



# **TEST REPORT**

**Report Number. :** 13131738-E8V2

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

**Model :** A2410

**FCC ID :** BCG-E3549A

**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

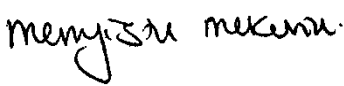
| Rev. | Issue Date | Revisions               | Revised By       |
|------|------------|-------------------------|------------------|
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## TABLE OF CONTENTS

|                                                             |           |
|-------------------------------------------------------------|-----------|
| <b>1. ATTESTATION OF TEST RESULTS</b>                       | <b>5</b>  |
| <b>2. TEST METHODOLOGY</b>                                  | <b>6</b>  |
| <b>3. FACILITIES AND ACCREDITATION</b>                      | <b>6</b>  |
| <b>4. DECISION RULES AND MEASUREMENT UNCERTAINTY</b>        | <b>7</b>  |
| 4.1. METROLOGICAL TRACEABILITY                              | 7         |
| 4.2. DECISION RULES                                         | 7         |
| 4.3. MEASUREMENT UNCERTAINTY                                | 7         |
| 4.4. SAMPLE CALCULATION                                     | 7         |
| <b>5. INTRODUCTION OF TEST DATA REUSE</b>                   | <b>8</b>  |
| 5.1. DESCRIPTION OF EUT                                     | 8         |
| 5.2. INTRODUCTION                                           | 8         |
| 5.3. MODEL DIFFERENCES                                      | 8         |
| 5.4. SPOT CHECK VERIFICATION RESULTS SUMMARY                | 9         |
| 5.5. REFERENCE DETAIL                                       | 10        |
| 5.6. SOFTWARE AND FIRMWARE                                  | 10        |
| 5.7. MAXIMUM ANTENNA GAIN                                   | 10        |
| 5.8. WORST-CASE CONFIGURATION AND MODE                      | 11        |
| 5.9. DESCRIPTION OF TEST SETUP                              | 13        |
| <b>6. TEST AND MEASUREMENT EQUIPMENT</b>                    | <b>15</b> |
| <b>7. RADIATED TEST RESULTS</b>                             | <b>16</b> |
| 7.1. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT2 | 16        |
| 7.1.1. LTE BAND 2                                           | 17        |
| 7.1.2. LTE BAND 5 AND 5G NR Band n5                         | 18        |
| 7.1.3. LTE BAND 7                                           | 20        |
| 7.1.4. LTE BAND 12 AND 5G NR Band n12                       | 21        |
| 7.1.5. LTE BAND 13                                          | 23        |
| 7.1.6. LTE BAND 14                                          | 24        |
| 7.1.7. LTE BAND 17                                          | 25        |
| 7.1.8. LTE BAND 25                                          | 26        |
| 7.1.9. LTE BAND 26 (PART 90S)                               | 27        |
| 7.1.10. LTE BAND 30                                         | 28        |

|                                                     |                                      |    |
|-----------------------------------------------------|--------------------------------------|----|
| 7.1.11.                                             | LTE BAND 41 AND 5G NR BAND n41 ..... | 29 |
| 7.1.12.                                             | LTE BAND 66 .....                    | 31 |
| 7.1.13.                                             | LTE BAND 71 .....                    | 32 |
| 8.                                                  | SETUP PHOTOS .....                   | 33 |
| Appendix A – Reference Test Report 13335182-E8..... |                                      | 34 |

# 1. ATTESTATION OF TEST RESULTS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Applicant Name and Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | APPLE, INC<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A.                       |                                                                                       |
| Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A2410                                                                               |                                                                                       |
| FCC ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BCG-E3549A                                                                          |                                                                                       |
| EUT Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SMARTPHONE                                                                          |                                                                                       |
| Serial Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MODEL (A2410): C0703040063P5635 (Conducted) and G6TD402M06P3 (Radiated)             |                                                                                       |
| Date Tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | JULY 01, 2020 to SEPTEMBER 18, 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 Andean<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. 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-E3548A to cover variant model BCG-E3549A. 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 A2342 and A2410.

A2342 and A2410 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 A2410 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 A2342 may be applied as representative to model A2410.

## 5.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

| A2410 SPOT CHECK RESULTS |                   |           |         |                              |                                             |                                        |            |                   |
|--------------------------|-------------------|-----------|---------|------------------------------|---------------------------------------------|----------------------------------------|------------|-------------------|
| Technology               | Worst Mode        | Test Item | Channel | Measured<br>Frequency<br>MHz | Original Model: A2342<br>FCC ID: BCG-E3548A | Sub Model: A2410<br>FCC ID: BCG-E3549A | Delta (dB) | Remarks           |
| LTE<br>BAND 2            | QPSK @ 20 MHz BW  | EIRP      | Low     | 1860                         | 25.8 dBm                                    | 25.8 dBm                               | 0          |                   |
|                          | QPSK @ highest BW | RSE       | Low     | 7868.34                      | -46.19 dBm                                  | -44.15 dBm                             | 2.04       | Noise Floor Level |
| LTE<br>BAND 5            | QPSK @ 10 MHz BW  | ERP       | Low     | 829                          | 18.25 dBm                                   | 17.95 dBm                              | -0.3       |                   |
|                          | QPSK @ highest BW | RSE       | High    | 3315.45                      | -51.54 dBm                                  | -51.41 dBm                             | 0.13       | Noise Floor Level |
| 5G NR<br>BAND N5         | QPSK @ 20 MHz BW  | ERP       | High    | 839                          | 18.25 dBm                                   | 17.95 dBm                              | -0.3       |                   |
| LTE<br>BAND 7            | QPSK @ 20 MHz BW  | EIRP      | Low     | 2510                         | 23.7 dBm                                    | 23.2 dBm                               | -0.5       |                   |
|                          | QPSK @ highest BW | RSE       | Mid     | 10138.52                     | -43.08 dBm                                  | -43.07 dBm                             | 0.01       | Noise Floor Level |
| LTE<br>BAND 12           | QPSK @ 10 MHz BW  | ERP       | High    | 711                          | 18.45 dBm                                   | 17.85 dBm                              | -0.6       |                   |
| 5G NR<br>BAND N12        | QPSK @ 15 MHz BW  | ERP       | Mid     | 707.5                        | 18.45 dBm                                   | 17.85 dBm                              | -0.6       |                   |
| LTE<br>BAND 13           | QPSK @ 10 MHz BW  | ERP       | Mid     | 782                          | 18.45 dBm                                   | 17.95 dBm                              | -0.5       |                   |
| LTE<br>BAND 14           | QPSK @ 10 MHz BW  | ERP       | Mid     | 793                          | 17.95 dBm                                   | 17.35 dBm                              | -0.6       |                   |
| LTE<br>BAND 17           | QPSK @ 10 MHz BW  | ERP       | Mid     | 710                          | 18.45 dBm                                   | 17.85 dBm                              | -0.6       |                   |
| LTE<br>BAND 25           | QPSK @ 20 MHz BW  | EIRP      | High    | 1905                         | 25.8 dBm                                    | 25.6 dBm                               | -0.2       |                   |
| LTE<br>BAND 26 (90S)     | QPSK @ 10 MHz BW  | ERP       | Mid     | 819                          | 18.3 dBm                                    | 18.0 dBm                               | -0.3       |                   |
| LTE<br>BAND 30 (NS1)     | QPSK @ 10 MHz BW  | EIRP      | Mid     | 2310                         | 23.5 dBm                                    | 23.3 dBm                               | -0.2       |                   |
| LTE<br>BAND 41           | QPSK @ 20 MHz BW  | EIRP      | Mid     | 2593                         | 25.7 dBm                                    | 25.2 dBm                               | -0.5       |                   |
| 5G NR<br>BAND N41        | QPSK @ 100 MHz BW | EIRP      | High    | 2640                         | 26.0 dBm                                    | 25.7 dBm                               | -0.5       |                   |
| LTE<br>BAND 48           | QPSK @ 20 MHz BW  | EIRP      | Mid     | 3625                         | 22.2 dBm                                    | 22.2 dBm                               | 0          |                   |
| LTE<br>BAND 66           | QPSK @ 20 MHz BW  | EIRP      | High    | 1770                         | 25.1 dBm                                    | 25.1 dBm                               | 0          |                   |
| LTE<br>BAND 71           | QPSK @ 20MHz BW   | ERP       | High    | 688                          | 19.15 dBm                                   | 18.85 dBm                              | -0.3       |                   |
| 5G NR<br>BAND N77        | QPSK @ 100 MHz BW | EIRP      | Mid     | 3840                         | 19.8 dBm                                    | 19.7 dBm                               | 0          |                   |

## 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-E3548A       | 13335182-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   | -4.4               | -5.3  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 12, 5G NR Band n12, 699 – 716 MHz   | -5.1               | -6.9  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 17, 704 – 716 MHz                   | -5.1               | -6.9  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 13, 777 – 787 MHz                   | -5.1               | -6.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 14, 788 – 798 MHz                   | -5.6               | -6.9  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 26, 814 – 824 MHz (Part 90S )       | -5.3               | -5.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 5, 5G NR Band n5, 824 – 849 MHz     | -5.3               | -4.9  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 66, 5G NR Band n66, 1710 – 1780 MHz | -3.1               | -1.8  | 0.4   | -1.7  | NA    | NA    | NA    |
| LTE Band 2, 5G NR Band n2, 1850 – 1910 MHz   | -2.8               | -1.4  | 1.1   | -0.7  | NA    | NA    | NA    |
| LTE Band 25, 5G NR Band n25 1850 – 1915 MHz  | -2.8               | -1.4  | 1.1   | -0.7  | NA    | NA    | NA    |
| LTE Band 30, 2305 – 2315 MHz                 | -2.9               | -1.1  | 0.4   | 1.0   | NA    | NA    | NA    |
| LTE Band 7, 2500 – 2570 MHz                  | -2.0               | -1.5  | -1.1  | -0.2  | NA    | NA    | NA    |
| LTE Band 41, 5G NR Band n41, 2496 – 2690 MHz | -2.0               | -1.1  | 0     | -0.2  | NA    | NA    | NA    |
| 5G NR Band n77, 3700 – 3980 MHz              | NA                 | NA    | NA    | -3.2  | -5.9  | -5.9  | -5.5  |
| LTE Band 48, 3550 – 3700 MHz                 | NA                 | NA    | NA    | -3.0  | -4.9  | -4.9  | -3.0  |

## 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 Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, and 5G NR Band 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 as 5G NR Band n5, 5G NR Band n12, and 5G NR Band 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. 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 n41, and 5G NR Band n77. For 5G NR Band n41 ANT2 is the worst case antenna. For bands 48 and 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    |

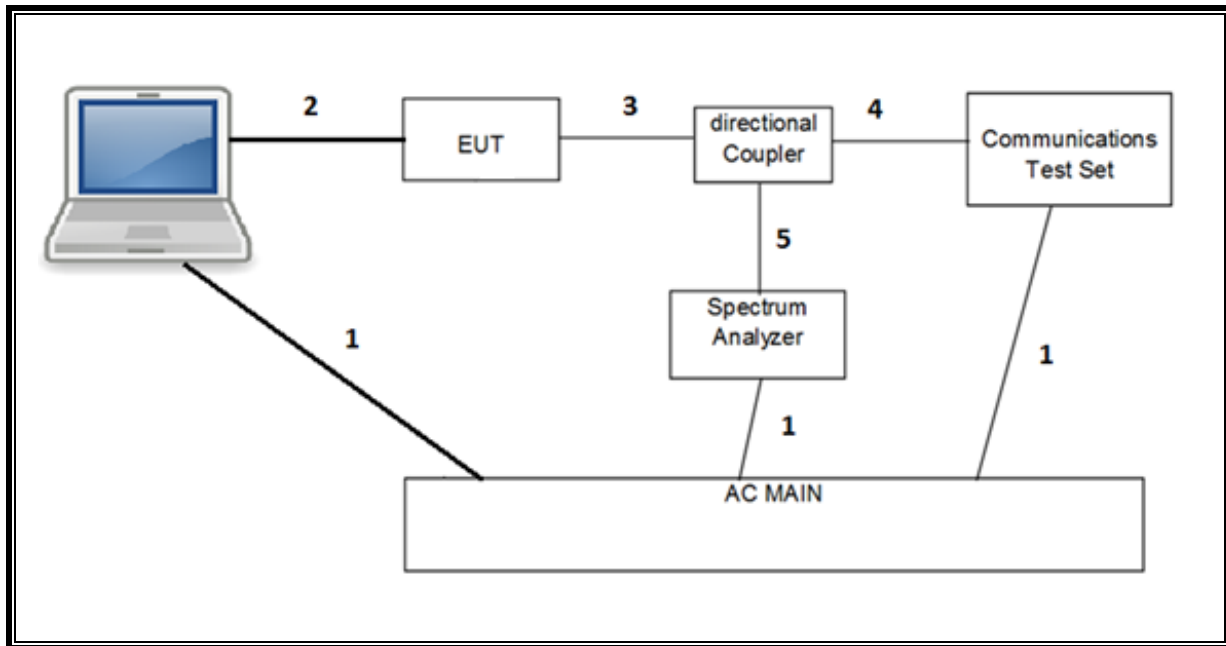
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

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.

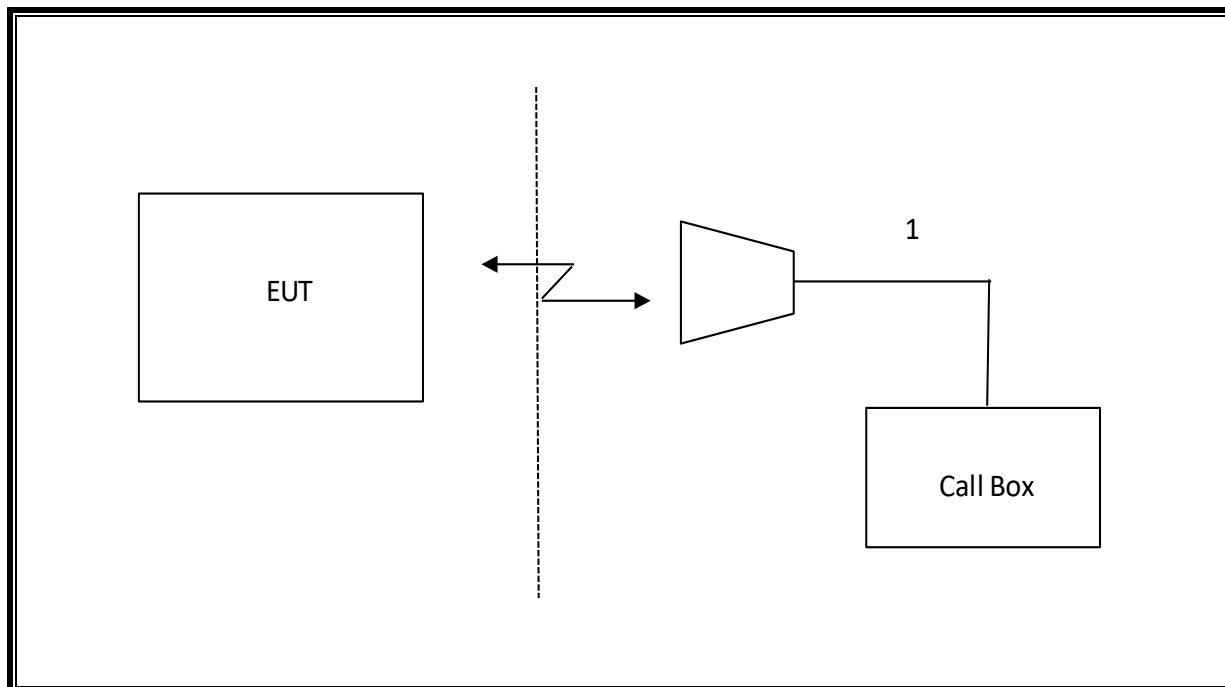
## 5.9. DESCRIPTION OF TEST SETUP

| 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 #:     | 13131738              |
| Date:          | 8/15/2020             |
| Test Engineer: | 19497                 |
| Configuration: | EUT Only              |
| Mode           | LTE Band 2 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, 1860MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.90389              | 39.32                | Pk  | 33.8           | -27.1        | -95.2   | -49.18                  | -13             | -36.18      | H        |
| 4.79819              | 38.01                | Pk  | 34.2           | -25.1        | -95.2   | -48.09                  | -13             | -35.09      | H        |
| 4.80317              | 38.12                | Pk  | 34.3           | -25.1        | -95.2   | -47.88                  | -13             | -34.88      | V        |
| 5.35976              | 36.29                | Pk  | 34.8           | -25.1        | -95.2   | -49.21                  | -13             | -36.21      | V        |
| 6.71572              | 34.52                | Pk  | 36.8           | -22.6        | -95.2   | -46.48                  | -13             | -33.48      | H        |
| 8.10757              | 35.17                | Pk  | 36.1           | -21.1        | -95.2   | -45.03                  | -13             | -32.03      | V        |
| Mid Channel, 1880MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.76761              | 39.28                | Pk  | 33.6           | -27          | -95.2   | -49.32                  | -13             | -36.32      | V        |
| 3.76793              | 38.31                | Pk  | 33.6           | -27          | -95.2   | -50.29                  | -13             | -37.29      | H        |
| 5.62543              | 37.33                | Pk  | 35.1           | -24.1        | -95.2   | -46.87                  | -13             | -33.87      | H        |
| 5.65871              | 36.85                | Pk  | 35.2           | -24.4        | -95.2   | -47.55                  | -13             | -34.55      | V        |
| 7.52198              | 35.34                | Pk  | 36             | -22.3        | -95.2   | -46.16                  | -13             | -33.16      | H        |
| 7.57012              | 34.84                | Pk  | 35.9           | -21.4        | -95.2   | -45.86                  | -13             | -32.86      | V        |
| Mid Channel, 1900MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.60205              | 38.17                | Pk  | 33.3           | -27.2        | -95.2   | -50.93                  | -13             | -37.93      | H        |
| 3.72957              | 38.38                | Pk  | 33.5           | -26.8        | -95.2   | -50.12                  | -13             | -37.12      | V        |
| 4.56338              | 37.6                 | Pk  | 34             | -26.5        | -95.2   | -50.1                   | -13             | -37.1       | H        |
| 4.61667              | 37.95                | Pk  | 34.2           | -27.1        | -95.2   | -50.15                  | -13             | -37.15      | V        |
| 6.47582              | 35.58                | Pk  | 36.3           | -22.7        | -95.2   | -46.02                  | -13             | -33.02      | V        |
| 7.3398               | 34.93                | Pk  | 36.1           | -21.1        | -95.2   | -45.27                  | -13             | -32.27      | 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 #:     | 13131738              |
| Date:          | 9/1/2020              |
| Test Engineer: | 50820                 |
| Configuration: | EUT Only              |
| Mode:          | LTE Band 5 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, 829MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.65699               | 39.84                | Pk  | 29             | -30.7        | -95.2   | -56.26                  | -13             | -43.26      | H        |
| 1.65724               | 39.67                | Pk  | 29             | -30.7        | -95.2   | -56.43                  | -13             | -43.43      | V        |
| 2.48647               | 38.33                | Pk  | 33.4           | -29.8        | -95.2   | -52.77                  | -13             | -39.77      | V        |
| 2.48723               | 38.55                | Pk  | 33.4           | -29.8        | -95.2   | -52.55                  | -13             | -39.55      | H        |
| 3.31706               | 37.79                | Pk  | 33             | -28.7        | -95.2   | -52.51                  | -13             | -39.51      | H        |
| 3.31994               | 37.71                | Pk  | 33             | -28.6        | -95.2   | -52.49                  | -13             | -39.49      | V        |
| Mid Channel, 836.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.6731                | 38.9                 | Pk  | 29             | -30.6        | -95.2   | -57.2                   | -13             | -44.2       | V        |
| 1.67562               | 39.46                | Pk  | 29             | -30.6        | -95.2   | -56.64                  | -13             | -43.64      | H        |
| 2.51513               | 38.31                | Pk  | 33.5           | -29.6        | -95.2   | -52.29                  | -13             | -39.29      | H        |
| 2.51755               | 38.09                | Pk  | 33.5           | -29.5        | -95.2   | -52.31                  | -13             | -39.31      | V        |
| 3.34531               | 37.64                | Pk  | 33             | -28.5        | -95.2   | -52.56                  | -13             | -39.56      | H        |
| 3.34642               | 37.09                | Pk  | 33             | -28.5        | -95.2   | -53.11                  | -13             | -40.11      | V        |
| High Channel, 844MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.68939               | 39.06                | Pk  | 29.1           | -30.5        | -95.2   | -56.84                  | -13             | -43.84      | V        |
| 1.69104               | 39.43                | Pk  | 29.1           | -30.5        | -95.2   | -56.47                  | -13             | -43.47      | H        |
| 2.5462                | 38.75                | Pk  | 33.3           | -29.5        | -95.2   | -52.05                  | -13             | -39.05      | H        |
| 2.55046               | 37.7                 | Pk  | 33.2           | -29.5        | -95.2   | -53.2                   | -13             | -40.2       | V        |
| 3.37322               | 37.63                | Pk  | 33             | -28.6        | -95.2   | -52.57                  | -13             | -39.57      | V        |
| 3.37883               | 38.37                | Pk  | 33             | -28.6        | -95.2   | -51.83                  | -13             | -38.83      | H        |

