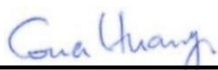


# FCC SAR TEST REPORT

FCC ID : HFS-QTAWUA  
Equipment : 5G USB Modem  
Model Name : QTAWUA  
Applicant : Quanta Computer Inc.  
NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan  
City 33377, Taiwan  
Manufacturer : Quanta Computer Inc.  
NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan  
City 33377, Taiwan  
Standard : FCC 47 CFR Part 2 (2.1093)

The product was received on Jun. 04, 2024 and testing was started from Jun. 09, 2024 and completed on Dec. 05, 2024. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



**Sporton International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



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## History of this test report

| Report No. | Version | Description             | Issued Date   |
|------------|---------|-------------------------|---------------|
| FA451315   | 01      | Initial issue of report | Dec. 23, 2024 |
| FA451315   | 02      | Update section 3.3      | Jan. 02, 2025 |
|            |         |                         |               |
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|            |         |                         |               |



## 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for **Quanta Computer Inc., 5G USB Modem, QTAWUA**, are as follows.

| Equipment Class  | Frequency Band |                 | Highest SAR Summary                | Highest Simultaneous Transmission<br>1g SAR (W/kg) |
|------------------|----------------|-----------------|------------------------------------|----------------------------------------------------|
|                  |                |                 | Body<br>(Separation distance 10mm) |                                                    |
|                  |                |                 | 1g SAR (W/kg)                      |                                                    |
| Licensed         | LTE            | LTE Band 2      | 0.71                               | 1.59                                               |
|                  |                | LTE Band 5      | 0.67                               |                                                    |
|                  |                | LTE Band 13     | 0.49                               |                                                    |
|                  |                | LTE Band 48     | 0.34                               |                                                    |
|                  |                | LTE Band 4 / 66 | 0.75                               |                                                    |
|                  | FR1            | FR1 n2          | 0.80                               |                                                    |
|                  |                | FR1 n5          | 0.72                               |                                                    |
|                  |                | FR1 n48         | 0.50                               |                                                    |
|                  |                | FR1 n66         | 0.71                               |                                                    |
|                  |                | FR1 n77         | 1.17                               |                                                    |
| Date of Testing: |                |                 | 2024/06/09 ~ 2024/12/05            |                                                    |

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

**Reviewed by: Jason Wang**  
**Report Producer: Daisy Peng**

## 2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 447498 D02 SAR Procedures for Dongle Xmtr v02r01
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02



### **3. Equipment Under Test (EUT) Information**

#### **3.1 General Information**

| Product Feature & Specification         |                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment Name                          | 5G USB Modem                                                                                                                                                                                                                                                                                                                                                                                               |
| Model Name                              | QTAWUA                                                                                                                                                                                                                                                                                                                                                                                                     |
| FCC ID                                  | HFS-QTAWUA                                                                                                                                                                                                                                                                                                                                                                                                 |
| Wireless Technology and Frequency Range | LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>5G NR n2 : 1850 MHz ~ 1910 MHz<br>5G NR n5 : 824 MHz ~ 849 MHz<br>5G NR n48 : 3550 MHz ~ 3700 MHz<br>5G NR n66 : 1710 MHz ~ 1780 MHz<br>5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz |
| Mode                                    | LTE: QPSK, 16QAM, 64QAM, 256QAM<br>5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM                                                                                                                                                                                                                                                                                                            |

### 3.2 General LTE SAR Test and Reporting Considerations

| Summarized necessary items addressed in KDB 941225 D05 v02r05           |                   |             |                                                                                                                                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
|-------------------------------------------------------------------------|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| FCC ID                                                                  |                   |             | HFS-QTAWUA                                                                                                                                                                                                                                                                    |             |                                                               |             |                  |             |                  |             |                  |             |
| Equipment Name                                                          |                   |             | 5G USB Modem                                                                                                                                                                                                                                                                  |             |                                                               |             |                  |             |                  |             |                  |             |
| Operating Frequency Range of each LTE transmission band                 |                   |             | LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz                                                                 |             |                                                               |             |                  |             |                  |             |                  |             |
| Channel Bandwidth                                                       |                   |             | LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 13: 5MHz, 10MHz<br>LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz |             |                                                               |             |                  |             |                  |             |                  |             |
| uplink modulations used                                                 |                   |             | QPSK / 16QAM / 64QAM / 256QAM                                                                                                                                                                                                                                                 |             |                                                               |             |                  |             |                  |             |                  |             |
| LTE Voice / Data requirements                                           |                   |             | Data only                                                                                                                                                                                                                                                                     |             |                                                               |             |                  |             |                  |             |                  |             |
| LTE MPR permanently built-in by design                                  |                   |             | Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3                                                                                                                                                                                                       |             |                                                               |             |                  |             |                  |             |                  |             |
|                                                                         |                   |             | Modulation                                                                                                                                                                                                                                                                    |             | Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> ) |             |                  |             |                  |             | MPR (dB)         |             |
|                                                                         |                   |             |                                                                                                                                                                                                                                                                               |             | 1.4 MHz                                                       | 3.0 MHz     | 5 MHz            | 10 MHz      | 15 MHz           | 20 MHz      |                  |             |
|                                                                         |                   |             | QPSK                                                                                                                                                                                                                                                                          | > 5         | > 4                                                           | > 8         | > 12             | > 16        | > 18             | ≤ 1         |                  |             |
|                                                                         |                   |             | 16 QAM                                                                                                                                                                                                                                                                        | ≤ 5         | ≤ 4                                                           | ≤ 8         | ≤ 12             | ≤ 16        | ≤ 18             | ≤ 1         |                  |             |
|                                                                         |                   |             | 16 QAM                                                                                                                                                                                                                                                                        | > 5         | > 4                                                           | > 8         | > 12             | > 16        | > 18             | ≤ 2         |                  |             |
|                                                                         |                   |             | 64 QAM                                                                                                                                                                                                                                                                        | ≤ 5         | ≤ 4                                                           | ≤ 8         | ≤ 12             | ≤ 16        | ≤ 18             | ≤ 2         |                  |             |
|                                                                         |                   |             | 64 QAM                                                                                                                                                                                                                                                                        | > 5         | > 4                                                           | > 8         | > 12             | > 16        | > 18             | ≤ 3         |                  |             |
| 256 QAM                                                                 | ≥ 1               |             |                                                                                                                                                                                                                                                                               |             |                                                               |             | ≤ 5              |             |                  |             |                  |             |
| LTE A-MPR                                                               |                   |             | In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)                                                                                 |             |                                                               |             |                  |             |                  |             |                  |             |
| Spectrum plots for RB configuration                                     |                   |             | A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.                                                                        |             |                                                               |             |                  |             |                  |             |                  |             |
| Power reduction applied to satisfy SAR compliance                       |                   |             | Yes, Proximity Sensor.                                                                                                                                                                                                                                                        |             |                                                               |             |                  |             |                  |             |                  |             |
| LTE Carrier Aggregation Combinations                                    |                   |             | Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 10.                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
| LTE Carrier Aggregation Additional Information                          |                   |             | This device supports maximum of 5 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.            |             |                                                               |             |                  |             |                  |             |                  |             |
| Transmission (H, M, L) channel numbers and frequencies in each LTE band |                   |             |                                                                                                                                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
| LTE Band 2                                                              |                   |             |                                                                                                                                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz                                                                                                                                                                                                                                                               |             | Bandwidth 5 MHz                                               |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #                                                                                                                                                                                                                                                                         | Freq. (MHz) | Ch. #                                                         | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 18607             | 1850.7      | 18615                                                                                                                                                                                                                                                                         | 1851.5      | 18625                                                         | 1852.5      | 18650            | 1855        | 18675            | 1857.5      | 18700            | 1860        |
| M                                                                       | 18900             | 1880        | 18900                                                                                                                                                                                                                                                                         | 1880        | 18900                                                         | 1880        | 18900            | 1880        | 18900            | 1880        | 18900            | 1880        |
| H                                                                       | 19193             | 1909.3      | 19185                                                                                                                                                                                                                                                                         | 1908.5      | 19175                                                         | 1907.5      | 19150            | 1905        | 19125            | 1902.5      | 19100            | 1900        |
| LTE Band 4                                                              |                   |             |                                                                                                                                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz                                                                                                                                                                                                                                                               |             | Bandwidth 5 MHz                                               |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #                                                                                                                                                                                                                                                                         | Freq. (MHz) | Ch. #                                                         | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 19957             | 1710.7      | 19965                                                                                                                                                                                                                                                                         | 1711.5      | 19975                                                         | 1712.5      | 20000            | 1715        | 20025            | 1717.5      | 20050            | 1720        |
| M                                                                       | 20175             | 1732.5      | 20175                                                                                                                                                                                                                                                                         | 1732.5      | 20175                                                         | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      | 20175            | 1732.5      |
| H                                                                       | 20393             | 1754.3      | 20385                                                                                                                                                                                                                                                                         | 1753.5      | 20375                                                         | 1752.5      | 20350            | 1750        | 20325            | 1747.5      | 20300            | 1745        |
| LTE Band 5                                                              |                   |             |                                                                                                                                                                                                                                                                               |             |                                                               |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz                                                                                                                                                                                                                                                               |             | Bandwidth 5 MHz                                               |             | Bandwidth 10 MHz |             |                  |             |                  |             |
|                                                                         | Ch. #             | Freq. (MHz) | Ch. #                                                                                                                                                                                                                                                                         | Freq. (MHz) | Ch. #                                                         | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L                                                                       | 20407             | 824.7       | 20415                                                                                                                                                                                                                                                                         | 825.5       | 20425                                                         | 826.5       | 20450            | 829         |                  |             |                  |             |



# FCC SAR TEST REPORT

Report No. : FA451315

|             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|-------------|-------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| M           | 20525             | 836.5       | 20525            | 836.5       | 20525            | 836.5       | 20525            | 836.5       |                  |             |                  |             |
| H           | 20643             | 848.3       | 20635            | 847.5       | 20625            | 846.5       | 20600            | 844         |                  |             |                  |             |
| LTE Band 13 |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|             | Bandwidth 5 MHz   |             |                  |             | Bandwidth 10 MHz |             |                  |             |                  |             |                  |             |
|             | Channel #         |             | Freq.(MHz)       |             | Channel #        |             | Freq.(MHz)       |             |                  |             |                  |             |
| L           | 23205             |             | 779.5            |             | 23230            |             | 782              |             |                  |             |                  |             |
| M           | 23230             |             | 782              |             |                  |             |                  |             |                  |             |                  |             |
| H           | 23255             |             | 784.5            |             |                  |             |                  |             |                  |             |                  |             |
| LTE Band 48 |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|             | Bandwidth 5 MHz   |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |                  |             |                  |             |
|             | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |                  |             |                  |             |
| L           | 55265             | 3552.5      | 55290            | 3555        | 55315            | 3557.5      | 55340            | 3560        |                  |             |                  |             |
| L<br>M      | 55810             | 3607        | 55815            | 3607.5      | 55820            | 3608        | 55830            | 3609        |                  |             |                  |             |
| M<br>H      | 56170             | 3643        | 56165            | 3642.5      | 56160            | 3642        | 56150            | 3641        |                  |             |                  |             |
| H           | 56715             | 3697.5      | 56690            | 3695        | 56665            | 3692.5      | 56640            | 3690        |                  |             |                  |             |
| LTE Band 66 |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|             | Bandwidth 1.4 MHz |             | Bandwidth 3 MHz  |             | Bandwidth 5 MHz  |             | Bandwidth 10 MHz |             | Bandwidth 15 MHz |             | Bandwidth 20 MHz |             |
|             | Ch. #             | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) | Ch. #            | Freq. (MHz) |
| L           | 131979            | 1710.7      | 131987           | 1711.5      | 131997           | 1712.5      | 132022           | 1715        | 132047           | 1717.5      | 132072           | 1720        |
| M           | 132322            | 1745        | 132322           | 1745        | 132322           | 1745        | 132322           | 1745        | 132322           | 1745        | 132322           | 1745        |
| H           | 132665            | 1779.3      | 132657           | 1778.5      | 132647           | 1777.5      | 132622           | 1775        | 132597           | 1772.5      | 132572           | 1770        |



### 3.3 General 5G NR SAR Test and Reporting Considerations

| 5G NR Information                                         |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| FCC ID                                                    | HFS-QTAWUA                                                                                                                                                                                                                                                                                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| Equipment Name                                            | 5G USB Modem                                                                                                                                                                                                                                                                               |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| Operating Frequency Range of each 5G NR transmission band | 5G NR n2: 1850 MHz ~ 1910 MHz<br>5G NR n5: 824 MHz ~ 849 MHz<br>5G NR n48 : 3550 MHz ~ 3700 MHz<br>5G NR n66: 1710 MHz ~ 1780 MHz<br>5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz                                                                                                     |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| Channel Bandwidth                                         | 5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz<br>5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz<br>5G NR n48: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz<br>5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz,30MHz, 40MHz<br>5G NR n77: 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| SCS                                                       | FDD: SCS15KHz, TDD: SCS30KHz                                                                                                                                                                                                                                                               |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| uplink modulations used                                   | DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM<br>CP-OFDM QPSK / 16QAM / 64QAM / 256QAM                                                                                                                                                                                             |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| A-MPR (Additional MPR) disabled for SAR Testing?          | Yes                                                                                                                                                                                                                                                                                        |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| LTE Anchor Bands for n2                                   | LTE B2/4/5/13/66                                                                                                                                                                                                                                                                           |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| LTE Anchor Bands for n5                                   | LTE B2/4/66                                                                                                                                                                                                                                                                                |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| LTE Anchor Bands for n66                                  | LTE B2/5/13/66                                                                                                                                                                                                                                                                             |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| LTE Anchor Bands for n77                                  | LTE B2/5/13/66                                                                                                                                                                                                                                                                             |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| NR Band 2                                                 |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth 5MHz                                                                                                                                                                                                                                                                             |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| L                                                         | 370500                                                                                                                                                                                                                                                                                     | 1852.5      | 371000          | 1855        | 371500          | 1857.5      | 372000          | 1860        |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| M                                                         | 376000                                                                                                                                                                                                                                                                                     | 1880        | 376000          | 1880        | 376000          | 1880        | 376000          | 1880        |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| H                                                         | 381500                                                                                                                                                                                                                                                                                     | 1907.5      | 381000          | 1905        | 380500          | 1902.5      | 380000          | 1900        |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| NR Band 5                                                 |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth 5MHz                                                                                                                                                                                                                                                                             |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| L                                                         | 165300                                                                                                                                                                                                                                                                                     | 826.5       | 165800          | 829         | 166300          | 831.5       | 166800          | 834         |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| M                                                         | 167300                                                                                                                                                                                                                                                                                     | 836.5       | 167300          | 836.5       | 167300          | 836.5       | 167300          | 836.5       |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| H                                                         | 169300                                                                                                                                                                                                                                                                                     | 846.5       | 168800          | 844         | 168300          | 841.5       | 167800          | 839         |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| NR Band 48                                                |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth10MHz                                                                                                                                                                                                                                                                             |             | Bandwidth 15MHz |             | Bandwidth20MHz  |             | Bandwidth30MHz  |             | Bandwidth 40MHz |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| L                                                         | 637000                                                                                                                                                                                                                                                                                     | 3555        | 637168          | 3557.52     | 637334          | 3560.01     | 637668          | 3565.02     | 638000          | 3570        |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| M                                                         | 641666                                                                                                                                                                                                                                                                                     | 3624.99     | 641666          | 3624.99     | 641666          | 3624.99     | 641666          | 3624.99     | 641666          | 3624.99     |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| H                                                         | 646332                                                                                                                                                                                                                                                                                     | 3694.98     | 646166          | 3692.49     | 646000          | 3690        | 645666          | 3684.99     | 645332          | 3679.98     |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
| NR Band 66                                                |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth 5MHz                                                                                                                                                                                                                                                                             |             | Bandwidth 10MHz |             | Bandwidth 15MHz |             | Bandwidth 20MHz |             | Bandwidth 25MHz |             | Bandwidth 30MHz |             | Bandwidth 40MHz |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |                 |             |                 |             |                 |             |                 |             |                 |             |
| L                                                         | 342500                                                                                                                                                                                                                                                                                     | 1712.5      | 343000          | 1715        | 343500          | 1717.5      | 344000          | 1720        | 344500          | 1722.5      | 345000          | 1725        | 346000          | 1730        |                 |             |                 |             |                 |             |                 |             |                 |             |
| M                                                         | 349000                                                                                                                                                                                                                                                                                     | 1745        | 349000          | 1745        | 349000          | 1745        | 349000          | 1745        | 349000          | 1745        | 349000          | 1745        | 349000          | 1745        |                 |             |                 |             |                 |             |                 |             |                 |             |
| H                                                         | 355500                                                                                                                                                                                                                                                                                     | 1777.5      | 355000          | 1775        | 354500          | 1772.5      | 354000          | 1770        | 353500          | 1767.5      | 353000          | 1765        | 352000          | 1760        |                 |             |                 |             |                 |             |                 |             |                 |             |
| NR Band 77                                                |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth10MHz                                                                                                                                                                                                                                                                             |             | Bandwidth15MHz  |             | Bandwidth 20MHz |             | Bandwidth25MHz  |             | Bandwidth30MHz  |             | Bandwidth 40MHz |             | Bandwidth 50MHz |             | Bandwidth 60MHz |             | Bandwidth 70MHz |             | Bandwidth 80MHz |             | Bandwidth 90MHz |             | Bandwidth100MHz |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |
| L                                                         | 647000                                                                                                                                                                                                                                                                                     | 3705        | 647168          | 3707.52     | 647334          | 3710.01     | 647500          | 3712.5      | 647668          | 3715.02     | 648000          | 3720        | 648334          | 3725.01     | 648668          | 3730.02     | 649000          | 3735        | 649334          | 3740.01     | 649668          | 3745.02     | 650000          | 3750        |
| M                                                         | 656000                                                                                                                                                                                                                                                                                     | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        | 656000          | 3840        |
| H                                                         | 665000                                                                                                                                                                                                                                                                                     | 3975        | 664832          | 3972.48     | 664666          | 3969.99     | 664500          | 3967.50     | 664332          | 3964.98     | 664000          | 3960        | 663666          | 3954.99     | 663332          | 3949.98     | 663000          | 3945        | 662666          | 3939.99     | 662332          | 3934.98     | 662000          | 3930        |
| NR Band 77(3450MHz ~ 3550MHz)                             |                                                                                                                                                                                                                                                                                            |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |                 |             |
|                                                           | Bandwidth10MHz                                                                                                                                                                                                                                                                             |             | Bandwidth15MHz  |             | Bandwidth 20MHz |             | Bandwidth25MHz  |             | Bandwidth30MHz  |             | Bandwidth 40MHz |             | Bandwidth 50MHz |             | Bandwidth 60MHz |             | Bandwidth 70MHz |             | Bandwidth 80MHz |             | Bandwidth 90MHz |             | Bandwidth100MHz |             |
|                                                           | Ch. #                                                                                                                                                                                                                                                                                      | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) | Ch. #           | Freq. (MHz) |
| L                                                         | 630334                                                                                                                                                                                                                                                                                     | 3455.01     | 630500          | 3457.5      | 630668          | 3460.02     | 630834          | 3462.51     | 631000          | 3465        | 631334          | 3470.01     | 631668          | 3475.02     | 632000          | 3480        | 632334          | 3485.01     | 632668          | 3490.02     | 633000          | 3495        | 633334          | 3500.01     |
| M                                                         | 633332                                                                                                                                                                                                                                                                                     | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     | 633332          | 3499.98     |
| H                                                         | 636332                                                                                                                                                                                                                                                                                     | 3544.98     | 636166          | 3542.49     | 636000          | 3540        | 635832          | 3537.48     | 635666          | 3534.99     | 635332          | 3529.98     | 635000          | 3525        | 634666          | 3519.99     | 634332          | 3514.98     | 634000          | 3510        | 633666          | 3504.99     | 633332          | 3499.98     |

## **4. RF Exposure Limits**

### **4.1 Uncontrolled Environment**

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

### **4.2 Controlled Environment**

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Limits for Occupational/Controlled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|------------|--------------|--------------------------------|
| 0.4        | 8.0          | 20.0                           |

**Limits for General Population/Uncontrolled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|------------|--------------|--------------------------------|
| 0.08       | 1.6          | 4.0                            |

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

## **5. Specific Absorption Rate (SAR)**

### **5.1 Introduction**

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

### **5.2 SAR Definition**

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density ( $\rho$ ). The equation description is as below:

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right)$$

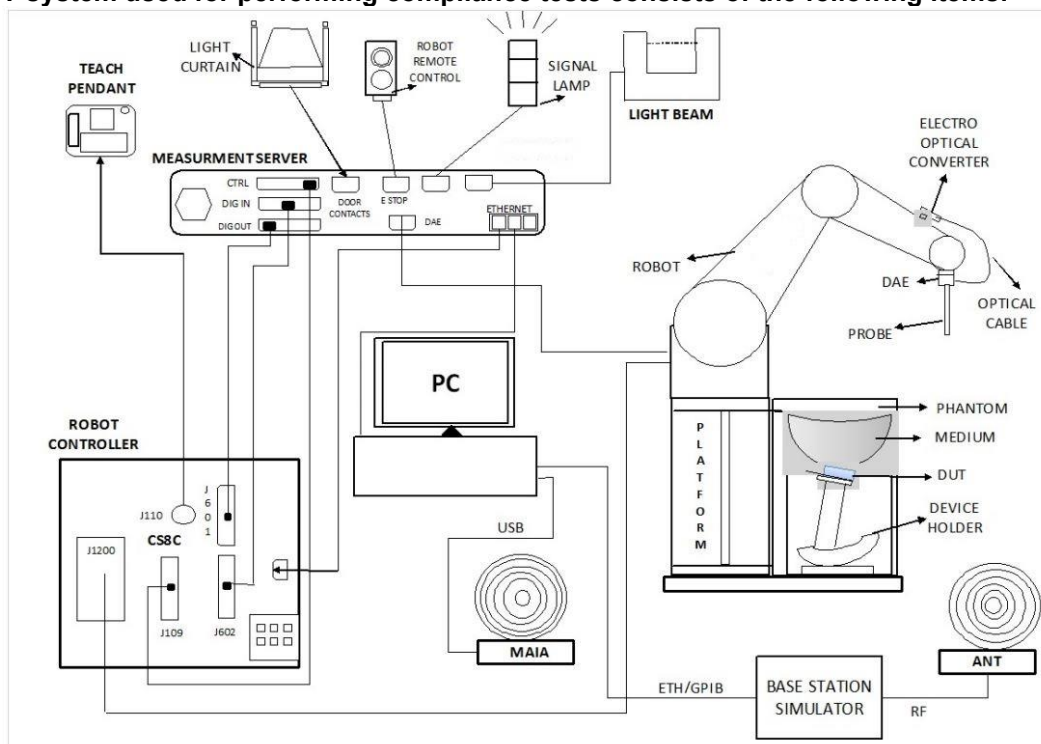
SAR is expressed in units of Watts per kilogram (W/kg)

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the RMS electrical field strength.

## 6. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- The DASY system in SAR Configuration is shown above
- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running windows software and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

### 6.1 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

| Laboratory         | EMC & Wireless Communications Laboratory                                |          | Wensan Laboratory                                                                              |          |          |          |          |
|--------------------|-------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------|----------|----------|----------|----------|
| Test Site Location | TW1190<br>No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan |          | TW3786<br>No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan |          |          |          |          |
| Test Site No.      | SAR01-HY                                                                | SAR03-HY | SAR08-HY                                                                                       | SAR09-HY | SAR15-HY | SAR18-HY | SAR21-HY |
|                    | SAR04-HY                                                                | SAR05-HY | SAR11-HY                                                                                       | SAR12-HY | SAR16-HY | SAR19-HY | SAR22-HY |
|                    | SAR06-HY                                                                | SAR10-HY | SAR13-HY                                                                                       | SAR14-HY | SAR17-HY | SAR20-HY |          |

## 6.2 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

### <ES3DV3 Probe>

|                      |                                                                                                                                                                                  |                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Construction</b>  | Symmetric design with triangular core<br>Interleaved sensors<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |  |
| <b>Frequency</b>     | 4 MHz – 4 GHz;<br>Linearity: $\pm 0.2$ dB (30 MHz – 4 GHz)                                                                                                                       |                                                                                    |
| <b>Directivity</b>   | $\pm 0.2$ dB in TSL (rotation around probe axis)<br>$\pm 0.3$ dB in TSL (rotation normal to probe axis)                                                                          |                                                                                    |
| <b>Dynamic Range</b> | 5 $\mu$ W/g – >100 mW/g;<br>Linearity: $\pm 0.2$ dB                                                                                                                              |                                                                                    |
| <b>Dimensions</b>    | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 3.9 mm (body: 12 mm)<br>Distance from probe tip to dipole centers: 3.0 mm                                                   |                                                                                    |

### <EX3DV4 Probe>

|                      |                                                                                                                                                           |                                                                                     |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Construction</b>  | Symmetric design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |  |
| <b>Frequency</b>     | 4 MHz – >6 GHz<br>Linearity: $\pm 0.2$ dB (30 MHz – 6 GHz)                                                                                                |                                                                                     |
| <b>Directivity</b>   | $\pm 0.3$ dB in TSL (rotation around probe axis)<br>$\pm 0.5$ dB in TSL (rotation normal to probe axis)                                                   |                                                                                     |
| <b>Dynamic Range</b> | 10 $\mu$ W/g – >100 mW/g<br>Linearity: $\pm 0.2$ dB (noise: typically <1 $\mu$ W/g)                                                                       |                                                                                     |
| <b>Dimensions</b>    | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 2.5 mm (body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm                      |                                                                                     |

## 6.3 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



**Fig 5.1 Photo of DAE**

## 6.4 Phantom

### <SAM Twin Phantom>

|                          |                                                         |                                                                                    |
|--------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Shell Thickness</b>   | 2 ± 0.2 mm;<br>Center ear point: 6 ± 0.2 mm             |  |
| <b>Filling Volume</b>    | Approx. 25 liters                                       |                                                                                    |
| <b>Dimensions</b>        | Length: 1000 mm; Width: 500 mm; Height: adjustable feet |                                                                                    |
| <b>Measurement Areas</b> | Left Hand, Right Hand, Flat Phantom                     |                                                                                    |

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

### <ELI Phantom>

|                        |                                                  |                                                                                     |
|------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Shell Thickness</b> | 2 ± 0.2 mm (sagging: <1%)                        |  |
| <b>Filling Volume</b>  | Approx. 30 liters                                |                                                                                     |
| <b>Dimensions</b>      | Major ellipse axis: 600 mm<br>Minor axis: 400 mm |                                                                                     |

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

## **6.5 Device Holder**

### **<Mounting Device for Hand-Held Transmitter>**

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

### **<Mounting Device for Laptops and other Body-Worn Transmitters>**

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

## **7. Measurement Procedures**

The measurement procedures are as follows:

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

### **7.1 Spatial Peak SAR Evaluation**

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

## **7.2 Power Reference Measurement**

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

## **7.3 Area Scan**

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

|                                                                                                        | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                              |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | $5 \pm 1$ mm                                                                                                                                                                                                                                                           | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm     |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location              | $30^\circ \pm 1^\circ$                                                                                                                                                                                                                                                 | $20^\circ \pm 1^\circ$                                 |
| Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$                            | $\leq 2$ GHz: $\leq 15$ mm<br>$2 - 3$ GHz: $\leq 12$ mm                                                                                                                                                                                                                | $3 - 4$ GHz: $\leq 12$ mm<br>$4 - 6$ GHz: $\leq 10$ mm |
|                                                                                                        | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                        |

## 7.4 Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

|                                                                                                                                                                                                                                                                                                             |                                           |                                                                                             | $\leq 3$ GHz                                           | $> 3$ GHz                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|
| Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$                                                                                                                                                                                                                      |                                           |                                                                                             | $\leq 2$ GHz: $\leq 8$ mm<br>$2 - 3$ GHz: $\leq 5$ mm* | $3 - 4$ GHz: $\leq 5$ mm*<br>$4 - 6$ GHz: $\leq 4$ mm*                              |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                                                             | uniform grid: $\Delta z_{\text{Zoom}}(n)$ |                                                                                             | $\leq 5$ mm                                            | $3 - 4$ GHz: $\leq 4$ mm<br>$4 - 5$ GHz: $\leq 3$ mm<br>$5 - 6$ GHz: $\leq 2$ mm    |
|                                                                                                                                                                                                                                                                                                             | graded grid                               | $\Delta z_{\text{Zoom}}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface | $\leq 4$ mm                                            | $3 - 4$ GHz: $\leq 3$ mm<br>$4 - 5$ GHz: $\leq 2.5$ mm<br>$5 - 6$ GHz: $\leq 2$ mm  |
|                                                                                                                                                                                                                                                                                                             |                                           | $\Delta z_{\text{Zoom}}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$           |                                                                                     |
| Minimum zoom scan volume                                                                                                                                                                                                                                                                                    | x, y, z                                   |                                                                                             | $\geq 30$ mm                                           | $3 - 4$ GHz: $\geq 28$ mm<br>$4 - 5$ GHz: $\geq 25$ mm<br>$5 - 6$ GHz: $\geq 22$ mm |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.                                                                                                                                                           |                                           |                                                                                             |                                                        |                                                                                     |
| * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                           |                                                                                             |                                                        |                                                                                     |

## 7.5 Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

## 7.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASy measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

## 8. Test Equipment List

| Manufacturer  | Name of Equipment                            | Type/Model      | Serial Number | Calibration   |               |
|---------------|----------------------------------------------|-----------------|---------------|---------------|---------------|
|               |                                              |                 |               | Last Cal.     | Due Date      |
| SPEAG         | 750MHz System Validation Kit <sup>(2)</sup>  | D750V3          | 1012          | Aug. 18, 2021 | Aug. 15, 2024 |
| SPEAG         | 750MHz System Validation Kit <sup>(2)</sup>  | D750V3          | 1117          | Mar. 24, 2022 | Mar. 21, 2025 |
| SPEAG         | 835MHz System Validation Kit <sup>(2)</sup>  | D835V2          | 499           | Aug. 18, 2021 | Aug. 15, 2024 |
| SPEAG         | 835MHz System Validation Kit <sup>(2)</sup>  | D835V2          | 4d060         | Mar. 24, 2022 | Mar. 21, 2025 |
| SPEAG         | 1750MHz System Validation Kit <sup>(2)</sup> | D1750V2         | 1068          | Nov. 21, 2022 | Nov. 18, 2025 |
| SPEAG         | 1900MHz System Validation Kit <sup>(2)</sup> | D1900V2         | 5d041         | Aug. 19, 2021 | Aug. 16, 2024 |
| SPEAG         | 1900MHz System Validation Kit <sup>(2)</sup> | D1900V2         | 5d093         | Mar. 25, 2022 | Mar. 22, 2025 |
| SPEAG         | 1900MHz System Validation Kit <sup>(2)</sup> | D1900V2         | 5d185         | Jun. 17, 2022 | Jun. 14, 2025 |
| SPEAG         | 3500MHz System Validation Kit <sup>(2)</sup> | D3500V2         | 1014          | Jan. 17, 2022 | Jan. 14, 2025 |
| SPEAG         | 3500MHz System Validation Kit <sup>(2)</sup> | D3500V2         | 1036          | Mar. 23, 2022 | Mar. 20, 2025 |
| SPEAG         | 3700MHz System Validation Kit <sup>(2)</sup> | D3700V2         | 1006          | Jun. 20, 2022 | Jun. 17, 2025 |
| SPEAG         | 3900MHz System Validation Kit <sup>(2)</sup> | D3900V2         | 1017          | Apr. 22, 2022 | Apr. 19, 2025 |
| SPEAG         | Data Acquisition Electronics                 | DAE4            | 376           | Sep. 14, 2023 | Sep. 13, 2024 |
| SPEAG         | Data Acquisition Electronics                 | DAE4            | 1424          | Dec. 07, 2023 | Dec. 06, 2024 |
| SPEAG         | Data Acquisition Electronics                 | DAE4            | 1696          | Sep. 03, 2024 | Sep. 02, 2025 |
| SPEAG         | Data Acquisition Electronics                 | DAE4            | 1805          | May. 22, 2024 | May. 21, 2025 |
| SPEAG         | Dosimetric E-Field Probe                     | EX3DV4          | 3976          | Jan. 22, 2024 | Jan. 21, 2025 |
| SPEAG         | Dosimetric E-Field Probe                     | EX3DV4          | 7625          | Dec. 14, 2023 | Dec. 13, 2024 |
| SPEAG         | Dosimetric E-Field Probe                     | EX3DV4          | 7695          | Jun. 04, 2024 | Jun. 03, 2025 |
| SPEAG         | Dosimetric E-Field Probe                     | EX3DV4          | 7700          | Feb. 01, 2024 | Jan. 31, 2025 |
| SPEAG         | Dosimetric E-Field Probe                     | EX3DV4          | 7791          | Feb. 21, 2024 | Feb. 20, 2025 |
| Testo         | Hygro meter                                  | 608-H1          | 45142597      | Jan. 03, 2024 | Jan. 02, 2025 |
| Anritsu       | Radio Communication Test Station             | MT8000A         | 6262208374    | Feb. 29, 2024 | Feb. 28, 2025 |
| Anritsu       | Radio Communication Analyzer                 | MT8821C         | 6201341950    | Nov. 13, 2023 | Nov. 12, 2024 |
| Anritsu       | Radio Communication Analyzer                 | MT8821C         | 6201074414    | Aug. 20, 2024 | Aug. 19, 2025 |
| Keysight      | 5G Wireless Test Platform                    | E7515B          | MY58300712    | Apr. 22, 2024 | Apr. 21, 2025 |
| SPEAG         | Device Holder                                | N/A             | N/A           | N/A           | N/A           |
| Anritsu       | Signal Generator                             | MG3692C         | 113508        | Jan. 23, 2024 | Jan. 22, 2025 |
| Keysight      | ENA Network Analyzer                         | E5071C          | MY46104758    | Oct. 30, 2023 | Oct. 29, 2024 |
| Keysight      | ENA Network Analyzer                         | E5071C          | MY46104758    | Oct. 20, 2024 | Oct. 19, 2025 |
| SPEAG         | Dielectric Probe Kit                         | DAK-3.5         | 1126          | Sep. 19, 2023 | Sep. 18, 2024 |
| SPEAG         | Dielectric Probe Kit                         | DAK-3.5         | 1126          | Sep. 17, 2024 | Sep. 16, 2025 |
| LINE SEIKI    | Digital Thermometer                          | DTM3000-spezial | 3690          | Aug. 09, 2023 | Aug. 08, 2024 |
| LINE SEIKI    | Digital Thermometer                          | DTM3000-spezial | 3252          | Jul. 31, 2024 | Jul. 30, 2025 |
| Anritsu       | Power Meter                                  | ML2495A         | 1419002       | Aug. 17, 2023 | Aug. 16, 2024 |
| Anritsu       | Power Meter                                  | ML2495A         | 1419002       | Aug. 13, 2024 | Aug. 12, 2025 |
| Anritsu       | Power Sensor                                 | MA2411B         | 1911176       | Aug. 18, 2023 | Aug. 17, 2024 |
| Anritsu       | Power Sensor                                 | MA2411B         | 1911176       | Aug. 13, 2024 | Aug. 12, 2025 |
| Anritsu       | Spectrum Analyzer                            | N9010A          | MY53470118    | Jan. 10, 2024 | Jan. 09, 2025 |
| Mini-Circuits | Power Amplifier                              | ZHL-42W+        | 715701915     | May. 17, 2024 | May. 16, 2025 |
| ATM           | Dual Directional Coupler                     | C122H-10        | P610410z-02   | Note 1        |               |
| Warison       | Directional Coupler                          | WCOU-10-50S-10  | WR889BMC4B1   | Note 1        |               |
| Woken         | Attenuator 1                                 | WK0602-XX       | N/A           | Note 1        |               |
| PE            | Attenuator 2                                 | PE7005-10       | N/A           | Note 1        |               |
| PE            | Attenuator 3                                 | PE7005- 3       | N/A           | Note 1        |               |

**General Note:**

- Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
- The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

## 9. System Verification

### 9.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within  $\pm 2^\circ\text{C}$  of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing

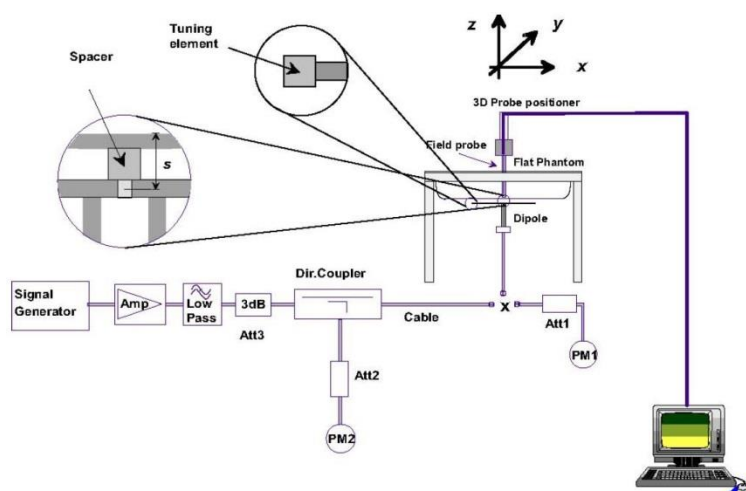
#### <Tissue Dielectric Parameter Check Results>

| Frequency (MHz) | Liquid Temp. (°C) | Conductivity ( $\sigma$ ) | Permittivity ( $\epsilon_r$ ) | Conductivity Target ( $\sigma$ ) | Permittivity Target ( $\epsilon_r$ ) | Delta ( $\sigma$ ) (%) | Delta ( $\epsilon_r$ ) (%) | Limit (%) | Date      |
|-----------------|-------------------|---------------------------|-------------------------------|----------------------------------|--------------------------------------|------------------------|----------------------------|-----------|-----------|
| 750             | 22.5              | 0.887                     | 42.195                        | 0.89                             | 41.90                                | -0.34                  | 0.70                       | $\pm 5$   | 2024/6/22 |
| 750             | 22.6              | 0.894                     | 42.809                        | 0.89                             | 41.90                                | 0.45                   | 2.17                       | $\pm 5$   | 2024/8/26 |
| 835             | 22.4              | 0.925                     | 41.459                        | 0.90                             | 41.50                                | 2.78                   | -0.10                      | $\pm 5$   | 2024/6/12 |
| 835             | 22.6              | 0.928                     | 41.254                        | 0.90                             | 41.50                                | 3.11                   | -0.59                      | $\pm 5$   | 2024/7/15 |
| 835             | 22.3              | 0.940                     | 41.511                        | 0.90                             | 41.50                                | 4.44                   | 0.03                       | $\pm 5$   | 2024/7/29 |
| 835             | 22.6              | 0.924                     | 42.213                        | 0.90                             | 41.50                                | 2.67                   | 1.72                       | $\pm 5$   | 2024/8/26 |
| 1750            | 22.6              | 1.375                     | 41.218                        | 1.37                             | 40.10                                | 0.36                   | 2.79                       | $\pm 5$   | 2024/6/9  |
| 1750            | 22.6              | 1.373                     | 41.218                        | 1.37                             | 40.10                                | 0.22                   | 2.79                       | $\pm 5$   | 2024/7/13 |
| 1750            | 22.5              | 1.372                     | 40.620                        | 1.37                             | 40.10                                | 0.15                   | 1.30                       | $\pm 5$   | 2024/7/16 |
| 1750            | 22.3              | 1.372                     | 40.638                        | 1.37                             | 40.10                                | 0.15                   | 1.34                       | $\pm 5$   | 2024/7/29 |
| 1750            | 22.6              | 1.357                     | 40.798                        | 1.37                             | 40.10                                | -0.95                  | 1.74                       | $\pm 5$   | 2024/8/26 |
| 1900            | 22.7              | 1.438                     | 39.021                        | 1.40                             | 40.00                                | 2.71                   | -2.45                      | $\pm 5$   | 2024/12/5 |
| 1900            | 22.4              | 1.449                     | 39.030                        | 1.40                             | 40.00                                | 3.50                   | -2.43                      | $\pm 5$   | 2024/6/11 |
| 1900            | 22.6              | 1.451                     | 39.670                        | 1.40                             | 40.00                                | 3.64                   | -0.82                      | $\pm 5$   | 2024/7/13 |
| 1900            | 22.5              | 1.449                     | 39.072                        | 1.40                             | 40.00                                | 3.50                   | -2.32                      | $\pm 5$   | 2024/7/16 |
| 1900            | 22.3              | 1.449                     | 39.090                        | 1.40                             | 40.00                                | 3.50                   | -2.27                      | $\pm 5$   | 2024/7/29 |
| 1900            | 22.6              | 1.422                     | 40.695                        | 1.40                             | 40.00                                | 1.57                   | 1.74                       | $\pm 5$   | 2024/8/26 |
| 3500            | 22.5              | 2.858                     | 38.163                        | 2.91                             | 37.90                                | -1.79                  | 0.69                       | $\pm 5$   | 2024/6/20 |
| 3500            | 22.7              | 2.922                     | 38.053                        | 2.91                             | 37.90                                | 0.41                   | 0.40                       | $\pm 5$   | 2024/6/25 |
| 3500            | 22.7              | 2.991                     | 37.641                        | 2.91                             | 37.90                                | 2.78                   | -0.68                      | $\pm 5$   | 2024/7/12 |
| 3500            | 22.4              | 2.991                     | 37.663                        | 2.91                             | 37.90                                | 2.78                   | -0.63                      | $\pm 5$   | 2024/7/14 |
| 3500            | 22.6              | 2.921                     | 38.029                        | 2.91                             | 37.90                                | 0.38                   | 0.34                       | $\pm 5$   | 2024/7/30 |
| 3500            | 22.5              | 2.964                     | 37.222                        | 2.91                             | 37.90                                | 1.86                   | -1.79                      | $\pm 5$   | 2024/7/31 |
| 3500            | 22.6              | 2.932                     | 38.203                        | 2.91                             | 37.90                                | 0.76                   | 0.80                       | $\pm 5$   | 2024/8/26 |
| 3500            | 22.7              | 2.922                     | 37.953                        | 2.91                             | 37.90                                | 0.41                   | 0.14                       | $\pm 5$   | 2024/12/5 |
| 3700            | 22.7              | 3.106                     | 37.754                        | 3.12                             | 37.70                                | -0.45                  | 0.14                       | $\pm 5$   | 2024/6/25 |
| 3700            | 22.7              | 3.179                     | 37.342                        | 3.12                             | 37.70                                | 1.89                   | -0.95                      | $\pm 5$   | 2024/7/12 |
| 3700            | 22.4              | 3.179                     | 37.364                        | 3.12                             | 37.70                                | 1.89                   | -0.89                      | $\pm 5$   | 2024/7/14 |
| 3700            | 22.6              | 3.075                     | 37.791                        | 3.12                             | 37.70                                | -1.44                  | 0.24                       | $\pm 5$   | 2024/7/30 |
| 3700            | 22.5              | 3.121                     | 36.984                        | 3.12                             | 37.70                                | 0.03                   | -1.90                      | $\pm 5$   | 2024/7/31 |
| 3700            | 22.6              | 3.142                     | 38.001                        | 3.12                             | 37.70                                | 0.71                   | 0.80                       | $\pm 5$   | 2024/8/26 |
| 3900            | 22.7              | 3.384                     | 37.063                        | 3.33                             | 37.51                                | 1.62                   | -1.19                      | $\pm 5$   | 2024/7/12 |
| 3900            | 22.4              | 3.384                     | 37.086                        | 3.33                             | 37.51                                | 1.62                   | -1.13                      | $\pm 5$   | 2024/7/14 |
| 3900            | 22.6              | 3.246                     | 37.546                        | 3.33                             | 37.51                                | -2.52                  | 0.10                       | $\pm 5$   | 2024/7/30 |
| 3900            | 22.5              | 3.294                     | 36.739                        | 3.33                             | 37.51                                | -1.08                  | -2.06                      | $\pm 5$   | 2024/7/31 |
| 3900            | 22.6              | 3.352                     | 37.813                        | 3.33                             | 37.51                                | 0.66                   | 0.81                       | $\pm 5$   | 2024/8/26 |
| 3900            | 22.7              | 3.307                     | 37.376                        | 3.33                             | 37.51                                | -0.69                  | -0.36                      | $\pm 5$   | 2024/12/5 |

## 9.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

| Date      | Frequency (MHz) | Input Power (mW) | Dipole S/N        | Probe S/N       | DAE S/N     | Measured 1g SAR (W/kg) | Targeted 1g SAR (W/kg) | Normalized 1g SAR (W/kg) | Deviation (%) | Test Site |
|-----------|-----------------|------------------|-------------------|-----------------|-------------|------------------------|------------------------|--------------------------|---------------|-----------|
| 2024/6/22 | 750             | 50               | D750V3-1012       | EX3DV4 - SN7791 | DAE4 Sn1805 | 0.401                  | 8.560                  | 8.02                     | -6.31         | SAR-12    |
| 2024/8/26 | 750             | 50               | D750V3-1117       | EX3DV4 - SN7695 | DAE4 Sn1424 | 0.388                  | 8.520                  | 7.76                     | -8.92         | SAR-13    |
| 2024/6/12 | 835             | 50               | D835V2-499        | EX3DV4 - SN7625 | DAE4 Sn376  | 0.442                  | 9.680                  | 8.84                     | -8.68         | SAR-08    |
| 2024/7/15 | 835             | 50               | D835V2-499        | EX3DV4 - SN3976 | DAE4 Sn1424 | 0.447                  | 9.680                  | 8.94                     | -7.64         | SAR-09    |
| 2024/7/29 | 835             | 50               | D835V2-499        | EX3DV4 - SN3976 | DAE4 Sn1424 | 0.453                  | 9.680                  | 9.06                     | -6.40         | SAR-09    |
| 2024/8/26 | 835             | 50               | D835V2-4d060      | EX3DV4 - SN7695 | DAE4 Sn1424 | 0.482                  | 9.730                  | 9.64                     | -0.92         | SAR-13    |
| 2024/6/9  | 1750            | 250              | D1750V2-1068      | EX3DV4 - SN7625 | DAE4 Sn376  | 8.680                  | 36.700                 | 34.72                    | -5.40         | SAR-08    |
| 2024/7/13 | 1750            | 50               | D1750V2-1068      | EX3DV4 - SN3976 | DAE4 Sn1424 | 1.710                  | 36.700                 | 34.2                     | -6.81         | SAR-09    |
| 2024/7/16 | 1750            | 50               | D1750V2-1068      | EX3DV4 - SN3976 | DAE4 Sn1424 | 1.810                  | 36.700                 | 36.2                     | -1.36         | SAR-09    |
| 2024/7/29 | 1750            | 50               | D1750V2-1068      | EX3DV4 - SN3976 | DAE4 Sn1424 | 1.950                  | 36.700                 | 39                       | 6.27          | SAR-09    |
| 2024/8/26 | 1750            | 50               | D1750V2-1068      | EX3DV4 - SN7695 | DAE4 Sn1424 | 1.730                  | 36.700                 | 34.6                     | -5.72         | SAR-13    |
| 2024/12/5 | 1900            | 50               | D1900V2-5d185     | EX3DV4 - SN7700 | DAE4 Sn1696 | 1.830                  | 39.000                 | 36.6                     | -6.15         | SAR-12    |
| 2024/6/11 | 1900            | 250              | D1900V2-5d041     | EX3DV4 - SN7625 | DAE4 Sn376  | 9.490                  | 40.600                 | 37.96                    | -6.50         | SAR-08    |
| 2024/7/13 | 1900            | 50               | D1900V2-5d041     | EX3DV4 - SN3976 | DAE4 Sn1424 | 1.980                  | 40.600                 | 39.6                     | -2.46         | SAR-09    |
| 2024/7/16 | 1900            | 50               | D1900V2-5d041     | EX3DV4 - SN3976 | DAE4 Sn1424 | 2.050                  | 40.600                 | 41                       | 0.99          | SAR-09    |
| 2024/7/29 | 1900            | 50               | D1900V2-5d093     | EX3DV4 - SN3976 | DAE4 Sn1424 | 1.980                  | 39.900                 | 39.6                     | -0.75         | SAR-09    |
| 2024/8/26 | 1900            | 50               | D1900V2-5d093     | EX3DV4 - SN7695 | DAE4 Sn1424 | 1.880                  | 39.900                 | 37.6                     | -5.76         | SAR-13    |
| 2024/6/20 | 3500            | 100              | D3500V2-1014      | EX3DV4 - SN7791 | DAE4 Sn1805 | 6.220                  | 67.200                 | 62.2                     | -7.44         | SAR-12    |
| 2024/6/25 | 3500            | 100              | D3500V2-1014      | EX3DV4 - SN7791 | DAE4 Sn1805 | 6.360                  | 67.200                 | 63.6                     | -5.36         | SAR-12    |
| 2024/7/12 | 3500            | 50               | D3500V2-1014      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.280                  | 67.200                 | 65.6                     | -2.38         | SAR-09    |
| 2024/7/14 | 3500            | 50               | D3500V2-1014      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.320                  | 67.200                 | 66.4                     | -1.19         | SAR-09    |
| 2024/7/30 | 3500            | 50               | D3500V2-1014      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.310                  | 67.200                 | 66.2                     | -1.49         | SAR-09    |
| 2024/7/31 | 3500            | 100              | D3500V2-1014      | EX3DV4 - SN3976 | DAE4 Sn1424 | 6.850                  | 67.200                 | 68.5                     | 1.93          | SAR-09    |
| 2024/8/26 | 3500            | 50               | D3500V2-1014      | EX3DV4 - SN7695 | DAE4 Sn1424 | 3.620                  | 67.200                 | 72.4                     | 7.74          | SAR-13    |
| 2024/12/5 | 3500            | 50               | D3500V2-1036      | EX3DV4 - SN7700 | DAE4 Sn1696 | 3.150                  | 67.400                 | 63                       | -6.53         | SAR-12    |
| 2024/6/25 | 3700            | 50               | D3700V2-1006      | EX3DV4 - SN7791 | DAE4 Sn1805 | 3.130                  | 65.600                 | 62.6                     | -4.57         | SAR-12    |
| 2024/7/12 | 3700            | 50               | D3700V2-1006      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.380                  | 65.600                 | 67.6                     | 3.05          | SAR-09    |
| 2024/7/14 | 3700            | 50               | D3700V2-1006      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.400                  | 65.600                 | 68                       | 3.66          | SAR-09    |
| 2024/7/30 | 3700            | 50               | D3700V2-1006      | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.270                  | 65.600                 | 65.4                     | -0.30         | SAR-09    |
| 2024/7/31 | 3700            | 100              | D3700V2-1006      | EX3DV4 - SN3976 | DAE4 Sn1424 | 7.020                  | 65.600                 | 70.2                     | 7.01          | SAR-09    |
| 2024/8/26 | 3700            | 100              | D3700V2-1006      | EX3DV4 - SN7695 | DAE4 Sn1424 | 6.170                  | 65.600                 | 61.7                     | -5.95         | SAR-13    |
| 2024/7/12 | 3900            | 50               | D3900V2-1017-3900 | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.260                  | 68.700                 | 65.2                     | -5.09         | SAR-09    |
| 2024/7/14 | 3900            | 100              | D3900V2-1017-3900 | EX3DV4 - SN3976 | DAE4 Sn1424 | 6.780                  | 68.700                 | 67.8                     | -1.31         | SAR-09    |
| 2024/7/30 | 3900            | 50               | D3900V2-1017-3900 | EX3DV4 - SN3976 | DAE4 Sn1424 | 3.130                  | 68.700                 | 62.6                     | -8.88         | SAR-09    |
| 2024/7/31 | 3900            | 100              | D3900V2-1017-3900 | EX3DV4 - SN3976 | DAE4 Sn1424 | 6.580                  | 68.700                 | 65.8                     | -4.22         | SAR-09    |
| 2024/8/26 | 3900            | 100              | D3900V2-1017-3900 | EX3DV4 - SN7695 | DAE4 Sn1424 | 6.190                  | 68.700                 | 61.9                     | -9.90         | SAR-13    |
| 2024/12/5 | 3900            | 50               | D3900V2-1017-3900 | EX3DV4 - SN7700 | DAE4 Sn1696 | 3.260                  | 68.700                 | 65.2                     | -5.09         | SAR-12    |



**Fig 8.3.1 System Performance Check Setup**



**Fig 8.3.2 Setup Photo**

## **10. LTE Output Power (Unit: dBm)**

### **<LTE Conducted Power>**

#### **General Note:**

1. A Base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 4 SAR test was covered by Band 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
  - a. the maximum output power, including tolerance, for the smaller band is  $\leq$  the larger band to qualify for the SAR test exclusion
  - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band



| <LTE Band 2_Ant 3_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|-------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                       |            |         |           | 18700                    | 18900                       | 19100                     |                        |
| Frequency (MHz)               |            |         |           | 1860                     | 1880                        | 1900                      |                        |
| 20                            | QPSK       | 1       | 0         | 23.39                    | 23.46                       | 23.41                     | 24                     |
| 20                            | QPSK       | 1       | 49        | 23.36                    | 23.37                       | 23.38                     |                        |
| 20                            | QPSK       | 1       | 99        | 23.32                    | 23.37                       | 23.32                     |                        |
| 20                            | QPSK       | 50      | 0         | 22.54                    | 22.59                       | 22.57                     | 23                     |
| 20                            | QPSK       | 50      | 24        | 22.53                    | 22.48                       | 22.55                     |                        |
| 20                            | QPSK       | 50      | 50        | 22.52                    | 22.40                       | 22.46                     |                        |
| 20                            | QPSK       | 100     | 0         | 22.42                    | 22.43                       | 22.39                     |                        |
| 20                            | 16QAM      | 1       | 0         | 22.70                    | 22.71                       | 22.71                     | 23                     |
| 20                            | 16QAM      | 1       | 49        | 22.69                    | 22.68                       | 22.73                     |                        |
| 20                            | 16QAM      | 1       | 99        | 22.62                    | 22.68                       | 22.61                     |                        |
| 20                            | 16QAM      | 50      | 0         | 21.47                    | 21.48                       | 21.56                     | 22                     |
| 20                            | 16QAM      | 50      | 24        | 21.49                    | 21.41                       | 21.51                     |                        |
| 20                            | 16QAM      | 50      | 50        | 21.51                    | 21.40                       | 21.40                     |                        |
| 20                            | 16QAM      | 100     | 0         | 21.46                    | 21.39                       | 21.46                     |                        |
| 20                            | 64QAM      | 1       | 0         | 21.59                    | 21.62                       | 21.61                     | 22                     |
| 20                            | 64QAM      | 1       | 49        | 21.59                    | 21.60                       | 21.58                     |                        |
| 20                            | 64QAM      | 1       | 99        | 21.53                    | 21.58                       | 21.52                     |                        |
| 20                            | 64QAM      | 50      | 0         | 20.44                    | 20.46                       | 20.57                     | 21                     |
| 20                            | 64QAM      | 50      | 24        | 20.46                    | 20.45                       | 20.48                     |                        |
| 20                            | 64QAM      | 50      | 50        | 20.50                    | 20.38                       | 20.43                     |                        |
| 20                            | 64QAM      | 100     | 0         | 20.44                    | 20.38                       | 20.45                     |                        |
| 20                            | 256QAM     | 1       | 0         | 18.20                    | 18.32                       | 18.26                     | 19                     |
| 20                            | 256QAM     | 1       | 49        | 18.15                    | 18.24                       | 18.11                     |                        |
| 20                            | 256QAM     | 1       | 99        | 18.10                    | 18.19                       | 18.07                     |                        |
| 20                            | 256QAM     | 50      | 0         | 18.01                    | 18.13                       | 17.98                     | 19                     |
| 20                            | 256QAM     | 50      | 24        | 18.02                    | 18.11                       | 18.02                     |                        |
| 20                            | 256QAM     | 50      | 50        | 17.89                    | 18.06                       | 18.00                     |                        |
| 20                            | 256QAM     | 100     | 0         | 17.99                    | 18.09                       | 18.02                     |                        |
| Channel                       |            |         |           | 18675                    | 18900                       | 19125                     | Tune-up limit<br>(dBm) |
| Frequency (MHz)               |            |         |           | 1857.5                   | 1880                        | 1902.5                    |                        |
| 15                            | QPSK       | 1       | 0         | 23.24                    | 23.22                       | 23.29                     | 24                     |
| 15                            | QPSK       | 1       | 37        | 23.30                    | 23.27                       | 23.32                     |                        |
| 15                            | QPSK       | 1       | 74        | 23.23                    | 23.23                       | 23.26                     |                        |
| 15                            | QPSK       | 36      | 0         | 22.31                    | 22.36                       | 22.34                     | 23                     |
| 15                            | QPSK       | 36      | 20        | 22.37                    | 22.30                       | 22.36                     |                        |
| 15                            | QPSK       | 36      | 39        | 22.38                    | 22.26                       | 22.32                     |                        |
| 15                            | QPSK       | 75      | 0         | 22.38                    | 22.35                       | 22.31                     | 23                     |
| 15                            | 16QAM      | 1       | 0         | 22.65                    | 22.59                       | 22.63                     |                        |
| 15                            | 16QAM      | 1       | 37        | 22.62                    | 22.56                       | 22.58                     |                        |
| 15                            | 16QAM      | 1       | 74        | 22.56                    | 22.59                       | 22.56                     | 22                     |
| 15                            | 16QAM      | 36      | 0         | 21.32                    | 21.35                       | 21.36                     |                        |
| 15                            | 16QAM      | 36      | 20        | 21.39                    | 21.33                       | 21.33                     |                        |
| 15                            | 16QAM      | 36      | 39        | 21.37                    | 21.26                       | 21.31                     |                        |
| 15                            | 16QAM      | 75      | 0         | 21.35                    | 21.31                       | 21.32                     | 22                     |
| 15                            | 64QAM      | 1       | 0         | 21.52                    | 21.50                       | 21.54                     |                        |
| 15                            | 64QAM      | 1       | 37        | 21.52                    | 21.49                       | 21.51                     |                        |
| 15                            | 64QAM      | 1       | 74        | 21.57                    | 21.50                       | 21.48                     | 21                     |
| 15                            | 64QAM      | 36      | 0         | 20.30                    | 20.36                       | 20.41                     |                        |
| 15                            | 64QAM      | 36      | 20        | 20.36                    | 20.37                       | 20.33                     |                        |
| 15                            | 64QAM      | 36      | 39        | 20.38                    | 20.30                       | 20.28                     |                        |



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|                 |        |    |    |        |       |        |                     |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 15              | 64QAM  | 75 | 0  | 20.31  | 20.30 | 20.27  |                     |
| 15              | 256QAM | 1  | 0  | 18.13  | 18.21 | 18.25  | 19                  |
| 15              | 256QAM | 1  | 37 | 18.07  | 18.12 | 18.04  |                     |
| 15              | 256QAM | 1  | 74 | 18.04  | 18.06 | 18.02  |                     |
| 15              | 256QAM | 36 | 0  | 17.99  | 18.00 | 17.90  |                     |
| 15              | 256QAM | 36 | 20 | 18.01  | 18.01 | 17.95  | 19                  |
| 15              | 256QAM | 36 | 39 | 17.86  | 17.96 | 17.95  |                     |
| 15              | 256QAM | 75 | 0  | 17.94  | 18.00 | 17.95  |                     |
| Channel         |        |    |    | 18650  | 18900 | 19150  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1855   | 1880  | 1905   |                     |
| 10              | QPSK   | 1  | 0  | 23.24  | 23.29 | 23.32  | 24                  |
| 10              | QPSK   | 1  | 25 | 23.23  | 23.26 | 23.29  |                     |
| 10              | QPSK   | 1  | 49 | 23.25  | 23.27 | 23.28  |                     |
| 10              | QPSK   | 25 | 0  | 22.30  | 22.33 | 22.39  |                     |
| 10              | QPSK   | 25 | 12 | 22.35  | 22.32 | 22.33  | 23                  |
| 10              | QPSK   | 25 | 25 | 22.37  | 22.29 | 22.28  |                     |
| 10              | QPSK   | 50 | 0  | 22.38  | 22.33 | 22.36  |                     |
| 10              | 16QAM  | 1  | 0  | 22.63  | 22.62 | 22.64  |                     |
| 10              | 16QAM  | 1  | 25 | 22.56  | 22.58 | 22.54  | 23                  |
| 10              | 16QAM  | 1  | 49 | 22.60  | 22.60 | 22.61  |                     |
| 10              | 16QAM  | 25 | 0  | 21.31  | 21.38 | 21.38  |                     |
| 10              | 16QAM  | 25 | 12 | 21.37  | 21.32 | 21.36  |                     |
| 10              | 16QAM  | 25 | 25 | 21.34  | 21.32 | 21.27  | 22                  |
| 10              | 16QAM  | 50 | 0  | 21.38  | 21.33 | 21.33  |                     |
| 10              | 64QAM  | 1  | 0  | 21.55  | 21.51 | 21.53  |                     |
| 10              | 64QAM  | 1  | 25 | 21.44  | 21.47 | 21.51  |                     |
| 10              | 64QAM  | 1  | 49 | 21.51  | 21.51 | 21.48  | 22                  |
| 10              | 64QAM  | 25 | 0  | 20.33  | 20.33 | 20.40  |                     |
| 10              | 64QAM  | 25 | 12 | 20.33  | 20.30 | 20.34  |                     |
| 10              | 64QAM  | 25 | 25 | 20.32  | 20.30 | 20.24  |                     |
| 10              | 64QAM  | 50 | 0  | 20.34  | 20.32 | 20.33  | 21                  |
| 10              | 256QAM | 1  | 0  | 18.10  | 18.30 | 18.16  |                     |
| 10              | 256QAM | 1  | 25 | 18.12  | 18.15 | 18.01  |                     |
| 10              | 256QAM | 1  | 49 | 18.03  | 18.14 | 17.97  |                     |
| 10              | 256QAM | 25 | 0  | 18.00  | 18.10 | 17.91  | 19                  |
| 10              | 256QAM | 25 | 12 | 17.93  | 18.04 | 17.97  |                     |
| 10              | 256QAM | 25 | 25 | 17.84  | 17.96 | 17.97  |                     |
| 10              | 256QAM | 50 | 0  | 17.97  | 18.05 | 17.92  |                     |
| Channel         |        |    |    | 18625  | 18900 | 19175  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1852.5 | 1880  | 1907.5 |                     |
| 5               | QPSK   | 1  | 0  | 23.27  | 23.29 | 23.32  | 24                  |
| 5               | QPSK   | 1  | 12 | 23.28  | 23.28 | 23.30  |                     |
| 5               | QPSK   | 1  | 24 | 23.24  | 23.31 | 23.29  |                     |
| 5               | QPSK   | 12 | 0  | 22.41  | 22.34 | 22.34  |                     |
| 5               | QPSK   | 12 | 7  | 22.38  | 22.32 | 22.36  | 23                  |
| 5               | QPSK   | 12 | 13 | 22.35  | 22.34 | 22.27  |                     |
| 5               | QPSK   | 25 | 0  | 22.33  | 22.35 | 22.33  |                     |
| 5               | 16QAM  | 1  | 0  | 22.65  | 22.62 | 22.59  |                     |
| 5               | 16QAM  | 1  | 12 | 22.59  | 22.61 | 22.57  | 23                  |
| 5               | 16QAM  | 1  | 24 | 22.59  | 22.63 | 22.61  |                     |
| 5               | 16QAM  | 12 | 0  | 21.35  | 21.33 | 21.34  |                     |
| 5               | 16QAM  | 12 | 7  | 21.35  | 21.33 | 21.35  |                     |
| 5               | 16QAM  | 12 | 13 | 21.30  | 21.29 | 21.25  | 22                  |
| 5               | 16QAM  | 25 | 0  | 21.32  | 21.36 | 21.32  |                     |
| 5               | 64QAM  | 1  | 0  | 21.50  | 21.53 | 21.54  |                     |
| 5               | 64QAM  | 1  | 12 | 21.51  | 21.50 | 21.52  |                     |



