



# RF Exposure Evaluation Report

**APPLICANT** : ZTE CORPORATION  
**EQUIPMENT** : Rogers HSPA/LTE CPE  
**BRAND NAME** : ZTE  
**MODEL NAME** : MF275R  
**FCC ID** : SRQ-MF275R  
**STANDARD** : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Deputy Manager

Approved by: Jones Tsai / Manager

**SPORTON INTERNATIONAL (KUNSHAN) INC.**  
**No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China**



## Table of Contents

|                                                                        |           |
|------------------------------------------------------------------------|-----------|
| <b>1. ADMINISTRATION DATA .....</b>                                    | <b>4</b>  |
| 1.1. Testing Laboratory .....                                          | 4         |
| <b>2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) .....</b>              | <b>5</b>  |
| <b>3. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS .....</b> | <b>6</b>  |
| <b>4. CONDUCTED RF OUTPUT POWER (UNIT: DBM).....</b>                   | <b>7</b>  |
| <b>5. RF EXPOSURE LIMIT INTRODUCTION .....</b>                         | <b>24</b> |
| <b>6. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION .....</b>          | <b>25</b> |
| 6.1. Standalone Power Density Calculation .....                        | 25        |
| 6.2. Collocated Power Density Calculation .....                        | 26        |





**1. Administration Data**

**1.1. Testing Laboratory**

| Testing Laboratory |                                                                                                                       |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|
| Test Site          | SPORTON INTERNATIONAL (KUNSHAN) INC.                                                                                  |
| Test Site Location | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 |

| Applicant    |                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------|
| Company Name | ZTE CORPORATION                                                                                                  |
| Address      | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China |

| Manufacturer |                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------|
| Company Name | ZTE CORPORATION                                                                                                  |
| Address      | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China |



**2. Description of Equipment Under Test (EUT)**

| Product Feature & Specification                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                     |              |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
| EUT Type                                                                                                                                                    | Rogers HSPA/LTE CPE                                                                                                                                                                                                                                                                                                                                                                 |              |              |
| Brand Name                                                                                                                                                  | ZTE                                                                                                                                                                                                                                                                                                                                                                                 |              |              |
| Model Name                                                                                                                                                  | MF275R                                                                                                                                                                                                                                                                                                                                                                              |              |              |
| FCC ID                                                                                                                                                      | SRQ-MF275R                                                                                                                                                                                                                                                                                                                                                                          |              |              |
| IMEI Code                                                                                                                                                   | 004401783465723                                                                                                                                                                                                                                                                                                                                                                     |              |              |
| Wireless Technology and Frequency Range                                                                                                                     | WCDMA Band V: 826.4 MHz ~ 846.6 MHz<br>WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz<br>LTE Band 12: 699.7 MHz ~ 715.3 MHz<br>LTE Band 17: 706.5 MHz ~ 713.5 MHz<br>LTE Band 4: 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 2: 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 7: 2502.5 MHz ~ 2567.5 MHz<br>WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz<br>WLAN 5GHz Band: 5180 MHz ~ 5240 MHz, 5745 MHz ~ 5825 MHz |              |              |
| Mode                                                                                                                                                        | <ul style="list-style-type: none"> <li>• RMC12.2Kbps</li> <li>• HSDPA</li> <li>• HSUPA</li> <li>• DC-HSDPA</li> <li>• HSPA+(Downlink only)</li> <li>• LTE</li> </ul>                                                                                                                                                                                                                |              |              |
| Antenna Type                                                                                                                                                | WWAN: Monopole Antenna<br>WLAN Chain Port 1: Monopole Antenna<br>WLAN Chain Port 2: Monopole Antenna                                                                                                                                                                                                                                                                                |              |              |
| HW Version                                                                                                                                                  | dgpB                                                                                                                                                                                                                                                                                                                                                                                |              |              |
| SW Version                                                                                                                                                  | MF275R1.0.5                                                                                                                                                                                                                                                                                                                                                                         |              |              |
| Antenna Function Description                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                     | Chain Port 1 | Chain Port 2 |
|                                                                                                                                                             | 802.11 b                                                                                                                                                                                                                                                                                                                                                                            | V            | V            |
|                                                                                                                                                             | 802.11 g                                                                                                                                                                                                                                                                                                                                                                            | V            | V            |
|                                                                                                                                                             | 802.11a                                                                                                                                                                                                                                                                                                                                                                             | V            | V            |
|                                                                                                                                                             | 802.11n SISO                                                                                                                                                                                                                                                                                                                                                                        | V            | V            |
|                                                                                                                                                             | 802.11n MIMO                                                                                                                                                                                                                                                                                                                                                                        | V            | V            |
| EUT Stage                                                                                                                                                   | Identical Prototype                                                                                                                                                                                                                                                                                                                                                                 |              |              |
| <b>Remark:</b> The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description. |                                                                                                                                                                                                                                                                                                                                                                                     |              |              |



**3. Maximum RF average output power among production units**

| Mode               | Average power (dBm) |               |
|--------------------|---------------------|---------------|
|                    | WCDMA Band V        | WCDMA Band II |
| RMC 12.2Kbps       | 24.0                | 23.0          |
| HSDPA Subtest-1    | 23.5                | 22.0          |
| HSDPA Subtest-2    | 23.5                | 22.0          |
| HSDPA Subtest-3    | 23.0                | 21.5          |
| HSDPA Subtest-4    | 23.0                | 21.5          |
| DC-HSDPA Subtest-1 | 23.5                | 22.0          |
| DC-HSDPA Subtest-2 | 23.5                | 22.0          |
| DC-HSDPA Subtest-3 | 23.0                | 21.5          |
| DC-HSDPA Subtest-4 | 23.0                | 21.5          |
| HSUPA Subtest-1    | 22.5                | 21.5          |
| HSUPA Subtest-2    | 22.5                | 21.5          |
| HSUPA Subtest-3    | 22.5                | 21.5          |
| HSUPA Subtest-4    | 23.0                | 21.5          |
| HSUPA Subtest-5    | 24.0                | 22.5          |

| Band / Mode |         | Average Power (dBm) |
|-------------|---------|---------------------|
| LTE         | Band 12 | 23.0                |
|             | Band 17 | 23.5                |
|             | Band 4  | 23.5                |
|             | Band 2  | 23.5                |
|             | Band 7  | 23.5                |

| Mode   |              | Average Power (dBm) |              |                |
|--------|--------------|---------------------|--------------|----------------|
|        |              | Chain Port 1        | Chain Port 2 | Chain Port 1+2 |
| 2.4GHz | 802.11b      | 16.5                | 20.5         |                |
|        | 802.11g      | 15.5                | 16.5         |                |
|        | 802.11n HT20 | 19.5                | 19.5         | 19.5           |
|        | 802.11n HT40 | 18.5                | 18.5         | 19.0           |
| 5.2GHz | 802.11a      | 17.5                | 18.0         |                |
|        | 802.11n HT20 | 15.0                | 14.5         | 15.5           |
|        | 802.11n HT40 | 15.5                | 15.5         | 15.5           |
| 5.8GHz | 802.11a      | 12.5                | 15.5         |                |
|        | 802.11n HT20 | 15.0                | 14.0         | 15.0           |
|        | 802.11n HT40 | 13.0                | 13.0         | 14.0           |



**4. Conducted RF Output Power (Unit: dBm)**

**<WCDMA Conducted Power>**

| Band            |             |                    | WCDMA Band V |       |              | WCDMA Band II |              |        |
|-----------------|-------------|--------------------|--------------|-------|--------------|---------------|--------------|--------|
| TX Channel      |             |                    | 4132         | 4182  | 4233         | 9262          | 9400         | 9538   |
| Rx Channel      |             |                    | 4357         | 4407  | 4458         | 9662          | 9800         | 9938   |
| Frequency (MHz) |             |                    | 826.4        | 836.4 | 846.6        | 1852.4        | 1880         | 1907.6 |
| MPR (dB)        | 3GPP Rel 99 | RMC 12.2Kbps       | 23.83        | 23.72 | <b>23.85</b> | 22.42         | <b>22.53</b> | 22.44  |
| 0               | 3GPP Rel 6  | HSDPA Subtest-1    | 22.83        | 22.34 | 23.16        | 21.52         | 21.74        | 21.31  |
| 0               | 3GPP Rel 6  | HSDPA Subtest-2    | 22.90        | 22.39 | 23.24        | 21.45         | 21.68        | 21.45  |
| 0.5             | 3GPP Rel 6  | HSDPA Subtest-3    | 22.32        | 21.75 | 22.75        | 20.92         | 21.36        | 20.96  |
| 0.5             | 3GPP Rel 6  | HSDPA Subtest-4    | 22.35        | 21.80 | 22.64        | 20.91         | 21.39        | 21.04  |
| 0               | 3GPP Rel 8  | DC-HSDPA Subtest-1 | 22.83        | 22.30 | 23.28        | 21.56         | 21.28        | 21.33  |
| 0               | 3GPP Rel 8  | DC-HSDPA Subtest-2 | 22.82        | 22.29 | 23.25        | 21.54         | 21.26        | 21.29  |
| 0.5             | 3GPP Rel 8  | DC-HSDPA Subtest-3 | 22.38        | 21.65 | 22.74        | 20.97         | 21.37        | 20.64  |
| 0.5             | 3GPP Rel 8  | DC-HSDPA Subtest-4 | 22.34        | 21.61 | 22.73        | 20.94         | 21.16        | 20.63  |
| 0               | 3GPP Rel 6  | HSUPA Subtest-1    | 22.27        | 22.02 | 22.36        | 21.10         | 21.32        | 21.09  |
| 2               | 3GPP Rel 6  | HSUPA Subtest-2    | 21.77        | 21.68 | 21.82        | 20.07         | 20.44        | 20.39  |
| 1               | 3GPP Rel 6  | HSUPA Subtest-3    | 21.79        | 21.45 | 22.04        | 20.17         | 20.38        | 20.41  |
| 2               | 3GPP Rel 6  | HSUPA Subtest-4    | 22.58        | 22.52 | 22.61        | 21.38         | 21.41        | 21.39  |
| 0               | 3GPP Rel 6  | HSUPA Subtest-5    | 23.06        | 22.90 | 23.56        | 21.86         | 22.31        | 22.01  |



