



# **TEST REPORT**

**Report Number. :** 13171736-E8V3

**Applicant :** APPLE, INC  
1 APPLE PARK WAY  
CUPERTINO, CA 95014, U.S.A.

**Model :** A2402

**FCC ID :** BCG-E3543A

**EUT Description :** SMARTPHONE

**Test Standard(s) :** FCC CFR47 PART 22H, 24E, 27, 90S, 90R, AND 96

**Date Of Issue:**  
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NVLAP Lab code: 200065-0

Revision History

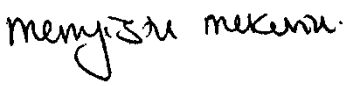
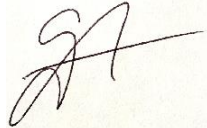
| Rev. | Issue Date | Revisions                                                                                          | Revised By       |
|------|------------|----------------------------------------------------------------------------------------------------|------------------|
| V1   | 9/14/2020  | Initial Review                                                                                     | Mengistu Mekuria |
| V2   | 9/15/2020  | Address TCB Questions                                                                              | John Thompson    |
| V3   | 9/18/2020  | 5G NR band description                                                                             | John Thompson    |
| V4   | 9/29/2020  | Updated Antenna gains, Updated spotcheck table to match Parent report for V4, Updated Section 5.8. | John Thompson    |

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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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A2402                                                                               |                                                                                       |
| FCC ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BCG-E3543A                                                                          |                                                                                       |
| EUT Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SMARTPHONE                                                                          |                                                                                       |
| Serial Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MODEL (A2102): C070287008PP5595 (Conducted) and G6TD200504HT (Radiated)             |                                                                                       |
| Date Tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | APRIL 21, 2020 to SEPTEMBER 29, 2020                                                |                                                                                       |
| Applicable Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FCC CFR47 22H, 24E, 27, 90S, 90R, AND 96                                            |                                                                                       |
| Test Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | COMPLIES                                                                            |                                                                                       |
| <p>UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.</p> <p>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 the U.S. government.</p> |                                                                                     |                                                                                       |
| Approved & Released By:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reviewed By:                                                                        | Prepared By:                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |
| Mengistu Mekuria<br>Lead Test Engineer<br>UL Verification Services Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Glenn Escano<br>Project Engineer<br>UL Verification Services Inc.                   | Sintia Andrean<br>Laboratory Engineer<br>UL Verification Services Inc.                |

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90, and Part 96
- [FCC KDB 971168 D01 v03r01](#): Power Meas License Digital Systems
- [FCC KDB 971168 D02 v02r01](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01 v01r01](#): Determining ERP and EIRP

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, 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                            | 47658 Kato Rd.                                   |
|------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|
| <input checked="" type="checkbox"/> Chamber A (IC:2324B-1) | <input type="checkbox"/> Chamber D (IC:22541-1) | <input type="checkbox"/> Chamber I (IC: 2324A-5) |
| <input checked="" type="checkbox"/> Chamber B (IC:2324B-2) | <input type="checkbox"/> Chamber E (IC:22541-2) | <input type="checkbox"/> Chamber J (IC: 2324A-6) |
| <input type="checkbox"/> Chamber C (IC:2324B-3)            | <input type="checkbox"/> Chamber F (IC:22541-3) | <input type="checkbox"/> Chamber K (IC: 2324A-1) |
|                                                            | <input type="checkbox"/> Chamber G (IC:22541-4) | <input type="checkbox"/> Chamber L (IC: 2324A-3) |
|                                                            | <input type="checkbox"/> Chamber H (IC:22541-5) | <input type="checkbox"/> Chamber M (IC: 2324A-2) |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324A.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

## 4. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

### 4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER                                           | U <sub>Lab</sub> |
|-----------------------------------------------------|------------------|
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz  | 3.39 dB          |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz    | 3.07 dB          |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB          |
| Worst Case Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB          |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB          |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB          |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.17 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%.

### 4.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

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)  
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

#### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.  
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

## 5. INTRODUCTION OF TEST DATA REUSE

### 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, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

### 5.2. INTRODUCTION

This application for certification is leveraging the data reuse procedures from KDB 484596 D01 based on reference FCC ID BCG-E3542A to cover variant model BCG-E3543A. The major difference between the parent/reference model and the variant model is the depopulation in the variant model of the mmWave transmitter. All other circuitry and features are identical. The data reuse test plan was approved via manufacturer KDB inquiry.

### 5.3. MODEL DIFFERENCES

The manufacturer hereby declares the following for models A2172 and A2402.

A2172 and A2402 are highly similar, with the only difference being the supported cellular bands.

They have the same PCB layout, design, common components, antennas, antenna locations and housing cases.

More specifically, their cellular modem, Wi-Fi, BT, NFC, WPT and UWB transmitters are identical, and removal of cellular bands is done by software and depopulation of band-specific components associated with the removed bands.

Spot check verification and additional full radiated spurious emission test on ANT2 have been done on model A2402 in accordance with the test plan approved via KDB inquiry. Comparison of the models, upper deviation is within 3dB range and all tests are under FCC/ISED Technical Limits. The results documented for model A2172 may be applied as representative to model A2402.

## 5.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

| A2402 SPOT CHECK RESULTS |                   |           |         |                        |                                             |                                        |            |                   |
|--------------------------|-------------------|-----------|---------|------------------------|---------------------------------------------|----------------------------------------|------------|-------------------|
| Technology               | Worst Mode        | Test Item | Channel | Measured Frequency MHz | Original Model: A2172<br>FCC ID: BCG-E3542A | Sub Model: A2402<br>FCC ID: BCG-E3543A | Delta (dB) | Remarks           |
| LTE<br>BAND 2            | QPSK @ 20 MHz BW  | EIRP      | Low     | 1860                   | 26 dBm                                      | 26 dBm                                 | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 7092.05                | -45.16 dBm                                  | -45.87 dBm                             | -0.71      | Noise Floor Level |
| LTE<br>BAND 5            | QPSK @ 10 MHz BW  | ERP       | High    | 844                    | 18.35 dBm                                   | 18.35 dBm                              | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 1668.51                | -42.64 dBm                                  | -58.17 dBm                             | -15.53     | Noise Floor Level |
| 5G NR<br>BAND N5         | QPSK @ 20 MHz BW  | ERP       | Mid     | 836.5                  | 18.15 dBm                                   | 18.15 dBm                              | 0          |                   |
|                          | QPSK @ highest BW | RSE       | High    | 2516.73                | -45.74 dBm                                  | -51.26 dBm                             | -5.52      | Noise Floor Level |
| LTE<br>BAND 7            | QPSK @ 20 MHz BW  | EIRP      | Mid     | 2535                   | 25.9 dBm                                    | 25.9 dBm                               | 0          |                   |
|                          | QPSK @ highest BW | RSE       | High    | 10297.32               | -43.33 dBm                                  | -40.52 dBm                             | 2.81       | Noise Floor Level |
| LTE<br>BAND 12           | QPSK @ 10 MHz BW  | ERP       | High    | 711                    | 18.55 dBm                                   | 18.35 dBm                              | -0.2       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 2829.43                |                                             |                                        |            |                   |
| 5G NR<br>BAND N12        | QPSK @ 15 MHz BW  | ERP       | Mid     | 707.5                  | 18.05 dBm                                   | 18.05 dBm                              | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 2818                   |                                             |                                        |            |                   |
| LTE<br>BAND 13           | QPSK @ 10 MHz BW  | ERP       | Mid     | 782                    | 18.05 dBm                                   | 17.65 dBm                              | -0.4       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 1563.95                |                                             |                                        |            |                   |
| LTE<br>BAND 14           | QPSK @ 10 MHz BW  | ERP       | Mid     | 793                    | 17.95 dBm                                   | 17.75 dBm                              | -0.2       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 1587.34                |                                             |                                        |            |                   |
| LTE<br>BAND 17           | QPSK @ 10 MHz BW  | ERP       | High    | 711                    | 18.55 dBm                                   | 17.95 dBm                              | -0.6       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 2840.43                |                                             |                                        |            |                   |
| LTE<br>BAND 25           | QPSK @ 20 MHz BW  | EIRP      | Mid     | 1882.5                 | 26 dBm                                      | 26 dBm                                 | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 7428                   |                                             |                                        |            |                   |
| LTE<br>BAND 26<br>(90S)  | QPSK @ 10 MHz BW  | ERP       | Mid     | 819                    | 18.35 dBm                                   | 18.35 dBm                              | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 3274.57                |                                             |                                        |            |                   |
| LTE<br>BAND 30<br>(NS1)  | QPSK @ 10 MHz BW  | EIRP      | Mid     | 2310                   | 23.5 dBm                                    | 22.6 dBm                               | -0.9       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 9246.62                |                                             |                                        |            |                   |
| LTE<br>BAND 41           | QPSK @ 20 MHz BW  | EIRP      | Low     | 2506                   | 26.9 dBm                                    | 26.9 dBm                               | 0          |                   |
|                          | QPSK @ highest BW | RSE       | High    | 10709.39               |                                             |                                        |            |                   |
| 5G NR<br>BAND N41        | QPSK @ 100 MHz BW | EIRP      | High    | 2640                   | 27.6 dBm                                    | 26.1 dBm                               | -1.5       |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 10363.82               |                                             |                                        |            |                   |
| LTE<br>BAND 48           | QPSK @ 20 MHz BW  | EIRP      | Low     | 3560                   | 22.7 dBm                                    | 21.9 dBm                               | -0.8       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 14498.91               |                                             |                                        |            |                   |
| LTE<br>BAND 66           | QPSK @ 20 MHz BW  | EIRP      | Mid     | 1745                   | 23.8 dBm                                    | 23.5 dBm                               | -0.3       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 6986.58                |                                             |                                        |            |                   |
| LTE<br>BAND 71           | QPSK @ 20MHz BW   | ERP       | Low     | 673                    | 17.65 dBm                                   | 17.15 dBm                              | -0.5       |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 2021.01                |                                             |                                        |            |                   |
| 5G NR<br>BAND N77        | QPSK @ 100 MHz BW | EIRP      | Low     | 3750                   | 26.6 dBm                                    | 26.6 dBm                               | 0          |                   |
|                          | QPSK @ highest BW | RSE       | High    | 15723.61               |                                             |                                        |            |                   |

## 5.5. REFERENCE DETAIL

Reference application that contains the reused reference data.

| Equipment Class | Reference FCC ID | Reference Application | Report Title/Section                                                   |
|-----------------|------------------|-----------------------|------------------------------------------------------------------------|
| PCE, CBE        | BCG-E3542A       | 13179116-E8           | FCC LTE Report/ All Sections except Radiated spurious emission on ANT2 |

## 5.6. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.28.03-1.

## 5.7. MAXIMUM ANTENNA GAIN

Please see table below:

| LTE Bands AND 5G NR Bands                    | Antenna Gain (dBi) |       |       |       |       |       |       |
|----------------------------------------------|--------------------|-------|-------|-------|-------|-------|-------|
|                                              | ANT 1              | ANT 2 | ANT 3 | ANT 4 | ANT 7 | ANT 8 | ANT 9 |
| LTE Band 71, 5G NR Band n71, 663 – 698 MHz   | -5.9               | -5.5  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 12, 5G NR Band n12, 699 – 716 MHz   | -5.0               | -6.0  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 17, 704 – 716 MHz                   | -5.0               | -6.0  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 13, 777 – 787 MHz                   | -5.5               | -5.0  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 14, 788 – 798 MHz                   | -5.6               | -5.1  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 26, 814 – 824 MHz (Part 90S )       | -5.2               | -5.8  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 5, 5G NR Band n5, 824 – 849 MHz     | -5.2               | -5.6  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 66, 5G NR Band n66, 1710 – 1780 MHz | -1.9               | -2.0  | -1.5  | -3.0  | NA    | NA    | NA    |
| LTE Band 2, 5G NR Band n2, 1850 – 1910 MHz   | -2.2               | -3.9  | 1.0   | -1.8  | NA    | NA    | NA    |
| LTE Band 25, 5G NR Band n25, 1850 – 1915 MHz | -2.2               | -3.9  | 1.0   | -1.8  | NA    | NA    | NA    |
| LTE Band 30, 2305 – 2315 MHz                 | -3.3               | -2.1  | -1.2  | -2.3  | NA    | NA    | NA    |
| LTE Band 7, 2500 – 2570 MHz                  | -2.9               | -0.4  | 0.9   | -3.0  | NA    | NA    | NA    |
| LTE Band 41, 5G NR Band n41, 2496 – 2690 MHz | -2.5               | -0.4  | 0.9   | -2.8  | NA    | NA    | NA    |
| 5G NR Band n77, 3300 – 3980 MHz              | NA                 | NA    | NA    | -2.2  | -0.1  | -3.2  | -2.9  |
| LTE Band 48, 3550 – 3700 MHz                 | NA                 | NA    | NA    | -0.5  | -0.1  | -5.3  | -0.9  |

## 5.8. WORST-CASE CONFIGURATION AND MODE

The EUT supports the following LTE and 5G NR Bands:

Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 14, Band 17, Band 25, Band 26, Band 30, Band 41, Band 48, Band 66, Band 71, 5G NR Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, 5G NR Band n71 and 5G NR Band n77.

For 5G NR Bands (n2, n5, n12, n25, n41, n66, and n71) having the same operations bandwidth and Power are covered by LTE bands of (Band 2, Band5, Band12, Band 25, Band 41, Band 66, and Band 71). Additional tests for 5G NR bands with higher BW modes than LTE Bands, includes 5G NR Bands n5, n12, and n41 were performed.

LTE Band 4 (1710-1755MHz, 5/10/15/20MHz bandwidth) is covered by LTE Band 66 because it is a subset of LTE band 66 and they have same output power.

FCC rule Part 22.905 of LTE Band 26 (824-849MHz) is covered by LTE Band 5 of same rule since they have the same output power and supported bandwidths.

For 5G NR bands, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

BPSK modulation applied only for 5G NR band frequencies and has the same tune up power as QPSK modulations.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation and QPSK was observed as the worst one and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM, and BPSK, modulations. For testing purposes emissions on sections 8 and 9 were measured while QPSK was set at or above target power for all bands. Conducted tests were performed on the worst case antenna because it has the highest conducted power. ANT1 is the worst case for all bands except Band 48, 5G NR Band 41, and 5G NR Band 77. For 5G NR Band 41 ANT2 is the worst case antenna. For band 48 ANT9 is the worst case antenna. For 5G NR Band n77 ANT7 is the worst case antenna.

For 5G NR Band n41 20MHz BW, antenna 2 and antenna 4 powers are higher than LTE band 41. Therefore, additional power measurements and occupied bandwidth tests were performed on antenna 2 and antenna 4 for 20MHz BW. Since LTE antenna 1 the highest output power of all (LTE band 41 and 5G NR Band n41) antennas, all other conducted tests for 20MHz BW were performed only on LTE antenna 1.

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, ANT4, ANT7, ANT8 and ANT 9 antennas to determine the worst case orientation. The following table exhibit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

| Freq Bands      | ANT1 | ANT2 | ANT3 | ANT4 | ANT7 | ANT8 | ANT9 |
|-----------------|------|------|------|------|------|------|------|
| 663 – 849 MHz   | Y    | X    | N/A  | N/A  | N/A  | N/A  | N/A  |
| 1710 – 1915 MHz | X    | X    | X    | X    | N/A  | N/A  | N/A  |
| 2300 – 2700 MHz | Y    | Y    | Y    | X    | N/A  | N/A  | N/A  |
| 3300 – 3980 MHz | N/A  | N/A  | N/A  | X    | Y    | X    | Y    |

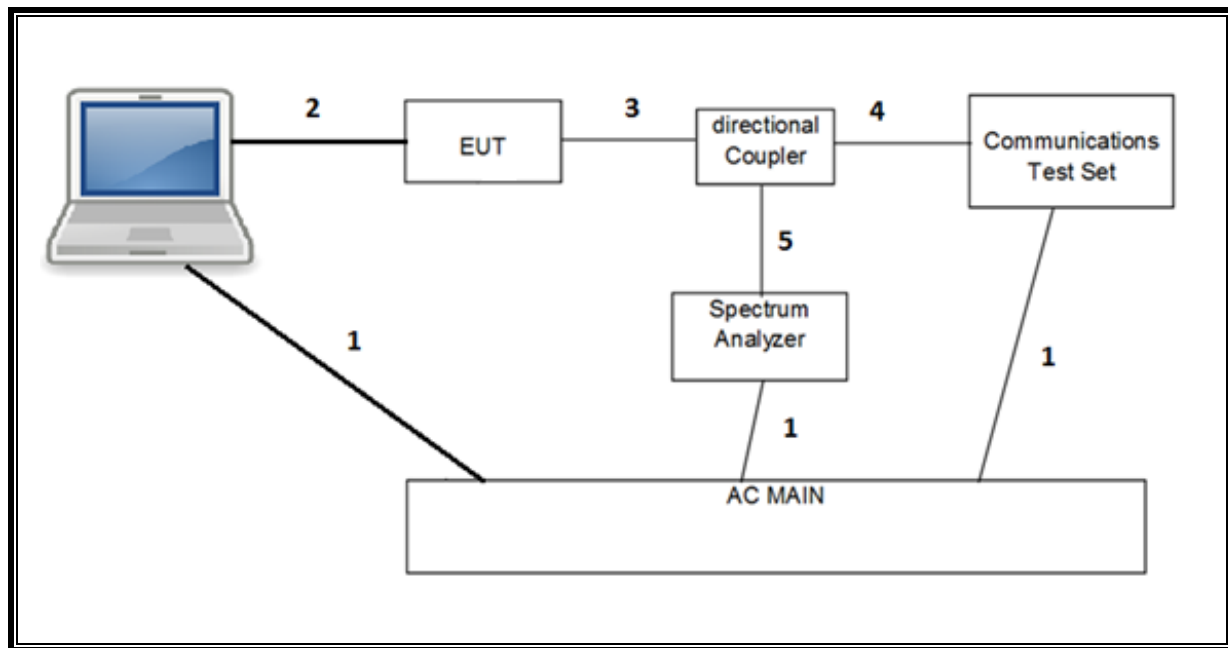
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

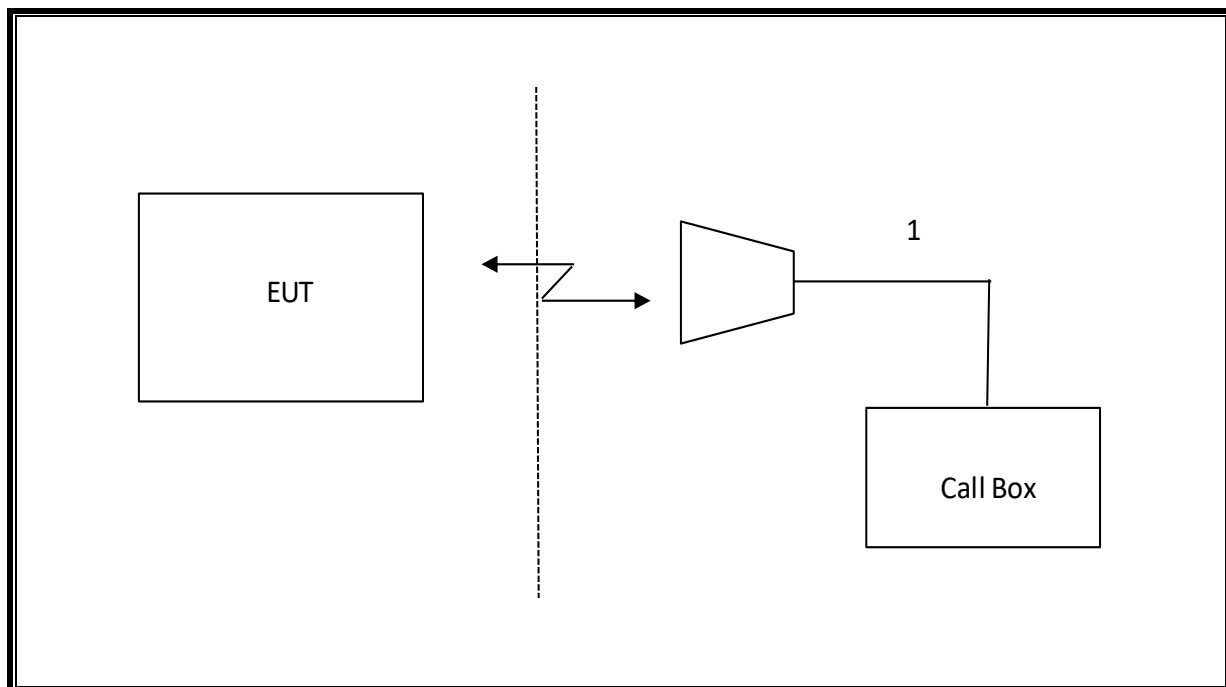
## 5.9. DESCRIPTION OF TEST SETUP

| SUPPORT TEST EQUIPMENT         |           |                      |                        |                   |                  |             |
|--------------------------------|-----------|----------------------|------------------------|-------------------|------------------|-------------|
| Description                    |           | Manufacturer         | Model                  | Serial Number     |                  | FCC ID/ DoC |
| Laptop AC/DC adapter           |           | Apple                | 85W MagSafe 2          | C0651730MMMG6P4AL |                  |             |
| Laptop                         |           | Apple                | Macbook Pro            | C02PM012G3QD      |                  |             |
| Laptop                         |           | Apple                | Macbook Pro            | C02P52HGG085      |                  |             |
| I/O CABLES (RF CONDUCTED TEST) |           |                      |                        |                   |                  |             |
| Cable No.                      | Port      | # of Identical Ports | Connector Type         | Cable Type        | Cable Length (m) | Remarks     |
| 1                              | AC        | 3                    | US 115V                | Un-shielded       | 2.0              | N/A         |
| 2                              | USB       | 1                    | DC                     | Un-shielded       | 1.0              | N/A         |
| 3                              | RF In/Out | 1                    | EUT                    | Shielded          | 0.6              | N/A         |
| 4                              | RF In/Out | 1                    | Communication Test Set | Shielded          | 1.2              | N/A         |
| 5                              | RF In/Out | 1                    | Barrel                 | N/A               | N/A              | N/A         |
| I/O CABLES (RF RADIATED TEST)  |           |                      |                        |                   |                  |             |
| Cable No.                      | Port      | # of Identical Ports | Connector Type         | Cable Type        | Cable Length (m) | Remarks     |
| 1                              | RF In/Out | 1                    | Antenna                | Shielded          | 5.0              | 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                       | A.H. Systems, Inc.   | SAS-571                | T961                       | 01/25/2021 |
| Antenna, Horn 1-18GHz                       | ETS Lindgren         | 3117                   | T136                       | 07/07/2021 |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz | Sunol Sciences Corp. | JB3                    | T407                       | 05/20/2021 |
| Amplifier, 1 to 18GHz                       | MITEQ                | AFS42-00101800-25-S-42 | T931                       | 05/11/2021 |
| Amplifier, 1 to 18GHz                       | MITEQ                | AFS42-00101800-25-S-42 | T1165                      | 08/10/2021 |
| Amplifier, 9KHz to 1GHz, 32dB               | SONOMA INSTRUMENT    | 310                    | PRE0180176                 | 07/14/2021 |
| Filter, BRF 2495 to 2690MHz                 | MICRO-TRONICS        | BRM50709-02            | T1790                      | 06/23/2021 |
| Filter, BRF 1850 – 1910 MHz                 | Micro-Tronics        | BRM50714-02            | T1796                      | 06/23/2021 |
| Filter, BRF 824 – 848 MHz                   | Micro-Tronics        | BRM20025               | PRE0191180                 | 06/23/2021 |
| *Directional Coupler                        | KRYTAR               | 152610                 | T1161                      | 08/14/2020 |
| Spectrum Analyzer, PXA 3Hz to 44GHz         | Keysight             | N9030A                 | T340                       | 01/22/2021 |
| Spectrum Analyzer, PXA 3Hz to 44GHz         | Keysight             | N9030A                 | T907                       | 01/22/2021 |
| Wideband Communication Test Set, Call Box   | R&S GmbH & Co. KG    | CMW500                 | T260                       | 02/19/2021 |
| Wideband Communication Test Set, Call Box   | R&S GmbH & Co. KG    | CMW500                 | T959                       | 02/19/2021 |
| Wideband Communication Test Set, Call Box   | R&S GmbH & Co. KG    | CMW500                 | T1871                      | 02/25/2021 |
| Power Meter, P-series single channel        | Keysight             | N1912A                 | T1245                      | 01/22/2021 |
| Power Sensor                                | Keysight             | N1921A                 | T1225                      | 02/23/2021 |
| UL AUTOMATION SOFTWARE                      |                      |                        |                            |            |
| CLT Software                                | UL                   | UL RF                  | Ver 7.6, November 11, 2017 |            |
| Power Measurement Software                  | UL                   | UL RF                  | Ver 2.7, 2019              |            |
| Radiated test software                      | UL                   | UL RF                  | Ver 9.5 June 15, 2019      |            |

### NOTES:

\* Testing is completed before equipment expiration date.

## 7. RADIATED TEST RESULTS

### 7.1. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT2

#### TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

#### RESULTS

## 7.1.1. LTE BAND 2

### LIMITS

FCC: §24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 2 (20.0MHZ BANDWIDTH)

|                |                 |
|----------------|-----------------|
| Project #:     | 13171736        |
| Date:          | 5/18/2020       |
| Test Engineer: | 30606           |
| Configuration: | EUT only        |
| Mode           | LTE2 QPSK 20MHz |
| Chamber #:     | Chamber B       |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.73825               | 39.82                | Pk  | 30.5           | -27.8        | -95.2   | -52.68                  | -13             | -39.68      | H        |
| 3.74672               | 39.45                | Pk  | 30.6           | -27.7        | -95.2   | -52.85                  | -13             | -39.85      | V        |
| 5.62699               | 37.85                | Pk  | 33.2           | -26          | -95.2   | -50.15                  | -13             | -37.15      | H        |
| 5.62965               | 37.89                | Pk  | 33.2           | -26.1        | -95.2   | -50.21                  | -13             | -37.21      | V        |
| 7.52226               | 36.01                | Pk  | 36.7           | -23.9        | -95.2   | -46.39                  | -13             | -33.39      | V        |
| 7.53949               | 36.43                | Pk  | 36.8           | -23.9        | -95.2   | -45.87                  | -13             | -32.87      | H        |
| Mid Channel, 1880MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.77332               | 39.21                | Pk  | 30.7           | -27.8        | -95.2   | -53.09                  | -13             | -40.09      | H        |
| 3.78016               | 39.65                | Pk  | 30.8           | -27.8        | -95.2   | -52.55                  | -13             | -39.55      | V        |
| 5.63442               | 38.29                | Pk  | 33.1           | -26          | -95.2   | -49.81                  | -13             | -36.81      | H        |
| 5.67592               | 36.94                | Pk  | 33             | -25.7        | -95.2   | -50.96                  | -13             | -37.96      | V        |
| 7.50432               | 36.56                | Pk  | 36.7           | -23.9        | -95.2   | -45.84                  | -13             | -32.84      | V        |
| 7.5081                | 36.37                | Pk  | 36.8           | -23.9        | -95.2   | -45.93                  | -13             | -32.93      | H        |
| High Channel, 1900MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.77691               | 39.77                | Pk  | 30.7           | -27.8        | -95.2   | -52.53                  | -13             | -39.53      | V        |
| 3.78476               | 39.76                | Pk  | 30.8           | -27.8        | -95.2   | -52.44                  | -13             | -39.44      | H        |
| 5.67276               | 36.88                | Pk  | 33             | -25.7        | -95.2   | -51.02                  | -13             | -38.02      | V        |
| 5.71393               | 39.5                 | Pk  | 33             | -25.4        | -95.2   | -48.1                   | -13             | -35.1       | H        |
| 7.60862               | 36.63                | Pk  | 37             | -23.7        | -95.2   | -45.27                  | -13             | -32.27      | V        |
| 7.61466               | 36.37                | Pk  | 36.9           | -23.6        | -95.2   | -45.53                  | -13             | -32.53      | H        |

## 7.1.2. LTE BAND 5 AND 5G NR BAND n5

### LIMITS

FCC: §22.917(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 5 (10.0MHZ BANDWIDTH)

|                |                 |
|----------------|-----------------|
| Project #:     | 13171736        |
| Date:          | 7/29/2020       |
| Test Engineer: | 19140           |
| Configuration: | EUT only        |
| Mode           | LTE5 QPSK 10MHz |
| Chamber #:     | Chamber B       |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 829MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.65722               | 41.44                | Pk  | 25             | -30.5        | -95.2   | -58.46                  | -13             | -45.46      | V        |
| 1.65923               | 40.35                | Pk  | 25             | -30.4        | -95.2   | -59.45                  | -13             | -46.45      | H        |
| 2.48663               | 40.22                | Pk  | 29             | -29.2        | -95.2   | -54.68                  | -13             | -41.68      | V        |
| 2.48914               | 39.62                | Pk  | 29             | -29.2        | -95.2   | -55.18                  | -13             | -42.18      | H        |
| 3.3155                | 39.58                | Pk  | 31.1           | -28          | -95.2   | -51.92                  | -13             | -38.92      | V        |
| 3.31571               | 39.31                | Pk  | 31.1           | -28          | -95.2   | -52.19                  | -13             | -39.19      | H        |
| Mid Channel, 836.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.67288               | 41.03                | Pk  | 25             | -30.4        | -95.2   | -58.87                  | -13             | -45.87      | V        |
| 1.67509               | 41.73                | Pk  | 25             | -30.4        | -95.2   | -58.17                  | -13             | -45.17      | H        |
| 2.50809               | 40.54                | Pk  | 29.1           | -29.3        | -95.2   | -54.16                  | -13             | -41.16      | V        |
| 2.50813               | 40.47                | Pk  | 29.1           | -29.3        | -95.2   | -54.23                  | -13             | -41.23      | H        |
| 3.34395               | 38.06                | Pk  | 31             | -28.2        | -95.2   | -53.74                  | -13             | -40.74      | V        |
| 3.34745               | 38.29                | Pk  | 31             | -28.2        | -95.2   | -53.51                  | -13             | -40.51      | H        |
| High Channel, 844MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.68737               | 41.05                | Pk  | 25             | -30.4        | -95.2   | -58.85                  | -13             | -45.85      | V        |
| 1.68794               | 40.92                | Pk  | 25             | -30.4        | -95.2   | -58.98                  | -13             | -45.98      | H        |
| 2.53183               | 38.51                | Pk  | 29.2           | -29.3        | -95.2   | -55.99                  | -13             | -42.99      | V        |
| 2.53198               | 38.85                | Pk  | 29.2           | -29.3        | -95.2   | -55.65                  | -13             | -42.65      | H        |
| 3.37505               | 39.34                | Pk  | 30.8           | -28          | -95.2   | -52.46                  | -13             | -39.46      | V        |
| 3.37576               | 39.05                | Pk  | 30.8           | -28          | -95.2   | -52.75                  | -13             | -39.75      | H        |

# QPSK 5G NR BAND n5 (20.0MHZ BANDWIDTH)

|                |                     |
|----------------|---------------------|
| Project #:     | 13171736            |
| Date:          | 7/30/2020           |
| Test Engineer: | 19169               |
| Configuration: | EUT only            |
| Mode           | 5G NR n5 QPSK 20MHz |
| Chamber #:     | Chamber A           |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 834MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.65819               | 40.67                | Pk  | 29             | -32.3        | -95.2   | -57.03                  | -13             | -44.03      | H        |
| 1.66393               | 41.43                | Pk  | 29             | -32.2        | -95.2   | -56.17                  | -13             | -43.17      | V        |
| 2.49905               | 41.35                | Pk  | 33.5           | -31.4        | -95.2   | -51.15                  | -13             | -38.15      | V        |
| 2.50347               | 40.51                | Pk  | 33.5           | -31.3        | -95.2   | -51.79                  | -13             | -38.79      | H        |
| 3.32883               | 39.61                | Pk  | 33             | -30.2        | -95.2   | -52.19                  | -13             | -39.19      | H        |
| 3.33058               | 40.09                | Pk  | 33             | -30.2        | -95.2   | -51.81                  | -13             | -38.81      | V        |
| Mid Channel, 836.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.67993               | 41.98                | Pk  | 28.9           | -32.2        | -95.2   | -55.82                  | -13             | -42.82      | H        |
| 1.68904               | 42.11                | Pk  | 29.1           | -32.2        | -95.2   | -55.49                  | -13             | -42.49      | V        |
| 2.50457               | 41.11                | Pk  | 33.5           | -31.4        | -95.2   | -51.29                  | -13             | -38.29      | H        |
| 2.51142               | 40.99                | Pk  | 33.5           | -31.4        | -95.2   | -51.41                  | -13             | -38.41      | V        |
| 3.35412               | 39.7                 | Pk  | 33             | -30.1        | -95.2   | -52                     | -13             | -39         | H        |
| 3.36264               | 39.39                | Pk  | 33             | -30.1        | -95.2   | -52.31                  | -13             | -39.31      | V        |
| High Channel, 839MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.67683               | 41.82                | Pk  | 28.9           | -32.2        | -95.2   | -55.98                  | -13             | -42.98      | V        |
| 1.67965               | 42.06                | Pk  | 28.9           | -32.2        | -95.2   | -55.74                  | -13             | -42.74      | H        |
| 2.51691               | 40.87                | Pk  | 33.5           | -31.4        | -95.2   | -51.53                  | -13             | -38.53      | V        |
| 2.51746               | 41.04                | Pk  | 33.5           | -31.3        | -95.2   | -51.26                  | -13             | -38.26      | H        |
| 3.35412               | 41.08                | Pk  | 33             | -30.1        | -95.2   | -50.62                  | -13             | -37.62      | V        |
| 3.35413               | 40.31                | Pk  | 33             | -30.1        | -95.2   | -51.39                  | -13             | -38.39      | H        |

### 7.1.3. LTE BAND 7

#### LIMITS

FCC: §27.53 (m)

At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

#### QPSK LTE BAND 7 (20.0MHZ BANDWIDTH)

|                |                 |
|----------------|-----------------|
| Project #:     | 13171736        |
| Date:          | 5/18/2020       |
| Test Engineer: | 50820           |
| Configuration: | EUT only        |
| Mode           | LTE7 QPSK 20MHz |
| Chamber #:     | Chamber B       |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.02141               | 38.29                | Pk  | 33.7           | -25.9        | -95.2   | -49.11                  | -25             | -24.11      | H        |
| 5.02225               | 37.59                | Pk  | 33.7           | -25.9        | -95.2   | -49.81                  | -25             | -24.81      | V        |
| 7.52852               | 35.91                | Pk  | 36.9           | -23.9        | -95.2   | -46.29                  | -25             | -21.29      | V        |
| 7.53135               | 35.36                | Pk  | 36.9           | -23.8        | -95.2   | -46.74                  | -25             | -21.74      | H        |
| 10.04015              | 33.98                | Pk  | 38.4           | -20          | -95.2   | -42.82                  | -25             | -17.82      | V        |
| 10.04036              | 34.68                | Pk  | 38.4           | -20          | -95.2   | -42.12                  | -25             | -17.12      | H        |
| Mid Channel, 2535MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.07252               | -69.6                | Pk  | 33.8           | -26.1        | 8.4     | -53.5                   | -25             | -28.5       | 236      |
| 5.07274               | -69.64               | Pk  | 33.8           | -26.1        | 8.5     | -53.44                  | -25             | -28.44      | 61       |
| 7.60551               | -71.05               | Pk  | 37             | -23.7        | 7.7     | -50.05                  | -25             | -25.05      | 130      |
| 7.60638               | -71.59               | Pk  | 37             | -23.7        | 7.5     | -50.79                  | -25             | -25.79      | 184      |
| 10.13975              | -72.76               | Pk  | 38.4           | -19.9        | 6.4     | -47.86                  | -25             | -22.86      | 97       |
| 10.14199              | -72.87               | Pk  | 38.4           | -20          | 6.5     | -47.97                  | -25             | -22.97      | 351      |
| High Channel, 2560MHz |                      |     |                |              |         |                         |                 |             |          |
| 5.12                  | 37.56                | Pk  | 33.9           | -26.4        | -95.2   | -50.14                  | -25             | -25.14      | H        |
| 5.12083               | 37.47                | Pk  | 33.9           | -26.4        | -95.2   | -50.23                  | -25             | -25.23      | V        |
| 7.67892               | 35.33                | Pk  | 37             | -23.3        | -95.2   | -46.17                  | -25             | -21.17      | H        |
| 7.67968               | 35.13                | Pk  | 37             | -23.3        | -95.2   | -46.37                  | -25             | -21.37      | V        |
| 10.24059              | 35.12                | Pk  | 38.8           | -19.4        | -95.2   | -40.68                  | -25             | -15.68      | V        |
| 10.24267              | 34.28                | Pk  | 38.8           | -19.4        | -95.2   | -41.52                  | -25             | -16.52      | H        |

## 7.1.4. LTE BAND 12 AND 5G NR BAND n12

### LIMITS

FCC: §27.53 (g)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 12 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 5/22/2020        |
| Test Engineer: | 29435            |
| Configuration: | EUT only         |
| Mode           | LTE12 QPSK 10MHz |
| Chamber #:     | Chamber A        |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 704MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.40792               | 40.72                | Pk  | 25.4           | -30.8        | -95.2   | -59.88                  | -13             | -46.88      | V        |
| 1.40999               | 40.87                | Pk  | 25.4           | -30.8        | -95.2   | -59.73                  | -13             | -46.73      | H        |
| 2.11202               | 39.35                | Pk  | 26.9           | -29.5        | -95.2   | -58.45                  | -13             | -45.45      | V        |
| 2.1127                | 39.66                | Pk  | 26.9           | -29.5        | -95.2   | -58.14                  | -13             | -45.14      | H        |
| 2.81491               | 37.96                | Pk  | 28.8           | -28.7        | -95.2   | -57.14                  | -13             | -44.14      | V        |
| 2.81563               | 38.13                | Pk  | 28.8           | -28.7        | -95.2   | -56.97                  | -13             | -43.97      | H        |
| Mid Channel, 707.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.41363               | 40.22                | Pk  | 25.4           | -30.7        | -95.2   | -60.28                  | -13             | -47.28      | H        |
| 1.41519               | 41.02                | Pk  | 25.3           | -30.7        | -95.2   | -59.58                  | -13             | -46.58      | H        |
| 1.41661               | 41.43                | Pk  | 25.3           | -30.7        | -95.2   | -59.17                  | -13             | -46.17      | V        |
| 2.12223               | 38.58                | Pk  | 26.9           | -29.6        | -95.2   | -59.32                  | -13             | -46.32      | V        |
| 2.82923               | 37.92                | Pk  | 28.8           | -28.7        | -95.2   | -57.18                  | -13             | -44.18      | V        |
| 2.83121               | 38.89                | Pk  | 28.8           | -28.7        | -95.2   | -56.21                  | -13             | -43.21      | H        |
| High Channel, 711MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.42192               | -66.32               | Pk  | 25.3           | -30.7        | 8.8     | -62.92                  | -13             | -49.92      | 164      |
| 1.423                 | -66.38               | Pk  | 25.3           | -30.7        | 8.7     | -63.08                  | -13             | -50.08      | 201      |
| 2.13156               | -67.93               | Pk  | 26.9           | -29.6        | 10.3    | -60.33                  | -13             | -47.33      | 176      |
| 2.13223               | -68.01               | Pk  | 26.9           | -29.6        | 11.1    | -59.61                  | -13             | -46.61      | 153      |
| 2.84251               | -68.08               | Pk  | 28.8           | -28.7        | 9.2     | -58.78                  | -13             | -45.78      | 187      |
| 2.84526               | -68.28               | Pk  | 28.9           | -28.7        | 8.7     | -59.38                  | -13             | -46.38      | 187      |

# QPSK 5G NR BAND n12 (15.0MHZ BANDWIDTH)

|                |                      |
|----------------|----------------------|
| Project #:     | 13171736             |
| Date:          | 7/20/2020            |
| Test Engineer: | 30606                |
| Configuration: | EUT only             |
| Mode           | 5G NR n12 QPSK 15MHz |
| Chamber #:     | Chamber A            |

| Frequency (GHz)        | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 706.5MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.42067                | 41.8                 | Pk  | 29             | -32.6        | -95.2   | -56.1                   | -13             | -43.1       | H        |
| 1.43191                | 41.49                | Pk  | 29             | -32.5        | -95.2   | -56.31                  | -13             | -43.31      | V        |
| 2.09945                | 40.76                | Pk  | 31.9           | -31.8        | -95.2   | -53.84                  | -13             | -40.84      | H        |
| 2.10932                | 40.7                 | Pk  | 31.7           | -31.9        | -95.2   | -54.2                   | -13             | -41.2       | V        |
| 2.818                  | 40.96                | Pk  | 32.6           | -30.7        | -95.2   | -51.74                  | -13             | -38.74      | H        |
| 2.82605                | 40.45                | Pk  | 32.6           | -30.6        | -95.2   | -52.05                  | -13             | -39.05      | V        |
| Mid Channel, 707.5MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.4085                 | 41.65                | Pk  | 29.1           | -32.7        | -95.2   | -56.25                  | -13             | -43.25      | H        |
| 1.41462                | 42.67                | Pk  | 29.1           | -32.7        | -95.2   | -55.23                  | -13             | -42.23      | V        |
| 2.12027                | 41.52                | Pk  | 31.6           | -31.7        | -95.2   | -53.28                  | -13             | -40.28      | H        |
| 2.1289                 | 40.45                | Pk  | 31.5           | -31.5        | -95.2   | -54.25                  | -13             | -41.25      | V        |
| 2.83486                | 40.1                 | Pk  | 32.5           | -30.6        | -95.2   | -52.5                   | -13             | -39.5       | H        |
| 2.83673                | 40.58                | Pk  | 32.5           | -30.6        | -95.2   | -52.02                  | -13             | -39.02      | V        |
| High Channel, 708.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.4148                 | 42.03                | Pk  | 29.1           | -32.7        | -95.2   | -55.87                  | -13             | -42.87      | H        |
| 1.41816                | 42.03                | Pk  | 29.1           | -32.6        | -95.2   | -55.77                  | -13             | -42.77      | V        |
| 2.11478                | 41.75                | Pk  | 31.7           | -31.8        | -95.2   | -53.05                  | -13             | -40.05      | H        |
| 2.11646                | 41.42                | Pk  | 31.7           | -31.8        | -95.2   | -53.38                  | -13             | -40.38      | V        |
| 2.83381                | 40.36                | Pk  | 32.5           | -30.6        | -95.2   | -52.24                  | -13             | -39.24      | H        |
| 2.83524                | 39.95                | Pk  | 32.5           | -30.6        | -95.2   | -52.65                  | -13             | -39.65      | V        |

## 7.1.5. LTE BAND 13

### LIMITS

FCC: §27.53

(c) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

### QPSK LTE BAND 13 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 5/22/2020        |
| Test Engineer: | 19169            |
| Configuration: | EUT only         |
| Mode           | LTE13 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)     | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 782MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.56286             | 40.04                | Pk  | 24.9           | -30.5        | -95.2   | -60.76                  | -40             | -20.76      | H        |
| 1.56463             | 40.36                | Pk  | 24.9           | -30.5        | -95.2   | -60.44                  | -40             | -20.44      | V        |
| 2.34537             | 39.15                | Pk  | 28             | -29.5        | -95.2   | -57.55                  | -13             | -44.55      | H        |
| 2.34538             | 39.45                | Pk  | 28             | -29.5        | -95.2   | -57.25                  | -13             | -44.25      | V        |
| 3.12927             | 38.87                | Pk  | 30.7           | -28.5        | -95.2   | -54.13                  | -13             | -41.13      | V        |
| 3.12961             | 39.39                | Pk  | 30.7           | -28.5        | -95.2   | -53.61                  | -13             | -40.61      | H        |

## 7.1.6. LTE BAND 14

### LIMITS

FCC: §90.543 Emission Limitations. (Band 14)

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation

### QPSK LTE BAND 14 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 6/16/2020        |
| Test Engineer: | 19410            |
| Configuration: | EUT only         |
| Mode           | LTE14 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)     | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.58491             | 40.52                | Pk  | 24.9           | -30.5        | -95.2   | -60.28                  | -40             | -20.28      | H        |
| 1.58496             | 40.99                | Pk  | 24.9           | -30.5        | -95.2   | -59.81                  | -40             | -10.81      | V        |
| 2.37817             | 39.91                | Pk  | 28.3           | -29.5        | -95.2   | -56.49                  | -13             | -43.49      | V        |
| 2.38053             | 39.54                | Pk  | 28.4           | -29.5        | -95.2   | -56.76                  | -13             | -43.76      | H        |
| 3.17178             | 38.45                | Pk  | 31             | -28.5        | -95.2   | -54.25                  | -13             | -41.25      | V        |
| 3.17264             | 38.15                | Pk  | 31.1           | -28.5        | -95.2   | -54.45                  | -13             | -41.45      | H        |

### 7.1.7. LTE BAND 17

#### LIMITS

FCC: §27.53 (g)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

#### QPSK LTE BAND 17 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 6/26/2020        |
| Test Engineer: | 50820            |
| Configuration: | EUT only         |
| Mode           | LTE17 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)     | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.42023             | 40.17                | Pk  | 25.3           | -30.7        | -95.2   | -60.43                  | -13             | -47.43      | V        |
| 1.42132             | 40.02                | Pk  | 25.3           | -30.7        | -95.2   | -60.58                  | -13             | -47.58      | H        |
| 2.1294              | 39.06                | Pk  | 26.9           | -29.6        | -95.2   | -58.84                  | -13             | -45.84      | H        |
| 2.13196             | 39.64                | Pk  | 26.9           | -29.6        | -95.2   | -58.26                  | -13             | -45.26      | V        |
| 2.84074             | 37.94                | Pk  | 28.8           | -28.7        | -95.2   | -57.16                  | -13             | -44.16      | H        |
| 2.84153             | 38.72                | Pk  | 28.8           | -28.7        | -95.2   | -56.38                  | -13             | -43.38      | V        |

## 7.1.8. LTE BAND 25

### LIMITS

FCC: §24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 25 (20.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 5/18/2020        |
| Test Engineer: | 30606            |
| Configuration: | EUT only         |
| Mode           | LTE25 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)        | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                      |     |                |              |         |                         |                 |             |          |
| 3.69309                | 39.71                | Pk  | 30.3           | -27.6        | -95.2   | -52.79                  | -13             | -39.79      | V        |
| 3.73179                | 39.57                | Pk  | 30.5           | -27.8        | -95.2   | -52.93                  | -13             | -39.93      | H        |
| 5.55951                | 37.82                | Pk  | 33.2           | -26.1        | -95.2   | -50.28                  | -13             | -37.28      | V        |
| 5.57143                | 41.99                | Pk  | 33.2           | -26          | -95.2   | -46.01                  | -13             | -33.01      | H        |
| 7.46356                | 36.75                | Pk  | 36.7           | -23.8        | -95.2   | -45.55                  | -13             | -32.55      | V        |
| 7.46843                | 36.17                | Pk  | 36.7           | -23.8        | -95.2   | -46.13                  | -13             | -33.13      | H        |
| Mid Channel, 1882.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.78711                | 39.55                | Pk  | 30.8           | -27.8        | -95.2   | -52.65                  | -13             | -39.65      | V        |
| 3.79153                | 39.97                | Pk  | 30.8           | -27.8        | -95.2   | -52.23                  | -13             | -39.23      | H        |
| 5.65161                | 38.74                | Pk  | 33             | -25.8        | -95.2   | -49.26                  | -13             | -36.26      | H        |
| 5.65464                | 38.44                | Pk  | 33.1           | -25.9        | -95.2   | -49.56                  | -13             | -36.56      | V        |
| 7.53553                | 36.78                | Pk  | 36.9           | -23.9        | -95.2   | -45.42                  | -13             | -32.42      | H        |
| 7.55651                | 36.75                | Pk  | 36.8           | -24          | -95.2   | -45.65                  | -13             | -32.65      | V        |
| High Channel, 1905MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.8029                 | 39.63                | Pk  | 30.9           | -27.8        | -95.2   | -52.47                  | -13             | -39.47      | H        |
| 3.8286                 | 39.2                 | Pk  | 31.1           | -27.8        | -95.2   | -52.7                   | -13             | -39.7       | V        |
| 5.70322                | 38.43                | Pk  | 33.1           | -25.4        | -95.2   | -49.07                  | -13             | -36.07      | H        |
| 5.72376                | 38.89                | Pk  | 33             | -25.4        | -95.2   | -48.71                  | -13             | -35.71      | V        |
| 7.60472                | 36.85                | Pk  | 37             | -23.7        | -95.2   | -45.05                  | -13             | -32.05      | H        |
| 7.61949                | 36.62                | Pk  | 37             | -23.6        | -95.2   | -45.18                  | -13             | -32.18      | V        |

## 7.1.9. LTE BAND 26 (PART 90S)

### LIMITS

FCC: §90.691

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 26 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 6/14/2020        |
| Test Engineer: | 19212            |
| Configuration: | EUT only         |
| Mode           | LTE26 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)     | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 819MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.63713             | 35.12                | Pk  | 28.5           | -32.5        | -95.2   | -64.08                  | -13             | -51.08      | V        |
| 1.63754             | 42.16                | Pk  | 28.5           | -32.5        | -95.2   | -57.04                  | -13             | -44.04      | H        |
| 2.45575             | 34.07                | Pk  | 32.5           | -31.4        | -95.2   | -60.03                  | -13             | -47.03      | V        |
| 2.45778             | 41.52                | Pk  | 32.5           | -31.4        | -95.2   | -52.58                  | -13             | -39.58      | H        |
| 3.27629             | 40.72                | Pk  | 32.9           | -30.2        | -95.2   | -51.78                  | -13             | -38.78      | V        |
| 3.2781              | 40.53                | Pk  | 32.9           | -30.2        | -95.2   | -51.97                  | -13             | -38.97      | H        |

## 7.1.10. LTE BAND 30

### LIMITS

FCC: §27.53 (a)

For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2360 and 2365 MHz, and not less than  $70 + 10 \log (P)$  dB above 2365 MHz.

### QPSK LTE BAND 30 (10.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 8/7/2020         |
| Test Engineer: | 19169            |
| Configuration: | EUT only         |
| Mode:          | LTE30 QPSK 20MHz |
| Chamber #:     | Chamber A        |

| Frequency (GHz)      | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                      |     |                |              |         |                         |                 |             |          |
| 4.6202               | 39.23                | Pk  | 34.2           | -26.8        | -95.2   | -48.57                  | -40             | -8.57       | H        |
| 4.62099              | 40.25                | Pk  | 34.2           | -26.8        | -95.2   | -47.55                  | -40             | -7.55       | V        |
| 6.931                | 36.85                | Pk  | 36.3           | -24.5        | -95.2   | -46.55                  | -40             | -6.55       | V        |
| 6.93179              | 38.34                | Pk  | 36.3           | -24.5        | -95.2   | -45.06                  | -40             | -5.06       | H        |
| 9.24136              | 35.75                | Pk  | 36.4           | -21.8        | -95.2   | -44.85                  | -40             | -4.85       | H        |
| 9.24182              | 35.54                | Pk  | 36.4           | -21.8        | -95.2   | -45.06                  | -40             | -5.06       | V        |

## 7.1.11. LTE BAND 41 AND 5G NR BAND n41

### LIMITS

FCC: §27.53 (m)

At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

### QPSK LTE BAND 41 (20.0MHZ BANDWIDTH)

|                |                     |
|----------------|---------------------|
| Project #:     | 13171736            |
| Date:          | 8/7/2020            |
| Test Engineer: | 39005               |
| Configuration: | EUT Only            |
| Mode:          | LTE41FCC QPSK 20MHz |
| Chamber #:     | Chamber B           |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T962 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|----------------|----------|
| Low Channel, 2506MHz  |                      |     |                |              |         |                         |                 |                |          |
| 5.00627               | 36.65                | Pk  | 33.7           | -25.9        | -95.2   | -50.75                  | -25             | -25.75         | H        |
| 5.15779               | 36.36                | Pk  | 33.8           | -26.4        | -95.2   | -51.44                  | -25             | -26.44         | V        |
| 7.66688               | 35.07                | Pk  | 36.9           | -23.4        | -95.2   | -46.63                  | -25             | -21.63         | V        |
| 7.66831               | 36.21                | Pk  | 36.9           | -23.3        | -95.2   | -45.39                  | -25             | -20.39         | H        |
| 9.93217               | 33.78                | Pk  | 38.4           | -19.8        | -95.2   | -42.82                  | -25             | -17.82         | H        |
| 10.55277              | 33.38                | Pk  | 39.5           | -19.6        | -95.2   | -41.92                  | -25             | -16.92         | V        |
| Mid Channel, 2593MHz  |                      |     |                |              |         |                         |                 |                |          |
| 4.80002               | 36.25                | Pk  | 33             | -27          | -95.2   | -52.95                  | -25             | -27.95         | H        |
| 5.09262               | 36.83                | Pk  | 33.9           | -26.3        | -95.2   | -50.77                  | -25             | -25.77         | V        |
| 7.69879               | 35.4                 | Pk  | 37.1           | -23.2        | -95.2   | -45.9                   | -25             | -20.9          | V        |
| 7.77288               | 35.02                | Pk  | 37.2           | -23.4        | -95.2   | -46.38                  | -25             | -21.38         | H        |
| 10.38066              | 32.81                | Pk  | 39.2           | -19.3        | -95.2   | -42.49                  | -25             | -17.49         | H        |
| 10.55865              | 33.28                | Pk  | 39.5           | -19.5        | -95.2   | -41.92                  | -25             | -16.92         | V        |
| High Channel, 2680MHz |                      |     |                |              |         |                         |                 |                |          |
| 5.11968               | 37.4                 | Pk  | 33.9           | -26.4        | -95.2   | -50.3                   | -25             | -25.3          | H        |
| 5.1487                | 34.8                 | Pk  | 33.8           | -26.3        | -95.2   | -52.9                   | -25             | -27.9          | V        |
| 8.08516               | 36.21                | Pk  | 37.2           | -22.6        | -95.2   | -44.39                  | -25             | -19.39         | H        |
| 8.28894               | 33.91                | Pk  | 37.5           | -22.7        | -95.2   | -46.49                  | -25             | -21.49         | V        |
| 10.96109              | 33.59                | Pk  | 39.4           | -19.4        | -95.2   | -41.61                  | -25             | -16.61         | H        |
| 10.96699              | 33.64                | Pk  | 39.4           | -19.5        | -95.2   | -41.66                  | -25             | -16.66         | V        |

# QPSK 5G NR BAND n41 (100.0MHZ BANDWIDTH)

|                |                       |
|----------------|-----------------------|
| Project #:     | 13171736              |
| Date:          | 8/19/2020             |
| Test Engineer: | 50822                 |
| Configuration: | EUT only              |
| Mode           | 5G NR n41 QPSK 100MHz |
| Chamber #:     | Chamber B             |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2546MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.84283               | 36.57                | Pk  | 33.6           | -25.6        | -95.2   | -49.93                  | -25             | -24.93      | H        |
| 5.85328               | 37.14                | Pk  | 33.7           | -25.8        | -95.2   | -49.56                  | -25             | -24.56      | V        |
| 7.88503               | 34.81                | Pk  | 37.3           | -22.9        | -95.2   | -45.49                  | -25             | -20.49      | H        |
| 8.02712               | 35.34                | Pk  | 37.1           | -22.7        | -95.2   | -45.16                  | -25             | -20.16      | V        |
| 10.25183              | 33.46                | Pk  | 38.8           | -19.4        | -95.2   | -41.64                  | -25             | -16.64      | H        |
| 10.5066               | 34.24                | Pk  | 39.5           | -19.2        | -95.2   | -40.06                  | -25             | -15.06      | V        |
| Mid Channel, 2593MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.77995               | 36.55                | Pk  | 33.2           | -25.2        | -95.2   | -50.05                  | -25             | -25.05      | V        |
| 5.81347               | 36.41                | Pk  | 33.4           | -25.5        | -95.2   | -49.99                  | -25             | -24.99      | H        |
| 7.97872               | 34.69                | Pk  | 37.2           | -22.9        | -95.2   | -45.91                  | -25             | -20.91      | H        |
| 8.17804               | 34.89                | Pk  | 37.3           | -22.9        | -95.2   | -45.61                  | -25             | -20.61      | V        |
| 10.56589              | 33.99                | Pk  | 39.6           | -19.4        | -95.2   | -40.21                  | -25             | -15.21      | H        |
| 10.75613              | 34.14                | Pk  | 39.2           | -19.4        | -95.2   | -40.36                  | -25             | -15.36      | V        |
| High Channel, 2640MHz |                      |     |                |              |         |                         |                 |             |          |
| 5.5698                | 36.24                | Pk  | 33.2           | -26.1        | -95.2   | -51.56                  | -25             | -26.56      | V        |
| 5.69093               | 36.06                | Pk  | 33.1           | -25.5        | -95.2   | -50.74                  | -25             | -25.74      | H        |
| 8.14701               | 35.48                | Pk  | 37.3           | -23          | -95.2   | -45.12                  | -25             | -20.12      | H        |
| 8.34636               | 35.06                | Pk  | 37.5           | -22.7        | -95.2   | -44.94                  | -25             | -19.94      | V        |
| 10.87133              | 33.82                | Pk  | 39.3           | -19.5        | -95.2   | -41.28                  | -25             | -16.28      | V        |
| 11.11309              | 33.67                | Pk  | 39.2           | -19.7        | -95.2   | -41.13                  | -25             | -16.13      | H        |

## 7.1.12. LTE BAND 66

### LIMITS

FCC: §27.53 (h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

### QPSK LTE BAND 66 (20.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 5/15/2020        |
| Test Engineer: | 50820            |
| Configuration: | EUT only         |
| Mode           | LTE66 QPSK 20MHz |
| Chamber #:     | Chamber A        |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.43989               | 30.86                | Pk  | 30.4           | -27.9        | -95.2   | -61.84                  | -13             | -48.84      | H        |
| 3.44017               | 30.63                | Pk  | 30.4           | -27.9        | -95.2   | -62.07                  | -13             | -49.07      | V        |
| 5.15854               | 30.3                 | Pk  | 33.8           | -26.4        | -95.2   | -57.5                   | -13             | -44.5       | H        |
| 5.15939               | 30.37                | Pk  | 33.8           | -26.4        | -95.2   | -57.43                  | -13             | -44.43      | V        |
| 6.87875               | 29.58                | Pk  | 36.3           | -24.7        | -95.2   | -54.02                  | -13             | -41.02      | V        |
| 6.87923               | 28.62                | Pk  | 36.3           | -24.7        | -95.2   | -54.98                  | -13             | -41.98      | H        |
| Mid Channel, 1745MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.49063               | 31.22                | Pk  | 30.2           | -27.7        | -95.2   | -61.48                  | -13             | -48.48      | H        |
| 3.49197               | 31.2                 | Pk  | 30.2           | -27.7        | -95.2   | -61.5                   | -13             | -48.5       | V        |
| 5.23496               | 29.72                | Pk  | 33.5           | -26.6        | -95.2   | -58.58                  | -13             | -45.58      | V        |
| 5.23675               | 29.89                | Pk  | 33.5           | -26.6        | -95.2   | -58.41                  | -13             | -45.41      | H        |
| 6.98083               | 28.88                | Pk  | 36.3           | -24.4        | -95.2   | -54.42                  | -13             | -41.42      | H        |
| 6.98112               | 29.24                | Pk  | 36.3           | -24.4        | -95.2   | -54.06                  | -13             | -41.06      | V        |
| High Channel, 1770MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.54041               | 31.46                | Pk  | 30.2           | -27.8        | -95.2   | -61.34                  | -13             | -48.34      | V        |
| 3.54109               | 32.25                | Pk  | 30.2           | -27.8        | -95.2   | -60.55                  | -13             | -47.55      | H        |
| 5.3103                | 29.67                | Pk  | 33.3           | -26.5        | -95.2   | -58.73                  | -13             | -45.73      | V        |
| 5.31233               | 29.39                | Pk  | 33.2           | -26.4        | -95.2   | -59.01                  | -13             | -46.01      | H        |
| 7.07962               | 28.22                | Pk  | 36.6           | -23.7        | -95.2   | -54.08                  | -13             | -41.08      | H        |
| 7.08217               | 28.49                | Pk  | 36.7           | -23.7        | -95.2   | -53.71                  | -13             | -40.71      | V        |

### 7.1.13. LTE BAND 71

#### LIMITS

FCC: §27.53 (g)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

#### QPSK LTE BAND 71 (20.0MHZ BANDWIDTH)

|                |                  |
|----------------|------------------|
| Project #:     | 13171736         |
| Date:          | 6/16/2020        |
| Test Engineer: | 19140            |
| Configuration: | EUT only         |
| Mode           | LTE77 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T348 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 673MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.34585               | 40.78                | Pk  | 25.3           | -30.8        | -95.2   | -59.92                  | -13             | -46.92      | H        |
| 1.34738               | 40.8                 | Pk  | 25.3           | -30.8        | -95.2   | -59.9                   | -13             | -46.9       | V        |
| 2.01996               | 39.4                 | Pk  | 27.2           | -29.8        | -95.2   | -58.4                   | -13             | -45.4       | V        |
| 2.02025               | 39.74                | Pk  | 27.2           | -29.7        | -95.2   | -57.96                  | -13             | -44.96      | H        |
| 2.69084               | 38.77                | Pk  | 29.2           | -29          | -95.2   | -56.23                  | -13             | -43.23      | H        |
| 2.69125               | 39.31                | Pk  | 29.2           | -29          | -95.2   | -55.69                  | -13             | -42.69      | V        |
| Mid Channel, 680.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.36251               | 41.44                | Pk  | 25.3           | -30.8        | -95.2   | -59.26                  | -13             | -46.26      | H        |
| 1.3629                | 42.66                | Pk  | 25.4           | -30.8        | -95.2   | -57.94                  | -13             | -44.94      | V        |
| 2.03951               | 40.48                | Pk  | 27             | -29.7        | -95.2   | -57.42                  | -13             | -44.42      | V        |
| 2.03958               | 39.74                | Pk  | 27             | -29.7        | -95.2   | -58.16                  | -13             | -45.16      | H        |
| 2.72022               | 39.28                | Pk  | 29             | -28.9        | -95.2   | -55.82                  | -13             | -42.82      | H        |
| 2.72323               | 38.87                | Pk  | 29             | -28.9        | -95.2   | -56.23                  | -13             | -43.23      | V        |
| High Channel, 688MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.37398               | 41.45                | Pk  | 25.4           | -30.7        | -95.2   | -59.05                  | -13             | -46.05      | H        |
| 1.37473               | 44.03                | Pk  | 25.4           | -30.8        | -95.2   | -56.57                  | -13             | -43.57      | V        |
| 2.06327               | 40.17                | Pk  | 27             | -29.6        | -95.2   | -57.63                  | -13             | -44.63      | H        |
| 2.06591               | 38.98                | Pk  | 27             | -29.6        | -95.2   | -58.82                  | -13             | -45.82      | V        |
| 2.75007               | 38.68                | Pk  | 29             | -28.9        | -95.2   | -56.42                  | -13             | -43.42      | H        |
| 2.7515                | 38.64                | Pk  | 29             | -28.9        | -95.2   | -56.46                  | -13             | -43.46      | V        |

## 8. SETUP PHOTOS

Please refer to 13179116-EP1 for setup photos

## **Appendix A – Reference Test Report 13179116-E8**

Attached is the test report from the parent / reference model. The data from the reference report is being reused for the variant model described in this test report (13171736-E8).



# **TEST REPORT**

**Report Number. :** 13179116-E8V4

**Applicant :** APPLE, INC  
1 APPLE PARK WAY  
CUPERTINO, CA 95014, U.S.A.

**Model :** A2172

**FCC ID :** BCG-E3542A

**EUT Description :** SMARTPHONE

**Test Standard(s) :** FCC CFR47 PART 22H, 24E, 27, 90S, 90R, AND 96

**Date Of Issue:**  
SEPTEMBER 29, 2020

**Prepared by:**  
UL Verification Services Inc.  
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NVLAP Lab code: 200065-0

Revision History

| Rev. | Issue Date | Revisions                                                                                                                                                                                                 | Revised By       |
|------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| V1   | 8/24/2020  | Initial Review                                                                                                                                                                                            | Mengistu Mekuria |
| V2   | 9/14/2020  | Addressed TCB Questions                                                                                                                                                                                   | Mengistu Mekuria |
| V3   | 9/28/2020  | 5G NR band description & Changes 5G NR Band n41 Antenna Port Naming                                                                                                                                       | Mengistu Mekuria |
| V4   | 9/29/2020  | Updated Antenna gains, Updated Section 5.5, Added 20MHz Power and OBW for 5G NR Band 41, updated OBW tables to include BPSK for all 5G NR Bands. Updated EIRP data for 5G NR 41 to reflect changes in V3. | John Thompson    |

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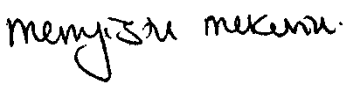
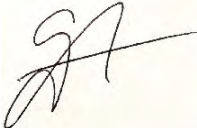
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# 1. ATTESTATION OF TEST RESULTS

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Applicant Name and Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | APPLE, INC<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A.                       |                                                                                       |
| Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A2172                                                                               |                                                                                       |
| FCC ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BCG-E3542A                                                                          |                                                                                       |
| EUT Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SMARTPHONE                                                                          |                                                                                       |
| Serial Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MODEL (A2172): C070033L5P573(Conducted) and G6TCN00YQ5HL<br>(Radiated)              |                                                                                       |
| Date Tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | APRIL 06, 2020 to SEPTEMBER 29, 2020                                                |                                                                                       |
| Applicable Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FCC CFR47 22H, 24E, 27, 90S, 90R, AND 96                                            |                                                                                       |
| Test Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | COMPLIES                                                                            |                                                                                       |
| <p>UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.</p> <p>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 the U.S. government.</p> |                                                                                     |                                                                                       |
| Approved & Released By:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reviewed By:                                                                        | Prepared By:                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |
| Mengistu Mekuria<br>Lead Test Engineer<br>UL Verification Services Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Glenn Escano<br>Project Engineer<br>UL Verification Services Inc.                   | Sintia Andrean<br>Laboratory Engineer<br>UL Verification Services Inc.                |

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90, and Part 96
- [FCC KDB 971168 D01 v03r01](#): Power Meas License Digital Systems
- [FCC KDB 971168 D02 v02r01](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01 v01r01](#): Determining ERP and EIRP.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, 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                            | 47658 Kato Rd.                                              |
|------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> Chamber A (IC:2324B-1) | <input type="checkbox"/> Chamber D (IC:22541-1) | <input checked="" type="checkbox"/> Chamber I (IC: 2324A-5) |
| <input checked="" type="checkbox"/> Chamber B (IC:2324B-2) | <input type="checkbox"/> Chamber E (IC:22541-2) | <input type="checkbox"/> Chamber J (IC: 2324A-6)            |
| <input type="checkbox"/> Chamber C (IC:2324B-3)            | <input type="checkbox"/> Chamber F (IC:22541-3) | <input type="checkbox"/> Chamber K (IC: 2324A-1)            |
|                                                            | <input type="checkbox"/> Chamber G (IC:22541-4) | <input type="checkbox"/> Chamber L (IC: 2324A-3)            |
|                                                            | <input type="checkbox"/> Chamber H (IC:22541-5) | <input type="checkbox"/> Chamber M (IC: 2324A-2)            |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324A.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

## 4. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

### 4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER                                           | U <sub>Lab</sub> |
|-----------------------------------------------------|------------------|
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz  | 3.39 dB          |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz    | 3.07 dB          |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB          |
| Worst Case Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB          |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB          |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB          |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.17 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%.

### 4.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

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)  
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

#### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.  
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

## 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, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

### 5.2. MAXIMUM OUTPUT POWER

#### EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015  
KDB 971168 D01 Section 5.6

$ERP/EIRP = P_{Meas} + GT - LC$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P<sub>Meas</sub>, typically dBW or dBm);

P<sub>Meas</sub> = 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:

## LTE BAND 2

| Part 24 / RSS 133  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            |                     | 2.00                  |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            |                     | 1.00                  |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 1850.7              | 1909.3                | 25.0                    | 26.00              | 0.398            | 1080         | 1M08G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 25.70              | 0.372            | 1082         | 1M08D7W             |
| 3.0                | QPSK       | 1851.5              | 1908.5                | 25.0                    | 26.00              | 0.398            | 2687         | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.6                    | 25.60              | 0.363            | 2685         | 2M69D7W             |
| 5.0                | QPSK       | 1852.5              | 1907.5                | 25.0                    | 26.00              | 0.398            | 4504         | 4M50G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 25.80              | 0.380            | 4487         | 4M49D7W             |
| 10.0               | QPSK       | 1855.0              | 1905.0                | 25.0                    | 26.00              | 0.398            | 8963         | 8M96G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.90              | 0.389            | 8932         | 8M93D7W             |
| 15.0               | QPSK       | 1857.5              | 1902.5                | 25.0                    | 26.00              | 0.398            | 13381        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 26.00              | 0.398            | 13392        | 13M4D7W             |
| 20.0               | QPSK       | 1860.0              | 1900.0                | 25.0                    | 26.00              | 0.398            | 17834        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 26.00              | 0.398            | 17823        | 17M8D7W             |

## LTE BAND 5

| Part 22H           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 7.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.20                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 824.7               | 848.3                 | 25.7                    | 18.35             | 0.068           | 1082         | 1M08G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.75             | 0.060           | 1084         | 1M08D7W             |
| 3.0                | QPSK       | 825.5               | 847.5                 | 25.7                    | 18.35             | 0.068           | 2693         | 2M69G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.75             | 0.060           | 2692         | 2M69D7W             |
| 5.0                | QPSK       | 826.5               | 846.5                 | 25.7                    | 18.35             | 0.068           | 4493         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 17.95             | 0.062           | 4479         | 4M48D7W             |
| 10.0               | QPSK       | 829.0               | 844.0                 | 25.7                    | 18.35             | 0.068           | 8976         | 8M98G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.75             | 0.060           | 8974         | 8M97D7W             |

## 5G NR Band n5

| Part 22H           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 7.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.20                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 15.0               | BPSK       | 831.5               | 841.5                 | 25.7                    | 18.35             | 0.068           | 13388        | 13M4G7W             |
|                    | QPSK       |                     |                       | 25.4                    | 18.05             | 0.064           | 13440        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 16.85             | 0.048           | 13436        | 13M4D7W             |
| 20.0               | BPSK       | 834.0               | 839.0                 | 25.7                    | 18.35             | 0.068           | 17834        | 17M8G7W             |
|                    | QPSK       |                     |                       | 25.5                    | 18.15             | 0.065           | 17851        | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 16.85             | 0.048           | 17821        | 17M8D7W             |

## 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 |
| 5.0                | QPSK       | 2502.5              | 2567.5                | 25.0                    | 25.90              | 0.389            | 4499         | 4M50G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.80              | 0.380            | 4487         | 4M49D7W             |
| 10.0               | QPSK       | 2505.0              | 2565.0                | 25.0                    | 25.90              | 0.389            | 8942         | 8M94G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.80              | 0.380            | 8937         | 8M94D7W             |
| 15.0               | QPSK       | 2507.5              | 2562.5                | 25.0                    | 25.90              | 0.389            | 13401        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.80              | 0.380            | 13415        | 13M4D7W             |
| 20.0               | QPSK       | 2510.0              | 2560.0                | 25.0                    | 25.90              | 0.389            | 17821        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 25.90              | 0.389            | 17869        | 17M9D7W             |

## LTE BAND 12

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.00               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 699.7               | 715.3                 | 25.7                    | 18.55             | 0.072           | 1079         | 1M08G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 18.05             | 0.064           | 1085         | 1M09D7W             |
| 3.0                | QPSK       | 700.5               | 714.5                 | 25.7                    | 18.55             | 0.072           | 2686         | 2M69G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 18.05             | 0.064           | 2681         | 2M68D7W             |
| 5.0                | QPSK       | 701.5               | 713.5                 | 25.7                    | 18.55             | 0.072           | 4491         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 18.15             | 0.065           | 4482         | 4M48D7W             |
| 10.0               | QPSK       | 704.0               | 711.0                 | 25.7                    | 18.55             | 0.072           | 8949         | 8M95G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.95             | 0.062           | 8923         | 8M92D7W             |

## 5G NR Band n12

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.00               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 15.0               | BPSK       | 706.5               | 708.5                 | 25.7                    | 18.55             | 0.072           | 13352        | 13M4G7W             |
|                    | QPSK       |                     |                       | 25.2                    | 18.05             | 0.064           | 13420        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 16.95             | 0.050           | 13342        | 13M3D7W             |

### **LTE BAND 13**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 3.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.50                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 779.5               | 784.5                 | 25.7                    | 18.05             | 0.064           | 4510         | 4M51G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 17.55             | 0.057           | 4497         | 4M50D7W             |
| 10.0               | QPSK       | 782.0               | 782.0                 | 25.7                    | 18.05             | 0.064           | 8973         | 8M97G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 17.25             | 0.053           | 8971         | 8M97D7W             |

### **LTE BAND 14**

| Part 90R / RSS 140 |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 3.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.60                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 790.5               | 795.5                 | 25.7                    | 17.95             | 0.062           | 4487         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.35             | 0.054           | 4483         | 4M48D7W             |
| 10.0               | QPSK       | 793.0               | 793.0                 | 25.7                    | 17.95             | 0.062           | 8985         | 8M99G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 17.15             | 0.052           | 8977         | 8M98D7W             |

### **LTE BAND 17**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 3.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.00                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 706.5               | 713.5                 | 25.7                    | 18.55             | 0.072           | 4495         | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 18.05             | 0.064           | 4476         | 4M48D7W             |
| 10.0               | QPSK       | 709.0               | 711.0                 | 25.7                    | 18.55             | 0.072           | 8958         | 8M96G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.95             | 0.062           | 8973         | 8M97D7W             |

## LTE BAND 25

| Part 24 / RSS 133  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            |                     | 2.00                  |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            |                     | 1.00                  |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 1850.7              | 1914.3                | 25.0                    | 26.00              | 0.398            | 1077         | 1M08G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.90              | 0.389            | 1085         | 1M09D7W             |
| 3.0                | QPSK       | 1851.5              | 1913.5                | 25.0                    | 26.00              | 0.398            | 2683         | 2M68G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 25.70              | 0.372            | 2688         | 2M69D7W             |
| 5.0                | QPSK       | 1852.5              | 1912.5                | 25.0                    | 26.00              | 0.398            | 4492         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 25.80              | 0.380            | 4489         | 4M49D7W             |
| 10.0               | QPSK       | 1855.0              | 1910.0                | 25.0                    | 26.00              | 0.398            | 8908         | 8M91G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 25.90              | 0.389            | 8924         | 8M92D7W             |
| 15.0               | QPSK       | 1857.5              | 1907.5                | 25.0                    | 26.00              | 0.398            | 13427        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 26.00              | 0.398            | 13386        | 13M4D7W             |
| 20.0               | QPSK       | 1860.0              | 1905.0                | 25.0                    | 26.00              | 0.398            | 17836        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 26.00              | 0.398            | 17826        | 17M8D7W             |

## LTE BAND 26 (Part 90S)

| Part 90S            |            |                     |                       |                         |                   |                 |              |                     |
|---------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| Conducted Limit (W) |            |                     | 100.00                |                         |                   |                 |              |                     |
| Antenna Gain (dBi)  |            |                     | -5.20                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)     | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                 | QPSK       | 814.7               | 823.3                 | 25.7                    | 18.35             | 0.068           | 1086         | 1M09G7W             |
|                     | 16QAM      |                     |                       | 25.1                    | 17.75             | 0.060           | 1088         | 1M09D7W             |
| 3.0                 | QPSK       | 815.5               | 822.5                 | 25.7                    | 18.35             | 0.068           | 2689         | 2M69G7W             |
|                     | 16QAM      |                     |                       | 25.1                    | 17.75             | 0.060           | 2693         | 2M69D7W             |
| 5.0                 | QPSK       | 816.5               | 821.5                 | 25.7                    | 18.35             | 0.068           | 4493         | 4M49G7W             |
|                     | 16QAM      |                     |                       | 25.2                    | 17.85             | 0.061           | 4509         | 4M51D7W             |
| 10.0                | QPSK       | 819.0               | 819.0                 | 25.7                    | 18.35             | 0.068           | 8937         | 8M94G7W             |
|                     | 16QAM      |                     |                       | 24.9                    | 17.55             | 0.057           | 8943         | 8M94D7W             |

## LTE BAND 30

| Part 27 / RSS 195  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            |                     | 0.25                  |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            |                     | -1.20                 |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 2307.5              | 2312.5                | 24.7                    | 23.50              | 0.224            | 4491.8       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 23.03              | 0.201            | 4492.5       | 4M49D7W             |
| 10.0               | QPSK       | 2310.0              | 2310.0                | 24.7                    | 23.50              | 0.224            | 8962.5       | 8M96G7W             |
|                    | 16QAM      |                     |                       | 24.6                    | 23.38              | 0.218            | 8938.8       | 8M94D7W             |

## 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 |
| 5.0                | QPSK       | 2498.5              | 2687.5                | 26.0                    | 26.90              | 0.490            | 4501.1       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 26.20              | 0.417            | 4495.6       | 4M50D7W             |
| 10.0               | QPSK       | 2501.0              | 2685.0                | 26.0                    | 26.90              | 0.490            | 8930.5       | 8M93G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 26.30              | 0.427            | 8963.1       | 8M96D7W             |
| 15.0               | QPSK       | 2503.5              | 2682.5                | 26.0                    | 26.90              | 0.490            | 13420.8      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 26.30              | 0.427            | 13433.7      | 13M4D7W             |
| 20.0               | QPSK       | 2506.0              | 2680.0                | 26.0                    | 26.90              | 0.490            | 17780.4      | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 26.00              | 0.398            | 17844        | 17M8D7W             |

## 5G NR Band n41

| 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 |
| 20.0               | QPSK       | 2506.0              | 2680.0                | 26.7                    | 27.60              | 0.575            | 17876        | 17M9G7W             |
|                    | 16QAM      |                     |                       | 26.1                    | 27.00              | 0.501            | 17890        | 17M9D7W             |
| 40.0               | QPSK       | 2516.0              | 2670.0                | 26.7                    | 27.60              | 0.575            | 35595        | 35M6G7W             |
|                    | 16QAM      |                     |                       | 26.5                    | 27.40              | 0.550            | 35662        | 35M7D7W             |
| 50.0               | QPSK       | 2521.0              | 2665.0                | 26.7                    | 27.60              | 0.575            | 45486        | 45M5G7W             |
|                    | 16QAM      |                     |                       | 26.4                    | 27.30              | 0.537            | 45557        | 45M6D7W             |
| 60.0               | QPSK       | 2526.0              | 2660.0                | 26.7                    | 27.60              | 0.575            | 57754        | 57M8G7W             |
|                    | 16QAM      |                     |                       | 26.2                    | 27.10              | 0.513            | 57757        | 57M8D7W             |
| 80.0               | QPSK       | 2536.0              | 2650.0                | 26.5                    | 27.40              | 0.550            | 76864        | 76M9G7W             |
|                    | 16QAM      |                     |                       | 26.5                    | 27.40              | 0.550            | 76903        | 76M9D7W             |
| 90.0               | QPSK       | 2541.0              | 2645.0                | 26.7                    | 27.60              | 0.575            | 85516        | 85M5G7W             |
|                    | 16QAM      |                     |                       | 25.9                    | 26.80              | 0.479            | 85428        | 85M4D7W             |
| 100.0              | QPSK       | 2546.0              | 2640.0                | 26.7                    | 27.60              | 0.575            | 96467        | 96M5G7W             |
|                    | 16QAM      |                     |                       | 26.6                    | 27.50              | 0.562            | 95743        | 95M7D7W             |

## LTE BAND 48

| Part 96               |            |                     |                       |                         |                    |                  |              |                     |
|-----------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)/ 10MHz |            | 0.20                |                       |                         |                    |                  |              |                     |
| 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 |
| 5.0                   | QPSK       | 3552.5              | 3697.5                | 23.6                    | 22.70              | 0.186            | 4469.4       | 4M47G7W             |
|                       | 16QAM      |                     |                       | 23.0                    | 22.10              | 0.162            | 4480.5       | 4M48D7W             |
| 10.0                  | QPSK       | 3555.0              | 3695.0                | 23.6                    | 22.70              | 0.186            | 9002         | 9M00G7W             |
|                       | 16QAM      |                     |                       | 23.2                    | 22.30              | 0.170            | 8942.9       | 8M94D7W             |
| 15.0                  | QPSK       | 3557.5              | 3692.5                | 23.6                    | 22.70              | 0.186            | 13337.7      | 13M3G7W             |
|                       | 16QAM      |                     |                       | 23.1                    | 22.20              | 0.166            | 13362        | 13M4D7W             |
| 20.0                  | QPSK       | 3560.0              | 3690.0                | 23.6                    | 22.70              | 0.186            | 17858.5      | 17M9G7W             |
|                       | 16QAM      |                     |                       | 23.0                    | 22.10              | 0.162            | 17893.1      | 17M9D7W             |

## LTE BAND 66

| Part 27 / RSS 139  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 1.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -1.90               |                       |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 1710.7              | 1779.3                | 25.7                    | 23.80              | 0.240            | 1092         | 1M09G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 23.20              | 0.209            | 1080         | 1M08D7W             |
| 3.0                | QPSK       | 1711.5              | 1778.5                | 25.7                    | 23.80              | 0.240            | 2689         | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 23.00              | 0.200            | 2682         | 2M68D7W             |
| 5.0                | QPSK       | 1712.5              | 1777.5                | 25.7                    | 23.80              | 0.240            | 4496         | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 23.20              | 0.209            | 4497         | 4M50D7W             |
| 10.0               | QPSK       | 1715.0              | 1775.0                | 25.7                    | 23.80              | 0.240            | 8966         | 8M97G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 23.00              | 0.200            | 8942         | 8M94D7W             |
| 15.0               | QPSK       | 1717.5              | 1772.5                | 25.7                    | 23.80              | 0.240            | 13416        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 23.40              | 0.219            | 13403        | 13M4D7W             |
| 20.0               | QPSK       | 1720.0              | 1770.0                | 25.7                    | 23.80              | 0.240            | 17832        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 23.30              | 0.214            | 17875        | 17M9D7W             |

## **LTE BAND 71**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            |                     | 3.00                  |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            |                     | -5.90                 |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 665.5               | 695.5                 | 25.7                    | 17.65             | 0.058           | 4491         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 17.15             | 0.052           | 4488         | 4M49D7W             |
| 10.0               | QPSK       | 668.0               | 693.0                 | 25.7                    | 17.65             | 0.058           | 8936         | 8M94G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.05             | 0.051           | 8953         | 8M95D7W             |
| 15.0               | QPSK       | 670.5               | 690.5                 | 25.7                    | 17.65             | 0.058           | 13395        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 17.15             | 0.052           | 13398        | 13M4D7W             |
| 20.0               | QPSK       | 673.0               | 688.0                 | 25.7                    | 17.65             | 0.058           | 17836        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 17.25             | 0.053           | 17885        | 17M9D7W             |

## **5G NR Band n77**

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            |                     | 1.00                  |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            |                     | -0.10                 |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 20.0               | QPSK       | 3710.0              | 3970.0                | 26.7                    | 26.59              | 0.456            | 17825        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 26.6                    | 26.47              | 0.444            | 17897        | 17M9D7W             |
| 40.0               | BPSK       | 3720.0              | 3960.0                | 26.7                    | 26.63              | 0.460            | 37894        | 37M9G7W             |
|                    | 16QAM      |                     |                       | 26.1                    | 25.99              | 0.397            | 35601        | 35M6D7W             |
| 50.0               | QPSK       | 3725.0              | 3955.0                | 26.7                    | 26.60              | 0.457            | 45590        | 45M6G7W             |
|                    | 16QAM      |                     |                       | 26.6                    | 26.49              | 0.446            | 45695        | 45M7D7W             |
| 60.0               | QPSK       | 3730.0              | 3950.0                | 26.7                    | 26.60              | 0.457            | 57679        | 57M7G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 24.76              | 0.299            | 57667        | 57M7D7W             |
| 80.0               | QPSK       | 3740.0              | 3940.0                | 26.7                    | 26.60              | 0.457            | 77007        | 77M0G7W             |
|                    | 16QAM      |                     |                       | 26.5                    | 26.38              | 0.435            | 76648        | 76M6D7W             |
| 90.0               | QPSK       | 3745.0              | 3935.0                | 26.7                    | 26.60              | 0.457            | 85525        | 85M5G7W             |
|                    | 16QAM      |                     |                       | 26.3                    | 26.15              | 0.412            | 86689        | 86M7D7W             |
| 100.0              | QPSK       | 3750.0              | 3930.0                | 26.7                    | 26.60              | 0.457            | 96242        | 96M2G7W             |
|                    | 16QAM      |                     |                       | 26.5                    | 26.35              | 0.432            | 96240        | 96M2D7W             |

### 5.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.28.03-1.

### 5.4. MAXIMUM ANTENNA GAIN

Please see table below:

| LTE Bands                                    | Antenna Gain (dBi) |       |       |       |       |       |       |
|----------------------------------------------|--------------------|-------|-------|-------|-------|-------|-------|
|                                              | ANT 1              | ANT 2 | ANT 3 | ANT 4 | ANT 7 | ANT 8 | ANT 9 |
| LTE Band 71, 5G NR Band n71, 663 – 698 MHz   | -5.9               | -5.3  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 12, 5G NR Band n12, 699 – 716 MHz   | -5.0               | -5.5  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 17, 704 – 716 MHz                   | -5.0               | -5.5  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 13, 777 – 787 MHz                   | -5.5               | -5.6  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 14, 788 – 798 MHz                   | -5.6               | -5.8  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 26, 814 – 824 MHz (Part 90S )       | -5.2               | -5.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 5, 5G NR Band n5, 824 – 849 MHz     | -5.2               | -5.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 66, 5G NR Band n66, 1710 – 1780 MHz | -1.9               | -1.0  | -1.5  | -3.0  | NA    | NA    | NA    |
| LTE Band 2, 5G NR Band n2, 1850 – 1910 MHz   | -2.2               | -3.8  | 1.0   | -1.8  | NA    | NA    | NA    |
| LTE Band 25, 5G NR Band n25 1850 – 1915 MHz  | -2.2               | -3.8  | 1.0   | -1.8  | NA    | NA    | NA    |
| LTE Band 30, 2305 – 2315 MHz                 | -3.3               | -1.7  | -1.2  | -2.3  | NA    | NA    | NA    |
| LTE Band 7, 2500 – 2570 MHz                  | -2.9               | 0.9   | 0.9   | -3.0  | NA    | NA    | NA    |
| LTE Band 41, 5G NR Band n41, 2496 – 2690 MHz | -2.5               | 0.9   | 0.9   | -2.8  | NA    | NA    | NA    |
| 5G NR Band n77, 3300 – 3980 MHz              | NA                 | NA    | NA    | -2.2  | -0.1  | -3.2  | -2.9  |
| LTE Band 48, 3550 – 3700 MHz                 | NA                 | NA    | NA    | -0.5  | -0.1  | -5.3  | -0.9  |

## 5.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports the following LTE and 5G NR Bands:

Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 14, Band 17, Band 25, Band 26, Band 30, Band 41, Band 48, Band 66, Band 71, 5G NR Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, 5G NR Band n71 and 5G NR Band n77.