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|                 |        |    |    |        |       |        |                     |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 5               | 64QAM  | 1  | 24 | 21.49  | 21.54 | 21.54  | 21                  |
| 5               | 64QAM  | 12 | 0  | 20.41  | 20.38 | 20.35  |                     |
| 5               | 64QAM  | 12 | 7  | 20.37  | 20.33 | 20.38  |                     |
| 5               | 64QAM  | 12 | 13 | 20.32  | 20.31 | 20.27  |                     |
| 5               | 64QAM  | 25 | 0  | 20.30  | 20.33 | 20.30  | 19                  |
| 5               | 256QAM | 1  | 0  | 18.15  | 18.30 | 18.18  |                     |
| 5               | 256QAM | 1  | 12 | 18.06  | 18.22 | 18.03  |                     |
| 5               | 256QAM | 1  | 24 | 18.00  | 18.10 | 18.04  |                     |
| 5               | 256QAM | 12 | 0  | 17.96  | 18.10 | 17.92  | 19                  |
| 5               | 256QAM | 12 | 7  | 18.01  | 18.02 | 17.98  |                     |
| 5               | 256QAM | 12 | 13 | 17.85  | 18.01 | 17.90  |                     |
| 5               | 256QAM | 25 | 0  | 17.96  | 18.04 | 17.97  |                     |
| Channel         |        |    |    | 18615  | 18900 | 19185  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1851.5 | 1880  | 1908.5 |                     |
| 3               | QPSK   | 1  | 0  | 23.20  | 23.23 | 23.25  | 24                  |
| 3               | QPSK   | 1  | 8  | 23.18  | 23.22 | 23.24  |                     |
| 3               | QPSK   | 1  | 14 | 23.22  | 23.25 | 23.25  |                     |
| 3               | QPSK   | 8  | 0  | 22.33  | 22.35 | 22.37  | 23                  |
| 3               | QPSK   | 8  | 4  | 22.35  | 22.30 | 22.34  |                     |
| 3               | QPSK   | 8  | 7  | 22.34  | 22.31 | 22.33  |                     |
| 3               | QPSK   | 15 | 0  | 22.37  | 22.34 | 22.37  |                     |
| 3               | 16QAM  | 1  | 0  | 22.58  | 22.58 | 22.58  | 23                  |
| 3               | 16QAM  | 1  | 8  | 22.56  | 22.61 | 22.54  |                     |
| 3               | 16QAM  | 1  | 14 | 22.58  | 22.59 | 22.59  |                     |
| 3               | 16QAM  | 8  | 0  | 21.40  | 21.41 | 21.45  | 22                  |
| 3               | 16QAM  | 8  | 4  | 21.42  | 21.38 | 21.40  |                     |
| 3               | 16QAM  | 8  | 7  | 21.44  | 21.39 | 21.42  |                     |
| 3               | 16QAM  | 15 | 0  | 21.39  | 21.34 | 21.37  |                     |
| 3               | 64QAM  | 1  | 0  | 21.50  | 21.48 | 21.48  | 22                  |
| 3               | 64QAM  | 1  | 8  | 21.43  | 21.45 | 21.46  |                     |
| 3               | 64QAM  | 1  | 14 | 21.47  | 21.48 | 21.47  |                     |
| 3               | 64QAM  | 8  | 0  | 20.35  | 20.37 | 20.38  | 21                  |
| 3               | 64QAM  | 8  | 4  | 20.36  | 20.32 | 20.34  |                     |
| 3               | 64QAM  | 8  | 7  | 20.39  | 20.35 | 20.38  |                     |
| 3               | 64QAM  | 15 | 0  | 20.36  | 20.31 | 20.35  |                     |
| 3               | 256QAM | 1  | 0  | 18.15  | 18.22 | 18.18  | 19                  |
| 3               | 256QAM | 1  | 8  | 18.10  | 18.19 | 18.06  |                     |
| 3               | 256QAM | 1  | 14 | 18.08  | 18.14 | 18.06  |                     |
| 3               | 256QAM | 8  | 0  | 17.92  | 18.11 | 17.90  | 19                  |
| 3               | 256QAM | 8  | 4  | 17.95  | 18.07 | 17.94  |                     |
| 3               | 256QAM | 8  | 7  | 17.83  | 18.00 | 17.93  |                     |
| 3               | 256QAM | 15 | 0  | 17.96  | 18.02 | 17.95  |                     |
| Channel         |        |    |    | 18607  | 18900 | 19193  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1850.7 | 1880  | 1909.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.23  | 23.28 | 23.24  | 24                  |
| 1.4             | QPSK   | 1  | 3  | 23.22  | 23.28 | 23.26  |                     |
| 1.4             | QPSK   | 1  | 5  | 23.19  | 23.26 | 23.25  |                     |
| 1.4             | QPSK   | 3  | 0  | 23.26  | 23.27 | 23.25  |                     |
| 1.4             | QPSK   | 3  | 1  | 23.25  | 23.28 | 23.26  |                     |
| 1.4             | QPSK   | 3  | 3  | 23.25  | 23.25 | 23.27  |                     |
| 1.4             | QPSK   | 6  | 0  | 22.35  | 22.39 | 22.34  | 23                  |
| 1.4             | 16QAM  | 1  | 0  | 22.58  | 22.58 | 22.54  | 23                  |
| 1.4             | 16QAM  | 1  | 3  | 22.58  | 22.62 | 22.54  |                     |
| 1.4             | 16QAM  | 1  | 5  | 22.58  | 22.57 | 22.52  |                     |
| 1.4             | 16QAM  | 3  | 0  | 22.36  | 22.40 | 22.35  |                     |
| 1.4             | 16QAM  | 3  | 1  | 22.34  | 22.39 | 22.35  |                     |



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|     |        |   |   |       |       |       |    |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | 16QAM  | 3 | 3 | 22.35 | 22.35 | 22.34 |    |
| 1.4 | 16QAM  | 6 | 0 | 21.40 | 21.43 | 21.41 | 22 |
| 1.4 | 64QAM  | 1 | 0 | 21.52 | 21.52 | 21.47 | 22 |
| 1.4 | 64QAM  | 1 | 3 | 21.48 | 21.50 | 21.44 |    |
| 1.4 | 64QAM  | 1 | 5 | 21.46 | 21.50 | 21.46 |    |
| 1.4 | 64QAM  | 3 | 0 | 21.44 | 21.45 | 21.41 |    |
| 1.4 | 64QAM  | 3 | 1 | 21.44 | 21.45 | 21.42 |    |
| 1.4 | 64QAM  | 3 | 3 | 21.43 | 21.43 | 21.43 |    |
| 1.4 | 64QAM  | 6 | 0 | 20.31 | 20.33 | 20.27 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.11 | 18.30 | 18.23 | 19 |
| 1.4 | 256QAM | 1 | 3 | 18.12 | 18.19 | 18.01 |    |
| 1.4 | 256QAM | 1 | 5 | 18.01 | 18.13 | 17.99 |    |
| 1.4 | 256QAM | 3 | 0 | 17.98 | 18.11 | 17.96 |    |
| 1.4 | 256QAM | 3 | 1 | 17.93 | 18.08 | 17.98 |    |
| 1.4 | 256QAM | 3 | 3 | 17.83 | 17.99 | 17.97 |    |
| 1.4 | 256QAM | 6 | 0 | 17.91 | 17.99 | 17.94 | 19 |

| <LTE Band 2_Ant 3_Sensor ON> |            |         |           |                       |                          |                        |                     |
|------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| BW [MHz]                     | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                      |            |         |           | 18700                 | 18900                    | 19100                  |                     |
| Frequency (MHz)              |            |         |           | 1860                  | 1880                     | 1900                   |                     |
| 20                           | QPSK       | 1       | 0         | 22.53                 | 22.68                    | 22.57                  | 23                  |
| 20                           | QPSK       | 1       | 49        | 22.52                 | 22.57                    | 22.63                  |                     |
| 20                           | QPSK       | 1       | 99        | 22.62                 | 22.56                    | 22.60                  |                     |
| 20                           | QPSK       | 50      | 0         | 21.63                 | 21.76                    | 21.71                  | 22                  |
| 20                           | QPSK       | 50      | 24        | 21.61                 | 21.67                    | 21.67                  |                     |
| 20                           | QPSK       | 50      | 50        | 21.67                 | 21.50                    | 21.64                  |                     |
| 20                           | QPSK       | 100     | 0         | 21.61                 | 21.60                    | 21.61                  |                     |
| 20                           | 16QAM      | 1       | 0         | 21.55                 | 21.64                    | 21.97                  | 22                  |
| 20                           | 16QAM      | 1       | 49        | 21.47                 | 21.98                    | 21.97                  |                     |
| 20                           | 16QAM      | 1       | 99        | 21.67                 | 21.75                    | 21.94                  |                     |
| 20                           | 16QAM      | 50      | 0         | 20.55                 | 20.66                    | 20.69                  | 21                  |
| 20                           | 16QAM      | 50      | 24        | 20.58                 | 20.60                    | 20.72                  |                     |
| 20                           | 16QAM      | 50      | 50        | 20.63                 | 20.56                    | 20.63                  |                     |
| 20                           | 16QAM      | 100     | 0         | 20.57                 | 20.60                    | 20.60                  |                     |
| 20                           | 64QAM      | 1       | 0         | 20.92                 | 20.72                    | 20.97                  | 21                  |
| 20                           | 64QAM      | 1       | 49        | 20.61                 | 20.59                    | 20.97                  |                     |
| 20                           | 64QAM      | 1       | 99        | 20.62                 | 20.79                    | 20.73                  |                     |
| 20                           | 64QAM      | 50      | 0         | 19.60                 | 19.66                    | 19.66                  | 20                  |
| 20                           | 64QAM      | 50      | 24        | 19.56                 | 19.68                    | 19.67                  |                     |
| 20                           | 64QAM      | 50      | 50        | 19.49                 | 19.53                    | 19.59                  |                     |
| 20                           | 64QAM      | 100     | 0         | 19.59                 | 19.62                    | 19.66                  |                     |
| 20                           | 256QAM     | 1       | 0         | 17.85                 | 17.86                    | 17.83                  | 18                  |
| 20                           | 256QAM     | 1       | 49        | 17.44                 | 17.54                    | 17.47                  |                     |
| 20                           | 256QAM     | 1       | 99        | 17.73                 | 17.76                    | 17.67                  |                     |
| 20                           | 256QAM     | 50      | 0         | 17.45                 | 17.51                    | 17.42                  | 18                  |
| 20                           | 256QAM     | 50      | 24        | 17.48                 | 17.48                    | 17.43                  |                     |
| 20                           | 256QAM     | 50      | 50        | 17.42                 | 17.42                    | 17.39                  |                     |
| 20                           | 256QAM     | 100     | 0         | 17.42                 | 17.47                    | 17.37                  |                     |
| Channel                      |            |         |           | 18675                 | 18900                    | 19125                  | Tune-up limit (dBm) |
| Frequency (MHz)              |            |         |           | 1857.5                | 1880                     | 1902.5                 |                     |
| 15                           | QPSK       | 1       | 0         | 22.50                 | 22.46                    | 22.65                  | 23                  |
| 15                           | QPSK       | 1       | 37        | 22.47                 | 22.54                    | 22.46                  |                     |
| 15                           | QPSK       | 1       | 74        | 22.42                 | 22.36                    | 22.58                  |                     |
| 15                           | QPSK       | 36      | 0         | 21.54                 | 21.60                    | 21.74                  | 22                  |

|                 |        |    |    |        |       |        |                     |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 15              | QPSK   | 36 | 20 | 21.48  | 21.57 | 21.63  |                     |
| 15              | QPSK   | 36 | 39 | 21.66  | 21.40 | 21.57  |                     |
| 15              | QPSK   | 75 | 0  | 21.60  | 21.40 | 21.43  |                     |
| 15              | 16QAM  | 1  | 0  | 21.43  | 21.60 | 21.97  | 22                  |
| 15              | 16QAM  | 1  | 37 | 21.44  | 21.87 | 21.95  |                     |
| 15              | 16QAM  | 1  | 74 | 21.52  | 21.67 | 21.97  |                     |
| 15              | 16QAM  | 36 | 0  | 20.44  | 20.55 | 20.68  | 21                  |
| 15              | 16QAM  | 36 | 20 | 20.55  | 20.40 | 20.53  |                     |
| 15              | 16QAM  | 36 | 39 | 20.57  | 20.38 | 20.58  |                     |
| 15              | 16QAM  | 75 | 0  | 20.52  | 20.56 | 20.47  | 21                  |
| 15              | 64QAM  | 1  | 0  | 20.87  | 20.64 | 20.93  |                     |
| 15              | 64QAM  | 1  | 37 | 20.50  | 20.56 | 20.84  |                     |
| 15              | 64QAM  | 1  | 74 | 20.44  | 20.75 | 20.59  | 20                  |
| 15              | 64QAM  | 36 | 0  | 19.59  | 19.58 | 19.52  |                     |
| 15              | 64QAM  | 36 | 20 | 19.40  | 19.56 | 19.62  |                     |
| 15              | 64QAM  | 36 | 39 | 19.29  | 19.35 | 19.55  | 18                  |
| 15              | 64QAM  | 75 | 0  | 19.53  | 19.61 | 19.56  |                     |
| 15              | 256QAM | 1  | 0  | 17.81  | 17.70 | 17.70  |                     |
| 15              | 256QAM | 1  | 37 | 17.32  | 17.40 | 17.43  | 18                  |
| 15              | 256QAM | 1  | 74 | 17.66  | 17.73 | 17.50  |                     |
| 15              | 256QAM | 36 | 0  | 17.36  | 17.32 | 17.38  |                     |
| 15              | 256QAM | 36 | 20 | 17.35  | 17.28 | 17.23  | 18                  |
| 15              | 256QAM | 36 | 39 | 17.36  | 17.37 | 17.32  |                     |
| 15              | 256QAM | 75 | 0  | 17.24  | 17.43 | 17.25  |                     |
| Channel         |        |    |    | 18650  | 18900 | 19150  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1855   | 1880  | 1905   |                     |
| 10              | QPSK   | 1  | 0  | 22.52  | 22.54 | 22.65  | 23                  |
| 10              | QPSK   | 1  | 25 | 22.51  | 22.55 | 22.53  |                     |
| 10              | QPSK   | 1  | 49 | 22.45  | 22.50 | 22.50  |                     |
| 10              | QPSK   | 25 | 0  | 21.43  | 21.63 | 21.71  | 22                  |
| 10              | QPSK   | 25 | 12 | 21.45  | 21.51 | 21.57  |                     |
| 10              | QPSK   | 25 | 25 | 21.64  | 21.50 | 21.55  |                     |
| 10              | QPSK   | 50 | 0  | 21.60  | 21.43 | 21.46  | 22                  |
| 10              | 16QAM  | 1  | 0  | 21.42  | 21.47 | 21.98  |                     |
| 10              | 16QAM  | 1  | 25 | 21.42  | 21.85 | 21.99  |                     |
| 10              | 16QAM  | 1  | 49 | 21.56  | 21.74 | 21.94  | 21                  |
| 10              | 16QAM  | 25 | 0  | 20.37  | 20.46 | 20.64  |                     |
| 10              | 16QAM  | 25 | 12 | 20.45  | 20.44 | 20.72  |                     |
| 10              | 16QAM  | 25 | 25 | 20.62  | 20.55 | 20.46  | 21                  |
| 10              | 16QAM  | 50 | 0  | 20.52  | 20.54 | 20.51  |                     |
| 10              | 64QAM  | 1  | 0  | 20.87  | 20.67 | 20.85  |                     |
| 10              | 64QAM  | 1  | 25 | 20.52  | 20.40 | 20.78  | 21                  |
| 10              | 64QAM  | 1  | 49 | 20.57  | 20.60 | 20.57  |                     |
| 10              | 64QAM  | 25 | 0  | 19.59  | 19.46 | 19.61  | 20                  |
| 10              | 64QAM  | 25 | 12 | 19.44  | 19.65 | 19.60  |                     |
| 10              | 64QAM  | 25 | 25 | 19.30  | 19.41 | 19.49  |                     |
| 10              | 64QAM  | 50 | 0  | 19.52  | 19.46 | 19.51  | 18                  |
| 10              | 256QAM | 1  | 0  | 17.68  | 17.67 | 17.80  |                     |
| 10              | 256QAM | 1  | 25 | 17.30  | 17.53 | 17.29  |                     |
| 10              | 256QAM | 1  | 49 | 17.59  | 17.68 | 17.61  | 18                  |
| 10              | 256QAM | 25 | 0  | 17.26  | 17.34 | 17.33  |                     |
| 10              | 256QAM | 25 | 12 | 17.35  | 17.44 | 17.35  |                     |
| 10              | 256QAM | 25 | 25 | 17.38  | 17.38 | 17.23  | 18                  |
| 10              | 256QAM | 50 | 0  | 17.32  | 17.46 | 17.32  |                     |
| Channel         |        |    |    | 18625  | 18900 | 19175  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1852.5 | 1880  | 1907.5 |                     |



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|                 |        |    |    |        |       |        |                     |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 5               | QPSK   | 1  | 0  | 22.41  | 22.52 | 22.64  | 23                  |
| 5               | QPSK   | 1  | 12 | 22.50  | 22.41 | 22.61  |                     |
| 5               | QPSK   | 1  | 24 | 22.60  | 22.46 | 22.56  |                     |
| 5               | QPSK   | 12 | 0  | 21.52  | 21.62 | 21.56  | 22                  |
| 5               | QPSK   | 12 | 7  | 21.60  | 21.61 | 21.55  |                     |
| 5               | QPSK   | 12 | 13 | 21.53  | 21.43 | 21.49  |                     |
| 5               | QPSK   | 25 | 0  | 21.44  | 21.55 | 21.56  | 22                  |
| 5               | 16QAM  | 1  | 0  | 21.48  | 21.61 | 21.99  |                     |
| 5               | 16QAM  | 1  | 12 | 21.44  | 21.97 | 21.87  |                     |
| 5               | 16QAM  | 1  | 24 | 21.63  | 21.75 | 21.98  | 21                  |
| 5               | 16QAM  | 12 | 0  | 20.54  | 20.66 | 20.57  |                     |
| 5               | 16QAM  | 12 | 7  | 20.54  | 20.47 | 20.67  |                     |
| 5               | 16QAM  | 12 | 13 | 20.57  | 20.53 | 20.58  | 21                  |
| 5               | 16QAM  | 25 | 0  | 20.46  | 20.43 | 20.57  |                     |
| 5               | 64QAM  | 1  | 0  | 20.88  | 20.65 | 20.79  |                     |
| 5               | 64QAM  | 1  | 12 | 20.45  | 20.47 | 20.88  | 20                  |
| 5               | 64QAM  | 1  | 24 | 20.43  | 20.68 | 20.65  |                     |
| 5               | 64QAM  | 12 | 0  | 19.50  | 19.50 | 19.50  |                     |
| 5               | 64QAM  | 12 | 7  | 19.39  | 19.61 | 19.47  | 18                  |
| 5               | 64QAM  | 12 | 13 | 19.35  | 19.46 | 19.59  |                     |
| 5               | 64QAM  | 25 | 0  | 19.55  | 19.44 | 19.52  |                     |
| 5               | 256QAM | 1  | 0  | 17.79  | 17.74 | 17.72  | 18                  |
| 5               | 256QAM | 1  | 12 | 17.25  | 17.49 | 17.27  |                     |
| 5               | 256QAM | 1  | 24 | 17.72  | 17.58 | 17.54  |                     |
| 5               | 256QAM | 12 | 0  | 17.25  | 17.33 | 17.40  | 18                  |
| 5               | 256QAM | 12 | 7  | 17.36  | 17.40 | 17.30  |                     |
| 5               | 256QAM | 12 | 13 | 17.41  | 17.41 | 17.26  |                     |
| 5               | 256QAM | 25 | 0  | 17.33  | 17.44 | 17.34  | Tune-up limit (dBm) |
| Channel         |        |    |    | 18615  | 18900 | 19185  |                     |
| Frequency (MHz) |        |    |    | 1851.5 | 1880  | 1908.5 |                     |
| 3               | QPSK   | 1  | 0  | 22.39  | 22.45 | 22.67  | 23                  |
| 3               | QPSK   | 1  | 8  | 22.42  | 22.56 | 22.50  |                     |
| 3               | QPSK   | 1  | 14 | 22.42  | 22.44 | 22.46  |                     |
| 3               | QPSK   | 8  | 0  | 21.50  | 21.54 | 21.75  | 22                  |
| 3               | QPSK   | 8  | 4  | 21.48  | 21.54 | 21.53  |                     |
| 3               | QPSK   | 8  | 7  | 21.58  | 21.37 | 21.51  |                     |
| 3               | QPSK   | 15 | 0  | 21.46  | 21.56 | 21.57  | 22                  |
| 3               | 16QAM  | 1  | 0  | 21.54  | 21.54 | 21.98  |                     |
| 3               | 16QAM  | 1  | 8  | 21.43  | 21.82 | 21.99  |                     |
| 3               | 16QAM  | 1  | 14 | 21.50  | 21.72 | 21.97  | 21                  |
| 3               | 16QAM  | 8  | 0  | 20.52  | 20.56 | 20.56  |                     |
| 3               | 16QAM  | 8  | 4  | 20.49  | 20.46 | 20.52  |                     |
| 3               | 16QAM  | 8  | 7  | 20.55  | 20.43 | 20.47  | 21                  |
| 3               | 16QAM  | 15 | 0  | 20.46  | 20.45 | 20.49  |                     |
| 3               | 64QAM  | 1  | 0  | 20.79  | 20.57 | 20.82  |                     |
| 3               | 64QAM  | 1  | 8  | 20.58  | 20.39 | 20.87  | 20                  |
| 3               | 64QAM  | 1  | 14 | 20.57  | 20.64 | 20.62  |                     |
| 3               | 64QAM  | 8  | 0  | 19.51  | 19.51 | 19.54  |                     |
| 3               | 64QAM  | 8  | 4  | 19.54  | 19.64 | 19.59  | 18                  |
| 3               | 64QAM  | 8  | 7  | 19.29  | 19.33 | 19.59  |                     |
| 3               | 64QAM  | 15 | 0  | 19.45  | 19.52 | 19.55  |                     |
| 3               | 256QAM | 1  | 0  | 17.69  | 17.68 | 17.63  | 18                  |
| 3               | 256QAM | 1  | 8  | 17.43  | 17.52 | 17.46  |                     |
| 3               | 256QAM | 1  | 14 | 17.73  | 17.75 | 17.52  |                     |
| 3               | 256QAM | 8  | 0  | 17.44  | 17.42 | 17.32  | 18                  |
| 3               | 256QAM | 8  | 4  | 17.32  | 17.38 | 17.23  |                     |



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|                 |        |    |   |        |       |        |                        |
|-----------------|--------|----|---|--------|-------|--------|------------------------|
| 3               | 256QAM | 8  | 7 | 17.30  | 17.30 | 17.31  |                        |
| 3               | 256QAM | 15 | 0 | 17.24  | 17.30 | 17.30  |                        |
| Channel         |        |    |   | 18607  | 18900 | 19193  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |   | 1850.7 | 1880  | 1909.3 |                        |
| 1.4             | QPSK   | 1  | 0 | 22.27  | 22.25 | 22.27  | 23                     |
| 1.4             | QPSK   | 1  | 3 | 22.24  | 22.44 | 22.34  |                        |
| 1.4             | QPSK   | 1  | 5 | 22.31  | 22.21 | 22.39  |                        |
| 1.4             | QPSK   | 3  | 0 | 22.31  | 22.23 | 22.33  |                        |
| 1.4             | QPSK   | 3  | 1 | 22.25  | 22.34 | 22.40  |                        |
| 1.4             | QPSK   | 3  | 3 | 22.35  | 22.31 | 22.37  |                        |
| 1.4             | QPSK   | 6  | 0 | 21.24  | 21.35 | 21.36  | 22                     |
| 1.4             | 16QAM  | 1  | 0 | 21.67  | 21.32 | 21.76  | 22                     |
| 1.4             | 16QAM  | 1  | 3 | 21.21  | 21.64 | 21.43  |                        |
| 1.4             | 16QAM  | 1  | 5 | 21.52  | 21.41 | 21.74  |                        |
| 1.4             | 16QAM  | 3  | 0 | 21.29  | 21.37 | 21.24  |                        |
| 1.4             | 16QAM  | 3  | 1 | 21.34  | 21.42 | 21.35  |                        |
| 1.4             | 16QAM  | 3  | 3 | 21.33  | 21.35 | 21.33  |                        |
| 1.4             | 16QAM  | 6  | 0 | 20.26  | 20.36 | 20.27  | 21                     |
| 1.4             | 64QAM  | 1  | 0 | 20.79  | 20.59 | 20.45  | 21                     |
| 1.4             | 64QAM  | 1  | 3 | 20.89  | 20.52 | 20.52  |                        |
| 1.4             | 64QAM  | 1  | 5 | 20.88  | 20.17 | 20.38  |                        |
| 1.4             | 64QAM  | 3  | 0 | 20.93  | 20.59 | 20.45  |                        |
| 1.4             | 64QAM  | 3  | 1 | 20.57  | 20.08 | 20.52  |                        |
| 1.4             | 64QAM  | 3  | 3 | 20.73  | 20.33 | 20.11  |                        |
| 1.4             | 64QAM  | 6  | 0 | 19.91  | 19.18 | 19.24  | 20                     |
| 1.4             | 256QAM | 1  | 0 | 17.51  | 17.48 | 17.45  | 18                     |
| 1.4             | 256QAM | 1  | 3 | 17.33  | 17.43 | 17.38  |                        |
| 1.4             | 256QAM | 1  | 5 | 17.48  | 17.54 | 17.48  |                        |
| 1.4             | 256QAM | 3  | 0 | 17.40  | 17.50 | 17.50  |                        |
| 1.4             | 256QAM | 3  | 1 | 17.45  | 17.49 | 17.41  |                        |
| 1.4             | 256QAM | 3  | 3 | 17.41  | 17.51 | 17.46  |                        |
| 1.4             | 256QAM | 6  | 0 | 17.34  | 17.42 | 17.38  | 18                     |

| <LTE Band 4_Ant 3_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|-------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                       |            |         |           | 20050                    | 20175                       | 20300                     |                        |
| Frequency (MHz)               |            |         |           | 1720                     | 1732.5                      | 1745                      |                        |
| 20                            | QPSK       | 1       | 0         | 23.22                    | 23.35                       | 23.33                     | 24                     |
| 20                            | QPSK       | 1       | 49        | 23.20                    | 23.27                       | 23.32                     |                        |
| 20                            | QPSK       | 1       | 99        | 23.19                    | 23.22                       | 23.26                     |                        |
| 20                            | QPSK       | 50      | 0         | 22.61                    | 22.62                       | 22.40                     | 23                     |
| 20                            | QPSK       | 50      | 24        | 22.41                    | 22.39                       | 22.39                     |                        |
| 20                            | QPSK       | 50      | 50        | 22.39                    | 22.60                       | 22.15                     |                        |
| 20                            | QPSK       | 100     | 0         | 22.50                    | 22.52                       | 22.18                     |                        |
| 20                            | 16QAM      | 1       | 0         | 22.53                    | 22.65                       | 22.61                     | 23                     |
| 20                            | 16QAM      | 1       | 49        | 22.56                    | 22.64                       | 22.65                     |                        |
| 20                            | 16QAM      | 1       | 99        | 22.59                    | 22.56                       | 22.64                     |                        |
| 20                            | 16QAM      | 50      | 0         | 21.61                    | 21.25                       | 21.25                     | 22                     |
| 20                            | 16QAM      | 50      | 24        | 21.39                    | 21.39                       | 21.39                     |                        |
| 20                            | 16QAM      | 50      | 50        | 21.37                    | 21.63                       | 21.16                     |                        |
| 20                            | 16QAM      | 100     | 0         | 21.49                    | 21.45                       | 21.17                     |                        |
| 20                            | 64QAM      | 1       | 0         | 21.43                    | 21.55                       | 21.53                     | 22                     |
| 20                            | 64QAM      | 1       | 49        | 21.42                    | 21.52                       | 21.54                     |                        |
| 20                            | 64QAM      | 1       | 99        | 21.48                    | 21.45                       | 21.53                     |                        |
| 20                            | 64QAM      | 50      | 0         | 20.59                    | 20.22                       | 20.21                     | 21                     |



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|                 |        |     |    |        |        |        |                     |
|-----------------|--------|-----|----|--------|--------|--------|---------------------|
| 20              | 64QAM  | 50  | 24 | 20.36  | 20.35  | 20.36  |                     |
| 20              | 64QAM  | 50  | 50 | 20.39  | 20.63  | 20.15  |                     |
| 20              | 64QAM  | 100 | 0  | 20.47  | 20.44  | 20.15  |                     |
| 20              | 256QAM | 1   | 0  | 18.05  | 18.23  | 18.12  | 19                  |
| 20              | 256QAM | 1   | 49 | 18.01  | 18.17  | 18.15  |                     |
| 20              | 256QAM | 1   | 99 | 18.03  | 18.16  | 18.10  |                     |
| 20              | 256QAM | 50  | 0  | 17.79  | 17.95  | 17.84  | 19                  |
| 20              | 256QAM | 50  | 24 | 17.85  | 18.01  | 17.98  |                     |
| 20              | 256QAM | 50  | 50 | 18.26  | 18.42  | 18.38  |                     |
| 20              | 256QAM | 100 | 0  | 17.99  | 18.21  | 18.13  |                     |
| Channel         |        |     |    | 20025  | 20175  | 20325  | Tune-up limit (dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1732.5 | 1747.5 |                     |
| 15              | QPSK   | 1   | 0  | 23.06  | 23.15  | 23.25  | 24                  |
| 15              | QPSK   | 1   | 37 | 23.09  | 23.17  | 23.20  |                     |
| 15              | QPSK   | 1   | 74 | 23.14  | 23.16  | 23.23  |                     |
| 15              | QPSK   | 36  | 0  | 22.31  | 22.19  | 22.35  | 23                  |
| 15              | QPSK   | 36  | 20 | 22.17  | 22.21  | 22.27  |                     |
| 15              | QPSK   | 36  | 39 | 22.18  | 22.30  | 22.13  |                     |
| 15              | QPSK   | 75  | 0  | 22.24  | 22.27  | 22.27  |                     |
| 15              | 16QAM  | 1   | 0  | 22.45  | 22.50  | 22.61  | 23                  |
| 15              | 16QAM  | 1   | 37 | 22.45  | 22.53  | 22.56  |                     |
| 15              | 16QAM  | 1   | 74 | 22.50  | 22.50  | 22.58  |                     |
| 15              | 16QAM  | 36  | 0  | 21.31  | 21.21  | 21.33  | 22                  |
| 15              | 16QAM  | 36  | 20 | 21.18  | 21.20  | 21.28  |                     |
| 15              | 16QAM  | 36  | 39 | 21.15  | 21.34  | 21.14  |                     |
| 15              | 16QAM  | 75  | 0  | 21.28  | 21.23  | 21.28  |                     |
| 15              | 64QAM  | 1   | 0  | 21.32  | 21.41  | 21.47  | 22                  |
| 15              | 64QAM  | 1   | 37 | 21.32  | 21.43  | 21.44  |                     |
| 15              | 64QAM  | 1   | 74 | 21.39  | 21.39  | 21.47  |                     |
| 15              | 64QAM  | 36  | 0  | 20.32  | 20.19  | 20.36  | 21                  |
| 15              | 64QAM  | 36  | 20 | 20.18  | 20.23  | 20.28  |                     |
| 15              | 64QAM  | 36  | 39 | 20.15  | 20.35  | 20.15  |                     |
| 15              | 64QAM  | 75  | 0  | 20.22  | 20.25  | 20.24  |                     |
| 15              | 256QAM | 1   | 0  | 17.99  | 18.17  | 18.09  | 19                  |
| 15              | 256QAM | 1   | 37 | 18.00  | 18.13  | 18.09  |                     |
| 15              | 256QAM | 1   | 74 | 17.97  | 18.13  | 18.03  |                     |
| 15              | 256QAM | 36  | 0  | 17.71  | 17.86  | 17.81  | 19                  |
| 15              | 256QAM | 36  | 20 | 17.75  | 17.98  | 17.89  |                     |
| 15              | 256QAM | 36  | 39 | 18.24  | 18.36  | 18.35  |                     |
| 15              | 256QAM | 75  | 0  | 17.95  | 18.15  | 18.11  |                     |
| Channel         |        |     |    | 20000  | 20175  | 20350  | Tune-up limit (dBm) |
| Frequency (MHz) |        |     |    | 1715   | 1732.5 | 1750   |                     |
| 10              | QPSK   | 1   | 0  | 23.14  | 23.29  | 23.33  | 24                  |
| 10              | QPSK   | 1   | 25 | 23.13  | 23.20  | 23.22  |                     |
| 10              | QPSK   | 1   | 49 | 23.16  | 23.18  | 23.32  |                     |
| 10              | QPSK   | 25  | 0  | 22.31  | 22.19  | 22.46  | 23                  |
| 10              | QPSK   | 25  | 12 | 22.20  | 22.23  | 22.34  |                     |
| 10              | QPSK   | 25  | 25 | 22.05  | 22.36  | 22.18  |                     |
| 10              | QPSK   | 50  | 0  | 22.23  | 22.27  | 22.37  |                     |
| 10              | 16QAM  | 1   | 0  | 22.42  | 22.60  | 22.61  | 23                  |
| 10              | 16QAM  | 1   | 25 | 22.50  | 22.55  | 22.55  |                     |
| 10              | 16QAM  | 1   | 49 | 22.49  | 22.48  | 22.62  |                     |
| 10              | 16QAM  | 25  | 0  | 21.32  | 21.20  | 21.44  | 22                  |
| 10              | 16QAM  | 25  | 12 | 21.22  | 21.25  | 21.34  |                     |
| 10              | 16QAM  | 25  | 25 | 21.05  | 21.36  | 21.18  |                     |
| 10              | 16QAM  | 50  | 0  | 21.24  | 21.24  | 21.37  |                     |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 10              | 64QAM  | 1  | 0  | 21.35  | 21.46  | 21.47  | 22                  |
| 10              | 64QAM  | 1  | 25 | 21.34  | 21.42  | 21.42  |                     |
| 10              | 64QAM  | 1  | 49 | 21.38  | 21.33  | 21.49  |                     |
| 10              | 64QAM  | 25 | 0  | 20.30  | 20.17  | 20.43  | 21                  |
| 10              | 64QAM  | 25 | 12 | 20.20  | 20.26  | 20.33  |                     |
| 10              | 64QAM  | 25 | 25 | 20.04  | 20.35  | 20.16  |                     |
| 10              | 64QAM  | 50 | 0  | 20.22  | 20.24  | 20.32  |                     |
| 10              | 256QAM | 1  | 0  | 17.99  | 18.20  | 18.09  | 19                  |
| 10              | 256QAM | 1  | 25 | 17.94  | 18.09  | 18.09  |                     |
| 10              | 256QAM | 1  | 49 | 17.93  | 18.13  | 18.02  |                     |
| 10              | 256QAM | 25 | 0  | 17.72  | 17.88  | 17.77  | 19                  |
| 10              | 256QAM | 25 | 12 | 17.75  | 17.91  | 17.95  |                     |
| 10              | 256QAM | 25 | 25 | 18.24  | 18.32  | 18.29  |                     |
| 10              | 256QAM | 50 | 0  | 17.97  | 18.15  | 18.07  |                     |
| Channel         |        |    |    | 19975  | 20175  | 20375  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1732.5 | 1752.5 |                     |
| 5               | QPSK   | 1  | 0  | 23.10  | 23.28  | 23.30  | 24                  |
| 5               | QPSK   | 1  | 12 | 23.09  | 23.23  | 23.26  |                     |
| 5               | QPSK   | 1  | 24 | 23.15  | 23.20  | 23.33  |                     |
| 5               | QPSK   | 12 | 0  | 22.26  | 22.25  | 22.40  | 23                  |
| 5               | QPSK   | 12 | 7  | 22.15  | 22.25  | 22.34  |                     |
| 5               | QPSK   | 12 | 13 | 22.10  | 22.26  | 22.30  |                     |
| 5               | QPSK   | 25 | 0  | 22.17  | 22.22  | 22.36  |                     |
| 5               | 16QAM  | 1  | 0  | 22.43  | 22.59  | 22.61  | 23                  |
| 5               | 16QAM  | 1  | 12 | 22.46  | 22.56  | 22.61  |                     |
| 5               | 16QAM  | 1  | 24 | 22.48  | 22.50  | 22.67  |                     |
| 5               | 16QAM  | 12 | 0  | 21.24  | 21.24  | 21.40  | 22                  |
| 5               | 16QAM  | 12 | 7  | 21.14  | 21.23  | 21.31  |                     |
| 5               | 16QAM  | 12 | 13 | 21.07  | 21.23  | 21.27  |                     |
| 5               | 16QAM  | 25 | 0  | 21.16  | 21.23  | 21.34  |                     |
| 5               | 64QAM  | 1  | 0  | 21.33  | 21.50  | 21.48  | 22                  |
| 5               | 64QAM  | 1  | 12 | 21.34  | 21.45  | 21.48  |                     |
| 5               | 64QAM  | 1  | 24 | 21.35  | 21.39  | 21.54  |                     |
| 5               | 64QAM  | 12 | 0  | 20.26  | 20.22  | 20.40  | 21                  |
| 5               | 64QAM  | 12 | 7  | 20.17  | 20.27  | 20.35  |                     |
| 5               | 64QAM  | 12 | 13 | 20.11  | 20.24  | 20.28  |                     |
| 5               | 64QAM  | 25 | 0  | 20.14  | 20.22  | 20.34  |                     |
| 5               | 256QAM | 1  | 0  | 17.96  | 18.13  | 18.11  | 19                  |
| 5               | 256QAM | 1  | 12 | 17.97  | 18.13  | 18.07  |                     |
| 5               | 256QAM | 1  | 24 | 17.95  | 18.14  | 18.09  |                     |
| 5               | 256QAM | 12 | 0  | 17.69  | 17.85  | 17.79  | 19                  |
| 5               | 256QAM | 12 | 7  | 17.79  | 17.99  | 17.94  |                     |
| 5               | 256QAM | 12 | 13 | 18.19  | 18.32  | 18.37  |                     |
| 5               | 256QAM | 25 | 0  | 17.96  | 18.18  | 18.11  |                     |
| Channel         |        |    |    | 19965  | 20175  | 20385  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1732.5 | 1753.5 |                     |
| 3               | QPSK   | 1  | 0  | 23.02  | 23.19  | 23.19  | 24                  |
| 3               | QPSK   | 1  | 8  | 23.01  | 23.16  | 23.20  |                     |
| 3               | QPSK   | 1  | 14 | 23.10  | 23.18  | 23.26  |                     |
| 3               | QPSK   | 8  | 0  | 22.15  | 22.28  | 22.35  | 23                  |
| 3               | QPSK   | 8  | 4  | 22.13  | 22.24  | 22.34  |                     |
| 3               | QPSK   | 8  | 7  | 22.14  | 22.26  | 22.35  |                     |
| 3               | QPSK   | 15 | 0  | 22.18  | 22.25  | 22.34  |                     |
| 3               | 16QAM  | 1  | 0  | 22.40  | 22.55  | 22.58  | 23                  |
| 3               | 16QAM  | 1  | 8  | 22.43  | 22.52  | 22.59  |                     |
| 3               | 16QAM  | 1  | 14 | 22.42  | 22.51  | 22.61  |                     |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 3               | 16QAM  | 8  | 0  | 21.23  | 21.35  | 21.42  | 22                  |
| 3               | 16QAM  | 8  | 4  | 21.21  | 21.31  | 21.42  |                     |
| 3               | 16QAM  | 8  | 7  | 21.22  | 21.34  | 21.44  |                     |
| 3               | 16QAM  | 15 | 0  | 21.18  | 21.28  | 21.36  | 22                  |
| 3               | 64QAM  | 1  | 0  | 21.28  | 21.41  | 21.42  |                     |
| 3               | 64QAM  | 1  | 8  | 21.29  | 21.37  | 21.46  |                     |
| 3               | 64QAM  | 1  | 14 | 21.33  | 21.41  | 21.50  | 21                  |
| 3               | 64QAM  | 8  | 0  | 20.15  | 20.30  | 20.37  |                     |
| 3               | 64QAM  | 8  | 4  | 20.14  | 20.27  | 20.36  |                     |
| 3               | 64QAM  | 8  | 7  | 20.17  | 20.30  | 20.39  |                     |
| 3               | 64QAM  | 15 | 0  | 20.15  | 20.26  | 20.33  |                     |
| 3               | 256QAM | 1  | 0  | 17.99  | 18.19  | 18.11  | 19                  |
| 3               | 256QAM | 1  | 8  | 17.92  | 18.14  | 18.08  |                     |
| 3               | 256QAM | 1  | 14 | 17.98  | 18.06  | 18.02  |                     |
| 3               | 256QAM | 8  | 0  | 17.77  | 17.86  | 17.80  | 19                  |
| 3               | 256QAM | 8  | 4  | 17.81  | 17.98  | 17.93  |                     |
| 3               | 256QAM | 8  | 7  | 18.16  | 18.41  | 18.35  |                     |
| 3               | 256QAM | 15 | 0  | 17.95  | 18.11  | 18.04  |                     |
| Channel         |        |    |    | 19957  | 20175  | 20393  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1732.5 | 1754.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.00  | 23.16  | 23.21  | 24                  |
| 1.4             | QPSK   | 1  | 3  | 23.02  | 23.18  | 23.27  |                     |
| 1.4             | QPSK   | 1  | 5  | 23.04  | 23.17  | 23.25  |                     |
| 1.4             | QPSK   | 3  | 0  | 23.04  | 23.21  | 23.30  |                     |
| 1.4             | QPSK   | 3  | 1  | 23.05  | 23.20  | 23.29  |                     |
| 1.4             | QPSK   | 3  | 3  | 23.03  | 23.19  | 23.30  |                     |
| 1.4             | QPSK   | 6  | 0  | 22.14  | 22.31  | 22.40  | 23                  |
| 1.4             | 16QAM  | 1  | 0  | 22.36  | 22.51  | 22.61  | 23                  |
| 1.4             | 16QAM  | 1  | 3  | 22.39  | 22.54  | 22.65  |                     |
| 1.4             | 16QAM  | 1  | 5  | 22.40  | 22.50  | 22.62  |                     |
| 1.4             | 16QAM  | 3  | 0  | 22.15  | 22.32  | 22.42  |                     |
| 1.4             | 16QAM  | 3  | 1  | 22.14  | 22.31  | 22.40  |                     |
| 1.4             | 16QAM  | 3  | 3  | 22.16  | 22.29  | 22.39  |                     |
| 1.4             | 16QAM  | 6  | 0  | 21.20  | 21.35  | 21.47  | 22                  |
| 1.4             | 64QAM  | 1  | 0  | 21.30  | 21.46  | 21.52  | 22                  |
| 1.4             | 64QAM  | 1  | 3  | 21.28  | 21.40  | 21.50  |                     |
| 1.4             | 64QAM  | 1  | 5  | 21.29  | 21.40  | 21.51  |                     |
| 1.4             | 64QAM  | 3  | 0  | 21.22  | 21.37  | 21.48  |                     |
| 1.4             | 64QAM  | 3  | 1  | 21.22  | 21.40  | 21.50  |                     |
| 1.4             | 64QAM  | 3  | 3  | 21.21  | 21.37  | 21.49  |                     |
| 1.4             | 64QAM  | 6  | 0  | 20.10  | 20.27  | 20.34  | 21                  |
| 1.4             | 256QAM | 1  | 0  | 17.98  | 18.20  | 18.05  | 19                  |
| 1.4             | 256QAM | 1  | 3  | 17.96  | 18.12  | 18.13  |                     |
| 1.4             | 256QAM | 1  | 5  | 17.95  | 18.08  | 18.06  |                     |
| 1.4             | 256QAM | 3  | 0  | 17.74  | 17.93  | 17.79  |                     |
| 1.4             | 256QAM | 3  | 1  | 17.83  | 17.99  | 17.95  |                     |
| 1.4             | 256QAM | 3  | 3  | 18.17  | 18.41  | 18.37  |                     |
| 1.4             | 256QAM | 6  | 0  | 17.92  | 18.17  | 18.09  | 19                  |

| <LTE Band 4_Ant 3_Sensor ON> |            |         |           |                       |                          |                        |                     |
|------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| BW [MHz]                     | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                      |            |         |           | 20050                 | 20175                    | 20300                  |                     |
| Frequency (MHz)              |            |         |           | 1720                  | 1732.5                   | 1745                   |                     |
| 20                           | QPSK       | 1       | 0         | 20.76                 | 20.90                    | 20.85                  | 21.5                |
| 20                           | QPSK       | 1       | 49        | 20.77                 | 20.87                    | 20.89                  |                     |



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|                 |        |     |    |        |        |        |                     |
|-----------------|--------|-----|----|--------|--------|--------|---------------------|
| 20              | QPSK   | 1   | 99 | 20.79  | 20.80  | 20.83  | 20.5                |
| 20              | QPSK   | 50  | 0  | 20.08  | 20.10  | 19.72  |                     |
| 20              | QPSK   | 50  | 24 | 19.87  | 19.89  | 19.87  |                     |
| 20              | QPSK   | 50  | 50 | 19.88  | 19.76  | 19.62  |                     |
| 20              | QPSK   | 100 | 0  | 19.95  | 19.95  | 19.67  |                     |
| 20              | 16QAM  | 1   | 0  | 20.07  | 20.19  | 20.15  | 20.5                |
| 20              | 16QAM  | 1   | 49 | 20.04  | 20.13  | 20.14  |                     |
| 20              | 16QAM  | 1   | 99 | 20.05  | 20.06  | 20.12  |                     |
| 20              | 16QAM  | 50  | 0  | 19.07  | 18.71  | 18.68  | 19.5                |
| 20              | 16QAM  | 50  | 24 | 18.83  | 18.84  | 18.86  |                     |
| 20              | 16QAM  | 50  | 50 | 18.84  | 19.10  | 18.62  |                     |
| 20              | 16QAM  | 100 | 0  | 18.94  | 18.91  | 18.66  |                     |
| 20              | 64QAM  | 1   | 0  | 19.50  | 19.02  | 18.95  | 19.5                |
| 20              | 64QAM  | 1   | 49 | 19.47  | 19.02  | 19.04  |                     |
| 20              | 64QAM  | 1   | 99 | 18.92  | 18.92  | 18.96  |                     |
| 20              | 64QAM  | 50  | 0  | 18.05  | 17.68  | 17.68  | 18.5                |
| 20              | 64QAM  | 50  | 24 | 17.81  | 17.82  | 17.83  |                     |
| 20              | 64QAM  | 50  | 50 | 17.82  | 18.11  | 17.59  |                     |
| 20              | 64QAM  | 100 | 0  | 17.91  | 17.91  | 17.60  |                     |
| 20              | 256QAM | 1   | 0  | 15.87  | 15.94  | 16.08  | 16.5                |
| 20              | 256QAM | 1   | 49 | 15.92  | 16.07  | 16.07  |                     |
| 20              | 256QAM | 1   | 99 | 16.14  | 16.15  | 16.15  |                     |
| 20              | 256QAM | 50  | 0  | 15.66  | 15.77  | 15.84  | 16.5                |
| 20              | 256QAM | 50  | 24 | 15.92  | 15.93  | 15.92  |                     |
| 20              | 256QAM | 50  | 50 | 15.67  | 15.67  | 15.75  |                     |
| 20              | 256QAM | 100 | 0  | 15.67  | 15.70  | 15.82  |                     |
| Channel         |        |     |    | 20025  | 20175  | 20325  | Tune-up limit (dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1732.5 | 1747.5 |                     |
| 15              | QPSK   | 1   | 0  | 20.65  | 20.75  | 20.75  | 21.5                |
| 15              | QPSK   | 1   | 37 | 20.57  | 20.72  | 20.74  |                     |
| 15              | QPSK   | 1   | 74 | 20.68  | 20.66  | 20.67  |                     |
| 15              | QPSK   | 36  | 0  | 19.98  | 19.59  | 19.58  | 20.5                |
| 15              | QPSK   | 36  | 20 | 19.71  | 19.74  | 19.67  |                     |
| 15              | QPSK   | 36  | 39 | 19.74  | 20.01  | 19.46  |                     |
| 15              | QPSK   | 75  | 0  | 19.76  | 19.75  | 19.54  |                     |
| 15              | 16QAM  | 1   | 0  | 19.89  | 20.04  | 19.96  | 20.5                |
| 15              | 16QAM  | 1   | 37 | 19.90  | 19.99  | 20.00  |                     |
| 15              | 16QAM  | 1   | 74 | 19.90  | 19.95  | 19.95  |                     |
| 15              | 16QAM  | 36  | 0  | 18.88  | 18.51  | 18.54  | 19.5                |
| 15              | 16QAM  | 36  | 20 | 18.68  | 18.66  | 18.75  |                     |
| 15              | 16QAM  | 36  | 39 | 18.69  | 18.91  | 18.44  |                     |
| 15              | 16QAM  | 75  | 0  | 18.82  | 18.75  | 18.47  |                     |
| 15              | 64QAM  | 1   | 0  | 19.33  | 18.86  | 18.80  | 19.5                |
| 15              | 64QAM  | 1   | 37 | 19.34  | 18.92  | 18.86  |                     |
| 15              | 64QAM  | 1   | 74 | 18.79  | 18.77  | 18.79  |                     |
| 15              | 64QAM  | 36  | 0  | 17.86  | 17.55  | 17.55  | 18.5                |
| 15              | 64QAM  | 36  | 20 | 17.71  | 17.63  | 17.69  |                     |
| 15              | 64QAM  | 36  | 39 | 17.64  | 17.94  | 17.48  |                     |
| 15              | 64QAM  | 75  | 0  | 17.81  | 17.75  | 17.43  |                     |
| 15              | 256QAM | 1   | 0  | 15.74  | 15.84  | 15.91  | 16.5                |
| 15              | 256QAM | 1   | 37 | 15.81  | 15.90  | 15.90  |                     |
| 15              | 256QAM | 1   | 74 | 15.96  | 16.02  | 16.03  |                     |
| 15              | 256QAM | 36  | 0  | 15.49  | 15.58  | 15.72  | 16.5                |
| 15              | 256QAM | 36  | 20 | 15.79  | 15.79  | 15.75  |                     |
| 15              | 256QAM | 36  | 39 | 15.47  | 15.55  | 15.64  |                     |
| 15              | 256QAM | 75  | 0  | 15.50  | 15.56  | 15.71  |                     |



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| Channel         |        |    |    | 20000  | 20175  | 20350  | Tune-up limit<br>(dBm) |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| Frequency (MHz) |        |    |    | 1715   | 1732.5 | 1750   |                        |
| 10              | QPSK   | 1  | 0  | 20.64  | 20.79  | 20.68  | 21.5                   |
| 10              | QPSK   | 1  | 25 | 20.62  | 20.75  | 20.69  |                        |
| 10              | QPSK   | 1  | 49 | 20.68  | 20.62  | 20.64  |                        |
| 10              | QPSK   | 25 | 0  | 19.90  | 19.56  | 19.53  | 20.5                   |
| 10              | QPSK   | 25 | 12 | 19.68  | 19.77  | 19.67  |                        |
| 10              | QPSK   | 25 | 25 | 19.69  | 20.01  | 19.45  |                        |
| 10              | QPSK   | 50 | 0  | 19.79  | 19.75  | 19.53  |                        |
| 10              | 16QAM  | 1  | 0  | 19.91  | 19.99  | 19.98  | 20.5                   |
| 10              | 16QAM  | 1  | 25 | 19.85  | 19.98  | 20.00  |                        |
| 10              | 16QAM  | 1  | 49 | 19.87  | 19.87  | 19.92  |                        |
| 10              | 16QAM  | 25 | 0  | 18.96  | 18.56  | 18.55  | 19.5                   |
| 10              | 16QAM  | 25 | 12 | 18.66  | 18.70  | 18.71  |                        |
| 10              | 16QAM  | 25 | 25 | 18.69  | 18.98  | 18.48  |                        |
| 10              | 16QAM  | 50 | 0  | 18.80  | 18.76  | 18.53  |                        |
| 10              | 64QAM  | 1  | 0  | 19.34  | 18.86  | 18.79  | 19.5                   |
| 10              | 64QAM  | 1  | 25 | 19.33  | 18.88  | 18.92  |                        |
| 10              | 64QAM  | 1  | 49 | 18.76  | 18.73  | 18.85  |                        |
| 10              | 64QAM  | 25 | 0  | 17.88  | 17.52  | 17.57  | 18.5                   |
| 10              | 64QAM  | 25 | 12 | 17.63  | 17.70  | 17.63  |                        |
| 10              | 64QAM  | 25 | 25 | 17.65  | 18.01  | 17.47  |                        |
| 10              | 64QAM  | 50 | 0  | 17.71  | 17.74  | 17.46  |                        |
| 10              | 256QAM | 1  | 0  | 15.67  | 15.84  | 15.90  | 16.5                   |
| 10              | 256QAM | 1  | 25 | 15.79  | 15.97  | 15.97  |                        |
| 10              | 256QAM | 1  | 49 | 15.95  | 16.03  | 16.01  |                        |
| 10              | 256QAM | 25 | 0  | 15.53  | 15.62  | 15.66  | 16.5                   |
| 10              | 256QAM | 25 | 12 | 15.72  | 15.83  | 15.78  |                        |
| 10              | 256QAM | 25 | 25 | 15.51  | 15.55  | 15.63  |                        |
| 10              | 256QAM | 50 | 0  | 15.51  | 15.50  | 15.68  |                        |
| Channel         |        |    |    | 19975  | 20175  | 20375  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1732.5 | 1752.5 |                        |
| 5               | QPSK   | 1  | 0  | 20.63  | 20.70  | 20.66  | 21.5                   |
| 5               | QPSK   | 1  | 12 | 20.62  | 20.72  | 20.75  |                        |
| 5               | QPSK   | 1  | 24 | 20.68  | 20.67  | 20.66  |                        |
| 5               | QPSK   | 12 | 0  | 19.88  | 19.56  | 19.58  | 20.5                   |
| 5               | QPSK   | 12 | 7  | 19.68  | 19.72  | 19.72  |                        |
| 5               | QPSK   | 12 | 13 | 19.75  | 19.98  | 19.47  |                        |
| 5               | QPSK   | 25 | 0  | 19.81  | 19.76  | 19.50  |                        |
| 5               | 16QAM  | 1  | 0  | 19.93  | 20.06  | 20.04  | 20.5                   |
| 5               | 16QAM  | 1  | 12 | 19.90  | 20.02  | 19.98  |                        |
| 5               | 16QAM  | 1  | 24 | 19.87  | 19.90  | 19.93  |                        |
| 5               | 16QAM  | 12 | 0  | 18.92  | 18.54  | 18.53  | 19.5                   |
| 5               | 16QAM  | 12 | 7  | 18.67  | 18.69  | 18.67  |                        |
| 5               | 16QAM  | 12 | 13 | 18.67  | 18.95  | 18.43  |                        |
| 5               | 16QAM  | 25 | 0  | 18.74  | 18.74  | 18.53  |                        |
| 5               | 64QAM  | 1  | 0  | 19.31  | 18.83  | 18.77  | 19.5                   |
| 5               | 64QAM  | 1  | 12 | 19.30  | 18.85  | 18.90  |                        |
| 5               | 64QAM  | 1  | 24 | 18.78  | 18.74  | 18.81  |                        |
| 5               | 64QAM  | 12 | 0  | 17.87  | 17.55  | 17.58  | 18.5                   |
| 5               | 64QAM  | 12 | 7  | 17.69  | 17.69  | 17.68  |                        |
| 5               | 64QAM  | 12 | 13 | 17.69  | 17.97  | 17.44  |                        |
| 5               | 64QAM  | 25 | 0  | 17.80  | 17.71  | 17.50  |                        |
| 5               | 256QAM | 1  | 0  | 15.76  | 15.81  | 15.89  | 16.5                   |
| 5               | 256QAM | 1  | 12 | 15.73  | 15.93  | 15.93  |                        |
| 5               | 256QAM | 1  | 24 | 15.98  | 16.02  | 16.04  |                        |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5               | 256QAM | 12 | 0  | 15.55  | 15.63  | 15.70  | 16.5                |
| 5               | 256QAM | 12 | 7  | 15.76  | 15.73  | 15.72  |                     |
| 5               | 256QAM | 12 | 13 | 15.51  | 15.48  | 15.59  |                     |
| 5               | 256QAM | 25 | 0  | 15.51  | 15.52  | 15.62  |                     |
| Channel         |        |    |    | 19965  | 20175  | 20385  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1732.5 | 1753.5 |                     |
| 3               | QPSK   | 1  | 0  | 20.64  | 20.80  | 20.69  | 21.5                |
| 3               | QPSK   | 1  | 8  | 20.65  | 20.77  | 20.70  |                     |
| 3               | QPSK   | 1  | 14 | 20.69  | 20.66  | 20.67  |                     |
| 3               | QPSK   | 8  | 0  | 19.92  | 19.66  | 19.52  | 20.5                |
| 3               | QPSK   | 8  | 4  | 19.71  | 19.74  | 19.73  |                     |
| 3               | QPSK   | 8  | 7  | 19.75  | 20.05  | 19.46  |                     |
| 3               | QPSK   | 15 | 0  | 19.77  | 19.79  | 19.56  |                     |
| 3               | 16QAM  | 1  | 0  | 19.88  | 20.06  | 19.96  | 20.5                |
| 3               | 16QAM  | 1  | 8  | 19.86  | 19.95  | 20.02  |                     |
| 3               | 16QAM  | 1  | 14 | 19.88  | 19.94  | 19.95  |                     |
| 3               | 16QAM  | 8  | 0  | 18.96  | 18.55  | 18.50  | 19.5                |
| 3               | 16QAM  | 8  | 4  | 18.69  | 18.70  | 18.74  |                     |
| 3               | 16QAM  | 8  | 7  | 18.68  | 19.00  | 18.42  |                     |
| 3               | 16QAM  | 15 | 0  | 18.81  | 18.79  | 18.55  |                     |
| 3               | 64QAM  | 1  | 0  | 19.34  | 18.85  | 18.80  | 19.5                |
| 3               | 64QAM  | 1  | 8  | 19.36  | 18.90  | 18.86  |                     |
| 3               | 64QAM  | 1  | 14 | 18.76  | 18.72  | 18.76  |                     |
| 3               | 64QAM  | 8  | 0  | 17.94  | 17.57  | 17.53  | 18.5                |
| 3               | 64QAM  | 8  | 4  | 17.71  | 17.72  | 17.66  |                     |
| 3               | 64QAM  | 8  | 7  | 17.68  | 17.99  | 17.44  |                     |
| 3               | 64QAM  | 15 | 0  | 17.80  | 17.71  | 17.43  |                     |
| 3               | 256QAM | 1  | 0  | 15.73  | 15.77  | 15.94  | 16.5                |
| 3               | 256QAM | 1  | 8  | 15.81  | 15.96  | 15.91  |                     |
| 3               | 256QAM | 1  | 14 | 15.95  | 15.96  | 15.95  |                     |
| 3               | 256QAM | 8  | 0  | 15.56  | 15.67  | 15.67  | 16.5                |
| 3               | 256QAM | 8  | 4  | 15.77  | 15.83  | 15.81  |                     |
| 3               | 256QAM | 8  | 7  | 15.54  | 15.50  | 15.62  |                     |
| 3               | 256QAM | 15 | 0  | 15.57  | 15.55  | 15.69  |                     |
| Channel         |        |    |    | 19957  | 20175  | 20393  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1732.5 | 1754.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 20.57  | 20.75  | 20.67  | 21.5                |
| 1.4             | QPSK   | 1  | 3  | 20.58  | 20.72  | 20.74  |                     |
| 1.4             | QPSK   | 1  | 5  | 20.62  | 20.70  | 20.66  |                     |
| 1.4             | QPSK   | 3  | 0  | 20.65  | 20.78  | 20.75  |                     |
| 1.4             | QPSK   | 3  | 1  | 20.67  | 20.71  | 20.74  |                     |
| 1.4             | QPSK   | 3  | 3  | 20.61  | 20.70  | 20.71  |                     |
| 1.4             | QPSK   | 6  | 0  | 19.89  | 19.63  | 19.58  | 20.5                |
| 1.4             | 16QAM  | 1  | 0  | 19.71  | 19.69  | 19.77  | 20.5                |
| 1.4             | 16QAM  | 1  | 3  | 19.75  | 20.01  | 19.48  |                     |
| 1.4             | 16QAM  | 1  | 5  | 19.75  | 19.84  | 19.51  |                     |
| 1.4             | 16QAM  | 3  | 0  | 19.90  | 20.08  | 20.05  |                     |
| 1.4             | 16QAM  | 3  | 1  | 19.94  | 20.00  | 20.01  |                     |
| 1.4             | 16QAM  | 3  | 3  | 19.87  | 19.95  | 19.93  |                     |
| 1.4             | 16QAM  | 6  | 0  | 18.88  | 18.60  | 18.51  | 19.5                |
| 1.4             | 64QAM  | 1  | 0  | 18.64  | 18.67  | 18.71  | 19.5                |
| 1.4             | 64QAM  | 1  | 3  | 18.65  | 18.94  | 18.45  |                     |
| 1.4             | 64QAM  | 1  | 5  | 18.78  | 18.73  | 18.55  |                     |
| 1.4             | 64QAM  | 3  | 0  | 19.40  | 18.92  | 18.78  |                     |
| 1.4             | 64QAM  | 3  | 1  | 19.35  | 18.82  | 18.86  |                     |
| 1.4             | 64QAM  | 3  | 3  | 18.78  | 18.74  | 18.82  |                     |



