# CERTIFICATION TEST REPORT

**Report Number. :** 12258201-E9V2

| | | |
|---|---|---|
| **Applicant** | : | APPLE, INC.<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A. |
| **Model** | : | A2106 |
| **FCC ID** | : | BCG-E3238A |
| **EUT Description** | : | SMARTPHONE |
| **Test Standard(s)** | : | CFR47 PART 27 |

**Date Of Issue:**
AUGUST 30, 2018

**Prepared by:**
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NVLAP LAB CODE 200065-0 (FREMONT)

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V1 | 8/22/2018 | Initial Review | Mengistu Mekuria |
| V2 | 8/30/2018 | TCB Review | Vanessa Moestopo |

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# 1. ATTESTATION OF TEST RESULTS

| | |
|---|---|
| Applicant Name and Address | APPLE, INC.<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A. |
| Model | A2106 |
| FCC ID | BCG-E3238A |
| EUT Description | SMARTPHONE |
| Serial Number | C7CWN00RK3MY |
| Date Tested | APRIL 06, 2018 to JUNE 30, 2018 |
| Applicable Standards | CFR47 PART 27 |
| Test Results | COMPLIES |

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

| Approved & Released By: | Prepared By: |
|---|---|
| Mengistu Mekuria<br>Lead Test Engineer<br>UL Verification Services Inc. | Tohny Luong<br>Laboratory Engineer<br>UL Verification Services Inc. |

# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.26:2015, CFR 47 Part 2, KDB 971168 D01 v03r01/ D02 v02r01, KDB 412172 D01 Determining ERP and EIRP v01r01, Part 27.

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 47173 Benicia Street | 47266 Benicia Street |
|---|---|
| ☐ Chamber A (IC:2324B-1) | ☐ Chamber D (IC:22541-1) |
| ☐ Chamber B (IC:2324B-2) | ☐ Chamber E (IC:22541-2) |
| ☒ Chamber C (IC:2324B-3) | ☐ Chamber F (IC:22541-3) |
| | ☐ Chamber G (IC:22541-4) |
| | ☐ Chamber H (IC:22541-5) |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.
UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at NVLAP Lab Search.

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

## 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

## 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|---|---|
| Conducted Disturbance, 9KHz to 0.15 MHz | 3.84 dB |
| Conducted Disturbance, 0.15 to 30 MHz | 3.65 dB |
| Radiated Disturbance, 9KHz to 30 MHz | 3.15 dB |
| Radiated Disturbance, 30 to 1000 MHz | 5.36 dB |
| Radiated Disturbance,1000 to 18000 MHz | 4.32 dB |
| Radiated Disturbance,18000 to 26000 MHz | 4.45 dB |
| Radiated Disturbance,26000 to 40000 MHz | 5.24 dB |
| Occupied Channel Bandwidth | ±0.39 % |
| Temperature | ±0.9 °C |
| Supply voltages | ±0.45 % |
| Time | ±0.02 % |

Uncertainty figures are valid to a confidence level of 95%.

# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

The Apple iPhone, is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, TD-SCDMA, CDMA, IEEE 802.11a/b/g/n/ac, Bluetooth, GPS and NFC. All models support at least one UICC based SIM. The second SIM is either UICC based, electronic SIM (e-SIM), or second SIM is not present. The device has a built-in inductive charging receiver which is not user accessible. The rechargeable battery is not user accessible.

## 5.2. MAXIMUM OUTPUT POWER

**ERP/EIRP LIMIT**

§2.1046, §27.50

**EIRP/ERP TEST PROCEDURE**

ANSI C63.26:2015
KDB 971168 D01 Section 5.6
KDB 412172 D01 Determining ERP and EIRP v01r01

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

**OUTPUT POWER FOR LTE BAND 7**

| Part 27 / RSS 199 | |
|---|---|
| EIRP Limit (W) | 2.00 |
| Antenna Gain (dBi) | -0.90 |

| Bandwidth (MHz) | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
|---|---|---|---|---|---|---|---|---|
| 10+20 | QPSK | 2505.5 | 2560.0 | 25.0 | 24.10 | 0.257 | 28462 | 28M5G7W |
| | 16QAM | | | 24.0 | 23.10 | 0.204 | 28361 | 28M4D7W |
| | 64QAM | | | 23.0 | 22.10 | 0.162 | 27971 | 28M0D7W |
| 20+10 | QPSK | 2510.0 | 2564.5 | 25.0 | 24.10 | 0.257 | 28421 | 28M4G7W |
| | 16QAM | | | 23.8 | 22.90 | 0.195 | 28279 | 28M3D7W |
| | 64QAM | | | 23.1 | 22.20 | 0.166 | 27974 | 28M0D7W |
| 15+15 | QPSK | 2507.5 | 2562.5 | 25.0 | 24.10 | 0.257 | 28569 | 28M6G7W |
| | 16QAM | | | 24.0 | 23.10 | 0.204 | 28559 | 28M6D7W |
| | 64QAM | | | 23.1 | 22.20 | 0.166 | 28547 | 28M5D7W |
| 15+20 | QPSK | 2507.8 | 2560.0 | 25.0 | 24.10 | 0.257 | 32749 | 32M7G7W |
| | 16QAM | | | 24.1 | 23.20 | 0.209 | 32801 | 32M8D7W |
| | 64QAM | | | 23.0 | 22.10 | 0.162 | 32764 | 32M8D7W |
| 20+15 | QPSK | 2510.0 | 2562.2 | 25.0 | 24.10 | 0.257 | 33083 | 33M1G7W |
| | 16QAM | | | 23.9 | 23.00 | 0.200 | 33061 | 33M1D7W |
| | 64QAM | | | 23.0 | 22.10 | 0.162 | 32805 | 32M8D7W |
| 20+20 | QPSK | 2510.0 | 2560.0 | 25.0 | 24.10 | 0.257 | 37909 | 37M9G7W |
| | 16QAM | | | 24.1 | 23.20 | 0.209 | 37929 | 37M9D7W |
| | 64QAM | | | 23.2 | 22.30 | 0.170 | 37592 | 37M6D7W |

**OUTPUT POWER FOR LTE BAND 41**

| Part 27 | |
|---|---|
| EIRP Limit (W) | 2.00 |
| Antenna Gain (dBi) | -0.90 |

| Bandwidth (MHz) | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
|---|---|---|---|---|---|---|---|---|
| 5+20 | QPSK | 2499.3 | 2680.0 | 25.0 | 24.10 | 0.257 | 23415 | 23M4G7W |
| | 16QAM | | | 23.7 | 22.80 | 0.191 | 23433 | 23M4D7W |
| | 64QAM | | | 22.7 | 21.80 | 0.151 | 23138 | 23M1D7W |
| 20+5 | QPSK | 2506.0 | 2686.7 | 25.0 | 24.10 | 0.257 | 23464 | 23M5G7W |
| | 16QAM | | | 23.6 | 22.70 | 0.186 | 23364 | 23M4D7W |
| | 64QAM | | | 22.6 | 21.70 | 0.148 | 23244 | 23M2D7W |
| 10+20 | QPSK | 2501.5 | 2680.0 | 25.0 | 24.10 | 0.257 | 28307 | 28M3G7W |
| | 16QAM | | | 23.9 | 23.00 | 0.200 | 28110 | 28M1D7W |
| | 64QAM | | | 23.0 | 22.10 | 0.162 | 27814 | 27M8D7W |
| 20+10 | QPSK | 2506.0 | 2684.5 | 25.0 | 24.10 | 0.257 | 28231 | 28M2G7W |
| | 16QAM | | | 24.1 | 23.20 | 0.209 | 28174 | 28M2D7W |
| | 64QAM | | | 23.1 | 22.20 | 0.166 | 27962 | 28M0D7W |
| 15+15 | QPSK | 2503.5 | 2682.5 | 25.0 | 24.10 | 0.257 | 28748 | 28M7G7W |
| | 16QAM | | | 24.0 | 23.10 | 0.204 | 28686 | 28M7D7W |
| | 64QAM | | | 22.9 | 22.00 | 0.158 | 28551 | 28M6D7W |
| 15+20 | QPSK | 2503.8 | 2680.0 | 25.0 | 24.10 | 0.257 | 33041 | 33M0G7W |
| | 16QAM | | | 24.0 | 23.10 | 0.204 | 32941 | 32M9D7W |
| | 64QAM | | | 23.0 | 22.10 | 0.162 | 32767 | 32M8D7W |
| 20+15 | QPSK | 2506.0 | 2682.2 | 25.0 | 24.10 | 0.257 | 33039 | 33M0G7W |
| | 16QAM | | | 24.2 | 23.30 | 0.214 | 33011 | 33M0D7W |
| | 64QAM | | | 23.2 | 22.30 | 0.170 | 32630 | 32M6D7W |
| 20+20 | QPSK | 2506.0 | 2680.0 | 25.0 | 24.10 | 0.257 | 37942 | 37M9G7W |
| | 16QAM | | | 24.2 | 23.30 | 0.214 | 37884 | 37M9D7W |
| | 64QAM | | | 23.2 | 22.30 | 0.170 | 37461 | 37M5D7W |

## 5.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 00.28.02

## 5.4. MAXIMUM ANTENNA GAIN

Please see table below:

| LTE Bands | ANT 1 Antenna Gain (dBi) | ANT 2 Antenna Gain (dBi) |
|---|---|---|
| LTE Band 7, 2500 – 2570 MHz | -0.9 | -1.6 |
| LTE Band 41, 2496 – 2690 MHz | -0.9 | -1.6 |

## 5.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports LTE dual carrier Bands of: Band 7, and Band 41.

LTE Band 38 (2570-2620MHz) is covered by LTE Band 41 because it is a subset of LTE band 41. Also, they have the same output power and supported bandwidths on Ant 1.

The worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM and 64QAM modulations. It was found that QPSK and 16QAM results were worst case. All testing was performed using QPSK and 16QAM modulations to represent the worst case. Tests were performed on the conducted test at LAT 1 antenna as worst case since it has higher output powers.

The EUT was investigated in three orthogonal orientations X/Y/Z on both LAT 1 and UAT 1 antennas, it was determined that Y (Landscape) orientation was worst-case orientation for all bands on both antennas without AC/DC adapter, headphones, or laptop.

Radiated spurious emissions were investigated below 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found on below 30MHz and 30MHz-1GHz.

For simultaneous transmission of multiple channels in the 2.4/5 GHz and Cellular bands, no noticeable emission was found.