For 5G NR Bands (n2, n5, n12, n25, n41, n66, and n71) having the same operations bandwidth and Power are covered by LTE bands of (Band 2, Band5, Band12, Band 25, Band 41, Band 66, and Band 71). Additional tests for 5G NR bands with higher BW modes than LTE Bands, includes 5G NR Bands n5, n12, and n41 were performed.

LTE Band 4 (1710-1755MHz, 5/10/15/20MHz bandwidth) is covered by LTE Band 66 because it is a subset of LTE band 66 and they have same output power.

FCC rule Part 22.905 of LTE Band 26 (824-849MHz) is covered by LTE Band 5 of same rule since they have the same output power and supported bandwidths.

For 5G NR bands, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

BPSK modulation applied only for 5G NR band frequencies and has the same tune up power as QPSK modulations.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation and QPSK was observed as the worst one and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM, and BPSK, modulations. For testing purposes emissions on sections 8 and 9 were measured while QPSK was set at or above target power for all bands. Conducted tests were performed on the worst case antenna because it has the highest conducted power. ANT1 is the worst case for all bands except Band 48, 5G NR Band 41, and 5G NR Band 77. For 5G NR Band 41 ANT2 is the worst case antenna. For band 48 ANT9 is the worst case antenna. For 5G NR Band n77 ANT7 is the worst case antenna.

For 5G NR Band n41 20MHz BW, antenna 2 and antenna 4 powers are higher than LTE band 41. Therefore, additional power measurements and occupied bandwidth tests were performed on antenna 2 and antenna 4 for 20MHz BW. Since LTE antenna 1 the highest output power of all (LTE band 41 and 5G NR Band n41) antennas, all other conducted tests for 20MHz BW were performed only on LTE antenna 1.

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, ANT4, ANT7, ANT8 and ANT 9 antennas to determine the worst case orientation. The following table exhibit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

| Freq Bands      | ANT1 | ANT2 | ANT3 | ANT4 | ANT7 | ANT8 | ANT9 |
|-----------------|------|------|------|------|------|------|------|
| 663 – 849 MHz   | Y    | Z    | N/A  | N/A  | N/A  | N/A  | N/A  |
| 1710 – 1915 MHz | X    | Y    | X    | X    | N/A  | N/A  | N/A  |
| 2300 – 2700 MHz | Y    | Z    | Y    | X    | N/A  | N/A  | N/A  |
| 3300 – 3980 MHz | N/A  | N/A  | N/A  | X    | Y    | X    | Y    |

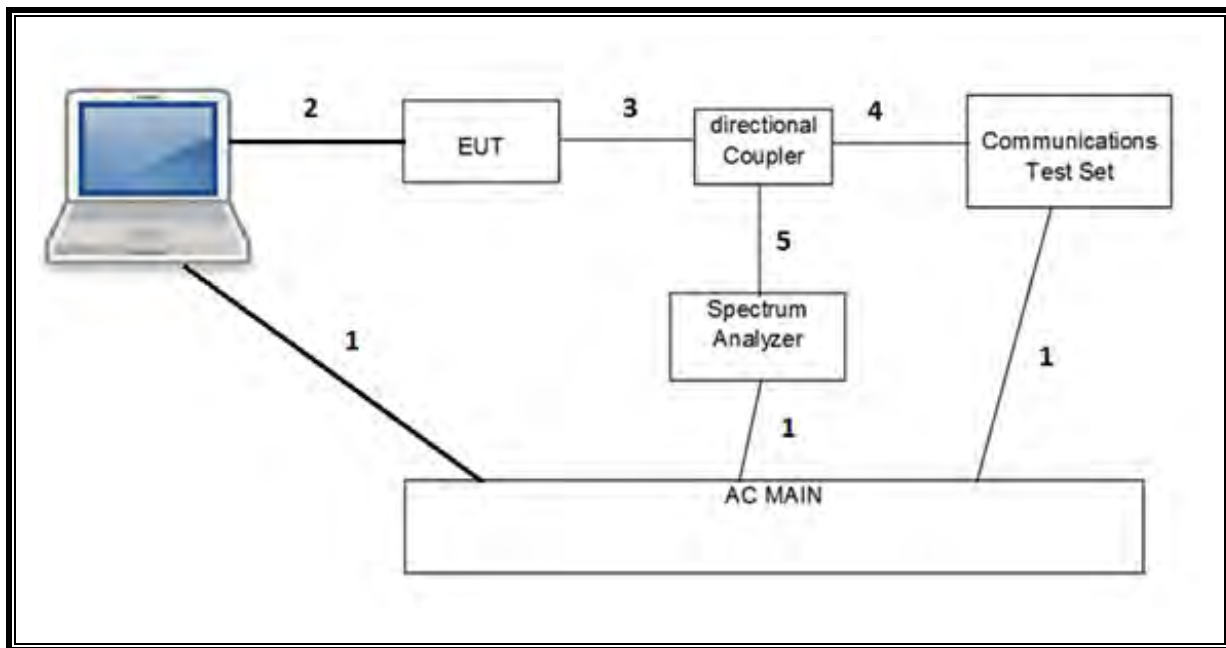
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

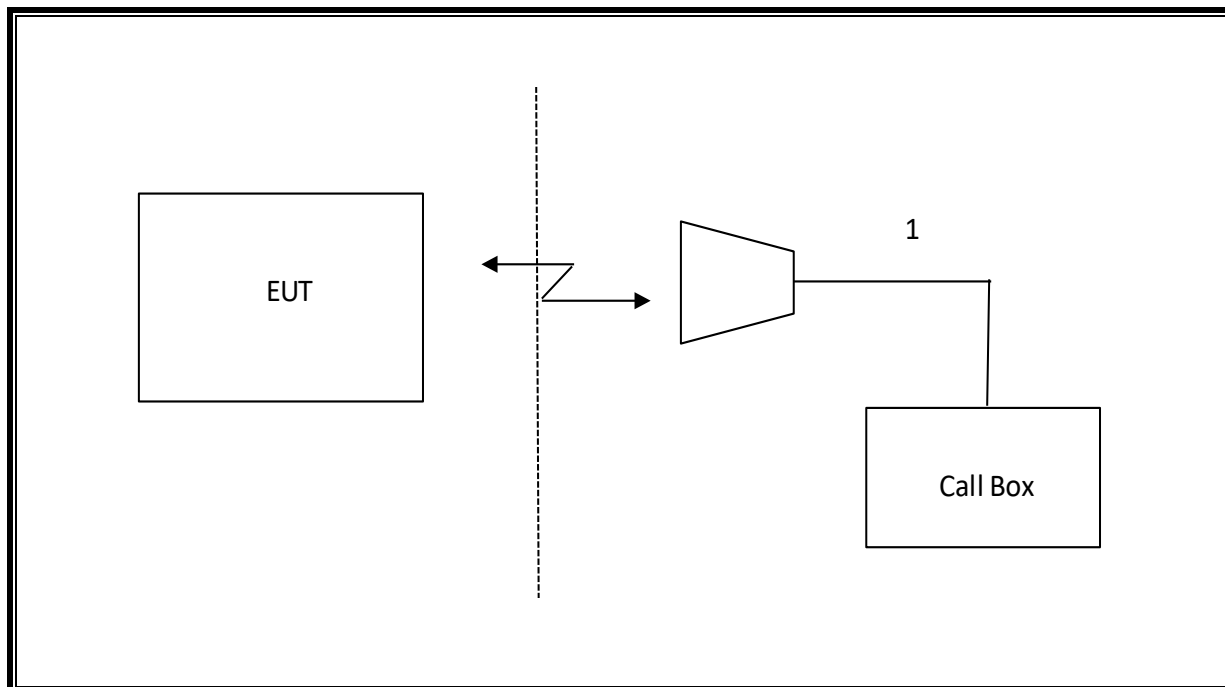
## 5.6. DESCRIPTION OF TEST SETUP

| SUPPORT TEST EQUIPMENT         |           |                      |                        |                  |                  |         |
|--------------------------------|-----------|----------------------|------------------------|------------------|------------------|---------|
| Description                    |           | Manufacturer         | Model                  | Serial Number    | FCC ID/ DoC      |         |
| Laptop AC/DC adapter           |           | Apple                | 85W MagSafe 2          | C0651730MMM6P4AL |                  |         |
| Laptop                         |           | Apple                | Macbook Pro            | C02PM012G3QD     |                  |         |
| Laptop                         |           | Apple                | Macbook Pro            | C02P52HGG085     |                  |         |
| I/O CABLES (RF CONDUCTED TEST) |           |                      |                        |                  |                  |         |
| Cable No.                      | Port      | # of Identical Ports | Connector Type         | Cable Type       | Cable Length (m) | Remarks |
| 1                              | AC        | 3                    | US 115V                | Un-shielded      | 2.0              | N/A     |
| 2                              | USB       | 1                    | DC                     | Un-shielded      | 1.0              | N/A     |
| 3                              | RF In/Out | 1                    | EUT                    | Shielded         | 0.6              | N/A     |
| 4                              | RF In/Out | 1                    | Communication Test Set | Shielded         | 1.2              | N/A     |
| 5                              | RF In/Out | 1                    | Barrel                 | N/A              | N/A              | N/A     |
| I/O CABLES (RF RADIATED TEST)  |           |                      |                        |                  |                  |         |
| Cable No.                      | Port      | # of Identical Ports | Connector Type         | Cable Type       | Cable Length (m) | Remarks |
| 1                              | RF In/Out | 1                    | Antenna                | Shielded         | 5.0              | 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                            | A.H. Systems, Inc.  | SAS-571                | T962                       | 01/25/2021 |
| Antenna, Horn 1-18GHz                            | ETS Lindgren        | 3117                   | T346                       | 07/20/2021 |
| Antenna, Horn 1-18GHz                            | ETS Lindgren        | 3117                   | T136                       | 07/07/2021 |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz      | Sunol Sciences      | JB3                    | T407                       | 05/20/2021 |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz      | Sunol Sciences      | JB3                    | PRE0184052                 | 11/12/2020 |
| *Antenna, Broadband Hybrid, 30MHz to 2000MHz     | Sunol Sciences      | JB3                    | PRE0181575                 | 09/05/2020 |
| Antenna, Active Loop 9KHz to 30MHz               | ETS-Lindgren        | 6502                   | T757                       | 10/01/2020 |
| Antenna Horn, 18 to 26GHz                        | ARA                 | SWH-28                 | T125                       | 04/17/2021 |
| Antenna, Horn 26-40GHz                           | ARA                 | MWH-2640/B             | PRE0182203                 | 04/17/2021 |
| *Amplifier, 1 to 18GHz                           | MITEQ               | AFS42-00101800-25-S-42 | T1165                      | 05/18/2020 |
| Amplifier, 1 to 18GHz                            | MITEQ               | AFS42-00101800-25-S-42 | PRE0181078                 | 05/06/2021 |
| Amplifier, 10KHz to 1GHz, 32dB                   | Sonoma              | 310N                   | PRE0180176                 | 07/14/2021 |
| Amplifier, 100KHz to 1GHz, 32dB                  | Keysight            | 8447D                  | T15                        | 10/26/2020 |
| *Amplifier, 10KHz to 1GHz, 32dB                  | Sonoma              | 310N                   | PRE0180175                 | 05/29/2020 |
| Pre-Amp 18-26GHz                                 | Agilent Technology  | 8449B                  | T404                       | 04/08/2021 |
| Amplifier, 26-40GHz                              | Miteq               | TTA2640                | T1864                      | 04/08/2021 |
| Filter, BRF 1850 – 1910 MHz                      | Micro-Tronics       | BRM50714-02            | T1796                      | 06/23/2021 |
| Filter, BRF 824 – 848 MHz                        | Micro-Tronics       | BRM20025               | PRE0191180                 | 06/23/2021 |
| Filter, HPF 1.2 GHz                              | MICRO-TRONICS       | MICRO-TRONICS          | T1737                      | 06/23/2021 |
| *Directional Coupler                             | KRYTAR              | 152610                 | T1536                      | 06/09/2020 |
| *Directional Coupler                             | KRYTAR              | 152610                 | T1161                      | 08/14/2020 |
| *Directional Coupler                             | KRYTAR              | 152613                 | T1537                      | 06/08/2020 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T340                       | 01/22/2021 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T1454                      | 07/15/2021 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T907                       | 01/22/2021 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | N9030A                 | T908                       | 05/05/2021 |
| Spectrum Analyzer, PSA, 3Hz to 26.5GHz           | Keysight            | E4440A                 | T198                       | 01/28/2021 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | E4440A                 | T200                       | 01/24/2021 |
| EMI Test Receiver                                | Rohde & Schwarz     | ESW44                  | PRE0179522                 | 02/18/2021 |
| Wireless Communications Test Set, 8960 Series 10 | Agilent             | E5515C                 | T211                       | 02/18/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T948                       | 08/10/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T1871                      | 02/25/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T972                       | 02/24/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T260                       | 02/19/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T959                       | 02/19/2021 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | 163287                     | 10/23/2020 |
| UXM 5G Wireless Test Platform                    | Keysight            | E7515B                 | MY59321399                 | 10/09/2020 |
| Chamber, Environmental                           | Cincinnati Sub Zero | ZPHS-8-3.5-SCT/WC      | T754                       | 12/22/2020 |
| Environmental Chamber                            | Cincinnati Sub Zero | ZPHS-8-3.5-SCT/WC      | T1154                      | 12/22/2020 |
| Power Meter, P-series single channel             | Keysight            | N1912A                 | T1245                      | 01/22/2021 |
| Power Sensor                                     | Keysight            | N1921A                 | T1225                      | 02/23/2021 |
| UL AUTOMATION SOFTWARE                           |                     |                        |                            |            |
| CLT Software                                     | UL                  | UL RF                  | Ver 7.6, November 11, 2017 |            |
| Power Measurement Software                       | UL                  | UL RF                  | Ver 2.7, 2019              |            |
| Radiated test software                           | UL                  | UL RF                  | Ver 9.5 June 15, 2019      |            |
| Signal Generation Software                       | Apple               | 5G NR GUI              | Automation_v495            |            |

### Notes:

\*Testing is completed before equipment expiration date.

## 7. RF OUTPUT POWER VERIFICATION

### CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All LTE bands conducted average power is obtained from the CMW500 telecommunication test set.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS136.101 specification.

UE Power Class: 3 (23 +/- 2dBm). Band 41 UE Power Class: 2 (26 +/-2 dBm).The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS136.101.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**

| Modulation | Channel bandwidth / Transmission bandwidth ( $N_{RB}$ ) |         |       |        |        |        | 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      |
| 64 QAM     | ≤ 5                                                     | ≤ 4     | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | ≤ 2      |
| 64 QAM     | > 5                                                     | > 4     | > 8   | > 12   | > 16   | > 18   | ≤ 3      |
| 256 QAM    | ≥ 1                                                     |         |       |        |        |        | ≤ 5      |

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS136.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS\_01".

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

| Network Signalling value | Requirements (subclause) | E-UTRA Band                      | Channel bandwidth (MHz) | Resources Blocks ( $N_{RB}$ ) | A-MPR (dB) |
|--------------------------|--------------------------|----------------------------------|-------------------------|-------------------------------|------------|
| NS_01                    | 6.6.2.1.1                | Table 5.5-1                      | 1.4, 3, 5, 10, 15, 20   | Table 5.6-1                   | N/A        |
| NS_03                    | 6.6.2.2.1                | 2, 4, 10, 23, 25, 35, 36, 66, 70 | 3                       | >5                            | ≤ 1        |
|                          |                          |                                  | 5                       | >6                            | ≤ 1        |
|                          |                          |                                  | 10                      | >6                            | ≤ 1        |
|                          |                          |                                  | 15                      | >8                            | ≤ 1        |
|                          |                          |                                  | 20                      | >10                           | ≤ 1        |
| NS_04                    | 6.6.2.2.2, 6.6.3.3.19    | 41                               | 5, 10, 15, 20           | Table 6.2.4-4, Table 6.2.4-4a |            |

**Table 6.2.2.3-1: Maximum Power Reduction (MPR) for Power 3**

| Modulation                                                                                                                                                                                                                                                                                                                                             | MPR (dB)            |                      |                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|----------------------|
|                                                                                                                                                                                                                                                                                                                                                        | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM PI/2 BPSK                                                                                                                                                                                                                                                                                                                                   | $\leq 3.5^1$        | $\leq 1.2^1$         | $\leq 0.2^1$         |
|                                                                                                                                                                                                                                                                                                                                                        | $\leq 0.5^2$        |                      | $0^2$                |
| DFT-s-OFDM QPSK                                                                                                                                                                                                                                                                                                                                        | $\leq 1$            |                      | 0                    |
| DFT-s-OFDM 16 QAM                                                                                                                                                                                                                                                                                                                                      | $\leq 2$            |                      | $\leq 1$             |
| DFT-s-OFDM 64 QAM                                                                                                                                                                                                                                                                                                                                      |                     | $\leq 2.5$           |                      |
| DFT-s-OFDM 256 QAM                                                                                                                                                                                                                                                                                                                                     |                     | $\leq 4.5$           |                      |
| CP-OFDM QPSK                                                                                                                                                                                                                                                                                                                                           | $\leq 3$            |                      | $\leq 1.5$           |
| CP-OFDM 16 QAM                                                                                                                                                                                                                                                                                                                                         | $\leq 3$            |                      | $\leq 2$             |
| CP-OFDM 64 QAM                                                                                                                                                                                                                                                                                                                                         |                     | $\leq 3.5$           |                      |
| CP-OFDM 256 QAM                                                                                                                                                                                                                                                                                                                                        |                     | $\leq 6.5$           |                      |
| NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and UE indicates support for UE capability <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm. |                     |                      |                      |
| NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE <i>powerBoostPi2BPSK</i> is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.                                                                      |                     |                      |                      |

**Table 6.2.2.3-2: Maximum Power Reduction (MPR) for Power Class 2**

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

## RESULTS

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 2

Test Engineer ID: 39004 Test Date: 3/9/2020

### OUTPUT POWER FOR LTE BAND 2 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18607                   | 18900  | 19193  | 18607  | 18900  | 19193  | 18607  | 18900  | 19193  | 18607  | 18900  | 19193  |
|                    |            |                  |              | 1850.7                  | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 |
| 1.4                | QPSK       | 1                | 0            | 25.3                    | 25.6   | 25.7   | 22.8   | 23.1   | 22.9   | 24.9   | 24.8   | 24.7   | 22.7   | 23.0   | 22.9   |
|                    |            | 1                | 2            | 25.4                    | 25.7   | 25.7   | 22.9   | 23.1   | 23.0   | 25.0   | 24.9   | 24.7   | 22.8   | 23.0   | 23.0   |
|                    |            | 1                | 5            | 25.4                    | 25.6   | 25.5   | 22.8   | 23.1   | 22.9   | 24.8   | 24.8   | 24.6   | 22.7   | 22.9   | 22.9   |
|                    |            | 3                | 0            | 25.5                    | 25.6   | 25.4   | 22.9   | 23.0   | 23.0   | 24.9   | 24.8   | 24.7   | 22.7   | 22.9   | 22.9   |
|                    |            | 3                | 1            | 25.5                    | 25.7   | 25.4   | 22.9   | 23.1   | 23.0   | 24.9   | 24.8   | 24.7   | 22.8   | 22.9   | 23.0   |
|                    |            | 3                | 2            | 25.5                    | 25.7   | 25.3   | 22.9   | 23.1   | 23.0   | 24.9   | 24.8   | 24.7   | 22.7   | 22.9   | 23.0   |
|                    | 16QAM      | 6                | 0            | 24.5                    | 24.7   | 24.5   | 22.0   | 22.1   | 22.1   | 24.5   | 24.3   | 24.2   | 22.3   | 22.5   | 22.5   |
|                    |            | 1                | 0            | 25.0                    | 24.8   | 24.6   | 22.1   | 22.3   | 22.5   | 24.5   | 24.5   | 24.6   | 22.4   | 22.6   | 22.9   |
|                    |            | 1                | 2            | 25.0                    | 24.9   | 24.6   | 22.1   | 22.3   | 22.5   | 24.6   | 24.5   | 24.6   | 22.4   | 22.7   | 22.9   |
|                    |            | 1                | 5            | 25.0                    | 24.8   | 24.6   | 22.1   | 22.1   | 22.4   | 24.5   | 24.4   | 24.5   | 22.3   | 22.5   | 22.8   |
|                    |            | 3                | 0            | 24.8                    | 25.0   | 24.6   | 22.2   | 22.1   | 22.3   | 24.7   | 24.4   | 24.4   | 22.5   | 22.5   | 22.7   |
|                    |            | 3                | 1            | 24.9                    | 25.0   | 24.6   | 22.3   | 22.2   | 22.3   | 24.7   | 24.5   | 24.5   | 22.6   | 22.6   | 22.8   |
|                    | 64QAM      | 3                | 2            | 24.9                    | 25.0   | 24.6   | 22.3   | 22.2   | 22.3   | 24.7   | 24.5   | 24.4   | 22.6   | 22.6   | 22.7   |
|                    |            | 6                | 0            | 23.6                    | 24.0   | 23.8   | 21.3   | 21.3   | 21.0   | 23.7   | 23.5   | 23.1   | 21.6   | 21.6   | 21.4   |
|                    |            | 1                | 0            | 24.0                    | 23.8   | 23.9   | 21.1   | 20.7   | 20.7   | 22.1   | 22.5   | 22.9   | 21.4   | 21.3   | 21.3   |
|                    |            | 1                | 2            | 24.1                    | 23.9   | 23.9   | 21.1   | 20.8   | 20.7   | 22.1   | 22.6   | 22.9   | 21.4   | 21.3   | 21.4   |
|                    |            | 1                | 5            | 24.0                    | 23.8   | 23.7   | 21.0   | 20.7   | 20.7   | 22.1   | 22.4   | 22.8   | 21.3   | 21.2   | 21.3   |
|                    |            | 3                | 0            | 24.0                    | 23.9   | 23.6   | 21.0   | 20.8   | 20.5   | 21.8   | 22.4   | 22.8   | 21.3   | 21.3   | 21.1   |
|                    | 256QAM     | 3                | 1            | 24.1                    | 23.9   | 23.6   | 21.1   | 20.8   | 20.5   | 21.8   | 22.4   | 22.8   | 21.4   | 21.4   | 21.2   |
|                    |            | 3                | 2            | 24.1                    | 24.0   | 23.5   | 21.0   | 20.9   | 20.5   | 21.8   | 22.4   | 22.8   | 21.4   | 21.4   | 21.2   |
|                    |            | 6                | 0            | 22.7                    | 23.1   | 22.7   | 19.7   | 19.9   | 19.6   | 20.9   | 21.1   | 21.9   | 20.0   | 20.5   | 20.3   |
|                    |            | 1                | 0            | 21.2                    | 20.7   | 20.6   | 13.2   | 20.9   | 20.9   | 18.6   | 18.9   | 18.6   | 18.7   | 18.6   | 18.7   |
|                    |            | 1                | 2            | 21.2                    | 20.8   | 20.7   | 13.1   | 20.9   | 20.9   | 18.7   | 19.0   | 18.7   | 18.7   | 18.7   | 19.3   |
|                    |            | 1                | 5            | 21.1                    | 20.7   | 20.6   | 20.7   | 20.9   | 20.9   | 18.5   | 18.9   | 18.5   | 18.7   | 18.7   | 19.4   |
|                    |            | 3                | 0            | 21.2                    | 21.1   | 21.1   | 20.7   | 20.9   | 20.9   | 19.0   | 18.9   | 18.9   | 18.8   | 18.8   | 19.1   |
|                    |            | 3                | 1            | 21.2                    | 21.2   | 21.2   | 20.8   | 20.9   | 20.9   | 19.1   | 18.9   | 18.9   | 18.7   | 18.8   | 19.1   |
|                    |            | 3                | 2            | 21.2                    | 21.2   | 21.2   | 20.8   | 20.9   | 20.9   | 19.1   | 18.9   | 18.9   | 18.8   | 18.8   | 19.2   |
|                    |            | 6                | 0            | 21.3                    | 21.0   | 21.2   | 20.8   | 21.0   | 20.9   | 19.0   | 18.9   | 18.7   | 18.7   | 18.6   | 19.2   |

## OUTPUT POWER FOR LTE BAND 2 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18615                   | 18900  | 19185  | 18615  | 18900  | 19185  | 18615  | 18900  | 19185  | 18615  | 18900  | 19185  |
|                    |            |                  |              | 1851.5                  | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 |
| 3.0                | QPSK       | 1                | 0            | 25.7                    | 25.7   | 25.7   | 23.1   | 23.1   | 23.1   | 25.0   | 24.8   | 24.7   | 22.9   | 22.9   | 23.0   |
|                    |            | 1                | 7            | 25.7                    | 25.7   | 25.5   | 23.1   | 23.1   | 23.1   | 24.9   | 24.7   | 24.7   | 22.9   | 22.9   | 22.9   |
|                    |            | 1                | 14           | 25.7                    | 25.7   | 25.3   | 23.0   | 23.1   | 23.0   | 24.9   | 24.8   | 24.3   | 22.8   | 22.9   | 22.9   |
|                    |            | 8                | 0            | 24.8                    | 24.8   | 24.7   | 22.2   | 22.2   | 22.1   | 24.6   | 24.4   | 24.3   | 22.5   | 22.5   | 22.6   |
|                    |            | 8                | 4            | 24.8                    | 24.8   | 24.6   | 22.3   | 22.2   | 22.1   | 24.6   | 24.4   | 24.3   | 22.4   | 22.6   | 22.6   |
|                    |            | 8                | 7            | 24.8                    | 24.9   | 24.6   | 22.2   | 22.3   | 22.1   | 24.6   | 24.5   | 24.3   | 22.5   | 22.6   | 22.6   |
|                    | 16QAM      | 15               | 0            | 24.8                    | 24.8   | 24.6   | 22.2   | 22.2   | 22.1   | 24.6   | 24.4   | 24.7   | 22.4   | 22.5   | 22.6   |
|                    |            | 1                | 0            | 24.9                    | 24.9   | 25.0   | 22.3   | 22.2   | 22.5   | 24.6   | 24.2   | 24.6   | 22.8   | 22.6   | 22.6   |
|                    |            | 1                | 7            | 24.8                    | 24.8   | 24.8   | 22.2   | 22.3   | 22.4   | 24.6   | 24.2   | 24.6   | 22.8   | 22.5   | 22.4   |
|                    |            | 1                | 14           | 24.7                    | 24.8   | 24.7   | 22.1   | 22.2   | 22.4   | 24.5   | 24.2   | 23.4   | 22.7   | 22.5   | 22.4   |
|                    |            | 8                | 0            | 23.9                    | 23.9   | 23.8   | 21.3   | 21.3   | 21.2   | 23.7   | 23.5   | 23.5   | 21.5   | 21.6   | 21.7   |
|                    |            | 8                | 4            | 23.9                    | 23.9   | 23.8   | 21.3   | 21.4   | 21.2   | 23.6   | 23.5   | 23.4   | 21.6   | 21.7   | 21.7   |
|                    | 64QAM      | 8                | 7            | 23.8                    | 24.0   | 23.8   | 21.3   | 21.4   | 21.2   | 23.6   | 23.5   | 23.3   | 21.5   | 21.6   | 21.7   |
|                    |            | 15               | 0            | 23.8                    | 23.8   | 23.8   | 21.2   | 21.2   | 21.2   | 23.6   | 23.4   | 22.9   | 21.4   | 21.5   | 21.6   |
|                    |            | 1                | 0            | 23.9                    | 24.0   | 23.8   | 20.9   | 20.9   | 20.6   | 22.1   | 22.5   | 22.9   | 21.4   | 21.5   | 21.3   |
|                    |            | 1                | 7            | 23.8                    | 24.0   | 23.7   | 20.8   | 20.9   | 20.6   | 22.1   | 22.4   | 22.9   | 21.3   | 21.5   | 21.3   |
|                    |            | 1                | 14           | 23.8                    | 24.0   | 23.6   | 20.8   | 20.8   | 20.5   | 22.3   | 22.4   | 21.8   | 21.2   | 21.5   | 21.3   |
|                    |            | 8                | 0            | 22.6                    | 22.8   | 22.8   | 19.6   | 19.6   | 19.6   | 20.9   | 21.3   | 21.9   | 20.1   | 20.3   | 20.3   |
|                    | 256QAM     | 8                | 4            | 22.6                    | 22.8   | 22.8   | 19.7   | 19.6   | 19.6   | 21.0   | 21.3   | 21.9   | 20.1   | 20.3   | 20.3   |
|                    |            | 8                | 7            | 22.7                    | 22.8   | 22.8   | 19.7   | 19.7   | 19.6   | 21.0   | 21.3   | 21.8   | 20.1   | 20.4   | 20.3   |
|                    |            | 15               | 0            | 22.7                    | 22.7   | 22.7   | 19.7   | 19.6   | 19.6   | 21.1   | 21.2   | -0.8   | 20.2   | 20.2   | 20.3   |
|                    |            | 1                | 0            | 20.9                    | 21.1   | 21.1   | 20.4   | 20.5   | 20.5   | 18.9   | 18.9   | 18.9   | 20.3   | 19.9   | 20.1   |
|                    |            | 1                | 7            | 20.9                    | 21.0   | 21.0   | 20.5   | 20.5   | 20.5   | 18.8   | 18.9   | 18.9   | 20.3   | 19.8   | 20.1   |
|                    |            | 1                | 14           | 20.8                    | 20.9   | 21.0   | 20.4   | 20.5   | 20.5   | 18.7   | 18.9   | 18.8   | 20.2   | 19.8   | 20.0   |
|                    |            | 8                | 0            | 21.4                    | 21.1   | 21.1   | 20.4   | 20.5   | 20.5   | 19.1   | 18.9   | 18.8   | 20.3   | 20.2   | 20.0   |
|                    |            | 8                | 4            | 21.4                    | 21.2   | 21.2   | 20.4   | 20.5   | 20.5   | 19.1   | 18.9   | 18.8   | 20.3   | 20.2   | 20.0   |
|                    |            | 8                | 7            | 21.3                    | 21.2   | 21.2   | 20.4   | 20.5   | 20.5   | 19.1   | 18.9   | 18.8   | 20.3   | 20.2   | 20.0   |
|                    |            | 15               | 0            | 21.3                    | 21.1   | 21.3   | 20.4   | 20.5   | 20.5   | 19.0   | 18.8   | 18.9   | 20.1   | 20.1   | 20.2   |

## OUTPUT POWER FOR LTE BAND 2 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18625                   | 18900  | 19175  | 18625  | 18900  | 19175  | 18625  | 18900  | 19175  | 18625  | 18900  | 19175  |
|                    |            |                  |              | 1852.5                  | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 |
| 5.0                | QPSK       | 1                | 0            | 25.4                    | 25.6   | 25.4   | 22.9   | 23.0   | 22.7   | 25.0   | 24.8   | 24.7   | 22.6   | 22.8   | 22.9   |
|                    |            | 1                | 12           | 25.5                    | 25.7   | 25.2   | 23.0   | 23.1   | 22.8   | 25.0   | 24.9   | 24.7   | 22.8   | 22.9   | 23.0   |
|                    |            | 1                | 24           | 25.5                    | 25.5   | 24.9   | 22.9   | 23.0   | 22.7   | 24.9   | 24.9   | 24.7   | 22.7   | 22.8   | 22.9   |
|                    |            | 12               | 0            | 24.4                    | 24.6   | 24.5   | 22.0   | 21.9   | 21.8   | 24.6   | 24.4   | 24.3   | 22.3   | 22.4   | 22.4   |
|                    |            | 12               | 6            | 24.5                    | 24.6   | 24.4   | 22.1   | 22.0   | 22.0   | 24.7   | 24.4   | 24.3   | 22.4   | 22.5   | 22.4   |
|                    |            | 12               | 11           | 24.5                    | 24.6   | 24.2   | 22.0   | 22.0   | 21.9   | 24.6   | 24.4   | 24.3   | 22.3   | 22.4   | 22.4   |
|                    |            | 25               | 0            | 24.4                    | 24.6   | 24.3   | 22.0   | 22.0   | 21.9   | 24.6   | 24.4   | 24.3   | 22.3   | 22.4   | 22.4   |
|                    | 16QAM      | 1                | 0            | 24.4                    | 24.7   | 25.0   | 22.2   | 22.1   | 22.4   | 24.7   | 24.5   | 24.7   | 22.8   | 22.5   | 22.6   |
|                    |            | 1                | 12           | 24.5                    | 24.8   | 24.8   | 22.4   | 22.2   | 22.5   | 24.7   | 24.6   | 24.8   | 22.9   | 22.6   | 22.6   |
|                    |            | 1                | 24           | 24.6                    | 24.7   | 24.4   | 22.1   | 22.1   | 22.3   | 24.6   | 24.5   | 24.7   | 22.8   | 22.5   | 22.6   |
|                    |            | 12               | 0            | 23.5                    | 23.7   | 23.7   | 21.1   | 21.1   | 21.1   | 23.7   | 23.5   | 23.5   | 21.5   | 21.5   | 21.5   |
|                    |            | 12               | 6            | 23.6                    | 23.7   | 23.7   | 21.1   | 21.1   | 21.1   | 23.7   | 23.5   | 23.5   | 21.5   | 21.5   | 21.6   |
|                    |            | 12               | 11           | 23.6                    | 23.6   | 23.6   | 21.0   | 21.1   | 21.1   | 23.6   | 23.5   | 23.4   | 21.4   | 21.5   | 21.5   |
|                    |            | 25               | 0            | 23.5                    | 23.5   | 23.6   | 20.9   | 21.0   | 20.9   | 23.5   | 23.4   | 23.3   | 21.4   | 21.4   | 21.4   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.2   | 23.6   | 20.8   | 20.2   | 20.5   | 22.1   | 22.3   | 23.0   | 21.2   | 21.0   | 21.4   |
|                    |            | 1                | 12           | 23.6                    | 23.3   | 23.7   | 20.8   | 20.3   | 20.6   | 22.3   | 22.1   | 23.0   | 21.3   | 21.1   | 21.4   |
|                    |            | 1                | 24           | 23.6                    | 23.2   | 23.4   | 20.7   | 20.3   | 20.5   | 22.5   | 22.0   | 23.1   | 21.2   | 21.0   | 21.3   |
|                    |            | 12               | 0            | 22.4                    | 22.4   | 22.3   | 19.6   | 19.4   | 19.2   | 21.0   | 21.3   | 21.7   | 20.1   | 20.2   | 20.1   |
|                    |            | 12               | 6            | 22.5                    | 22.4   | 22.4   | 19.6   | 19.4   | 19.3   | 21.2   | 21.3   | 21.8   | 20.1   | 20.2   | 20.1   |
|                    |            | 12               | 11           | 22.4                    | 22.4   | 22.3   | 19.5   | 19.4   | 19.3   | 21.2   | 21.3   | 21.8   | 20.1   | 20.2   | 20.1   |
|                    |            | 25               | 0            | 22.3                    | 22.3   | 22.3   | 19.5   | 19.4   | 19.2   | 21.1   | 21.2   | 21.7   | 20.0   | 20.1   | 20.1   |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.6   | 21.1   | 20.6   | 20.6   | 20.5   | 19.0   | 18.5   | 18.8   | 20.3   | 20.1   | 19.7   |
|                    |            | 1                | 12           | 21.1                    | 20.8   | 21.2   | 20.6   | 20.6   | 20.5   | 19.0   | 18.6   | 18.9   | 20.2   | 20.1   | 19.9   |
|                    |            | 1                | 24           | 21.0                    | 20.7   | 21.2   | 20.5   | 20.6   | 20.5   | 18.9   | 18.5   | 18.8   | 20.2   | 20.1   | 19.7   |
|                    |            | 12               | 0            | 21.3                    | 21.2   | 21.2   | 20.6   | 20.6   | 20.5   | 19.0   | 18.9   | 18.8   | 20.3   | 20.1   | 20.0   |
|                    |            | 12               | 6            | 21.4                    | 21.2   | 21.2   | 20.5   | 20.6   | 20.5   | 19.1   | 18.9   | 18.9   | 20.3   | 20.1   | 20.1   |
|                    |            | 12               | 11           | 21.3                    | 21.2   | 21.1   | 20.5   | 20.6   | 20.5   | 19.0   | 18.8   | 18.8   | 20.3   | 20.1   | 20.0   |
|                    |            | 25               | 0            | 21.3                    | 21.2   | 21.2   | 20.5   | 20.6   | 20.6   | 19.0   | 18.9   | 18.8   | 20.3   | 20.1   | 20.0   |

## OUTPUT POWER FOR LTE BAND 2 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 18650                   | 18900 | 19150 | 18650 | 18900 | 19150 | 18650 | 18900 | 19150 | 18650 | 18900 | 19150 |
| 10.0               | QPSK       | 1                | 0            | 25.1                    | 25.4  | 25.7  | 22.6  | 22.7  | 23.0  | 24.7  | 24.6  | 25.0  | 22.6  | 22.7  | 23.0  |
|                    |            | 1                | 24           | 25.5                    | 25.7  | 25.6  | 22.9  | 23.1  | 22.9  | 25.0  | 24.9  | 24.9  | 23.0  | 23.0  | 23.0  |
|                    |            | 1                | 49           | 25.3                    | 25.0  | 24.9  | 22.6  | 22.8  | 22.7  | 24.7  | 24.8  | 24.8  | 22.8  | 22.7  | 23.0  |
|                    |            | 25               | 0            | 24.3                    | 24.6  | 24.6  | 21.9  | 22.0  | 21.9  | 24.5  | 24.4  | 24.4  | 22.4  | 22.5  | 22.5  |
|                    |            | 25               | 12           | 24.6                    | 24.7  | 24.7  | 22.1  | 22.1  | 22.0  | 24.6  | 24.5  | 24.5  | 22.6  | 22.7  | 22.7  |
|                    |            | 25               | 24           | 24.6                    | 24.6  | 24.3  | 21.9  | 22.0  | 21.9  | 24.5  | 24.5  | 24.4  | 22.5  | 22.5  | 22.6  |
|                    | 16QAM      | 50               | 0            | 24.4                    | 24.6  | 24.5  | 22.0  | 21.9  | 21.9  | 24.5  | 24.4  | 24.4  | 22.5  | 22.6  | 22.6  |
|                    |            | 1                | 0            | 23.9                    | 24.5  | 25.2  | 21.6  | 21.8  | 22.5  | 24.4  | 24.1  | 24.9  | 22.5  | 22.3  | 22.6  |
|                    |            | 1                | 24           | 24.5                    | 24.6  | 24.9  | 22.1  | 22.1  | 22.4  | 24.6  | 24.4  | 24.8  | 22.9  | 22.6  | 22.6  |
|                    |            | 1                | 49           | 24.3                    | 23.9  | 24.3  | 21.7  | 21.8  | 22.1  | 24.3  | 24.2  | 24.7  | 22.7  | 22.3  | 22.6  |
|                    |            | 25               | 0            | 23.5                    | 23.6  | 23.7  | 21.0  | 21.0  | 21.0  | 23.6  | 23.4  | 23.4  | 21.5  | 21.6  | 21.6  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.7  | 21.2  | 21.1  | 21.0  | 23.8  | 23.5  | 23.6  | 21.6  | 21.8  | 21.7  |
|                    | 64QAM      | 25               | 24           | 23.7                    | 23.7  | 23.5  | 21.0  | 21.0  | 21.0  | 23.6  | 23.5  | 23.4  | 21.5  | 21.7  | 21.6  |
|                    |            | 50               | 0            | 23.6                    | 23.6  | 23.6  | 21.0  | 20.9  | 20.9  | 23.6  | 23.4  | 23.5  | 21.5  | 21.6  | 21.6  |
|                    |            | 1                | 0            | 23.0                    | 23.4  | 23.6  | 20.3  | 20.3  | 20.4  | 21.7  | 22.6  | 23.4  | 21.0  | 21.3  | 21.4  |
|                    |            | 1                | 24           | 23.6                    | 23.8  | 23.6  | 20.6  | 20.7  | 20.4  | 22.4  | 22.5  | 22.9  | 21.3  | 21.7  | 21.4  |
|                    |            | 1                | 49           | 23.3                    | 23.3  | 23.3  | 20.3  | 20.5  | 20.4  | 22.5  | 22.0  | 22.9  | 21.1  | 21.4  | 21.5  |
|                    |            | 25               | 0            | 22.2                    | 22.5  | 22.5  | 19.4  | 19.3  | 19.3  | 21.0  | 21.4  | 21.9  | 20.2  | 20.3  | 20.3  |
|                    | 256QAM     | 25               | 12           | 22.5                    | 22.6  | 22.6  | 19.6  | 19.4  | 19.4  | 21.4  | 21.3  | 21.9  | 20.3  | 20.4  | 20.5  |
|                    |            | 25               | 24           | 22.5                    | 22.5  | 22.6  | 19.5  | 19.4  | 19.4  | 21.5  | 21.2  | 21.8  | 20.2  | 20.4  | 20.4  |
|                    |            | 50               | 0            | 22.3                    | 22.5  | 22.4  | 19.4  | 19.3  | 19.3  | 21.2  | 21.2  | 21.8  | 20.2  | 20.3  | 20.4  |
|                    |            | 1                | 0            | 20.7                    | 20.6  | 20.8  | 20.5  | 20.6  | 20.6  | 18.5  | 18.4  | 18.5  | 19.7  | 19.8  | 19.7  |
|                    |            | 1                | 24           | 21.0                    | 21.1  | 21.2  | 20.5  | 20.5  | 20.6  | 18.8  | 18.8  | 18.9  | 20.1  | 20.3  | 20.1  |
|                    |            | 1                | 49           | 20.7                    | 20.8  | 21.0  | 20.5  | 20.6  | 20.6  | 18.5  | 18.6  | 18.7  | 19.8  | 20.0  | 19.9  |
|                    |            | 25               | 0            | 21.3                    | 21.1  | 21.1  | 20.5  | 20.6  | 20.6  | 18.9  | 18.7  | 18.6  | 20.2  | 20.1  | 19.9  |
|                    |            | 25               | 12           | 21.4                    | 21.2  | 21.2  | 20.5  | 20.6  | 20.6  | 19.0  | 18.9  | 18.8  | 20.3  | 20.1  | 20.0  |
|                    |            | 25               | 24           | 21.2                    | 21.1  | 21.2  | 20.5  | 20.6  | 20.6  | 18.9  | 18.8  | 18.7  | 20.2  | 20.1  | 20.0  |
|                    |            | 50               | 0            | 21.3                    | 21.1  | 21.1  | 20.4  | 20.6  | 20.6  | 18.9  | 18.8  | 18.6  | 20.2  | 20.0  | 19.9  |

## OUTPUT POWER FOR LTE BAND 2 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18675                   | 18900  | 19125  | 18675  | 18900  | 19125  | 18675  | 18900  | 19125  | 18675  | 18900  | 19125  |
|                    |            |                  |              | 1857.5                  | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 |
| 15.0               | QPSK       | 1                | 0            | 25.3                    | 25.7   | 25.7   | 22.9   | 23.0   | 23.1   | 24.9   | 24.9   | 25.0   | 22.7   | 23.0   | 22.9   |
|                    |            | 1                | 37           | 25.3                    | 25.5   | 25.7   | 23.0   | 23.1   | 23.0   | 25.0   | 24.9   | 24.8   | 22.8   | 22.9   | 22.9   |
|                    |            | 1                | 74           | 25.7                    | 25.0   | 24.6   | 23.0   | 23.0   | 22.4   | 24.9   | 24.9   | 24.8   | 22.9   | 22.9   | 22.9   |
|                    |            | 36               | 0            | 24.2                    | 24.7   | 24.6   | 22.0   | 22.1   | 22.1   | 24.5   | 24.4   | 24.4   | 22.3   | 22.4   | 22.3   |
|                    |            | 36               | 16           | 24.4                    | 24.6   | 24.6   | 22.2   | 22.2   | 22.1   | 24.6   | 24.5   | 24.4   | 22.4   | 22.4   | 22.4   |
|                    |            | 36               | 35           | 24.5                    | 24.4   | 24.3   | 22.2   | 22.3   | 22.2   | 24.6   | 24.6   | 24.5   | 22.5   | 22.5   | 22.5   |
|                    |            | 75               | 0            | 24.4                    | 24.5   | 24.3   | 22.1   | 22.2   | 22.1   | 24.5   | 24.4   | 24.4   | 22.4   | 22.5   | 22.4   |
|                    | 16QAM      | 1                | 0            | 24.5                    | 24.9   | 24.8   | 22.3   | 22.3   | 22.4   | 24.9   | 24.3   | 24.9   | 22.6   | 22.9   | 22.4   |
|                    |            | 1                | 37           | 24.7                    | 24.4   | 24.9   | 22.6   | 22.2   | 22.6   | 25.0   | 24.3   | 24.8   | 22.8   | 22.9   | 22.4   |
|                    |            | 1                | 74           | 25.1                    | 24.0   | 24.0   | 22.5   | 22.0   | 21.8   | 24.9   | 24.4   | 24.7   | 22.8   | 22.9   | 22.4   |
|                    |            | 36               | 0            | 23.4                    | 23.7   | 23.7   | 21.0   | 21.0   | 21.2   | 23.5   | 23.4   | 23.4   | 21.3   | 21.4   | 21.4   |
|                    |            | 36               | 16           | 23.6                    | 23.8   | 23.8   | 21.2   | 21.2   | 21.2   | 23.6   | 23.5   | 23.4   | 21.5   | 21.4   | 21.4   |
|                    |            | 36               | 35           | 23.7                    | 23.6   | 23.6   | 21.1   | 21.2   | 21.2   | 23.5   | 23.5   | 23.5   | 21.5   | 21.5   | 21.5   |
|                    |            | 75               | 0            | 23.6                    | 23.7   | 23.7   | 21.1   | 21.1   | 20.9   | 23.5   | 23.4   | 23.4   | 21.4   | 21.5   | 21.4   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.8   | 23.6   | 20.9   | 20.7   | 20.5   | 22.2   | 23.1   | 23.4   | 21.3   | 21.5   | 21.3   |
|                    |            | 1                | 37           | 23.8                    | 23.8   | 23.7   | 21.0   | 20.7   | 20.5   | 22.8   | 22.1   | 22.8   | 21.4   | 21.4   | 21.3   |
|                    |            | 1                | 74           | 24.0                    | 23.3   | 23.1   | 20.9   | 20.7   | 20.5   | 23.8   | 22.2   | 22.6   | 21.6   | 21.2   | 21.2   |
|                    |            | 36               | 0            | 22.1                    | 22.5   | 22.6   | 19.4   | 19.4   | 19.4   | 20.8   | 21.4   | 22.0   | 19.8   | 20.2   | 20.3   |
|                    |            | 36               | 16           | 22.2                    | 22.6   | 22.8   | 19.5   | 19.5   | 19.4   | 21.1   | 21.1   | 21.8   | 19.9   | 20.2   | 20.3   |
|                    |            | 36               | 35           | 22.4                    | 22.4   | 22.8   | 19.5   | 19.5   | 19.5   | 21.6   | 21.0   | 21.7   | 20.1   | 20.2   | 20.4   |
|                    |            | 75               | 0            | 22.3                    | 22.5   | 22.7   | 19.5   | 19.4   | 19.3   | 21.2   | 21.2   | 21.8   | 19.9   | 20.1   | 20.3   |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.7   | 20.9   | 20.9   | 21.0   | 20.9   | 18.8   | 18.5   | 18.6   | 20.1   | 19.9   | 19.8   |
|                    |            | 1                | 37           | 21.2                    | 20.9   | 21.1   | 20.9   | 21.0   | 20.9   | 18.8   | 18.7   | 18.8   | 20.2   | 20.2   | 20.0   |
|                    |            | 1                | 74           | 21.1                    | 20.9   | 21.0   | 20.9   | 21.0   | 20.9   | 18.7   | 18.6   | 18.8   | 20.1   | 20.1   | 19.9   |
|                    |            | 36               | 0            | 21.1                    | 21.0   | 21.1   | 20.9   | 21.0   | 20.9   | 18.7   | 18.6   | 18.6   | 20.0   | 20.0   | 19.9   |
|                    |            | 36               | 16           | 21.2                    | 21.1   | 21.2   | 20.9   | 21.0   | 20.9   | 18.8   | 18.7   | 18.7   | 20.2   | 20.1   | 19.9   |
|                    |            | 36               | 35           | 21.2                    | 21.2   | 21.2   | 20.9   | 21.0   | 20.9   | 18.8   | 18.7   | 18.8   | 20.1   | 20.1   | 20.0   |
|                    |            | 75               | 0            | 21.2                    | 21.1   | 21.1   | 20.9   | 21.0   | 20.9   | 18.8   | 18.7   | 18.6   | 20.2   | 20.0   | 19.9   |

## OUTPUT POWER FOR LTE BAND 2 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|--------------------|------------|------------------|--------------|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                    |            |                  |              | ANT 1                   |                 |                 | ANT 2           |                 |                 | ANT 3           |                 |                 | ANT 4           |                 |                 |
|                    |            |                  |              | 18700<br>1860.0         | 18900<br>1880.0 | 19100<br>1900.0 | 18700<br>1860.0 | 18900<br>1880.0 | 19100<br>1900.0 | 18700<br>1860.0 | 18900<br>1880.0 | 19100<br>1900.0 | 18700<br>1860.0 | 18900<br>1880.0 | 19100<br>1900.0 |
| 20.0               | QPSK       | 1                | 0            | 25.3                    | 25.6            | 24.3            | 23.1            | 22.9            | 23.0            | 25.0            | 24.9            | 25.0            | 22.8            | 23.0            | 22.9            |
|                    |            | 1                | 49           | 25.1                    | 25.3            | 24.0            | 23.0            | 23.0            | 22.9            | 24.9            | 24.9            | 24.9            | 22.8            | 22.9            | 22.9            |
|                    |            | 1                | 99           | 25.7                    | 24.8            | 23.5            | 23.0            | 23.0            | 22.8            | 24.9            | 25.0            | 24.8            | 22.9            | 22.9            | 22.9            |
|                    |            | 50               | 0            | 23.9                    | 24.6            | 23.3            | 21.9            | 21.9            | 21.9            | 24.4            | 24.4            | 24.4            | 22.3            | 22.4            | 22.3            |
|                    |            | 50               | 24           | 24.2                    | 24.4            | 23.1            | 22.1            | 22.0            | 21.9            | 24.6            | 24.5            | 24.5            | 22.5            | 22.5            | 22.4            |
|                    |            | 50               | 49           | 24.5                    | 24.1            | 22.8            | 22.0            | 22.0            | 22.0            | 24.5            | 24.5            | 24.4            | 22.5            | 22.5            | 22.5            |
|                    | 16QAM      | 100              | 0            | 24.1                    | 24.4            | 23.1            | 22.0            | 21.9            | 21.9            | 24.5            | 24.4            | 24.4            | 22.5            | 22.5            | 22.4            |
|                    |            | 1                | 0            | 24.6                    | 25.3            | 24.0            | 22.5            | 22.5            | 22.5            | 25.0            | 25.0            | 25.0            | 22.8            | 22.9            | 23.0            |
|                    |            | 1                | 49           | 24.6                    | 24.9            | 23.6            | 22.4            | 22.5            | 22.4            | 24.9            | 25.0            | 24.9            | 22.8            | 22.9            | 23.0            |
|                    |            | 1                | 99           | 25.0                    | 24.5            | 23.2            | 22.4            | 22.6            | 22.4            | 24.8            | 25.0            | 24.8            | 22.9            | 22.8            | 23.0            |
|                    |            | 50               | 0            | 23.1                    | 23.6            | 22.3            | 20.9            | 20.9            | 20.9            | 23.4            | 23.4            | 23.4            | 21.3            | 21.4            | 21.4            |
|                    |            | 50               | 24           | 23.4                    | 23.7            | 22.4            | 21.1            | 21.0            | 21.0            | 23.6            | 23.5            | 23.4            | 21.5            | 21.5            | 21.5            |
|                    | 64QAM      | 50               | 49           | 23.6                    | 23.4            | 22.1            | 21.0            | 21.1            | 21.0            | 23.5            | 23.6            | 23.5            | 21.5            | 21.5            | 21.5            |
|                    |            | 100              | 0            | 23.3                    | 23.6            | 22.3            | 21.0            | 21.0            | 20.9            | 23.5            | 23.4            | 23.4            | 21.4            | 21.5            | 21.4            |
|                    |            | 1                | 0            | 23.3                    | 23.8            | 22.5            | 21.2            | 21.3            | 21.6            | 22.2            | 23.5            | 23.5            | 21.1            | 21.5            | 21.8            |
|                    |            | 1                | 49           | 23.2                    | 23.6            | 22.3            | 21.2            | 21.3            | 21.6            | 22.7            | 22.1            | 23.6            | 21.1            | 21.4            | 21.8            |
|                    |            | 1                | 99           | 23.7                    | 23.1            | 21.8            | 21.2            | 21.4            | 21.6            | 23.6            | 22.4            | 23.2            | 21.4            | 21.2            | 21.8            |
|                    |            | 50               | 0            | 21.8                    | 22.5            | 21.2            | 20.0            | 20.0            | 19.9            | 20.8            | 21.4            | 21.7            | 19.6            | 20.2            | 20.2            |
|                    | 256QAM     | 50               | 24           | 22.1                    | 22.3            | 21.0            | 20.1            | 20.1            | 20.1            | 21.4            | 21.0            | 21.9            | 20.0            | 20.2            | 20.3            |
|                    |            | 50               | 49           | 22.3                    | 21.9            | 20.6            | 20.1            | 20.1            | 20.0            | 21.9            | 20.9            | 21.7            | 20.2            | 20.0            | 20.3            |
|                    |            | 100              | 0            | 21.9                    | 22.2            | 20.9            | 20.1            | 20.0            | 20.0            | 21.2            | 21.2            | 21.6            | 19.8            | 20.1            | 20.2            |
|                    |            | 1                | 0            | 21.3                    | 20.7            | 20.7            | 21.2            | 21.3            | 21.3            | 18.9            | 18.4            | 18.3            | 20.2            | 19.6            | 19.7            |
|                    |            | 1                | 49           | 21.4                    | 21.1            | 20.9            | 21.2            | 21.3            | 21.3            | 19.1            | 18.8            | 18.6            | 20.4            | 20.0            | 20.0            |
|                    |            | 1                | 99           | 21.2                    | 21.0            | 20.8            | 21.2            | 21.3            | 21.3            | 19.0            | 18.7            | 18.5            | 20.3            | 19.8            | 19.8            |
|                    |            | 50               | 0            | 21.0                    | 20.9            | 20.9            | 21.2            | 21.3            | 21.3            | 18.7            | 18.5            | 18.5            | 20.0            | 19.8            | 19.8            |
|                    |            | 50               | 24           | 21.2                    | 21.1            | 21.1            | 21.2            | 21.3            | 21.2            | 18.8            | 18.7            | 18.6            | 20.1            | 20.1            | 19.9            |
|                    |            | 50               | 49           | 21.1                    | 21.1            | 21.1            | 21.2            | 21.3            | 21.2            | 18.8            | 18.7            | 18.7            | 20.1            | 20.0            | 19.9            |
|                    |            | 100              | 0            | 21.1                    | 21.0            | 21.0            | 21.2            | 21.3            | 21.3            | 18.8            | 18.7            | 18.6            | 20.1            | 20.0            | 19.9            |

## 7.2. LTE BAND 5

Test Engineer ID: 39004 Test Date: 3/9/2020

### OUTPUT POWER FOR LTE BAND 5 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 20407                   | 20525 | 20643 | 20407 | 20525 | 20643 |
|                    |            |                  |              | 824.7                   | 836.5 | 848.3 | 824.7 | 836.5 | 848.3 |
| 1.4                | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.6  | 24.4  | 24.4  | 24.3  |
|                    |            | 1                | 2            | 25.6                    | 25.7  | 25.7  | 24.4  | 24.5  | 24.4  |
|                    |            | 1                | 5            | 25.5                    | 25.6  | 25.7  | 24.4  | 24.5  | 24.3  |
|                    |            | 3                | 0            | 25.4                    | 25.5  | 25.7  | 24.3  | 24.4  | 24.3  |
|                    |            | 3                | 1            | 25.5                    | 25.6  | 25.7  | 24.4  | 24.4  | 24.4  |
|                    |            | 3                | 2            | 25.5                    | 25.6  | 25.7  | 24.4  | 24.5  | 24.4  |
|                    | 16QAM      | 6                | 0            | 24.6                    | 24.6  | 24.7  | 23.4  | 23.5  | 23.5  |
|                    |            | 1                | 0            | 24.6                    | 24.8  | 25.1  | 23.6  | 23.9  | 23.5  |
|                    |            | 1                | 2            | 24.6                    | 24.9  | 25.1  | 23.6  | 23.9  | 23.5  |
|                    |            | 1                | 5            | 24.6                    | 24.8  | 25.0  | 23.5  | 23.9  | 23.5  |
|                    |            | 3                | 0            | 24.7                    | 24.7  | 24.9  | 23.5  | 23.6  | 23.6  |
|                    |            | 3                | 1            | 24.8                    | 24.7  | 25.0  | 23.6  | 23.7  | 23.7  |
|                    | 64QAM      | 3                | 2            | 24.8                    | 24.8  | 25.0  | 23.5  | 23.8  | 23.7  |
|                    |            | 6                | 0            | 23.8                    | 23.7  | 23.6  | 22.6  | 22.4  | 22.6  |
|                    |            | 1                | 0            | 24.2                    | 24.3  | 24.0  | 22.9  | 23.1  | 22.6  |
|                    |            | 1                | 2            | 24.2                    | 24.5  | 24.1  | 23.0  | 23.2  | 22.7  |
|                    |            | 1                | 5            | 24.2                    | 24.4  | 24.0  | 23.0  | 23.1  | 22.6  |
|                    |            | 3                | 0            | 23.9                    | 24.3  | 24.0  | 22.6  | 23.0  | 22.7  |
|                    | 256QAM     | 3                | 1            | 24.0                    | 24.3  | 24.1  | 22.7  | 23.1  | 22.8  |
|                    |            | 3                | 2            | 24.0                    | 24.4  | 24.1  | 22.7  | 23.1  | 22.7  |
|                    |            | 6                | 0            | 23.1                    | 22.9  | 23.2  | 21.8  | 21.7  | 21.9  |
|                    |            | 1                | 0            | 20.9                    | 20.7  | 21.2  | 23.1  | 23.1  | 23.1  |
|                    |            | 1                | 2            | 21.0                    | 20.7  | 20.8  | 23.1  | 23.1  | 23.1  |
|                    |            | 1                | 5            | 20.9                    | 20.7  | 20.7  | 23.1  | 23.1  | 23.1  |
|                    |            | 3                | 0            | 21.2                    | 21.1  | 21.2  | 23.1  | 23.1  | 23.1  |
|                    |            | 3                | 1            | 21.2                    | 21.2  | 21.2  | 23.1  | 23.1  | 23.1  |
|                    |            | 3                | 2            | 21.3                    | 21.2  | 21.2  | 23.1  | 23.1  | 23.1  |
|                    |            | 6                | 0            | 21.1                    | 21.2  | 21.2  | 23.1  | 23.1  | 23.1  |

## OUTPUT POWER FOR LTE BAND 5 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 20415                   | 20525 | 20635 | 20415 | 20525 | 20635 |
| 3.0                | QPSK       | 1                | 0            | 825.5                   | 836.5 | 847.5 | 825.5 | 836.5 | 847.5 |
|                    |            | 1                | 7            | 25.4                    | 25.5  | 25.6  | 24.7  | 24.8  | 24.4  |
|                    |            | 1                | 14           | 25.4                    | 25.5  | 25.7  | 24.7  | 24.8  | 24.5  |
|                    |            | 8                | 0            | 25.5                    | 25.6  | 25.7  | 24.8  | 24.8  | 24.5  |
|                    |            | 8                | 4            | 24.5                    | 24.6  | 24.6  | 23.8  | 23.9  | 23.5  |
|                    |            | 8                | 7            | 24.6                    | 24.6  | 24.7  | 23.9  | 23.9  | 23.6  |
|                    |            | 15               | 0            | 24.6                    | 24.7  | 24.7  | 23.9  | 24.0  | 23.6  |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.6  | 24.6  | 23.9  | 23.9  | 23.5  |
|                    |            | 1                | 7            | 24.5                    | 24.6  | 25.0  | 23.8  | 23.8  | 23.9  |
|                    |            | 1                | 14           | 24.5                    | 24.6  | 25.1  | 23.9  | 23.8  | 23.9  |
|                    |            | 8                | 0            | 24.6                    | 24.7  | 25.0  | 23.9  | 23.8  | 23.9  |
|                    |            | 8                | 4            | 23.5                    | 23.7  | 23.7  | 22.9  | 23.0  | 22.6  |
|                    |            | 8                | 7            | 23.6                    | 23.7  | 23.8  | 23.0  | 23.0  | 22.7  |
|                    |            | 15               | 0            | 23.6                    | 23.8  | 23.8  | 23.0  | 23.1  | 22.7  |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.7  | 23.7  | 22.9  | 23.0  | 22.6  |
|                    |            | 1                | 7            | 24.1                    | 24.3  | 23.9  | 23.2  | 23.3  | 22.7  |
|                    |            | 1                | 14           | 24.2                    | 24.3  | 24.0  | 23.3  | 23.3  | 22.7  |
|                    |            | 8                | 0            | 24.2                    | 24.3  | 24.0  | 23.3  | 23.4  | 22.7  |
|                    |            | 8                | 4            | 22.9                    | 23.0  | 22.9  | 22.0  | 22.1  | 21.6  |
|                    |            | 8                | 7            | 23.0                    | 23.0  | 23.0  | 22.1  | 22.1  | 21.7  |
|                    |            | 15               | 0            | 23.0                    | 23.1  | 23.0  | 22.1  | 22.2  | 21.7  |
|                    | 256QAM     | 1                | 0            | 23.1                    | 22.9  | 23.0  | 22.2  | 22.0  | 21.7  |
|                    |            | 1                | 2            | 20.9                    | 21.1  | 21.2  | 23.4  | 23.4  | 23.3  |
|                    |            | 1                | 5            | 21.0                    | 21.1  | 21.3  | 23.4  | 23.4  | 23.3  |
|                    |            | 3                | 0            | 21.0                    | 21.1  | 21.3  | 23.4  | 23.4  | 23.3  |
|                    |            | 3                | 1            | 21.3                    | 21.1  | 21.0  | 23.4  | 23.4  | 23.3  |
|                    |            | 3                | 2            | 21.3                    | 21.2  | 21.1  | 23.4  | 23.4  | 23.3  |
|                    |            | 6                | 0            | 21.3                    | 21.2  | 21.2  | 23.4  | 23.4  | 23.3  |

## OUTPUT POWER FOR LTE BAND 5 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |             |             |             |             |             |
|--------------------|------------|------------------|--------------|-------------------------|-------------|-------------|-------------|-------------|-------------|
|                    |            |                  |              | ANT 1                   |             |             | ANT 2       |             |             |
|                    |            |                  |              | 20425                   | 20525       | 20625       | 20425       | 20525       | 20625       |
| 5.0                | QPSK       | 1                | 0            | 826.5                   | 836.5       | 846.5       | 826.5       | 836.5       | 846.5       |
|                    |            | 1                | 12           | 25.4                    | 25.6        | 25.5        | 24.3        | 24.4        | 24.3        |
|                    |            | 1                | 24           | 25.5                    | 25.7        | 25.6        | 24.4        | 24.5        | 24.3        |
|                    |            | 12               | 0            | 25.5                    | <b>25.7</b> | 25.6        | 24.4        | <b>24.5</b> | 24.3        |
|                    |            | 12               | 6            | 24.5                    | 24.6        | 24.6        | 23.3        | 23.4        | 23.4        |
|                    |            | 12               | 11           | 24.6                    | 24.6        | 24.7        | 23.4        | 23.4        | 23.5        |
|                    |            | 25               | 0            | 24.6                    | 24.7        | 24.7        | 23.4        | 23.5        | 23.5        |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.8        | 25.2        | 23.4        | 23.6        | 23.9        |
|                    |            | 1                | 12           | 24.8                    | 24.9        | <b>25.3</b> | 23.6        | 23.6        | <b>24.0</b> |
|                    |            | 1                | 24           | 24.8                    | 24.9        | 25.2        | 23.6        | 23.6        | 23.9        |
|                    |            | 12               | 0            | 23.6                    | 23.7        | 23.8        | 22.4        | 22.5        | 22.5        |
|                    |            | 12               | 6            | 23.7                    | 23.7        | 23.9        | 22.5        | 22.5        | 22.6        |
|                    |            | 12               | 11           | 23.7                    | 23.7        | 23.9        | 22.5        | 22.5        | 22.6        |
|                    |            | 25               | 0            | 23.5                    | 23.7        | 23.8        | 22.4        | 22.4        | 22.5        |
|                    | 64QAM      | 1                | 0            | 24.2                    | 23.9        | 24.2        | 22.8        | 22.4        | 22.8        |
|                    |            | 1                | 12           | <b>24.4</b>             | 24.0        | 24.3        | <b>22.9</b> | 22.5        | 22.8        |
|                    |            | 1                | 24           | 24.3                    | 23.9        | 24.2        | 22.9        | 22.5        | 22.8        |
|                    |            | 12               | 0            | 23.1                    | 23.0        | 22.9        | 21.6        | 21.6        | 21.5        |
|                    |            | 12               | 6            | 23.2                    | 23.1        | 23.0        | 21.7        | 21.6        | 21.5        |
|                    |            | 12               | 11           | 23.1                    | 23.1        | 23.0        | 21.7        | 21.7        | 21.5        |
|                    |            | 25               | 0            | 23.1                    | 23.0        | 22.9        | 21.6        | 21.5        | 21.4        |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.7        | 21.1        | 22.6        | 22.6        | 22.6        |
|                    |            | 1                | 12           | 21.2                    | 20.9        | 21.2        | 22.5        | 22.6        | 22.6        |
|                    |            | 1                | 24           | 21.2                    | 20.9        | 21.2        | 22.5        | 22.6        | 22.6        |
|                    |            | 12               | 0            | 21.2                    | 21.1        | 21.1        | 22.5        | 22.6        | 22.6        |
|                    |            | 12               | 6            | <b>21.3</b>             | 21.1        | 21.1        | 22.5        | 22.6        | 22.6        |
|                    |            | 12               | 11           | 21.2                    | 21.1        | 21.1        | 22.5        | 22.6        | 22.6        |
|                    |            | 25               | 0            | 21.2                    | 21.2        | 21.1        | 22.5        | <b>22.6</b> | 22.6        |

## OUTPUT POWER FOR LTE BAND 5 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 20450                   | 20525 | 20600 | 20450 | 20525 | 20600 |
| 10.0               | QPSK       | 1                | 0            | 829.0                   | 836.5 | 844.0 | 829.0 | 836.5 | 844.0 |
|                    |            | 1                | 0            | 25.5                    | 25.6  | 25.7  | 24.4  | 24.5  | 24.5  |
|                    |            | 1                | 24           | 25.5                    | 25.6  | 25.7  | 24.4  | 24.4  | 24.5  |
|                    |            | 1                | 49           | 25.5                    | 24.6  | 25.7  | 24.4  | 24.5  | 24.5  |
|                    |            | 25               | 0            | 24.5                    | 24.6  | 24.6  | 23.4  | 23.5  | 23.5  |
|                    |            | 25               | 12           | 24.6                    | 24.7  | 24.7  | 23.5  | 23.5  | 23.5  |
|                    |            | 25               | 24           | 24.6                    | 24.5  | 24.7  | 23.5  | 23.5  | 23.5  |
|                    | 16QAM      | 50               | 0            | 24.5                    | 24.6  | 24.7  | 23.5  | 23.4  | 23.5  |
|                    |            | 1                | 0            | 24.6                    | 24.6  | 25.1  | 23.5  | 23.6  | 23.9  |
|                    |            | 1                | 24           | 24.6                    | 24.6  | 25.1  | 23.4  | 23.4  | 23.9  |
|                    |            | 1                | 49           | 24.7                    | 23.7  | 25.1  | 23.5  | 23.5  | 23.9  |
|                    |            | 25               | 0            | 23.6                    | 23.7  | 23.7  | 22.6  | 22.5  | 22.6  |
|                    |            | 25               | 12           | 23.7                    | 23.7  | 23.7  | 22.6  | 22.5  | 22.6  |
|                    |            | 25               | 24           | 23.7                    | 23.6  | 23.8  | 22.6  | 22.6  | 22.6  |
|                    | 64QAM      | 50               | 0            | 23.6                    | 24.4  | 23.7  | 22.5  | 22.4  | 22.6  |
|                    |            | 1                | 0            | 24.2                    | 24.4  | 24.1  | 22.9  | 23.0  | 22.7  |
|                    |            | 1                | 24           | 24.2                    | 24.3  | 24.1  | 22.9  | 23.0  | 22.7  |
|                    |            | 1                | 49           | 24.2                    | 23.1  | 24.1  | 22.9  | 23.0  | 22.8  |
|                    |            | 25               | 0            | 23.1                    | 23.1  | 23.0  | 21.7  | 21.7  | 21.7  |
|                    |            | 25               | 12           | 23.2                    | 23.1  | 23.1  | 21.8  | 21.7  | 21.7  |
|                    |            | 25               | 24           | 23.1                    | 22.9  | 23.1  | 21.7  | 21.7  | 21.7  |
|                    | 256QAM     | 50               | 0            | 23.0                    | -0.6  | 23.0  | 21.7  | 21.6  | 21.6  |
|                    |            | 1                | 0            | 20.7                    | 20.8  | 21.0  | 22.8  | 22.8  | 22.7  |
|                    |            | 1                | 24           | 21.0                    | 21.2  | 21.2  | 22.9  | 22.8  | 22.7  |
|                    |            | 1                | 49           | 20.8                    | 20.9  | 21.0  | 22.9  | 22.8  | 22.7  |
|                    |            | 25               | 0            | 21.1                    | 21.0  | 21.0  | 22.9  | 22.8  | 22.7  |
|                    |            | 25               | 12           | 21.2                    | 21.1  | 21.2  | 22.9  | 22.8  | 22.7  |
|                    |            | 25               | 24           | 21.2                    | 21.1  | 21.1  | 22.9  | 22.8  | 22.7  |
|                    |            | 50               | 0            | 21.2                    | 21.1  | 21.1  | 22.9  | 22.8  | 22.7  |