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|     |        |   |   |       |       |       |      |
|-----|--------|---|---|-------|-------|-------|------|
| 1.4 | 64QAM  | 6 | 0 | 17.86 | 17.55 | 17.56 | 18.5 |
| 1.4 | 256QAM | 1 | 0 | 15.76 | 15.81 | 15.93 | 16.5 |
| 1.4 | 256QAM | 1 | 3 | 15.75 | 15.96 | 15.91 |      |
| 1.4 | 256QAM | 1 | 5 | 16.03 | 15.96 | 15.97 |      |
| 1.4 | 256QAM | 3 | 0 | 15.54 | 15.57 | 15.70 |      |
| 1.4 | 256QAM | 3 | 1 | 15.79 | 15.80 | 15.76 |      |
| 1.4 | 256QAM | 3 | 3 | 15.52 | 15.49 | 15.64 |      |
| 1.4 | 256QAM | 6 | 0 | 15.50 | 15.52 | 15.72 | 16.5 |

| <LTE Band 4_Ant 8_Sensor OFF> |            |         |           |                       |                          |                        |                     |
|-------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                       |            |         |           | 20050                 | 20175                    | 20300                  |                     |
| Frequency (MHz)               |            |         |           | 1720                  | 1732.5                   | 1745                   |                     |
| 20                            | QPSK       | 1       | 0         | 23.52                 | 23.53                    | 23.48                  | 24                  |
| 20                            | QPSK       | 1       | 49        | 23.37                 | 23.47                    | 23.42                  |                     |
| 20                            | QPSK       | 1       | 99        | 23.48                 | 23.52                    | 23.47                  |                     |
| 20                            | QPSK       | 50      | 0         | 22.46                 | 22.52                    | 22.45                  | 23                  |
| 20                            | QPSK       | 50      | 24        | 22.36                 | 22.46                    | 22.37                  |                     |
| 20                            | QPSK       | 50      | 50        | 22.45                 | 22.51                    | 22.44                  |                     |
| 20                            | QPSK       | 100     | 0         | 22.43                 | 22.45                    | 22.43                  | 23                  |
| 20                            | 16QAM      | 1       | 0         | 22.53                 | 22.63                    | 22.58                  |                     |
| 20                            | 16QAM      | 1       | 49        | 22.54                 | 22.64                    | 22.56                  |                     |
| 20                            | 16QAM      | 1       | 99        | 22.57                 | 22.64                    | 22.62                  | 22                  |
| 20                            | 16QAM      | 50      | 0         | 21.40                 | 21.43                    | 21.42                  |                     |
| 20                            | 16QAM      | 50      | 24        | 21.43                 | 21.51                    | 21.45                  |                     |
| 20                            | 16QAM      | 50      | 50        | 21.44                 | 21.47                    | 21.38                  | 22                  |
| 20                            | 16QAM      | 100     | 0         | 21.32                 | 21.42                    | 21.40                  |                     |
| 20                            | 64QAM      | 1       | 0         | 21.54                 | 21.57                    | 21.52                  | 22                  |
| 20                            | 64QAM      | 1       | 49        | 21.52                 | 21.55                    | 21.54                  |                     |
| 20                            | 64QAM      | 1       | 99        | 21.45                 | 21.55                    | 21.47                  |                     |
| 20                            | 64QAM      | 50      | 0         | 20.37                 | 20.40                    | 20.31                  | 21                  |
| 20                            | 64QAM      | 50      | 24        | 20.48                 | 20.49                    | 20.46                  |                     |
| 20                            | 64QAM      | 50      | 50        | 20.43                 | 20.47                    | 20.40                  |                     |
| 20                            | 64QAM      | 100     | 0         | 20.28                 | 20.35                    | 20.26                  | 19                  |
| 20                            | 256QAM     | 1       | 0         | 18.28                 | 18.34                    | 18.26                  |                     |
| 20                            | 256QAM     | 1       | 49        | 18.33                 | 18.37                    | 18.28                  |                     |
| 20                            | 256QAM     | 1       | 99        | 18.36                 | 18.39                    | 18.35                  | 19                  |
| 20                            | 256QAM     | 50      | 0         | 18.34                 | 18.37                    | 18.30                  |                     |
| 20                            | 256QAM     | 50      | 24        | 18.43                 | 18.46                    | 18.41                  |                     |
| 20                            | 256QAM     | 50      | 50        | 18.34                 | 18.42                    | 18.41                  | 19                  |
| 20                            | 256QAM     | 100     | 0         | 18.24                 | 18.31                    | 18.21                  |                     |
| Channel                       |            |         |           | 20025                 | 20175                    | 20325                  | Tune-up limit (dBm) |
| Frequency (MHz)               |            |         |           | 1717.5                | 1732.5                   | 1747.5                 |                     |
| 15                            | QPSK       | 1       | 0         | 23.49                 | 23.48                    | 23.38                  | 24                  |
| 15                            | QPSK       | 1       | 37        | 23.28                 | 23.44                    | 23.41                  |                     |
| 15                            | QPSK       | 1       | 74        | 23.40                 | 23.43                    | 23.39                  |                     |
| 15                            | QPSK       | 36      | 0         | 22.45                 | 22.48                    | 22.38                  | 23                  |
| 15                            | QPSK       | 36      | 20        | 22.29                 | 22.44                    | 22.32                  |                     |
| 15                            | QPSK       | 36      | 39        | 22.44                 | 22.46                    | 22.42                  |                     |
| 15                            | QPSK       | 75      | 0         | 22.41                 | 22.40                    | 22.37                  | 23                  |
| 15                            | 16QAM      | 1       | 0         | 22.47                 | 22.57                    | 22.52                  |                     |
| 15                            | 16QAM      | 1       | 37        | 22.50                 | 22.57                    | 22.51                  |                     |
| 15                            | 16QAM      | 1       | 74        | 22.48                 | 22.61                    | 22.57                  | 23                  |
| 15                            | 16QAM      | 36      | 0         | 21.37                 | 21.33                    | 21.33                  |                     |
| 15                            | 16QAM      | 36      | 20        | 21.36                 | 21.50                    | 21.44                  | 22                  |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 15              | 16QAM  | 36 | 39 | 21.39  | 21.42  | 21.29  |                     |
| 15              | 16QAM  | 75 | 0  | 21.28  | 21.37  | 21.35  |                     |
| 15              | 64QAM  | 1  | 0  | 21.50  | 21.53  | 21.46  |                     |
| 15              | 64QAM  | 1  | 37 | 21.49  | 21.49  | 21.53  | 22                  |
| 15              | 64QAM  | 1  | 74 | 21.38  | 21.49  | 21.43  |                     |
| 15              | 64QAM  | 36 | 0  | 20.32  | 20.31  | 20.22  |                     |
| 15              | 64QAM  | 36 | 20 | 20.42  | 20.40  | 20.41  | 21                  |
| 15              | 64QAM  | 36 | 39 | 20.39  | 20.45  | 20.36  |                     |
| 15              | 64QAM  | 75 | 0  | 20.23  | 20.25  | 20.23  |                     |
| 15              | 256QAM | 1  | 0  | 18.19  | 18.29  | 18.20  | 19                  |
| 15              | 256QAM | 1  | 37 | 18.23  | 18.32  | 18.23  |                     |
| 15              | 256QAM | 1  | 74 | 18.29  | 18.32  | 18.33  |                     |
| 15              | 256QAM | 36 | 0  | 18.29  | 18.36  | 18.27  | 19                  |
| 15              | 256QAM | 36 | 20 | 18.36  | 18.41  | 18.37  |                     |
| 15              | 256QAM | 36 | 39 | 18.27  | 18.32  | 18.33  |                     |
| 15              | 256QAM | 75 | 0  | 18.19  | 18.23  | 18.13  |                     |
| Channel         |        |    |    | 20000  | 20175  | 20350  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1715   | 1732.5 | 1750   |                     |
| 10              | QPSK   | 1  | 0  | 23.42  | 23.52  | 23.42  | 24                  |
| 10              | QPSK   | 1  | 25 | 23.31  | 23.37  | 23.36  |                     |
| 10              | QPSK   | 1  | 49 | 23.41  | 23.46  | 23.41  |                     |
| 10              | QPSK   | 25 | 0  | 22.40  | 22.49  | 22.40  | 23                  |
| 10              | QPSK   | 25 | 12 | 22.32  | 22.45  | 22.35  |                     |
| 10              | QPSK   | 25 | 25 | 22.40  | 22.41  | 22.41  |                     |
| 10              | QPSK   | 50 | 0  | 22.39  | 22.41  | 22.37  |                     |
| 10              | 16QAM  | 1  | 0  | 22.50  | 22.57  | 22.51  | 23                  |
| 10              | 16QAM  | 1  | 25 | 22.48  | 22.59  | 22.48  |                     |
| 10              | 16QAM  | 1  | 49 | 22.49  | 22.54  | 22.60  |                     |
| 10              | 16QAM  | 25 | 0  | 21.37  | 21.36  | 21.34  | 22                  |
| 10              | 16QAM  | 25 | 12 | 21.38  | 21.42  | 21.38  |                     |
| 10              | 16QAM  | 25 | 25 | 21.38  | 21.38  | 21.31  |                     |
| 10              | 16QAM  | 50 | 0  | 21.22  | 21.35  | 21.38  |                     |
| 10              | 64QAM  | 1  | 0  | 21.49  | 21.48  | 21.51  | 22                  |
| 10              | 64QAM  | 1  | 25 | 21.47  | 21.49  | 21.48  |                     |
| 10              | 64QAM  | 1  | 49 | 21.36  | 21.49  | 21.46  |                     |
| 10              | 64QAM  | 25 | 0  | 20.31  | 20.31  | 20.29  | 21                  |
| 10              | 64QAM  | 25 | 12 | 20.43  | 20.39  | 20.38  |                     |
| 10              | 64QAM  | 25 | 25 | 20.35  | 20.41  | 20.34  |                     |
| 10              | 64QAM  | 50 | 0  | 20.22  | 20.31  | 20.22  |                     |
| 10              | 256QAM | 1  | 0  | 18.20  | 18.29  | 18.18  | 19                  |
| 10              | 256QAM | 1  | 25 | 18.23  | 18.32  | 18.20  |                     |
| 10              | 256QAM | 1  | 49 | 18.32  | 18.34  | 18.27  |                     |
| 10              | 256QAM | 25 | 0  | 18.27  | 18.36  | 18.25  | 19                  |
| 10              | 256QAM | 25 | 12 | 18.40  | 18.40  | 18.35  |                     |
| 10              | 256QAM | 25 | 25 | 18.33  | 18.40  | 18.34  |                     |
| 10              | 256QAM | 50 | 0  | 18.14  | 18.23  | 18.20  |                     |
| Channel         |        |    |    | 19975  | 20175  | 20375  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1732.5 | 1752.5 |                     |
| 5               | QPSK   | 1  | 0  | 23.43  | 23.49  | 23.44  | 24                  |
| 5               | QPSK   | 1  | 12 | 23.31  | 23.45  | 23.41  |                     |
| 5               | QPSK   | 1  | 24 | 23.44  | 23.49  | 23.43  |                     |
| 5               | QPSK   | 12 | 0  | 22.45  | 22.49  | 22.43  | 23                  |
| 5               | QPSK   | 12 | 7  | 22.26  | 22.36  | 22.35  |                     |
| 5               | QPSK   | 12 | 13 | 22.37  | 22.43  | 22.38  |                     |
| 5               | QPSK   | 25 | 0  | 22.39  | 22.37  | 22.37  |                     |
| 5               | 16QAM  | 1  | 0  | 22.47  | 22.57  | 22.56  | 23                  |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5               | 16QAM  | 1  | 12 | 22.44  | 22.58  | 22.46  |                     |
| 5               | 16QAM  | 1  | 24 | 22.55  | 22.56  | 22.53  |                     |
| 5               | 16QAM  | 12 | 0  | 21.32  | 21.42  | 21.34  |                     |
| 5               | 16QAM  | 12 | 7  | 21.38  | 21.47  | 21.44  | 22                  |
| 5               | 16QAM  | 12 | 13 | 21.40  | 21.43  | 21.36  |                     |
| 5               | 16QAM  | 25 | 0  | 21.22  | 21.37  | 21.31  |                     |
| 5               | 64QAM  | 1  | 0  | 21.44  | 21.55  | 21.47  | 22                  |
| 5               | 64QAM  | 1  | 12 | 21.49  | 21.51  | 21.47  |                     |
| 5               | 64QAM  | 1  | 24 | 21.36  | 21.49  | 21.45  |                     |
| 5               | 64QAM  | 12 | 0  | 20.32  | 20.31  | 20.22  | 21                  |
| 5               | 64QAM  | 12 | 7  | 20.46  | 20.48  | 20.45  |                     |
| 5               | 64QAM  | 12 | 13 | 20.40  | 20.39  | 20.37  |                     |
| 5               | 64QAM  | 25 | 0  | 20.27  | 20.28  | 20.22  | 19                  |
| 5               | 256QAM | 1  | 0  | 18.24  | 18.26  | 18.23  |                     |
| 5               | 256QAM | 1  | 12 | 18.30  | 18.34  | 18.22  |                     |
| 5               | 256QAM | 1  | 24 | 18.31  | 18.29  | 18.25  | 19                  |
| 5               | 256QAM | 12 | 0  | 18.31  | 18.36  | 18.25  |                     |
| 5               | 256QAM | 12 | 7  | 18.33  | 18.41  | 18.40  |                     |
| 5               | 256QAM | 12 | 13 | 18.29  | 18.40  | 18.39  |                     |
| 5               | 256QAM | 25 | 0  | 18.23  | 18.25  | 18.16  |                     |
| Channel         |        |    |    | 19965  | 20175  | 20385  | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1732.5 | 1753.5 |                     |
| 3               | QPSK   | 1  | 0  | 23.43  | 23.51  | 23.39  | 24                  |
| 3               | QPSK   | 1  | 8  | 23.27  | 23.39  | 23.33  |                     |
| 3               | QPSK   | 1  | 14 | 23.44  | 23.48  | 23.37  |                     |
| 3               | QPSK   | 8  | 0  | 22.44  | 22.44  | 22.38  | 23                  |
| 3               | QPSK   | 8  | 4  | 22.29  | 22.42  | 22.36  |                     |
| 3               | QPSK   | 8  | 7  | 22.38  | 22.50  | 22.36  |                     |
| 3               | QPSK   | 15 | 0  | 22.41  | 22.41  | 22.36  | 23                  |
| 3               | 16QAM  | 1  | 0  | 22.52  | 22.62  | 22.55  |                     |
| 3               | 16QAM  | 1  | 8  | 22.48  | 22.59  | 22.47  |                     |
| 3               | 16QAM  | 1  | 14 | 22.54  | 22.56  | 22.54  | 22                  |
| 3               | 16QAM  | 8  | 0  | 21.33  | 21.39  | 21.37  |                     |
| 3               | 16QAM  | 8  | 4  | 21.34  | 21.48  | 21.35  |                     |
| 3               | 16QAM  | 8  | 7  | 21.37  | 21.44  | 21.30  | 22                  |
| 3               | 16QAM  | 15 | 0  | 21.27  | 21.32  | 21.34  |                     |
| 3               | 64QAM  | 1  | 0  | 21.51  | 21.51  | 21.44  |                     |
| 3               | 64QAM  | 1  | 8  | 21.43  | 21.53  | 21.50  | 22                  |
| 3               | 64QAM  | 1  | 14 | 21.39  | 21.54  | 21.42  |                     |
| 3               | 64QAM  | 8  | 0  | 20.28  | 20.35  | 20.25  |                     |
| 3               | 64QAM  | 8  | 4  | 20.38  | 20.46  | 20.39  | 21                  |
| 3               | 64QAM  | 8  | 7  | 20.41  | 20.40  | 20.33  |                     |
| 3               | 64QAM  | 15 | 0  | 20.23  | 20.28  | 20.18  |                     |
| 3               | 256QAM | 1  | 0  | 18.23  | 18.32  | 18.17  | 19                  |
| 3               | 256QAM | 1  | 8  | 18.25  | 18.31  | 18.27  |                     |
| 3               | 256QAM | 1  | 14 | 18.29  | 18.29  | 18.33  |                     |
| 3               | 256QAM | 8  | 0  | 18.33  | 18.32  | 18.21  | 19                  |
| 3               | 256QAM | 8  | 4  | 18.41  | 18.38  | 18.36  |                     |
| 3               | 256QAM | 8  | 7  | 18.27  | 18.32  | 18.36  |                     |
| 3               | 256QAM | 15 | 0  | 18.14  | 18.30  | 18.20  |                     |
| Channel         |        |    |    | 19957  | 20175  | 20393  |                     |
| Frequency (MHz) |        |    |    | 1710.7 | 1732.5 | 1754.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.47  | 23.48  | 23.46  | 24                  |
| 1.4             | QPSK   | 1  | 3  | 23.38  | 23.47  | 23.37  |                     |
| 1.4             | QPSK   | 1  | 5  | 23.38  | 23.45  | 23.39  |                     |
| 1.4             | QPSK   | 3  | 0  | 23.45  | 23.47  | 23.38  |                     |



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|     |        |   |   |       |       |       |    |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | QPSK   | 3 | 1 | 23.39 | 23.48 | 23.40 | 23 |
| 1.4 | QPSK   | 3 | 3 | 23.37 | 23.42 | 23.39 |    |
| 1.4 | QPSK   | 6 | 0 | 22.43 | 22.52 | 22.46 |    |
| 1.4 | 16QAM  | 1 | 0 | 22.50 | 22.58 | 22.52 | 23 |
| 1.4 | 16QAM  | 1 | 3 | 22.63 | 22.64 | 22.58 |    |
| 1.4 | 16QAM  | 1 | 5 | 22.58 | 22.62 | 22.53 |    |
| 1.4 | 16QAM  | 3 | 0 | 22.46 | 22.48 | 22.39 |    |
| 1.4 | 16QAM  | 3 | 1 | 22.41 | 22.48 | 22.44 |    |
| 1.4 | 16QAM  | 3 | 3 | 22.36 | 22.42 | 22.34 | 22 |
| 1.4 | 16QAM  | 6 | 0 | 21.43 | 21.52 | 21.42 |    |
| 1.4 | 64QAM  | 1 | 0 | 21.41 | 21.51 | 21.47 |    |
| 1.4 | 64QAM  | 1 | 3 | 21.48 | 21.57 | 21.47 | 22 |
| 1.4 | 64QAM  | 1 | 5 | 21.45 | 21.55 | 21.45 |    |
| 1.4 | 64QAM  | 3 | 0 | 21.47 | 21.48 | 21.39 |    |
| 1.4 | 64QAM  | 3 | 1 | 21.40 | 21.48 | 21.41 |    |
| 1.4 | 64QAM  | 3 | 3 | 21.39 | 21.42 | 21.33 |    |
| 1.4 | 64QAM  | 6 | 0 | 20.38 | 20.47 | 20.46 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.27 | 18.33 | 18.27 | 19 |
| 1.4 | 256QAM | 1 | 3 | 18.26 | 18.31 | 18.24 |    |
| 1.4 | 256QAM | 1 | 5 | 18.29 | 18.37 | 18.34 |    |
| 1.4 | 256QAM | 3 | 0 | 18.40 | 18.41 | 18.34 |    |
| 1.4 | 256QAM | 3 | 1 | 18.38 | 18.42 | 18.35 |    |
| 1.4 | 256QAM | 3 | 3 | 18.30 | 18.36 | 18.28 | 19 |
| 1.4 | 256QAM | 6 | 0 | 18.44 | 18.47 | 18.41 |    |

| <LTE Band 4_Ant 8_Sensor ON> |            |         |           |                          |                             |                           |                        |
|------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                     | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                      |            |         |           | 20050                    | 20175                       | 20300                     |                        |
| Frequency (MHz)              |            |         |           | 1720                     | 1732.5                      | 1745                      |                        |
| 20                           | QPSK       | 1       | 0         | 20.78                    | 20.62                       | 20.74                     | 21.5                   |
| 20                           | QPSK       | 1       | 49        | 20.60                    | 20.44                       | 20.56                     |                        |
| 20                           | QPSK       | 1       | 99        | 20.75                    | 20.59                       | 20.71                     |                        |
| 20                           | QPSK       | 50      | 0         | 20.62                    | 20.46                       | 20.58                     | 21.5                   |
| 20                           | QPSK       | 50      | 24        | 20.60                    | 20.44                       | 20.56                     |                        |
| 20                           | QPSK       | 50      | 50        | 20.56                    | 20.40                       | 20.52                     |                        |
| 20                           | QPSK       | 100     | 0         | 20.61                    | 20.45                       | 20.57                     | 21.5                   |
| 20                           | 16QAM      | 1       | 0         | 20.69                    | 20.53                       | 20.65                     |                        |
| 20                           | 16QAM      | 1       | 49        | 20.66                    | 20.50                       | 20.62                     |                        |
| 20                           | 16QAM      | 1       | 99        | 20.69                    | 20.53                       | 20.65                     | 21.5                   |
| 20                           | 16QAM      | 50      | 0         | 20.64                    | 20.48                       | 20.60                     |                        |
| 20                           | 16QAM      | 50      | 24        | 20.54                    | 20.38                       | 20.50                     |                        |
| 20                           | 16QAM      | 50      | 50        | 20.60                    | 20.44                       | 20.56                     | 21.5                   |
| 20                           | 16QAM      | 100     | 0         | 20.65                    | 20.49                       | 20.61                     |                        |
| 20                           | 64QAM      | 1       | 0         | 20.74                    | 20.58                       | 20.70                     |                        |
| 20                           | 64QAM      | 1       | 49        | 20.62                    | 20.46                       | 20.58                     | 21                     |
| 20                           | 64QAM      | 1       | 99        | 20.77                    | 20.61                       | 20.73                     |                        |
| 20                           | 64QAM      | 50      | 0         | 20.17                    | 20.01                       | 20.13                     |                        |
| 20                           | 64QAM      | 50      | 24        | 20.09                    | 19.94                       | 20.05                     | 19.5                   |
| 20                           | 64QAM      | 50      | 50        | 20.12                    | 19.97                       | 20.08                     |                        |
| 20                           | 64QAM      | 100     | 0         | 20.11                    | 19.96                       | 20.07                     |                        |
| 20                           | 256QAM     | 1       | 0         | 17.95                    | 17.81                       | 17.92                     | 19.5                   |
| 20                           | 256QAM     | 1       | 49        | 17.93                    | 17.79                       | 17.90                     |                        |
| 20                           | 256QAM     | 1       | 99        | 18.11                    | 17.97                       | 18.08                     |                        |
| 20                           | 256QAM     | 50      | 0         | 18.03                    | 17.89                       | 18.00                     | 19.5                   |
| 20                           | 256QAM     | 50      | 24        | 17.96                    | 17.82                       | 17.93                     |                        |



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|                 |        |     |    |        |        |        |                        |
|-----------------|--------|-----|----|--------|--------|--------|------------------------|
| 20              | 256QAM | 50  | 50 | 18.06  | 17.92  | 18.03  |                        |
| 20              | 256QAM | 100 | 0  | 18.01  | 17.87  | 17.98  |                        |
| Channel         |        |     |    | 20025  | 20175  | 20325  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1732.5 | 1747.5 |                        |
| 15              | QPSK   | 1   | 0  | 20.73  | 20.56  | 20.69  | 21.5                   |
| 15              | QPSK   | 1   | 37 | 20.51  | 20.36  | 20.48  |                        |
| 15              | QPSK   | 1   | 74 | 20.70  | 20.50  | 20.65  |                        |
| 15              | QPSK   | 36  | 0  | 20.54  | 20.37  | 20.52  | 21.5                   |
| 15              | QPSK   | 36  | 20 | 20.51  | 20.35  | 20.49  |                        |
| 15              | QPSK   | 36  | 39 | 20.51  | 20.31  | 20.45  |                        |
| 15              | QPSK   | 75  | 0  | 20.55  | 20.40  | 20.50  | 21.5                   |
| 15              | 16QAM  | 1   | 0  | 20.64  | 20.47  | 20.59  |                        |
| 15              | 16QAM  | 1   | 37 | 20.59  | 20.43  | 20.53  |                        |
| 15              | 16QAM  | 1   | 74 | 20.61  | 20.47  | 20.57  | 21.5                   |
| 15              | 16QAM  | 36  | 0  | 20.58  | 20.39  | 20.53  |                        |
| 15              | 16QAM  | 36  | 20 | 20.49  | 20.30  | 20.45  |                        |
| 15              | 16QAM  | 36  | 39 | 20.52  | 20.39  | 20.50  | 21.5                   |
| 15              | 16QAM  | 75  | 0  | 20.59  | 20.41  | 20.53  |                        |
| 15              | 64QAM  | 1   | 0  | 20.65  | 20.52  | 20.65  |                        |
| 15              | 64QAM  | 1   | 37 | 20.55  | 20.39  | 20.52  | 21.5                   |
| 15              | 64QAM  | 1   | 74 | 20.69  | 20.53  | 20.66  |                        |
| 15              | 64QAM  | 36  | 0  | 20.09  | 19.94  | 20.06  |                        |
| 15              | 64QAM  | 36  | 20 | 20.03  | 19.88  | 20.00  | 21                     |
| 15              | 64QAM  | 36  | 39 | 20.04  | 19.90  | 20.03  |                        |
| 15              | 64QAM  | 75  | 0  | 20.04  | 19.88  | 19.99  |                        |
| 15              | 256QAM | 1   | 0  | 17.88  | 17.73  | 17.83  | 19.5                   |
| 15              | 256QAM | 1   | 37 | 17.86  | 17.72  | 17.84  |                        |
| 15              | 256QAM | 1   | 74 | 18.03  | 17.88  | 18.02  |                        |
| 15              | 256QAM | 36  | 0  | 17.94  | 17.81  | 17.91  | 19.5                   |
| 15              | 256QAM | 36  | 20 | 17.87  | 17.77  | 17.86  |                        |
| 15              | 256QAM | 36  | 39 | 17.97  | 17.84  | 17.97  |                        |
| 15              | 256QAM | 75  | 0  | 17.96  | 17.79  | 17.91  |                        |
| Channel         |        |     |    | 20000  | 20175  | 20350  |                        |
| Frequency (MHz) |        |     |    | 1715   | 1732.5 | 1750   | Tune-up limit<br>(dBm) |
| 10              | QPSK   | 1   | 0  | 20.70  | 20.57  | 20.67  | 21.5                   |
| 10              | QPSK   | 1   | 25 | 20.55  | 20.39  | 20.51  |                        |
| 10              | QPSK   | 1   | 49 | 20.69  | 20.50  | 20.62  |                        |
| 10              | QPSK   | 25  | 0  | 20.57  | 20.41  | 20.53  | 21.5                   |
| 10              | QPSK   | 25  | 12 | 20.52  | 20.37  | 20.49  |                        |
| 10              | QPSK   | 25  | 25 | 20.49  | 20.35  | 20.43  |                        |
| 10              | QPSK   | 50  | 0  | 20.56  | 20.37  | 20.52  | 21.5                   |
| 10              | 16QAM  | 1   | 0  | 20.62  | 20.44  | 20.60  |                        |
| 10              | 16QAM  | 1   | 25 | 20.57  | 20.41  | 20.55  |                        |
| 10              | 16QAM  | 1   | 49 | 20.64  | 20.45  | 20.60  | 21.5                   |
| 10              | 16QAM  | 25  | 0  | 20.59  | 20.40  | 20.55  |                        |
| 10              | 16QAM  | 25  | 12 | 20.47  | 20.33  | 20.44  |                        |
| 10              | 16QAM  | 25  | 25 | 20.55  | 20.36  | 20.50  | 21.5                   |
| 10              | 16QAM  | 50  | 0  | 20.59  | 20.40  | 20.52  |                        |
| 10              | 64QAM  | 1   | 0  | 20.65  | 20.49  | 20.64  |                        |
| 10              | 64QAM  | 1   | 25 | 20.53  | 20.39  | 20.50  | 21.5                   |
| 10              | 64QAM  | 1   | 49 | 20.68  | 20.56  | 20.67  |                        |
| 10              | 64QAM  | 25  | 0  | 20.12  | 19.93  | 20.04  |                        |
| 10              | 64QAM  | 25  | 12 | 20.03  | 19.88  | 19.99  | 21                     |
| 10              | 64QAM  | 25  | 25 | 20.04  | 19.89  | 20.02  |                        |
| 10              | 64QAM  | 50  | 0  | 20.04  | 19.91  | 19.99  |                        |
| 10              | 256QAM | 1   | 0  | 17.90  | 17.76  | 17.83  | 19.5                   |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 10              | 256QAM | 1  | 25 | 17.88  | 17.73  | 17.81  | 19.5                |
| 10              | 256QAM | 1  | 49 | 18.03  | 17.91  | 18.00  |                     |
| 10              | 256QAM | 25 | 0  | 17.97  | 17.83  | 17.91  |                     |
| 10              | 256QAM | 25 | 12 | 17.91  | 17.76  | 17.87  |                     |
| 10              | 256QAM | 25 | 25 | 17.99  | 17.86  | 17.98  |                     |
| 10              | 256QAM | 50 | 0  | 17.92  | 17.79  | 17.89  | 19.5                |
| Channel         |        |    |    | 19975  | 20175  | 20375  |                     |
| Frequency (MHz) |        |    |    | 1712.5 | 1732.5 | 1752.5 |                     |
| 5               | QPSK   | 1  | 0  | 20.73  | 20.56  | 20.65  | 21.5                |
| 5               | QPSK   | 1  | 12 | 20.54  | 20.39  | 20.51  |                     |
| 5               | QPSK   | 1  | 24 | 20.68  | 20.53  | 20.63  |                     |
| 5               | QPSK   | 12 | 0  | 20.55  | 20.40  | 20.51  | 21.5                |
| 5               | QPSK   | 12 | 7  | 20.54  | 20.39  | 20.50  |                     |
| 5               | QPSK   | 12 | 13 | 20.51  | 20.35  | 20.43  |                     |
| 5               | QPSK   | 25 | 0  | 20.56  | 20.38  | 20.49  | 21.5                |
| 5               | 16QAM  | 1  | 0  | 20.62  | 20.46  | 20.56  |                     |
| 5               | 16QAM  | 1  | 12 | 20.59  | 20.42  | 20.56  |                     |
| 5               | 16QAM  | 1  | 24 | 20.63  | 20.46  | 20.57  | 21.5                |
| 5               | 16QAM  | 12 | 0  | 20.57  | 20.41  | 20.52  |                     |
| 5               | 16QAM  | 12 | 7  | 20.47  | 20.29  | 20.43  |                     |
| 5               | 16QAM  | 12 | 13 | 20.51  | 20.36  | 20.51  | 21.5                |
| 5               | 16QAM  | 25 | 0  | 20.59  | 20.44  | 20.56  |                     |
| 5               | 64QAM  | 1  | 0  | 20.69  | 20.53  | 20.61  |                     |
| 5               | 64QAM  | 1  | 12 | 20.56  | 20.38  | 20.52  | 21                  |
| 5               | 64QAM  | 1  | 24 | 20.69  | 20.53  | 20.65  |                     |
| 5               | 64QAM  | 12 | 0  | 20.12  | 19.96  | 20.08  |                     |
| 5               | 64QAM  | 12 | 7  | 20.01  | 19.87  | 19.97  | 19.5                |
| 5               | 64QAM  | 12 | 13 | 20.04  | 19.89  | 19.99  |                     |
| 5               | 64QAM  | 25 | 0  | 20.04  | 19.88  | 19.99  |                     |
| 5               | 256QAM | 1  | 0  | 17.89  | 17.73  | 17.83  | 19.5                |
| 5               | 256QAM | 1  | 12 | 17.85  | 17.72  | 17.84  |                     |
| 5               | 256QAM | 1  | 24 | 18.03  | 17.92  | 18.00  |                     |
| 5               | 256QAM | 12 | 0  | 17.94  | 17.81  | 17.93  | 19.5                |
| 5               | 256QAM | 12 | 7  | 17.91  | 17.75  | 17.87  |                     |
| 5               | 256QAM | 12 | 13 | 17.99  | 17.85  | 17.98  |                     |
| 5               | 256QAM | 25 | 0  | 17.96  | 17.81  | 17.91  | Tune-up limit (dBm) |
| Channel         |        |    |    | 19965  | 20175  | 20385  |                     |
| Frequency (MHz) |        |    |    | 1711.5 | 1732.5 | 1753.5 |                     |
| 3               | QPSK   | 1  | 0  | 20.73  | 20.54  | 20.69  | 21.5                |
| 3               | QPSK   | 1  | 8  | 20.51  | 20.38  | 20.51  |                     |
| 3               | QPSK   | 1  | 14 | 20.70  | 20.53  | 20.63  |                     |
| 3               | QPSK   | 8  | 0  | 20.53  | 20.37  | 20.53  | 21.5                |
| 3               | QPSK   | 8  | 4  | 20.52  | 20.36  | 20.47  |                     |
| 3               | QPSK   | 8  | 7  | 20.48  | 20.33  | 20.45  |                     |
| 3               | QPSK   | 15 | 0  | 20.54  | 20.37  | 20.49  | 21.5                |
| 3               | 16QAM  | 1  | 0  | 20.63  | 20.48  | 20.57  |                     |
| 3               | 16QAM  | 1  | 8  | 20.57  | 20.42  | 20.53  |                     |
| 3               | 16QAM  | 1  | 14 | 20.60  | 20.46  | 20.57  | 21.5                |
| 3               | 16QAM  | 8  | 0  | 20.59  | 20.41  | 20.52  |                     |
| 3               | 16QAM  | 8  | 4  | 20.47  | 20.30  | 20.41  |                     |
| 3               | 16QAM  | 8  | 7  | 20.54  | 20.39  | 20.50  | 21.5                |
| 3               | 16QAM  | 15 | 0  | 20.58  | 20.40  | 20.52  |                     |
| 3               | 64QAM  | 1  | 0  | 20.68  | 20.51  | 20.64  |                     |
| 3               | 64QAM  | 1  | 8  | 20.55  | 20.37  | 20.53  | 21                  |
| 3               | 64QAM  | 1  | 14 | 20.70  | 20.54  | 20.64  |                     |
| 3               | 64QAM  | 8  | 0  | 20.11  | 19.92  | 20.06  |                     |



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|                 |        |    |    |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| 3               | 64QAM  | 8  | 4  | 20.01  | 19.88  | 19.96  |                        |
| 3               | 64QAM  | 8  | 7  | 20.06  | 19.91  | 20.00  |                        |
| 3               | 64QAM  | 15 | 0  | 20.03  | 19.90  | 20.02  |                        |
| 3               | 256QAM | 1  | 0  | 17.89  | 17.76  | 17.86  | 19.5                   |
| 3               | 256QAM | 1  | 8  | 17.84  | 17.73  | 17.82  |                        |
| 3               | 256QAM | 1  | 14 | 18.03  | 17.91  | 18.03  |                        |
| 3               | 256QAM | 8  | 0  | 17.98  | 17.80  | 17.94  | 19.5                   |
| 3               | 256QAM | 8  | 4  | 17.89  | 17.77  | 17.84  |                        |
| 3               | 256QAM | 8  | 7  | 17.98  | 17.85  | 17.95  |                        |
| 3               | 256QAM | 15 | 0  | 17.92  | 17.82  | 17.90  |                        |
| Channel         |        |    |    | 19957  | 20175  | 20393  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1732.5 | 1754.3 |                        |
| 1.4             | QPSK   | 1  | 0  | 20.64  | 20.60  | 20.62  | 21.5                   |
| 1.4             | QPSK   | 1  | 3  | 20.67  | 20.62  | 20.70  |                        |
| 1.4             | QPSK   | 1  | 5  | 20.63  | 20.56  | 20.61  |                        |
| 1.4             | QPSK   | 3  | 0  | 20.64  | 20.60  | 20.67  |                        |
| 1.4             | QPSK   | 3  | 1  | 20.62  | 20.61  | 20.62  |                        |
| 1.4             | QPSK   | 3  | 3  | 20.64  | 20.55  | 20.58  |                        |
| 1.4             | QPSK   | 6  | 0  | 20.64  | 20.60  | 20.60  | 21.5                   |
| 1.4             | 16QAM  | 1  | 0  | 20.69  | 20.68  | 20.77  | 21.5                   |
| 1.4             | 16QAM  | 1  | 3  | 20.72  | 20.70  | 20.72  |                        |
| 1.4             | 16QAM  | 1  | 5  | 20.76  | 20.69  | 20.72  |                        |
| 1.4             | 16QAM  | 3  | 0  | 20.58  | 20.51  | 20.60  |                        |
| 1.4             | 16QAM  | 3  | 1  | 20.52  | 20.52  | 20.56  |                        |
| 1.4             | 16QAM  | 3  | 3  | 20.52  | 20.51  | 20.51  |                        |
| 1.4             | 16QAM  | 6  | 0  | 20.70  | 20.61  | 20.61  | 21.5                   |
| 1.4             | 64QAM  | 1  | 0  | 20.70  | 20.63  | 20.68  | 21.5                   |
| 1.4             | 64QAM  | 1  | 3  | 20.68  | 20.64  | 20.67  |                        |
| 1.4             | 64QAM  | 1  | 5  | 20.62  | 20.61  | 20.67  |                        |
| 1.4             | 64QAM  | 3  | 0  | 20.61  | 20.56  | 20.60  |                        |
| 1.4             | 64QAM  | 3  | 1  | 20.61  | 20.57  | 20.59  |                        |
| 1.4             | 64QAM  | 3  | 3  | 20.61  | 20.53  | 20.57  |                        |
| 1.4             | 64QAM  | 6  | 0  | 20.09  | 20.06  | 20.16  | 21                     |
| 1.4             | 256QAM | 1  | 0  | 18.05  | 17.96  | 17.96  | 19.5                   |
| 1.4             | 256QAM | 1  | 3  | 18.04  | 17.96  | 18.02  |                        |
| 1.4             | 256QAM | 1  | 5  | 18.00  | 17.93  | 18.01  |                        |
| 1.4             | 256QAM | 3  | 0  | 18.08  | 17.98  | 18.06  |                        |
| 1.4             | 256QAM | 3  | 1  | 18.09  | 18.01  | 18.11  |                        |
| 1.4             | 256QAM | 3  | 3  | 17.97  | 17.94  | 17.95  |                        |
| 1.4             | 256QAM | 6  | 0  | 18.05  | 18.05  | 18.11  | 19.5                   |



| <LTE Band 5_Ant 8_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|-------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                       |            |         |           | 20450                    | 20525                       | 20600                     |                        |
| Frequency (MHz)               |            |         |           | 829                      | 836.5                       | 844                       |                        |
| 10                            | QPSK       | 1       | 0         | 24.19                    | 24.23                       | 24.11                     | 25                     |
| 10                            | QPSK       | 1       | 25        | 24.17                    | 24.15                       | 24.06                     |                        |
| 10                            | QPSK       | 1       | 49        | 24.14                    | 24.11                       | 24.09                     |                        |
| 10                            | QPSK       | 25      | 0         | 23.21                    | 23.22                       | 23.12                     | 24                     |
| 10                            | QPSK       | 25      | 12        | 23.19                    | 23.10                       | 23.03                     |                        |
| 10                            | QPSK       | 25      | 25        | 23.09                    | 23.20                       | 23.06                     |                        |
| 10                            | QPSK       | 50      | 0         | 23.16                    | 23.17                       | 23.13                     | 24                     |
| 10                            | 16QAM      | 1       | 0         | 23.38                    | 23.39                       | 23.28                     |                        |
| 10                            | 16QAM      | 1       | 25        | 23.46                    | 23.38                       | 23.25                     |                        |
| 10                            | 16QAM      | 1       | 49        | 23.44                    | 23.32                       | 23.28                     | 23                     |
| 10                            | 16QAM      | 25      | 0         | 22.27                    | 22.14                       | 22.12                     |                        |
| 10                            | 16QAM      | 25      | 12        | 22.22                    | 22.10                       | 22.02                     |                        |
| 10                            | 16QAM      | 25      | 25        | 22.08                    | 22.22                       | 22.07                     | 23                     |
| 10                            | 16QAM      | 50      | 0         | 22.20                    | 22.16                       | 22.11                     |                        |
| 10                            | 64QAM      | 1       | 0         | 22.25                    | 22.25                       | 22.18                     | 23                     |
| 10                            | 64QAM      | 1       | 25        | 22.31                    | 22.24                       | 22.15                     |                        |
| 10                            | 64QAM      | 1       | 49        | 22.34                    | 22.21                       | 22.15                     |                        |
| 10                            | 64QAM      | 25      | 0         | 21.32                    | 21.19                       | 21.06                     | 22                     |
| 10                            | 64QAM      | 25      | 12        | 21.28                    | 21.17                       | 21.07                     |                        |
| 10                            | 64QAM      | 25      | 25        | 21.12                    | 21.17                       | 21.09                     |                        |
| 10                            | 64QAM      | 50      | 0         | 21.25                    | 21.23                       | 21.06                     | 20                     |
| 10                            | 256QAM     | 1       | 0         | 19.63                    | 19.64                       | 19.56                     |                        |
| 10                            | 256QAM     | 1       | 25        | 19.58                    | 19.51                       | 19.46                     |                        |
| 10                            | 256QAM     | 1       | 49        | 19.45                    | 19.47                       | 19.36                     | 20                     |
| 10                            | 256QAM     | 25      | 0         | 19.43                    | 19.46                       | 19.34                     |                        |
| 10                            | 256QAM     | 25      | 12        | 19.36                    | 19.47                       | 19.30                     |                        |
| 10                            | 256QAM     | 25      | 25        | 19.36                    | 19.48                       | 19.26                     | 20                     |
| 10                            | 256QAM     | 50      | 0         | 19.43                    | 19.63                       | 19.34                     |                        |
| Channel                       |            |         |           | 20425                    | 20525                       | 20625                     | Tune-up limit<br>(dBm) |
| Frequency (MHz)               |            |         |           | 826.5                    | 836.5                       | 846.5                     |                        |
| 5                             | QPSK       | 1       | 0         | 24.17                    | 24.22                       | 24.08                     |                        |
| 5                             | QPSK       | 1       | 12        | 24.21                    | 24.13                       | 24.09                     | 25                     |
| 5                             | QPSK       | 1       | 24        | 24.16                    | 24.11                       | 24.10                     |                        |
| 5                             | QPSK       | 12      | 0         | 23.16                    | 23.14                       | 23.09                     | 24                     |
| 5                             | QPSK       | 12      | 7         | 23.16                    | 23.10                       | 23.01                     |                        |
| 5                             | QPSK       | 12      | 13        | 23.11                    | 23.08                       | 23.04                     |                        |
| 5                             | QPSK       | 25      | 0         | 23.13                    | 23.11                       | 23.03                     | 24                     |
| 5                             | 16QAM      | 1       | 0         | 23.36                    | 23.38                       | 23.27                     |                        |
| 5                             | 16QAM      | 1       | 12        | 23.37                    | 23.34                       | 23.28                     |                        |
| 5                             | 16QAM      | 1       | 24        | 23.43                    | 23.30                       | 23.26                     | 23                     |
| 5                             | 16QAM      | 12      | 0         | 22.13                    | 22.10                       | 22.07                     |                        |
| 5                             | 16QAM      | 12      | 7         | 22.13                    | 22.07                       | 22.00                     |                        |
| 5                             | 16QAM      | 12      | 13        | 22.06                    | 22.08                       | 22.03                     | 23                     |
| 5                             | 16QAM      | 25      | 0         | 22.13                    | 22.10                       | 22.07                     |                        |
| 5                             | 64QAM      | 1       | 0         | 22.24                    | 22.29                       | 22.19                     |                        |
| 5                             | 64QAM      | 1       | 12        | 22.29                    | 22.26                       | 22.20                     | 23                     |
| 5                             | 64QAM      | 1       | 24        | 22.33                    | 22.19                       | 22.15                     |                        |
| 5                             | 64QAM      | 12      | 0         | 21.23                    | 21.10                       | 21.10                     | 22                     |
| 5                             | 64QAM      | 12      | 7         | 21.23                    | 21.10                       | 21.12                     |                        |
| 5                             | 64QAM      | 12      | 13        | 21.17                    | 21.16                       | 21.06                     |                        |
| 5                             | 64QAM      | 25      | 0         | 21.21                    | 21.15                       | 21.15                     |                        |



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|                 |        |    |    |       |       |       |                     |
|-----------------|--------|----|----|-------|-------|-------|---------------------|
| 5               | 256QAM | 1  | 0  | 19.57 | 19.62 | 19.55 | 20                  |
| 5               | 256QAM | 1  | 12 | 19.50 | 19.50 | 19.37 |                     |
| 5               | 256QAM | 1  | 24 | 19.38 | 19.38 | 19.26 |                     |
| 5               | 256QAM | 12 | 0  | 19.33 | 19.42 | 19.30 | 20                  |
| 5               | 256QAM | 12 | 7  | 19.30 | 19.39 | 19.24 |                     |
| 5               | 256QAM | 12 | 13 | 19.29 | 19.44 | 19.18 |                     |
| 5               | 256QAM | 25 | 0  | 19.37 | 19.61 | 19.33 |                     |
| Channel         |        |    |    | 20415 | 20525 | 20635 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 825.5 | 836.5 | 847.5 |                     |
| 3               | QPSK   | 1  | 0  | 24.12 | 24.12 | 24.03 | 25                  |
| 3               | QPSK   | 1  | 8  | 24.15 | 24.07 | 24.04 |                     |
| 3               | QPSK   | 1  | 14 | 24.21 | 24.06 | 24.05 |                     |
| 3               | QPSK   | 8  | 0  | 23.12 | 23.09 | 23.03 | 24                  |
| 3               | QPSK   | 8  | 4  | 23.08 | 23.07 | 23.01 |                     |
| 3               | QPSK   | 8  | 7  | 23.15 | 23.08 | 23.01 |                     |
| 3               | QPSK   | 15 | 0  | 23.13 | 23.10 | 23.02 |                     |
| 3               | 16QAM  | 1  | 0  | 23.31 | 23.32 | 23.25 | 24                  |
| 3               | 16QAM  | 1  | 8  | 23.33 | 23.29 | 23.22 |                     |
| 3               | 16QAM  | 1  | 14 | 23.37 | 23.26 | 23.20 |                     |
| 3               | 16QAM  | 8  | 0  | 22.19 | 22.14 | 22.08 | 23                  |
| 3               | 16QAM  | 8  | 4  | 22.14 | 22.13 | 22.06 |                     |
| 3               | 16QAM  | 8  | 7  | 22.20 | 22.14 | 22.08 |                     |
| 3               | 16QAM  | 15 | 0  | 22.15 | 22.12 | 22.06 |                     |
| 3               | 64QAM  | 1  | 0  | 22.22 | 22.22 | 22.13 | 23                  |
| 3               | 64QAM  | 1  | 8  | 22.26 | 22.20 | 22.11 |                     |
| 3               | 64QAM  | 1  | 14 | 22.26 | 22.17 | 22.11 |                     |
| 3               | 64QAM  | 8  | 0  | 21.23 | 21.17 | 21.02 | 22                  |
| 3               | 64QAM  | 8  | 4  | 21.18 | 21.08 | 21.02 |                     |
| 3               | 64QAM  | 8  | 7  | 21.28 | 21.10 | 21.04 |                     |
| 3               | 64QAM  | 15 | 0  | 21.20 | 21.07 | 21.00 |                     |
| 3               | 256QAM | 1  | 0  | 19.58 | 19.58 | 19.51 | 20                  |
| 3               | 256QAM | 1  | 8  | 19.57 | 19.48 | 19.37 |                     |
| 3               | 256QAM | 1  | 14 | 19.38 | 19.46 | 19.28 |                     |
| 3               | 256QAM | 8  | 0  | 19.36 | 19.41 | 19.33 | 20                  |
| 3               | 256QAM | 8  | 4  | 19.26 | 19.44 | 19.29 |                     |
| 3               | 256QAM | 8  | 7  | 19.34 | 19.38 | 19.20 |                     |
| 3               | 256QAM | 15 | 0  | 19.39 | 19.53 | 19.27 |                     |
| Channel         |        |    |    | 20407 | 20525 | 20643 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 824.7 | 836.5 | 848.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 24.08 | 24.08 | 24.02 | 25                  |
| 1.4             | QPSK   | 1  | 3  | 24.13 | 24.08 | 24.04 |                     |
| 1.4             | QPSK   | 1  | 5  | 24.11 | 24.05 | 24.00 |                     |
| 1.4             | QPSK   | 3  | 0  | 24.11 | 24.09 | 24.05 |                     |
| 1.4             | QPSK   | 3  | 1  | 24.12 | 24.09 | 24.05 |                     |
| 1.4             | QPSK   | 3  | 3  | 24.16 | 24.07 | 24.07 |                     |
| 1.4             | QPSK   | 6  | 0  | 23.10 | 23.09 | 23.04 | 24                  |
| 1.4             | 16QAM  | 1  | 0  | 23.30 | 23.34 | 23.23 | 24                  |
| 1.4             | 16QAM  | 1  | 3  | 23.38 | 23.32 | 23.23 |                     |
| 1.4             | 16QAM  | 1  | 5  | 23.33 | 23.29 | 23.18 |                     |
| 1.4             | 16QAM  | 3  | 0  | 23.14 | 23.13 | 23.07 |                     |
| 1.4             | 16QAM  | 3  | 1  | 23.12 | 23.13 | 23.08 |                     |
| 1.4             | 16QAM  | 3  | 3  | 23.15 | 23.09 | 23.06 |                     |
| 1.4             | 16QAM  | 6  | 0  | 22.14 | 22.14 | 22.08 | 23                  |
| 1.4             | 64QAM  | 1  | 0  | 22.20 | 22.21 | 22.17 | 23                  |
| 1.4             | 64QAM  | 1  | 3  | 22.22 | 22.22 | 22.16 |                     |
| 1.4             | 64QAM  | 1  | 5  | 22.23 | 22.20 | 22.10 |                     |



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|     |        |   |   |       |       |       |    |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | 64QAM  | 3 | 0 | 22.19 | 22.18 | 22.12 |    |
| 1.4 | 64QAM  | 3 | 1 | 22.17 | 22.18 | 22.12 |    |
| 1.4 | 64QAM  | 3 | 3 | 22.21 | 22.15 | 22.11 |    |
| 1.4 | 64QAM  | 6 | 0 | 21.15 | 21.04 | 20.97 | 22 |
| 1.4 | 256QAM | 1 | 0 | 19.58 | 19.58 | 19.55 | 20 |
| 1.4 | 256QAM | 1 | 3 | 19.57 | 19.45 | 19.38 |    |
| 1.4 | 256QAM | 1 | 5 | 19.43 | 19.42 | 19.34 |    |
| 1.4 | 256QAM | 3 | 0 | 19.35 | 19.44 | 19.33 |    |
| 1.4 | 256QAM | 3 | 1 | 19.28 | 19.37 | 19.29 |    |
| 1.4 | 256QAM | 3 | 3 | 19.33 | 19.46 | 19.25 | 20 |
| 1.4 | 256QAM | 6 | 0 | 19.35 | 19.60 | 19.28 |    |

| <LTE Band 5_Ant 8_Sensor ON> |            |         |           |                       |                          |                        |                     |
|------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| BW [MHz]                     | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                      |            |         |           | 20450                 | 20525                    | 20600                  |                     |
| Frequency (MHz)              |            |         |           | 829                   | 836.5                    | 844                    |                     |
| 10                           | QPSK       | 1       | 0         | 23.31                 | 23.34                    | 23.13                  | 24.5                |
| 10                           | QPSK       | 1       | 25        | 23.33                 | 23.29                    | 23.27                  |                     |
| 10                           | QPSK       | 1       | 49        | 23.28                 | 23.22                    | 23.18                  |                     |
| 10                           | QPSK       | 25      | 0         | 22.26                 | 22.39                    | 22.19                  | 23.5                |
| 10                           | QPSK       | 25      | 12        | 22.28                 | 22.17                    | 22.22                  |                     |
| 10                           | QPSK       | 25      | 25        | 22.16                 | 22.38                    | 22.19                  |                     |
| 10                           | QPSK       | 50      | 0         | 22.27                 | 22.27                    | 22.17                  | 23.5                |
| 10                           | 16QAM      | 1       | 0         | 22.32                 | 22.70                    | 22.39                  |                     |
| 10                           | 16QAM      | 1       | 25        | 22.70                 | 22.65                    | 22.26                  |                     |
| 10                           | 16QAM      | 1       | 49        | 22.55                 | 22.30                    | 22.00                  | 22.5                |
| 10                           | 16QAM      | 25      | 0         | 21.33                 | 21.15                    | 21.13                  |                     |
| 10                           | 16QAM      | 25      | 12        | 21.20                 | 21.12                    | 21.00                  |                     |
| 10                           | 16QAM      | 25      | 25        | 21.08                 | 21.20                    | 21.09                  | 22.5                |
| 10                           | 16QAM      | 50      | 0         | 21.18                 | 21.22                    | 21.14                  |                     |
| 10                           | 64QAM      | 1       | 0         | 21.60                 | 21.44                    | 21.27                  |                     |
| 10                           | 64QAM      | 1       | 25        | 20.94                 | 21.52                    | 21.41                  | 22.5                |
| 10                           | 64QAM      | 1       | 49        | 21.38                 | 21.00                    | 21.45                  |                     |
| 10                           | 64QAM      | 25      | 0         | 20.44                 | 20.30                    | 20.27                  | 21.5                |
| 10                           | 64QAM      | 25      | 12        | 20.37                 | 20.22                    | 20.19                  |                     |
| 10                           | 64QAM      | 25      | 25        | 20.17                 | 20.41                    | 20.31                  |                     |
| 10                           | 64QAM      | 50      | 0         | 20.40                 | 20.35                    | 20.28                  | 19.5                |
| 10                           | 256QAM     | 1       | 0         | 18.40                 | 18.45                    | 18.39                  |                     |
| 10                           | 256QAM     | 1       | 25        | 18.41                 | 18.41                    | 18.41                  |                     |
| 10                           | 256QAM     | 1       | 49        | 18.45                 | 18.44                    | 18.45                  | 19.5                |
| 10                           | 256QAM     | 25      | 0         | 18.37                 | 18.31                    | 18.34                  |                     |
| 10                           | 256QAM     | 25      | 12        | 18.32                 | 18.28                    | 18.28                  |                     |
| 10                           | 256QAM     | 25      | 25        | 18.48                 | 18.40                    | 18.44                  | 19.5                |
| 10                           | 256QAM     | 50      | 0         | 18.45                 | 18.37                    | 18.44                  |                     |
| Channel                      |            |         |           | 20425                 | 20525                    | 20625                  | Tune-up limit (dBm) |
| Frequency (MHz)              |            |         |           | 826.5                 | 836.5                    | 846.5                  |                     |
| 5                            | QPSK       | 1       | 0         | 23.19                 | 23.21                    | 23.04                  | 24.5                |
| 5                            | QPSK       | 1       | 12        | 23.14                 | 23.27                    | 23.18                  |                     |
| 5                            | QPSK       | 1       | 24        | 23.12                 | 23.05                    | 23.17                  |                     |
| 5                            | QPSK       | 12      | 0         | 22.26                 | 22.07                    | 22.03                  | 23.5                |
| 5                            | QPSK       | 12      | 7         | 22.10                 | 22.07                    | 22.02                  |                     |
| 5                            | QPSK       | 12      | 13        | 22.00                 | 22.30                    | 21.99                  |                     |
| 5                            | QPSK       | 25      | 0         | 22.21                 | 22.16                    | 21.97                  | 23.5                |
| 5                            | 16QAM      | 1       | 0         | 22.22                 | 22.67                    | 22.28                  |                     |
| 5                            | 16QAM      | 1       | 12        | 22.61                 | 22.56                    | 22.17                  | 23.5                |



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|                 |        |    |    |       |       |       |                     |
|-----------------|--------|----|----|-------|-------|-------|---------------------|
| 5               | 16QAM  | 1  | 24 | 22.53 | 22.12 | 21.98 | 22.5                |
| 5               | 16QAM  | 12 | 0  | 21.24 | 21.08 | 21.08 |                     |
| 5               | 16QAM  | 12 | 7  | 21.17 | 20.98 | 20.94 |                     |
| 5               | 16QAM  | 12 | 13 | 21.05 | 21.14 | 20.92 |                     |
| 5               | 16QAM  | 25 | 0  | 21.13 | 21.05 | 20.95 |                     |
| 5               | 64QAM  | 1  | 0  | 21.46 | 21.27 | 21.13 | 22.5                |
| 5               | 64QAM  | 1  | 12 | 20.92 | 21.37 | 21.21 |                     |
| 5               | 64QAM  | 1  | 24 | 21.26 | 20.92 | 21.26 |                     |
| 5               | 64QAM  | 12 | 0  | 20.36 | 20.26 | 20.18 | 21.5                |
| 5               | 64QAM  | 12 | 7  | 20.27 | 20.06 | 20.15 |                     |
| 5               | 64QAM  | 12 | 13 | 20.12 | 20.24 | 20.18 |                     |
| 5               | 64QAM  | 25 | 0  | 20.26 | 20.18 | 20.23 |                     |
| 5               | 256QAM | 1  | 0  | 18.25 | 18.38 | 18.25 |                     |
| 5               | 256QAM | 1  | 12 | 18.28 | 18.22 | 18.39 | 19.5                |
| 5               | 256QAM | 1  | 24 | 18.31 | 18.35 | 18.42 |                     |
| 5               | 256QAM | 12 | 0  | 18.25 | 18.11 | 18.27 | 19.5                |
| 5               | 256QAM | 12 | 7  | 18.23 | 18.22 | 18.09 |                     |
| 5               | 256QAM | 12 | 13 | 18.33 | 18.33 | 18.41 |                     |
| 5               | 256QAM | 25 | 0  | 18.27 | 18.34 | 18.37 |                     |
| Channel         |        |    |    | 20415 | 20525 | 20635 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 825.5 | 836.5 | 847.5 |                     |
| 3               | QPSK   | 1  | 0  | 23.19 | 23.30 | 23.10 | 24.5                |
| 3               | QPSK   | 1  | 8  | 23.18 | 23.17 | 23.16 |                     |
| 3               | QPSK   | 1  | 14 | 23.25 | 23.10 | 23.13 |                     |
| 3               | QPSK   | 8  | 0  | 22.11 | 22.22 | 22.03 | 23.5                |
| 3               | QPSK   | 8  | 4  | 22.23 | 22.14 | 22.14 |                     |
| 3               | QPSK   | 8  | 7  | 22.14 | 22.28 | 22.12 |                     |
| 3               | QPSK   | 15 | 0  | 22.18 | 22.18 | 22.01 |                     |
| 3               | 16QAM  | 1  | 0  | 22.25 | 22.56 | 22.38 |                     |
| 3               | 16QAM  | 1  | 8  | 22.62 | 22.52 | 22.22 | 23.5                |
| 3               | 16QAM  | 1  | 14 | 22.45 | 22.11 | 21.99 |                     |
| 3               | 16QAM  | 8  | 0  | 21.19 | 21.07 | 20.97 |                     |
| 3               | 16QAM  | 8  | 4  | 21.10 | 20.94 | 20.88 | 22.5                |
| 3               | 16QAM  | 8  | 7  | 20.90 | 21.07 | 21.01 |                     |
| 3               | 16QAM  | 15 | 0  | 21.18 | 21.02 | 21.13 |                     |
| 3               | 64QAM  | 1  | 0  | 21.43 | 21.37 | 21.25 |                     |
| 3               | 64QAM  | 1  | 8  | 20.74 | 21.46 | 21.30 |                     |
| 3               | 64QAM  | 1  | 14 | 21.38 | 21.00 | 21.33 | 21.5                |
| 3               | 64QAM  | 8  | 0  | 20.27 | 20.16 | 20.19 |                     |
| 3               | 64QAM  | 8  | 4  | 20.33 | 20.06 | 20.00 |                     |
| 3               | 64QAM  | 8  | 7  | 20.04 | 20.37 | 20.31 |                     |
| 3               | 64QAM  | 15 | 0  | 20.37 | 20.23 | 20.22 |                     |
| 3               | 256QAM | 1  | 0  | 18.20 | 18.28 | 18.27 | 19.5                |
| 3               | 256QAM | 1  | 8  | 18.36 | 18.21 | 18.26 |                     |
| 3               | 256QAM | 1  | 14 | 18.26 | 18.41 | 18.30 |                     |
| 3               | 256QAM | 8  | 0  | 18.18 | 18.28 | 18.23 | 19.5                |
| 3               | 256QAM | 8  | 4  | 18.30 | 18.14 | 18.19 |                     |
| 3               | 256QAM | 8  | 7  | 18.41 | 18.39 | 18.34 |                     |
| 3               | 256QAM | 15 | 0  | 18.33 | 18.23 | 18.39 |                     |
| Channel         |        |    |    | 20407 | 20525 | 20643 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 824.7 | 836.5 | 848.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.10 | 23.24 | 22.98 | 24.5                |
| 1.4             | QPSK   | 1  | 3  | 23.29 | 23.02 | 23.16 |                     |
| 1.4             | QPSK   | 1  | 5  | 23.05 | 23.15 | 22.99 |                     |
| 1.4             | QPSK   | 3  | 0  | 23.11 | 23.18 | 23.06 |                     |
| 1.4             | QPSK   | 3  | 1  | 23.17 | 23.05 | 23.19 |                     |