## 5.6. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Support Equipment List | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** |
| Laptop AC/DC adapter | Apple | MD592LL/A | N/A |
| Laptop | Apple | A1466 | C02PS2H6G08S |

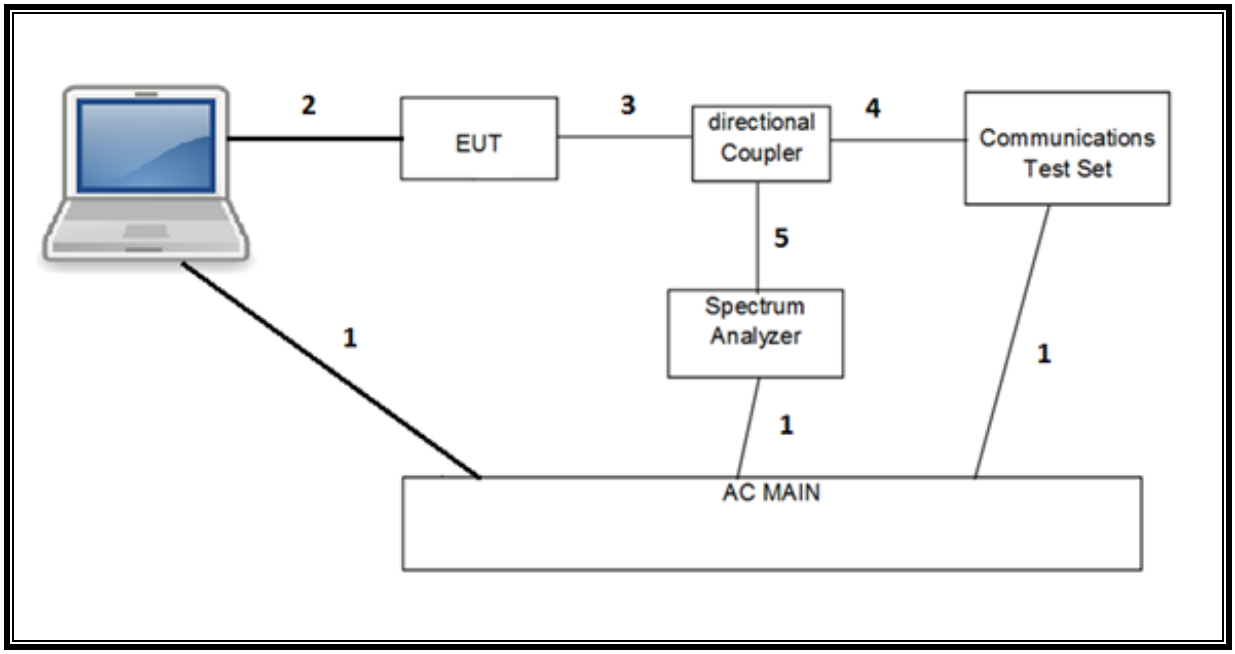
**I/O CABLES (RF Conducted Test)**

| I/O Cable List | | | | | | |
|---|---|---|---|---|---|---|
| **Cable No** | **Port** | **# of identical ports** | **Connector Type** | **Cable Type** | **Cable Length (m)** | **Remarks** |
| 1 | AC | 3 | US 115V | Un-shielded | 2.0m | N/A |
| 2 | USB | 1 | DC | Un-shielded | 1.0m | N/A |
| 3 | RF In/Out | 1 | EUT | Un-shielded | 0.6m | N/A |
| 4 | RF In/Out | 1 | Communication Test Set | Un-shielded | 1.2m | N/A |
| 5 | RF In/Out | 1 | Barrel | N/A | N/A | N/A |

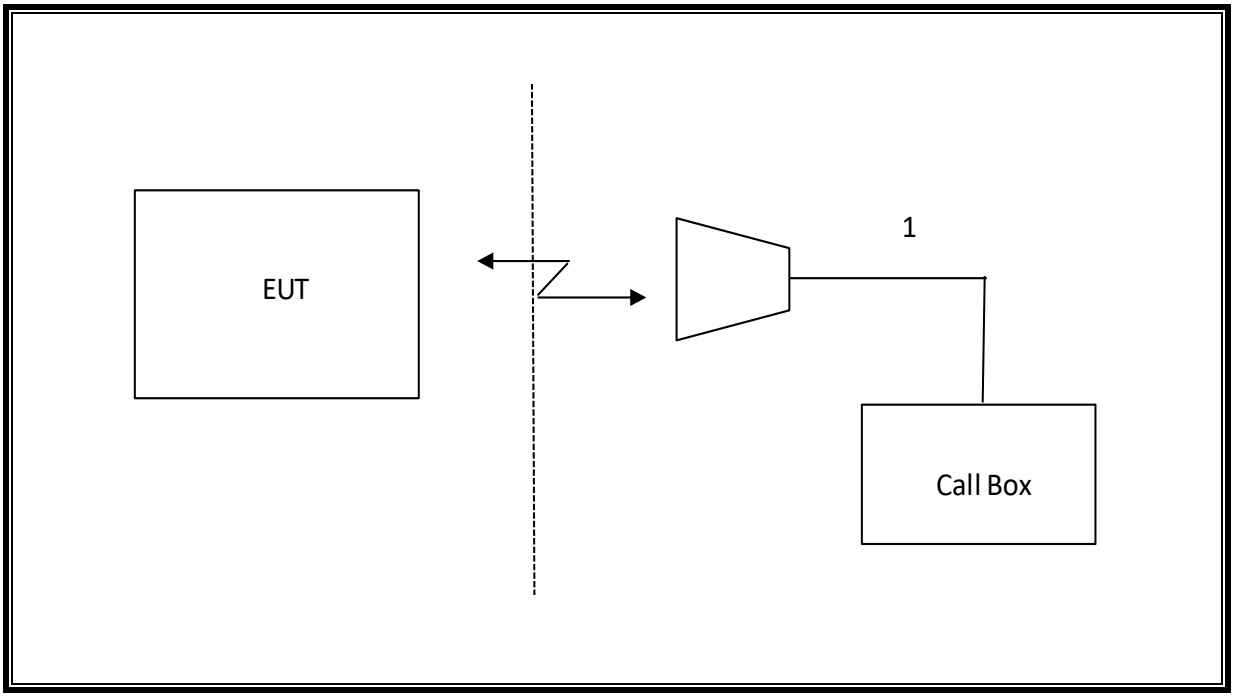
**I/O CABLES (RF Radiated Test)**

| I/O Cable List | | | | | | |
|---|---|---|---|---|---|---|
| **Cable No** | **Port** | **# of identical ports** | **Connector Type** | **Cable Type** | **Cable Length (m)** | **Remarks** |
| 1 | RF In/Out | 1 | Antenna | Un-shielded | 5.0m | N/A |

**CONDUCTED SETUP**




**RADIATED SETUP**



# 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| TEST EQUIPMENT LIST | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Asset** | **Cal Due** |
| Antenna, Horn 1-18GHz | ETS Lindgren | 3117 | T119 | 04/03/2019 |
| *Antenna, Broadband Hybrid, 30MHz to 2000MHz | Sunol Sciences | JB3 | T900 | 5/31/2018 |
| Amplifier, 1 to 18GHz | Miteq | AFS42-00101800-25-S-42 | T1131 | 12/30/2018 |
| *Amplifier, 10KHz to 1GHz, 32dB | Sonoma | 310N | T285 | 6/24/2018 |
| Spectrum Analyzer, PXA 3Hz to 44GHz | Keysight | N9030A | T1113 | 12/21/2018 |
| Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer | Keysight | N9030A | T342 | 2/22/2019 |
| Spectrum Analyzer, PSA 3Hz to 44GHz | Keysight | E4446A | T123 | 10/28/2018 |
| Wideband Communication Test Set, Call Box | R&S GmbH & Co. KG | CMW500 | AE0038201512 | connection purpose only |
| Directional Coupler | KRYTAR | 152610 | T1536 | 4/27/2019 |
| Directional Coupler | KRYTAR | 152610 | T1537 | 4/27/2019 |
| Power Meter, P-series single channel | Keysight | N1912A | T1265 | 12/15/2018 |
| Power Sensor, P - series, 50MHz to 18GHz, Wideband | Keysight | N1921A | T750 | 10/27/2018 |
| Filter, HPF 3.0GHz | MICROTRONICS | HPM17543 | T487 | 12/04/2018 |
| Filter, HPF 1.2GHz | Micro-Tronics | WHKX1.2/15G-6ST | T1182 | 05/19/2019 |
| *Spectrum Analyzer, PXA, 3Hz to 44GHz | Keysight | N9030A | T1210 | 07/17/2018 |
| Wideband Communication Test Set, Call Box | R&S GmbH & Co. KG | CMW500 | T959 | 02/17/2019 |
| Wideband Communication Test Set, Call Box | R&S GmbH & Co. KG | CMW500 | T971 | 02/19/2019 |
| Chamber, Environmental | Cincinnati Sub Zero | ZPHS-8-3.5-SCT/WC | T754 | 09/05/2018 |
| Amplifier, 26.5GHz to 40GHz | Miteq | NSP 4000 SP2 | T1864 | 03/09/2019 |
| Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum | Keysight | 8449B | T404 | 03/09/2019 |
| Antenna, Horn 18 to 26.5GHz | ARA | MWH-1826/B | T447 | 6/16/2019 |
| Antenna, Horn 26.5GHz to 40GHz | ARA | MWH-2640 | T90 | 8/25/2018 |
| Spectrum Analyzer | Keysight | 8564E | T106 | 9/7/2017 |
| Antenna, Active Loop 9KHz to 30MHz | EMCO | 6502 | T1616 | 09/14/2018 |
| **UL AUTOMATION SOFTWARE** | | | | |
| CLT Software | UL | UL RF | Ver 1.7, November 2015 | |
| Power Measurement Software | UL | UL RF | Ver 2.2, June 2017 | |

**NOTES:**

1. Equipment listed above that calibrated during the testing period was set for test after the calibration. *Testing is completed before equipment expiration date.