**<LTE Conducted Power>**

**<LTE Band 12>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 23060                 | 23095                    | 23130                  |                     |          |
| Frequency (MHz) |            |         |           | 704                   | 707.5                    | 711                    |                     |          |
| 10              | QPSK       | 1       | 0         | 21.75                 | 21.65                    | 21.72                  | 23.0                | 0        |
| 10              | QPSK       | 1       | 24        | <b>22.06</b>          | 21.94                    | 22.03                  |                     |          |
| 10              | QPSK       | 1       | 49        | 21.45                 | 21.45                    | 21.69                  |                     |          |
| 10              | QPSK       | 25      | 0         | 21.74                 | 21.80                    | 21.48                  | 22.0                | 0-1      |
| 10              | QPSK       | 25      | 12        | 21.86                 | 21.72                    | 21.30                  |                     |          |
| 10              | QPSK       | 25      | 24        | 21.85                 | 21.37                    | 21.39                  |                     |          |
| 10              | QPSK       | 50      | 0         | 21.76                 | 21.58                    | 21.41                  | 22.0                | 0-1      |
| 10              | 16QAM      | 1       | 0         | 20.99                 | 20.99                    | 21.05                  |                     |          |
| 10              | 16QAM      | 1       | 24        | 21.23                 | 21.10                    | 20.97                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 20.96                 | 20.78                    | 21.04                  | 21.0                | 0-2      |
| 10              | 16QAM      | 25      | 0         | 20.86                 | 20.99                    | 20.63                  |                     |          |
| 10              | 16QAM      | 25      | 12        | 20.91                 | 20.89                    | 20.45                  |                     |          |
| 10              | 16QAM      | 25      | 24        | 20.91                 | 20.53                    | 20.52                  | 21.0                | 0-2      |
| 10              | 16QAM      | 50      | 0         | 20.90                 | 20.74                    | 20.58                  |                     |          |
| Channel         |            |         |           | 23035                 | 23095                    | 23155                  |                     |          |
| Frequency (MHz) |            |         |           | 701.5                 | 707.5                    | 713.5                  |                     |          |
| 5               | QPSK       | 1       | 0         | 21.72                 | 21.85                    | 21.14                  | 23.0                | 0        |
| 5               | QPSK       | 1       | 12        | 21.56                 | 21.63                    | 21.35                  |                     |          |
| 5               | QPSK       | 1       | 24        | 21.76                 | 21.28                    | 21.79                  |                     |          |
| 5               | QPSK       | 12      | 0         | 21.70                 | 21.88                    | 21.26                  | 22.0                | 0-1      |
| 5               | QPSK       | 12      | 6         | 21.66                 | 21.74                    | 21.43                  |                     |          |
| 5               | QPSK       | 12      | 11        | 21.70                 | 21.57                    | 21.65                  |                     |          |
| 5               | QPSK       | 25      | 0         | 21.69                 | 21.69                    | 21.47                  | 22.0                | 0-1      |
| 5               | 16QAM      | 1       | 0         | 21.06                 | 21.19                    | 20.68                  |                     |          |
| 5               | 16QAM      | 1       | 12        | 20.93                 | 21.02                    | 20.70                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.16                 | 20.70                    | 21.11                  | 21.0                | 0-2      |
| 5               | 16QAM      | 12      | 0         | 20.84                 | 20.98                    | 20.38                  |                     |          |
| 5               | 16QAM      | 12      | 6         | 20.81                 | 20.92                    | 20.54                  |                     |          |
| 5               | 16QAM      | 12      | 11        | 20.85                 | 20.75                    | 20.75                  | 21.0                | 0-2      |
| 5               | 16QAM      | 25      | 0         | 20.85                 | 20.87                    | 20.60                  |                     |          |



| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB)        |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|-----------------|
| Channel         |            |         |           | 23025                 | 23095                    | 23165                  | 23.0                | 0               |
| Frequency (MHz) |            |         |           | 700.5                 | 707.5                    | 714.5                  |                     |                 |
| 3               | QPSK       | 1       | 0         | 21.76                 | 21.92                    | 21.37                  | 23.0                | 0               |
| 3               | QPSK       | 1       | 7         | 21.72                 | 21.74                    | 21.60                  |                     |                 |
| 3               | QPSK       | 1       | 14        | 21.62                 | 21.46                    | 21.80                  |                     |                 |
| 3               | QPSK       | 8       | 0         | 21.72                 | 21.82                    | 21.50                  | 22.0                | 0-1             |
| 3               | QPSK       | 8       | 4         | 21.67                 | 21.69                    | 21.68                  |                     |                 |
| 3               | QPSK       | 8       | 7         | 21.63                 | 21.57                    | 21.78                  |                     |                 |
| 3               | QPSK       | 15      | 0         | 21.67                 | 21.70                    | 21.65                  |                     |                 |
| 3               | 16QAM      | 1       | 0         | 21.10                 | 21.24                    | 20.71                  | 22.0                | 0-1             |
| 3               | 16QAM      | 1       | 7         | 21.08                 | 21.11                    | 20.91                  |                     |                 |
| 3               | 16QAM      | 1       | 14        | 21.00                 | 20.84                    | 21.11                  |                     |                 |
| 3               | 16QAM      | 8       | 0         | 20.91                 | 20.95                    | 20.64                  | 21.0                | 0-2             |
| 3               | 16QAM      | 8       | 4         | 20.90                 | 20.90                    | 20.82                  |                     |                 |
| 3               | 16QAM      | 8       | 7         | 20.86                 | 20.78                    | 20.91                  |                     |                 |
| 3               | 16QAM      | 15      | 0         | 20.86                 | 20.88                    | 20.76                  |                     |                 |
| Channel         |            |         |           | 23017                 | 23095                    | 23173                  | Tune up Limit (dBm) | Target MPR (dB) |
| Frequency (MHz) |            |         |           | 699.7                 | 707.5                    | 715.3                  |                     |                 |
| 1.4             | QPSK       | 1       | 0         | 22.01                 | 22.03                    | 21.88                  | 23.0                | 0               |
| 1.4             | QPSK       | 1       | 2         | 21.92                 | 21.98                    | 22.00                  |                     |                 |
| 1.4             | QPSK       | 1       | 5         | 21.95                 | 21.94                    | 21.92                  |                     |                 |
| 1.4             | QPSK       | 3       | 0         | 21.98                 | 21.96                    | 21.92                  |                     |                 |
| 1.4             | QPSK       | 3       | 1         | 21.93                 | 21.86                    | 21.97                  |                     |                 |
| 1.4             | QPSK       | 3       | 2         | 21.89                 | 22.02                    | 21.98                  | 22.0                | 0-1             |
| 1.4             | QPSK       | 6       | 0         | 21.82                 | 21.85                    | 21.93                  | 22.0                | 0-1             |
| 1.4             | 16QAM      | 1       | 0         | 21.34                 | 21.43                    | 21.12                  |                     |                 |
| 1.4             | 16QAM      | 1       | 2         | 21.18                 | 21.42                    | 21.29                  |                     |                 |
| 1.4             | 16QAM      | 1       | 5         | 21.15                 | 21.21                    | 21.23                  |                     |                 |
| 1.4             | 16QAM      | 3       | 0         | 21.18                 | 21.17                    | 21.00                  |                     |                 |
| 1.4             | 16QAM      | 3       | 1         | 21.22                 | 21.17                    | 21.07                  |                     |                 |
| 1.4             | 16QAM      | 3       | 2         | 21.41                 | 21.12                    | 21.06                  |                     |                 |
| 1.4             | 16QAM      | 6       | 0         | 20.95                 | 20.93                    | 20.96                  | 21.0                | 0-2             |