### **QPSK 5G NR Band n5 (20.0MHZ BANDWIDTH)**

|                |                          |
|----------------|--------------------------|
| Project #:     | 13131738                 |
| Date:          | 9/1/220                  |
| Test Engineer: | 50820                    |
| Configuration: | EUT Only                 |
| Mode           | 5G NR Band 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   |                      |     |                |              |         |                         |                 |             |          |
| 1.66518               | 39.18                | Pk  | 28.9           | -30.6        | -95.2   | -57.02                  | -13             | -44.02      | H        |
| 1.66967               | 38.47                | Pk  | 28.9           | -30.6        | -95.2   | -57.73                  | -13             | -44.73      | V        |
| 2.50267               | 39.27                | Pk  | 33.5           | -29.8        | -95.2   | -51.63                  | -13             | -38.63      | H        |
| 2.50271               | 39.5                 | Pk  | 33.5           | -29.8        | -95.2   | -51.4                   | -13             | -38.4       | V        |
| 3.35809               | 38.07                | Pk  | 33             | -28.5        | -95.2   | -52.03                  | -13             | -39.03      | H        |
| 3.36681               | 38.55                | Pk  | 33             | -28.4        | -95.2   | -51.45                  | -13             | -38.45      | V        |
| Mid Channel, 836.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.66693               | 40.74                | Pk  | 28.9           | -30.6        | -95.2   | -55.46                  | -13             | -42.46      | H        |
| 1.67866               | 41.53                | Pk  | 28.9           | -30.6        | -95.2   | -54.67                  | -13             | -41.67      | V        |
| 2.51458               | 38.83                | Pk  | 33.5           | -29.6        | -95.2   | -51.77                  | -13             | -38.77      | H        |
| 2.5153                | 38.88                | Pk  | 33.5           | -29.6        | -95.2   | -51.72                  | -13             | -38.72      | V        |
| 3.34952               | 38.43                | Pk  | 33             | -28.5        | -95.2   | -51.77                  | -13             | -38.77      | H        |
| 3.36383               | 39.16                | Pk  | 33             | -28.4        | -95.2   | -50.84                  | -13             | -37.84      | V        |
| High Channel, 839MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.67865               | 39.67                | Pk  | 28.9           | -30.6        | -95.2   | -56.53                  | -13             | -43.53      | H        |
| 1.68171               | 40.17                | Pk  | 28.9           | -30.6        | -95.2   | -56.03                  | -13             | -43.03      | V        |
| 2.516                 | 38.56                | Pk  | 33.5           | -29.5        | -95.2   | -51.94                  | -13             | -38.94      | V        |
| 2.51616               | 38.94                | Pk  | 33.5           | -29.5        | -95.2   | -51.56                  | -13             | -38.56      | H        |
| 3.35719               | 37.96                | Pk  | 33             | -28.5        | -95.2   | -52.14                  | -13             | -39.14      | V        |
| 3.35741               | 38.01                | Pk  | 33             | -28.5        | -95.2   | -52.09                  | -13             | -39.09      | 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 #:     | 13131738              |
| Date:          | 9/7/2020              |
| Test Engineer: | 30606                 |
| Configuration: | EUT Only              |
| Mode           | LTE Band 7 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, 2510MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.84191               | 39.74                | Pk  | 33.8           | -27.7        | -95.2   | -48.66                  | -25             | -23.66      | H        |
| 3.9442                | 39.49                | Pk  | 33.7           | -27.6        | -95.2   | -49.21                  | -25             | -24.21      | V        |
| 4.80372               | 38.57                | Pk  | 34.3           | -27          | -95.2   | -48.43                  | -25             | -23.43      | H        |
| 5.20146               | 36.83                | Pk  | 34.5           | -25.8        | -95.2   | -48.77                  | -25             | -23.77      | V        |
| 6.36243               | 36.16                | Pk  | 36.3           | -24.6        | -95.2   | -46.74                  | -25             | -21.74      | H        |
| 7.5033                | 35.59                | Pk  | 36             | -22.6        | -95.2   | -45.91                  | -25             | -20.91      | V        |
| Mid Channel, 2535MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.0804                | 38.38                | Pk  | 34.4           | -26          | -95.2   | -47.72                  | -25             | -22.72      | H        |
| 5.08911               | 38.14                | Pk  | 34.4           | -26          | -95.2   | -47.86                  | -25             | -22.86      | V        |
| 7.60796               | 35.26                | Pk  | 35.9           | -22.6        | -95.2   | -46.24                  | -25             | -21.24      | H        |
| 7.66835               | 35.4                 | Pk  | 35.9           | -22.3        | -95.2   | -45.9                   | -25             | -20.9       | V        |
| 10.13464              | 35.05                | Pk  | 37.5           | -20.4        | -95.2   | -42.35                  | -25             | -17.35      | H        |
| 10.18593              | 34.53                | Pk  | 37.5           | -20.4        | -95.2   | -42.87                  | -25             | -17.87      | V        |
| High Channel, 2560MHz |                      |     |                |              |         |                         |                 |             |          |
| 4.20789               | 38.6                 | Pk  | 33.5           | -27.5        | -95.2   | -50.2                   | -25             | -25.2       | H        |
| 4.36557               | 38.38                | Pk  | 33.6           | -27.1        | -95.2   | -50.02                  | -25             | -25.02      | V        |
| 5.08869               | 38.21                | Pk  | 34.4           | -26          | -95.2   | -47.79                  | -25             | -22.79      | V        |
| 5.66723               | 36.51                | Pk  | 35.2           | -25.4        | -95.2   | -48.39                  | -25             | -23.39      | H        |
| 6.3313                | 36.6                 | Pk  | 36.3           | -24.6        | -95.2   | -46.4                   | -25             | -21.4       | V        |
| 7.30285               | 35.66                | Pk  | 36.1           | -22.7        | -95.2   | -45.74                  | -25             | -20.74      | 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 #:     | 13131738               |
| Date:          | 9/1/2020               |
| Test Engineer: | 50820                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 12 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   |                      |     |                |              |         |                         |                 |             |          |
| 1.40532               | 39.99                | Pk  | 29.1           | -31          | -95.2   | -56.21                  | -13             | -43.21      | H        |
| 1.40753               | 39.91                | Pk  | 29.1           | -31          | -95.2   | -56.29                  | -13             | -43.29      | V        |
| 2.1122                | 38.81                | Pk  | 31.7           | -30.1        | -95.2   | -54.29                  | -13             | -41.29      | H        |
| 2.11418               | 38.23                | Pk  | 31.7           | -30          | -95.2   | -54.77                  | -13             | -41.77      | V        |
| 2.81493               | 37.8                 | Pk  | 32.6           | -29          | -95.2   | -53.2                   | -13             | -40.2       | V        |
| 2.81686               | 37.66                | Pk  | 32.6           | -29          | -95.2   | -53.34                  | -13             | -40.34      | H        |
| Mid Channel, 707.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.4148                | 40.78                | Pk  | 29.1           | -31          | -95.2   | -55.42                  | -13             | -42.42      | V        |
| 1.4158                | 40.55                | Pk  | 29.1           | -31          | -95.2   | -55.65                  | -13             | -42.65      | H        |
| 2.12381               | 39.75                | Pk  | 31.6           | -30          | -95.2   | -53.35                  | -13             | -40.35      | H        |
| 2.13104               | 39.56                | Pk  | 31.5           | -29.9        | -95.2   | -53.54                  | -13             | -40.54      | V        |
| 2.82673               | 38.58                | Pk  | 32.5           | -28.9        | -95.2   | -52.32                  | -13             | -39.32      | V        |
| 2.83176               | 38.92                | Pk  | 32.6           | -28.9        | -95.2   | -51.88                  | -13             | -38.88      | H        |
| High Channel, 711MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.4148                | 40.78                | Pk  | 29.1           | -31          | -95.2   | -55.42                  | -13             | -42.42      | V        |
| 1.4158                | 40.55                | Pk  | 29.1           | -31          | -95.2   | -55.65                  | -13             | -42.65      | H        |
| 2.12381               | 39.75                | Pk  | 31.6           | -30          | -95.2   | -53.35                  | -13             | -40.35      | H        |
| 2.13104               | 39.56                | Pk  | 31.5           | -29.9        | -95.2   | -53.54                  | -13             | -40.54      | V        |
| 2.82673               | 38.58                | Pk  | 32.5           | -28.9        | -95.2   | -52.32                  | -13             | -39.32      | V        |
| 2.83176               | 38.92                | Pk  | 32.6           | -28.9        | -95.2   | -51.88                  | -13             | -38.88      | H        |

# **QPSK 5G NR Band n12 (15.0MHZ BANDWIDTH)**

|                |                           |
|----------------|---------------------------|
| Project #:     | 13131738                  |
| Date:          | 9/2/2020                  |
| Test Engineer: | 50822                     |
| Configuration: | EUT Only                  |
| Mode           | 5G NR Band n12 15MHz QPSK |
| 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, 706.5MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.46536                | 41.12                | Pk  | 25             | -30.6        | -95.2   | -58.78                  | -13             | -45.78      | V        |
| 1.46555                | 41.26                | Pk  | 25             | -30.6        | -95.2   | -58.64                  | -13             | -45.64      | H        |
| 2.16862                | 40.09                | Pk  | 27             | -29.6        | -95.2   | -57.11                  | -13             | -44.11      | H        |
| 2.44764                | 40.25                | Pk  | 28.8           | -29.4        | -95.2   | -55.05                  | -13             | -42.05      | V        |
| 3.13688                | 39.37                | Pk  | 30.8           | -28.5        | -95.2   | -52.93                  | -13             | -39.93      | H        |
| 3.32293                | 39.62                | Pk  | 31.1           | -28.1        | -95.2   | -51.98                  | -13             | -38.98      | V        |
| Mid Channel, 707.5MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.46536                | 41.12                | Pk  | 25             | -30.6        | -95.2   | -58.78                  | -13             | -45.78      | V        |
| 1.46555                | 41.26                | Pk  | 25             | -30.6        | -95.2   | -58.64                  | -13             | -45.64      | H        |
| 2.16862                | 40.09                | Pk  | 27             | -29.6        | -95.2   | -57.11                  | -13             | -44.11      | H        |
| 2.44764                | 40.25                | Pk  | 28.8           | -29.4        | -95.2   | -55.05                  | -13             | -42.05      | V        |
| 3.13688                | 39.37                | Pk  | 30.8           | -28.5        | -95.2   | -52.93                  | -13             | -39.93      | H        |
| 3.32293                | 39.62                | Pk  | 31.1           | -28.1        | -95.2   | -51.98                  | -13             | -38.98      | V        |
| High Channel, 708.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.49305                | 41                   | Pk  | 24.8           | -30.6        | -95.2   | -59.1                   | -13             | -46.1       | V        |
| 1.50799                | 41.6                 | Pk  | 24.8           | -30.6        | -95.2   | -58.6                   | -13             | -45.6       | H        |
| 2.44976                | 40.86                | Pk  | 28.8           | -29.4        | -95.2   | -54.44                  | -13             | -41.44      | H        |
| 2.50683                | 40.28                | Pk  | 29.1           | -29.3        | -95.2   | -54.42                  | -13             | -41.42      | V        |
| 3.49976                | 38.73                | Pk  | 30.1           | -27.7        | -95.2   | -53.17                  | -13             | -40.17      | H        |
| 3.60466                | 38.6                 | Pk  | 30             | -27.9        | -95.2   | -53.8                   | -13             | -40.8       | 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 #:     | 13131738               |
| Date:          | 8/23/2020              |
| Test Engineer: | 31300                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 13 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 |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 782MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.56498             | 41.13                | Pk  | 24.9           | -30.5        | -95.2   | -58.77                  | -40             | -18.77      | V        |
| 1.5688              | 41.22                | Pk  | 24.9           | -30.5        | -95.2   | -58.68                  | -40             | -18.68      | H        |
| 2.36414             | 39.49                | Pk  | 28.2           | -29.5        | -95.2   | -56.41                  | -13             | -43.41      | V        |
| 2.36587             | 40.21                | Pk  | 28.2           | -29.5        | -95.2   | -55.69                  | -13             | -42.69      | H        |
| 3.12749             | 40.72                | Pk  | 30.7           | -28.5        | -95.2   | -51.68                  | -13             | -38.68      | H        |
| 3.12823             | 39.55                | Pk  | 30.7           | -28.5        | -95.2   | -52.85                  | -13             | -39.85      | V        |

\* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

## 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 #:     | 13131738               |
| Date:          | 8/6/2020               |
| Test Engineer: | 19497                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 14 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 |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.58812             | 41.09                | Pk  | 24.9           | -30.5        | -95.2   | -58.91                  | -40             | -18.91      | V        |
| 1.58921             | 40.88                | Pk  | 24.9           | -30.5        | -95.2   | -59.12                  | -40             | -19.12      | H        |
| 2.37925             | 40.05                | Pk  | 28.3           | -29.5        | -95.2   | -55.75                  | -13             | -42.75      | V        |
| 2.37956             | 40.17                | Pk  | 28.3           | -29.5        | -95.2   | -55.63                  | -13             | -42.63      | H        |
| 3.17327             | 38.36                | Pk  | 31.1           | -28.5        | -95.2   | -53.74                  | -13             | -40.74      | H        |
| 3.17391             | 40.53                | Pk  | 31.1           | -28.5        | -95.2   | -51.57                  | -13             | -38.57      | V        |

\* Emissions in the GPS band were wideband emissions therefore the -40dBm/MHz limit was used.

## 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 #:     | 13131738               |
| Date:          | 8/14/2020              |
| Test Engineer: | 19497                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 17 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 |
|---------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.42121             | 40.47                | Pk  | 29             | -30.9        | -95.2   | -55.73                  | -13             | -42.73      | H        |
| 1.42563             | 40.55                | Pk  | 29             | -31          | -95.2   | -55.75                  | -13             | -42.75      | V        |
| 2.1279              | 39.78                | Pk  | 31.6           | -30          | -95.2   | -53.32                  | -13             | -40.32      | H        |
| 2.1339              | 39.99                | Pk  | 31.5           | -29.9        | -95.2   | -53.11                  | -13             | -40.11      | V        |
| 2.83915             | 39.1                 | Pk  | 32.5           | -29          | -95.2   | -51.9                   | -13             | -38.9       | H        |
| 2.84302             | 39.37                | Pk  | 32.5           | -29.1        | -95.2   | -51.73                  | -13             | -38.73      | 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 #:     | 13131738               |
| Date:          | 8/24/2020              |
| Test Engineer: | 31300                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 25 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, 1860MHz   |                      |     |                |              |         |                         |                 |             |          |
| 3.63114                | 38.73                | Pk  | 33.4           | -27.5        | -95.2   | -50.57                  | -13             | -37.57      | H        |
| 3.7246                 | 39.72                | Pk  | 33.4           | -26.9        | -95.2   | -48.98                  | -13             | -35.98      | V        |
| 4.80527                | 37.87                | Pk  | 34.3           | -25.2        | -95.2   | -48.23                  | -13             | -35.23      | H        |
| 5.65953                | 37.11                | Pk  | 35.2           | -24.4        | -95.2   | -47.29                  | -13             | -34.29      | V        |
| 8.11745                | 35.37                | Pk  | 36.1           | -20.9        | -95.2   | -44.63                  | -13             | -31.63      | H        |
| 8.16849                | 35.31                | Pk  | 36.1           | -20.4        | -95.2   | -44.19                  | -13             | -31.19      | V        |
| Mid Channel, 1882.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.76393                | 39.21                | Pk  | 30.7           | -27.5        | -95.2   | -52.79                  | -13             | -39.79      | H        |
| 3.76527                | 39.42                | Pk  | 30.7           | -27.5        | -95.2   | -52.58                  | -13             | -39.58      | V        |
| 5.64633                | 36.79                | Pk  | 33.1           | -24.8        | -95.2   | -50.11                  | -13             | -37.11      | V        |
| 5.64829                | 37.17                | Pk  | 33.1           | -24.7        | -95.2   | -49.63                  | -13             | -36.63      | H        |
| 7.53001                | 36.72                | Pk  | 36.9           | -23.1        | -95.2   | -44.68                  | -13             | -31.68      | V        |
| 7.53308                | 35.95                | Pk  | 36.9           | -23.1        | -95.2   | -45.45                  | -13             | -32.45      | H        |
| High Channel, 1905MHz  |                      |     |                |              |         |                         |                 |             |          |
| 4.2537                 | 38.09                | Pk  | 33.5           | -26.2        | -95.2   | -49.81                  | -13             | -36.81      | H        |
| 4.64139                | 38.5                 | Pk  | 34.3           | -27          | -95.2   | -49.4                   | -13             | -36.4       | V        |
| 6.42244                | 35.9                 | Pk  | 36.4           | -23.2        | -95.2   | -46.1                   | -13             | -33.1       | H        |
| 6.47316                | 36.44                | Pk  | 36.4           | -22.7        | -95.2   | -45.06                  | -13             | -32.06      | V        |
| 8.44677                | 35.03                | Pk  | 36.2           | -20.6        | -95.2   | -44.57                  | -13             | -31.57      | H        |
| 9.32886                | 35.95                | Pk  | 36.6           | -20          | -95.2   | -42.65                  | -13             | -29.65      | 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 #:     | 13131738               |
| Date:          | 8/24/2020              |
| Test Engineer: | 31300                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 26 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 |                      |     |                |              |         |                         |                 |             |          |
| 1.63484             | 42.21                | Pk  | 25             | -30.5        | -95.2   | -57.79                  | -13             | -44.79      | V        |
| 1.63537             | 41.82                | Pk  | 25             | -30.5        | -95.2   | -58.18                  | -13             | -45.18      | H        |
| 2.45495             | 39.49                | Pk  | 28.8           | -29.4        | -95.2   | -55.81                  | -13             | -42.81      | H        |
| 2.45657             | 40.36                | Pk  | 28.9           | -29.4        | -95.2   | -54.84                  | -13             | -41.84      | V        |
| 3.2774              | 38.3                 | Pk  | 31.3           | -28.1        | -95.2   | -52.9                   | -13             | -39.9       | H        |
| 3.27858             | 38.89                | Pk  | 31.4           | -28.1        | -95.2   | -52.21                  | -13             | -39.21      | V        |

## 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 #:     | 13131738               |
| Date:          | 8/24/2020              |
| Test Engineer: | 19410                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 30 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 |
|----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                      |     |                |              |         |                         |                 |             |          |
| 4.62057              | 33.77                | RMS | 32.2           | -26.9        | -95.2   | -56.13                  | -40             | -16.13      | H        |
| 4.62063              | 33.37                | RMS | 32.3           | -26.9        | -95.2   | -56.43                  | -40             | -16.43      | V        |
| 6.9292               | 30.87                | RMS | 36.3           | -23.4        | -95.2   | -51.43                  | -40             | -11.43      | V        |
| 6.93125              | 30.7                 | RMS | 36.3           | -23.4        | -95.2   | -51.6                   | -40             | -11.6       | H        |
| 9.24053              | 24.39                | RMS | 38.7           | -20.3        | -95.2   | -52.41                  | -40             | -12.41      | V        |
| 9.2416               | 24.42                | RMS | 38.7           | -20.3        | -95.2   | -52.38                  | -40             | -12.38      | H        |

## 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 #:     | 13131738               |
| Date:          | 9/8/2020               |
| Test Engineer: | 50820                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 41 QPSK 20MHz |
| Chamber #:     | Chamber A              |

| 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  |                      |     |                |              |         |                         |                 |                |          |
| 5.01206               | 36.85                | Pk  | 34.2           | -26.7        | -95.2   | -50.05                  | -25             | -25.05         | V        |
| 5.016                 | 37.78                | Pk  | 34.2           | -26.6        | -95.2   | -49.02                  | -25             | -24.02         | H        |
| 7.51973               | 34.1                 | Pk  | 36             | -22.7        | -95.2   | -47.5                   | -25             | -22.5          | H        |
| 7.52125               | 34.26                | Pk  | 36             | -22.7        | -95.2   | -47.34                  | -25             | -22.34         | V        |
| 10.02602              | 32.45                | Pk  | 37.3           | -20.4        | -95.2   | -45.15                  | -25             | -20.15         | H        |
| 10.02773              | 32.82                | Pk  | 37.3           | -20.4        | -95.2   | -44.78                  | -25             | -19.78         | V        |
| Mid Channel, 2593MHz  |                      |     |                |              |         |                         |                 |                |          |
| 5.18682               | 37.44                | Pk  | 33.6           | -26.4        | -95.2   | -49.76                  | -25             | -24.76         | V        |
| 5.18706               | 36.73                | Pk  | 33.6           | -26.4        | -95.2   | -50.47                  | -25             | -25.47         | H        |
| 7.78023               | 35.6                 | Pk  | 37.2           | -23.3        | -95.2   | -45.4                   | -25             | -20.4          | H        |
| 7.7804                | 35.89                | Pk  | 37.2           | -23.3        | -95.2   | -45.11                  | -25             | -20.11         | V        |
| 10.37194              | 33.59                | Pk  | 39.2           | -19.3        | -95.2   | -40.91                  | -25             | -15.91         | H        |
| 10.37292              | 34.01                | Pk  | 39.2           | -19.3        | -95.2   | -40.49                  | -25             | -15.49         | V        |
| High Channel, 2680MHz |                      |     |                |              |         |                         |                 |                |          |
| 5.3607                | 36.12                | Pk  | 34.8           | -26.2        | -95.2   | -49.98                  | -25             | -24.98         | V        |
| 5.37132               | 36.48                | Pk  | 34.8           | -26.1        | -95.2   | -49.42                  | -25             | -24.42         | H        |
| 8.05609               | 34.24                | Pk  | 36.1           | -22.3        | -95.2   | -46.76                  | -25             | -21.76         | H        |
| 8.06935               | 34.37                | Pk  | 36.2           | -22.2        | -95.2   | -46.43                  | -25             | -21.43         | V        |
| 10.72031              | 33.69                | Pk  | 37.8           | -19.8        | -95.2   | -42.91                  | -25             | -17.91         | H        |
| 10.72243              | 33.48                | Pk  | 37.8           | -19.8        | -95.2   | -43.12                  | -25             | -18.12         | V        |