# 7. RF OUTPUT POWER VERIFICATION

**RULE PART(S)**

§2.1046, §27.50

**MODES TESTED**

- LTE Band 7
- LTE Band 41

**RESULT**

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

## 7.1. LTE BAND 7

| ID: | 39004 | Date: | 6/18/18 |
|---|---|---|---|

**OUTPUT POWER FOR LTE BAND 7 (10.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 10MHz / 20MHz | 2505.5 | 2519.9 | 1 | 49 | 1 | 0 | **25.0** | **24.0** | 23.0 | 20.1 | 19.0 | 17.6 |
| | | | 50 | 0 | 100 | 0 | 20.9 | 19.9 | 19.9 | 21.3 | 17.0 | 16.3 |
| | 2525.6 | 2540.0 | 1 | 49 | 1 | 0 | 24.6 | 24.0 | 22.8 | **21.5** | **20.4** | **19.7** |
| | | | 50 | 0 | 100 | 0 | 20.8 | 19.8 | 19.7 | 17.9 | 16.9 | 16.2 |
| | 2545.6 | 2560.0 | 1 | 49 | 1 | 0 | 24.7 | 23.9 | **23.0** | 19.9 | 19.2 | 18.3 |
| | | | 50 | 0 | 100 | 0 | 20.7 | 19.7 | 19.7 | 18.0 | 17.1 | 16.2 |

**OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 10.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz / 10MHz | 2510.0 | 2524.4 | 1 | 99 | 1 | 0 | **25.0** | 23.8 | 22.8 | 21.3 | 20.7 | **19.8** |
| | | | 1 | 0 | 1 | 49 | 16.4 | 16.7 | 16.3 | 14.9 | 14.9 | 14.9 |
| | | | 100 | 0 | 50 | 0 | 22.9 | 21.9 | 20.9 | 21.3 | 20.3 | 19.4 |
| | 2530.1 | 2544.5 | 1 | 99 | 1 | 0 | 24.9 | **23.8** | **23.1** | **21.5** | **20.7** | 19.5 |
| | | | 1 | 0 | 1 | 49 | 16.1 | 16.2 | 16.3 | 14.7 | 14.7 | 14.6 |
| | | | 100 | 0 | 50 | 0 | 22.7 | 21.7 | 21.8 | 21.2 | 20.1 | 19.3 |
| | 2550.1 | 2564.5 | 1 | 99 | 1 | 0 | 24.6 | 23.7 | 22.7 | 21.2 | 20.3 | 19.2 |
| | | | 1 | 0 | 1 | 49 | 16.0 | 15.9 | 16.1 | 14.6 | 14.6 | 14.6 |
| | | | 100 | 0 | 50 | 0 | 22.5 | 21.5 | 21.5 | 21.0 | 20.0 | 18.9 |

**OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 15.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 15MHz / 15MHz | 2507.5 | 2522.5 | 1 | 74 | 1 | 0 | **25.0** | 24.0 | **23.1** | **21.5** | **20.7** | **19.7** |
| | | | 75 | 0 | 75 | 0 | 21.7 | 20.7 | 20.5 | 20.2 | 19.2 | 18.4 |
| | 2527.5 | 2542.5 | 1 | 74 | 1 | 0 | 24.9 | **24.0** | 23.1 | 21.5 | 20.6 | 19.7 |
| | | | 75 | 0 | 75 | 0 | 21.6 | 20.6 | 20.6 | 20.0 | 19.1 | 18.2 |
| | 2547.5 | 2562.5 | 1 | 74 | 1 | 0 | 24.7 | 23.8 | 22.8 | 21.2 | 20.4 | 19.2 |
| | | | 75 | 0 | 75 | 0 | 21.6 | 20.4 | 20.4 | 21.3 | 19.0 | 18.0 |

**OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 15MHz / 20MHz | 2507.8 | 2524.9 | 1 | 74 | 1 | 0 | **25.0** | **24.1** | **23.0** | **21.5** | **20.6** | 19.4 |
| | | | 75 | 0 | 100 | 0 | 21.4 | 20.4 | 20.4 | 19.8 | 18.8 | 17.9 |
| | 2525.3 | 2542.4 | 1 | 74 | 1 | 0 | 24.8 | 23.8 | 23.0 | 21.5 | 20.5 | **19.7** |
| | | | 75 | 0 | 100 | 0 | 21.3 | 20.2 | 20.2 | 19.7 | 18.7 | 18.0 |
| | 2542.9 | 2560.0 | 1 | 74 | 1 | 0 | 24.7 | 23.9 | 22.9 | 21.3 | 20.4 | 19.5 |
| | | | 75 | 0 | 100 | 0 | 21.2 | 20.1 | 20.2 | 19.5 | 18.6 | 17.7 |

**OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 15.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz / 15MHz | 2510.0 | 2527.1 | 1 | 99 | 1 | 0 | 24.9 | **23.9** | 23.0 | **21.5** | 20.4 | 19.5 |
| | | | 100 | 0 | 75 | 0 | 22.4 | 21.5 | 21.3 | 20.5 | 17.8 | 17.0 |
| | 2527.6 | 2544.7 | 1 | 99 | 1 | 0 | **25.0** | 23.8 | **23.0** | 21.3 | **20.4** | **19.5** |
| | | | 100 | 0 | 75 | 0 | 22.2 | 21.2 | 21.2 | 20.5 | 19.5 | 18.6 |
| | 2545.1 | 2562.2 | 1 | 99 | 1 | 0 | 24.7 | 23.7 | 22.9 | 21.0 | 19.8 | 19.3 |
| | | | 100 | 0 | 75 | 0 | 22.0 | 21.0 | 20.9 | 20.2 | 19.3 | 18.4 |

**OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz/ 20MHz | 2510.0 | 2529.8 | 1 | 99 | 1 | 0 | 24.9 | **24.1** | 23.1 | **21.5** | 20.6 | 19.5 |
| | | | 1 | 0 | 1 | 99 | 13.2 | 13.4 | 13.5 | 11.6 | 11.9 | 11.8 |
| | | | 100 | 0 | 100 | 0 | 21.9 | 20.8 | 20.8 | 20.3 | 19.4 | 18.4 |
| | 2525.1 | 2544.9 | 1 | 99 | 1 | 0 | **25.0** | 23.8 | **23.2** | 21.2 | **20.7** | **19.7** |
| | | | 1 | 0 | 1 | 99 | 13.3 | 13.6 | 13.6 | 11.9 | 11.9 | 12.0 |
| | | | 100 | 0 | 100 | 0 | 21.8 | 20.8 | 20.8 | 20.2 | 19.2 | 18.3 |
| | 2540.2 | 2560.0 | 1 | 99 | 1 | 0 | 24.8 | 23.8 | 23.0 | 21.3 | 20.3 | 19.5 |
| | | | 1 | 0 | 1 | 99 | 13.1 | 13.0 | 13.0 | 11.7 | 11.8 | 12.3 |
| | | | 100 | 0 | 100 | 0 | 21.6 | 20.6 | 20.7 | 20.1 | 19.1 | 18.3 |

## 7.2. LTE BAND 41

| ID: | 10646 | Date: | 6/5/18 |
|---|---|---|---|

**OUTPUT POWER FOR LTE BAND 41 (5.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 5MHz / 20MHz | 2499.3 | 2511.0 | 1 | 24 | 1 | 0 | 24.6 | 23.6 | 22.6 | **22.5** | **21.8** | **20.7** |
| | | | 25 | 0 | 100 | 0 | 22.8 | 21.8 | 21.8 | 22.2 | 21.3 | 20.3 |
| | 2583.8 | 2595.5 | 1 | 24 | 1 | 0 | **25.0** | 23.3 | 22.6 | 20.3 | 19.2 | 18.4 |
| | | | 25 | 0 | 100 | 0 | 22.7 | 21.6 | 21.6 | 18.1 | 17.1 | 17.1 |
| | 2668.3 | 2680.0 | 1 | 24 | 1 | 0 | 24.6 | **23.7** | **22.7** | 22.2 | 21.1 | 20.5 |
| | | | 25 | 0 | 100 | 0 | 22.6 | 21.6 | 21.5 | 21.8 | 20.9 | 19.9 |

**OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 5.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz / 5MHz | 2506.0 | 2517.7 | 1 | 99 | 1 | 0 | **25.0** | 21.9 | 20.9 | **22.5** | **21.7** | **20.8** |
| | | | 1 | 0 | 1 | 24 | 23.0 | 14.1 | 14.2 | 16.5 | 16.7 | 16.6 |
| | | | 100 | 0 | 25 | 0 | 20.6 | 19.6 | 21.4 | 22.4 | 21.5 | 20.6 |
| | 2590.5 | 2602.2 | 1 | 99 | 1 | 0 | 24.5 | **23.6** | **22.6** | 20.5 | 19.7 | 18.7 |
| | | | 1 | 0 | 1 | 24 | 15.7 | 15.8 | 15.8 | 11.7 | 11.8 | 11.8 |
| | | | 100 | 0 | 25 | 0 | 22.2 | 21.2 | 21.2 | 18.3 | 17.3 | 17.3 |
| | 2675.0 | 2686.7 | 1 | 99 | 1 | 0 | 24.3 | 23.4 | 22.4 | 22.2 | 21.4 | 20.6 |
| | | | 1 | 0 | 1 | 24 | 15.6 | 15.6 | 15.7 | 16.0 | 16.1 | 16.2 |
| | | | 100 | 0 | 25 | 0 | 22.1 | 21.2 | 21.2 | 22.0 | 21.1 | 20.1 |

**OUTPUT POWER FOR LTE BAND 41 (10.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 10MHz / 20MHz | 2501.5 | 2515.9 | 1 | 49 | 1 | 0 | **25.0** | **23.9** | **23.0** | **22.5** | **21.7** | **20.9** |
| | | | 50 | 0 | 100 | 0 | 22.9 | 21.9 | 21.9 | 20.1 | 19.1 | 19.1 |
| | 2583.6 | 2598.0 | 1 | 49 | 1 | 0 | 24.7 | 23.7 | 22.9 | 22.3 | 21.3 | 20.6 |
| | | | 50 | 0 | 100 | 0 | 22.7 | 21.7 | 21.7 | 19.9 | 18.9 | 18.9 |
| | 2665.6 | 2680.0 | 1 | 49 | 1 | 0 | 24.6 | 23.7 | 22.7 | 22.0 | 21.0 | 20.2 |
| | | | 50 | 0 | 100 | 0 | 22.5 | 21.5 | 21.6 | 19.7 | 18.7 | 18.7 |

**OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 10.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz / 10MHz | 2506.0 | 2520.4 | 1 | 99 | 1 | 0 | **25.0** | **24.1** | **23.1** | **22.5** | **21.6** | **20.7** |
| | | | 100 | 0 | 50 | 0 | 22.8 | 21.7 | 21.7 | 22.3 | 21.5 | 20.5 |
| | 2588.1 | 2602.5 | 1 | 99 | 1 | 0 | 24.9 | 24.0 | 23.0 | 20.5 | 19.6 | 18.7 |
| | | | 100 | 0 | 50 | 0 | 22.6 | 21.5 | 21.6 | 18.3 | 17.3 | 17.3 |
| | 2670.1 | 2684.5 | 1 | 99 | 1 | 0 | 24.7 | 23.8 | 22.8 | 22.3 | 21.3 | 20.6 |
| | | | 100 | 0 | 50 | 0 | 22.5 | 21.5 | 21.5 | 21.9 | 21.0 | 20.1 |

**OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 15.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 15MHz / 15MHz | 2503.5 | 2518.5 | 1 | 74 | 1 | 0 | **25.0** | **24.0** | **22.9** | **22.5** | **21.6** | **20.6** |
| | | | 75 | 0 | 75 | 0 | 22.8 | 21.8 | 21.8 | 22.4 | 21.4 | 20.5 |
| | 2585.5 | 2600.5 | 1 | 74 | 1 | 0 | 24.9 | 23.9 | 22.9 | 20.5 | 19.5 | 18.5 |
| | | | 75 | 0 | 75 | 0 | 22.7 | 21.7 | 21.7 | 18.3 | 17.3 | 17.3 |
| | 2667.5 | 2682.5 | 1 | 74 | 1 | 0 | 24.8 | 23.8 | 22.7 | 22.1 | 21.3 | 20.4 |
| | | | 75 | 0 | 75 | 0 | 22.5 | 21.6 | 21.6 | 21.9 | 21.0 | 20.1 |

**OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 15MHz / 20MHz | 2503.8 | 2520.9 | 1 | 74 | 1 | 0 | **25.0** | 23.9 | **23.0** | **22.5** | **21.9** | **21.4** |
| | | | 75 | 0 | 100 | 0 | 21.2 | 20.2 | 20.2 | 21.3 | 20.0 | 18.2 |
| | 2583.3 | 2600.4 | 1 | 74 | 1 | 0 | 24.8 | 23.7 | 22.8 | 22.4 | 21.3 | 21.1 |
| | | | 75 | 0 | 100 | 0 | 21.0 | 20.0 | 19.9 | 20.1 | 18.9 | 20.0 |
| | 2662.9 | 2680.0 | 1 | 74 | 1 | 0 | 24.9 | **24.0** | 22.9 | 22.2 | 21.0 | 19.9 |
| | | | 75 | 0 | 100 | 0 | 21.1 | 20.0 | 20.0 | 19.9 | 18.7 | 18.1 |

**OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 15.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz / 15MHz | 2506.0 | 2523.1 | 1 | 99 | 1 | 0 | **25.0** | **24.2** | 23.1 | **22.5** | **21.5** | **21.0** |
| | | | 100 | 0 | 75 | 0 | 22.2 | 21.2 | 21.2 | 20.3 | 19.3 | 19.3 |
| | 2585.6 | 2602.7 | 1 | 99 | 1 | 0 | 24.9 | 24.1 | **23.2** | 22.4 | 21.5 | 20.7 |
| | | | 100 | 0 | 75 | 0 | 22.0 | 21.0 | 21.0 | 20.1 | 19.1 | 19.0 |
| | 2665.1 | 2682.2 | 1 | 99 | 1 | 0 | 24.9 | 24.2 | 23.1 | 22.2 | 21.2 | 20.4 |
| | | | 100 | 0 | 75 | 0 | 22.0 | 21.0 | 21.0 | 19.9 | 18.9 | 18.9 |

**OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 20.0MHz)**

| Bandwidth | PCC Frequency (MHz) | SCC1 Frequency (MHz) | PCC RB Size | PCC RB Offset | SCC1 RB Size | SCC1 RB Offset | Conducted Average (dBm) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Ant 1 | | | Ant 2 | | |
| | | | | | | | QPSK | 16QAM | 64QAM | QPSK | 16QAM | 64QAM |
| 20MHz/ 20MHz | 2506.0 | 2525.8 | 1 | 99 | 1 | 0 | 24.8 | 23.9 | 23.1 | **22.5** | **21.8** | **21.2** |
| | | | 1 | 0 | 1 | 99 | 13.3 | 13.3 | 13.1 | 13.5 | 13.5 | 18.1 |
| | | | 100 | 0 | 100 | 0 | 21.7 | 20.7 | 20.7 | 20.3 | 19.3 | 20.7 |
| | 2583.1 | 2602.9 | 1 | 99 | 1 | 0 | 24.9 | 24.0 | 23.1 | 22.4 | 21.5 | 20.5 |
| | | | 1 | 0 | 1 | 99 | 13.0 | 13.0 | 13.1 | 13.5 | 13.4 | 13.4 |
| | | | 100 | 0 | 100 | 0 | 21.5 | 20.5 | 20.5 | 20.2 | 19.1 | 19.1 |
| | 2660.2 | 2680.0 | 1 | 99 | 1 | 0 | **25.0** | **24.2** | **23.2** | 22.1 | 21.2 | 20.8 |
| | | | 1 | 0 | 1 | 99 | 13.4 | 13.4 | 13.4 | 13.2 | 13.2 | 17.8 |
| | | | 100 | 0 | 100 | 0 | 21.7 | 20.7 | 20.6 | 19.9 | 18.9 | 20.9 |

# 8. CONDUCTED TEST RESULTS

## 8.1. OCCUPIED BANDWIDTH

**RULE PART(S)**

§2.1049

**LIMITS**

For reporting purposes only

**TEST PROCEDURE**

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

**MODES TESTED**

- LTE Band 7
- LTE Band 41

**RESULTS**

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested

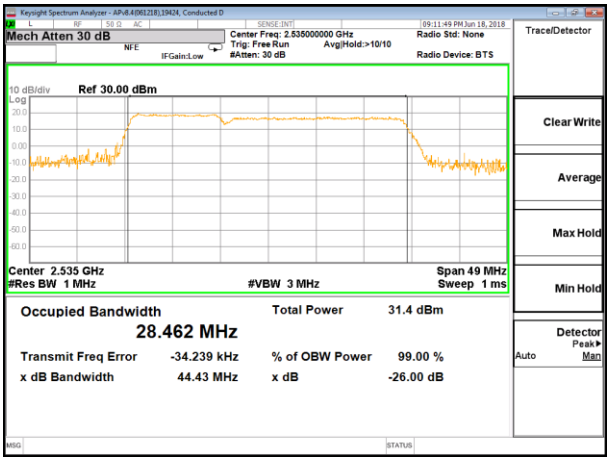
**LTE BAND 7**

| Band | Mode | RB Allocation/RB Offset | f (MHz) | 99% BW (MHz) | - 26dB BW (MHz) |
|---|---|---|---|---|---|
| LTE BAND 7 | 10MHz + 20MHz BAND QPSK | 50/0 + 100/0 | 2535 | 28.462 | 44.43 |
| | 10MHz + 20MHz BAND 16QAM | | | 28.361 | 39.35 |
| | 10MHz + 20MHz BAND 64QAM | | | 27.971 | 30.42 |
| | 20MHz + 10MHz BAND QPSK | 100/0 + 50/0 | | 28.421 | 47.56 |
| | 20MHz + 10MHz BAND 16QAM | | | 28.279 | 43.24 |
| | 20MHz + 10MHz BAND 64QAM | | | 27.974 | 30.06 |
| | 15MHz + 15MHz BAND QPSK | 75/0 + 75/0 | | 28.569 | 30.70 |
| | 15MHz + 15MHz BAND 16QAM | | | 28.559 | 30.71 |
| | 15MHz + 15MHz BAND 64QAM | | | 28.547 | 30.77 |
| | 15MHz + 20MHz BAND QPSK | 75/0 + 100/0 | | 32.749 | 35.12 |
| | 15MHz + 20MHz BAND 16QAM | | | 32.801 | 35.53 |
| | 15MHz + 20MHz BAND 64QAM | | | 32.764 | 35.25 |
| | 20MHz + 15MHz BAND QPSK | 100/0 + 75/0 | | 33.083 | 44.12 |
| | 20MHz + 15MHz BAND 16QAM | | | 33.061 | 44.98 |
| | 20MHz + 15MHz BAND 64QAM | | | 32.805 | 35.08 |
| | 20MHz + 20MHz BAND QPSK | 100/0 + 100/0 | | 37.909 | 46.38 |
| | 20MHz + 20MHz BAND 16QAM | | | 37.929 | 46.91 |
| | 20MHz + 20MHz BAND 64QAM | | | 37.592 | 40.00 |

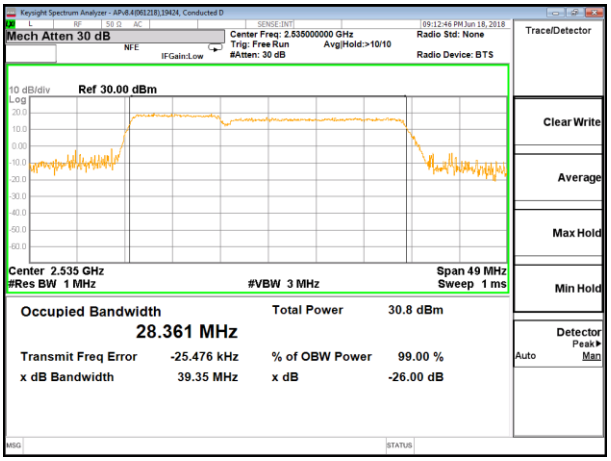
**LTE BAND 41**

| Band | Mode | RB Allocation/RB Offset | f (MHz) | 99% BW (MHz) | - 26dB BW (MHz) |
|---|---|---|---|---|---|
| LTE BAND 41 | 5MHz + 20MHz BAND QPSK | 25/0 + 100/0 | 2593 | 23.415 | 25.58 |
| | 5MHz + 20MHz BAND 16QAM | | | 23.433 | 25.17 |
| | 5MHz + 20MHz BAND 64QAM | | | 23.138 | 24.89 |
| | 20MHz + 5MHz BAND QPSK | 100/0 + 25/0 | | 23.464 | 25.66 |
| | 20MHz + 5MHz BAND 16QAM | | | 23.364 | 25.44 |
| | 20MHz + 5MHz BAND 64QAM | | | 23.244 | 24.96 |
| | 10MHz + 20MHz BAND QPSK | 50/0 + 100/0 | | 28.307 | 38.05 |
| | 10MHz + 20MHz BAND 16QAM | | | 28.110 | 30.80 |
| | 10MHz + 20MHz BAND 64QAM | | | 27.814 | 29.89 |
| | 20MHz + 10MHz BAND QPSK | 100/0 + 50/0 | | 28.231 | 33.63 |
| | 20MHz + 10MHz BAND 16QAM | | | 28.174 | 33.42 |
| | 20MHz + 10MHz BAND 64QAM | | | 27.962 | 30.09 |
| | 15MHz + 15MHz BAND QPSK | 75/0 + 75/0 | | 28.748 | 39.79 |
| | 15MHz + 15MHz BAND 16QAM | | | 28.686 | 35.99 |
| | 15MHz + 15MHz BAND 64QAM | | | 28.551 | 30.60 |
| | 15MHz + 20MHz BAND QPSK | 75/0 + 100/0 | | 33.041 | 47.51 |
| | 15MHz + 20MHz BAND 16QAM | | | 32.941 | 41.49 |
| | 15MHz + 20MHz BAND 64QAM | | | 32.767 | 35.09 |
| | 20MHz + 15MHz BAND QPSK | 100/0 + 75/0 | | 33.039 | 42.67 |
| | 20MHz + 15MHz BAND 16QAM | | | 33.011 | 42.04 |
| | 20MHz + 15MHz BAND 64QAM | | | 32.630 | 34.88 |
| | 20MHz + 20MHz BAND QPSK | 100/0 + 100/0 | | 37.942 | 52.14 |
| | 20MHz + 20MHz BAND 16QAM | | | 37.884 | 50.42 |
| | 20MHz + 20MHz BAND 64QAM | | | 37.461 | 39.94 |