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|     |        |   |   |       |       |       |      |
|-----|--------|---|---|-------|-------|-------|------|
| 1.4 | QPSK   | 3 | 3 | 23.13 | 23.08 | 23.04 |      |
| 1.4 | QPSK   | 6 | 0 | 22.16 | 22.08 | 22.21 | 23.5 |
| 1.4 | 16QAM  | 1 | 0 | 22.09 | 22.33 | 22.41 | 23.5 |
| 1.4 | 16QAM  | 1 | 3 | 22.47 | 22.56 | 22.14 |      |
| 1.4 | 16QAM  | 1 | 5 | 22.52 | 22.19 | 22.52 |      |
| 1.4 | 16QAM  | 3 | 0 | 22.15 | 22.13 | 22.16 |      |
| 1.4 | 16QAM  | 3 | 1 | 22.20 | 22.18 | 22.13 |      |
| 1.4 | 16QAM  | 3 | 3 | 22.16 | 22.15 | 22.10 |      |
| 1.4 | 16QAM  | 6 | 0 | 21.21 | 21.20 | 20.99 | 22.5 |
| 1.4 | 64QAM  | 1 | 0 | 21.36 | 21.20 | 20.88 | 22.5 |
| 1.4 | 64QAM  | 1 | 3 | 21.07 | 20.95 | 21.05 |      |
| 1.4 | 64QAM  | 1 | 5 | 21.17 | 21.17 | 20.94 |      |
| 1.4 | 64QAM  | 3 | 0 | 21.12 | 21.12 | 21.13 |      |
| 1.4 | 64QAM  | 3 | 1 | 21.21 | 21.33 | 21.29 |      |
| 1.4 | 64QAM  | 3 | 3 | 21.14 | 21.36 | 21.06 |      |
| 1.4 | 64QAM  | 6 | 0 | 20.16 | 20.10 | 20.11 | 21.5 |
| 1.4 | 256QAM | 1 | 0 | 18.42 | 18.41 | 18.35 | 19.5 |
| 1.4 | 256QAM | 1 | 3 | 18.45 | 18.43 | 18.47 |      |
| 1.4 | 256QAM | 1 | 5 | 18.49 | 18.45 | 18.50 |      |
| 1.4 | 256QAM | 3 | 0 | 18.46 | 18.38 | 18.41 |      |
| 1.4 | 256QAM | 3 | 1 | 18.44 | 18.40 | 18.49 |      |
| 1.4 | 256QAM | 3 | 3 | 18.40 | 18.39 | 18.45 |      |
| 1.4 | 256QAM | 6 | 0 | 18.29 | 18.28 | 18.32 | 19.5 |

| <LTE Band 13_Ant 8_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|--------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                       | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                        |            |         |           | 23230                    |                             |                           |                        |
| Frequency (MHz)                |            |         |           | 782                      |                             |                           |                        |
| 10                             | QPSK       | 1       | 0         |                          | 23.65                       |                           | 25                     |
| 10                             | QPSK       | 1       | 25        |                          | 23.58                       |                           |                        |
| 10                             | QPSK       | 1       | 49        |                          | 23.60                       |                           |                        |
| 10                             | QPSK       | 25      | 0         |                          | 22.54                       |                           | 24                     |
| 10                             | QPSK       | 25      | 12        |                          | 22.52                       |                           |                        |
| 10                             | QPSK       | 25      | 25        |                          | 22.51                       |                           |                        |
| 10                             | QPSK       | 50      | 0         |                          | 22.51                       |                           |                        |
| 10                             | 16QAM      | 1       | 0         |                          | 22.79                       |                           | 24                     |
| 10                             | 16QAM      | 1       | 25        |                          | 22.79                       |                           |                        |
| 10                             | 16QAM      | 1       | 49        |                          | 22.80                       |                           |                        |
| 10                             | 16QAM      | 25      | 0         |                          | 21.53                       |                           | 23                     |
| 10                             | 16QAM      | 25      | 12        |                          | 21.61                       |                           |                        |
| 10                             | 16QAM      | 25      | 25        |                          | 21.62                       |                           |                        |
| 10                             | 16QAM      | 50      | 0         |                          | 21.59                       |                           |                        |
| 10                             | 64QAM      | 1       | 0         |                          | 21.76                       |                           | 23                     |
| 10                             | 64QAM      | 1       | 25        |                          | 21.76                       |                           |                        |
| 10                             | 64QAM      | 1       | 49        |                          | 21.79                       |                           |                        |
| 10                             | 64QAM      | 25      | 0         |                          | 20.51                       |                           | 22                     |
| 10                             | 64QAM      | 25      | 12        |                          | 20.63                       |                           |                        |
| 10                             | 64QAM      | 25      | 25        |                          | 20.60                       |                           |                        |
| 10                             | 64QAM      | 50      | 0         |                          | 20.56                       |                           |                        |
| 10                             | 256QAM     | 1       | 0         |                          | 18.98                       |                           | 20                     |
| 10                             | 256QAM     | 1       | 25        |                          | 18.88                       |                           |                        |
| 10                             | 256QAM     | 1       | 49        |                          | 18.82                       |                           |                        |
| 10                             | 256QAM     | 25      | 0         |                          | 18.87                       |                           | 20                     |
| 10                             | 256QAM     | 25      | 12        |                          | 18.82                       |                           |                        |
| 10                             | 256QAM     | 25      | 25        |                          | 18.83                       |                           |                        |



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|                 |        |    |    |       |       |       |                        |
|-----------------|--------|----|----|-------|-------|-------|------------------------|
| 10              | 256QAM | 50 | 0  |       | 19.05 |       |                        |
| Channel         |        |    |    | 23205 | 23230 | 23255 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 779.5 | 782   | 784.5 |                        |
| 5               | QPSK   | 1  | 0  | 23.64 | 23.57 | 23.58 | 25                     |
| 5               | QPSK   | 1  | 12 | 23.59 | 23.57 | 23.53 |                        |
| 5               | QPSK   | 1  | 24 | 23.61 | 23.53 | 23.61 |                        |
| 5               | QPSK   | 12 | 0  | 22.43 | 22.46 | 22.43 | 24                     |
| 5               | QPSK   | 12 | 7  | 22.54 | 22.51 | 22.49 |                        |
| 5               | QPSK   | 12 | 13 | 22.54 | 22.52 | 22.47 |                        |
| 5               | QPSK   | 25 | 0  | 22.53 | 22.51 | 22.46 |                        |
| 5               | 16QAM  | 1  | 0  | 22.79 | 22.80 | 22.78 | 24                     |
| 5               | 16QAM  | 1  | 12 | 22.81 | 22.79 | 22.73 |                        |
| 5               | 16QAM  | 1  | 24 | 22.84 | 22.75 | 22.81 |                        |
| 5               | 16QAM  | 12 | 0  | 21.52 | 21.55 | 21.51 | 23                     |
| 5               | 16QAM  | 12 | 7  | 21.63 | 21.58 | 21.56 |                        |
| 5               | 16QAM  | 12 | 13 | 21.58 | 21.58 | 21.52 |                        |
| 5               | 16QAM  | 25 | 0  | 21.63 | 21.61 | 21.55 |                        |
| 5               | 64QAM  | 1  | 0  | 21.81 | 21.77 | 21.78 | 23                     |
| 5               | 64QAM  | 1  | 12 | 21.78 | 21.78 | 21.72 |                        |
| 5               | 64QAM  | 1  | 24 | 21.79 | 21.72 | 21.78 |                        |
| 5               | 64QAM  | 12 | 0  | 20.55 | 20.54 | 20.50 | 22                     |
| 5               | 64QAM  | 12 | 7  | 20.63 | 20.64 | 20.59 |                        |
| 5               | 64QAM  | 12 | 13 | 20.61 | 20.62 | 20.58 |                        |
| 5               | 64QAM  | 25 | 0  | 20.60 | 20.61 | 20.52 |                        |
| 5               | 256QAM | 1  | 0  | 18.94 | 18.89 | 18.86 | 20                     |
| 5               | 256QAM | 1  | 12 | 18.82 | 18.80 | 18.76 |                        |
| 5               | 256QAM | 1  | 24 | 18.72 | 18.75 | 18.72 |                        |
| 5               | 256QAM | 12 | 0  | 18.80 | 18.78 | 18.81 | 20                     |
| 5               | 256QAM | 12 | 7  | 18.80 | 18.72 | 18.75 |                        |
| 5               | 256QAM | 12 | 13 | 18.80 | 18.72 | 18.69 |                        |
| 5               | 256QAM | 25 | 0  | 19.04 | 18.93 | 18.92 |                        |

| <LTE Band 66_Ant 3_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|--------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                       | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                        |            |         |           | 132072                   | 132322                      | 132572                    |                        |
| Frequency (MHz)                |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20                             | QPSK       | 1       | 0         | 23.37                    | 23.42                       | 23.41                     | 24                     |
| 20                             | QPSK       | 1       | 49        | 23.34                    | 23.35                       | 23.38                     |                        |
| 20                             | QPSK       | 1       | 99        | 23.27                    | 23.31                       | 23.37                     |                        |
| 20                             | QPSK       | 50      | 0         | 22.48                    | 22.52                       | 22.47                     | 23                     |
| 20                             | QPSK       | 50      | 24        | 22.22                    | 22.29                       | 22.31                     |                        |
| 20                             | QPSK       | 50      | 50        | 22.26                    | 22.20                       | 22.19                     |                        |
| 20                             | QPSK       | 100     | 0         | 22.31                    | 22.36                       | 22.33                     |                        |
| 20                             | 16QAM      | 1       | 0         | 22.40                    | 22.67                       | 22.75                     | 23                     |
| 20                             | 16QAM      | 1       | 49        | 22.50                    | 22.71                       | 22.73                     |                        |
| 20                             | 16QAM      | 1       | 99        | 22.44                    | 22.67                       | 22.67                     |                        |
| 20                             | 16QAM      | 50      | 0         | 21.49                    | 21.28                       | 21.29                     | 22                     |
| 20                             | 16QAM      | 50      | 24        | 21.24                    | 21.43                       | 21.49                     |                        |
| 20                             | 16QAM      | 50      | 50        | 21.24                    | 21.20                       | 21.20                     |                        |
| 20                             | 16QAM      | 100     | 0         | 21.37                    | 21.22                       | 21.20                     |                        |
| 20                             | 64QAM      | 1       | 0         | 21.25                    | 21.52                       | 21.63                     | 22                     |
| 20                             | 64QAM      | 1       | 49        | 21.38                    | 21.58                       | 21.65                     |                        |
| 20                             | 64QAM      | 1       | 99        | 21.28                    | 21.57                       | 21.59                     |                        |
| 20                             | 64QAM      | 50      | 0         | 20.47                    | 20.25                       | 20.29                     | 21                     |
| 20                             | 64QAM      | 50      | 24        | 20.22                    | 20.41                       | 20.50                     |                        |



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|                 |        |     |    |        |        |        |                        |
|-----------------|--------|-----|----|--------|--------|--------|------------------------|
| 20              | 64QAM  | 50  | 50 | 20.26  | 20.18  | 20.17  |                        |
| 20              | 64QAM  | 100 | 0  | 20.33  | 20.23  | 20.22  |                        |
| 20              | 256QAM | 1   | 0  | 18.05  | 18.13  | 18.08  |                        |
| 20              | 256QAM | 1   | 49 | 18.09  | 18.22  | 18.17  | 19                     |
| 20              | 256QAM | 1   | 99 | 18.26  | 18.34  | 18.24  |                        |
| 20              | 256QAM | 50  | 0  | 17.84  | 17.90  | 17.80  |                        |
| 20              | 256QAM | 50  | 24 | 17.97  | 18.06  | 17.94  | 19                     |
| 20              | 256QAM | 50  | 50 | 17.75  | 17.84  | 17.75  |                        |
| 20              | 256QAM | 100 | 0  | 17.74  | 17.89  | 17.76  |                        |
| Channel         |        |     |    | 132047 | 132322 | 132597 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1745   | 1772.5 |                        |
| 15              | QPSK   | 1   | 0  | 23.05  | 23.26  | 23.27  | 24                     |
| 15              | QPSK   | 1   | 37 | 23.21  | 23.26  | 23.32  |                        |
| 15              | QPSK   | 1   | 74 | 23.15  | 23.16  | 23.23  |                        |
| 15              | QPSK   | 36  | 0  | 22.33  | 22.30  | 22.28  | 23                     |
| 15              | QPSK   | 36  | 20 | 22.23  | 22.32  | 22.36  |                        |
| 15              | QPSK   | 36  | 39 | 22.20  | 22.16  | 22.18  |                        |
| 15              | QPSK   | 75  | 0  | 22.32  | 22.24  | 22.26  | 23                     |
| 15              | 16QAM  | 1   | 0  | 22.48  | 22.60  | 22.64  |                        |
| 15              | 16QAM  | 1   | 37 | 22.55  | 22.55  | 22.63  |                        |
| 15              | 16QAM  | 1   | 74 | 22.53  | 22.56  | 22.57  | 22                     |
| 15              | 16QAM  | 36  | 0  | 21.34  | 21.31  | 21.30  |                        |
| 15              | 16QAM  | 36  | 20 | 21.25  | 21.34  | 21.35  |                        |
| 15              | 16QAM  | 36  | 39 | 21.23  | 21.21  | 21.18  | 22                     |
| 15              | 16QAM  | 75  | 0  | 21.34  | 21.25  | 21.24  |                        |
| 15              | 64QAM  | 1   | 0  | 21.35  | 21.50  | 21.54  |                        |
| 15              | 64QAM  | 1   | 37 | 21.46  | 21.49  | 21.55  | 21                     |
| 15              | 64QAM  | 1   | 74 | 21.42  | 21.43  | 21.49  |                        |
| 15              | 64QAM  | 36  | 0  | 20.36  | 20.31  | 20.31  |                        |
| 15              | 64QAM  | 36  | 20 | 20.24  | 20.34  | 20.35  | 19                     |
| 15              | 64QAM  | 36  | 39 | 20.18  | 20.16  | 20.18  |                        |
| 15              | 64QAM  | 75  | 0  | 20.28  | 20.21  | 20.21  |                        |
| 15              | 256QAM | 1   | 0  | 18.02  | 18.12  | 18.01  | 19                     |
| 15              | 256QAM | 1   | 37 | 18.04  | 18.19  | 18.12  |                        |
| 15              | 256QAM | 1   | 74 | 18.18  | 18.24  | 18.21  |                        |
| 15              | 256QAM | 36  | 0  | 17.82  | 17.81  | 17.70  | 19                     |
| 15              | 256QAM | 36  | 20 | 17.89  | 17.99  | 17.85  |                        |
| 15              | 256QAM | 36  | 39 | 17.72  | 17.77  | 17.69  |                        |
| 15              | 256QAM | 75  | 0  | 17.67  | 17.82  | 17.66  | Tune-up limit<br>(dBm) |
| Channel         |        |     |    | 132022 | 132322 | 132622 |                        |
| Frequency (MHz) |        |     |    | 1715   | 1745   | 1775   | 24                     |
| 10              | QPSK   | 1   | 0  | 23.12  | 23.29  | 23.33  |                        |
| 10              | QPSK   | 1   | 25 | 23.15  | 23.25  | 23.26  |                        |
| 10              | QPSK   | 1   | 49 | 23.21  | 23.20  | 23.26  | 23                     |
| 10              | QPSK   | 25  | 0  | 22.39  | 22.34  | 22.57  |                        |
| 10              | QPSK   | 25  | 12 | 22.24  | 22.36  | 22.41  |                        |
| 10              | QPSK   | 25  | 25 | 22.12  | 22.19  | 22.18  | 23                     |
| 10              | QPSK   | 50  | 0  | 22.31  | 22.29  | 22.42  |                        |
| 10              | 16QAM  | 1   | 0  | 22.48  | 22.60  | 22.63  |                        |
| 10              | 16QAM  | 1   | 25 | 22.52  | 22.56  | 22.59  | 22                     |
| 10              | 16QAM  | 1   | 49 | 22.57  | 22.58  | 22.62  |                        |
| 10              | 16QAM  | 25  | 0  | 21.39  | 21.33  | 21.56  |                        |
| 10              | 16QAM  | 25  | 12 | 21.25  | 21.34  | 21.41  | 22                     |
| 10              | 16QAM  | 25  | 25 | 21.10  | 21.18  | 21.18  |                        |
| 10              | 16QAM  | 50  | 0  | 21.31  | 21.27  | 21.43  |                        |
| 10              | 64QAM  | 1   | 0  | 21.35  | 21.47  | 21.53  | 22                     |



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|                 |        |    |    |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| 10              | 64QAM  | 1  | 25 | 21.38  | 21.43  | 21.48  |                        |
| 10              | 64QAM  | 1  | 49 | 21.45  | 21.49  | 21.51  |                        |
| 10              | 64QAM  | 25 | 0  | 20.36  | 20.32  | 20.54  |                        |
| 10              | 64QAM  | 25 | 12 | 20.21  | 20.32  | 20.39  | 21                     |
| 10              | 64QAM  | 25 | 25 | 20.09  | 20.19  | 20.17  |                        |
| 10              | 64QAM  | 50 | 0  | 20.29  | 20.26  | 20.40  |                        |
| 10              | 256QAM | 1  | 0  | 17.98  | 18.12  | 18.04  | 19                     |
| 10              | 256QAM | 1  | 25 | 18.01  | 18.17  | 18.12  |                        |
| 10              | 256QAM | 1  | 49 | 18.17  | 18.32  | 18.16  |                        |
| 10              | 256QAM | 25 | 0  | 17.83  | 17.86  | 17.78  | 19                     |
| 10              | 256QAM | 25 | 12 | 17.95  | 18.01  | 17.88  |                        |
| 10              | 256QAM | 25 | 25 | 17.71  | 17.83  | 17.68  |                        |
| 10              | 256QAM | 50 | 0  | 17.67  | 17.85  | 17.70  |                        |
| Channel         |        |    |    | 131997 | 132322 | 132647 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1745   | 1777.5 |                        |
| 5               | QPSK   | 1  | 0  | 23.09  | 23.28  | 23.29  | 24                     |
| 5               | QPSK   | 1  | 12 | 23.14  | 23.25  | 23.28  |                        |
| 5               | QPSK   | 1  | 24 | 23.16  | 23.24  | 23.30  |                        |
| 5               | QPSK   | 12 | 0  | 22.29  | 22.34  | 22.50  | 23                     |
| 5               | QPSK   | 12 | 7  | 22.22  | 22.30  | 22.38  |                        |
| 5               | QPSK   | 12 | 13 | 22.14  | 22.23  | 22.32  |                        |
| 5               | QPSK   | 25 | 0  | 22.23  | 22.28  | 22.40  | 23                     |
| 5               | 16QAM  | 1  | 0  | 22.47  | 22.60  | 22.63  |                        |
| 5               | 16QAM  | 1  | 12 | 22.49  | 22.56  | 22.62  |                        |
| 5               | 16QAM  | 1  | 24 | 22.54  | 22.59  | 22.62  | 22                     |
| 5               | 16QAM  | 12 | 0  | 21.24  | 21.34  | 21.50  |                        |
| 5               | 16QAM  | 12 | 7  | 21.20  | 21.27  | 21.36  |                        |
| 5               | 16QAM  | 12 | 13 | 21.11  | 21.22  | 21.29  | 22                     |
| 5               | 16QAM  | 25 | 0  | 21.22  | 21.29  | 21.40  |                        |
| 5               | 64QAM  | 1  | 0  | 21.35  | 21.49  | 21.53  |                        |
| 5               | 64QAM  | 1  | 12 | 21.37  | 21.47  | 21.50  | 21                     |
| 5               | 64QAM  | 1  | 24 | 21.41  | 21.47  | 21.54  |                        |
| 5               | 64QAM  | 12 | 0  | 20.29  | 20.36  | 20.53  |                        |
| 5               | 64QAM  | 12 | 7  | 20.23  | 20.31  | 20.39  | 19                     |
| 5               | 64QAM  | 12 | 13 | 20.11  | 20.22  | 20.32  |                        |
| 5               | 64QAM  | 25 | 0  | 20.20  | 20.26  | 20.39  |                        |
| 5               | 256QAM | 1  | 0  | 18.00  | 18.08  | 18.04  | 19                     |
| 5               | 256QAM | 1  | 12 | 18.00  | 18.19  | 18.07  |                        |
| 5               | 256QAM | 1  | 24 | 18.24  | 18.27  | 18.18  |                        |
| 5               | 256QAM | 12 | 0  | 17.79  | 17.86  | 17.79  | 19                     |
| 5               | 256QAM | 12 | 7  | 17.92  | 17.96  | 17.84  |                        |
| 5               | 256QAM | 12 | 13 | 17.72  | 17.75  | 17.70  |                        |
| 5               | 256QAM | 25 | 0  | 17.67  | 17.79  | 17.73  |                        |
| Channel         |        |    |    | 131987 | 132322 | 132657 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1745   | 1778.5 |                        |
| 3               | QPSK   | 1  | 0  | 23.07  | 23.23  | 23.26  | 24                     |
| 3               | QPSK   | 1  | 8  | 23.07  | 23.20  | 23.26  |                        |
| 3               | QPSK   | 1  | 14 | 23.09  | 23.21  | 23.26  |                        |
| 3               | QPSK   | 8  | 0  | 22.22  | 22.36  | 22.39  | 23                     |
| 3               | QPSK   | 8  | 4  | 22.16  | 22.28  | 22.37  |                        |
| 3               | QPSK   | 8  | 7  | 22.21  | 22.28  | 22.37  |                        |
| 3               | QPSK   | 15 | 0  | 22.21  | 22.31  | 22.40  | 23                     |
| 3               | 16QAM  | 1  | 0  | 22.47  | 22.57  | 22.63  |                        |
| 3               | 16QAM  | 1  | 8  | 22.47  | 22.54  | 22.60  |                        |
| 3               | 16QAM  | 1  | 14 | 22.48  | 22.57  | 22.60  | 22                     |
| 3               | 16QAM  | 8  | 0  | 21.28  | 21.42  | 21.45  |                        |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 3               | 16QAM  | 8  | 4  | 21.24  | 21.36  | 21.43  |                     |
| 3               | 16QAM  | 8  | 7  | 21.30  | 21.37  | 21.46  |                     |
| 3               | 16QAM  | 15 | 0  | 21.24  | 21.33  | 21.42  |                     |
| 3               | 64QAM  | 1  | 0  | 21.33  | 21.46  | 21.50  | 22                  |
| 3               | 64QAM  | 1  | 8  | 21.35  | 21.42  | 21.51  |                     |
| 3               | 64QAM  | 1  | 14 | 21.36  | 21.48  | 21.52  |                     |
| 3               | 64QAM  | 8  | 0  | 20.23  | 20.37  | 20.41  | 21                  |
| 3               | 64QAM  | 8  | 4  | 20.17  | 20.31  | 20.39  |                     |
| 3               | 64QAM  | 8  | 7  | 20.24  | 20.32  | 20.40  |                     |
| 3               | 64QAM  | 15 | 0  | 20.20  | 20.30  | 20.39  | 19                  |
| 3               | 256QAM | 1  | 0  | 17.96  | 18.08  | 18.04  |                     |
| 3               | 256QAM | 1  | 8  | 18.03  | 18.16  | 18.12  |                     |
| 3               | 256QAM | 1  | 14 | 18.17  | 18.26  | 18.14  | 19                  |
| 3               | 256QAM | 8  | 0  | 17.76  | 17.82  | 17.76  |                     |
| 3               | 256QAM | 8  | 4  | 17.88  | 18.03  | 17.89  |                     |
| 3               | 256QAM | 8  | 7  | 17.65  | 17.81  | 17.72  | 19                  |
| 3               | 256QAM | 15 | 0  | 17.68  | 17.88  | 17.69  |                     |
| Channel         |        |    |    | 131979 | 132322 | 132665 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1745   | 1779.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.08  | 23.21  | 23.29  | 24                  |
| 1.4             | QPSK   | 1  | 3  | 23.08  | 23.22  | 23.30  |                     |
| 1.4             | QPSK   | 1  | 5  | 23.07  | 23.21  | 23.29  |                     |
| 1.4             | QPSK   | 3  | 0  | 23.10  | 23.24  | 23.34  |                     |
| 1.4             | QPSK   | 3  | 1  | 23.10  | 23.25  | 23.33  |                     |
| 1.4             | QPSK   | 3  | 3  | 23.11  | 23.22  | 23.33  |                     |
| 1.4             | QPSK   | 6  | 0  | 22.21  | 22.37  | 22.41  | 23                  |
| 1.4             | 16QAM  | 1  | 0  | 22.44  | 22.56  | 22.64  | 23                  |
| 1.4             | 16QAM  | 1  | 3  | 22.44  | 22.56  | 22.62  |                     |
| 1.4             | 16QAM  | 1  | 5  | 22.42  | 22.54  | 22.63  |                     |
| 1.4             | 16QAM  | 3  | 0  | 22.22  | 22.36  | 22.43  |                     |
| 1.4             | 16QAM  | 3  | 1  | 22.21  | 22.36  | 22.44  |                     |
| 1.4             | 16QAM  | 3  | 3  | 22.21  | 22.33  | 22.43  |                     |
| 1.4             | 16QAM  | 6  | 0  | 21.27  | 21.41  | 21.48  | 22                  |
| 1.4             | 64QAM  | 1  | 0  | 21.32  | 21.49  | 21.56  | 22                  |
| 1.4             | 64QAM  | 1  | 3  | 21.32  | 21.46  | 21.55  |                     |
| 1.4             | 64QAM  | 1  | 5  | 21.33  | 21.45  | 21.51  |                     |
| 1.4             | 64QAM  | 3  | 0  | 21.30  | 21.44  | 21.50  |                     |
| 1.4             | 64QAM  | 3  | 1  | 21.28  | 21.45  | 21.51  |                     |
| 1.4             | 64QAM  | 3  | 3  | 21.29  | 21.39  | 21.50  |                     |
| 1.4             | 64QAM  | 6  | 0  | 20.14  | 20.30  | 20.37  | 21                  |
| 1.4             | 256QAM | 1  | 0  | 17.95  | 18.05  | 17.98  | 19                  |
| 1.4             | 256QAM | 1  | 3  | 18.06  | 18.19  | 18.10  |                     |
| 1.4             | 256QAM | 1  | 5  | 18.21  | 18.30  | 18.15  |                     |
| 1.4             | 256QAM | 3  | 0  | 17.79  | 17.83  | 17.72  |                     |
| 1.4             | 256QAM | 3  | 1  | 17.88  | 18.02  | 17.85  |                     |
| 1.4             | 256QAM | 3  | 3  | 17.71  | 17.78  | 17.70  |                     |
| 1.4             | 256QAM | 6  | 0  | 17.67  | 17.85  | 17.67  | 19                  |

| <LTE Band 66_Ant 3_Sensor ON> |            |         |           |                       |                          |                        |                     |
|-------------------------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                       |            |         |           | 132072                | 132322                   | 132572                 |                     |
| Frequency (MHz)               |            |         |           | 1720                  | 1745                     | 1770                   |                     |
| 20                            | QPSK       | 1       | 0         | 20.75                 | 20.97                    | 20.84                  | 21.5                |
| 20                            | QPSK       | 1       | 49        | 20.74                 | 20.70                    | 20.96                  |                     |
| 20                            | QPSK       | 1       | 99        | 20.72                 | 20.79                    | 20.71                  |                     |



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|                 |        |     |    |        |        |        |                     |
|-----------------|--------|-----|----|--------|--------|--------|---------------------|
| 20              | QPSK   | 50  | 0  | 19.95  | 19.96  | 19.85  | 20.5                |
| 20              | QPSK   | 50  | 24 | 19.61  | 19.83  | 19.80  |                     |
| 20              | QPSK   | 50  | 50 | 19.75  | 19.52  | 19.52  |                     |
| 20              | QPSK   | 100 | 0  | 19.81  | 19.62  | 19.50  |                     |
| 20              | 16QAM  | 1   | 0  | 19.99  | 19.79  | 20.48  | 20.5                |
| 20              | 16QAM  | 1   | 49 | 20.24  | 20.25  | 20.27  |                     |
| 20              | 16QAM  | 1   | 99 | 19.98  | 20.37  | 20.12  |                     |
| 20              | 16QAM  | 50  | 0  | 18.97  | 18.68  | 18.67  | 19.5                |
| 20              | 16QAM  | 50  | 24 | 18.63  | 18.69  | 18.71  |                     |
| 20              | 16QAM  | 50  | 50 | 18.76  | 18.49  | 18.51  |                     |
| 20              | 16QAM  | 100 | 0  | 18.94  | 18.62  | 18.60  |                     |
| 20              | 64QAM  | 1   | 0  | 19.04  | 18.84  | 19.02  | 19.5                |
| 20              | 64QAM  | 1   | 49 | 18.89  | 18.87  | 19.11  |                     |
| 20              | 64QAM  | 1   | 99 | 19.21  | 19.14  | 19.10  |                     |
| 20              | 64QAM  | 50  | 0  | 17.91  | 17.63  | 17.56  | 18.5                |
| 20              | 64QAM  | 50  | 24 | 17.61  | 17.77  | 17.89  |                     |
| 20              | 64QAM  | 50  | 50 | 17.72  | 17.57  | 17.50  |                     |
| 20              | 64QAM  | 100 | 0  | 17.83  | 17.61  | 17.65  |                     |
| 20              | 256QAM | 1   | 0  | 15.84  | 15.90  | 16.01  | 16.5                |
| 20              | 256QAM | 1   | 49 | 15.90  | 16.00  | 16.03  |                     |
| 20              | 256QAM | 1   | 99 | 16.05  | 16.08  | 16.13  |                     |
| 20              | 256QAM | 50  | 0  | 15.66  | 15.69  | 15.76  | 16.5                |
| 20              | 256QAM | 50  | 24 | 15.83  | 15.87  | 15.89  |                     |
| 20              | 256QAM | 50  | 50 | 15.59  | 15.65  | 15.74  |                     |
| 20              | 256QAM | 100 | 0  | 15.59  | 15.67  | 15.73  |                     |
| Channel         |        |     |    | 132047 | 132322 | 132597 | Tune-up limit (dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1745   | 1772.5 |                     |
| 15              | QPSK   | 1   | 0  | 20.67  | 20.82  | 20.82  | 21.5                |
| 15              | QPSK   | 1   | 37 | 20.71  | 20.54  | 20.78  |                     |
| 15              | QPSK   | 1   | 74 | 20.71  | 20.75  | 20.71  |                     |
| 15              | QPSK   | 36  | 0  | 19.83  | 19.59  | 19.49  | 20.5                |
| 15              | QPSK   | 36  | 20 | 19.44  | 19.69  | 19.76  |                     |
| 15              | QPSK   | 36  | 39 | 19.70  | 19.46  | 19.34  |                     |
| 15              | QPSK   | 75  | 0  | 19.69  | 19.60  | 19.32  |                     |
| 15              | 16QAM  | 1   | 0  | 19.93  | 19.75  | 20.49  | 20.5                |
| 15              | 16QAM  | 1   | 37 | 20.21  | 20.20  | 20.22  |                     |
| 15              | 16QAM  | 1   | 74 | 19.82  | 20.22  | 20.03  |                     |
| 15              | 16QAM  | 36  | 0  | 18.79  | 18.58  | 18.52  | 19.5                |
| 15              | 16QAM  | 36  | 20 | 18.48  | 18.67  | 18.51  |                     |
| 15              | 16QAM  | 36  | 39 | 18.71  | 18.39  | 18.43  |                     |
| 15              | 16QAM  | 75  | 0  | 18.91  | 18.57  | 18.54  |                     |
| 15              | 64QAM  | 1   | 0  | 18.90  | 18.72  | 18.98  | 19.5                |
| 15              | 64QAM  | 1   | 37 | 18.76  | 18.78  | 19.07  |                     |
| 15              | 64QAM  | 1   | 74 | 19.03  | 19.10  | 19.06  |                     |
| 15              | 64QAM  | 36  | 0  | 17.83  | 17.58  | 17.44  | 18.5                |
| 15              | 64QAM  | 36  | 20 | 17.46  | 17.69  | 17.83  |                     |
| 15              | 64QAM  | 36  | 39 | 17.70  | 17.48  | 17.50  |                     |
| 15              | 64QAM  | 75  | 0  | 17.79  | 17.61  | 17.56  |                     |
| 15              | 256QAM | 1   | 0  | 15.74  | 15.86  | 15.86  | 16.5                |
| 15              | 256QAM | 1   | 37 | 15.83  | 15.96  | 16.03  |                     |
| 15              | 256QAM | 1   | 74 | 16.05  | 16.08  | 16.11  |                     |
| 15              | 256QAM | 36  | 0  | 15.56  | 15.62  | 15.60  | 16.5                |
| 15              | 256QAM | 36  | 20 | 15.72  | 15.76  | 15.80  |                     |
| 15              | 256QAM | 36  | 39 | 15.57  | 15.63  | 15.58  |                     |
| 15              | 256QAM | 75  | 0  | 15.56  | 15.62  | 15.73  |                     |
| Channel         |        |     |    | 132022 | 132322 | 132622 | Tune-up limit       |



# FCC SAR TEST REPORT

Report No. : FA451315

| Frequency (MHz) |        |    |    | 1715   | 1745   | 1775   | (dBm)                  |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| 10              | QPSK   | 1  | 0  | 20.62  | 20.64  | 20.83  | 21.5                   |
| 10              | QPSK   | 1  | 25 | 20.71  | 20.69  | 20.84  |                        |
| 10              | QPSK   | 1  | 49 | 20.58  | 20.73  | 20.59  |                        |
| 10              | QPSK   | 25 | 0  | 19.90  | 19.67  | 19.48  | 20.5                   |
| 10              | QPSK   | 25 | 12 | 19.42  | 19.81  | 19.71  |                        |
| 10              | QPSK   | 25 | 25 | 19.61  | 19.52  | 19.42  |                        |
| 10              | QPSK   | 50 | 0  | 19.64  | 19.53  | 19.35  |                        |
| 10              | 16QAM  | 1  | 0  | 19.87  | 19.75  | 20.49  | 20.5                   |
| 10              | 16QAM  | 1  | 25 | 20.20  | 20.14  | 20.10  |                        |
| 10              | 16QAM  | 1  | 49 | 19.96  | 20.27  | 20.06  |                        |
| 10              | 16QAM  | 25 | 0  | 18.82  | 18.51  | 18.48  | 19.5                   |
| 10              | 16QAM  | 25 | 12 | 18.61  | 18.52  | 18.64  |                        |
| 10              | 16QAM  | 25 | 25 | 18.59  | 18.36  | 18.48  |                        |
| 10              | 16QAM  | 50 | 0  | 18.91  | 18.60  | 18.43  |                        |
| 10              | 64QAM  | 1  | 0  | 18.89  | 18.79  | 18.88  | 19.5                   |
| 10              | 64QAM  | 1  | 25 | 18.78  | 18.69  | 18.96  |                        |
| 10              | 64QAM  | 1  | 49 | 19.09  | 18.97  | 18.98  |                        |
| 10              | 64QAM  | 25 | 0  | 17.91  | 17.61  | 17.47  | 18.5                   |
| 10              | 64QAM  | 25 | 12 | 17.57  | 17.69  | 17.77  |                        |
| 10              | 64QAM  | 25 | 25 | 17.59  | 17.47  | 17.40  |                        |
| 10              | 64QAM  | 50 | 0  | 17.63  | 17.49  | 17.62  |                        |
| 10              | 256QAM | 1  | 0  | 15.65  | 15.89  | 15.81  | 16.5                   |
| 10              | 256QAM | 1  | 25 | 15.78  | 15.98  | 15.94  |                        |
| 10              | 256QAM | 1  | 49 | 15.98  | 16.06  | 16.12  |                        |
| 10              | 256QAM | 25 | 0  | 15.52  | 15.64  | 15.60  | 16.5                   |
| 10              | 256QAM | 25 | 12 | 15.75  | 15.77  | 15.76  |                        |
| 10              | 256QAM | 25 | 25 | 15.58  | 15.65  | 15.60  |                        |
| 10              | 256QAM | 50 | 0  | 15.58  | 15.50  | 15.53  |                        |
| Channel         |        |    |    | 131997 | 132322 | 132647 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1745   | 1777.5 |                        |
| 5               | QPSK   | 1  | 0  | 20.58  | 20.77  | 20.74  | 21.5                   |
| 5               | QPSK   | 1  | 12 | 20.71  | 20.64  | 20.94  |                        |
| 5               | QPSK   | 1  | 24 | 20.53  | 20.67  | 20.64  |                        |
| 5               | QPSK   | 12 | 0  | 19.81  | 19.65  | 19.53  | 20.5                   |
| 5               | QPSK   | 12 | 7  | 19.60  | 19.67  | 19.63  |                        |
| 5               | QPSK   | 12 | 13 | 19.64  | 19.48  | 19.37  |                        |
| 5               | QPSK   | 25 | 0  | 19.81  | 19.45  | 19.49  |                        |
| 5               | 16QAM  | 1  | 0  | 19.80  | 19.66  | 20.49  | 20.5                   |
| 5               | 16QAM  | 1  | 12 | 20.04  | 20.06  | 20.23  |                        |
| 5               | 16QAM  | 1  | 24 | 19.91  | 20.20  | 20.04  |                        |
| 5               | 16QAM  | 12 | 0  | 18.84  | 18.63  | 18.56  | 19.5                   |
| 5               | 16QAM  | 12 | 7  | 18.44  | 18.51  | 18.57  |                        |
| 5               | 16QAM  | 12 | 13 | 18.72  | 18.35  | 18.41  |                        |
| 5               | 16QAM  | 25 | 0  | 18.84  | 18.46  | 18.50  |                        |
| 5               | 64QAM  | 1  | 0  | 18.93  | 18.83  | 18.84  | 19.5                   |
| 5               | 64QAM  | 1  | 12 | 18.70  | 18.87  | 18.91  |                        |
| 5               | 64QAM  | 1  | 24 | 19.07  | 19.03  | 19.10  |                        |
| 5               | 64QAM  | 12 | 0  | 17.73  | 17.52  | 17.50  | 18.5                   |
| 5               | 64QAM  | 12 | 7  | 17.43  | 17.76  | 17.80  |                        |
| 5               | 64QAM  | 12 | 13 | 17.53  | 17.53  | 17.48  |                        |
| 5               | 64QAM  | 25 | 0  | 17.66  | 17.60  | 17.56  |                        |
| 5               | 256QAM | 1  | 0  | 15.83  | 15.72  | 15.94  | 16.5                   |
| 5               | 256QAM | 1  | 12 | 15.77  | 15.89  | 16.01  |                        |
| 5               | 256QAM | 1  | 24 | 16.03  | 16.05  | 16.03  |                        |
| 5               | 256QAM | 12 | 0  | 15.48  | 15.52  | 15.60  | 16.5                   |



# FCC SAR TEST REPORT

Report No. : FA451315

|                 |        |    |    |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| 5               | 256QAM | 12 | 7  | 15.78  | 15.86  | 15.79  |                        |
| 5               | 256QAM | 12 | 13 | 15.59  | 15.47  | 15.67  |                        |
| 5               | 256QAM | 25 | 0  | 15.50  | 15.49  | 15.65  |                        |
| Channel         |        |    |    | 131987 | 132322 | 132657 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1745   | 1778.5 |                        |
| 3               | QPSK   | 1  | 0  | 20.61  | 20.77  | 20.83  | 21.5                   |
| 3               | QPSK   | 1  | 8  | 20.60  | 20.70  | 20.82  |                        |
| 3               | QPSK   | 1  | 14 | 20.54  | 20.68  | 20.65  |                        |
| 3               | QPSK   | 8  | 0  | 19.93  | 19.53  | 19.64  | 20.5                   |
| 3               | QPSK   | 8  | 4  | 19.48  | 19.80  | 19.74  |                        |
| 3               | QPSK   | 8  | 7  | 19.69  | 19.49  | 19.52  |                        |
| 3               | QPSK   | 15 | 0  | 19.70  | 19.58  | 19.45  | 20.5                   |
| 3               | 16QAM  | 1  | 0  | 19.87  | 19.75  | 20.48  |                        |
| 3               | 16QAM  | 1  | 8  | 20.08  | 20.20  | 20.19  |                        |
| 3               | 16QAM  | 1  | 14 | 19.88  | 20.36  | 20.12  | 19.5                   |
| 3               | 16QAM  | 8  | 0  | 18.90  | 18.51  | 18.49  |                        |
| 3               | 16QAM  | 8  | 4  | 18.52  | 18.54  | 18.66  |                        |
| 3               | 16QAM  | 8  | 7  | 18.74  | 18.49  | 18.36  | 19.5                   |
| 3               | 16QAM  | 15 | 0  | 18.77  | 18.47  | 18.57  |                        |
| 3               | 64QAM  | 1  | 0  | 19.03  | 18.67  | 18.89  |                        |
| 3               | 64QAM  | 1  | 8  | 18.79  | 18.68  | 18.99  | 18.5                   |
| 3               | 64QAM  | 1  | 14 | 19.09  | 19.02  | 18.94  |                        |
| 3               | 64QAM  | 8  | 0  | 17.80  | 17.56  | 17.55  |                        |
| 3               | 64QAM  | 8  | 4  | 17.54  | 17.65  | 17.84  | 16.5                   |
| 3               | 64QAM  | 8  | 7  | 17.60  | 17.46  | 17.40  |                        |
| 3               | 64QAM  | 15 | 0  | 17.69  | 17.47  | 17.64  |                        |
| 3               | 256QAM | 1  | 0  | 15.80  | 15.85  | 15.84  | 16.5                   |
| 3               | 256QAM | 1  | 8  | 15.78  | 15.84  | 16.02  |                        |
| 3               | 256QAM | 1  | 14 | 15.99  | 16.00  | 16.08  |                        |
| 3               | 256QAM | 8  | 0  | 15.60  | 15.69  | 15.73  | 16.5                   |
| 3               | 256QAM | 8  | 4  | 15.66  | 15.72  | 15.75  |                        |
| 3               | 256QAM | 8  | 7  | 15.44  | 15.65  | 15.68  |                        |
| 3               | 256QAM | 15 | 0  | 15.52  | 15.53  | 15.69  | Tune-up limit<br>(dBm) |
| Channel         |        |    |    | 131979 | 132322 | 132665 |                        |
| Frequency (MHz) |        |    |    | 1710.7 | 1745   | 1779.3 | 21.5                   |
| 1.4             | QPSK   | 1  | 0  | 20.63  | 20.86  | 20.76  |                        |
| 1.4             | QPSK   | 1  | 3  | 20.66  | 20.82  | 20.84  |                        |
| 1.4             | QPSK   | 1  | 5  | 20.61  | 20.85  | 20.77  |                        |
| 1.4             | QPSK   | 3  | 0  | 20.66  | 20.85  | 20.84  |                        |
| 1.4             | QPSK   | 3  | 1  | 20.65  | 20.82  | 20.85  |                        |
| 1.4             | QPSK   | 3  | 3  | 20.61  | 20.80  | 20.84  | 20.5                   |
| 1.4             | QPSK   | 6  | 0  | 19.53  | 19.84  | 19.78  |                        |
| 1.4             | 16QAM  | 1  | 0  | 19.79  | 20.09  | 19.75  | 20.5                   |
| 1.4             | 16QAM  | 1  | 3  | 20.26  | 19.97  | 20.35  |                        |
| 1.4             | 16QAM  | 1  | 5  | 19.61  | 20.08  | 20.28  |                        |
| 1.4             | 16QAM  | 3  | 0  | 19.63  | 19.91  | 19.87  |                        |
| 1.4             | 16QAM  | 3  | 1  | 19.62  | 19.85  | 19.90  |                        |
| 1.4             | 16QAM  | 3  | 3  | 19.72  | 19.88  | 19.91  |                        |
| 1.4             | 16QAM  | 6  | 0  | 18.67  | 18.90  | 18.84  | 19.5                   |
| 1.4             | 64QAM  | 1  | 0  | 18.97  | 19.13  | 18.83  |                        |
| 1.4             | 64QAM  | 1  | 3  | 18.65  | 19.09  | 19.16  | 19.5                   |
| 1.4             | 64QAM  | 1  | 5  | 18.43  | 19.14  | 18.61  |                        |
| 1.4             | 64QAM  | 3  | 0  | 18.78  | 18.88  | 18.97  |                        |
| 1.4             | 64QAM  | 3  | 1  | 18.86  | 19.09  | 19.03  |                        |
| 1.4             | 64QAM  | 3  | 3  | 18.63  | 18.91  | 18.83  |                        |
| 1.4             | 64QAM  | 6  | 0  | 17.62  | 17.75  | 17.74  | 18.5                   |



# FCC SAR TEST REPORT

Report No. : FA451315

|     |        |   |   |       |       |       |      |
|-----|--------|---|---|-------|-------|-------|------|
| 1.4 | 256QAM | 1 | 0 | 15.99 | 15.94 | 16.02 | 16.5 |
| 1.4 | 256QAM | 1 | 3 | 16.01 | 15.98 | 16.04 |      |
| 1.4 | 256QAM | 1 | 5 | 16.07 | 15.98 | 15.99 |      |
| 1.4 | 256QAM | 3 | 0 | 15.96 | 15.95 | 15.98 |      |
| 1.4 | 256QAM | 3 | 1 | 16.04 | 15.95 | 15.99 |      |
| 1.4 | 256QAM | 3 | 3 | 15.94 | 15.93 | 15.95 |      |
| 1.4 | 256QAM | 6 | 0 | 15.89 | 15.89 | 15.92 | 16.5 |

| <LTE Band 66_Ant 8_Sensor OFF> |            |         |           |                          |                             |                           |                        |
|--------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                       | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                        |            |         |           | 132072                   | 132322                      | 132572                    |                        |
| Frequency (MHz)                |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20                             | QPSK       | 1       | 0         | 23.59                    | 23.60                       | 23.56                     | 24                     |
| 20                             | QPSK       | 1       | 49        | 23.52                    | 23.59                       | 23.50                     |                        |
| 20                             | QPSK       | 1       | 99        | 23.58                    | 23.59                       | 23.54                     |                        |
| 20                             | QPSK       | 50      | 0         | 22.60                    | 22.64                       | 22.61                     | 23                     |
| 20                             | QPSK       | 50      | 24        | 22.45                    | 22.51                       | 22.43                     |                        |
| 20                             | QPSK       | 50      | 50        | 22.58                    | 22.61                       | 22.59                     |                        |
| 20                             | QPSK       | 100     | 0         | 22.53                    | 22.60                       | 22.57                     | 23                     |
| 20                             | 16QAM      | 1       | 0         | 22.56                    | 22.63                       | 22.59                     |                        |
| 20                             | 16QAM      | 1       | 49        | 22.60                    | 22.64                       | 22.60                     |                        |
| 20                             | 16QAM      | 1       | 99        | 22.66                    | 22.72                       | 22.71                     | 22                     |
| 20                             | 16QAM      | 50      | 0         | 21.55                    | 21.60                       | 21.58                     |                        |
| 20                             | 16QAM      | 50      | 24        | 21.40                    | 21.50                       | 21.47                     |                        |
| 20                             | 16QAM      | 50      | 50        | 21.54                    | 21.57                       | 21.50                     | 22                     |
| 20                             | 16QAM      | 100     | 0         | 21.57                    | 21.58                       | 21.57                     |                        |
| 20                             | 64QAM      | 1       | 0         | 21.54                    | 21.56                       | 21.53                     |                        |
| 20                             | 64QAM      | 1       | 49        | 21.56                    | 21.57                       | 21.52                     | 22                     |
| 20                             | 64QAM      | 1       | 99        | 21.53                    | 21.63                       | 21.60                     |                        |
| 20                             | 64QAM      | 50      | 0         | 20.52                    | 20.57                       | 20.53                     | 21                     |
| 20                             | 64QAM      | 50      | 24        | 20.46                    | 20.51                       | 20.42                     |                        |
| 20                             | 64QAM      | 50      | 50        | 20.50                    | 20.54                       | 20.48                     |                        |
| 20                             | 64QAM      | 100     | 0         | 20.53                    | 20.55                       | 20.48                     | 19                     |
| 20                             | 256QAM     | 1       | 0         | 18.35                    | 18.39                       | 18.33                     |                        |
| 20                             | 256QAM     | 1       | 49        | 18.28                    | 18.38                       | 18.36                     |                        |
| 20                             | 256QAM     | 1       | 99        | 18.43                    | 18.46                       | 18.42                     | 19                     |
| 20                             | 256QAM     | 50      | 0         | 18.50                    | 18.54                       | 18.51                     |                        |
| 20                             | 256QAM     | 50      | 24        | 18.43                    | 18.44                       | 18.38                     |                        |
| 20                             | 256QAM     | 50      | 50        | 18.44                    | 18.50                       | 18.46                     | 23                     |
| 20                             | 256QAM     | 100     | 0         | 18.40                    | 18.50                       | 18.41                     |                        |
| Channel                        |            |         |           | 132047                   | 132322                      | 132597                    | Tune-up limit<br>(dBm) |
| Frequency (MHz)                |            |         |           | 1717.5                   | 1745                        | 1772.5                    |                        |
| 15                             | QPSK       | 1       | 0         | 23.53                    | 23.55                       | 23.48                     |                        |
| 15                             | QPSK       | 1       | 37        | 23.46                    | 23.49                       | 23.48                     | 24                     |
| 15                             | QPSK       | 1       | 74        | 23.52                    | 23.52                       | 23.53                     |                        |
| 15                             | QPSK       | 36      | 0         | 22.45                    | 22.63                       | 22.57                     | 23                     |
| 15                             | QPSK       | 36      | 20        | 22.41                    | 22.45                       | 22.42                     |                        |
| 15                             | QPSK       | 36      | 39        | 22.56                    | 22.58                       | 22.50                     |                        |
| 15                             | QPSK       | 75      | 0         | 22.49                    | 22.54                       | 22.49                     | 23                     |
| 15                             | 16QAM      | 1       | 0         | 22.50                    | 22.57                       | 22.49                     |                        |
| 15                             | 16QAM      | 1       | 37        | 22.52                    | 22.56                       | 22.53                     |                        |
| 15                             | 16QAM      | 1       | 74        | 22.57                    | 22.71                       | 22.63                     | 22                     |
| 15                             | 16QAM      | 36      | 0         | 21.47                    | 21.53                       | 21.50                     |                        |
| 15                             | 16QAM      | 36      | 20        | 21.33                    | 21.41                       | 21.38                     |                        |
| 15                             | 16QAM      | 36      | 39        | 21.50                    | 21.56                       | 21.47                     |                        |



# FCC SAR TEST REPORT

Report No. : FA451315

|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 15              | 16QAM  | 75 | 0  | 21.48  | 21.50  | 21.47  |                     |
| 15              | 64QAM  | 1  | 0  | 21.49  | 21.50  | 21.43  | 22                  |
| 15              | 64QAM  | 1  | 37 | 21.48  | 21.51  | 21.48  |                     |
| 15              | 64QAM  | 1  | 74 | 21.44  | 21.58  | 21.57  |                     |
| 15              | 64QAM  | 36 | 0  | 20.46  | 20.47  | 20.45  | 21                  |
| 15              | 64QAM  | 36 | 20 | 20.45  | 20.46  | 20.32  |                     |
| 15              | 64QAM  | 36 | 39 | 20.41  | 20.49  | 20.40  |                     |
| 15              | 64QAM  | 75 | 0  | 20.51  | 20.47  | 20.39  | 19                  |
| 15              | 256QAM | 1  | 0  | 18.34  | 18.32  | 18.24  |                     |
| 15              | 256QAM | 1  | 37 | 18.27  | 18.28  | 18.32  |                     |
| 15              | 256QAM | 1  | 74 | 18.36  | 18.39  | 18.36  | 19                  |
| 15              | 256QAM | 36 | 0  | 18.49  | 18.44  | 18.47  |                     |
| 15              | 256QAM | 36 | 20 | 18.33  | 18.39  | 18.29  |                     |
| 15              | 256QAM | 36 | 39 | 18.35  | 18.46  | 18.45  | 19                  |
| 15              | 256QAM | 75 | 0  | 18.39  | 18.43  | 18.38  |                     |
| Channel         |        |    |    | 132022 | 132322 | 132622 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1715   | 1745   | 1775   |                     |
| 10              | QPSK   | 1  | 0  | 23.52  | 23.51  | 23.53  | 24                  |
| 10              | QPSK   | 1  | 25 | 23.50  | 23.58  | 23.47  |                     |
| 10              | QPSK   | 1  | 49 | 23.56  | 23.53  | 23.45  |                     |
| 10              | QPSK   | 25 | 0  | 22.47  | 22.62  | 22.51  | 23                  |
| 10              | QPSK   | 25 | 12 | 22.35  | 22.46  | 22.36  |                     |
| 10              | QPSK   | 25 | 25 | 22.50  | 22.53  | 22.52  |                     |
| 10              | QPSK   | 50 | 0  | 22.52  | 22.59  | 22.52  | 23                  |
| 10              | 16QAM  | 1  | 0  | 22.49  | 22.60  | 22.56  |                     |
| 10              | 16QAM  | 1  | 25 | 22.59  | 22.54  | 22.53  |                     |
| 10              | 16QAM  | 1  | 49 | 22.58  | 22.69  | 22.69  | 22                  |
| 10              | 16QAM  | 25 | 0  | 21.46  | 21.59  | 21.56  |                     |
| 10              | 16QAM  | 25 | 12 | 21.34  | 21.46  | 21.42  |                     |
| 10              | 16QAM  | 25 | 25 | 21.53  | 21.50  | 21.41  | 22                  |
| 10              | 16QAM  | 50 | 0  | 21.49  | 21.55  | 21.48  |                     |
| 10              | 64QAM  | 1  | 0  | 21.46  | 21.52  | 21.43  |                     |
| 10              | 64QAM  | 1  | 25 | 21.54  | 21.53  | 21.50  | 22                  |
| 10              | 64QAM  | 1  | 49 | 21.47  | 21.59  | 21.57  |                     |
| 10              | 64QAM  | 25 | 0  | 20.43  | 20.47  | 20.52  |                     |
| 10              | 64QAM  | 25 | 12 | 20.42  | 20.42  | 20.32  | 21                  |
| 10              | 64QAM  | 25 | 25 | 20.49  | 20.50  | 20.39  |                     |
| 10              | 64QAM  | 50 | 0  | 20.44  | 20.49  | 20.41  |                     |
| 10              | 256QAM | 1  | 0  | 18.25  | 18.37  | 18.31  | 19                  |
| 10              | 256QAM | 1  | 25 | 18.23  | 18.31  | 18.28  |                     |
| 10              | 256QAM | 1  | 49 | 18.34  | 18.42  | 18.41  |                     |
| 10              | 256QAM | 25 | 0  | 18.49  | 18.53  | 18.43  | 19                  |
| 10              | 256QAM | 25 | 12 | 18.42  | 18.41  | 18.32  |                     |
| 10              | 256QAM | 25 | 25 | 18.39  | 18.49  | 18.37  |                     |
| 10              | 256QAM | 50 | 0  | 18.36  | 18.41  | 18.32  | 19                  |
| Channel         |        |    |    | 131997 | 132322 | 132647 |                     |
| Frequency (MHz) |        |    |    | 1712.5 | 1745   | 1777.5 |                     |
| 5               | QPSK   | 1  | 0  | 23.58  | 23.55  | 23.52  | 24                  |
| 5               | QPSK   | 1  | 12 | 23.51  | 23.51  | 23.49  |                     |
| 5               | QPSK   | 1  | 24 | 23.56  | 23.52  | 23.50  |                     |
| 5               | QPSK   | 12 | 0  | 22.49  | 22.59  | 22.57  | 23                  |
| 5               | QPSK   | 12 | 7  | 22.44  | 22.48  | 22.34  |                     |
| 5               | QPSK   | 12 | 13 | 22.55  | 22.54  | 22.52  |                     |
| 5               | QPSK   | 25 | 0  | 22.51  | 22.53  | 22.55  | 23                  |
| 5               | 16QAM  | 1  | 0  | 22.49  | 22.61  | 22.50  |                     |
| 5               | 16QAM  | 1  | 12 | 22.50  | 22.56  | 22.58  |                     |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5               | 16QAM  | 1  | 24 | 22.64  | 22.70  | 22.63  | 22                  |
| 5               | 16QAM  | 12 | 0  | 21.50  | 21.54  | 21.52  |                     |
| 5               | 16QAM  | 12 | 7  | 21.38  | 21.46  | 21.41  |                     |
| 5               | 16QAM  | 12 | 13 | 21.52  | 21.51  | 21.44  |                     |
| 5               | 16QAM  | 25 | 0  | 21.47  | 21.57  | 21.47  | 22                  |
| 5               | 64QAM  | 1  | 0  | 21.48  | 21.55  | 21.44  |                     |
| 5               | 64QAM  | 1  | 12 | 21.53  | 21.55  | 21.42  |                     |
| 5               | 64QAM  | 1  | 24 | 21.47  | 21.54  | 21.53  |                     |
| 5               | 64QAM  | 12 | 0  | 20.49  | 20.52  | 20.44  | 21                  |
| 5               | 64QAM  | 12 | 7  | 20.45  | 20.45  | 20.34  |                     |
| 5               | 64QAM  | 12 | 13 | 20.47  | 20.46  | 20.47  |                     |
| 5               | 64QAM  | 25 | 0  | 20.48  | 20.53  | 20.41  |                     |
| 5               | 256QAM | 1  | 0  | 18.31  | 18.31  | 18.27  | 19                  |
| 5               | 256QAM | 1  | 12 | 18.19  | 18.34  | 18.29  |                     |
| 5               | 256QAM | 1  | 24 | 18.41  | 18.42  | 18.37  |                     |
| 5               | 256QAM | 12 | 0  | 18.47  | 18.53  | 18.41  |                     |
| 5               | 256QAM | 12 | 7  | 18.37  | 18.39  | 18.32  | 19                  |
| 5               | 256QAM | 12 | 13 | 18.41  | 18.45  | 18.41  |                     |
| 5               | 256QAM | 25 | 0  | 18.32  | 18.41  | 18.37  |                     |
| Channel         |        |    |    | 131987 | 132322 | 132657 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1745   | 1778.5 |                     |
| 3               | QPSK   | 1  | 0  | 23.51  | 23.51  | 23.52  | 24                  |
| 3               | QPSK   | 1  | 8  | 23.48  | 23.53  | 23.43  |                     |
| 3               | QPSK   | 1  | 14 | 23.54  | 23.58  | 23.49  |                     |
| 3               | QPSK   | 8  | 0  | 22.48  | 22.59  | 22.52  | 23                  |
| 3               | QPSK   | 8  | 4  | 22.43  | 22.47  | 22.33  |                     |
| 3               | QPSK   | 8  | 7  | 22.56  | 22.57  | 22.53  |                     |
| 3               | QPSK   | 15 | 0  | 22.43  | 22.54  | 22.49  |                     |
| 3               | 16QAM  | 1  | 0  | 22.54  | 22.59  | 22.55  | 23                  |
| 3               | 16QAM  | 1  | 8  | 22.50  | 22.54  | 22.51  |                     |
| 3               | 16QAM  | 1  | 14 | 22.62  | 22.62  | 22.64  |                     |
| 3               | 16QAM  | 8  | 0  | 21.51  | 21.50  | 21.56  | 22                  |
| 3               | 16QAM  | 8  | 4  | 21.30  | 21.41  | 21.44  |                     |
| 3               | 16QAM  | 8  | 7  | 21.49  | 21.50  | 21.47  |                     |
| 3               | 16QAM  | 15 | 0  | 21.47  | 21.49  | 21.48  |                     |
| 3               | 64QAM  | 1  | 0  | 21.47  | 21.46  | 21.50  | 22                  |
| 3               | 64QAM  | 1  | 8  | 21.54  | 21.52  | 21.48  |                     |
| 3               | 64QAM  | 1  | 14 | 21.45  | 21.55  | 21.56  |                     |
| 3               | 64QAM  | 8  | 0  | 20.45  | 20.47  | 20.44  | 21                  |
| 3               | 64QAM  | 8  | 4  | 20.37  | 20.46  | 20.36  |                     |
| 3               | 64QAM  | 8  | 7  | 20.43  | 20.51  | 20.42  |                     |
| 3               | 64QAM  | 15 | 0  | 20.50  | 20.50  | 20.40  |                     |
| 3               | 256QAM | 1  | 0  | 18.29  | 18.30  | 18.27  | 19                  |
| 3               | 256QAM | 1  | 8  | 18.19  | 18.29  | 18.31  |                     |
| 3               | 256QAM | 1  | 14 | 18.39  | 18.37  | 18.32  |                     |
| 3               | 256QAM | 8  | 0  | 18.44  | 18.53  | 18.44  | 19                  |
| 3               | 256QAM | 8  | 4  | 18.40  | 18.40  | 18.31  |                     |
| 3               | 256QAM | 8  | 7  | 18.39  | 18.40  | 18.43  |                     |
| 3               | 256QAM | 15 | 0  | 18.33  | 18.46  | 18.36  |                     |
| Channel         |        |    |    | 131979 | 132322 | 132665 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1745   | 1779.3 |                     |
| 1.4             | QPSK   | 1  | 0  | 23.51  | 23.56  | 23.55  | 24                  |
| 1.4             | QPSK   | 1  | 3  | 23.44  | 23.51  | 23.42  |                     |
| 1.4             | QPSK   | 1  | 5  | 23.48  | 23.52  | 23.42  |                     |
| 1.4             | QPSK   | 3  | 0  | 23.46  | 23.54  | 23.52  |                     |
| 1.4             | QPSK   | 3  | 1  | 23.50  | 23.55  | 23.54  |                     |