### 7.3. 5G NR Band n5

Test Engineer ID: 23547 Test Date: 8/14/2020

#### OUTPUT POWER FOR 5G NR Band n5 (15.0 MHz)

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Ant 1                   |           |           | Ant 2                   |           |           |
|-----------------|------------|---------------|-----------|-------------------------|-----------|-----------|-------------------------|-----------|-----------|
|                 |            |               |           | Conducted Average (dBm) |           |           | Conducted Average (dBm) |           |           |
|                 |            |               |           | 166300                  | 167300    | 168300    | 166300                  | 167300    | 168300    |
|                 |            |               |           | 831.5 MHz               | 836.5 MHz | 841.5 MHz | 831.5 MHz               | 836.5 MHz | 841.5 MHz |
| 15.0            | BPSK       | 1             | 0         | 25.5                    | 25.2      | 24.9      | 23.9                    | 23.9      | 23.8      |
|                 |            | 1             | 1         | 25.7                    | 25.7      | 25.7      | 24.5                    | 24.3      | 24.4      |
|                 |            | 36            | 18        | 25.4                    | 25.5      | 25.3      | 20.1                    | 20.4      | 22.3      |
|                 |            | 75            | 0         | 25.0                    | 24.9      | 24.8      | 24.1                    | 22.8      | 22.2      |
|                 | QPSK       | 1             | 0         | 24.4                    | 24.1      | 24.0      | 23.6                    | 23.4      | 23.3      |
|                 |            | 1             | 1         | 25.4                    | 25.1      | 25.0      | 24.3                    | 24.3      | 24.3      |
|                 |            | 36            | 18        | 25.0                    | 25.1      | 24.9      | 24.4                    | 24.5      | 23.9      |
|                 |            | 75            | 0         | 24.1                    | 23.9      | 23.7      | 23.3                    | 23.3      | 22.9      |
|                 | 16QAM      | 1             | 0         | 23.3                    | 22.9      | 23.0      | 22.4                    | 22.3      | 22.2      |
|                 |            | 1             | 1         | 24.2                    | 24.1      | 24.1      | 23.2                    | 23.7      | 23.3      |
|                 |            | 36            | 18        | 24.2                    | 24.1      | 23.9      | 23.4                    | 23.4      | 22.9      |
|                 |            | 75            | 0         | 23.1                    | 23.0      | 22.9      | 22.4                    | 22.4      | 22.0      |
|                 | 64QAM      | 1             | 0         | 22.5                    | 23.0      | 22.7      | 21.8                    | 22.0      | 22.0      |
|                 |            | 1             | 1         | 22.9                    | 22.6      | 22.5      | 22.1                    | 22.2      | 21.7      |
|                 |            | 36            | 18        | 22.6                    | 22.5      | 22.3      | 21.9                    | 22.0      | 21.5      |
|                 |            | 75            | 0         | 22.6                    | 22.5      | 22.4      | 21.8                    | 21.8      | 21.8      |
|                 | 256QAM     | 1             | 0         | 20.8                    | 20.8      | 21.0      | 20.1                    | 20.1      | 19.9      |
|                 |            | 1             | 1         | 20.9                    | 21.1      | 20.9      | 20.2                    | 19.8      | 20.0      |
|                 |            | 36            | 18        | 20.6                    | 20.5      | 20.4      | 19.9                    | 19.8      | 19.8      |
|                 |            | 75            | 0         | 20.6                    | 20.5      | 20.4      | 19.8                    | 19.9      | 19.8      |

#### OUTPUT POWER FOR 5G NR Band n5 (20.0 MHz)

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Ant 1                   |           |           | Ant 2                   |           |           |
|-----------------|------------|---------------|-----------|-------------------------|-----------|-----------|-------------------------|-----------|-----------|
|                 |            |               |           | Conducted Average (dBm) |           |           | Conducted Average (dBm) |           |           |
|                 |            |               |           | 166800                  | 167300    | 167800    | 166800                  | 167300    | 167800    |
|                 |            |               |           | 834.0 MHz               | 836.5 MHz | 839.0 MHz | 834.0 MHz               | 836.5 MHz | 839.0 MHz |
| 20.0            | BPSK       | 1             | 0         | 25.3                    | 25.3      | 25.3      | 24.1                    | 24.0      | 24.0      |
|                 |            | 1             | 1         | 25.6                    | 25.7      | 25.5      | 24.5                    | 24.4      | 24.4      |
|                 |            | 50            | 25        | 25.5                    | 25.5      | 25.5      | 24.0                    | 23.7      | 23.8      |
|                 |            | 100           | 1         | 25.1                    | 20.6      | 21.7      | 23.4                    | 23.3      | 23.3      |
|                 | QPSK       | 1             | 0         | 24.2                    | 24.2      | 24.1      | 23.3                    | 23.4      | 23.3      |
|                 |            | 1             | 1         | 25.4                    | 25.5      | 25.0      | 24.3                    | 24.3      | 24.4      |
|                 |            | 50            | 25        | 25.2                    | 25.3      | 24.9      | 24.4                    | 24.4      | 24.3      |
|                 |            | 100           | 1         | 24.4                    | 24.2      | 24.2      | 23.2                    | 23.5      | 23.1      |
|                 | 16QAM      | 1             | 0         | 23.1                    | 23.0      | 23.3      | 22.5                    | 22.5      | 22.6      |
|                 |            | 1             | 1         | 24.2                    | 24.1      | 24.1      | 23.6                    | 23.1      | 23.8      |
|                 |            | 50            | 25        | 24.0                    | 24.0      | 24.0      | 23.4                    | 23.5      | 23.3      |
|                 |            | 100           | 1         | 23.1                    | 23.0      | 23.1      | 22.1                    | 22.4      | 22.0      |
|                 | 64QAM      | 1             | 0         | 22.6                    | 22.8      | 22.7      | 21.5                    | 21.6      | 22.2      |
|                 |            | 1             | 1         | 22.8                    | 22.2      | 22.9      | 21.7                    | 22.0      | 22.6      |
|                 |            | 50            | 25        | 22.6                    | 22.6      | 22.5      | 21.9                    | 21.9      | 22.8      |
|                 |            | 100           | 1         | 22.5                    | 22.6      | 22.5      | 21.7                    | 21.9      | 21.7      |
|                 | 256QAM     | 1             | 0         | 20.4                    | 20.9      | 20.6      | 20.1                    | 20.0      | 20.2      |
|                 |            | 1             | 1         | 20.5                    | 20.7      | 20.8      | 20.0                    | 20.0      | 19.7      |
|                 |            | 50            | 25        | 20.7                    | 20.7      | 20.5      | 19.8                    | 19.9      | 19.7      |
|                 |            | 100           | 1         | 20.6                    | 20.5      | 20.5      | 19.8                    | 19.9      | 19.9      |

## 7.4. LTE BAND 7

Test Engineer ID: 39004 Test Date: 3/9/2020

### OUTPUT POWER FOR LTE BAND 7 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 20775                   | 21100 | 21425 | 20775 | 21100 | 21425 | 20775 | 21100 | 21425 | 20775 | 21100 | 21425 |
| 5.0                | QPSK       | 1                | 0            | 24.7                    | 25.4  | 25.7  | 22.6  | 22.8  | 21.8  | 24.9  | 25.0  | 24.8  | 22.0  | 22.5  | 22.1  |
|                    |            | 1                | 12           | 24.9                    | 25.5  | 25.7  | 22.6  | 22.8  | 21.5  | 25.0  | 24.9  | 24.8  | 22.4  | 22.4  | 22.1  |
|                    |            | 1                | 24           | 24.9                    | 25.6  | 25.5  | 22.7  | 22.8  | 21.5  | 25.0  | 25.0  | 24.9  | 22.5  | 22.4  | 22.1  |
|                    |            | 12               | 0            | 24.0                    | 24.6  | 24.8  | 21.6  | 21.9  | 21.1  | 24.5  | 24.4  | 24.3  | 21.7  | 21.5  | 21.4  |
|                    |            | 12               | 6            | 24.3                    | 24.7  | 25.0  | 21.7  | 21.9  | 20.9  | 24.6  | 24.4  | 24.4  | 21.7  | 21.6  | 21.4  |
|                    |            | 12               | 11           | 24.3                    | 24.7  | 24.9  | 21.6  | 21.9  | 20.8  | 24.5  | 24.4  | 24.4  | 21.7  | 21.5  | 21.4  |
|                    |            | 25               | 0            | 24.0                    | 24.6  | 24.6  | 21.7  | 21.9  | 20.7  | 24.5  | 24.4  | 24.3  | 21.7  | 21.5  | 21.4  |
|                    | 16QAM      | 1                | 0            | 23.9                    | 25.2  | 24.8  | 21.9  | 22.4  | 20.9  | 24.7  | 24.7  | 24.9  | 21.7  | 21.7  | 21.9  |
|                    |            | 1                | 12           | 24.0                    | 25.3  | 24.6  | 21.9  | 22.3  | 20.7  | 24.8  | 24.6  | 24.9  | 21.9  | 21.7  | 21.8  |
|                    |            | 1                | 24           | 24.2                    | 25.3  | 24.5  | 21.9  | 22.4  | 20.6  | 24.8  | 24.6  | 24.9  | 21.9  | 21.7  | 21.9  |
|                    |            | 12               | 0            | 23.2                    | 23.8  | 24.0  | 20.8  | 21.0  | 20.4  | 23.7  | 23.5  | 23.5  | 20.8  | 20.6  | 20.5  |
|                    |            | 12               | 6            | 23.5                    | 23.9  | 24.0  | 20.9  | 21.1  | 20.2  | 23.7  | 23.5  | 23.5  | 20.9  | 20.6  | 20.6  |
|                    |            | 12               | 11           | 23.5                    | 23.9  | 24.0  | 20.9  | 21.0  | 20.1  | 23.6  | 23.4  | 23.5  | 20.8  | 20.6  | 20.5  |
|                    |            | 25               | 0            | 23.2                    | 23.7  | 23.8  | 20.8  | 20.9  | 20.0  | 23.5  | 23.4  | 23.4  | 20.7  | 20.5  | 20.4  |
|                    | 64QAM      | 1                | 0            | 22.4                    | 23.1  | 23.7  | 19.6  | 19.4  | 19.8  | 21.4  | 23.0  | 23.0  | 17.9  | 21.1  | 19.9  |
|                    |            | 1                | 12           | 22.6                    | 23.2  | 23.7  | 19.7  | 19.4  | 19.7  | 21.7  | 23.0  | 23.0  | 18.6  | 20.8  | 19.5  |
|                    |            | 1                | 24           | 22.9                    | 23.2  | 23.8  | 19.7  | 19.5  | 19.7  | 22.0  | 23.0  | 22.7  | 19.0  | 20.6  | 19.1  |
|                    |            | 12               | 0            | 21.4                    | 22.2  | 22.3  | 18.5  | 18.5  | 18.3  | 21.2  | 21.6  | 21.8  | 18.0  | 20.3  | 18.8  |
|                    |            | 12               | 6            | 21.7                    | 22.3  | 22.4  | 18.5  | 18.6  | 18.4  | 21.6  | 21.6  | 21.9  | 18.7  | 20.2  | 18.5  |
|                    |            | 12               | 11           | 22.0                    | 22.3  | 22.4  | 18.5  | 18.5  | 18.4  | 21.8  | 21.6  | 21.8  | 19.2  | 20.1  | 18.1  |
|                    |            | 25               | 0            | 21.6                    | 22.2  | 22.4  | 18.4  | 18.4  | 18.3  | 21.2  | 21.6  | 21.7  | 18.4  | 19.8  | 18.2  |
|                    | 256QAM     | 1                | 0            | 22.0                    | 19.7  | 19.6  | 21.9  | 22.9  | 22.9  | 18.2  | 19.6  | 19.5  | 16.3  | 17.4  | 17.0  |
|                    |            | 1                | 12           | 18.5                    | 19.7  | 19.6  | 22.9  | 22.9  | 22.9  | 18.4  | 19.5  | 19.4  | 16.5  | 17.3  | 17.0  |
|                    |            | 1                | 24           | 18.4                    | 19.7  | 19.6  | 22.9  | 22.9  | 22.8  | 18.4  | 19.5  | 19.4  | 16.5  | 17.3  | 17.0  |
|                    |            | 12               | 0            | 18.7                    | 19.7  | 19.6  | 22.9  | 22.9  | 22.9  | 18.5  | 19.5  | 19.4  | 16.4  | 17.4  | 17.2  |
|                    |            | 12               | 6            | 18.7                    | 19.7  | 19.7  | 22.9  | 22.9  | 22.9  | 18.7  | 19.5  | 19.5  | 16.4  | 17.4  | 17.3  |
|                    |            | 12               | 11           | 18.7                    | 19.7  | 19.6  | 22.9  | 22.9  | 22.9  | 18.7  | 19.5  | 19.4  | 16.5  | 17.4  | 17.3  |
|                    |            | 25               | 0            | 18.8                    | 19.7  | 19.6  | 22.9  | 22.9  | 22.9  | 18.7  | 19.5  | 19.4  | 16.5  | 17.4  | 17.3  |

## OUTPUT POWER FOR LTE BAND 7 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 20800                   | 21100  | 21400  | 20800  | 21100  | 21400  | 20800  | 21100  | 21400  | 20800  | 21100  | 21400  |
|                    |            |                  |              | 2505.0                  | 2535.0 | 2565.0 | 2505.0 | 2535.0 | 2565.0 | 2505.0 | 2535.0 | 2565.0 | 2505.0 | 2535.0 | 2565.0 |
| 10.0               | QPSK       | 1                | 0            | 25.1                    | 25.7   | 25.7   | 22.3   | 22.8   | 22.7   | 24.9   | 25.0   | 24.9   | 22.4   | 22.4   | 22.2   |
|                    |            | 1                | 24           | 25.4                    | 25.7   | 25.4   | 22.3   | 22.8   | 22.0   | 25.0   | 24.9   | 24.9   | 22.5   | 22.4   | 22.2   |
|                    |            | 1                | 49           | 25.5                    | 25.7   | 25.0   | 22.5   | 22.7   | 21.8   | 25.0   | 24.9   | 24.9   | 22.5   | 22.3   | 22.2   |
|                    |            | 25               | 0            | 24.7                    | 24.8   | 24.9   | 21.9   | 21.9   | 21.7   | 24.6   | 24.5   | 24.4   | 21.8   | 21.7   | 21.5   |
|                    |            | 25               | 12           | 24.7                    | 24.8   | 24.7   | 21.9   | 22.0   | 21.2   | 24.7   | 24.5   | 24.5   | 21.9   | 21.6   | 21.5   |
|                    |            | 25               | 24           | 24.7                    | 24.9   | 24.4   | 21.8   | 22.0   | 20.8   | 24.7   | 24.5   | 24.5   | 21.8   | 21.6   | 21.5   |
|                    |            | 50               | 0            | 24.7                    | 24.7   | 24.8   | 21.9   | 21.9   | 21.5   | 24.7   | 24.5   | 24.5   | 21.8   | 21.6   | 21.4   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.8   | 24.8   | 21.9   | 22.0   | 22.3   | 24.7   | 24.5   | 24.9   | 21.8   | 21.6   | 21.9   |
|                    |            | 1                | 24           | 25.1                    | 24.8   | 24.6   | 21.9   | 21.9   | 21.6   | 24.7   | 24.4   | 24.9   | 21.8   | 21.6   | 21.8   |
|                    |            | 1                | 49           | 25.1                    | 24.9   | 24.2   | 22.0   | 21.9   | 21.4   | 24.8   | 24.4   | 24.9   | 21.9   | 21.5   | 21.8   |
|                    |            | 25               | 0            | 23.7                    | 23.8   | 23.9   | 21.0   | 21.0   | 20.9   | 23.8   | 23.6   | 23.5   | 20.9   | 20.7   | 20.6   |
|                    |            | 25               | 12           | 23.8                    | 23.9   | 23.8   | 21.0   | 21.0   | 20.5   | 23.9   | 23.6   | 23.5   | 21.0   | 20.7   | 20.5   |
|                    |            | 25               | 24           | 23.8                    | 23.9   | 23.6   | 21.1   | 21.0   | 20.0   | 23.8   | 23.5   | 23.6   | 20.9   | 20.6   | 20.5   |
|                    |            | 50               | 0            | 23.7                    | 23.7   | 23.7   | 20.9   | 20.8   | 20.6   | 23.7   | 23.5   | 23.5   | 20.9   | 20.6   | 20.5   |
|                    | 64QAM      | 1                | 0            | 22.0                    | 23.5   | 23.4   | 19.6   | 19.7   | 19.4   | 21.8   | 23.1   | 22.9   | 19.1   | 21.2   | 20.6   |
|                    |            | 1                | 24           | 22.8                    | 23.5   | 23.5   | 19.5   | 19.8   | 19.6   | 22.5   | 23.1   | 23.1   | 20.1   | 20.9   | 19.9   |
|                    |            | 1                | 49           | 23.4                    | 23.6   | 23.4   | 19.6   | 19.8   | 19.6   | 23.0   | 23.2   | 22.9   | 20.2   | 20.5   | 19.2   |
|                    |            | 25               | 0            | 21.7                    | 22.2   | 22.5   | 18.4   | 18.5   | 18.4   | 21.7   | 21.9   | 21.9   | 18.8   | 20.1   | 19.6   |
|                    |            | 25               | 12           | 22.3                    | 22.2   | 22.5   | 18.5   | 18.5   | 18.5   | 22.0   | 21.9   | 22.0   | 19.2   | 19.9   | 19.0   |
|                    |            | 25               | 24           | 22.4                    | 22.3   | 22.5   | 18.5   | 18.6   | 18.5   | 22.0   | 21.9   | 22.0   | 19.1   | 19.5   | 18.2   |
|                    |            | 50               | 0            | 22.0                    | 22.1   | 22.4   | 18.4   | 18.4   | 18.3   | 21.7   | 21.8   | 21.9   | 18.7   | 19.6   | 18.9   |
|                    | 256QAM     | 1                | 0            | 18.6                    | 19.2   | 19.4   | 18.7   | 19.7   | 19.7   | 18.5   | 19.2   | 19.2   | 16.2   | 17.2   | 17.3   |
|                    |            | 1                | 24           | 18.8                    | 19.5   | 19.6   | 18.7   | 19.7   | 19.7   | 18.9   | 19.3   | 19.5   | 16.6   | 17.4   | 17.5   |
|                    |            | 1                | 49           | 18.6                    | 19.3   | 19.4   | 18.7   | 19.7   | 19.7   | 18.8   | 19.2   | 19.2   | 16.3   | 17.2   | 17.3   |
|                    |            | 25               | 0            | 18.7                    | 19.7   | 19.5   | 18.7   | 19.7   | 19.7   | 18.7   | 19.5   | 19.3   | 16.6   | 17.3   | 17.3   |
|                    |            | 25               | 12           | 18.8                    | 19.7   | 19.6   | 18.7   | 19.7   | 19.7   | 18.9   | 19.5   | 19.4   | 16.7   | 17.4   | 17.3   |
|                    |            | 25               | 24           | 18.7                    | 19.7   | 19.5   | 18.8   | 19.7   | 19.7   | 18.8   | 19.5   | 19.4   | 16.6   | 17.3   | 17.3   |
|                    |            | 50               | 0            | 18.7                    | 19.7   | 19.5   | 18.7   | 19.7   | 19.7   | 18.8   | 19.5   | 19.3   | 16.7   | 17.3   | 17.3   |

## OUTPUT POWER FOR LTE BAND 7 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 20825                   | 21100 | 21375 | 20825 | 21100 | 21375 | 20825 | 21100 | 21375 | 20825 | 21100 | 21375 |
| 15.0               | QPSK       | 1                | 0            | 24.6                    | 25.7  | 25.4  | 22.6  | 22.8  | 22.5  | 25.0  | 24.7  | 24.7  | 22.4  | 22.4  | -26.4 |
|                    |            | 1                | 37           | 25.2                    | 25.6  | 25.1  | 22.5  | 22.5  | 21.8  | 25.0  | 24.6  | 24.6  | 22.5  | 22.2  | -26.3 |
|                    |            | 1                | 74           | 25.3                    | 25.6  | 24.5  | 22.6  | 22.1  | 21.4  | 25.0  | 24.6  | 24.7  | 22.5  | 22.1  | -26.3 |
|                    |            | 36               | 0            | 24.5                    | 25.2  | 24.7  | 21.8  | 21.9  | 21.8  | 24.5  | 24.3  | 24.2  | 21.8  | 21.5  | -25.7 |
|                    |            | 36               | 16           | 24.6                    | 25.3  | 24.5  | 21.6  | 21.9  | 21.3  | 24.5  | 24.3  | 24.3  | 21.9  | 21.5  | -25.7 |
|                    |            | 36               | 35           | 24.6                    | 25.2  | 24.3  | 21.2  | 21.5  | 20.7  | 24.5  | 24.3  | 24.3  | 21.8  | 21.5  | -25.6 |
|                    |            | 75               | 0            | 24.5                    | 25.0  | 24.2  | 21.7  | 21.9  | 21.3  | 24.4  | 24.2  | 24.3  | 21.8  | 21.5  | -25.6 |
|                    | 16QAM      | 1                | 0            | 24.3                    | 24.8  | 24.9  | 21.9  | 22.0  | 22.2  | 24.9  | 24.2  | 24.7  | 22.2  | 21.5  | -26.1 |
|                    |            | 1                | 37           | 24.9                    | 24.9  | 24.6  | 21.8  | 21.7  | 21.5  | 24.9  | 24.1  | 24.6  | 22.2  | 21.4  | -26.0 |
|                    |            | 1                | 74           | 24.9                    | 24.9  | 24.2  | 22.0  | 21.3  | 21.1  | 24.9  | 24.0  | 24.6  | 22.1  | 21.3  | -25.9 |
|                    |            | 36               | 0            | 23.7                    | 24.2  | 24.0  | 20.8  | 21.0  | 21.0  | 23.5  | 23.3  | 23.3  | 20.8  | 20.5  | -24.7 |
|                    |            | 36               | 16           | 23.9                    | 24.2  | 23.9  | 20.6  | 20.9  | 20.6  | 23.4  | 23.2  | 23.3  | 20.9  | 20.5  | -24.7 |
|                    |            | 36               | 35           | 23.8                    | 24.3  | 23.7  | 20.3  | 20.7  | 20.0  | 23.4  | 23.2  | 23.3  | 20.8  | 20.4  | -24.7 |
|                    |            | 75               | 0            | 23.6                    | 24.1  | 23.7  | 20.7  | 20.9  | 20.6  | 23.4  | 23.2  | 23.2  | 20.8  | 20.5  | -24.6 |
|                    | 64QAM      | 1                | 0            | 22.5                    | 23.7  | 23.3  | 19.9  | 19.5  | 19.3  | 21.6  | 22.7  | 23.0  | 19.6  | 20.6  | -24.1 |
|                    |            | 1                | 37           | 23.8                    | 23.7  | 23.5  | 19.8  | 19.6  | 19.4  | 22.5  | 22.6  | 23.1  | 20.1  | 20.3  | -24.0 |
|                    |            | 1                | 74           | 21.9                    | 22.5  | 22.4  | 18.2  | 18.3  | 18.3  | 21.2  | 21.7  | 21.8  | 18.5  | 19.7  | -23.7 |
|                    |            | 36               | 0            | 21.9                    | 22.5  | 22.4  | 18.2  | 18.3  | 18.3  | 21.2  | 21.7  | 21.8  | 18.5  | 19.7  | -23.7 |
|                    |            | 36               | 16           | 22.5                    | 22.5  | 22.6  | 18.4  | 18.3  | 18.4  | 21.5  | 21.8  | 21.9  | 18.5  | 19.4  | -23.3 |
|                    |            | 36               | 35           | 22.6                    | 22.5  | 22.5  | 18.3  | 18.4  | 18.4  | 21.4  | 21.8  | 21.5  | 18.1  | 18.9  | -22.5 |
|                    |            | 75               | 0            | 22.0                    | 22.4  | 22.3  | 18.3  | 18.3  | 18.3  | 21.1  | 21.6  | 21.8  | 18.3  | 19.1  | -22.9 |
|                    | 256QAM     | 1                | 0            | 18.5                    | 19.5  | 19.5  | 18.8  | 19.7  | 19.8  | 18.5  | 19.5  | 19.3  | 21.6  | 21.6  | 21.7  |
|                    |            | 1                | 37           | 18.8                    | 19.7  | 19.5  | 18.8  | 19.7  | 19.7  | 18.9  | 19.5  | 19.4  | 21.6  | 21.6  | 21.7  |
|                    |            | 1                | 74           | 18.7                    | 19.6  | 19.4  | 18.8  | 19.7  | 19.7  | 18.9  | 19.4  | 19.2  | 21.6  | 21.6  | 21.7  |
|                    |            | 36               | 0            | 18.7                    | 19.6  | 19.6  | 18.8  | 19.7  | 19.7  | 18.7  | 19.4  | 19.4  | 21.5  | 21.6  | 21.6  |
|                    |            | 36               | 16           | 18.8                    | 19.6  | 19.6  | 18.8  | 19.7  | 19.7  | 18.9  | 19.4  | 19.4  | 21.6  | 21.6  | 21.7  |
|                    |            | 36               | 35           | 18.7                    | 19.6  | 19.5  | 18.8  | 19.7  | 19.8  | 18.9  | 19.4  | 19.3  | 21.6  | 21.6  | 21.6  |
|                    |            | 75               | 0            | 18.7                    | 19.6  | 19.5  | 18.8  | 19.7  | 19.7  | 18.7  | 19.4  | 19.4  | 21.6  | 21.6  | 21.7  |

## OUTPUT POWER FOR LTE BAND 7 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 20850                   | 21100  | 21350  | 20850  | 21100  | 21350  | 20850  | 21100  | 21350  | 20850  | 21100  | 21350  |
|                    |            |                  |              | 2510.0                  | 2535.0 | 2560.0 | 2510.0 | 2535.0 | 2560.0 | 2510.0 | 2535.0 | 2560.0 | 2510.0 | 2535.0 | 2560.0 |
| 20.0               | QPSK       | 1                | 0            | 24.6                    | 25.6   | 25.5   | 22.2   | 22.7   | 22.7   | 24.9   | 24.8   | 24.7   | 22.4   | 22.4   | 22.2   |
|                    |            | 1                | 49           | 25.3                    | 25.7   | 25.3   | 22.2   | 22.4   | 22.1   | 25.0   | 24.7   | 24.8   | 22.5   | 22.3   | 22.1   |
|                    |            | 1                | 99           | 25.1                    | 25.6   | 24.6   | 22.8   | 22.1   | 21.4   | 25.0   | 24.7   | 24.7   | 22.5   | 22.2   | 22.1   |
|                    |            | 50               | 0            | 24.8                    | 25.2   | 24.8   | 21.7   | 21.9   | 21.8   | 24.6   | 24.4   | 24.3   | 21.8   | 21.6   | 21.5   |
|                    |            | 50               | 24           | 24.9                    | 25.3   | 24.8   | 21.3   | 21.9   | 21.6   | 24.6   | 24.4   | 24.3   | 21.7   | 21.6   | 21.5   |
|                    |            | 50               | 49           | 24.6                    | 25.2   | 24.4   | 21.1   | 21.3   | 20.8   | 24.5   | 24.3   | 24.4   | 21.7   | 21.5   | 21.4   |
|                    |            | 100              | 0            | 24.9                    | 25.2   | 24.7   | 21.7   | 21.8   | 21.4   | 24.5   | 24.3   | 24.2   | 21.7   | 21.5   | 21.4   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 25.5   | 25.3   | 21.9   | 22.5   | 22.3   | 24.9   | 24.9   | 24.8   | 22.1   | 22.1   | 22.0   |
|                    |            | 1                | 49           | 25.3                    | 25.7   | 25.2   | 21.7   | 22.4   | 21.9   | 24.9   | 24.8   | 24.7   | 22.2   | 22.0   | 21.8   |
|                    |            | 1                | 99           | 25.0                    | 25.6   | 24.6   | 22.3   | 22.0   | 21.1   | 25.0   | 24.8   | 24.8   | 22.2   | 22.0   | 21.9   |
|                    |            | 50               | 0            | 23.6                    | 24.3   | 23.9   | 20.7   | 20.9   | 20.9   | 23.5   | 23.4   | 23.3   | 20.8   | 20.6   | 20.5   |
|                    |            | 50               | 24           | 23.8                    | 24.3   | 24.0   | 20.4   | 20.9   | 20.8   | 23.6   | 23.4   | 23.3   | 20.7   | 20.6   | 20.5   |
|                    |            | 50               | 49           | 23.7                    | 24.3   | 23.7   | 20.2   | 20.5   | 20.1   | 23.5   | 23.3   | 23.3   | 20.7   | 20.5   | 20.4   |
|                    |            | 100              | 0            | 23.7                    | 24.1   | 23.7   | 20.7   | 20.8   | 20.6   | 23.5   | 23.3   | 23.2   | 20.7   | 20.5   | 20.4   |
|                    | 64QAM      | 1                | 0            | 22.3                    | 23.6   | 23.8   | 19.3   | 19.4   | 19.7   | 21.5   | 22.9   | 23.0   | 18.9   | 20.5   | 20.0   |
|                    |            | 1                | 49           | 23.7                    | 23.8   | 23.9   | 19.3   | 19.5   | 19.7   | 22.5   | 22.8   | 23.1   | 19.4   | 20.3   | 20.7   |
|                    |            | 1                | 99           | 23.4                    | 23.8   | 23.8   | 19.4   | 19.6   | 19.8   | 22.7   | 22.9   | 22.5   | 19.4   | 19.5   | 19.3   |
|                    |            | 50               | 0            | 22.1                    | 22.6   | 22.2   | 18.2   | 18.2   | 18.1   | 21.3   | 21.8   | 21.8   | 18.4   | 19.6   | 19.2   |
|                    |            | 50               | 24           | 22.5                    | 22.6   | 22.5   | 18.2   | 18.3   | 18.2   | 21.4   | 21.8   | 21.9   | 18.2   | 19.4   | 19.3   |
|                    |            | 50               | 49           | 22.3                    | 22.6   | 22.5   | 18.2   | 18.4   | 18.2   | 21.4   | 21.9   | 21.9   | 17.6   | 18.7   | 18.6   |
|                    |            | 100              | 0            | 21.9                    | 22.4   | 22.2   | 18.2   | 18.2   | 18.1   | 21.2   | 21.8   | 21.8   | 18.2   | 19.0   | 18.6   |
|                    | 256QAM     | 1                | 0            | 18.2                    | 19.7   | 19.5   | 18.6   | 19.6   | 19.7   | 18.1   | 19.8   | 19.3   | 16.5   | 17.1   | 17.1   |
|                    |            | 1                | 49           | 18.6                    | 20.0   | 19.6   | 18.6   | 19.6   | 19.7   | 18.8   | 19.7   | 19.4   | 17.0   | 17.2   | 17.3   |
|                    |            | 1                | 99           | 18.4                    | 19.9   | 19.2   | 18.6   | 19.6   | 19.7   | 18.5   | 19.7   | 19.0   | 16.8   | 17.1   | 17.0   |
|                    |            | 50               | 0            | 18.5                    | 19.6   | 19.5   | 18.6   | 19.6   | 19.7   | 18.5   | 19.4   | 19.3   | 16.5   | 17.2   | 17.2   |
|                    |            | 50               | 24           | 18.7                    | 19.6   | 19.5   | 18.6   | 19.6   | 19.7   | 18.7   | 19.4   | 19.4   | 16.7   | 17.3   | 17.3   |
|                    |            | 50               | 49           | 18.6                    | 19.6   | 19.4   | 18.6   | 19.6   | 19.7   | 18.8   | 19.4   | 19.2   | 16.6   | 17.2   | 17.2   |
|                    |            | 100              | 0            | 18.6                    | 19.6   | 19.5   | 18.6   | 19.6   | 19.7   | 18.6   | 19.3   | 19.3   | 16.5   | 17.2   | 17.2   |

## 7.5. LTE BAND 12

Test Engineer ID: 39004 Test Date: 3/10/2020

### OUTPUT POWER FOR LTE BAND 12 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23017                   | 23095 | 23173 | 23017 | 23095 | 23173 |
| 1.4                | QPSK       | 1                | 0            | 699.7                   | 707.5 | 715.3 | 699.7 | 707.5 | 715.3 |
|                    |            | 1                | 2            | 25.5                    | 25.6  | 25.6  | 23.8  | 23.7  | 23.5  |
|                    |            | 1                | 5            | 25.6                    | 25.7  | 25.7  | 23.9  | 23.8  | 23.7  |
|                    |            | 3                | 0            | 25.6                    | 25.7  | 25.6  | 23.8  | 23.8  | 23.6  |
|                    |            | 3                | 1            | 25.5                    | 25.6  | 25.6  | 23.8  | 23.7  | 23.6  |
|                    |            | 3                | 2            | 25.6                    | 25.7  | 25.7  | 23.8  | 23.7  | 23.7  |
|                    |            | 6                | 0            | 25.6                    | 25.7  | 25.7  | 23.8  | 23.8  | 23.7  |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.7  | 24.7  | 22.9  | 22.7  | 22.7  |
|                    |            | 1                | 2            | 24.7                    | 25.1  | 24.8  | 22.9  | 23.1  | 22.7  |
|                    |            | 1                | 5            | 24.9                    | 25.2  | 24.9  | 23.0  | 23.2  | 22.8  |
|                    |            | 3                | 0            | 24.8                    | 25.1  | 24.8  | 23.0  | 23.2  | 22.8  |
|                    |            | 3                | 1            | 24.7                    | 24.8  | 24.9  | 22.9  | 22.9  | 22.8  |
|                    |            | 3                | 2            | 24.8                    | 24.9  | 24.9  | 23.0  | 22.9  | 22.9  |
|                    | 64QAM      | 6                | 0            | 24.8                    | 25.0  | 25.0  | 23.0  | 23.0  | 22.9  |
|                    |            | 1                | 0            | 23.8                    | 23.6  | 23.9  | 22.0  | 21.6  | 21.9  |
|                    |            | 1                | 2            | 24.1                    | 23.8  | 24.0  | 22.2  | 21.9  | 21.9  |
|                    |            | 1                | 5            | 24.2                    | 24.2  | 23.9  | 22.3  | 21.9  | 22.0  |
|                    |            | 3                | 0            | 24.1                    | 23.9  | 23.7  | 22.2  | 21.9  | 21.7  |
|                    |            | 3                | 1            | 24.1                    | 23.9  | 23.8  | 22.3  | 22.0  | 21.8  |
|                    | 256QAM     | 3                | 2            | 24.1                    | 24.0  | 23.9  | 22.3  | 22.0  | 21.8  |
|                    |            | 6                | 0            | 22.7                    | 23.0  | 22.8  | 20.9  | 21.0  | 20.8  |
|                    |            | 1                | 0            | 20.0                    | 20.4  | 20.2  | 22.2  | 22.3  | 22.2  |
|                    |            | 1                | 2            | 20.1                    | 20.6  | 20.3  | 22.2  | 22.3  | 22.2  |
|                    |            | 1                | 5            | 20.0                    | 20.5  | 20.2  | 22.2  | 22.2  | 22.2  |
|                    |            | 3                | 0            | 20.5                    | 20.5  | 20.5  | 22.2  | 22.2  | 22.2  |
|                    |            | 3                | 1            | 20.6                    | 20.5  | 20.5  | 22.2  | 22.2  | 22.2  |
|                    |            | 3                | 2            | 20.6                    | 20.6  | 20.6  | 22.2  | 22.2  | 22.2  |
|                    |            | 6                | 0            | 20.6                    | 20.5  | 20.3  | 22.2  | 22.3  | 22.2  |

## OUTPUT POWER FOR LTE BAND 12 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23025                   | 23095 | 23165 | 23025 | 23095 | 23165 |
|                    |            |                  |              | 700.5                   | 707.5 | 714.5 | 700.5 | 707.5 | 714.5 |
| 3.0                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.7  | 23.5  | 23.8  | 23.6  |
|                    |            | 1                | 7            | 25.6                    | 25.6  | 25.7  | 23.5  | 23.8  | 23.5  |
|                    |            | 1                | 14           | 25.7                    | 25.7  | 25.7  | 23.6  | 23.9  | 23.5  |
|                    |            | 8                | 0            | 24.7                    | 24.7  | 24.7  | 22.6  | 22.9  | 22.5  |
|                    |            | 8                | 4            | 24.8                    | 24.7  | 24.7  | 22.7  | 22.9  | 22.5  |
|                    |            | 8                | 7            | 24.8                    | 24.8  | 24.8  | 22.7  | 23.0  | 22.6  |
|                    | 16QAM      | 15               | 0            | 24.8                    | 24.7  | 24.7  | 22.7  | 22.9  | 22.5  |
|                    |            | 1                | 0            | 24.8                    | 24.7  | 25.1  | 22.7  | 22.9  | 23.0  |
|                    |            | 1                | 7            | 24.7                    | 24.6  | 25.1  | 22.6  | 22.8  | 22.9  |
|                    |            | 1                | 14           | 24.8                    | 24.6  | 25.2  | 22.7  | 22.9  | 23.0  |
|                    |            | 8                | 0            | 23.8                    | 23.8  | 23.8  | 21.6  | 22.0  | 21.6  |
|                    |            | 8                | 4            | 23.8                    | 23.8  | 23.8  | 21.7  | 22.0  | 21.6  |
|                    | 64QAM      | 8                | 7            | 23.8                    | 23.9  | 23.9  | 21.8  | 22.1  | 21.7  |
|                    |            | 15               | 0            | 23.7                    | 23.7  | 23.8  | 21.6  | 21.9  | 21.6  |
|                    |            | 1                | 0            | 24.0                    | 24.1  | 23.9  | 21.9  | 22.3  | 21.8  |
|                    |            | 1                | 7            | 23.9                    | 24.1  | 23.9  | 21.8  | 22.3  | 21.7  |
|                    |            | 1                | 14           | 24.0                    | 24.1  | 23.9  | 21.9  | 22.3  | 21.8  |
|                    |            | 8                | 0            | 22.7                    | 22.8  | 22.8  | 20.6  | 21.0  | 20.7  |
|                    | 256QAM     | 8                | 4            | 22.8                    | 22.8  | 22.8  | 20.7  | 21.0  | 20.7  |
|                    |            | 8                | 7            | 22.8                    | 22.9  | 22.9  | 20.7  | 21.1  | 20.7  |
|                    |            | 15               | 0            | 22.8                    | 22.8  | 22.8  | 20.8  | 20.9  | 20.7  |
|                    |            | 1                | 0            | 20.3                    | 20.6  | 20.5  | 22.1  | 22.1  | 22.2  |
|                    |            | 1                | 7            | 20.3                    | 20.5  | 20.5  | 22.1  | 22.1  | 22.2  |
|                    |            | 1                | 14           | 20.4                    | 20.6  | 20.6  | 22.1  | 22.1  | 22.2  |
|                    |            | 8                | 0            | 20.6                    | 20.4  | 20.4  | 22.1  | 22.1  | 22.2  |
|                    |            | 8                | 4            | 20.7                    | 20.5  | 20.5  | 22.1  | 22.1  | 22.2  |
|                    |            | 8                | 7            | 20.6                    | 20.5  | 20.5  | 22.1  | 22.2  | 22.2  |
|                    |            | 15               | 0            | 20.6                    | 20.4  | 20.6  | 22.1  | 22.1  | 22.2  |

## OUTPUT POWER FOR LTE BAND 12 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23035                   | 23095 | 23155 | 23035 | 23095 | 23155 |
|                    |            |                  |              | 701.5                   | 707.5 | 713.5 | 701.5 | 707.5 | 713.5 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.5  | 23.6  | 23.8  | 23.5  |
|                    |            | 1                | 12           | 25.6                    | 25.7  | 25.6  | 23.6  | 23.9  | 23.6  |
|                    |            | 1                | 24           | 25.7                    | 25.7  | 25.6  | 23.6  | 23.9  | 23.6  |
|                    |            | 12               | 0            | 24.6                    | 24.6  | 24.6  | 22.6  | 22.8  | 22.6  |
|                    |            | 12               | 6            | 24.7                    | 24.6  | 24.6  | 22.7  | 22.8  | 22.6  |
|                    |            | 12               | 11           | 24.7                    | 24.6  | 24.7  | 22.7  | 22.8  | 22.6  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.6  | 22.6  | 22.8  | 22.6  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.8  | 25.2  | 22.8  | 23.0  | 23.2  |
|                    |            | 1                | 12           | 24.9                    | 24.8  | 25.3  | 22.8  | 23.1  | 23.2  |
|                    |            | 1                | 24           | 24.9                    | 24.8  | 25.2  | 22.8  | 23.0  | 23.2  |
|                    |            | 12               | 0            | 23.7                    | 23.7  | 23.8  | 21.7  | 21.9  | 21.8  |
|                    |            | 12               | 6            | 23.7                    | 23.7  | 23.8  | 21.8  | 21.9  | 21.8  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.8  | 21.7  | 21.9  | 21.8  |
|                    |            | 25               | 0            | 23.6                    | 23.6  | 23.7  | 21.6  | 21.8  | 21.7  |
|                    | 64QAM      | 1                | 0            | 23.9                    | 23.5  | 24.0  | 21.9  | 21.7  | 22.0  |
|                    |            | 1                | 12           | 24.0                    | 23.6  | 24.1  | 22.0  | 21.8  | 21.9  |
|                    |            | 1                | 24           | 24.0                    | 23.6  | 24.1  | 22.0  | 21.8  | 22.0  |
|                    |            | 12               | 0            | 22.8                    | 22.7  | 22.7  | 20.7  | 20.9  | 20.6  |
|                    |            | 12               | 6            | 22.8                    | 22.7  | 22.7  | 20.8  | 20.9  | 20.6  |
|                    |            | 12               | 11           | 22.8                    | 22.8  | 22.7  | 20.8  | 20.9  | 20.6  |
|                    |            | 25               | 0            | 22.8                    | 22.6  | 22.6  | 20.7  | 20.8  | 20.6  |
|                    | 256QAM     | 1                | 0            | 20.5                    | 20.6  | 20.2  | 21.6  | 21.8  | 21.8  |
|                    |            | 1                | 12           | 20.5                    | 20.5  | 20.2  | 21.6  | 21.7  | 21.8  |
|                    |            | 1                | 24           | 20.5                    | 20.5  | 20.2  | 21.6  | 21.8  | 21.7  |
|                    |            | 12               | 0            | 20.4                    | 20.5  | 20.5  | 21.6  | 21.8  | 21.7  |
|                    |            | 12               | 6            | 20.5                    | 20.5  | 20.5  | 21.6  | 21.7  | 21.7  |
|                    |            | 12               | 11           | 20.4                    | 20.5  | 20.5  | 21.6  | 21.8  | 21.7  |
|                    |            | 25               | 0            | 20.5                    | 20.6  | 20.6  | 21.6  | 21.8  | 21.7  |

## OUTPUT POWER FOR LTE BAND 12 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23060                   | 23095 | 23130 | 23060 | 23095 | 23130 |
|                    |            |                  |              | 704.0                   | 707.5 | 711.0 | 704.0 | 707.5 | 711.0 |
| 10.0               | QPSK       | 1                | 0            | 25.5                    | 25.5  | 25.7  | 23.5  | 23.8  | 23.7  |
|                    |            | 1                | 24           | 25.5                    | 25.5  | 25.6  | 23.5  | 23.9  | 23.5  |
|                    |            | 1                | 49           | 25.6                    | 25.6  | 25.6  | 23.5  | 23.8  | 23.5  |
|                    |            | 25               | 0            | 24.5                    | 24.6  | 24.5  | 22.5  | 22.9  | 22.5  |
|                    |            | 25               | 12           | 24.7                    | 24.6  | 24.7  | 22.7  | 22.9  | 22.6  |
|                    |            | 25               | 24           | 24.6                    | 24.6  | 24.6  | 22.6  | 22.9  | 22.6  |
|                    | 16QAM      | 50               | 0            | 24.6                    | 24.6  | 24.7  | 22.6  | 22.9  | 22.6  |
|                    |            | 1                | 0            | 24.6                    | 24.5  | 25.1  | 22.6  | 22.8  | 23.0  |
|                    |            | 1                | 24           | 24.6                    | 24.6  | 25.0  | 22.6  | 22.9  | 22.9  |
|                    |            | 1                | 49           | 24.7                    | 24.6  | 25.0  | 22.7  | 22.8  | 23.0  |
|                    |            | 25               | 0            | 23.6                    | 23.6  | 23.6  | 21.6  | 21.9  | 21.6  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.8  | 21.8  | 21.9  | 21.7  |
|                    | 64QAM      | 25               | 24           | 23.8                    | 23.7  | 23.7  | 21.7  | 21.9  | 21.6  |
|                    |            | 50               | 0            | 23.7                    | 23.5  | 23.7  | 21.6  | 21.8  | 21.6  |
|                    |            | 1                | 0            | 23.8                    | 24.0  | 23.8  | 21.8  | 22.2  | 21.7  |
|                    |            | 1                | 24           | 23.8                    | 24.0  | 23.8  | 21.9  | 22.3  | 21.8  |
|                    |            | 1                | 49           | 24.0                    | 24.0  | 23.8  | 21.9  | 22.3  | 21.8  |
|                    |            | 25               | 0            | 22.7                    | 22.6  | 22.8  | 20.7  | 20.9  | 20.7  |
|                    | 256QAM     | 25               | 12           | 22.8                    | 22.8  | 22.9  | 20.8  | 21.0  | 20.9  |
|                    |            | 25               | 24           | 22.8                    | 22.8  | 22.8  | 20.8  | 21.0  | 20.8  |
|                    |            | 50               | 0            | 22.7                    | 22.7  | 22.8  | 20.7  | 20.9  | 20.7  |
|                    |            | 1                | 0            | 20.0                    | 20.2  | 20.5  | 22.1  | 22.1  | 22.0  |
|                    |            | 1                | 24           | 20.4                    | 20.6  | 20.6  | 22.1  | 22.1  | 22.1  |
|                    |            | 1                | 49           | 20.2                    | 20.3  | 20.5  | 22.1  | 22.1  | 22.1  |
|                    |            | 25               | 0            | 20.5                    | 20.4  | 20.4  | 22.1  | 22.1  | 22.1  |
|                    |            | 25               | 12           | 20.6                    | 20.5  | 20.5  | 22.1  | 22.1  | 22.1  |
|                    |            | 25               | 24           | 20.5                    | 20.5  | 20.5  | 22.1  | 22.1  | 22.1  |
|                    |            | 50               | 0            | 20.5                    | 20.4  | 20.4  | 22.1  | 22.1  | 22.1  |

## 7.6. 5G NR Band n12

Test Engineer ID: 23547 Test Date: 8/14/2020

### OUTPUT POWER FOR 5G NR Band n12 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB Offset | Ant 1                   |           |           | Ant 2                   |           |           |
|--------------------|------------|------------------|-----------|-------------------------|-----------|-----------|-------------------------|-----------|-----------|
|                    |            |                  |           | Conducted Average (dBm) |           |           | Conducted Average (dBm) |           |           |
|                    |            |                  |           | 141300                  | 141500    | 141700    | 141300                  | 141500    | 141700    |
|                    |            |                  |           | 706.5 MHz               | 707.5 MHz | 708.5 MHz | 706.5 MHz               | 707.5 MHz | 708.5 MHz |
| 15.0               | BPSK       | 1                | 0         | 25.2                    | 25.5      | 25.3      | 23.2                    | 23.4      | 23.4      |
|                    |            | 1                | 1         | 25.7                    | 25.6      | 25.5      | 23.9                    | 23.9      | 23.7      |
|                    |            | 36               | 18        | 25.6                    | 25.6      | 25.4      | 20.9                    | 20.6      | 20.7      |
|                    |            | 75               | 0         | 25.2                    | 25.0      | 25.1      | 23.4                    | 22.0      | 21.9      |
|                    | QPSK       | 1                | 0         | 23.9                    | 24.3      | 24.0      | 22.3                    | 22.3      | 22.4      |
|                    |            | 1                | 1         | 24.9                    | 25.2      | 25.1      | 23.0                    | 23.0      | 23.0      |
|                    |            | 36               | 18        | 24.9                    | 24.8      | 24.8      | 20.3                    | 20.4      | 20.6      |
|                    |            | 75               | 0         | 23.8                    | 23.8      | 23.8      | 20.3                    | 19.4      | 19.3      |
|                    | 16QAM      | 1                | 0         | 23.1                    | 23.0      | 22.8      | 21.4                    | 21.3      | 21.4      |
|                    |            | 1                | 1         | 24.1                    | 23.9      | 23.8      | 22.2                    | 22.2      | 22.2      |
|                    |            | 36               | 18        | 23.9                    | 23.9      | 23.9      | 19.3                    | 19.5      | 19.6      |
|                    |            | 75               | 0         | 22.8                    | 22.8      | 22.7      | 19.3                    | 18.4      | 18.4      |
|                    | 64QAM      | 1                | 0         | 22.5                    | 22.8      | 22.4      | 21.1                    | 21.0      | 21.2      |
|                    |            | 1                | 1         | 22.3                    | 22.5      | 22.4      | 21.0                    | 21.1      | 21.1      |
|                    |            | 36               | 18        | 22.4                    | 22.3      | 22.3      | 18.8                    | 19.0      | 19.0      |
|                    |            | 75               | 0         | 22.5                    | 22.4      | 22.4      | 18.8                    | 17.8      | 17.8      |
|                    | 256QAM     | 1                | 0         | 20.6                    | 20.0      | 20.4      | 19.0                    | 18.8      | 19.1      |
|                    |            | 1                | 1         | 20.8                    | 20.1      | 20.0      | 19.0                    | 18.8      | 18.9      |
|                    |            | 36               | 18        | 20.3                    | 20.4      | 20.3      | 17.1                    | 17.1      | 17.3      |
|                    |            | 75               | 0         | 20.4                    | 20.4      | 20.4      | 17.0                    | 15.9      | 15.9      |

## 7.7. LTE BAND 13

Test Engineer ID: 39004 Test Date: 3/10/2020

### OUTPUT POWER FOR LTE BAND 13 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23205                   | 23230 | 23255 | 23205 | 23230 | 23255 |
| 5.0                | QPSK       | 1                | 0            | 779.5                   | 782.0 | 784.5 | 779.5 | 782.0 | 784.5 |
|                    |            | 1                | 0            | 25.5                    | 25.6  | 25.6  | 23.6  | 23.8  | 23.7  |
|                    |            | 1                | 12           | 25.6                    | 25.7  | 25.6  | 23.6  | 23.8  | 23.7  |
|                    |            | 1                | 24           | 25.6                    | 25.7  | 25.6  | 23.8  | 23.9  | 23.8  |
|                    |            | 12               | 0            | 24.6                    | 24.6  | 24.6  | 22.7  | 22.8  | 22.7  |
|                    |            | 12               | 6            | 24.7                    | 24.6  | 24.6  | 22.8  | 22.8  | 22.8  |
|                    |            | 12               | 11           | 24.7                    | 24.7  | 24.6  | 22.8  | 22.9  | 22.8  |
|                    | 16QAM      | 25               | 0            | 24.7                    | 24.6  | 24.7  | 22.8  | 22.8  | 22.7  |
|                    |            | 1                | 0            | 24.7                    | 24.8  | 25.1  | 22.7  | 22.9  | 23.2  |
|                    |            | 1                | 12           | 24.7                    | 24.8  | 25.2  | 22.8  | 23.0  | 23.2  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 25.1  | 22.9  | 23.1  | 23.3  |
|                    |            | 12               | 0            | 23.6                    | 23.7  | 23.7  | 21.8  | 21.9  | 21.9  |
|                    |            | 12               | 6            | 23.7                    | 23.7  | 23.8  | 21.9  | 21.9  | 21.9  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.8  | 21.9  | 22.0  | 22.0  |
|                    | 64QAM      | 25               | 0            | 23.6                    | 23.6  | 23.7  | 21.8  | 21.9  | 21.8  |
|                    |            | 1                | 0            | 24.0                    | 23.9  | 24.3  | 22.2  | 21.9  | 22.2  |
|                    |            | 1                | 12           | 24.1                    | 23.9  | 24.3  | 22.3  | 22.0  | 22.2  |
|                    |            | 1                | 24           | 24.2                    | 24.0  | 24.4  | 22.3  | 22.0  | 22.2  |
|                    |            | 12               | 0            | 22.9                    | 23.0  | 22.9  | 21.0  | 21.0  | 20.8  |
|                    |            | 12               | 6            | 23.0                    | 23.0  | 23.0  | 21.1  | 21.1  | 20.9  |
|                    |            | 12               | 11           | 23.0                    | 23.1  | 23.0  | 21.1  | 21.1  | 21.0  |
|                    | 256QAM     | 25               | 0            | 23.0                    | 23.0  | 23.0  | 21.1  | 21.0  | 20.9  |
|                    |            | 1                | 0            | 20.1                    | 20.3  | 20.4  | 22.0  | 22.1  | 22.0  |
|                    |            | 1                | 12           | 20.1                    | 20.4  | 20.4  | 22.1  | 22.1  | 21.9  |
|                    |            | 1                | 24           | 20.2                    | 20.4  | 20.5  | 22.1  | 22.0  | 21.9  |
|                    |            | 12               | 0            | 20.3                    | 20.3  | 20.3  | 22.1  | 22.0  | 21.9  |
|                    |            | 12               | 6            | 20.4                    | 20.4  | 20.4  | 22.0  | 22.0  | 21.9  |
|                    |            | 12               | 11           | 20.4                    | 20.3  | 20.4  | 22.1  | 22.0  | 21.9  |
|                    |            | 25               | 0            | 20.5                    | 20.4  | 20.4  | 22.1  | 22.0  | 21.9  |

## OUTPUT POWER FOR LTE BAND 13 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |     |       |       |     |
|--------------------|------------|------------------|--------------|-------------------------|-------|-----|-------|-------|-----|
|                    |            |                  |              | ANT 1                   |       |     | ANT 2 |       |     |
|                    |            |                  |              | N/A                     | 23230 | N/A | N/A   | 23230 | N/A |
|                    |            |                  |              | N/A                     | 782.0 | N/A | N/A   | 782.0 | N/A |
| 10.0               | QPSK       | 1                | 0            |                         | 25.7  |     |       | 23.6  |     |
|                    |            | 1                | 24           |                         | 25.7  |     |       | 23.8  |     |
|                    |            | 1                | 49           |                         | 25.7  |     |       | 23.9  |     |
|                    |            | 25               | 0            |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 25               | 12           |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 25               | 24           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 50               | 0            |                         | 24.8  |     |       | 22.9  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.9  |     |       | 22.8  |     |
|                    |            | 1                | 24           |                         | 24.9  |     |       | 22.9  |     |
|                    |            | 1                | 49           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 0            |                         | 23.9  |     |       | 22.0  |     |
|                    |            | 25               | 12           |                         | 23.9  |     |       | 22.0  |     |
|                    |            | 25               | 24           |                         | 23.9  |     |       | 22.1  |     |
|                    |            | 50               | 0            |                         | 23.8  |     |       | 21.9  |     |
|                    | 64QAM      | 1                | 0            |                         | 24.4  |     |       | 22.4  |     |
|                    |            | 1                | 24           |                         | 24.5  |     |       | 22.4  |     |
|                    |            | 1                | 49           |                         | 24.4  |     |       | 22.4  |     |
|                    |            | 25               | 0            |                         | 23.3  |     |       | 21.2  |     |
|                    |            | 25               | 12           |                         | 23.3  |     |       | 21.2  |     |
|                    |            | 25               | 24           |                         | 23.4  |     |       | 21.3  |     |
|                    |            | 50               | 0            |                         | 23.1  |     |       | 21.1  |     |
|                    | 256QAM     | 1                | 0            |                         | 20.0  |     |       | 22.2  |     |
|                    |            | 1                | 24           |                         | 20.3  |     |       | 22.2  |     |
|                    |            | 1                | 49           |                         | 20.2  |     |       | 22.2  |     |
|                    |            | 25               | 0            |                         | 20.3  |     |       | 22.2  |     |
|                    |            | 25               | 12           |                         | 20.4  |     |       | 22.2  |     |
|                    |            | 25               | 24           |                         | 20.3  |     |       | 22.2  |     |
|                    |            | 50               | 0            |                         | 20.4  |     |       | 22.2  |     |

## 7.8. LTE BAND 14

Test Engineer ID: 39004 Test Date: 3/10/2020

### OUTPUT POWER FOR LTE BAND 14 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23305                   | 23330 | 23355 | 23305 | 23330 | 23355 |
| 5.0                | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.5  | 23.7  | 23.7  | 23.6  |
|                    |            | 1                | 12           | 25.6                    | 25.7  | 25.6  | 23.8  | 23.9  | 23.8  |
|                    |            | 1                | 24           | 25.6                    | 25.6  | 25.5  | 23.7  | 23.8  | 23.7  |
|                    |            | 12               | 0            | 24.6                    | 24.6  | 24.6  | 22.8  | 22.9  | 22.8  |
|                    |            | 12               | 6            | 24.7                    | 24.6  | 24.7  | 22.9  | 22.9  | 22.8  |
|                    |            | 12               | 11           | 24.6                    | 24.6  | 24.6  | 22.8  | 22.8  | 22.7  |
|                    |            | 25               | 0            | 24.6                    | 24.6  | 24.6  | 22.8  | 22.9  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.7  | 25.1  | 22.9  | 23.3  | 23.2  |
|                    |            | 1                | 12           | 24.8                    | 24.8  | 25.1  | 23.0  | 23.4  | 23.3  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 25.1  | 22.9  | 23.4  | 23.3  |
|                    |            | 12               | 0            | 23.7                    | 23.7  | 23.8  | 21.9  | 22.0  | 21.9  |
|                    |            | 12               | 6            | 23.8                    | 23.7  | 23.8  | 21.9  | 22.1  | 22.0  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.7  | 21.9  | 22.0  | 21.9  |
|                    |            | 25               | 0            | 23.6                    | 23.6  | 23.7  | 21.8  | 22.0  | 21.9  |
|                    | 64QAM      | 1                | 0            | 23.7                    | 24.1  | 24.1  | 22.5  | 22.9  | 22.8  |
|                    |            | 1                | 12           | 23.7                    | 24.1  | 24.1  | 22.6  | 23.0  | 22.9  |
|                    |            | 1                | 24           | 23.7                    | 24.1  | 24.0  | 22.5  | 23.0  | 22.9  |
|                    |            | 12               | 0            | 22.9                    | 22.8  | 22.9  | 21.8  | 21.7  | 21.7  |
|                    |            | 12               | 6            | 22.9                    | 22.8  | 22.9  | 21.8  | 21.7  | 21.7  |
|                    |            | 12               | 11           | 22.8                    | 22.8  | 22.8  | 21.7  | 21.7  | 21.7  |
|                    |            | 25               | 0            | 22.8                    | 22.8  | 22.8  | 21.7  | 21.6  | 21.6  |
|                    | 256QAM     | 1                | 0            | 23.4                    | 21.1  | 21.1  | 20.3  | 22.6  | 22.6  |
|                    |            | 1                | 12           | 20.9                    | 21.1  | 21.2  | 21.1  | 22.6  | 22.6  |
|                    |            | 1                | 24           | 20.9                    | 21.1  | 21.1  | 21.2  | 22.6  | 22.6  |
|                    |            | 12               | 0            | 21.2                    | 21.1  | 21.1  | 21.2  | 22.6  | 22.6  |
|                    |            | 12               | 6            | 21.2                    | 21.1  | 21.1  | 21.2  | 22.6  | 22.6  |
|                    |            | 12               | 11           | 21.1                    | 21.0  | 21.1  | 21.2  | 22.6  | 22.6  |
|                    |            | 25               | 0            | 21.2                    | 21.1  | 21.1  | 21.2  | 22.6  | 22.6  |

## OUTPUT POWER FOR LTE BAND 14 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |     |       |       |     |
|--------------------|------------|------------------|--------------|-------------------------|-------|-----|-------|-------|-----|
|                    |            |                  |              | ANT 1                   |       |     | ANT 2 |       |     |
|                    |            |                  |              | N/A                     | 23330 | N/A | N/A   | 23330 | N/A |
|                    |            |                  |              | N/A                     | 793.0 | N/A | N/A   | 793.0 | N/A |
| 10.0               | QPSK       | 1                | 0            |                         | 25.7  |     |       | 23.9  |     |
|                    |            | 1                | 24           |                         | 25.7  |     |       | 23.9  |     |
|                    |            | 1                | 49           |                         | 25.6  |     |       | 23.9  |     |
|                    |            | 25               | 0            |                         | 24.7  |     |       | 22.9  |     |
|                    |            | 25               | 12           |                         | 24.8  |     |       | 23.1  |     |
|                    |            | 25               | 24           |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 50               | 0            |                         | 24.7  |     |       | 23.0  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.9  |     |       | 23.0  |     |
|                    |            | 1                | 24           |                         | 24.9  |     |       | 23.0  |     |
|                    |            | 1                | 49           |                         | 24.8  |     |       | 23.1  |     |
|                    |            | 25               | 0            |                         | 23.9  |     |       | 22.0  |     |
|                    |            | 25               | 12           |                         | 23.9  |     |       | 22.2  |     |
|                    |            | 25               | 24           |                         | 23.8  |     |       | 22.1  |     |
|                    |            | 50               | 0            |                         | 23.8  |     |       | 22.0  |     |
|                    | 64QAM      | 1                | 0            |                         | 24.3  |     |       | 23.2  |     |
|                    |            | 1                | 24           |                         | 24.2  |     |       | 23.2  |     |
|                    |            | 1                | 49           |                         | 24.2  |     |       | 23.1  |     |
|                    |            | 25               | 0            |                         | 23.0  |     |       | 22.0  |     |
|                    |            | 25               | 12           |                         | 23.1  |     |       | 22.0  |     |
|                    |            | 25               | 24           |                         | 23.1  |     |       | 22.0  |     |
|                    |            | 50               | 0            |                         | 23.0  |     |       | 21.9  |     |
|                    | 256QAM     | 1                | 0            |                         | 20.7  |     |       | 22.6  |     |
|                    |            | 1                | 24           |                         | 21.0  |     |       | 22.6  |     |
|                    |            | 1                | 49           |                         | 20.7  |     |       | 22.6  |     |
|                    |            | 25               | 0            |                         | 21.0  |     |       | 22.6  |     |
|                    |            | 25               | 12           |                         | 21.2  |     |       | 22.6  |     |
|                    |            | 25               | 24           |                         | 21.1  |     |       | 22.6  |     |
|                    |            | 50               | 0            |                         | 21.1  |     |       | 22.6  |     |

## 7.9. LTE BAND 17

Test Engineer ID: 39004 Test Date: 3/10/2020

### OUTPUT POWER FOR LTE BAND 17 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23755                   | 23790 | 23825 | 23755 | 23790 | 23825 |
| 5.0                | QPSK       | 1                | 0            | 25.7                    | 25.5  | 25.6  | 23.6  | 23.9  | 23.5  |
|                    |            | 1                | 12           | 25.7                    | 25.6  | 25.7  | 23.6  | 23.9  | 23.6  |
|                    |            | 1                | 24           | 25.7                    | 25.6  | 25.7  | 23.6  | 23.9  | 23.6  |
|                    |            | 12               | 0            | 24.6                    | 24.6  | 24.7  | 22.5  | 23.0  | 22.6  |
|                    |            | 12               | 6            | 24.7                    | 24.7  | 24.8  | 22.6  | 23.0  | 22.7  |
|                    |            | 12               | 11           | 24.7                    | 24.7  | 24.8  | 22.6  | 23.0  | 22.6  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.7  | 22.6  | 23.0  | 22.6  |
|                    | 16QAM      | 1                | 0            | 24.9                    | 25.2  | 24.8  | 22.8  | 23.5  | 22.8  |
|                    |            | 1                | 12           | 24.9                    | 25.2  | 25.0  | 22.8  | 23.5  | 22.8  |
|                    |            | 1                | 24           | 24.9                    | 25.2  | 24.9  | 22.8  | 23.5  | 22.8  |
|                    |            | 12               | 0            | 23.7                    | 23.8  | 23.8  | 21.7  | 22.1  | 21.6  |
|                    |            | 12               | 6            | 23.9                    | 23.8  | 23.8  | 21.8  | 22.2  | 21.7  |
|                    |            | 12               | 11           | 23.8                    | 23.9  | 23.8  | 21.8  | 22.2  | 21.7  |
|                    | 64QAM      | 25               | 0            | 23.7                    | 23.7  | 23.7  | 21.7  | 22.0  | 21.6  |
|                    |            | 1                | 0            | 24.3                    | 24.0  | 24.4  | 22.3  | 23.0  | 22.6  |
|                    |            | 1                | 12           | 24.4                    | 24.1  | 24.5  | 22.3  | 23.1  | 22.7  |
|                    |            | 1                | 24           | 24.4                    | 24.1  | 24.4  | 22.3  | 23.1  | 22.3  |
|                    |            | 12               | 0            | 23.2                    | 23.2  | 23.0  | 21.4  | 21.7  | 21.4  |
|                    |            | 12               | 6            | 23.3                    | 23.2  | 23.0  | 21.4  | 21.7  | 21.4  |
|                    |            | 12               | 11           | 23.2                    | 23.2  | 23.1  | 21.4  | 21.7  | 21.4  |
|                    | 256QAM     | 25               | 0            | 23.2                    | 23.1  | 23.1  | 21.4  | 21.7  | 21.4  |
|                    |            | 1                | 0            | 23.5                    | 21.3  | 21.3  | 22.0  | 22.9  | 22.9  |
|                    |            | 1                | 12           | 21.0                    | 21.3  | 21.3  | 22.9  | 22.9  | 22.9  |
|                    |            | 1                | 24           | 21.1                    | 21.4  | 21.3  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 0            | 21.2                    | 21.2  | 21.3  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 6            | 21.3                    | 21.3  | 21.4  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 11           | 21.3                    | 21.3  | 21.4  | 22.9  | 22.9  | 22.9  |
|                    |            | 25               | 0            | 21.3                    | 21.3  | 21.3  | 22.9  | 22.9  | 22.9  |

## OUTPUT POWER FOR LTE BAND 17 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23780                   | 23790 | 23800 | 23780 | 23790 | 23800 |
|                    |            |                  |              | 709.0                   | 710.0 | 711.0 | 709.0 | 710.0 | 711.0 |
| 10.0               | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.7  | 23.6  | 23.9  | 23.7  |
|                    |            | 1                | 24           | 25.6                    | 25.6  | 25.6  | 23.5  | 23.8  | 23.6  |
|                    |            | 1                | 49           | 25.6                    | 25.7  | 25.7  | 23.4  | 23.8  | 23.5  |
|                    |            | 25               | 0            | 24.7                    | 24.7  | 24.7  | 22.6  | 22.9  | 22.6  |
|                    |            | 25               | 12           | 24.8                    | 24.7  | 24.7  | 22.7  | 22.9  | 22.6  |
|                    |            | 25               | 24           | 24.8                    | 24.7  | 24.7  | 22.7  | 22.9  | 22.6  |
|                    | 16QAM      | 50               | 0            | 24.8                    | 24.7  | 24.7  | 22.7  | 22.9  | 22.6  |
|                    |            | 1                | 0            | 24.8                    | 24.6  | 25.1  | 22.7  | 22.9  | 23.0  |
|                    |            | 1                | 24           | 24.7                    | 24.6  | 25.1  | 22.6  | 22.8  | 23.0  |
|                    |            | 1                | 49           | 24.7                    | 24.7  | 25.1  | 22.6  | 22.8  | 23.0  |
|                    |            | 25               | 0            | 23.8                    | 23.7  | 23.7  | 21.7  | 21.9  | 21.7  |
|                    |            | 25               | 12           | 23.9                    | 23.7  | 23.7  | 21.8  | 21.9  | 21.7  |
|                    | 64QAM      | 25               | 24           | 23.9                    | 23.8  | 23.8  | 21.8  | 21.9  | 21.7  |
|                    |            | 50               | 0            | 23.8                    | 23.7  | 23.7  | 21.8  | 21.9  | 21.6  |
|                    |            | 1                | 0            | 24.2                    | 24.4  | 24.1  | 22.5  | 22.9  | 22.4  |
|                    |            | 1                | 24           | 24.3                    | 24.5  | 24.3  | 22.6  | 23.0  | 22.5  |
|                    |            | 1                | 49           | 24.3                    | 24.5  | 24.3  | 22.6  | 23.0  | 22.6  |
|                    |            | 25               | 0            | 23.2                    | 23.2  | 23.3  | 21.4  | 21.7  | 21.5  |
|                    | 256QAM     | 25               | 12           | 23.3                    | 23.2  | 23.3  | 21.6  | 21.8  | 21.5  |
|                    |            | 25               | 24           | 23.3                    | 23.2  | 23.3  | 21.6  | 21.8  | 21.6  |
|                    |            | 50               | 0            | 23.2                    | 23.2  | 23.2  | 21.5  | 21.7  | 21.4  |
|                    |            | 1                | 0            | 21.4                    | 21.1  | 21.4  | 22.9  | 22.7  | 22.7  |
|                    |            | 1                | 24           | 21.4                    | 21.2  | 21.3  | 22.9  | 22.7  | 22.7  |
|                    |            | 1                | 49           | 21.4                    | 21.2  | 21.3  | 22.9  | 22.8  | 22.7  |
|                    |            | 25               | 0            | 21.3                    | 21.3  | 21.2  | 22.9  | 22.8  | 22.7  |
|                    |            | 25               | 12           | 21.4                    | 21.4  | 21.3  | 22.8  | 22.7  | 22.7  |
|                    |            | 25               | 24           | 21.3                    | 21.4  | 21.3  | 22.9  | 22.8  | 22.7  |
|                    |            | 50               | 0            | 21.3                    | 21.4  | 21.3  | 22.8  | 22.8  | 22.7  |

## 7.10. LTE BAND 25

Test Engineer ID: 39004 Test Date: 3/10/2020

### OUTPUT POWER FOR LTE BAND 25 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 26047                   | 26365  | 26683  | 26047  | 26365  | 26683  | 26047  | 26365  | 26683  | 26047  | 26365  | 26683  |
|                    |            |                  |              | 1850.7                  | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 |
| 1.4                | QPSK       | 1                | 0            | 25.3                    | 25.6   | 25.3   | 23.0   | 23.1   | 23.0   | 24.9   | 24.9   | 24.9   | 22.6   | 22.9   | 22.9   |
|                    |            | 1                | 2            | 25.4                    | 25.7   | 24.9   | 23.1   | 23.1   | 23.0   | 25.0   | 24.9   | 24.9   | 22.8   | 23.0   | 23.0   |
|                    |            | 1                | 5            | 25.5                    | 25.7   | 24.4   | 23.0   | 23.1   | 23.0   | 25.0   | 24.9   | 24.9   | 22.7   | 23.0   | 23.0   |
|                    |            | 3                | 0            | 25.4                    | 25.6   | 24.5   | 22.9   | 23.0   | 23.0   | 24.9   | 24.8   | 24.9   | 22.7   | 22.9   | 22.9   |
|                    |            | 3                | 1            | 25.5                    | 25.7   | 24.3   | 23.0   | 23.1   | 23.0   | 25.0   | 24.9   | 25.0   | 22.8   | 22.9   | 23.0   |
|                    |            | 3                | 2            | 25.5                    | 25.7   | 24.1   | 23.1   | 23.1   | 23.0   | 25.0   | 24.9   | 25.0   | 22.8   | 22.9   | 23.0   |
|                    | 16QAM      | 6                | 0            | 24.6                    | 24.7   | 23.5   | 22.1   | 22.1   | 22.1   | 24.6   | 24.5   | 24.5   | 22.3   | 22.5   | 22.5   |
|                    |            | 1                | 0            | 24.6                    | 24.8   | 24.0   | 22.1   | 22.2   | 22.4   | 24.6   | 24.5   | 24.8   | 22.3   | 22.6   | 22.9   |
|                    |            | 1                | 2            | 24.7                    | 24.9   | 23.9   | 22.2   | 22.3   | 22.4   | 24.7   | 24.7   | 24.9   | 22.4   | 22.7   | 23.0   |
|                    |            | 1                | 5            | 24.7                    | 24.9   | 23.6   | 22.2   | 22.2   | 22.5   | 24.6   | 24.6   | 24.9   | 22.4   | 22.6   | 23.0   |
|                    |            | 3                | 0            | 24.8                    | 24.8   | 23.7   | 22.3   | 22.2   | 22.3   | 24.8   | 24.5   | 24.7   | 22.5   | 22.5   | 22.6   |
|                    |            | 3                | 1            | 24.9                    | 24.8   | 23.6   | 22.3   | 22.2   | 22.3   | 24.8   | 24.6   | 24.7   | 22.6   | 22.6   | 22.7   |
|                    | 64QAM      | 3                | 2            | 24.9                    | 24.9   | 23.5   | 22.3   | 22.2   | 22.3   | 24.8   | 24.6   | 24.7   | 22.6   | 22.6   | 22.8   |
|                    |            | 6                | 0            | 23.9                    | 23.9   | 22.6   | 21.3   | 21.3   | 21.0   | 23.8   | 23.6   | 23.4   | 21.5   | 21.6   | 21.4   |
|                    |            | 1                | 0            | 23.7                    | 24.0   | 23.8   | 22.8   | 22.5   | 20.8   | 22.6   | 22.5   | 22.6   | 21.0   | 21.4   | 20.3   |
|                    |            | 1                | 2            | 23.7                    | 24.1   | 24.0   | 22.8   | 22.4   | 20.8   | 22.6   | 22.5   | 22.4   | 21.1   | 21.5   | 20.3   |
|                    |            | 1                | 5            | 23.8                    | 24.1   | 23.9   | 22.6   | 22.3   | 20.7   | 22.4   | 22.5   | 22.0   | 21.2   | 21.5   | 20.1   |
|                    |            | 3                | 0            | 23.6                    | 24.0   | 23.9   | 22.4   | 22.3   | 20.5   | 22.4   | 22.2   | 22.3   | 20.9   | 21.4   | 20.2   |
|                    | 256QAM     | 3                | 1            | 23.6                    | 24.1   | 24.0   | 22.4   | 22.3   | 20.5   | 22.4   | 22.2   | 22.2   | 21.0   | 21.4   | 20.2   |
|                    |            | 3                | 2            | 23.7                    | 24.1   | 23.9   | 22.4   | 22.3   | 20.4   | 22.3   | 22.2   | 22.1   | 21.0   | 21.5   | 20.1   |
|                    |            | 6                | 0            | 22.7                    | 22.7   | 22.5   | 20.9   | 21.4   | 19.6   | 21.4   | 21.4   | 20.9   | 20.0   | 20.1   | 19.3   |
|                    |            | 1                | 0            | 19.7                    | 20.0   | 19.6   | 21.1   | 21.2   | 21.1   | 18.5   | 18.9   | 18.8   | 20.5   | 20.5   | 20.5   |
|                    |            | 1                | 2            | 19.8                    | 20.0   | 19.7   | 21.1   | 21.1   | 21.1   | 18.5   | 18.5   | 19.0   | 20.5   | 20.5   | 20.5   |
|                    |            | 1                | 5            | 19.7                    | 20.0   | 19.6   | 21.1   | 21.2   | 21.1   | 18.5   | 18.3   | 18.8   | 20.5   | 20.5   | 20.5   |
|                    |            | 3                | 0            | 20.1                    | 19.9   | 19.9   | 21.1   | 21.1   | 21.1   | 18.9   | 18.8   | 18.8   | 20.5   | 20.5   | 20.4   |
|                    |            | 3                | 1            | 20.2                    | 20.0   | 20.0   | 21.1   | 21.1   | 21.1   | 19.0   | 18.9   | 18.9   | 20.5   | 20.5   | 20.4   |
|                    |            | 3                | 2            | 20.2                    | 20.0   | 20.0   | 21.1   | 21.1   | 21.1   | 19.0   | 18.9   | 18.9   | 20.5   | 20.5   | 20.5   |
|                    |            | 6                | 0            | 20.1                    | 20.0   | 19.8   | 21.1   | 21.2   | 21.1   | 19.0   | 18.8   | 18.9   | 20.5   | 20.5   | 20.4   |