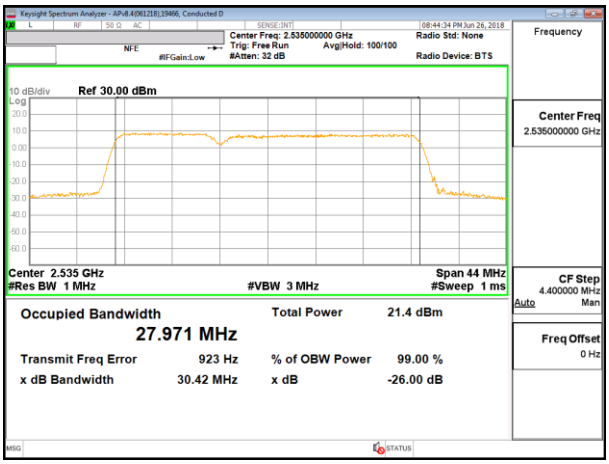
## 8.1.1. LTE BAND 7



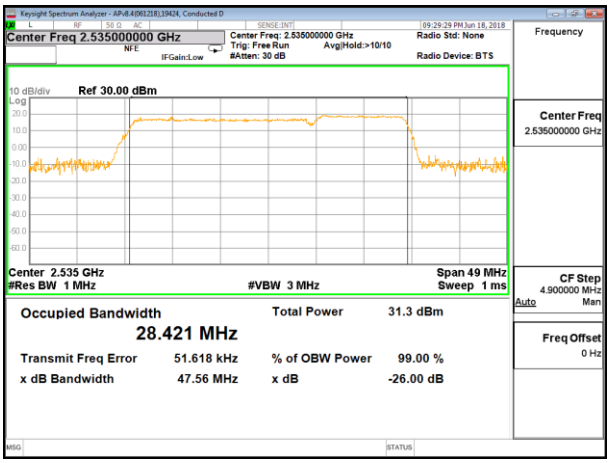

LTE B7 10MHz + 20MHz QPSK RB50-0 + RB100-0



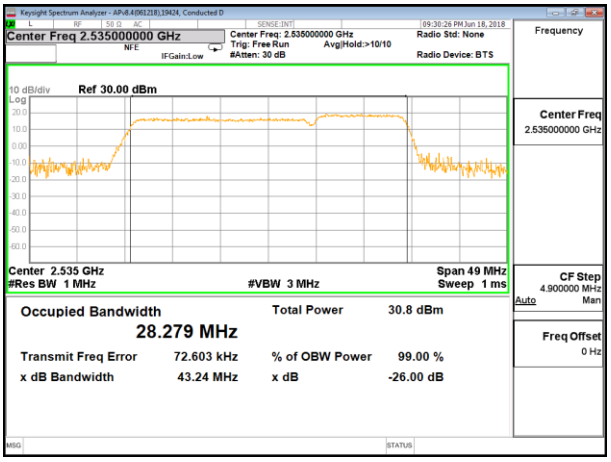

LTE B7 10MHz + 20MHz 16QAM RB50-0 + RB100-0



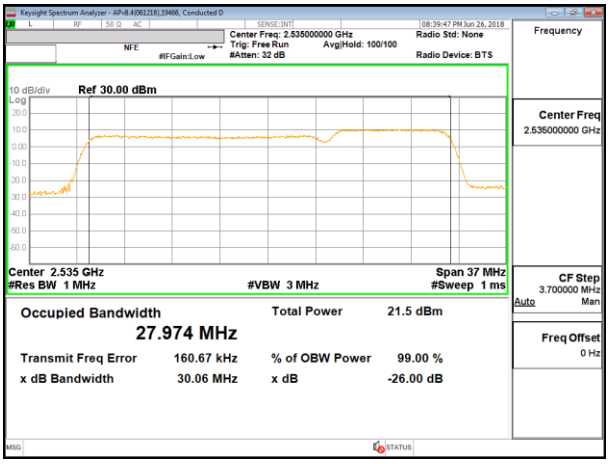

LTE B7 10MHz + 20MHz 64QAM RB50-0 + RB100-0



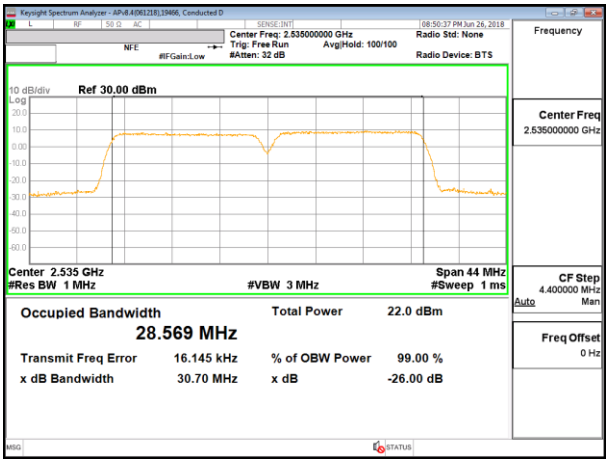

LTE B7 20MHz + 10MHz QPSK RB100-0 + RB50-0



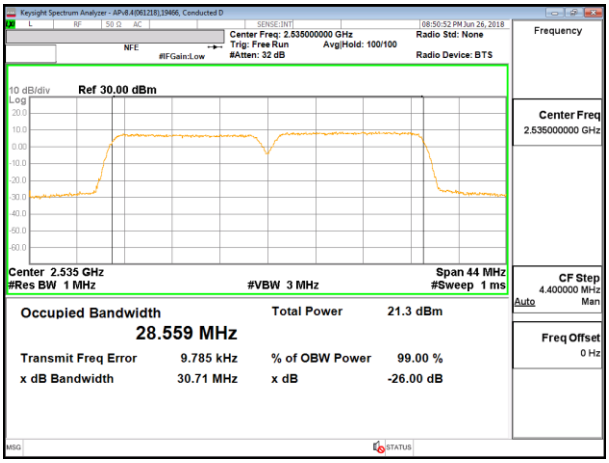

LTE B7 20MHz + 10MHz 16QAM RB100-0 + RB50-0



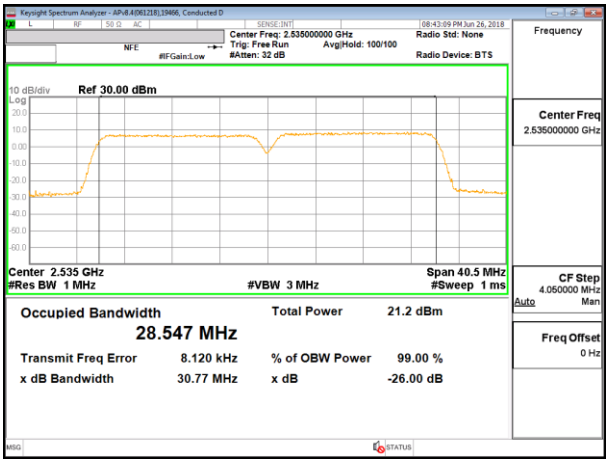

LTE B7 20MHz + 10MHz 64QAM RB100-0 + RB50-0



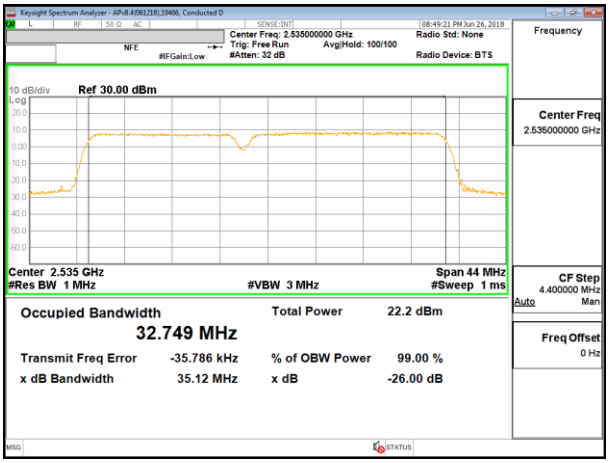

LTE B7 15MHz + 15MHz QPSK RB75-0 + RB75-0



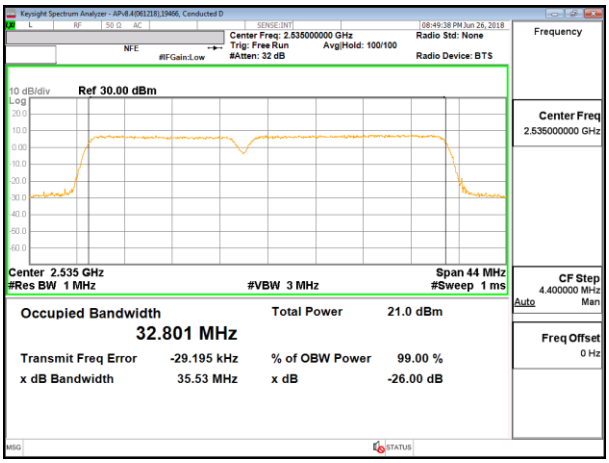

LTE B7 15MHz + 15MHz 16QAM RB75-0 + RB75-0



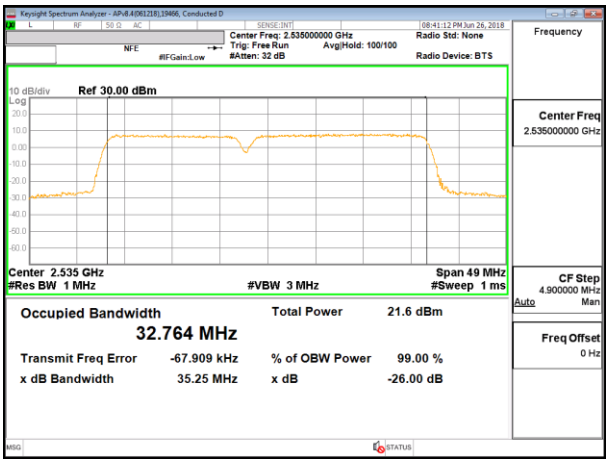

LTE B7 15MHz + 15MHz 64QAM RB75-0 + RB75-0



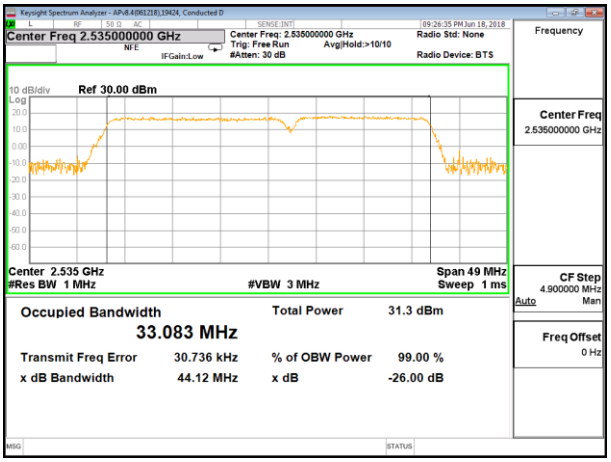

LTE B7 15MHz + 20MHz QPSK RB75-0 + RB100-0