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

|                |                            |
|----------------|----------------------------|
| Project #:     | 13171738                   |
| Date:          | 8/30/2020                  |
| Test Engineer: | 50820                      |
| Configuration: | EUT only                   |
| Mode           | 5G NR Band n41 QPSK 100MHz |
| Chamber #:     | Chamber A                  |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2546MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.08513               | 37.46                | Pk  | 34.4           | -26          | -95.2   | -49.34                  | -25             | -24.34      | H        |
| 5.09741               | 37.42                | Pk  | 34.5           | -26.1        | -95.2   | -49.38                  | -25             | -24.38      | V        |
| 7.63596               | 33.24                | Pk  | 35.9           | -22.4        | -95.2   | -48.46                  | -25             | -23.46      | H        |
| 7.6365                | 34.3                 | Pk  | 35.9           | -22.4        | -95.2   | -47.4                   | -25             | -22.4       | V        |
| 10.18097              | 34.46                | Pk  | 37.5           | -20.3        | -95.2   | -43.54                  | -25             | -18.54      | H        |
| 10.18295              | 33.84                | Pk  | 37.5           | -20.4        | -95.2   | -44.26                  | -25             | -19.26      | V        |
| Mid Channel, 2593MHz  |                      |     |                |              |         |                         |                 |             |          |
| 5.17098               | 36.8                 | Pk  | 34.6           | -26.3        | -95.2   | -50.1                   | -25             | -25.1       | H        |
| 5.18045               | 37.2                 | Pk  | 34.6           | -26.1        | -95.2   | -49.5                   | -25             | -24.5       | V        |
| 7.76917               | 34.8                 | Pk  | 35.9           | -22.5        | -95.2   | -47                     | -25             | -22         | H        |
| 7.78954               | 35.23                | Pk  | 36             | -22.4        | -95.2   | -46.37                  | -25             | -21.37      | V        |
| 10.35766              | 33.05                | Pk  | 37.7           | -19.8        | -95.2   | -44.25                  | -25             | -19.25      | V        |
| 10.40084              | 32.96                | Pk  | 37.7           | -19.5        | -95.2   | -44.04                  | -25             | -19.04      | H        |
| High Channel, 2640MHz |                      |     |                |              |         |                         |                 |             |          |
| 5.27909               | 37.48                | Pk  | 34.7           | -26.6        | -95.2   | -49.62                  | -25             | -24.62      | H        |
| 5.28183               | 36.02                | Pk  | 34.7           | -26.7        | -95.2   | -51.18                  | -25             | -26.18      | V        |
| 7.92447               | 34.49                | Pk  | 36.2           | -22.4        | -95.2   | -46.91                  | -25             | -21.91      | V        |
| 7.9258                | 34.35                | Pk  | 36.2           | -22.4        | -95.2   | -47.05                  | -25             | -22.05      | H        |
| 10.5641               | 32.72                | Pk  | 37.8           | -19.7        | -95.2   | -44.38                  | -25             | -19.38      | V        |
| 10.56644              | 32.87                | Pk  | 37.8           | -19.7        | -95.2   | -44.23                  | -25             | -19.23      | 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 #:     | 13131738               |
| Date:          | 9/9/2020               |
| Test Engineer: | 50820                  |
| Configuration: | EUT Only               |
| Mode           | LTE Band 66 QPSK 20MHz |
| Chamber #:     | Chamber A              |

| Frequency (GHz)       | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl (dB) | EIRP CF | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|----------------------|-----|----------------|--------------|---------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.42863               | 38.63                | Pk  | 33.1           | -28.2        | -95.2   | -51.67                  | -13             | -38.67      | V        |
| 3.44058               | 38.02                | Pk  | 33.1           | -28.1        | -95.2   | -52.18                  | -13             | -39.18      | H        |
| 5.17501               | 38.51                | Pk  | 34.6           | -26.4        | -95.2   | -48.49                  | -13             | -35.49      | V        |
| 5.17999               | 37.16                | Pk  | 34.6           | -26.4        | -95.2   | -49.84                  | -13             | -36.84      | H        |
| 6.83125               | 34.91                | Pk  | 36.4           | -23          | -95.2   | -46.89                  | -13             | -33.89      | H        |
| 6.8586                | 35.19                | Pk  | 36.4           | -23.5        | -95.2   | -47.11                  | -13             | -34.11      | V        |
| Mid Channel, 1745MHz  |                      |     |                |              |         |                         |                 |             |          |
| 3.48392               | 38.2                 | Pk  | 33.1           | -27.7        | -95.2   | -51.6                   | -13             | -38.6       | V        |
| 3.48707               | 38.56                | Pk  | 33.1           | -27.6        | -95.2   | -51.14                  | -13             | -38.14      | H        |
| 5.22827               | 37.6                 | Pk  | 34.6           | -26.2        | -95.2   | -49.2                   | -13             | -36.2       | H        |
| 5.24154               | 37.05                | Pk  | 34.6           | -26          | -95.2   | -49.55                  | -13             | -36.55      | V        |
| 6.98443               | 35.2                 | Pk  | 36.1           | -22.6        | -95.2   | -46.5                   | -13             | -33.5       | H        |
| 7.01184               | 35.14                | Pk  | 36.1           | -22.6        | -95.2   | -46.56                  | -13             | -33.56      | V        |
| High Channel, 1770MHz |                      |     |                |              |         |                         |                 |             |          |
| 3.55025               | 38.1                 | Pk  | 33.4           | -26.8        | -95.2   | -50.5                   | -13             | -37.5       | V        |
| 3.55304               | 37.94                | Pk  | 33.3           | -26.8        | -95.2   | -50.76                  | -13             | -37.76      | H        |
| 5.30295               | 37.02                | Pk  | 34.8           | -25.7        | -95.2   | -49.08                  | -13             | -36.08      | V        |
| 5.30468               | 36.35                | Pk  | 34.8           | -25.6        | -95.2   | -49.65                  | -13             | -36.65      | H        |
| 7.06928               | 34.68                | Pk  | 36             | -22.1        | -95.2   | -46.62                  | -13             | -33.62      | H        |
| 7.07679               | 35.07                | Pk  | 36             | -22.4        | -95.2   | -46.53                  | -13             | -33.53      | 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 #:     | 13131738         |
| Date:          | 9/24/2020        |
| Test Engineer: | 20792            |
| Configuration: | EUT only         |
| Mode           | LTE77 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, 673MHz   |                      |     |                |              |         |                         |                 |             |          |
| 1.34571               | 41.12                | Pk  | 29.8           | -31.3        | -95.2   | -54.48                  | -13             | -41.48      | V        |
| 1.34694               | 40.8                 | Pk  | 29.8           | -31.3        | -95.2   | -54.9                   | -13             | -41.9       | H        |
| 2.01751               | 40.92                | Pk  | 32.4           | -30.3        | -95.2   | -51.68                  | -13             | -38.68      | H        |
| 2.0188                | 39.23                | Pk  | 32.4           | -30.3        | -95.2   | -53.37                  | -13             | -40.37      | V        |
| 2.69058               | 39.2                 | Pk  | 32.9           | -29.4        | -95.2   | -52                     | -13             | -39         | H        |
| 2.69222               | 39.2                 | Pk  | 33             | -29.4        | -95.2   | -51.9                   | -13             | -38.9       | V        |
| Mid Channel, 680.5MHz |                      |     |                |              |         |                         |                 |             |          |
| 1.3638                | 41.01                | Pk  | 29.8           | -31.2        | -95.2   | -54.59                  | -13             | -41.59      | H        |
| 1.3638                | 42.14                | Pk  | 29.8           | -31.2        | -95.2   | -53.46                  | -13             | -40.46      | V        |
| 2.04037               | 40.02                | Pk  | 32.3           | -30.3        | -95.2   | -52.58                  | -13             | -39.58      | V        |
| 2.04155               | 40.03                | Pk  | 32.3           | -30.3        | -95.2   | -52.67                  | -13             | -39.67      | H        |
| 2.72104               | 38.78                | Pk  | 33             | -29.2        | -95.2   | -52.12                  | -13             | -39.12      | V        |
| 2.72315               | 38.92                | Pk  | 32.9           | -29.2        | -95.2   | -52.08                  | -13             | -39.08      | H        |
| High Channel, 688MHz  |                      |     |                |              |         |                         |                 |             |          |
| 1.37638               | 41.41                | Pk  | 29.5           | -31.1        | -95.2   | -54.39                  | -13             | -41.39      | V        |
| 1.37664               | 41.1                 | Pk  | 29.5           | -31.1        | -95.2   | -54.7                   | -13             | -41.7       | H        |
| 2.06515               | 39.43                | Pk  | 32.2           | -30.3        | -95.2   | -53.37                  | -13             | -40.37      | H        |
| 2.06555               | 38.98                | Pk  | 32.2           | -30.3        | -95.2   | -53.82                  | -13             | -40.82      | V        |
| 2.75209               | 37.99                | Pk  | 32.9           | -29          | -95.2   | -52.81                  | -13             | -39.81      | H        |
| 2.75224               | 38.63                | Pk  | 32.9           | -29          | -95.2   | -52.17                  | -13             | -39.17      | V        |

## 8. SETUP PHOTOS

Please refer to 13335182-EP1 for setup photos

## **Appendix A – Reference Test Report 13335182-E8**

Attached is the test report (13335182-E8) containing the reference data from the parent model as detailed in section 5.5.



# **TEST REPORT**

**Report Number. :** 13335182-E8V2

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

**Model :** A2342

**FCC ID :** BCG-E3548A

**EUT Description :** SMARTPHONE

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

**Date Of Issue:**  
OCTOBER 02, 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   | 10/2/2020  | Initial Review                                   | Mengistu Mekuria |
| V2   | 10/2/2020  | Updated Antenna gains and EIRP table for Band 48 | John Thompson    |

## TABLE OF CONTENTS

|                                                      |           |
|------------------------------------------------------|-----------|
| <b>1. ATTESTATION OF TEST RESULTS</b>                | <b>9</b>  |
| <b>2. TEST METHODOLOGY</b>                           | <b>10</b> |
| <b>3. FACILITIES AND ACCREDITATION</b>               | <b>10</b> |
| <b>4. DECISION RULES AND MEASUREMENT UNCERTAINTY</b> | <b>11</b> |
| 4.1. METROLOGICAL TRACEABILITY                       | 11        |
| 4.2. DECISION RULES                                  | 11        |
| 4.3. MEASUREMENT UNCERTAINTY                         | 11        |
| 4.4. SAMPLE CALCULATION                              | 11        |
| <b>5. EQUIPMENT UNDER TEST</b>                       | <b>12</b> |
| 5.1. DESCRIPTION OF EUT                              | 12        |
| 5.2. MAXIMUM OUTPUT POWER                            | 12        |
| 5.3. SOFTWARE AND FIRMWARE                           | 21        |
| 5.4. MAXIMUM ANTENNA GAIN                            | 21        |
| 5.5. WORST-CASE CONFIGURATION AND MODE               | 22        |
| 5.6. DESCRIPTION OF TEST SETUP                       | 24        |
| <b>6. TEST AND MEASUREMENT EQUIPMENT</b>             | <b>26</b> |
| <b>7. RF OUTPUT POWER VERIFICATION</b>               | <b>27</b> |
| 7.1. LTE BAND 2                                      | 29        |
| 7.2. LTE BAND 5                                      | 35        |
| 7.3. 5G NR Band n5                                   | 39        |
| 7.4. LTE BAND 7                                      | 41        |
| 7.5. LTE BAND 12                                     | 45        |
| 7.6. 5G NR Band n12                                  | 49        |
| 7.7. LTE BAND 13                                     | 50        |
| 7.8. LTE BAND 14                                     | 52        |
| 7.9. LTE BAND 17                                     | 54        |
| 7.10. LTE BAND 25                                    | 56        |
| 7.11. LTE BAND 26 (FCC Part 90S)                     | 62        |
| 7.12. LTE BAND 30(NS21)                              | 66        |
| 7.13. LTE BAND 41 (NS04)                             | 68        |
| 7.14. 5G NR BAND n41 (NS04)                          | 72        |

|                                                                    |            |
|--------------------------------------------------------------------|------------|
| 7.15. LTE BAND 48.....                                             | 79         |
| 7.16. LTE BAND 66.....                                             | 83         |
| 7.17. LTE BAND 71.....                                             | 89         |
| 7.18. 5G NR BAND n77 .....                                         | 93         |
| <b>8. CONDUCTED TEST RESULTS.....</b>                              | <b>100</b> |
| 8.1. OCCUPIED BANDWIDTH.....                                       | 100        |
| 8.1.1. LTE BAND 2.....                                             | 108        |
| 8.1.2. LTE BAND 5.....                                             | 110        |
| 8.1.3. 5G NR BAND n5 .....                                         | 111        |
| 8.1.4. LTE BAND 7.....                                             | 112        |
| 8.1.5. LTE BAND 12.....                                            | 113        |
| 8.1.6. 5G NR BAND n12 .....                                        | 114        |
| 8.1.7. LTE BAND 13.....                                            | 115        |
| 8.1.8. LTE BAND 14.....                                            | 116        |
| 8.1.9. LTE BAND 17.....                                            | 117        |
| 8.1.10. LTE BAND 25 .....                                          | 118        |
| 8.1.11. LTE BAND 26 (PART 90S) .....                               | 119        |
| 8.1.12. LTE BAND 30 .....                                          | 120        |
| 8.1.13. LTE BAND 41 .....                                          | 121        |
| 8.1.14. 5G NR BAND n41 .....                                       | 122        |
| 8.1.15. LTE BAND 48 .....                                          | 124        |
| 8.1.16. LTE BAND 66 .....                                          | 125        |
| 8.1.17. LTE BAND 71 .....                                          | 127        |
| 8.1.18. 5G NR BAND n77 .....                                       | 128        |
| 8.2. BAND EDGE AND EMISSION MASK .....                             | 130        |
| 8.2.1. LTE BAND 2 BANDEDGE.....                                    | 132        |
| 8.2.2. LTE BAND 5 AND 5G NR BAND n5 BANDEDGE .....                 | 137        |
| 8.2.3. LTE BAND 7 ADJACENT CHANNEL POWER.....                      | 143        |
| 8.2.4. LTE BAND 12 AND 5G NR BAND n12 ADJACENT CHANNEL POWER ..... | 152        |
| 8.2.5. LTE BAND 13 ADJACENT CHANNEL POWER.....                     | 163        |
| 8.2.6. LTE BAND 14 ADJACENT CHANNEL POWER.....                     | 166        |
| 8.2.7. LTE BAND 17 BANDEDGE .....                                  | 169        |
| 8.2.8. LTE BAND 25 BANDEDGE .....                                  | 172        |
| 8.2.9. LTE BAND 26 EMISSION MASK (PART 90S).....                   | 179        |

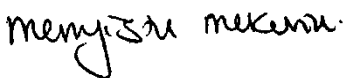
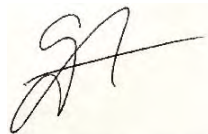
|         |                                                  |     |
|---------|--------------------------------------------------|-----|
| 8.2.10. | LTE BAND 30 ADJACENT CHANNEL POWER .....         | 184 |
| 8.2.11. | LTE BAND 41 AND n41 ADJACENT CHANNEL POWER ..... | 187 |
| 8.2.12. | LTE BAND 48 ADJACENT CHANNEL POWER .....         | 208 |
| 8.2.13. | LTE BAND 66 BANDEDGE .....                       | 217 |
| 8.2.14. | LTE BAND 71 ADJACENT CHANNEL POWER .....         | 224 |
| 8.2.15. | 5G NR BAND n77 ADJACENT CHANNEL POWER .....      | 233 |
| 8.3.    | OUT OF BAND EMISSIONS .....                      | 248 |
| 8.3.1.  | LTE BAND 2.....                                  | 249 |
| 8.3.2.  | LTE BAND 5 AND 5G NR BAND n5.....                | 253 |
| 8.3.3.  | LTE BAND 7.....                                  | 257 |
| 8.3.4.  | LTE BAND 12 AND 5G NR BAND n12.....              | 260 |
| 8.3.5.  | LTE BAND 13.....                                 | 264 |
| 8.3.6.  | LTE BAND 14.....                                 | 266 |
| 8.3.7.  | LTE BAND 17.....                                 | 268 |
| 8.3.8.  | LTE BAND 25.....                                 | 270 |
| 8.3.9.  | LTE BAND 26 (FCC PART 90S) .....                 | 274 |
| 8.3.10. | LTE BAND 30 .....                                | 276 |
| 8.3.11. | LTE BAND 41 AND 5G NR BAND n41 .....             | 278 |
| 8.3.12. | LTE BAND 48 .....                                | 282 |
| 8.3.13. | LTE BAND 66 .....                                | 287 |
| 8.3.14. | LTE BAND 71 .....                                | 291 |
| 8.3.15. | 5G NR BAND n77 .....                             | 294 |
| 8.4.    | FREQUENCY STABILITY .....                        | 295 |
| 8.4.1.  | LTE BAND 2.....                                  | 296 |
| 8.4.2.  | LTE BAND 5 AND 5G NR BAND n5.....                | 297 |
| 8.4.3.  | LTE BAND 7.....                                  | 299 |
| 8.4.4.  | LTE BAND 12 AND 5G NR BAND n12.....              | 300 |
| 8.4.5.  | LTE BAND 13.....                                 | 302 |
| 8.4.6.  | LTE BAND 14.....                                 | 303 |
| 8.4.7.  | LTE BAND 17.....                                 | 304 |
| 8.4.8.  | LTE BAND 25.....                                 | 305 |
| 8.4.9.  | LTE BAND 26 (PART 90S).....                      | 306 |
| 8.4.10. | LTE BAND 30 .....                                | 307 |
| 8.4.11. | LTE BAND 41 AND 5G NR BAND n41 .....             | 308 |

|         |                                                  |     |
|---------|--------------------------------------------------|-----|
| 8.4.12. | LTE BAND 48 .....                                | 310 |
| 8.4.13. | LTE BAND 66 .....                                | 311 |
| 8.4.14. | LTE BAND 71 .....                                | 312 |
| 8.4.15. | 5G NR BAND n77 .....                             | 313 |
| 8.5.    | PEAK-TO-AVERAGE POWER RATIO .....                | 314 |
| 8.5.1.  | LTE BAND 2.....                                  | 315 |
| 8.5.2.  | LTE BAND 5 AND 5G NR BAND n5.....                | 317 |
| 8.5.3.  | LTE BAND 7.....                                  | 320 |
| 8.5.4.  | LTE BAND 12 AND 5G NR BAND n12 .....             | 322 |
| 8.5.5.  | LTE BAND 13.....                                 | 325 |
| 8.5.6.  | LTE BAND 14.....                                 | 326 |
| 8.5.7.  | LTE BAND 17.....                                 | 327 |
| 8.5.8.  | LTE BAND 25.....                                 | 328 |
| 8.5.9.  | LTE BAND 26 (PART 90S).....                      | 330 |
| 8.5.10. | LTE BAND 30 .....                                | 332 |
| 8.5.11. | LTE BAND 41 AND 5G NR BAND n41 .....             | 333 |
| 8.5.12. | LTE BAND 48 .....                                | 334 |
| 8.5.13. | LTE BAND 66 .....                                | 335 |
| 8.5.14. | LTE BAND 71 .....                                | 338 |
| 8.5.15. | 5G NR BAND n77 .....                             | 340 |
| 9.      | RADIATED TEST RESULTS .....                      | 341 |
| 9.1.    | Example Plot .....                               | 342 |
| 9.2.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT1 ..... | 344 |
| 9.2.1.  | LTE BAND 2.....                                  | 345 |
| 9.2.2.  | LTE BAND 5 AND 5G NR BAND n5.....                | 347 |
| 9.2.3.  | LTE BAND 7.....                                  | 350 |
| 9.2.4.  | LTE BAND 12 AND 5G NR BAND n12 .....             | 352 |
| 9.2.5.  | LTE BAND 13.....                                 | 355 |
| 9.2.6.  | LTE BAND 14.....                                 | 357 |
| 9.2.7.  | LTE BAND 17.....                                 | 359 |
| 9.2.8.  | LTE BAND 25.....                                 | 361 |
| 9.2.9.  | LTE BAND 26 (PART 90S).....                      | 363 |
| 9.2.10. | LTE BAND 30 .....                                | 364 |
| 9.2.11. | LTE BAND 41 and 5G NR BAND n41 .....             | 365 |

|         |                                                  |     |
|---------|--------------------------------------------------|-----|
| 9.2.12. | LTE BAND 66 .....                                | 368 |
| 9.2.13. | LTE BAND 71 .....                                | 370 |
| 9.3.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT2 ..... | 372 |
| 9.3.1.  | LTE BAND 2.....                                  | 373 |
| 9.3.2.  | LTE BAND 5 AND 5G NR BAND n5.....                | 375 |
| 9.3.3.  | LTE BAND 7.....                                  | 378 |
| 9.3.4.  | LTE BAND 12 AND 5G NR BAND n12.....              | 380 |
| 9.3.5.  | LTE BAND 13.....                                 | 383 |
| 9.3.6.  | LTE BAND 14.....                                 | 385 |
| 9.3.7.  | LTE BAND 17.....                                 | 387 |
| 9.3.8.  | LTE BAND 25.....                                 | 389 |
| 9.3.9.  | LTE BAND 26 (PART 90S).....                      | 391 |
| 9.3.10. | LTE BAND 30 .....                                | 392 |
| 9.3.11. | LTE BAND 41 AND 5G NR BAND n41 .....             | 393 |
| 9.3.12. | LTE BAND 66 .....                                | 396 |
| 9.3.13. | LTE BAND 71 .....                                | 398 |
| 9.4.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT3 ..... | 400 |
| 9.4.1.  | LTE BAND 2.....                                  | 401 |
| 9.4.2.  | LTE BAND 7.....                                  | 403 |
| 9.4.3.  | LTE BAND 25.....                                 | 405 |
| 9.4.4.  | LTE BAND 30.....                                 | 407 |
| 9.4.5.  | LTE BAND 41 AND 5G NR BAND n41 .....             | 408 |
| 9.4.6.  | LTE BAND 66.....                                 | 411 |
| 9.5.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT4 ..... | 413 |
| 9.5.1.  | LTE BAND 2.....                                  | 414 |
| 9.5.2.  | LTE BAND 7.....                                  | 416 |
| 9.5.3.  | LTE BAND 25.....                                 | 418 |
| 9.5.4.  | LTE BAND 30.....                                 | 420 |
| 9.5.5.  | LTE BAND 41 AND 5G NR BAND n41 .....             | 421 |
| 9.5.6.  | LTE BAND 48.....                                 | 424 |
| 9.5.7.  | LTE BAND 66.....                                 | 426 |
| 9.5.18. | 5G NR BAND n77 .....                             | 428 |
| 9.6.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT7 ..... | 430 |
| 9.6.1.  | LTE BAND 48.....                                 | 431 |

|        |                                                  |     |
|--------|--------------------------------------------------|-----|
| 9.6.2. | 5G NR BAND n77 .....                             | 433 |
| 9.7.   | FIELD STRENGTH OF SPURIOUS RADIATION, ANT8 ..... | 435 |
| 9.7.1. | LTE BAND 48.....                                 | 436 |
| 9.7.2. | 5G NR BAND n77 .....                             | 438 |
| 9.8.   | FIELD STRENGTH OF SPURIOUS RADIATION, ANT9 ..... | 440 |
| 9.8.1. | LTE BAND 48.....                                 | 441 |
| 9.8.2. | 5G NR BAND n77 .....                             | 443 |
| 10.    | SETUP PHOTOS.....                                | 445 |

# 1. ATTESTATION OF TEST RESULTS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Applicant Name and Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | APPLE, INC<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A.                       |                                                                                       |
| Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A2342                                                                               |                                                                                       |
| FCC ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BCG-E3548A                                                                          |                                                                                       |
| EUT Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SMARTPHONE                                                                          |                                                                                       |
| Serial Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MODEL (A2342): C0703040073P5635 (Conducted), G6TD609K06PR (Radiated)                |                                                                                       |
| Date Tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | APRIL 21, 2020 to SEPTEMBER 30, 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. 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

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

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

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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

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

## **LTE BAND 2**

| Part 24 / RSS 133  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | 1.10                |                       |                         |                    |                  |              |                     |
| 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                | 24.7                    | 25.80              | 0.380            | 1085.3       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 25.10              | 0.324            | 1089.8       | 1M09D7W             |
| 3.0                | QPSK       | 1851.5              | 1908.5                | 24.7                    | 25.80              | 0.380            | 2689.8       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 25.10              | 0.324            | 2685.4       | 2M69D7W             |
| 5.0                | QPSK       | 1852.5              | 1907.5                | 24.7                    | 25.80              | 0.380            | 4494         | 4M49G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 25.30              | 0.339            | 4495.7       | 4M50D7W             |
| 10.0               | QPSK       | 1855.0              | 1905.0                | 24.7                    | 25.80              | 0.380            | 8948.3       | 8M95G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 25.20              | 0.331            | 8924.1       | 8M92D7W             |
| 15.0               | QPSK       | 1857.5              | 1902.5                | 24.7                    | 25.80              | 0.380            | 13386.6      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 25.40              | 0.347            | 13390.6      | 13M4D7W             |
| 20.0               | QPSK       | 1860.0              | 1900.0                | 24.7                    | 25.80              | 0.380            | 17880.8      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 25.40              | 0.347            | 17873.9      | 17M9D7W             |

## **LTE BAND 5**

| Part 22H           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 7.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.30               |                       |                         |                   |                 |              |                     |
| 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                    | 18.25             | 0.067           | 1081.5       | 1M08G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.55             | 0.057           | 1086.1       | 1M09D7W             |
| 3.0                | QPSK       | 825.5               | 847.5                 | 25.7                    | 18.25             | 0.067           | 2690.6       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.55             | 0.057           | 2681.1       | 2M68D7W             |
| 5.0                | QPSK       | 826.5               | 846.5                 | 25.7                    | 18.25             | 0.067           | 4496.1       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.65             | 0.058           | 4499.3       | 4M50D7W             |
| 10.0               | QPSK       | 829.0               | 844.0                 | 25.7                    | 18.25             | 0.067           | 8940.7       | 8M94G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.65             | 0.058           | 8921.4       | 8M92D7W             |

## 5G NR Band n5

| Part 22H           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 7.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.30               |                       |                         |                   |                 |              |                     |
| 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               | QPSK       | 831.5               | 841.5                 | 25.7                    | 18.25             | 0.067           | 13374        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.5                    | 17.05             | 0.051           | 13361        | 13M4D7W             |
| 20.0               | BPSK       | 834.0               | 839.0                 | 25.7                    | 18.25             | 0.067           | 17795        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 17.25             | 0.053           | 17765        | 17M8D7W             |

## LTE BAND 7

| Part 27 / RSS 199  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.00               |                       |                         |                    |                  |              |                     |
| 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                | 25.7                    | 23.70              | 0.234            | 4514.9       | 4M51G7W             |
|                    | 16QAM      |                     |                       | 24.3*                   | 23.20              | 0.209            | 4487.4       | 4M49D7W             |
| 10.0               | QPSK       | 2505.0              | 2565.0                | 25.7                    | 23.70              | 0.234            | 8922.7       | 8M92G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 23.00              | 0.200            | 8923.8       | 8M92D7W             |
| 15.0               | QPSK       | 2507.5              | 2562.5                | 25.7                    | 23.70              | 0.234            | 13398.2      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 23.20              | 0.209            | 13411        | 13M4D7W             |
| 20.0               | QPSK       | 2510.0              | 2560.0                | 25.7                    | 23.70              | 0.234            | 17797.2      | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 23.20              | 0.209            | 17848.9      | 17M8D7W             |

\*Values from Ant3 with a gain of -1.1dBi, which have a higher EIRP than Ant1.