**<LTE Band 17>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 23780                 | 23790                    | 23800                  |                     |          |
| Frequency (MHz) |            |         |           | 709                   | 710                      | 711                    |                     |          |
| 10              | QPSK       | 1       | 0         | <b>22.92</b>          | 22.91                    | 22.76                  | 23.5                | 0        |
| 10              | QPSK       | 1       | 24        | 22.82                 | 22.32                    | 22.18                  |                     |          |
| 10              | QPSK       | 1       | 49        | 22.54                 | 22.46                    | 22.67                  |                     |          |
| 10              | QPSK       | 25      | 0         | 21.99                 | 22.04                    | 22.09                  | 22.5                | 0-1      |
| 10              | QPSK       | 25      | 12        | 22.08                 | 22.13                    | 22.03                  |                     |          |
| 10              | QPSK       | 25      | 24        | 21.99                 | 22.03                    | 22.07                  |                     |          |
| 10              | QPSK       | 50      | 0         | 21.90                 | 22.04                    | 22.12                  | 22.5                | 0-1      |
| 10              | 16QAM      | 1       | 0         | 22.25                 | 22.17                    | 22.06                  |                     |          |
| 10              | 16QAM      | 1       | 24        | 22.00                 | 21.65                    | 21.53                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 21.80                 | 21.76                    | 22.00                  | 21.5                | 0-2      |
| 10              | 16QAM      | 25      | 0         | 20.92                 | 21.03                    | 21.07                  |                     |          |
| 10              | 16QAM      | 25      | 12        | 21.01                 | 21.11                    | 21.04                  |                     |          |
| 10              | 16QAM      | 25      | 24        | 20.96                 | 21.07                    | 21.10                  | 21.5                | 0-2      |
| 10              | 16QAM      | 25      | 24        | 20.96                 | 21.07                    | 21.10                  |                     |          |
| 10              | 16QAM      | 50      | 0         | 20.90                 | 21.05                    | 21.08                  |                     |          |
| Channel         |            |         |           | 23755                 | 23790                    | 23825                  |                     |          |
| Frequency (MHz) |            |         |           | 706.5                 | 710                      | 713.5                  |                     |          |
| 5               | QPSK       | 1       | 0         | 22.75                 | 22.47                    | 22.01                  | 23.5                | 0        |
| 5               | QPSK       | 1       | 12        | 22.67                 | 22.09                    | 22.22                  |                     |          |
| 5               | QPSK       | 1       | 24        | 22.29                 | 22.01                    | 22.63                  |                     |          |
| 5               | QPSK       | 12      | 0         | 22.02                 | 22.05                    | 22.04                  | 22.5                | 0-1      |
| 5               | QPSK       | 12      | 6         | 22.01                 | 22.14                    | 22.06                  |                     |          |
| 5               | QPSK       | 12      | 11        | 21.96                 | 22.07                    | 22.05                  |                     |          |
| 5               | QPSK       | 25      | 0         | 21.99                 | 22.13                    | 22.07                  | 22.5                | 0-1      |
| 5               | 16QAM      | 1       | 0         | 22.09                 | 21.79                    | 21.36                  |                     |          |
| 5               | 16QAM      | 1       | 12        | 22.05                 | 21.45                    | 21.56                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.71                 | 21.35                    | 21.96                  | 21.5                | 0-2      |
| 5               | 16QAM      | 12      | 0         | 21.05                 | 21.13                    | 21.09                  |                     |          |
| 5               | 16QAM      | 12      | 6         | 21.01                 | 21.14                    | 21.03                  |                     |          |
| 5               | 16QAM      | 12      | 11        | 20.96                 | 21.05                    | 21.02                  | 21.5                | 0-2      |
| 5               | 16QAM      | 12      | 11        | 20.96                 | 21.05                    | 21.02                  |                     |          |
| 5               | 16QAM      | 25      | 0         | 20.98                 | 21.12                    | 21.04                  |                     |          |



**<LTE Band 4>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 20050                 | 20175                    | 20300                  |                     |          |
| Frequency (MHz) |            |         |           | 1720                  | 1732.5                   | 1745                   |                     |          |
| 20              | QPSK       | 1       | 0         | 22.77                 | 22.80                    | 22.55                  | 23.5                | 0        |
| 20              | QPSK       | 1       | 49        | 22.14                 | 22.27                    | 21.87                  |                     |          |
| 20              | QPSK       | 1       | 99        | 22.20                 | 22.22                    | 21.86                  |                     |          |
| 20              | QPSK       | 50      | 0         | 21.35                 | 21.42                    | 21.12                  | 22.5                | 0-1      |
| 20              | QPSK       | 50      | 24        | 21.08                 | 21.11                    | 20.87                  |                     |          |
| 20              | QPSK       | 50      | 49        | 21.14                 | 22.08                    | 20.99                  |                     |          |
| 20              | QPSK       | 100     | 0         | 21.10                 | 21.17                    | 20.93                  | 22.5                | 0-1      |
| 20              | 16QAM      | 1       | 0         | 21.97                 | 22.08                    | 21.84                  |                     |          |
| 20              | 16QAM      | 1       | 49        | 21.24                 | 21.21                    | 21.04                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 21.44                 | 21.32                    | 21.10                  | 22.5                | 0-1      |
| 20              | 16QAM      | 50      | 0         | 20.25                 | 20.39                    | 20.10                  |                     |          |
| 20              | 16QAM      | 50      | 24        | 20.10                 | 20.17                    | 19.87                  |                     |          |
| 20              | 16QAM      | 50      | 49        | 20.12                 | 20.11                    | 19.97                  | 21.5                | 0-2      |
| 20              | 16QAM      | 50      | 49        | 20.12                 | 20.11                    | 19.97                  |                     |          |
| 20              | 16QAM      | 100     | 0         | 20.16                 | 20.15                    | 19.97                  |                     |          |
| Channel         |            |         |           | 20025                 | 20175                    | 20325                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1717.5                | 1732.5                   | 1747.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 22.47                 | 22.17                    | 22.36                  | 23.5                | 0        |
| 15              | QPSK       | 1       | 37        | 22.06                 | 21.89                    | 21.86                  |                     |          |
| 15              | QPSK       | 1       | 74        | 21.80                 | 21.97                    | 21.74                  |                     |          |
| 15              | QPSK       | 36      | 0         | 21.10                 | 21.16                    | 21.08                  | 22.5                | 0-1      |
| 15              | QPSK       | 36      | 18        | 20.99                 | 20.92                    | 20.82                  |                     |          |
| 15              | QPSK       | 36      | 37        | 20.87                 | 20.87                    | 20.76                  |                     |          |
| 15              | QPSK       | 75      | 0         | 21.02                 | 20.97                    | 20.90                  | 22.5                | 0-1      |
| 15              | 16QAM      | 1       | 0         | 21.82                 | 21.78                    | 21.75                  |                     |          |
| 15              | 16QAM      | 1       | 37        | 21.40                 | 21.11                    | 21.25                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 21.32                 | 21.30                    | 21.15                  | 22.5                | 0-1      |
| 15              | 16QAM      | 36      | 0         | 20.11                 | 20.10                    | 20.08                  |                     |          |
| 15              | 16QAM      | 36      | 18        | 20.02                 | 19.88                    | 19.82                  |                     |          |
| 15              | 16QAM      | 36      | 37        | 19.87                 | 19.81                    | 19.68                  | 21.5                | 0-2      |
| 15              | 16QAM      | 36      | 37        | 19.87                 | 19.81                    | 19.68                  |                     |          |
| 15              | 16QAM      | 75      | 0         | 20.14                 | 19.97                    | 19.95                  |                     |          |
| Channel         |            |         |           | 20000                 | 20175                    | 20350                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1715                  | 1732.5                   | 1750                   |                     |          |
| 10              | QPSK       | 1       | 0         | 22.21                 | 21.88                    | 21.89                  | 23.5                | 0        |
| 10              | QPSK       | 1       | 24        | 22.05                 | 21.64                    | 21.63                  |                     |          |
| 10              | QPSK       | 1       | 49        | 21.80                 | 21.62                    | 21.62                  |                     |          |
| 10              | QPSK       | 25      | 0         | 20.99                 | 20.71                    | 20.73                  | 22.5                | 0-1      |
| 10              | QPSK       | 25      | 12        | 20.86                 | 20.67                    | 20.62                  |                     |          |
| 10              | QPSK       | 25      | 24        | 20.80                 | 20.57                    | 20.54                  |                     |          |
| 10              | QPSK       | 50      | 0         | 20.91                 | 20.70                    | 20.67                  | 22.5                | 0-1      |
| 10              | 16QAM      | 1       | 0         | 21.32                 | 21.12                    | 21.10                  |                     |          |
| 10              | 16QAM      | 1       | 24        | 21.12                 | 20.90                    | 20.99                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 20.99                 | 20.88                    | 20.70                  | 22.5                | 0-1      |
| 10              | 16QAM      | 1       | 49        | 20.99                 | 20.88                    | 20.70                  |                     |          |
| 10              | 16QAM      | 25      | 0         | 20.04                 | 19.75                    | 19.77                  |                     |          |
| 10              | 16QAM      | 25      | 12        | 19.86                 | 19.65                    | 19.65                  | 21.5                | 0-2      |
| 10              | 16QAM      | 25      | 12        | 19.86                 | 19.65                    | 19.65                  |                     |          |
| 10              | 16QAM      | 25      | 24        | 19.85                 | 19.54                    | 19.56                  |                     |          |
| 10              | 16QAM      | 50      | 0         | 19.90                 | 19.61                    | 19.61                  | 21.5                | 0-2      |
| 10              | 16QAM      | 50      | 0         | 19.90                 | 19.61                    | 19.61                  |                     |          |
| 10              | 16QAM      | 50      | 0         | 19.90                 | 19.61                    | 19.61                  |                     |          |



| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 19975                 | 20175                    | 20375                  |                     |          |
| Frequency (MHz) |            |         |           | 1712.5                | 1732.5                   | 1752.5                 |                     |          |
| 5               | QPSK       | 1       | 0         | 21.97                 | 21.72                    | 21.75                  | 23.5                | 0        |
| 5               | QPSK       | 1       | 12        | 21.96                 | 21.65                    | 21.71                  |                     |          |
| 5               | QPSK       | 1       | 24        | 21.87                 | 21.56                    | 21.66                  |                     |          |
| 5               | QPSK       | 12      | 0         | 20.81                 | 20.63                    | 20.64                  | 22.5                | 0-1      |
| 5               | QPSK       | 12      | 6         | 20.90                 | 20.66                    | 20.72                  |                     |          |
| 5               | QPSK       | 12      | 11        | 20.85                 | 20.62                    | 20.66                  |                     |          |
| 5               | QPSK       | 25      | 0         | 20.86                 | 20.63                    | 20.72                  |                     |          |
| 5               | 16QAM      | 1       | 0         | 21.22                 | 20.91                    | 21.13                  | 22.5                | 0-1      |
| 5               | 16QAM      | 1       | 12        | 21.26                 | 20.92                    | 21.07                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.05                 | 20.74                    | 20.92                  |                     |          |
| 5               | 16QAM      | 12      | 0         | 19.96                 | 19.72                    | 19.82                  | 21.5                | 0-2      |
| 5               | 16QAM      | 12      | 6         | 19.93                 | 19.65                    | 19.79                  |                     |          |
| 5               | 16QAM      | 12      | 11        | 19.87                 | 19.68                    | 19.73                  |                     |          |
| 5               | 16QAM      | 25      | 0         | 19.89                 | 19.65                    | 19.71                  |                     |          |
| Channel         |            |         |           | 19965                 | 20175                    | 20385                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1711.5                | 1732.5                   | 1753.5                 |                     |          |
| 3               | QPSK       | 1       | 0         | 22.00                 | 21.66                    | 21.82                  | 23.5                | 0        |
| 3               | QPSK       | 1       | 7         | 22.13                 | 21.53                    | 21.92                  |                     |          |
| 3               | QPSK       | 1       | 14        | 21.93                 | 21.56                    | 21.68                  |                     |          |
| 3               | QPSK       | 8       | 0         | 20.87                 | 20.74                    | 20.73                  | 22.5                | 0-1      |
| 3               | QPSK       | 8       | 4         | 20.99                 | 20.71                    | 20.78                  |                     |          |
| 3               | QPSK       | 8       | 7         | 20.85                 | 20.61                    | 20.71                  |                     |          |
| 3               | QPSK       | 15      | 0         | 20.88                 | 20.61                    | 20.66                  |                     |          |
| 3               | 16QAM      | 1       | 0         | 21.10                 | 20.81                    | 20.93                  | 22.5                | 0-1      |
| 3               | 16QAM      | 1       | 7         | 21.31                 | 20.93                    | 21.14                  |                     |          |
| 3               | 16QAM      | 1       | 14        | 21.21                 | 20.72                    | 20.86                  |                     |          |
| 3               | 16QAM      | 8       | 0         | 19.96                 | 19.80                    | 19.81                  | 21.5                | 0-2      |
| 3               | 16QAM      | 8       | 4         | 20.03                 | 19.70                    | 19.81                  |                     |          |
| 3               | 16QAM      | 8       | 7         | 19.91                 | 19.66                    | 19.79                  |                     |          |
| 3               | 16QAM      | 15      | 0         | 19.91                 | 19.61                    | 19.66                  |                     |          |
| Channel         |            |         |           | 19957                 | 20175                    | 20393                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1710.7                | 1732.5                   | 1754.3                 |                     |          |
| 1.4             | QPSK       | 1       | 0         | 21.93                 | 21.69                    | 21.65                  | 23.5                | 0        |
| 1.4             | QPSK       | 1       | 2         | 22.14                 | 21.69                    | 21.78                  |                     |          |
| 1.4             | QPSK       | 1       | 5         | 21.80                 | 21.55                    | 21.62                  |                     |          |
| 1.4             | QPSK       | 3       | 0         | 21.88                 | 21.75                    | 21.77                  |                     |          |
| 1.4             | QPSK       | 3       | 1         | 21.96                 | 21.74                    | 21.77                  |                     |          |
| 1.4             | QPSK       | 3       | 2         | 21.99                 | 21.69                    | 21.75                  | 22.5                | 0-1      |
| 1.4             | QPSK       | 6       | 0         | 20.77                 | 20.62                    | 20.65                  |                     |          |
| 1.4             | 16QAM      | 1       | 0         | 21.29                 | 20.94                    | 20.98                  | 22.5                | 0-1      |
| 1.4             | 16QAM      | 1       | 2         | 21.28                 | 20.96                    | 21.06                  |                     |          |
| 1.4             | 16QAM      | 1       | 5         | 21.11                 | 20.92                    | 20.95                  |                     |          |
| 1.4             | 16QAM      | 3       | 0         | 20.98                 | 20.78                    | 20.77                  |                     |          |
| 1.4             | 16QAM      | 3       | 1         | 20.97                 | 20.83                    | 20.86                  |                     |          |
| 1.4             | 16QAM      | 3       | 2         | 21.01                 | 20.80                    | 20.86                  |                     |          |
| 1.4             | 16QAM      | 6       | 0         | 19.90                 | 19.68                    | 19.78                  | 21.5                | 0-2      |



**<LTE Band 2>**

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 18700                 | 18900                    | 19100                  |                     |          |
| Frequency (MHz) |            |         |           | 1860                  | 1880                     | 1900                   |                     |          |
| 20              | QPSK       | 1       | 0         | 22.31                 | 22.74                    | <b>23.04</b>           | 23.5                | 0        |
| 20              | QPSK       | 1       | 49        | 21.62                 | 22.06                    | 22.35                  |                     |          |
| 20              | QPSK       | 1       | 99        | 21.62                 | 22.10                    | 22.37                  |                     |          |
| 20              | QPSK       | 50      | 0         | 20.96                 | 21.15                    | 21.50                  | 22.5                | 0-1      |
| 20              | QPSK       | 50      | 24        | 20.68                 | 21.09                    | 21.35                  |                     |          |
| 20              | QPSK       | 50      | 49        | 20.65                 | 21.06                    | 21.38                  |                     |          |
| 20              | QPSK       | 100     | 0         | 20.78                 | 21.19                    | 21.39                  | 22.5                | 0-1      |
| 20              | 16QAM      | 1       | 0         | 21.80                 | 22.01                    | 22.38                  |                     |          |
| 20              | 16QAM      | 1       | 49        | 20.79                 | 21.11                    | 21.34                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 20.83                 | 21.38                    | 21.57                  | 21.5                | 0-2      |
| 20              | 16QAM      | 50      | 0         | 19.92                 | 20.12                    | 20.46                  |                     |          |
| 20              | 16QAM      | 50      | 24        | 19.68                 | 20.08                    | 20.34                  |                     |          |
| 20              | 16QAM      | 50      | 49        | 19.70                 | 20.06                    | 20.35                  | 21.5                | 0-2      |
| 20              | 16QAM      | 100     | 0         | 19.77                 | 20.22                    | 20.36                  |                     |          |
| Channel         |            |         |           | 18675                 | 18900                    | 19125                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1857.5                | 1880                     | 1902.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 22.09                 | 22.39                    | 22.50                  | 23.5                | 0        |
| 15              | QPSK       | 1       | 37        | 21.64                 | 21.89                    | 22.05                  |                     |          |
| 15              | QPSK       | 1       | 74        | 21.67                 | 22.02                    | 22.11                  |                     |          |
| 15              | QPSK       | 36      | 0         | 20.94                 | 21.04                    | 21.29                  | 22.5                | 0-1      |
| 15              | QPSK       | 36      | 18        | 20.71                 | 20.93                    | 21.10                  |                     |          |
| 15              | QPSK       | 36      | 37        | 20.66                 | 20.83                    | 21.02                  |                     |          |
| 15              | QPSK       | 75      | 0         | 20.71                 | 20.94                    | 21.20                  | 22.5                | 0-1      |
| 15              | 16QAM      | 1       | 0         | 21.56                 | 21.73                    | 21.96                  |                     |          |
| 15              | 16QAM      | 1       | 37        | 20.91                 | 21.18                    | 21.46                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 20.95                 | 21.36                    | 21.54                  | 21.5                | 0-2      |
| 15              | 16QAM      | 36      | 0         | 19.96                 | 19.97                    | 20.31                  |                     |          |
| 15              | 16QAM      | 36      | 18        | 19.68                 | 19.88                    | 20.10                  |                     |          |
| 15              | 16QAM      | 36      | 37        | 19.60                 | 19.79                    | 20.00                  | 21.5                | 0-2      |
| 15              | 16QAM      | 75      | 0         | 19.74                 | 19.98                    | 20.20                  |                     |          |
| Channel         |            |         |           | 18650                 | 18900                    | 19150                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1855                  | 1880                     | 1905                   |                     |          |
| 10              | QPSK       | 1       | 0         | 21.88                 | 22.18                    | 22.34                  | 23.5                | 0        |
| 10              | QPSK       | 1       | 24        | 21.54                 | 21.98                    | 22.24                  |                     |          |
| 10              | QPSK       | 1       | 49        | 21.50                 | 21.93                    | 22.14                  |                     |          |
| 10              | QPSK       | 25      | 0         | 20.68                 | 20.93                    | 21.00                  | 22.5                | 0-1      |
| 10              | QPSK       | 25      | 12        | 20.71                 | 20.93                    | 21.19                  |                     |          |
| 10              | QPSK       | 25      | 24        | 20.66                 | 20.85                    | 21.12                  |                     |          |
| 10              | QPSK       | 50      | 0         | 20.69                 | 20.90                    | 21.17                  | 22.5                | 0-1      |
| 10              | 16QAM      | 1       | 0         | 21.20                 | 21.41                    | 21.54                  |                     |          |
| 10              | 16QAM      | 1       | 24        | 21.03                 | 21.33                    | 21.48                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 20.84                 | 21.34                    | 21.49                  | 21.5                | 0-2      |
| 10              | 16QAM      | 25      | 0         | 19.85                 | 19.94                    | 20.11                  |                     |          |
| 10              | 16QAM      | 25      | 12        | 19.78                 | 19.94                    | 20.20                  |                     |          |
| 10              | 16QAM      | 25      | 24        | 19.65                 | 19.87                    | 20.13                  | 21.5                | 0-2      |
| 10              | 16QAM      | 50      | 0         | 19.64                 | 19.86                    | 20.16                  |                     |          |



| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 18625                 | 18900                    | 19175                  |                     |          |
| Frequency (MHz) |            |         |           | 1852.5                | 1880                     | 1907.5                 |                     |          |
| 5               | QPSK       | 1       | 0         | 21.76                 | 21.97                    | 22.35                  | 23.5                | 0        |
| 5               | QPSK       | 1       | 12        | 21.57                 | 21.91                    | 22.20                  |                     |          |
| 5               | QPSK       | 1       | 24        | 21.57                 | 21.82                    | 22.14                  |                     |          |
| 5               | QPSK       | 12      | 0         | 20.56                 | 20.77                    | 21.12                  | 22.5                | 0-1      |
| 5               | QPSK       | 12      | 6         | 20.61                 | 20.85                    | 21.19                  |                     |          |
| 5               | QPSK       | 12      | 11        | 20.56                 | 20.82                    | 21.16                  |                     |          |
| 5               | QPSK       | 25      | 0         | 20.60                 | 20.81                    | 21.20                  |                     |          |
| 5               | 16QAM      | 1       | 0         | 20.94                 | 21.09                    | 21.51                  | 22.5                | 0-1      |
| 5               | 16QAM      | 1       | 12        | 20.95                 | 21.09                    | 21.57                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 20.88                 | 21.14                    | 21.49                  |                     |          |
| 5               | 16QAM      | 12      | 0         | 19.65                 | 19.87                    | 20.26                  | 21.5                | 0-2      |
| 5               | 16QAM      | 12      | 6         | 19.69                 | 19.89                    | 20.29                  |                     |          |
| 5               | 16QAM      | 12      | 11        | 19.60                 | 19.83                    | 20.21                  |                     |          |
| 5               | 16QAM      | 25      | 0         | 19.63                 | 19.80                    | 20.22                  |                     |          |
| Channel         |            |         |           | 18615                 | 18900                    | 19185                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1851.5                | 1880                     | 1908.5                 |                     |          |
| 3               | QPSK       | 1       | 0         | 21.76                 | 22.07                    | 22.38                  | 23.5                | 0        |
| 3               | QPSK       | 1       | 7         | 21.83                 | 22.28                    | 22.60                  |                     |          |
| 3               | QPSK       | 1       | 14        | 21.67                 | 21.87                    | 22.31                  |                     |          |
| 3               | QPSK       | 8       | 0         | 20.62                 | 20.90                    | 21.28                  | 22.5                | 0-1      |
| 3               | QPSK       | 8       | 4         | 20.62                 | 20.91                    | 21.31                  |                     |          |
| 3               | QPSK       | 8       | 7         | 20.60                 | 20.83                    | 21.24                  |                     |          |
| 3               | QPSK       | 15      | 0         | 20.58                 | 20.87                    | 21.19                  |                     |          |
| 3               | 16QAM      | 1       | 0         | 20.93                 | 21.06                    | 21.51                  | 22.5                | 0-1      |
| 3               | 16QAM      | 1       | 7         | 20.91                 | 21.44                    | 21.49                  |                     |          |
| 3               | 16QAM      | 1       | 14        | 20.87                 | 21.16                    | 21.43                  |                     |          |
| 3               | 16QAM      | 8       | 0         | 19.71                 | 19.98                    | 20.31                  | 21.5                | 0-2      |
| 3               | 16QAM      | 8       | 4         | 19.60                 | 19.98                    | 20.30                  |                     |          |
| 3               | 16QAM      | 8       | 7         | 19.70                 | 19.90                    | 20.29                  |                     |          |
| 3               | 16QAM      | 15      | 0         | 19.57                 | 19.86                    | 20.21                  |                     |          |
| Channel         |            |         |           | 18607                 | 18900                    | 19193                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 1850.7                | 1880                     | 1909.3                 |                     |          |
| 1.4             | QPSK       | 1       | 0         | 21.75                 | 21.91                    | 22.15                  | 23.5                | 0        |
| 1.4             | QPSK       | 1       | 2         | 21.80                 | 21.96                    | 22.34                  |                     |          |
| 1.4             | QPSK       | 1       | 5         | 21.69                 | 21.69                    | 22.11                  |                     |          |
| 1.4             | QPSK       | 3       | 0         | 21.74                 | 21.83                    | 22.21                  |                     |          |
| 1.4             | QPSK       | 3       | 1         | 21.70                 | 21.87                    | 22.23                  |                     |          |
| 1.4             | QPSK       | 3       | 2         | 21.72                 | 21.83                    | 22.25                  |                     |          |
| 1.4             | QPSK       | 6       | 0         | 20.58                 | 20.79                    | 21.14                  | 22.5                | 0-1      |
| 1.4             | 16QAM      | 1       | 0         | 20.95                 | 21.16                    | 21.53                  | 22.5                | 0-1      |
| 1.4             | 16QAM      | 1       | 2         | 20.72                 | 21.19                    | 21.63                  |                     |          |
| 1.4             | 16QAM      | 1       | 5         | 20.88                 | 21.07                    | 21.44                  |                     |          |
| 1.4             | 16QAM      | 3       | 0         | 21.01                 | 20.85                    | 21.28                  |                     |          |
| 1.4             | 16QAM      | 3       | 1         | 20.70                 | 20.96                    | 21.39                  |                     |          |
| 1.4             | 16QAM      | 3       | 2         | 20.87                 | 20.96                    | 21.36                  |                     |          |
| 1.4             | 16QAM      | 6       | 0         | 19.83                 | 19.88                    | 20.26                  | 21.5                | 0-2      |



<LTE Band 7>

| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 20850                 | 21100                    | 21350                  |                     |          |
| Frequency (MHz) |            |         |           | 2510                  | 2535                     | 2560                   |                     |          |
| 20              | QPSK       | 1       | 0         | 23.00                 | 22.63                    | 22.48                  | 23.5                | 0        |
| 20              | QPSK       | 1       | 49        | 22.63                 | 22.84                    | 22.64                  |                     |          |
| 20              | QPSK       | 1       | 99        | 22.32                 | 22.24                    | 22.31                  |                     |          |
| 20              | QPSK       | 50      | 0         | 21.68                 | 21.74                    | 21.60                  | 22.5                | 0-1      |
| 20              | QPSK       | 50      | 24        | 21.66                 | 21.75                    | 21.58                  |                     |          |
| 20              | QPSK       | 50      | 49        | 21.60                 | 21.52                    | 21.44                  |                     |          |
| 20              | QPSK       | 100     | 0         | 21.54                 | 21.62                    | 21.46                  | 22.5                | 0-1      |
| 20              | 16QAM      | 1       | 0         | 22.06                 | 21.94                    | 21.94                  |                     |          |
| 20              | 16QAM      | 1       | 49        | 21.74                 | 21.95                    | 21.83                  |                     |          |
| 20              | 16QAM      | 1       | 99        | 21.45                 | 21.56                    | 21.41                  | 21.5                | 0-2      |
| 20              | 16QAM      | 50      | 0         | 20.78                 | 20.78                    | 20.73                  |                     |          |
| 20              | 16QAM      | 50      | 24        | 20.55                 | 20.80                    | 20.59                  |                     |          |
| 20              | 16QAM      | 50      | 49        | 20.44                 | 20.50                    | 20.47                  | 21.5                | 0-2      |
| 20              | 16QAM      | 100     | 0         | 20.62                 | 20.72                    | 20.49                  |                     |          |
| Channel         |            |         |           | 20825                 | 21100                    | 21375                  |                     |          |
| Frequency (MHz) |            |         |           | 2507.5                | 2535                     | 2562.5                 |                     |          |
| 15              | QPSK       | 1       | 0         | 22.86                 | 22.80                    | 22.48                  | 23.5                | 0        |
| 15              | QPSK       | 1       | 37        | 22.87                 | 22.99                    | 22.95                  |                     |          |
| 15              | QPSK       | 1       | 74        | 22.28                 | 22.56                    | 22.26                  |                     |          |
| 15              | QPSK       | 36      | 0         | 21.73                 | 21.78                    | 21.62                  | 22.5                | 0-1      |
| 15              | QPSK       | 36      | 18        | 21.72                 | 21.78                    | 21.58                  |                     |          |
| 15              | QPSK       | 36      | 37        | 21.56                 | 21.62                    | 21.50                  |                     |          |
| 15              | QPSK       | 75      | 0         | 21.72                 | 21.74                    | 21.55                  | 22.5                | 0-1      |
| 15              | 16QAM      | 1       | 0         | 22.16                 | 22.04                    | 21.95                  |                     |          |
| 15              | 16QAM      | 1       | 37        | 22.01                 | 22.13                    | 21.85                  |                     |          |
| 15              | 16QAM      | 1       | 74        | 21.52                 | 21.85                    | 21.65                  | 21.5                | 0-2      |
| 15              | 16QAM      | 36      | 0         | 20.69                 | 20.75                    | 20.59                  |                     |          |
| 15              | 16QAM      | 36      | 18        | 20.83                 | 20.80                    | 20.54                  |                     |          |
| 15              | 16QAM      | 36      | 37        | 20.50                 | 20.62                    | 20.54                  | 21.5                | 0-2      |
| 15              | 16QAM      | 75      | 0         | 20.64                 | 20.72                    | 20.57                  |                     |          |