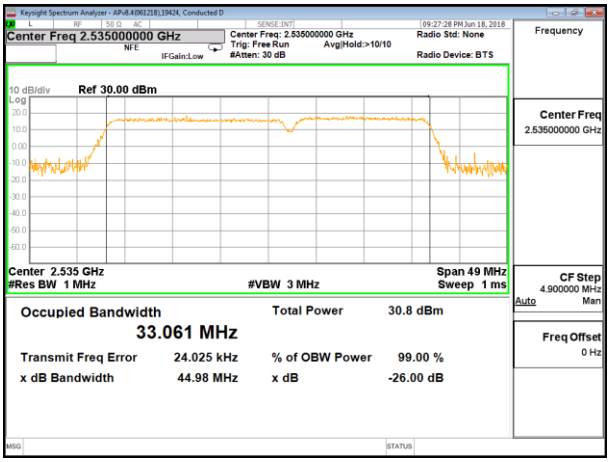

LTE B7 15MHz + 20MHz 16QAM RB75-0 + RB100-0



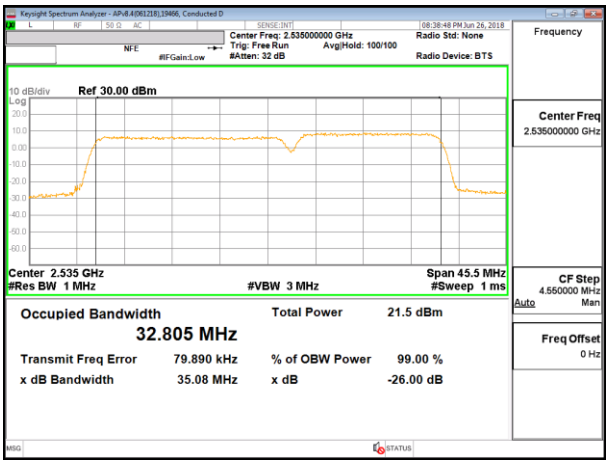

LTE B7 15MHz + 20MHz 64QAM RB75-0 + RB100-0



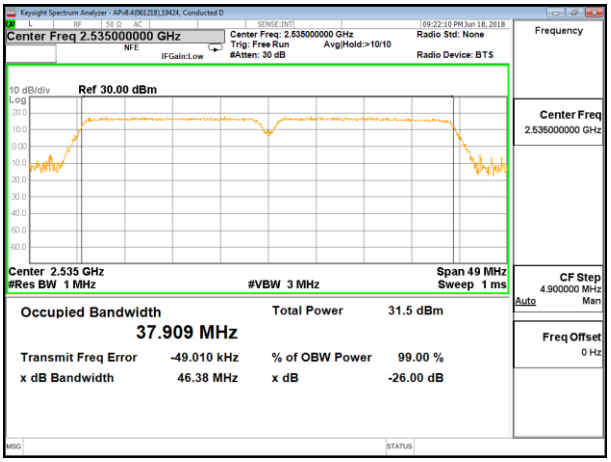

LTE B7 20MHz + 15MHz QPSK RB100-0 + RB75-0



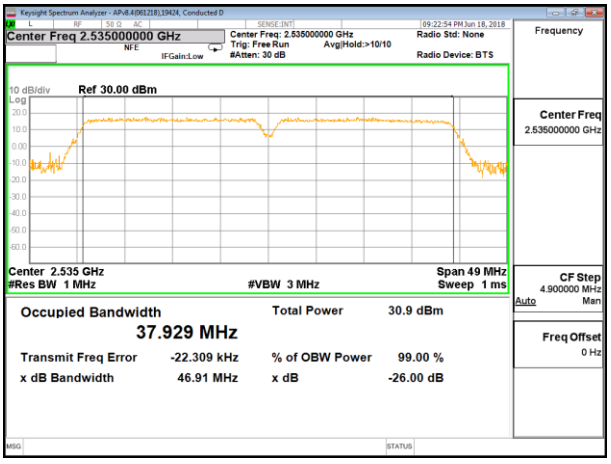

LTE B7 20MHz + 15MHz 16QAM RB100-0 + RB75-0



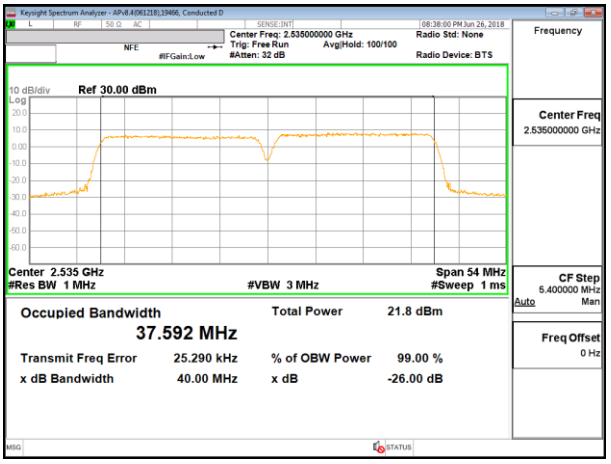

LTE B7 20MHz + 15MHz 64QAM RB100-0 + RB75-0




LTE B7 20MHz + 20MHz QPSK RB100-0 + RB100-0

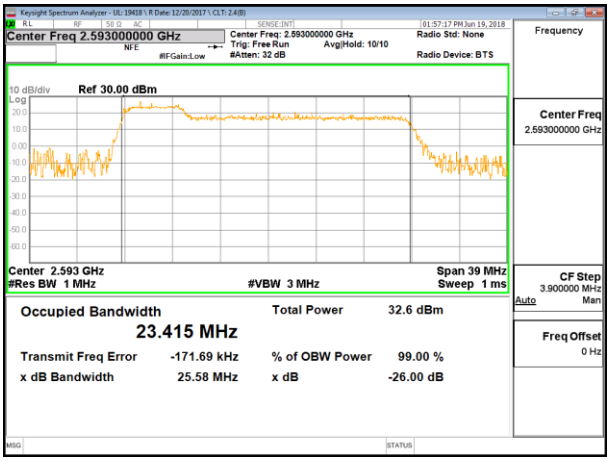



LTE B7 20MHz + 20MHz 16QAM RB100-0 + RB100-0

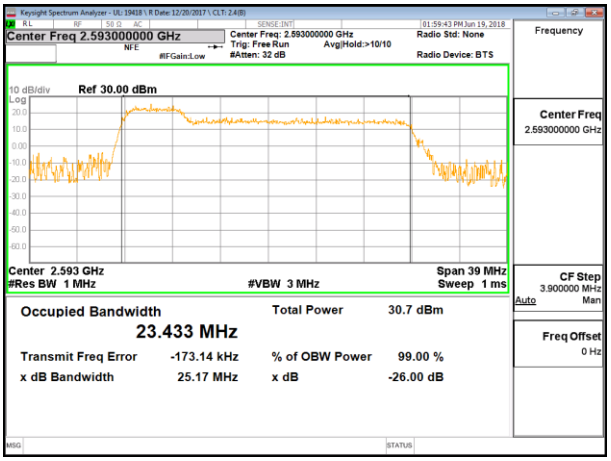



LTE B7 20MHz + 20MHz 64QAM RB100-0 + RB100-0

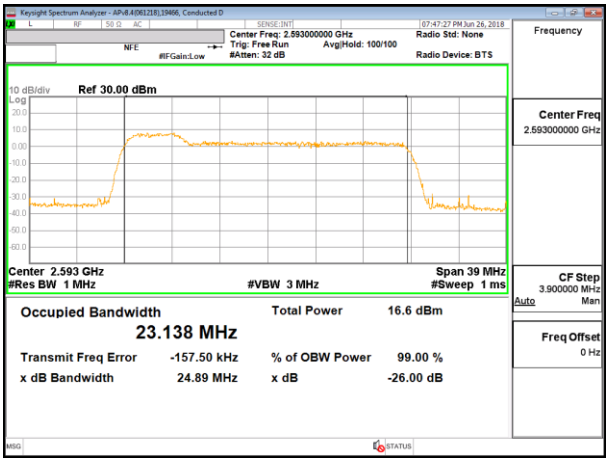
## 8.1.2. LTE BAND 41



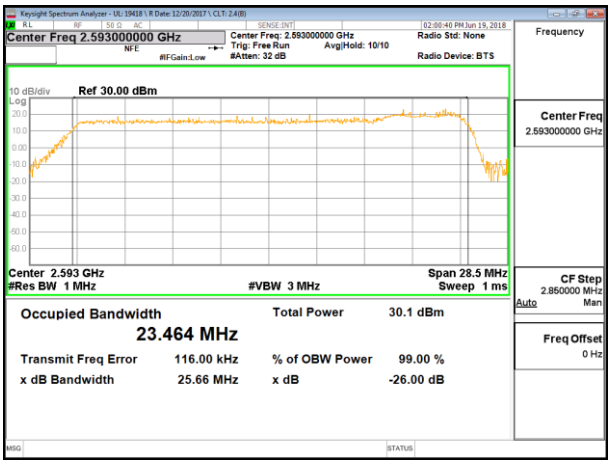

LTE B41 5MHz + 20MHz QPSK RB25-0 + RB100-0



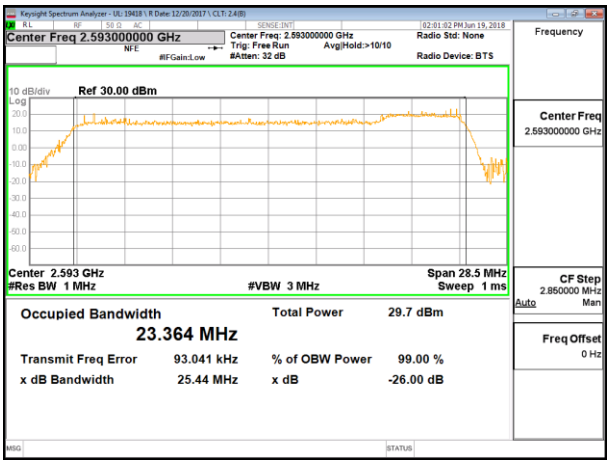

LTE B41 5MHz + 20MHz 16QAM RB25-0 + RB100-0