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|     |        |   |   |       |       |       |    |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | QPSK   | 3 | 3 | 23.50 | 23.51 | 23.46 |    |
| 1.4 | QPSK   | 6 | 0 | 22.43 | 22.51 | 22.43 | 23 |
| 1.4 | 16QAM  | 1 | 0 | 22.55 | 22.59 | 22.55 | 23 |
| 1.4 | 16QAM  | 1 | 3 | 22.59 | 22.60 | 22.50 |    |
| 1.4 | 16QAM  | 1 | 5 | 22.50 | 22.58 | 22.56 |    |
| 1.4 | 16QAM  | 3 | 0 | 22.40 | 22.47 | 22.46 |    |
| 1.4 | 16QAM  | 3 | 1 | 22.45 | 22.47 | 22.43 |    |
| 1.4 | 16QAM  | 3 | 3 | 22.40 | 22.43 | 22.35 |    |
| 1.4 | 16QAM  | 6 | 0 | 21.49 | 21.51 | 21.49 | 22 |
| 1.4 | 64QAM  | 1 | 0 | 21.53 | 21.55 | 21.54 | 22 |
| 1.4 | 64QAM  | 1 | 3 | 21.49 | 21.54 | 21.47 |    |
| 1.4 | 64QAM  | 1 | 5 | 21.47 | 21.52 | 21.45 |    |
| 1.4 | 64QAM  | 3 | 0 | 21.37 | 21.47 | 21.43 |    |
| 1.4 | 64QAM  | 3 | 1 | 21.37 | 21.46 | 21.42 |    |
| 1.4 | 64QAM  | 3 | 3 | 21.38 | 21.43 | 21.37 |    |
| 1.4 | 64QAM  | 6 | 0 | 20.45 | 20.46 | 20.43 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.21 | 18.29 | 18.23 | 19 |
| 1.4 | 256QAM | 1 | 3 | 18.23 | 18.30 | 18.27 |    |
| 1.4 | 256QAM | 1 | 5 | 18.26 | 18.34 | 18.28 |    |
| 1.4 | 256QAM | 3 | 0 | 18.38 | 18.39 | 18.31 |    |
| 1.4 | 256QAM | 3 | 1 | 18.29 | 18.39 | 18.33 |    |
| 1.4 | 256QAM | 3 | 3 | 18.28 | 18.34 | 18.24 |    |
| 1.4 | 256QAM | 6 | 0 | 18.38 | 18.45 | 18.42 | 19 |

| <LTE Band 66_Ant 8_Sensor ON> |            |         |           |                          |                             |                           |                        |
|-------------------------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| BW [MHz]                      | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
| Channel                       |            |         |           | 132072                   | 132322                      | 132572                    |                        |
| Frequency (MHz)               |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20                            | QPSK       | 1       | 0         | 21.04                    | 21.14                       | 21.10                     | 21.5                   |
| 20                            | QPSK       | 1       | 49        | 20.97                    | 20.97                       | 20.99                     |                        |
| 20                            | QPSK       | 1       | 99        | 21.03                    | 21.00                       | 20.99                     |                        |
| 20                            | QPSK       | 50      | 0         | 21.13                    | 21.16                       | 21.10                     | 21.5                   |
| 20                            | QPSK       | 50      | 24        | 20.98                    | 20.97                       | 21.02                     |                        |
| 20                            | QPSK       | 50      | 50        | 21.05                    | 20.99                       | 21.06                     |                        |
| 20                            | QPSK       | 100     | 0         | 21.03                    | 20.98                       | 21.02                     | 21.5                   |
| 20                            | 16QAM      | 1       | 0         | 21.13                    | 21.05                       | 21.13                     |                        |
| 20                            | 16QAM      | 1       | 49        | 21.03                    | 21.02                       | 21.06                     |                        |
| 20                            | 16QAM      | 1       | 99        | 21.12                    | 21.10                       | 21.07                     | 21.5                   |
| 20                            | 16QAM      | 50      | 0         | 21.03                    | 21.02                       | 21.09                     |                        |
| 20                            | 16QAM      | 50      | 24        | 20.98                    | 20.93                       | 20.97                     |                        |
| 20                            | 16QAM      | 50      | 50        | 21.12                    | 21.02                       | 21.08                     | 21.5                   |
| 20                            | 16QAM      | 100     | 0         | 21.00                    | 20.97                       | 21.00                     |                        |
| 20                            | 64QAM      | 1       | 0         | 21.02                    | 20.98                       | 21.03                     | 21.5                   |
| 20                            | 64QAM      | 1       | 49        | 21.07                    | 20.98                       | 21.05                     |                        |
| 20                            | 64QAM      | 1       | 99        | 21.05                    | 21.00                       | 21.07                     |                        |
| 20                            | 64QAM      | 50      | 0         | 20.53                    | 20.50                       | 20.53                     | 21.5                   |
| 20                            | 64QAM      | 50      | 24        | 20.46                    | 20.44                       | 20.48                     |                        |
| 20                            | 64QAM      | 50      | 50        | 20.52                    | 20.49                       | 20.58                     |                        |
| 20                            | 64QAM      | 100     | 0         | 20.51                    | 20.48                       | 20.57                     | 19.5                   |
| 20                            | 256QAM     | 1       | 0         | 18.35                    | 18.31                       | 18.40                     |                        |
| 20                            | 256QAM     | 1       | 49        | 18.38                    | 18.31                       | 18.34                     |                        |
| 20                            | 256QAM     | 1       | 99        | 18.43                    | 18.35                       | 18.37                     | 19.5                   |
| 20                            | 256QAM     | 50      | 0         | 18.51                    | 18.44                       | 18.47                     |                        |
| 20                            | 256QAM     | 50      | 24        | 18.47                    | 18.37                       | 18.46                     |                        |
| 20                            | 256QAM     | 50      | 50        | 18.44                    | 18.44                       | 18.49                     |                        |



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|                 |        |     |    |        |        |        |                        |
|-----------------|--------|-----|----|--------|--------|--------|------------------------|
| 20              | 256QAM | 100 | 0  | 18.47  | 18.46  | 18.54  |                        |
| Channel         |        |     |    | 132047 | 132322 | 132597 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |     |    | 1717.5 | 1745   | 1772.5 |                        |
| 15              | QPSK   | 1   | 0  | 20.97  | 20.83  | 20.83  | 21.5                   |
| 15              | QPSK   | 1   | 37 | 20.80  | 20.96  | 20.98  |                        |
| 15              | QPSK   | 1   | 74 | 21.08  | 20.94  | 20.95  |                        |
| 15              | QPSK   | 36  | 0  | 21.06  | 21.06  | 21.04  | 21.5                   |
| 15              | QPSK   | 36  | 20 | 20.78  | 20.83  | 21.02  |                        |
| 15              | QPSK   | 36  | 39 | 20.90  | 20.81  | 21.03  |                        |
| 15              | QPSK   | 75  | 0  | 20.99  | 20.86  | 20.86  |                        |
| 15              | 16QAM  | 1   | 0  | 21.11  | 21.03  | 21.05  | 21.5                   |
| 15              | 16QAM  | 1   | 37 | 21.02  | 20.96  | 21.04  |                        |
| 15              | 16QAM  | 1   | 74 | 20.92  | 20.91  | 20.94  |                        |
| 15              | 16QAM  | 36  | 0  | 21.01  | 20.94  | 20.89  | 21.5                   |
| 15              | 16QAM  | 36  | 20 | 20.90  | 20.83  | 20.95  |                        |
| 15              | 16QAM  | 36  | 39 | 21.02  | 20.96  | 20.96  |                        |
| 15              | 16QAM  | 75  | 0  | 21.00  | 20.85  | 20.88  |                        |
| 15              | 64QAM  | 1   | 0  | 20.90  | 20.79  | 21.03  | 21.5                   |
| 15              | 64QAM  | 1   | 37 | 20.91  | 20.89  | 20.91  |                        |
| 15              | 64QAM  | 1   | 74 | 20.99  | 20.81  | 21.03  |                        |
| 15              | 64QAM  | 36  | 0  | 20.53  | 20.32  | 20.47  | 21.5                   |
| 15              | 64QAM  | 36  | 20 | 20.31  | 20.38  | 20.28  |                        |
| 15              | 64QAM  | 36  | 39 | 20.33  | 20.41  | 20.47  |                        |
| 15              | 64QAM  | 75  | 0  | 20.41  | 20.46  | 20.44  |                        |
| 15              | 256QAM | 1   | 0  | 18.35  | 18.29  | 18.23  | 19.5                   |
| 15              | 256QAM | 1   | 37 | 18.36  | 18.29  | 18.24  |                        |
| 15              | 256QAM | 1   | 74 | 18.42  | 18.25  | 18.20  |                        |
| 15              | 256QAM | 36  | 0  | 18.45  | 18.24  | 18.42  | 19.5                   |
| 15              | 256QAM | 36  | 20 | 18.44  | 18.19  | 18.26  |                        |
| 15              | 256QAM | 36  | 39 | 18.44  | 18.42  | 18.39  |                        |
| 15              | 256QAM | 75  | 0  | 18.44  | 18.41  | 18.45  |                        |
| Channel         |        |     |    | 132022 | 132322 | 132622 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |     |    | 1715   | 1745   | 1775   |                        |
| 10              | QPSK   | 1   | 0  | 21.12  | 20.93  | 20.83  | 21.5                   |
| 10              | QPSK   | 1   | 25 | 20.96  | 20.82  | 20.90  |                        |
| 10              | QPSK   | 1   | 49 | 20.95  | 20.94  | 21.07  |                        |
| 10              | QPSK   | 25  | 0  | 20.93  | 21.00  | 20.95  | 21.5                   |
| 10              | QPSK   | 25  | 12 | 20.91  | 20.79  | 20.84  |                        |
| 10              | QPSK   | 25  | 25 | 21.01  | 20.87  | 20.93  |                        |
| 10              | QPSK   | 50  | 0  | 20.95  | 20.80  | 20.89  |                        |
| 10              | 16QAM  | 1   | 0  | 20.96  | 20.86  | 20.99  | 21.5                   |
| 10              | 16QAM  | 1   | 25 | 20.86  | 20.99  | 21.00  |                        |
| 10              | 16QAM  | 1   | 49 | 21.03  | 20.97  | 20.94  |                        |
| 10              | 16QAM  | 25  | 0  | 21.00  | 20.87  | 20.96  | 21.5                   |
| 10              | 16QAM  | 25  | 12 | 20.93  | 20.91  | 20.81  |                        |
| 10              | 16QAM  | 25  | 25 | 21.08  | 20.89  | 21.08  |                        |
| 10              | 16QAM  | 50  | 0  | 20.98  | 20.94  | 20.84  |                        |
| 10              | 64QAM  | 1   | 0  | 20.85  | 20.78  | 20.90  | 21.5                   |
| 10              | 64QAM  | 1   | 25 | 20.93  | 20.83  | 20.85  |                        |
| 10              | 64QAM  | 1   | 49 | 20.90  | 20.97  | 21.02  |                        |
| 10              | 64QAM  | 25  | 0  | 20.47  | 20.33  | 20.37  | 21.5                   |
| 10              | 64QAM  | 25  | 12 | 20.42  | 20.34  | 20.33  |                        |
| 10              | 64QAM  | 25  | 25 | 20.40  | 20.39  | 20.46  |                        |
| 10              | 64QAM  | 50  | 0  | 20.43  | 20.42  | 20.54  |                        |
| 10              | 256QAM | 1   | 0  | 18.22  | 18.21  | 18.29  | 19.5                   |
| 10              | 256QAM | 1   | 25 | 18.21  | 18.11  | 18.33  |                        |



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|                 |        |    |    |        |        |        |                     |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 10              | 256QAM | 1  | 49 | 18.23  | 18.32  | 18.33  | 19.5                |
| 10              | 256QAM | 25 | 0  | 18.42  | 18.27  | 18.30  |                     |
| 10              | 256QAM | 25 | 12 | 18.34  | 18.23  | 18.36  |                     |
| 10              | 256QAM | 25 | 25 | 18.30  | 18.34  | 18.37  |                     |
| 10              | 256QAM | 50 | 0  | 18.47  | 18.39  | 18.44  |                     |
| Channel         |        |    |    | 131997 | 132322 | 132647 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1712.5 | 1745   | 1777.5 |                     |
| 5               | QPSK   | 1  | 0  | 20.96  | 20.93  | 20.99  | 21.5                |
| 5               | QPSK   | 1  | 12 | 20.88  | 20.78  | 20.84  |                     |
| 5               | QPSK   | 1  | 24 | 21.08  | 20.84  | 20.99  |                     |
| 5               | QPSK   | 12 | 0  | 20.95  | 21.06  | 20.90  | 21.5                |
| 5               | QPSK   | 12 | 7  | 20.84  | 20.80  | 20.96  |                     |
| 5               | QPSK   | 12 | 13 | 21.03  | 20.87  | 20.94  |                     |
| 5               | QPSK   | 25 | 0  | 20.93  | 20.92  | 20.85  |                     |
| 5               | 16QAM  | 1  | 0  | 21.10  | 21.01  | 21.07  | 21.5                |
| 5               | 16QAM  | 1  | 12 | 20.86  | 20.93  | 21.02  |                     |
| 5               | 16QAM  | 1  | 24 | 21.10  | 21.06  | 21.02  |                     |
| 5               | 16QAM  | 12 | 0  | 20.92  | 20.84  | 21.04  | 21.5                |
| 5               | 16QAM  | 12 | 7  | 20.89  | 20.88  | 20.87  |                     |
| 5               | 16QAM  | 12 | 13 | 21.02  | 20.95  | 20.99  |                     |
| 5               | 16QAM  | 25 | 0  | 20.94  | 20.85  | 20.92  |                     |
| 5               | 64QAM  | 1  | 0  | 21.02  | 20.83  | 20.84  | 21.5                |
| 5               | 64QAM  | 1  | 12 | 21.00  | 20.80  | 20.92  |                     |
| 5               | 64QAM  | 1  | 24 | 20.86  | 20.87  | 20.87  |                     |
| 5               | 64QAM  | 12 | 0  | 20.39  | 20.38  | 20.40  | 21.5                |
| 5               | 64QAM  | 12 | 7  | 20.45  | 20.29  | 20.32  |                     |
| 5               | 64QAM  | 12 | 13 | 20.39  | 20.47  | 20.50  |                     |
| 5               | 64QAM  | 25 | 0  | 20.44  | 20.38  | 20.51  |                     |
| 5               | 256QAM | 1  | 0  | 18.28  | 18.21  | 18.23  | 19.5                |
| 5               | 256QAM | 1  | 12 | 18.22  | 18.24  | 18.16  |                     |
| 5               | 256QAM | 1  | 24 | 18.29  | 18.23  | 18.33  |                     |
| 5               | 256QAM | 12 | 0  | 18.32  | 18.25  | 18.40  | 19.5                |
| 5               | 256QAM | 12 | 7  | 18.33  | 18.31  | 18.42  |                     |
| 5               | 256QAM | 12 | 13 | 18.29  | 18.37  | 18.36  |                     |
| 5               | 256QAM | 25 | 0  | 18.36  | 18.28  | 18.52  |                     |
| Channel         |        |    |    | 131987 | 132322 | 132657 | Tune-up limit (dBm) |
| Frequency (MHz) |        |    |    | 1711.5 | 1745   | 1778.5 |                     |
| 3               | QPSK   | 1  | 0  | 20.98  | 20.81  | 20.89  | 21.5                |
| 3               | QPSK   | 1  | 8  | 20.89  | 20.81  | 20.84  |                     |
| 3               | QPSK   | 1  | 14 | 20.98  | 20.97  | 20.93  |                     |
| 3               | QPSK   | 8  | 0  | 21.13  | 21.06  | 21.05  | 21.5                |
| 3               | QPSK   | 8  | 4  | 20.87  | 20.84  | 21.01  |                     |
| 3               | QPSK   | 8  | 7  | 20.97  | 20.91  | 20.97  |                     |
| 3               | QPSK   | 15 | 0  | 20.91  | 20.93  | 21.02  |                     |
| 3               | 16QAM  | 1  | 0  | 21.00  | 20.92  | 21.12  | 21.5                |
| 3               | 16QAM  | 1  | 8  | 21.00  | 20.92  | 20.94  |                     |
| 3               | 16QAM  | 1  | 14 | 21.00  | 20.94  | 21.07  |                     |
| 3               | 16QAM  | 8  | 0  | 20.84  | 20.87  | 21.08  | 21.5                |
| 3               | 16QAM  | 8  | 4  | 20.92  | 20.88  | 20.84  |                     |
| 3               | 16QAM  | 8  | 7  | 21.04  | 20.92  | 20.89  |                     |
| 3               | 16QAM  | 15 | 0  | 20.91  | 20.79  | 20.94  |                     |
| 3               | 64QAM  | 1  | 0  | 20.97  | 20.92  | 20.86  | 21.5                |
| 3               | 64QAM  | 1  | 8  | 21.05  | 20.87  | 20.92  |                     |
| 3               | 64QAM  | 1  | 14 | 21.03  | 20.91  | 20.97  |                     |
| 3               | 64QAM  | 8  | 0  | 20.42  | 20.43  | 20.38  | 21.5                |
| 3               | 64QAM  | 8  | 4  | 20.43  | 20.26  | 20.32  |                     |



# FCC SAR TEST REPORT

Report No. : FA451315

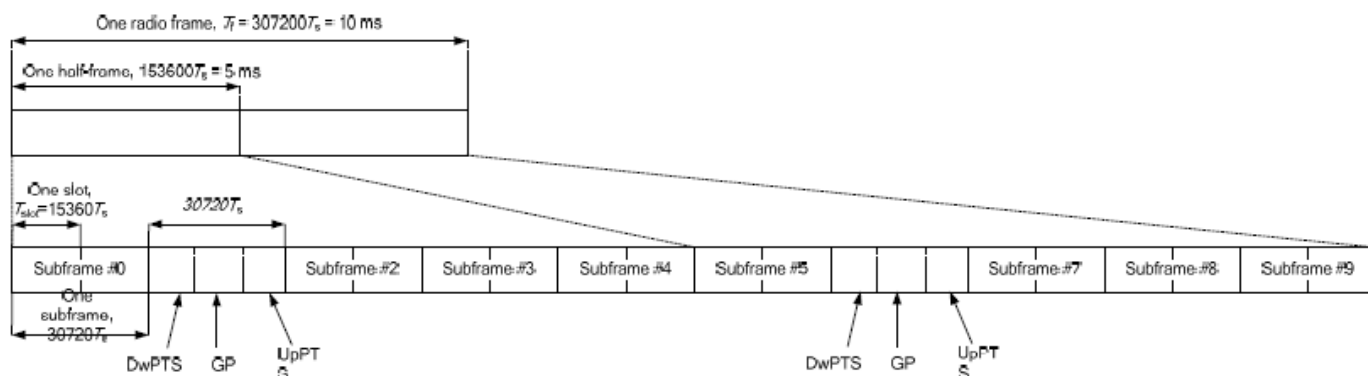
|                 |        |    |    |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|------------------------|
| 3               | 64QAM  | 8  | 7  | 20.49  | 20.30  | 20.41  |                        |
| 3               | 64QAM  | 15 | 0  | 20.48  | 20.28  | 20.38  |                        |
| 3               | 256QAM | 1  | 0  | 18.20  | 18.31  | 18.38  |                        |
| 3               | 256QAM | 1  | 8  | 18.32  | 18.29  | 18.33  | 19.5                   |
| 3               | 256QAM | 1  | 14 | 18.26  | 18.16  | 18.34  |                        |
| 3               | 256QAM | 8  | 0  | 18.38  | 18.41  | 18.32  |                        |
| 3               | 256QAM | 8  | 4  | 18.41  | 18.21  | 18.29  | 19.5                   |
| 3               | 256QAM | 8  | 7  | 18.34  | 18.42  | 18.41  |                        |
| 3               | 256QAM | 15 | 0  | 18.33  | 18.37  | 18.37  |                        |
| Channel         |        |    |    | 131979 | 132322 | 132665 | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 1710.7 | 1745   | 1779.3 |                        |
| 1.4             | QPSK   | 1  | 0  | 20.96  | 20.92  | 20.94  | 21.5                   |
| 1.4             | QPSK   | 1  | 3  | 20.99  | 20.94  | 21.02  |                        |
| 1.4             | QPSK   | 1  | 5  | 20.95  | 20.88  | 20.93  |                        |
| 1.4             | QPSK   | 3  | 0  | 20.96  | 20.92  | 20.99  |                        |
| 1.4             | QPSK   | 3  | 1  | 20.94  | 20.93  | 20.94  |                        |
| 1.4             | QPSK   | 3  | 3  | 20.96  | 20.87  | 20.90  |                        |
| 1.4             | QPSK   | 6  | 0  | 20.96  | 20.92  | 20.92  | 21.5                   |
| 1.4             | 16QAM  | 1  | 0  | 21.01  | 21.00  | 21.09  | 21.5                   |
| 1.4             | 16QAM  | 1  | 3  | 21.04  | 21.02  | 21.04  |                        |
| 1.4             | 16QAM  | 1  | 5  | 21.08  | 21.01  | 21.04  |                        |
| 1.4             | 16QAM  | 3  | 0  | 20.90  | 20.83  | 20.92  |                        |
| 1.4             | 16QAM  | 3  | 1  | 20.84  | 20.84  | 20.88  |                        |
| 1.4             | 16QAM  | 3  | 3  | 20.84  | 20.83  | 20.83  |                        |
| 1.4             | 16QAM  | 6  | 0  | 21.02  | 20.93  | 20.93  | 21.5                   |
| 1.4             | 64QAM  | 1  | 0  | 21.02  | 20.95  | 21.00  | 21.5                   |
| 1.4             | 64QAM  | 1  | 3  | 21.00  | 20.96  | 20.99  |                        |
| 1.4             | 64QAM  | 1  | 5  | 20.94  | 20.93  | 20.99  |                        |
| 1.4             | 64QAM  | 3  | 0  | 20.93  | 20.88  | 20.92  |                        |
| 1.4             | 64QAM  | 3  | 1  | 20.93  | 20.89  | 20.91  |                        |
| 1.4             | 64QAM  | 3  | 3  | 20.93  | 20.85  | 20.89  |                        |
| 1.4             | 64QAM  | 6  | 0  | 20.41  | 20.38  | 20.48  | 21.5                   |
| 1.4             | 256QAM | 1  | 0  | 18.37  | 18.28  | 18.28  | 19.5                   |
| 1.4             | 256QAM | 1  | 3  | 18.36  | 18.28  | 18.34  |                        |
| 1.4             | 256QAM | 1  | 5  | 18.32  | 18.25  | 18.33  |                        |
| 1.4             | 256QAM | 3  | 0  | 18.40  | 18.30  | 18.38  |                        |
| 1.4             | 256QAM | 3  | 1  | 18.41  | 18.33  | 18.43  |                        |
| 1.4             | 256QAM | 3  | 3  | 18.29  | 18.26  | 18.27  |                        |
| 1.4             | 256QAM | 6  | 0  | 18.37  | 18.37  | 18.43  | 19.5                   |

**<TDD LTE SAR Measurement>**

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “special subframe S” contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Base station simulator was used for LTE output power measurements and SAR testing.



**Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).**

**Table 4.2-2: Uplink-downlink configurations.**

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number |   |   |   |   |   |   |   |   |   |
|-------------------------------|---------------------------------------------|-----------------|---|---|---|---|---|---|---|---|---|
|                               |                                             | 0               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                             | 5 ms                                        | D               | S | U | U | U | D | S | U | U | U |
| 1                             | 5 ms                                        | D               | S | U | U | D | D | S | U | U | D |
| 2                             | 5 ms                                        | D               | S | U | D | D | D | S | U | D | D |
| 3                             | 10 ms                                       | D               | S | U | U | U | D | D | D | D | D |
| 4                             | 10 ms                                       | D               | S | U | U | D | D | D | D | D | D |
| 5                             | 10 ms                                       | D               | S | U | D | D | D | D | D | D | D |
| 6                             | 5 ms                                        | D               | S | U | U | U | D | S | U | U | D |

**Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).**

| Special subframe configuration | Normal cyclic prefix in downlink |                                |                                  | Extended cyclic prefix in downlink |                                |                                  |
|--------------------------------|----------------------------------|--------------------------------|----------------------------------|------------------------------------|--------------------------------|----------------------------------|
|                                | DwPTS                            | UpPTS                          |                                  | DwPTS                              | UpPTS                          |                                  |
|                                |                                  | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |                                    | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0                              | $6592 \cdot T_s$                 | $2192 \cdot T_s$               | $2560 \cdot T_s$                 | $7680 \cdot T_s$                   | $2192 \cdot T_s$               | $2560 \cdot T_s$                 |
| 1                              | $19760 \cdot T_s$                |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 2                              | $21952 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 3                              | $24144 \cdot T_s$                |                                |                                  | $25600 \cdot T_s$                  |                                |                                  |
| 4                              | $26336 \cdot T_s$                | $4384 \cdot T_s$               | $5120 \cdot T_s$                 | $7680 \cdot T_s$                   | $4384 \cdot T_s$               | $5120 \cdot T_s$                 |
| 5                              | $6592 \cdot T_s$                 |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 6                              | $19760 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 7                              | $21952 \cdot T_s$                |                                |                                  | $12800 \cdot T_s$                  |                                |                                  |
| 8                              | $24144 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |
| 9                              | $13168 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |

| Special subframe (30720·T <sub>s</sub> ): Normal cyclic prefix in downlink (UpPTS) |                                |                                |                                  |
|------------------------------------------------------------------------------------|--------------------------------|--------------------------------|----------------------------------|
|                                                                                    | Special subframe configuration | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| Uplink duty factor in one special subframe                                         | 0~4                            | 7.13%                          | 8.33%                            |
|                                                                                    | 5~9                            | 14.3%                          | 16.7%                            |

| Special subframe(30720·T <sub>s</sub> ): Extended cyclic prefix in downlink (UpPTS) |                                |                                |                                  |
|-------------------------------------------------------------------------------------|--------------------------------|--------------------------------|----------------------------------|
|                                                                                     | Special subframe configuration | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| Uplink duty factor in one special subframe                                          | 0~3                            | 7.13%                          | 8.33%                            |
|                                                                                     | 4~7                            | 14.3%                          | 16.7%                            |

The highest duty factor is resulted from:

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is:  
 $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is:  
 $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix  $63.3\%/62.9\% = 1.006$  is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.

| <LTE Band 48_Ant 1_Sensor OFF> |            |         |           |                       |                              |                               |                        |                     |
|--------------------------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| BW [MHz]                       | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                        |            |         |           | 55340                 | 55830                        | 56150                         | 56640                  |                     |
| Frequency (MHz)                |            |         |           | 3560                  | 3609                         | 3641                          | 3690                   |                     |
| 20                             | QPSK       | 1       | 0         | 20.95                 | 20.85                        | 20.80                         | 20.82                  | 21                  |
| 20                             | QPSK       | 1       | 49        | 20.87                 | 20.78                        | 20.74                         | 20.74                  |                     |
| 20                             | QPSK       | 1       | 99        | 20.92                 | 20.75                        | 20.79                         | 20.77                  |                     |
| 20                             | QPSK       | 50      | 0         | 20.89                 | 20.82                        | 20.76                         | 20.78                  | 21                  |
| 20                             | QPSK       | 50      | 24        | 20.87                 | 20.80                        | 20.73                         | 20.72                  |                     |
| 20                             | QPSK       | 50      | 50        | 20.88                 | 20.74                        | 20.72                         | 20.75                  |                     |
| 20                             | QPSK       | 100     | 0         | 20.88                 | 20.76                        | 20.74                         | 20.73                  | 21                  |
| 20                             | 16QAM      | 1       | 0         | 20.90                 | 20.85                        | 20.74                         | 20.76                  |                     |
| 20                             | 16QAM      | 1       | 49        | 20.80                 | 20.64                        | 20.72                         | 20.66                  |                     |
| 20                             | 16QAM      | 1       | 99        | 20.87                 | 20.61                        | 20.81                         | 20.71                  | 21                  |
| 20                             | 16QAM      | 50      | 0         | 20.76                 | 20.75                        | 20.69                         | 20.67                  |                     |
| 20                             | 16QAM      | 50      | 24        | 20.76                 | 20.53                        | 20.63                         | 20.60                  |                     |
| 20                             | 16QAM      | 50      | 50        | 20.77                 | 20.64                        | 20.61                         | 20.61                  | 21                  |
| 20                             | 16QAM      | 100     | 0         | 20.78                 | 20.56                        | 20.65                         | 20.66                  |                     |
| 20                             | 64QAM      | 1       | 0         | 20.87                 | 20.73                        | 20.80                         | 20.74                  |                     |
| 20                             | 64QAM      | 1       | 49        | 20.77                 | 20.63                        | 20.53                         | 20.63                  | 21                  |
| 20                             | 64QAM      | 1       | 99        | 20.83                 | 20.65                        | 20.78                         | 20.69                  |                     |
| 20                             | 64QAM      | 50      | 0         | 20.27                 | 20.14                        | 20.19                         | 20.18                  | 20.5                |
| 20                             | 64QAM      | 50      | 24        | 20.24                 | 20.21                        | 20.06                         | 20.12                  |                     |
| 20                             | 64QAM      | 50      | 50        | 20.30                 | 20.20                        | 20.12                         | 20.10                  |                     |
| 20                             | 64QAM      | 100     | 0         | 20.28                 | 20.16                        | 20.11                         | 20.12                  | 18.5                |
| 20                             | 256QAM     | 1       | 0         | 18.23                 | 17.99                        | 18.16                         | 18.09                  |                     |
| 20                             | 256QAM     | 1       | 49        | 18.10                 | 17.96                        | 18.02                         | 17.95                  |                     |
| 20                             | 256QAM     | 1       | 99        | 18.20                 | 17.94                        | 17.98                         | 18.03                  | 18.5                |
| 20                             | 256QAM     | 50      | 0         | 18.21                 | 18.13                        | 18.05                         | 18.14                  |                     |
| 20                             | 256QAM     | 50      | 24        | 18.22                 | 18.09                        | 18.08                         | 18.07                  |                     |
| 20                             | 256QAM     | 50      | 50        | 18.22                 | 18.15                        | 18.02                         | 18.05                  | 18.5                |
| 20                             | 256QAM     | 100     | 0         | 18.22                 | 18.16                        | 18.03                         | 18.07                  |                     |
| Channel                        |            |         |           | 55315                 | 55820                        | 56160                         | 56665                  | Tune-up limit (dBm) |
| Frequency (MHz)                |            |         |           | 3557.5                | 3608                         | 3642                          | 3692.5                 |                     |
| 15                             | QPSK       | 1       | 0         | 20.80                 | 20.72                        | 20.64                         | 20.62                  |                     |
| 15                             | QPSK       | 1       | 37        | 20.72                 | 20.65                        | 20.58                         | 20.57                  | 21                  |
| 15                             | QPSK       | 1       | 74        | 20.78                 | 20.62                        | 20.67                         | 20.63                  |                     |
| 15                             | QPSK       | 36      | 0         | 20.79                 | 20.69                        | 20.58                         | 20.59                  | 21                  |
| 15                             | QPSK       | 36      | 20        | 20.75                 | 20.70                        | 20.55                         | 20.57                  |                     |
| 15                             | QPSK       | 36      | 39        | 20.69                 | 20.57                        | 20.59                         | 20.65                  |                     |
| 15                             | QPSK       | 75      | 0         | 20.77                 | 20.62                        | 20.60                         | 20.60                  | 21                  |
| 15                             | 16QAM      | 1       | 0         | 20.70                 | 20.67                        | 20.63                         | 20.58                  |                     |
| 15                             | 16QAM      | 1       | 37        | 20.60                 | 20.44                        | 20.56                         | 20.54                  |                     |
| 15                             | 16QAM      | 1       | 74        | 20.70                 | 20.43                        | 20.69                         | 20.61                  | 21                  |
| 15                             | 16QAM      | 36      | 0         | 20.58                 | 20.55                        | 20.50                         | 20.57                  |                     |
| 15                             | 16QAM      | 36      | 20        | 20.58                 | 20.43                        | 20.53                         | 20.45                  |                     |
| 15                             | 16QAM      | 36      | 39        | 20.67                 | 20.50                        | 20.51                         | 20.42                  | 21                  |
| 15                             | 16QAM      | 75      | 0         | 20.62                 | 20.36                        | 20.50                         | 20.47                  |                     |
| 15                             | 64QAM      | 1       | 0         | 20.76                 | 20.56                        | 20.64                         | 20.59                  |                     |
| 15                             | 64QAM      | 1       | 37        | 20.65                 | 20.46                        | 20.33                         | 20.52                  | 21                  |
| 15                             | 64QAM      | 1       | 74        | 20.64                 | 20.49                        | 20.67                         | 20.54                  |                     |
| 15                             | 64QAM      | 36      | 0         | 20.11                 | 19.96                        | 20.04                         | 20.00                  |                     |
| 15                             | 64QAM      | 36      | 20        | 20.09                 | 20.05                        | 19.90                         | 19.94                  | 20.5                |
| 15                             | 64QAM      | 36      | 39        | 20.19                 | 20.01                        | 20.00                         | 19.93                  |                     |



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|                 |        |    |    |        |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|--------|------------------------|
| 15              | 64QAM  | 75 | 0  | 20.17  | 20.06  | 19.91  | 20.02  |                        |
| 15              | 256QAM | 1  | 0  | 18.07  | 17.84  | 18.01  | 17.95  | 18.5                   |
| 15              | 256QAM | 1  | 37 | 17.98  | 17.84  | 17.90  | 17.85  |                        |
| 15              | 256QAM | 1  | 74 | 18.10  | 17.76  | 17.78  | 17.92  |                        |
| 15              | 256QAM | 36 | 0  | 18.10  | 18.03  | 17.85  | 18.01  | 18.5                   |
| 15              | 256QAM | 36 | 20 | 18.06  | 17.93  | 17.95  | 17.97  |                        |
| 15              | 256QAM | 36 | 39 | 18.02  | 17.99  | 17.84  | 17.90  |                        |
| 15              | 256QAM | 75 | 0  | 18.08  | 18.00  | 17.85  | 17.91  |                        |
| Channel         |        |    |    | 55290  | 55815  | 56165  | 56690  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 3555   | 3607.5 | 3642.5 | 3695   |                        |
| 10              | QPSK   | 1  | 0  | 20.85  | 20.66  | 20.70  | 20.65  | 21                     |
| 10              | QPSK   | 1  | 25 | 20.75  | 20.68  | 20.59  | 20.58  |                        |
| 10              | QPSK   | 1  | 49 | 20.77  | 20.63  | 20.66  | 20.61  |                        |
| 10              | QPSK   | 25 | 0  | 20.69  | 20.70  | 20.56  | 20.67  | 21                     |
| 10              | QPSK   | 25 | 12 | 20.71  | 20.65  | 20.59  | 20.60  |                        |
| 10              | QPSK   | 25 | 25 | 20.73  | 20.55  | 20.60  | 20.61  |                        |
| 10              | QPSK   | 50 | 0  | 20.74  | 20.66  | 20.56  | 20.55  |                        |
| 10              | 16QAM  | 1  | 0  | 20.76  | 20.71  | 20.64  | 20.63  | 21                     |
| 10              | 16QAM  | 1  | 25 | 20.60  | 20.46  | 20.56  | 20.55  |                        |
| 10              | 16QAM  | 1  | 49 | 20.72  | 20.42  | 20.66  | 20.53  |                        |
| 10              | 16QAM  | 25 | 0  | 20.60  | 20.61  | 20.49  | 20.57  | 21                     |
| 10              | 16QAM  | 25 | 12 | 20.57  | 20.34  | 20.47  | 20.50  |                        |
| 10              | 16QAM  | 25 | 25 | 20.67  | 20.51  | 20.47  | 20.47  |                        |
| 10              | 16QAM  | 50 | 0  | 20.58  | 20.40  | 20.48  | 20.56  |                        |
| 10              | 64QAM  | 1  | 0  | 20.69  | 20.54  | 20.66  | 20.61  | 21                     |
| 10              | 64QAM  | 1  | 25 | 20.57  | 20.43  | 20.42  | 20.46  |                        |
| 10              | 64QAM  | 1  | 49 | 20.70  | 20.52  | 20.60  | 20.57  |                        |
| 10              | 64QAM  | 25 | 0  | 20.11  | 19.96  | 20.02  | 20.06  | 20.5                   |
| 10              | 64QAM  | 25 | 12 | 20.05  | 20.05  | 19.92  | 19.97  |                        |
| 10              | 64QAM  | 25 | 25 | 20.14  | 20.03  | 20.00  | 19.92  |                        |
| 10              | 64QAM  | 50 | 0  | 20.12  | 20.03  | 19.92  | 19.99  |                        |
| 10              | 256QAM | 1  | 0  | 18.06  | 17.81  | 17.98  | 17.89  | 18.5                   |
| 10              | 256QAM | 1  | 25 | 17.90  | 17.82  | 17.92  | 17.80  |                        |
| 10              | 256QAM | 1  | 49 | 18.00  | 17.84  | 17.80  | 17.93  |                        |
| 10              | 256QAM | 25 | 0  | 18.11  | 18.01  | 17.95  | 18.03  | 18.5                   |
| 10              | 256QAM | 25 | 12 | 18.09  | 17.93  | 17.96  | 17.93  |                        |
| 10              | 256QAM | 25 | 25 | 18.12  | 17.98  | 17.89  | 17.88  |                        |
| 10              | 256QAM | 50 | 0  | 18.05  | 18.03  | 17.88  | 17.96  |                        |
| Channel         |        |    |    | 55265  | 55810  | 56170  | 56715  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 3552.5 | 3607   | 3643   | 3697.5 |                        |
| 5               | QPSK   | 1  | 0  | 20.83  | 20.70  | 20.60  | 20.65  | 21                     |
| 5               | QPSK   | 1  | 12 | 20.70  | 20.63  | 20.59  | 20.58  |                        |
| 5               | QPSK   | 1  | 24 | 20.79  | 20.59  | 20.59  | 20.61  |                        |
| 5               | QPSK   | 12 | 0  | 20.70  | 20.72  | 20.61  | 20.61  | 21                     |
| 5               | QPSK   | 12 | 7  | 20.76  | 20.66  | 20.56  | 20.59  |                        |
| 5               | QPSK   | 12 | 13 | 20.74  | 20.55  | 20.58  | 20.65  |                        |
| 5               | QPSK   | 25 | 0  | 20.77  | 20.58  | 20.54  | 20.62  |                        |
| 5               | 16QAM  | 1  | 0  | 20.77  | 20.74  | 20.58  | 20.56  | 21                     |
| 5               | 16QAM  | 1  | 12 | 20.69  | 20.46  | 20.58  | 20.56  |                        |
| 5               | 16QAM  | 1  | 24 | 20.77  | 20.44  | 20.69  | 20.54  |                        |
| 5               | 16QAM  | 12 | 0  | 20.63  | 20.60  | 20.49  | 20.52  | 21                     |
| 5               | 16QAM  | 12 | 7  | 20.66  | 20.41  | 20.50  | 20.49  |                        |
| 5               | 16QAM  | 12 | 13 | 20.61  | 20.47  | 20.45  | 20.45  |                        |
| 5               | 16QAM  | 25 | 0  | 20.60  | 20.46  | 20.47  | 20.47  |                        |
| 5               | 64QAM  | 1  | 0  | 20.69  | 20.63  | 20.64  | 20.64  | 21                     |
| 5               | 64QAM  | 1  | 12 | 20.57  | 20.45  | 20.42  | 20.48  |                        |

|   |        |    |    |       |       |       |       |      |
|---|--------|----|----|-------|-------|-------|-------|------|
| 5 | 64QAM  | 1  | 24 | 20.73 | 20.49 | 20.58 | 20.59 | 20.5 |
| 5 | 64QAM  | 12 | 0  | 20.11 | 19.95 | 20.06 | 20.07 |      |
| 5 | 64QAM  | 12 | 7  | 20.07 | 20.02 | 19.91 | 20.02 |      |
| 5 | 64QAM  | 12 | 13 | 20.20 | 20.05 | 19.98 | 19.91 |      |
| 5 | 64QAM  | 25 | 0  | 20.15 | 19.96 | 19.93 | 19.94 |      |
| 5 | 256QAM | 1  | 0  | 18.08 | 17.80 | 17.96 | 17.93 | 18.5 |
| 5 | 256QAM | 1  | 12 | 17.91 | 17.85 | 17.82 | 17.78 |      |
| 5 | 256QAM | 1  | 24 | 18.09 | 17.83 | 17.87 | 17.91 |      |
| 5 | 256QAM | 12 | 0  | 18.05 | 17.98 | 17.94 | 18.04 | 18.5 |
| 5 | 256QAM | 12 | 7  | 18.05 | 17.92 | 17.97 | 17.90 |      |
| 5 | 256QAM | 12 | 13 | 18.10 | 17.95 | 17.89 | 17.89 |      |
| 5 | 256QAM | 25 | 0  | 18.12 | 18.03 | 17.90 | 17.92 |      |

| <LTE Band 48_Ant 6_Sensor OFF> |            |         |           |                       |                              |                               |                        |                     |
|--------------------------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| BW [MHz]                       | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
| Channel                        |            |         |           | 55340                 | 55830                        | 56150                         | 56640                  |                     |
| Frequency (MHz)                |            |         |           | 3560                  | 3609                         | 3641                          | 3690                   |                     |
| 20                             | QPSK       | 1       | 0         | 20.76                 | 20.72                        | 20.78                         | 20.92                  | 21                  |
| 20                             | QPSK       | 1       | 49        | 20.61                 | 20.61                        | 20.71                         | 20.81                  |                     |
| 20                             | QPSK       | 1       | 99        | 20.68                 | 20.63                        | 20.72                         | 20.86                  |                     |
| 20                             | QPSK       | 50      | 0         | 20.75                 | 20.72                        | 20.76                         | 20.86                  | 21                  |
| 20                             | QPSK       | 50      | 24        | 20.63                 | 20.64                        | 20.70                         | 20.83                  |                     |
| 20                             | QPSK       | 50      | 50        | 20.66                 | 20.65                        | 20.74                         | 20.85                  |                     |
| 20                             | QPSK       | 100     | 0         | 20.64                 | 20.63                        | 20.70                         | 20.80                  |                     |
| 20                             | 16QAM      | 1       | 0         | 20.71                 | 20.67                        | 20.74                         | 20.79                  | 21                  |
| 20                             | 16QAM      | 1       | 49        | 20.63                 | 20.66                        | 20.66                         | 20.85                  |                     |
| 20                             | 16QAM      | 1       | 99        | 20.75                 | 20.68                        | 20.62                         | 20.91                  |                     |
| 20                             | 16QAM      | 50      | 0         | 20.68                 | 20.60                        | 20.61                         | 20.76                  | 21                  |
| 20                             | 16QAM      | 50      | 24        | 20.55                 | 20.63                        | 20.54                         | 20.79                  |                     |
| 20                             | 16QAM      | 50      | 50        | 20.59                 | 20.63                        | 20.58                         | 20.81                  |                     |
| 20                             | 16QAM      | 100     | 0         | 20.58                 | 20.65                        | 20.66                         | 20.84                  |                     |
| 20                             | 64QAM      | 1       | 0         | 20.62                 | 20.64                        | 20.54                         | 20.76                  | 21                  |
| 20                             | 64QAM      | 1       | 49        | 20.54                 | 20.62                        | 20.52                         | 20.84                  |                     |
| 20                             | 64QAM      | 1       | 99        | 20.62                 | 20.64                        | 20.58                         | 20.89                  |                     |
| 20                             | 64QAM      | 50      | 0         | 20.09                 | 20.12                        | 20.06                         | 20.27                  | 20.5                |
| 20                             | 64QAM      | 50      | 24        | 20.18                 | 20.14                        | 20.11                         | 20.30                  |                     |
| 20                             | 64QAM      | 50      | 50        | 20.21                 | 20.13                        | 20.11                         | 20.33                  |                     |
| 20                             | 64QAM      | 100     | 0         | 20.24                 | 20.14                        | 20.16                         | 20.28                  |                     |
| 20                             | 256QAM     | 1       | 0         | 17.92                 | 17.95                        | 17.97                         | 18.08                  | 18.5                |
| 20                             | 256QAM     | 1       | 49        | 17.91                 | 17.93                        | 17.84                         | 18.13                  |                     |
| 20                             | 256QAM     | 1       | 99        | 18.00                 | 17.98                        | 17.90                         | 18.24                  |                     |
| 20                             | 256QAM     | 50      | 0         | 18.11                 | 18.10                        | 18.06                         | 18.22                  | 18.5                |
| 20                             | 256QAM     | 50      | 24        | 17.99                 | 18.09                        | 18.02                         | 18.25                  |                     |
| 20                             | 256QAM     | 50      | 50        | 17.98                 | 18.08                        | 18.04                         | 18.28                  |                     |
| 20                             | 256QAM     | 100     | 0         | 18.03                 | 18.07                        | 18.15                         | 18.24                  |                     |
| Channel                        |            |         |           | 55315                 | 55820                        | 56160                         | 56665                  | Tune-up limit (dBm) |
| Frequency (MHz)                |            |         |           | 3557.5                | 3608                         | 3642                          | 3692.5                 |                     |
| 15                             | QPSK       | 1       | 0         | 20.56                 | 20.60                        | 20.64                         | 20.73                  | 21                  |
| 15                             | QPSK       | 1       | 37        | 20.51                 | 20.48                        | 20.51                         | 20.63                  |                     |
| 15                             | QPSK       | 1       | 74        | 20.48                 | 20.53                        | 20.61                         | 20.78                  |                     |
| 15                             | QPSK       | 36      | 0         | 20.58                 | 20.57                        | 20.62                         | 20.74                  | 21                  |
| 15                             | QPSK       | 36      | 20        | 20.48                 | 20.51                        | 20.56                         | 20.64                  |                     |
| 15                             | QPSK       | 36      | 39        | 20.46                 | 20.53                        | 20.61                         | 20.69                  |                     |
| 15                             | QPSK       | 75      | 0         | 20.44                 | 20.44                        | 20.50                         | 20.70                  |                     |
| 15                             | 16QAM      | 1       | 0         | 20.60                 | 20.56                        | 20.55                         | 20.64                  | 21                  |



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|                 |        |    |    |        |        |        |        |                        |
|-----------------|--------|----|----|--------|--------|--------|--------|------------------------|
| 15              | 16QAM  | 1  | 37 | 20.53  | 20.47  | 20.46  | 20.73  |                        |
| 15              | 16QAM  | 1  | 74 | 20.55  | 20.54  | 20.50  | 20.80  |                        |
| 15              | 16QAM  | 36 | 0  | 20.49  | 20.40  | 20.48  | 20.63  |                        |
| 15              | 16QAM  | 36 | 20 | 20.37  | 20.48  | 20.34  | 20.67  | 21                     |
| 15              | 16QAM  | 36 | 39 | 20.48  | 20.50  | 20.47  | 20.70  |                        |
| 15              | 16QAM  | 75 | 0  | 20.48  | 20.45  | 20.48  | 20.72  |                        |
| 15              | 64QAM  | 1  | 0  | 20.45  | 20.54  | 20.36  | 20.58  | 21                     |
| 15              | 64QAM  | 1  | 37 | 20.39  | 20.48  | 20.37  | 20.69  |                        |
| 15              | 64QAM  | 1  | 74 | 20.52  | 20.49  | 20.40  | 20.74  |                        |
| 15              | 64QAM  | 36 | 0  | 19.92  | 19.98  | 19.87  | 20.15  | 20.5                   |
| 15              | 64QAM  | 36 | 20 | 20.06  | 19.98  | 19.94  | 20.15  |                        |
| 15              | 64QAM  | 36 | 39 | 20.11  | 20.00  | 19.94  | 20.15  |                        |
| 15              | 64QAM  | 75 | 0  | 20.06  | 20.00  | 20.00  | 20.12  |                        |
| 15              | 256QAM | 1  | 0  | 17.73  | 17.78  | 17.85  | 17.90  | 18.5                   |
| 15              | 256QAM | 1  | 37 | 17.76  | 17.83  | 17.71  | 18.00  |                        |
| 15              | 256QAM | 1  | 74 | 17.80  | 17.80  | 17.70  | 18.08  |                        |
| 15              | 256QAM | 36 | 0  | 17.98  | 17.99  | 17.87  | 18.07  | 18.5                   |
| 15              | 256QAM | 36 | 20 | 17.84  | 17.93  | 17.88  | 18.12  |                        |
| 15              | 256QAM | 36 | 39 | 17.86  | 17.92  | 17.90  | 18.10  |                        |
| 15              | 256QAM | 75 | 0  | 17.90  | 17.90  | 18.00  | 18.13  |                        |
| Channel         |        |    |    | 55290  | 55815  | 56165  | 56690  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 3555   | 3607.5 | 3642.5 | 3695   |                        |
| 10              | QPSK   | 1  | 0  | 20.59  | 20.54  | 20.66  | 20.71  | 21                     |
| 10              | QPSK   | 1  | 25 | 20.51  | 20.42  | 20.58  | 20.68  |                        |
| 10              | QPSK   | 1  | 49 | 20.58  | 20.49  | 20.54  | 20.76  |                        |
| 10              | QPSK   | 25 | 0  | 20.63  | 20.54  | 20.66  | 20.72  | 21                     |
| 10              | QPSK   | 25 | 12 | 20.53  | 20.47  | 20.53  | 20.66  |                        |
| 10              | QPSK   | 25 | 25 | 20.56  | 20.53  | 20.64  | 20.66  |                        |
| 10              | QPSK   | 50 | 0  | 20.48  | 20.43  | 20.55  | 20.67  |                        |
| 10              | 16QAM  | 1  | 0  | 20.61  | 20.56  | 20.58  | 20.68  | 21                     |
| 10              | 16QAM  | 1  | 25 | 20.50  | 20.50  | 20.51  | 20.75  |                        |
| 10              | 16QAM  | 1  | 49 | 20.55  | 20.56  | 20.42  | 20.79  |                        |
| 10              | 16QAM  | 25 | 0  | 20.58  | 20.44  | 20.50  | 20.62  | 21                     |
| 10              | 16QAM  | 25 | 12 | 20.38  | 20.48  | 20.35  | 20.59  |                        |
| 10              | 16QAM  | 25 | 25 | 20.40  | 20.43  | 20.47  | 20.64  |                        |
| 10              | 16QAM  | 50 | 0  | 20.48  | 20.51  | 20.51  | 20.70  |                        |
| 10              | 64QAM  | 1  | 0  | 20.44  | 20.47  | 20.43  | 20.59  | 21                     |
| 10              | 64QAM  | 1  | 25 | 20.35  | 20.50  | 20.36  | 20.66  |                        |
| 10              | 64QAM  | 1  | 49 | 20.50  | 20.47  | 20.38  | 20.77  |                        |
| 10              | 64QAM  | 25 | 0  | 19.96  | 19.95  | 19.91  | 20.13  | 20.5                   |
| 10              | 64QAM  | 25 | 12 | 20.05  | 19.97  | 19.95  | 20.17  |                        |
| 10              | 64QAM  | 25 | 25 | 20.10  | 20.00  | 19.99  | 20.19  |                        |
| 10              | 64QAM  | 50 | 0  | 20.05  | 20.04  | 20.06  | 20.11  |                        |
| 10              | 256QAM | 1  | 0  | 17.77  | 17.81  | 17.77  | 17.90  | 18.5                   |
| 10              | 256QAM | 1  | 25 | 17.80  | 17.82  | 17.72  | 17.99  |                        |
| 10              | 256QAM | 1  | 49 | 17.80  | 17.82  | 17.76  | 18.10  |                        |
| 10              | 256QAM | 25 | 0  | 17.91  | 17.97  | 17.91  | 18.10  | 18.5                   |
| 10              | 256QAM | 25 | 12 | 17.81  | 17.95  | 17.86  | 18.13  |                        |
| 10              | 256QAM | 25 | 25 | 17.86  | 17.93  | 17.90  | 18.10  |                        |
| 10              | 256QAM | 50 | 0  | 17.89  | 17.94  | 18.00  | 18.07  |                        |
| Channel         |        |    |    | 55265  | 55810  | 56170  | 56715  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |        |    |    | 3552.5 | 3607   | 3643   | 3697.5 |                        |
| 5               | QPSK   | 1  | 0  | 20.66  | 20.52  | 20.68  | 20.68  | 21                     |
| 5               | QPSK   | 1  | 12 | 20.44  | 20.50  | 20.57  | 20.65  |                        |
| 5               | QPSK   | 1  | 24 | 20.50  | 20.43  | 20.62  | 20.79  |                        |
| 5               | QPSK   | 12 | 0  | 20.64  | 20.52  | 20.57  | 20.66  | 21                     |



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|   |        |    |    |       |       |       |       |      |
|---|--------|----|----|-------|-------|-------|-------|------|
| 5 | QPSK   | 12 | 7  | 20.51 | 20.52 | 20.55 | 20.67 |      |
| 5 | QPSK   | 12 | 13 | 20.48 | 20.46 | 20.62 | 20.67 |      |
| 5 | QPSK   | 25 | 0  | 20.53 | 20.52 | 20.55 | 20.61 |      |
| 5 | 16QAM  | 1  | 0  | 20.57 | 20.50 | 20.60 | 20.63 | 21   |
| 5 | 16QAM  | 1  | 12 | 20.49 | 20.51 | 20.49 | 20.66 |      |
| 5 | 16QAM  | 1  | 24 | 20.60 | 20.49 | 20.50 | 20.71 |      |
| 5 | 16QAM  | 12 | 0  | 20.56 | 20.47 | 20.49 | 20.60 | 21   |
| 5 | 16QAM  | 12 | 7  | 20.35 | 20.46 | 20.34 | 20.62 |      |
| 5 | 16QAM  | 12 | 13 | 20.46 | 20.53 | 20.47 | 20.67 |      |
| 5 | 16QAM  | 25 | 0  | 20.45 | 20.55 | 20.53 | 20.70 | 21   |
| 5 | 64QAM  | 1  | 0  | 20.51 | 20.52 | 20.39 | 20.58 |      |
| 5 | 64QAM  | 1  | 12 | 20.35 | 20.52 | 20.37 | 20.68 |      |
| 5 | 64QAM  | 1  | 24 | 20.45 | 20.44 | 20.38 | 20.78 | 20.5 |
| 5 | 64QAM  | 12 | 0  | 19.98 | 20.01 | 19.93 | 20.14 |      |
| 5 | 64QAM  | 12 | 7  | 20.03 | 19.96 | 19.93 | 20.15 |      |
| 5 | 64QAM  | 12 | 13 | 20.09 | 20.03 | 19.98 | 20.18 | 18.5 |
| 5 | 64QAM  | 25 | 0  | 20.12 | 20.03 | 20.05 | 20.13 |      |
| 5 | 256QAM | 1  | 0  | 17.77 | 17.84 | 17.79 | 17.91 |      |
| 5 | 256QAM | 1  | 12 | 17.71 | 17.78 | 17.66 | 17.95 | 18.5 |
| 5 | 256QAM | 1  | 24 | 17.90 | 17.86 | 17.73 | 18.14 |      |
| 5 | 256QAM | 12 | 0  | 17.97 | 17.90 | 17.91 | 18.10 |      |
| 5 | 256QAM | 12 | 7  | 17.84 | 17.96 | 17.83 | 18.09 | 18.5 |
| 5 | 256QAM | 12 | 13 | 17.88 | 17.93 | 17.93 | 18.15 |      |
| 5 | 256QAM | 25 | 0  | 17.93 | 17.92 | 18.00 | 18.04 |      |

**<LTE Carrier Aggregation combinations>****General Note:**

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

| 2CC Downlink Carrier Aggregation |               |                                 | 3CC Downlink Carrier Aggregation |                |                                 | 4CC Downlink Carrier Aggregation |                    |                                 | 5CC Downlink Carrier Aggregation |                      |                                 |
|----------------------------------|---------------|---------------------------------|----------------------------------|----------------|---------------------------------|----------------------------------|--------------------|---------------------------------|----------------------------------|----------------------|---------------------------------|
| Number                           | Combination   | Covered by Measurement Superset | Number                           | Combination    | Covered by Measurement Superset | Number                           | Combination        | Covered by Measurement Superset | Number                           | Combination          | Covered by Measurement Superset |
| 1                                | CA_48C        | 124                             | 26                               | CA_48D         | 124                             | 63                               | CA_48E             | 124                             | 101                              | CA_2A-48E            | 124                             |
| 2                                | CA_48C        | 124                             | 27                               | CA_66A-66A-66A | 124                             | 64                               | CA_2A-2A-4A-4A     | 107                             | 102                              | CA_4A-48E            |                                 |
| 3                                | CA_66B        | 124                             | 28                               | CA_2A-2A-4A    | 107                             | 65                               | CA_2A-2A-66A-66A   | 124                             | 103                              | CA_5A-48E            | 121                             |
| 4                                | CA_66C        | 124                             | 29                               | CA_2A-2A-5A    | 121                             | 66                               | CA_2A-2A-66B       | 124                             | 104                              | CA_13A-48E           | 124                             |
| 5                                | CA_2A-2A      | 124                             | 30                               | CA_2A-2A-13A   | 124                             | 67                               | CA_2A-2A-66C       | 124                             | 105                              | CA_48E-66A           | 124                             |
| 6                                | CA_4A-4A      | 107                             | 31                               | CA_2A-2A-66A   | 124                             | 68                               | CA_2A-48D          | 124                             | 106                              | CA_2A-2A-4A-4A-5A    |                                 |
| 7                                | CA_66A-66A    | 124                             | 32                               | CA_2A-4A-4A    | 107                             | 69                               | CA_2A-66A-66A-66A  | 124                             | 107                              | CA_2A-2A-4A-4A-13A   |                                 |
| 8                                | CA_2A-4A      | 107                             | 33                               | CA_2A-48C      | 124                             | 70                               | CA_4A-48D          | 102                             | 108                              | CA_2A-2A-5A-66A-66A  | 121                             |
| 9                                | CA_2A-5A      | 121                             | 34                               | CA_2A-66A-66A  | 124                             | 71                               | CA_5A-48D          | 121                             | 109                              | CA_2A-2A-5A-66A-66A  | 121                             |
| 10                               | CA_2A-48A     | 124                             | 35                               | CA_2A-66B      | 124                             | 72                               | CA_13A-48D         | 124                             | 110                              | CA_2A-2A-5A-66B      | 121                             |
| 11                               | CA_2A-48A     | 124                             | 36                               | CA_2A-66C      | 124                             | 73                               | CA_13A-66A-66A-66A | 124                             | 111                              | CA_2A-2A-5A-66C      | 121                             |
| 12                               | CA_2A-66A     | 124                             | 37                               | CA_4A-4A-5A    | 106                             | 74                               | CA_48C-66A-66A     | 124                             | 112                              | CA_2A-2A-13A-66A-66A | 124                             |
| 13                               | CA_4A-5A      | 106                             | 38                               | CA_4A-4A-13A   | 107                             | 75                               | CA_48C-66B         | 124                             | 113                              | CA_2A-5A-48D         | 121                             |
| 14                               | CA_4A-48A     | 102                             | 39                               | CA_4A-48C      | 102                             | 76                               | CA_48C-66C         | 124                             | 114                              | CA_2A-13A-48D        | 124                             |
| 15                               | CA_5A-48A     | 121                             | 40                               | CA_5A-48C      | 121                             | 77                               | CA_48D-66A         | 124                             | 115                              | CA_2A-48D-66A        | 124                             |
| 16                               | CA_5A-48A     | 121                             | 41                               | CA_5A-66A-66A  | 121                             | 78                               | CA_2A-2A-4A-5A     | 106                             | 116                              | CA_2A-48D-66A        | 124                             |
| 17                               | CA_5A-66A     | 121                             | 42                               | CA_5A-66B      | 121                             | 79                               | CA_2A-2A-4A-5A     | 106                             | 117                              | CA_5A-48D-66A        | 121                             |
| 18                               | CA_13A-2A     | 124                             | 43                               | CA_5A-66C      | 121                             | 80                               | CA_2A-2A-4A-5A     | 106                             | 118                              | CA_13A-48C-66B       | 124                             |
| 19                               | CA_13A-4A     | 107                             | 44                               | CA_13A-48C     | 124                             | 81                               | CA_2A-2A-4A-13A    | 107                             | 119                              | CA_13A-48C-66C       | 124                             |
| 20                               | CA_13A-48A    | 124                             | 45                               | CA_13A-66A-66A | 124                             | 82                               | CA_2A-2A-5A-66A    | 121                             | 120                              | CA_13A-48D-66A       | 124                             |
| 21                               | CA_13A-48A    | 124                             | 46                               | CA_13A-66B     | 124                             | 83                               | CA_2A-2A-13A-66A   | 124                             | 121                              | CA_2A-5A-48C-66A     |                                 |
| 22                               | CA_13A-66A    | 124                             | 47                               | CA_13A-66C     | 124                             | 84                               | CA_2A-4A-4A-5A     | 106                             | 122                              | CA_2A-13A-48C-66A    | 124                             |
| 23                               | CA_48A-66A    | 124                             | 48                               | CA_48A-66A-66A | 124                             | 85                               | CA_2A-4A-4A-13A    | 107                             | 123                              | CA_2A-13A-48C-66A    | 124                             |
| 24                               | CA_48A-66A    | 124                             | 49                               | CA_48A-66B     | 124                             | 86                               | CA_2A-5A-48C       | 121                             | 124                              | CA_2A-13A-48C-66A    |                                 |
| 25                               | CA_2A-48A-66A | 124                             | 50                               | CA_48A-66C     | 124                             | 87                               | CA_2A-5A-66A-66A   | 121                             |                                  |                      |                                 |
|                                  |               |                                 | 51                               | CA_48C-66A     | 124                             | 88                               | CA_2A-5A-66B       | 121                             |                                  |                      |                                 |
|                                  |               |                                 | 52                               | CA_2A-4A-5A    | 106                             | 89                               | CA_2A-5A-66C       | 121                             |                                  |                      |                                 |
|                                  |               |                                 | 53                               | CA_2A-4A-5A    | 106                             | 90                               | CA_2A-13A-48C      | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 54                               | CA_2A-4A-13A   | 107                             | 91                               | CA_2A-13A-66A-66A  | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 55                               | CA_2A-4A-13A   | 107                             | 92                               | CA_2A-13A-66B      | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 56                               | CA_2A-4A-13A   | 107                             | 93                               | CA_2A-13A-66C      | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 57                               | CA_2A-5A-48A   | 121                             | 94                               | CA_2A-48C-66A      | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 58                               | CA_2A-5A-66A   | 121                             | 95                               | CA_5A-48C-66A      | 121                             |                                  |                      |                                 |
|                                  |               |                                 | 59                               | CA_2A-13A-48A  | 124                             | 96                               | CA_13A-48A-66B     | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 60                               | CA_2A-13A-66A  | 124                             | 97                               | CA_13A-48A-66C     | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 61                               | CA_5A-48A-66A  | 121                             | 98                               | CA_13A-48C-66A     | 124                             |                                  |                      |                                 |
|                                  |               |                                 | 62                               | CA_13A-48A-66A | 124                             | 99                               | CA_2A-5A-48A-66A   | 121                             |                                  |                      |                                 |
|                                  |               |                                 |                                  |                |                                 | 100                              | CA_2A-13A-48A-66A  | 124                             |                                  |                      |                                 |

**<Power verification when LTE Carrier Aggregation Active>**
**General Note:**

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lceil \frac{BW_{\text{Channel}(1)} + BW_{\text{Channel}(2)} - 0.1 |BW_{\text{Channel}(1)} - BW_{\text{Channel}(2)}|}{0.6} \right\rceil 0.3 \text{ [MHz]}$$