## OUTPUT POWER FOR LTE BAND 25 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 26055                   | 26365 | 26675 | 26055 | 26365 | 26675 | 26055 | 26365 | 26675 | 26055 | 26365 | 26675 |
| 3.0                | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.0  | 22.9  | 23.0  | 22.9  | 24.9  | 24.8  | 24.7  | 22.7  | 22.9  | 22.9  |
|                    |            | 1                | 7            | 25.6                    | 25.7  | 24.6  | 22.9  | 22.9  | 22.9  | 24.9  | 24.8  | 24.7  | 22.7  | 22.8  | 22.9  |
|                    |            | 1                | 14           | 25.6                    | 25.7  | 23.8  | 23.0  | 23.1  | 22.9  | 25.0  | 25.0  | 24.8  | 22.8  | 22.9  | 23.0  |
|                    |            | 8                | 0            | 24.7                    | 24.7  | 23.7  | 22.0  | 22.1  | 22.0  | 24.6  | 24.4  | 24.3  | 22.3  | 22.4  | 22.5  |
|                    |            | 8                | 4            | 24.7                    | 24.7  | 23.6  | 22.1  | 22.1  | 22.0  | 24.6  | 24.5  | 24.3  | 22.4  | 22.5  | 22.5  |
|                    |            | 8                | 7            | 24.7                    | 24.7  | 23.5  | 22.1  | 22.1  | 22.0  | 24.6  | 24.5  | 24.3  | 22.4  | 22.5  | 22.5  |
|                    |            | 15               | 0            | 24.7                    | 24.7  | 23.5  | 22.1  | 22.1  | 21.9  | 24.6  | 24.5  | 24.3  | 22.3  | 22.5  | 22.5  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.7  | 24.0  | 22.1  | 22.1  | 22.3  | 24.6  | 24.3  | 24.6  | 22.3  | 22.5  | 22.8  |
|                    |            | 1                | 7            | 24.7                    | 24.7  | 23.8  | 22.0  | 22.1  | 22.2  | 24.6  | 24.4  | 24.6  | 22.3  | 22.4  | 22.8  |
|                    |            | 1                | 14           | 24.7                    | 24.6  | 23.4  | 22.1  | 22.2  | 22.4  | 24.6  | 24.5  | 24.7  | 22.4  | 22.5  | 23.0  |
|                    |            | 8                | 0            | 23.7                    | 23.8  | 22.8  | 21.1  | 21.2  | 21.0  | 23.7  | 23.5  | 23.3  | 21.4  | 21.6  | 21.6  |
|                    |            | 8                | 4            | 23.8                    | 23.8  | 22.9  | 21.1  | 21.2  | 21.0  | 23.6  | 23.6  | 23.4  | 21.4  | 21.6  | 21.6  |
|                    |            | 8                | 7            | 23.8                    | 23.8  | 22.8  | 21.2  | 21.2  | 21.1  | 23.7  | 23.6  | 23.4  | 21.4  | 21.6  | 21.6  |
|                    |            | 15               | 0            | 23.7                    | 23.7  | 22.8  | 21.0  | 21.1  | 21.0  | 23.6  | 23.5  | 23.4  | 21.3  | 21.5  | 21.5  |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.8  | 23.0  | 21.9  | 22.2  | 20.7  | 22.2  | 22.4  | 22.5  | 21.1  | 21.3  | 20.5  |
|                    |            | 1                | 7            | 23.7                    | 23.8  | 22.9  | 21.9  | 22.1  | 20.4  | 22.2  | 22.4  | 22.0  | 21.0  | 21.4  | 20.2  |
|                    |            | 1                | 14           | 23.7                    | 23.9  | 22.8  | 21.9  | 22.0  | 20.3  | 22.3  | 22.4  | 21.4  | 21.1  | 21.3  | 20.0  |
|                    |            | 8                | 0            | 22.5                    | 22.6  | 21.9  | 20.5  | 20.9  | 19.5  | 20.9  | 21.2  | 21.2  | 19.8  | 20.1  | 19.3  |
|                    |            | 8                | 4            | 22.5                    | 22.6  | 21.9  | 20.6  | 21.0  | 19.5  | 21.0  | 21.3  | 21.1  | 19.8  | 20.1  | 19.3  |
|                    |            | 8                | 7            | 22.5                    | 22.7  | 21.9  | 20.6  | 21.0  | 19.5  | 21.1  | 21.3  | 20.9  | 19.8  | 20.2  | 19.2  |
|                    |            | 15               | 0            | 22.5                    | 22.5  | 21.8  | 20.6  | 20.8  | 19.5  | 21.1  | 21.2  | 21.0  | 19.8  | 20.1  | 19.2  |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.0  | 19.7  | 21.2  | 21.2  | 21.3  | 18.9  | 18.9  | 18.6  | 20.5  | 20.6  | 20.5  |
|                    |            | 1                | 7            | 20.2                    | 20.0  | 19.7  | 21.2  | 21.3  | 21.3  | 18.9  | 18.9  | 18.6  | 20.5  | 20.6  | 20.5  |
|                    |            | 1                | 14           | 20.3                    | 20.1  | 19.8  | 21.2  | 21.2  | 21.3  | 19.0  | 18.9  | 18.6  | 20.5  | 20.6  | 20.5  |
|                    |            | 8                | 0            | 20.1                    | 19.9  | 20.0  | 21.2  | 21.2  | 21.2  | 18.9  | 18.8  | 18.9  | 20.5  | 20.6  | 20.5  |
|                    |            | 8                | 4            | 20.1                    | 19.9  | 20.1  | 21.2  | 21.3  | 21.3  | 19.0  | 18.8  | 18.9  | 20.5  | 20.6  | 20.5  |
|                    |            | 8                | 7            | 20.1                    | 20.0  | 20.1  | 21.2  | 21.2  | 21.3  | 19.0  | 18.8  | 18.9  | 20.5  | 20.6  | 20.6  |
|                    |            | 15               | 0            | 20.0                    | 20.0  | 20.0  | 21.2  | 21.3  | 21.2  | 18.9  | 18.9  | 18.8  | 20.5  | 20.6  | 20.6  |

## OUTPUT POWER FOR LTE BAND 25 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 26065                   | 26365  | 26665  | 26065  | 26365  | 26665  | 26065  | 26365  | 26665  | 26065  | 26365  | 26665  |
|                    |            |                  |              | 1852.5                  | 1882.5 | 1912.5 | 1852.5 | 1882.5 | 1912.5 | 1852.5 | 1882.5 | 1912.5 | 1852.5 | 1882.5 | 1912.5 |
| 5.0                | QPSK       | 1                | 0            | 25.4                    | 25.6   | 25.0   | 23.0   | 23.0   | 23.1   | 24.9   | 24.8   | 24.6   | 22.7   | 23.0   | 22.9   |
|                    |            | 1                | 12           | 25.5                    | 25.7   | 24.5   | 23.0   | 23.1   | 23.1   | 24.9   | 24.9   | 24.6   | 22.8   | 23.0   | 22.9   |
|                    |            | 1                | 24           | 25.5                    | 25.6   | 23.5   | 23.0   | 23.1   | 23.1   | 25.0   | 24.9   | 24.7   | 22.8   | 23.0   | 22.9   |
|                    |            | 12               | 0            | 24.5                    | 24.6   | 23.6   | 22.1   | 22.0   | 22.1   | 24.5   | 24.3   | 24.2   | 22.2   | 22.4   | 22.4   |
|                    |            | 12               | 6            | 24.6                    | 24.6   | 23.5   | 22.1   | 22.1   | 22.1   | 24.5   | 24.3   | 24.3   | 22.3   | 22.5   | 22.4   |
|                    |            | 12               | 11           | 24.6                    | 24.6   | 23.3   | 22.1   | 22.1   | 22.2   | 24.5   | 24.4   | 24.3   | 22.4   | 22.5   | 22.6   |
|                    |            | 25               | 0            | 24.6                    | 24.6   | 23.3   | 22.1   | 22.1   | 22.1   | 24.5   | 24.4   | 24.3   | 22.4   | 22.5   | 22.5   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.7   | 24.2   | 22.3   | 22.2   | 22.6   | 24.6   | 24.5   | 24.8   | 22.5   | 22.6   | 23.0   |
|                    |            | 1                | 12           | 24.8                    | 24.8   | 23.8   | 22.5   | 22.3   | 22.6   | 24.7   | 24.5   | 24.7   | 22.6   | 22.7   | 23.0   |
|                    |            | 1                | 24           | 24.8                    | 24.7   | 23.1   | 22.4   | 22.4   | 22.7   | 24.7   | 24.6   | 24.7   | 22.6   | 22.7   | 23.0   |
|                    |            | 12               | 0            | 23.6                    | 23.7   | 22.8   | 21.2   | 21.1   | 21.2   | 23.6   | 23.4   | 23.4   | 21.3   | 21.5   | 21.6   |
|                    |            | 12               | 6            | 23.6                    | 23.7   | 22.7   | 21.2   | 21.2   | 21.3   | 23.6   | 23.5   | 23.4   | 21.4   | 21.6   | 21.6   |
|                    |            | 12               | 11           | 23.6                    | 23.7   | 22.6   | 21.2   | 21.2   | 21.4   | 23.5   | 23.5   | 23.4   | 21.4   | 21.6   | 21.7   |
|                    |            | 25               | 0            | 23.5                    | 23.6   | 22.6   | 21.1   | 21.1   | 21.1   | 23.5   | 23.4   | 23.3   | 21.3   | 21.5   | 21.5   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.3   | 23.2   | 21.8   | 21.8   | 21.6   | 22.0   | 21.9   | 22.8   | 21.1   | 20.9   | 21.1   |
|                    |            | 1                | 12           | 23.6                    | 23.4   | 22.9   | 22.0   | 21.8   | 21.0   | 22.2   | 21.9   | 22.3   | 21.1   | 21.0   | 20.5   |
|                    |            | 1                | 24           | 23.6                    | 23.2   | 22.6   | 22.0   | 21.7   | 20.6   | 22.3   | 21.9   | 21.3   | 21.1   | 20.9   | 20.1   |
|                    |            | 12               | 0            | 22.3                    | 22.5   | 21.6   | 20.6   | 20.9   | 20.0   | 20.8   | 21.1   | 21.2   | 19.8   | 20.1   | 19.5   |
|                    |            | 12               | 6            | 22.4                    | 22.6   | 21.6   | 20.7   | 20.9   | 19.8   | 21.0   | 21.1   | 21.1   | 19.9   | 20.2   | 19.3   |
|                    |            | 12               | 11           | 22.3                    | 22.5   | 21.5   | 20.7   | 20.9   | 19.6   | 21.0   | 21.1   | 20.8   | 19.9   | 20.1   | 19.1   |
|                    |            | 25               | 0            | 22.2                    | 22.4   | 21.6   | 20.6   | 20.8   | 19.8   | 20.9   | 21.0   | 20.9   | 19.7   | 20.0   | 19.3   |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.0   | 19.6   | 21.3   | 21.3   | 21.3   | 18.8   | 18.7   | 18.5   | 20.8   | 20.8   | 20.8   |
|                    |            | 1                | 12           | 20.0                    | 20.1   | 19.7   | 21.3   | 21.3   | 21.3   | 18.9   | 18.8   | 18.6   | 20.7   | 20.8   | 20.8   |
|                    |            | 1                | 24           | 20.1                    | 20.1   | 19.7   | 21.3   | 21.3   | 21.3   | 18.9   | 18.9   | 18.6   | 20.7   | 20.8   | 20.8   |
|                    |            | 12               | 0            | 20.0                    | 19.9   | 19.9   | 21.3   | 21.3   | 21.3   | 18.8   | 18.7   | 18.7   | 20.7   | 20.8   | 20.8   |
|                    |            | 12               | 6            | 20.1                    | 20.0   | 20.0   | 21.3   | 21.3   | 21.3   | 18.9   | 18.8   | 18.8   | 20.7   | 20.8   | 20.8   |
|                    |            | 12               | 11           | 20.1                    | 20.0   | 20.0   | 21.3   | 21.3   | 21.3   | 18.9   | 18.8   | 18.9   | 20.7   | 20.8   | 20.8   |
|                    |            | 25               | 0            | 20.1                    | 20.0   | 20.0   | 21.3   | 21.3   | 21.3   | 18.9   | 18.8   | 18.9   | 20.7   | 20.8   | 20.8   |

## OUTPUT POWER FOR LTE BAND 25 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 26090                   | 26365 | 26640 | 26090 | 26365 | 26640 | 26090 | 26365 | 26640 | 26090 | 26365 | 26640 |
| 10.0               | QPSK       | 1                | 0            | 25.2                    | 25.6  | 25.7  | 22.9  | 22.9  | 23.1  | 24.8  | 24.8  | 25.0  | 22.5  | 22.8  | 23.0  |
|                    |            | 1                | 24           | 25.5                    | 25.7  | 24.9  | 23.1  | 23.1  | 23.1  | 25.0  | 25.0  | 24.9  | 22.8  | 22.9  | 23.0  |
|                    |            | 1                | 49           | 25.3                    | 25.1  | 23.8  | 22.9  | 23.0  | 23.1  | 24.7  | 24.9  | 24.8  | 22.6  | 22.8  | 23.0  |
|                    |            | 25               | 0            | 24.5                    | 24.7  | 24.3  | 22.1  | 22.1  | 22.0  | 24.6  | 24.5  | 24.4  | 22.3  | 22.5  | 22.5  |
|                    |            | 25               | 12           | 24.7                    | 24.8  | 24.0  | 22.3  | 22.3  | 22.1  | 24.7  | 24.6  | 24.5  | 22.5  | 22.6  | 22.6  |
|                    |            | 25               | 24           | 24.7                    | 24.6  | 23.5  | 22.2  | 22.2  | 22.1  | 24.6  | 24.6  | 24.4  | 22.4  | 22.5  | 22.6  |
|                    |            | 50               | 0            | 24.5                    | 24.7  | 23.9  | 22.2  | 22.2  | 22.0  | 24.6  | 24.5  | 24.5  | 22.4  | 22.5  | 22.6  |
|                    | 16QAM      | 1                | 0            | 24.0                    | 24.5  | 25.2  | 22.1  | 21.9  | 22.5  | 24.5  | 24.3  | 24.9  | 22.2  | 22.3  | 22.9  |
|                    |            | 1                | 24           | 24.6                    | 24.6  | 24.2  | 22.2  | 22.1  | 22.5  | 24.6  | 24.5  | 24.8  | 22.4  | 22.4  | 22.9  |
|                    |            | 1                | 49           | 24.5                    | 24.1  | 23.3  | 22.0  | 21.9  | 22.5  | 24.4  | 24.3  | 24.8  | 22.2  | 22.2  | 23.0  |
|                    |            | 25               | 0            | 23.5                    | 23.7  | 23.4  | 21.3  | 21.1  | 21.1  | 23.7  | 23.5  | 23.5  | 21.4  | 21.5  | 21.5  |
|                    |            | 25               | 12           | 23.8                    | 23.8  | 23.1  | 21.4  | 21.3  | 21.1  | 23.8  | 23.6  | 23.6  | 21.6  | 21.7  | 21.7  |
|                    |            | 25               | 24           | 23.8                    | 23.7  | 22.7  | 21.3  | 21.2  | 21.1  | 23.7  | 23.7  | 23.5  | 21.6  | 21.6  | 21.6  |
|                    |            | 50               | 0            | 23.6                    | 23.7  | 23.0  | 21.3  | 21.1  | 21.1  | 23.7  | 23.5  | 23.5  | 21.4  | 21.6  | 21.6  |
|                    | 64QAM      | 1                | 0            | 23.1                    | 23.7  | 23.7  | 21.5  | 21.8  | 22.5  | 21.7  | 22.3  | 23.0  | 20.7  | 21.2  | 21.3  |
|                    |            | 1                | 24           | 23.5                    | 23.7  | 22.9  | 22.2  | 22.1  | 21.3  | 22.4  | 22.3  | 22.6  | 21.1  | 21.4  | 20.9  |
|                    |            | 1                | 49           | 23.5                    | 23.1  | 22.4  | 22.0  | 21.6  | 20.3  | 22.7  | 22.1  | 21.4  | 21.0  | 21.0  | 19.9  |
|                    |            | 25               | 0            | 22.1                    | 22.6  | 22.3  | 20.7  | 20.7  | 20.8  | 20.9  | 21.1  | 21.6  | 19.7  | 20.1  | 20.2  |
|                    |            | 25               | 12           | 22.4                    | 22.5  | 21.9  | 21.0  | 20.9  | 20.3  | 21.3  | 21.2  | 21.5  | 20.0  | 20.2  | 19.8  |
|                    |            | 25               | 24           | 22.4                    | 22.3  | 21.6  | 20.9  | 20.7  | 19.8  | 21.4  | 21.1  | 21.1  | 20.0  | 20.0  | 19.4  |
|                    |            | 50               | 0            | 22.1                    | 22.3  | 21.9  | 20.6  | 20.6  | 20.2  | 21.0  | 21.1  | 21.2  | 19.7  | 19.9  | 19.6  |
|                    | 256QAM     | 1                | 0            | 19.9                    | 19.5  | 19.7  | 21.3  | 21.2  | 21.2  | 18.8  | 18.4  | 18.5  | 20.3  | 20.1  | 21.2  |
|                    |            | 1                | 24           | 20.2                    | 19.8  | 19.9  | 21.3  | 21.2  | 21.2  | 19.0  | 18.6  | 18.8  | 20.3  | 20.1  | 21.2  |
|                    |            | 1                | 49           | 19.9                    | 19.7  | 19.8  | 21.3  | 21.2  | 21.2  | 18.7  | 18.4  | 18.7  | 20.2  | 20.2  | 21.2  |
|                    |            | 25               | 0            | 20.1                    | 19.9  | 19.8  | 21.3  | 21.3  | 21.2  | 18.8  | 18.7  | 18.6  | 20.1  | 20.1  | 21.2  |
|                    |            | 25               | 12           | 20.1                    | 20.0  | 20.0  | 21.3  | 21.3  | 21.2  | 18.9  | 18.9  | 18.8  | 20.3  | 20.2  | 21.2  |
|                    |            | 25               | 24           | 20.0                    | 20.0  | 20.0  | 21.2  | 21.2  | 21.2  | 18.8  | 18.8  | 18.8  | 20.2  | 20.2  | 21.2  |
|                    |            | 50               | 0            | 20.0                    | 19.9  | 19.9  | 21.3  | 21.2  | 21.2  | 18.8  | 18.8  | 18.8  | 20.2  | 20.2  | 21.2  |

## OUTPUT POWER FOR LTE BAND 25 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 26115                   | 26365  | 26615  | 26115  | 26365  | 26615  | 26115  | 26365  | 26615  | 26115  | 26365  | 26615  |
|                    |            |                  |              | 1857.5                  | 1882.5 | 1907.5 | 1857.5 | 1882.5 | 1907.5 | 1857.5 | 1882.5 | 1907.5 | 1857.5 | 1882.5 | 1907.5 |
| 15.0               | QPSK       | 1                | 0            | 25.2                    | 25.7   | 25.7   | 22.9   | 23.1   | 23.0   | 24.9   | 24.9   | 25.0   | 22.6   | 23.0   | 23.0   |
|                    |            | 1                | 37           | 25.4                    | 25.0   | 24.7   | 23.0   | 23.1   | 23.0   | 25.0   | 25.0   | 24.8   | 22.9   | 22.9   | 22.9   |
|                    |            | 1                | 74           | 25.4                    | 24.8   | 23.0   | 22.9   | 23.1   | 22.9   | 24.8   | 25.0   | 24.8   | 22.8   | 22.9   | 23.0   |
|                    |            | 36               | 0            | 24.1                    | 24.5   | 24.3   | 22.0   | 22.0   | 21.9   | 24.5   | 24.4   | 24.4   | 22.2   | 22.4   | 22.4   |
|                    |            | 36               | 16           | 24.2                    | 24.2   | 23.8   | 22.1   | 22.2   | 22.0   | 24.6   | 24.5   | 24.5   | 22.4   | 22.6   | 22.6   |
|                    |            | 36               | 35           | 24.5                    | 24.0   | 23.2   | 22.1   | 22.2   | 22.0   | 24.6   | 24.6   | 24.4   | 22.5   | 22.5   | 22.5   |
|                    |            | 75               | 0            | 24.2                    | 24.2   | 23.7   | 22.0   | 22.1   | 21.9   | 24.6   | 24.5   | 24.4   | 22.4   | 22.5   | 22.5   |
|                    | 16QAM      | 1                | 0            | 24.2                    | 24.8   | 25.1   | 22.5   | 22.1   | 22.5   | 24.9   | 24.5   | 24.9   | 22.7   | 22.5   | 22.9   |
|                    |            | 1                | 37           | 24.5                    | 23.9   | 24.0   | 22.6   | 22.2   | 22.4   | 25.0   | 24.5   | 24.8   | 22.9   | 22.5   | 22.9   |
|                    |            | 1                | 74           | 25.0                    | 23.7   | 22.6   | 22.4   | 22.1   | 22.4   | 25.0   | 24.6   | 24.7   | 22.8   | 22.4   | 22.9   |
|                    |            | 36               | 0            | 23.1                    | 23.6   | 23.5   | 21.0   | 21.0   | 21.0   | 23.5   | 23.4   | 23.4   | 21.3   | 21.4   | 21.5   |
|                    |            | 36               | 16           | 23.3                    | 23.3   | 23.0   | 21.1   | 21.2   | 21.0   | 23.6   | 23.4   | 23.5   | 21.5   | 21.6   | 21.6   |
|                    |            | 36               | 35           | 23.5                    | 23.2   | 22.5   | 21.1   | 21.2   | 21.0   | 23.6   | 23.5   | 23.5   | 21.4   | 21.5   | 21.6   |
|                    |            | 75               | 0            | 23.4                    | 23.4   | 23.0   | 21.0   | 21.1   | 20.9   | 23.6   | 23.4   | 23.4   | 21.4   | 21.5   | 21.6   |
|                    | 64QAM      | 1                | 0            | 23.4                    | 23.8   | 23.7   | 21.6   | 22.0   | 22.0   | 22.0   | 22.6   | 23.1   | 20.7   | 21.4   | 21.4   |
|                    |            | 1                | 37           | 23.5                    | 23.1   | 23.0   | 21.9   | 21.6   | 21.5   | 22.6   | 21.9   | 22.4   | 21.0   | 20.8   | 20.9   |
|                    |            | 1                | 74           | 23.9                    | 22.9   | 21.9   | 22.2   | 21.4   | 19.7   | 23.8   | 22.3   | 21.0   | 21.5   | 20.7   | 19.4   |
|                    |            | 36               | 0            | 21.7                    | 22.3   | 22.5   | 20.1   | 20.5   | 20.7   | 20.6   | 20.9   | 21.6   | 19.2   | 19.8   | 20.1   |
|                    |            | 36               | 16           | 21.8                    | 22.0   | 22.0   | 20.3   | 20.4   | 20.4   | 20.9   | 20.8   | 21.4   | 19.4   | 19.7   | 19.9   |
|                    |            | 36               | 35           | 22.1                    | 21.8   | 21.4   | 20.4   | 20.3   | 19.7   | 21.4   | 20.9   | 21.1   | 19.7   | 19.6   | 19.3   |
|                    |            | 75               | 0            | 21.9                    | 22.0   | 21.9   | 20.3   | 20.3   | 20.1   | 21.1   | 20.9   | 21.2   | 19.5   | 19.7   | 19.6   |
|                    | 256QAM     | 1                | 0            | 19.9                    | 19.8   | 19.6   | 21.3   | 21.2   | 21.3   | 18.7   | 18.7   | 18.5   | 21.1   | 21.3   | 21.3   |
|                    |            | 1                | 37           | 20.2                    | 20.1   | 19.9   | 21.3   | 21.2   | 21.3   | 19.0   | 18.9   | 18.8   | 21.1   | 21.3   | 21.3   |
|                    |            | 1                | 74           | 20.0                    | 20.0   | 19.9   | 21.3   | 21.3   | 21.3   | 18.8   | 18.8   | 18.7   | 21.1   | 21.2   | 21.3   |
|                    |            | 36               | 0            | 20.0                    | 19.9   | 19.8   | 21.3   | 21.3   | 21.3   | 18.8   | 18.7   | 18.6   | 21.1   | 21.3   | 21.3   |
|                    |            | 36               | 16           | 20.2                    | 19.9   | 19.9   | 21.3   | 21.3   | 21.3   | 19.0   | 18.8   | 18.7   | 21.1   | 21.3   | 21.3   |
|                    |            | 36               | 35           | 20.1                    | 20.0   | 19.9   | 21.3   | 21.3   | 21.3   | 18.9   | 18.8   | 18.8   | 21.1   | 21.3   | 21.3   |
|                    |            | 75               | 0            | 20.0                    | 19.9   | 19.9   | 21.3   | 21.3   | 21.3   | 18.8   | 18.8   | 18.7   | 21.0   | 21.3   | 21.3   |

## OUTPUT POWER FOR LTE BAND 25 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 26140                   | 26365  | 26590  | 26140  | 26365  | 26590  | 26140  | 26365  | 26590  | 26140  | 26365  | 26590  |
|                    |            |                  |              | 1860.0                  | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.7   | 25.6   | 23.1   | 23.1   | 23.0   | 25.0   | 24.9   | 24.9   | 22.7   | 22.9   | 22.8   |
|                    |            | 1                | 49           | 25.4                    | 24.9   | 25.3   | 23.0   | 23.1   | 22.9   | 24.9   | 24.9   | 24.8   | 22.8   | 22.8   | 22.8   |
|                    |            | 1                | 99           | 25.6                    | 24.8   | 23.2   | 23.0   | 23.1   | 22.8   | 24.8   | 24.9   | 24.7   | 22.8   | 22.8   | 22.9   |
|                    |            | 50               | 0            | 24.1                    | 24.5   | 24.5   | 22.1   | 22.1   | 21.9   | 24.5   | 24.4   | 24.4   | 22.3   | 22.4   | 22.4   |
|                    |            | 50               | 24           | 24.3                    | 24.0   | 24.1   | 22.1   | 22.1   | 22.0   | 24.5   | 24.4   | 24.3   | 22.4   | 22.5   | 22.4   |
|                    |            | 50               | 49           | 24.6                    | 23.9   | 23.4   | 22.0   | 22.1   | 21.9   | 24.4   | 24.5   | 24.3   | 22.4   | 22.4   | 22.4   |
|                    |            | 100              | 0            | 24.1                    | 24.0   | 23.8   | 22.0   | 22.1   | 21.9   | 24.4   | 24.3   | 24.3   | 22.3   | 22.3   | 22.3   |
|                    |            | 100              | 0            | 24.4                    | 25.4   | 24.7   | 22.6   | 22.7   | 22.5   | 25.0   | 25.0   | 24.9   | 22.7   | 23.0   | 22.9   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.5   | 24.6   | 22.5   | 22.7   | 22.4   | 24.9   | 25.0   | 24.8   | 22.8   | 23.0   | 22.8   |
|                    |            | 1                | 49           | 25.0                    | 24.5   | 22.8   | 22.5   | 22.7   | 22.3   | 24.8   | 25.0   | 24.7   | 22.8   | 22.9   | 23.0   |
|                    |            | 1                | 99           | 25.0                    | 24.5   | 22.8   | 22.5   | 22.7   | 22.3   | 24.8   | 25.0   | 24.7   | 22.8   | 22.9   | 23.0   |
|                    |            | 50               | 0            | 23.0                    | 23.7   | 23.7   | 21.0   | 21.1   | 21.0   | 23.5   | 23.4   | 23.4   | 21.3   | 21.5   | 21.4   |
|                    |            | 50               | 24           | 23.3                    | 23.3   | 23.3   | 21.1   | 21.2   | 21.0   | 23.5   | 23.4   | 23.3   | 21.4   | 21.5   | 21.4   |
|                    |            | 50               | 49           | 23.6                    | 23.1   | 22.7   | 21.1   | 21.2   | 20.9   | 23.4   | 23.5   | 23.4   | 21.4   | 21.4   | 21.5   |
|                    |            | 100              | 0            | 23.2                    | 23.3   | 23.1   | 21.0   | 21.1   | 20.9   | 23.4   | 23.3   | 23.3   | 21.3   | 21.4   | 21.3   |
|                    | 64QAM      | 1                | 0            | 23.2                    | 23.9   | 24.1   | 21.5   | 22.1   | 21.9   | 21.8   | 23.0   | 23.7   | 20.6   | 21.4   | 21.6   |
|                    |            | 1                | 49           | 23.3                    | 23.1   | 24.1   | 21.5   | 21.6   | 22.4   | 22.5   | 21.8   | 23.0   | 20.8   | 20.8   | 21.7   |
|                    |            | 1                | 99           | 23.7                    | 23.0   | 22.7   | 21.9   | 21.3   | 20.4   | 23.5   | 22.4   | 21.7   | 21.2   | 20.7   | 20.1   |
|                    |            | 50               | 0            | 21.7                    | 22.4   | 22.6   | 20.2   | 20.6   | 20.6   | 20.6   | 21.0   | 21.8   | 19.3   | 19.9   | 20.1   |
|                    |            | 50               | 24           | 22.0                    | 21.9   | 22.3   | 20.3   | 20.3   | 20.5   | 21.2   | 20.7   | 21.4   | 19.6   | 19.6   | 20.0   |
|                    |            | 50               | 49           | 22.3                    | 21.7   | 21.6   | 20.5   | 20.2   | 19.9   | 21.8   | 20.8   | 21.1   | 19.9   | 19.5   | 19.4   |
|                    |            | 100              | 0            | 21.8                    | 21.8   | 22.0   | 20.1   | 20.1   | 20.1   | 20.9   | 20.8   | 21.3   | 19.4   | 19.5   | 19.6   |
|                    | 256QAM     | 1                | 0            | 19.6                    | 19.9   | 19.5   | 22.1   | 22.1   | 22.2   | 18.4   | 18.8   | 18.4   | 21.5   | 21.5   | 21.6   |
|                    |            | 1                | 49           | 19.9                    | 20.3   | 20.0   | 22.1   | 22.1   | 22.2   | 18.7   | 19.2   | 18.8   | 21.5   | 21.5   | 21.6   |
|                    |            | 1                | 99           | 19.6                    | 20.2   | 19.7   | 22.1   | 22.2   | 22.2   | 18.5   | 19.0   | 18.7   | 21.5   | 21.5   | 21.6   |
|                    |            | 50               | 0            | 19.8                    | 19.8   | 19.7   | 22.1   | 22.2   | 22.2   | 18.7   | 18.6   | 18.6   | 21.5   | 21.5   | 21.6   |
|                    |            | 50               | 24           | 20.0                    | 19.9   | 19.9   | 22.1   | 22.1   | 22.2   | 18.8   | 18.8   | 18.7   | 21.5   | 21.5   | 21.6   |
|                    |            | 50               | 49           | 19.9                    | 19.9   | 19.8   | 22.1   | 22.1   | 22.2   | 18.7   | 18.8   | 18.8   | 21.4   | 21.5   | 21.6   |
|                    |            | 100              | 0            | 19.9                    | 19.8   | 19.8   | 22.1   | 22.1   | 22.2   | 18.7   | 18.8   | 18.6   | 21.4   | 21.5   | 21.6   |

## 7.11. LTE BAND 26 (Part 90S)

Test Engineer ID: 39004 Test Date: 3/11/2020

### OUTPUT POWER FOR LTE BAND 26 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 26697                   | 26740 | 26783 | 26697 | 26740 | 26783 |
| 1.4                | QPSK       | 1                | 0            | 814.7                   | 819.0 | 823.3 | 814.7 | 819.0 | 823.3 |
|                    |            | 1                | 2            | 25.6                    | 25.6  | 25.6  | 24.3  | 24.3  | 24.3  |
|                    |            | 1                | 5            | 25.7                    | 25.7  | 25.7  | 24.4  | 24.5  | 24.4  |
|                    |            | 3                | 0            | 25.6                    | 25.7  | 25.6  | 24.3  | 24.4  | 24.4  |
|                    |            | 3                | 1            | 25.6                    | 25.7  | 25.7  | 24.3  | 24.4  | 24.4  |
|                    |            | 3                | 2            | 25.6                    | 25.7  | 25.7  | 24.3  | 24.4  | 24.4  |
|                    |            | 6                | 0            | 24.7                    | 24.7  | 24.8  | 23.4  | 23.5  | 23.5  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 25.0  | 24.8  | 23.4  | 23.8  | 23.4  |
|                    |            | 1                | 2            | 24.9                    | 25.1  | 24.8  | 23.6  | 23.9  | 23.5  |
|                    |            | 1                | 5            | 24.8                    | 25.1  | 24.8  | 23.5  | 23.8  | 23.6  |
|                    |            | 3                | 0            | 24.7                    | 24.9  | 24.9  | 23.4  | 23.7  | 23.7  |
|                    |            | 3                | 1            | 24.8                    | 25.0  | 25.0  | 23.5  | 23.7  | 23.7  |
|                    |            | 3                | 2            | 24.8                    | 24.9  | 25.0  | 23.5  | 23.7  | 23.7  |
|                    | 64QAM      | 6                | 0            | 23.9                    | 23.6  | 24.0  | 22.6  | 22.4  | 22.7  |
|                    |            | 1                | 0            | 24.4                    | 24.6  | 24.3  | 23.7  | 23.3  | 23.4  |
|                    |            | 1                | 2            | 24.4                    | 24.8  | 24.4  | 23.8  | 23.5  | 23.5  |
|                    |            | 1                | 5            | 24.4                    | 24.7  | 24.4  | 23.6  | 23.4  | 23.5  |
|                    |            | 3                | 0            | 24.2                    | 24.6  | 24.4  | 23.6  | 23.4  | 23.3  |
|                    |            | 3                | 1            | 24.2                    | 24.6  | 24.5  | 23.6  | 23.5  | 23.3  |
|                    |            | 3                | 2            | 24.2                    | 24.7  | 24.5  | 23.6  | 23.5  | 23.3  |
|                    | 256QAM     | 6                | 0            | 23.3                    | 23.3  | 23.6  | 22.2  | 22.6  | 22.4  |
|                    |            | 1                | 0            | 24.2                    | 24.3  | 24.4  | 22.9  | 23.0  | 23.0  |
|                    |            | 1                | 2            | 24.3                    | 24.3  | 24.4  | 23.0  | 23.0  | 23.0  |
|                    |            | 1                | 5            | 24.3                    | 24.3  | 24.4  | 22.9  | 23.0  | 23.0  |
|                    |            | 3                | 0            | 24.3                    | 24.3  | 24.4  | 23.0  | 23.0  | 23.0  |
|                    |            | 3                | 1            | 24.3                    | 24.3  | 24.4  | 23.0  | 23.0  | 23.0  |
|                    |            | 3                | 2            | 24.3                    | 24.3  | 24.4  | 23.0  | 23.0  | 23.0  |
|                    |            | 6                | 0            | 24.3                    | 24.3  | 24.4  | 23.0  | 23.0  | 23.0  |

## OUTPUT POWER FOR LTE BAND 26 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 26705                   | 26740 | 26775 | 26705 | 26740 | 26775 |
|                    |            |                  |              | 815.5                   | 819.0 | 822.5 | 815.5 | 819.0 | 822.5 |
| 3.0                | QPSK       | 1                | 0            | 25.4                    | 25.5  | 25.6  | 24.3  | 24.3  | 24.4  |
|                    |            | 1                | 7            | 25.5                    | 25.5  | 25.6  | 24.3  | 24.3  | 24.4  |
|                    |            | 1                | 14           | 25.5                    | 25.6  | 25.7  | 24.4  | 24.4  | 24.5  |
|                    |            | 8                | 0            | 24.6                    | 24.6  | 24.6  | 23.4  | 23.4  | 23.4  |
|                    |            | 8                | 4            | 24.7                    | 24.7  | 24.7  | 23.5  | 23.5  | 23.5  |
|                    |            | 8                | 7            | 24.7                    | 24.7  | 24.8  | 23.5  | 23.5  | 23.5  |
|                    | 16QAM      | 15               | 0            | 24.6                    | 24.7  | 24.7  | 23.5  | 23.5  | 23.4  |
|                    |            | 1                | 0            | 24.6                    | 24.6  | 25.0  | 23.4  | 23.4  | 23.8  |
|                    |            | 1                | 7            | 24.6                    | 24.7  | 25.1  | 23.5  | 23.3  | 23.8  |
|                    |            | 1                | 14           | 24.6                    | 24.7  | 25.1  | 23.5  | 23.4  | 23.9  |
|                    |            | 8                | 0            | 23.6                    | 23.7  | 23.7  | 22.4  | 22.5  | 22.5  |
|                    |            | 8                | 4            | 23.7                    | 23.8  | 23.8  | 22.5  | 22.6  | 22.6  |
|                    | 64QAM      | 8                | 7            | 23.7                    | 23.8  | 23.9  | 22.6  | 22.6  | 22.6  |
|                    |            | 15               | 0            | 23.6                    | 23.7  | 23.8  | 22.4  | 22.5  | 22.5  |
|                    |            | 1                | 0            | 24.3                    | 24.4  | 24.2  | 23.5  | 23.6  | 23.4  |
|                    |            | 1                | 7            | 24.3                    | 24.5  | 24.3  | 23.5  | 23.5  | 23.4  |
|                    |            | 1                | 14           | 24.4                    | 24.5  | 24.3  | 23.5  | 23.7  | 23.5  |
|                    |            | 8                | 0            | 23.1                    | 23.2  | 23.2  | 22.2  | 22.3  | 22.3  |
|                    | 256QAM     | 8                | 4            | 23.2                    | 23.3  | 23.3  | 22.3  | 22.4  | 22.4  |
|                    |            | 8                | 7            | 23.2                    | 23.3  | 23.3  | 22.3  | 22.5  | 22.4  |
|                    |            | 15               | 0            | 23.2                    | 23.2  | 23.2  | 22.4  | 22.3  | 22.4  |
|                    |            | 1                | 0            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 1                | 7            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 1                | 14           | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 8                | 0            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 8                | 4            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 8                | 7            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |
|                    |            | 15               | 0            | 24.3                    | 24.3  | 24.3  | 23.1  | 23.1  | 23.1  |

## OUTPUT POWER FOR LTE BAND 26 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 26715                   | 26740 | 26765 | 26715 | 26740 | 26765 |
|                    |            |                  |              | 816.5                   | 819.0 | 821.5 | 816.5 | 819.0 | 821.5 |
| 5.0                | QPSK       | 1                | 0            | 25.4                    | 25.6  | 25.5  | 24.3  | 24.5  | 24.4  |
|                    |            | 1                | 12           | 25.6                    | 25.7  | 25.6  | 24.4  | 24.5  | 24.4  |
|                    |            | 1                | 24           | 25.6                    | 25.7  | 25.6  | 24.4  | 24.5  | 24.4  |
|                    |            | 12               | 0            | 24.6                    | 24.5  | 24.6  | 23.4  | 23.4  | 23.4  |
|                    |            | 12               | 6            | 24.7                    | 24.6  | 24.7  | 23.5  | 23.5  | 23.5  |
|                    |            | 12               | 11           | 24.6                    | 24.6  | 24.6  | 23.5  | 23.5  | 23.5  |
|                    |            | 25               | 0            | 24.6                    | 24.6  | 24.6  | 23.4  | 23.5  | 23.5  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.8  | 25.1  | 23.5  | 23.7  | 23.9  |
|                    |            | 1                | 12           | 24.9                    | 24.9  | 25.2  | 23.6  | 23.6  | 24.0  |
|                    |            | 1                | 24           | 24.9                    | 24.9  | 25.2  | 23.6  | 23.7  | 24.0  |
|                    |            | 12               | 0            | 23.6                    | 23.6  | 23.7  | 22.5  | 22.5  | 22.6  |
|                    |            | 12               | 6            | 23.7                    | 23.8  | 23.9  | 22.6  | 22.6  | 22.6  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.8  | 22.5  | 22.6  | 22.6  |
|                    |            | 25               | 0            | 23.6                    | 23.7  | 23.7  | 22.5  | 22.5  | 22.5  |
|                    | 64QAM      | 1                | 0            | 24.3                    | 24.1  | 24.4  | 23.5  | 23.3  | 23.6  |
|                    |            | 1                | 12           | 24.4                    | 24.0  | 24.4  | 23.6  | 23.3  | 23.6  |
|                    |            | 1                | 24           | 24.4                    | 24.1  | 24.5  | 23.6  | 23.3  | 23.7  |
|                    |            | 12               | 0            | 23.1                    | 23.1  | 23.0  | 22.3  | 22.3  | 22.2  |
|                    |            | 12               | 6            | 23.2                    | 23.2  | 23.1  | 22.4  | 22.4  | 22.3  |
|                    |            | 12               | 11           | 23.2                    | 23.2  | 23.1  | 22.4  | 22.4  | 22.3  |
|                    |            | 25               | 0            | 23.1                    | 23.1  | 23.1  | 22.3  | 22.3  | 22.3  |
|                    | 256QAM     | 1                | 0            | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 1                | 12           | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 1                | 24           | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 12               | 0            | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 12               | 6            | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 12               | 11           | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |
|                    |            | 25               | 0            | 24.2                    | 24.3  | 24.3  | 23.4  | 23.5  | 23.5  |

## OUTPUT POWER FOR LTE BAND 26 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |     |       |       |     |
|--------------------|------------|------------------|--------------|-------------------------|-------|-----|-------|-------|-----|
|                    |            |                  |              | ANT 1                   |       |     | ANT 2 |       |     |
|                    |            |                  |              | N/A                     | 26740 | N/A | N/A   | 26740 | N/A |
|                    |            |                  |              | N/A                     | 819.0 | N/A | N/A   | 819.0 | N/A |
| 10.0               | QPSK       | 1                | 0            |                         | 25.7  |     |       | 24.5  |     |
|                    |            | 1                | 24           |                         | 25.7  |     |       | 24.5  |     |
|                    |            | 1                | 49           |                         | 25.7  |     |       | 24.4  |     |
|                    |            | 25               | 0            |                         | 24.7  |     |       | 23.4  |     |
|                    |            | 25               | 12           |                         | 24.9  |     |       | 23.6  |     |
|                    |            | 25               | 24           |                         | 24.8  |     |       | 23.5  |     |
|                    |            | 50               | 0            |                         | 24.8  |     |       | 23.5  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.9  |     |       | 23.6  |     |
|                    |            | 1                | 24           |                         | 24.8  |     |       | 23.6  |     |
|                    |            | 1                | 49           |                         | 24.8  |     |       | 23.5  |     |
|                    |            | 25               | 0            |                         | 23.8  |     |       | 22.5  |     |
|                    |            | 25               | 12           |                         | 23.9  |     |       | 22.7  |     |
|                    |            | 25               | 24           |                         | 23.9  |     |       | 22.6  |     |
|                    | 64QAM      | 50               | 0            |                         | 23.8  |     |       | 22.6  |     |
|                    |            | 1                | 0            |                         | 24.4  |     |       | 23.6  |     |
|                    |            | 1                | 24           |                         | 24.5  |     |       | 23.6  |     |
|                    |            | 1                | 49           |                         | 24.5  |     |       | 23.6  |     |
|                    |            | 25               | 0            |                         | 23.2  |     |       | 22.4  |     |
|                    |            | 25               | 12           |                         | 23.4  |     |       | 22.6  |     |
|                    | 256QAM     | 25               | 24           |                         | 23.3  |     |       | 22.5  |     |
|                    |            | 50               | 0            |                         | 23.3  |     |       | 22.4  |     |
|                    |            | 1                | 0            |                         | 24.3  |     |       | 23.0  |     |
|                    |            | 1                | 24           |                         | 24.3  |     |       | 23.0  |     |
|                    |            | 1                | 49           |                         | 24.3  |     |       | 23.0  |     |
|                    |            | 25               | 0            |                         | 24.2  |     |       | 23.0  |     |
|                    |            | 25               | 12           |                         | 24.3  |     |       | 23.0  |     |
|                    |            | 25               | 24           |                         | 24.3  |     |       | 23.0  |     |
|                    |            | 50               | 0            |                         | 24.2  |     |       | 23.0  |     |

## 7.12. LTE BAND 30(NS1)

Test Engineer ID: 39006 Test Date: 8/1/2020

### OUTPUT POWER FOR LTE BAND 30 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 27685                   | 27710  | 27735  | 27685  | 27710  | 27735  | 27685  | 27710  | 27735  | 27685  | 27710  | 27735  |
|                    |            |                  |              | 2307.5                  | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 |
| 5.0                | QPSK       | 1                | 0            | 25.5                    | 25.5   | 25.6   | 22.6   | 22.7   | 22.6   | 24.5   | 24.5   | 24.4   | 22.3   | 22.2   | 22.3   |
|                    |            | 1                | 12           | 25.7                    | 25.7   | 24.9   | 22.6   | 22.7   | 22.7   | 24.6   | 24.6   | 22.9   | 22.4   | 22.4   | 22.5   |
|                    |            | 1                | 24           | 25.7                    | 24.8   | 23.9   | 22.6   | 22.6   | 22.6   | 24.6   | 23.0   | 22.5   | 22.3   | 22.3   | 21.7   |
|                    |            | 12               | 0            | 25.0                    | 25.0   | 25.1   | 22.7   | 22.7   | 22.7   | 24.5   | 24.6   | 24.5   | 22.4   | 22.4   | 22.4   |
|                    |            | 12               | 6            | 25.1                    | 25.1   | 25.1   | 22.7   | 22.8   | 22.7   | 24.5   | 24.7   | 24.4   | 22.5   | 22.5   | 22.4   |
|                    |            | 12               | 11           | 25.1                    | 25.0   | 25.0   | 22.7   | 22.7   | 22.8   | 24.6   | 24.7   | 24.1   | 22.5   | 22.5   | 22.4   |
|                    |            | 25               | 0            | 25.1                    | 25.0   | 25.0   | 22.7   | 22.7   | 22.7   | 24.6   | 24.5   | 24.1   | 22.4   | 22.4   | 22.4   |
|                    | 16QAM      | 1                | 0            | 25.0                    | 24.9   | 24.8   | 22.6   | 22.7   | 22.5   | 24.2   | 23.7   | 23.3   | 22.1   | 22.3   | 22.3   |
|                    |            | 1                | 12           | 25.1                    | 25.0   | 23.2   | 22.7   | 22.8   | 22.6   | 24.0   | 23.7   | 21.7   | 22.3   | 22.4   | 21.6   |
|                    |            | 1                | 24           | 25.1                    | 23.5   | 22.7   | 22.6   | 22.7   | 22.1   | 23.9   | 21.9   | 21.4   | 22.3   | 21.9   | 20.7   |
|                    |            | 12               | 0            | 24.0                    | 24.0   | 24.0   | 22.7   | 22.7   | 22.7   | 23.8   | 24.0   | 23.9   | 21.7   | 21.7   | 22.3   |
|                    |            | 12               | 6            | 24.1                    | 24.1   | 24.1   | 22.7   | 22.8   | 22.8   | 23.9   | 24.0   | 23.8   | 21.7   | 21.9   | 22.5   |
|                    |            | 12               | 11           | 24.1                    | 24.1   | 24.1   | 22.8   | 22.7   | 22.8   | 24.0   | 24.0   | 23.7   | 21.6   | 22.2   | 22.5   |
|                    |            | 25               | 0            | 24.1                    | 24.0   | 24.1   | 22.6   | 22.8   | 22.7   | 23.7   | 23.9   | 23.7   | 21.5   | 21.8   | 22.4   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.3   | 23.2   | 21.5   | 21.5   | 21.5   | 22.6   | 22.1   | 21.9   | 20.7   | 20.6   | 20.6   |
|                    |            | 1                | 12           | 23.5                    | 23.5   | 21.8   | 21.6   | 21.8   | 20.9   | 22.3   | 22.3   | 20.4   | 20.7   | 20.9   | 20.0   |
|                    |            | 1                | 24           | 23.6                    | 22.1   | 21.5   | 21.8   | 21.1   | 20.6   | 22.4   | 20.7   | 20.3   | 20.8   | 20.2   | 19.5   |
|                    |            | 12               | 0            | 22.9                    | 23.0   | 23.0   | 20.9   | 20.9   | 21.5   | 21.9   | 22.2   | 22.2   | 19.8   | 19.8   | 20.4   |
|                    |            | 12               | 6            | 23.0                    | 23.1   | 23.0   | 20.9   | 21.2   | 21.8   | 22.1   | 22.5   | 22.3   | 20.0   | 20.0   | 20.8   |
|                    |            | 12               | 11           | 23.1                    | 23.1   | 23.0   | 20.8   | 21.3   | 21.9   | 22.1   | 22.6   | 22.2   | 19.8   | 20.2   | 21.1   |
|                    |            | 25               | 0            | 22.9                    | 23.0   | 23.1   | 20.9   | 21.1   | 21.6   | 22.0   | 22.2   | 22.1   | 19.7   | 19.9   | 20.7   |
|                    | 256QAM     | 1                | 0            | 20.9                    | 20.9   | 21.0   | 20.6   | 20.5   | 20.5   | 20.9   | 20.8   | 20.9   | 19.7   | 19.7   | 19.6   |
|                    |            | 1                | 12           | 21.0                    | 21.0   | 21.0   | 20.7   | 20.8   | 20.0   | 20.9   | 21.0   | 19.8   | 19.8   | 19.9   | 19.1   |
|                    |            | 1                | 24           | 21.0                    | 21.0   | 21.0   | 20.8   | 20.2   | 19.8   | 21.0   | 20.2   | 19.8   | 19.9   | 19.4   | 18.9   |
|                    |            | 12               | 0            | 21.0                    | 21.0   | 21.0   | 20.9   | 20.9   | 20.9   | 20.9   | 20.9   | 20.9   | 20.0   | 19.9   | 20.4   |
|                    |            | 12               | 6            | 21.1                    | 21.1   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 20.0   | 20.1   | 20.7   |
|                    |            | 12               | 11           | 21.0                    | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 21.0   | 19.9   | 20.2   | 21.1   |
|                    |            | 25               | 0            | 21.1                    | 21.0   | 21.0   | 20.8   | 21.0   | 20.9   | 21.0   | 21.0   | 21.0   | 19.8   | 20.0   | 20.6   |

## OUTPUT POWER FOR LTE BAND 30 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |     |       |        |     |       |        |     |       |        |     |
|--------------------|------------|------------------|--------------|-------------------------|--------|-----|-------|--------|-----|-------|--------|-----|-------|--------|-----|
|                    |            |                  |              | ANT 1                   |        |     | ANT 2 |        |     | ANT 3 |        |     | ANT 4 |        |     |
|                    |            |                  |              | N/A                     | 27710  | N/A | N/A   | 27710  | N/A | N/A   | 27710  | N/A | N/A   | 27710  | N/A |
|                    |            |                  |              | N/A                     | 2310.0 | N/A | N/A   | 2310.0 | N/A | N/A   | 2310.0 | N/A | N/A   | 2310.0 | N/A |
| 10.0               | QPSK       | 1                | 0            |                         | 25.7   |     |       | 22.6   |     |       | 24.6   |     |       | 22.4   |     |
|                    |            | 1                | 24           |                         | 25.7   |     |       | 22.7   |     |       | 24.5   |     |       | 22.3   |     |
|                    |            | 1                | 49           |                         | 25.0   |     |       | 22.7   |     |       | 24.0   |     |       | 22.3   |     |
|                    |            | 25               | 0            |                         | 25.0   |     |       | 22.7   |     |       | 24.5   |     |       | 22.4   |     |
|                    |            | 25               | 12           |                         | 25.2   |     |       | 22.8   |     |       | 24.7   |     |       | 22.5   |     |
|                    |            | 25               | 24           |                         | 25.1   |     |       | 22.7   |     |       | 24.5   |     |       | 22.4   |     |
|                    | 16QAM      | 50               | 0            |                         | 25.0   |     |       | 22.7   |     |       | 24.6   |     |       | 22.4   |     |
|                    |            | 1                | 0            |                         | 25.0   |     |       | 22.7   |     |       | 24.5   |     |       | 22.4   |     |
|                    |            | 1                | 24           |                         | 25.1   |     |       | 22.7   |     |       | 24.6   |     |       | 22.3   |     |
|                    |            | 1                | 49           |                         | 25.1   |     |       | 22.8   |     |       | 23.9   |     |       | 22.1   |     |
|                    |            | 25               | 0            |                         | 24.0   |     |       | 22.7   |     |       | 23.9   |     |       | 21.7   |     |
|                    |            | 25               | 12           |                         | 24.2   |     |       | 22.8   |     |       | 24.0   |     |       | 22.0   |     |
|                    | 64QAM      | 25               | 24           |                         | 24.1   |     |       | 22.7   |     |       | 24.0   |     |       | 22.5   |     |
|                    |            | 50               | 0            |                         | 24.0   |     |       | 22.7   |     |       | 23.9   |     |       | 22.1   |     |
|                    |            | 1                | 0            |                         | 24.1   |     |       | 22.2   |     |       | 23.3   |     |       | 21.4   |     |
|                    |            | 1                | 24           |                         | 24.0   |     |       | 22.3   |     |       | 23.5   |     |       | 21.4   |     |
|                    |            | 1                | 49           |                         | 23.6   |     |       | 21.8   |     |       | 22.2   |     |       | 20.7   |     |
|                    |            | 25               | 0            |                         | 23.0   |     |       | 21.0   |     |       | 22.2   |     |       | 20.0   |     |
|                    | 256QAM     | 25               | 12           |                         | 23.2   |     |       | 21.2   |     |       | 22.2   |     |       | 20.1   |     |
|                    |            | 25               | 24           |                         | 23.1   |     |       | 21.5   |     |       | 22.2   |     |       | 20.5   |     |
|                    |            | 50               | 0            |                         | 23.0   |     |       | 21.2   |     |       | 22.2   |     |       | 20.2   |     |
|                    |            | 1                | 0            |                         | 20.8   |     |       | 20.7   |     |       | 20.7   |     |       | 19.9   |     |
|                    |            | 1                | 24           |                         | 21.2   |     |       | 21.0   |     |       | 21.0   |     |       | 20.5   |     |
|                    |            | 1                | 49           |                         | 20.8   |     |       | 20.8   |     |       | 20.7   |     |       | 19.6   |     |
|                    |            | 25               | 0            |                         | 21.0   |     |       | 20.9   |     |       | 20.8   |     |       | 20.0   |     |
|                    |            | 25               | 12           |                         | 21.1   |     |       | 21.0   |     |       | 20.9   |     |       | 20.0   |     |
|                    |            | 25               | 24           |                         | 21.0   |     |       | 21.0   |     |       | 20.9   |     |       | 20.6   |     |
|                    |            | 50               | 0            |                         | 21.0   |     |       | 20.9   |     |       | 20.9   |     |       | 20.2   |     |

### 7.13. LTE BAND 41 (NS04)

Test Engineer ID: 39004 Test Date: 7/19/2020

#### OUTPUT POWER FOR LTE BAND 41 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 39675                   | 40620 | 41565 | 39675 | 40620 | 41565 | 39675 | 40620 | 41565 | 39675 | 40620 | 41565 |
| 5.0                | QPSK       | 1                | 0            | 24.7                    | 27.5  | 27.4  | 21.9  | 24.6  | 24.6  | 21.8  | 26.0  | 25.8  | 22.9  | 24.1  | 23.9  |
|                    |            | 1                | 12           | 27.7                    | 27.4  | 27.2  | 24.8  | 24.6  | 24.6  | 25.1  | 25.9  | 25.7  | 24.3  | 24.0  | 24.0  |
|                    |            | 1                | 24           | 27.7                    | 27.4  | 27.4  | 24.8  | 24.6  | 24.5  | 25.4  | 25.9  | 25.7  | 24.5  | 24.1  | 23.9  |
|                    |            | 12               | 0            | 23.8                    | 26.6  | 26.4  | 20.9  | 23.7  | 23.7  | 21.1  | 25.0  | 24.8  | 22.1  | 24.2  | 24.0  |
|                    |            | 12               | 6            | 23.8                    | 26.6  | 26.4  | 20.8  | 23.7  | 23.7  | 21.2  | 25.0  | 24.9  | 22.2  | 24.2  | 24.0  |
|                    |            | 12               | 11           | 26.8                    | 26.5  | 26.4  | 23.9  | 23.7  | 23.7  | 24.2  | 25.0  | 24.9  | 24.0  | 24.2  | 24.0  |
|                    |            | 25               | 0            | 23.7                    | 26.6  | 26.3  | 20.8  | 23.7  | 23.6  | 21.1  | 25.0  | 24.9  | 22.1  | 24.1  | 24.0  |
|                    | 16QAM      | 1                | 0            | 24.0                    | 26.8  | 26.5  | 21.2  | 24.0  | 24.0  | 21.3  | 25.3  | 25.1  | 22.3  | 24.5  | 24.4  |
|                    |            | 1                | 12           | 27.0                    | 26.8  | 26.4  | 24.1  | 24.0  | 24.0  | 24.5  | 25.3  | 25.1  | 23.9  | 24.5  | 24.3  |
|                    |            | 1                | 24           | 27.1                    | 26.8  | 26.4  | 24.1  | 24.0  | 23.9  | 24.7  | 25.2  | 25.1  | 24.4  | 24.4  | 24.3  |
|                    |            | 12               | 0            | 22.8                    | 25.6  | 25.4  | 20.0  | 22.8  | 22.7  | 20.2  | 24.1  | 23.8  | 21.0  | 24.1  | 24.0  |
|                    |            | 12               | 6            | 22.9                    | 25.6  | 25.4  | 19.9  | 22.8  | 22.7  | 20.3  | 24.1  | 23.9  | 21.2  | 24.1  | 23.9  |
|                    |            | 12               | 11           | 25.8                    | 25.5  | 25.4  | 22.9  | 22.8  | 22.6  | 23.3  | 24.0  | 23.9  | 23.0  | 24.0  | 23.9  |
|                    | 64QAM      | 25               | 0            | 22.7                    | 25.6  | 25.4  | 19.9  | 22.7  | 22.7  | 20.1  | 24.0  | 23.9  | 21.2  | 24.0  | 23.8  |
|                    |            | 1                | 0            | 21.4                    | 24.0  | 23.5  | 19.2  | 21.1  | 20.7  | 22.7  | 23.3  | 23.3  | 21.0  | 21.4  | 21.9  |
|                    |            | 1                | 12           | 23.4                    | 24.0  | 23.5  | 21.1  | 21.1  | 20.6  | 23.0  | 23.3  | 23.4  | 21.5  | 21.4  | 22.0  |
|                    |            | 1                | 24           | 23.4                    | 24.0  | 23.5  | 21.1  | 21.1  | 20.6  | 23.3  | 23.3  | 23.3  | 21.7  | 21.4  | 22.0  |
|                    |            | 12               | 0            | 20.6                    | 22.6  | 22.0  | 17.8  | 19.7  | 19.6  | 21.9  | 21.8  | 21.9  | 20.0  | 20.4  | 20.5  |
|                    |            | 12               | 6            | 20.7                    | 22.2  | 22.1  | 17.8  | 19.6  | 19.6  | 22.0  | 21.9  | 22.0  | 20.1  | 20.4  | 20.6  |
|                    |            | 12               | 11           | 22.7                    | 22.2  | 22.0  | 19.7  | 19.7  | 19.6  | 22.1  | 21.8  | 22.0  | 20.1  | 20.4  | 20.5  |
|                    |            | 25               | 0            | 20.7                    | 22.2  | 22.0  | 17.8  | 19.6  | 19.6  | 22.0  | 21.7  | 21.9  | 20.0  | 20.4  | 20.4  |
|                    | 256QAM     | 1                | 0            | 23.6                    | 23.9  | 21.0  | 21.0  | 20.9  | 20.9  | 23.2  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |
|                    |            | 1                | 12           | 23.7                    | 23.9  | 21.0  | 20.3  | 20.9  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 22.0  | 21.8  |
|                    |            | 1                | 24           | 23.7                    | 23.9  | 21.0  | 20.8  | 20.9  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |
|                    |            | 12               | 0            | 23.7                    | 23.9  | 21.0  | 20.9  | 21.0  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |
|                    |            | 12               | 6            | 23.7                    | 23.9  | 21.0  | 20.9  | 20.9  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |
|                    |            | 12               | 11           | 23.7                    | 23.9  | 21.0  | 20.9  | 20.9  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |
|                    |            | 25               | 0            | 23.7                    | 23.9  | 21.0  | 20.9  | 20.9  | 20.9  | 23.3  | 23.2  | 23.2  | 18.9  | 21.9  | 21.8  |

## OUTPUT POWER FOR LTE BAND 41 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 39700                   | 40620  | 41540  | 39700  | 40620  | 41540  | 39700  | 40620  | 41540  | 39700  | 40620  | 41540  |
|                    |            |                  |              | 2501.0                  | 2593.0 | 2685.0 | 2501.0 | 2593.0 | 2685.0 | 2501.0 | 2593.0 | 2685.0 | 2501.0 | 2593.0 | 2685.0 |
| 10.0               | QPSK       | 1                | 0            | 22.7                    | 27.2   | 27.0   | 19.9   | 24.5   | 24.4   | 20.0   | 25.9   | 25.6   | 20.4   | 23.4   | 23.1   |
|                    |            | 1                | 24           | 27.7                    | 27.5   | 27.2   | 24.8   | 24.7   | 24.6   | 25.5   | 26.0   | 25.8   | 24.1   | 23.5   | 23.3   |
|                    |            | 1                | 49           | 27.6                    | 27.2   | 27.0   | 24.8   | 24.5   | 24.4   | 25.9   | 25.7   | 25.5   | 24.2   | 23.3   | 23.1   |
|                    |            | 25               | 0            | 23.7                    | 26.6   | 26.4   | 21.0   | 23.8   | 23.7   | 21.3   | 25.1   | 24.9   | 21.7   | 23.7   | 23.5   |
|                    |            | 25               | 12           | 26.8                    | 26.6   | 26.4   | 24.0   | 23.8   | 23.8   | 24.5   | 25.1   | 25.0   | 23.8   | 23.7   | 23.5   |
|                    |            | 25               | 24           | 25.7                    | 26.5   | 26.3   | 22.9   | 23.8   | 23.7   | 23.6   | 25.0   | 24.8   | 24.0   | 23.6   | 23.4   |
|                    |            | 50               | 0            | 23.6                    | 26.5   | 26.4   | 20.8   | 23.7   | 23.7   | 21.4   | 25.0   | 24.9   | 21.8   | 23.6   | 23.4   |
|                    | 16QAM      | 1                | 0            | 22.3                    | 26.7   | 26.5   | 19.3   | 24.1   | 23.8   | 19.5   | 25.3   | 25.0   | 19.9   | 23.8   | 23.7   |
|                    |            | 1                | 24           | 27.2                    | 26.9   | 26.7   | 24.2   | 24.2   | 24.1   | 24.9   | 25.4   | 25.2   | 24.1   | 24.0   | 23.9   |
|                    |            | 1                | 49           | 27.3                    | 26.6   | 26.5   | 24.3   | 24.0   | 23.8   | 25.2   | 25.1   | 24.9   | 24.5   | 23.7   | 23.6   |
|                    |            | 25               | 0            | 22.8                    | 25.6   | 25.4   | 20.0   | 22.8   | 22.7   | 20.4   | 24.1   | 23.9   | 20.8   | 23.5   | 23.3   |
|                    |            | 25               | 12           | 25.8                    | 25.6   | 25.4   | 22.9   | 22.9   | 22.8   | 23.5   | 24.1   | 23.9   | 22.8   | 23.5   | 23.3   |
|                    |            | 25               | 24           | 24.8                    | 25.5   | 25.4   | 21.9   | 22.8   | 22.7   | 22.7   | 24.0   | 23.9   | 22.9   | 23.5   | 23.3   |
|                    |            | 50               | 0            | 22.7                    | 25.6   | 25.3   | 19.9   | 22.8   | 22.7   | 20.5   | 24.1   | 23.9   | 20.8   | 23.5   | 23.2   |
|                    | 64QAM      | 1                | 0            | 20.4                    | 22.8   | 23.4   | 17.7   | 20.5   | 20.8   | 22.6   | 23.2   | 23.0   | 20.6   | 20.5   | 21.2   |
|                    |            | 1                | 24           | 23.3                    | 23.0   | 23.6   | 20.7   | 20.9   | 21.2   | 23.2   | 23.3   | 23.2   | 21.1   | 20.7   | 21.5   |
|                    |            | 1                | 49           | 23.4                    | 22.7   | 23.4   | 20.7   | 20.7   | 21.0   | 23.6   | 23.0   | 23.0   | 21.4   | 20.5   | 21.4   |
|                    |            | 25               | 0            | 20.2                    | 22.1   | 21.9   | 17.9   | 19.6   | 19.5   | 22.1   | 21.6   | 21.8   | 19.7   | 19.9   | 19.8   |
|                    |            | 25               | 12           | 22.2                    | 22.2   | 22.0   | 19.9   | 19.7   | 19.6   | 22.4   | 21.7   | 22.0   | 19.9   | 20.0   | 20.0   |
|                    |            | 25               | 24           | 21.3                    | 22.1   | 21.9   | 18.9   | 19.6   | 19.5   | 22.5   | 21.6   | 21.8   | 20.0   | 19.9   | 19.9   |
|                    |            | 50               | 0            | 20.2                    | 22.0   | 21.8   | 17.5   | 19.4   | 19.3   | 22.2   | 21.6   | 21.8   | 19.8   | 19.8   | 19.9   |
|                    | 256QAM     | 1                | 0            | 19.8                    | 23.5   | 22.4   | 20.1   | 21.0   | 20.1   | 23.4   | 22.4   | 22.4   | 17.6   | 21.3   | 20.2   |
|                    |            | 1                | 24           | 19.8                    | 23.5   | 22.4   | 20.1   | 21.0   | 20.1   | 23.5   | 22.4   | 22.4   | 17.6   | 21.4   | 20.2   |
|                    |            | 1                | 49           | 19.8                    | 23.4   | 22.3   | 20.1   | 21.1   | 20.1   | 23.4   | 22.4   | 22.4   | 17.5   | 21.4   | 20.2   |
|                    |            | 25               | 0            | 19.8                    | 23.4   | 22.0   | 20.1   | 21.0   | 20.1   | 23.5   | 22.4   | 22.4   | 17.5   | 21.4   | 20.2   |
|                    |            | 25               | 12           | 19.8                    | 23.4   | 22.4   | 20.1   | 21.0   | 20.1   | 23.5   | 22.4   | 22.4   | 17.5   | 21.4   | 20.2   |
|                    |            | 25               | 24           | 19.8                    | 23.4   | 22.4   | 20.1   | 21.1   | 20.1   | 23.4   | 22.4   | 22.4   | 17.6   | 21.3   | 20.2   |
|                    |            | 50               | 0            | 19.8                    | 23.5   | 22.4   | 20.1   | 21.1   | 20.1   | 23.5   | 22.4   | 22.4   | 17.5   | 21.3   | 20.3   |

## OUTPUT POWER FOR LTE BAND 41 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 39725                   | 40620  | 41515  | 39725  | 40620  | 41515  | 39725  | 40620  | 41515  | 39725  | 40620  | 41515  |
|                    |            |                  |              | 2503.5                  | 2593.0 | 2682.5 | 2503.5 | 2593.0 | 2682.5 | 2503.5 | 2593.0 | 2682.5 | 2503.5 | 2593.0 | 2682.5 |
| 15.0               | QPSK       | 1                | 0            | 22.7                    | 27.4   | 27.2   | 19.9   | 24.6   | 24.4   | 19.8   | 25.8   | 25.5   | 20.5   | 23.6   | 23.3   |
|                    |            | 1                | 37           | 27.7                    | 27.5   | 27.4   | 24.8   | 24.7   | 24.6   | 25.7   | 25.8   | 25.7   | 24.2   | 23.6   | 23.4   |
|                    |            | 1                | 74           | 27.7                    | 27.4   | 27.4   | 24.8   | 24.6   | 24.6   | 26.0   | 25.6   | 25.6   | 24.4   | 23.5   | 23.4   |
|                    |            | 36               | 0            | 22.8                    | 26.6   | 26.4   | 19.9   | 23.8   | 23.6   | 20.3   | 24.9   | 24.7   | 20.8   | 23.8   | 23.5   |
|                    |            | 36               | 16           | 26.8                    | 26.7   | 26.5   | 23.9   | 23.9   | 23.8   | 24.6   | 24.9   | 24.8   | 24.2   | 23.8   | 23.6   |
|                    |            | 36               | 35           | 23.8                    | 26.6   | 26.5   | 20.9   | 23.8   | 23.8   | 21.8   | 24.9   | 24.8   | 22.1   | 23.8   | 23.6   |
|                    |            | 75               | 0            | 22.8                    | 26.6   | 26.4   | 19.9   | 23.8   | 23.7   | 20.5   | 24.9   | 24.6   | 20.9   | 23.7   | 23.6   |
|                    | 16QAM      | 1                | 0            | 22.2                    | 26.7   | 26.6   | 19.3   | 24.0   | 23.8   | 19.3   | 25.2   | 24.9   | 19.9   | 24.0   | 23.8   |
|                    |            | 1                | 37           | 27.2                    | 27.0   | 26.9   | 24.2   | 24.1   | 24.1   | 25.0   | 25.2   | 25.1   | 24.4   | 24.2   | 24.0   |
|                    |            | 1                | 74           | 27.2                    | 26.7   | 26.8   | 24.2   | 24.0   | 24.0   | 25.4   | 25.0   | 25.0   | 24.5   | 23.9   | 23.9   |
|                    |            | 36               | 0            | 21.9                    | 25.6   | 25.4   | 19.0   | 22.8   | 22.6   | 19.3   | 23.9   | 23.7   | 19.9   | 23.5   | 23.3   |
|                    |            | 36               | 16           | 25.8                    | 25.7   | 25.5   | 22.9   | 22.9   | 22.8   | 23.6   | 24.0   | 23.8   | 23.3   | 23.6   | 23.4   |
|                    |            | 36               | 35           | 22.8                    | 25.6   | 25.5   | 19.9   | 22.8   | 22.8   | 20.8   | 23.9   | 23.8   | 21.2   | 23.6   | 23.4   |
|                    |            | 75               | 0            | 21.8                    | 25.6   | 25.4   | 18.9   | 22.8   | 22.7   | 19.5   | 23.9   | 23.7   | 19.9   | 23.5   | 23.4   |
|                    | 64QAM      | 1                | 0            | 20.5                    | 22.8   | 23.4   | 17.8   | 20.5   | 20.8   | 22.9   | 22.6   | 23.3   | 21.3   | 20.9   | 21.5   |
|                    |            | 1                | 37           | 23.4                    | 22.9   | 23.6   | 20.7   | 20.7   | 21.1   | 23.8   | 22.5   | 23.6   | 21.6   | 21.0   | 21.8   |
|                    |            | 1                | 74           | 23.4                    | 22.9   | 23.6   | 20.7   | 20.6   | 21.1   | 24.0   | 22.5   | 23.6   | 21.5   | 20.9   | 21.8   |
|                    |            | 36               | 0            | 19.3                    | 22.2   | 22.1   | 17.0   | 19.6   | 19.5   | 22.3   | 21.8   | 21.9   | 19.9   | 20.2   | 20.1   |
|                    |            | 36               | 16           | 22.3                    | 22.3   | 22.1   | 20.0   | 19.7   | 19.6   | 22.6   | 21.9   | 22.1   | 20.1   | 20.3   | 20.3   |
|                    |            | 36               | 35           | 21.3                    | 22.3   | 22.2   | 18.9   | 19.6   | 19.6   | 22.9   | 21.9   | 22.1   | 20.0   | 20.2   | 20.3   |
|                    |            | 75               | 0            | 19.3                    | 22.2   | 22.0   | 16.8   | 19.7   | 19.5   | 22.6   | 21.8   | 22.0   | 20.0   | 20.1   | 20.2   |
|                    | 256QAM     | 1                | 0            | 19.5                    | 23.4   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.0   | 21.7   | 21.7   |
|                    |            | 1                | 37           | 19.5                    | 23.4   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.0   | 21.8   | 21.7   |
|                    |            | 1                | 74           | 19.5                    | 23.5   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.1   | 21.8   | 21.7   |
|                    |            | 36               | 0            | 19.5                    | 23.5   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.0   | 21.8   | 21.7   |
|                    |            | 36               | 16           | 19.5                    | 23.4   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.0   | 21.7   | 21.7   |
|                    |            | 36               | 35           | 19.6                    | 23.4   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.0   | 21.7   | 21.7   |
|                    |            | 75               | 0            | 19.5                    | 23.5   | 23.4   | 21.0   | 21.0   | 21.0   | 23.9   | 23.9   | 23.9   | 18.1   | 21.8   | 21.7   |

## OUTPUT POWER FOR LTE BAND 41 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                    |            |                  |              | 39750                   | 40620 | 41490 | 39750 | 40620 | 41490 | 39750 | 40620 | 41490 | 39750 | 40620 | 41490 |
| 20.0               | QPSK       | 1                | 0            | 22.7                    | 27.1  | 27.0  | 19.9  | 24.3  | 24.3  | 19.8  | 25.5  | 25.3  | 20.7  | 23.6  | 23.3  |
|                    |            | 1                | 49           | 27.7                    | 27.5  | 27.4  | 24.7  | 24.6  | 24.6  | 25.6  | 25.6  | 25.6  | 24.5  | 23.8  | 23.6  |
|                    |            | 1                | 99           | 27.6                    | 27.1  | 27.3  | 24.8  | 24.3  | 24.6  | 26.0  | 25.3  | 25.5  | 24.5  | 23.5  | 23.5  |
|                    |            | 50               | 0            | 22.7                    | 26.5  | 26.3  | 19.9  | 23.6  | 23.5  | 20.2  | 24.7  | 24.5  | 21.1  | 23.8  | 23.6  |
|                    |            | 50               | 24           | 26.7                    | 26.6  | 26.4  | 23.8  | 23.7  | 23.6  | 24.6  | 24.8  | 24.6  | 24.4  | 23.9  | 23.7  |
|                    |            | 50               | 49           | 23.7                    | 26.5  | 26.4  | 20.8  | 23.6  | 23.7  | 21.8  | 24.7  | 24.6  | 22.3  | 23.8  | 23.7  |
|                    |            | 100              | 0            | 22.6                    | 26.5  | 26.4  | 19.8  | 23.6  | 23.6  | 20.4  | 24.7  | 24.5  | 21.1  | 23.9  | 23.6  |
|                    | 16QAM      | 1                | 0            | 21.9                    | 26.4  | 26.4  | 19.3  | 23.6  | 23.4  | 18.8  | 24.8  | 24.7  | 19.8  | 24.1  | 23.6  |
|                    |            | 1                | 49           | 26.8                    | 26.8  | 26.8  | 24.2  | 24.0  | 23.7  | 24.8  | 24.9  | 25.0  | 24.5  | 24.2  | 24.0  |
|                    |            | 1                | 99           | 26.8                    | 26.5  | 26.7  | 24.2  | 23.7  | 23.7  | 25.1  | 24.6  | 24.8  | 24.4  | 24.0  | 23.9  |
|                    |            | 50               | 0            | 21.8                    | 25.5  | 25.4  | 19.0  | 22.6  | 22.5  | 19.2  | 23.7  | 23.5  | 20.1  | 23.7  | 23.4  |
|                    |            | 50               | 24           | 25.7                    | 25.6  | 25.5  | 22.9  | 22.7  | 22.7  | 23.6  | 23.8  | 23.6  | 23.4  | 23.8  | 23.5  |
|                    |            | 50               | 49           | 22.7                    | 25.5  | 25.5  | 19.9  | 22.6  | 22.7  | 20.8  | 23.6  | 23.6  | 21.3  | 23.7  | 23.5  |
|                    |            | 100              | 0            | 21.6                    | 25.5  | 25.3  | 18.8  | 22.6  | 22.6  | 19.4  | 23.7  | 23.5  | 20.1  | 23.7  | 23.4  |
|                    | 64QAM      | 1                | 0            | 20.5                    | 23.2  | 22.7  | 18.3  | 20.5  | 20.2  | 23.3  | 22.7  | 22.6  | 21.1  | 21.4  | 20.9  |
|                    |            | 1                | 49           | 23.5                    | 23.5  | 23.0  | 21.2  | 20.8  | 20.5  | 24.2  | 22.7  | 23.1  | 21.9  | 21.7  | 21.4  |
|                    |            | 1                | 99           | 23.5                    | 23.3  | 23.0  | 21.2  | 20.5  | 20.5  | 24.2  | 22.5  | 23.1  | 22.1  | 21.5  | 21.5  |
|                    |            | 50               | 0            | 19.3                    | 22.0  | 21.9  | 16.8  | 19.5  | 19.3  | 22.2  | 21.6  | 21.7  | 20.4  | 20.2  | 20.2  |
|                    |            | 50               | 24           | 22.3                    | 22.2  | 22.0  | 19.7  | 19.6  | 19.5  | 22.7  | 21.7  | 21.9  | 20.6  | 20.3  | 20.4  |
|                    |            | 50               | 49           | 21.2                    | 22.1  | 22.0  | 18.7  | 19.6  | 19.5  | 22.6  | 21.6  | 21.9  | 20.7  | 20.3  | 20.4  |
|                    |            | 100              | 0            | 19.2                    | 22.0  | 21.9  | 16.7  | 19.5  | 19.4  | 22.6  | 21.6  | 21.8  | 20.5  | 20.2  | 20.3  |
|                    | 256QAM     | 1                | 0            | 19.5                    | 23.4  | 23.3  | 21.0  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.1  | 21.9  |
|                    |            | 1                | 49           | 19.4                    | 23.4  | 23.3  | 21.0  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.1  | 21.9  |
|                    |            | 1                | 99           | 19.5                    | 23.4  | 23.3  | 21.1  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.0  | 21.9  |
|                    |            | 50               | 0            | 19.5                    | 23.4  | 23.4  | 21.1  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.0  | 21.9  |
|                    |            | 50               | 24           | 19.4                    | 23.4  | 23.3  | 21.0  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.0  | 21.9  |
|                    |            | 50               | 49           | 19.5                    | 23.4  | 23.3  | 21.0  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.0  | 21.9  |
|                    |            | 100              | 0            | 19.5                    | 23.4  | 23.3  | 21.1  | 21.0  | 21.1  | 23.9  | 23.9  | 23.9  | 18.4  | 22.1  | 21.9  |

## 7.14. 5G NR Band n41

Test Engineer ID: 23547 Test Date: 8/18/2020

### OUTPUT POWER FOR 5G NR Band n41 (20.0 MHz)

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 2                   |        |        | ANT 1  |        |        | ANT 4  |        |        | ANT 3  |        |        |
|                 |            |               |           | 501200                  | 518600 | 536000 | 501200 | 518600 | 536000 | 501200 | 518600 | 536000 | 501200 | 518600 | 536000 |
|                 |            |               |           | 2506.0                  | 2593.0 | 2680.0 | 2506.0 | 2593.0 | 2680.0 | 2506.0 | 2593.0 | 2680.0 | 2506.0 | 2593.0 | 2680.0 |
| 20.0            | BPSK       | 1             | 0         | 23.3                    | 25.3   | 25.2   |        |        |        | 21.9   | 23.7   | 23.6   |        |        |        |
|                 |            | 1             | 1         | 23.5                    | 26.6   | 26.7   |        |        |        | 22.0   | 26.5   | 24.9   |        |        |        |
|                 |            | 25            | 12        | 25.3                    | 26.4   | 26.3   |        |        |        | 23.5   | 26.2   | 24.7   |        |        |        |
|                 |            | 50            | 0         | 25.3                    | 26.3   | 26.3   |        |        |        | 23.6   | 26.2   | 24.7   |        |        |        |
|                 | QPSK       | 1             | 0         | 22.8                    | 25.3   | 25.3   |        |        |        | 21.2   | 23.5   | 23.7   |        |        |        |
|                 |            | 1             | 1         | 23.0                    | 26.7   | 26.4   |        |        |        | 21.5   | 26.3   | 24.9   |        |        |        |
|                 |            | 25            | 12        | 24.2                    | 26.3   | 26.4   |        |        |        | 22.5   | 26.3   | 24.8   |        |        |        |
|                 |            | 50            | 0         | 24.1                    | 26.3   | 26.2   |        |        |        | 22.4   | 25.4   | 24.7   |        |        |        |
|                 | 16QAM      | 1             | 0         | 22.3                    | 24.5   | 24.5   |        |        |        | 21.1   | 23.7   | 23.3   |        |        |        |
|                 |            | 1             | 1         | 22.1                    | 26.1   | 25.2   |        |        |        | 21.1   | 25.3   | 24.7   |        |        |        |
|                 |            | 25            | 12        | 22.9                    | 25.6   | 25.6   |        |        |        | 22.1   | 25.5   | 24.6   |        |        |        |
|                 |            | 50            | 0         | 22.9                    | 25.6   | 24.7   |        |        |        | 22.0   | 24.9   | 24.9   |        |        |        |
|                 | 64QAM      | 1             | 0         | 21.4                    | 24.7   | 24.5   |        |        |        | 21.0   | 23.7   | 23.3   |        |        |        |
|                 |            | 1             | 1         | 21.7                    | 25.5   | 24.2   |        |        |        | 20.8   | 24.2   | 23.4   |        |        |        |
|                 |            | 25            | 12        | 23.0                    | 25.4   | 24.6   |        |        |        | 22.1   | 24.3   | 23.6   |        |        |        |
|                 |            | 50            | 0         | 22.9                    | 25.3   | 24.5   |        |        |        | 22.0   | 24.2   | 23.4   |        |        |        |
|                 | 256QAM     | 1             | 0         | 20.5                    | 24.0   | 23.5   |        |        |        | 19.4   | 22.6   | 22.4   |        |        |        |
|                 |            | 1             | 1         | 20.7                    | 24.0   | 23.0   |        |        |        | 19.4   | 22.8   | 22.5   |        |        |        |
|                 |            | 25            | 12        | 21.5                    | 23.3   | 23.3   |        |        |        | 20.5   | 22.5   | 22.3   |        |        |        |
|                 |            | 50            | 0         | 21.4                    | 23.3   | 23.2   |        |        |        | 20.4   | 22.3   | 22.3   |        |        |        |