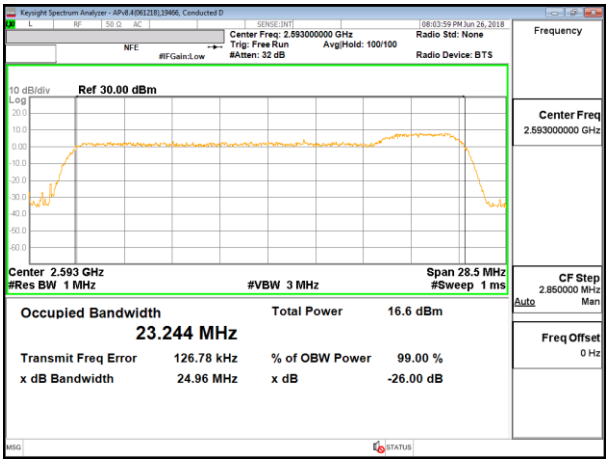

LTE B41 5MHz + 20MHz 64QAM RB25-0 + RB100-0



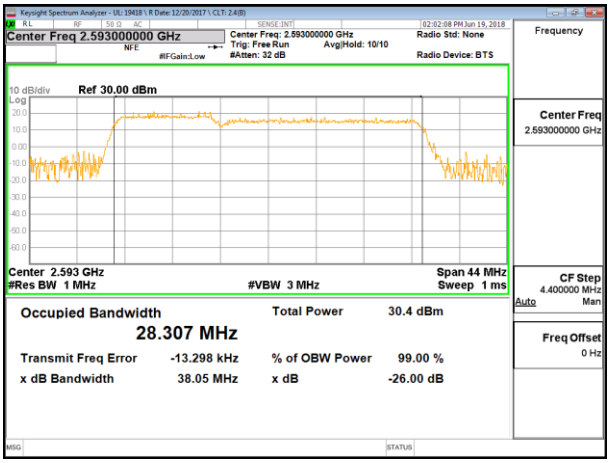

LTE B41 20MHz + 5MHz QPSK RB100-0 + RB25-0



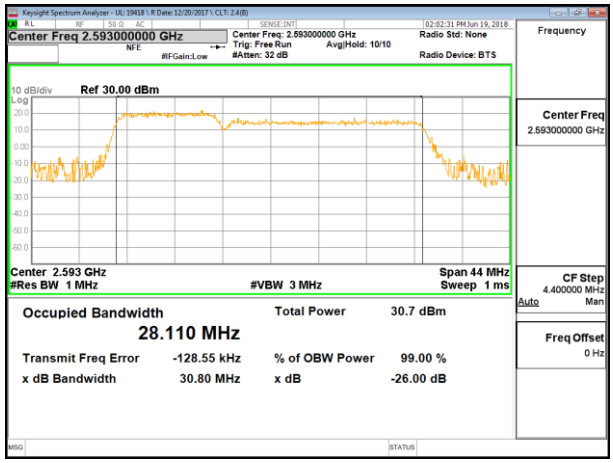

LTE B41 20MHz + 5MHz 16QAM RB100-0 + RB25-0



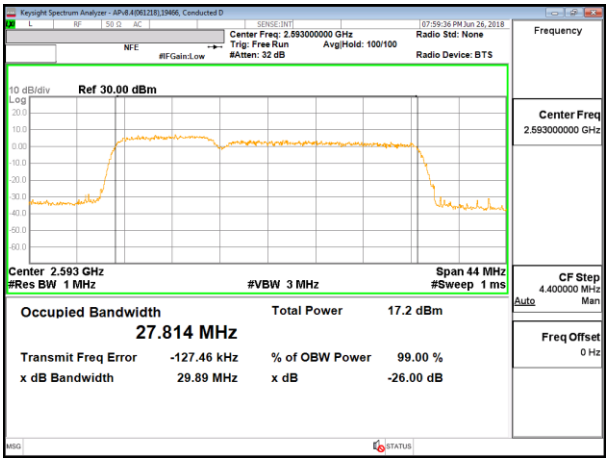

LTE B41 20MHz + 5MHz 64QAM RB100-0 + RB25-0



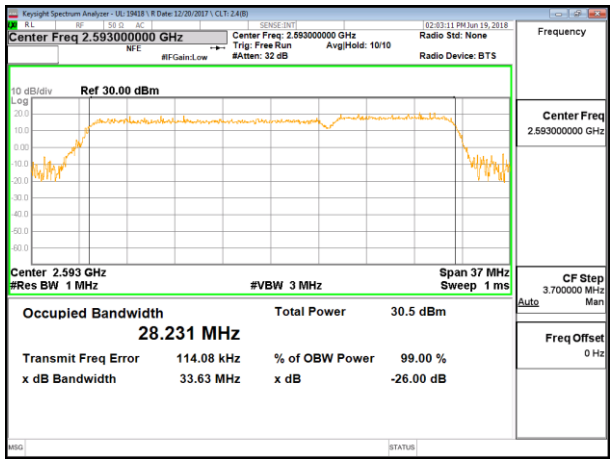

LTE B41 10MHz + 20MHz QPSK RB50-0 + RB100-0



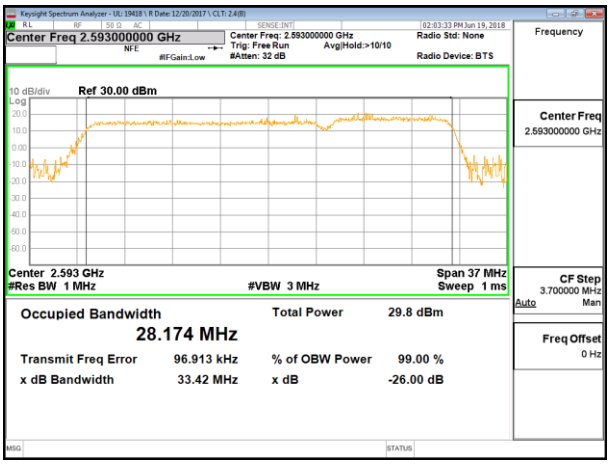

LTE B41 10MHz + 20MHz 16QAM RB50-0 + RB100-0



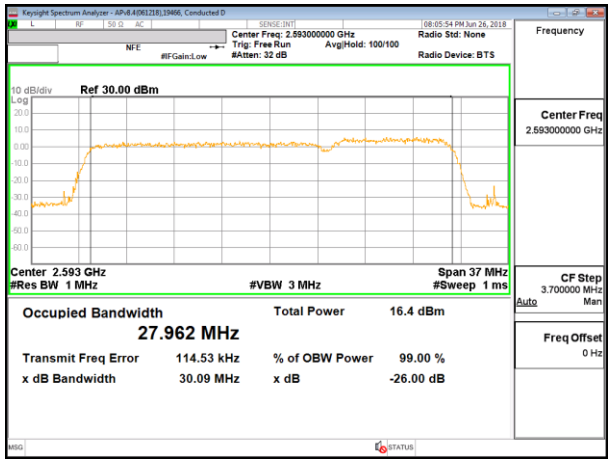

LTE B41 10MHz + 20MHz 64QAM RB50-0 + RB100-0



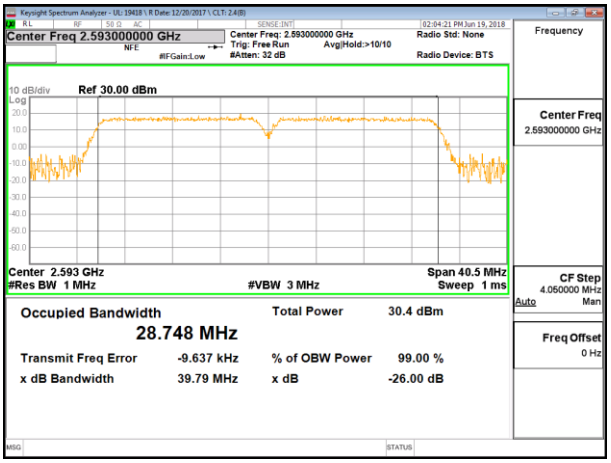

LTE B41 20MHz + 10MHz QPSK RB100-0 + RB50-0



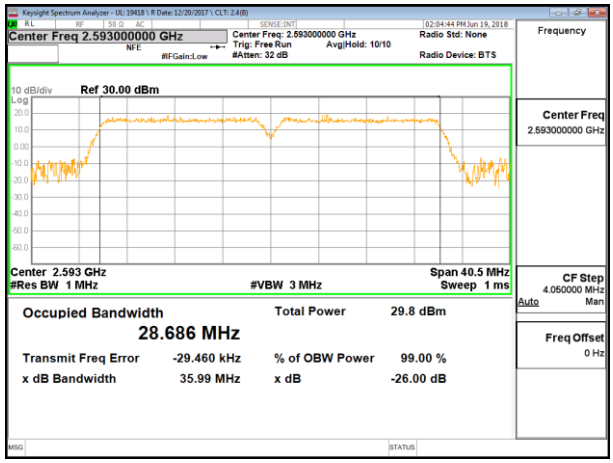

LTE B41 20MHz + 10MHz 16QAM RB100-0 + RB50-0



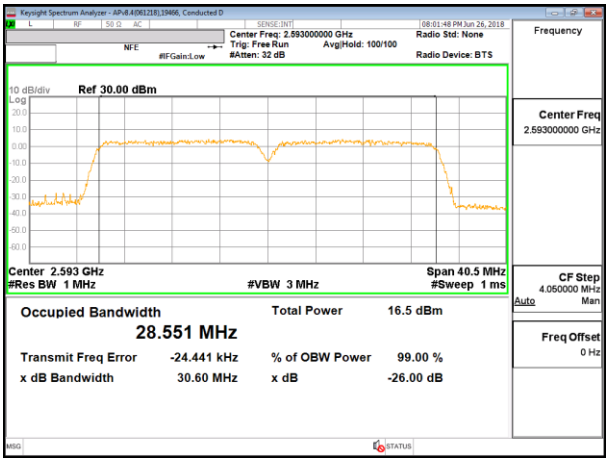

LTE B41 20MHz + 10MHz 64QAM RB100-0 + RB50-0



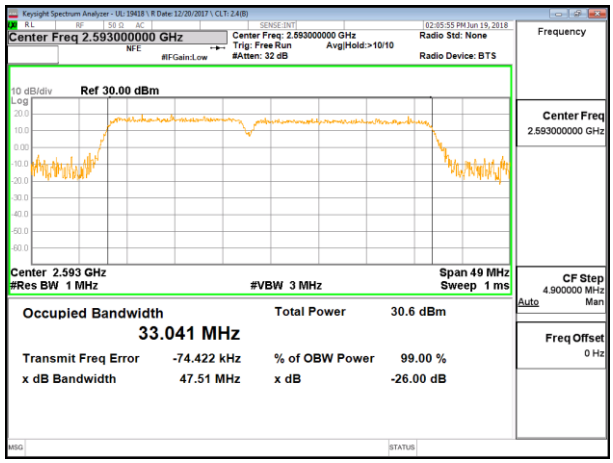