**<Five Carrier power verification>**

| Configure  | PCC      |          |                |            |      |        |              | SCC1     |          |                |            | SCC2     |          |                |            | SCC3     |          |                |            | SCC4     |          |                |            | Power                  |                       |
|------------|----------|----------|----------------|------------|------|--------|--------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|------------------------|-----------------------|
|            | LTE Band | BW (MHz) | UL Freq. (MHz) | UL Channel | Mod. | UL# RB | UL RB Offset | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | With CA Tx.Power (dBm) | W/O CA Tx.Power (dBm) |
| Inter-Band | Band 4   | 20       | 1732.5         | 20175      | QPSK | 1      | 0            | 48       | 20       | 3609           | 55830      | 48       | 20       | 3628.8         | 56028      | 48       | 20       | 3648.6         | 56226      | 48       | 20       | 3668.4         | 56424      | 23.16                  | 23.35                 |
|            | Band 2   | 20       | 1880           | 18900      | QPSK | 1      | 0            | 2        | 5        | 1987.5         | 1175       | 4        | 20       | 2132.5         | 2175       | 4        | 5        | 2152.5         | 2375       | 5        | 10       | 881.5          | 2175       | 23.03                  | 23.46                 |
|            | Band 2   | 20       | 1880           | 18900      | QPSK | 1      | 0            | 2        | 5        | 1987.5         | 1175       | 4        | 20       | 2132.5         | 2175       | 4        | 5        | 2152.5         | 2375       | 13       | 10       | 751            | 2175       | 23.05                  | 23.46                 |
|            | Band 2   | 20       | 1880           | 18900      | QPSK | 1      | 0            | 5        | 10       | 881.5          | 2525       | 48       | 20       | 3609           | 55830      | 48       | 20       | 3628.8         | 56028      | 66       | 20       | 2145           | 66786      | 23.11                  | 23.46                 |
|            | Band 2   | 20       | 1880           | 18900      | QPSK | 1      | 0            | 13       | 10       | 751            | 5230       | 48       | 20       | 3609           | 55830      | 48       | 20       | 3628.8         | 56028      | 66       | 20       | 2145           | 66786      | 23.11                  | 23.46                 |

### <LTE Uplink carrier aggregation>

| 2CC Uplink Carrier Aggregation |             |
|--------------------------------|-------------|
| Number                         | Combination |
| 1                              | 48C         |
| 2                              | 66B         |
| 3                              | 66C         |

### <Intra-band>

#### General Note:

- i. The device supports intra-band uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- v. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

### <Sensor OFF>

| CA_66B_Ant 3                       |             |            |         |           |         |           |               |                       |                      |                     |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 15MHz+5MHz (75RB+25RB) |             |            |         |           |         |           |               |                       |                      |                     |
| PCC Channel                        | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
|                                    |             |            | RB Size | RB offset | RB Size | RB offset |               |                       |                      |                     |
| 132047                             | 132140      | QPSK       | 1       | 0         | 0       | 0         | 1             | 0                     | 23.24                | 24.00               |
| 132322                             | 132229      | QPSK       | 1       | 0         | 1       | 24        | 2             | 0                     | 23.34                | 24.00               |
| 132597                             | 132504      | QPSK       | 1       | 0         | 1       | 24        | 2             | 0                     | 23.34                | 24.00               |

| CA_66C_Ant 3                          |             |            |         |           |         |           |               |                       |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |               |                       |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |               |                       |                      |                     |
| 132072                                | 132270      | QPSK       | 1       | 0         | 0       | 0         | 1             | 0                     | 22.87                | 24.00               |
| 132322                                | 132124      | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 22.97                | 24.00               |
| 132572                                | 132374      | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 23.04                | 24.00               |

| CA_48C_Ant 1                          |             |            |         |           |         |           |               |                       |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |               |                       |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |               |                       |                      |                     |
| 55340                                 | 55538       | QPSK       | 1       | 0         | 0       | 0         | 1             | 0                     | 20.43                | 21.00               |
| 55830                                 | 55632       | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 20.43                | 21.00               |
| 56150                                 | 55952       | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 20.35                | 21.00               |
| 56640                                 | 56442       | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 20.12                | 21.00               |

### <Sensor ON>

| CA_66B_Ant 3                       |             |            |         |           |         |           |               |                       |                      |                     |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 15MHz+5MHz (75RB+25RB) |             |            |         |           |         |           |               |                       |                      |                     |
| PCC Channel                        | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
|                                    |             |            | RB Size | RB offset | RB Size | RB offset |               |                       |                      |                     |
| 132047                             | 132140      | QPSK       | 1       | 0         | 0       | 0         | 1             | 0                     | 20.85                | 21.50               |
| 132322                             | 132229      | QPSK       | 1       | 0         | 1       | 24        | 2             | 0                     | 20.92                | 21.50               |
| 132597                             | 132504      | QPSK       | 1       | 0         | 1       | 24        | 2             | 0                     | 20.89                | 21.50               |

| CA_66C_Ant 3                          |             |            |         |           |         |           |               |                       |                      |                     |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) |             |            |         |           |         |           |               |                       |                      |                     |
| PCC Channel                           | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
|                                       |             |            | RB Size | RB offset | RB Size | RB offset |               |                       |                      |                     |
| 132072                                | 132270      | QPSK       | 1       | 0         | 0       | 0         | 1             | 0                     | 20.44                | 21.50               |
| 132322                                | 132124      | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 20.51                | 21.50               |
| 132572                                | 132374      | QPSK       | 1       | 0         | 1       | 99        | 2             | 0                     | 20.50                | 21.50               |

## 11. 5G NR Output Power (Unit: dBm)

### General Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below
  - a. For DFT-OFDM output power measurement, full measurement was done for Pi/2 BPSK and QPSK and for the largest supported bandwidth, repeat test for 16QAM/64QAM/256QAM under 1RB 1Offset configuration. For smaller bandwidth, measure conducted power for Pi/2 BPSK and 1RB 1Offset configuration.
  - b. According to the tune-up, CP-OFDM output power is not ½ dB higher than DFT-OFDM mode, and the reported SAR of DFT-OFDM mode reported SAR is  $\leq 1.45$  W/kg, SAR test and thus conducted power for CP-OFDM mode is not required.
  - c. To start SAR test for the largest channel bandwidth for Pi/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for Pi/2 BPSK SAR testing using 1RB Pi/2 BPSK allocation procedure
  - d. For Pi/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
  - e. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not ½ dB higher than the same configuration in Pi/2 BPSK, also reported SAR for the Pi/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
  - f. Smaller bandwidth output power for each RB allocation configuration for this device is not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg, smaller bandwidth SAR testing is not required for this device
2. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

### <3GPP 38.101 MPR for EN-DC>

**Table 6.2.2-1 Maximum power reduction (MPR) for power class 3**

| Modulation |           | MPR (dB)            |                      |                      |
|------------|-----------|---------------------|----------------------|----------------------|
|            |           | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | $\leq 3.5^1$        | $\leq 1.2^1$         | $\leq 0.2^1$         |
|            |           | $\leq 0.5^2$        | $\leq 0.5^2$         | 0 <sup>2</sup>       |
|            | QPSK      | $\leq 1$            |                      | 0                    |
|            | 16 QAM    | $\leq 2$            |                      | $\leq 1$             |
|            | 64 QAM    |                     | $\leq 2.5$           |                      |
| CP-OFDM    | 256 QAM   |                     | $\leq 4.5$           |                      |
|            | QPSK      | $\leq 3$            |                      | $\leq 1.5$           |
|            | 16 QAM    | $\leq 3$            |                      | $\leq 2$             |
|            | 64 QAM    |                     | $\leq 3.5$           |                      |
|            | 256 QAM   |                     | $\leq 6.5$           |                      |

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

**Table 6.2.2-2 Maximum power reduction (MPR) for power class 2**

| Modulation |           | MPR (dB)            |                      |                      |
|------------|-----------|---------------------|----------------------|----------------------|
|            |           | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | $\leq 3.5$          | $\leq 0.5$           | 0                    |
|            | QPSK      | $\leq 3.5$          | $\leq 1$             | 0                    |
|            | 16 QAM    | $\leq 3.5$          | $\leq 2$             | $\leq 1$             |
|            | 64 QAM    | $\leq 3.5$          |                      | $\leq 2.5$           |
|            | 256 QAM   |                     | $\leq 4.5$           |                      |
| CP-OFDM    | QPSK      | $\leq 3.5$          | $\leq 3$             | $\leq 1.5$           |
|            | 16 QAM    | $\leq 3.5$          | $\leq 3$             | $\leq 2$             |
|            | 64 QAM    |                     | $\leq 3.5$           |                      |
|            | 256 QAM   |                     | $\leq 6.5$           |                      |



<FR1 n2\_Ant 3\_Sensor OFF>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 372000                   | 376000                      | 380000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1860                     | 1880                        | 1900                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.46                    | 23.59                       | 23.50                     | 24.0                   |
| 20              | PI/2 BPSK  | 1       | 53        | 23.31                    | 23.49                       | 23.39                     |                        |
| 20              | PI/2 BPSK  | 1       | 104       | 23.45                    | 23.58                       | 23.49                     |                        |
| 20              | PI/2 BPSK  | 50      | 0         | 22.78                    | 22.97                       | 22.91                     | 23.5                   |
| 20              | PI/2 BPSK  | 50      | 28        | 23.32                    | 23.47                       | 23.43                     | 24.0                   |
| 20              | PI/2 BPSK  | 50      | 56        | 22.83                    | 23.01                       | 22.92                     | 23.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 22.84                    | 22.97                       | 22.90                     |                        |
| 20              | QPSK       | 1       | 1         | 23.32                    | 23.46                       | 23.45                     | 24.0                   |
| 20              | QPSK       | 1       | 53        | 23.29                    | 23.44                       | 23.37                     |                        |
| 20              | QPSK       | 1       | 104       | 23.33                    | 23.53                       | 23.49                     |                        |
| 20              | QPSK       | 50      | 0         | 22.34                    | 22.56                       | 22.53                     | 23.0                   |
| 20              | QPSK       | 50      | 28        | 23.25                    | 23.42                       | 23.40                     | 24.0                   |
| 20              | QPSK       | 50      | 56        | 22.30                    | 22.51                       | 22.41                     | 23.0                   |
| 20              | QPSK       | 100     | 0         | 22.41                    | 22.56                       | 22.50                     |                        |
| 20              | 16QAM      | 1       | 1         | 22.07                    | 22.28                       | 22.25                     | 23.0                   |
| 20              | 64QAM      | 1       | 1         | 20.71                    | 20.85                       | 20.76                     | 21.5                   |
| 20              | 256QAM     | 1       | 1         | 19.26                    | 19.41                       | 19.38                     | 19.5                   |
| Channel         |            |         |           | 371500                   | 376000                      | 380500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1857.5                   | 1880                        | 1902.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.44                    | 23.41                       | 23.42                     | 24.0                   |
| Channel         |            |         |           | 371000                   | 376000                      | 381000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1855                     | 1880                        | 1905                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.43                    | 23.35                       | 23.48                     | 24.0                   |
| Channel         |            |         |           | 370500                   | 376000                      | 381500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1852.5                   | 1880                        | 1907.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 23.36                    | 23.37                       | 23.45                     | 24.0                   |



<FR1 n2\_Ant 3\_Sensor ON>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 372000                   | 376000                      | 380000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1860                     | 1880                        | 1900                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 21.53                    | 21.62                       | 21.55                     |                        |
| 20              | PI/2 BPSK  | 1       | 53        | 21.42                    | 21.51                       | 21.44                     | 22.5                   |
| 20              | PI/2 BPSK  | 1       | 104       | 21.50                    | 21.59                       | 21.52                     | 22.5                   |
| 20              | PI/2 BPSK  | 50      | 0         | 21.52                    | 21.61                       | 21.54                     |                        |
| 20              | PI/2 BPSK  | 50      | 28        | 21.43                    | 21.52                       | 21.45                     |                        |
| 20              | PI/2 BPSK  | 50      | 56        | 21.38                    | 21.47                       | 21.40                     | 22.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 21.49                    | 21.58                       | 21.51                     |                        |
| 20              | QPSK       | 1       | 1         | 21.48                    | 21.57                       | 21.50                     |                        |
| 20              | QPSK       | 1       | 53        | 21.40                    | 21.49                       | 21.42                     | 22.5                   |
| 20              | QPSK       | 1       | 104       | 21.51                    | 21.60                       | 21.53                     |                        |
| 20              | QPSK       | 50      | 0         | 21.52                    | 21.61                       | 21.54                     |                        |
| 20              | QPSK       | 50      | 28        | 21.44                    | 21.53                       | 21.46                     | 22.5                   |
| 20              | QPSK       | 50      | 56        | 21.40                    | 21.49                       | 21.42                     | 22.5                   |
| 20              | QPSK       | 100     | 0         | 21.50                    | 21.59                       | 21.52                     |                        |
| 20              | 16QAM      | 1       | 1         | 21.26                    | 21.35                       | 21.28                     |                        |
| 20              | 64QAM      | 1       | 1         | 20.80                    | 20.89                       | 20.82                     | 21.5                   |
| 20              | 256QAM     | 1       | 1         | 19.40                    | 19.48                       | 19.42                     | 19.5                   |
| Channel         |            |         |           | 371500                   | 376000                      | 380500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1857.5                   | 1880                        | 1902.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 21.42                    | 21.48                       | 21.38                     |                        |
| Channel         |            |         |           | 371000                   | 376000                      | 381000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1855                     | 1880                        | 1905                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 21.40                    | 21.47                       | 21.37                     |                        |
| Channel         |            |         |           | 370500                   | 376000                      | 381500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1852.5                   | 1880                        | 1907.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 21.43                    | 21.52                       | 21.39                     |                        |



<FR1 n2\_Ant 8\_Sensor OFF>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 372000                   | 376000                      | 380000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1860                     | 1880                        | 1900                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.71                    | 23.76                       | 23.72                     | 24.0                   |
| 20              | PI/2 BPSK  | 1       | 53        | 23.58                    | 23.66                       | 23.58                     |                        |
| 20              | PI/2 BPSK  | 1       | 104       | 23.65                    | 23.75                       | 23.68                     |                        |
| 20              | PI/2 BPSK  | 50      | 0         | 23.24                    | 23.29                       | 23.23                     | 23.5                   |
| 20              | PI/2 BPSK  | 50      | 28        | 23.66                    | 23.70                       | 23.63                     | 24.0                   |
| 20              | PI/2 BPSK  | 50      | 56        | 23.18                    | 23.21                       | 23.18                     | 23.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 23.22                    | 23.27                       | 23.18                     |                        |
| 20              | QPSK       | 1       | 1         | 23.54                    | 23.60                       | 23.51                     | 24.0                   |
| 20              | QPSK       | 1       | 53        | 23.55                    | 23.61                       | 23.58                     |                        |
| 20              | QPSK       | 1       | 104       | 23.62                    | 23.72                       | 23.69                     |                        |
| 20              | QPSK       | 50      | 0         | 22.66                    | 22.76                       | 22.69                     | 23.0                   |
| 20              | QPSK       | 50      | 28        | 23.59                    | 23.66                       | 23.56                     | 24.0                   |
| 20              | QPSK       | 50      | 56        | 22.62                    | 22.71                       | 22.65                     | 23.0                   |
| 20              | QPSK       | 100     | 0         | 22.73                    | 22.74                       | 22.66                     |                        |
| 20              | 16QAM      | 1       | 1         | 22.43                    | 22.50                       | 22.40                     | 23.0                   |
| 20              | 64QAM      | 1       | 1         | 20.97                    | 21.00                       | 20.97                     | 21.5                   |
| 20              | 256QAM     | 1       | 1         | 19.39                    | 19.49                       | 19.47                     | 19.5                   |
| Channel         |            |         |           | 371500                   | 376000                      | 380500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1857.5                   | 1880                        | 1902.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.64                    | 23.67                       | 23.62                     | 24.0                   |
| Channel         |            |         |           | 371000                   | 376000                      | 381000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1855                     | 1880                        | 1905                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.68                    | 23.72                       | 23.68                     | 24.0                   |
| Channel         |            |         |           | 370500                   | 376000                      | 381500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1852.5                   | 1880                        | 1907.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 23.67                    | 23.67                       | 23.70                     | 24.0                   |



<FR1 n2\_Ant 8\_Sensor ON>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 372000                   | 376000                      | 380000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1860                     | 1880                        | 1900                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 22.77                    | 22.91                       | 22.85                     | 23.5                   |
| 20              | PI/2 BPSK  | 1       | 53        | 22.68                    | 22.82                       | 22.76                     |                        |
| 20              | PI/2 BPSK  | 1       | 104       | 22.76                    | 22.90                       | 22.84                     |                        |
| 20              | PI/2 BPSK  | 50      | 0         | 22.78                    | 22.92                       | 22.86                     | 23.5                   |
| 20              | PI/2 BPSK  | 50      | 28        | 22.70                    | 22.84                       | 22.78                     | 23.5                   |
| 20              | PI/2 BPSK  | 50      | 56        | 22.63                    | 22.77                       | 22.71                     | 23.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 22.68                    | 22.82                       | 22.76                     |                        |
| 20              | QPSK       | 1       | 1         | 22.69                    | 22.83                       | 22.77                     | 23.5                   |
| 20              | QPSK       | 1       | 53        | 22.66                    | 22.80                       | 22.74                     |                        |
| 20              | QPSK       | 1       | 104       | 22.71                    | 22.85                       | 22.79                     |                        |
| 20              | QPSK       | 50      | 0         | 22.74                    | 22.88                       | 22.82                     | 23.0                   |
| 20              | QPSK       | 50      | 28        | 22.66                    | 22.80                       | 22.74                     | 23.5                   |
| 20              | QPSK       | 50      | 56        | 22.64                    | 22.78                       | 22.72                     | 23.0                   |
| 20              | QPSK       | 100     | 0         | 22.66                    | 22.80                       | 22.74                     |                        |
| 20              | 16QAM      | 1       | 1         | 22.41                    | 22.55                       | 22.49                     | 23.0                   |
| 20              | 64QAM      | 1       | 1         | 20.95                    | 21.08                       | 21.02                     | 21.5                   |
| 20              | 256QAM     | 1       | 1         | 19.35                    | 19.47                       | 19.42                     | 19.5                   |
| Channel         |            |         |           | 371500                   | 376000                      | 380500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1857.5                   | 1880                        | 1902.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 22.62                    | 22.74                       | 22.68                     | 23.5                   |
| Channel         |            |         |           | 371000                   | 376000                      | 381000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1855                     | 1880                        | 1905                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 22.65                    | 22.80                       | 22.69                     | 23.5                   |
| Channel         |            |         |           | 370500                   | 376000                      | 381500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1852.5                   | 1880                        | 1907.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 22.67                    | 22.75                       | 22.75                     | 23.5                   |



<FR1 n5\_Ant 8\_Sensor OFF>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 166800                   | 167300                      | 167800                    |                        |
| Frequency (MHz) |            |         |           | 834                      | 836.5                       | 839                       |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 24.34                    | 24.40                       | 24.36                     | 25.0                   |
| 20              | PI/2 BPSK  | 1       | 53        | 24.25                    | 24.33                       | 24.23                     |                        |
| 20              | PI/2 BPSK  | 1       | 104       | 24.32                    | 24.39                       | 24.32                     |                        |
| 20              | PI/2 BPSK  | 50      | 0         | 23.86                    | 23.95                       | 23.93                     | 24.5                   |
| 20              | PI/2 BPSK  | 50      | 28        | 24.21                    | 24.28                       | 24.25                     | 25.0                   |
| 20              | PI/2 BPSK  | 50      | 56        | 23.57                    | 23.62                       | 23.61                     | 24.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 23.79                    | 23.84                       | 23.80                     |                        |
| 20              | QPSK       | 1       | 1         | 24.24                    | 24.29                       | 24.27                     | 25.0                   |
| 20              | QPSK       | 1       | 53        | 24.17                    | 24.24                       | 24.20                     |                        |
| 20              | QPSK       | 1       | 104       | 24.25                    | 24.30                       | 24.20                     |                        |
| 20              | QPSK       | 50      | 0         | 23.34                    | 23.43                       | 23.37                     | 24.0                   |
| 20              | QPSK       | 50      | 28        | 24.23                    | 24.24                       | 24.23                     | 25.0                   |
| 20              | QPSK       | 50      | 56        | 23.00                    | 23.10                       | 23.07                     | 24.0                   |
| 20              | QPSK       | 100     | 0         | 23.21                    | 23.31                       | 23.27                     |                        |
| 20              | 16QAM      | 1       | 1         | 22.97                    | 22.99                       | 22.95                     | 24.0                   |
| 20              | 64QAM      | 1       | 1         | 21.51                    | 21.52                       | 21.42                     | 22.5                   |
| 20              | 256QAM     | 1       | 1         | 20.16                    | 20.19                       | 20.12                     | 20.5                   |
| Channel         |            |         |           | 166300                   | 167300                      | 168300                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 831.5                    | 836.5                       | 841.5                     |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 24.29                    | 24.33                       | 24.26                     | 25.0                   |
| Channel         |            |         |           | 165800                   | 167300                      | 168800                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 829                      | 836.5                       | 844                       |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 24.24                    | 24.37                       | 24.31                     | 25.0                   |
| Channel         |            |         |           | 165300                   | 167300                      | 169300                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 826.5                    | 836.5                       | 846.5                     |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 24.33                    | 24.31                       | 24.32                     | 25.0                   |



<FR1 n5\_Ant 8\_Sensor ON>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 166800                   | 167300                      | 167800                    | 24.5                   |
| Frequency (MHz) |            |         |           | 834                      | 836.5                       | 839                       |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.43                    | 23.64                       | 23.49                     | 24.5                   |
| 20              | PI/2 BPSK  | 1       | 53        | 23.25                    | 23.46                       | 23.31                     |                        |
| 20              | PI/2 BPSK  | 1       | 104       | 23.29                    | 23.50                       | 23.35                     |                        |
| 20              | PI/2 BPSK  | 50      | 0         | 23.42                    | 23.63                       | 23.48                     | 24.5                   |
| 20              | PI/2 BPSK  | 50      | 28        | 23.22                    | 23.43                       | 23.28                     | 24.5                   |
| 20              | PI/2 BPSK  | 50      | 56        | 23.11                    | 23.32                       | 23.17                     | 24.5                   |
| 20              | PI/2 BPSK  | 100     | 0         | 23.33                    | 23.54                       | 23.39                     |                        |
| 20              | QPSK       | 1       | 1         | 23.23                    | 23.44                       | 23.29                     | 24.5                   |
| 20              | QPSK       | 1       | 53        | 23.19                    | 23.40                       | 23.25                     |                        |
| 20              | QPSK       | 1       | 104       | 23.22                    | 23.43                       | 23.28                     |                        |
| 20              | QPSK       | 50      | 0         | 23.39                    | 23.60                       | 23.45                     | 24.0                   |
| 20              | QPSK       | 50      | 28        | 23.20                    | 23.41                       | 23.26                     | 24.5                   |
| 20              | QPSK       | 50      | 56        | 23.07                    | 23.28                       | 23.13                     | 24.0                   |
| 20              | QPSK       | 100     | 0         | 23.30                    | 23.51                       | 23.36                     |                        |
| 20              | 16QAM      | 1       | 1         | 22.98                    | 23.19                       | 23.04                     | 24.0                   |
| 20              | 64QAM      | 1       | 1         | 21.51                    | 21.70                       | 21.56                     | 22.5                   |
| 20              | 256QAM     | 1       | 1         | 20.18                    | 20.36                       | 20.23                     | 20.5                   |
| Channel         |            |         |           | 166300                   | 167300                      | 168300                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 831.5                    | 836.5                       | 841.5                     |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.23                    | 23.45                       | 23.30                     | 24.5                   |
| Channel         |            |         |           | 165800                   | 167300                      | 168800                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 829                      | 836.5                       | 844                       |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.24                    | 23.46                       | 23.35                     | 24.5                   |
| Channel         |            |         |           | 165300                   | 167300                      | 169300                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 826.5                    | 836.5                       | 846.5                     |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 23.28                    | 23.45                       | 23.30                     | 24.5                   |



&lt;FR1 n66\_Ant 3\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 346000                   | 349000                      | 352000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1730                     | 1745                        | 1760                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 23.42                    | 23.51                       | 23.45                     | 24.0                   |
| 40              | PI/2 BPSK  | 1       | 108       | 23.27                    | 23.32                       | 23.28                     |                        |
| 40              | PI/2 BPSK  | 1       | 214       | 23.41                    | 23.50                       | 23.44                     |                        |
| 40              | PI/2 BPSK  | 108     | 0         | 22.20                    | 22.23                       | 22.18                     | 23.5                   |
| 40              | PI/2 BPSK  | 108     | 54        | 23.27                    | 23.29                       | 23.24                     | 24.0                   |
| 40              | PI/2 BPSK  | 108     | 108       | 22.40                    | 22.50                       | 22.44                     | 23.5                   |
| 40              | PI/2 BPSK  | 216     | 0         | 22.31                    | 22.40                       | 22.35                     |                        |
| 40              | QPSK       | 1       | 1         | 23.13                    | 23.21                       | 23.16                     | 24.0                   |
| 40              | QPSK       | 1       | 108       | 23.17                    | 23.27                       | 23.18                     |                        |
| 40              | QPSK       | 1       | 214       | 23.42                    | 23.45                       | 23.38                     |                        |
| 40              | QPSK       | 108     | 0         | 21.62                    | 21.71                       | 21.67                     | 23.0                   |
| 40              | QPSK       | 108     | 54        | 23.05                    | 23.15                       | 23.13                     | 24.0                   |
| 40              | QPSK       | 108     | 108       | 21.92                    | 21.98                       | 21.90                     | 23.0                   |
| 40              | QPSK       | 216     | 0         | 21.79                    | 21.86                       | 21.85                     |                        |
| 40              | 16QAM      | 1       | 1         | 21.93                    | 22.01                       | 21.95                     | 23.0                   |
| 40              | 64QAM      | 1       | 1         | 20.49                    | 20.55                       | 20.52                     | 21.5                   |
| 40              | 256QAM     | 1       | 1         | 19.07                    | 19.14                       | 19.05                     | 19.5                   |
| Channel         |            |         |           | 345000                   | 349000                      | 353000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1725                     | 1745                        | 1765                      |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 23.40                    | 23.50                       | 23.39                     | 24.0                   |
| Channel         |            |         |           | 344500                   | 349000                      | 353500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1722.5                   | 1745                        | 1767.5                    |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 23.38                    | 23.49                       | 23.35                     | 24.0                   |
| Channel         |            |         |           | 344000                   | 349000                      | 354000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.32                    | 23.46                       | 23.41                     | 24.0                   |
| Channel         |            |         |           | 343500                   | 349000                      | 354500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1717.5                   | 1745                        | 1772.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.36                    | 23.48                       | 23.38                     | 24.0                   |
| Channel         |            |         |           | 343000                   | 349000                      | 355000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1715                     | 1745                        | 1775                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.36                    | 23.41                       | 23.43                     | 24.0                   |
| Channel         |            |         |           | 342500                   | 349000                      | 355500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 1712.5                   | 1745                        | 1777.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 23.38                    | 23.47                       | 23.43                     | 24.0                   |



&lt;FR1 n66\_Ant 3\_Sensor ON&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 346000                   | 349000                      | 352000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1730                     | 1745                        | 1760                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.31                    | 20.51                       | 20.33                     |                        |
| 40              | PI/2 BPSK  | 1       | 108       | 20.17                    | 20.37                       | 20.19                     | 21.0                   |
| 40              | PI/2 BPSK  | 1       | 214       | 20.30                    | 20.50                       | 20.32                     | 21.0                   |
| 40              | PI/2 BPSK  | 108     | 0         | 19.58                    | 19.77                       | 19.60                     | 21.0                   |
| 40              | PI/2 BPSK  | 108     | 54        | 20.11                    | 20.31                       | 20.13                     | 21.0                   |
| 40              | PI/2 BPSK  | 108     | 108       | 19.84                    | 20.04                       | 19.86                     | 21.0                   |
| 40              | PI/2 BPSK  | 216     | 0         | 19.71                    | 19.90                       | 19.73                     | 21.0                   |
| 40              | QPSK       | 1       | 1         | 20.08                    | 20.28                       | 20.10                     | 21.0                   |
| 40              | QPSK       | 1       | 108       | 20.12                    | 20.32                       | 20.14                     |                        |
| 40              | QPSK       | 1       | 214       | 20.30                    | 20.50                       | 20.32                     |                        |
| 40              | QPSK       | 108     | 0         | 19.60                    | 19.79                       | 19.62                     | 21.0                   |
| 40              | QPSK       | 108     | 54        | 20.09                    | 20.29                       | 20.11                     | 21.0                   |
| 40              | QPSK       | 108     | 108       | 19.85                    | 20.05                       | 19.87                     | 21.0                   |
| 40              | QPSK       | 216     | 0         | 19.71                    | 19.90                       | 19.73                     | 21.0                   |
| 40              | 16QAM      | 1       | 1         | 19.84                    | 20.04                       | 19.86                     | 21.0                   |
| 40              | 64QAM      | 1       | 1         | 19.88                    | 20.08                       | 19.90                     | 21.0                   |
| 40              | 256QAM     | 1       | 1         | 19.01                    | 19.20                       | 19.03                     | 19.5                   |
| Channel         |            |         |           | 345000                   | 349000                      | 353000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1725                     | 1745                        | 1765                      |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.11                    | 20.33                       | 20.15                     |                        |
| Channel         |            |         |           | 344500                   | 349000                      | 353500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1722.5                   | 1745                        | 1767.5                    |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 20.11                    | 20.35                       | 20.16                     |                        |
| Channel         |            |         |           | 344000                   | 349000                      | 354000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.13                    | 20.38                       | 20.13                     |                        |
| Channel         |            |         |           | 343500                   | 349000                      | 354500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1717.5                   | 1745                        | 1772.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.20                    | 20.36                       | 20.13                     |                        |
| Channel         |            |         |           | 343000                   | 349000                      | 355000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1715                     | 1745                        | 1775                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.11                    | 20.34                       | 20.14                     |                        |
| Channel         |            |         |           | 342500                   | 349000                      | 355500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1712.5                   | 1745                        | 1777.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 20.21                    | 20.41                       | 20.23                     |                        |



&lt;FR1 n66\_Ant 8\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 346000                   | 349000                      | 352000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1730                     | 1745                        | 1760                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 23.76                    | 23.84                       | 23.71                     |                        |
| 40              | PI/2 BPSK  | 1       | 108       | 23.57                    | 23.70                       | 23.64                     | 23.5                   |
| 40              | PI/2 BPSK  | 1       | 214       | 23.73                    | 23.83                       | 23.70                     | 24.0                   |
| 40              | PI/2 BPSK  | 108     | 0         | 23.07                    | 23.22                       | 23.16                     | 23.5                   |
| 40              | PI/2 BPSK  | 108     | 54        | 23.63                    | 23.69                       | 23.61                     | 24.0                   |
| 40              | PI/2 BPSK  | 108     | 108       | 23.21                    | 23.34                       | 23.29                     | 23.5                   |
| 40              | PI/2 BPSK  | 216     | 0         | 23.20                    | 23.32                       | 23.24                     | 24.0                   |
| 40              | QPSK       | 1       | 1         | 23.56                    | 23.66                       | 23.59                     | 23.0                   |
| 40              | QPSK       | 1       | 108       | 23.53                    | 23.66                       | 23.53                     | 24.0                   |
| 40              | QPSK       | 1       | 214       | 23.59                    | 23.74                       | 23.63                     | 23.0                   |
| 40              | QPSK       | 108     | 0         | 22.58                    | 22.69                       | 22.56                     | 24.0                   |
| 40              | QPSK       | 108     | 54        | 23.58                    | 23.66                       | 23.60                     | 23.0                   |
| 40              | QPSK       | 108     | 108       | 22.66                    | 22.80                       | 22.75                     | 23.0                   |
| 40              | QPSK       | 216     | 0         | 22.73                    | 22.81                       | 22.75                     | 23.0                   |
| 40              | 16QAM      | 1       | 1         | 22.24                    | 22.37                       | 22.32                     | 21.5                   |
| 40              | 64QAM      | 1       | 1         | 20.82                    | 20.90                       | 20.83                     | 19.5                   |
| 40              | 256QAM     | 1       | 1         | 19.40                    | 19.49                       | 19.44                     |                        |
| Channel         |            |         |           | 345000                   | 349000                      | 353000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1725                     | 1745                        | 1765                      |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 23.67                    | 23.82                       | 23.66                     |                        |
| Channel         |            |         |           | 344500                   | 349000                      | 353500                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1722.5                   | 1745                        | 1767.5                    |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 23.68                    | 23.74                       | 23.67                     |                        |
| Channel         |            |         |           | 344000                   | 349000                      | 354000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.68                    | 23.75                       | 23.66                     |                        |
| Channel         |            |         |           | 343500                   | 349000                      | 354500                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1717.5                   | 1745                        | 1772.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.75                    | 23.75                       | 23.62                     |                        |
| Channel         |            |         |           | 343000                   | 349000                      | 355000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1715                     | 1745                        | 1775                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.75                    | 23.82                       | 23.62                     |                        |
| Channel         |            |         |           | 342500                   | 349000                      | 355500                    | 24.0                   |
| Frequency (MHz) |            |         |           | 1712.5                   | 1745                        | 1777.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 23.66                    | 23.76                       | 23.63                     |                        |



<FR1 n66\_Ant 8\_Sensor ON>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 346000                   | 349000                      | 352000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1730                     | 1745                        | 1760                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.70                    | 20.61                       | 20.59                     | 21.0                   |
| 40              | PI/2 BPSK  | 1       | 108       | 20.64                    | 20.55                       | 20.53                     |                        |
| 40              | PI/2 BPSK  | 1       | 214       | 20.67                    | 20.58                       | 20.56                     |                        |
| 40              | PI/2 BPSK  | 108     | 0         | 20.62                    | 20.53                       | 20.51                     | 21.0                   |
| 40              | PI/2 BPSK  | 108     | 54        | 20.60                    | 20.51                       | 20.49                     | 21.0                   |
| 40              | PI/2 BPSK  | 108     | 108       | 20.50                    | 20.41                       | 20.39                     | 21.0                   |
| 40              | PI/2 BPSK  | 216     | 0         | 20.50                    | 20.41                       | 20.39                     |                        |
| 40              | QPSK       | 1       | 1         | 20.65                    | 20.56                       | 20.54                     | 21.0                   |
| 40              | QPSK       | 1       | 108       | 20.62                    | 20.53                       | 20.51                     |                        |
| 40              | QPSK       | 1       | 214       | 20.65                    | 20.56                       | 20.54                     |                        |
| 40              | QPSK       | 108     | 0         | 20.43                    | 20.34                       | 20.32                     | 21.0                   |
| 40              | QPSK       | 108     | 54        | 20.64                    | 20.55                       | 20.53                     | 21.0                   |
| 40              | QPSK       | 108     | 108       | 20.50                    | 20.41                       | 20.39                     | 21.0                   |
| 40              | QPSK       | 216     | 0         | 20.49                    | 20.40                       | 20.38                     |                        |
| 40              | 16QAM      | 1       | 1         | 20.45                    | 20.36                       | 20.34                     | 21.0                   |
| 40              | 64QAM      | 1       | 1         | 20.47                    | 20.38                       | 20.36                     | 21.0                   |
| 40              | 256QAM     | 1       | 1         | 19.50                    | 19.42                       | 19.40                     | 19.5                   |
| Channel         |            |         |           | 345000                   | 349000                      | 353000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1725                     | 1745                        | 1765                      |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.55                    | 20.47                       | 20.47                     | 21.0                   |
| Channel         |            |         |           | 344500                   | 349000                      | 353500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1722.5                   | 1745                        | 1767.5                    |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 20.57                    | 20.50                       | 20.45                     | 21.0                   |
| Channel         |            |         |           | 344000                   | 349000                      | 354000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1720                     | 1745                        | 1770                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.50                    | 20.46                       | 20.43                     | 21.0                   |
| Channel         |            |         |           | 343500                   | 349000                      | 354500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1717.5                   | 1745                        | 1772.5                    |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.59                    | 20.43                       | 20.42                     | 21.0                   |
| Channel         |            |         |           | 343000                   | 349000                      | 355000                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1715                     | 1745                        | 1775                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.59                    | 20.48                       | 20.44                     | 21.0                   |
| Channel         |            |         |           | 342500                   | 349000                      | 355500                    | 21.0                   |
| Frequency (MHz) |            |         |           | 1712.5                   | 1745                        | 1777.5                    |                        |
| 5               | PI/2 BPSK  | 1       | 1         | 20.59                    | 20.49                       | 20.40                     | 21.0                   |

**<FR1 n48\_Ant 1\_Sensor OFF>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 638000                   | 641666                      | 645332                    | 21.0                   |
| Frequency (MHz) |            |         |           | 3570                     | 3624.99                     | 3679.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.50                    | 20.40                       | 20.43                     | 21.0                   |
| 40              | PI/2 BPSK  | 1       | 53        | 20.22                    | 20.33                       | 20.19                     |                        |
| 40              | PI/2 BPSK  | 1       | 104       | 20.23                    | 20.39                       | 20.23                     |                        |
| 40              | PI/2 BPSK  | 50      | 0         | 20.28                    | 20.27                       | 20.13                     | 21.0                   |
| 40              | PI/2 BPSK  | 50      | 28        | 20.34                    | 20.30                       | 20.19                     | 21.0                   |
| 40              | PI/2 BPSK  | 50      | 56        | 20.24                    | 20.23                       | 20.17                     | 21.0                   |
| 40              | PI/2 BPSK  | 100     | 0         | 20.19                    | 20.30                       | 20.17                     |                        |
| 40              | QPSK       | 1       | 1         | 20.27                    | 20.42                       | 20.23                     | 21.0                   |
| 40              | QPSK       | 1       | 53        | 20.24                    | 20.33                       | 20.20                     |                        |
| 40              | QPSK       | 1       | 104       | 20.38                    | 20.39                       | 20.28                     |                        |
| 40              | QPSK       | 50      | 0         | 20.32                    | 20.32                       | 20.12                     | 21.0                   |
| 40              | QPSK       | 50      | 28        | 20.18                    | 20.30                       | 20.18                     | 21.0                   |
| 40              | QPSK       | 50      | 56        | 20.22                    | 20.28                       | 20.17                     | 21.0                   |
| 40              | QPSK       | 100     | 0         | 20.13                    | 20.32                       | 20.20                     |                        |
| 40              | 16QAM      | 1       | 1         | 20.13                    | 20.16                       | 20.01                     | 21.0                   |
| 40              | 64QAM      | 1       | 1         | 20.15                    | 20.19                       | 20.03                     | 21.0                   |
| 40              | 256QAM     | 1       | 1         | 18.94                    | 18.98                       | 18.95                     | 19.0                   |
| Channel         |            |         |           | 637668                   | 641666                      | 645666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3565.02                  | 3624.99                     | 3684.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.44                    | 20.39                       | 20.07                     | 21.0                   |
| Channel         |            |         |           | 637334                   | 641666                      | 646000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3560.01                  | 3624.99                     | 3690                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.48                    | 20.40                       | 20.41                     | 21.0                   |
| Channel         |            |         |           | 637168                   | 641666                      | 646166                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3557.52                  | 3624.99                     | 3692.49                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.44                    | 20.39                       | 20.37                     | 21.0                   |
| Channel         |            |         |           | 637000                   | 641666                      | 646332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3555                     | 3624.99                     | 3694.98                   |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.46                    | 20.37                       | 20.42                     | 21.0                   |

**<FR1 n48\_Ant 6\_Sensor OFF>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 638000                   | 641666                      | 645332                    | 21.0                   |
| Frequency (MHz) |            |         |           | 3570                     | 3624.99                     | 3679.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.74                    | 20.77                       | 20.72                     | 21.0                   |
| 40              | PI/2 BPSK  | 1       | 53        | 20.62                    | 20.69                       | 20.65                     |                        |
| 40              | PI/2 BPSK  | 1       | 104       | 20.76                    | 20.74                       | 20.71                     |                        |
| 40              | PI/2 BPSK  | 50      | 0         | 20.65                    | 20.75                       | 20.68                     | 21.0                   |
| 40              | PI/2 BPSK  | 50      | 28        | 20.61                    | 20.72                       | 20.66                     | 21.0                   |
| 40              | PI/2 BPSK  | 50      | 56        | 20.64                    | 20.75                       | 20.64                     | 21.0                   |
| 40              | PI/2 BPSK  | 100     | 0         | 20.63                    | 20.76                       | 20.59                     |                        |
| 40              | QPSK       | 1       | 1         | 20.63                    | 20.74                       | 20.70                     | 21.0                   |
| 40              | QPSK       | 1       | 53        | 20.58                    | 20.66                       | 20.65                     |                        |
| 40              | QPSK       | 1       | 104       | 20.67                    | 20.69                       | 20.75                     |                        |
| 40              | QPSK       | 50      | 0         | 20.61                    | 20.66                       | 20.53                     | 21.0                   |
| 40              | QPSK       | 50      | 28        | 20.60                    | 20.65                       | 20.65                     | 21.0                   |
| 40              | QPSK       | 50      | 56        | 20.59                    | 20.58                       | 20.52                     | 21.0                   |
| 40              | QPSK       | 100     | 0         | 20.57                    | 20.61                       | 20.64                     |                        |
| 40              | 16QAM      | 1       | 1         | 20.50                    | 20.50                       | 20.40                     | 21.0                   |
| 40              | 64QAM      | 1       | 1         | 20.45                    | 20.56                       | 20.47                     | 21.0                   |
| 40              | 256QAM     | 1       | 1         | 18.94                    | 18.96                       | 18.95                     | 19.0                   |
| Channel         |            |         |           | 637668                   | 641666                      | 645666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3565.02                  | 3624.99                     | 3684.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.78                    | 20.67                       | 20.65                     | 21.0                   |
| Channel         |            |         |           | 637334                   | 641666                      | 646000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3560.01                  | 3624.99                     | 3690                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.80                    | 20.63                       | 20.73                     | 21.0                   |
| Channel         |            |         |           | 637168                   | 641666                      | 646166                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3557.52                  | 3624.99                     | 3692.49                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.78                    | 20.67                       | 20.71                     | 21.0                   |
| Channel         |            |         |           | 637000                   | 641666                      | 646332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3555                     | 3624.99                     | 3694.98                   |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.80                    | 20.70                       | 20.64                     | 21.0                   |



&lt;FR1 n77\_Ant 1\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 23.29                    | 23.17                       | 22.89                     | 24.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 23.34                    | 23.22                       | 22.94                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 23.05                    | 22.93                       | 22.65                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 23.40                    | 23.28                       | 23.00                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 69        | 23.46                    | 23.34                       | 23.06                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 23.35                    | 23.23                       | 22.95                     | 24.0                   |
| 100             | PI/2 BPSK  | 270     | 0         | 23.36                    | 23.24                       | 22.96                     |                        |
| 100             | QPSK       | 1       | 1         | 23.34                    | 23.22                       | 22.94                     | 24.0                   |
| 100             | QPSK       | 1       | 137       | 23.30                    | 23.18                       | 22.90                     |                        |
| 100             | QPSK       | 1       | 271       | 23.02                    | 22.90                       | 22.62                     |                        |
| 100             | QPSK       | 135     | 0         | 22.97                    | 22.95                       | 22.97                     | 24.0                   |
| 100             | QPSK       | 135     | 69        | 23.44                    | 23.32                       | 23.04                     | 24.0                   |
| 100             | QPSK       | 135     | 138       | 22.91                    | 22.99                       | 22.91                     | 24.0                   |
| 100             | QPSK       | 270     | 0         | 22.92                    | 22.92                       | 22.92                     |                        |
| 100             | 16QAM      | 1       | 1         | 22.98                    | 22.96                       | 22.68                     | 24.0                   |
| 100             | 64QAM      | 1       | 1         | 22.92                    | 23.00                       | 22.72                     | 24.0                   |
| 100             | 256QAM     | 1       | 1         | 23.17                    | 23.05                       | 22.77                     | 24.0                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 23.30                    | 23.20                       | 22.77                     | 24.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 23.11                    | 23.03                       | 22.57                     | 24.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 23.14                    | 23.06                       | 22.57                     | 24.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 23.18                    | 23.10                       | 22.64                     | 24.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 23.16                    | 23.08                       | 22.62                     | 24.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 23.20                    | 23.10                       | 22.65                     | 24.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 23.20                    | 23.02                       | 22.63                     | 24.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 23.11                    | 23.00                       | 22.62                     | 24.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.16                    | 22.96                       | 22.63                     | 24.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.11                    | 23.03                       | 22.57                     | 24.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.08                    | 22.47                       | 22.24                     | 24.0                   |



&lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 1\_Sensor ON&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 21.5                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 20.96                    | 20.67                       | 20.54                     | 21.5                   |
| 100             | PI/2 BPSK  | 1       | 137       | 20.97                    | 20.68                       | 20.55                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 20.81                    | 20.52                       | 20.39                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 21.09                    | 20.80                       | 20.67                     | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 21.09                    | 20.80                       | 20.67                     | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 138       | 21.05                    | 20.76                       | 20.63                     | 21.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 21.03                    | 20.74                       | 20.61                     |                        |
| 100             | QPSK       | 1       | 1         | 20.93                    | 20.64                       | 20.51                     | 21.5                   |
| 100             | QPSK       | 1       | 137       | 20.96                    | 20.67                       | 20.54                     |                        |
| 100             | QPSK       | 1       | 271       | 20.80                    | 20.51                       | 20.38                     |                        |
| 100             | QPSK       | 135     | 0         | 21.07                    | 20.78                       | 20.65                     | 21.5                   |
| 100             | QPSK       | 135     | 69        | 21.09                    | 20.80                       | 20.67                     | 21.5                   |
| 100             | QPSK       | 135     | 138       | 21.04                    | 20.75                       | 20.62                     | 21.5                   |
| 100             | QPSK       | 270     | 0         | 21.03                    | 20.74                       | 20.61                     |                        |
| 100             | 16QAM      | 1       | 1         | 20.73                    | 20.44                       | 20.32                     | 21.5                   |
| 100             | 64QAM      | 1       | 1         | 20.77                    | 20.48                       | 20.35                     | 21.5                   |
| 100             | 256QAM     | 1       | 1         | 20.90                    | 20.61                       | 20.48                     | 21.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 20.81                    | 20.52                       | 20.42                     | 21.5                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 20.83                    | 20.55                       | 20.45                     | 21.5                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 20.88                    | 20.53                       | 20.36                     | 21.5                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 20.84                    | 20.57                       | 20.40                     | 21.5                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 20.79                    | 20.51                       | 20.45                     | 21.5                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.88                    | 20.56                       | 20.38                     | 21.5                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.78                    | 20.51                       | 20.46                     | 21.5                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 20.79                    | 20.57                       | 20.45                     | 21.5                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.87                    | 20.50                       | 20.39                     | 21.5                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.84                    | 20.59                       | 20.45                     | 21.5                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.79                    | 20.53                       | 20.40                     | 21.5                   |



&lt;FR1 n77\_Ant 6\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 23.06                    | 23.23                       | 23.35                     | 24.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 23.39                    | 23.56                       | 23.68                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 23.28                    | 23.45                       | 23.57                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 23.40                    | 23.57                       | 23.69                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 69        | 23.52                    | 23.69                       | 23.81                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 23.41                    | 23.58                       | 23.70                     | 24.0                   |
| 100             | PI/2 BPSK  | 270     | 0         | 23.37                    | 23.54                       | 23.66                     |                        |
| 100             | QPSK       | 1       | 1         | 23.04                    | 23.21                       | 23.33                     | 24.0                   |
| 100             | QPSK       | 1       | 137       | 23.34                    | 23.51                       | 23.63                     |                        |
| 100             | QPSK       | 1       | 271       | 23.29                    | 23.46                       | 23.58                     |                        |
| 100             | QPSK       | 135     | 0         | 23.36                    | 23.53                       | 23.65                     | 24.0                   |
| 100             | QPSK       | 135     | 69        | 23.50                    | 23.67                       | 23.79                     | 24.0                   |
| 100             | QPSK       | 135     | 138       | 23.38                    | 23.55                       | 23.67                     | 24.0                   |
| 100             | QPSK       | 270     | 0         | 23.35                    | 23.52                       | 23.64                     |                        |
| 100             | 16QAM      | 1       | 1         | 22.82                    | 22.99                       | 23.11                     | 24.0                   |
| 100             | 64QAM      | 1       | 1         | 22.84                    | 23.01                       | 23.13                     | 24.0                   |
| 100             | 256QAM     | 1       | 1         | 23.40                    | 23.57                       | 23.69                     | 24.0                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 23.04                    | 23.27                       | 23.30                     | 24.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 22.86                    | 23.08                       | 23.18                     | 24.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 22.90                    | 23.17                       | 23.15                     | 24.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 22.84                    | 23.08                       | 23.14                     | 24.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 22.90                    | 23.07                       | 23.10                     | 24.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 22.90                    | 23.12                       | 23.12                     | 24.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 22.92                    | 23.13                       | 23.12                     | 24.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 22.90                    | 23.07                       | 23.13                     | 24.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 22.87                    | 23.11                       | 23.15                     | 24.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 22.84                    | 23.11                       | 23.15                     | 24.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 22.99                    | 23.06                       | 23.10                     | 24.0                   |



&lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 6\_Sensor ON&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 21.5                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 20.57                    | 20.95                       | 20.71                     | 21.5                   |
| 100             | PI/2 BPSK  | 1       | 137       | 20.52                    | 20.90                       | 20.66                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 20.47                    | 20.85                       | 20.61                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 20.66                    | 21.04                       | 20.80                     | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 20.65                    | 21.03                       | 20.79                     | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 138       | 20.59                    | 20.97                       | 20.73                     | 21.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 20.57                    | 20.95                       | 20.71                     |                        |
| 100             | QPSK       | 1       | 1         | 20.33                    | 20.71                       | 20.47                     | 21.5                   |
| 100             | QPSK       | 1       | 137       | 20.58                    | 20.96                       | 20.72                     |                        |
| 100             | QPSK       | 1       | 271       | 20.48                    | 20.86                       | 20.62                     |                        |
| 100             | QPSK       | 135     | 0         | 20.62                    | 21.00                       | 20.76                     | 21.5                   |
| 100             | QPSK       | 135     | 69        | 20.64                    | 21.02                       | 20.78                     | 21.5                   |
| 100             | QPSK       | 135     | 138       | 20.61                    | 20.99                       | 20.75                     | 21.5                   |
| 100             | QPSK       | 270     | 0         | 20.57                    | 20.95                       | 20.71                     |                        |
| 100             | 16QAM      | 1       | 1         | 20.11                    | 20.48                       | 20.25                     | 21.5                   |
| 100             | 64QAM      | 1       | 1         | 20.16                    | 20.53                       | 20.29                     | 21.5                   |
| 100             | 256QAM     | 1       | 1         | 20.13                    | 20.50                       | 20.27                     | 21.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 20.37                    | 20.85                       | 20.52                     | 21.5                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 20.38                    | 20.79                       | 20.52                     | 21.5                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 20.45                    | 20.79                       | 20.60                     | 21.5                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 20.38                    | 20.84                       | 20.58                     | 21.5                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 20.46                    | 20.75                       | 20.59                     | 21.5                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.40                    | 20.75                       | 20.57                     | 21.5                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.46                    | 20.80                       | 20.61                     | 21.5                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 20.37                    | 20.83                       | 20.55                     | 21.5                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.41                    | 20.84                       | 20.56                     | 21.5                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.47                    | 20.85                       | 20.61                     | 21.5                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.43                    | 20.85                       | 20.55                     | 21.5                   |



&lt;FR1 n77\_Ant 3\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 23.16                    | 22.68                       | 22.41                     | 24.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 23.10                    | 22.62                       | 22.35                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 22.81                    | 22.34                       | 22.07                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 23.23                    | 22.70                       | 22.40                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 69        | 23.25                    | 22.71                       | 22.44                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 23.08                    | 22.60                       | 22.33                     | 24.0                   |
| 100             | PI/2 BPSK  | 270     | 0         | 23.11                    | 22.63                       | 22.36                     |                        |
| 100             | QPSK       | 1       | 1         | 23.21                    | 22.73                       | 22.46                     | 24.0                   |
| 100             | QPSK       | 1       | 137       | 23.07                    | 22.59                       | 22.32                     |                        |
| 100             | QPSK       | 1       | 271       | 22.80                    | 22.33                       | 22.06                     |                        |
| 100             | QPSK       | 135     | 0         | 23.22                    | 22.74                       | 22.47                     | 24.0                   |
| 100             | QPSK       | 135     | 69        | 23.16                    | 22.68                       | 22.41                     | 24.0                   |
| 100             | QPSK       | 135     | 138       | 23.05                    | 22.57                       | 22.30                     | 24.0                   |
| 100             | QPSK       | 270     | 0         | 23.08                    | 22.60                       | 22.33                     |                        |
| 100             | 16QAM      | 1       | 1         | 22.97                    | 22.49                       | 22.22                     | 24.0                   |
| 100             | 64QAM      | 1       | 1         | 23.01                    | 22.53                       | 22.26                     | 24.0                   |
| 100             | 256QAM     | 1       | 1         | 23.07                    | 23.08                       | 22.81                     | 24.0                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 23.14                    | 22.76                       | 22.56                     | 24.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 23.04                    | 22.61                       | 22.41                     | 24.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 23.02                    | 22.58                       | 22.42                     | 24.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 22.99                    | 22.59                       | 22.37                     | 24.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 22.94                    | 22.63                       | 22.40                     | 24.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 23.02                    | 22.56                       | 22.39                     | 24.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 22.96                    | 22.63                       | 22.36                     | 24.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 23.02                    | 22.58                       | 22.38                     | 24.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 22.98                    | 22.56                       | 22.38                     | 24.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 22.97                    | 22.56                       | 22.46                     | 24.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 22.98                    | 22.59                       | 22.40                     | 24.0                   |



&lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 3\_Sensor ON&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    |                        |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 19.54                    | 19.08                       | 18.95                     | 20.5                   |
| 100             | PI/2 BPSK  | 1       | 137       | 19.53                    | 19.01                       | 18.87                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 19.32                    | 18.80                       | 18.64                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 19.62                    | 19.06                       | 18.96                     | 20.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 19.61                    | 19.01                       | 18.93                     | 20.5                   |
| 100             | PI/2 BPSK  | 135     | 138       | 19.55                    | 19.01                       | 18.89                     | 20.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 19.53                    | 19.03                       | 18.91                     |                        |
| 100             | QPSK       | 1       | 1         | 19.52                    | 19.00                       | 18.87                     | 20.5                   |
| 100             | QPSK       | 1       | 137       | 19.49                    | 18.97                       | 18.81                     |                        |
| 100             | QPSK       | 1       | 271       | 19.31                    | 18.84                       | 18.69                     |                        |
| 100             | QPSK       | 135     | 0         | 19.57                    | 19.03                       | 18.93                     | 20.5                   |
| 100             | QPSK       | 135     | 69        | 19.60                    | 19.08                       | 18.91                     | 20.5                   |
| 100             | QPSK       | 135     | 138       | 19.55                    | 19.03                       | 18.89                     | 20.5                   |
| 100             | QPSK       | 270     | 0         | 19.51                    | 18.95                       | 18.82                     |                        |
| 100             | 16QAM      | 1       | 1         | 19.30                    | 18.83                       | 18.68                     | 20.5                   |
| 100             | 64QAM      | 1       | 1         | 19.34                    | 18.88                       | 18.70                     | 20.5                   |
| 100             | 256QAM     | 1       | 1         | 19.50                    | 18.95                       | 18.85                     | 20.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 19.37                    | 18.92                       | 18.84                     | 20.5                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 19.43                    | 18.94                       | 18.78                     | 20.5                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 19.41                    | 18.89                       | 18.77                     | 20.5                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 19.41                    | 18.93                       | 18.75                     | 20.5                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 19.36                    | 18.96                       | 18.84                     | 20.5                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 19.42                    | 18.89                       | 18.81                     | 20.5                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 19.44                    | 18.95                       | 18.75                     | 20.5                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 19.41                    | 18.90                       | 18.76                     | 20.5                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 19.36                    | 18.97                       | 18.85                     | 20.5                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 19.39                    | 18.97                       | 18.81                     | 20.5                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 19.38                    | 18.98                       | 18.81                     | 20.5                   |



&lt;FR1 n77\_Ant 5\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 24.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 23.13                    | 23.02                       | 23.19                     | 24.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 23.48                    | 23.37                       | 23.54                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 23.46                    | 23.35                       | 23.52                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 23.39                    | 23.28                       | 23.45                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 69        | 23.59                    | 23.48                       | 23.65                     | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 23.44                    | 23.43                       | 23.46                     | 24.0                   |
| 100             | PI/2 BPSK  | 270     | 0         | 23.45                    | 23.34                       | 23.41                     |                        |
| 100             | QPSK       | 1       | 1         | 23.09                    | 22.98                       | 23.15                     | 24.0                   |
| 100             | QPSK       | 1       | 137       | 23.43                    | 23.32                       | 23.49                     |                        |
| 100             | QPSK       | 1       | 271       | 23.43                    | 23.32                       | 23.49                     |                        |
| 100             | QPSK       | 135     | 0         | 23.36                    | 23.25                       | 23.42                     | 24.0                   |
| 100             | QPSK       | 135     | 69        | 23.54                    | 23.43                       | 23.60                     | 24.0                   |
| 100             | QPSK       | 135     | 138       | 23.51                    | 23.40                       | 23.57                     | 24.0                   |
| 100             | QPSK       | 270     | 0         | 23.41                    | 23.30                       | 23.47                     |                        |
| 100             | 16QAM      | 1       | 1         | 22.86                    | 22.75                       | 22.92                     | 24.0                   |
| 100             | 64QAM      | 1       | 1         | 22.89                    | 22.78                       | 22.95                     | 24.0                   |
| 100             | 256QAM     | 1       | 1         | 22.07                    | 22.00                       | 22.13                     | 24.0                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 23.12                    | 23.04                       | 23.18                     | 24.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 22.97                    | 22.84                       | 22.98                     | 24.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 22.93                    | 22.85                       | 23.07                     | 24.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 22.95                    | 22.92                       | 23.00                     | 24.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 22.93                    | 22.89                       | 23.04                     | 24.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 22.94                    | 22.89                       | 23.00                     | 24.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 22.96                    | 22.85                       | 23.08                     | 24.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 22.94                    | 22.92                       | 22.98                     | 24.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 22.96                    | 22.84                       | 23.05                     | 24.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 22.96                    | 22.87                       | 22.99                     | 24.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 22.94                    | 22.93                       | 23.00                     | 24.0                   |



&lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 5\_Sensor ON&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 21.60                    | 21.67                       | 21.87                     | 22.5                   |
| 100             | PI/2 BPSK  | 1       | 137       | 21.84                    | 21.91                       | 22.11                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 21.82                    | 21.89                       | 22.09                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 21.78                    | 21.85                       | 22.05                     | 22.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 21.97                    | 22.04                       | 22.24                     | 22.5                   |
| 100             | PI/2 BPSK  | 135     | 138       | 21.91                    | 21.98                       | 22.18                     | 22.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 21.83                    | 21.90                       | 22.10                     |                        |
| 100             | QPSK       | 1       | 1         | 21.53                    | 21.60                       | 21.80                     | 22.5                   |
| 100             | QPSK       | 1       | 137       | 21.82                    | 21.89                       | 22.09                     |                        |
| 100             | QPSK       | 1       | 271       | 21.87                    | 21.94                       | 22.14                     |                        |
| 100             | QPSK       | 135     | 0         | 21.72                    | 21.79                       | 21.99                     | 22.5                   |
| 100             | QPSK       | 135     | 69        | 21.93                    | 22.00                       | 22.20                     | 22.5                   |
| 100             | QPSK       | 135     | 138       | 21.90                    | 21.97                       | 22.17                     | 22.5                   |
| 100             | QPSK       | 270     | 0         | 21.81                    | 21.88                       | 22.08                     |                        |
| 100             | 16QAM      | 1       | 1         | 21.91                    | 21.98                       | 22.18                     | 22.5                   |
| 100             | 64QAM      | 1       | 1         | 21.89                    | 21.96                       | 22.16                     | 22.5                   |
| 100             | 256QAM     | 1       | 1         | 21.91                    | 21.98                       | 22.18                     | 22.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 21.70                    | 21.67                       | 21.84                     | 22.5                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 21.51                    | 21.60                       | 21.74                     | 22.5                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 21.50                    | 21.53                       | 21.71                     | 22.5                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 21.53                    | 21.51                       | 21.75                     | 22.5                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 21.53                    | 21.60                       | 21.80                     | 22.5                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 21.57                    | 21.51                       | 21.74                     | 22.5                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 21.59                    | 21.53                       | 21.78                     | 22.5                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 21.50                    | 21.52                       | 21.72                     | 22.5                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 21.51                    | 21.55                       | 21.74                     | 22.5                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 21.52                    | 21.50                       | 21.73                     | 22.5                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 21.55                    | 21.50                       | 21.78                     | 22.5                   |



&lt;FR1 n77\_HPUE\_Ant 1\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 27.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 26.89                    | 25.67                       | 25.60                     | 27.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 26.37                    | 25.58                       | 26.34                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 25.50                    | 25.47                       | 26.28                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 26.43                    | 25.54                       | 25.94                     | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 26.41                    | 25.60                       | 26.30                     | 27.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 25.95                    | 25.59                       | 26.13                     | 26.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 26.27                    | 25.58                       | 26.02                     |                        |
| 100             | QPSK       | 1       | 1         | 26.50                    | 25.35                       | 25.62                     | 27.0                   |
| 100             | QPSK       | 1       | 137       | 26.27                    | 25.55                       | 26.25                     |                        |
| 100             | QPSK       | 1       | 271       | 25.57                    | 25.56                       | 26.24                     |                        |
| 100             | QPSK       | 135     | 0         | 25.96                    | 25.47                       | 25.73                     | 26.0                   |
| 100             | QPSK       | 135     | 69        | 26.34                    | 25.61                       | 26.16                     | 27.0                   |
| 100             | QPSK       | 135     | 138       | 25.96                    | 25.61                       | 25.51                     | 26.0                   |
| 100             | QPSK       | 270     | 0         | 25.98                    | 25.59                       | 25.55                     |                        |
| 100             | 16QAM      | 1       | 1         | 25.92                    | 24.91                       | 25.39                     | 26.0                   |
| 100             | 64QAM      | 1       | 1         | 24.47                    | 24.27                       | 23.88                     | 24.5                   |
| 100             | 256QAM     | 1       | 1         | 22.55                    | 22.58                       | 22.55                     | 24.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 26.34                    | 25.45                       | 25.27                     | 27.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 26.16                    | 25.34                       | 25.15                     | 27.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 26.17                    | 25.29                       | 25.08                     | 27.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 26.15                    | 25.33                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 26.22                    | 25.25                       | 25.17                     | 27.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 26.15                    | 25.25                       | 25.09                     | 27.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 26.14                    | 25.25                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 26.16                    | 25.32                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 26.21                    | 25.25                       | 25.08                     | 27.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 26.17                    | 25.35                       | 25.11                     | 27.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 26.16                    | 25.32                       | 25.11                     | 27.0                   |