Ant1 and Ant3 are covered by LTE Band 41

### OUTPUT POWER FOR 5G NR Band n41 (40.0 MHz)

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 2                   |        |        | ANT 1  |        |        | ANT 4  |        |        | ANT 3  |        |        |
|                 |            |               |           | 503200                  | 518600 | 534000 | 503200 | 518600 | 534000 | 503200 | 518600 | 534000 | 503200 | 518600 | 534000 |
|                 |            |               |           | 2516.0                  | 2593.0 | 2670.0 | 2516.0 | 2593.0 | 2670.0 | 2516.0 | 2593.0 | 2670.0 | 2516.0 | 2593.0 | 2670.0 |
| 40.0            | BPSK       | 1             | 0         | 22.2                    | 24.1   | 23.8   | 19.0   | 20.1   | 20.7   | 20.1   | 23.3   | 23.4   | 16.7   | 19.5   | 19.4   |
|                 |            | 1             | 1         | 22.2                    | 26.3   | 26.2   | 20.1   | 23.1   | 24.7   | 20.3   | 26.5   | 26.3   | 16.7   | 23.0   | 22.9   |
|                 |            | 50            | 25        | 23.8                    | 26.4   | 26.2   | 20.0   | 23.5   | 23.2   | 22.7   | 26.3   | 26.3   | 19.5   | 22.6   | 22.8   |
|                 |            | 100           | 0         | 23.9                    | 26.4   | 26.0   | 20.5   | 22.9   | 22.9   | 23.1   | 26.4   | 26.4   | 19.5   | 22.1   | 22.2   |
|                 | QPSK       | 1             | 0         | 21.9                    | 24.1   | 24.2   | 18.4   | 20.4   | 20.6   | 20.2   | 23.5   | 23.6   | 16.1   | 19.5   | 19.1   |
|                 |            | 1             | 1         | 21.9                    | 26.7   | 26.4   | 18.1   | 23.4   | 24.1   | 20.3   | 26.0   | 26.5   | 16.1   | 22.9   | 22.7   |
|                 |            | 50            | 25        | 23.3                    | 26.5   | 26.4   | 19.5   | 23.8   | 23.9   | 22.3   | 26.4   | 26.3   | 18.5   | 21.8   | 22.7   |
|                 |            | 100           | 0         | 23.2                    | 26.5   | 26.4   | 19.4   | 22.9   | 22.4   | 22.3   | 26.0   | 25.8   | 18.6   | 21.8   | 21.9   |
|                 | 16QAM      | 1             | 0         | 21.8                    | 24.4   | 23.5   | 18.2   | 20.6   | 20.3   | 20.3   | 23.6   | 23.7   | 15.9   | 19.3   | 19.1   |
|                 |            | 1             | 1         | 22.1                    | 26.2   | 26.2   | 18.1   | 22.9   | 22.7   | 20.5   | 25.6   | 25.7   | 16.0   | 22.2   | 21.7   |
|                 |            | 50            | 25        | 22.8                    | 26.5   | 26.2   | 18.9   | 22.9   | 22.8   | 22.0   | 25.9   | 25.4   | 18.1   | 20.9   | 21.7   |
|                 |            | 100           | 0         | 22.7                    | 25.7   | 25.7   | 19.0   | 21.9   | 21.9   | 21.9   | 25.0   | 24.9   | 18.1   | 20.8   | 20.8   |
|                 | 64QAM      | 1             | 0         | 21.5                    | 24.7   | 24.4   | 17.9   | 20.8   | 20.7   | 20.2   | 24.3   | 24.1   | 15.5   | 20.1   | 19.0   |
|                 |            | 1             | 1         | 21.7                    | 25.4   | 25.5   | 17.8   | 21.8   | 21.6   | 20.3   | 24.6   | 25.1   | 15.7   | 21.3   | 20.5   |
|                 |            | 50            | 25        | 23.0                    | 24.8   | 25.0   | 19.0   | 21.5   | 21.4   | 21.9   | 24.4   | 24.3   | 17.9   | 20.3   | 20.3   |
|                 |            | 100           | 0         | 22.8                    | 25.2   | 25.2   | 19.1   | 21.5   | 21.4   | 21.9   | 24.4   | 24.4   | 17.9   | 20.3   | 20.3   |
|                 | 256QAM     | 1             | 0         | 20.2                    | 23.2   | 22.9   | 16.1   | 19.3   | 19.5   | 18.2   | 22.7   | 22.4   | 14.5   | 18.5   | 18.5   |
|                 |            | 1             | 1         | 20.2                    | 23.4   | 23.3   | 16.2   | 19.3   | 19.4   | 18.2   | 22.4   | 22.4   | 14.5   | 19.0   | 18.7   |
|                 |            | 50            | 25        | 21.3                    | 22.9   | 23.2   | 17.5   | 19.4   | 19.5   | 20.4   | 22.4   | 22.5   | 16.6   | 18.2   | 18.2   |
|                 |            | 100           | 0         | 21.3                    | 23.2   | 23.3   | 17.6   | 19.4   | 19.4   | 20.4   | 22.5   | 22.4   | 16.6   | 18.3   | 18.2   |

### OUTPUT POWER FOR 5G NR Band n41 (50.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 2                   |        |        | ANT 1  |        |        | ANT 4  |        |        | ANT 3  |        |        |
|                    |            |                  |              | 504200                  | 518600 | 533000 | 504200 | 518600 | 533000 | 504200 | 518600 | 533000 | 504200 | 518600 | 533000 |
|                    |            |                  |              | 2521.0                  | 2593.0 | 2665.0 | 2521.0 | 2593.0 | 2665.0 | 2521.0 | 2593.0 | 2665.0 | 2521.0 | 2593.0 | 2665.0 |
| 50.0               | BPSK       | 1                | 0            | 21.9                    | 23.9   | 23.8   | 19.0   | 20.7   | 20.7   | 20.5   | 23.5   | 23.1   | 16.8   | 19.6   | 19.5   |
|                    |            | 1                | 1            | 22.0                    | 26.3   | 26.2   | 18.6   | 24.7   | 23.9   | 20.6   | 26.3   | 26.2   | 16.8   | 23.0   | 22.9   |
|                    |            | 64               | 32           | 23.7                    | 26.1   | 26.1   | 21.0   | 24.3   | 23.9   | 23.4   | 26.3   | 26.2   | 19.8   | 22.7   | 22.7   |
|                    |            | 128              | 0            | 23.7                    | 26.2   | 25.8   | 20.7   | 23.6   | 23.5   | 22.9   | 26.0   | 26.2   | 19.6   | 22.1   | 22.2   |
|                    | QPSK       | 1                | 0            | 21.8                    | 24.3   | 23.8   | 18.8   | 20.9   | 20.6   | 20.6   | 23.7   | 23.4   | 16.0   | 19.5   | 19.2   |
|                    |            | 1                | 1            | 21.9                    | 26.7   | 25.9   | 18.6   | 24.7   | 24.3   | 20.5   | 26.4   | 26.4   | 16.1   | 22.8   | 22.6   |
|                    |            | 64               | 32           | 23.2                    | 26.6   | 25.9   | 19.9   | 24.4   | 24.0   | 22.8   | 26.5   | 26.2   | 18.5   | 21.8   | 22.5   |
|                    |            | 128              | 0            | 23.2                    | 26.4   | 25.9   | 20.0   | 23.2   | 23.0   | 22.6   | 25.9   | 25.8   | 18.5   | 21.9   | 22.0   |
|                    | 16QAM      | 1                | 0            | 21.9                    | 24.1   | 23.8   | 18.3   | 20.6   | 20.9   | 20.8   | 24.0   | 23.5   | 15.8   | 19.3   | 19.2   |
|                    |            | 1                | 1            | 21.9                    | 26.3   | 25.5   | 18.3   | 23.0   | 23.1   | 20.6   | 26.1   | 25.3   | 16.0   | 22.2   | 21.8   |
|                    |            | 64               | 32           | 22.8                    | 26.4   | 25.9   | 19.4   | 23.2   | 23.1   | 22.2   | 25.9   | 25.7   | 18.1   | 20.8   | 21.9   |
|                    |            | 128              | 0            | 22.7                    | 25.3   | 25.2   | 19.4   | 22.3   | 22.0   | 22.1   | 24.9   | 24.8   | 18.1   | 20.9   | 21.9   |
|                    | 64QAM      | 1                | 0            | 21.4                    | 24.0   | 23.6   | 18.6   | 21.2   | 20.9   | 20.5   | 24.2   | 23.6   | 15.5   | 20.1   | 18.9   |
|                    |            | 1                | 1            | 21.3                    | 24.9   | 24.4   | 18.4   | 22.1   | 22.0   | 20.4   | 24.8   | 24.7   | 15.6   | 21.3   | 20.5   |
|                    |            | 64               | 32           | 22.8                    | 24.8   | 24.7   | 19.5   | 21.7   | 21.5   | 22.3   | 24.4   | 24.4   | 17.9   | 20.3   | 20.2   |
|                    |            | 128              | 0            | 22.7                    | 24.9   | 24.8   | 19.5   | 21.8   | 21.5   | 22.1   | 24.3   | 24.4   | 17.9   | 20.4   | 20.4   |
|                    | 256QAM     | 1                | 0            | 19.7                    | 22.9   | 22.7   | 16.6   | 19.8   | 19.7   | 18.6   | 22.6   | 22.2   | 14.4   | 18.8   | 18.5   |
|                    |            | 1                | 1            | 19.6                    | 23.2   | 22.7   | 16.8   | 19.6   | 19.8   | 18.4   | 22.6   | 22.3   | 14.5   | 18.9   | 18.7   |
|                    |            | 64               | 32           | 21.2                    | 23.0   | 22.9   | 17.9   | 19.7   | 19.3   | 20.7   | 22.4   | 22.2   | 16.6   | 18.3   | 18.3   |
|                    |            | 128              | 0            | 21.3                    | 23.0   | 22.8   | 17.9   | 19.8   | 19.6   | 20.6   | 22.4   | 22.3   | 16.6   | 18.3   | 18.2   |

### OUTPUT POWER FOR 5G NR Band n41 (60.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 2                   |        |        | ANT 1  |        |        | ANT 4  |        |        | ANT 3  |        |        |
|                    |            |                  |              | 505200                  | 518600 | 532000 | 505200 | 518600 | 532000 | 505200 | 518600 | 532000 | 505200 | 518600 | 532000 |
|                    |            |                  |              | 2526.0                  | 2593.0 | 2660.0 | 2526.0 | 2593.0 | 2660.0 | 2526.0 | 2593.0 | 2660.0 | 2526.0 | 2593.0 | 2660.0 |
| 60.0               | BPSK       | 1                | 0            | 21.8                    | 23.4   | 23.4   | 19.7   | 20.4   | 20.3   | 20.4   | 23.4   | 23.1   | 16.6   | 19.4   | 19.4   |
|                    |            | 1                | 1            | 21.6                    | 26.3   | 26.4   | 19.2   | 24.7   | 24.6   | 20.8   | 26.2   | 25.9   | 16.6   | 23.0   | 22.6   |
|                    |            | 81               | 40           | 23.4                    | 26.5   | 25.7   | 20.4   | 24.1   | 23.5   | 23.4   | 26.0   | 26.0   | 19.6   | 22.6   | 23.0   |
|                    |            | 162              | 0            | 23.5                    | 26.2   | 25.8   | 20.5   | 23.3   | 23.2   | 23.3   | 26.0   | 26.0   | 19.7   | 22.2   | 22.1   |
|                    | QPSK       | 1                | 0            | 21.5                    | 23.7   | 23.8   | 18.3   | 20.8   | 20.6   | 20.3   | 23.6   | 23.5   | 16.0   | 19.4   | 19.3   |
|                    |            | 1                | 1            | 21.6                    | 26.7   | 26.4   | 18.5   | 24.3   | 24.2   | 20.5   | 26.5   | 26.3   | 16.0   | 22.9   | 22.6   |
|                    |            | 81               | 40           | 23.0                    | 26.6   | 26.4   | 19.8   | 24.2   | 24.2   | 22.7   | 26.4   | 26.5   | 18.5   | 21.7   | 22.7   |
|                    |            | 162              | 0            | 22.7                    | 26.4   | 26.1   | 19.7   | 23.1   | 23.2   | 22.6   | 25.9   | 26.0   | 18.5   | 21.8   | 21.9   |
|                    | 16QAM      | 1                | 0            | 21.2                    | 23.6   | 23.6   | 18.1   | 20.8   | 20.5   | 20.3   | 23.8   | 23.5   | 15.8   | 19.2   | 19.1   |
|                    |            | 1                | 1            | 21.2                    | 26.2   | 25.5   | 18.2   | 23.3   | 23.0   | 20.4   | 26.1   | 26.0   | 15.8   | 21.8   | 21.7   |
|                    |            | 81               | 40           | 22.5                    | 25.8   | 26.2   | 19.2   | 23.2   | 23.2   | 22.3   | 25.9   | 25.5   | 18.0   | 20.7   | 21.8   |
|                    |            | 162              | 0            | 22.4                    | 25.4   | 25.0   | 19.3   | 22.2   | 22.2   | 22.1   | 24.9   | 25.0   | 18.0   | 20.8   | 20.9   |
|                    | 64QAM      | 1                | 0            | 21.0                    | 23.7   | 24.0   | 17.9   | 20.9   | 20.8   | 20.2   | 23.8   | 23.3   | 15.4   | 19.7   | 18.8   |
|                    |            | 1                | 1            | 21.2                    | 25.2   | 24.8   | 18.0   | 22.2   | 22.1   | 20.2   | 24.7   | 24.6   | 15.6   | 20.8   | 20.4   |
|                    |            | 81               | 40           | 22.4                    | 25.0   | 24.9   | 19.2   | 21.6   | 21.6   | 22.3   | 24.3   | 24.6   | 17.8   | 20.2   | 20.1   |
|                    |            | 162              | 0            | 22.3                    | 25.0   | 24.8   | 19.3   | 21.6   | 21.6   | 22.1   | 24.5   | 24.5   | 17.8   | 20.3   | 20.3   |
|                    | 256QAM     | 1                | 0            | 19.4                    | 22.8   | 22.8   | 16.3   | 19.6   | 19.7   | 18.0   | 22.5   | 22.3   | 14.3   | 18.8   | 18.4   |
|                    |            | 1                | 1            | 19.5                    | 22.9   | 22.8   | 16.3   | 19.7   | 19.6   | 18.1   | 22.4   | 22.3   | 14.3   | 18.8   | 18.6   |
|                    |            | 81               | 40           | 20.9                    | 23.1   | 22.7   | 17.8   | 19.7   | 19.7   | 20.6   | 22.5   | 22.5   | 16.5   | 18.2   | 18.1   |
|                    |            | 162              | 0            | 20.8                    | 23.0   | 22.7   | 17.8   | 19.6   | 19.6   | 20.7   | 22.5   | 22.6   | 16.5   | 18.3   | 18.2   |

### OUTPUT POWER FOR 5G NR Band n41 (80.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |             |        |        |             |             |        |             |             |        |             |             |
|--------------------|------------|------------------|--------------|-------------------------|-------------|--------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|
|                    |            |                  |              | ANT 2                   |             |        | ANT 1  |             |             | ANT 4  |             |             | ANT 3  |             |             |
|                    |            |                  |              | 507200                  | 518600      | 530000 | 507200 | 518600      | 530000      | 507200 | 518600      | 530000      | 507200 | 518600      | 530000      |
|                    |            |                  |              | 2536.0                  | 2593.0      | 2650.0 | 2536.0 | 2593.0      | 2650.0      | 2536.0 | 2593.0      | 2650.0      | 2536.0 | 2593.0      | 2650.0      |
| 80.0               | BPSK       | 1                | 0            | 21.4                    | 21.4        | 23.3   | 19.0   | 18.5        | 20.9        | 20.6   | 21.5        | 23.3        | 17.0   | 17.9        | 19.6        |
|                    |            | 1                | 1            | 21.3                    | 21.2        | 25.8   | 19.5   | 18.4        | <b>24.7</b> | 20.7   | 21.6        | <b>26.2</b> | 17.0   | 17.9        | <b>23.0</b> |
|                    |            | 108              | 54           | 23.3                    | 26.2        | 25.7   | 20.1   | 24.6        | 23.4        | 23.5   | 26.1        | 26.1        | 20.0   | <b>22.9</b> | 23.0        |
|                    |            | 216              | 0            | 23.2                    | <b>26.2</b> | 25.1   | 20.9   | 23.2        | 23.1        | 23.3   | 26.1        | 26.0        | 19.9   | 22.6        | 22.4        |
|                    | QPSK       | 1                | 0            | 21.5                    | 21.4        | 23.6   | 18.1   | 18.2        | 20.5        | 20.8   | 21.2        | 23.6        | 16.3   | 17.2        | 19.4        |
|                    |            | 1                | 1            | 21.5                    | 21.5        | 25.9   | 18.2   | 18.3        | 23.9        | 20.4   | 21.3        | 26.3        | 16.3   | 16.8        | <b>23.0</b> |
|                    |            | 108              | 54           | 23.1                    | <b>26.5</b> | 25.9   | 19.7   | <b>24.0</b> | 23.9        | 22.7   | 26.4        | <b>26.5</b> | 18.8   | 22.0        | 22.9        |
|                    |            | 216              | 0            | 23.0                    | 26.1        | 25.6   | 19.6   | 22.9        | 22.9        | 22.6   | 26.0        | 25.6        | 18.7   | <b>22.2</b> | 22.0        |
|                    | 16QAM      | 1                | 0            | 21.1                    | 21.7        | 23.6   | 18.2   | 18.3        | 20.5        | 20.5   | 21.2        | 23.5        | 16.0   | 17.2        | 19.3        |
|                    |            | 1                | 1            | 21.3                    | 21.8        | 25.2   | 18.2   | 18.2        | <b>23.0</b> | 20.6   | 21.4        | 25.4        | 16.1   | 16.8        | <b>21.9</b> |
|                    |            | 108              | 54           | 22.6                    | <b>26.5</b> | 25.8   | 19.1   | 22.9        | 22.9        | 22.2   | <b>26.0</b> | 26.0        | 18.3   | 21.1        | 21.8        |
|                    |            | 216              | 0            | 22.5                    | 25.2        | 24.6   | 19.1   | 21.9        | 21.8        | 22.1   | 25.0        | 24.9        | 18.3   | <b>21.2</b> | 21.0        |
|                    | 64QAM      | 1                | 0            | 20.7                    | 21.4        | 23.7   | 17.9   | 17.9        | 20.4        | 20.0   | 20.7        | 23.8        | 15.7   | 17.0        | 19.1        |
|                    |            | 1                | 1            | 21.0                    | 21.3        | 23.9   | 17.9   | 17.7        | 21.6        | 19.9   | 20.7        | 24.6        | 15.9   | 16.6        | 20.8        |
|                    |            | 108              | 54           | 22.6                    | 25.0        | 24.4   | 19.1   | 21.4        | 21.4        | 22.2   | 24.5        | 24.3        | 18.1   | 20.6        | 20.5        |
|                    |            | 216              | 0            | 22.6                    | 24.9        | 23.6   | 19.1   | 21.4        | 21.4        | 22.0   | 24.5        | 24.3        | 18.1   | 20.1        | 20.6        |
|                    | 256QAM     | 1                | 0            | 19.4                    | 20.0        | 22.6   | 16.2   | 16.2        | 19.3        | 18.3   | 18.8        | <b>23.4</b> | 14.6   | 15.7        | 18.7        |
|                    |            | 1                | 1            | 19.4                    | 19.9        | 21.4   | 16.4   | 16.1        | 19.2        | 18.3   | 19.0        | <b>22.4</b> | 14.7   | 16.2        | <b>18.9</b> |
|                    |            | 108              | 54           | 21.0                    | <b>22.9</b> | 22.7   | 17.6   | 19.4        | 19.4        | 20.7   | 22.4        | 22.4        | 16.8   | 18.5        | 18.5        |
|                    |            | 216              | 0            | 21.1                    | 22.9        | 21.7   | 17.6   | <b>19.5</b> | 19.4        | 20.6   | 22.5        | 22.4        | 16.8   | <b>18.7</b> | 18.5        |

### OUTPUT POWER FOR 5G NR Band n41 (90.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |             |             |        |        |             |        |        |             |        |        |             |
|--------------------|------------|------------------|--------------|-------------------------|-------------|-------------|--------|--------|-------------|--------|--------|-------------|--------|--------|-------------|
|                    |            |                  |              | ANT 2                   |             |             | ANT 1  |        |             | ANT 4  |        |             | ANT 3  |        |             |
|                    |            |                  |              | 508200                  | 518600      | 529000      | 508200 | 518600 | 529000      | 508200 | 518600 | 529000      | 508200 | 518600 | 529000      |
|                    |            |                  |              | 2541.0                  | 2593.0      | 2645.0      | 2541.0 | 2593.0 | 2645.0      | 2541.0 | 2593.0 | 2645.0      | 2541.0 | 2593.0 | 2645.0      |
| 90.0               | BPSK       | 1                | 0            | 22.0                    | 21.8        | 23.6        | 18.1   | 19.0   | 20.7        | 20.9   | 21.5   | 23.6        | 17.0   | 18.0   | 19.5        |
|                    |            | 1                | 1            | 21.9                    | 21.6        | 26.1        | 18.2   | 18.7   | <b>24.7</b> | 20.6   | 21.6   | <b>26.3</b> | 17.0   | 17.9   | 22.9        |
|                    |            | 120              | 60           | 23.8                    | 26.6        | 26.0        | 20.0   | 19.5   | 23.0        | 23.4   | 26.2   | 26.1        | 20.1   | 23.0   | <b>23.0</b> |
|                    |            | 240              | 0            | 23.6                    | <b>26.7</b> | 26.0        | 19.9   | 19.6   | 23.4        | 23.5   | 26.1   | 26.1        | 19.9   | 22.5   | 22.4        |
|                    | QPSK       | 1                | 0            | 21.8                    | 24.3        | 24.8        | 18.2   | 18.3   | 20.6        | 20.5   | 21.5   | 23.6        | 16.3   | 17.4   | 19.4        |
|                    |            | 1                | 1            | 26.3                    | 25.9        | <b>26.7</b> | 18.2   | 18.3   | <b>24.1</b> | 20.6   | 21.5   | <b>26.5</b> | 16.4   | 17.6   | 22.8        |
|                    |            | 120              | 60           | 22.2                    | 25.6        | 25.2        | 19.8   | 19.7   | 22.8        | 22.7   | 26.2   | 26.1        | 18.8   | 21.9   | <b>22.9</b> |
|                    |            | 240              | 0            | 19.7                    | 24.7        | 24.9        | 19.7   | 19.6   | 23.0        | 22.7   | 26.0   | 26.0        | 18.8   | 21.9   | 22.0        |
|                    | 16QAM      | 1                | 0            | 21.2                    | 23.8        | 24.5        | 18.2   | 18.3   | 20.7        | 20.7   | 21.5   | 23.6        | 16.1   | 17.4   | 19.2        |
|                    |            | 1                | 1            | <b>25.9</b>             | 24.9        | 25.8        | 18.2   | 18.1   | <b>23.1</b> | 20.7   | 21.4   | <b>26.1</b> | 16.2   | 17.5   | <b>22.3</b> |
|                    |            | 120              | 60           | 20.5                    | 25.2        | 24.8        | 19.2   | 19.2   | 22.0        | 22.2   | 25.0   | 25.1        | 18.3   | 20.9   | 22.1        |
|                    |            | 240              | 0            | 18.7                    | 24.1        | 23.9        | 19.2   | 19.2   | 21.9        | 22.3   | 25.0   | 24.9        | 18.3   | 20.9   | 21.1        |
|                    | 64QAM      | 1                | 0            | 20.1                    | 23.2        | 24.0        | 18.0   | 18.1   | 20.6        | 20.3   | 21.2   | 23.6        | 15.7   | 16.9   | 19.4        |
|                    |            | 1                | 1            | 24.9                    | 24.2        | 24.9        | 18.0   | 17.9   | 22.0        | 20.0   | 20.9   | 24.5        | 15.9   | 17.0   | 20.4        |
|                    |            | 120              | 60           | 20.3                    | 24.5        | 24.3        | 19.2   | 19.1   | 21.5        | 22.1   | 24.7   | 24.6        | 18.2   | 20.5   | 20.5        |
|                    |            | 240              | 0            | 17.9                    | 23.5        | 23.8        | 19.3   | 19.1   | 21.4        | 22.2   | 24.6   | 24.5        | 18.2   | 20.4   | 20.5        |
|                    | 256QAM     | 1                | 0            | 19.6                    | 23.2        | 23.1        | 16.0   | 16.0   | 19.2        | 18.6   | 19.3   | 22.6        | 14.8   | 15.9   | 18.5        |
|                    |            | 1                | 1            | <b>24.0</b>             | 23.0        | 23.4        | 15.9   | 16.1   | 19.2        | 18.5   | 19.0   | <b>22.7</b> | 14.8   | 16.0   | <b>18.7</b> |
|                    |            | 120              | 60           | 19.1                    | 23.1        | 23.2        | 17.7   | 17.7   | 19.3        | 20.6   | 22.6   | 22.6        | 16.8   | 18.4   | 18.5        |
|                    |            | 240              | 0            | 16.6                    | 22.0        | 23.0        | 17.7   | 17.6   | <b>19.5</b> | 20.7   | 22.5   | 22.5        | 16.8   | 17.9   | 18.4        |

## OUTPUT POWER FOR 5G NR Band n41 (100.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 2                   |        |        | ANT 1  |        |        | ANT 4  |        |        | ANT 3  |        |        |
|                    |            |                  |              | 509200                  | 528600 | 528000 | 509200 | 528600 | 528000 | 509200 | 528600 | 528000 | 509200 | 528600 | 528000 |
|                    |            |                  |              | 2546.0                  | 2593.0 | 2640.0 | 2546.0 | 2593.0 | 2640.0 | 2546.0 | 2593.0 | 2640.0 | 2546.0 | 2593.0 | 2640.0 |
| 100.0              | BPSK       | 1                | 0            | 22.1                    | 21.9   | 24.1   | 18.5   | 18.1   | 20.6   | 20.7   | 21.5   | 23.5   | 16.9   | 18.0   | 19.4   |
|                    |            | 1                | 1            | 21.7                    | 22.1   | 26.7   | 18.8   | 18.6   | 24.4   | 20.8   | 21.4   | 26.3   | 17.0   | 18.1   | 23.0   |
|                    |            | 135              | 67           | 23.7                    | 26.4   | 26.6   | 19.5   | 24.7   | 24.1   | 23.4   | 26.0   | 26.2   | 20.0   | 22.9   | 22.9   |
|                    |            | 270              | 0            | 23.7                    | 26.5   | 26.6   | 19.3   | 23.5   | 23.1   | 23.3   | 26.1   | 26.1   | 19.8   | 22.5   | 22.3   |
|                    | QPSK       | 1                | 0            | 22.1                    | 23.0   | 24.0   | 18.0   | 17.8   | 20.4   | 20.6   | 21.2   | 23.4   | 16.2   | 17.5   | 19.3   |
|                    |            | 1                | 1            | 22.5                    | 21.8   | 26.0   | 18.0   | 17.9   | 23.8   | 20.3   | 21.5   | 26.5   | 16.3   | 17.5   | 22.8   |
|                    |            | 135              | 67           | 23.7                    | 26.7   | 26.6   | 19.3   | 23.8   | 23.6   | 22.7   | 26.4   | 26.4   | 18.9   | 21.8   | 22.8   |
|                    |            | 270              | 0            | 23.8                    | 25.4   | 26.3   | 19.3   | 22.9   | 22.8   | 22.5   | 25.8   | 25.7   | 18.7   | 21.9   | 22.0   |
|                    | 16QAM      | 1                | 0            | 22.0                    | 22.6   | 23.5   | 17.8   | 17.7   | 20.4   | 20.5   | 21.3   | 23.7   | 16.1   | 17.3   | 19.2   |
|                    |            | 1                | 1            | 21.1                    | 21.2   | 25.2   | 18.0   | 18.1   | 22.8   | 20.6   | 21.4   | 25.7   | 16.2   | 17.4   | 21.8   |
|                    |            | 135              | 67           | 23.1                    | 26.6   | 26.5   | 18.9   | 22.8   | 22.6   | 22.1   | 25.9   | 25.8   | 18.3   | 20.8   | 21.8   |
|                    |            | 270              | 0            | 23.0                    | 24.4   | 25.3   | 18.8   | 21.9   | 21.8   | 22.0   | 24.9   | 24.8   | 18.2   | 21.0   | 20.9   |
|                    | 64QAM      | 1                | 0            | 20.9                    | 21.8   | 23.6   | 17.7   | 17.5   | 20.8   | 20.1   | 20.6   | 23.4   | 15.8   | 16.8   | 19.1   |
|                    |            | 1                | 1            | 20.3                    | 21.2   | 23.1   | 17.8   | 17.6   | 21.7   | 20.0   | 20.7   | 24.6   | 15.8   | 16.9   | 20.6   |
|                    |            | 135              | 67           | 23.1                    | 25.0   | 24.9   | 18.9   | 21.3   | 21.1   | 22.1   | 24.3   | 24.3   | 18.2   | 20.4   | 20.4   |
|                    |            | 270              | 0            | 23.0                    | 23.9   | 25.0   | 18.9   | 21.4   | 21.2   | 22.0   | 24.4   | 24.3   | 18.1   | 20.5   | 20.4   |
|                    | 256QAM     | 1                | 0            | 20.5                    | 19.9   | 22.2   | 15.9   | 15.8   | 19.1   | 18.3   | 19.1   | 22.5   | 14.9   | 15.9   | 18.6   |
|                    |            | 1                | 1            | 19.2                    | 20.1   | 22.5   | 15.9   | 16.0   | 19.0   | 18.4   | 19.1   | 22.3   | 14.9   | 15.9   | 18.9   |
|                    |            | 135              | 67           | 21.8                    | 22.9   | 23.0   | 17.3   | 19.3   | 19.2   | 20.6   | 22.4   | 22.4   | 16.8   | 18.3   | 18.4   |
|                    |            | 270              | 0            | 21.9                    | 22.1   | 22.9   | 17.4   | 19.3   | 19.2   | 20.5   | 22.4   | 22.4   | 16.8   | 18.5   | 18.4   |

## 7.15. LTE BAND 48

Test Engineer ID: 19467 Test Date: 6/30/2020

### OUTPUT POWER FOR LTE BAND 48 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 7                   |       |       | ANT 4 |       |       | ANT 9 |       |       | ANT 8 |       |       |
|                    |            |                  |              | 55265                   | 55990 | 56715 | 55265 | 55990 | 56715 | 55265 | 55990 | 56715 | 55265 | 55990 | 56715 |
| 5.0                | QPSK       | 1                | 0            | 22.7                    | 22.6  | 22.6  | 22.6  | 22.3  | 22.2  | 23.2  | 23.4  | 23.4  | 23.0  | 23.1  | 23.0  |
|                    |            | 1                | 12           | 22.8                    | 22.7  | 22.7  | 22.7  | 22.1  | 22.4  | 23.5  | 23.6  | 23.5  | 22.9  | 23.3  | 23.2  |
|                    |            | 1                | 24           | 22.8                    | 22.7  | 22.7  | 22.6  | 21.9  | 22.4  | 23.5  | 23.5  | 23.5  | 22.9  | 23.2  | 23.3  |
|                    |            | 12               | 0            | 22.0                    | 21.9  | 21.8  | 21.7  | 21.1  | 21.4  | 22.5  | 22.6  | 22.5  | 22.8  | 22.3  | 22.2  |
|                    |            | 12               | 6            | 22.1                    | 22.0  | 21.8  | 21.8  | 21.2  | 21.5  | 22.7  | 22.7  | 22.6  | 22.9  | 22.4  | 22.3  |
|                    |            | 12               | 11           | 22.0                    | 22.0  | 22.0  | 21.7  | 21.5  | 21.5  | 22.6  | 22.7  | 22.6  | 22.9  | 22.4  | 22.3  |
|                    |            | 25               | 0            | 21.9                    | 21.9  | 21.8  | 21.7  | 21.4  | 21.4  | 22.6  | 22.6  | 22.5  | 22.8  | 22.4  | 22.3  |
|                    | 16QAM      | 1                | 0            | 21.9                    | 21.7  | 21.6  | 21.9  | 21.6  | 21.7  | 22.9  | 22.9  | 22.8  | 22.8  | 22.5  | 22.5  |
|                    |            | 1                | 12           | 22.1                    | 21.8  | 21.8  | 22.1  | 21.7  | 21.9  | 23.0  | 23.0  | 23.0  | 23.0  | 22.6  | 22.7  |
|                    |            | 1                | 24           | 22.1                    | 21.8  | 21.7  | 22.1  | 21.7  | 21.8  | 22.9  | 22.9  | 22.9  | 22.9  | 22.5  | 22.7  |
|                    |            | 12               | 0            | 21.0                    | 21.0  | 20.9  | 20.4  | 20.4  | 20.6  | 21.7  | 21.5  | 21.7  | 21.6  | 21.3  | 21.4  |
|                    |            | 12               | 6            | 21.2                    | 21.0  | 20.9  | 20.8  | 20.5  | 20.6  | 21.7  | 21.6  | 21.7  | 21.7  | 21.4  | 21.4  |
|                    |            | 12               | 11           | 21.2                    | 21.0  | 20.9  | 20.5  | 20.5  | 20.7  | 21.7  | 21.6  | 21.7  | 21.7  | 21.3  | 21.5  |
|                    |            | 25               | 0            | 21.0                    | 20.9  | 20.9  | 20.6  | 20.5  | 20.5  | 21.6  | 21.6  | 21.6  | 21.6  | 21.3  | 21.3  |
|                    | 64QAM      | 1                | 0            | 20.2                    | 19.7  | 20.4  | 21.5  | 21.2  | 21.8  | 22.3  | 22.0  | 21.7  | 22.9  | 23.4  | 23.1  |
|                    |            | 1                | 12           | 20.3                    | 19.8  | 20.5  | 21.7  | 21.3  | 22.0  | 22.4  | 22.1  | 21.8  | 23.0  | 23.5  | 23.2  |
|                    |            | 1                | 24           | 20.3                    | 19.8  | 20.5  | 21.6  | 21.3  | 21.9  | 22.3  | 22.1  | 21.7  | 23.0  | 23.5  | 23.1  |
|                    |            | 12               | 0            | 19.3                    | 19.3  | 19.3  | 20.2  | 20.3  | 20.3  | 20.8  | 20.7  | 20.7  | 21.9  | 22.0  | 21.7  |
|                    |            | 12               | 6            | 19.3                    | 19.3  | 19.3  | 20.3  | 20.3  | 20.5  | 20.9  | 20.8  | 20.8  | 22.0  | 22.0  | 21.7  |
|                    |            | 12               | 11           | 19.3                    | 19.3  | 19.3  | 20.3  | 20.3  | 20.5  | 20.9  | 20.8  | 20.8  | 22.0  | 22.0  | 21.7  |
|                    |            | 25               | 0            | 19.2                    | 19.2  | 19.1  | 20.2  | 20.3  | 20.3  | 20.7  | 20.7  | 20.7  | 22.0  | 21.8  | 21.7  |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.3  | 20.3  | 21.5  | 21.7  | 21.7  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.7  |
|                    |            | 1                | 12           | 20.0                    | 20.3  | 20.3  | 21.5  | 21.7  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.7  |
|                    |            | 1                | 24           | 20.0                    | 20.3  | 20.3  | 21.6  | 21.7  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.7  |
|                    |            | 12               | 0            | 20.1                    | 20.3  | 20.3  | 21.6  | 21.8  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.8  |
|                    |            | 12               | 6            | 20.1                    | 20.3  | 20.3  | 21.6  | 21.8  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.8  |
|                    |            | 12               | 11           | 20.1                    | 20.3  | 20.3  | 21.6  | 21.8  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.8  |
|                    |            | 25               | 0            | 20.1                    | 20.3  | 20.4  | 21.6  | 21.8  | 21.8  | 22.3  | 22.3  | 22.2  | 22.3  | 22.6  | 22.8  |

## OUTPUT POWER FOR LTE BAND 48 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 7                   |        |        | ANT 4  |        |        | ANT 9  |        |        | ANT 8  |        |        |
|                    |            |                  |              | 55290                   | 55990  | 56690  | 55290  | 55990  | 56690  | 55290  | 55990  | 56690  | 55290  | 55990  | 56690  |
|                    |            |                  |              | 3555.0                  | 3625.0 | 3695.0 | 3555.0 | 3625.0 | 3695.0 | 3555.0 | 3625.0 | 3695.0 | 3555.0 | 3625.0 | 3695.0 |
| 10.0               | QPSK       | 1                | 0            | 22.5                    | 22.3   | 22.2   | 22.2   | 22.3   | 22.3   | 23.2   | 23.2   | 23.1   | 23.2   | 23.0   | 22.6   |
|                    |            | 1                | 24           | 22.8                    | 22.6   | 22.4   | 22.6   | 22.6   | 22.7   | 23.6   | 23.5   | 23.4   | 23.5   | 23.2   | 23.0   |
|                    |            | 1                | 49           | 22.6                    | 22.4   | 22.3   | 22.5   | 22.4   | 22.6   | 23.4   | 23.4   | 23.2   | 23.2   | 22.9   | 23.0   |
|                    |            | 25               | 0            | 21.8                    | 21.7   | 21.5   | 21.8   | 21.6   | 21.6   | 22.5   | 22.5   | 22.5   | 22.5   | 22.3   | 22.0   |
|                    |            | 25               | 12           | 21.9                    | 21.7   | 21.6   | 22.0   | 21.8   | 21.7   | 22.6   | 22.7   | 22.7   | 22.6   | 22.3   | 22.2   |
|                    |            | 25               | 24           | 21.9                    | 21.7   | 21.6   | 22.0   | 21.7   | 21.8   | 22.6   | 22.7   | 22.6   | 22.6   | 22.2   | 22.3   |
|                    |            | 50               | 0            | 21.9                    | 21.7   | 21.5   | 21.9   | 21.7   | 21.7   | 22.6   | 22.6   | 22.6   | 22.6   | 22.3   | 22.1   |
|                    | 16QAM      | 1                | 0            | 21.7                    | 21.3   | 21.3   | 22.0   | 22.1   | 21.8   | 22.9   | 22.7   | 22.8   | 22.9   | 22.4   | 22.2   |
|                    |            | 1                | 24           | 21.9                    | 21.6   | 21.6   | 22.3   | 22.3   | 22.2   | 23.2   | 23.0   | 23.0   | 23.1   | 22.6   | 22.6   |
|                    |            | 1                | 49           | 21.9                    | 21.5   | 21.4   | 22.1   | 22.2   | 22.1   | 23.0   | 22.9   | 22.9   | 23.0   | 22.4   | 22.5   |
|                    |            | 25               | 0            | 20.8                    | 20.6   | 20.4   | 20.8   | 20.8   | 20.6   | 21.6   | 21.6   | 21.5   | 21.5   | 21.3   | 21.0   |
|                    |            | 25               | 12           | 21.0                    | 20.7   | 20.6   | 20.9   | 20.9   | 20.8   | 21.7   | 21.6   | 21.6   | 21.7   | 21.3   | 21.1   |
|                    |            | 25               | 24           | 20.9                    | 20.7   | 20.6   | 20.8   | 20.8   | 20.9   | 21.6   | 21.6   | 21.6   | 21.6   | 21.3   | 21.2   |
|                    |            | 50               | 0            | 20.9                    | 20.7   | 20.5   | 20.9   | 20.8   | 20.7   | 21.6   | 21.6   | 21.6   | 21.6   | 21.2   | 21.2   |
|                    | 64QAM      | 1                | 0            | 20.1                    | 19.8   | 19.1   | 21.3   | 20.7   | 21.6   | 21.9   | 21.3   | 22.1   | 23.0   | 22.5   | 23.1   |
|                    |            | 1                | 24           | 20.4                    | 20.0   | 19.5   | 21.6   | 21.1   | 21.9   | 22.2   | 21.7   | 22.3   | 23.3   | 22.7   | 23.4   |
|                    |            | 1                | 49           | 20.2                    | 20.0   | 19.3   | 21.5   | 20.9   | 21.7   | 22.1   | 21.5   | 22.2   | 23.1   | 22.6   | 23.2   |
|                    |            | 25               | 0            | 19.1                    | 18.9   | 18.8   | 20.1   | 20.1   | 20.1   | 20.7   | 20.8   | 20.6   | 21.8   | 21.8   | 21.6   |
|                    |            | 25               | 12           | 19.2                    | 19.0   | 18.9   | 20.3   | 20.2   | 20.2   | 20.7   | 20.9   | 20.8   | 21.9   | 22.0   | 21.8   |
|                    |            | 25               | 24           | 19.2                    | 18.9   | 18.9   | 20.1   | 20.2   | 20.2   | 20.7   | 20.9   | 20.7   | 21.9   | 21.9   | 21.7   |
|                    |            | 50               | 0            | 19.1                    | 18.9   | 18.8   | 20.2   | 20.1   | 20.0   | 20.8   | 20.7   | 20.6   | 21.9   | 21.8   | 21.6   |
|                    | 256QAM     | 1                | 0            | 20.2                    | 19.6   | 19.6   | 21.8   | 21.2   | 21.3   | 21.6   | 22.3   | 21.5   | 22.8   | 22.6   | 22.6   |
|                    |            | 1                | 24           | 20.2                    | 19.6   | 19.6   | 21.8   | 21.3   | 21.3   | 21.6   | 22.3   | 21.5   | 22.8   | 22.6   | 22.6   |
|                    |            | 1                | 49           | 20.2                    | 19.6   | 19.5   | 21.8   | 21.2   | 21.2   | 21.6   | 22.2   | 21.5   | 22.9   | 22.5   | 22.6   |
|                    |            | 25               | 0            | 20.2                    | 19.6   | 19.5   | 21.8   | 21.3   | 21.2   | 21.6   | 22.2   | 21.5   | 22.9   | 22.6   | 22.7   |
|                    |            | 25               | 12           | 20.1                    | 19.6   | 19.6   | 21.8   | 21.3   | 21.2   | 21.6   | 22.3   | 21.5   | 22.9   | 22.6   | 22.6   |
|                    |            | 25               | 24           | 20.1                    | 19.6   | 19.5   | 21.8   | 21.2   | 21.2   | 21.6   | 22.2   | 21.5   | 22.9   | 22.6   | 22.7   |
|                    |            | 50               | 0            | 20.1                    | 19.6   | 19.5   | 21.8   | 21.3   | 21.3   | 21.6   | 22.2   | 21.5   | 22.9   | 22.6   | 22.7   |

## OUTPUT POWER FOR LTE BAND 48 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 7                   |        |        | ANT 4  |        |        | ANT 9  |        |        | ANT 8  |        |        |
|                    |            |                  |              | 55315                   | 55990  | 56665  | 55315  | 55990  | 56665  | 55315  | 55990  | 56665  | 55315  | 55990  | 56665  |
|                    |            |                  |              | 3557.5                  | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 |
| 15.0               | QPSK       | 1                | 0            | 22.5                    | 22.5   | 22.4   | 22.7   | 22.3   | 22.2   | 23.4   | 23.4   | 23.3   | 23.2   | 23.2   | 22.8   |
|                    |            | 1                | 37           | 22.5                    | 22.5   | 22.4   | 22.6   | 22.3   | 22.5   | 23.6   | 23.5   | 23.4   | 23.5   | 23.1   | 22.9   |
|                    |            | 1                | 74           | 22.8                    | 22.6   | 22.2   | 22.5   | 22.3   | 22.5   | 23.5   | 23.5   | 23.3   | 23.3   | 23.0   | 22.9   |
|                    |            | 36               | 0            | 21.6                    | 21.7   | 21.5   | 21.6   | 21.5   | 21.6   | 22.7   | 22.6   | 22.6   | 22.5   | 22.3   | 22.0   |
|                    |            | 36               | 16           | 21.7                    | 21.8   | 21.6   | 21.7   | 21.6   | 21.6   | 22.7   | 22.7   | 22.7   | 22.6   | 22.3   | 22.1   |
|                    |            | 36               | 35           | 21.7                    | 21.8   | 21.6   | 21.7   | 21.5   | 21.6   | 22.6   | 22.7   | 22.6   | 22.5   | 22.2   | 22.2   |
|                    |            | 75               | 0            | 21.6                    | 21.6   | 21.6   | 21.7   | 21.5   | 21.5   | 22.6   | 22.6   | 22.6   | 22.5   | 22.2   | 22.1   |
|                    | 16QAM      | 1                | 0            | 21.5                    | 21.6   | 21.4   | 21.8   | 22.0   | 21.9   | 22.9   | 22.8   | 22.9   | 22.8   | 22.6   | 22.4   |
|                    |            | 1                | 37           | 21.7                    | 21.7   | 21.5   | 22.1   | 22.0   | 22.1   | 23.1   | 23.1   | 23.1   | 23.0   | 22.7   | 22.6   |
|                    |            | 1                | 74           | 21.8                    | 21.5   | 21.3   | 22.0   | 21.9   | 22.0   | 22.9   | 22.9   | 22.9   | 22.8   | 22.4   | 22.6   |
|                    |            | 36               | 0            | 20.6                    | 20.7   | 20.5   | 20.5   | 20.6   | 20.6   | 21.7   | 21.6   | 21.6   | 21.5   | 21.2   | 21.0   |
|                    |            | 36               | 16           | 20.7                    | 20.7   | 20.6   | 20.7   | 20.8   | 20.6   | 21.7   | 21.6   | 21.6   | 21.6   | 21.3   | 21.1   |
|                    |            | 36               | 35           | 20.6                    | 20.7   | 20.5   | 20.6   | 20.7   | 20.6   | 21.6   | 21.6   | 21.6   | 21.5   | 21.2   | 21.2   |
|                    |            | 75               | 0            | 20.6                    | 20.7   | 20.5   | 20.8   | 20.6   | 20.5   | 21.6   | 21.7   | 21.6   | 21.5   | 21.3   | 21.1   |
|                    | 64QAM      | 1                | 0            | 20.0                    | 19.6   | 19.2   | 21.0   | 21.0   | 21.7   | 21.7   | 21.4   | 22.2   | 22.9   | 22.6   | 23.2   |
|                    |            | 1                | 37           | 20.2                    | 19.8   | 19.4   | 21.3   | 21.3   | 21.8   | 21.9   | 21.6   | 22.4   | 23.1   | 22.7   | 23.3   |
|                    |            | 1                | 74           | 20.2                    | 19.7   | 19.2   | 21.3   | 21.3   | 21.6   | 21.8   | 21.6   | 22.2   | 23.0   | 22.6   | 23.1   |
|                    |            | 36               | 0            | 18.8                    | 18.9   | 18.8   | 20.1   | 20.1   | 20.2   | 20.7   | 20.8   | 20.8   | 21.9   | 21.9   | 21.7   |
|                    |            | 36               | 16           | 19.0                    | 19.0   | 18.9   | 20.2   | 20.2   | 20.1   | 20.8   | 20.9   | 20.9   | 22.0   | 21.9   | 21.7   |
|                    |            | 36               | 35           | 18.9                    | 18.9   | 18.9   | 20.2   | 20.2   | 20.1   | 20.8   | 20.9   | 20.8   | 21.8   | 21.9   | 21.7   |
|                    |            | 75               | 0            | 18.8                    | 19.0   | 18.8   | 20.2   | 20.2   | 20.0   | 20.8   | 20.8   | 20.7   | 21.9   | 21.8   | 21.6   |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.1   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.2   | 22.3   | 22.6   | 22.6   |
|                    |            | 1                | 37           | 19.9                    | 20.1   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.2   | 22.3   | 22.6   | 22.6   |
|                    |            | 1                | 74           | 20.0                    | 20.0   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.1   | 22.3   | 22.6   | 22.6   |
|                    |            | 36               | 0            | 20.0                    | 20.0   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.1   | 22.3   | 22.6   | 22.6   |
|                    |            | 36               | 16           | 20.0                    | 20.0   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.1   | 22.3   | 22.6   | 22.6   |
|                    |            | 36               | 35           | 20.0                    | 20.0   | 20.0   | 21.5   | 21.6   | 21.6   | 22.3   | 22.3   | 22.1   | 22.3   | 22.6   | 22.6   |
|                    |            | 75               | 0            | 20.0                    | 20.0   | 20.0   | 21.5   | 21.7   | 21.6   | 22.3   | 22.3   | 22.1   | 22.3   | 22.6   | 22.6   |

## OUTPUT POWER FOR LTE BAND 48 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 7                   |        |        | ANT 4  |        |        | ANT 9  |        |        | ANT 8  |        |        |
|                    |            |                  |              | 55340                   | 55990  | 56640  | 55340  | 55990  | 56640  | 55340  | 55990  | 56640  | 55340  | 55990  | 56640  |
|                    |            |                  |              | 3560.0                  | 3625.0 | 3690.0 | 3560.0 | 3625.0 | 3690.0 | 3560.0 | 3625.0 | 3690.0 | 3560.0 | 3625.0 | 3690.0 |
| 20.0               | QPSK       | 1                | 0            | 22.5                    | 22.4   | 22.3   | 22.4   | 22.2   | 22.1   | 23.4   | 23.2   | 23.2   | 23.4   | 23.2   | 23.0   |
|                    |            | 1                | 49           | 22.8                    | 22.6   | 22.6   | 22.7   | 22.3   | 22.3   | 23.6   | 23.5   | 23.3   | 23.5   | 23.2   | 23.1   |
|                    |            | 1                | 99           | 22.5                    | 22.5   | 22.2   | 22.3   | 22.0   | 22.1   | 23.4   | 23.4   | 22.8   | 23.2   | 22.9   | 22.9   |
|                    |            | 50               | 0            | 21.7                    | 21.6   | 21.4   | 21.5   | 21.3   | 21.3   | 22.4   | 22.5   | 22.3   | 22.5   | 22.3   | 22.1   |
|                    |            | 50               | 24           | 21.9                    | 21.7   | 21.5   | 21.6   | 21.4   | 21.3   | 22.5   | 22.6   | 22.3   | 22.5   | 22.3   | 22.2   |
|                    |            | 50               | 49           | 21.8                    | 21.6   | 21.5   | 21.5   | 21.3   | 21.4   | 22.5   | 22.5   | 22.2   | 22.4   | 22.2   | 22.2   |
|                    | 16QAM      | 100              | 0            | 21.8                    | 21.6   | 21.4   | 21.5   | 21.4   | 21.3   | 22.5   | 22.5   | 22.3   | 22.5   | 22.2   | 22.2   |
|                    |            | 1                | 0            | 21.6                    | 21.4   | 21.1   | 21.9   | 21.5   | 21.1   | 22.8   | 22.5   | 22.1   | 22.8   | 22.5   | 22.0   |
|                    |            | 1                | 49           | 21.9                    | 21.7   | 21.4   | 22.1   | 21.6   | 21.3   | 23.0   | 22.7   | 22.3   | 23.0   | 22.5   | 22.2   |
|                    |            | 1                | 99           | 21.7                    | 21.5   | 21.1   | 21.7   | 21.4   | 21.1   | 22.8   | 22.4   | 21.8   | 22.6   | 22.2   | 22.0   |
|                    |            | 50               | 0            | 20.8                    | 20.6   | 20.5   | 20.5   | 20.3   | 20.3   | 21.5   | 21.5   | 21.3   | 21.5   | 21.3   | 21.2   |
|                    |            | 50               | 24           | 20.9                    | 20.7   | 20.5   | 20.7   | 20.4   | 20.4   | 21.6   | 21.6   | 21.4   | 21.6   | 21.3   | 21.2   |
|                    | 64QAM      | 50               | 49           | 20.9                    | 20.6   | 20.5   | 20.5   | 20.3   | 20.3   | 21.5   | 21.5   | 21.0   | 21.5   | 21.1   | 21.2   |
|                    |            | 100              | 0            | 20.8                    | 20.6   | 20.4   | 20.5   | 20.3   | 20.3   | 21.5   | 21.5   | 21.2   | 21.4   | 21.3   | 21.1   |
|                    |            | 1                | 0            | 19.6                    | 19.8   | 19.9   | 20.8   | 21.0   | 20.8   | 21.6   | 21.9   | 21.5   | 22.8   | 23.1   | 22.7   |
|                    |            | 1                | 49           | 20.1                    | 20.0   | 20.2   | 21.1   | 21.3   | 21.1   | 22.0   | 22.2   | 21.9   | 23.2   | 23.2   | 22.9   |
|                    |            | 1                | 99           | 19.8                    | 19.9   | 19.9   | 20.9   | 21.1   | 20.7   | 22.0   | 22.0   | 21.5   | 22.8   | 23.1   | 22.5   |
|                    |            | 50               | 0            | 19.1                    | 19.0   | 18.8   | 19.9   | 19.7   | 19.8   | 20.7   | 20.7   | 20.6   | 21.8   | 21.8   | 21.6   |
|                    | 256QAM     | 50               | 24           | 19.2                    | 19.1   | 18.8   | 19.9   | 19.8   | 19.8   | 20.8   | 20.8   | 20.7   | 21.8   | 21.8   | 21.7   |
|                    |            | 50               | 49           | 19.2                    | 19.0   | 18.8   | 19.9   | 19.7   | 19.7   | 20.7   | 20.7   | 20.7   | 21.8   | 21.8   | 21.6   |
|                    |            | 100              | 0            | 19.1                    | 19.0   | 18.7   | 19.9   | 19.7   | 19.7   | 20.7   | 20.7   | 20.6   | 21.8   | 21.8   | 21.6   |
|                    |            | 1                | 0            | 20.1                    | 20.2   | 20.1   | 21.2   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.7   |
|                    |            | 1                | 49           | 20.1                    | 20.2   | 20.1   | 21.2   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.7   |
|                    |            | 1                | 99           | 20.1                    | 20.2   | 20.1   | 21.2   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.7   |
|                    |            | 50               | 0            | 20.1                    | 20.2   | 20.1   | 21.3   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.7   |
|                    |            | 50               | 24           | 20.0                    | 20.2   | 20.1   | 21.2   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.6   |
|                    |            | 50               | 49           | 20.1                    | 20.2   | 20.1   | 21.2   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.6   |
|                    |            | 100              | 0            | 20.1                    | 20.2   | 20.1   | 21.3   | 21.3   | 21.3   | 22.2   | 22.2   | 22.0   | 22.3   | 22.6   | 22.6   |

## 7.16. LTE BAND 66

Test Engineer ID: 39004 Test Date: 3/11/2020

### OUTPUT POWER FOR LTE BAND 66 (1.4 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 131979                  | 132322 | 132665 | 131979 | 132322 | 132665 | 131979 | 132322 | 132665 | 131979 | 132322 | 132665 |
| 1.4                | QPSK       | 1                | 0            | 25.6                    | 25.6   | 25.5   | 23.1   | 22.9   | 22.9   | 24.6   | 24.8   | 24.9   | 22.7   | 23.0   | 22.9   |
|                    |            | 1                | 2            | 25.6                    | 25.7   | 25.6   | 23.1   | 23.0   | 23.0   | 24.7   | 24.8   | 24.9   | 22.8   | 23.0   | 22.9   |
|                    |            | 1                | 5            | 25.5                    | 25.6   | 25.5   | 23.0   | 22.9   | 22.8   | 24.6   | 24.8   | 24.9   | 22.7   | 22.9   | 22.8   |
|                    |            | 3                | 0            | 25.6                    | 25.6   | 25.6   | 23.0   | 23.0   | 22.9   | 24.7   | 24.8   | 25.0   | 22.7   | 22.9   | 22.9   |
|                    |            | 3                | 1            | 25.7                    | 25.7   | 25.7   | 23.0   | 23.0   | 23.0   | 24.8   | 24.9   | 25.0   | 22.8   | 23.0   | 22.9   |
|                    |            | 3                | 2            | 25.7                    | 25.7   | 25.6   | 23.1   | 23.0   | 22.9   | 24.8   | 24.9   | 24.8   | 22.8   | 22.9   | 22.9   |
|                    | 16QAM      | 6                | 0            | 24.7                    | 24.7   | 24.7   | 22.5   | 22.4   | 22.4   | 23.8   | 24.0   | 23.9   | 22.4   | 22.5   | 22.5   |
|                    |            | 1                | 0            | 25.1                    | 24.8   | 25.0   | 22.6   | 22.8   | 22.4   | 24.3   | 24.3   | 24.2   | 22.5   | 22.7   | 22.9   |
|                    |            | 1                | 2            | 25.1                    | 24.8   | 25.0   | 22.7   | 22.8   | 22.5   | 24.3   | 24.3   | 24.2   | 22.6   | 22.7   | 23.0   |
|                    |            | 1                | 5            | 25.0                    | 24.7   | 25.0   | 22.6   | 22.7   | 22.4   | 24.3   | 24.3   | 24.2   | 22.6   | 22.6   | 22.9   |
|                    |            | 3                | 0            | 24.9                    | 24.9   | 24.9   | 22.6   | 22.7   | 22.6   | 24.0   | 24.0   | 23.9   | 22.6   | 22.5   | 22.6   |
|                    |            | 3                | 1            | 25.0                    | 24.9   | 24.9   | 22.6   | 22.7   | 22.6   | 24.0   | 24.1   | 23.9   | 22.7   | 22.6   | 22.7   |
|                    | 64QAM      | 3                | 2            | 25.0                    | 24.9   | 24.9   | 22.6   | 22.7   | 22.6   | 24.0   | 24.0   | 23.9   | 22.7   | 22.6   | 22.7   |
|                    |            | 6                | 0            | 23.6                    | 23.9   | 23.6   | 21.7   | 21.3   | 21.5   | 22.8   | 22.8   | 22.7   | 21.7   | 21.8   | 21.4   |
|                    |            | 1                | 0            | 24.1                    | 23.8   | 24.0   | 22.8   | 21.4   | 22.0   | 22.5   | 22.9   | 22.7   | 21.8   | 21.5   | 21.5   |
|                    |            | 1                | 2            | 24.1                    | 23.8   | 24.1   | 22.8   | 21.4   | 22.0   | 22.5   | 22.9   | 22.7   | 21.9   | 21.6   | 21.5   |
|                    |            | 1                | 5            | 24.0                    | 23.7   | 24.0   | 22.7   | 21.3   | 22.0   | 22.4   | 22.7   | 22.5   | 21.8   | 21.5   | 21.4   |
|                    |            | 3                | 0            | 24.0                    | 23.9   | 24.0   | 22.5   | 21.3   | 21.7   | 22.4   | 22.6   | 22.5   | 21.8   | 21.5   | 21.3   |
|                    | 256QAM     | 3                | 1            | 24.1                    | 23.9   | 24.0   | 22.5   | 21.4   | 21.7   | 22.4   | 22.7   | 22.6   | 21.8   | 21.6   | 21.3   |
|                    |            | 3                | 2            | 24.0                    | 23.9   | 24.0   | 22.4   | 21.4   | 21.7   | 22.4   | 22.6   | 22.5   | 21.9   | 21.6   | 21.3   |
|                    |            | 6                | 0            | 22.7                    | 23.0   | 22.6   | 21.0   | 20.5   | 20.8   | 21.5   | 21.2   | 21.7   | 20.5   | 20.7   | 20.4   |
|                    |            | 1                | 0            | 24.0                    | 24.0   | 24.0   | 21.3   | 21.3   | 21.3   | 18.6   | 19.1   | 18.6   | 21.3   | 21.3   | 21.1   |
|                    |            | 1                | 2            | 24.0                    | 24.0   | 23.9   | 21.3   | 21.3   | 21.3   | 18.7   | 19.1   | 18.8   | 21.3   | 21.2   | 21.1   |
|                    |            | 1                | 5            | 24.0                    | 23.9   | 24.0   | 21.3   | 21.3   | 21.3   | 18.6   | 19.1   | 18.5   | 21.3   | 21.2   | 21.1   |
|                    |            | 3                | 0            | 24.0                    | 23.9   | 24.0   | 21.3   | 21.3   | 21.3   | 19.1   | 19.1   | 19.0   | 21.3   | 21.2   | 21.1   |
|                    |            | 3                | 1            | 24.0                    | 24.0   | 24.0   | 21.3   | 21.3   | 21.3   | 19.1   | 19.1   | 19.0   | 21.2   | 21.3   | 21.1   |
|                    |            | 3                | 2            | 24.0                    | 23.9   | 24.0   | 21.3   | 21.3   | 21.3   | 19.1   | 19.1   | 19.1   | 21.2   | 21.3   | 21.1   |
|                    |            | 6                | 0            | 24.0                    | 24.0   | 24.0   | 21.3   | 21.3   | 21.3   | 19.1   | 19.1   | 18.8   | 21.2   | 21.2   | 21.1   |

## OUTPUT POWER FOR LTE BAND 66 (3.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 131987                  | 132322 | 132657 | 131987 | 132322 | 132657 | 131987 | 132322 | 132657 | 131987 | 132322 | 132657 |
|                    |            |                  |              | 1711.5                  | 1745.0 | 1778.5 | 1711.5 | 1745.0 | 1778.5 | 1711.5 | 1745.0 | 1778.5 | 1711.5 | 1745.0 | 1778.5 |
| 3.0                | QPSK       | 1                | 0            | 25.6                    | 25.7   | 25.7   | 23.1   | 23.0   | 23.1   | 24.9   | 24.9   | 25.0   | 22.8   | 22.9   | 23.0   |
|                    |            | 1                | 7            | 25.6                    | 25.7   | 25.6   | 23.1   | 22.9   | 23.0   | 24.9   | 24.9   | 25.0   | 22.8   | 23.0   | 23.0   |
|                    |            | 1                | 14           | 25.6                    | 25.7   | 25.6   | 23.1   | 22.9   | 22.9   | 24.9   | 25.0   | 25.0   | 22.8   | 23.0   | 22.9   |
|                    |            | 8                | 0            | 24.8                    | 24.8   | 24.8   | 22.6   | 22.4   | 22.5   | 24.1   | 24.1   | 24.2   | 22.5   | 22.6   | 22.5   |
|                    |            | 8                | 4            | 24.8                    | 24.8   | 24.8   | 22.6   | 22.5   | 22.5   | 24.1   | 24.1   | 24.3   | 22.5   | 22.6   | 22.5   |
|                    |            | 8                | 7            | 24.8                    | 24.8   | 24.8   | 22.6   | 22.5   | 22.5   | 24.0   | 24.2   | 24.3   | 22.5   | 22.6   | 22.5   |
|                    |            | 15               | 0            | 24.8                    | 24.8   | 24.8   | 22.6   | 22.5   | 22.5   | 23.9   | 24.1   | 24.2   | 22.5   | 22.5   | 22.5   |
|                    | 16QAM      | 1                | 0            | 24.9                    | 24.9   | 24.9   | 22.7   | 22.4   | 22.9   | 23.9   | 24.1   | 24.2   | 22.6   | 22.6   | 23.0   |
|                    |            | 1                | 7            | 24.8                    | 24.8   | 24.7   | 22.6   | 22.3   | 22.8   | 23.9   | 24.0   | 24.1   | 22.6   | 22.6   | 22.9   |
|                    |            | 1                | 14           | 24.8                    | 24.8   | 24.7   | 22.6   | 22.3   | 22.8   | 23.9   | 24.0   | 24.0   | 22.5   | 22.6   | 22.9   |
|                    |            | 8                | 0            | 23.9                    | 23.9   | 23.9   | 21.7   | 21.6   | 21.6   | 22.9   | 23.1   | 23.2   | 21.6   | 21.7   | 21.7   |
|                    |            | 8                | 4            | 23.9                    | 23.9   | 23.8   | 21.7   | 21.6   | 21.6   | 23.0   | 23.2   | 23.2   | 21.6   | 21.8   | 21.7   |
|                    |            | 8                | 7            | 23.9                    | 23.9   | 23.8   | 21.7   | 21.6   | 21.6   | 23.0   | 23.2   | 23.2   | 21.6   | 21.8   | 21.7   |
|                    |            | 15               | 0            | 23.8                    | 23.7   | 23.7   | 21.6   | 21.5   | 21.5   | 22.9   | 23.0   | 23.1   | 21.6   | 21.6   | 21.6   |
|                    | 64QAM      | 1                | 0            | 24.0                    | 24.0   | 24.0   | 21.5   | 21.1   | 21.7   | 22.6   | 22.8   | 23.0   | 21.8   | 21.7   | 21.4   |
|                    |            | 1                | 7            | 23.9                    | 23.9   | 23.8   | 21.6   | 21.1   | 21.7   | 22.5   | 22.7   | 22.9   | 21.7   | 21.7   | 21.3   |
|                    |            | 1                | 14           | 23.9                    | 24.0   | 23.9   | 21.7   | 21.1   | 21.7   | 22.5   | 22.6   | 22.9   | 21.7   | 21.7   | 21.3   |
|                    |            | 8                | 0            | 22.8                    | 22.8   | 22.8   | 20.3   | 20.0   | 20.6   | 21.2   | 21.4   | 21.6   | 20.5   | 20.5   | 20.4   |
|                    |            | 8                | 4            | 22.8                    | 22.8   | 22.8   | 20.4   | 20.0   | 20.7   | 21.3   | 21.5   | 21.7   | 20.5   | 20.6   | 20.4   |
|                    |            | 8                | 7            | 22.8                    | 22.8   | 22.8   | 20.5   | 20.1   | 20.7   | 21.3   | 21.5   | 21.7   | 20.5   | 20.6   | 20.4   |
|                    |            | 15               | 0            | 22.9                    | 22.8   | 22.8   | 20.5   | 20.0   | 20.7   | 21.3   | 21.5   | 21.7   | 20.6   | 20.4   | 20.4   |
|                    | 256QAM     | 1                | 0            | 23.9                    | 23.8   | 23.8   | 21.4   | 21.4   | 21.4   | 19.2   | 19.4   | 19.0   | 21.4   | 21.4   | 21.2   |
|                    |            | 1                | 7            | 23.9                    | 23.9   | 23.8   | 21.4   | 21.4   | 21.4   | 19.1   | 19.3   | 18.9   | 21.3   | 21.4   | 21.2   |
|                    |            | 1                | 14           | 24.0                    | 23.9   | 23.8   | 21.4   | 21.4   | 21.4   | 19.1   | 19.3   | 18.8   | 21.4   | 21.4   | 21.2   |
|                    |            | 8                | 0            | 23.9                    | 23.9   | 23.8   | 21.4   | 21.4   | 21.4   | 19.3   | 19.3   | 19.2   | 21.3   | 21.4   | 21.2   |
|                    |            | 8                | 4            | 23.9                    | 23.9   | 23.8   | 21.4   | 21.4   | 21.4   | 19.3   | 19.3   | 19.2   | 21.3   | 21.4   | 21.2   |
|                    |            | 8                | 7            | 24.0                    | 23.9   | 23.9   | 21.4   | 21.4   | 21.4   | 19.3   | 19.2   | 19.2   | 21.4   | 21.4   | 21.2   |
|                    |            | 15               | 0            | 23.9                    | 23.9   | 23.8   | 21.4   | 21.4   | 21.4   | 19.2   | 19.4   | 19.1   | 21.3   | 21.4   | 21.2   |

## OUTPUT POWER FOR LTE BAND 66 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 131997                  | 132322 | 132647 | 131997 | 132322 | 132647 | 131997 | 132322 | 132647 | 131997 | 132322 | 132647 |
|                    |            |                  |              | 1712.5                  | 1745.0 | 1777.5 | 1712.5 | 1745.0 | 1777.5 | 1712.5 | 1745.0 | 1777.5 | 1712.5 | 1745.0 | 1777.5 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6   | 25.7   | 23.1   | 22.9   | 23.0   | 24.8   | 24.8   | 24.9   | 22.7   | 22.9   | 22.6   |
|                    |            | 1                | 12           | 25.7                    | 25.7   | 25.6   | 23.1   | 23.0   | 22.9   | 24.9   | 24.9   | 25.0   | 22.8   | 23.0   | 22.7   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.6   | 23.0   | 22.9   | 22.9   | 24.9   | 24.9   | 24.9   | 22.8   | 23.0   | 22.6   |
|                    |            | 12               | 0            | 24.7                    | 24.7   | 24.7   | 22.5   | 22.3   | 22.5   | 23.9   | 24.0   | 24.1   | 22.3   | 22.4   | 22.4   |
|                    |            | 12               | 6            | 24.8                    | 24.8   | 24.7   | 22.6   | 22.4   | 22.5   | 24.0   | 24.0   | 24.2   | 22.4   | 22.4   | 22.4   |
|                    |            | 12               | 11           | 24.7                    | 24.7   | 24.7   | 22.5   | 22.4   | 22.4   | 23.9   | 24.0   | 24.1   | 22.3   | 22.4   | 22.3   |
|                    | 16QAM      | 25               | 0            | 24.8                    | 24.7   | 24.7   | 22.5   | 22.4   | 22.4   | 23.7   | 23.9   | 24.0   | 22.4   | 22.4   | 22.4   |
|                    |            | 1                | 0            | 24.9                    | 24.9   | 25.0   | 22.7   | 22.5   | 22.9   | 23.7   | 23.9   | 23.9   | 22.6   | 22.5   | 22.9   |
|                    |            | 1                | 12           | 25.1                    | 25.0   | 25.0   | 22.9   | 22.5   | 22.8   | 23.8   | 23.9   | 24.1   | 22.8   | 22.6   | 23.0   |
|                    |            | 1                | 24           | 25.0                    | 24.9   | 24.9   | 22.8   | 22.5   | 22.8   | 23.8   | 23.8   | 24.0   | 22.7   | 22.6   | 22.9   |
|                    |            | 12               | 0            | 23.8                    | 23.9   | 23.9   | 21.6   | 21.4   | 21.7   | 22.7   | 22.9   | 22.9   | 21.4   | 21.5   | 21.6   |
|                    |            | 12               | 6            | 23.9                    | 23.8   | 23.8   | 21.7   | 21.5   | 21.6   | 22.9   | 23.0   | 23.1   | 21.5   | 21.5   | 21.5   |
|                    | 64QAM      | 12               | 11           | 23.8                    | 23.8   | 23.8   | 21.6   | 21.4   | 21.5   | 22.9   | 23.0   | 23.1   | 21.5   | 21.6   | 21.5   |
|                    |            | 25               | 0            | 23.7                    | 23.7   | 23.7   | 21.5   | 21.4   | 21.5   | 22.6   | 22.8   | 22.8   | 21.4   | 21.4   | 21.5   |
|                    |            | 1                | 0            | 23.9                    | 23.6   | 24.0   | 21.3   | 20.6   | 21.8   | 22.4   | 22.6   | 22.7   | 21.5   | 21.4   | 21.0   |
|                    |            | 1                | 12           | 24.1                    | 23.7   | 24.0   | 21.5   | 20.6   | 21.7   | 22.4   | 22.6   | 22.9   | 21.6   | 21.5   | 21.0   |
|                    |            | 1                | 24           | 24.0                    | 23.6   | 23.9   | 21.6   | 20.6   | 21.7   | 22.4   | 22.4   | 22.8   | 21.6   | 21.4   | 20.9   |
|                    |            | 12               | 0            | 22.8                    | 22.8   | 22.8   | 20.2   | 19.8   | 20.4   | 21.1   | 21.3   | 21.4   | 20.2   | 20.3   | 20.2   |
|                    | 256QAM     | 12               | 6            | 22.9                    | 22.8   | 22.8   | 20.3   | 19.9   | 20.5   | 21.2   | 21.4   | 21.6   | 20.2   | 20.3   | 20.2   |
|                    |            | 12               | 11           | 22.8                    | 22.8   | 22.7   | 20.4   | 19.9   | 20.5   | 21.2   | 21.4   | 21.6   | 20.2   | 20.3   | 20.1   |
|                    |            | 25               | 0            | 22.8                    | 22.7   | 22.8   | 20.2   | 19.8   | 20.4   | 21.0   | 21.3   | 21.4   | 20.3   | 20.2   | 20.1   |
|                    |            | 1                | 0            | 24.0                    | 24.0   | 24.0   | 21.6   | 21.7   | 21.8   | 19.0   | 19.1   | 18.8   | 21.4   | 21.3   | 21.2   |
|                    |            | 1                | 12           | 24.1                    | 24.0   | 24.1   | 21.6   | 21.7   | 21.8   | 19.1   | 19.2   | 18.7   | 21.4   | 21.3   | 21.2   |
|                    |            | 1                | 24           | 24.1                    | 24.1   | 24.0   | 21.6   | 21.7   | 21.7   | 19.1   | 19.1   | 18.6   | 21.3   | 21.3   | 21.2   |
|                    |            | 12               | 0            | 24.1                    | 24.1   | 24.1   | 21.6   | 21.7   | 21.7   | 19.0   | 19.2   | 19.0   | 21.4   | 21.3   | 21.2   |
|                    |            | 12               | 6            | 24.0                    | 24.1   | 24.1   | 21.6   | 21.7   | 21.7   | 19.1   | 19.2   | 19.0   | 21.3   | 21.3   | 21.2   |
|                    |            | 12               | 11           | 24.1                    | 24.1   | 24.1   | 21.6   | 21.7   | 21.7   | 19.0   | 19.1   | 19.0   | 21.3   | 21.3   | 21.2   |
|                    |            | 25               | 0            | 24.1                    | 24.1   | 24.0   | 21.6   | 21.7   | 21.7   | 19.1   | 19.1   | 19.0   | 21.3   | 21.3   | 21.2   |

## OUTPUT POWER FOR LTE BAND 66 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 132022                  | 132322 | 132622 | 132022 | 132322 | 132622 | 132022 | 132322 | 132622 | 132022 | 132322 | 132622 |
|                    |            |                  |              | 1715.0                  | 1745.0 | 1775.0 | 1715.0 | 1745.0 | 1775.0 | 1715.0 | 1745.0 | 1775.0 | 1715.0 | 1745.0 | 1775.0 |
| 10.0               | QPSK       | 1                | 0            | 25.4                    | 25.4   | 25.3   | 22.8   | 22.7   | 22.9   | 24.5   | 24.6   | 24.6   | 22.5   | 22.7   | 22.7   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.6   | 23.1   | 22.9   | 23.0   | 24.9   | 24.9   | 25.0   | 22.9   | 23.0   | 22.9   |
|                    |            | 1                | 49           | 25.5                    | 25.5   | 25.4   | 22.8   | 22.8   | 22.8   | 24.7   | 24.7   | 24.8   | 22.6   | 22.9   | 22.7   |
|                    |            | 25               | 0            | 24.7                    | 24.7   | 24.7   | 22.5   | 22.4   | 22.4   | 23.8   | 24.0   | 24.0   | 22.4   | 22.5   | 22.4   |
|                    |            | 25               | 12           | 24.9                    | 24.8   | 24.7   | 22.6   | 22.5   | 22.5   | 24.0   | 24.1   | 24.2   | 22.5   | 22.5   | 22.4   |
|                    |            | 25               | 24           | 24.8                    | 24.8   | 24.7   | 22.5   | 22.4   | 22.4   | 23.9   | 23.9   | 24.0   | 22.5   | 22.6   | 22.4   |
|                    |            | 50               | 0            | 24.8                    | 24.7   | 24.7   | 22.6   | 22.4   | 22.4   | 23.7   | 23.8   | 23.8   | 22.5   | 22.5   | 22.4   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.6   | 24.5   | 22.4   | 22.1   | 22.6   | 23.3   | 23.6   | 23.1   | 22.3   | 22.3   | 22.7   |
|                    |            | 1                | 24           | 24.9                    | 24.9   | 24.8   | 22.6   | 22.3   | 22.9   | 23.8   | 23.9   | 24.0   | 22.5   | 22.6   | 22.9   |
|                    |            | 1                | 49           | 24.8                    | 24.7   | 24.6   | 22.4   | 22.1   | 22.6   | 23.5   | 23.5   | 23.6   | 22.3   | 22.4   | 22.7   |
|                    |            | 25               | 0            | 23.8                    | 23.8   | 23.8   | 21.6   | 21.4   | 21.5   | 22.6   | 22.8   | 22.6   | 21.5   | 21.5   | 21.5   |
|                    |            | 25               | 12           | 24.0                    | 23.9   | 23.8   | 21.8   | 21.5   | 21.5   | 22.8   | 23.0   | 23.0   | 21.7   | 21.6   | 21.5   |
|                    |            | 25               | 24           | 23.9                    | 23.9   | 23.8   | 21.7   | 21.4   | 21.5   | 22.8   | 22.9   | 22.9   | 21.6   | 21.6   | 21.5   |
|                    |            | 50               | 0            | 23.8                    | 23.8   | 23.7   | 21.6   | 21.4   | 21.5   | 22.6   | 22.8   | 22.7   | 21.6   | 21.5   | 21.4   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.6   | 23.6   | 21.0   | 20.9   | 21.5   | 21.9   | 22.3   | 22.0   | 21.3   | 21.4   | 21.1   |
|                    |            | 1                | 24           | 24.0                    | 24.1   | 23.9   | 21.8   | 21.1   | 21.7   | 22.4   | 22.6   | 22.8   | 21.6   | 21.7   | 21.5   |
|                    |            | 1                | 49           | 23.7                    | 23.8   | 23.7   | 21.5   | 20.9   | 21.4   | 22.1   | 22.1   | 22.4   | 21.4   | 21.6   | 21.2   |
|                    |            | 25               | 0            | 22.8                    | 22.8   | 22.7   | 20.2   | 19.8   | 20.6   | 21.0   | 21.2   | 21.1   | 20.5   | 20.3   | 20.4   |
|                    |            | 25               | 12           | 23.0                    | 22.9   | 22.8   | 20.5   | 20.0   | 20.7   | 21.2   | 21.4   | 21.5   | 20.6   | 20.5   | 20.5   |
|                    |            | 25               | 24           | 22.9                    | 22.9   | 22.8   | 20.5   | 19.9   | 20.6   | 21.1   | 21.3   | 21.4   | 20.6   | 20.5   | 20.4   |
|                    |            | 50               | 0            | 22.8                    | 22.7   | 22.7   | 20.2   | 19.9   | 20.6   | 20.9   | 21.1   | 21.2   | 20.5   | 20.3   | 20.4   |
|                    | 256QAM     | 1                | 0            | 23.3                    | 23.4   | 23.9   | 21.4   | 21.4   | 21.3   | 18.9   | 18.6   | 18.8   | 21.5   | 20.8   | 20.7   |
|                    |            | 1                | 24           | 23.4                    | 23.4   | 23.8   | 21.4   | 21.4   | 21.3   | 19.2   | 18.9   | 19.0   | 21.5   | 20.8   | 20.6   |
|                    |            | 1                | 49           | 23.4                    | 23.3   | 23.8   | 21.4   | 21.4   | 21.3   | 19.0   | 18.8   | 18.8   | 21.5   | 20.9   | 20.7   |
|                    |            | 25               | 0            | 23.4                    | 23.3   | 23.8   | 21.4   | 21.4   | 21.3   | 19.0   | 19.0   | 18.9   | 21.4   | 20.8   | 20.7   |
|                    |            | 25               | 12           | 23.4                    | 23.3   | 23.8   | 21.4   | 21.4   | 21.3   | 19.2   | 19.1   | 19.0   | 21.5   | 20.9   | 20.6   |
|                    |            | 25               | 24           | 23.4                    | 23.3   | 23.9   | 21.4   | 21.4   | 21.3   | 19.1   | 19.1   | 18.9   | 21.5   | 20.8   | 20.6   |
|                    |            | 50               | 0            | 23.4                    | 23.4   | 23.8   | 21.4   | 21.4   | 21.3   | 19.1   | 19.1   | 18.9   | 21.4   | 20.8   | 20.6   |