LTE B41 15MHz + 15MHz QPSK RB75-0 + RB75-0



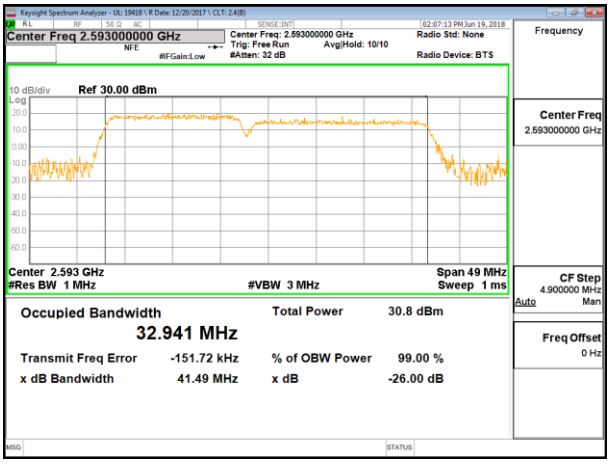

LTE B41 15MHz + 15MHz 16QAM RB75-0 + RB75-0



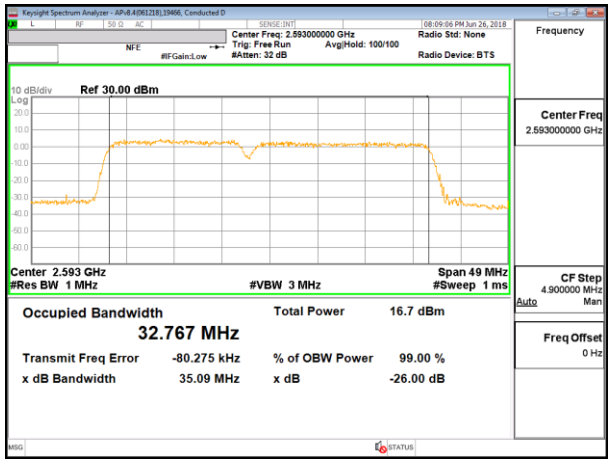

LTE B41 15MHz + 15MHz 64QAM RB75-0 + RB75-0



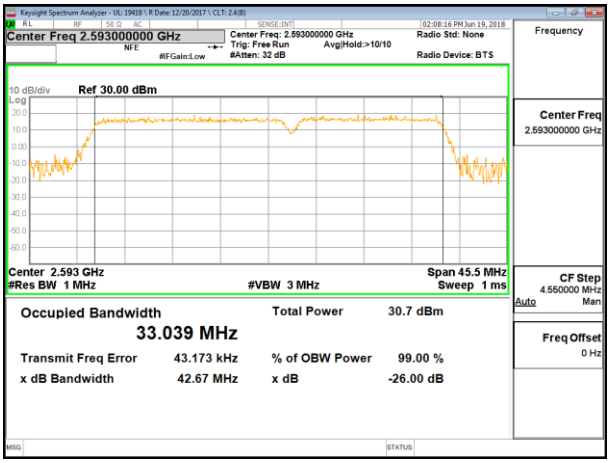

LTE B41 15MHz + 20MHz QPSK RB75-0 + RB100-0



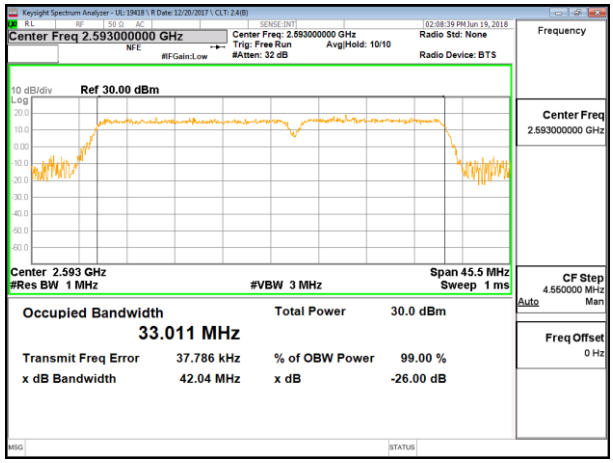

LTE B41 15MHz + 20MHz 16QAM RB75-0 + RB100-0



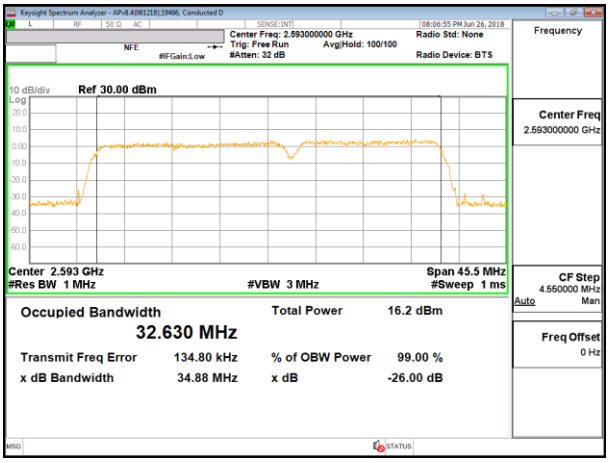

LTE B41 15MHz + 20MHz 64QAM RB75-0 + RB100-0



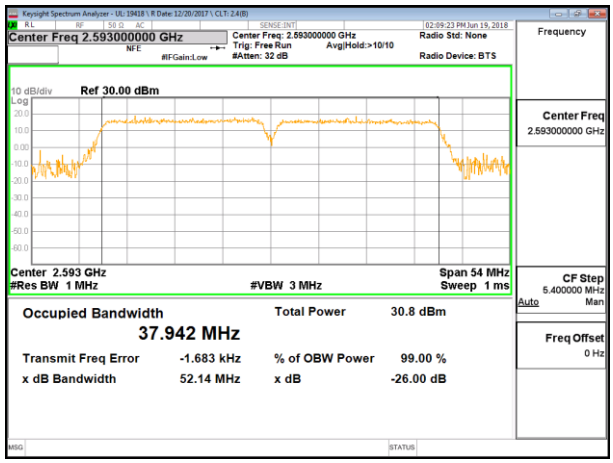

LTE B41 20MHz + 15MHz QPSK RB100-0 + RB75-0



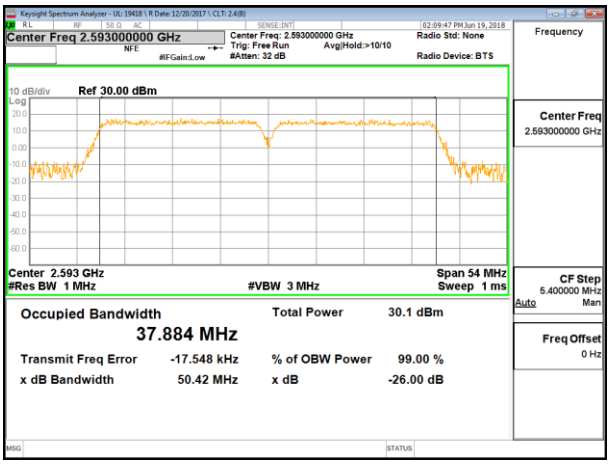

LTE B41 20MHz + 15MHz 16QAM RB100-0 + RB75-0



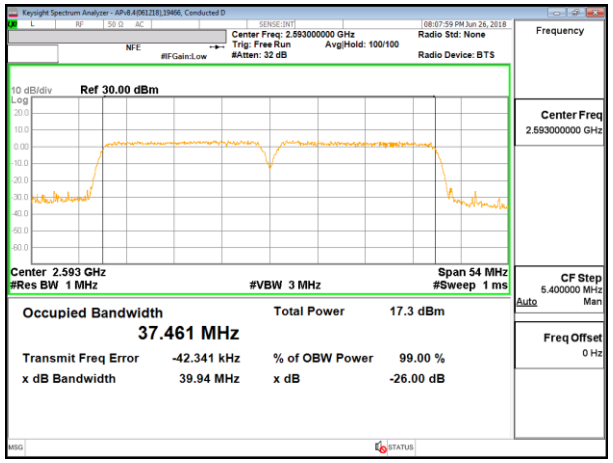

LTE B41 20MHz + 15MHz 64QAM RB100-0 + RB75-0




LTE B41 20MHz + 20MHz QPSK RB100-0 + RB100-0




LTE B41 20MHz + 20MHz 16QAM RB100-0 + RB100-0




LTE B41 20MHz + 20MHz 64QAM RB100-0 + RB100-0