## **LTE BAND 12**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.10               |                       |                         |                   |                 |              |                     |
| 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                    | 18.45             | 0.070           | 1081.7       | 1M08G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.85             | 0.061           | 1084         | 1M08D7W             |
| 3.0                | QPSK       | 700.5               | 714.5                 | 25.7                    | 18.45             | 0.070           | 2683.1       | 2M68G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.85             | 0.061           | 2678.1       | 2M68D7W             |
| 5.0                | QPSK       | 701.5               | 713.5                 | 25.7                    | 18.45             | 0.070           | 4496.1       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 17.95             | 0.062           | 4492.1       | 4M49D7W             |
| 10.0               | QPSK       | 704.0               | 711.0                 | 25.7                    | 18.45             | 0.070           | 8925.3       | 8M93G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.85             | 0.061           | 8954.1       | 8M95D7W             |

## **5G NR Band n12**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.10               |                       |                         |                   |                 |              |                     |
| 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               | QPSK       | 706.5               | 708.5                 | 25.7                    | 18.45             | 0.070           | 13375        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 17.45             | 0.056           | 13373        | 13M4D7W             |

## **LTE BAND 13**

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.10               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (MHz) | Emission Designator |
| 5.0                | QPSK       | 779.5               | 784.5                 | 25.7                    | 18.45             | 0.070           | 4489.2       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 18.05             | 0.064           | 4499.6       | 4M50D7W             |
| 10.0               | QPSK       | 782.0               | 782.0                 | 25.7                    | 18.45             | 0.070           | 8935.4       | 8M94G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 17.55             | 0.057           | 8925.7       | 8M93D7W             |

## 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           | 4490.7       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.35             | 0.054           | 4503.3       | 4M50D7W             |
| 10.0               | QPSK       | 793.0               | 793.0                 | 25.7                    | 17.95             | 0.062           | 8950.4       | 8M95G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 17.05             | 0.051           | 8933         | 8M93D7W             |

## LTE BAND 17

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.10               |                       |                         |                   |                 |              |                     |
| 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                    | 18.45             | 0.070           | 4506.8       | 4M51G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 17.95             | 0.062           | 4498.9       | 4M50D7W             |
| 10.0               | QPSK       | 709.0               | 711.0                 | 25.7                    | 18.45             | 0.070           | 8938.3       | 8M94G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.75             | 0.060           | 8927.5       | 8M93D7W             |

## LTE BAND 25

| Part 24 / RSS 133  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | 1.10                |                       |                         |                    |                  |              |                     |
| 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                | 24.7                    | 25.80              | 0.380            | 1084.8       | 1M08G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 25.10              | 0.324            | 1092.3       | 1M09D7W             |
| 3.0                | QPSK       | 1851.5              | 1913.5                | 24.7                    | 25.80              | 0.380            | 2696.5       | 2M70G7W             |
|                    | 16QAM      |                     |                       | 23.9                    | 25.00              | 0.316            | 2685.2       | 2M69D7W             |
| 5.0                | QPSK       | 1852.5              | 1912.5                | 24.7                    | 25.80              | 0.380            | 4490.6       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 25.10              | 0.324            | 4500.5       | 4M50D7W             |
| 10.0               | QPSK       | 1855.0              | 1910.0                | 24.7                    | 25.80              | 0.380            | 8963.3       | 8M96G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 25.10              | 0.324            | 8931.6       | 8M93D7W             |
| 15.0               | QPSK       | 1857.5              | 1907.5                | 24.7                    | 25.80              | 0.380            | 13382.1      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 25.40              | 0.347            | 13426.8      | 13M4D7W             |
| 20.0               | QPSK       | 1860.0              | 1905.0                | 24.7                    | 25.80              | 0.380            | 17806.2      | 17M8G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 25.40              | 0.347            | 17871.9      | 17M9D7W             |

### LTE BAND 26 (FCC Part 90S)

| Part 90S            |            |                     |                       |                         |           |             |              |                     |
|---------------------|------------|---------------------|-----------------------|-------------------------|-----------|-------------|--------------|---------------------|
| Conducted Limit (W) |            | 100.00              |                       |                         |           |             |              |                     |
| Antenna Gain (dBi)  |            | -5.30               |                       |                         |           |             |              |                     |
| Bandwidth (MHz)     | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP (dBm) | Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                 | QPSK       | 814.7               | 823.3                 | 25.7                    | 18.3      | 0.067       | 1080.3       | 1M08G7W             |
|                     | 16QAM      |                     |                       | 25.0                    | 17.6      | 0.057       | 1080.3       | 1M08D7W             |
| 3.0                 | QPSK       | 815.5               | 822.5                 | 25.7                    | 18.3      | 0.067       | 2686.8       | 2M69G7W             |
|                     | 16QAM      |                     |                       | 25.1                    | 17.7      | 0.058       | 2687.4       | 2M69D7W             |
| 5.0                 | QPSK       | 816.5               | 821.5                 | 25.7                    | 18.3      | 0.067       | 4498.3       | 4M50G7W             |
|                     | 16QAM      |                     |                       | 25.2                    | 17.8      | 0.060       | 4493.5       | 4M49D7W             |
| 10.0                | QPSK       | 819.0               | 819.0                 | 25.7                    | 18.3      | 0.067       | 8942         | 8M94G7W             |
|                     | 16QAM      |                     |                       | 24.8                    | 17.4      | 0.054       | 8939.1       | 8M94D7W             |

### LTE BAND 30

| Part 27 / RSS 195  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 0.25                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | 0.40                |                       |                         |                    |                  |              |                     |
| 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                | 23.1                    | 23.50              | 0.224            | 4488.2       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 21.8                    | 22.20              | 0.166            | 4494.1       | 4M49D7W             |
| 10.0               | QPSK       | 2310.0              | 2310.0                | 23.1                    | 23.50              | 0.224            | 8954.4       | 8M95G7W             |
|                    | 16QAM      |                     |                       | 22.1                    | 22.50              | 0.178            | 8954.4       | 8M95D7W             |

### LTE BAND 41 (NS04)

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.00               |                       |                         |                    |                  |              |                     |
| 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                | 27.7                    | 25.70              | 0.372            | 4504.2       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 26.8                    | 24.80              | 0.302            | 4489.7       | 4M49D7W             |
| 10.0               | QPSK       | 2501.0              | 2685.0                | 27.7                    | 25.70              | 0.372            | 8949.9       | 8M95G7W             |
|                    | 16QAM      |                     |                       | 26.9                    | 24.90              | 0.309            | 8898.3       | 8M90D7W             |
| 15.0               | QPSK       | 2503.5              | 2682.5                | 27.7                    | 25.70              | 0.372            | 13376.2      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.7*                   | 24.70              | 0.295            | 13390.1      | 13M4D7W             |
| 20.0               | QPSK       | 2506.0              | 2680.0                | 27.7                    | 25.70              | 0.372            | 17801        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 24.8*                   | 24.80              | 0.302            | 17842.9      | 17M8D7W             |

\*Values from Ant 3 with a gain of 0dBi, which has a higher EIRP than Ant 1.

## 5G NR Band n41 (NS04)

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -0.20               |                       |                         |                    |                  |              |                     |
| 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                | 26.2                    | 26.00              | 0.398            | 17986        | 18M0G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 25.23              | 0.333            | 17925        | 17M9D7W             |
| 40.0               | BPSK       | 2516.0              | 2670.0                | 26.2                    | 26.00              | 0.398            | 35678        | 35M7G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 25.23              | 0.333            | 35624        | 35M6D7W             |
| 50.0               | QPSK       | 2521.0              | 2665.0                | 26.2                    | 25.98              | 0.396            | 45675        | 45M7G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 25.19              | 0.330            | 45489        | 45M5D7W             |
| 60.0               | BPSK       | 2526.0              | 2660.0                | 26.2                    | 26.00              | 0.398            | 57700        | 57M7G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 25.03              | 0.318            | 57743        | 57M7D7W             |
| 80.0               | QPSK       | 2536.0              | 2650.0                | 26.2                    | 25.97              | 0.395            | 76971        | 77M0G7W             |
|                    | 16QAM      |                     |                       | 25.4                    | 25.18              | 0.330            | 76955        | 77M0D7W             |
| 90.0               | BPSK       | 2541.0              | 2645.0                | 26.2                    | 26.00              | 0.398            | 85414        | 85M4G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 24.97              | 0.314            | 85689        | 85M7D7W             |
| 100.0              | QPSK       | 2546.0              | 2640.0                | 26.2                    | 26.00              | 0.398            | 96026        | 96M0G7W             |
|                    | 16QAM      |                     |                       | 24.6                    | 24.40              | 0.275            | 96042        | 96M0D7W             |

## LTE BAND 48

| Part 96               |            |                     |                       |                         |                    |                  |              |                     |
|-----------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)/ 10MHz |            | 0.20                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi)    |            | -3.00               |                       |                         |                    |                  |              |                     |
| 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                | 25.0                    | 22.00              | 0.158            | 4557.6       | 4M56G7W             |
|                       | 16QAM      |                     |                       | 24.3                    | 21.30              | 0.135            | 4463.1       | 4M46D7W             |
| 10.0                  | QPSK       | 3555.0              | 3695.0                | 25.0                    | 22.00              | 0.158            | 8933.8       | 8M93G7W             |
|                       | 16QAM      |                     |                       | 24.4                    | 21.40              | 0.138            | 8933.1       | 8M93D7W             |
| 15.0                  | QPSK       | 3557.5              | 3692.5                | 25.0                    | 22.00              | 0.158            | 13391.5      | 13M4G7W             |
|                       | 16QAM      |                     |                       | 24.5                    | 21.50              | 0.141            | 13409.1      | 13M4D7W             |
| 20.0                  | QPSK       | 3560.0              | 3690.0                | 25.2                    | 22.20              | 0.166            | 17891.1      | 17M9G7W             |
|                       | 16QAM      |                     |                       | 24.4                    | 21.40              | 0.138            | 17906.9      | 17M9D7W             |

## **LTE BAND 66**

| Part 27 / RSS 139  |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 1.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | 0.40                |                       |                         |                    |                  |              |                     |
| 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                | 24.7                    | 25.10              | 0.324            | 1085.4       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 24.60              | 0.288            | 1087.9       | 1M09D7W             |
| 3.0                | QPSK       | 1711.5              | 1778.5                | 24.7                    | 25.10              | 0.324            | 2683.1       | 2M68G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 24.50              | 0.282            | 2683.3       | 2M68D7W             |
| 5.0                | QPSK       | 1712.5              | 1777.5                | 24.7                    | 25.10              | 0.324            | 4492.8       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 24.60              | 0.288            | 4485.8       | 4M49D7W             |
| 10.0               | QPSK       | 1715.0              | 1775.0                | 24.7                    | 25.10              | 0.324            | 8942.5       | 8M94G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 24.50              | 0.282            | 8954         | 8M95D7W             |
| 15.0               | QPSK       | 1717.5              | 1772.5                | 24.7                    | 25.10              | 0.324            | 13379        | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 24.60              | 0.288            | 13391.8      | 13M4D7W             |
| 20.0               | QPSK       | 1720.0              | 1770.0                | 24.7                    | 25.10              | 0.324            | 17853        | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 24.70              | 0.295            | 17848.9      | 17M8D7W             |

## LTE BAND 71

| Part 27 / RSS 130  |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -4.40               |                       |                         |                   |                 |              |                     |
| 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                    | 19.15             | 0.082           | 4493.9       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 18.45             | 0.070           | 4490.3       | 4M49D7W             |
| 10.0               | QPSK       | 668.0               | 693.0                 | 25.7                    | 19.15             | 0.082           | 8956         | 8M96G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 18.45             | 0.070           | 8960.9       | 8M96D7W             |
| 15.0               | QPSK       | 670.5               | 690.5                 | 25.7                    | 19.15             | 0.082           | 13441.9      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 18.55             | 0.072           | 13445.8      | 13M4D7W             |
| 20.0               | QPSK       | 673.0               | 688.0                 | 25.7                    | 19.15             | 0.082           | 17921.4      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 25.3                    | 18.75             | 0.075           | 17.8446      | 17K8D7W             |

## 5G NR Band n77

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 1.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -5.90               |                       |                         |                    |                  |              |                     |
| 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       | 3710.0              | 3970.0                | 25.7                    | 19.80              | 0.095            | 17823        | 17M8G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 19.00              | 0.079            | 17899        | 17M9D7W             |
| 40.0               | QPSK       | 3720.0              | 3960.0                | 25.7                    | 19.80              | 0.095            | 35690        | 35M7G7W             |
|                    | 16QAM      |                     |                       | 22.1*                   | 18.90              | 0.078            | 35695        | 35M7D7W             |
| 50.0               | QPSK       | 3725.0              | 3955.0                | 25.7                    | 19.80              | 0.095            | 45608        | 45M6G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 18.80              | 0.076            | 45640        | 45M6D7W             |
| 60.0               | QPSK       | 3730.0              | 3950.0                | 25.7                    | 19.80              | 0.095            | 57844        | 57M8G7W             |
|                    | 16QAM      |                     |                       | 22.1*                   | 18.90              | 0.078            | 57862        | 57M9D7W             |
| 80.0               | QPSK       | 3740.0              | 3940.0                | 25.7                    | 19.80              | 0.095            | 76934        | 76M9G7W             |
|                    | 16QAM      |                     |                       | 22.1*                   | 18.90              | 0.078            | 77084        | 77M1D7W             |
| 90.0               | BPSK       | 3745.0              | 3935.0                | 25.7                    | 19.80              | 0.095            | 85608        | 85M6G7W             |
|                    | 16QAM      |                     |                       | 22.1*                   | 18.90              | 0.078            | 85585        | 85M6D7W             |
| 100.0              | BPSK       | 3750.0              | 3930.0                | 25.7                    | 19.80              | 0.095            | 96520        | 96M5G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 18.90              | 0.078            | 96519        | 96M5D7W             |

\*Values from Ant4 with a gain of -3.2dBi, which has a higher eirp than Ant7.

### 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 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   | -4.4               | -5.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 12, 5G NR Band n12, 699 – 716 MHz   | -5.1               | -6.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 17, 704 – 716 MHz                   | -5.1               | -6.4  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 13, 777 – 787 MHz                   | -5.1               | -6.6  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 14, 788 – 798 MHz                   | -5.6               | -7.3  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 26, 814 – 824 MHz (Part 90S )       | -5.3               | -5.5  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 5, 5G NR Band n5, 824 – 849 MHz     | -5.3               | -5.0  | NA    | NA    | NA    | NA    | NA    |
| LTE Band 66, 5G NR Band n66, 1710 – 1780 MHz | -3.1               | -2.2  | 0.4   | -1.7  | NA    | NA    | NA    |
| LTE Band 2, 5G NR Band n2, 1850 – 1910 MHz   | -2.8               | -1.6  | 1.1   | -0.7  | NA    | NA    | NA    |
| LTE Band 25, 5G NR Band n25 1850 – 1915 MHz  | -2.8               | -1.6  | 1.1   | -0.7  | NA    | NA    | NA    |
| LTE Band 30, 2305 – 2315 MHz                 | -2.9               | -0.3  | 0.4   | 1.0   | NA    | NA    | NA    |
| LTE Band 7, 2500 – 2570 MHz                  | -2.0               | -2.4  | -1.1  | -0.2  | NA    | NA    | NA    |
| LTE Band 41, 5G NR Band n41, 2496 – 2690 MHz | -2.0               | -1.7  | 0     | -0.2  | NA    | NA    | NA    |
| 5G NR Band n77, 3700 – 3980 MHz              | NA                 | NA    | NA    | -3.2  | -5.9  | -5.9  | -5.5  |
| LTE Band 48, 3550 – 3700 MHz                 | NA                 | NA    | NA    | -3.0  | -4.9  | -4.9  | -3.0  |

## 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 Band n2, 5G NR Band n5, 5G NR Band n12, 5G NR Band n25, 5G NR Band n41, 5G NR Band n66, and 5G NR Band 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 with Higher BW modes than LTE Bands as 5G NR Band n5, 5G NR Band n12, and 5G NR Band 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 BANDS 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 and 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.

| Frequency 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 | Y    | X    | Y    | Y    | N/A  | N/A  | N/A  |
| 2300 – 2700 MHz | Y    | Z    | Z    | X    | N/A  | N/A  | N/A  |
| 3300 – 3980 MHz | N/A  | N/A  | N/A  | X    | Y    | Y    | Y    |

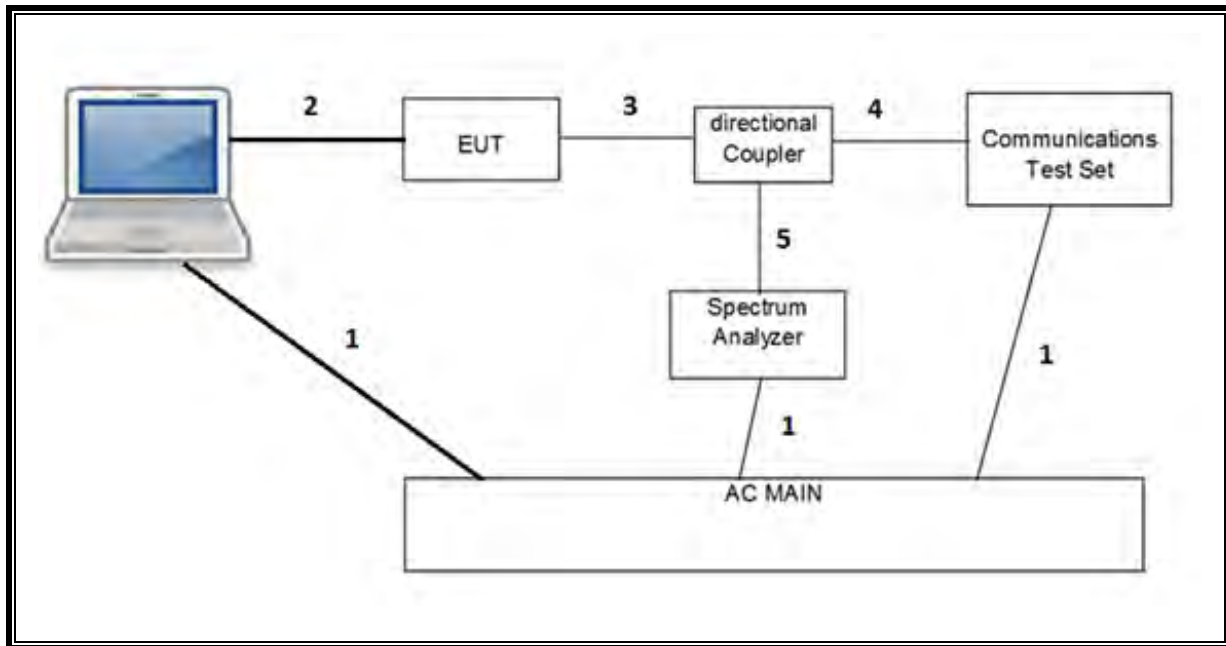
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

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.