## OUTPUT POWER FOR LTE BAND 66 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 132047                  | 132322 | 132597 | 132047 | 132322 | 132597 | 132047 | 132322 | 132597 | 132047 | 132322 | 132597 |
|                    |            |                  |              | 1717.5                  | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 |
| 15.0               | QPSK       | 1                | 0            | 25.5                    | 25.6   | 25.7   | 22.9   | 22.8   | 23.0   | 24.8   | 24.9   | 25.0   | 22.5   | 22.7   | 22.8   |
|                    |            | 1                | 37           | 25.7                    | 25.7   | 25.7   | 23.0   | 22.8   | 22.9   | 24.8   | 24.8   | 25.0   | 22.6   | 22.9   | 22.6   |
|                    |            | 1                | 74           | 25.6                    | 25.6   | 25.6   | 22.9   | 22.6   | 22.8   | 24.9   | 24.4   | 24.7   | 22.5   | 22.8   | 22.6   |
|                    |            | 36               | 0            | 24.7                    | 24.7   | 24.7   | 22.4   | 22.3   | 22.3   | 23.5   | 23.7   | 23.2   | 22.2   | 22.1   | 22.3   |
|                    |            | 36               | 16           | 24.8                    | 24.7   | 24.7   | 22.5   | 22.3   | 22.3   | 23.5   | 23.5   | 23.4   | 22.3   | 22.1   | 22.3   |
|                    |            | 36               | 35           | 24.8                    | 24.8   | 24.7   | 22.5   | 22.3   | 22.3   | 23.5   | 23.4   | 23.4   | 22.3   | 22.2   | 22.3   |
|                    |            | 75               | 0            | 24.7                    | 24.7   | 24.6   | 22.4   | 22.3   | 22.3   | 23.3   | 23.4   | 23.1   | 22.3   | 22.1   | 22.2   |
|                    | 16QAM      | 1                | 0            | 25.2                    | 25.1   | 25.3   | 22.9   | 22.1   | 22.8   | 23.6   | 23.9   | 23.2   | 22.8   | 21.9   | 22.7   |
|                    |            | 1                | 37           | 25.3                    | 25.2   | 25.3   | 23.1   | 22.1   | 22.7   | 23.6   | 23.7   | 23.6   | 23.0   | 22.0   | 22.7   |
|                    |            | 1                | 74           | 25.2                    | 25.1   | 25.1   | 22.9   | 22.0   | 22.6   | 24.0   | 23.6   | 23.7   | 22.8   | 22.3   | 22.6   |
|                    |            | 36               | 0            | 23.7                    | 23.7   | 23.7   | 21.4   | 21.3   | 21.4   | 22.3   | 22.6   | 21.9   | 21.4   | 21.2   | 21.4   |
|                    |            | 36               | 16           | 23.8                    | 23.7   | 23.7   | 21.5   | 21.3   | 21.4   | 22.4   | 22.5   | 22.3   | 21.5   | 21.3   | 21.4   |
|                    |            | 36               | 35           | 23.7                    | 23.8   | 23.7   | 21.4   | 21.3   | 21.4   | 22.5   | 22.4   | 22.4   | 21.4   | 21.4   | 21.4   |
|                    |            | 75               | 0            | 23.8                    | 23.7   | 23.7   | 21.5   | 21.3   | 21.3   | 22.4   | 22.5   | 22.2   | 21.5   | 21.3   | 21.3   |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1   | 24.3   | 21.7   | 20.8   | 21.4   | 22.4   | 22.8   | 22.3   | 21.5   | 20.7   | 21.2   |
|                    |            | 1                | 37           | 24.3                    | 24.2   | 24.3   | 22.0   | 20.6   | 21.4   | 22.4   | 22.5   | 22.7   | 21.7   | 20.7   | 21.0   |
|                    |            | 1                | 74           | 24.2                    | 24.1   | 24.2   | 22.2   | 20.8   | 21.1   | 22.7   | 22.4   | 22.7   | 21.6   | 21.1   | 21.0   |
|                    |            | 36               | 0            | 22.7                    | 22.7   | 22.7   | 20.1   | 19.6   | 20.2   | 20.8   | 21.1   | 20.6   | 20.2   | 19.6   | 19.9   |
|                    |            | 36               | 16           | 22.8                    | 22.7   | 22.7   | 20.2   | 19.5   | 20.3   | 20.8   | 21.0   | 20.9   | 20.3   | 19.6   | 19.9   |
|                    |            | 36               | 35           | 22.8                    | 22.8   | 22.7   | 20.2   | 19.6   | 20.2   | 20.9   | 20.9   | 21.1   | 20.2   | 19.7   | 19.9   |
|                    |            | 75               | 0            | 22.8                    | 22.8   | 22.7   | 20.1   | 19.5   | 20.1   | 20.9   | 21.0   | 20.9   | 20.1   | 19.6   | 19.8   |
|                    | 256QAM     | 1                | 0            | 24.2                    | 24.1   | 24.2   | 21.9   | 21.9   | 22.1   | 19.0   | 18.9   | 18.9   | 21.7   | 20.8   | 20.6   |
|                    |            | 1                | 37           | 24.3                    | 24.1   | 24.2   | 21.9   | 21.8   | 22.1   | 19.2   | 19.1   | 19.0   | 21.7   | 20.8   | 20.6   |
|                    |            | 1                | 74           | 24.3                    | 24.1   | 24.2   | 21.9   | 21.9   | 22.0   | 19.0   | 19.1   | 18.8   | 21.7   | 20.8   | 20.6   |
|                    |            | 36               | 0            | 24.2                    | 24.1   | 24.2   | 21.9   | 21.8   | 22.1   | 19.1   | 19.0   | 19.0   | 21.7   | 20.8   | 20.6   |
|                    |            | 36               | 16           | 24.2                    | 24.1   | 24.2   | 21.9   | 21.8   | 22.1   | 19.1   | 19.1   | 19.0   | 21.7   | 20.8   | 20.6   |
|                    |            | 36               | 35           | 24.2                    | 24.1   | 24.3   | 21.9   | 21.9   | 22.1   | 19.1   | 19.1   | 19.0   | 21.6   | 20.8   | 20.6   |
|                    |            | 75               | 0            | 24.3                    | 24.1   | 24.2   | 21.9   | 21.9   | 22.1   | 19.0   | 19.1   | 18.9   | 21.7   | 20.8   | 20.6   |

## OUTPUT POWER FOR LTE BAND 66 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 132072                  | 132322 | 132572 | 132072 | 132322 | 132572 | 132072 | 132322 | 132572 | 132072 | 132322 | 132572 |
|                    |            |                  |              | 1720.0                  | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.4   | 25.7   | 22.9   | 22.8   | 23.1   | 24.8   | 24.9   | 24.8   | 22.6   | 22.7   | 22.9   |
|                    |            | 1                | 49           | 25.7                    | 25.7   | 25.7   | 23.1   | 23.0   | 23.1   | 24.9   | 24.9   | 25.0   | 23.0   | 23.0   | 22.7   |
|                    |            | 1                | 99           | 25.5                    | 25.5   | 25.6   | 22.8   | 22.8   | 22.9   | 24.7   | 24.2   | 24.9   | 22.7   | 22.8   | 22.7   |
|                    |            | 50               | 0            | 24.7                    | 24.7   | 24.7   | 22.6   | 22.4   | 22.5   | 23.4   | 23.7   | 22.9   | 22.4   | 22.0   | 22.2   |
|                    |            | 50               | 24           | 24.9                    | 24.8   | 24.9   | 22.7   | 22.5   | 22.6   | 23.5   | 23.6   | 23.4   | 22.6   | 22.1   | 22.5   |
|                    |            | 50               | 49           | 24.8                    | 24.8   | 24.7   | 22.5   | 22.4   | 22.5   | 23.5   | 23.3   | 23.5   | 22.5   | 22.2   | 22.3   |
|                    |            | 100              | 0            | 24.8                    | 24.7   | 24.7   | 22.6   | 22.4   | 22.5   | 23.3   | 23.3   | 23.0   | 22.4   | 22.0   | 22.2   |
|                    | 16QAM      | 1                | 0            | 24.9                    | 24.9   | 25.2   | 22.8   | 22.8   | 23.0   | 23.4   | 23.7   | 23.3   | 22.4   | 22.3   | 23.0   |
|                    |            | 1                | 49           | 25.2                    | 25.2   | 25.2   | 23.0   | 23.0   | 23.0   | 23.9   | 23.9   | 23.7   | 23.0   | 22.5   | 22.9   |
|                    |            | 1                | 99           | 24.9                    | 25.0   | 25.1   | 22.7   | 22.8   | 22.9   | 23.8   | 23.4   | 24.0   | 22.6   | 22.6   | 22.9   |
|                    |            | 50               | 0            | 23.7                    | 23.7   | 23.7   | 21.6   | 21.5   | 21.5   | 22.2   | 22.5   | 21.7   | 21.4   | 21.1   | 21.2   |
|                    |            | 50               | 24           | 23.8                    | 23.8   | 23.8   | 21.7   | 21.6   | 21.6   | 22.5   | 22.6   | 22.3   | 21.6   | 21.3   | 21.5   |
|                    |            | 50               | 49           | 23.7                    | 23.8   | 23.7   | 21.5   | 21.5   | 21.5   | 22.5   | 22.4   | 22.5   | 21.5   | 21.4   | 21.4   |
|                    |            | 100              | 0            | 23.7                    | 23.7   | 23.7   | 21.6   | 21.5   | 21.5   | 22.4   | 22.4   | 22.1   | 21.4   | 21.3   | 21.4   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.6   | 23.9   | 21.5   | 21.2   | 21.5   | 21.9   | 22.3   | 21.9   | 21.2   | 20.7   | 21.8   |
|                    |            | 1                | 49           | 24.0                    | 24.0   | 23.9   | 22.1   | 21.2   | 21.8   | 22.3   | 22.4   | 22.3   | 21.5   | 20.9   | 21.7   |
|                    |            | 1                | 99           | 23.7                    | 23.7   | 23.9   | 21.7   | 21.2   | 21.5   | 22.3   | 21.8   | 22.6   | 21.3   | 21.0   | 21.7   |
|                    |            | 50               | 0            | 22.8                    | 22.7   | 22.7   | 20.2   | 19.7   | 19.9   | 20.8   | 21.1   | 20.3   | 20.2   | 19.6   | 19.7   |
|                    |            | 50               | 24           | 22.9                    | 22.8   | 22.9   | 20.4   | 19.7   | 20.5   | 21.0   | 21.1   | 21.0   | 20.3   | 19.7   | 20.0   |
|                    |            | 50               | 49           | 22.8                    | 22.8   | 22.7   | 20.4   | 19.7   | 20.4   | 21.0   | 20.9   | 21.2   | 20.1   | 19.7   | 19.9   |
|                    |            | 100              | 0            | 22.8                    | 22.7   | 22.7   | 20.1   | 19.6   | 20.2   | 20.9   | 20.9   | 20.7   | 19.9   | 19.6   | 19.8   |
|                    | 256QAM     | 1                | 0            | 23.5                    | 23.6   | 23.7   | 21.6   | 21.6   | 21.9   | 18.6   | 19.0   | 18.8   | 21.5   | 21.5   | 21.6   |
|                    |            | 1                | 49           | 23.5                    | 23.6   | 23.8   | 21.6   | 21.6   | 21.9   | 18.9   | 19.4   | 19.0   | 21.5   | 21.5   | 21.6   |
|                    |            | 1                | 99           | 23.5                    | 23.6   | 23.7   | 21.6   | 21.5   | 21.9   | 18.7   | 19.3   | 18.7   | 21.5   | 21.5   | 21.7   |
|                    |            | 50               | 0            | 23.5                    | 23.6   | 23.8   | 21.6   | 21.6   | 21.9   | 18.9   | 18.9   | 18.9   | 21.5   | 21.5   | 21.6   |
|                    |            | 50               | 24           | 23.5                    | 23.6   | 23.8   | 21.5   | 21.6   | 21.9   | 19.1   | 19.1   | 19.0   | 21.4   | 21.5   | 21.7   |
|                    |            | 50               | 49           | 23.5                    | 23.6   | 23.7   | 21.6   | 21.6   | 21.9   | 19.0   | 19.0   | 18.8   | 21.5   | 21.4   | 21.6   |
|                    |            | 100              | 0            | 23.5                    | 23.6   | 23.8   | 21.6   | 21.5   | 21.9   | 19.0   | 19.0   | 18.9   | 21.4   | 21.5   | 21.7   |

## 7.17. LTE BAND 71

Test Engineer ID: 39004 Test Date: 3/11/2020

### OUTPUT POWER FOR LTE BAND 71 (5.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        |
|                    |            |                  |              | 133147                  | 133297 | 133447 | 133147 | 133297 | 133447 |
|                    |            |                  |              | 665.5                   | 680.5  | 695.5  | 665.5  | 680.5  | 695.5  |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6   | 25.5   | 24.5   | 24.2   | 24.2   |
|                    |            | 1                | 12           | 25.6                    | 25.7   | 25.6   | 24.5   | 24.3   | 24.1   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.5   | 24.4   | 24.3   | 24.1   |
|                    |            | 12               | 0            | 24.6                    | 24.6   | 24.7   | 24.3   | 24.3   | 24.3   |
|                    |            | 12               | 6            | 24.7                    | 24.7   | 24.7   | 24.3   | 24.4   | 24.2   |
|                    |            | 12               | 11           | 24.7                    | 24.7   | 24.7   | 24.3   | 24.4   | 23.7   |
|                    |            | 25               | 0            | 24.7                    | 24.7   | 24.7   | 24.2   | 24.4   | 24.0   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7   | 25.1   | 24.3   | 24.3   | 24.2   |
|                    |            | 1                | 12           | 24.8                    | 24.9   | 25.2   | 24.2   | 24.4   | 24.2   |
|                    |            | 1                | 24           | 25.0                    | 24.9   | 25.1   | 24.2   | 24.4   | 23.4   |
|                    |            | 12               | 0            | 23.7                    | 23.7   | 23.8   | 23.4   | 23.8   | 23.7   |
|                    |            | 12               | 6            | 23.8                    | 23.8   | 23.8   | 23.4   | 24.0   | 23.4   |
|                    |            | 12               | 11           | 23.8                    | 23.8   | 23.8   | 23.4   | 23.9   | 22.9   |
|                    |            | 25               | 0            | 23.7                    | 23.7   | 23.7   | 23.4   | 23.9   | 23.2   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.7   | 23.7   | 22.5   | 23.1   | 22.9   |
|                    |            | 1                | 12           | 23.5                    | 23.9   | 23.8   | 22.3   | 23.0   | 22.6   |
|                    |            | 1                | 24           | 23.6                    | 23.9   | 23.8   | 22.2   | 23.0   | 21.7   |
|                    |            | 12               | 0            | 22.6                    | 22.5   | 22.6   | 21.6   | 22.2   | 21.9   |
|                    |            | 12               | 6            | 22.7                    | 22.5   | 22.6   | 21.6   | 22.2   | 21.5   |
|                    |            | 12               | 11           | 22.7                    | 22.6   | 22.6   | 21.5   | 22.2   | 21.1   |
|                    |            | 25               | 0            | 22.6                    | 22.5   | 22.6   | 21.5   | 22.2   | 21.3   |
|                    | 256QAM     | 1                | 0            | 23.5                    | 21.1   | 21.1   | 21.0   | 20.8   | 20.7   |
|                    |            | 1                | 12           | 21.0                    | 21.2   | 21.2   | 21.0   | 20.9   | 20.8   |
|                    |            | 1                | 24           | 20.9                    | 21.3   | 21.1   | 20.9   | 21.1   | 20.7   |
|                    |            | 12               | 0            | 21.2                    | 21.1   | 21.1   | 21.0   | 20.9   | 20.8   |
|                    |            | 12               | 6            | 21.3                    | 21.2   | 21.2   | 21.0   | 21.0   | 20.9   |
|                    |            | 12               | 11           | 21.3                    | 21.2   | 21.2   | 21.0   | 21.0   | 20.9   |
|                    |            | 25               | 0            | 21.3                    | 21.2   | 21.2   | 21.0   | 21.0   | 20.9   |

## OUTPUT POWER FOR LTE BAND 71 (10.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        |
|                    |            |                  |              | 133172                  | 133297 | 133422 | 133172 | 133297 | 133422 |
|                    |            |                  |              | 668.0                   | 680.5  | 693.0  | 668.0  | 680.5  | 693.0  |
| 10.0               | QPSK       | 1                | 0            | 25.6                    | 25.7   | 25.7   | 24.4   | 24.4   | 24.3   |
|                    |            | 1                | 24           | 25.6                    | 25.6   | 25.7   | 24.2   | 24.3   | 24.3   |
|                    |            | 1                | 49           | 25.6                    | 25.6   | 25.7   | 24.3   | 24.3   | 24.2   |
|                    |            | 25               | 0            | 24.7                    | 24.7   | 24.7   | 24.4   | 24.3   | 24.3   |
|                    |            | 25               | 12           | 24.8                    | 24.7   | 24.7   | 24.4   | 24.4   | 24.2   |
|                    |            | 25               | 24           | 24.7                    | 24.7   | 24.7   | 24.3   | 24.3   | 24.2   |
|                    |            | 50               | 0            | 24.7                    | 24.6   | 24.6   | 24.3   | 24.3   | 24.2   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7   | 25.1   | 24.3   | 24.4   | 24.2   |
|                    |            | 1                | 24           | 24.7                    | 24.6   | 25.1   | 24.0   | 24.3   | 24.2   |
|                    |            | 1                | 49           | 24.7                    | 24.6   | 25.1   | 24.2   | 24.5   | 23.6   |
|                    |            | 25               | 0            | 23.8                    | 23.7   | 23.7   | 23.4   | 23.8   | 23.8   |
|                    |            | 25               | 12           | 23.9                    | 23.7   | 23.7   | 23.5   | 23.9   | 23.7   |
|                    |            | 25               | 24           | 23.8                    | 23.8   | 23.7   | 23.8   | 23.9   | 23.3   |
|                    |            | 50               | 0            | 23.8                    | 23.6   | 23.6   | 23.5   | 23.8   | 23.7   |
|                    | 64QAM      | 1                | 0            | 23.8                    | 23.8   | 23.7   | 22.4   | 23.0   | 22.9   |
|                    |            | 1                | 24           | 23.8                    | 23.9   | 23.7   | 22.0   | 23.0   | 23.0   |
|                    |            | 1                | 49           | 23.7                    | 23.9   | 23.7   | 22.4   | 22.7   | 21.9   |
|                    |            | 25               | 0            | 22.7                    | 22.6   | 22.6   | 21.6   | 22.1   | 22.3   |
|                    |            | 25               | 12           | 22.7                    | 22.6   | 22.7   | 21.6   | 22.2   | 22.1   |
|                    |            | 25               | 24           | 22.7                    | 22.6   | 22.7   | 21.8   | 22.2   | 21.5   |
|                    |            | 50               | 0            | 22.6                    | 22.5   | 22.6   | 21.6   | 22.2   | 21.8   |
|                    | 256QAM     | 1                | 0            | 21.1                    | 21.1   | 20.8   | 20.8   | 20.7   | 20.4   |
|                    |            | 1                | 24           | 21.4                    | 21.3   | 21.0   | 20.9   | 21.0   | 20.8   |
|                    |            | 1                | 49           | 21.1                    | 21.1   | 20.8   | 20.8   | 20.7   | 20.4   |
|                    |            | 25               | 0            | 21.2                    | 21.1   | 21.1   | 20.9   | 20.7   | 20.7   |
|                    |            | 25               | 12           | 21.3                    | 21.2   | 21.2   | 21.0   | 20.9   | 20.8   |
|                    |            | 25               | 24           | 21.3                    | 21.2   | 21.2   | 20.9   | 20.9   | 20.8   |
|                    |            | 50               | 0            | 21.3                    | 21.1   | 21.1   | 20.9   | 20.9   | 20.7   |

## OUTPUT POWER FOR LTE BAND 71 (15.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        |
|                    |            |                  |              | 133197                  | 133297 | 133397 | 133197 | 133297 | 133397 |
|                    |            |                  |              | 670.5                   | 680.5  | 690.5  | 670.5  | 680.5  | 690.5  |
| 15.0               | QPSK       | 1                | 0            | 25.7                    | 25.7   | 25.7   | 24.4   | 24.3   | 24.3   |
|                    |            | 1                | 37           | 25.7                    | 25.6   | 25.6   | 24.3   | 24.3   | 24.2   |
|                    |            | 1                | 74           | 25.7                    | 25.6   | 25.7   | 24.3   | 24.2   | 24.1   |
|                    |            | 36               | 0            | 24.8                    | 24.8   | 24.7   | 24.3   | 24.3   | 24.3   |
|                    |            | 36               | 16           | 24.8                    | 24.7   | 24.7   | 24.4   | 24.3   | 24.3   |
|                    |            | 36               | 35           | 24.8                    | 24.8   | 24.8   | 24.3   | 24.3   | 24.2   |
|                    |            | 75               | 0            | 24.8                    | 24.7   | 24.7   | 24.3   | 24.3   | 24.1   |
|                    | 16QAM      | 1                | 0            | 25.2                    | 24.7   | 25.1   | 24.2   | 24.4   | 24.2   |
|                    |            | 1                | 37           | 25.1                    | 24.6   | 25.1   | 24.4   | 24.3   | 24.1   |
|                    |            | 1                | 74           | 25.2                    | 24.7   | 25.0   | 24.5   | 24.4   | 23.6   |
|                    |            | 36               | 0            | 23.8                    | 23.7   | 23.8   | 23.5   | 23.8   | 23.8   |
|                    |            | 36               | 16           | 23.8                    | 23.7   | 23.8   | 23.8   | 23.8   | 23.7   |
|                    |            | 36               | 35           | 23.8                    | 23.8   | 23.8   | 23.8   | 23.8   | 23.7   |
|                    |            | 75               | 0            | 23.8                    | 23.7   | 23.6   | 23.7   | 23.8   | 23.7   |
|                    | 64QAM      | 1                | 0            | 24.1                    | 23.9   | 23.7   | 22.6   | 22.9   | 23.0   |
|                    |            | 1                | 37           | 24.1                    | 23.8   | 23.7   | 22.4   | 22.9   | 22.9   |
|                    |            | 1                | 74           | 24.2                    | 23.9   | 23.7   | 22.6   | 22.6   | 22.0   |
|                    |            | 36               | 0            | 22.6                    | 22.6   | 22.7   | 21.5   | 22.2   | 22.2   |
|                    |            | 36               | 16           | 22.7                    | 22.6   | 22.7   | 21.7   | 22.2   | 22.3   |
|                    |            | 36               | 35           | 22.6                    | 22.7   | 22.7   | 22.1   | 22.2   | 21.9   |
|                    |            | 75               | 0            | 22.7                    | 22.5   | 22.6   | 21.8   | 22.1   | 21.9   |
|                    | 256QAM     | 1                | 0            | 21.0                    | 21.1   | 21.0   | 20.7   | 20.6   | 20.5   |
|                    |            | 1                | 37           | 21.3                    | 21.3   | 21.3   | 20.9   | 20.9   | 20.6   |
|                    |            | 1                | 74           | 21.2                    | 21.2   | 21.1   | 20.7   | 20.6   | 20.4   |
|                    |            | 36               | 0            | 21.1                    | 21.2   | 21.0   | 20.8   | 20.8   | 20.7   |
|                    |            | 36               | 16           | 21.3                    | 21.3   | 21.1   | 20.9   | 20.8   | 20.7   |
|                    |            | 36               | 35           | 21.3                    | 21.3   | 21.1   | 20.9   | 20.9   | 20.8   |
|                    |            | 75               | 0            | 21.3                    | 21.2   | 21.1   | 20.9   | 20.9   | 20.7   |

## OUTPUT POWER FOR LTE BAND 71 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        |
|                    |            |                  |              | 133222                  | 133297 | 133372 | 133222 | 133297 | 133372 |
|                    |            |                  |              | 673.0                   | 680.5  | 688.0  | 673.0  | 680.5  | 688.0  |
| 20.0               | QPSK       | 1                | 0            | 25.7                    | 25.7   | 25.7   | 24.3   | 24.3   | 24.3   |
|                    |            | 1                | 49           | 25.7                    | 25.7   | 25.6   | 24.3   | 24.3   | 24.3   |
|                    |            | 1                | 99           | 25.7                    | 25.7   | 25.6   | 24.2   | 24.2   | 24.1   |
|                    |            | 50               | 0            | 24.8                    | 24.7   | 24.7   | 24.4   | 24.4   | 24.4   |
|                    |            | 50               | 24           | 24.8                    | 24.7   | 24.7   | 24.4   | 24.3   | 24.3   |
|                    |            | 50               | 49           | 24.7                    | 24.7   | 24.7   | 24.4   | 24.3   | 24.3   |
|                    |            | 100              | 0            | 24.8                    | 24.7   | 24.7   | 24.3   | 24.3   | 24.2   |
|                    | 16QAM      | 1                | 0            | 25.2                    | 25.3   | 25.2   | 24.4   | 24.4   | 24.5   |
|                    |            | 1                | 49           | 25.2                    | 25.3   | 25.1   | 24.3   | 24.4   | 24.4   |
|                    |            | 1                | 99           | 25.1                    | 25.3   | 25.1   | 24.2   | 24.3   | 23.8   |
|                    |            | 50               | 0            | 23.8                    | 23.8   | 23.7   | 23.6   | 23.9   | 23.9   |
|                    |            | 50               | 24           | 23.8                    | 23.7   | 23.7   | 23.9   | 23.8   | 23.8   |
|                    |            | 50               | 49           | 23.8                    | 23.8   | 23.7   | 23.9   | 23.8   | 23.8   |
|                    |            | 100              | 0            | 23.8                    | 23.7   | 23.7   | 23.8   | 23.8   | 23.7   |
|                    | 64QAM      | 1                | 0            | 23.8                    | 23.9   | 24.2   | 22.7   | 23.2   | 23.0   |
|                    |            | 1                | 49           | 23.8                    | 23.9   | 24.1   | 22.7   | 23.2   | 23.0   |
|                    |            | 1                | 99           | 23.8                    | 23.9   | 24.2   | 22.9   | 23.0   | 22.0   |
|                    |            | 50               | 0            | 22.7                    | 22.7   | 22.6   | 21.7   | 22.2   | 22.2   |
|                    |            | 50               | 24           | 22.7                    | 22.7   | 22.6   | 22.0   | 22.2   | 22.2   |
|                    |            | 50               | 49           | 22.7                    | 22.7   | 22.6   | 22.2   | 22.2   | 21.9   |
|                    |            | 100              | 0            | 22.7                    | 22.5   | 22.5   | 22.0   | 22.0   | 21.9   |
|                    | 256QAM     | 1                | 0            | 20.9                    | 20.8   | 21.2   | 20.6   | 20.5   | 20.5   |
|                    |            | 1                | 49           | 21.2                    | 21.0   | 21.5   | 21.2   | 20.8   | 20.8   |
|                    |            | 1                | 99           | 21.0                    | 21.0   | 21.3   | 20.8   | 20.7   | 20.5   |
|                    |            | 50               | 0            | 21.1                    | 21.0   | 21.0   | 20.8   | 20.8   | 20.8   |
|                    |            | 50               | 24           | 21.2                    | 21.2   | 21.2   | 21.0   | 20.9   | 20.8   |
|                    |            | 50               | 49           | 21.2                    | 21.1   | 21.1   | 21.0   | 20.9   | 20.8   |
|                    |            | 100              | 0            | 21.2                    | 21.1   | 21.1   | 20.9   | 20.9   | 20.8   |

## 7.18. 5G NR Band n77

Test Engineer ID: 19171 Test Date: 8/14/2020

### OUTPUT POWER FOR 5G NR Band n77 (20.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 647333<br>3710.0        | 656000<br>3840.0 | 664666<br>3970.0 | 647333<br>3710.0 | 656000<br>3840.0 | 664666<br>3970.0 | 647333<br>3710.0 | 656000<br>3840.0 | 664666<br>3970.0 | 647333<br>3710.0 | 656000<br>3840.0 | 664666<br>3970.0 |
| 20.0               | BPSK       | 1                | 0            | 23.7                    | 24.3             | 23.9             | 18.2             | 18.8             | 18.8             | 23.6             | 23.1             | 23.4             | 20.7             | 20.7             | 20.7             |
|                    |            | 1                | 1            | 26.6                    | 26.5             | 26.1             | 21.1             | 21.9             | 22.1             | 26.1             | 25.9             | 26.3             | 23.8             | 24.0             | 24.1             |
|                    |            | 25               | 12           | 26.6                    | 26.5             | 26.4             | 20.9             | 23.7             | 20.9             | 26.1             | 26.0             | 26.5             | 23.7             | 24.0             | 24.0             |
|                    |            | 50               | 0            | 26.7                    | 26.5             | 26.3             | 20.3             | 21.1             | 20.5             | 25.8             | 25.7             | 26.5             | 23.3             | 23.4             | 23.5             |
|                    | QPSK       | 1                | 0            | 24.3                    | 24.0             | 24.0             | 19.7             | 19.8             | 20.0             | 22.3             | 22.5             | 22.9             | 20.8             | 21.0             | 21.0             |
|                    |            | 1                | 1            | 26.7                    | 26.7             | 26.7             | 23.1             | 23.0             | 23.3             | 25.5             | 25.8             | 26.5             | 24.2             | 24.5             | 24.3             |
|                    |            | 25               | 12           | 26.5                    | 26.6             | 26.5             | 23.0             | 23.1             | 23.3             | 25.5             | 25.6             | 25.8             | 24.1             | 24.4             | 24.4             |
|                    |            | 50               | 0            | 26.7                    | 26.5             | 26.5             | 21.9             | 22.2             | 22.3             | 25.1             | 25.1             | 25.4             | 23.1             | 23.4             | 23.4             |
|                    | 16QAM      | 1                | 0            | 24.1                    | 23.9             | 23.8             | 19.6             | 19.5             | 19.7             | 22.4             | 22.7             | 22.9             | 20.5             | 20.7             | 20.8             |
|                    |            | 1                | 1            | 26.6                    | 26.5             | 26.5             | 22.1             | 22.0             | 22.4             | 25.0             | 25.1             | 25.3             | 22.7             | 23.1             | 23.4             |
|                    |            | 25               | 12           | 26.6                    | 26.6             | 26.5             | 21.9             | 22.1             | 22.2             | 25.0             | 25.0             | 26.0             | 23.1             | 23.4             | 23.5             |
|                    |            | 50               | 0            | 25.5                    | 25.5             | 25.5             | 21.0             | 21.1             | 21.3             | 24.0             | 24.1             | 24.4             | 22.2             | 22.4             | 22.4             |
|                    | 64QAM      | 1                | 0            | 24.4                    | 24.3             | 24.2             | 20.0             | 20.1             | 19.8             | 22.6             | 22.8             | 23.1             | 21.0             | 21.1             | 21.1             |
|                    |            | 1                | 1            | 25.5                    | 25.2             | 25.4             | 20.9             | 20.9             | 21.0             | 23.6             | 23.8             | 24.2             | 21.9             | 22.0             | 22.1             |
|                    |            | 25               | 12           | 25.1                    | 25.1             | 25.0             | 20.5             | 20.5             | 20.7             | 23.6             | 23.7             | 23.9             | 21.7             | 22.0             | 22.0             |
|                    |            | 50               | 0            | 25.1                    | 25.0             | 25.0             | 20.5             | 20.6             | 20.8             | 23.6             | 23.6             | 23.9             | 21.6             | 21.9             | 21.9             |
|                    | 256QAM     | 1                | 0            | 23.1                    | 23.0             | 23.0             | 18.4             | 18.6             | 18.6             | 21.5             | 21.8             | 22.2             | 19.7             | 19.9             | 20.0             |
|                    |            | 1                | 1            | 23.1                    | 23.1             | 23.1             | 18.4             | 18.7             | 18.7             | 21.4             | 21.8             | 22.2             | 19.7             | 19.9             | 20.1             |
|                    |            | 25               | 12           | 23.1                    | 23.0             | 23.0             | 18.5             | 18.5             | 18.8             | 21.6             | 21.7             | 21.9             | 19.6             | 20.0             | 19.9             |
|                    |            | 50               | 0            | 23.1                    | 23.0             | 23.0             | 18.5             | 18.5             | 18.8             | 21.6             | 21.5             | 21.9             | 19.7             | 19.9             | 19.9             |

### OUTPUT POWER FOR 5G NR Band n77 (40.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 648000<br>3720.0        | 656000<br>3840.0 | 664000<br>3960.0 | 648000<br>3720.0 | 656000<br>3840.0 | 664000<br>3960.0 | 648000<br>3720.0 | 656000<br>3840.0 | 664000<br>3960.0 | 648000<br>3720.0 | 656000<br>3840.0 | 664000<br>3960.0 |
| 40.0               | BPSK       | 1                | 0            | 24.2                    | 23.9             | 23.8             | 20.4             | 20.2             | 19.3             | 23.1             | 22.6             | 23.0             | 19.9             | 19.9             | 19.9             |
|                    |            | 1                | 1            | 26.7                    | 26.4             | 26.3             | 22.9             | 22.5             | 22.0             | 25.8             | 25.5             | 26.2             | 23.0             | 23.3             | 23.3             |
|                    |            | 50               | 25           | 26.5                    | 26.4             | 26.3             | 23.1             | 21.7             | 22.4             | 25.4             | 25.5             | 25.9             | 22.7             | 23.2             | 23.2             |
|                    |            | 100              | 0            | 26.5                    | 26.4             | 26.4             | 22.4             | 20.9             | 21.0             | 25.2             | 25.3             | 25.9             | 22.5             | 22.6             | 22.6             |
|                    | QPSK       | 1                | 0            | 23.8                    | 24.2             | 23.6             | 19.8             | 19.8             | 20.3             | 23.1             | 23.4             | 23.6             | 20.3             | 20.9             | 20.4             |
|                    |            | 1                | 1            | 26.4                    | 26.3             | 26.2             | 23.5             | 23.7             | 23.7             | 26.1             | 26.3             | 26.5             | 23.5             | 24.5             | 23.6             |
|                    |            | 50               | 25           | 26.5                    | 26.3             | 25.9             | 23.4             | 23.5             | 23.6             | 26.1             | 26.2             | 26.1             | 22.9             | 23.6             | 23.4             |
|                    |            | 100              | 0            | 25.6                    | 25.5             | 25.1             | 22.4             | 22.5             | 22.6             | 25.5             | 25.7             | 25.7             | 22.0             | 22.4             | 22.3             |
|                    | 16QAM      | 1                | 0            | 23.6                    | 23.5             | 23.6             | 20.0             | 20.0             | 19.9             | 23.6             | 23.7             | 23.4             | 19.9             | 20.5             | 20.8             |
|                    |            | 1                | 1            | 25.8                    | 26.0             | 25.6             | 22.7             | 22.6             | 22.8             | 26.0             | 26.2             | 26.4             | 22.5             | 23.0             | 23.5             |
|                    |            | 50               | 25           | 26.0                    | 26.1             | 25.8             | 22.3             | 22.5             | 22.5             | 25.6             | 25.7             | 25.6             | 22.0             | 22.7             | 22.2             |
|                    |            | 100              | 0            | 25.2                    | 25.3             | 25.0             | 21.5             | 21.5             | 21.6             | 24.5             | 24.8             | 24.8             | 21.2             | 21.5             | 21.2             |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.3             | 23.6             | 20.1             | 20.5             | 20.5             | 23.3             | 23.6             | 23.6             | 19.8             | 20.7             | 20.6             |
|                    |            | 1                | 1            | 24.4                    | 25.4             | 25.0             | 21.2             | 21.3             | 21.4             | 24.6             | 24.9             | 25.0             | 20.7             | 21.6             | 21.6             |
|                    |            | 50               | 25           | 24.7                    | 24.6             | 24.4             | 20.9             | 21.1             | 21.1             | 24.0             | 24.3             | 24.3             | 20.4             | 21.1             | 20.7             |
|                    |            | 100              | 0            | 24.7                    | 24.8             | 24.4             | 21.0             | 21.0             | 21.1             | 24.0             | 24.4             | 24.2             | 20.4             | 20.9             | 20.7             |
|                    | 256QAM     | 1                | 0            | 22.4                    | 22.7             | 22.3             | 18.8             | 18.8             | 18.9             | 22.1             | 22.8             | 22.5             | 18.5             | 19.8             | 19.3             |
|                    |            | 1                | 1            | 22.9                    | 22.7             | 22.3             | 19.0             | 18.7             | 18.9             | 22.1             | 22.6             | 22.8             | 19.0             | 19.6             | 19.1             |
|                    |            | 50               | 25           | 22.6                    | 22.7             | 22.4             | 18.9             | 19.0             | 19.1             | 22.1             | 22.2             | 22.2             | 18.5             | 18.9             | 18.6             |
|                    |            | 100              | 0            | 22.7                    | 22.8             | 22.4             | 18.9             | 19.0             | 19.0             | 22.0             | 22.3             | 22.2             | 18.4             | 18.8             | 18.8             |

### OUTPUT POWER FOR 5G NR Band n77 (50.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 648333<br>3725.0        | 656000<br>3840.0 | 663666<br>3955.0 | 648333<br>3725.0 | 656000<br>3840.0 | 663666<br>3955.0 | 648333<br>3725.0 | 656000<br>3840.0 | 663666<br>3955.0 | 648333<br>3725.0 | 656000<br>3840.0 | 663666<br>3955.0 |
| 50.0               | BPSK       | 1                | 0            | 24.0                    | 24.1             | 23.9             | 18.8             | 19.4             | 19.7             | 22.8             | 22.5             | 23.2             | 20.4             | 20.4             | 20.4             |
|                    |            | 1                | 1            | 26.5                    | 26.6             | 26.3             | 21.5             | 22.1             | 21.0             | 25.7             | 25.3             | 25.7             | 23.7             | 23.8             | 23.8             |
|                    |            | 64               | 32           | 26.6                    | 26.5             | 26.3             | 21.8             | 22.3             | 21.9             | 25.8             | 25.6             | 25.9             | 23.5             | 23.7             | 23.7             |
|                    |            | 128              | 0            | 26.5                    | 26.5             | 26.4             | 21.0             | 21.2             | 21.0             | 25.7             | 25.6             | 25.9             | 23.2             | 23.2             | 23.1             |
|                    | QPSK       | 1                | 0            | 23.9                    | 23.7             | 23.6             | 20.1             | 20.0             | 20.2             | 23.1             | 23.2             | 23.3             | 20.7             | 21.2             | 21.2             |
|                    |            | 1                | 1            | 26.3                    | 26.4             | 26.3             | 23.7             | 23.5             | 23.7             | 26.2             | 26.5             | 26.4             | 24.0             | 24.2             | 24.3             |
|                    |            | 64               | 32           | 26.7                    | 26.3             | 26.0             | 23.5             | 23.5             | 23.6             | 26.3             | 26.2             | 26.3             | 24.0             | 24.5             | 24.0             |
|                    |            | 128              | 0            | 25.7                    | 25.6             | 25.3             | 22.7             | 22.5             | 22.6             | 25.5             | 25.8             | 25.7             | 22.6             | 23.2             | 23.0             |
|                    | 16QAM      | 1                | 0            | 24.3                    | 23.7             | 23.8             | 19.9             | 19.6             | 20.1             | 23.4             | 24.0             | 24.0             | 21.1             | 21.9             | 20.8             |
|                    |            | 1                | 1            | 26.0                    | 26.3             | 26.6             | 22.6             | 22.6             | 22.9             | 25.7             | 26.2             | 26.3             | 23.4             | 23.5             | 23.4             |
|                    |            | 64               | 32           | 26.4                    | 26.3             | 25.9             | 22.7             | 22.7             | 22.7             | 25.6             | 25.8             | 25.8             | 22.8             | 23.4             | 23.0             |
|                    |            | 128              | 0            | 25.4                    | 25.3             | 25.0             | 21.6             | 21.5             | 21.6             | 24.5             | 24.8             | 24.7             | 21.6             | 22.3             | 21.9             |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.1             | 23.7             | 20.4             | 20.1             | 20.7             | 23.2             | 22.8             | 22.9             | 20.7             | 21.4             | 21.4             |
|                    |            | 1                | 1            | 25.2                    | 24.9             | 25.3             | 21.5             | 21.1             | 21.7             | 24.6             | 23.8             | 24.0             | 22.1             | 22.3             | 22.1             |
|                    |            | 64               | 32           | 24.9                    | 24.9             | 24.6             | 21.1             | 21.2             | 21.1             | 24.1             | 24.3             | 24.3             | 21.3             | 22.1             | 21.5             |
|                    |            | 128              | 0            | 24.9                    | 24.9             | 24.5             | 21.1             | 21.1             | 21.1             | 24.0             | 24.3             | 24.3             | 21.1             | 21.7             | 21.5             |
|                    | 256QAM     | 1                | 0            | 22.2                    | 22.8             | 22.4             | 18.8             | 18.4             | 18.9             | 22.3             | 22.2             | 22.2             | 19.5             | 20.2             | 20.9             |
|                    |            | 1                | 1            | 22.6                    | 22.3             | 22.5             | 19.0             | 18.7             | 18.8             | 22.5             | 22.0             | 22.2             | 19.6             | 20.4             | 20.0             |
|                    |            | 64               | 32           | 22.9                    | 22.8             | 22.5             | 19.0             | 19.0             | 19.0             | 22.0             | 22.2             | 22.2             | 19.2             | 19.8             | 19.8             |
|                    |            | 128              | 0            | 22.8                    | 22.7             | 22.4             | 19.1             | 18.9             | 19.0             | 21.9             | 22.2             | 22.3             | 19.1             | 19.7             | 19.4             |

### OUTPUT POWER FOR 5G NR Band n77 (60.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 648666<br>3730.0        | 656000<br>3840.0 | 663333<br>3950.0 | 648666<br>3730.0 | 656000<br>3840.0 | 663333<br>3950.0 | 648666<br>3730.0 | 656000<br>3840.0 | 663333<br>3950.0 | 648666<br>3730.0 | 656000<br>3840.0 | 663333<br>3950.0 |
| 60.0               | BPSK       | 1                | 0            | 22.28                   | 22.7             | 21.8             | 19.6             | 19.9             | 20.3             | 22.8             | 22.5             | 22.6             | 20.3             | 20.4             | 20.4             |
|                    |            | 1                | 1            | 24.96                   | 26.7             | 23.8             | 22.0             | 21.0             | 22.0             | 25.6             | 25.4             | 25.2             | 24.0             | 23.9             | 23.8             |
|                    |            | 81               | 40           | 24.66                   | 24.5             | 24.1             | 21.9             | 21.6             | 22.3             | 25.7             | 25.4             | 25.5             | 23.9             | 23.7             | 23.7             |
|                    |            | 162              | 0            | 24.12                   | 23.3             | 23.5             | 21.3             | 21.2             | 21.2             | 25.5             | 25.6             | 25.6             | 23.2             | 23.2             | 23.3             |
|                    | QPSK       | 1                | 0            | 22.2                    | 22.4             | 22.3             | 19.8             | 19.7             | 20.3             | 22.8             | 23.5             | 23.1             | 20.4             | 20.8             | 20.7             |
|                    |            | 1                | 1            | 24.5                    | 26.7             | 24.5             | 23.3             | 23.4             | 23.7             | 26.0             | 26.1             | 26.5             | 23.9             | 24.5             | 24.2             |
|                    |            | 81               | 40           | 25.0                    | 24.9             | 24.5             | 23.4             | 23.3             | 23.6             | 25.8             | 26.2             | 26.1             | 24.0             | 24.3             | 24.1             |
|                    |            | 162              | 0            | 24.2                    | 24.1             | 23.8             | 22.5             | 22.4             | 22.6             | 25.4             | 25.6             | 25.6             | 22.9             | 23.1             | 22.9             |
|                    | 16QAM      | 1                | 0            | 22.3                    | 22.2             | 21.9             | 19.7             | 19.5             | 20.2             | 23.3             | 23.4             | 23.4             | 20.8             | 21.4             | 20.4             |
|                    |            | 1                | 1            | 24.5                    | 24.9             | 23.5             | 22.4             | 22.3             | 22.6             | 25.5             | 25.4             | 25.9             | 23.1             | 23.8             | 23.2             |
|                    |            | 81               | 40           | 24.6                    | 24.8             | 24.5             | 22.4             | 22.5             | 22.6             | 25.4             | 25.7             | 25.6             | 22.9             | 23.1             | 23.0             |
|                    |            | 162              | 0            | 23.5                    | 23.9             | 23.6             | 21.5             | 21.5             | 21.7             | 24.4             | 24.6             | 24.7             | 21.9             | 22.2             | 22.1             |
|                    | 64QAM      | 1                | 0            | 22.7                    | 21.9             | 22.3             | 20.4             | 20.4             | 20.5             | 22.7             | 22.9             | 22.8             | 20.7             | 21.0             | 20.8             |
|                    |            | 1                | 1            | 23.4                    | 23.4             | 23.1             | 21.5             | 20.8             | 21.8             | 24.0             | 24.1             | 24.0             | 21.7             | 22.3             | 22.0             |
|                    |            | 81               | 40           | 23.2                    | 23.2             | 23.0             | 20.9             | 20.9             | 21.1             | 23.9             | 24.2             | 24.2             | 21.3             | 21.8             | 21.5             |
|                    |            | 162              | 0            | 23.4                    | 23.4             | 23.1             | 20.9             | 20.9             | 21.2             | 23.8             | 24.1             | 24.1             | 21.4             | 21.8             | 21.4             |
|                    | 256QAM     | 1                | 0            | 20.8                    | 21.3             | 21.2             | 18.3             | 18.6             | 18.8             | 21.6             | 22.2             | 21.7             | 19.3             | 20.1             | 19.4             |
|                    |            | 1                | 1            | 20.7                    | 21.0             | 20.7             | 18.8             | 18.6             | 19.3             | 22.2             | 21.8             | 21.9             | 19.7             | 20.1             | 19.6             |
|                    |            | 81               | 40           | 21.1                    | 21.3             | 21.0             | 19.0             | 19.1             | 19.1             | 21.8             | 22.2             | 22.2             | 19.4             | 19.9             | 19.4             |
|                    |            | 162              | 0            | 21.5                    | 21.4             | 21.1             | 19.0             | 18.9             | 19.2             | 21.9             | 22.1             | 22.1             | 19.4             | 19.9             | 19.4             |

### OUTPUT POWER FOR 5G NR Band n77 (80.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 649333<br>3740.0        | 656000<br>3840.0 | 662666<br>3940.0 | 649333<br>3740.0 | 656000<br>3840.0 | 662666<br>3940.0 | 649333<br>3740.0 | 656000<br>3840.0 | 662666<br>3940.0 | 649333<br>3740.0 | 656000<br>3840.0 | 662666<br>3940.0 |
| 80.0               | BPSK       | 1                | 0            | 23.4                    | 23.4             | 23.4             | 19.4             | 19.4             | 20.3             | 22.7             | 22.5             | 22.7             | 20.1             | 20.4             | 20.4             |
|                    |            | 1                | 1            | 26.0                    | 26.2             | 25.4             | 22.0             | 22.1             | 21.5             | 25.5             | 25.5             | 25.8             | 23.6             | 23.8             | 23.7             |
|                    |            | 108              | 54           | 26.3                    | 26.1             | 26.4             | 20.9             | 22.3             | 21.5             | 25.2             | 25.3             | 25.5             | 23.7             | 23.7             | 23.7             |
|                    |            | 216              | 0            | 25.4                    | 25.2             | 25.2             | 20.4             | 21.3             | 21.3             | 25.4             | 25.3             | 25.6             | 23.1             | 23.1             | 23.1             |
|                    | QPSK       | 1                | 0            | 23.6                    | 23.9             | 23.5             | 19.7             | 20.1             | 20.5             | 23.4             | 23.6             | 23.4             | 20.6             | 20.8             | 20.8             |
|                    |            | 1                | 1            | 26.3                    | 26.7             | 26.2             | 23.3             | 23.7             | 23.7             | 25.9             | 26.5             | 26.5             | 23.9             | 24.5             | 24.3             |
|                    |            | 108              | 54           | 26.5                    | 26.4             | 26.2             | 23.2             | 23.5             | 23.7             | 26.1             | 25.7             | 26.2             | 23.7             | 23.7             | 24.0             |
|                    |            | 216              | 0            | 25.7                    | 25.7             | 25.2             | 21.7             | 22.8             | 22.8             | 25.5             | 25.7             | 25.7             | 22.8             | 23.3             | 23.0             |
|                    | 16QAM      | 1                | 0            | 23.2                    | 23.7             | 23.6             | 19.9             | 20.1             | 20.5             | 23.6             | 23.7             | 23.7             | 20.2             | 20.5             | 20.2             |
|                    |            | 1                | 1            | 26.1                    | 26.2             | 26.1             | 22.5             | 22.7             | 22.9             | 25.9             | 25.8             | 26.0             | 22.9             | 23.4             | 23.2             |
|                    |            | 108              | 54           | 26.5                    | 26.4             | 26.1             | 22.4             | 22.6             | 22.8             | 25.4             | 24.7             | 25.7             | 22.5             | 23.2             | 23.0             |
|                    |            | 216              | 0            | 25.4                    | 25.4             | 25.0             | 20.7             | 21.6             | 21.8             | 24.5             | 24.7             | 24.6             | 21.8             | 22.2             | 21.4             |
|                    | 64QAM      | 1                | 0            | 23.8                    | 24.2             | 24.0             | 19.7             | 20.4             | 20.9             | 23.0             | 22.9             | 22.6             | 20.5             | 21.3             | 21.4             |
|                    |            | 1                | 1            | 24.9                    | 25.0             | 24.9             | 21.1             | 20.6             | 21.5             | 23.5             | 24.5             | 23.9             | 21.7             | 22.1             | 21.7             |
|                    |            | 108              | 54           | 24.8                    | 24.9             | 24.4             | 20.8             | 21.0             | 21.3             | 23.9             | 24.2             | 24.2             | 21.4             | 21.7             | 21.5             |
|                    |            | 216              | 0            | 25.0                    | 24.8             | 24.4             | 20.7             | 21.1             | 21.3             | 23.9             | 24.2             | 24.2             | 21.4             | 21.8             | 21.5             |
|                    | 256QAM     | 1                | 0            | 22.6                    | 22.9             | 22.6             | 18.7             | 18.8             | 19.0             | 22.3             | 22.0             | 22.0             | 19.6             | 19.9             | 19.8             |
|                    |            | 1                | 1            | 23.0                    | 22.8             | 22.4             | 18.7             | 18.8             | 19.4             | 22.0             | 22.3             | 22.5             | 19.1             | 19.7             | 19.8             |
|                    |            | 108              | 54           | 22.9                    | 22.8             | 22.5             | 18.5             | 19.0             | 19.3             | 22.0             | 22.2             | 22.1             | 19.3             | 19.8             | 19.3             |
|                    |            | 216              | 0            | 22.9                    | 22.6             | 22.5             | 18.6             | 19.1             | 19.2             | 22.0             | 22.3             | 22.1             | 19.4             | 19.7             | 19.4             |

### OUTPUT POWER FOR 5G NR Band n77 (90.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 649666<br>3745.0        | 656000<br>3840.0 | 662333<br>3935.0 | 649666<br>3745.0 | 656000<br>3840.0 | 662333<br>3935.0 | 649666<br>3745.0 | 656000<br>3840.0 | 662333<br>3935.0 | 649666<br>3745.0 | 656000<br>3840.0 | 662333<br>3935.0 |
| 90.0               | BPSK       | 1                | 0            | 23.3                    | 23.7             | 23.2             | 21.0             | 21.6             | 20.5             | 22.9             | 22.5             | 23.0             | 20.7             | 21.0             | 20.9             |
|                    |            | 1                | 1            | 25.7                    | 26.1             | 25.0             | 23.0             | 22.5             | 23.1             | 25.8             | 25.3             | 25.6             | 24.1             | 24.2             | 24.2             |
|                    |            | 120              | 60           | 25.6                    | 25.8             | 25.6             | 22.3             | 22.4             | 22.8             | 25.5             | 25.2             | 25.6             | 24.2             | 24.2             | 24.2             |
|                    |            | 240              | 0            | 25.6                    | 25.2             | 24.5             | 21.9             | 22.1             | 22.4             | 25.5             | 25.4             | 25.6             | 23.6             | 23.6             | 23.6             |
|                    | QPSK       | 1                | 0            | 23.6                    | 23.9             | 23.7             | 20.9             | 21.2             | 21.5             | 23.2             | 23.7             | 23.4             | 21.2             | 21.1             | 21.0             |
|                    |            | 1                | 1            | 26.2                    | 26.7             | 26.1             | 24.8             | 24.7             | 24.9             | 26.2             | 26.5             | 26.4             | 24.5             | 24.5             | 24.5             |
|                    |            | 120              | 60           | 26.3                    | 26.1             | 26.3             | 24.6             | 24.5             | 24.7             | 26.0             | 26.2             | 26.2             | 23.1             | 23.8             | 23.4             |
|                    |            | 240              | 0            | 25.9                    | 25.5             | 25.1             | 23.5             | 23.5             | 23.7             | 25.5             | 25.8             | 25.8             | 23.1             | 23.8             | 23.4             |
|                    | 16QAM      | 1                | 0            | 23.3                    | 23.5             | 23.8             | 21.1             | 21.4             | 21.2             | 23.4             | 23.5             | 23.9             | 20.6             | 21.7             | 21.5             |
|                    |            | 1                | 1            | 25.9                    | 26.3             | 26.0             | 23.7             | 23.7             | 23.7             | 25.7             | 26.1             | 25.6             | 22.6             | 23.8             | 24.2             |
|                    |            | 120              | 60           | 25.9                    | 26.0             | 26.0             | 23.6             | 23.5             | 23.6             | 25.5             | 25.7             | 25.7             | 22.0             | 22.8             | 22.5             |
|                    |            | 240              | 0            | 25.8                    | 25.5             | 25.1             | 22.5             | 22.5             | 22.7             | 24.5             | 24.8             | 24.8             | 22.2             | 22.8             | 21.9             |
|                    | 64QAM      | 1                | 0            | 23.8                    | 24.2             | 23.9             | 21.4             | 21.7             | 21.3             | 22.9             | 23.2             | 23.0             | 21.4             | 21.5             | 21.4             |
|                    |            | 1                | 1            | 25.1                    | 25.4             | 26.0             | 22.5             | 22.2             | 22.7             | 23.9             | 24.7             | 23.8             | 22.1             | 22.8             | 22.1             |
|                    |            | 120              | 60           | 25.3                    | 25.4             | 25.5             | 22.1             | 22.0             | 22.2             | 24.1             | 24.2             | 24.3             | 21.7             | 22.3             | 21.9             |
|                    |            | 240              | 0            | 25.4                    | 25.3             | 25.1             | 22.0             | 22.0             | 22.1             | 24.0             | 24.3             | 24.2             | 21.7             | 22.2             | 22.1             |
|                    | 256QAM     | 1                | 0            | 23.2                    | 23.4             | 23.2             | 19.8             | 20.0             | 20.2             | 22.1             | 22.4             | 22.7             | 19.8             | 19.9             | 20.0             |
|                    |            | 1                | 1            | 23.3                    | 23.1             | 23.5             | 20.2             | 20.1             | 19.7             | 22.1             | 22.5             | 22.0             | 20.1             | 20.2             | 20.1             |
|                    |            | 120              | 60           | 23.3                    | 23.3             | 23.4             | 20.1             | 20.0             | 20.2             | 22.1             | 22.3             | 22.3             | 19.7             | 20.2             | 19.9             |
|                    |            | 240              | 0            | 23.4                    | 23.3             | 22.8             | 19.9             | 20.0             | 20.1             | 22.0             | 22.3             | 22.2             | 19.9             | 20.3             | 19.8             |

### OUTPUT POWER FOR 5G NR Band n77 (100.0 MHz)

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--------------------|------------|------------------|--------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                    |            |                  |              | ANT 7                   |                  |                  | ANT 4            |                  |                  | ANT 9            |                  |                  | ANT 8            |                  |                  |
|                    |            |                  |              | 650000<br>3750.0        | 656000<br>3840.0 | 662000<br>3930.0 | 650000<br>3750.0 | 656000<br>3840.0 | 662000<br>3930.0 | 650000<br>3750.0 | 656000<br>3840.0 | 662000<br>3930.0 | 650000<br>3750.0 | 656000<br>3840.0 | 662000<br>3930.0 |
| 100.0              | BPSK       | 1                | 0            | 23.7                    | 23.1             | 22.2             | 20.1             | 19.8             | 20.2             | 23.2             | 22.5             | 23.1             | 20.5             | 20.7             | 20.7             |
|                    |            | 1                | 1            | 25.5                    | 25.8             | 25.0             | 21.2             | 21.4             | 21.5             | 25.5             | 25.4             | 25.9             | 23.9             | 24.2             | 24.1             |
|                    |            | 135              | 67           | 26.0                    | 25.7             | 25.4             | 21.2             | 21.9             | 21.1             | 25.6             | 25.5             | 25.8             | 24.0             | 24.0             | 24.0             |
|                    |            | 270              | 0            | 25.4                    | 24.5             | 25.4             | 21.1             | 20.9             | 21.0             | 25.7             | 25.6             | 25.8             | 23.4             | 23.6             | 23.6             |
|                    | QPSK       | 1                | 0            | 23.8                    | 23.8             | 23.4             | 20.0             | 20.2             | 20.2             | 23.4             | 23.6             | 23.7             | 20.6             | 20.9             | 21.2             |
|                    |            | 1                | 1            | 26.4                    | 26.5             | 26.2             | 23.6             | 23.4             | 23.7             | 26.3             | 26.4             | 26.5             | 24.2             | 24.4             | 24.5             |
|                    |            | 135              | 67           | 26.7                    | 26.3             | 26.0             | 23.4             | 23.3             | 23.6             | 26.1             | 26.4             | 26.4             | 24.3             | 24.3             | 24.4             |
|                    |            | 270              | 0            | 25.6                    | 25.3             | 26.0             | 22.4             | 22.4             | 22.5             | 25.5             | 26.1             | 25.8             | 23.2             | 23.3             | 23.4             |
|                    | 16QAM      | 1                | 0            | 24.2                    | 24.0             | 23.6             | 20.2             | 20.3             | 20.3             | 23.2             | 23.8             | 23.7             | 20.3             | 20.5             | 20.9             |
|                    |            | 1                | 1            | 26.1                    | 26.3             | 26.2             | 22.5             | 22.3             | 22.5             | 26.0             | 26.3             | 26.5             | 23.0             | 23.2             | 23.2             |
|                    |            | 135              | 67           | 26.5                    | 26.3             | 26.0             | 22.4             | 22.2             | 22.5             | 25.7             | 25.8             | 25.9             | 23.3             | 23.3             | 23.5             |
|                    |            | 270              | 0            | 25.7                    | 25.3             | 25.7             | 21.4             | 21.3             | 21.5             | 24.6             | 25.0             | 24.9             | 22.3             | 22.3             | 22.4             |
|                    | 64QAM      | 1                | 0            | 24.2                    | 24.4             | 23.5             | 19.9             | 20.0             | 20.3             | 22.4             | 23.2             | 22.8             | 20.9             | 20.9             | 21.4             |
|                    |            | 1                | 1            | 26.3                    | 25.9             | 25.6             | 21.0             | 21.3             | 21.4             | 24.1             | 24.5             | 24.6             | 22.1             | 21.9             | 22.3             |
|                    |            | 135              | 67           | 25.8                    | 25.6             | 25.4             | 20.9             | 20.7             | 21.0             | 24.0             | 24.4             | 24.4             | 21.8             | 21.8             | 21.9             |
|                    |            | 270              | 0            | 25.6                    | 25.3             | 25.1             | 20.9             | 20.8             | 21.0             | 24.1             | 24.5             | 24.4             | 21.7             | 21.8             | 21.9             |
|                    | 256QAM     | 1                | 0            | 23.6                    | 23.3             | 22.6             | 18.7             | 18.6             | 18.6             | 22.0             | 22.3             | 21.9             | 19.7             | 19.8             | 20.0             |
|                    |            | 1                | 1            | 23.8                    | 23.8             | 23.0             | 19.0             | 18.7             | 18.9             | 22.3             | 22.2             | 22.4             | 19.8             | 19.8             | 19.9             |
|                    |            | 135              | 67           | 23.8                    | 23.5             | 23.5             | 18.8             | 18.8             | 19.0             | 22.2             | 22.4             | 22.4             | 19.8             | 19.8             | 19.9             |
|                    |            | 270              | 0            | 23.8                    | 23.5             | 23.1             | 18.8             | 18.8             | 19.1             | 22.1             | 22.5             | 22.4             | 19.7             | 19.8             | 19.9             |

## 8. CONDUCTED TEST RESULTS

### 8.1. OCCUPIED BANDWIDTH

#### **RULE PART(S)**

FCC: §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.

#### **RESULTS**

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested. Only QPSK plots are reported to show setting parameter complies with testing method/procedure.

## LTE BAND 2

| Band       | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 2 | 1.4MHz, QPSK | 6/0                     | 1880.0 | 1.080        | 1.223          |
|            | 1.4MHz,16QAM |                         |        | 1.082        | 1.226          |
|            | 3MHz, QPSK   | 15/0                    |        | 2.687        | 2.975          |
|            | 3MHz, 16QAM  |                         |        | 2.685        | 2.993          |
|            | 5MHz, QPSK   | 25/0                    |        | 4.504        | 4.901          |
|            | 5MHz, 16QAM  |                         |        | 4.487        | 4.931          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.963        | 9.602          |
|            | 10MHz, 16QAM |                         |        | 8.932        | 9.583          |
|            | 15MHz, QPSK  | 75/0                    |        | 13.381       | 14.493         |
|            | 15MHz, 16QAM |                         |        | 13.392       | 14.378         |
|            | 20MHz, QPSK  | 100/0                   |        | 17.834       | 19.268         |
|            | 20MHz, 16QAM |                         |        | 17.823       | 19.126         |
|            | 20MHz, QPSK  | 1/0                     |        | 0.31782      | 0.488          |

## LTE BAND 5

| Band       | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 5 | 1.4MHz, QPSK  | 6/0                     | 836.5  | 1.082        | 1.226          |
|            | 1.4MHz, 16QAM |                         |        | 1.084        | 1.230          |
|            | 3MHz, QPSK    | 15/0                    |        | 2.693        | 2.980          |
|            | 3MHz, 16QAM   |                         |        | 2.692        | 3.002          |
|            | 5MHz, QPSK    | 25/0                    |        | 4.493        | 4.914          |
|            | 5MHz, 16QAM   |                         |        | 4.479        | 4.916          |
|            | 10MHz, QPSK   | 50/0                    |        | 8.970        | 9.692          |
|            | 10MHz, 16QAM  |                         |        | 8.974        | 9.749          |

## 5G NR Band n5

| Band          | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|---------------|--------------|-------------------------|--------|--------------|----------------|
| 5G NR Band n5 | 15MHz, BPSK  | 75/0                    | 836.5  | 13.388       | 14.065         |
|               | 15MHz, QPSK  |                         |        | 13.440       | 14.51          |
|               | 15MHz, 16QAM |                         |        | 13.436       | 14.47          |
|               | 20MHz, BPSK  | 100/0                   |        | 17.834       | 18.60          |
|               | 20MHz, QPSK  |                         |        | 17.851       | 19.00          |
|               | 20MHz, 16QAM |                         |        | 17.821       | 18.81          |

### LTE BAND 7

| Band       | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 7 | 5MHz, QPSK   | 25/0                    | 2535.0 | 4.499        | 4.924          |
|            | 5MHz, 16QAM  |                         |        | 4.487        | 4.930          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.942        | 9.639          |
|            | 10MHz, 16QAM |                         |        | 8.937        | 9.615          |
|            | 15MHz, QPSK  | 75/0                    |        | 13.401       | 14.342         |
|            | 15MHz, 16QAM |                         |        | 13.415       | 14.427         |
|            | 20MHz, QPSK  | 100/0                   |        | 17.821       | 19.177         |
|            | 20MHz, 16QAM |                         |        | 17.869       | 19.113         |
|            | 20MHz, QPSK  | 1/0                     |        | 0.3011       | 0.5183         |

### LTE BAND 12

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 12 | 1.4MHz, QPSK | 6/0                     | 707.5  | 1.079        | 1.208          |
|             | 1.4MHz,16QAM |                         |        | 1.085        | 1.227          |
|             | 3MHz, QPSK   | 15/0                    |        | 2.686        | 2.964          |
|             | 3MHz, 16QAM  |                         |        | 2.681        | 2.932          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.491        | 4.937          |
|             | 5MHz, 16QAM  |                         |        | 4.482        | 4.910          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.949        | 9.680          |
|             | 10MHz, 16QAM |                         |        | 8.923        | 9.618          |

### 5G NR Band n12

| Band           | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------------|--------------|-------------------------|--------|--------------|----------------|
| 5G NR Band n12 | 15MHz, BPSK  | 75/0                    | 707.5  | 13.352       | 13.927         |
|                | 15MHz, QPSK  |                         |        | 13.420       | 14.15          |
|                | 15MHz, 16QAM |                         |        | 13.342       | 13.89          |
|                | 15MHz, QPSK  | 1/0                     |        | 0.3216       | 0.6637         |

### LTE BAND 13

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 13 | 5MHz, QPSK   | 25/0                    | 782.0  | 4.510        | 4.973          |
|             | 5MHz, 16QAM  |                         |        | 4.497        | 4.975          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.973        | 9.661          |
|             | 10MHz, 16QAM |                         |        | 8.971        | 9.719          |

### LTE BAND 14

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 14 | 5MHz, QPSK   | 25/0                    | 793.0  | 4.487        | 4.936          |
|             | 5MHz, 16QAM  |                         |        | 4.483        | 4.918          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.985        | 9.740          |
|             | 10MHz, 16QAM |                         |        | 8.977        | 9.747          |

### LTE BAND 17

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 17 | 5MHz, QPSK   | 25/0                    | 710.0  | 4.495        | 4.918          |
|             | 5MHz, 16QAM  |                         |        | 4.476        | 4.882          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.958        | 9.793          |
|             | 10MHz, 16QAM |                         |        | 8.973        | 9.768          |

### LTE BAND 25

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 25 | 1.4MHz, QPSK | 6/0                     | 1882.5 | 1.077        | 1.216          |
|             | 1.4MHz,16QAM |                         |        | 1.085        | 1.232          |
|             | 3MHz, QPSK   | 15/0                    |        | 2.683        | 2.959          |
|             | 3MHz, 16QAM  |                         |        | 2.688        | 2.939          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.492        | 4.933          |
|             | 5MHz, 16QAM  |                         |        | 4.489        | 4.900          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.908        | 9.695          |
|             | 10MHz, 16QAM |                         |        | 8.924        | 9.751          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.427       | 14.481         |
|             | 15MHz, 16QAM |                         |        | 13.386       | 14.506         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.836       | 19.249         |
|             | 20MHz, 16QAM |                         |        | 17.826       | 19.213         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.3173       | 0.5205         |

### LTE BAND 26 (PART 90S)

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 26 | 1.4MHz, QPSK  | 6/0                     | 819.0  | 1.078        | 1.219          |
|             | 1.4MHz, 16QAM |                         |        | 1.083        | 1.224          |
|             | 3MHz, QPSK    | 15/0                    |        | 2.692        | 2.955          |
|             | 3MHz, 16QAM   |                         |        | 2.677        | 2.985          |
|             | 5MHz, QPSK    | 25/0                    |        | 4.493        | 4.935          |
|             | 5MHz, 16QAM   |                         |        | 4.492        | 4.922          |
|             | 10MHz, QPSK   | 50/0                    |        | 8.962        | 9.745          |
|             | 10MHz, 16QAM  |                         |        | 8.982        | 9.777          |

### LTE BAND 30

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 30 | 5MHz, QPSK   | 25/0                    | 2310.0 | 4.4918       | 4.922          |
|             | 5MHz, 16QAM  |                         |        | 4.4925       | 4.904          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9625       | 9.649          |
|             | 10MHz, 16QAM |                         |        | 8.9388       | 9.695          |

### LTE BAND 41

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 41 | 5MHz, QPSK   | 25/0                    | 2593.0 | 4.5011       | 4.835          |
|             | 5MHz, 16QAM  |                         |        | 4.4956       | 4.851          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9305       | 9.561          |
|             | 10MHz, 16QAM |                         |        | 8.9631       | 9.461          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4208      | 14.202         |
|             | 15MHz, 16QAM |                         |        | 13.4337      | 14.394         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.7804      | 19.275         |
|             | 20MHz, 16QAM |                         |        | 17.8440      | 18.844         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.3122       | 0.4518         |

### 5G NR Band n41

| Band           | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------------|---------------|-------------------------|--------|--------------|----------------|
| 5G NR Band n41 | 20MHz, BPSK   | 50/0                    | 2593.0 | 17.884       | 19.33          |
|                | 20MHz, QPSK   |                         |        | 17.876       | 19.27          |
|                | 20MHz, 16QAM  |                         |        | 17.890       | 19.483         |
|                | 40MHz, BPSK   | 100/0                   |        | 35.472       | 37.12          |
|                | 40MHz, QPSK   |                         |        | 35.595       | 36.86          |
|                | 40MHz, 16QAM  |                         |        | 35.662       | 36.66          |
|                | 50MHz, BPSK   | 128/0                   |        | 45.578       | 47.33          |
|                | 50MHz, QPSK   |                         |        | 45.486       | 47.22          |
|                | 50MHz, 16QAM  |                         |        | 45.557       | 47.32          |
|                | 60MHz, BPSK   | 162/0                   |        | 57.693       | 59.71          |
|                | 60MHz, QPSK   |                         |        | 57.754       | 59.63          |
|                | 60MHz, 16QAM  |                         |        | 57.757       | 59.67          |
|                | 80MHz, BPSK   | 216/0                   |        | 76.856       | 79.59          |
|                | 80MHz, QPSK   |                         |        | 76.864       | 79.49          |
|                | 80MHz, 16QAM  |                         |        | 76.903       | 76.57          |
|                | 90MHz, BPSK   | 240/0                   |        | 85.565       | 88.40          |
|                | 90MHz, QPSK   |                         |        | 85.516       | 88.33          |
|                | 90MHz, 16QAM  |                         |        | 85.428       | 88.28          |
|                | 100MHz, BPSK  | 270/0                   |        | 95.975       | 99.29          |
|                | 100MHz, QPSK  |                         |        | 96.467       | 99.34          |
|                | 100MHz, 16QAM |                         |        | 95.743       | 99.35          |
|                | 100MHz, QPSK  | 1/0                     |        | 0.4971       | 0.8054         |

### LTE BAND 48

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 48 | 5MHz, QPSK   | 25/0                    | 3625.0 | 4.4694       | 4.705          |
|             | 5MHz, 16QAM  |                         |        | 4.4805       | 4.904          |
|             | 10MHz, QPSK  | 50/0                    |        | 9.0020       | 9.679          |
|             | 10MHz, 16QAM |                         |        | 8.9429       | 9.451          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.3377      | 14.087         |
|             | 15MHz, 16QAM |                         |        | 13.3620      | 14.056         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.8585      | 18.765         |
|             | 20MHz, 16QAM |                         |        | 17.8931      | 18.994         |

### LTE BAND 66

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 66 | 1.4MHz, QPSK | 6/0                     | 1745.0 | 1.092        | 1.236          |
|             | 1.4MHz,16QAM |                         |        | 1.080        | 1.233          |
|             | 3MHz, QPSK   | 15/0                    |        | 2.689        | 2.946          |
|             | 3MHz, 16QAM  |                         |        | 2.682        | 2.956          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.496        | 4.870          |
|             | 5MHz, 16QAM  |                         |        | 4.497        | 4.879          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.966        | 9.619          |
|             | 10MHz, 16QAM |                         |        | 8.942        | 9.577          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.416       | 14.513         |
|             | 15MHz, 16QAM |                         |        | 13.403       | 14.414         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.832       | 19.158         |
|             | 20MHz, 16QAM |                         |        | 17.875       | 19.277         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.30876      | 0.519          |

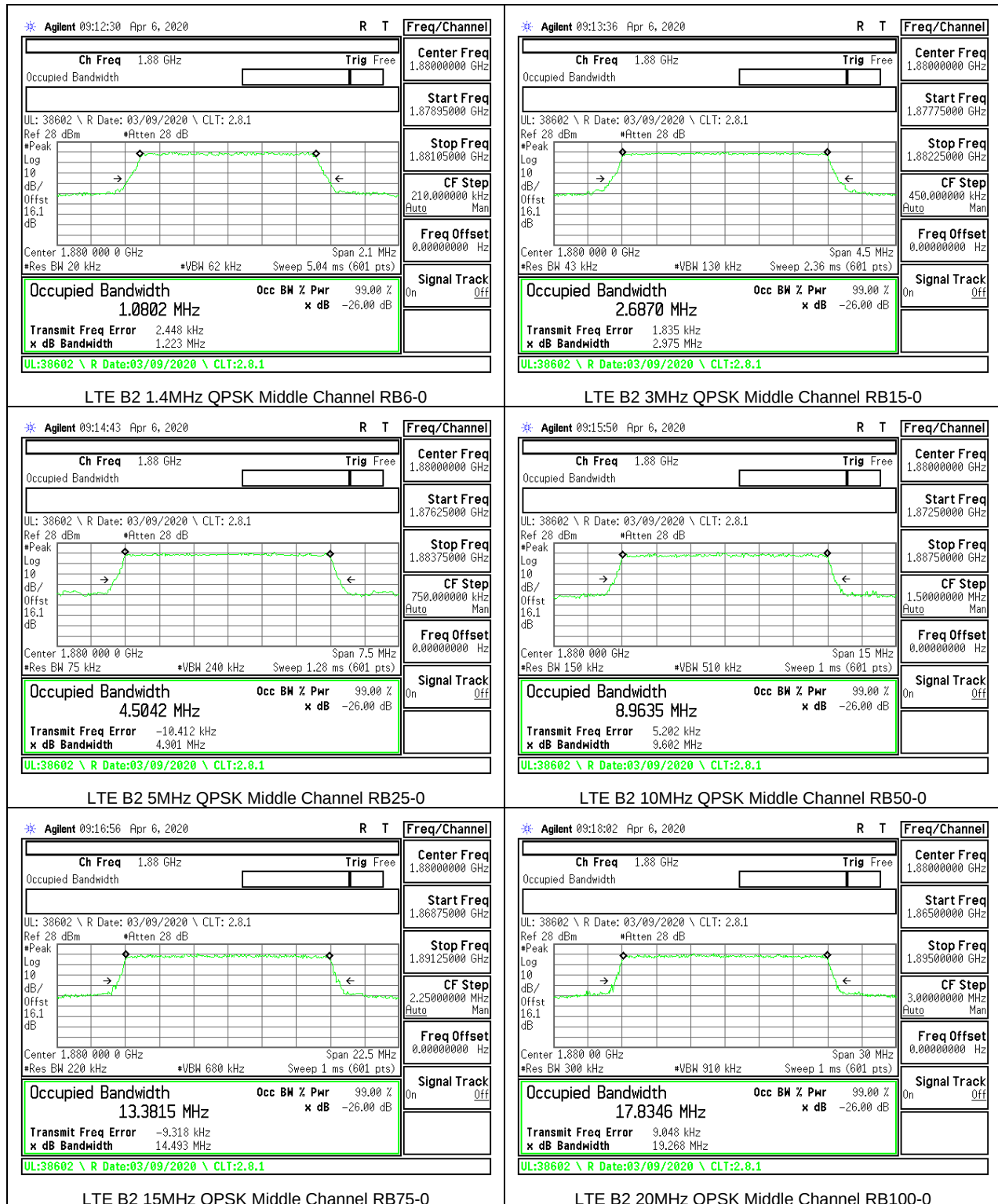
### LTE BAND 71

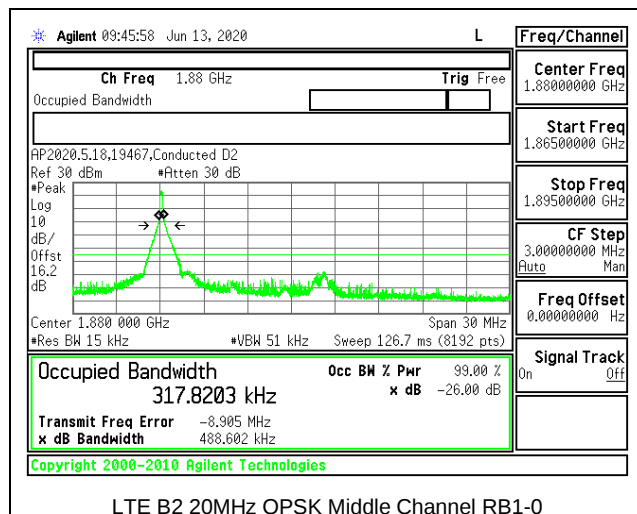
| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 71 | 5MHz, QPSK   | 25/0                    | 680.5  | 4.491        | 4.873          |
|             | 5MHz, 16QAM  |                         |        | 4.488        | 4.899          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.936        | 9.671          |
|             | 10MHz, 16QAM |                         |        | 8.953        | 9.510          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.395       | 14.335         |
|             | 15MHz, 16QAM |                         |        | 13.398       | 14.391         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.836       | 19.141         |
|             | 20MHz, 16QAM |                         |        | 17.885       | 19.235         |