&lt;FR1 n77\_HPUE\_Ant 6\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | 27.0                   |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 25.53                    | 25.74                       | 25.80                     | 27.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 25.83                    | 26.04                       | 26.10                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 25.73                    | 25.94                       | 26.00                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 25.85                    | 26.06                       | 26.12                     | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 25.99                    | 26.20                       | 26.26                     | 27.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 25.83                    | 26.04                       | 26.10                     | 26.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 25.80                    | 26.01                       | 26.07                     |                        |
| 100             | QPSK       | 1       | 1         | 25.47                    | 25.68                       | 25.74                     | 27.0                   |
| 100             | QPSK       | 1       | 137       | 25.76                    | 25.97                       | 26.03                     |                        |
| 100             | QPSK       | 1       | 271       | 25.68                    | 25.89                       | 25.95                     |                        |
| 100             | QPSK       | 135     | 0         | 25.79                    | 26.00                       | 25.96                     | 26.0                   |
| 100             | QPSK       | 135     | 69        | 25.92                    | 26.13                       | 26.19                     | 27.0                   |
| 100             | QPSK       | 135     | 138       | 25.77                    | 25.98                       | 25.94                     | 26.0                   |
| 100             | QPSK       | 270     | 0         | 25.74                    | 25.95                       | 25.91                     |                        |
| 100             | 16QAM      | 1       | 1         | 25.22                    | 25.43                       | 25.49                     | 26.0                   |
| 100             | 64QAM      | 1       | 1         | 24.43                    | 24.43                       | 24.49                     | 24.5                   |
| 100             | 256QAM     | 1       | 1         | 23.44                    | 23.63                       | 23.69                     | 24.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.51                    | 25.70                       | 25.76                     | 27.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.35                    | 25.60                       | 25.61                     | 27.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.39                    | 25.50                       | 25.58                     | 27.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.35                    | 25.56                       | 25.57                     | 27.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.38                    | 25.54                       | 25.57                     | 27.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.38                    | 25.55                       | 25.58                     | 27.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.34                    | 25.52                       | 25.56                     | 27.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.37                    | 25.55                       | 25.58                     | 27.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.40                    | 25.57                       | 25.64                     | 27.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 25.38                    | 25.58                       | 25.66                     | 27.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 25.32                    | 25.50                       | 25.57                     | 27.0                   |



&lt;FR1 n77\_HPUE\_Ant 3\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 25.81                    | 25.28                       | 25.09                     | 27.0                   |
| 100             | PI/2 BPSK  | 1       | 137       | 25.65                    | 25.12                       | 25.02                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 25.37                    | 25.10                       | 25.06                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 25.79                    | 25.20                       | 25.07                     | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 69        | 25.75                    | 25.22                       | 25.03                     | 27.0                   |
| 100             | PI/2 BPSK  | 135     | 138       | 25.63                    | 25.10                       | 25.03                     | 26.5                   |
| 100             | PI/2 BPSK  | 270     | 0         | 25.63                    | 25.10                       | 25.03                     |                        |
| 100             | QPSK       | 1       | 1         | 25.78                    | 25.25                       | 25.06                     | 27.0                   |
| 100             | QPSK       | 1       | 137       | 25.60                    | 25.07                       | 25.04                     |                        |
| 100             | QPSK       | 1       | 271       | 25.37                    | 25.06                       | 25.01                     |                        |
| 100             | QPSK       | 135     | 0         | 25.76                    | 25.23                       | 25.04                     | 26.0                   |
| 100             | QPSK       | 135     | 69        | 25.70                    | 25.17                       | 25.06                     | 27.0                   |
| 100             | QPSK       | 135     | 138       | 25.59                    | 25.06                       | 24.87                     | 26.0                   |
| 100             | QPSK       | 270     | 0         | 25.58                    | 25.05                       | 24.86                     |                        |
| 100             | 16QAM      | 1       | 1         | 25.50                    | 24.98                       | 24.79                     | 26.0                   |
| 100             | 64QAM      | 1       | 1         | 24.45                    | 24.47                       | 24.33                     | 24.5                   |
| 100             | 256QAM     | 1       | 1         | 23.60                    | 23.12                       | 22.95                     | 24.5                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.67                    | 25.24                       | 25.10                     | 27.0                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.49                    | 25.12                       | 25.12                     | 27.0                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.54                    | 25.14                       | 25.08                     | 27.0                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.55                    | 25.05                       | 25.06                     | 27.0                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.54                    | 25.10                       | 25.10                     | 27.0                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.53                    | 25.09                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.50                    | 25.06                       | 25.09                     | 27.0                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.51                    | 25.11                       | 25.08                     | 27.0                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.53                    | 25.12                       | 25.07                     | 27.0                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 25.48                    | 25.06                       | 25.07                     | 27.0                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 25.50                    | 25.13                       | 25.12                     | 27.0                   |



&lt;FR1 n77\_HPUE\_Ant 5\_Sensor OFF&gt;

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           | 650000                   | 656000                      | 662000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3750                     | 3840                        | 3930                      |                        |
| 100             | PI/2 BPSK  | 1       | 1         | 25.79                    | 25.20                       | 25.11                     | 26.5                   |
| 100             | PI/2 BPSK  | 1       | 137       | 26.21                    | 25.61                       | 25.52                     |                        |
| 100             | PI/2 BPSK  | 1       | 271       | 25.99                    | 25.40                       | 25.31                     |                        |
| 100             | PI/2 BPSK  | 135     | 0         | 26.00                    | 25.41                       | 25.32                     | 26.0                   |
| 100             | PI/2 BPSK  | 135     | 69        | 26.30                    | 25.70                       | 25.61                     | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 138       | 25.85                    | 25.45                       | 25.36                     | 26.0                   |
| 100             | PI/2 BPSK  | 270     | 0         | 25.88                    | 25.29                       | 25.20                     |                        |
| 100             | QPSK       | 1       | 1         | 25.92                    | 25.33                       | 25.24                     | 26.5                   |
| 100             | QPSK       | 1       | 137       | 26.27                    | 25.67                       | 25.58                     |                        |
| 100             | QPSK       | 1       | 271       | 25.92                    | 25.33                       | 25.24                     |                        |
| 100             | QPSK       | 135     | 0         | 25.49                    | 25.30                       | 25.21                     | 25.5                   |
| 100             | QPSK       | 135     | 69        | 26.11                    | 25.51                       | 25.42                     | 26.5                   |
| 100             | QPSK       | 135     | 138       | 25.46                    | 25.44                       | 25.35                     | 25.5                   |
| 100             | QPSK       | 270     | 0         | 25.45                    | 25.21                       | 25.12                     |                        |
| 100             | 16QAM      | 1       | 1         | 25.37                    | 24.79                       | 24.70                     | 25.5                   |
| 100             | 64QAM      | 1       | 1         | 23.81                    | 23.27                       | 23.19                     | 24.0                   |
| 100             | 256QAM     | 1       | 1         | 22.30                    | 22.35                       | 22.26                     | 24.0                   |
| Channel         |            |         |           | 649668                   | 656000                      | 662332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3745.02                  | 3840                        | 3934.98                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.74                    | 25.02                       | 25.27                     | 26.5                   |
| Channel         |            |         |           | 649334                   | 656000                      | 662666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3740.01                  | 3840                        | 3939.99                   |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.55                    | 24.88                       | 25.08                     | 26.5                   |
| Channel         |            |         |           | 649000                   | 656000                      | 663000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3735                     | 3840                        | 3945                      |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.62                    | 24.89                       | 25.17                     | 26.5                   |
| Channel         |            |         |           | 648668                   | 656000                      | 663332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3730.02                  | 3840                        | 3949.98                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.54                    | 24.89                       | 25.11                     | 26.5                   |
| Channel         |            |         |           | 648334                   | 656000                      | 663666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3725.01                  | 3840                        | 3954.99                   |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.62                    | 24.83                       | 25.16                     | 26.5                   |
| Channel         |            |         |           | 648000                   | 656000                      | 664000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3720                     | 3840                        | 3960                      |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.56                    | 24.90                       | 25.16                     | 26.5                   |
| Channel         |            |         |           | 647668                   | 656000                      | 664332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3715.02                  | 3840.00                     | 3964.98                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.63                    | 24.92                       | 25.11                     | 26.5                   |
| Channel         |            |         |           | 647500                   | 656000                      | 664500                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3712.5                   | 3840.00                     | 3967.50                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.56                    | 24.85                       | 25.17                     | 26.5                   |
| Channel         |            |         |           | 647334                   | 656000                      | 664666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3710.01                  | 3840                        | 3969.99                   |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.61                    | 24.86                       | 25.14                     | 26.5                   |
| Channel         |            |         |           | 647168                   | 656000                      | 664832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3707.52                  | 3840                        | 3972.48                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 25.57                    | 24.89                       | 25.11                     | 26.5                   |
| Channel         |            |         |           | 647000                   | 656000                      | 665000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3705                     | 3840                        | 3975                      |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 25.61                    | 24.86                       | 25.14                     | 26.5                   |

**<FR1 n77\_Ant 1\_Sensor OFF>(3450-3550MHz)**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           |                          | 633332                      |                           |                        |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                        |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 23.69                       |                           | 24.0                   |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 23.94                       |                           |                        |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 23.97                       |                           |                        |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 22.90                       |                           | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 23.90                       |                           | 24.0                   |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 23.48                       |                           | 24.0                   |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 23.46                       |                           |                        |
| 100             | QPSK       | 1       | 1         |                          | 23.42                       |                           | 24.0                   |
| 100             | QPSK       | 1       | 137       |                          | 23.73                       |                           |                        |
| 100             | QPSK       | 1       | 271       |                          | 23.76                       |                           |                        |
| 100             | QPSK       | 135     | 0         |                          | 23.70                       |                           | 24.0                   |
| 100             | QPSK       | 135     | 69        |                          | 23.87                       |                           | 24.0                   |
| 100             | QPSK       | 135     | 138       |                          | 23.85                       |                           | 24.0                   |
| 100             | QPSK       | 270     | 0         |                          | 23.83                       |                           |                        |
| 100             | 16QAM      | 1       | 1         |                          | 23.19                       |                           | 24.0                   |
| 100             | 64QAM      | 1       | 1         |                          | 23.22                       |                           | 24.0                   |
| 100             | 256QAM     | 1       | 1         |                          | 23.32                       |                           | 24.0                   |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 23.74                    | 23.75                       | 23.70                     | 24.0                   |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 23.56                    | 23.59                       | 23.58                     | 24.0                   |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 23.60                    | 23.55                       | 23.56                     | 24.0                   |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 23.60                    | 23.65                       | 23.58                     | 24.0                   |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 23.64                    | 23.65                       | 23.57                     | 24.0                   |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 23.61                    | 23.55                       | 23.60                     | 24.0                   |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 23.62                    | 23.57                       | 23.60                     | 24.0                   |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 23.61                    | 23.65                       | 23.52                     | 24.0                   |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 23.64                    | 23.65                       | 23.58                     | 24.0                   |
| Channel         |            |         |           | 630500                   | 633332                      | 636166                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3457.5                   | 3499.98                     | 3542.49                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 23.56                    | 23.57                       | 23.59                     | 24.0                   |
| Channel         |            |         |           | 630334                   | 633332                      | 636332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3455.01                  | 3499.98                     | 3544.98                   |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 23.63                    | 23.62                       | 23.60                     | 24.0                   |



&lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 1\_Sensor ON&gt;(3450-3550MHZ)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           |                          | 633332                      |                           |                        |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                        |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 21.06                       |                           | 21.5                   |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 21.34                       |                           |                        |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 21.31                       |                           |                        |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 21.34                       |                           | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 21.45                       |                           | 21.5                   |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 21.42                       |                           | 21.5                   |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 21.48                       |                           |                        |
| 100             | QPSK       | 1       | 1         |                          | 21.07                       |                           | 21.5                   |
| 100             | QPSK       | 1       | 137       |                          | 21.34                       |                           |                        |
| 100             | QPSK       | 1       | 271       |                          | 21.46                       |                           |                        |
| 100             | QPSK       | 135     | 0         |                          | 21.35                       |                           | 21.5                   |
| 100             | QPSK       | 135     | 69        |                          | 21.45                       |                           | 21.5                   |
| 100             | QPSK       | 135     | 138       |                          | 21.46                       |                           | 21.5                   |
| 100             | QPSK       | 270     | 0         |                          | 21.48                       |                           |                        |
| 100             | 16QAM      | 1       | 1         |                          | 20.86                       |                           | 21.5                   |
| 100             | 64QAM      | 1       | 1         |                          | 20.92                       |                           | 21.5                   |
| 100             | 256QAM     | 1       | 1         |                          | 21.48                       |                           | 21.5                   |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 20.79                    | 20.90                       | 20.85                     | 21.5                   |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 20.84                    | 20.91                       | 20.82                     | 21.5                   |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 20.85                    | 20.86                       | 20.80                     | 21.5                   |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 20.85                    | 20.91                       | 20.88                     | 21.5                   |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 20.83                    | 20.96                       | 20.81                     | 21.5                   |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 20.71                    | 20.84                       | 20.82                     | 21.5                   |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 20.88                    | 20.88                       | 20.88                     | 21.5                   |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 20.83                    | 20.95                       | 20.86                     | 21.5                   |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 20.80                    | 20.88                       | 20.86                     | 21.5                   |
| Channel         |            |         |           | 630500                   | 633332                      | 636166                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3457.5                   | 3499.98                     | 3542.49                   |                        |
| 15              | PI/2 BPSK  | 1       | 1         | 20.88                    | 20.89                       | 20.82                     | 21.5                   |
| Channel         |            |         |           | 630334                   | 633332                      | 636332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3455.01                  | 3499.98                     | 3544.98                   |                        |
| 10              | PI/2 BPSK  | 1       | 1         | 20.88                    | 20.86                       | 20.80                     | 21.5                   |



&lt;FR1 n77\_Ant 6\_Sensor OFF&gt;(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|---------------------------|
| Channel         |            |         |           |                          | 633332                      |                           | 24.0                      |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                           |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 22.88                       |                           | 24.0                      |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 23.15                       |                           |                           |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 23.09                       |                           |                           |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 23.20                       |                           | 24.0                      |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 23.27                       |                           | 24.0                      |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 23.24                       |                           | 24.0                      |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 23.17                       |                           |                           |
| 100             | QPSK       | 1       | 1         |                          | 22.82                       |                           | 24.0                      |
| 100             | QPSK       | 1       | 137       |                          | 23.10                       |                           |                           |
| 100             | QPSK       | 1       | 271       |                          | 23.14                       |                           |                           |
| 100             | QPSK       | 135     | 0         |                          | 23.20                       |                           | 24.0                      |
| 100             | QPSK       | 135     | 69        |                          | 23.21                       |                           | 24.0                      |
| 100             | QPSK       | 135     | 138       |                          | 23.24                       |                           | 24.0                      |
| 100             | QPSK       | 270     | 0         |                          | 23.17                       |                           |                           |
| 100             | 16QAM      | 1       | 1         |                          | 22.60                       |                           | 24.0                      |
| 100             | 64QAM      | 1       | 1         |                          | 22.68                       |                           | 24.0                      |
| 100             | 256QAM     | 1       | 1         |                          | 23.22                       |                           | 24.0                      |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                           |
| 90              | PI/2 BPSK  | 1       | 1         | 22.80                    | 22.78                       | 22.84                     | 24.0                      |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                           |
| 80              | PI/2 BPSK  | 1       | 1         | 22.63                    | 22.66                       | 22.70                     | 24.0                      |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                           |
| 70              | PI/2 BPSK  | 1       | 1         | 22.64                    | 22.60                       | 22.72                     | 24.0                      |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                           |
| 60              | PI/2 BPSK  | 1       | 1         | 22.70                    | 22.63                       | 22.68                     | 24.0                      |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                           |
| 50              | PI/2 BPSK  | 1       | 1         | 22.63                    | 22.65                       | 22.70                     | 24.0                      |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                           |
| 40              | PI/2 BPSK  | 1       | 1         | 22.68                    | 22.66                       | 22.67                     | 24.0                      |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                           |
| 30              | PI/2 BPSK  | 1       | 1         | 22.67                    | 22.60                       | 22.71                     | 24.0                      |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                           |
| 25              | PI/2 BPSK  | 1       | 1         | 22.67                    | 22.64                       | 22.72                     | 24.0                      |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                           |
| 20              | PI/2 BPSK  | 1       | 1         | 22.66                    | 22.60                       | 22.73                     | 24.0                      |
| Channel         |            |         |           | 630500                   | 633332                      | 636166                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3457.5                   | 3499.98                     | 3542.49                   |                           |
| 15              | PI/2 BPSK  | 1       | 1         | 22.62                    | 22.58                       | 22.64                     | 24.0                      |
| Channel         |            |         |           | 630334                   | 633332                      | 636332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3455.01                  | 3499.98                     | 3544.98                   |                           |
| 10              | PI/2 BPSK  | 1       | 1         | 22.63                    | 22.59                       | 22.68                     | 24.0                      |

**<FR1 n77\_non-HPUE & HPUE\_Ant 6\_Sensor ON>(3450-3550MHz)**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|---------------------------|
| Channel         |            |         |           |                          | 633332                      |                           | 21.5                      |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                           |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 20.65                       |                           | 21.5                      |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 20.92                       |                           |                           |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 20.80                       |                           |                           |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 21.07                       |                           | 21.5                      |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 21.05                       |                           | 21.5                      |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 20.98                       |                           | 21.5                      |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 20.99                       |                           |                           |
| 100             | QPSK       | 1       | 1         |                          | 20.65                       |                           | 21.5                      |
| 100             | QPSK       | 1       | 137       |                          | 20.92                       |                           |                           |
| 100             | QPSK       | 1       | 271       |                          | 20.82                       |                           |                           |
| 100             | QPSK       | 135     | 0         |                          | 21.05                       |                           | 21.5                      |
| 100             | QPSK       | 135     | 69        |                          | 21.06                       |                           | 21.5                      |
| 100             | QPSK       | 135     | 138       |                          | 20.99                       |                           | 21.5                      |
| 100             | QPSK       | 270     | 0         |                          | 21.01                       |                           |                           |
| 100             | 16QAM      | 1       | 1         |                          | 20.44                       |                           | 21.5                      |
| 100             | 64QAM      | 1       | 1         |                          | 20.53                       |                           | 21.5                      |
| 100             | 256QAM     | 1       | 1         |                          | 20.90                       |                           | 21.5                      |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                           |
| 90              | PI/2 BPSK  | 1       | 1         | 20.46                    | 20.48                       | 20.51                     | 21.5                      |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                           |
| 80              | PI/2 BPSK  | 1       | 1         | 20.42                    | 20.47                       | 20.47                     | 21.5                      |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                           |
| 70              | PI/2 BPSK  | 1       | 1         | 20.48                    | 20.51                       | 20.51                     | 21.5                      |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                           |
| 60              | PI/2 BPSK  | 1       | 1         | 20.43                    | 20.48                       | 20.49                     | 21.5                      |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                           |
| 50              | PI/2 BPSK  | 1       | 1         | 20.40                    | 20.46                       | 20.48                     | 21.5                      |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                           |
| 40              | PI/2 BPSK  | 1       | 1         | 20.45                    | 20.45                       | 20.46                     | 21.5                      |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                           |
| 30              | PI/2 BPSK  | 1       | 1         | 20.49                    | 20.54                       | 20.43                     | 21.5                      |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                           |
| 25              | PI/2 BPSK  | 1       | 1         | 20.50                    | 20.50                       | 20.46                     | 21.5                      |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                           |
| 20              | PI/2 BPSK  | 1       | 1         | 20.47                    | 20.54                       | 20.49                     | 21.5                      |
| Channel         |            |         |           | 630500                   | 633332                      | 636166                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3457.5                   | 3499.98                     | 3542.49                   |                           |
| 15              | PI/2 BPSK  | 1       | 1         | 20.46                    | 20.50                       | 20.52                     | 21.5                      |
| Channel         |            |         |           | 630334                   | 633332                      | 636332                    | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3455.01                  | 3499.98                     | 3544.98                   |                           |



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|    |           |   |   |       |       |       |      |
|----|-----------|---|---|-------|-------|-------|------|
| 10 | PI/2 BPSK | 1 | 1 | 20.41 | 20.52 | 20.48 | 21.5 |
|----|-----------|---|---|-------|-------|-------|------|

## <FR1 n77\_Ant 3\_Sensor OFF>(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel         |            |         |           |                       | 633332                   |                        |                     |
| Frequency (MHz) |            |         |           |                       | 3499.98                  |                        |                     |
| 100             | PI/2 BPSK  | 1       | 1         |                       | 23.01                    |                        | 24.0                |
| 100             | PI/2 BPSK  | 1       | 137       |                       | 23.36                    |                        |                     |
| 100             | PI/2 BPSK  | 1       | 271       |                       | 23.35                    |                        |                     |
| 100             | PI/2 BPSK  | 135     | 0         |                       | 23.32                    |                        | 24.0                |
| 100             | PI/2 BPSK  | 135     | 69        |                       | 23.51                    |                        | 24.0                |
| 100             | PI/2 BPSK  | 135     | 138       |                       | 23.49                    |                        | 24.0                |
| 100             | PI/2 BPSK  | 270     | 0         |                       | 23.45                    |                        |                     |
| 100             | QPSK       | 1       | 1         |                       | 23.00                    |                        | 24.0                |
| 100             | QPSK       | 1       | 137       |                       | 23.34                    |                        |                     |
| 100             | QPSK       | 1       | 271       |                       | 23.46                    |                        |                     |
| 100             | QPSK       | 135     | 0         |                       | 23.31                    |                        | 24.0                |
| 100             | QPSK       | 135     | 69        |                       | 23.49                    |                        | 24.0                |
| 100             | QPSK       | 135     | 138       |                       | 23.48                    |                        | 24.0                |
| 100             | QPSK       | 270     | 0         |                       | 23.45                    |                        |                     |
| 100             | 16QAM      | 1       | 1         |                       | 22.78                    |                        | 24.0                |
| 100             | 64QAM      | 1       | 1         |                       | 22.82                    |                        | 24.0                |
| 100             | 256QAM     | 1       | 1         |                       | 23.37                    |                        | 24.0                |
| Channel         |            |         |           | 633000                | 633332                   | 633666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3495                  | 3499.98                  | 3504.99                |                     |
| 90              | PI/2 BPSK  | 1       | 1         | 23.10                 | 23.09                    | 23.15                  | 24.0                |
| Channel         |            |         |           | 632668                | 633332                   | 634000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3490.02               | 3499.98                  | 3510                   |                     |
| 80              | PI/2 BPSK  | 1       | 1         | 22.94                 | 22.96                    | 22.98                  | 24.0                |
| Channel         |            |         |           | 632334                | 633332                   | 634332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3485.01               | 3499.98                  | 3514.98                |                     |
| 70              | PI/2 BPSK  | 1       | 1         | 22.98                 | 22.93                    | 23.00                  | 24.0                |
| Channel         |            |         |           | 632000                | 633332                   | 634666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3480                  | 3499.98                  | 3519.99                |                     |
| 60              | PI/2 BPSK  | 1       | 1         | 22.94                 | 22.90                    | 23.04                  | 24.0                |
| Channel         |            |         |           | 631668                | 633332                   | 635000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3475.02               | 3499.98                  | 3525                   |                     |
| 50              | PI/2 BPSK  | 1       | 1         | 22.96                 | 22.98                    | 22.99                  | 24.0                |
| Channel         |            |         |           | 631334                | 633332                   | 635332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3470.01               | 3499.98                  | 3529.98                |                     |
| 40              | PI/2 BPSK  | 1       | 1         | 22.90                 | 22.97                    | 22.99                  | 24.0                |
| Channel         |            |         |           | 631000                | 633332                   | 635666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3465                  | 3499.98                  | 3534.99                |                     |
| 30              | PI/2 BPSK  | 1       | 1         | 22.96                 | 22.97                    | 23.05                  | 24.0                |
| Channel         |            |         |           | 630834                | 633332                   | 635832                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3462.51               | 3499.98                  | 3537.48                |                     |
| 25              | PI/2 BPSK  | 1       | 1         | 22.93                 | 22.92                    | 23.00                  | 24.0                |
| Channel         |            |         |           | 630668                | 633332                   | 636000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3460.02               | 3499.98                  | 3540                   |                     |
| 20              | PI/2 BPSK  | 1       | 1         | 22.91                 | 22.93                    | 22.98                  | 24.0                |
| Channel         |            |         |           | 630500                | 633332                   | 636166                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3457.5                | 3499.98                  | 3542.49                |                     |
| 15              | PI/2 BPSK  | 1       | 1         | 23.00                 | 22.95                    | 22.95                  | 24.0                |
| Channel         |            |         |           | 630334                | 633332                   | 636332                 | Tune-up             |



| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 | limit (dBm) |
|-----------------|-----------|---|---|---------|---------|---------|-------------|
| 10              | PI/2 BPSK | 1 | 1 | 22.98   | 22.92   | 22.98   | 24.0        |

## &lt;FR1 n77\_non-HPUE &amp; HPUE\_Ant 3\_Sensor ON&gt;(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel         |            |         |           |                       | 633332                   |                        | 20.5                |
| Frequency (MHz) |            |         |           |                       | 3499.98                  |                        |                     |
| 100             | PI/2 BPSK  | 1       | 1         |                       | 19.52                    |                        | 20.5                |
| 100             | PI/2 BPSK  | 1       | 137       |                       | 19.80                    |                        |                     |
| 100             | PI/2 BPSK  | 1       | 271       |                       | 19.98                    |                        |                     |
| 100             | PI/2 BPSK  | 135     | 0         |                       | 19.77                    |                        | 20.5                |
| 100             | PI/2 BPSK  | 135     | 69        |                       | 19.94                    |                        | 20.5                |
| 100             | PI/2 BPSK  | 135     | 138       |                       | 20.06                    |                        | 20.5                |
| 100             | PI/2 BPSK  | 270     | 0         |                       | 19.92                    |                        |                     |
| 100             | QPSK       | 1       | 1         |                       | 19.50                    |                        | 20.5                |
| 100             | QPSK       | 1       | 137       |                       | 19.79                    |                        |                     |
| 100             | QPSK       | 1       | 271       |                       | 19.99                    |                        |                     |
| 100             | QPSK       | 135     | 0         |                       | 19.77                    |                        | 20.5                |
| 100             | QPSK       | 135     | 69        |                       | 19.94                    |                        | 20.5                |
| 100             | QPSK       | 135     | 138       |                       | 20.04                    |                        | 20.5                |
| 100             | QPSK       | 270     | 0         |                       | 19.93                    |                        |                     |
| 100             | 16QAM      | 1       | 1         |                       | 19.27                    |                        | 20.5                |
| 100             | 64QAM      | 1       | 1         |                       | 19.35                    |                        | 20.5                |
| 100             | 256QAM     | 1       | 1         |                       | 19.93                    |                        | 20.5                |
| Channel         |            |         |           | 633000                | 633332                   | 633666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3495                  | 3499.98                  | 3504.99                |                     |
| 90              | PI/2 BPSK  | 1       | 1         | 19.34                 | 19.34                    | 19.22                  | 20.5                |
| Channel         |            |         |           | 632668                | 633332                   | 634000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3490.02               | 3499.98                  | 3510                   |                     |
| 80              | PI/2 BPSK  | 1       | 1         | 19.29                 | 19.34                    | 19.28                  | 20.5                |
| Channel         |            |         |           | 632334                | 633332                   | 634332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3485.01               | 3499.98                  | 3514.98                |                     |
| 70              | PI/2 BPSK  | 1       | 1         | 19.30                 | 19.42                    | 19.20                  | 20.5                |
| Channel         |            |         |           | 632000                | 633332                   | 634666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3480                  | 3499.98                  | 3519.99                |                     |
| 60              | PI/2 BPSK  | 1       | 1         | 19.30                 | 19.36                    | 19.22                  | 20.5                |
| Channel         |            |         |           | 631668                | 633332                   | 635000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3475.02               | 3499.98                  | 3525                   |                     |
| 50              | PI/2 BPSK  | 1       | 1         | 19.37                 | 19.34                    | 19.24                  | 20.5                |
| Channel         |            |         |           | 631334                | 633332                   | 635332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3470.01               | 3499.98                  | 3529.98                |                     |
| 40              | PI/2 BPSK  | 1       | 1         | 19.32                 | 19.36                    | 19.22                  | 20.5                |
| Channel         |            |         |           | 631000                | 633332                   | 635666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3465                  | 3499.98                  | 3534.99                |                     |
| 30              | PI/2 BPSK  | 1       | 1         | 19.37                 | 19.36                    | 19.20                  | 20.5                |
| Channel         |            |         |           | 630834                | 633332                   | 635832                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3462.51               | 3499.98                  | 3537.48                |                     |
| 25              | PI/2 BPSK  | 1       | 1         | 19.37                 | 19.35                    | 19.25                  | 20.5                |
| Channel         |            |         |           | 630668                | 633332                   | 636000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3460.02               | 3499.98                  | 3540                   |                     |
| 20              | PI/2 BPSK  | 1       | 1         | 19.28                 | 19.37                    | 19.28                  | 20.5                |
| Channel         |            |         |           | 630500                | 633332                   | 636166                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3457.5                | 3499.98                  | 3542.49                |                     |
| 15              | PI/2 BPSK  | 1       | 1         | 19.28                 | 19.39                    | 19.20                  | 20.5                |



|                 |           |   |   |         |         |         |                           |
|-----------------|-----------|---|---|---------|---------|---------|---------------------------|
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                           |
| 10              | PI/2 BPSK | 1 | 1 | 19.28   | 19.39   | 19.23   | 20.5                      |

## &lt;FR1 n77\_Ant 5\_Sensor OFF&gt;(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power<br>Low<br>Ch. / Freq. | Power<br>Middle<br>Ch. / Freq. | Power<br>High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) |
|-----------------|------------|---------|-----------|-----------------------------|--------------------------------|------------------------------|---------------------------|
| Channel         |            |         |           |                             | 633332                         |                              |                           |
| Frequency (MHz) |            |         |           |                             | 3499.98                        |                              |                           |
| 100             | PI/2 BPSK  | 1       | 1         |                             | 23.06                          |                              | 24.0                      |
| 100             | PI/2 BPSK  | 1       | 137       |                             | 23.21                          |                              |                           |
| 100             | PI/2 BPSK  | 1       | 271       |                             | 23.13                          |                              |                           |
| 100             | PI/2 BPSK  | 135     | 0         |                             | 23.28                          |                              | 24.0                      |
| 100             | PI/2 BPSK  | 135     | 69        |                             | 23.34                          |                              | 24.0                      |
| 100             | PI/2 BPSK  | 135     | 138       |                             | 23.31                          |                              | 24.0                      |
| 100             | PI/2 BPSK  | 270     | 0         |                             | 23.27                          |                              |                           |
| 100             | QPSK       | 1       | 1         |                             | 22.99                          |                              | 24.0                      |
| 100             | QPSK       | 1       | 137       |                             | 23.17                          |                              |                           |
| 100             | QPSK       | 1       | 271       |                             | 23.13                          |                              |                           |
| 100             | QPSK       | 135     | 0         |                             | 22.84                          |                              | 24.0                      |
| 100             | QPSK       | 135     | 69        |                             | 23.31                          |                              | 24.0                      |
| 100             | QPSK       | 135     | 138       |                             | 22.89                          |                              | 24.0                      |
| 100             | QPSK       | 270     | 0         |                             | 22.94                          |                              |                           |
| 100             | 16QAM      | 1       | 1         |                             | 22.77                          |                              | 24.0                      |
| 100             | 64QAM      | 1       | 1         |                             | 22.50                          |                              | 24.0                      |
| 100             | 256QAM     | 1       | 1         |                             | 22.30                          |                              | 24.0                      |
| Channel         |            |         |           | 633000                      | 633332                         | 633666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                        | 3499.98                        | 3504.99                      |                           |
| 90              | PI/2 BPSK  | 1       | 1         | 23.04                       | 23.04                          | 23.06                        | 24.0                      |
| Channel         |            |         |           | 632668                      | 633332                         | 634000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                     | 3499.98                        | 3510                         |                           |
| 80              | PI/2 BPSK  | 1       | 1         | 22.87                       | 22.88                          | 22.96                        | 24.0                      |
| Channel         |            |         |           | 632334                      | 633332                         | 634332                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                     | 3499.98                        | 3514.98                      |                           |
| 70              | PI/2 BPSK  | 1       | 1         | 22.87                       | 22.90                          | 22.87                        | 24.0                      |
| Channel         |            |         |           | 632000                      | 633332                         | 634666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                        | 3499.98                        | 3519.99                      |                           |
| 60              | PI/2 BPSK  | 1       | 1         | 22.93                       | 22.89                          | 22.94                        | 24.0                      |
| Channel         |            |         |           | 631668                      | 633332                         | 635000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                     | 3499.98                        | 3525                         |                           |
| 50              | PI/2 BPSK  | 1       | 1         | 22.93                       | 22.87                          | 22.94                        | 24.0                      |
| Channel         |            |         |           | 631334                      | 633332                         | 635332                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                     | 3499.98                        | 3529.98                      |                           |
| 40              | PI/2 BPSK  | 1       | 1         | 22.93                       | 22.84                          | 22.95                        | 24.0                      |
| Channel         |            |         |           | 631000                      | 633332                         | 635666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                        | 3499.98                        | 3534.99                      |                           |
| 30              | PI/2 BPSK  | 1       | 1         | 22.94                       | 22.87                          | 22.93                        | 24.0                      |
| Channel         |            |         |           | 630834                      | 633332                         | 635832                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                     | 3499.98                        | 3537.48                      |                           |
| 25              | PI/2 BPSK  | 1       | 1         | 22.86                       | 22.92                          | 22.90                        | 24.0                      |
| Channel         |            |         |           | 630668                      | 633332                         | 636000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                     | 3499.98                        | 3540                         |                           |
| 20              | PI/2 BPSK  | 1       | 1         | 22.86                       | 22.94                          | 22.89                        | 24.0                      |
| Channel         |            |         |           | 630500                      | 633332                         | 636166                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3457.5                      | 3499.98                        | 3542.49                      |                           |



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|                 |           |   |   |         |         |         |                           |
|-----------------|-----------|---|---|---------|---------|---------|---------------------------|
| 15              | PI/2 BPSK | 1 | 1 | 22.87   | 22.89   | 22.93   | 24.0                      |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                           |
| 10              | PI/2 BPSK | 1 | 1 | 22.88   | 22.94   | 22.96   | 24.0                      |

## <FR1 n77\_non-HPUE & HPUE\_Ant 5\_Sensor ON>(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power<br>Low<br>Ch. / Freq. | Power<br>Middle<br>Ch. / Freq. | Power<br>High<br>Ch. / Freq. | Tune-up<br>limit<br>(dBm) |
|-----------------|------------|---------|-----------|-----------------------------|--------------------------------|------------------------------|---------------------------|
| Channel         |            |         |           |                             | 633332                         |                              | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           |                             | 3499.98                        |                              |                           |
| 100             | PI/2 BPSK  | 1       | 1         |                             | 21.68                          |                              | 22.5                      |
| 100             | PI/2 BPSK  | 1       | 137       |                             | 21.86                          |                              |                           |
| 100             | PI/2 BPSK  | 1       | 271       |                             | 21.77                          |                              |                           |
| 100             | PI/2 BPSK  | 135     | 0         |                             | 21.87                          |                              | 22.5                      |
| 100             | PI/2 BPSK  | 135     | 69        |                             | 21.98                          |                              | 22.5                      |
| 100             | PI/2 BPSK  | 135     | 138       |                             | 21.95                          |                              | 22.5                      |
| 100             | PI/2 BPSK  | 270     | 0         |                             | 21.91                          |                              |                           |
| 100             | QPSK       | 1       | 1         |                             | 21.62                          |                              | 22.5                      |
| 100             | QPSK       | 1       | 137       |                             | 21.78                          |                              |                           |
| 100             | QPSK       | 1       | 271       |                             | 21.80                          |                              |                           |
| 100             | QPSK       | 135     | 0         |                             | 21.85                          |                              | 22.5                      |
| 100             | QPSK       | 135     | 69        |                             | 21.90                          |                              | 22.5                      |
| 100             | QPSK       | 135     | 138       |                             | 21.94                          |                              | 22.5                      |
| 100             | QPSK       | 270     | 0         |                             | 21.80                          |                              |                           |
| 100             | 16QAM      | 1       | 1         |                             | 21.40                          |                              | 22.5                      |
| 100             | 64QAM      | 1       | 1         |                             | 21.44                          |                              | 22.5                      |
| 100             | 256QAM     | 1       | 1         |                             | 21.81                          |                              | 22.5                      |
| Channel         |            |         |           | 633000                      | 633332                         | 633666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                        | 3499.98                        | 3504.99                      |                           |
| 90              | PI/2 BPSK  | 1       | 1         | 21.60                       | 21.58                          | 21.63                        | 22.5                      |
| Channel         |            |         |           | 632668                      | 633332                         | 634000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                     | 3499.98                        | 3510                         |                           |
| 80              | PI/2 BPSK  | 1       | 1         | 21.54                       | 21.53                          | 21.55                        | 22.5                      |
| Channel         |            |         |           | 632334                      | 633332                         | 634332                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                     | 3499.98                        | 3514.98                      |                           |
| 70              | PI/2 BPSK  | 1       | 1         | 21.56                       | 21.58                          | 21.56                        | 22.5                      |
| Channel         |            |         |           | 632000                      | 633332                         | 634666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                        | 3499.98                        | 3519.99                      |                           |
| 60              | PI/2 BPSK  | 1       | 1         | 21.58                       | 21.57                          | 21.52                        | 22.5                      |
| Channel         |            |         |           | 631668                      | 633332                         | 635000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                     | 3499.98                        | 3525                         |                           |
| 50              | PI/2 BPSK  | 1       | 1         | 21.58                       | 21.56                          | 21.52                        | 22.5                      |
| Channel         |            |         |           | 631334                      | 633332                         | 635332                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                     | 3499.98                        | 3529.98                      |                           |
| 40              | PI/2 BPSK  | 1       | 1         | 21.51                       | 21.54                          | 21.53                        | 22.5                      |
| Channel         |            |         |           | 631000                      | 633332                         | 635666                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                        | 3499.98                        | 3534.99                      |                           |
| 30              | PI/2 BPSK  | 1       | 1         | 21.58                       | 21.59                          | 21.56                        | 22.5                      |
| Channel         |            |         |           | 630834                      | 633332                         | 635832                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                     | 3499.98                        | 3537.48                      |                           |
| 25              | PI/2 BPSK  | 1       | 1         | 21.56                       | 21.55                          | 21.59                        | 22.5                      |
| Channel         |            |         |           | 630668                      | 633332                         | 636000                       | Tune-up<br>limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                     | 3499.98                        | 3540                         |                           |
| 20              | PI/2 BPSK  | 1       | 1         | 21.53                       | 21.52                          | 21.50                        | 22.5                      |
| Channel         |            |         |           | 630500                      | 633332                         | 636166                       | Tune-up                   |

|                 |           |   |   |         |         |         |                     |
|-----------------|-----------|---|---|---------|---------|---------|---------------------|
| Frequency (MHz) |           |   |   | 3457.5  | 3499.98 | 3542.49 | limit (dBm)         |
| 15              | PI/2 BPSK | 1 | 1 | 21.58   | 21.55   | 21.60   | 22.5                |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up limit (dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                     |
| 10              | PI/2 BPSK | 1 | 1 | 21.56   | 21.60   | 21.51   | 22.5                |

**<FR1 n77\_HPUE\_Ant 1\_Sensor OFF>(3450-3550MHz)**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel         |            |         |           |                       | 633332                   |                        |                     |
| Frequency (MHz) |            |         |           |                       | 3499.98                  |                        |                     |
| 100             | PI/2 BPSK  | 1       | 1         |                       | 25.41                    |                        | 27.0                |
| 100             | PI/2 BPSK  | 1       | 137       |                       | 26.15                    |                        |                     |
| 100             | PI/2 BPSK  | 1       | 271       |                       | 26.24                    |                        |                     |
| 100             | PI/2 BPSK  | 135     | 0         |                       | 25.40                    |                        | 26.5                |
| 100             | PI/2 BPSK  | 135     | 69        |                       | 25.95                    |                        | 27.0                |
| 100             | PI/2 BPSK  | 135     | 138       |                       | 25.90                    |                        | 26.5                |
| 100             | PI/2 BPSK  | 270     | 0         |                       | 26.04                    |                        |                     |
| 100             | QPSK       | 1       | 1         |                       | 25.02                    |                        | 27.0                |
| 100             | QPSK       | 1       | 137       |                       | 26.02                    |                        |                     |
| 100             | QPSK       | 1       | 271       |                       | 26.02                    |                        |                     |
| 100             | QPSK       | 135     | 0         |                       | 25.48                    |                        | 26.0                |
| 100             | QPSK       | 135     | 69        |                       | 26.01                    |                        | 27.0                |
| 100             | QPSK       | 135     | 138       |                       | 25.96                    |                        | 26.0                |
| 100             | QPSK       | 270     | 0         |                       | 25.91                    |                        |                     |
| 100             | 16QAM      | 1       | 1         |                       | 24.99                    |                        | 26.0                |
| 100             | 64QAM      | 1       | 1         |                       | 24.45                    |                        | 24.5                |
| 100             | 256QAM     | 1       | 1         |                       | 22.68                    |                        | 24.5                |
| Channel         |            |         |           | 633000                | 633332                   | 633666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3495                  | 3499.98                  | 3504.99                |                     |
| 90              | PI/2 BPSK  | 1       | 1         | 25.44                 | 25.73                    | 25.69                  | 27.0                |
| Channel         |            |         |           | 632668                | 633332                   | 634000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3490.02               | 3499.98                  | 3510                   |                     |
| 80              | PI/2 BPSK  | 1       | 1         | 25.29                 | 25.63                    | 25.50                  | 27.0                |
| Channel         |            |         |           | 632334                | 633332                   | 634332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3485.01               | 3499.98                  | 3514.98                |                     |
| 70              | PI/2 BPSK  | 1       | 1         | 25.30                 | 25.56                    | 25.51                  | 27.0                |
| Channel         |            |         |           | 632000                | 633332                   | 634666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3480                  | 3499.98                  | 3519.99                |                     |
| 60              | PI/2 BPSK  | 1       | 1         | 25.33                 | 25.60                    | 25.54                  | 27.0                |
| Channel         |            |         |           | 631668                | 633332                   | 635000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3475.02               | 3499.98                  | 3525                   |                     |
| 50              | PI/2 BPSK  | 1       | 1         | 25.25                 | 25.54                    | 25.57                  | 27.0                |
| Channel         |            |         |           | 631334                | 633332                   | 635332                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3470.01               | 3499.98                  | 3529.98                |                     |
| 40              | PI/2 BPSK  | 1       | 1         | 25.25                 | 25.61                    | 25.54                  | 27.0                |
| Channel         |            |         |           | 631000                | 633332                   | 635666                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3465                  | 3499.98                  | 3534.99                |                     |
| 30              | PI/2 BPSK  | 1       | 1         | 25.31                 | 25.58                    | 25.57                  | 27.0                |
| Channel         |            |         |           | 630834                | 633332                   | 635832                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3462.51               | 3499.98                  | 3537.48                |                     |
| 25              | PI/2 BPSK  | 1       | 1         | 25.33                 | 25.58                    | 25.51                  | 27.0                |
| Channel         |            |         |           | 630668                | 633332                   | 636000                 | Tune-up limit (dBm) |
| Frequency (MHz) |            |         |           | 3460.02               | 3499.98                  | 3540                   |                     |
| 20              | PI/2 BPSK  | 1       | 1         | 25.24                 | 25.54                    | 25.57                  | 27.0                |



|                 |           |   |   |         |         |         |                        |
|-----------------|-----------|---|---|---------|---------|---------|------------------------|
| Channel         |           |   |   | 630500  | 633332  | 636166  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3457.5  | 3499.98 | 3542.49 |                        |
| 15              | PI/2 BPSK | 1 | 1 | 25.28   | 25.56   | 25.55   | 27.0                   |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                        |
| 10              | PI/2 BPSK | 1 | 1 | 25.30   | 25.61   | 25.52   | 27.0                   |

**<FR1 n77\_HPUE\_Ant 6\_Sensor OFF>(3450-3550MHz)**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           |                          | 633332                      |                           |                        |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                        |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 25.32                       |                           | 27.0                   |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 25.58                       |                           |                        |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 25.56                       |                           |                        |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 25.72                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 25.79                       |                           | 27.0                   |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 25.76                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 25.66                       |                           |                        |
| 100             | QPSK       | 1       | 1         |                          | 25.27                       |                           | 27.0                   |
| 100             | QPSK       | 1       | 137       |                          | 25.61                       |                           |                        |
| 100             | QPSK       | 1       | 271       |                          | 25.57                       |                           |                        |
| 100             | QPSK       | 135     | 0         |                          | 25.64                       |                           | 26.0                   |
| 100             | QPSK       | 135     | 69        |                          | 25.74                       |                           | 27.0                   |
| 100             | QPSK       | 135     | 138       |                          | 25.70                       |                           | 26.0                   |
| 100             | QPSK       | 270     | 0         |                          | 25.62                       |                           |                        |
| 100             | 16QAM      | 1       | 1         |                          | 24.98                       |                           | 26.0                   |
| 100             | 64QAM      | 1       | 1         |                          | 24.46                       |                           | 24.5                   |
| 100             | 256QAM     | 1       | 1         |                          | 23.13                       |                           | 24.5                   |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.23                    | 25.25                       | 25.24                     | 27.0                   |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.03                    | 25.15                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.12                    | 25.06                       | 25.09                     | 27.0                   |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.03                    | 25.08                       | 25.04                     | 27.0                   |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.13                    | 25.14                       | 25.14                     | 27.0                   |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.04                    | 25.09                       | 25.10                     | 27.0                   |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.03                    | 25.11                       | 25.07                     | 27.0                   |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.05                    | 25.15                       | 25.07                     | 27.0                   |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.09                    | 25.11                       | 25.08                     | 27.0                   |



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|                 |           |   |   |         |         |         |                        |
|-----------------|-----------|---|---|---------|---------|---------|------------------------|
| Channel         |           |   |   | 630500  | 633332  | 636166  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3457.5  | 3499.98 | 3542.49 |                        |
| 15              | PI/2 BPSK | 1 | 1 | 25.07   | 25.09   | 25.07   | 27.0                   |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                        |
| 10              | PI/2 BPSK | 1 | 1 | 25.07   | 25.10   | 25.10   | 27.0                   |

## <FR1 n77\_HPUE\_Ant 3\_Sensor OFF>(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           |                          | 633332                      |                           |                        |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                        |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 25.12                       |                           | 27.0                   |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 25.96                       |                           |                        |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 25.82                       |                           |                        |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 25.67                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 26.20                       |                           | 27.0                   |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 26.19                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 26.02                       |                           |                        |
| 100             | QPSK       | 1       | 1         |                          | 25.40                       |                           | 27.0                   |
| 100             | QPSK       | 1       | 137       |                          | 25.91                       |                           |                        |
| 100             | QPSK       | 1       | 271       |                          | 25.85                       |                           |                        |
| 100             | QPSK       | 135     | 0         |                          | 25.86                       |                           | 26.0                   |
| 100             | QPSK       | 135     | 69        |                          | 26.05                       |                           | 27.0                   |
| 100             | QPSK       | 135     | 138       |                          | 25.94                       |                           | 26.0                   |
| 100             | QPSK       | 270     | 0         |                          | 25.98                       |                           |                        |
| 100             | 16QAM      | 1       | 1         |                          | 24.90                       |                           | 26.0                   |
| 100             | 64QAM      | 1       | 1         |                          | 24.43                       |                           | 24.5                   |
| 100             | 256QAM     | 1       | 1         |                          | 23.45                       |                           | 24.5                   |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.21                    | 25.35                       | 25.28                     | 27.0                   |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.03                    | 25.20                       | 25.16                     | 27.0                   |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.09                    | 25.23                       | 25.16                     | 27.0                   |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.08                    | 25.23                       | 25.15                     | 27.0                   |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.01                    | 25.20                       | 25.13                     | 27.0                   |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.11                    | 25.19                       | 25.18                     | 27.0                   |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.09                    | 25.24                       | 25.08                     | 27.0                   |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.03                    | 25.22                       | 25.09                     | 27.0                   |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.11                    | 25.18                       | 25.16                     | 27.0                   |



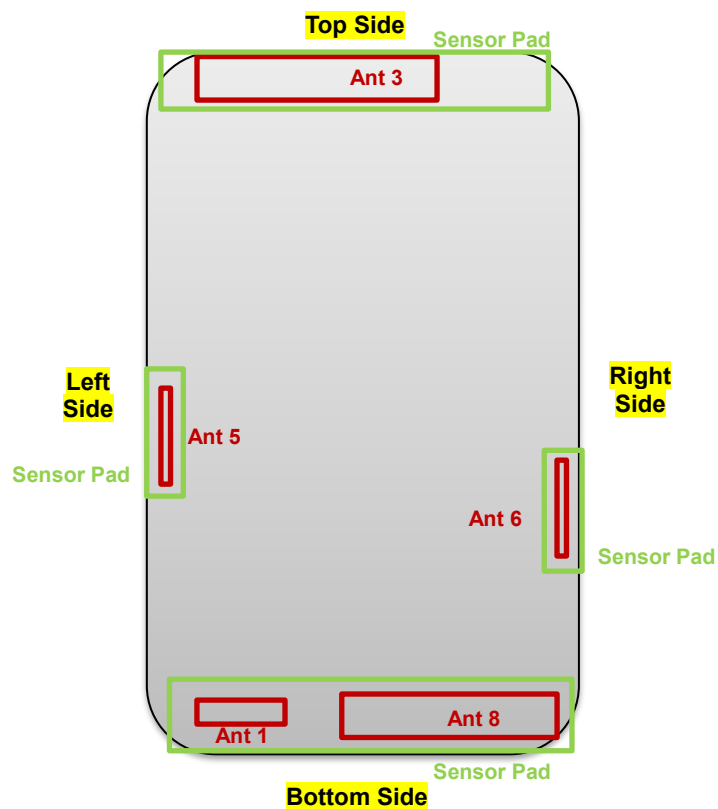
|                 |           |   |   |         |         |         |                        |
|-----------------|-----------|---|---|---------|---------|---------|------------------------|
| Channel         |           |   |   | 630500  | 633332  | 636166  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3457.5  | 3499.98 | 3542.49 |                        |
| 15              | PI/2 BPSK | 1 | 1 | 25.01   | 25.15   | 25.14   | 27.0                   |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                        |
| 10              | PI/2 BPSK | 1 | 1 | 25.06   | 25.25   | 25.09   | 27.0                   |

## &lt;FR1 n77\_HPUE\_Ant 5\_Sensor OFF&gt;(3450-3550MHz)

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low<br>Ch. / Freq. | Power Middle<br>Ch. / Freq. | Power High<br>Ch. / Freq. | Tune-up limit<br>(dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel         |            |         |           |                          | 633332                      |                           |                        |
| Frequency (MHz) |            |         |           |                          | 3499.98                     |                           |                        |
| 100             | PI/2 BPSK  | 1       | 1         |                          | 25.43                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 1       | 137       |                          | 25.70                       |                           |                        |
| 100             | PI/2 BPSK  | 1       | 271       |                          | 25.67                       |                           |                        |
| 100             | PI/2 BPSK  | 135     | 0         |                          | 25.47                       |                           | 26.0                   |
| 100             | PI/2 BPSK  | 135     | 69        |                          | 25.81                       |                           | 26.5                   |
| 100             | PI/2 BPSK  | 135     | 138       |                          | 25.71                       |                           | 26.0                   |
| 100             | PI/2 BPSK  | 270     | 0         |                          | 25.68                       |                           |                        |
| 100             | QPSK       | 1       | 1         |                          | 25.05                       |                           | 26.5                   |
| 100             | QPSK       | 1       | 137       |                          | 25.62                       |                           |                        |
| 100             | QPSK       | 1       | 271       |                          | 25.68                       |                           |                        |
| 100             | QPSK       | 135     | 0         |                          | 25.37                       |                           | 25.5                   |
| 100             | QPSK       | 135     | 69        |                          | 25.80                       |                           | 26.5                   |
| 100             | QPSK       | 135     | 138       |                          | 25.41                       |                           | 25.5                   |
| 100             | QPSK       | 270     | 0         |                          | 25.36                       |                           |                        |
| 100             | 16QAM      | 1       | 1         |                          | 24.85                       |                           | 25.5                   |
| 100             | 64QAM      | 1       | 1         |                          | 23.34                       |                           | 24.0                   |
| 100             | 256QAM     | 1       | 1         |                          | 22.12                       |                           | 24.0                   |
| Channel         |            |         |           | 633000                   | 633332                      | 633666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3495                     | 3499.98                     | 3504.99                   |                        |
| 90              | PI/2 BPSK  | 1       | 1         | 25.38                    | 25.28                       | 25.18                     | 26.5                   |
| Channel         |            |         |           | 632668                   | 633332                      | 634000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3490.02                  | 3499.98                     | 3510                      |                        |
| 80              | PI/2 BPSK  | 1       | 1         | 25.24                    | 25.08                       | 24.98                     | 26.5                   |
| Channel         |            |         |           | 632334                   | 633332                      | 634332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3485.01                  | 3499.98                     | 3514.98                   |                        |
| 70              | PI/2 BPSK  | 1       | 1         | 25.18                    | 25.08                       | 25.04                     | 26.5                   |
| Channel         |            |         |           | 632000                   | 633332                      | 634666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3480                     | 3499.98                     | 3519.99                   |                        |
| 60              | PI/2 BPSK  | 1       | 1         | 25.25                    | 25.12                       | 25.02                     | 26.5                   |
| Channel         |            |         |           | 631668                   | 633332                      | 635000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3475.02                  | 3499.98                     | 3525                      |                        |
| 50              | PI/2 BPSK  | 1       | 1         | 25.25                    | 25.14                       | 25.02                     | 26.5                   |
| Channel         |            |         |           | 631334                   | 633332                      | 635332                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3470.01                  | 3499.98                     | 3529.98                   |                        |
| 40              | PI/2 BPSK  | 1       | 1         | 25.23                    | 25.10                       | 25.06                     | 26.5                   |
| Channel         |            |         |           | 631000                   | 633332                      | 635666                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3465                     | 3499.98                     | 3534.99                   |                        |
| 30              | PI/2 BPSK  | 1       | 1         | 25.21                    | 25.08                       | 25.08                     | 26.5                   |
| Channel         |            |         |           | 630834                   | 633332                      | 635832                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3462.51                  | 3499.98                     | 3537.48                   |                        |
| 25              | PI/2 BPSK  | 1       | 1         | 25.22                    | 25.10                       | 25.06                     | 26.5                   |
| Channel         |            |         |           | 630668                   | 633332                      | 636000                    | Tune-up limit<br>(dBm) |
| Frequency (MHz) |            |         |           | 3460.02                  | 3499.98                     | 3540                      |                        |
| 20              | PI/2 BPSK  | 1       | 1         | 25.18                    | 25.14                       | 25.08                     | 26.5                   |

|                 |           |   |   |         |         |         |                        |
|-----------------|-----------|---|---|---------|---------|---------|------------------------|
| Channel         |           |   |   | 630500  | 633332  | 636166  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3457.5  | 3499.98 | 3542.49 |                        |
| 15              | PI/2 BPSK | 1 | 1 | 25.26   | 25.13   | 25.06   | 26.5                   |
| Channel         |           |   |   | 630334  | 633332  | 636332  | Tune-up limit<br>(dBm) |
| Frequency (MHz) |           |   |   | 3455.01 | 3499.98 | 3544.98 |                        |
| 10              | PI/2 BPSK | 1 | 1 | 25.21   | 25.10   | 24.99   | 26.5                   |

## 12. Antenna Location



**Front View**

## **13. SAR Test Results**

### **General Note:**

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
  - b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)\*Tune-up Scaling Factor
  - c. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix  $63.3\%/62.9\% = 1.006$  is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
  - $\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8$ W/kg.
4. According to KDB 447498 D01v06 section 5.2.3) c). When a peripheral transmitter, such as a USB dongle, must be connected to the host through an external cable or adapter, a test separation distance  $\leq 15$  mm should be applied to test the required device orientations.
5. The device support four sensor pad, when either one sensor pad is trigger and power reduction is active for SAR compliance.