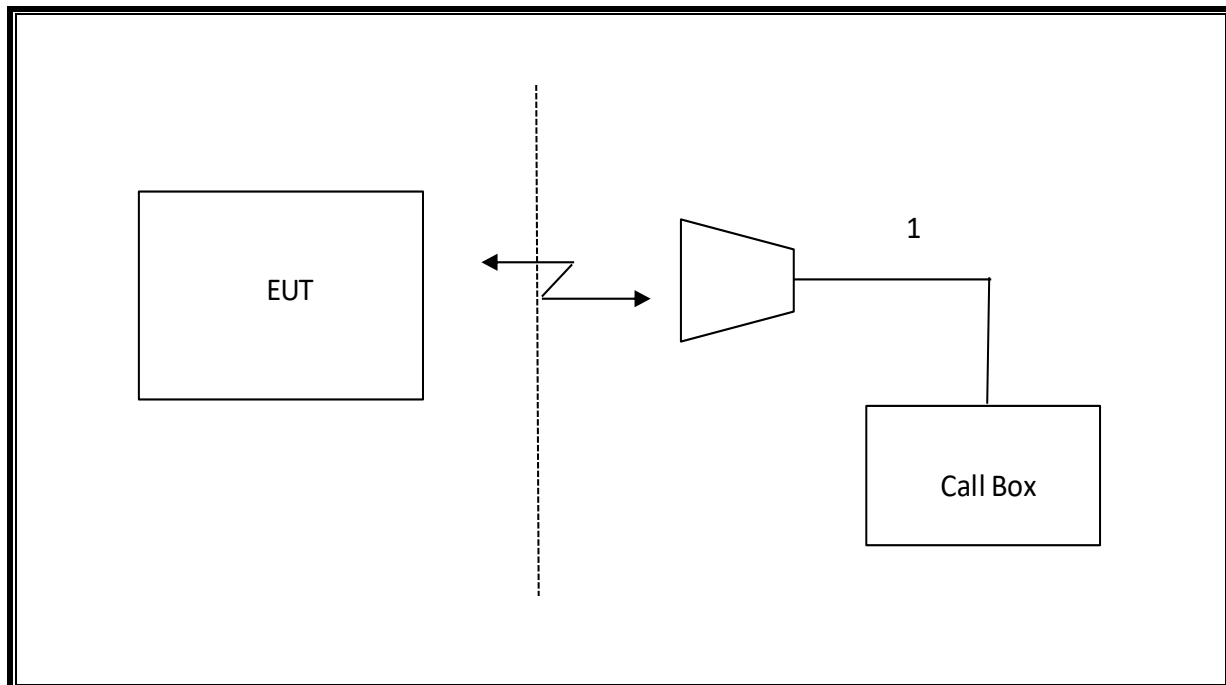
## 5.6. DESCRIPTION OF TEST SETUP

| SUPPORT TEST EQUIPMENT         |           |                      |                        |                   |                  |             |
|--------------------------------|-----------|----------------------|------------------------|-------------------|------------------|-------------|
| Description                    |           | Manufacturer         | Model                  | Serial Number     |                  | FCC ID/ DoC |
| Laptop AC/DC adapter           |           | Apple                | 85W MagSafe 2          | 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                | 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                      | 09/16/2021 |
| Directional Coupler                              | KRYTAR              | 152610                 | T1161                      | 09/16/2021 |
| Directional Coupler                              | KRYTAR              | 152613                 | T1537                      | 09/16/2021 |
| 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 <sup>2</sup>       |
| 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: | 5/8/2020 & 8/31/2020 |
|-------------------|-------|------------|----------------------|

### 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<br>1850.7         | 18900<br>1880.0 | 19193<br>1909.3 | 18607<br>1850.7 | 18900<br>1880.0 | 19193<br>1909.3 | 18607<br>1850.7 | 18900<br>1880.0 | 19193<br>1909.3 | 18607<br>1850.7 | 18900<br>1880.0 | 19193<br>1909.3 |
| 1.4                | QPSK       | 1                | 0            | 25.6                    | 25.7            | 25.6            | 23.1            | 23.0            | 22.8            | 24.7            | 24.5            | 24.4            | 22.6            | 22.1            | 22.1            |
|                    |            | 1                | 2            | 25.7                    | 25.7            | 25.6            | 23.1            | 23.0            | 22.9            | 24.7            | 24.5            | 24.5            | 22.7            | 22.3            | 22.2            |
|                    |            | 1                | 5            | 25.6                    | 25.6            | 25.6            | 23.0            | 22.9            | 22.7            | 24.6            | 24.5            | 24.4            | 22.7            | 22.2            | 22.2            |
|                    |            | 3                | 0            | 25.6                    | 25.6            | 25.6            | 23.0            | 22.9            | 22.7            | 24.6            | 24.5            | 24.4            | 22.6            | 22.1            | 22.2            |
|                    |            | 3                | 1            | 25.7                    | 25.7            | 25.6            | 23.0            | 23.0            | 22.8            | 24.6            | 24.5            | 24.5            | 22.7            | 22.2            | 22.2            |
|                    |            | 3                | 2            | 25.7                    | 25.7            | 25.6            | 23.0            | 23.0            | 22.8            | 24.6            | 24.5            | 24.4            | 22.7            | 22.2            | 22.3            |
|                    | 16QAM      | 6                | 0            | 24.8                    | 24.7            | 24.6            | 22.1            | 22.0            | 21.9            | 23.7            | 23.6            | 23.5            | 21.7            | 21.2            | 21.3            |
|                    |            | 1                | 0            | 24.8                    | 24.8            | 25.1            | 22.2            | 22.4            | 21.9            | 23.8            | 24.0            | 23.6            | 21.6            | 21.4            | 21.2            |
|                    |            | 1                | 2            | 24.8                    | 24.8            | 25.1            | 22.3            | 22.3            | 21.9            | 23.9            | 24.0            | 23.6            | 21.7            | 21.5            | 21.3            |
|                    |            | 1                | 5            | 24.8                    | 24.7            | 25.0            | 22.2            | 22.3            | 21.9            | 23.8            | 23.9            | 23.5            | 21.7            | 21.4            | 21.2            |
|                    |            | 3                | 0            | 24.9                    | 24.7            | 24.9            | 22.2            | 22.2            | 22.1            | 23.7            | 23.7            | 23.7            | 21.7            | 21.2            | 21.3            |
|                    |            | 3                | 1            | 25.0                    | 24.7            | 24.9            | 22.2            | 22.2            | 22.1            | 23.7            | 23.8            | 23.7            | 21.7            | 21.2            | 21.3            |
|                    | 64QAM      | 3                | 2            | 25.0                    | 24.7            | 24.9            | 22.2            | 22.2            | 22.1            | 23.8            | 23.8            | 23.7            | 21.8            | 21.2            | 21.3            |
|                    |            | 6                | 0            | 23.9                    | 23.9            | 23.6            | 21.3            | 20.9            | 21.1            | 22.9            | 22.5            | 22.7            | 20.9            | 20.2            | 20.2            |
|                    |            | 1                | 0            | 24.1                    | 24.3            | 24.0            | 21.8            | 21.3            | 21.4            | 22.9            | 22.5            | 22.8            | 21.0            | 20.4            | 20.5            |
|                    |            | 1                | 2            | 24.1                    | 24.3            | 24.0            | 21.8            | 21.3            | 21.4            | 22.9            | 22.6            | 22.8            | 21.1            | 20.4            | 20.6            |
|                    |            | 1                | 5            | 24.1                    | 24.2            | 23.9            | 21.7            | 21.2            | 21.3            | 22.8            | 22.4            | 22.8            | 21.0            | 20.3            | 20.5            |
|                    |            | 3                | 0            | 23.9                    | 24.2            | 24.0            | 21.7            | 21.3            | 21.1            | 22.7            | 22.5            | 22.6            | 20.8            | 20.3            | 20.2            |
|                    | 256QAM     | 3                | 1            | 23.9                    | 24.2            | 24.0            | 21.7            | 21.4            | 21.2            | 22.7            | 22.5            | 22.6            | 20.9            | 20.3            | 20.2            |
|                    |            | 3                | 2            | 23.9                    | 24.2            | 24.0            | 21.7            | 21.4            | 21.1            | 22.7            | 22.5            | 22.6            | 20.9            | 20.3            | 20.2            |
|                    |            | 6                | 0            | 23.0                    | 22.9            | 23.2            | 20.3            | 20.5            | 20.2            | 21.3            | 21.7            | 21.7            | 19.7            | 19.3            | 19.2            |
|                    |            | 1                | 0            | 20.5                    | 20.0            | 20.1            | 17.5            | 17.3            | 17.7            | 19.8            | 20.1            | 19.8            | 17.3            | 17.5            | 17.2            |
|                    |            | 1                | 2            | 20.6                    | 20.1            | 20.2            | 17.7            | 17.5            | 17.8            | 19.9            | 20.3            | 19.8            | 17.4            | 17.5            | 17.3            |
|                    |            | 1                | 5            | 20.5                    | 20.1            | 20.1            | 17.6            | 17.5            | 17.7            | 19.8            | 20.2            | 19.8            | 17.3            | 17.5            | 17.2            |
|                    |            | 3                | 0            | 20.3                    | 20.1            | 20.2            | 17.5            | 17.5            | 17.8            | 19.9            | 20.1            | 19.8            | 17.5            | 17.1            | 17.2            |
|                    |            | 3                | 1            | 20.4                    | 20.2            | 20.3            | 17.5            | 17.6            | 17.9            | 20.0            | 20.1            | 19.9            | 17.6            | 17.1            | 17.2            |
|                    |            | 3                | 2            | 20.4                    | 20.2            | 20.3            | 17.6            | 17.6            | 17.9            | 20.0            | 20.1            | 19.9            | 17.6            | 17.1            | 17.2            |
|                    |            | 6                | 0            | 20.3                    | 20.3            | 20.2            | 17.8            | 17.7            | 17.8            | 19.9            | 20.0            | 20.1            | 17.7            | 17.3            | 17.1            |

## 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 |
| 3.0                | QPSK       | 1                | 0            | 25.7                    | 25.6  | 25.7  | 23.1  | 22.9  | 23.0  | 24.7  | 24.5  | 24.6  | 22.7  | 22.1  | 22.3  |
|                    |            | 1                | 7            | 25.7                    | 25.6  | 25.7  | 23.0  | 22.9  | 23.0  | 24.6  | 24.5  | 24.6  | 22.7  | 22.1  | 22.3  |
|                    |            | 1                | 14           | 25.6                    | 25.6  | 25.6  | 22.9  | 22.9  | 22.9  | 24.6  | 24.5  | 24.5  | 22.7  | 22.2  | 22.3  |
|                    |            | 8                | 0            | 24.8                    | 24.8  | 24.7  | 22.1  | 22.0  | 22.0  | 23.8  | 23.6  | 23.6  | 21.8  | 21.2  | 21.3  |
|                    |            | 8                | 4            | 24.8                    | 24.8  | 24.7  | 22.2  | 22.0  | 22.1  | 23.8  | 23.6  | 23.6  | 21.8  | 21.3  | 21.3  |
|                    |            | 8                | 7            | 24.7                    | 24.8  | 24.7  | 22.1  | 22.0  | 22.0  | 23.8  | 23.7  | 23.6  | 21.8  | 21.2  | 21.3  |
|                    |            | 15               | 0            | 24.8                    | 24.8  | 24.7  | 22.1  | 22.1  | 22.0  | 23.8  | 23.6  | 23.6  | 21.7  | 21.3  | 21.3  |
|                    | 16QAM      | 1                | 0            | 24.9                    | 24.7  | 25.1  | 22.2  | 22.0  | 22.5  | 23.8  | 23.5  | 24.0  | 21.7  | 21.1  | 21.5  |
|                    |            | 1                | 7            | 24.7                    | 24.7  | 25.0  | 22.1  | 21.9  | 22.4  | 23.7  | 23.5  | 23.9  | 21.7  | 21.2  | 21.5  |
|                    |            | 1                | 14           | 24.7                    | 24.7  | 25.0  | 22.1  | 21.9  | 22.4  | 23.7  | 23.5  | 23.8  | 21.8  | 21.2  | 21.5  |
|                    |            | 8                | 0            | 23.8                    | 23.9  | 23.8  | 21.2  | 21.1  | 21.2  | 22.8  | 22.8  | 22.7  | 20.8  | 20.1  | 20.3  |
|                    |            | 8                | 4            | 23.8                    | 23.9  | 23.8  | 21.2  | 21.2  | 21.2  | 22.8  | 22.8  | 22.7  | 20.9  | 20.2  | 20.3  |
|                    |            | 8                | 7            | 23.8                    | 23.8  | 23.8  | 21.2  | 21.2  | 21.2  | 22.8  | 22.8  | 22.7  | 20.8  | 20.2  | 20.3  |
|                    |            | 15               | 0            | 23.7                    | 23.8  | 23.8  | 21.1  | 21.0  | 21.1  | 22.7  | 22.7  | 22.6  | 20.7  | 20.3  | 20.3  |
|                    | 64QAM      | 1                | 0            | 24.2                    | 24.2  | 24.0  | 21.6  | 21.4  | 21.3  | 22.6  | 22.8  | 22.8  | 20.3  | 20.5  | 20.4  |
|                    |            | 1                | 7            | 24.1                    | 24.2  | 24.0  | 21.5  | 21.5  | 21.2  | 22.6  | 22.6  | 22.7  | 20.3  | 20.5  | 20.4  |
|                    |            | 1                | 14           | 24.1                    | 24.1  | 23.9  | 21.5  | 21.4  | 21.2  | 22.7  | 22.5  | 22.7  | 20.4  | 20.5  | 20.5  |
|                    |            | 8                | 0            | 22.9                    | 23.0  | 23.0  | 20.4  | 20.3  | 20.2  | 21.3  | 21.5  | 21.8  | 19.8  | 19.3  | 19.3  |
|                    |            | 8                | 4            | 23.0                    | 23.0  | 23.0  | 20.4  | 20.3  | 20.3  | 21.4  | 21.5  | 21.8  | 19.8  | 19.3  | 19.3  |
|                    |            | 8                | 7            | 23.0                    | 23.0  | 23.0  | 20.4  | 20.3  | 20.2  | 21.4  | 21.6  | 21.8  | 19.8  | 19.3  | 19.3  |
|                    |            | 15               | 0            | 23.0                    | 22.9  | 23.0  | 20.4  | 20.2  | 20.2  | 21.5  | 21.5  | 21.7  | 19.7  | 19.2  | 19.3  |
|                    | 256QAM     | 1                | 0            | 20.4                    | 20.6  | 19.9  | 18.1  | 17.8  | 17.2  | 19.9  | 20.5  | 19.8  | 17.7  | 16.8  | 17.6  |
|                    |            | 1                | 7            | 20.4                    | 20.7  | 19.9  | 18.0  | 17.8  | 17.2  | 19.9  | 20.6  | 19.8  | 17.7  | 16.9  | 17.6  |
|                    |            | 1                | 14           | 20.4                    | 20.8  | 20.0  | 18.1  | 17.9  | 17.3  | 19.9  | 20.6  | 19.9  | 17.8  | 16.9  | 17.6  |
|                    |            | 8                | 0            | 20.6                    | 20.4  | 20.1  | 17.8  | 17.5  | 17.4  | 20.0  | 20.2  | 20.0  | 17.7  | 17.2  | 17.2  |
|                    |            | 8                | 4            | 20.6                    | 20.4  | 20.2  | 17.9  | 17.6  | 17.4  | 20.1  | 20.2  | 20.0  | 17.8  | 17.2  | 17.2  |
|                    |            | 8                | 7            | 20.6                    | 20.4  | 20.2  | 17.9  | 17.6  | 17.5  | 20.1  | 20.3  | 20.1  | 17.8  | 17.2  | 17.2  |
|                    |            | 15               | 0            | 20.5                    | 20.3  | 20.3  | 17.8  | 17.5  | 17.6  | 20.0  | 20.2  | 20.2  | 17.7  | 17.2  | 17.2  |

## 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 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.5  | 23.1  | 22.9  | 22.9  | 24.7  | 24.6  | 24.4  | 22.6  | 22.1  | 22.3  |
|                    |            | 1                | 12           | 25.7                    | 25.7  | 25.6  | 23.1  | 23.0  | 22.9  | 24.7  | 24.6  | 24.5  | 22.7  | 22.2  | 22.3  |
|                    |            | 1                | 24           | 25.6                    | 25.6  | 25.4  | 23.0  | 23.0  | 22.8  | 24.7  | 24.6  | 24.4  | 22.7  | 22.3  | 22.3  |
|                    |            | 12               | 0            | 24.7                    | 24.7  | 24.6  | 22.1  | 22.0  | 21.9  | 23.8  | 23.7  | 23.6  | 21.8  | 21.3  | 21.4  |
|                    |            | 12               | 6            | 24.7                    | 24.7  | 24.6  | 22.2  | 22.0  | 21.9  | 23.8  | 23.6  | 23.6  | 21.8  | 21.3  | 21.4  |
|                    |            | 12               | 11           | 24.6                    | 24.6  | 24.6  | 22.1  | 22.0  | 21.9  | 23.7  | 23.6  | 23.5  | 21.8  | 21.3  | 21.4  |
|                    |            | 25               | 0            | 24.6                    | 24.6  | 24.6  | 22.1  | 22.0  | 21.9  | 23.7  | 23.6  | 23.5  | 21.8  | 21.3  | 21.4  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.8  | 25.1  | 22.2  | 22.1  | 22.4  | 23.8  | 23.7  | 24.1  | 21.9  | 21.1  | 21.4  |
|                    |            | 1                | 12           | 24.9                    | 24.8  | 25.2  | 22.4  | 22.2  | 22.5  | 23.9  | 23.7  | 24.2  | 21.9  | 21.2  | 21.5  |
|                    |            | 1                | 24           | 24.8                    | 24.7  | 25.1  | 22.3  | 22.1  | 22.4  | 23.9  | 23.7  | 24.1  | 22.0  | 21.2  | 21.5  |
|                    |            | 12               | 0            | 23.8                    | 23.8  | 23.8  | 21.2  | 21.1  | 21.1  | 22.8  | 22.7  | 22.7  | 20.9  | 20.4  | 20.4  |
|                    |            | 12               | 6            | 23.8                    | 23.8  | 23.8  | 21.3  | 21.1  | 21.1  | 22.9  | 22.7  | 22.7  | 20.9  | 20.4  | 20.4  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.7  | 21.2  | 21.1  | 21.1  | 22.8  | 22.7  | 22.7  | 20.9  | 20.3  | 20.4  |
|                    |            | 25               | 0            | 23.7                    | 23.7  | 23.6  | 21.1  | 21.0  | 21.0  | 22.7  | 22.6  | 22.6  | 20.8  | 20.3  | 20.4  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 23.7  | 24.1  | 21.5  | 20.9  | 21.2  | 22.6  | 22.5  | 22.9  | 21.0  | 20.0  | 20.9  |
|                    |            | 1                | 12           | 24.1                    | 23.7  | 24.1  | 21.5  | 20.9  | 21.3  | 22.7  | 22.3  | 23.0  | 21.0  | 20.1  | 20.9  |
|                    |            | 1                | 24           | 24.0                    | 23.7  | 24.0  | 21.4  | 20.9  | 21.2  | 22.8  | 22.2  | 22.9  | 21.1  | 20.1  | 20.9  |
|                    |            | 12               | 0            | 23.0                    | 22.9  | 22.8  | 20.3  | 20.1  | 20.0  | 21.4  | 21.5  | 21.6  | 19.8  | 19.3  | 19.5  |
|                    |            | 12               | 6            | 23.0                    | 22.9  | 22.8  | 20.3  | 20.1  | 20.0  | 21.5  | 21.5  | 21.6  | 19.8  | 19.4  | 19.5  |
|                    |            | 12               | 11           | 22.9                    | 22.8  | 22.8  | 20.3  | 20.1  | 19.9  | 21.6  | 21.5  | 21.5  | 19.8  | 19.4  | 19.5  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.8  | 20.3  | 20.0  | 19.9  | 21.4  | 21.4  | 21.6  | 19.7  | 19.4  | 19.4  |
|                    | 256QAM     | 1                | 0            | 20.3                    | 19.9  | 20.3  | 17.6  | 16.9  | 17.5  | 20.0  | 19.8  | 20.2  | 18.1  | 17.5  | 17.6  |
|                    |            | 1                | 12           | 20.4                    | 19.9  | 20.3  | 17.6  | 17.0  | 17.5  | 20.0  | 19.9  | 20.2  | 18.0  | 17.5  | 17.6  |
|                    |            | 1                | 24           | 20.4                    | 20.0  | 20.3  | 17.7  | 17.1  | 17.6  | 20.0  | 19.9  | 20.3  | 18.1  | 17.6  | 17.6  |
|                    |            | 12               | 0            | 20.3                    | 20.1  | 20.2  | 17.6  | 17.3  | 17.4  | 19.9  | 20.1  | 20.1  | 17.8  | 17.3  | 17.3  |
|                    |            | 12               | 6            | 20.3                    | 20.2  | 20.2  | 17.6  | 17.3  | 17.4  | 20.0  | 20.2  | 20.2  | 17.8  | 17.3  | 17.3  |
|                    |            | 12               | 11           | 20.4                    | 20.2  | 20.2  | 17.7  | 17.3  | 17.4  | 20.0  | 20.2  | 20.1  | 17.8  | 17.3  | 17.3  |
|                    |            | 25               | 0            | 20.4                    | 20.3  | 20.1  | 17.7  | 17.4  | 17.4  | 20.0  | 20.2  | 20.1  | 17.8  | 17.3  | 17.4  |

## 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            | 25.2                    | 25.3  | 25.7  | 22.7  | 22.6  | 23.1  | 24.3  | 24.3  | 24.7  | 22.6  | 22.1  | 22.3  |
|                    |            | 1                | 24           | 25.5                    | 25.5  | 25.6  | 23.1  | 23.0  | 23.0  | 24.7  | 24.5  | 24.6  | 22.7  | 22.2  | 22.2  |
|                    |            | 1                | 49           | 25.3                    | 25.4  | 25.6  | 22.7  | 22.9  | 23.0  | 24.4  | 24.4  | 24.6  | 22.7  | 22.2  | 22.3  |
|                    |            | 25               | 0            | 24.5                    | 24.5  | 24.6  | 22.0  | 21.9  | 21.9  | 23.7  | 23.5  | 23.6  | 21.8  | 21.2  | 21.3  |
|                    |            | 25               | 12           | 24.7                    | 24.7  | 24.7  | 22.2  | 22.1  | 22.0  | 23.8  | 23.7  | 23.7  | 21.8  | 21.3  | 21.3  |
|                    |            | 25               | 24           | 24.6                    | 24.6  | 24.6  | 22.1  | 22.0  | 22.0  | 23.7  | 23.6  | 23.6  | 21.8  | 21.3  | 21.4  |
|                    |            | 50               | 0            | 24.6                    | 24.6  | 24.6  | 22.1  | 22.0  | 21.9  | 23.7  | 23.6  | 23.6  | 21.8  | 21.3  | 21.4  |
|                    | 16QAM      | 1                | 0            | 24.3                    | 24.2  | 25.1  | 21.9  | 21.6  | 22.4  | 23.4  | 23.3  | 24.1  | 21.9  | 21.3  | 21.4  |
|                    |            | 1                | 24           | 24.6                    | 24.5  | 25.0  | 22.2  | 22.0  | 22.4  | 23.7  | 23.6  | 24.0  | 21.9  | 21.3  | 21.3  |
|                    |            | 1                | 49           | 24.4                    | 24.4  | 25.0  | 21.9  | 21.8  | 22.4  | 23.5  | 23.5  | 24.0  | 21.9  | 21.4  | 21.4  |
|                    |            | 25               | 0            | 23.6                    | 23.5  | 23.6  | 21.1  | 20.9  | 21.0  | 22.7  | 22.6  | 22.6  | 20.8  | 20.2  | 20.4  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.8  | 21.3  | 21.1  | 21.1  | 22.9  | 22.7  | 22.8  | 20.9  | 20.4  | 20.4  |
|                    |            | 25               | 24           | 23.7                    | 23.6  | 23.6  | 21.2  | 21.0  | 21.0  | 22.8  | 22.6  | 22.6  | 20.9  | 20.4  | 20.5  |
|                    |            | 50               | 0            | 23.6                    | 23.6  | 23.7  | 21.1  | 21.0  | 21.0  | 22.7  | 22.6  | 22.6  | 20.9  | 20.4  | 20.5  |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.7  | 24.0  | 21.1  | 21.0  | 21.2  | 22.2  | 22.6  | 22.9  | 20.9  | 19.8  | 20.7  |
|                    |            | 1                | 24           | 24.0                    | 24.1  | 24.0  | 21.4  | 21.1  | 21.1  | 22.9  | 22.7  | 22.9  | 21.0  | 19.9  | 20.7  |
|                    |            | 1                | 49           | 23.7                    | 23.9  | 23.9  | 21.1  | 21.1  | 21.1  | 22.8  | 22.1  | 22.7  | 21.0  | 20.0  | 20.8  |
|                    |            | 25               | 0            | 22.8                    | 22.8  | 22.8  | 20.2  | 20.0  | 20.1  | 21.4  | 21.6  | 21.8  | 19.8  | 19.3  | 19.4  |
|                    |            | 25               | 12           | 22.9                    | 22.9  | 23.0  | 20.4  | 20.2  | 20.2  | 21.8  | 21.6  | 21.9  | 19.8  | 19.4  | 19.4  |
|                    |            | 25               | 24           | 22.8                    | 22.8  | 22.9  | 20.3  | 20.1  | 20.1  | 21.8  | 21.4  | 21.7  | 19.8  | 19.4  | 19.5  |
|                    |            | 50               | 0            | 22.8                    | 22.8  | 22.9  | 20.2  | 20.1  | 20.0  | 21.5  | 21.5  | 21.7  | 19.9  | 19.4  | 19.4  |
|                    | 256QAM     | 1                | 0            | 20.8                    | 19.9  | 20.3  | 17.7  | 17.8  | 17.2  | 20.4  | 19.9  | 20.1  | 18.1  | 17.3  | 17.1  |
|                    |            | 1                | 24           | 20.8                    | 20.0  | 20.2  | 17.7  | 17.8  | 17.3  | 20.4  | 20.0  | 20.1  | 18.1  | 17.3  | 17.1  |
|                    |            | 1                | 49           | 20.9                    | 20.0  | 20.2  | 17.7  | 17.9  | 17.3  | 20.5  | 19.9  | 20.2  | 18.1  | 17.3  | 17.0  |
|                    |            | 25               | 0            | 20.4                    | 20.2  | 20.3  | 17.7  | 17.4  | 17.5  | 20.0  | 20.2  | 20.1  | 17.9  | 17.2  | 17.4  |
|                    |            | 25               | 12           | 20.4                    | 20.3  | 20.3  | 17.8  | 17.5  | 17.5  | 20.0  | 20.3  | 20.1  | 17.8  | 17.4  | 17.5  |
|                    |            | 25               | 24           | 20.4                    | 20.3  | 20.3  | 17.8  | 17.5  | 17.6  | 20.0  | 20.3  | 20.2  | 17.8  | 17.4  | 17.5  |
|                    |            | 50               | 0            | 20.4                    | 20.2  | 20.2  | 17.8  | 17.5  | 17.5  | 20.0  | 20.2  | 20.1  | 17.9  | 17.4  | 17.4  |