| BW [MHz]        | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune up Limit (dBm) | MPR (dB) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|----------|
| Channel         |            |         |           | 20800                 | 21100                    | 21400                  |                     |          |
| Frequency (MHz) |            |         |           | 2505                  | 2535                     | 2565                   |                     |          |
| 10              | QPSK       | 1       | 0         | 22.56                 | 22.64                    | 22.39                  | 23.5                | 0        |
| 10              | QPSK       | 1       | 24        | 22.55                 | 22.71                    | 22.42                  |                     |          |
| 10              | QPSK       | 1       | 49        | 22.41                 | 22.64                    | 22.41                  |                     |          |
| 10              | QPSK       | 25      | 0         | 21.62                 | 21.55                    | 21.40                  | 22.5                | 0-1      |
| 10              | QPSK       | 25      | 12        | 21.50                 | 21.63                    | 21.43                  |                     |          |
| 10              | QPSK       | 25      | 24        | 21.35                 | 21.42                    | 21.30                  |                     |          |
| 10              | QPSK       | 50      | 0         | 21.33                 | 21.58                    | 21.32                  |                     |          |
| 10              | 16QAM      | 1       | 0         | 21.78                 | 21.92                    | 21.87                  | 22.5                | 0-1      |
| 10              | 16QAM      | 1       | 24        | 21.62                 | 22.02                    | 21.66                  |                     |          |
| 10              | 16QAM      | 1       | 49        | 21.61                 | 21.68                    | 21.56                  |                     |          |
| 10              | 16QAM      | 25      | 0         | 20.41                 | 20.53                    | 20.39                  | 21.5                | 0-2      |
| 10              | 16QAM      | 25      | 12        | 20.39                 | 20.66                    | 20.47                  |                     |          |
| 10              | 16QAM      | 25      | 24        | 20.21                 | 20.47                    | 20.39                  |                     |          |
| 10              | 16QAM      | 50      | 0         | 20.31                 | 20.61                    | 20.31                  |                     |          |
| Channel         |            |         |           | 20775                 | 21100                    | 21425                  | Tune up Limit (dBm) | MPR (dB) |
| Frequency (MHz) |            |         |           | 2502.5                | 2535                     | 2567.5                 |                     |          |
| 5               | QPSK       | 1       | 0         | 22.71                 | 22.75                    | 22.50                  | 23.5                | 0        |
| 5               | QPSK       | 1       | 12        | 22.69                 | 22.83                    | 22.46                  |                     |          |
| 5               | QPSK       | 1       | 24        | 22.35                 | 22.62                    | 22.42                  |                     |          |
| 5               | QPSK       | 12      | 0         | 21.66                 | 21.47                    | 21.23                  | 22.5                | 0-1      |
| 5               | QPSK       | 12      | 6         | 21.44                 | 21.64                    | 21.37                  |                     |          |
| 5               | QPSK       | 12      | 11        | 21.77                 | 21.56                    | 21.36                  |                     |          |
| 5               | QPSK       | 25      | 0         | 21.63                 | 21.57                    | 21.33                  |                     |          |
| 5               | 16QAM      | 1       | 0         | 21.66                 | 21.93                    | 21.71                  | 22.5                | 0-1      |
| 5               | 16QAM      | 1       | 12        | 21.73                 | 22.11                    | 21.65                  |                     |          |
| 5               | 16QAM      | 1       | 24        | 21.60                 | 21.87                    | 21.58                  |                     |          |
| 5               | 16QAM      | 12      | 0         | 20.36                 | 20.66                    | 20.48                  | 21.5                | 0-2      |
| 5               | 16QAM      | 12      | 6         | 20.40                 | 20.70                    | 20.47                  |                     |          |
| 5               | 16QAM      | 12      | 11        | 20.36                 | 20.62                    | 20.41                  |                     |          |
| 5               | 16QAM      | 25      | 0         | 20.38                 | 20.61                    | 20.39                  |                     |          |



**<WLAN Conducted Power>**

**<WLAN 2.4GHz>**

| 2.4GHz 802.11b Average Power (dBm) |                 |            |              |                     |       |         |        |
|------------------------------------|-----------------|------------|--------------|---------------------|-------|---------|--------|
| Power vs. Channel                  |                 |            |              | Power vs. Data Rate |       |         |        |
| Channel                            | Frequency (MHz) | Chain Port | Data Rate    | Channel             | 2Mbps | 5.5Mbps | 11Mbps |
|                                    |                 |            | 1Mbps        |                     |       |         |        |
| CH 01                              | 2412            | 1          | 15.23        | CH 06               | 15.99 | 16.14   | 16.08  |
| CH 06                              | 2437            | 1          | <b>16.15</b> |                     |       |         |        |
| CH 11                              | 2462            | 1          | 14.42        |                     |       |         |        |
| CH 01                              | 2412            | 2          | 19.81        | CH 06               | 20.09 | 20.25   | 20.23  |
| CH 06                              | 2437            | 2          | <b>20.26</b> |                     |       |         |        |
| CH 11                              | 2462            | 2          | 19.48        |                     |       |         |        |

| 2.4GHz 802.11g Average Power (dBm) |                 |            |              |                     |       |        |        |        |        |        |        |
|------------------------------------|-----------------|------------|--------------|---------------------|-------|--------|--------|--------|--------|--------|--------|
| Power vs. Channel                  |                 |            |              | Power vs. Data Rate |       |        |        |        |        |        |        |
| Channel                            | Frequency (MHz) | Chain Port | Data Rate    | Channel             | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
|                                    |                 |            | 6Mbps        |                     |       |        |        |        |        |        |        |
| CH 01                              | 2412            | 1          | 14.42        | CH 06               | 15.31 | 15.37  | 15.33  | 15.18  | 15.11  | 15.15  | 15.36  |
| CH 06                              | 2437            | 1          | <b>15.39</b> |                     |       |        |        |        |        |        |        |
| CH 11                              | 2462            | 1          | 14.12        |                     |       |        |        |        |        |        |        |
| CH 01                              | 2412            | 2          | 15.75        | CH 06               | 16.24 | 16.21  | 16.31  | 16.15  | 16.28  | 16.29  | 16.32  |
| CH 06                              | 2437            | 2          | <b>16.35</b> |                     |       |        |        |        |        |        |        |
| CH 11                              | 2462            | 2          | 15.58        |                     |       |        |        |        |        |        |        |



| 2.4GHz 802.11n HT20 Average Power (dBm) |                 |            |                   |                     |       |       |       |       |       |       |       |
|-----------------------------------------|-----------------|------------|-------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                       |                 |            |                   | Power vs. MCS Index |       |       |       |       |       |       |       |
| Channel                                 | Frequency (MHz) | Chain Port | MCS Index<br>MCS0 | Channel             | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
| CH 01                                   | 2412            | 1          | 18.51             | CH 06               | 19.27 | 19.26 | 19.19 | 18.41 | 18.49 | 17.43 | 15.54 |
| CH 06                                   | 2437            | 1          | 19.29             |                     |       |       |       |       |       |       |       |
| CH 11                                   | 2462            | 1          | 17.69             |                     |       |       |       |       |       |       |       |
| CH 01                                   | 2412            | 2          | 18.55             | CH 06               | 19.37 | 19.39 | 19.36 | 18.33 | 18.26 | 17.45 | 15.70 |
| CH 06                                   | 2437            | 2          | 19.41             |                     |       |       |       |       |       |       |       |
| CH 11                                   | 2462            | 2          | 18.96             |                     |       |       |       |       |       |       |       |
| CH 01                                   | 2412            | 1+2        | 18.76             | CH 06               | 19.44 | 19.06 | 19.07 | 18.44 | 18.34 | 18.28 | 18.37 |
| CH 06                                   | 2437            | 1+2        | 19.45             |                     |       |       |       |       |       |       |       |
| CH 11                                   | 2462            | 1+2        | 18.30             |                     |       |       |       |       |       |       |       |

| 2.4GHz 802.11n HT40 Average Power (dBm) |                 |            |                   |                     |         |       |       |       |       |       |       |
|-----------------------------------------|-----------------|------------|-------------------|---------------------|---------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                       |                 |            |                   | Power vs. MCS Index |         |       |       |       |       |       |       |
| Channel                                 | Frequency (MHz) | Chain Port | MCS Index<br>MCS0 | MCS1                | Channel | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
| CH 03                                   | 2422            | 1          | 17.42             | 18.06               | CH 06   | 18.03 | 16.92 | 16.86 | 16.23 | 15.11 | 13.30 |
| CH 06                                   | 2437            | 1          | 17.48             | 18.14               |         |       |       |       |       |       |       |
| CH 09                                   | 2452            | 1          | 16.76             | 17.40               |         |       |       |       |       |       |       |
| CH 03                                   | 2422            | 2          | 17.28             | 17.92               | CH 06   | 18.43 | 17.18 | 17.28 | 17.67 | 17.65 | 17.61 |
| CH 06                                   | 2437            | 2          | 17.67             | 18.45               |         |       |       |       |       |       |       |
| CH 09                                   | 2452            | 2          | 17.10             | 18.28               |         |       |       |       |       |       |       |
| CH 03                                   | 2422            | 1+2        | 17.71             | 18.54               | CH 06   | 18.55 | 17.32 | 17.67 | 17.30 | 17.23 | 16.98 |
| CH 06                                   | 2437            | 1+2        | 17.74             | 18.73               |         |       |       |       |       |       |       |
| CH 09                                   | 2452            | 1+2        | 17.35             | 18.31               |         |       |       |       |       |       |       |