## 5G NR Band n77

| Band           | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------------|---------------|-------------------------|--------|--------------|----------------|
| 5G NR Band n77 | 20MHz, BPSK   | 50/0                    | 3840.0 | 17.724       | 18.75          |
|                | 20MHz, QPSK   |                         |        | 17.825       | 18.59          |
|                | 20MHz, 16QAM  |                         |        | 17.897       | 18.55          |
|                | 40MHz, BPSK   | 100/0                   |        | 37.894       | 39.17          |
|                | 40MHz, QPSK   |                         |        | 35.717       | 36.99          |
|                | 40MHz, 16QAM  |                         |        | 35.601       | 37.06          |
|                | 50MHz, BPSK   | 128/0                   |        | 45.502       | 47.31          |
|                | 50MHz, QPSK   |                         |        | 45.590       | 47.33          |
|                | 50MHz, 16QAM  |                         |        | 45.695       | 47.45          |
|                | 60MHz, BPSK   | 162/0                   |        | 57.679       | 59.95          |
|                | 60MHz, QPSK   |                         |        | 57.679       | 59.63          |
|                | 60MHz, 16QAM  |                         |        | 57.667       | 59.73          |
|                | 80MHz, BPSK   | 216/0                   |        | 76.967       | 79.51          |
|                | 80MHz, QPSK   |                         |        | 77.007       | 79.43          |
|                | 80MHz, 16QAM  |                         |        | 76.648       | 79.69          |
|                | 90MHz, BPSK   | 240/0                   |        | 85.396       | 88.36          |
|                | 90MHz, QPSK   |                         |        | 85.525       | 88.62          |
|                | 90MHz, 16QAM  |                         |        | 86.689       | 88.48          |
|                | 100MHz, BPSK  | 270/0                   |        | 95.982       | 99.14          |
|                | 100MHz, QPSK  |                         |        | 96.242       | 99.54          |
|                | 100MHz, 16QAM |                         |        | 96.240       | 99.27          |
|                |               | 100MHz, QPSK            |        | 1/0          | 0.4957         |

## 8.1.1. LTE BAND 2





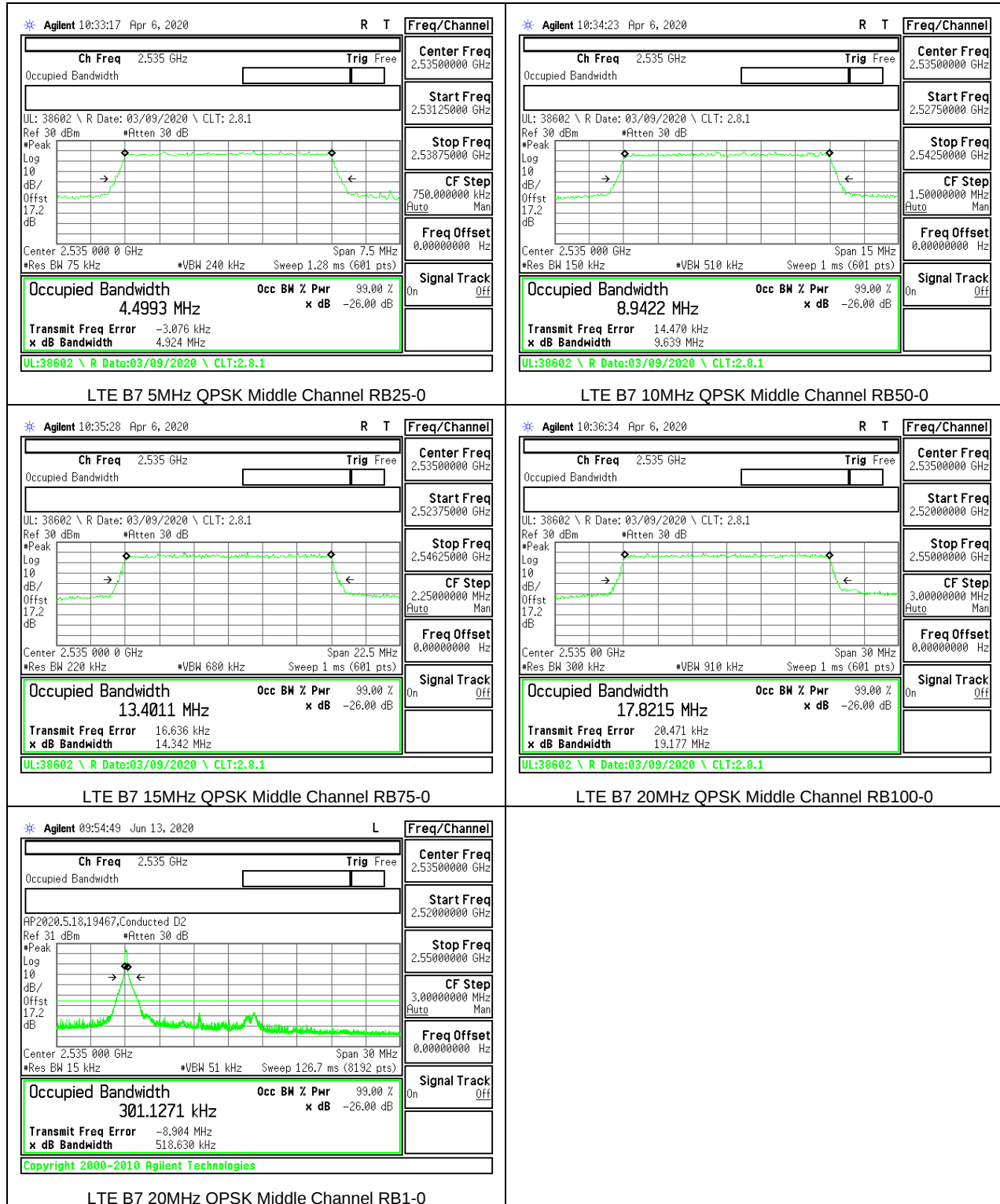
## 8.1.2. LTE BAND 5



## 8.1.3. 5G NR Band n5

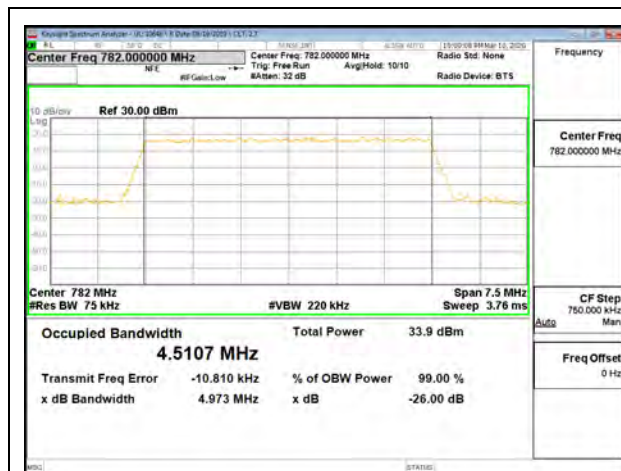


## 8.1.4. LTE BAND 7





### 8.1.7. LTE BAND 13



LTE B13 5MHz QPSK Middle Channel RB25-0



LTE B13 10MHz QPSK Middle Channel RB50-0

### 8.1.8. LTE BAND 14

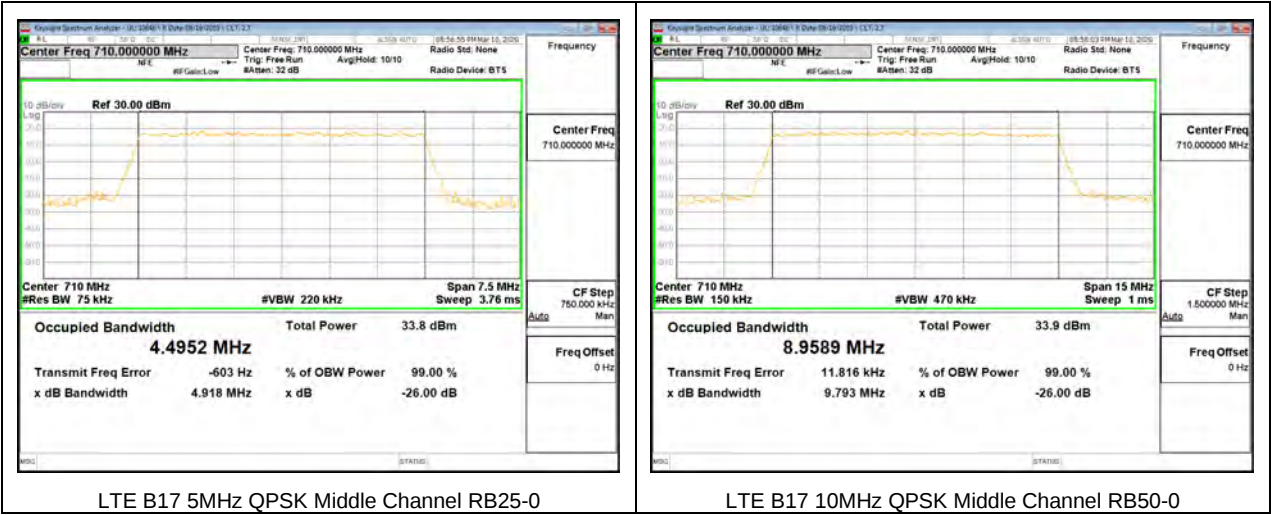


LTE B14 5MHz QPSK Middle Channel RB25-0

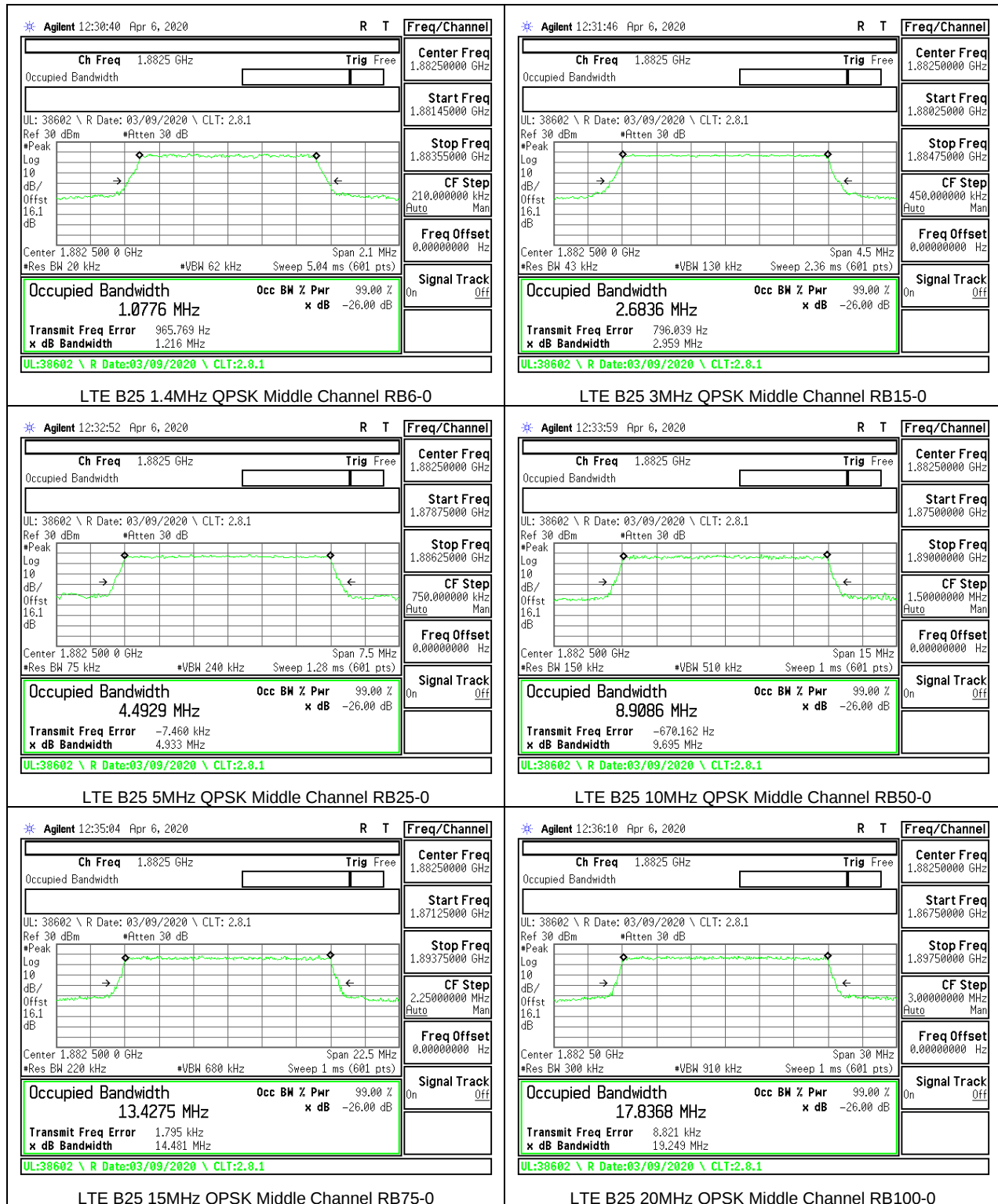


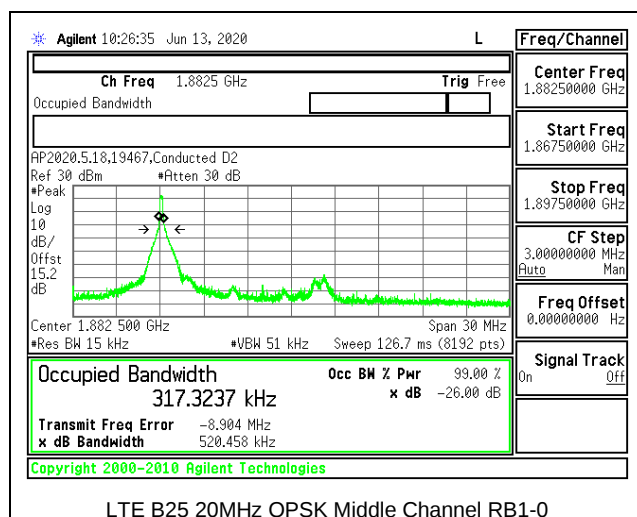
LTE B14 10MHz QPSK Middle Channel RB50-0

8.1.9. LTE BAND 17

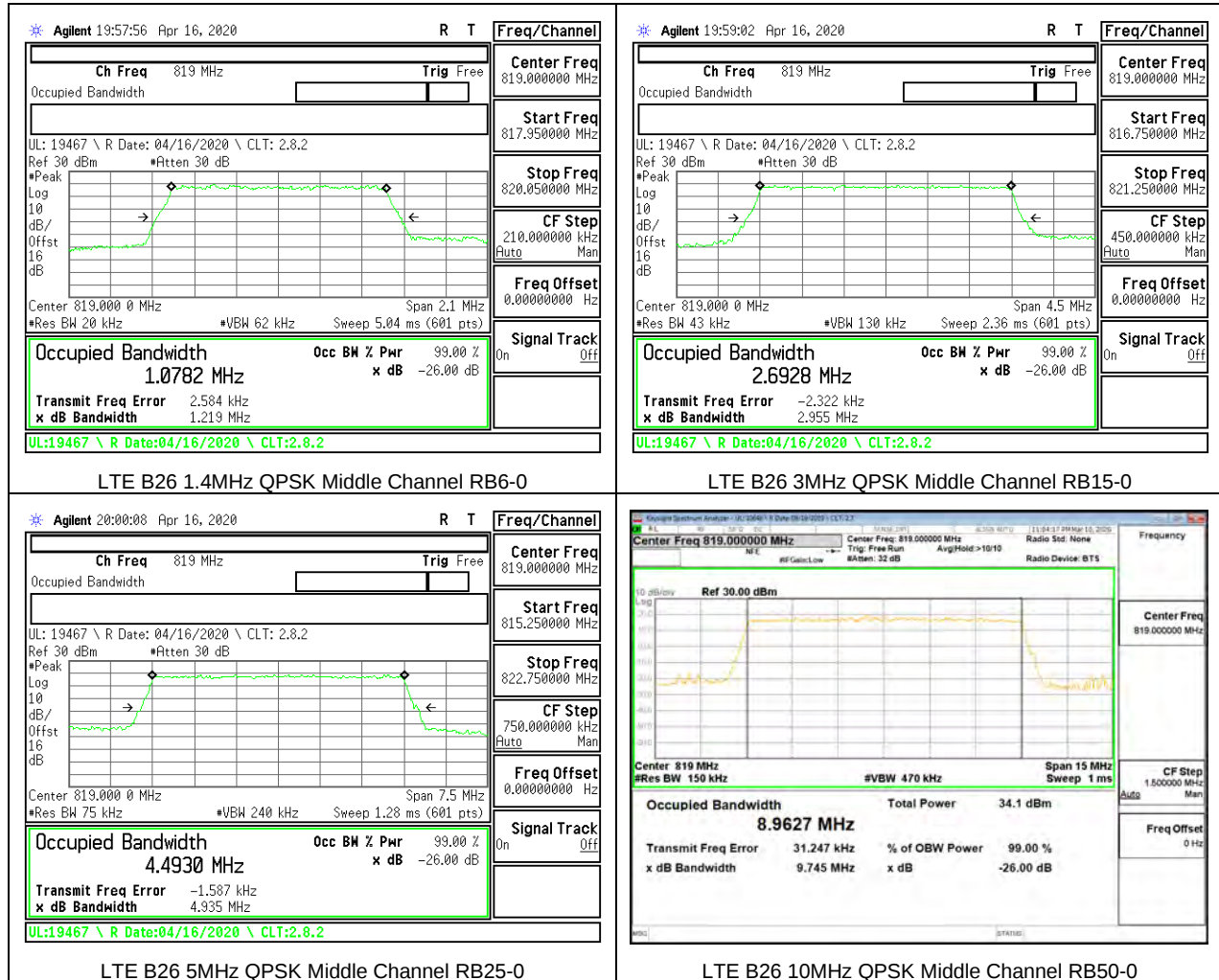


## 8.1.10. LTE BAND 25

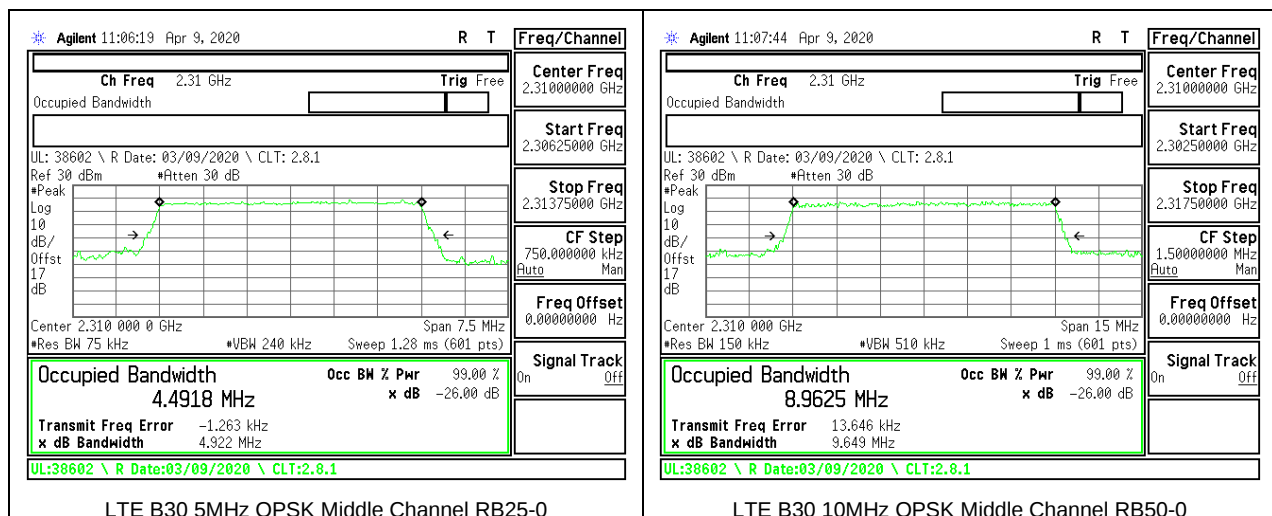




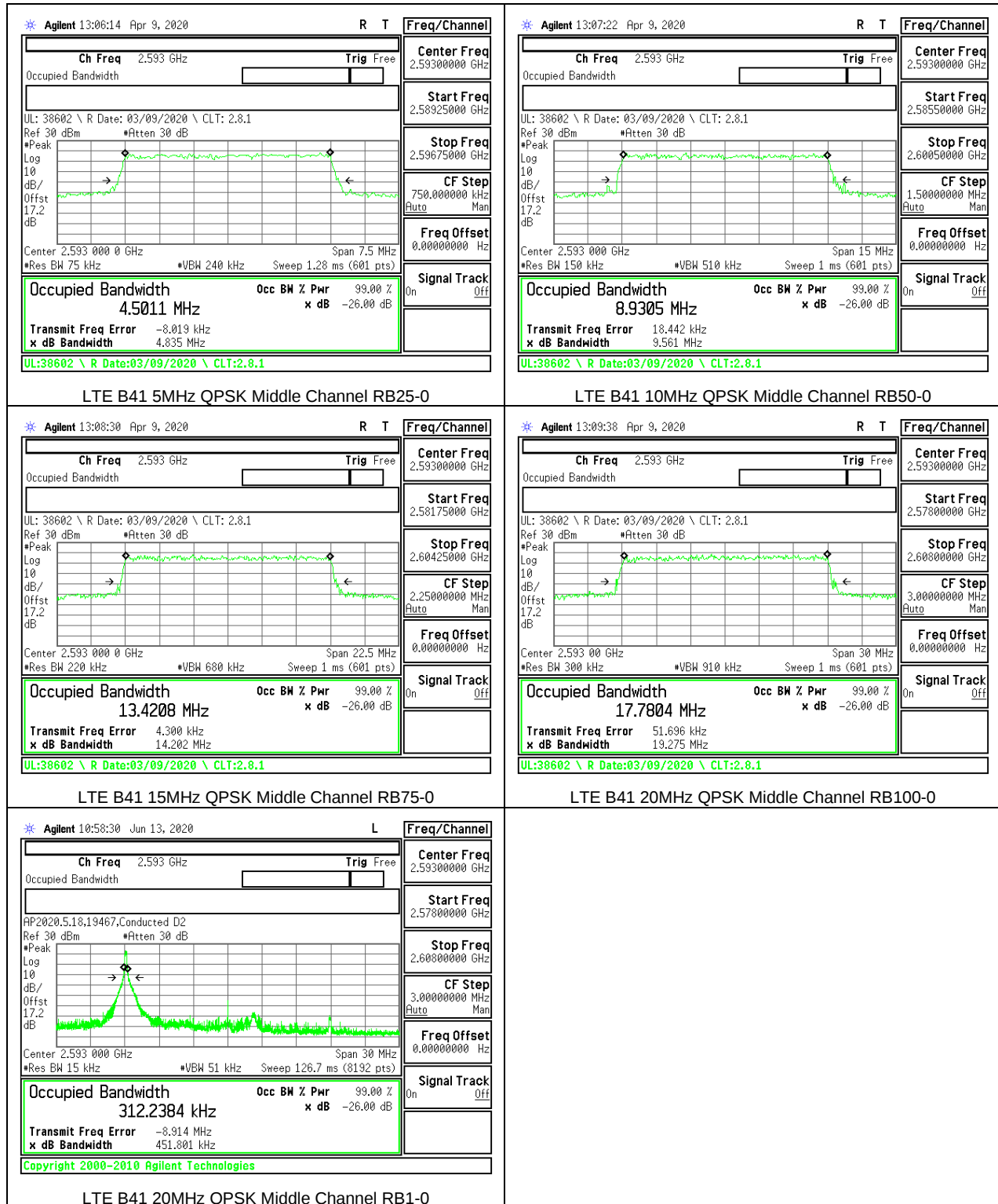
### 8.1.11. LTE BAND 26 (PART 90S)



### 8.1.12. LTE BAND 30

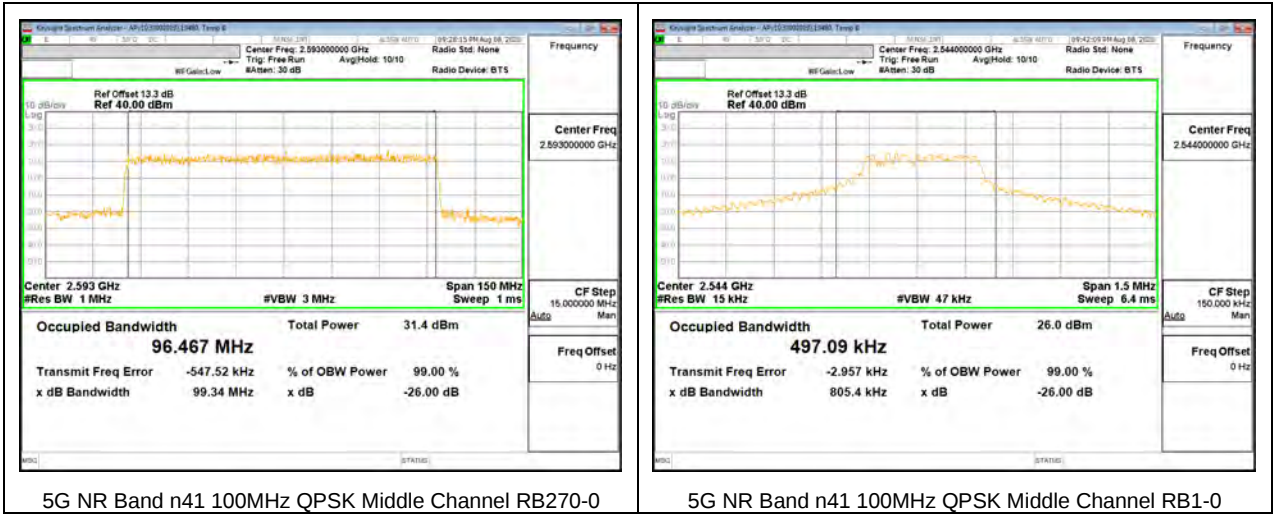


### 8.1.13. LTE BAND 41



### 8.1.14. 5G NR Band n41

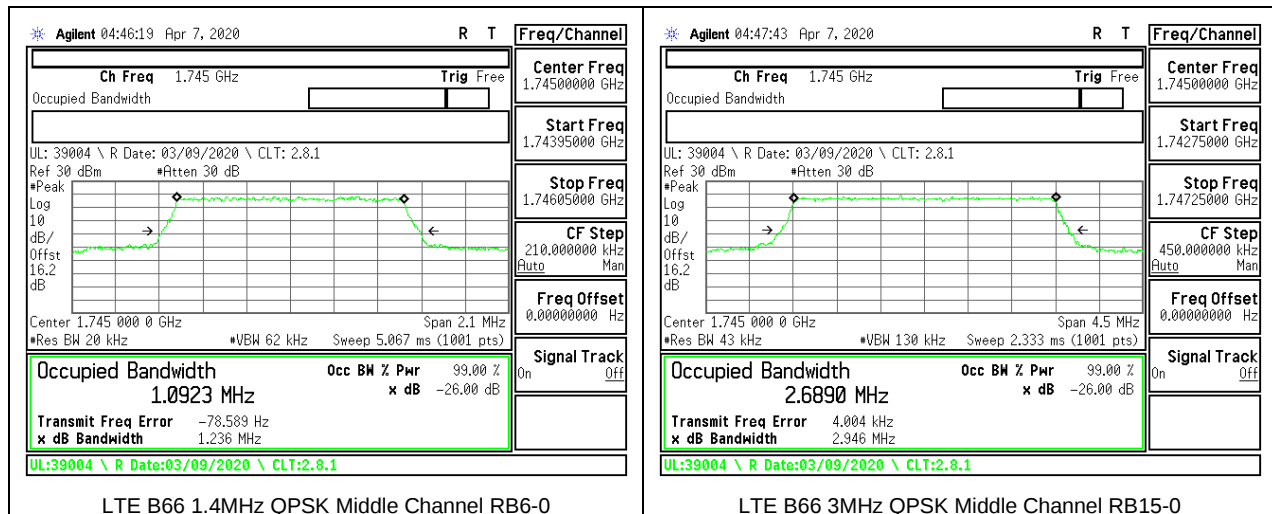


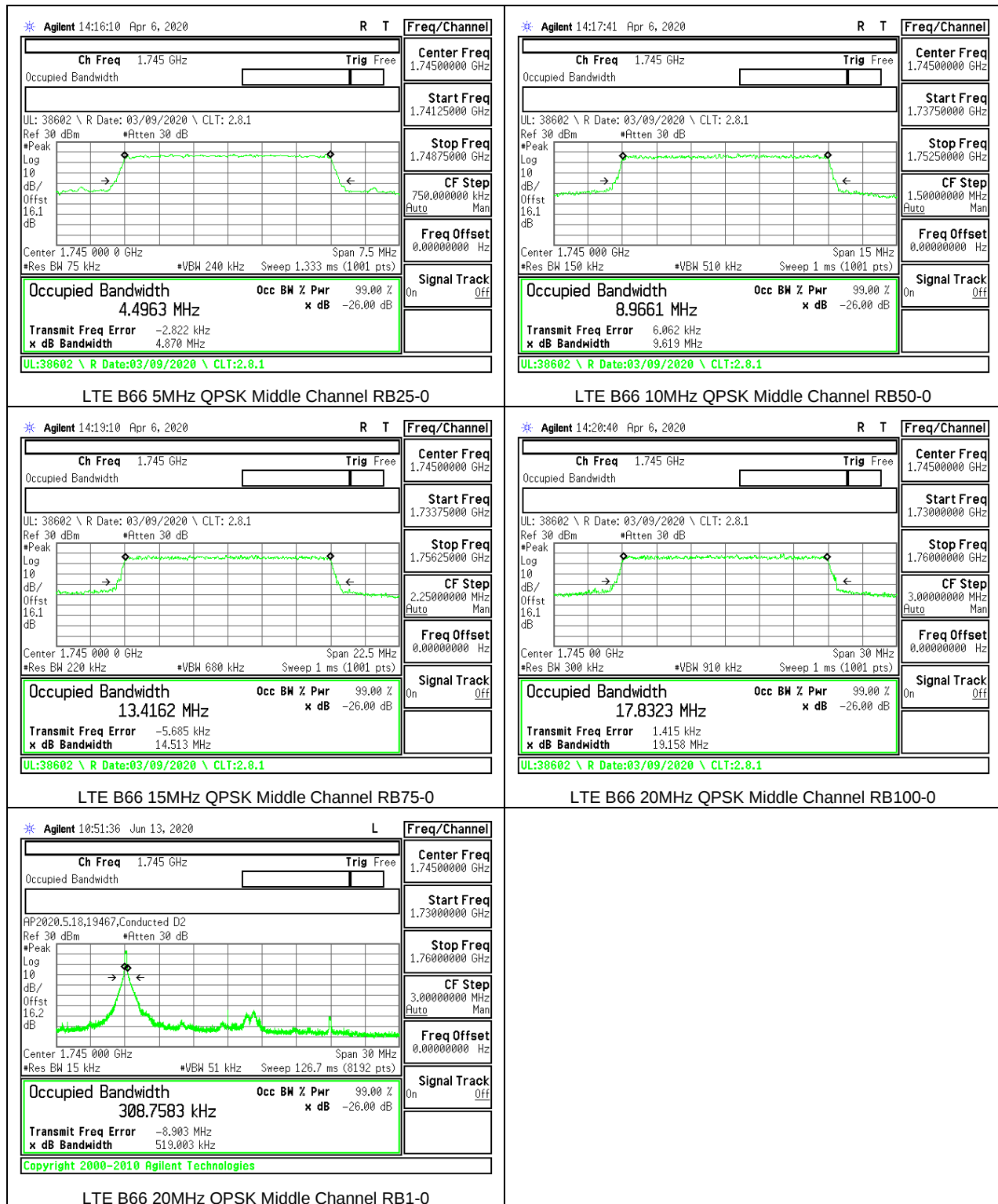


### 8.1.15. LTE BAND 48

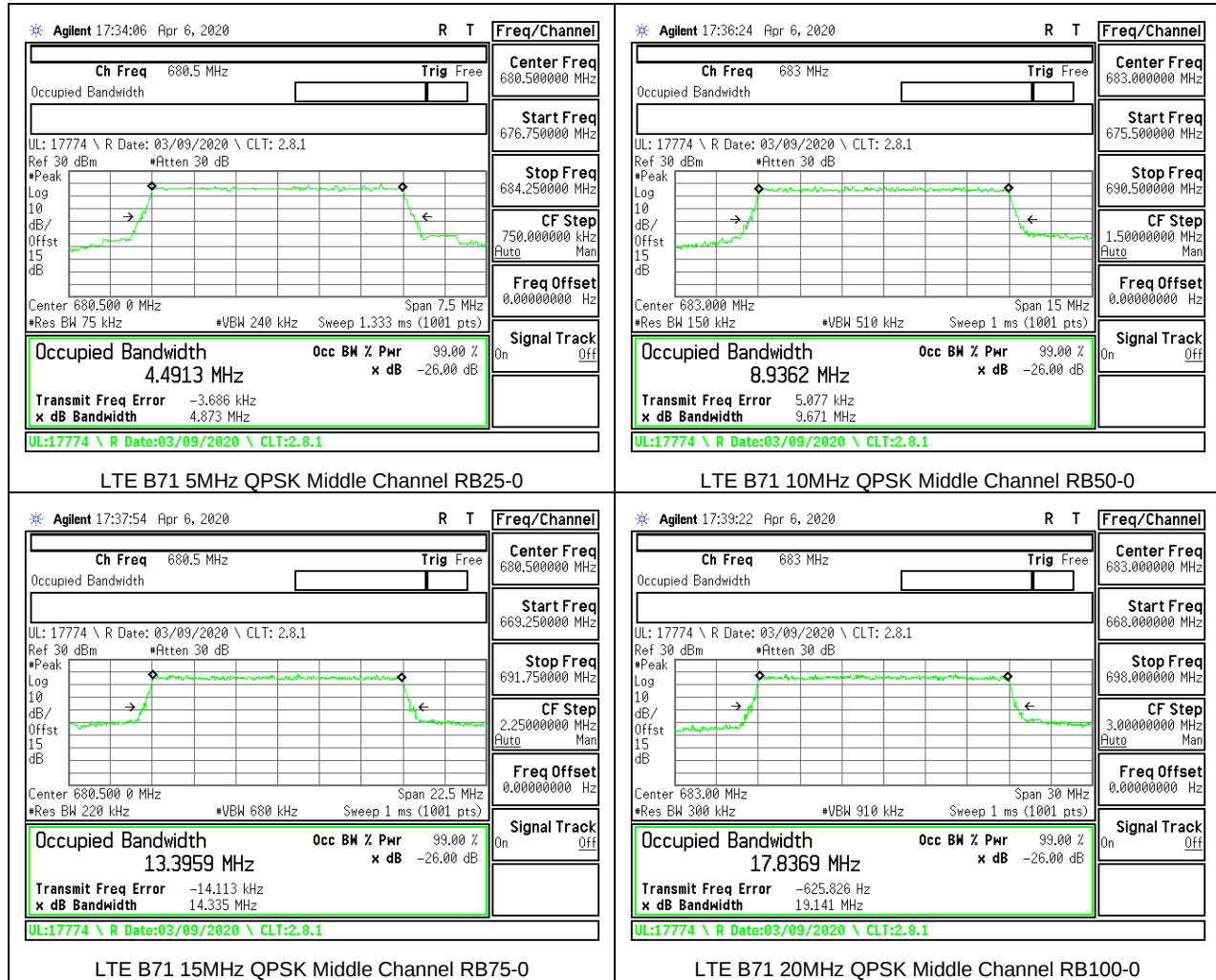


### 8.1.16. LTE BAND 66





## 8.1.17. LTE BAND 71



### 8.1.18. 5G NR Band n77



5G NR Band n77 20MHz QPSK Middle Channel RB50-0

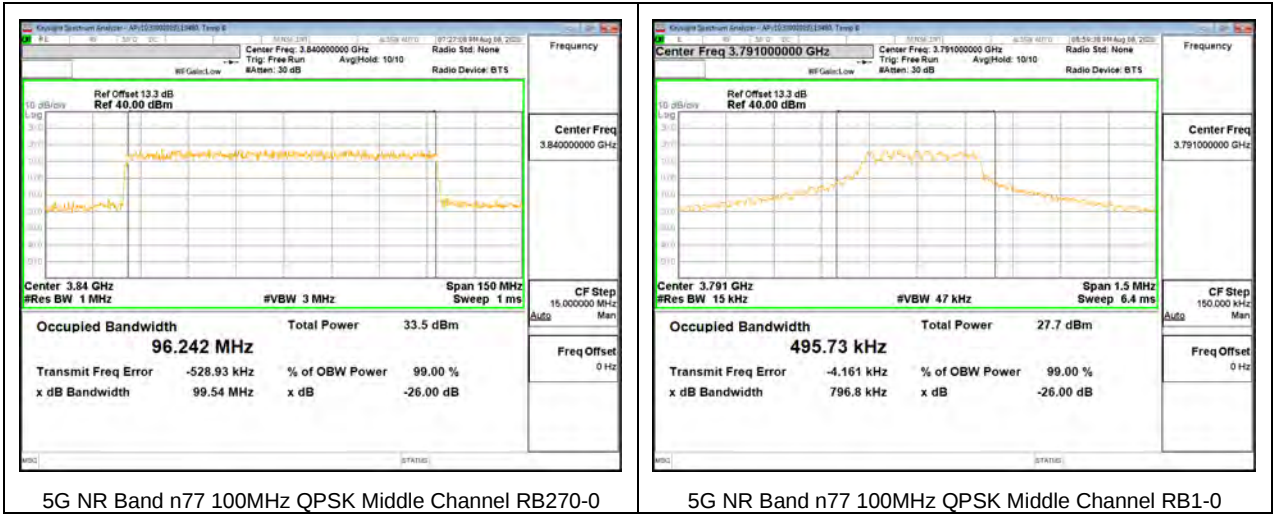
5G NR Band n77 40MHz QPSK Middle Channel RB100-0

5G NR Band n77 50MHz QPSK Middle Channel RB128-0

5G NR Band n77 60MHz QPSK Middle Channel RB162-0

5G NR Band n77 80MHz QPSK Middle Channel RB216-0

5G NR Band n77 90MHz QPSK Middle Channel RB240-0



## 8.2. BAND EDGE AND EMISSION MASK

### **TEST PROCEDURE**

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

1. Set the spectrum analyzer span to include the block edge frequency.
2. Set a marker to point the corresponding band edge frequency in each test case.
3. Set display line at -13 dBm
4. Set resolution bandwidth to at least 1% of emission bandwidth.

### **TEST PROCEDURE (FCC LTE BAND 14)**

(b)ACP measurement procedure. The following are the procedures for making the transmitter ACP measurements. For all measurements modulate the transmitter as it would be modulated in normal operating conditions. For time division multiple access (TDMA) systems, the measurements are to be made under TDMA operation only during time slots when the transmitter is active. All measurements are made at the transmitter's output port. If a transmitter has an integral antenna, a suitable power coupling device shall be used to couple the RF signal to the measurement instrument. The coupling device shall substantially maintain the proper transmitter load impedance. The ACP measurements may be made with a spectrum analyzer capable of making direct ACP measurements. "Measurement bandwidth", as used for non-swept measurements, implies an instrument that measures the power in many narrow bandwidths equal to the nominal resolution bandwidth and integrates these powers to determine the total power in the specified measurement bandwidth.

(1)Setting reference level. Set transmitter to maximum output power. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. For example, for a 6.25 kHz transmitter set the measurement bandwidth to 6.25 kHz. Set the frequency offset of the measurement bandwidth to zero and adjust the center frequency of the instrument to the assigned center frequency to measure the average power level of the transmitter. Record this power level in dBm as the "reference power level."

(2)Non-swept power measurement. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth and frequency offset from the assigned center frequency as shown in the tables in §90.543 (a) above. Any value of resolution bandwidth may be used as long as it does not exceed 2 percent of the specified measurement bandwidth. Measure the power level in dBm. These measurements should be made at maximum power. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

(3)Swept power measurement. Set a spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and average, sample, or RMS detection. Set the reference level of the spectrum analyzer to the RMS value of the transmitter power. Sweep above and below the carrier frequency to the limits defined in the tables. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

### **TEST PROCEDURE (FCC LTE BAND 7, 41)**

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may

be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

### **TEST PROCEDURE (FCC LTE BAND 30)**

(5) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### **TEST PROCEDURE (FCC LTE BAND 48)**

(i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(ii) When measuring unwanted emissions to demonstrate compliance with the limits, the CBSD and End User Device nominal carrier frequency/channel shall be adjusted as close to the licensee's authorized frequency block edges, both upper and lower, as the design permits.

(iii) Compliance with emission limits shall be demonstrated using either average (RMS)-detected or peak-detected power measurement techniques.

### **RESULTS**

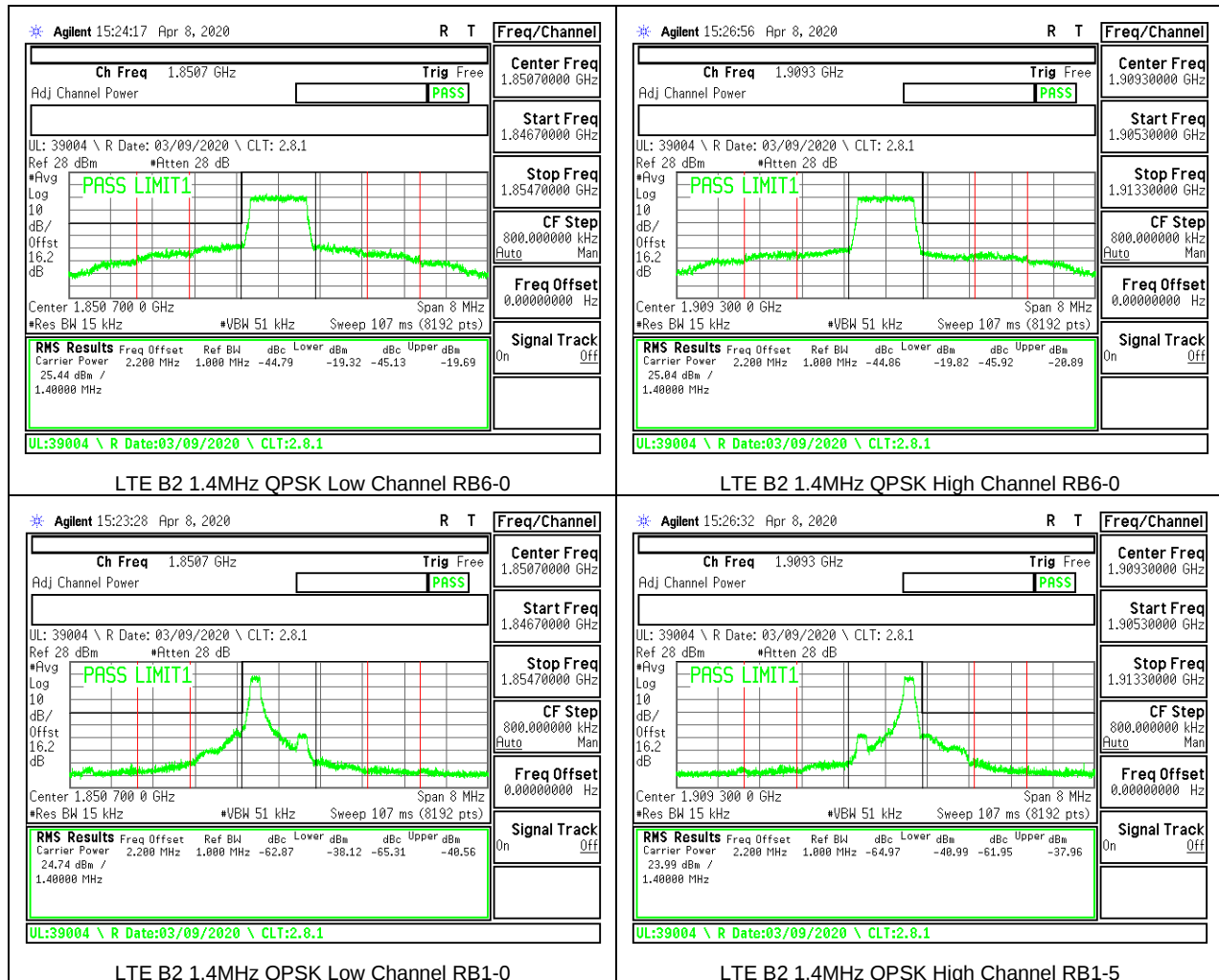
Both QPSK and 16QAM modes are tested, QPSK bandwidths results are reported as worst case

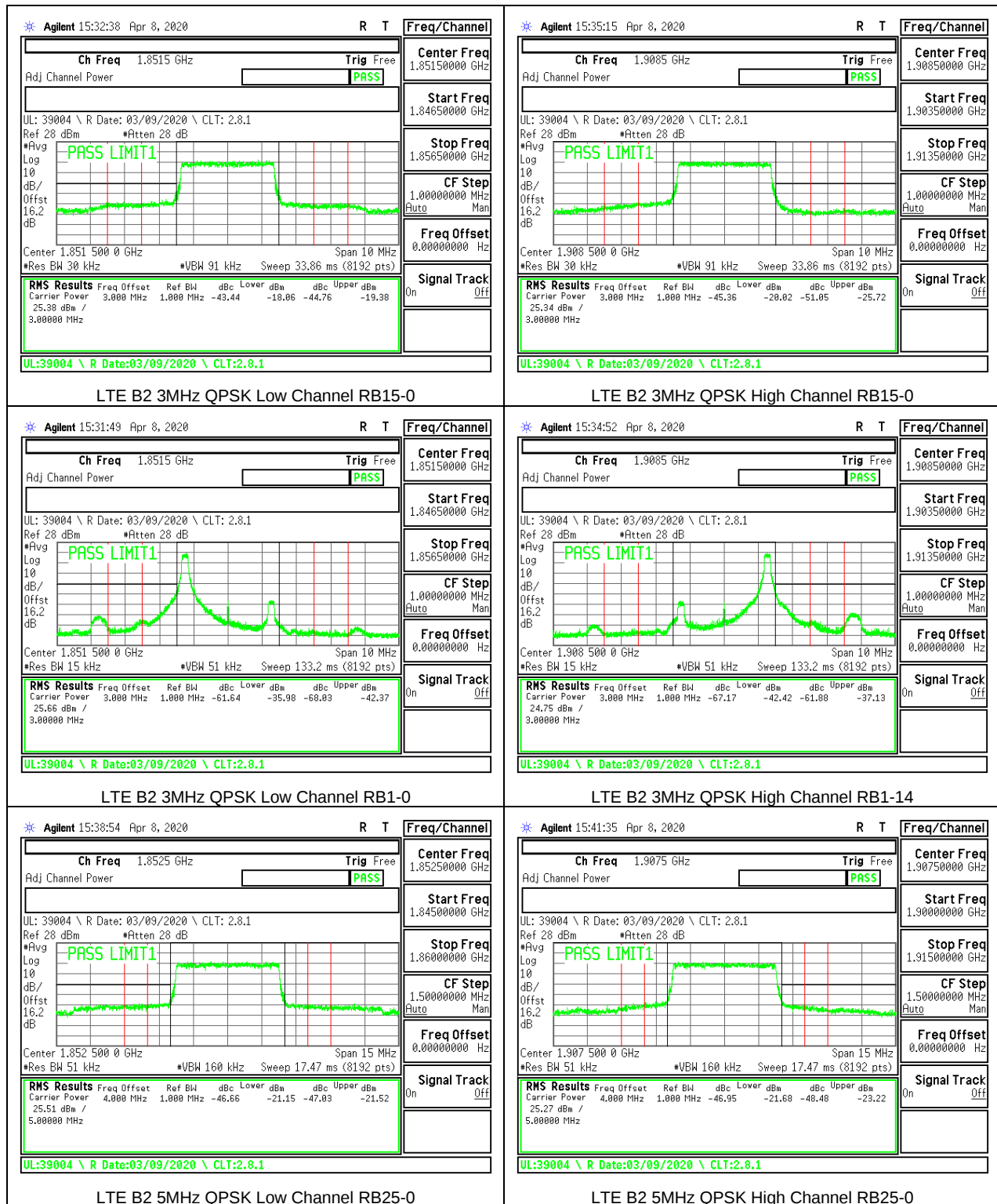
## 8.2.1. LTE BAND 2 BANDEDGE

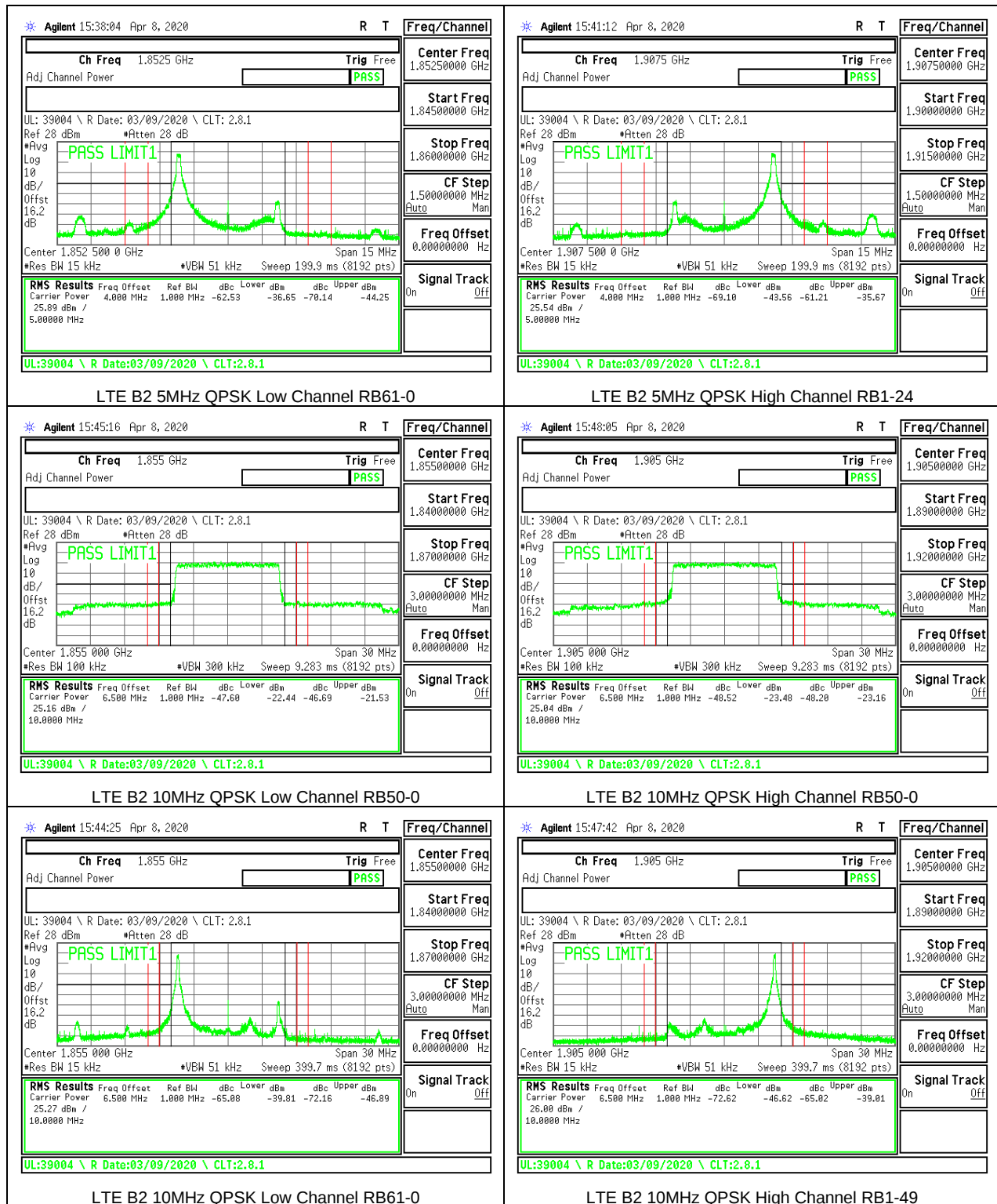
### LIMITS

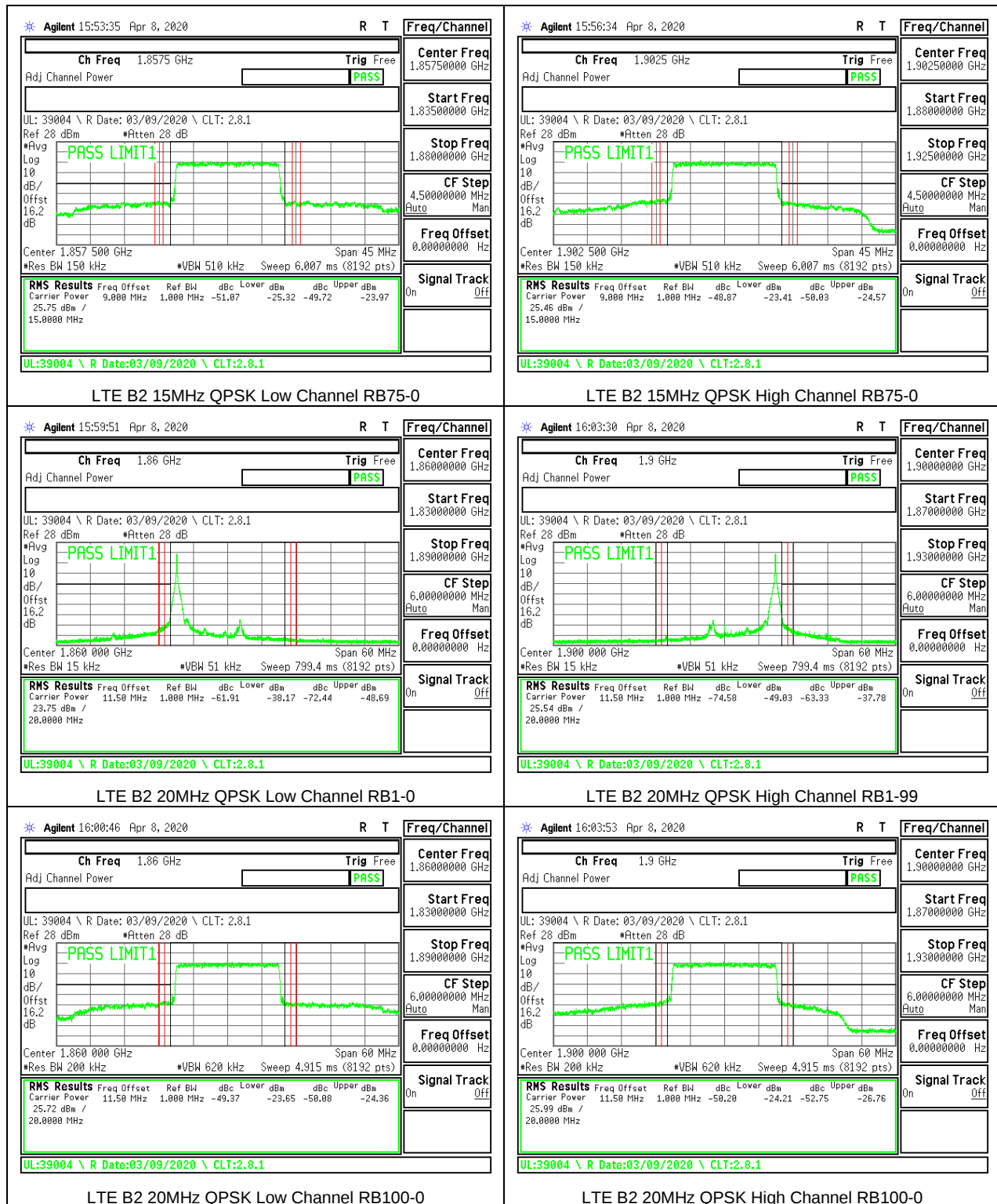
FCC: §24.238

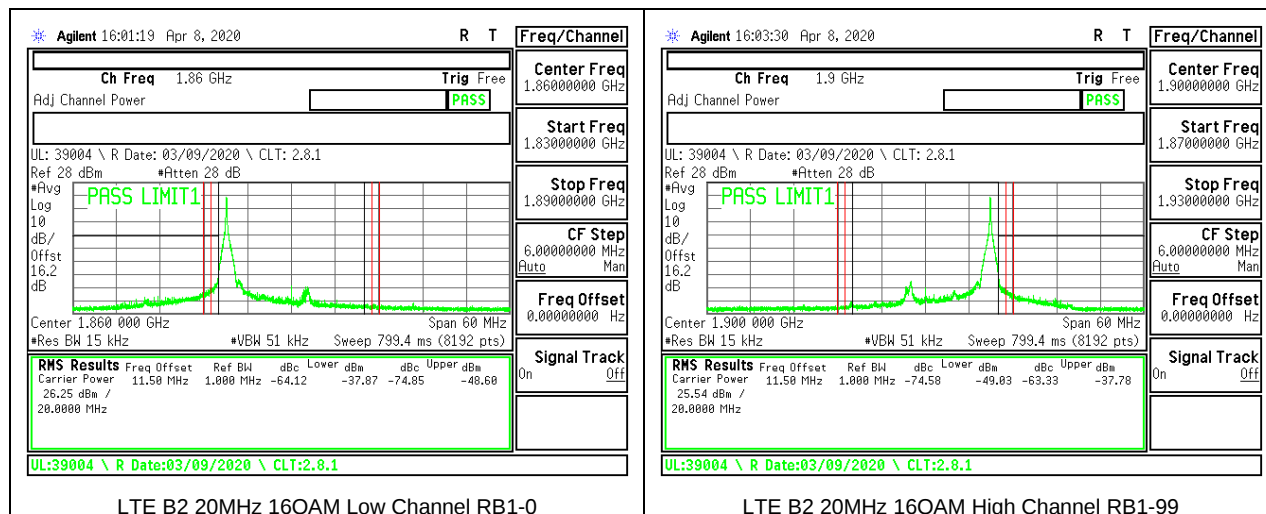
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.











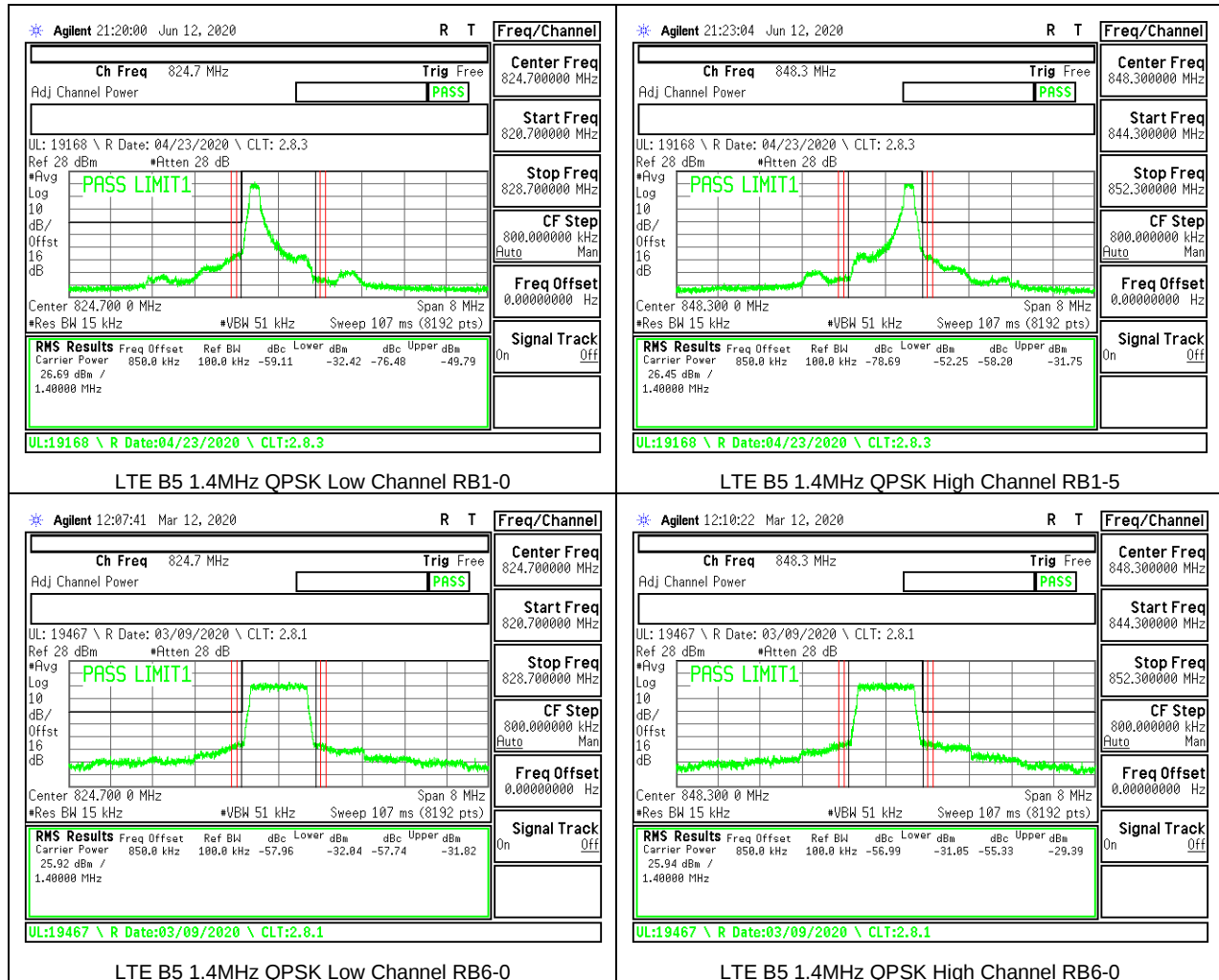
### 8.2.2. LTE BAND 5 AND 5G NR Band n5 BANDEDGE

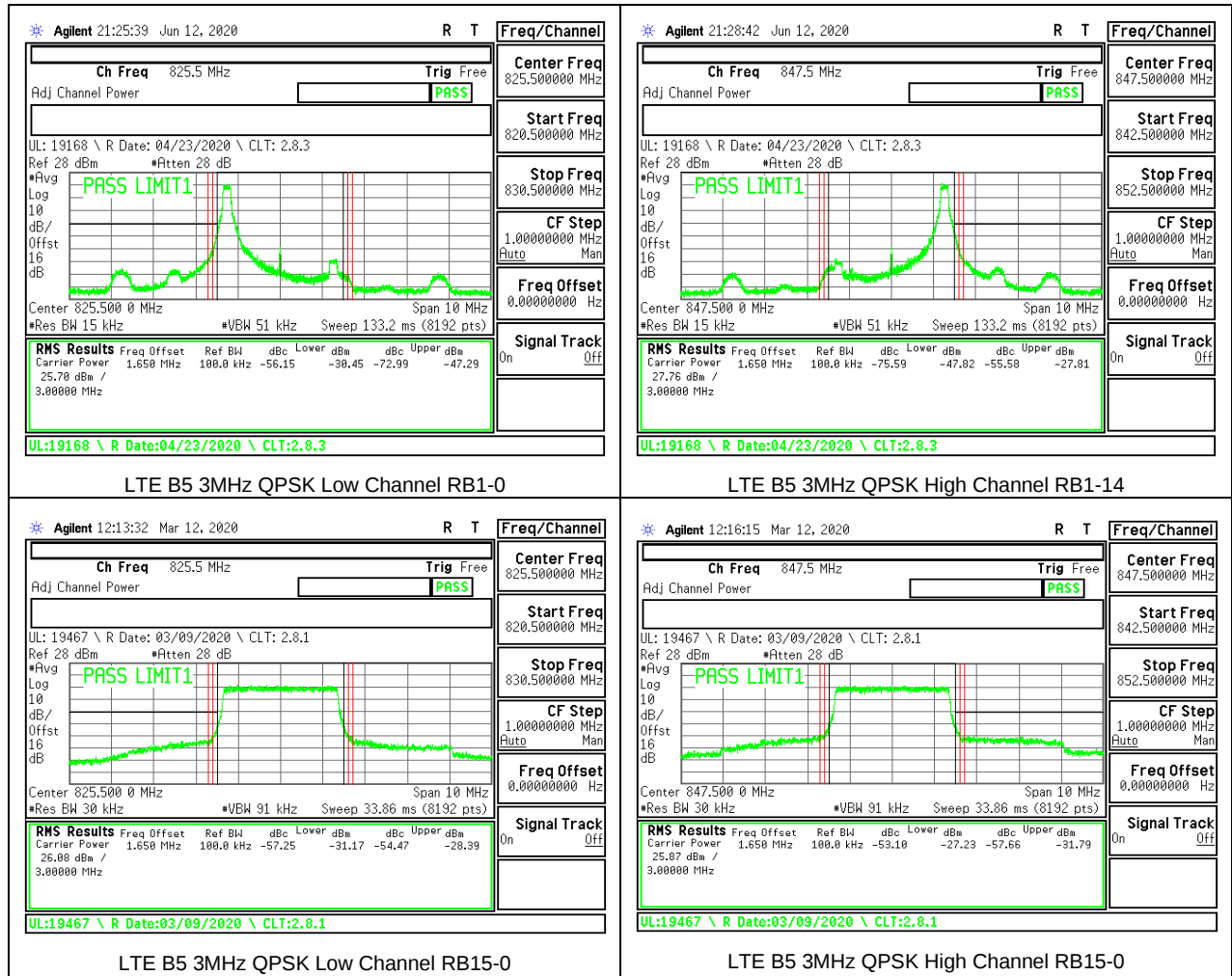
#### **LIMITS**

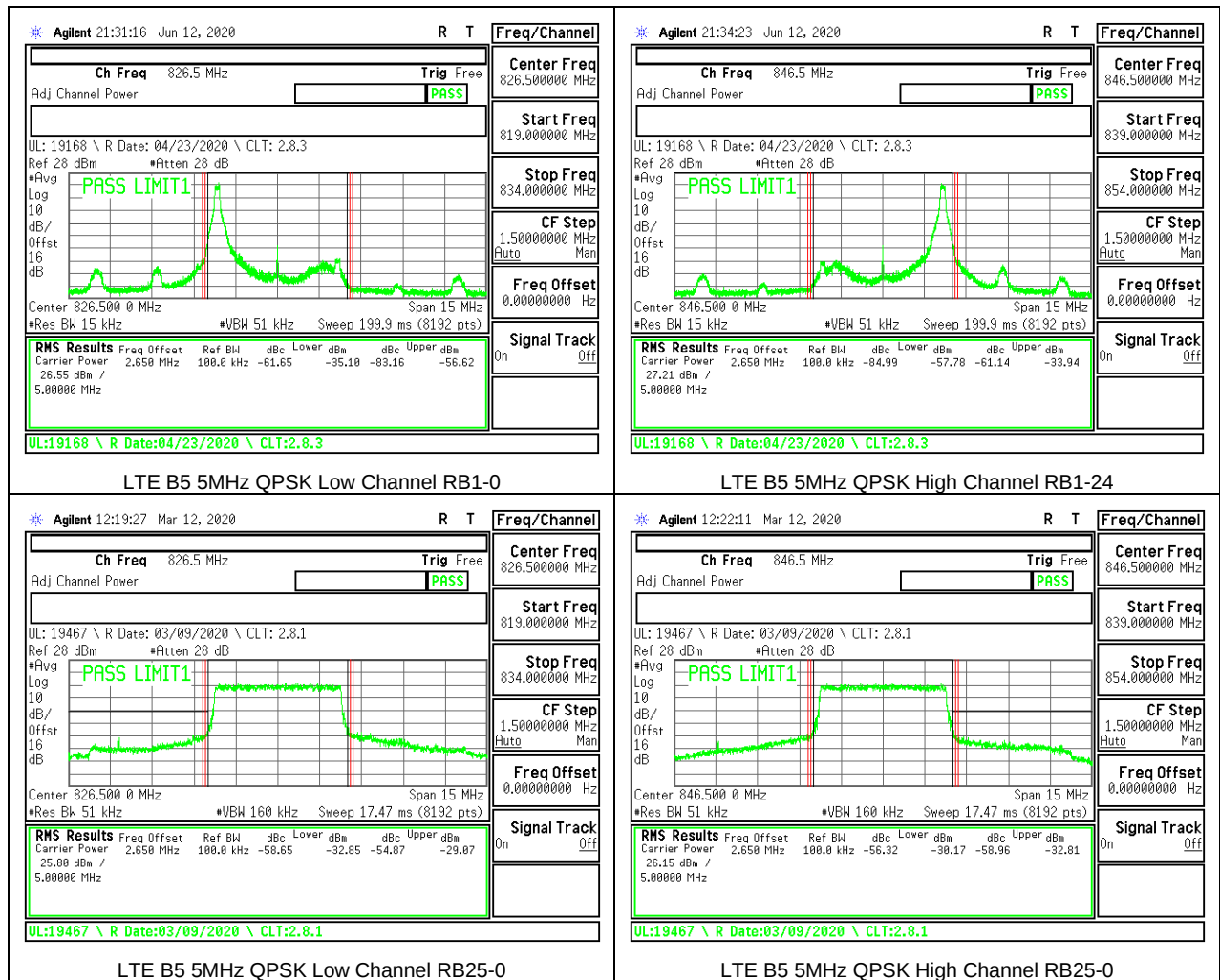
FCC: §22.917

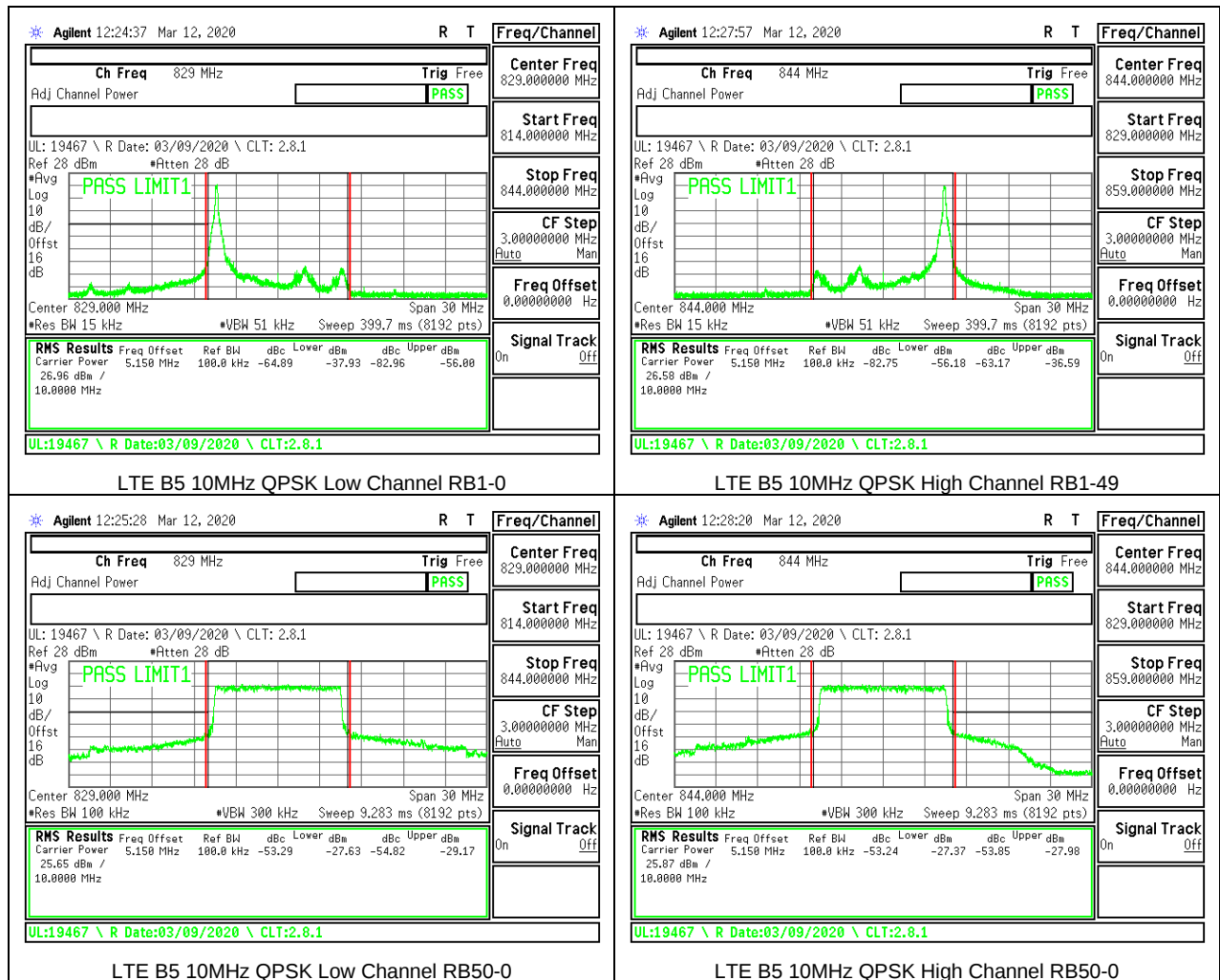
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