## 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 |
| 15.0               | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.7  | 23.0  | 22.9  | 23.1  | 24.6  | 24.6  | 24.7  | 22.7  | 22.3  | 22.4  |
|                    |            | 1                | 37           | 25.6                    | 25.6  | 25.7  | 23.1  | 23.0  | 23.0  | 24.7  | 24.5  | 24.6  | 22.7  | 22.3  | 22.4  |
|                    |            | 1                | 74           | 25.6                    | 25.6  | 25.6  | 23.0  | 23.1  | 23.0  | 24.6  | 24.6  | 24.6  | 22.6  | 22.3  | 22.3  |
|                    |            | 36               | 0            | 24.6                    | 24.6  | 24.6  | 22.0  | 21.9  | 22.0  | 23.7  | 23.5  | 23.6  | 21.8  | 21.3  | 21.4  |
|                    |            | 36               | 16           | 24.7                    | 24.7  | 24.7  | 22.2  | 22.1  | 22.0  | 23.8  | 23.7  | 23.7  | 21.8  | 21.4  | 21.5  |
|                    |            | 36               | 35           | 24.7                    | 24.7  | 24.7  | 22.1  | 22.1  | 22.1  | 23.8  | 23.7  | 23.7  | 21.8  | 21.4  | 21.5  |
|                    |            | 75               | 0            | 24.7                    | 24.7  | 24.7  | 22.1  | 22.1  | 22.1  | 23.7  | 23.6  | 23.7  | 21.7  | 21.4  | 21.5  |
|                    | 16QAM      | 1                | 0            | 25.0                    | 24.6  | 25.1  | 22.6  | 21.9  | 22.5  | 24.0  | 23.6  | 24.1  | 21.7  | 21.3  | 21.5  |
|                    |            | 1                | 37           | 25.2                    | 24.7  | 25.1  | 22.7  | 22.0  | 22.4  | 24.3  | 23.6  | 24.1  | 21.8  | 21.3  | 21.5  |
|                    |            | 1                | 74           | 25.2                    | 24.7  | 25.0  | 22.6  | 22.1  | 22.4  | 24.3  | 23.7  | 24.0  | 21.8  | 21.4  | 21.4  |
|                    |            | 36               | 0            | 23.6                    | 23.6  | 23.7  | 21.0  | 20.9  | 21.0  | 22.7  | 22.6  | 22.7  | 20.9  | 20.3  | 20.5  |
|                    |            | 36               | 16           | 23.7                    | 23.7  | 23.7  | 21.2  | 21.1  | 21.1  | 22.8  | 22.7  | 22.7  | 20.9  | 20.5  | 20.5  |
|                    |            | 36               | 35           | 23.7                    | 23.7  | 23.8  | 21.1  | 21.1  | 21.1  | 22.8  | 22.7  | 22.8  | 20.8  | 20.5  | 20.6  |
|                    |            | 75               | 0            | 23.7                    | 23.7  | 23.6  | 21.1  | 21.0  | 21.1  | 22.7  | 22.7  | 22.7  | 20.8  | 20.4  | 20.6  |
|                    | 64QAM      | 1                | 0            | 24.2                    | 24.1  | 23.9  | 21.7  | 21.3  | 21.2  | 22.7  | 23.0  | 22.8  | 20.7  | 20.0  | 20.9  |
|                    |            | 1                | 37           | 24.4                    | 24.1  | 24.0  | 21.8  | 21.4  | 21.2  | 23.3  | 22.4  | 22.9  | 20.8  | 20.0  | 20.8  |
|                    |            | 1                | 74           | 24.4                    | 24.1  | 23.9  | 21.7  | 21.5  | 21.1  | 23.3  | 22.5  | 22.7  | 20.8  | 20.0  | 20.9  |
|                    |            | 36               | 0            | 22.8                    | 22.8  | 22.9  | 20.1  | 20.0  | 20.1  | 21.3  | 21.7  | 21.8  | 19.9  | 19.5  | 19.6  |
|                    |            | 36               | 16           | 22.9                    | 23.0  | 23.0  | 20.3  | 20.2  | 20.2  | 21.7  | 21.4  | 21.8  | 19.9  | 19.5  | 19.7  |
|                    |            | 36               | 35           | 22.9                    | 23.0  | 23.0  | 20.2  | 20.2  | 20.2  | 21.9  | 21.2  | 21.9  | 19.9  | 19.6  | 19.8  |
|                    |            | 75               | 0            | 22.9                    | 22.9  | 22.9  | 20.2  | 20.1  | 20.1  | 21.7  | 21.4  | 21.8  | 19.9  | 19.5  | 19.6  |
|                    | 256QAM     | 1                | 0            | 20.6                    | 19.8  | 20.3  | 17.6  | 17.6  | 17.2  | 19.9  | 20.1  | 19.6  | 18.0  | 17.4  | 17.2  |
|                    |            | 1                | 37           | 20.6                    | 19.9  | 20.3  | 17.7  | 17.7  | 17.3  | 20.0  | 20.2  | 19.6  | 18.1  | 17.4  | 17.3  |
|                    |            | 1                | 74           | 20.6                    | 20.0  | 20.3  | 17.8  | 17.7  | 17.3  | 20.1  | 20.3  | 19.7  | 18.1  | 17.5  | 17.2  |
|                    |            | 36               | 0            | 20.2                    | 20.0  | 20.1  | 17.5  | 17.3  | 17.5  | 19.7  | 19.8  | 19.8  | 17.9  | 17.5  | 17.6  |
|                    |            | 36               | 16           | 20.3                    | 20.2  | 20.2  | 17.6  | 17.4  | 17.6  | 19.5  | 19.9  | 19.8  | 17.9  | 17.5  | 17.6  |
|                    |            | 36               | 35           | 20.3                    | 20.2  | 20.1  | 17.6  | 17.4  | 17.6  | 19.7  | 19.9  | 20.0  | 17.8  | 17.5  | 17.6  |
|                    |            | 75               | 0            | 20.3                    | 20.1  | 20.1  | 17.6  | 17.4  | 17.5  | 19.7  | 19.9  | 19.8  | 17.9  | 17.5  | 17.6  |

## 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            | 25.6                    | 25.6            | 25.6            | 23.1            | 22.9            | 23.0            | 24.7            | 24.7            | 24.7            | 22.7            | 22.4            | 22.5            |
|                    |            | 1                | 49           | 25.6                    | 25.6            | 25.7            | 22.9            | 22.9            | 23.0            | 24.7            | 24.6            | 24.7            | 22.7            | 22.3            | 22.5            |
|                    |            | 1                | 99           | 25.5                    | 25.6            | 25.6            | 22.9            | 23.0            | 22.9            | 24.6            | 24.6            | 24.6            | 22.5            | 22.3            | 22.4            |
|                    |            | 50               | 0            | 24.5                    | 24.6            | 24.6            | 22.0            | 21.8            | 21.9            | 23.6            | 23.6            | 23.6            | 21.6            | 21.2            | 21.4            |
|                    |            | 50               | 24           | 24.7                    | 24.7            | 24.8            | 22.1            | 22.0            | 22.0            | 23.8            | 23.7            | 23.8            | 21.7            | 21.3            | 21.5            |
|                    |            | 50               | 49           | 24.6                    | 24.7            | 24.7            | 22.0            | 22.0            | 22.0            | 23.7            | 23.7            | 23.7            | 21.6            | 21.3            | 21.5            |
|                    | 16QAM      | 100              | 0            | 24.6                    | 24.6            | 24.7            | 22.0            | 22.0            | 22.0            | 23.8            | 23.6            | 23.7            | 21.7            | 21.4            | 21.5            |
|                    |            | 1                | 0            | 25.0                    | 25.2            | 25.1            | 22.5            | 22.5            | 22.5            | 24.1            | 24.2            | 24.1            | 21.8            | 21.5            | 21.4            |
|                    |            | 1                | 49           | 25.0                    | 25.2            | 25.1            | 22.4            | 22.5            | 22.5            | 24.1            | 24.3            | 24.1            | 21.8            | 21.4            | 21.4            |
|                    |            | 1                | 99           | 25.0                    | 25.2            | 25.1            | 22.4            | 22.5            | 22.4            | 24.1            | 24.3            | 24.1            | 21.7            | 21.5            | 21.3            |
|                    |            | 50               | 0            | 23.5                    | 23.6            | 23.6            | 20.9            | 20.9            | 21.0            | 22.6            | 22.6            | 22.6            | 20.7            | 20.3            | 20.5            |
|                    |            | 50               | 24           | 23.7                    | 23.7            | 23.8            | 21.0            | 21.1            | 21.1            | 22.8            | 22.7            | 22.8            | 20.8            | 20.4            | 20.6            |
|                    | 64QAM      | 50               | 49           | 23.6                    | 23.7            | 23.8            | 21.0            | 21.1            | 21.1            | 22.7            | 22.7            | 22.7            | 20.8            | 20.4            | 20.6            |
|                    |            | 100              | 0            | 23.7                    | 23.7            | 23.7            | 21.0            | 21.0            | 21.0            | 22.8            | 22.7            | 22.7            | 20.8            | 20.5            | 20.6            |
|                    |            | 1                | 0            | 24.0                    | 24.1            | 24.4            | 21.3            | 21.3            | 21.7            | 22.6            | 23.0            | 23.3            | 20.8            | 20.9            | 20.5            |
|                    |            | 1                | 49           | 24.0                    | 24.2            | 24.5            | 21.3            | 21.3            | 21.7            | 23.2            | 22.5            | 23.4            | 20.8            | 20.8            | 20.6            |
|                    |            | 1                | 99           | 24.0                    | 24.2            | 24.4            | 21.2            | 21.4            | 21.6            | 23.0            | 22.8            | 23.2            | 20.7            | 20.9            | 20.5            |
|                    |            | 50               | 0            | 22.7                    | 22.8            | 22.8            | 20.1            | 20.0            | 20.0            | 21.3            | 21.7            | 21.7            | 19.8            | 19.4            | 19.6            |
|                    | 256QAM     | 50               | 24           | 22.9                    | 23.0            | 23.0            | 20.2            | 20.2            | 20.1            | 21.9            | 21.4            | 21.9            | 19.9            | 19.5            | 19.6            |
|                    |            | 50               | 49           | 22.9                    | 23.0            | 22.9            | 20.1            | 20.2            | 20.1            | 21.8            | 21.2            | 21.8            | 19.8            | 19.5            | 19.7            |
|                    |            | 100              | 0            | 22.8                    | 22.9            | 22.8            | 20.1            | 20.1            | 20.0            | 21.7            | 21.5            | 21.8            | 19.8            | 19.5            | 19.6            |
|                    |            | 1                | 0            | 20.0                    | 20.2            | 20.2            | 17.3            | 17.4            | 17.5            | 19.7            | 20.1            | 20.0            | 18.0            | 17.6            | 17.6            |
|                    |            | 1                | 49           | 20.0                    | 20.2            | 20.3            | 17.3            | 17.4            | 17.6            | 19.7            | 20.1            | 20.1            | 18.1            | 17.6            | 17.7            |
|                    |            | 1                | 99           | 20.0                    | 20.3            | 20.2            | 17.4            | 17.5            | 17.6            | 19.8            | 20.2            | 20.1            | 18.1            | 17.7            | 17.5            |
|                    |            | 50               | 0            | 20.2                    | 20.1            | 20.1            | 17.4            | 17.2            | 17.4            | 19.7            | 19.9            | 19.9            | 17.8            | 17.4            | 17.6            |
|                    |            | 50               | 24           | 20.3                    | 20.1            | 20.2            | 17.6            | 17.3            | 17.5            | 19.9            | 20.1            | 19.9            | 17.8            | 17.5            | 17.6            |
|                    |            | 50               | 49           | 20.2                    | 20.2            | 20.2            | 17.6            | 17.3            | 17.5            | 19.9            | 20.1            | 20.0            | 17.8            | 17.5            | 17.7            |
|                    |            | 100              | 0            | 20.2                    | 20.0            | 20.1            | 17.5            | 17.3            | 17.5            | 19.9            | 19.9            | 19.9            | 17.8            | 17.5            | 17.6            |

## 7.2. LTE BAND 5

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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                    | 25.5  | 25.5  | 23.8  | 23.8  | 23.9  |
|                    |            | 1                | 2            | 25.7                    | 25.6  | 25.5  | 23.9  | 23.9  | 23.9  |
|                    |            | 1                | 5            | 25.6                    | 25.6  | 25.5  | 23.8  | 23.8  | 23.8  |
|                    |            | 3                | 0            | 25.6                    | 25.5  | 25.5  | 23.8  | 23.8  | 23.8  |
|                    |            | 3                | 1            | 25.6                    | 25.6  | 25.5  | 23.9  | 23.8  | 23.9  |
|                    |            | 3                | 2            | 25.7                    | 25.6  | 25.6  | 23.9  | 23.8  | 23.8  |
|                    |            | 6                | 0            | 24.7                    | 24.6  | 24.5  | 22.9  | 22.8  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.6  | 25.0  | 22.9  | 22.9  | 23.3  |
|                    |            | 1                | 2            | 24.8                    | 24.8  | 25.0  | 23.0  | 23.1  | 23.3  |
|                    |            | 1                | 5            | 24.8                    | 24.7  | 25.0  | 23.0  | 23.0  | 23.2  |
|                    |            | 3                | 0            | 24.9                    | 24.7  | 24.8  | 23.1  | 22.9  | 23.1  |
|                    |            | 3                | 1            | 24.9                    | 24.7  | 24.8  | 23.2  | 23.0  | 23.2  |
|                    |            | 3                | 2            | 24.9                    | 24.7  | 24.8  | 23.2  | 23.0  | 23.2  |
|                    |            | 6                | 0            | 23.9                    | 23.7  | 23.5  | 22.1  | 22.0  | 21.8  |
|                    | 64QAM      | 1                | 0            | 24.0                    | 24.1  | 23.8  | 22.3  | 22.0  | 22.2  |
|                    |            | 1                | 2            | 24.1                    | 24.3  | 23.9  | 22.5  | 22.1  | 22.2  |
|                    |            | 1                | 5            | 24.1                    | 24.2  | 23.8  | 22.3  | 22.0  | 22.0  |
|                    |            | 3                | 0            | 23.9                    | 24.1  | 23.8  | 22.3  | 22.0  | 21.9  |
|                    |            | 3                | 1            | 23.9                    | 24.1  | 23.9  | 22.4  | 22.1  | 22.0  |
|                    |            | 3                | 2            | 23.9                    | 24.2  | 23.9  | 22.3  | 22.1  | 21.9  |
|                    |            | 6                | 0            | 23.0                    | 22.8  | 23.0  | 20.9  | 21.2  | 21.0  |
|                    | 256QAM     | 1                | 0            | 20.1                    | 19.6  | 19.8  | 17.6  | 17.3  | 18.4  |
|                    |            | 1                | 2            | 20.2                    | 19.7  | 19.9  | 17.7  | 18.2  | 18.4  |
|                    |            | 1                | 5            | 20.1                    | 19.6  | 19.7  | 17.5  | 18.2  | 18.3  |
|                    |            | 3                | 0            | 19.9                    | 19.7  | 19.9  | 17.5  | 18.2  | 18.3  |
|                    |            | 3                | 1            | 20.1                    | 19.7  | 19.9  | 17.6  | 18.3  | 18.2  |
|                    |            | 3                | 2            | 20.0                    | 19.8  | 19.9  | 17.5  | 18.3  | 18.2  |
|                    |            | 6                | 0            | 19.9                    | 19.9  | 19.8  | 17.5  | 18.4  | 18.2  |

# 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 |
|                    |            |                  |              | 825.5                   | 836.5 | 847.5 | 825.5 | 836.5 | 847.5 |
| 3.0                | QPSK       | 1                | 0            | 25.6                    | 25.5  | 25.5  | 23.9  | 23.8  | 23.9  |
|                    |            | 1                | 7            | 25.7                    | 25.5  | 25.6  | 23.9  | 23.8  | 23.9  |
|                    |            | 1                | 14           | 25.7                    | 25.6  | 25.6  | 23.9  | 23.9  | 23.9  |
|                    |            | 8                | 0            | 24.8                    | 24.6  | 24.6  | 23.0  | 22.9  | 22.9  |
|                    |            | 8                | 4            | 24.8                    | 24.7  | 24.7  | 23.0  | 23.0  | 22.9  |
|                    |            | 8                | 7            | 24.8                    | 24.7  | 24.7  | 23.0  | 23.0  | 23.0  |
|                    |            | 15               | 0            | 24.8                    | 24.7  | 24.6  | 23.0  | 22.9  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.5  | 25.0  | 22.9  | 22.8  | 23.3  |
|                    |            | 1                | 7            | 24.8                    | 24.7  | 25.0  | 23.0  | 22.9  | 23.3  |
|                    |            | 1                | 14           | 24.8                    | 24.7  | 25.0  | 23.0  | 22.9  | 23.3  |
|                    |            | 8                | 0            | 23.9                    | 23.7  | 23.7  | 22.0  | 22.0  | 22.0  |
|                    |            | 8                | 4            | 23.9                    | 23.8  | 23.8  | 22.1  | 22.1  | 22.0  |
|                    |            | 8                | 7            | 23.9                    | 23.9  | 23.8  | 22.1  | 22.1  | 22.1  |
|                    |            | 15               | 0            | 23.8                    | 23.8  | 23.6  | 22.0  | 22.0  | 22.0  |
|                    | 64QAM      | 1                | 0            | 24.2                    | 24.0  | 23.8  | 22.2  | 22.2  | 22.1  |
|                    |            | 1                | 7            | 24.2                    | 24.1  | 23.9  | 22.2  | 22.2  | 22.1  |
|                    |            | 1                | 14           | 24.1                    | 24.2  | 23.9  | 22.2  | 22.2  | 22.1  |
|                    |            | 8                | 0            | 22.9                    | 22.8  | 22.8  | 21.0  | 21.0  | 21.0  |
|                    |            | 8                | 4            | 23.0                    | 22.9  | 22.9  | 21.1  | 21.1  | 21.0  |
|                    |            | 8                | 7            | 23.0                    | 22.9  | 22.9  | 21.1  | 21.1  | 21.1  |
|                    |            | 15               | 0            | 23.0                    | 22.9  | 22.8  | 21.1  | 21.0  | 21.0  |
|                    | 256QAM     | 1                | 0            | 20.2                    | 20.4  | 19.7  | 18.2  | 18.9  | 18.1  |
|                    |            | 1                | 2            | 20.1                    | 20.3  | 19.7  | 18.1  | 18.9  | 18.0  |
|                    |            | 1                | 5            | 20.0                    | 20.4  | 19.7  | 18.1  | 18.9  | 18.0  |
|                    |            | 3                | 0            | 20.2                    | 20.0  | 19.9  | 18.3  | 18.6  | 18.2  |
|                    |            | 3                | 1            | 20.2                    | 20.1  | 19.9  | 18.3  | 18.6  | 18.2  |
|                    |            | 3                | 2            | 20.2                    | 20.0  | 19.9  | 18.6  | 18.3  | 18.2  |
|                    |            | 6                | 0            | 20.2                    | 20.0  | 20.0  | 18.5  | 18.2  | 18.3  |