**<WLAN 5GHz>**

| WLAN 5GHz 802.11a Average Power (dBm) |                 |            |                    |                     |       |        |        |        |        |        |        |
|---------------------------------------|-----------------|------------|--------------------|---------------------|-------|--------|--------|--------|--------|--------|--------|
| Power vs. Channel                     |                 |            |                    | Power vs. Data Rate |       |        |        |        |        |        |        |
| Channel                               | Frequency (MHz) | Chain Port | Data Rate<br>6Mbps | Channel             | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
| CH 36                                 | 5180            | 1          | 17.17              | CH 36               | 17.01 | 16.98  | 16.99  | 17.04  | 17.10  | 16.97  | 17.14  |
| CH 44                                 | 5220            | 1          | 15.68              |                     |       |        |        |        |        |        |        |
| CH 48                                 | 5240            | 1          | 16.01              |                     |       |        |        |        |        |        |        |
| CH 149                                | 5745            | 1          | 12.23              | CH 149              | 12.10 | 12.08  | 12.12  | 12.15  | 12.16  | 12.09  | 12.19  |
| CH 157                                | 5785            | 1          | 11.87              |                     |       |        |        |        |        |        |        |
| CH 165                                | 5825            | 1          | 11.53              |                     |       |        |        |        |        |        |        |
| CH 36                                 | 5180            | 2          | 17.55              | CH 36               | 17.33 | 17.37  | 17.44  | 17.42  | 17.50  | 17.52  | 17.53  |
| CH 44                                 | 5220            | 2          | 16.35              |                     |       |        |        |        |        |        |        |
| CH 48                                 | 5240            | 2          | 16.51              |                     |       |        |        |        |        |        |        |
| CH 149                                | 5745            | 2          | 15.15              | CH 149              | 15.02 | 14.93  | 15.07  | 14.97  | 15.09  | 15.11  | 15.08  |
| CH 157                                | 5785            | 2          | 14.57              |                     |       |        |        |        |        |        |        |
| CH 165                                | 5825            | 2          | 14.11              |                     |       |        |        |        |        |        |        |



| WLAN 5GHz 802.11n-HT20 Average Power (dBm) |                 |            |                |                     |       |       |       |       |       |       |       |
|--------------------------------------------|-----------------|------------|----------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                          |                 |            |                | Power vs. Data Rate |       |       |       |       |       |       |       |
| Channel                                    | Frequency (MHz) | Chain Port | MCS Index MCS0 | Channel             | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
| CH 36                                      | 5180            | 1          | 14.10          | CH 44               | 14.36 | 14.32 | 14.39 | 14.43 | 14.45 | 14.54 | 14.55 |
| CH 44                                      | 5220            | 1          | 14.58          |                     |       |       |       |       |       |       |       |
| CH 48                                      | 5240            | 1          | 13.64          |                     |       |       |       |       |       |       |       |
| CH 149                                     | 5745            | 1          | 14.57          | CH 149              | 14.42 | 14.43 | 14.47 | 14.51 | 14.54 | 14.49 | 14.48 |
| CH 157                                     | 5785            | 1          | 14.10          |                     |       |       |       |       |       |       |       |
| CH 165                                     | 5825            | 1          | 13.64          |                     |       |       |       |       |       |       |       |
| CH 36                                      | 5180            | 2          | 13.89          |                     |       |       |       |       |       |       |       |
| CH 44                                      | 5220            | 2          | 13.98          | CH 48               | 14.15 | 14.19 | 14.23 | 14.30 | 14.24 | 14.28 | 14.33 |
| CH 48                                      | 5240            | 2          | 14.36          |                     |       |       |       |       |       |       |       |
| CH 149                                     | 5745            | 2          | 13.86          |                     |       |       |       |       |       |       |       |
| CH 157                                     | 5785            | 2          | 13.37          | CH 149              | 13.70 | 13.72 | 13.76 | 13.77 | 13.83 | 13.80 | 13.78 |
| CH 165                                     | 5825            | 2          | 13.10          |                     |       |       |       |       |       |       |       |
| CH 36                                      | 5180            | 1+2        | 14.76          |                     |       |       |       |       |       |       |       |
| CH 44                                      | 5220            | 1+2        | 15.12          |                     |       |       |       |       |       |       |       |
| CH 48                                      | 5240            | 1+2        | 14.99          | CH 44               | 14.89 | 14.91 | 14.96 | 14.85 | 14.87 | 14.82 | 14.88 |
| CH 149                                     | 5745            | 1+2        | 14.94          |                     |       |       |       |       |       |       |       |
| CH 157                                     | 5785            | 1+2        | 14.80          |                     |       |       |       |       |       |       |       |
| CH 165                                     | 5825            | 1+2        | 14.08          | CH 149              | 14.83 | 14.77 | 14.73 | 14.67 | 14.71 | 14.76 | 14.75 |



| WLAN 5GHz 802.11n-HT40 Average Power (dBm) |                 |            |                   |                     |       |       |       |       |       |       |       |
|--------------------------------------------|-----------------|------------|-------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| Power vs. Channel                          |                 |            |                   | Power vs. Data Rate |       |       |       |       |       |       |       |
| Channel                                    | Frequency (MHz) | Chain Port | MCS Index<br>MCS0 | Channel             | MCS1  | MCS2  | MCS3  | MCS4  | MCS5  | MCS6  | MCS7  |
| CH 38                                      | 5190            | 1          | 15.13             | CH 38               | 14.61 | 14.77 | 14.96 | 15.00 | 15.04 | 15.03 | 15.06 |
| CH 46                                      | 5230            | 1          | 14.55             |                     |       |       |       |       |       |       |       |
| CH 151                                     | 5755            | 1          | 12.84             | CH 151              | 12.64 | 12.71 | 12.61 | 12.75 | 12.76 | 12.78 | 12.82 |
| CH 159                                     | 5795            | 1          | 12.36             |                     |       |       |       |       |       |       |       |
| CH 38                                      | 5190            | 2          | 14.44             | CH 46               | 14.91 | 14.90 | 14.92 | 15.10 | 15.13 | 15.12 | 15.16 |
| CH 46                                      | 5230            | 2          | 15.18             |                     |       |       |       |       |       |       |       |
| CH 151                                     | 5755            | 2          | 12.62             | CH 151              | 12.27 | 12.31 | 12.35 | 12.52 | 12.59 | 12.55 | 12.60 |
| CH 159                                     | 5795            | 2          | 12.11             |                     |       |       |       |       |       |       |       |
| CH 38                                      | 5190            | 1+2        | 15.33             | CH 38               | 15.26 | 15.15 | 14.93 | 15.02 | 15.11 | 15.14 | 15.05 |
| CH 46                                      | 5230            | 1+2        | 15.22             |                     |       |       |       |       |       |       |       |
| CH 151                                     | 5755            | 1+2        | 13.64             | CH 151              | 13.52 | 13.37 | 13.38 | 13.29 | 13.33 | 13.42 | 13.44 |
| CH 159                                     | 5795            | 1+2        | 13.44             |                     |       |       |       |       |       |       |       |



**The table below summarized necessary items addressed in KDB 941225 D05 v02r03**

| FCC ID                                                  | SRQ-MF275R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------|--------|--------|--------|----------|--|----------|---------|---------|-------|--------|--------|--------|------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|
| EUT                                                     | Rogers HSPA/LTE CPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
| Operating Frequency Range of each LTE transmission band | LTE Band 12: 699.7 MHz ~ 715.3 MHz<br>LTE Band 17: 706.5 MHz ~ 713.5 MHz<br>LTE Band 4: 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 2: 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 7: 2502.5 MHz ~ 2567.5 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
| Channel Bandwidth                                       | LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 17: 5MHz, 10MHz<br>LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
| Uplink modulations used                                 | QPSK and 16QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
| LTE MPR permanently built-in by design                  | <p align="center"><b>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 2</td> </tr> </tbody> </table> | Modulation | Channel bandwidth / Transmission bandwidth (RB) |        |        |        |          |  | 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 |
| Modulation                                              | Channel bandwidth / Transmission bandwidth (RB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                                                 |        |        |        | 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      |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |
| LTE -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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                                 |        |        |        |          |  |          |         |         |       |        |        |        |      |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |        |     |     |     |      |      |      |     |



| Transmission (H, M, L) channel numbers and frequencies in each LTE band |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|-------------------------------------------------------------------------|-------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|
| LTE Band 12                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | 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                                                                       | 23017             | 699.7       | 23025            | 700.5       | 23035            | 701.5       | 23060            | 704         |                  |             |                  |             |
| M                                                                       | 23095             | 707.5       | 23095            | 707.5       | 23095            | 707.5       | 23095            | 707.5       |                  |             |                  |             |
| H                                                                       | 23173             | 715.3       | 23165            | 714.5       | 23155            | 713.5       | 23130            | 711         |                  |             |                  |             |
| LTE Band 17                                                             |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | Bandwidth 5 MHz   |             |                  |             | Bandwidth 10 MHz |             |                  |             |                  |             |                  |             |
|                                                                         | Channel #         |             | Freq.(MHz)       |             | Channel #        |             | Freq. (MHz)      |             |                  |             |                  |             |
| L                                                                       | 23755             |             | 706.5            |             | 23780            |             | 709              |             |                  |             |                  |             |
| M                                                                       | 23790             |             | 710              |             | 23790            |             | 710              |             |                  |             |                  |             |
| H                                                                       | 23825             |             | 713.5            |             | 23800            |             | 711              |             |                  |             |                  |             |
| 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 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 7                                                              |                   |             |                  |             |                  |             |                  |             |                  |             |                  |             |
|                                                                         | 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                                                                       | 20775             | 2502.5      | 20800            | 2505        | 20825            | 2507.5      | 20850            | 2510        |                  |             |                  |             |
| M                                                                       | 21100             | 2535        | 21100            | 2535        | 21100            | 2535        | 21100            | 2535        |                  |             |                  |             |
| H                                                                       | 21425             | 2567.5      | 21400            | 2565        | 21375            | 2562.5      | 21350            | 2560        |                  |             |                  |             |