## LTE BAND 5 BANDEGE



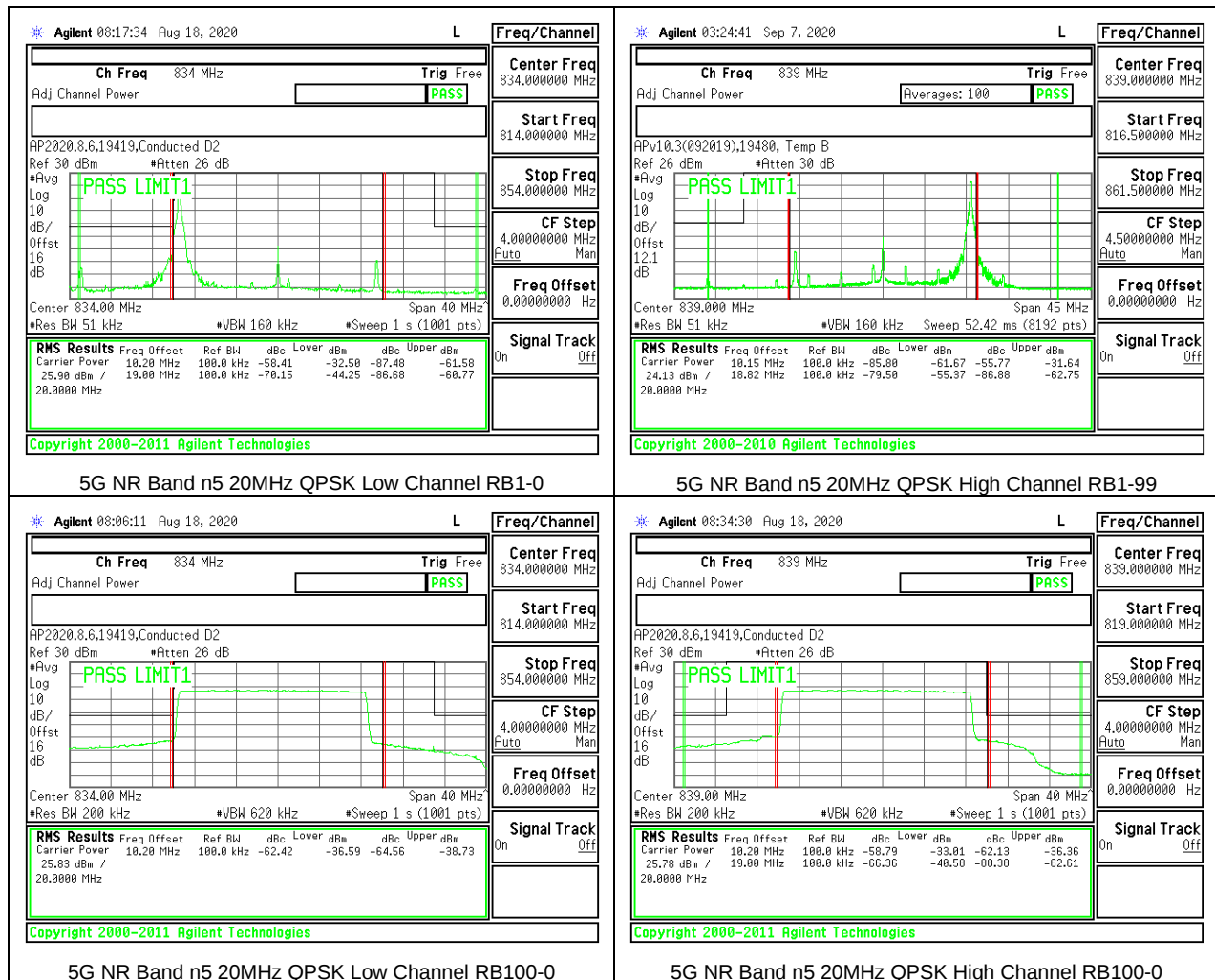






## 5G NR Band n5 BANDEDGE



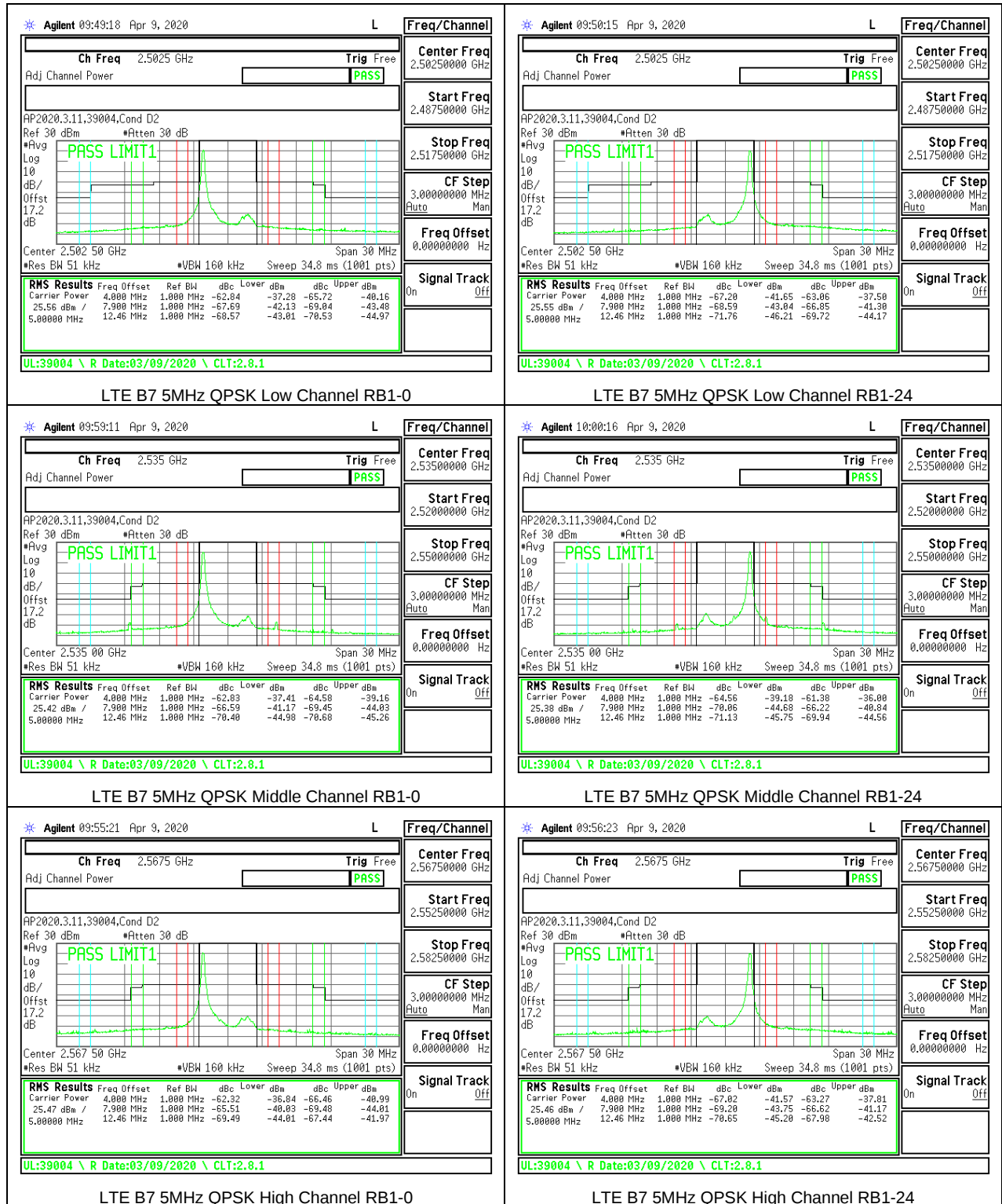


### 8.2.3. LTE BAND 7 ADJACENT CHANNEL POWER

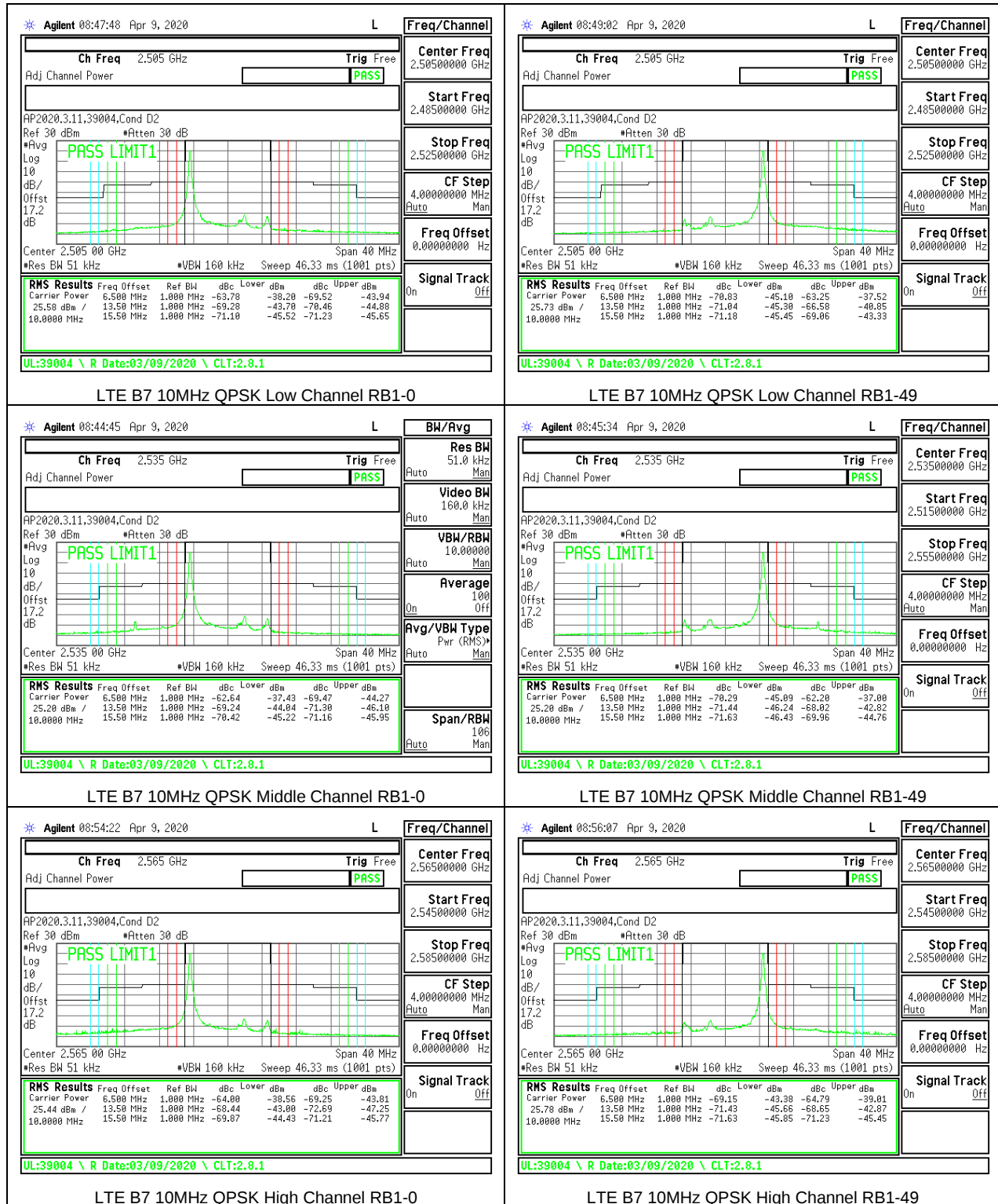
#### **LIMITS**

FCC: §27.53

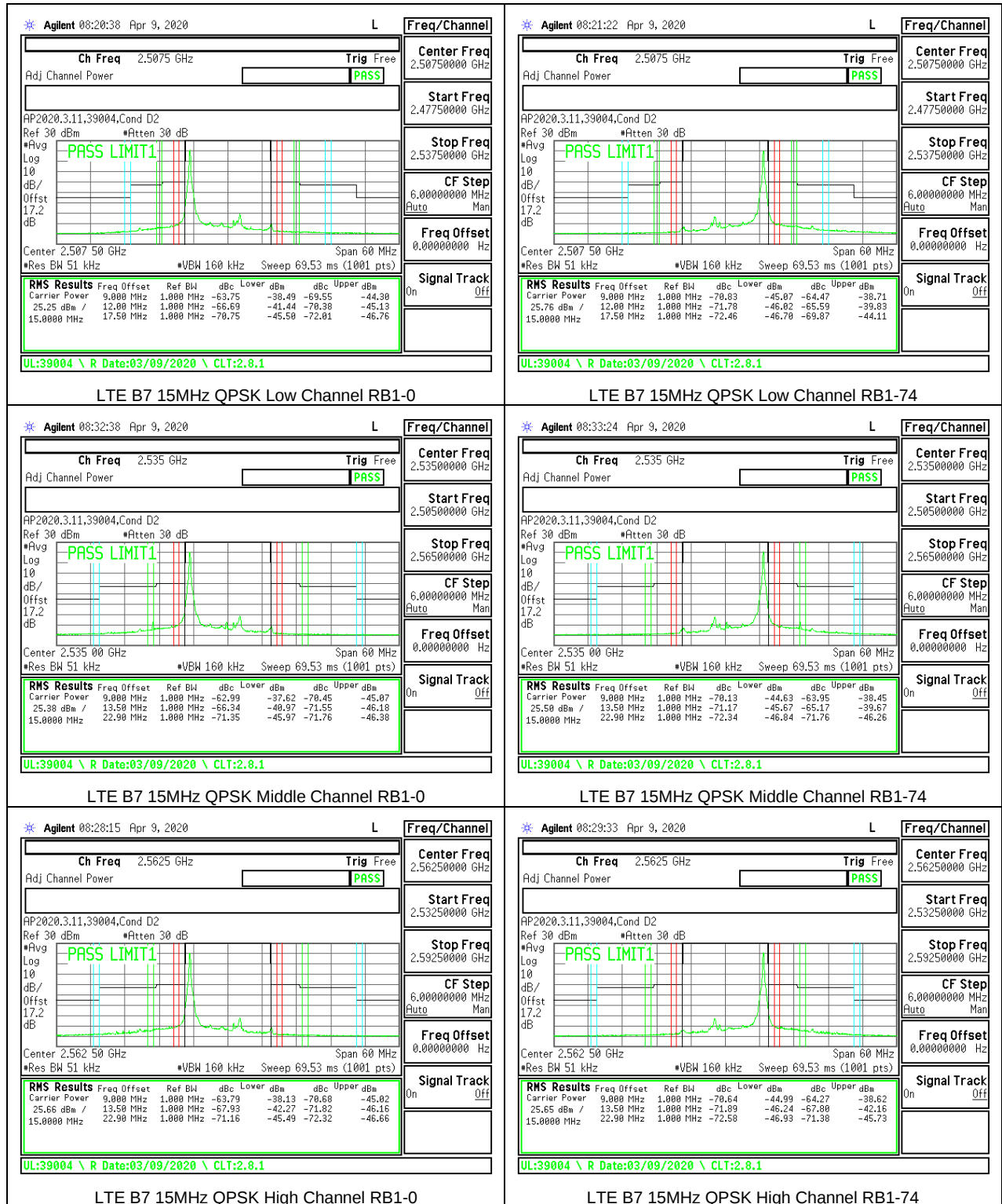
(m)(4) For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



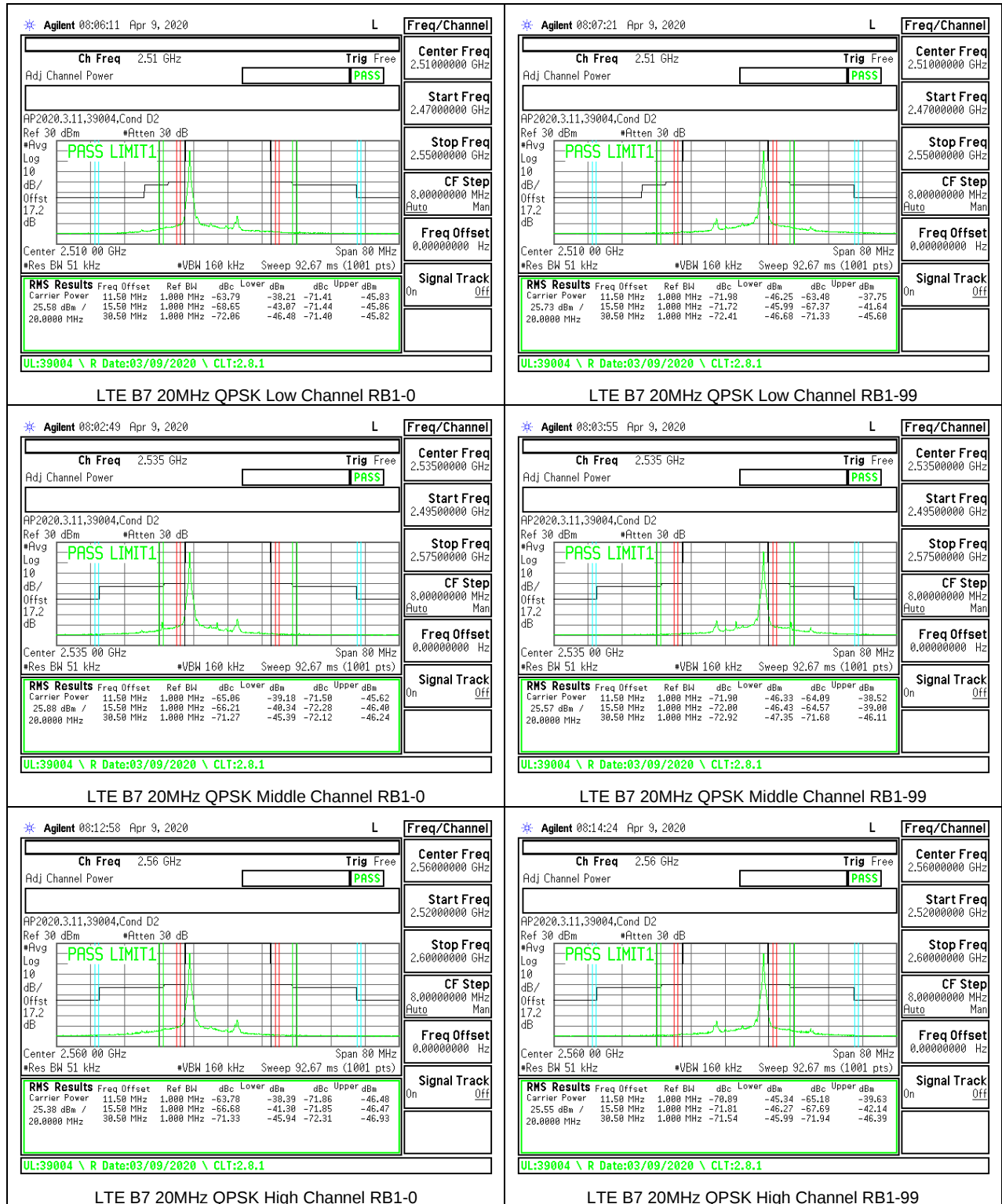














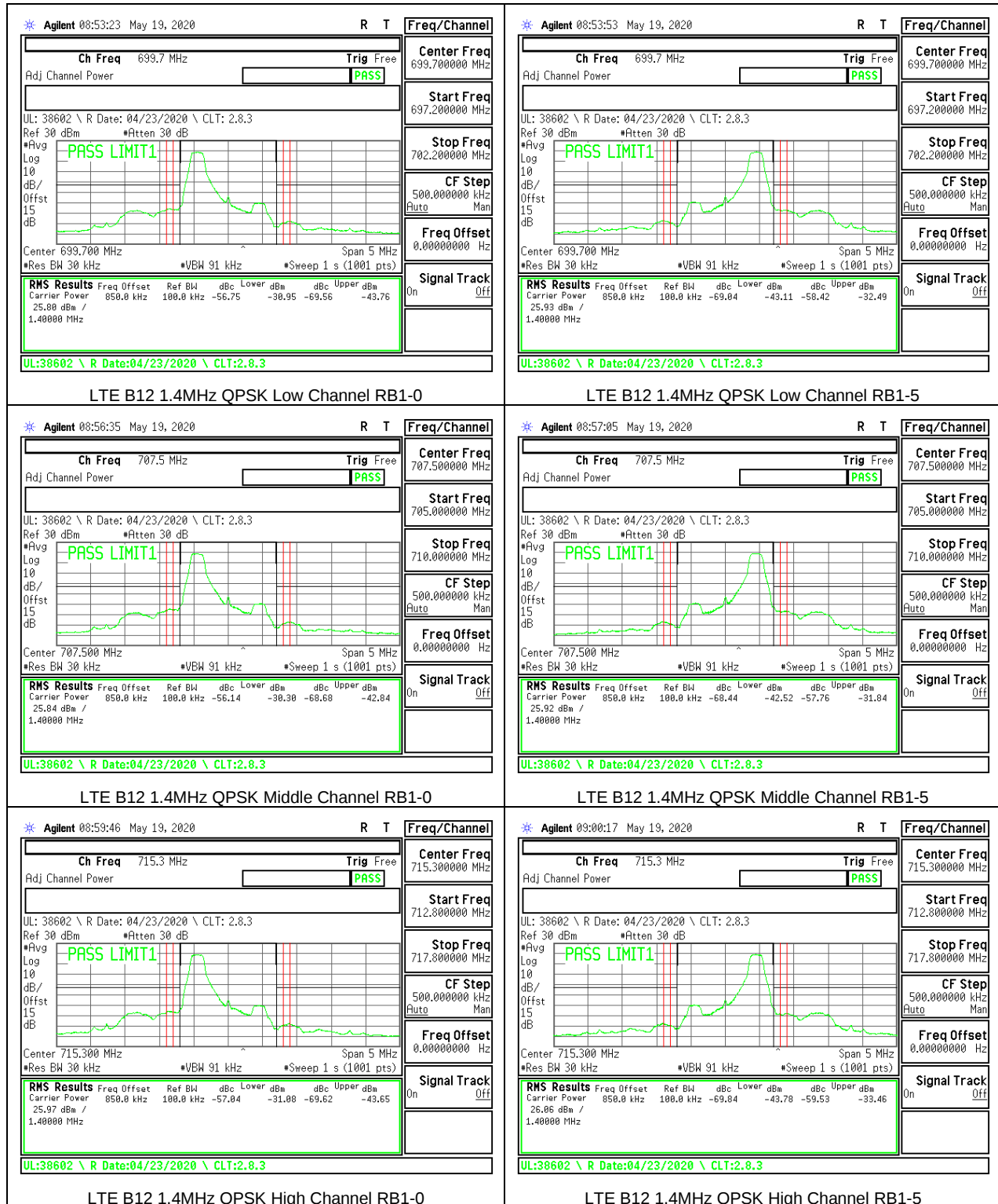
## 8.2.4. LTE BAND 12 AND n12 ADJACENT CHANNEL POWER

### **LIMITS**

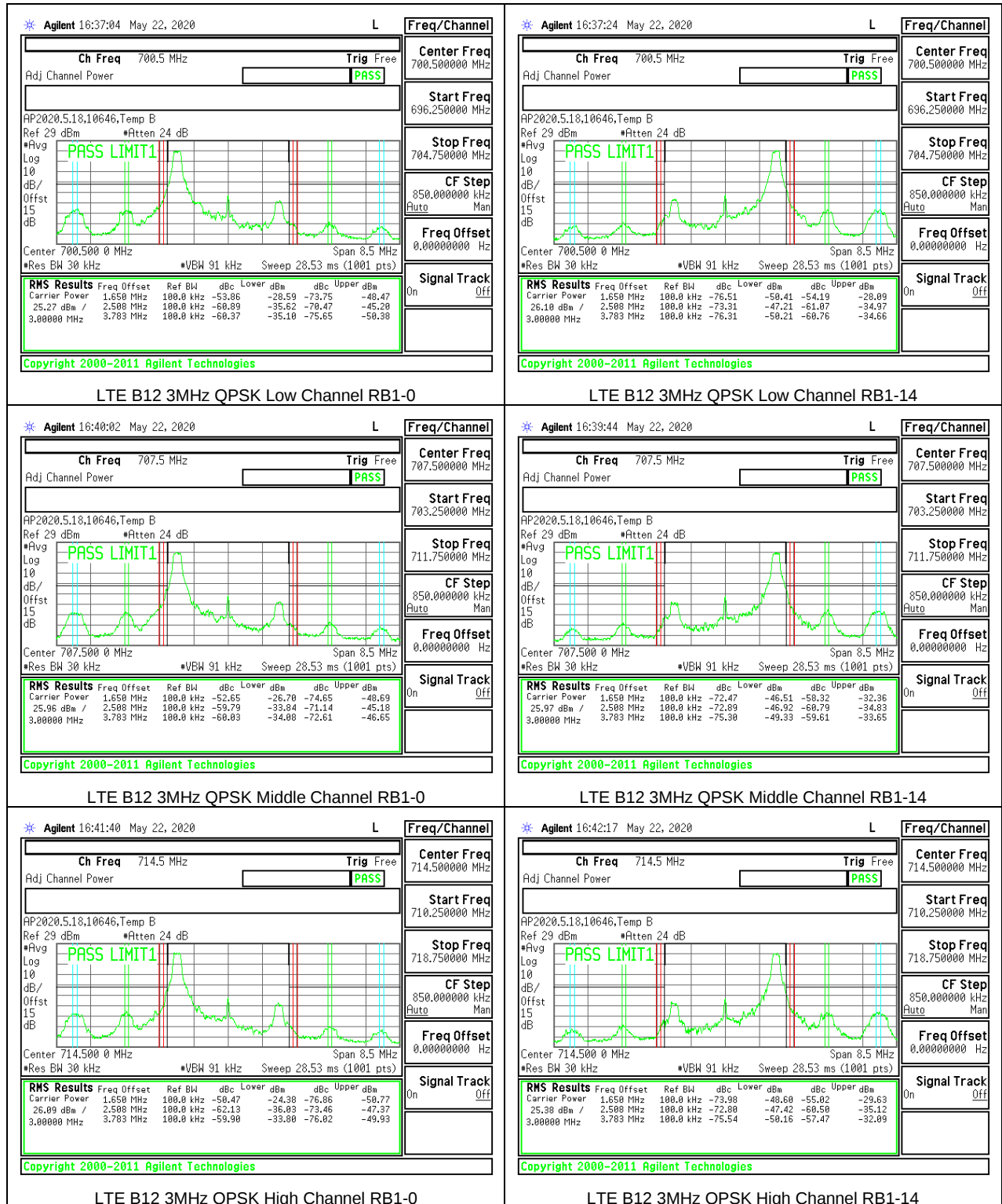
FCC: §27.53

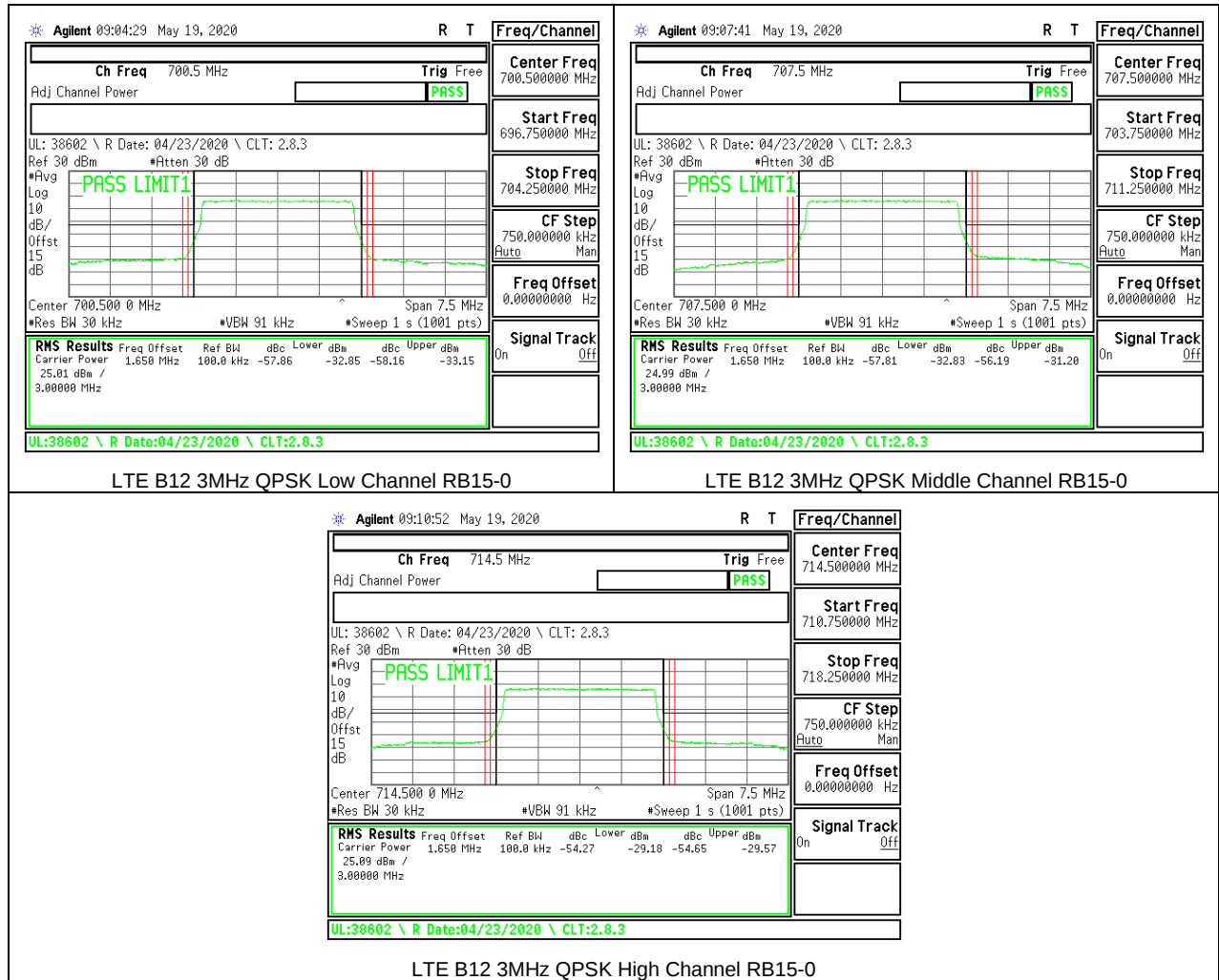
(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

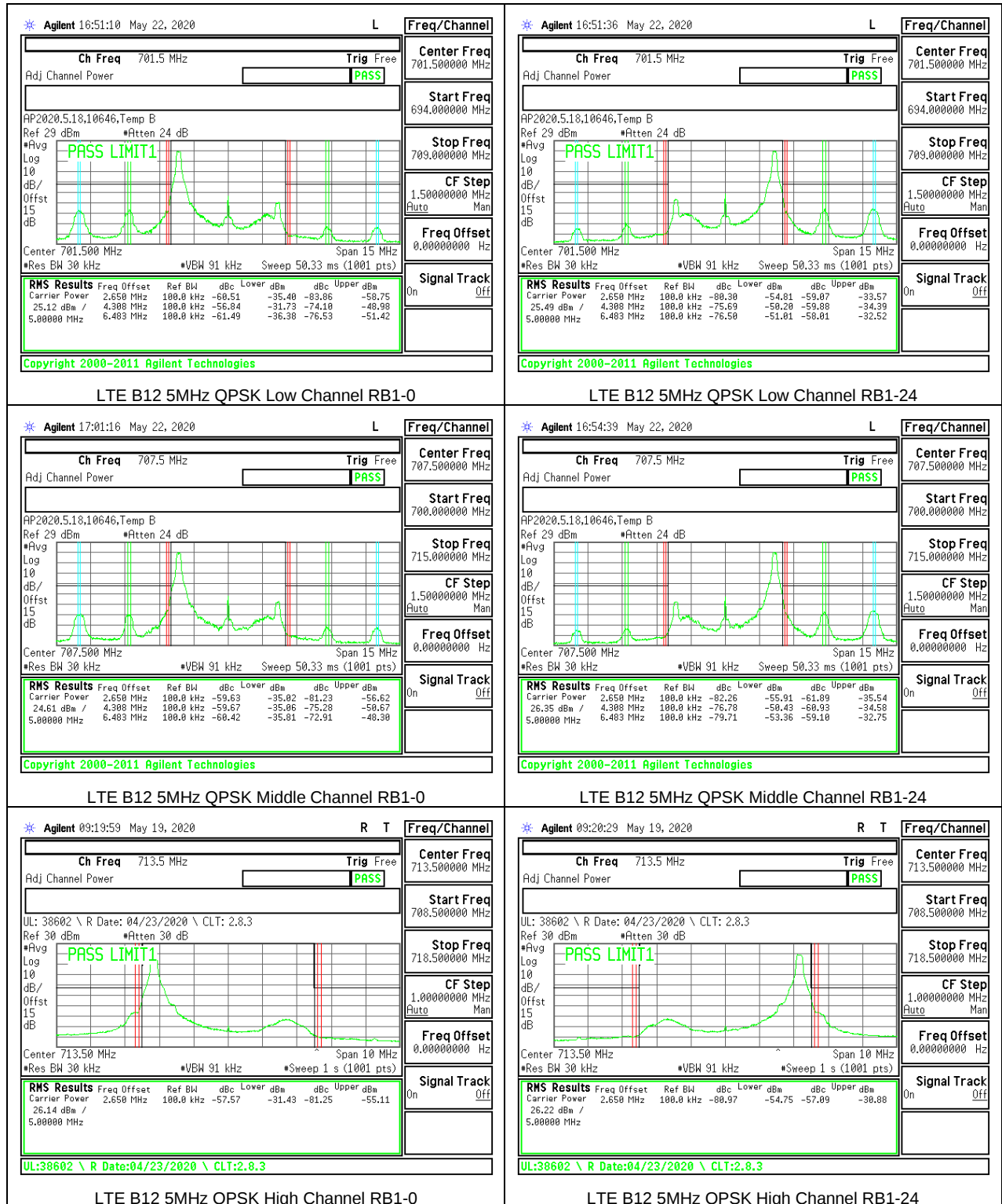
## LTE BAND 12 ADJACENT CHANNEL POWER

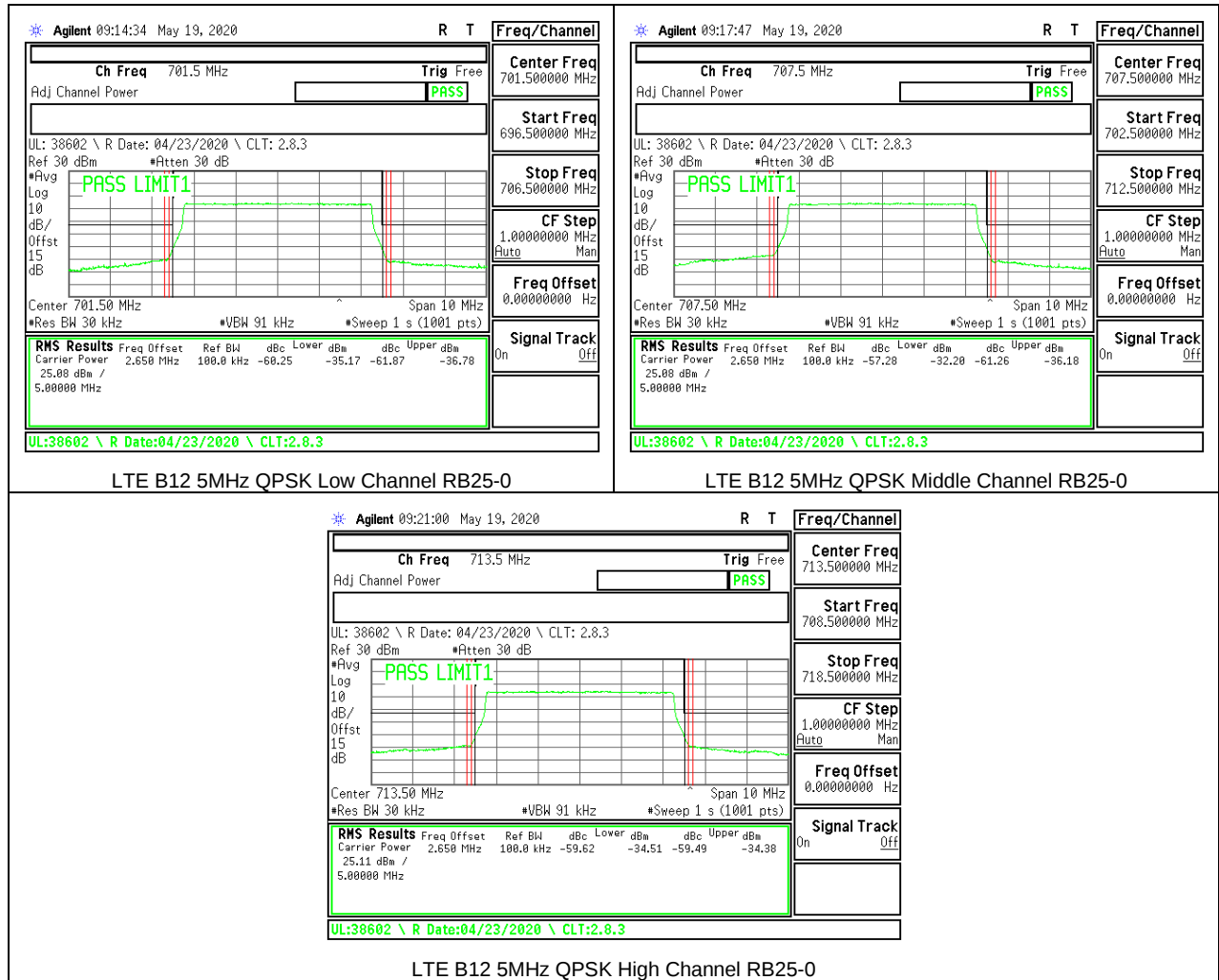


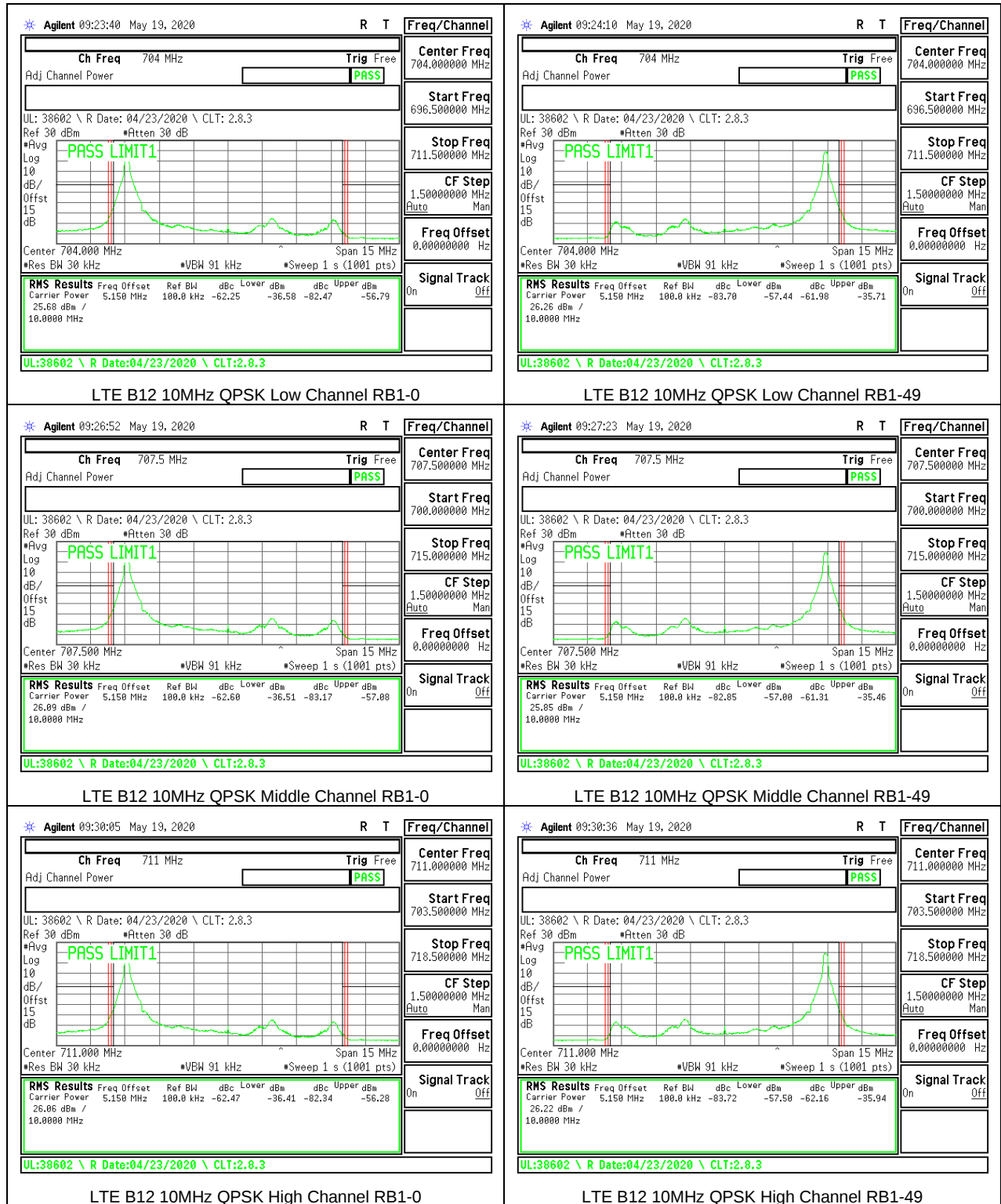






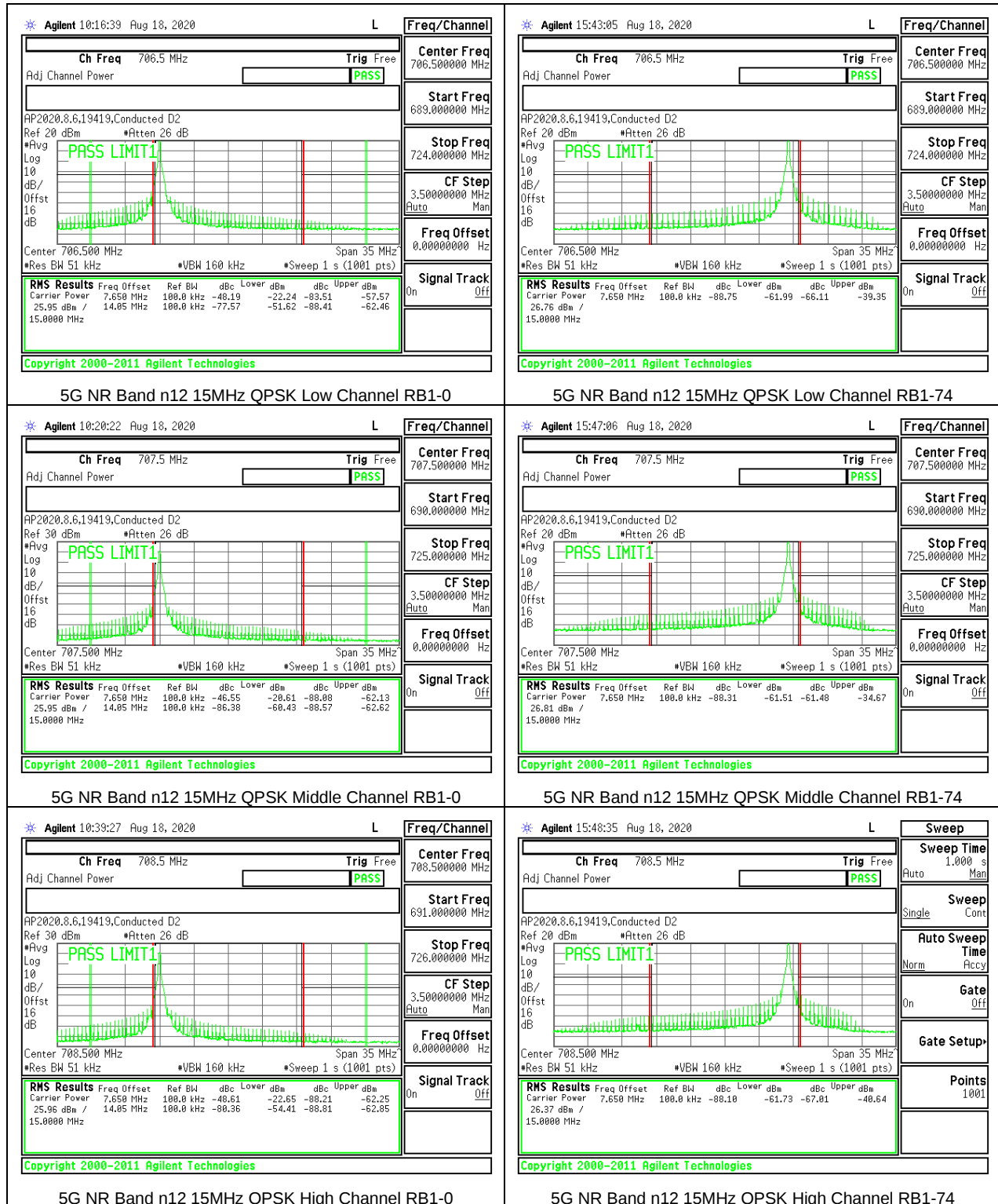


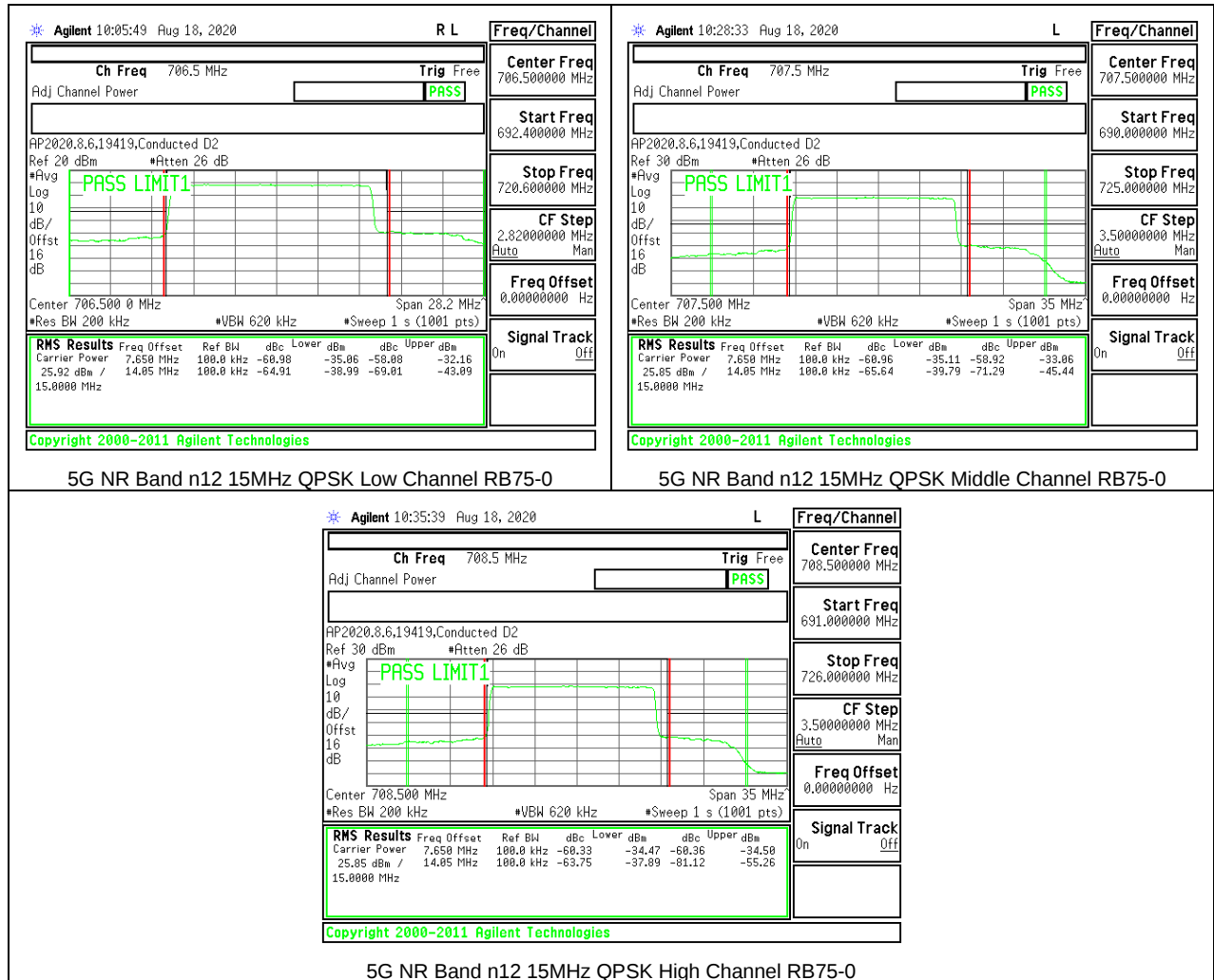






## 5G NR Band n12 ADJACENT CHANNEL POWER





## 8.2.5. LTE BAND 13 ADJACENT CHANNEL POWER

### **LIMITS**

FCC: §27.53

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

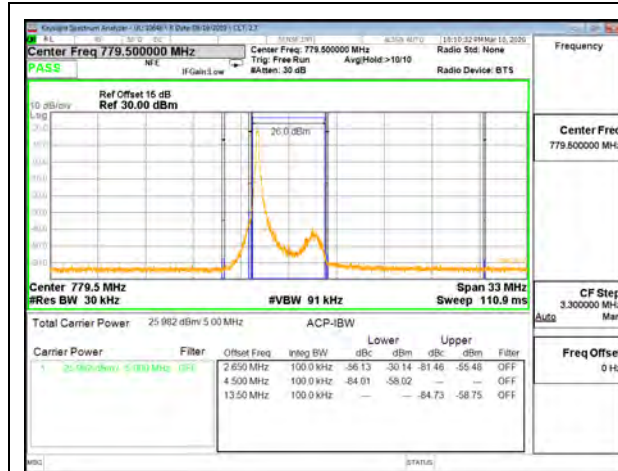
(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

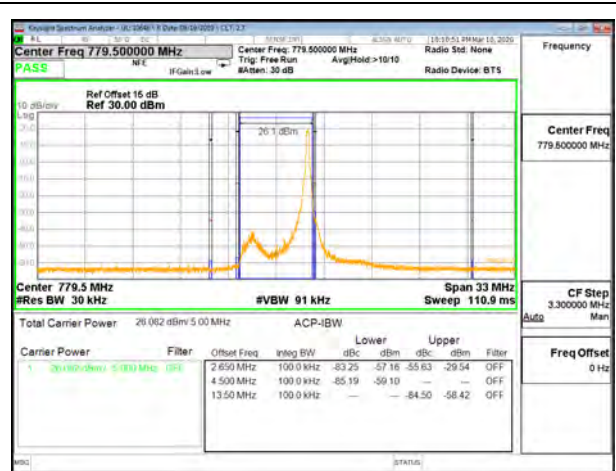
(5) Compliance with the provisions of paragraphs (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

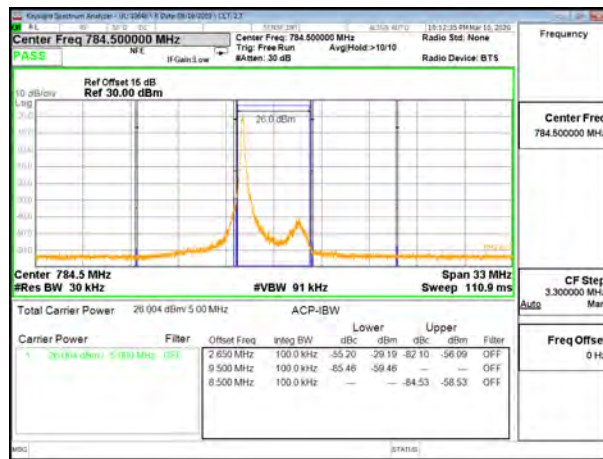
(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. (-70 dBW/MHz = -40dBm/MHz).



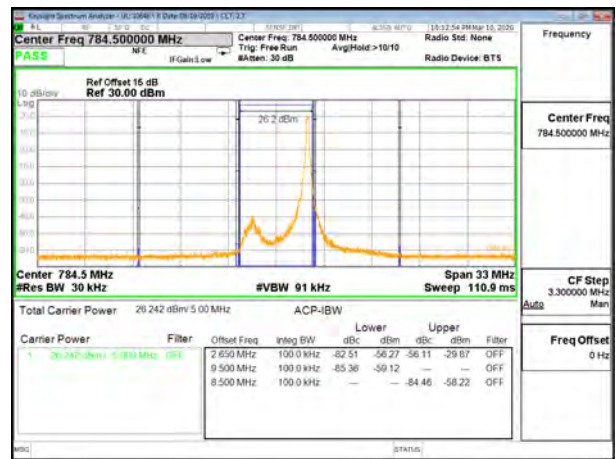
LTE B13 5MHz QPSK Low Channel RB1-0



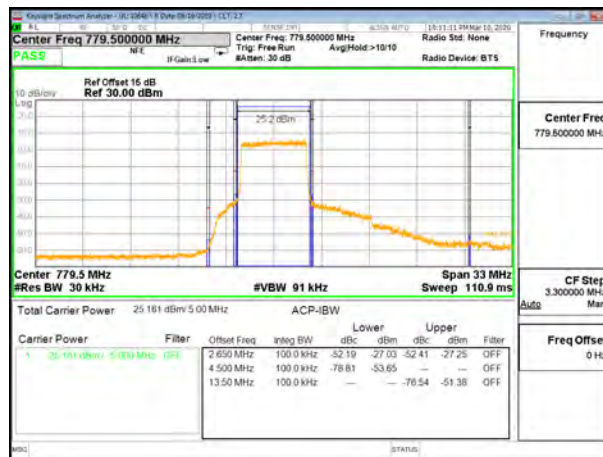
LTE B13 5MHz QPSK Low Channel RB1-24



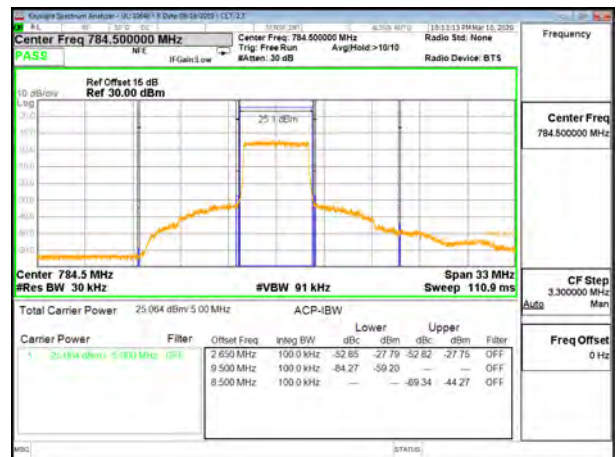
LTE B13 5MHz QPSK High Channel RB1-0



LTE B13 5MHz QPSK High Channel RB1-24



LTE B13 5MHz QPSK Low Channel RB25-0



LTE B13 5MHz QPSK High Channel RB25-0



## 8.2.6. LTE BAND 14 ADJACENT CHANNEL POWER

### **LIMITS**

FCC: §90.543 Emission Limitations.

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.



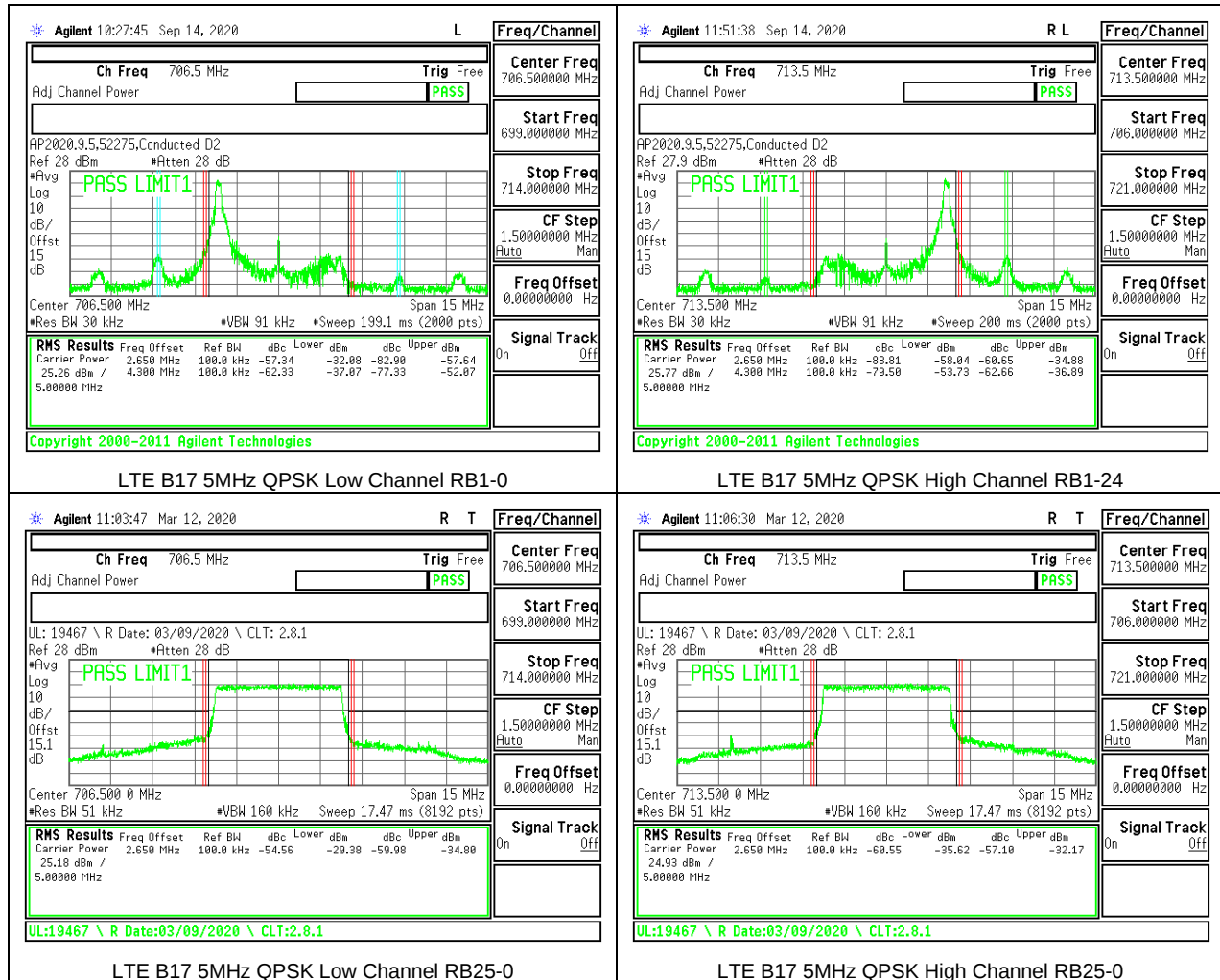


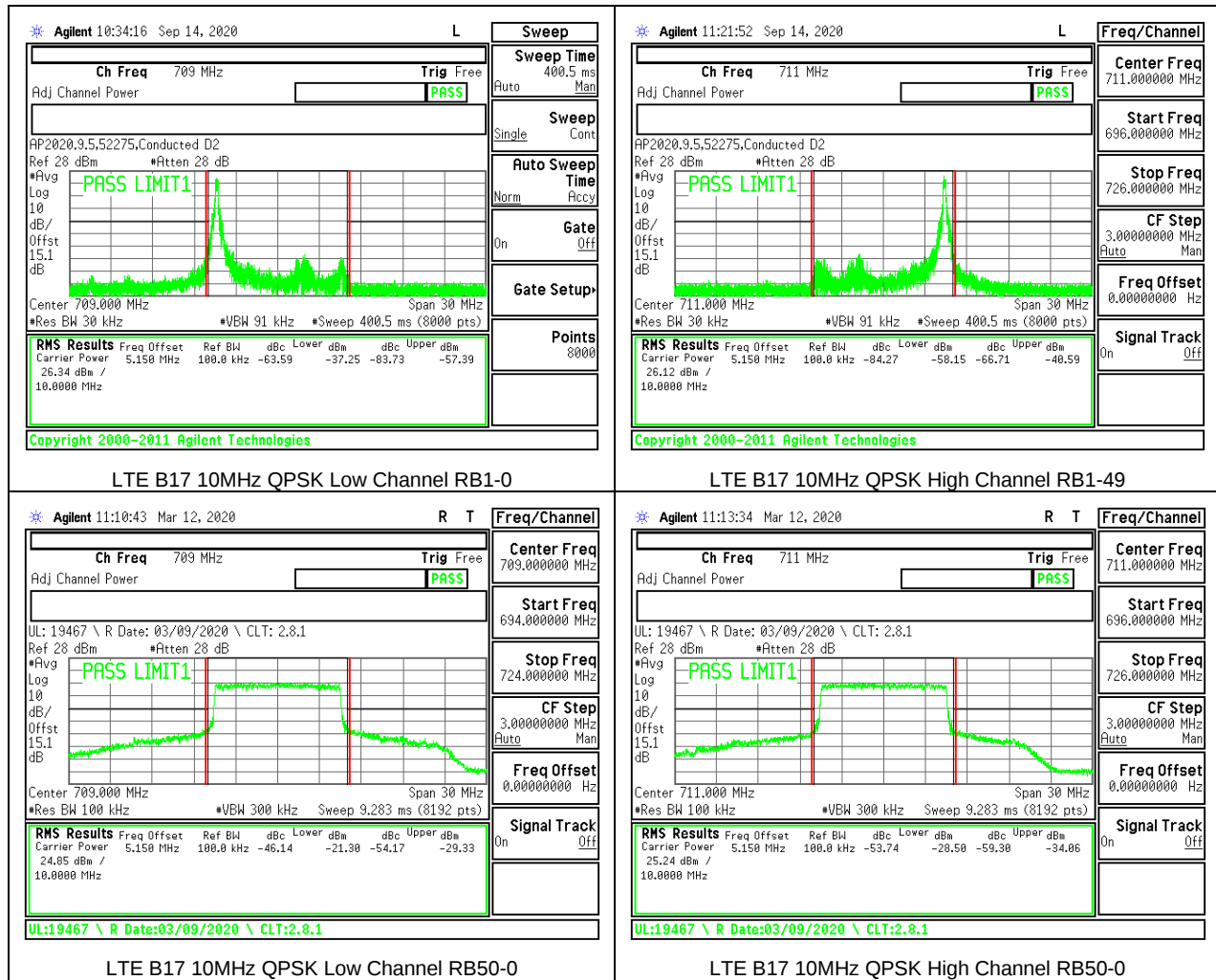
## 8.2.7. LTE BAND 17 BANDEDGE

### **LIMITS**

FCC: §27.53

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.



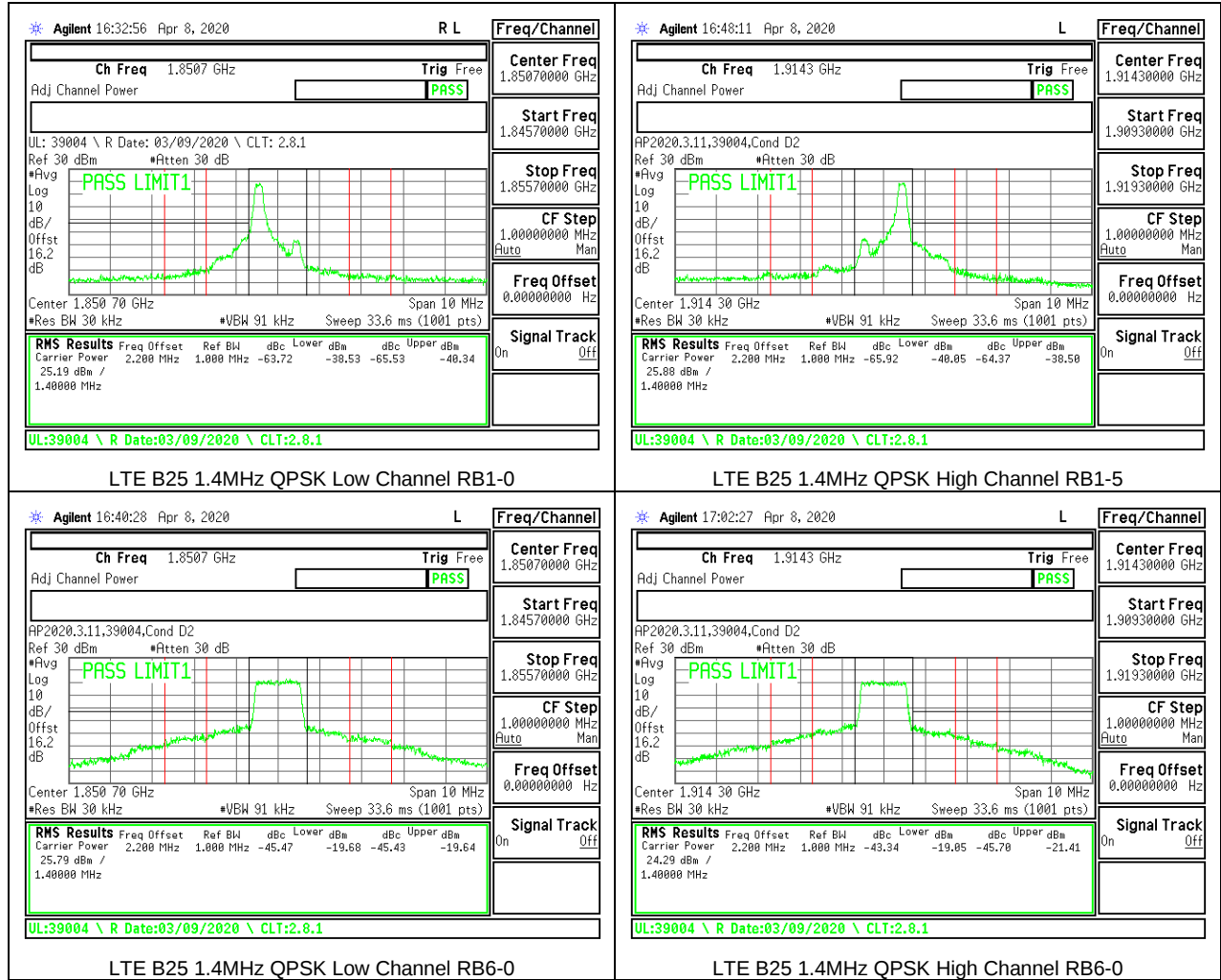


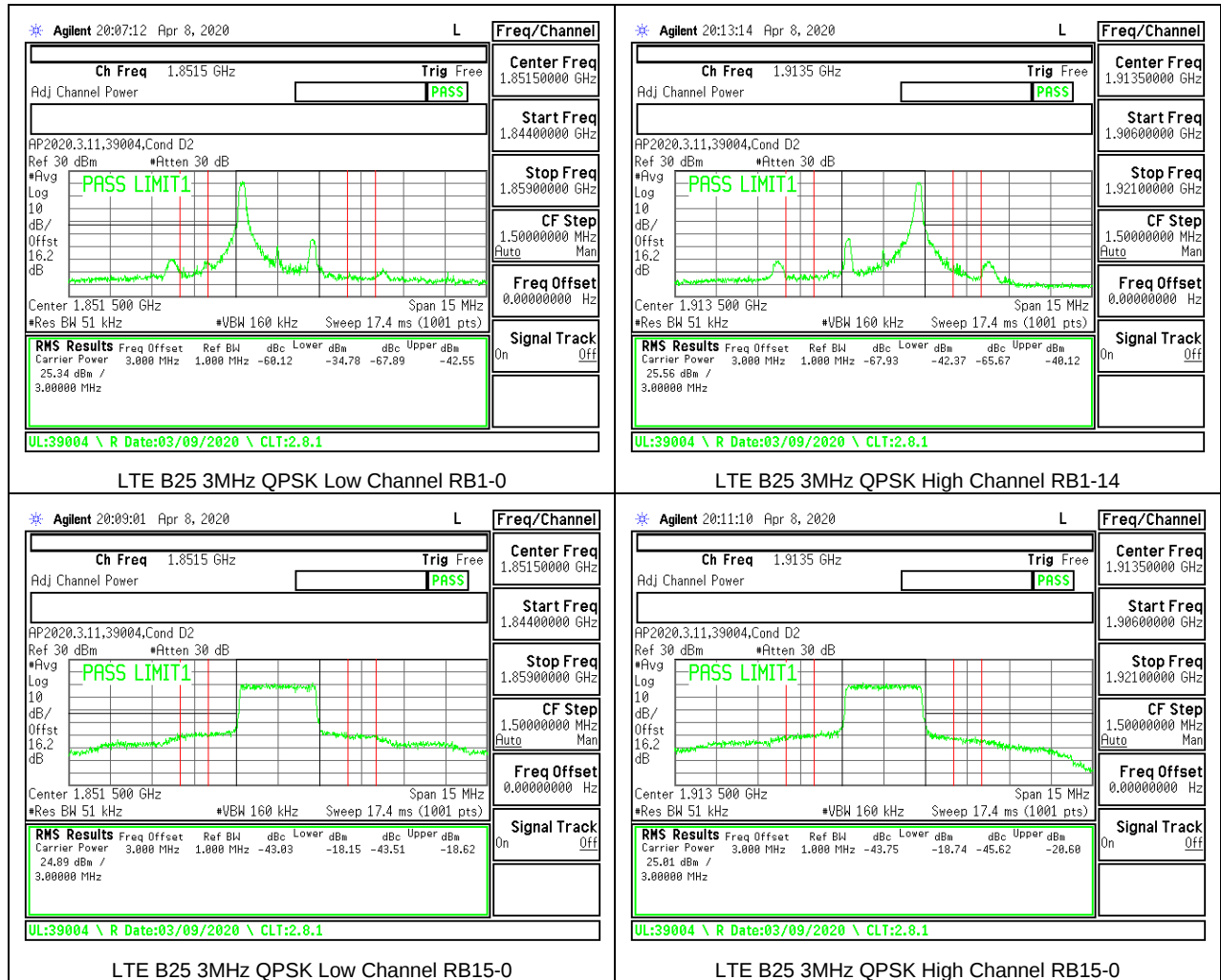
### 8.2.8. LTE BAND 25 BANDEDGE

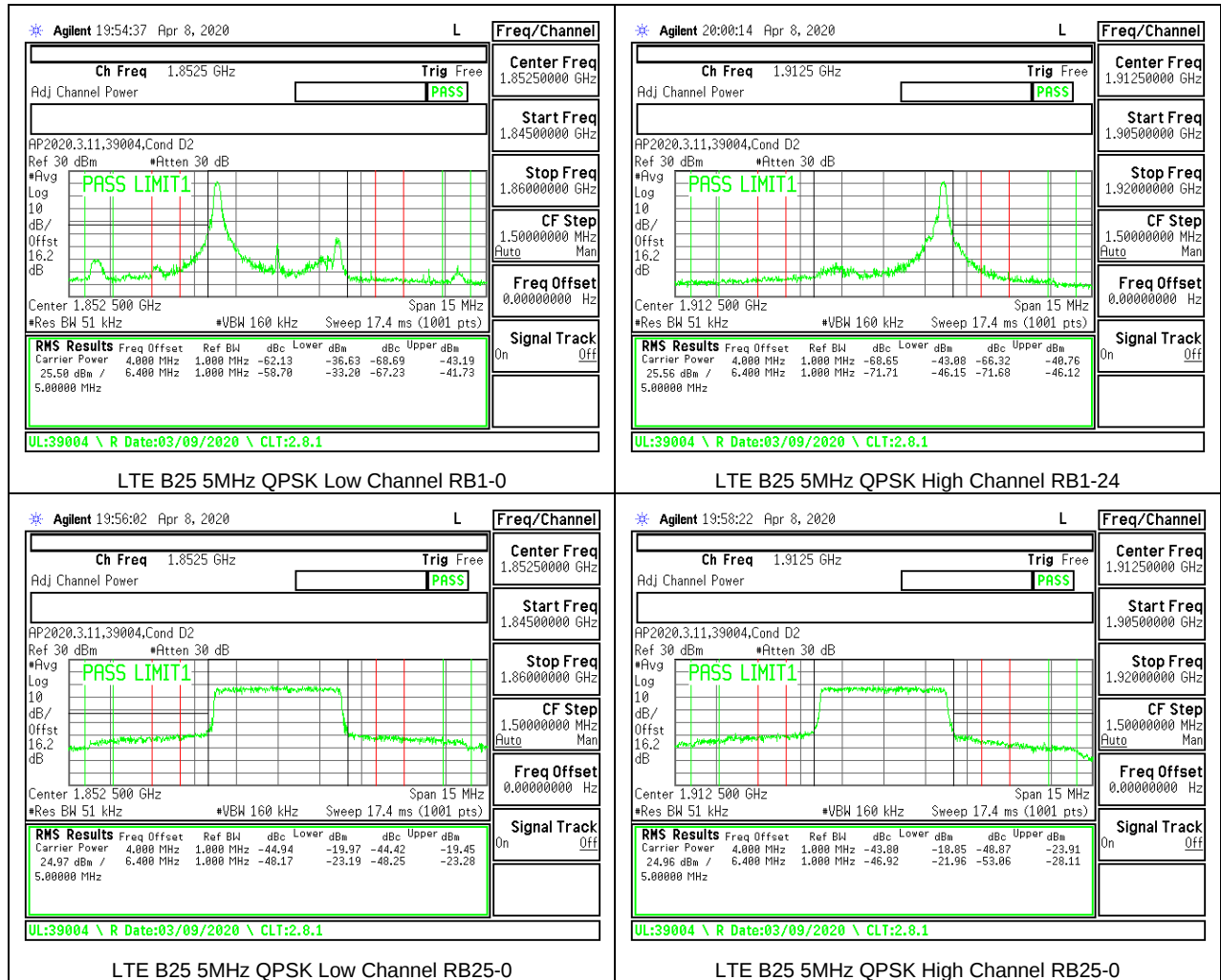
#### **LIMITS**

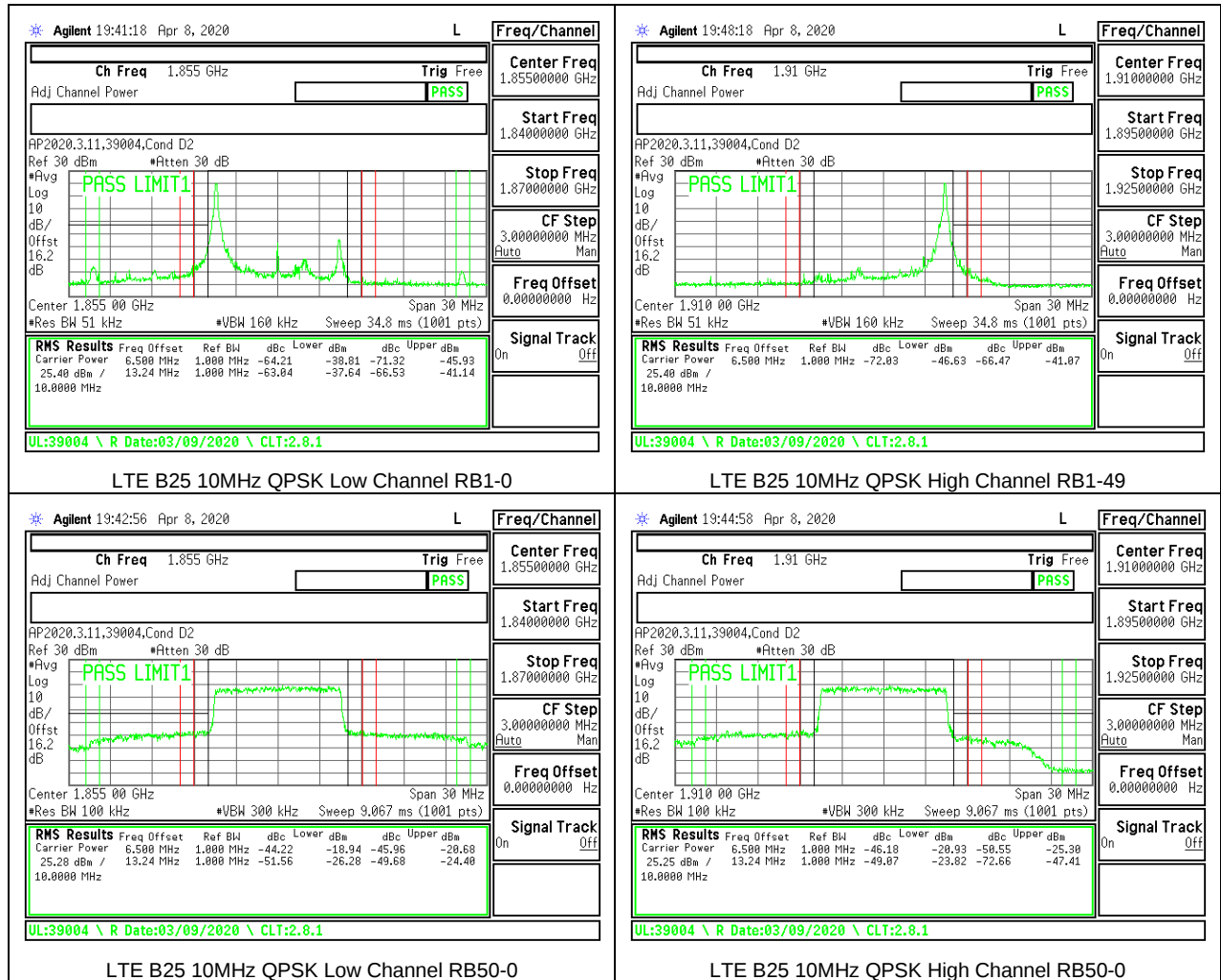
FCC: §24.238

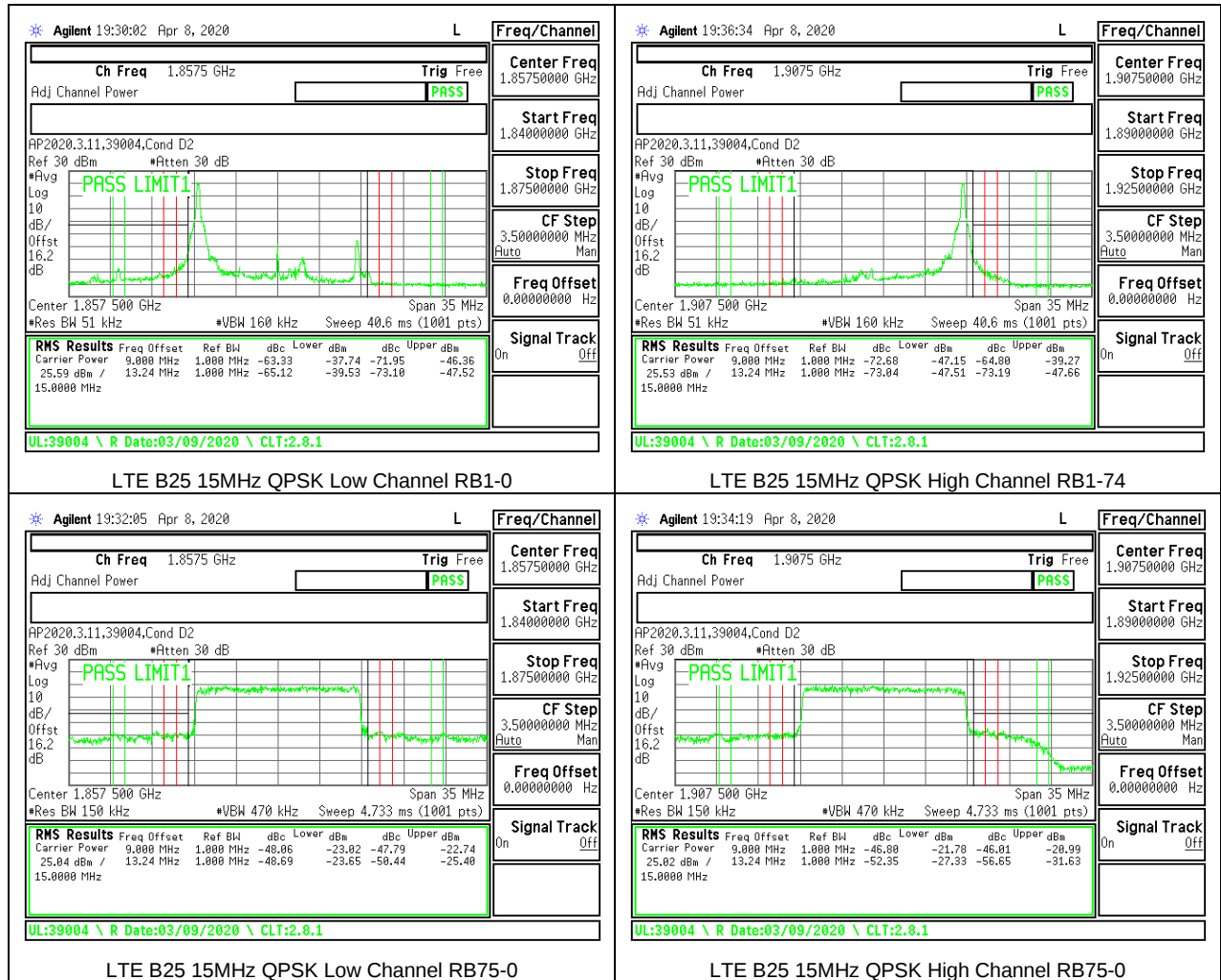
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

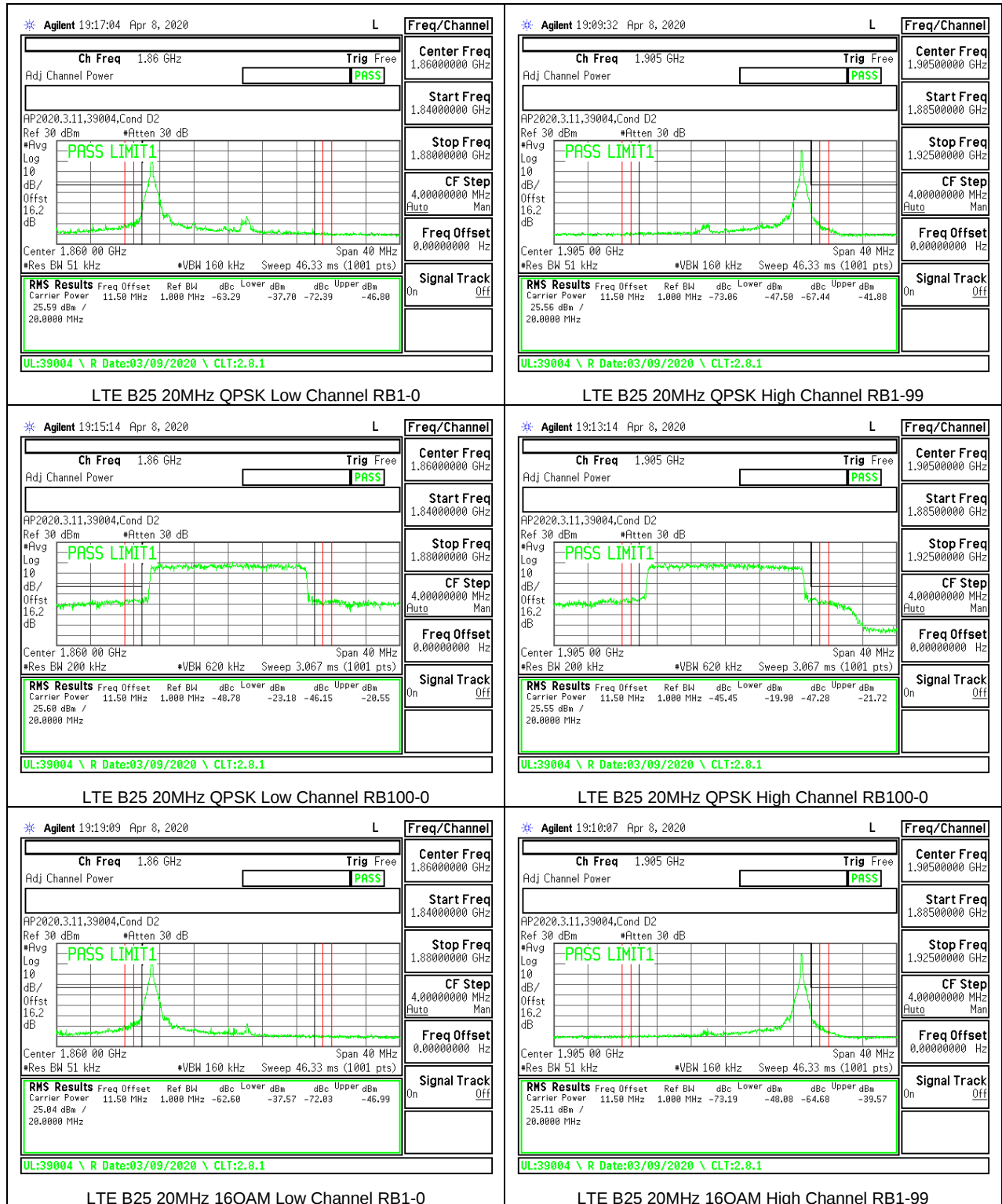












## 8.2.9. LTE BAND 26 EMISSION MASK (PART 90S)

### **LIMITS**

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