## 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 |
|                    |            |                  |              | 826.5                   | 836.5 | 846.5 | 826.5 | 836.5 | 846.5 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.4  | 23.8  | 23.8  | 23.7  |
|                    |            | 1                | 12           | 25.7                    | 25.7  | 25.5  | 23.9  | 23.8  | 23.8  |
|                    |            | 1                | 24           | 25.7                    | 25.6  | 25.5  | 23.9  | 23.8  | 23.8  |
|                    |            | 12               | 0            | 24.7                    | 24.6  | 24.5  | 22.9  | 22.8  | 22.8  |
|                    |            | 12               | 6            | 24.8                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 11           | 24.8                    | 24.6  | 24.6  | 22.9  | 22.8  | 22.9  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.6  | 22.9  | 22.8  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7  | 25.1  | 23.0  | 22.9  | 23.4  |
|                    |            | 1                | 12           | 25.0                    | 24.9  | 25.1  | 23.2  | 23.0  | 23.5  |
|                    |            | 1                | 24           | 24.9                    | 24.9  | 25.1  | 23.1  | 23.0  | 23.3  |
|                    |            | 12               | 0            | 23.7                    | 23.6  | 23.7  | 21.9  | 21.9  | 22.0  |
|                    |            | 12               | 6            | 23.8                    | 23.7  | 23.8  | 22.0  | 21.9  | 22.1  |
|                    |            | 12               | 11           | 23.8                    | 23.7  | 23.7  | 22.0  | 21.9  | 22.0  |
|                    |            | 25               | 0            | 23.7                    | 23.7  | 23.7  | 21.9  | 21.9  | 22.0  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 23.6  | 24.0  | 22.2  | 21.7  | 22.2  |
|                    |            | 1                | 12           | 24.3                    | 23.7  | 24.0  | 22.3  | 21.8  | 22.2  |
|                    |            | 1                | 24           | 24.1                    | 23.7  | 24.0  | 22.3  | 21.8  | 22.1  |
|                    |            | 12               | 0            | 22.9                    | 22.8  | 22.6  | 21.0  | 20.9  | 20.8  |
|                    |            | 12               | 6            | 23.0                    | 22.8  | 22.7  | 21.0  | 21.0  | 20.9  |
|                    |            | 12               | 11           | 23.0                    | 22.8  | 22.7  | 21.0  | 21.0  | 20.9  |
|                    |            | 25               | 0            | 22.9                    | 22.7  | 22.7  | 21.0  | 20.9  | 20.9  |
|                    | 256QAM     | 1                | 0            | 20.2                    | 19.6  | 20.1  | 18.3  | 18.0  | 18.6  |
|                    |            | 1                | 12           | 20.0                    | 19.6  | 20.0  | 18.2  | 18.0  | 18.5  |
|                    |            | 1                | 24           | 20.0                    | 19.6  | 19.9  | 18.2  | 18.0  | 18.4  |
|                    |            | 12               | 0            | 20.1                    | 19.9  | 20.0  | 18.2  | 18.2  | 18.4  |
|                    |            | 12               | 6            | 20.1                    | 19.8  | 19.9  | 18.2  | 18.3  | 18.4  |
|                    |            | 12               | 11           | 20.0                    | 19.8  | 19.9  | 18.1  | 18.3  | 18.4  |
|                    |            | 25               | 0            | 20.1                    | 19.9  | 19.8  | 18.2  | 18.4  | 18.4  |

# 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 |
|                    |            |                  |              | 829.0                   | 836.5 | 844.0 | 829.0 | 836.5 | 844.0 |
| 10.0               | QPSK       | 1                | 0            | 25.7                    | 25.6  | 25.7  | 23.9  | 23.8  | 23.9  |
|                    |            | 1                | 24           | 25.6                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.9  |
|                    |            | 1                | 49           | 25.5                    | 25.6  | 25.6  | 23.8  | 23.9  | 23.8  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.6  | 22.9  | 22.8  | 22.9  |
|                    |            | 25               | 12           | 24.7                    | 24.7  | 24.6  | 23.0  | 22.9  | 22.9  |
|                    |            | 25               | 24           | 24.7                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    |            | 50               | 0            | 24.7                    | 24.6  | 24.6  | 22.9  | 22.8  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6  | 25.1  | 23.0  | 22.9  | 23.3  |
|                    |            | 1                | 24           | 24.7                    | 24.6  | 25.0  | 22.9  | 22.8  | 23.3  |
|                    |            | 1                | 49           | 24.7                    | 24.7  | 25.0  | 22.9  | 22.8  | 23.3  |
|                    |            | 25               | 0            | 23.8                    | 23.6  | 23.7  | 22.0  | 21.9  | 21.9  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.7  | 22.1  | 21.9  | 21.9  |
|                    |            | 25               | 24           | 23.8                    | 23.7  | 23.7  | 22.1  | 21.9  | 21.9  |
|                    |            | 50               | 0            | 23.7                    | 23.6  | 23.6  | 21.9  | 21.9  | 21.8  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1  | 23.9  | 22.2  | 22.2  | 22.0  |
|                    |            | 1                | 24           | 24.0                    | 24.1  | 23.9  | 22.1  | 22.2  | 22.0  |
|                    |            | 1                | 49           | 23.9                    | 24.2  | 23.9  | 22.1  | 22.2  | 22.1  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.9  | 21.0  | 20.9  | 20.9  |
|                    |            | 25               | 12           | 23.0                    | 22.9  | 22.9  | 21.1  | 21.0  | 21.0  |
|                    |            | 25               | 24           | 22.9                    | 22.9  | 22.9  | 21.1  | 21.0  | 21.0  |
|                    |            | 50               | 0            | 22.8                    | 22.8  | 22.8  | 21.0  | 20.9  | 20.8  |
|                    | 256QAM     | 1                | 0            | 20.1                    | 20.3  | 19.6  | 18.3  | 18.8  | 18.2  |
|                    |            | 1                | 24           | 20.1                    | 20.3  | 19.7  | 18.3  | 18.9  | 18.3  |
|                    |            | 1                | 49           | 20.0                    | 20.3  | 19.7  | 18.3  | 18.9  | 18.2  |
|                    |            | 25               | 0            | 20.2                    | 19.9  | 20.0  | 18.5  | 18.4  | 18.5  |
|                    |            | 25               | 12           | 20.2                    | 20.0  | 19.9  | 18.5  | 18.5  | 18.5  |
|                    |            | 25               | 24           | 20.1                    | 19.9  | 19.9  | 18.4  | 18.5  | 18.5  |
|                    |            | 50               | 0            | 20.1                    | 20.0  | 19.9  | 18.5  | 18.5  | 18.4  |

### 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         | 25.2                    | 25.2      | 24.7      | 23.3                    | 23.5      | 23.6      |
|                 |            | 1             | 1         | 25.4                    | 25.1      | 25.3      | 22.3                    | 22.9      | 23.1      |
|                 |            | 36            | 18        | 25.5                    | 25.3      | 25.4      | 23.3                    | 23.2      | 23.2      |
|                 |            | 75            | 0         | 25.0                    | 24.9      | 24.8      | 23.4                    | 23.3      | 23.1      |
|                 | QPSK       | 1             | 0         | 24.3                    | 24.4      | 24.3      | 22.8                    | 22.8      | 23.1      |
|                 |            | 1             | 1         | 25.2                    | 25.7      | 25.2      | 23.9                    | 23.5      | 23.3      |
|                 |            | 36            | 18        | 25.5                    | 25.4      | 25.5      | 23.2                    | 23.3      | 23.1      |
|                 |            | 75            | 0         | 24.5                    | 24.4      | 24.4      | 23.0                    | 22.8      | 22.8      |
|                 | 16QAM      | 1             | 0         | 22.8                    | 22.5      | 19.6      | 21.3                    | 21.2      | 21.4      |
|                 |            | 1             | 1         | 24.2                    | 23.3      | 23.3      | 22.1                    | 22.2      | 21.9      |
|                 |            | 36            | 18        | 24.5                    | 23.4      | 23.5      | 21.8                    | 22.0      | 21.7      |
|                 |            | 75            | 0         | 23.5                    | 22.4      | 22.4      | 21.0                    | 20.9      | 20.8      |
|                 | 64QAM      | 1             | 0         | 21.8                    | 21.0      | 21.0      | 21.2                    | 21.1      | 20.8      |
|                 |            | 1             | 1         | 23.1                    | 21.0      | 21.1      | 21.3                    | 21.6      | 21.3      |
|                 |            | 36            | 18        | 22.5                    | 20.9      | 20.9      | 21.5                    | 21.2      | 21.2      |
|                 |            | 75            | 0         | 21.5                    | 20.9      | 20.9      | 21.6                    | 21.3      | 21.2      |
|                 | 256QAM     | 1             | 0         | 20.6                    | 20.7      | 20.8      | 19.1                    | 19.1      | 18.4      |
|                 |            | 1             | 1         | 20.3                    | 20.6      | 20.5      | 19.4                    | 19.1      | 19.2      |
|                 |            | 36            | 18        | 20.5                    | 20.4      | 20.5      | 19.0                    | 18.8      | 19.0      |
|                 |            | 75            | 0         | 20.5                    | 20.5      | 20.5      | 19.0                    | 18.9      | 18.9      |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>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         | 25.2                    | 24.9      | 24.6      | 23.8                    | 23.3      | 23.6      |
|                    |            | 1                | 1         | 25.5                    | 25.6      | 25.7      | 23.9                    | 23.4      | 23.6      |
|                    |            | 50               | 25        | 25.5                    | 25.4      | 25.5      | 23.4                    | 23.2      | 23.1      |
|                    |            | 100              | 1         | 22.0                    | 22.0      | 22.0      | 20.8                    | 20.3      | 20.2      |
|                    | QPSK       | 1                | 0         | 24.6                    | 24.3      | 24.7      | 22.9                    | 22.6      | 22.9      |
|                    |            | 1                | 1         | 25.0                    | 25.5      | 25.4      | 23.4                    | 23.4      | 23.2      |
|                    |            | 50               | 25        | 25.4                    | 25.5      | 25.6      | 23.3                    | 23.3      | 23.3      |
|                    |            | 100              | 1         | 24.4                    | 24.4      | 24.4      | 22.9                    | 22.8      | 22.7      |
|                    | 16QAM      | 1                | 0         | 23.7                    | 23.4      | 23.5      | 21.2                    | 21.2      | 20.9      |
|                    |            | 1                | 1         | 24.5                    | 24.7      | 24.3      | 22.4                    | 22.3      | 22.0      |
|                    |            | 50               | 25        | 24.4                    | 24.4      | 24.5      | 21.9                    | 21.8      | 21.8      |
|                    |            | 100              | 1         | 23.5                    | 23.5      | 23.5      | 20.9                    | 20.9      | 20.8      |
|                    | 64QAM      | 1                | 0         | 23.1                    | 22.8      | 23.1      | 21.5                    | 20.9      | 21.4      |
|                    |            | 1                | 1         | 23.3                    | 23.2      | 23.5      | 21.1                    | 21.3      | 21.2      |
|                    |            | 50               | 25        | 23.0                    | 22.9      | 22.9      | 21.4                    | 21.3      | 21.3      |
|                    |            | 100              | 1         | 23.1                    | 22.9      | 23.0      | 21.4                    | 21.4      | 21.3      |
|                    | 256QAM     | 1                | 0         | 20.9                    | 20.7      | 20.7      | 19.3                    | 19.4      | 19.0      |
|                    |            | 1                | 1         | 21.0                    | 20.3      | 20.5      | 18.8                    | 18.8      | 18.9      |
|                    |            | 50               | 25        | 20.4                    | 20.4      | 20.3      | 18.9                    | 18.9      | 18.9      |
|                    |            | 100              | 1         | 20.4                    | 20.3      | 20.4      | 18.9                    | 18.9      | 18.9      |

## 7.4. LTE BAND 7

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/31/2020 |
|-------------------|-------|------------|----------------------|

### 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  |
|                    |            |                  |              | 2502.5                  | 2535.0 | 2567.5 | 2502.5 | 2535.0 | 2567.5 | 2502.5 | 2535.0 | 2567.5 | 2502.5 | 2535.0 | 2567.5 |
| 5.0                | QPSK       | 1                | 0            | 24.3                    | 25.6   | 25.4   | 22.7   | 22.6   | 22.7   | 24.5   | 24.7   | 24.6   | 22.1   | 22.2   | 22.1   |
|                    |            | 1                | 12           | 24.6                    | 25.6   | 25.4   | 22.7   | 22.6   | 22.8   | 24.6   | 24.6   | 24.7   | 22.1   | 22.1   | 22.1   |
|                    |            | 1                | 24           | 24.7                    | 25.7   | 25.5   | 22.7   | 22.7   | 22.8   | 24.7   | 24.7   | 24.7   | 22.1   | 22.2   | 22.1   |
|                    |            | 12               | 0            | 24.3                    | 24.6   | 24.5   | 21.6   | 21.7   | 21.7   | 23.9   | 23.8   | 23.7   | 21.1   | 21.2   | 21.1   |
|                    |            | 12               | 6            | 24.6                    | 24.6   | 24.5   | 21.7   | 21.8   | 21.8   | 24.0   | 23.8   | 23.7   | 21.1   | 21.2   | 21.1   |
|                    |            | 12               | 11           | 24.7                    | 24.6   | 24.5   | 21.7   | 21.7   | 21.8   | 24.1   | 23.8   | 23.7   | 21.1   | 21.2   | 21.1   |
|                    |            | 25               | 0            | 24.4                    | 24.6   | 24.5   | 21.7   | 21.7   | 21.8   | 23.8   | 23.7   | 23.6   | 21.1   | 21.2   | 21.1   |
|                    | 16QAM      | 1                | 0            | 24.2                    | 24.8   | 25.0   | 21.9   | 22.2   | 21.9   | 23.8   | 24.3   | 23.8   | 21.3   | 21.8   | 21.3   |
|                    |            | 1                | 12           | 24.5                    | 24.8   | 25.0   | 21.9   | 22.2   | 21.9   | 23.9   | 24.2   | 23.8   | 21.4   | 21.7   | 21.2   |
|                    |            | 1                | 24           | 24.7                    | 24.9   | 25.0   | 21.9   | 22.2   | 22.0   | 24.1   | 24.3   | 23.9   | 21.4   | 21.7   | 21.3   |
|                    |            | 12               | 0            | 23.3                    | 23.7   | 23.6   | 20.8   | 20.9   | 20.8   | 22.9   | 22.9   | 22.7   | 20.2   | 20.4   | 20.3   |
|                    |            | 12               | 6            | 23.5                    | 23.7   | 23.7   | 20.9   | 20.9   | 20.9   | 23.1   | 22.9   | 22.8   | 20.3   | 20.4   | 20.3   |
|                    |            | 12               | 11           | 23.7                    | 23.7   | 23.6   | 20.8   | 20.9   | 20.9   | 23.2   | 22.9   | 22.7   | 20.3   | 20.4   | 20.3   |
|                    |            | 25               | 0            | 23.3                    | 23.6   | 23.6   | 20.8   | 20.8   | 20.8   | 22.9   | 22.8   | 22.6   | 20.2   | 20.3   | 20.2   |
|                    | 64QAM      | 1                | 0            | 22.5                    | 23.6   | 24.0   | 20.3   | 20.1   | 20.5   | 21.7   | 23.1   | 22.9   | 19.2   | 20.7   | 20.7   |
|                    |            | 1                | 12           | 22.7                    | 23.6   | 23.9   | 20.6   | 20.2   | 20.5   | 22.0   | 23.0   | 22.9   | 19.8   | 20.6   | 20.6   |
|                    |            | 1                | 24           | 23.2                    | 23.7   | 24.0   | 20.6   | 20.2   | 20.5   | 22.3   | 23.0   | 22.9   | 20.1   | 20.7   | 20.5   |
|                    |            | 12               | 0            | 21.5                    | 22.8   | 22.6   | 19.3   | 19.3   | 19.1   | 21.3   | 21.6   | 21.6   | 19.1   | 19.3   | 19.4   |
|                    |            | 12               | 6            | 21.8                    | 22.8   | 22.6   | 19.3   | 19.3   | 19.2   | 21.6   | 21.7   | 21.7   | 19.5   | 19.4   | 19.5   |
|                    |            | 12               | 11           | 22.1                    | 22.8   | 22.6   | 19.3   | 19.3   | 19.2   | 21.7   | 21.7   | 21.7   | 19.5   | 19.3   | 19.4   |
|                    |            | 25               | 0            | 21.7                    | 22.7   | 22.6   | 19.3   | 19.3   | 19.2   | 21.4   | 21.7   | 21.6   | 19.2   | 19.3   | 19.4   |
|                    | 256QAM     | 1                | 0            | 19.0                    | 20.6   | 20.5   | 17.1   | 18.4   | 18.4   | 19.0   | 20.1   | 20.2   | 16.4   | 17.9   | 17.2   |
|                    |            | 1                | 12           | 18.9                    | 20.5   | 20.4   | 17.0   | 18.4   | 18.3   | 19.1   | 20.0   | 20.2   | 16.5   | 17.8   | 17.2   |
|                    |            | 1                | 24           | 19.0                    | 20.6   | 20.4   | 17.1   | 18.5   | 18.3   | 19.5   | 20.1   | 20.2   | 16.6   | 17.9   | 17.3   |
|                    |            | 12               | 0            | 19.5                    | 20.5   | 20.4   | 17.4   | 18.3   | 18.3   | 19.0   | 20.2   | 20.1   | 16.7   | 17.8   | 17.3   |
|                    |            | 12               | 6            | 19.5                    | 20.5   | 20.4   | 17.4   | 18.3   | 18.3   | 19.2   | 20.2   | 20.1   | 16.8   | 17.8   | 17.4   |
|                    |            | 12               | 11           | 19.5                    | 20.5   | 20.4   | 17.3   | 18.3   | 18.3   | 19.2   | 20.2   | 20.1   | 16.8   | 17.8   | 17.3   |
|                    |            | 25               | 0            | 19.6                    | 20.6   | 20.4   | 17.4   | 18.4   | 18.4   | 19.2   | 20.3   | 20.1   | 16.9   | 17.8   | 17.1   |

## 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            | 25.2                    | 25.6   | 25.6   | 22.7   | 22.8   | 22.6   | 24.4   | 24.2   | 24.2   | 22.0   | 22.1   | 22.1   |
|                    |            | 1                | 24           | 25.6                    | 25.6   | 25.6   | 22.7   | 22.7   | 22.6   | 24.6   | 24.2   | 24.2   | 22.1   | 22.1   | 22.0   |
|                    |            | 1                | 49           | 25.6                    | 25.7   | 25.6   | 22.7   | 22.7   | 22.7   | 24.7   | 24.3   | 24.3   | 22.2   | 22.1   | 22.1   |
|                    |            | 25               | 0            | 24.8                    | 24.8   | 24.6   | 21.8   | 21.8   | 21.7   | 23.7   | 23.3   | 23.3   | 21.2   | 21.2   | 21.1   |
|                    |            | 25               | 12           | 24.8                    | 24.8   | 24.6   | 21.8   | 21.8   | 21.8   | 23.8   | 23.4   | 23.3   | 21.3   | 21.3   | 21.2   |
|                    |            | 25               | 24           | 24.7                    | 24.8   | 24.6   | 21.8   | 21.8   | 21.8   | 23.7   | 23.4   | 23.3   | 21.2   | 21.2   | 21.2   |
|                    |            | 50               | 0            | 24.7                    | 24.7   | 24.5   | 21.7   | 21.8   | 21.8   | 23.7   | 23.3   | 23.2   | 21.2   | 21.2   | 21.1   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6   | 25.0   | 21.7   | 22.2   | 21.8   | 23.8   | 23.3   | 23.6   | 21.1   | 21.3   | 21.1   |
|                    |            | 1                | 24           | 24.7                    | 24.6   | 25.0   | 21.7   | 22.1   | 21.8   | 23.7   | 23.2   | 23.6   | 21.3   | 21.2   | 21.0   |
|                    |            | 1                | 49           | 24.7                    | 24.7   | 25.0   | 21.7   | 22.2   | 21.9   | 23.8   | 23.3   | 23.7   | 21.4   | 21.3   | 21.1   |
|                    |            | 25               | 0            | 23.9                    | 23.8   | 23.6   | 20.9   | 20.9   | 20.8   | 22.8   | 22.4   | 22.3   | 20.3   | 20.4   | 20.2   |
|                    |            | 25               | 12           | 23.9                    | 23.8   | 23.6   | 20.8   | 20.9   | 21.0   | 22.9   | 22.4   | 22.3   | 20.4   | 20.4   | 20.2   |
|                    |            | 25               | 24           | 23.8                    | 23.8   | 23.7   | 20.9   | 20.9   | 20.9   | 22.8   | 22.4   | 22.3   | 20.4   | 20.4   | 20.2   |
|                    |            | 50               | 0            | 23.7                    | 23.7   | 23.5   | 20.8   | 20.8   | 20.8   | 22.7   | 22.3   | 22.2   | 20.3   | 20.2   | 20.2   |
|                    | 64QAM      | 1                | 0            | 22.6                    | 24.2   | 23.8   | 20.3   | 20.5   | 20.2   | 21.7   | 22.6   | 22.3   | 19.5   | 20.7   | 19.1   |
|                    |            | 1                | 24           | 23.5                    | 24.2   | 23.9   | 20.3   | 20.5   | 20.3   | 22.5   | 22.6   | 22.3   | 20.3   | 20.6   | 20.4   |
|                    |            | 1                | 49           | 24.1                    | 24.2   | 23.9   | 20.4   | 20.6   | 20.4   | 22.9   | 22.7   | 22.5   | 20.7   | 20.7   | 20.5   |
|                    |            | 25               | 0            | 22.2                    | 22.9   | 22.8   | 19.2   | 19.3   | 19.2   | 21.4   | 21.3   | 21.3   | 19.5   | 19.4   | 19.3   |
|                    |            | 25               | 12           | 22.9                    | 23.0   | 22.8   | 19.3   | 19.3   | 19.3   | 21.8   | 21.4   | 21.3   | 19.6   | 19.4   | 19.3   |
|                    |            | 25               | 24           | 23.0                    | 22.9   | 22.9   | 19.3   | 19.3   | 19.3   | 21.7   | 21.4   | 21.3   | 19.6   | 19.3   | 19.3   |
|                    |            | 50               | 0            | 22.7                    | 22.9   | 22.7   | 19.1   | 19.2   | 19.2   | 21.6   | 21.2   | 21.2   | 19.5   | 19.2   | 19.1   |
|                    | 256QAM     | 1                | 0            | 20.1                    | 20.6   | 20.6   | 17.3   | 18.4   | 18.7   | 18.8   | 20.5   | 20.7   | 16.6   | 18.2   | 17.4   |
|                    |            | 1                | 24           | 20.1                    | 20.5   | 20.4   | 17.1   | 18.3   | 18.7   | 19.2   | 20.3   | 20.5   | 16.7   | 18.1   | 17.3   |
|                    |            | 1                | 49           | 20.1                    | 20.6   | 20.5   | 17.1   | 18.4   | 18.7   | 19.5   | 20.4   | 20.6   | 16.8   | 18.1   | 17.4   |
|                    |            | 25               | 0            | 20.3                    | 20.5   | 20.5   | 17.5   | 18.5   | 18.3   | 19.3   | 20.5   | 20.2   | 16.8   | 17.8   | 17.5   |
|                    |            | 25               | 12           | 20.3                    | 20.6   | 20.5   | 17.5   | 18.5   | 18.4   | 19.5   | 20.5   | 20.2   | 16.8   | 17.8   | 17.5   |
|                    |            | 25               | 24           | 20.3                    | 20.6   | 20.4   | 17.4   | 18.4   | 18.4   | 19.6   | 20.4   | 20.2   | 16.8   | 17.8   | 17.5   |
|                    |            | 50               | 0            | 20.3                    | 20.6   | 20.4   | 17.4   | 18.4   | 18.3   | 19.4   | 20.4   | 20.2   | 16.8   | 17.8   | 17.5   |