### 5. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1500                                                       |                               |                               | f/300                               | 6                        |
| 1500-100,000                                                   |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | 30                       |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1500                                                       |                               |                               | f/1500                              | 30                       |
| 1500-100,000                                                   |                               |                               | 1.0                                 | 30                       |

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



**6. Radio Frequency Radiation Exposure Evaluation**

**6.1. Standalone Power Density Calculation**

| Band                                    | Frequency (MHz) | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum EIRP (dBm) | Maximum EIRP (W) | Average EIRP (mW) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Power Density / Limit |
|-----------------------------------------|-----------------|--------------------|---------------------|--------------------|------------------|-------------------|---------------------------------------------|-----------------------------|-----------------------|
| WCDMA Band V                            | 826.4           | -0.03              | 24.0                | 23.970             | 0.249            | 31.405            | 0.006                                       | 0.551                       | 0.011                 |
| WCDMA Band II                           | 1852.4          | 0.57               | 23.0                | 23.570             | 0.228            | 28.642            | 0.006                                       | 1.000                       | 0.006                 |
| LTE Band 12                             | 699.7           | -2.21              | 23.0                | 20.790             | 0.120            | 30.130            | 0.006                                       | 0.466                       | 0.013                 |
| LTE Band 17                             | 706.5           | -1.72              | 23.5                | 21.780             | 0.151            | 56.494            | 0.011                                       | 0.471                       | 0.024                 |
| LTE Band 4                              | 1710.7          | 1.31               | 23.5                | 24.810             | 0.303            | 151.705           | 0.030                                       | 1.000                       | 0.030                 |
| LTE Band 2                              | 1850.7          | 0.57               | 23.5                | 24.070             | 0.255            | 32.137            | 0.006                                       | 1.000                       | 0.006                 |
| LTE Band 7                              | 2502.5          | 1.87               | 23.5                | 25.370             | 0.344            | 86.497            | 0.017                                       | 1.000                       | 0.017                 |
| WLAN 2.4GHz 802.11b Chain Port 1        | 2412.0          | 2.68               | 16.5                | 19.180             | 0.083            | 31.046            | 0.006                                       | 1.000                       | 0.006                 |
| WLAN 2.4GHz 802.11b Chain Port 2        | 2412.0          | 4.51               | 20.5                | 25.010             | 0.317            | 158.855           | 0.032                                       | 1.000                       | 0.032                 |
| WLAN 2.4GHz 802.11g Chain Port 1        | 2412.0          | 2.68               | 15.5                | 18.180             | 0.066            | 8.279             | 0.002                                       | 1.000                       | 0.002                 |
| WLAN 2.4GHz 802.11g Chain Port 2        | 2412.0          | 4.51               | 16.5                | 21.010             | 0.126            | 15.885            | 0.003                                       | 1.000                       | 0.003                 |
| WLAN 2.4GHz 802.11n HT20 Chain Port 1   | 2412.0          | 2.68               | 19.5                | 22.180             | 0.165            | 41.495            | 0.008                                       | 1.000                       | 0.008                 |
| WLAN 2.4GHz 802.11n HT20 Chain Port 2   | 2412.0          | 4.51               | 19.5                | 24.010             | 0.252            | 94.406            | 0.019                                       | 1.000                       | 0.019                 |
| WLAN 2.4GHz 802.11n HT20 Chain Port 1+2 | 2412.0          | 6.65               | 19.5                | 26.150             | 0.412            | 206.538           | 0.041                                       | 1.000                       | 0.041                 |
| WLAN 2.4GHz 802.11n HT40 Chain Port 1   | 2412.0          | 2.68               | 18.5                | 21.180             | 0.131            | 16.520            | 0.003                                       | 1.000                       | 0.003                 |
| WLAN 2.4GHz 802.11n HT40 Chain Port 2   | 2412.0          | 4.51               | 18.5                | 23.010             | 0.200            | 50.234            | 0.010                                       | 1.000                       | 0.010                 |
| WLAN 2.4GHz 802.11n HT40 Chain Port 1+2 | 2412.0          | 6.65               | 19.0                | 25.650             | 0.367            | 137.721           | 0.027                                       | 1.000                       | 0.027                 |
| WLAN 5.2GHz 802.11a Chain Port 1        | 5180.0          | 0.76               | 17.5                | 18.260             | 0.067            | 33.574            | 0.007                                       | 1.000                       | 0.007                 |
| WLAN 5.2GHz 802.11a Chain Port 2        | 5180.0          | 1.61               | 18.0                | 19.610             | 0.091            | 91.411            | 0.018                                       | 1.000                       | 0.018                 |
| WLAN 5.2GHz 802.11n HT20 Chain Port 1   | 5180.0          | 0.76               | 15.0                | 15.760             | 0.038            | 37.670            | 0.007                                       | 1.000                       | 0.007                 |
| WLAN 5.2GHz 802.11n HT20 Chain Port 2   | 5180.0          | 1.61               | 14.5                | 16.110             | 0.041            | 40.832            | 0.008                                       | 1.000                       | 0.008                 |
| WLAN 5.2GHz 802.11n HT20 Chain Port 1+2 | 5180.0          | 4.21               | 15.5                | 19.710             | 0.094            | 93.541            | 0.019                                       | 1.000                       | 0.019                 |
| WLAN 5.2GHz 802.11n HT40 Chain Port 1   | 5190.0          | 0.76               | 15.5                | 16.260             | 0.042            | 42.267            | 0.008                                       | 1.000                       | 0.008                 |
| WLAN 5.2GHz 802.11n HT40 Chain Port 2   | 5190.0          | 1.61               | 15.5                | 17.110             | 0.051            | 51.404            | 0.010                                       | 1.000                       | 0.010                 |
| WLAN 5.2GHz 802.11n HT40 Chain Port 1+2 | 5190.0          | 4.21               | 15.5                | 19.710             | 0.094            | 93.541            | 0.019                                       | 1.000                       | 0.019                 |
| WLAN 5.8GHz 802.11a Chain Port 1        | 5745.0          | 3.33               | 12.5                | 15.830             | 0.038            | 38.282            | 0.008                                       | 1.000                       | 0.008                 |
| WLAN 5.8GHz 802.11a Chain Port 2        | 5745.0          | 0.27               | 15.5                | 15.770             | 0.038            | 37.757            | 0.008                                       | 1.000                       | 0.008                 |
| WLAN 5.8GHz 802.11n HT20 Chain Port 1   | 5745.0          | 3.33               | 15.0                | 18.330             | 0.068            | 68.077            | 0.014                                       | 1.000                       | 0.014                 |
| WLAN 5.8GHz 802.11n HT20 Chain Port 2   | 5745.0          | 0.27               | 14.0                | 14.270             | 0.027            | 26.730            | 0.005                                       | 1.000                       | 0.005                 |
| WLAN 5.8GHz 802.11n HT20 Chain Port 1+2 | 5745.0          | 4.95               | 15.0                | 19.950             | 0.099            | 98.855            | 0.020                                       | 1.000                       | 0.020                 |
| WLAN 5.8GHz 802.11n HT40 Chain Port 1   | 5755.0          | 3.33               | 13.0                | 16.330             | 0.043            | 42.954            | 0.009                                       | 1.000                       | 0.009                 |
| WLAN 5.8GHz 802.11n HT40 Chain Port 2   | 5755.0          | 0.27               | 13.0                | 13.270             | 0.021            | 21.232            | 0.004                                       | 1.000                       | 0.004                 |
| WLAN 5.8GHz 802.11n HT40 Chain Port 1+2 | 5755.0          | 4.95               | 14.0                | 18.950             | 0.079            | 78.524            | 0.016                                       | 1.000                       | 0.016                 |

**Note:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.



6.2. Collocated Power Density Calculation

| Mode       | Frequency         | Maximum EIRP (dBm) | Calculated Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | WLAN Power Density / Limit | LTE B and 4 Power Density / Limit | Σ (Power Density / Limit) of WWAN+ WLAN 2.4GHz + WLAN 5GHz |
|------------|-------------------|--------------------|------------------------------------------------|-----------------------------|----------------------------|-----------------------------------|------------------------------------------------------------|
| WLAN2.4GHz | 2412MHz ~ 2462MHz | 26.150             | 0.041                                          | 1.000                       | 0.041                      | 0.030                             | 0.091                                                      |
| WLAN5GHz   | 5745 MHz ~ 5825   | 19.950             | 0.020                                          | 1.000                       | 0.020                      |                                   |                                                            |

Note:

1. For collocation analysis, LTE Band 4 is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
2. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN 2.4GHz + WLAN 5GHz.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.