### **LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 4 SAR test was covered by Band 66; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
  - a. The maximum output power, including tolerance, for the smaller band is  $\leq$  the larger band to qualify for the SAR test exclusion.
  - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

**5G NR Note:**

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
  - a. To start SAR test for the largest channel bandwidth for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
  - b. For PI/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
  - c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not  $\frac{1}{2}$  dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
  - d. Smaller bandwidth output power for each RB allocation configuration for this device is not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg, smaller bandwidth SAR testing is not required for this device
  - e. For 5G FR1 n5/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
  - f. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

**13.1 Body SAR****<LTE SAR>**

| Plot No. | Band              | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Holder | Sensor ON / OFF | Ch.   | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|-------------------|----------|------------|---------|-----------|---------------|----------|--------|-----------------|-------|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 01       | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Front         | 10mm     |        | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | -0.1             | 0.657                  | 0.707                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Front         | 10mm     |        | ON              | 18900 | 1880        | 21.76               | 22.00               | 1.057                  |              |                           | 0.02             | 0.516                  | 0.545                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Back          | 10mm     |        | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | 0.16             | 0.505                  | 0.544                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Back          | 10mm     |        | ON              | 18900 | 1880        | 21.76               | 22.00               | 1.057                  |              |                           | -0.03            | 0.358                  | 0.378                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Left Side     | 10mm     |        | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | 0.07             | 0.188                  | 0.202                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Left Side     | 10mm     |        | ON              | 18900 | 1880        | 21.76               | 22.00               | 1.057                  |              |                           | 0                | 0.166                  | 0.175                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Top Side      | 10mm     |        | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | 0.01             | 0.486                  | 0.523                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Top Side      | 10mm     |        | ON              | 18900 | 1880        | 21.76               | 22.00               | 1.057                  |              |                           | -0.01            | 0.290                  | 0.306                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Bottom Side   | 10mm     |        | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | -0.06            | 0.024                  | 0.026                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Bottom Side   | 10mm     |        | ON              | 18900 | 1880        | 21.76               | 22.00               | 1.057                  |              |                           | -0.04            | 0.026                  | 0.027                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Front         | 35mm     |        | OFF             | 18900 | 1880        | 23.46               | 24.00               | 1.132                  |              |                           | -0.1             | 0.124                  | 0.140                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Front         | 35mm     |        | OFF             | 18900 | 1880        | 22.59               | 23.00               | 1.099                  |              |                           | 0.07             | 0.105                  | 0.115                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Back          | 20mm     |        | OFF             | 18900 | 1880        | 23.46               | 24.00               | 1.132                  |              |                           | -0.07            | 0.257                  | 0.291                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Back          | 20mm     |        | OFF             | 18900 | 1880        | 22.59               | 23.00               | 1.099                  |              |                           | 0.18             | 0.199                  | 0.219                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Left Side     | 30mm     |        | OFF             | 18900 | 1880        | 23.46               | 24.00               | 1.132                  |              |                           | -0.1             | 0.071                  | 0.080                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Left Side     | 30mm     |        | OFF             | 18900 | 1880        | 22.59               | 23.00               | 1.099                  |              |                           | 0.01             | 0.053                  | 0.058                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Top Side      | 15mm     |        | OFF             | 18900 | 1880        | 23.46               | 24.00               | 1.132                  |              |                           | -0.18            | 0.298                  | 0.337                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Top Side      | 15mm     |        | OFF             | 18900 | 1880        | 22.59               | 23.00               | 1.099                  |              |                           | 0.1              | 0.253                  | 0.278                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Bottom Side   | 15mm     |        | OFF             | 18900 | 1880        | 23.46               | 24.00               | 1.132                  |              |                           | 0                | 0.001                  | 0.001                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 50      | 0         | Bottom Side   | 15mm     |        | OFF             | 18900 | 1880        | 22.59               | 23.00               | 1.099                  |              |                           | 0                | 0.001                  | 0.001                  |
|          | LTE Band 2_Ant 3  | 20M      | QPSK       | 1       | 0         | Back          | 0mm      | Holder | ON              | 18900 | 1880        | 22.68               | 23.00               | 1.076                  |              |                           | 0.03             | 0.263                  | 0.283                  |
| 02       | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Front         | 10mm     |        | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | -0.15            | 0.509                  | 0.665                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Front         | 10mm     |        | ON              | 20525 | 836.5       | 22.39               | 23.50               | 1.291                  |              |                           | 0.08             | 0.339                  | 0.438                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Back          | 10mm     |        | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | 0.01             | 0.416                  | 0.543                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Back          | 10mm     |        | ON              | 20525 | 836.5       | 22.39               | 23.50               | 1.291                  |              |                           | 0.03             | 0.337                  | 0.435                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Left Side     | 10mm     |        | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | -0.08            | 0.297                  | 0.388                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Left Side     | 10mm     |        | ON              | 20525 | 836.5       | 22.39               | 23.50               | 1.291                  |              |                           | -0.08            | 0.220                  | 0.284                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Top Side      | 10mm     |        | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | 0.1              | 0.051                  | 0.067                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Top Side      | 10mm     |        | ON              | 20525 | 836.5       | 22.39               | 23.50               | 1.291                  |              |                           | -0.18            | 0.048                  | 0.062                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Bottom Side   | 10mm     |        | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | 0.1              | 0.010                  | 0.013                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Bottom Side   | 10mm     |        | ON              | 20525 | 836.5       | 22.39               | 23.50               | 1.291                  |              |                           | 0.12             | 0.087                  | 0.112                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Front         | 35mm     |        | OFF             | 20525 | 836.5       | 24.23               | 25.00               | 1.194                  |              |                           | 0.13             | 0.208                  | 0.248                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Front         | 35mm     |        | OFF             | 20525 | 836.5       | 23.22               | 24.00               | 1.197                  |              |                           | 0.12             | 0.147                  | 0.176                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Back          | 20mm     |        | OFF             | 20525 | 836.5       | 24.23               | 25.00               | 1.194                  |              |                           | -0.03            | 0.312                  | 0.373                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Back          | 20mm     |        | OFF             | 20525 | 836.5       | 23.22               | 24.00               | 1.197                  |              |                           | 0.03             | 0.224                  | 0.268                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Left Side     | 30mm     |        | OFF             | 20525 | 836.5       | 24.23               | 25.00               | 1.194                  |              |                           | 0.18             | 0.109                  | 0.130                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Left Side     | 30mm     |        | OFF             | 20525 | 836.5       | 23.22               | 24.00               | 1.197                  |              |                           | 0.16             | 0.072                  | 0.086                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Top Side      | 15mm     |        | OFF             | 20525 | 836.5       | 24.23               | 25.00               | 1.194                  |              |                           | -0.05            | 0.074                  | 0.088                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Top Side      | 15mm     |        | OFF             | 20525 | 836.5       | 23.22               | 24.00               | 1.197                  |              |                           | 0.01             | 0.053                  | 0.063                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Bottom Side   | 15mm     |        | OFF             | 20525 | 836.5       | 24.23               | 25.00               | 1.194                  |              |                           | 0                | 0.001                  | 0.001                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 25      | 0         | Bottom Side   | 15mm     |        | OFF             | 20525 | 836.5       | 23.22               | 24.00               | 1.197                  |              |                           | 0                | 0.001                  | 0.001                  |
|          | LTE Band 5_Ant 8  | 10M      | QPSK       | 1       | 0         | Back          | 0mm      | Holder | ON              | 20525 | 836.5       | 23.34               | 24.50               | 1.306                  |              |                           | 0.08             | 0.167                  | 0.218                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 1       | 0         | Front         | 10mm     |        | OFF             | 23230 | 782         | 23.65               | 25.00               | 1.365                  |              |                           | -0.09            | 0.325                  | 0.443                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 25      | 0         | Front         | 10mm     |        | OFF             | 23230 | 782         | 22.54               | 24.00               | 1.400                  |              |                           | -0.08            | 0.246                  | 0.344                  |
| 03       | LTE Band 13_Ant 8 | 10M      | QPSK       | 1       | 0         | Back          | 10mm     |        | OFF             | 23230 | 782         | 23.65               | 25.00               | 1.365                  |              |                           | 0.06             | 0.359                  | 0.490                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 25      | 0         | Back          | 10mm     |        | OFF             | 23230 | 782         | 22.54               | 24.00               | 1.400                  |              |                           | 0.12             | 0.264                  | 0.369                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 1       | 0         | Left Side     | 10mm     |        | OFF             | 23230 | 782         | 23.65               | 25.00               | 1.365                  |              |                           | 0.03             | 0.197                  | 0.269                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 25      | 0         | Left Side     | 10mm     |        | OFF             | 23230 | 782         | 22.54               | 24.00               | 1.400                  |              |                           | 0.18             | 0.154                  | 0.216                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 1       | 0         | Top Side      | 10mm     |        | OFF             | 23230 | 782         | 23.65               | 25.00               | 1.365                  |              |                           | 0.16             | 0.001                  | 0.001                  |
|          | LTE Band 13_Ant 8 | 10M      | QPSK       | 25      | 0         | Top Side      | 10mm     |        | OFF             | 23230 | 782         | 22.54               | 24.00               | 1.400                  |              |                           | -0.1             | 0.001                  | 0.001                  |



# FCC SAR TEST REPORT

Report No. : FA451315

|    |                    |     |      |    |   |             |      |        |     |               |      |       |       |       |      |       |       |       |       |
|----|--------------------|-----|------|----|---|-------------|------|--------|-----|---------------|------|-------|-------|-------|------|-------|-------|-------|-------|
|    | LTE Band 13_Ant 8  | 10M | QPSK | 1  | 0 | Bottom Side | 10mm |        | OFF | 23230         | 782  | 23.65 | 25.00 | 1.365 |      |       | 0.07  | 0.102 | 0.139 |
|    | LTE Band 13_Ant 8  | 10M | QPSK | 25 | 0 | Bottom Side | 10mm |        | OFF | 23230         | 782  | 22.54 | 24.00 | 1.400 |      |       | 0.18  | 0.073 | 0.102 |
|    | LTE Band 13_Ant 8  | 10M | QPSK | 1  | 0 | Back        | 0mm  | Holder | OFF | 23230         | 782  | 23.65 | 25.00 | 1.365 |      |       | -0.06 | 0.324 | 0.442 |
| 04 | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Front       | 10mm |        | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 | 62.9 | 1.006 | 0.19  | 0.337 | 0.343 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 50 | 0 | Front       | 10mm |        | OFF | 55340         | 3560 | 20.89 | 21.00 | 1.026 | 62.9 | 1.006 | 0.11  | 0.328 | 0.338 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Back        | 10mm |        | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 | 62.9 | 1.006 | -0.05 | 0.307 | 0.312 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 50 | 0 | Back        | 10mm |        | OFF | 55340         | 3560 | 20.89 | 21.00 | 1.026 | 62.9 | 1.006 | -0.08 | 0.279 | 0.288 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Left Side   | 10mm |        | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 | 62.9 | 1.006 | 0.16  | 0.267 | 0.272 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 50 | 0 | Left Side   | 10mm |        | OFF | 55340         | 3560 | 20.89 | 21.00 | 1.026 | 62.9 | 1.006 | 0.05  | 0.286 | 0.295 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Top Side    | 10mm |        | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 | 62.9 | 1.006 | 0.05  | 0.070 | 0.071 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 50 | 0 | Top Side    | 10mm |        | OFF | 55340         | 3560 | 20.89 | 21.00 | 1.026 | 62.9 | 1.006 | -0.03 | 0.068 | 0.070 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Bottom Side | 10mm |        | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 | 62.9 | 1.006 | -0.15 | 0.188 | 0.191 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 50 | 0 | Bottom Side | 10mm |        | OFF | 55340         | 3560 | 20.89 | 21.00 | 1.026 | 62.9 | 1.006 | 0.02  | 0.160 | 0.165 |
|    | LTE Band 48C_Ant 1 | 20M | QPSK | 1  | 0 | Front       | 10mm |        | OFF | 55340+55538   | 3560 | 20.43 | 21.00 | 1.140 | 62.9 | 1.006 | 0.07  | 0.285 | 0.327 |
|    | LTE Band 48_Ant 1  | 20M | QPSK | 1  | 0 | Back        | 0mm  | Holder | OFF | 55340         | 3560 | 20.95 | 21.00 | 1.012 |      |       | 0.12  | 0.232 | 0.235 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Front       | 10mm |        | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 | 62.9 | 1.006 | 0.11  | 0.207 | 0.212 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 50 | 0 | Front       | 10mm |        | OFF | 56640         | 3690 | 20.86 | 21.00 | 1.033 | 62.9 | 1.006 | 0.13  | 0.203 | 0.211 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Back        | 10mm |        | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 | 62.9 | 1.006 | -0.18 | 0.119 | 0.122 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 50 | 0 | Back        | 10mm |        | OFF | 56640         | 3690 | 20.86 | 21.00 | 1.033 | 62.9 | 1.006 | 0.02  | 0.115 | 0.119 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Left Side   | 10mm |        | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 | 62.9 | 1.006 | 0.16  | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 50 | 0 | Left Side   | 10mm |        | OFF | 56640         | 3690 | 20.86 | 21.00 | 1.033 | 62.9 | 1.006 | -0.03 | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Top Side    | 10mm |        | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 | 62.9 | 1.006 | 0.07  | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 50 | 0 | Top Side    | 10mm |        | OFF | 56640         | 3690 | 20.86 | 21.00 | 1.033 | 62.9 | 1.006 | 0     | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Bottom Side | 10mm |        | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 | 62.9 | 1.006 | 0.01  | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 50 | 0 | Bottom Side | 10mm |        | OFF | 56640         | 3690 | 20.86 | 21.00 | 1.033 | 62.9 | 1.006 | -0.01 | 0.001 | 0.001 |
|    | LTE Band 48_Ant 6  | 20M | QPSK | 1  | 0 | Back        | 0mm  | Holder | OFF | 56640         | 3690 | 20.92 | 21.00 | 1.019 |      |       | 0.09  | 0.099 | 0.101 |
| 05 | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Front       | 10mm |        | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | -0.03 | 0.664 | 0.750 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Front       | 10mm |        | ON  | 132322        | 1745 | 19.96 | 20.50 | 1.132 |      |       | 0.08  | 0.517 | 0.585 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Back        | 10mm |        | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | -0.17 | 0.441 | 0.498 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Back        | 10mm |        | ON  | 132322        | 1745 | 19.96 | 20.50 | 1.132 |      |       | -0.03 | 0.400 | 0.453 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Left Side   | 10mm |        | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | 0.14  | 0.243 | 0.275 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Left Side   | 10mm |        | ON  | 132322        | 1745 | 19.96 | 20.50 | 1.132 |      |       | 0.11  | 0.206 | 0.233 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Top Side    | 10mm |        | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | -0.05 | 0.156 | 0.176 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Top Side    | 10mm |        | ON  | 132322        | 1745 | 19.96 | 20.50 | 1.132 |      |       | 0.18  | 0.123 | 0.139 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Bottom Side | 10mm |        | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | 0.14  | 0.046 | 0.052 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Bottom Side | 10mm |        | ON  | 132322        | 1745 | 19.96 | 20.50 | 1.132 |      |       | -0.17 | 0.040 | 0.045 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Front       | 35mm |        | OFF | 132322        | 1745 | 23.42 | 24.00 | 1.143 |      |       | -0.15 | 0.152 | 0.174 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Front       | 35mm |        | OFF | 132322        | 1745 | 22.52 | 23.00 | 1.117 |      |       | 0.19  | 0.116 | 0.130 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Back        | 20mm |        | OFF | 132322        | 1745 | 23.42 | 24.00 | 1.143 |      |       | -0.05 | 0.213 | 0.243 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Back        | 20mm |        | OFF | 132322        | 1745 | 22.52 | 23.00 | 1.117 |      |       | 0.07  | 0.162 | 0.181 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Left Side   | 30mm |        | OFF | 132322        | 1745 | 23.42 | 24.00 | 1.143 |      |       | -0.18 | 0.068 | 0.078 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Left Side   | 30mm |        | OFF | 132322        | 1745 | 22.52 | 23.00 | 1.117 |      |       | 0.03  | 0.057 | 0.064 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Top Side    | 15mm |        | OFF | 132322        | 1745 | 23.42 | 24.00 | 1.143 |      |       | 0.03  | 0.099 | 0.113 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Top Side    | 15mm |        | OFF | 132322        | 1745 | 22.52 | 23.00 | 1.117 |      |       | -0.15 | 0.068 | 0.076 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Bottom Side | 15mm |        | OFF | 132322        | 1745 | 23.42 | 24.00 | 1.143 |      |       | -0.15 | 0.066 | 0.075 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 50 | 0 | Bottom Side | 15mm |        | OFF | 132322        | 1745 | 22.52 | 23.00 | 1.117 |      |       | 0.11  | 0.052 | 0.058 |
|    | LTE Band 66B_Ant 3 | 15M | QPSK | 50 | 0 | Front       | 10mm |        | ON  | 132322+132229 | 1745 | 20.92 | 21.50 | 1.143 |      |       | 0.08  | 0.614 | 0.702 |
|    | LTE Band 66C_Ant 3 | 20M | QPSK | 50 | 0 | Front       | 10mm |        | ON  | 132322+132124 | 1745 | 20.51 | 21.50 | 1.256 |      |       | -0.02 | 0.573 | 0.720 |
|    | LTE Band 66_Ant 3  | 20M | QPSK | 1  | 0 | Back        | 0mm  | Holder | ON  | 132322        | 1745 | 20.97 | 21.50 | 1.130 |      |       | -0.04 | 0.255 | 0.290 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 1  | 0 | Front       | 10mm |        | ON  | 132322        | 1745 | 21.14 | 21.50 | 1.086 |      |       | -0.01 | 0.667 | 0.725 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 50 | 0 | Front       | 10mm |        | ON  | 132322        | 1745 | 21.16 | 21.50 | 1.081 |      |       | 0.17  | 0.658 | 0.712 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 1  | 0 | Back        | 10mm |        | ON  | 132322        | 1745 | 21.14 | 21.50 | 1.086 |      |       | -0.05 | 0.406 | 0.441 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 50 | 0 | Back        | 10mm |        | ON  | 132322        | 1745 | 21.16 | 21.50 | 1.081 |      |       | 0.01  | 0.385 | 0.416 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 1  | 0 | Left Side   | 10mm |        | ON  | 132322        | 1745 | 21.14 | 21.50 | 1.086 |      |       | 0.1   | 0.130 | 0.141 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 50 | 0 | Left Side   | 10mm |        | ON  | 132322        | 1745 | 21.16 | 21.50 | 1.081 |      |       | -0.17 | 0.132 | 0.143 |
|    | LTE Band 66_Ant 8  | 20M | QPSK | 1  | 0 | Top Side    | 10mm |        | ON  | 132322        | 1745 | 21.14 | 21.50 | 1.086 |      |       | 0.04  | 0.001 | 0.001 |



## FCC SAR TEST REPORT

Report No. : FA451315

|  |                   |     |      |    |   |             |      |        |     |        |      |       |       |       |  |  |       |       |       |
|--|-------------------|-----|------|----|---|-------------|------|--------|-----|--------|------|-------|-------|-------|--|--|-------|-------|-------|
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Top Side    | 10mm |        | ON  | 132322 | 1745 | 21.16 | 21.50 | 1.081 |  |  | -0.01 | 0.001 | 0.001 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Bottom Side | 10mm |        | ON  | 132322 | 1745 | 21.14 | 21.50 | 1.086 |  |  | -0.08 | 0.150 | 0.163 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Bottom Side | 10mm |        | ON  | 132322 | 1745 | 21.16 | 21.50 | 1.081 |  |  | 0.05  | 0.133 | 0.144 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Front       | 35mm |        | OFF | 132322 | 1745 | 23.60 | 24.00 | 1.096 |  |  | 0.1   | 0.159 | 0.174 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Front       | 35mm |        | OFF | 132322 | 1745 | 22.64 | 23.00 | 1.086 |  |  | -0.18 | 0.112 | 0.122 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Back        | 20mm |        | OFF | 132322 | 1745 | 23.60 | 24.00 | 1.096 |  |  | -0.04 | 0.318 | 0.349 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Back        | 20mm |        | OFF | 132322 | 1745 | 22.64 | 23.00 | 1.086 |  |  | 0.1   | 0.226 | 0.246 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Left Side   | 30mm |        | OFF | 132322 | 1745 | 23.60 | 24.00 | 1.096 |  |  | 0.12  | 0.071 | 0.078 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Left Side   | 30mm |        | OFF | 132322 | 1745 | 22.64 | 23.00 | 1.086 |  |  | 0.08  | 0.051 | 0.055 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Top Side    | 15mm |        | OFF | 132322 | 1745 | 23.60 | 24.00 | 1.096 |  |  | -0.04 | 0.001 | 0.001 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Top Side    | 15mm |        | OFF | 132322 | 1745 | 22.64 | 23.00 | 1.086 |  |  | -0.08 | 0.001 | 0.001 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Bottom Side | 15mm |        | OFF | 132322 | 1745 | 23.60 | 24.00 | 1.096 |  |  | -0.13 | 0.073 | 0.080 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 50 | 0 | Bottom Side | 15mm |        | OFF | 132322 | 1745 | 22.64 | 23.00 | 1.086 |  |  | -0.13 | 0.061 | 0.066 |
|  | LTE Band 66_Ant 8 | 20M | QPSK | 1  | 0 | Back        | 0mm  | Holder | ON  | 132322 | 1745 | 21.14 | 21.50 | 1.086 |  |  | 0.03  | 0.250 | 0.272 |

### <5G NR SAR>

| Plot No. | Band         | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Holder | Sensor ON / OFF | Ch.    | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|--------------|----------|------------|---------|-----------|---------------|----------|--------|-----------------|--------|-------------|---------------------|---------------------|------------------------|------------------|------------------------|------------------------|
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Front         | 10mm     |        | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | 0.08             | 0.536                  | 0.656                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 0         | Front         | 10mm     |        | ON              | 376000 | 1880        | 21.61               | 22.50               | 1.227                  | -0.07            | 0.499                  | 0.612                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Back          | 10mm     |        | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | 0.05             | 0.379                  | 0.464                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 0         | Back          | 10mm     |        | ON              | 376000 | 1880        | 21.61               | 22.50               | 1.227                  | -0.11            | 0.352                  | 0.432                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Left Side     | 10mm     |        | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | -0.12            | 0.133                  | 0.163                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 0         | Left Side     | 10mm     |        | ON              | 376000 | 1880        | 21.61               | 22.50               | 1.227                  | 0.03             | 0.148                  | 0.182                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Top Side      | 10mm     |        | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | -0.16            | 0.335                  | 0.410                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 0         | Top Side      | 10mm     |        | ON              | 376000 | 1880        | 21.61               | 22.50               | 1.227                  | -0.02            | 0.360                  | 0.442                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Bottom Side   | 10mm     |        | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | 0.15             | 0.001                  | 0.001                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 0         | Bottom Side   | 10mm     |        | ON              | 376000 | 1880        | 21.61               | 22.50               | 1.227                  | -0.09            | 0.001                  | 0.001                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Front         | 35mm     |        | OFF             | 376000 | 1880        | 23.59               | 24.00               | 1.099                  | 0.01             | 0.120                  | 0.132                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 28        | Front         | 35mm     |        | OFF             | 376000 | 1880        | 23.47               | 24.00               | 1.130                  | 0.1              | 0.117                  | 0.132                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Back          | 20mm     |        | OFF             | 376000 | 1880        | 23.59               | 24.00               | 1.099                  | -0.17            | 0.211                  | 0.232                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 28        | Back          | 20mm     |        | OFF             | 376000 | 1880        | 23.47               | 24.00               | 1.130                  | -0.13            | 0.212                  | 0.240                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Left Side     | 30mm     |        | OFF             | 376000 | 1880        | 23.59               | 24.00               | 1.099                  | 0.04             | 0.060                  | 0.066                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 28        | Left Side     | 30mm     |        | OFF             | 376000 | 1880        | 23.47               | 24.00               | 1.130                  | -0.01            | 0.061                  | 0.069                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Top Side      | 15mm     |        | OFF             | 376000 | 1880        | 23.59               | 24.00               | 1.099                  | -0.1             | 0.286                  | 0.314                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 28        | Top Side      | 15mm     |        | OFF             | 376000 | 1880        | 23.47               | 24.00               | 1.130                  | 0.18             | 0.340                  | 0.384                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Bottom Side   | 15mm     |        | OFF             | 376000 | 1880        | 23.59               | 24.00               | 1.099                  | 0                | 0.001                  | 0.001                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 50      | 28        | Bottom Side   | 15mm     |        | OFF             | 376000 | 1880        | 23.47               | 24.00               | 1.130                  | 0                | 0.001                  | 0.001                  |
|          | FR1 n2_Ant 3 | 20M      | BPSK       | 1       | 1         | Back          | 0mm      | Holder | ON              | 376000 | 1880        | 21.62               | 22.50               | 1.225                  | -0.09            | 0.152                  | 0.186                  |
| 06       | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Front         | 10mm     |        | ON              | 376000 | 1880        | 22.91               | 23.50               | 1.146                  | 0.03             | 0.696                  | 0.797                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 0         | Front         | 10mm     |        | ON              | 376000 | 1880        | 22.92               | 23.50               | 1.143                  | 0.18             | 0.672                  | 0.768                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Back          | 10mm     |        | ON              | 376000 | 1880        | 22.91               | 23.50               | 1.146                  | -0.04            | 0.543                  | 0.622                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 0         | Back          | 10mm     |        | ON              | 376000 | 1880        | 22.92               | 23.50               | 1.143                  | -0.08            | 0.518                  | 0.592                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Left Side     | 10mm     |        | ON              | 376000 | 1880        | 22.91               | 23.50               | 1.146                  | -0.13            | 0.332                  | 0.380                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 0         | Left Side     | 10mm     |        | ON              | 376000 | 1880        | 22.92               | 23.50               | 1.143                  | -0.13            | 0.332                  | 0.379                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Top Side      | 10mm     |        | ON              | 376000 | 1880        | 22.91               | 23.50               | 1.146                  | 0.06             | 0.066                  | 0.076                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 0         | Top Side      | 10mm     |        | ON              | 376000 | 1880        | 22.92               | 23.50               | 1.143                  | -0.03            | 0.082                  | 0.094                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Bottom Side   | 10mm     |        | ON              | 376000 | 1880        | 22.91               | 23.50               | 1.146                  | -0.03            | 0.206                  | 0.236                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 0         | Bottom Side   | 10mm     |        | ON              | 376000 | 1880        | 22.92               | 23.50               | 1.143                  | 0.08             | 0.187                  | 0.214                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Front         | 35mm     |        | OFF             | 376000 | 1880        | 23.76               | 24.00               | 1.057                  | 0.18             | 0.119                  | 0.126                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 28        | Front         | 35mm     |        | OFF             | 376000 | 1880        | 23.70               | 24.00               | 1.072                  | 0.14             | 0.120                  | 0.129                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Back          | 20mm     |        | OFF             | 376000 | 1880        | 23.76               | 24.00               | 1.057                  | -0.15            | 0.257                  | 0.272                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 28        | Back          | 20mm     |        | OFF             | 376000 | 1880        | 23.70               | 24.00               | 1.072                  | -0.17            | 0.240                  | 0.257                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 1       | 1         | Left Side     | 30mm     |        | OFF             | 376000 | 1880        | 23.76               | 24.00               | 1.057                  | 0.17             | 0.117                  | 0.124                  |
|          | FR1 n2_Ant 8 | 20M      | BPSK       | 50      | 28        | Left Side     | 30mm     |        | OFF             | 376000 | 1880        | 23.70               | 24.00               | 1.072                  | -0.05            | 0.119                  | 0.128                  |



# FCC SAR TEST REPORT

Report No. : FA451315

|    |               |     |      |     |    |             |      |        |     |        |         |       |       |       |       |       |       |
|----|---------------|-----|------|-----|----|-------------|------|--------|-----|--------|---------|-------|-------|-------|-------|-------|-------|
|    | FR1 n2_Ant 8  | 20M | BPSK | 1   | 1  | Top Side    | 15mm |        | OFF | 376000 | 1880    | 23.76 | 24.00 | 1.057 | 0.06  | 0.036 | 0.038 |
|    | FR1 n2_Ant 8  | 20M | BPSK | 50  | 28 | Top Side    | 15mm |        | OFF | 376000 | 1880    | 23.70 | 24.00 | 1.072 | 0     | 0.028 | 0.030 |
|    | FR1 n2_Ant 8  | 20M | BPSK | 1   | 1  | Bottom Side | 15mm |        | OFF | 376000 | 1880    | 23.76 | 24.00 | 1.057 | -0.04 | 0.122 | 0.129 |
|    | FR1 n2_Ant 8  | 20M | BPSK | 50  | 28 | Bottom Side | 15mm |        | OFF | 376000 | 1880    | 23.70 | 24.00 | 1.072 | -0.15 | 0.114 | 0.122 |
|    | FR1 n2_Ant 8  | 20M | BPSK | 1   | 1  | Back        | 0mm  | Holder | ON  | 376000 | 1880    | 22.91 | 23.50 | 1.146 | -0.11 | 0.356 | 0.408 |
| 07 | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Front       | 10mm |        | ON  | 167300 | 836.5   | 23.64 | 24.50 | 1.219 | -0.04 | 0.592 | 0.722 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Front       | 10mm |        | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | -0.15 | 0.556 | 0.679 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Back        | 10mm |        | ON  | 167300 | 836.5   | 23.64 | 24.50 | 1.219 | -0.15 | 0.408 | 0.497 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Back        | 10mm |        | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | 0.11  | 0.499 | 0.610 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Left Side   | 10mm |        | ON  | 167300 | 836.5   | 23.64 | 24.50 | 1.219 | -0.08 | 0.352 | 0.429 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Left Side   | 10mm |        | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | -0.17 | 0.337 | 0.412 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Top Side    | 10mm |        | ON  | 167300 | 836.5   | 23.64 | 24.50 | 1.219 | -0.08 | 0.064 | 0.078 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Top Side    | 10mm |        | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | -0.04 | 0.089 | 0.109 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Bottom Side | 10mm |        | ON  | 167300 | 836.5   | 23.64 | 24.50 | 1.219 | -0.08 | 0.141 | 0.172 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Bottom Side | 10mm |        | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | 0.17  | 0.150 | 0.183 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Front       | 35mm |        | OFF | 167300 | 836.5   | 24.40 | 25.00 | 1.148 | -0.08 | 0.239 | 0.274 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 28 | Front       | 35mm |        | OFF | 167300 | 836.5   | 24.28 | 25.00 | 1.180 | 0.05  | 0.170 | 0.201 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Back        | 20mm |        | OFF | 167300 | 836.5   | 24.40 | 25.00 | 1.148 | -0.18 | 0.499 | 0.573 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 28 | Back        | 20mm |        | OFF | 167300 | 836.5   | 24.28 | 25.00 | 1.180 | 0.06  | 0.384 | 0.453 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Left Side   | 30mm |        | OFF | 167300 | 836.5   | 24.40 | 25.00 | 1.148 | -0.09 | 0.173 | 0.199 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 28 | Left Side   | 30mm |        | OFF | 167300 | 836.5   | 24.28 | 25.00 | 1.180 | -0.08 | 0.140 | 0.165 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Top Side    | 15mm |        | OFF | 167300 | 836.5   | 24.40 | 25.00 | 1.148 | -0.06 | 0.038 | 0.044 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 28 | Top Side    | 15mm |        | OFF | 167300 | 836.5   | 24.28 | 25.00 | 1.180 | -0.14 | 0.041 | 0.048 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 1   | 1  | Bottom Side | 15mm |        | OFF | 167300 | 836.5   | 24.40 | 25.00 | 1.148 | -0.19 | 0.066 | 0.076 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 28 | Bottom Side | 15mm |        | OFF | 167300 | 836.5   | 24.28 | 25.00 | 1.180 | 0.01  | 0.058 | 0.068 |
|    | FR1 n5_Ant 8  | 20M | BPSK | 50  | 0  | Back        | 0mm  | Holder | ON  | 167300 | 836.5   | 23.63 | 24.50 | 1.222 | 0.07  | 0.339 | 0.414 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Front       | 10mm |        | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | 0.11  | 0.410 | 0.460 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 50  | 28 | Front       | 10mm |        | OFF | 638000 | 3570    | 20.34 | 21.00 | 1.164 | -0.08 | 0.331 | 0.385 |
| 08 | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Back        | 10mm |        | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | -0.07 | 0.442 | 0.496 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 50  | 28 | Back        | 10mm |        | OFF | 638000 | 3570    | 20.34 | 21.00 | 1.164 | -0.01 | 0.392 | 0.456 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Left Side   | 10mm |        | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | -0.09 | 0.365 | 0.410 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 50  | 28 | Left Side   | 10mm |        | OFF | 638000 | 3570    | 20.34 | 21.00 | 1.164 | -0.06 | 0.312 | 0.363 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Top Side    | 10mm |        | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | -0.17 | 0.090 | 0.101 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 50  | 28 | Top Side    | 10mm |        | OFF | 638000 | 3570    | 20.34 | 21.00 | 1.164 | -0.01 | 0.087 | 0.101 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Bottom Side | 10mm |        | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | -0.11 | 0.217 | 0.243 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 50  | 28 | Bottom Side | 10mm |        | OFF | 638000 | 3570    | 20.34 | 21.00 | 1.164 | 0.14  | 0.180 | 0.210 |
|    | FR1 n48_Ant 1 | 40M | BPSK | 1   | 1  | Back        | 0mm  | Holder | OFF | 638000 | 3570    | 20.50 | 21.00 | 1.122 | -0.06 | 0.236 | 0.265 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 1   | 1  | Front       | 10mm |        | OFF | 641666 | 3624.99 | 20.77 | 21.00 | 1.054 | 0.1   | 0.274 | 0.289 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Front       | 10mm |        | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0     | 0.324 | 0.343 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 1   | 1  | Back        | 10mm |        | OFF | 641666 | 3624.99 | 20.77 | 21.00 | 1.054 | -0.06 | 0.182 | 0.192 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Back        | 10mm |        | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0.02  | 0.188 | 0.199 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 1   | 1  | Left Side   | 10mm |        | OFF | 641666 | 3624.99 | 20.77 | 21.00 | 1.054 | -0.16 | 0.001 | 0.001 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Left Side   | 10mm |        | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0.05  | 0.001 | 0.001 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 1   | 1  | Top Side    | 10mm |        | OFF | 641666 | 3624.99 | 20.77 | 21.00 | 1.054 | -0.03 | 0.001 | 0.001 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Top Side    | 10mm |        | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0.17  | 0.001 | 0.001 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 1   | 1  | Bottom Side | 10mm |        | OFF | 641666 | 3624.99 | 20.77 | 21.00 | 1.054 | -0.15 | 0.032 | 0.034 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Bottom Side | 10mm |        | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0.16  | 0.030 | 0.032 |
|    | FR1 n48_Ant 6 | 40M | BPSK | 50  | 0  | Back        | 0mm  | Holder | OFF | 641666 | 3624.99 | 20.75 | 21.00 | 1.059 | 0.03  | 0.171 | 0.181 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 1   | 1  | Front       | 10mm |        | ON  | 349000 | 1745    | 20.51 | 21.00 | 1.119 | 0.06  | 0.580 | 0.649 |
| 09 | FR1 n66_Ant 3 | 40M | BPSK | 108 | 54 | Front       | 10mm |        | ON  | 349000 | 1745    | 20.31 | 21.00 | 1.172 | -0.06 | 0.608 | 0.713 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 1   | 1  | Back        | 10mm |        | ON  | 349000 | 1745    | 20.51 | 21.00 | 1.119 | -0.09 | 0.392 | 0.439 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 108 | 54 | Back        | 10mm |        | ON  | 349000 | 1745    | 20.31 | 21.00 | 1.172 | -0.08 | 0.443 | 0.519 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 1   | 1  | Left Side   | 10mm |        | ON  | 349000 | 1745    | 20.51 | 21.00 | 1.119 | 0.13  | 0.215 | 0.241 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 108 | 54 | Left Side   | 10mm |        | ON  | 349000 | 1745    | 20.31 | 21.00 | 1.172 | 0.12  | 0.221 | 0.259 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 1   | 1  | Top Side    | 10mm |        | ON  | 349000 | 1745    | 20.51 | 21.00 | 1.119 | 0.03  | 0.095 | 0.106 |
|    | FR1 n66_Ant 3 | 40M | BPSK | 108 | 54 | Top Side    | 10mm |        | ON  | 349000 | 1745    | 20.31 | 21.00 | 1.172 | 0.18  | 0.104 | 0.122 |



# FCC SAR TEST REPORT

Report No. : FA451315

|  |                    |      |      |     |     |             |      |        |     |        |      |       |       |       |       |       |       |
|--|--------------------|------|------|-----|-----|-------------|------|--------|-----|--------|------|-------|-------|-------|-------|-------|-------|
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Bottom Side | 10mm |        | ON  | 349000 | 1745 | 20.51 | 21.00 | 1.119 | 0.16  | 0.046 | 0.051 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Bottom Side | 10mm |        | ON  | 349000 | 1745 | 20.31 | 21.00 | 1.172 | -0.1  | 0.057 | 0.067 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Front       | 35mm |        | OFF | 349000 | 1745 | 23.51 | 24.00 | 1.119 | -0.17 | 0.141 | 0.158 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Front       | 35mm |        | OFF | 349000 | 1745 | 23.29 | 24.00 | 1.178 | -0.03 | 0.149 | 0.175 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Back        | 20mm |        | OFF | 349000 | 1745 | 23.51 | 24.00 | 1.119 | 0.14  | 0.324 | 0.363 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Back        | 20mm |        | OFF | 349000 | 1745 | 23.29 | 24.00 | 1.178 | -0.02 | 0.320 | 0.377 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Left Side   | 30mm |        | OFF | 349000 | 1745 | 23.51 | 24.00 | 1.119 | 0.11  | 0.104 | 0.116 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Left Side   | 30mm |        | OFF | 349000 | 1745 | 23.29 | 24.00 | 1.178 | -0.05 | 0.092 | 0.108 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Top Side    | 15mm |        | OFF | 349000 | 1745 | 23.51 | 24.00 | 1.119 | -0.02 | 0.123 | 0.138 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Top Side    | 15mm |        | OFF | 349000 | 1745 | 23.29 | 24.00 | 1.178 | -0.05 | 0.126 | 0.148 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 1   | 1   | Bottom Side | 15mm |        | OFF | 349000 | 1745 | 23.51 | 24.00 | 1.119 | 0.03  | 0.001 | 0.001 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Bottom Side | 15mm |        | OFF | 349000 | 1745 | 23.29 | 24.00 | 1.178 | 0.01  | 0.001 | 0.001 |
|  | FR1 n66_Ant 3      | 40M  | BPSK | 108 | 54  | Back        | 0mm  | Holder | ON  | 349000 | 1745 | 20.31 | 21.00 | 1.172 | 0.05  | 0.111 | 0.130 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Front       | 10mm |        | ON  | 349000 | 1745 | 20.61 | 21.00 | 1.094 | -0.01 | 0.612 | 0.670 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 0   | Front       | 10mm |        | ON  | 349000 | 1745 | 20.53 | 21.00 | 1.114 | 0.07  | 0.591 | 0.659 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Back        | 10mm |        | ON  | 349000 | 1745 | 20.61 | 21.00 | 1.094 | 0.18  | 0.387 | 0.423 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 0   | Back        | 10mm |        | ON  | 349000 | 1745 | 20.53 | 21.00 | 1.114 | -0.1  | 0.370 | 0.412 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Left Side   | 10mm |        | ON  | 349000 | 1745 | 20.61 | 21.00 | 1.094 | 0.01  | 0.104 | 0.114 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 0   | Left Side   | 10mm |        | ON  | 349000 | 1745 | 20.53 | 21.00 | 1.114 | -0.15 | 0.111 | 0.124 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Top Side    | 10mm |        | ON  | 349000 | 1745 | 20.61 | 21.00 | 1.094 | 0.19  | 0.036 | 0.039 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 0   | Top Side    | 10mm |        | ON  | 349000 | 1745 | 20.53 | 21.00 | 1.114 | 0.07  | 0.026 | 0.029 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Bottom Side | 10mm |        | ON  | 349000 | 1745 | 20.61 | 21.00 | 1.094 | -0.18 | 0.138 | 0.151 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 0   | Bottom Side | 10mm |        | ON  | 349000 | 1745 | 20.53 | 21.00 | 1.114 | 0.03  | 0.127 | 0.142 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Front       | 35mm |        | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | -0.08 | 0.162 | 0.168 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 54  | Front       | 35mm |        | OFF | 349000 | 1745 | 23.69 | 24.00 | 1.074 | 0.08  | 0.138 | 0.148 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Back        | 20mm |        | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | -0.14 | 0.311 | 0.323 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 54  | Back        | 20mm |        | OFF | 349000 | 1745 | 23.69 | 24.00 | 1.074 | 0.01  | 0.262 | 0.281 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Left Side   | 30mm |        | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | 0.03  | 0.071 | 0.074 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 54  | Left Side   | 30mm |        | OFF | 349000 | 1745 | 23.69 | 24.00 | 1.074 | -0.08 | 0.068 | 0.073 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Top Side    | 15mm |        | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | -0.01 | 0.037 | 0.038 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 54  | Top Side    | 15mm |        | OFF | 349000 | 1745 | 23.69 | 24.00 | 1.074 | 0     | 0.041 | 0.044 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Bottom Side | 15mm |        | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | -0.11 | 0.133 | 0.138 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 108 | 54  | Bottom Side | 15mm |        | OFF | 349000 | 1745 | 23.69 | 24.00 | 1.074 | -0.06 | 0.140 | 0.150 |
|  | FR1 n66_Ant 8      | 40M  | BPSK | 1   | 1   | Back        | 0mm  | Holder | OFF | 349000 | 1745 | 23.84 | 24.00 | 1.038 | 0.01  | 0.225 | 0.233 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Front       | 10mm |        | ON  | 656000 | 3840 | 20.68 | 21.50 | 1.208 | 0.11  | 0.575 | 0.694 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Front       | 10mm |        | ON  | 656000 | 3840 | 20.80 | 21.50 | 1.175 | 0.06  | 0.640 | 0.752 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 270 | 0   | Front       | 10mm |        | ON  | 656000 | 3840 | 20.74 | 21.50 | 1.191 | -0.05 | 0.583 | 0.694 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Back        | 10mm |        | ON  | 656000 | 3840 | 20.68 | 21.50 | 1.208 | -0.08 | 0.623 | 0.752 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Back        | 10mm |        | ON  | 656000 | 3840 | 20.80 | 21.50 | 1.175 | 0.16  | 0.548 | 0.644 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 270 | 0   | Back        | 10mm |        | ON  | 656000 | 3840 | 20.74 | 21.50 | 1.191 | 0.05  | 0.578 | 0.689 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Left Side   | 10mm |        | ON  | 656000 | 3840 | 20.68 | 21.50 | 1.208 | 0.05  | 0.591 | 0.714 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Left Side   | 10mm |        | ON  | 656000 | 3840 | 20.80 | 21.50 | 1.175 | -0.03 | 0.652 | 0.766 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 270 | 0   | Left Side   | 10mm |        | ON  | 656000 | 3840 | 20.74 | 21.50 | 1.191 | -0.15 | 0.623 | 0.742 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Top Side    | 10mm |        | ON  | 656000 | 3840 | 20.68 | 21.50 | 1.208 | 0.02  | 0.120 | 0.145 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Top Side    | 10mm |        | ON  | 656000 | 3840 | 20.80 | 21.50 | 1.175 | 0.07  | 0.088 | 0.103 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Bottom Side | 10mm |        | ON  | 656000 | 3840 | 20.68 | 21.50 | 1.208 | 0.16  | 0.464 | 0.560 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Bottom Side | 10mm |        | ON  | 656000 | 3840 | 20.80 | 21.50 | 1.175 | 0.13  | 0.422 | 0.496 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 1   | Front       | 35mm |        | OFF | 656000 | 3840 | 25.67 | 27.00 | 1.358 | 0.08  | 0.374 | 0.508 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 656000 | 3840 | 25.60 | 27.00 | 1.380 | 0.01  | 0.569 | 0.785 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 1   | Back        | 20mm |        | OFF | 656000 | 3840 | 25.67 | 27.00 | 1.358 | 0.03  | 0.472 | 0.641 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 656000 | 3840 | 25.60 | 27.00 | 1.380 | -0.08 | 0.693 | 0.957 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 270 | 0   | Back        | 20mm |        | OFF | 656000 | 3840 | 25.58 | 26.50 | 1.236 | 0.03  | 0.677 | 0.837 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 1   | Left Side   | 30mm |        | OFF | 656000 | 3840 | 25.67 | 27.00 | 1.358 | -0.08 | 0.334 | 0.454 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 656000 | 3840 | 25.60 | 27.00 | 1.380 | 0.1   | 0.523 | 0.722 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 1   | Top Side    | 15mm |        | OFF | 656000 | 3840 | 25.67 | 27.00 | 1.358 | -0.18 | 0.129 | 0.175 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 656000 | 3840 | 25.60 | 27.00 | 1.380 | 0.1   | 0.183 | 0.253 |



# FCC SAR TEST REPORT

Report No. : FA451315

|  |                    |      |      |     |     |             |      |        |     |        |         |       |       |       |       |       |       |
|--|--------------------|------|------|-----|-----|-------------|------|--------|-----|--------|---------|-------|-------|-------|-------|-------|-------|
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 1   | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.67 | 27.00 | 1.358 | 0.12  | 0.692 | 0.940 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.60 | 27.00 | 1.380 | -0.01 | 0.768 | 1.060 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 270 | 0   | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.58 | 26.50 | 1.236 | 0.09  | 0.721 | 0.891 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Back        | 0mm  | Holder | OFF | 656000 | 3840    | 25.60 | 27.00 | 1.380 | 0.05  | 0.702 | 0.969 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Front       | 10mm |        | ON  | 633332 | 3499.98 | 21.34 | 21.50 | 1.038 | 0.08  | 0.591 | 0.613 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Front       | 10mm |        | ON  | 633332 | 3499.98 | 21.45 | 21.50 | 1.012 | 0.01  | 0.645 | 0.652 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Back        | 10mm |        | ON  | 633332 | 3499.98 | 21.34 | 21.50 | 1.038 | 0.03  | 0.606 | 0.629 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Back        | 10mm |        | ON  | 633332 | 3499.98 | 21.45 | 21.50 | 1.012 | -0.1  | 0.653 | 0.661 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 21.34 | 21.50 | 1.038 | -0.08 | 0.541 | 0.561 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 21.45 | 21.50 | 1.012 | -0.08 | 0.556 | 0.562 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 21.34 | 21.50 | 1.038 | 0.1   | 0.129 | 0.134 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 21.45 | 21.50 | 1.012 | -0.18 | 0.117 | 0.118 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 1   | 137 | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 21.34 | 21.50 | 1.038 | 0.1   | 0.316 | 0.328 |
|  | FR1 n77_Ant 1      | 100M | BPSK | 135 | 69  | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 21.45 | 21.50 | 1.012 | 0.12  | 0.335 | 0.339 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 271 | Front       | 35mm |        | OFF | 633332 | 3499.98 | 26.24 | 27.00 | 1.191 | 0.07  | 0.370 | 0.441 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | 0.18  | 0.403 | 0.513 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 271 | Back        | 20mm |        | OFF | 633332 | 3499.98 | 26.24 | 27.00 | 1.191 | -0.1  | 0.647 | 0.771 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | -0.02 | 0.658 | 0.838 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 270 | 0   | Back        | 20mm |        | OFF | 633332 | 3499.98 | 26.04 | 26.50 | 1.112 | -0.03 | 0.647 | 0.719 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 271 | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 26.24 | 27.00 | 1.191 | 0.01  | 0.426 | 0.507 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | -0.15 | 0.474 | 0.604 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 271 | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 26.24 | 27.00 | 1.191 | 0.19  | 0.296 | 0.353 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | 0.07  | 0.305 | 0.388 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1   | 271 | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 26.24 | 27.00 | 1.191 | -0.18 | 0.497 | 0.592 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | 0.03  | 0.528 | 0.672 |
|  | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 135 | 69  | Back        | 0mm  | Holder | OFF | 633332 | 3499.98 | 25.95 | 27.00 | 1.274 | 0.03  | 0.593 | 0.755 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 1   | Front       | 10mm |        | ON  | 656000 | 3840    | 19.08 | 20.50 | 1.387 | -0.17 | 0.187 | 0.259 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 0   | Front       | 10mm |        | ON  | 656000 | 3840    | 19.06 | 20.50 | 1.393 | -0.03 | 0.162 | 0.226 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 1   | Back        | 10mm |        | ON  | 656000 | 3840    | 19.08 | 20.50 | 1.387 | 0.14  | 0.151 | 0.209 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 0   | Back        | 10mm |        | ON  | 656000 | 3840    | 19.06 | 20.50 | 1.393 | 0.11  | 0.175 | 0.244 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 1   | Left Side   | 10mm |        | ON  | 656000 | 3840    | 19.08 | 20.50 | 1.387 | -0.05 | 0.272 | 0.377 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 0   | Left Side   | 10mm |        | ON  | 656000 | 3840    | 19.06 | 20.50 | 1.393 | 0.06  | 0.343 | 0.478 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 1   | Top Side    | 10mm |        | ON  | 656000 | 3840    | 19.08 | 20.50 | 1.387 | 0.18  | 0.195 | 0.270 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 0   | Top Side    | 10mm |        | ON  | 656000 | 3840    | 19.06 | 20.50 | 1.393 | 0.14  | 0.181 | 0.252 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 1   | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 19.08 | 20.50 | 1.387 | -0.17 | 0.039 | 0.054 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 0   | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 19.06 | 20.50 | 1.393 | 0.17  | 0.032 | 0.045 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 1   | Front       | 35mm |        | OFF | 656000 | 3840    | 25.28 | 27.00 | 1.486 | 0.17  | 0.342 | 0.508 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | -0.05 | 0.314 | 0.473 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 1   | Back        | 20mm |        | OFF | 656000 | 3840    | 25.28 | 27.00 | 1.486 | 0.01  | 0.496 | 0.737 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | 0.1   | 0.562 | 0.847 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 270 | 0   | Back        | 20mm |        | OFF | 656000 | 3840    | 25.10 | 26.50 | 1.380 | 0.07  | 0.532 | 0.734 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 1   | Left Side   | 30mm |        | OFF | 656000 | 3840    | 25.28 | 27.00 | 1.486 | -0.17 | 0.697 | 1.036 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | -0.14 | 0.728 | 1.097 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 270 | 0   | Left Side   | 30mm |        | OFF | 656000 | 3840    | 25.10 | 26.50 | 1.380 | 0.04  | 0.695 | 0.959 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 1   | Top Side    | 15mm |        | OFF | 656000 | 3840    | 25.28 | 27.00 | 1.486 | -0.01 | 0.705 | 1.048 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | -0.08 | 0.701 | 1.056 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 270 | 0   | Top Side    | 15mm |        | OFF | 656000 | 3840    | 25.10 | 26.50 | 1.380 | 0.03  | 0.671 | 0.926 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 1   | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.28 | 27.00 | 1.486 | 0.05  | 0.140 | 0.208 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | 0.06  | 0.257 | 0.387 |
|  | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Back        | 0mm  | Holder | OFF | 656000 | 3840    | 25.22 | 27.00 | 1.507 | 0.01  | 0.526 | 0.792 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 271 | Front       | 10mm |        | ON  | 633332 | 3499.98 | 19.98 | 20.50 | 1.127 | 0.03  | 0.319 | 0.360 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 138 | Front       | 10mm |        | ON  | 633332 | 3499.98 | 20.06 | 20.50 | 1.107 | 0.18  | 0.320 | 0.354 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 271 | Back        | 10mm |        | ON  | 633332 | 3499.98 | 19.98 | 20.50 | 1.127 | 0.16  | 0.219 | 0.247 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 138 | Back        | 10mm |        | ON  | 633332 | 3499.98 | 20.06 | 20.50 | 1.107 | -0.1  | 0.214 | 0.237 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 1   | 271 | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 19.98 | 20.50 | 1.127 | 0.07  | 0.144 | 0.162 |
|  | FR1 n77_Ant 3      | 100M | BPSK | 135 | 69  | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 19.94 | 20.50 | 1.138 | 0.18  | 0.136 | 0.155 |



# FCC SAR TEST REPORT

Report No. : FA451315

|    |                    |      |      |     |     |             |      |        |     |        |         |       |       |       |       |       |       |
|----|--------------------|------|------|-----|-----|-------------|------|--------|-----|--------|---------|-------|-------|-------|-------|-------|-------|
|    | FR1 n77_Ant 3      | 100M | BPSK | 1   | 271 | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 19.98 | 20.50 | 1.127 | -0.1  | 0.522 | 0.588 |
|    | FR1 n77_Ant 3      | 100M | BPSK | 135 | 138 | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 20.06 | 20.50 | 1.107 | 0.01  | 0.471 | 0.521 |
|    | FR1 n77_Ant 3      | 100M | BPSK | 1   | 271 | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 19.98 | 20.50 | 1.127 | -0.15 | 0.055 | 0.062 |
|    | FR1 n77_Ant 3      | 100M | BPSK | 135 | 138 | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 20.06 | 20.50 | 1.107 | 0.19  | 0.144 | 0.159 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | 0.08  | 0.246 | 0.313 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 633332 | 3499.98 | 26.20 | 27.00 | 1.202 | 0.01  | 0.226 | 0.272 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | 0.03  | 0.286 | 0.363 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 633332 | 3499.98 | 26.20 | 27.00 | 1.202 | -0.08 | 0.268 | 0.322 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | -0.08 | 0.197 | 0.250 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 26.20 | 27.00 | 1.202 | 0.1   | 0.209 | 0.251 |
| 10 | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | -0.07 | 0.922 | 1.171 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 26.20 | 27.00 | 1.202 | -0.18 | 0.887 | 1.066 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 270 | 0   | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 26.02 | 26.50 | 1.117 | 0.07  | 0.863 | 0.964 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | 0.1   | 0.056 | 0.071 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 26.20 | 27.00 | 1.202 | 0.12  | 0.001 | 0.001 |
|    | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1   | 137 | Back        | 0mm  | Holder | OFF | 633332 | 3499.98 | 25.96 | 27.00 | 1.271 | -0.07 | 0.467 | 0.593 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Front       | 10mm |        | ON  | 656000 | 3840    | 21.91 | 22.50 | 1.146 | 0.08  | 0.711 | 0.814 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Front       | 10mm |        | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | 0.03  | 0.755 | 0.839 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 270 | 0   | Front       | 10mm |        | ON  | 656000 | 3840    | 21.90 | 22.50 | 1.148 | 0.05  | 0.703 | 0.807 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Back        | 10mm |        | ON  | 656000 | 3840    | 21.91 | 22.50 | 1.146 | 0.01  | 0.252 | 0.289 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Back        | 10mm |        | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | 0.03  | 0.348 | 0.387 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Left Side   | 10mm |        | ON  | 656000 | 3840    | 21.91 | 22.50 | 1.146 | -0.08 | 0.480 | 0.550 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Left Side   | 10mm |        | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | -0.08 | 0.562 | 0.625 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Top Side    | 10mm |        | ON  | 656000 | 3840    | 21.91 | 22.50 | 1.146 | 0.1   | 0.100 | 0.115 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Top Side    | 10mm |        | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | -0.18 | 0.115 | 0.128 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 21.91 | 22.50 | 1.146 | 0.1   | 0.205 | 0.235 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | 0.12  | 0.207 | 0.230 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Front       | 35mm |        | OFF | 656000 | 3840    | 25.61 | 26.50 | 1.227 | 0.06  | 0.177 | 0.217 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 656000 | 3840    | 25.70 | 26.50 | 1.202 | -0.09 | 0.151 | 0.182 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Back        | 20mm |        | OFF | 656000 | 3840    | 25.61 | 26.50 | 1.227 | -0.13 | 0.249 | 0.306 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 656000 | 3840    | 25.70 | 26.50 | 1.202 | -0.08 | 0.253 | 0.304 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Left Side   | 30mm |        | OFF | 656000 | 3840    | 25.61 | 26.50 | 1.227 | 0.13  | 0.237 | 0.291 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 656000 | 3840    | 25.70 | 26.50 | 1.202 | 0.12  | 0.223 | 0.268 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Top Side    | 15mm |        | OFF | 656000 | 3840    | 25.61 | 26.50 | 1.227 | 0.03  | 0.123 | 0.151 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 656000 | 3840    | 25.70 | 26.50 | 1.202 | 0.18  | 0.120 | 0.144 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.61 | 26.50 | 1.227 | 0.16  | 0.218 | 0.268 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 25.70 | 26.50 | 1.202 | -0.1  | 0.220 | 0.264 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Back        | 0mm  | Holder | ON  | 656000 | 3840    | 22.04 | 22.50 | 1.112 | -0.08 | 0.232 | 0.258 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Front       | 10mm |        | ON  | 633332 | 3499.98 | 21.86 | 22.50 | 1.159 | -0.09 | 0.425 | 0.492 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Front       | 10mm |        | ON  | 633332 | 3499.98 | 21.98 | 22.50 | 1.127 | 0.08  | 0.427 | 0.481 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Back        | 10mm |        | ON  | 633332 | 3499.98 | 21.86 | 22.50 | 1.159 | 0.01  | 0.175 | 0.203 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Back        | 10mm |        | ON  | 633332 | 3499.98 | 21.98 | 22.50 | 1.127 | 0.03  | 0.181 | 0.204 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 21.86 | 22.50 | 1.159 | -0.08 | 0.404 | 0.468 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 21.98 | 22.50 | 1.127 | -0.08 | 0.427 | 0.481 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 21.86 | 22.50 | 1.159 | 0.1   | 0.109 | 0.126 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 21.98 | 22.50 | 1.127 | -0.18 | 0.127 | 0.143 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 1   | 137 | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 21.86 | 22.50 | 1.159 | 0.1   | 0.032 | 0.037 |
|    | FR1 n77_Ant 5      | 100M | BPSK | 135 | 69  | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 21.98 | 22.50 | 1.127 | 0.12  | 0.036 | 0.041 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.70 | 26.50 | 1.202 | 0.17  | 0.254 | 0.305 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | -0.05 | 0.363 | 0.426 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.70 | 26.50 | 1.202 | 0.01  | 0.173 | 0.208 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | -0.04 | 0.367 | 0.430 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.70 | 26.50 | 1.202 | 0.1   | 0.284 | 0.341 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | -0.17 | 0.278 | 0.326 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.70 | 26.50 | 1.202 | 0.04  | 0.131 | 0.157 |
|    | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | -0.01 | 0.133 | 0.156 |



# FCC SAR TEST REPORT

Report No. : FA451315

|  |                    |      |      |     |     |             |      |        |     |        |         |       |       |       |       |       |       |
|--|--------------------|------|------|-----|-----|-------------|------|--------|-----|--------|---------|-------|-------|-------|-------|-------|-------|
|  | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 1   | 137 | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.70 | 26.50 | 1.202 | -0.08 | 0.104 | 0.125 |
|  | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | 0.05  | 0.101 | 0.118 |
|  | FR1 n77_HPUE_Ant 5 | 100M | BPSK | 135 | 69  | Back        | 0mm  | Holder | OFF | 633332 | 3499.98 | 25.81 | 26.50 | 1.172 | 0.01  | 0.345 | 0.404 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 1   | Front       | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | -0.09 | 0.554 | 0.629 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Front       | 10mm |        | ON  | 656000 | 3840    | 21.04 | 21.50 | 1.112 | 0.17  | 0.602 | 0.669 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 270 | 0   | Front       | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | -0.09 | 0.540 | 0.613 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 1   | Back        | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | 0.11  | 0.315 | 0.358 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Back        | 10mm |        | ON  | 656000 | 3840    | 21.04 | 21.50 | 1.112 | 0.07  | 0.332 | 0.369 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 1   | Left Side   | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | -0.03 | 0.042 | 0.048 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Left Side   | 10mm |        | ON  | 656000 | 3840    | 21.04 | 21.50 | 1.112 | 0.09  | 0.063 | 0.070 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 1   | Top Side    | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | -0.08 | 0.122 | 0.138 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Top Side    | 10mm |        | ON  | 656000 | 3840    | 21.04 | 21.50 | 1.112 | -0.05 | 0.059 | 0.066 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 1   | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 20.95 | 21.50 | 1.135 | -0.03 | 0.076 | 0.086 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Bottom Side | 10mm |        | ON  | 656000 | 3840    | 21.04 | 21.50 | 1.112 | 0.17  | 0.130 | 0.145 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Front       | 35mm |        | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.15 | 0.545 | 0.680 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 656000 | 3840    | 26.20 | 27.00 | 1.202 | 0.06  | 0.571 | 0.686 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Back        | 20mm |        | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.15 | 0.399 | 0.498 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 656000 | 3840    | 26.20 | 27.00 | 1.202 | 0.11  | 0.411 | 0.494 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Left Side   | 30mm |        | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.08 | 0.056 | 0.070 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 656000 | 3840    | 26.20 | 27.00 | 1.202 | -0.17 | 0.060 | 0.072 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Top Side    | 15mm |        | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.08 | 0.040 | 0.050 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 656000 | 3840    | 26.20 | 27.00 | 1.202 | -0.04 | 0.050 | 0.060 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.08 | 0.116 | 0.145 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 656000 | 3840    | 26.20 | 27.00 | 1.202 | 0.17  | 0.117 | 0.141 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Back        | 0mm  | Holder | OFF | 656000 | 3840    | 26.04 | 27.00 | 1.247 | -0.06 | 0.426 | 0.531 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 137 | Front       | 10mm |        | ON  | 633332 | 3499.98 | 20.92 | 21.50 | 1.143 | -0.17 | 0.423 | 0.483 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Front       | 10mm |        | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | -0.11 | 0.476 | 0.526 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 137 | Back        | 10mm |        | ON  | 633332 | 3499.98 | 20.92 | 21.50 | 1.143 | -0.03 | 0.233 | 0.266 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Back        | 10mm |        | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | 0.14  | 0.278 | 0.307 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 137 | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 20.92 | 21.50 | 1.143 | 0.11  | 0.089 | 0.102 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Left Side   | 10mm |        | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | -0.05 | 0.086 | 0.095 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 137 | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 20.92 | 21.50 | 1.143 | 0.18  | 0.055 | 0.063 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Top Side    | 10mm |        | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | 0.14  | 0.057 | 0.063 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 1   | 137 | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 20.92 | 21.50 | 1.143 | -0.17 | 0.102 | 0.117 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Bottom Side | 10mm |        | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | 0.17  | 0.054 | 0.060 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.58 | 27.00 | 1.387 | 0.08  | 0.200 | 0.277 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Front       | 35mm |        | OFF | 633332 | 3499.98 | 25.79 | 27.00 | 1.321 | 0.08  | 0.216 | 0.285 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.58 | 27.00 | 1.387 | -0.17 | 0.195 | 0.270 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Back        | 20mm |        | OFF | 633332 | 3499.98 | 25.79 | 27.00 | 1.321 | -0.03 | 0.225 | 0.297 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.58 | 27.00 | 1.387 | 0.14  | 0.028 | 0.039 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Left Side   | 30mm |        | OFF | 633332 | 3499.98 | 25.79 | 27.00 | 1.321 | 0.11  | 0.029 | 0.038 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.58 | 27.00 | 1.387 | -0.05 | 0.039 | 0.054 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Top Side    | 15mm |        | OFF | 633332 | 3499.98 | 25.79 | 27.00 | 1.321 | 0.18  | 0.044 | 0.058 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 1   | 137 | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.58 | 27.00 | 1.387 | 0.14  | 0.119 | 0.165 |
|  | FR1 n77_HPUE_Ant 6 | 100M | BPSK | 135 | 69  | Bottom Side | 15mm |        | OFF | 633332 | 3499.98 | 25.79 | 27.00 | 1.321 | -0.17 | 0.138 | 0.182 |
|  | FR1 n77_Ant 6      | 100M | BPSK | 135 | 0   | Back        | 0mm  | Holder | ON  | 633332 | 3499.98 | 21.07 | 21.50 | 1.104 | 0.03  | 0.401 | 0.443 |

**13.2 Repeated SAR Measurement**

| No. | Band               | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Sensor ON / OFF | Ch.    | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Ratio | Reported 1g SAR (W/kg) |
|-----|--------------------|----------|------------|---------|-----------|---------------|----------|-----------------|--------|-------------|---------------------|---------------------|------------------------|------------------|------------------------|-------|------------------------|
| 1st | FR1 n77_HPUE_Ant 3 | 100M     | BPSK       | 1       | 137       | Top Side      | 15mm     | OFF             | 633332 | 3499.98     | 25.96               | 27.00               | 1.271                  | -0.07            | 0.922                  | -     | 1.171                  |
| 2nd | FR1 n77_HPUE_Ant 3 | 100M     | BPSK       | 1       | 137       | Top Side      | 15mm     | OFF             | 633332 | 3499.98     | 25.96               | 27.00               | 1.271                  | 0.03             | 0.891                  | 1.03  | 1.132                  |

**General Note:**

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8$ W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is  $\leq 1.2$  and the measured SAR  $< 1.45$ W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

## 14. Simultaneous Transmission Analysis

| NO. | Simultaneous Transmission Configurations | Body |
|-----|------------------------------------------|------|
| 1.  | Maximum LTE + Maximum FR1                | Yes  |

**General Note:**

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
  - ii) Scalar SAR summation < 1.6W/kg.
  - iii)  $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
  - iv) If  $SPLSR \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.
  - v) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

### 14.1 Body Exposure Conditions

| Exposure Position   | 1                | 2                | 1+2<br>Summed<br>1g SAR (W/kg) |
|---------------------|------------------|------------------|--------------------------------|
|                     | Maximum<br>LTE   | Maximum<br>FR1   |                                |
|                     | 1g SAR<br>(W/kg) | 1g SAR<br>(W/kg) |                                |
| Front at 10mm       | 0.750            | 0.839            | <b>1.589</b>                   |
| Back at 10mm        | 0.544            | 0.752            | <b>1.296</b>                   |
| Left Side at 10mm   | 0.388            | 0.766            | <b>1.154</b>                   |
| Top Side at 10mm    | 0.523            | 0.588            | <b>1.111</b>                   |
| Bottom Side at 10mm | 0.191            | 0.560            | <b>0.751</b>                   |
| Front at 35mm       | 0.248            | 0.785            | <b>1.033</b>                   |
| Back at 20mm        | 0.373            | 0.957            | <b>1.330</b>                   |
| Left Side at 30mm   | 0.130            | 1.097            | <b>1.227</b>                   |
| Top Side at 15mm    | 0.337            | 1.171            | <b>1.508</b>                   |
| Bottom Side at 15mm | 0.080            | 1.060            | <b>1.140</b>                   |

| Exposure Position  | 1                | 2                | 1+2<br>Summed<br>1g SAR (W/kg) |
|--------------------|------------------|------------------|--------------------------------|
|                    | Maximum<br>LTE   | Maximum<br>FR1   |                                |
|                    | 1g SAR<br>(W/kg) | 1g SAR<br>(W/kg) |                                |
| Back at 0mm Holder | 0.442            | 0.969            | <b>1.411</b>                   |

**Test Engineer** : Randy Lin, Teddy Chang, James Peng, John Fan and Bevis Chang

## **15. Uncertainty Assessment**

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is  $< 1.5$  W/kg and the measured 10-g SAR within a frequency band is  $< 3.75$  W/kg. The expanded SAR measurement uncertainty must be  $\leq 30\%$ , for a confidence interval of  $k = 2$ . If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:

The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

## **16. References**

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [6] FCC KDB 447498 D02 v02r01, "SAR Measurement Procedures for USB Dongle Transmitters", Oct 2015.
- [7] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [8] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [9] FCC KDB 616217 D04 v01r02, "SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers", Oct 2015
- [10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [11] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.