## 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  |
|                    |            |                  |              | 2507.5                  | 2535.0 | 2562.5 | 2507.5 | 2535.0 | 2562.5 | 2507.5 | 2535.0 | 2562.5 | 2507.5 | 2535.0 | 2562.5 |
| 15.0               | QPSK       | 1                | 0            | 25.1                    | 25.6   | 25.6   | 22.5   | 22.7   | 22.7   | 24.0   | 24.3   | 24.2   | 21.9   | 22.2   | 22.0   |
|                    |            | 1                | 37           | 25.7                    | 25.6   | 25.5   | 22.5   | 22.7   | 22.7   | 24.7   | 24.2   | 24.1   | 22.2   | 22.1   | 21.9   |
|                    |            | 1                | 74           | 25.7                    | 25.6   | 25.6   | 22.5   | 22.7   | 22.8   | 24.6   | 24.2   | 24.3   | 22.2   | 22.1   | 22.0   |
|                    |            | 36               | 0            | 24.8                    | 24.8   | 24.6   | 21.7   | 21.9   | 21.8   | 23.7   | 23.3   | 23.2   | 21.2   | 21.2   | 21.1   |
|                    |            | 36               | 16           | 24.8                    | 24.8   | 24.7   | 21.8   | 21.9   | 21.9   | 23.8   | 23.4   | 23.2   | 21.3   | 21.2   | 21.1   |
|                    |            | 36               | 35           | 24.8                    | 24.7   | 24.6   | 21.8   | 21.9   | 21.9   | 23.7   | 23.4   | 23.3   | 21.1   | 21.2   | 21.1   |
|                    |            | 75               | 0            | 24.7                    | 24.7   | 24.6   | 21.8   | 21.8   | 21.8   | 23.6   | 23.3   | 23.2   | 21.2   | 21.1   | 21.1   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6   | 25.0   | 21.8   | 22.2   | 22.2   | 23.4   | 23.2   | 23.6   | 21.5   | 21.6   | 21.0   |
|                    |            | 1                | 37           | 25.2                    | 24.6   | 25.0   | 21.7   | 22.1   | 22.1   | 24.2   | 23.2   | 23.6   | 21.6   | 21.5   | 21.0   |
|                    |            | 1                | 74           | 25.1                    | 24.6   | 25.0   | 21.7   | 22.1   | 22.1   | 24.1   | 23.2   | 23.7   | 21.7   | 21.5   | 21.0   |
|                    |            | 36               | 0            | 23.8                    | 23.8   | 23.7   | 20.9   | 20.9   | 20.8   | 22.7   | 22.3   | 22.2   | 20.3   | 20.2   | 20.1   |
|                    |            | 36               | 16           | 23.8                    | 23.7   | 23.7   | 20.9   | 20.9   | 20.9   | 22.8   | 22.4   | 22.3   | 20.4   | 20.2   | 20.2   |
|                    |            | 36               | 35           | 23.7                    | 23.7   | 23.7   | 20.9   | 20.8   | 20.9   | 22.7   | 22.3   | 22.3   | 20.3   | 20.2   | 20.2   |
|                    |            | 75               | 0            | 23.7                    | 23.7   | 23.7   | 20.9   | 20.8   | 20.9   | 22.6   | 22.3   | 22.2   | 20.3   | 20.1   | 20.1   |
|                    | 64QAM      | 1                | 0            | 22.5                    | 24.0   | 23.8   | 20.5   | 20.3   | 20.1   | 21.7   | 22.6   | 22.2   | 19.3   | 20.3   | 20.7   |
|                    |            | 1                | 37           | 23.6                    | 24.1   | 23.8   | 20.6   | 20.3   | 20.1   | 22.9   | 22.4   | 22.3   | 20.5   | 20.2   | 20.7   |
|                    |            | 1                | 74           | 23.9                    | 24.0   | 23.8   | 20.6   | 20.4   | 20.3   | 23.1   | 22.5   | 22.4   | 20.3   | 20.2   | 20.6   |
|                    |            | 36               | 0            | 22.1                    | 22.9   | 22.8   | 19.2   | 19.2   | 19.1   | 21.4   | 21.3   | 21.2   | 19.3   | 19.2   | 19.2   |
|                    |            | 36               | 16           | 22.9                    | 22.9   | 22.9   | 19.1   | 19.2   | 19.2   | 21.7   | 21.4   | 21.3   | 19.4   | 19.2   | 19.2   |
|                    |            | 36               | 35           | 22.9                    | 22.9   | 22.8   | 19.1   | 19.2   | 19.2   | 21.6   | 21.4   | 21.3   | 19.2   | 19.2   | 19.2   |
|                    |            | 75               | 0            | 22.6                    | 22.8   | 22.8   | 19.1   | 19.1   | 19.1   | 21.4   | 21.3   | 21.2   | 19.0   | 19.1   | 19.2   |
|                    | 256QAM     | 1                | 0            | 20.2                    | 20.4   | 20.6   | 17.2   | 18.5   | 18.6   | 19.4   | 20.3   | 20.5   | 17.1   | 17.7   | 17.9   |
|                    |            | 1                | 37           | 20.3                    | 20.5   | 20.6   | 17.2   | 18.6   | 18.7   | 20.0   | 20.1   | 20.4   | 17.3   | 17.6   | 17.9   |
|                    |            | 1                | 74           | 20.3                    | 20.6   | 20.5   | 17.3   | 18.6   | 18.7   | 20.2   | 20.1   | 20.4   | 17.3   | 17.5   | 17.9   |
|                    |            | 36               | 0            | 20.3                    | 20.6   | 20.6   | 17.5   | 18.3   | 18.3   | 19.4   | 20.5   | 20.3   | 16.9   | 17.9   | 17.6   |
|                    |            | 36               | 16           | 20.3                    | 20.6   | 20.5   | 17.5   | 18.4   | 18.3   | 19.7   | 20.4   | 20.2   | 16.9   | 17.9   | 17.7   |
|                    |            | 36               | 35           | 20.3                    | 20.6   | 20.5   | 17.5   | 18.3   | 18.4   | 19.7   | 20.4   | 20.2   | 16.9   | 17.8   | 17.6   |
|                    |            | 75               | 0            | 20.3                    | 20.6   | 20.5   | 17.5   | 18.4   | 18.3   | 19.5   | 20.4   | 20.2   | 16.9   | 17.8   | 17.7   |

## 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            | 25.3                    | 25.6   | 25.6   | 22.5   | 22.8   | 22.7   | 24.3   | 24.4   | 24.3   | 22.0   | 22.0   | 22.0   |
|                    |            | 1                | 49           | 25.6                    | 25.7   | 25.6   | 22.6   | 22.7   | 22.7   | 24.7   | 24.4   | 24.3   | 22.2   | 22.0   | 22.0   |
|                    |            | 1                | 99           | 25.7                    | 25.7   | 25.6   | 22.6   | 22.7   | 22.8   | 24.6   | 24.4   | 24.3   | 22.2   | 22.0   | 22.0   |
|                    |            | 50               | 0            | 24.8                    | 24.7   | 24.7   | 21.6   | 21.8   | 21.8   | 23.8   | 23.5   | 23.3   | 21.2   | 21.1   | 21.1   |
|                    |            | 50               | 24           | 24.8                    | 24.8   | 24.7   | 21.8   | 21.9   | 21.8   | 23.8   | 23.5   | 23.3   | 21.3   | 21.2   | 21.1   |
|                    |            | 50               | 49           | 24.7                    | 24.8   | 24.7   | 21.8   | 21.9   | 21.9   | 23.7   | 23.5   | 23.4   | 20.9   | 21.1   | 21.1   |
|                    |            | 100              | 0            | 24.7                    | 24.7   | 24.6   | 21.8   | 21.8   | 21.8   | 23.7   | 23.4   | 23.2   | 21.2   | 21.1   | 21.0   |
|                    | 16QAM      | 1                | 0            | 25.1                    | 25.2   | 25.2   | 22.3   | 22.4   | 22.2   | 24.1   | 23.9   | 23.8   | 21.5   | 21.6   | 21.5   |
|                    |            | 1                | 49           | 25.1                    | 25.2   | 25.1   | 22.3   | 22.2   | 22.2   | 24.2   | 23.9   | 23.8   | 21.6   | 21.6   | 21.5   |
|                    |            | 1                | 99           | 25.2                    | 25.2   | 25.1   | 22.4   | 22.3   | 22.3   | 24.0   | 24.0   | 23.9   | 21.7   | 21.7   | 21.6   |
|                    |            | 50               | 0            | 23.7                    | 23.7   | 23.7   | 20.8   | 20.9   | 20.8   | 22.8   | 22.5   | 22.3   | 20.2   | 20.2   | 20.1   |
|                    |            | 50               | 24           | 23.7                    | 23.8   | 23.8   | 20.9   | 20.9   | 20.8   | 22.8   | 22.5   | 22.3   | 20.3   | 20.2   | 20.1   |
|                    |            | 50               | 49           | 23.7                    | 23.8   | 23.7   | 20.9   | 20.8   | 20.9   | 22.7   | 22.5   | 22.4   | 20.2   | 20.2   | 20.1   |
|                    |            | 100              | 0            | 23.7                    | 23.7   | 23.7   | 20.8   | 20.8   | 20.7   | 22.7   | 22.4   | 22.3   | 20.2   | 20.1   | 20.1   |
|                    | 64QAM      | 1                | 0            | 22.9                    | 24.1   | 24.4   | 20.2   | 20.3   | 20.6   | 22.2   | 22.7   | 22.9   | 19.6   | 20.5   | 20.7   |
|                    |            | 1                | 49           | 24.0                    | 24.1   | 24.4   | 20.2   | 20.3   | 20.6   | 22.9   | 22.6   | 22.9   | 20.4   | 20.3   | 20.7   |
|                    |            | 1                | 99           | 24.1                    | 24.1   | 24.4   | 20.3   | 20.4   | 20.7   | 22.8   | 22.7   | 23.0   | 20.5   | 20.4   | 20.8   |
|                    |            | 50               | 0            | 22.9                    | 22.9   | 22.8   | 19.1   | 19.1   | 19.0   | 21.7   | 21.5   | 21.3   | 19.2   | 19.2   | 19.2   |
|                    |            | 50               | 24           | 22.9                    | 23.0   | 22.9   | 19.1   | 19.2   | 19.1   | 21.7   | 21.5   | 21.3   | 19.2   | 19.2   | 19.2   |
|                    |            | 50               | 49           | 22.9                    | 22.9   | 22.8   | 19.1   | 19.2   | 19.1   | 21.7   | 21.5   | 21.4   | 18.8   | 19.2   | 19.2   |
|                    |            | 100              | 0            | 22.9                    | 22.9   | 22.7   | 19.0   | 19.1   | 18.9   | 21.6   | 21.4   | 21.2   | 19.1   | 19.1   | 19.1   |
|                    | 256QAM     | 1                | 0            | 20.5                    | 20.5   | 20.4   | 17.5   | 18.2   | 18.4   | 18.9   | 20.8   | 20.4   | 16.9   | 18.0   | 17.6   |
|                    |            | 1                | 49           | 20.6                    | 20.6   | 20.4   | 17.6   | 18.3   | 18.5   | 19.6   | 20.5   | 20.4   | 17.1   | 18.0   | 17.5   |
|                    |            | 1                | 99           | 20.6                    | 20.6   | 20.3   | 17.5   | 18.3   | 18.5   | 19.7   | 20.6   | 20.4   | 17.1   | 17.9   | 17.6   |
|                    |            | 50               | 0            | 20.2                    | 20.5   | 20.5   | 17.5   | 18.4   | 18.3   | 19.5   | 20.5   | 20.3   | 16.9   | 17.9   | 17.7   |
|                    |            | 50               | 24           | 20.3                    | 20.6   | 20.4   | 17.5   | 18.5   | 18.4   | 19.7   | 20.5   | 20.3   | 17.0   | 17.9   | 17.7   |
|                    |            | 50               | 49           | 20.3                    | 20.6   | 20.4   | 17.4   | 18.4   | 18.4   | 19.8   | 20.4   | 20.3   | 16.9   | 17.9   | 17.7   |
|                    |            | 100              | 0            | 20.3                    | 20.5   | 20.4   | 17.4   | 18.4   | 18.3   | 19.7   | 20.4   | 20.3   | 16.8   | 17.9   | 17.7   |

## 7.5. LTE BAND 12

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
|                    |            |                  |              | 699.7                   | 707.5 | 715.3 | 699.7 | 707.5 | 715.3 |
| 1.4                | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 2            | 25.6                    | 25.6  | 25.7  | 23.8  | 23.9  | 23.8  |
|                    |            | 1                | 5            | 25.6                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.9  |
|                    |            | 3                | 0            | 25.6                    | 25.5  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 3                | 1            | 25.6                    | 25.6  | 25.7  | 23.8  | 23.8  | 23.8  |
|                    |            | 3                | 2            | 25.7                    | 25.6  | 25.7  | 23.8  | 23.8  | 23.8  |
|                    |            | 6                | 0            | 24.7                    | 24.6  | 24.7  | 22.9  | 22.8  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.7  | 25.0  | 22.9  | 22.9  | 23.2  |
|                    |            | 1                | 2            | 24.8                    | 24.8  | 25.1  | 23.0  | 23.0  | 23.3  |
|                    |            | 1                | 5            | 24.7                    | 24.7  | 25.1  | 22.9  | 23.0  | 23.3  |
|                    |            | 3                | 0            | 24.9                    | 24.7  | 24.8  | 23.1  | 22.9  | 23.0  |
|                    |            | 3                | 1            | 24.9                    | 24.7  | 25.0  | 23.1  | 23.0  | 23.1  |
|                    |            | 3                | 2            | 24.9                    | 24.7  | 24.9  | 23.1  | 23.0  | 23.1  |
|                    |            | 6                | 0            | 23.9                    | 23.8  | 23.6  | 22.1  | 22.0  | 21.8  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.2  | 24.1  | 22.2  | 22.3  | 22.1  |
|                    |            | 1                | 2            | 24.2                    | 24.4  | 24.1  | 22.2  | 22.4  | 22.1  |
|                    |            | 1                | 5            | 24.2                    | 24.2  | 24.0  | 22.2  | 22.3  | 22.1  |
|                    |            | 3                | 0            | 23.9                    | 24.2  | 24.0  | 21.9  | 22.3  | 22.1  |
|                    |            | 3                | 1            | 24.0                    | 24.3  | 24.2  | 22.0  | 22.3  | 22.1  |
|                    |            | 3                | 2            | 24.0                    | 24.3  | 24.1  | 22.0  | 22.3  | 22.2  |
|                    |            | 6                | 0            | 23.1                    | 22.9  | 23.3  | 21.1  | 20.9  | 21.3  |
|                    | 256QAM     | 1                | 0            | 20.7                    | 21.0  | 20.7  | 18.0  | 17.6  | 17.7  |
|                    |            | 1                | 2            | 20.8                    | 20.5  | 20.3  | 18.1  | 17.7  | 17.8  |
|                    |            | 1                | 5            | 20.6                    | 20.4  | 20.2  | 18.1  | 17.6  | 17.7  |
|                    |            | 3                | 0            | 21.2                    | 20.8  | 20.7  | 18.0  | 17.7  | 17.6  |
|                    |            | 3                | 1            | 21.3                    | 20.9  | 20.8  | 18.1  | 17.8  | 17.7  |
|                    |            | 3                | 2            | 21.2                    | 20.9  | 20.8  | 18.0  | 17.8  | 17.7  |
|                    |            | 6                | 0            | 21.2                    | 20.9  | 20.7  | 17.9  | 18.0  | 17.6  |

# 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<br>700.5          | 23095<br>707.5 | 23165<br>714.5 | 23025<br>700.5 | 23095<br>707.5 | 23165<br>714.5 |
| 3.0                | QPSK       | 1                | 0            | 25.6                    | 25.6           | 25.6           | 23.8           | 23.8           | 23.9           |
|                    |            | 1                | 7            | 25.6                    | 25.5           | 25.7           | 23.8           | 23.8           | 23.8           |
|                    |            | 1                | 14           | 25.6                    | 25.5           | 25.7           | 23.8           | 23.8           | 23.9           |
|                    |            | 8                | 0            | 24.7                    | 24.6           | 24.7           | 22.9           | 22.8           | 22.9           |
|                    |            | 8                | 4            | 24.8                    | 24.7           | 24.8           | 22.9           | 22.9           | 22.9           |
|                    |            | 8                | 7            | 24.8                    | 24.6           | 24.8           | 23.0           | 22.9           | 23.0           |
|                    |            | 15               | 0            | 24.7                    | 24.6           | 24.7           | 22.9           | 22.9           | 22.9           |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6           | 25.1           | 22.9           | 22.7           | 23.3           |
|                    |            | 1                | 7            | 24.7                    | 24.5           | 25.1           | 22.9           | 22.8           | 23.3           |
|                    |            | 1                | 14           | 24.8                    | 24.5           | 25.1           | 22.9           | 22.8           | 23.3           |
|                    |            | 8                | 0            | 23.7                    | 23.7           | 23.7           | 21.9           | 21.9           | 22.0           |
|                    |            | 8                | 4            | 23.8                    | 23.8           | 23.8           | 22.0           | 22.0           | 22.0           |
|                    |            | 8                | 7            | 23.8                    | 23.8           | 23.8           | 22.0           | 22.0           | 22.1           |
|                    |            | 15               | 0            | 23.7                    | 23.7           | 23.8           | 21.9           | 21.9           | 21.9           |
|                    | 64QAM      | 1                | 0            | 24.2                    | 24.1           | 24.0           | 22.2           | 22.2           | 22.1           |
|                    |            | 1                | 7            | 24.0                    | 24.1           | 24.0           | 22.1           | 22.2           | 22.1           |
|                    |            | 1                | 14           | 24.2                    | 24.1           | 24.0           | 22.2           | 22.2           | 22.1           |
|                    |            | 8                | 0            | 22.9                    | 22.9           | 22.9           | 20.9           | 21.0           | 21.0           |
|                    |            | 8                | 4            | 23.0                    | 23.0           | 23.0           | 21.0           | 21.0           | 21.0           |
|                    |            | 8                | 7            | 23.0                    | 23.0           | 23.0           | 21.0           | 21.0           | 21.1           |
|                    |            | 15               | 0            | 23.0                    | 22.9           | 23.0           | 21.1           | 21.0           | 21.0           |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.8           | 20.5           | 18.0           | 18.9           | 18.5           |
|                    |            | 1                | 7            | 20.9                    | 20.6           | 20.4           | 18.0           | 18.9           | 18.3           |
|                    |            | 1                | 14           | 20.9                    | 20.7           | 20.4           | 18.1           | 18.8           | 18.4           |
|                    |            | 8                | 0            | 20.9                    | 20.7           | 20.6           | 18.5           | 18.3           | 18.0           |
|                    |            | 8                | 4            | 20.9                    | 20.7           | 20.7           | 18.5           | 18.3           | 18.0           |
|                    |            | 8                | 7            | 20.9                    | 20.7           | 20.7           | 18.5           | 18.3           | 18.0           |
|                    |            | 15               | 0            | 20.8                    | 20.9           | 20.6           | 18.4           | 18.2           | 18.1           |

# 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<br>701.5          | 23095<br>707.5 | 23155<br>713.5 | 23035<br>701.5 | 23095<br>707.5 | 23155<br>713.5 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6           | 25.5           | 23.9           | 23.8           | 23.8           |
|                    |            | 1                | 12           | 25.7                    | 25.6           | 25.6           | 23.9           | 23.9           | 23.8           |
|                    |            | 1                | 24           | 25.7                    | 25.6           | 25.6           | 23.9           | 23.9           | 23.8           |
|                    |            | 12               | 0            | 24.6                    | 24.5           | 24.6           | 22.9           | 22.8           | 22.9           |
|                    |            | 12               | 6            | 24.7                    | 24.6           | 24.6           | 23.0           | 22.9           | 22.8           |
|                    |            | 12               | 11           | 24.7                    | 24.5           | 24.6           | 22.9           | 22.9           | 22.9           |
|                    |            | 25               | 0            | 24.7                    | 24.6           | 24.6           | 22.9           | 22.9           | 22.9           |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7           | 25.1           | 23.0           | 23.0           | 23.4           |
|                    |            | 1                | 12           | 24.8                    | 24.7           | 25.2           | 23.0           | 23.0           | 23.4           |
|                    |            | 1                | 24           | 24.9                    | 24.7           | 25.2           | 23.0           | 23.0           | 23.4           |
|                    |            | 12               | 0            | 23.7                    | 23.7           | 23.7           | 21.9           | 21.9           | 22.0           |
|                    |            | 12               | 6            | 23.8                    | 23.7           | 23.7           | 22.0           | 22.0           | 22.0           |
|                    |            | 12               | 11           | 23.8                    | 23.6           | 23.8           | 22.0           | 21.9           | 22.0           |
|                    |            | 25               | 0            | 23.7                    | 23.6           | 23.7           | 21.9           | 21.9           | 22.0           |
|                    | 64QAM      | 1                | 0            | 24.1                    | 23.7           | 24.1           | 22.2           | 21.7           | 22.2           |
|                    |            | 1                | 12           | 24.1                    | 23.7           | 24.2           | 22.2           | 21.8           | 22.3           |
|                    |            | 1                | 24           | 24.0                    | 23.7           | 24.2           | 22.2           | 21.8           | 22.3           |
|                    |            | 12               | 0            | 22.9                    | 22.9           | 22.8           | 21.0           | 20.9           | 20.9           |
|                    |            | 12               | 6            | 22.9                    | 22.9           | 22.8           | 21.1           | 21.0           | 20.9           |
|                    |            | 12               | 11           | 23.0                    | 22.8           | 22.8           | 21.0           | 21.0           | 20.9           |
|                    |            | 25               | 0            | 22.9                    | 22.8           | 22.8           | 21.0           | 20.9           | 20.9           |
|                    | 256QAM     | 1                | 0            | 21.0                    | 20.8           | 20.4           | 18.5           | 18.2           | 18.3           |
|                    |            | 1                | 12           | 20.8                    | 20.8           | 20.3           | 18.3           | 18.2           | 18.2           |
|                    |            | 1                | 24           | 20.8                    | 20.7           | 20.3           | 18.3           | 18.2           | 18.3           |
|                    |            | 12               | 0            | 20.8                    | 20.7           | 20.7           | 18.3           | 18.1           | 18.1           |
|                    |            | 12               | 6            | 20.8                    | 20.7           | 20.6           | 18.3           | 18.2           | 18.0           |
|                    |            | 12               | 11           | 20.8                    | 20.7           | 20.6           | 18.2           | 18.1           | 18.0           |
|                    |            | 25               | 0            | 20.8                    | 20.7           | 20.7           | 18.3           | 18.2           | 18.1           |

## 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                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 24           | 25.5                    | 25.5  | 25.5  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 49           | 25.5                    | 25.6  | 25.7  | 23.8  | 23.8  | 23.9  |
|                    |            | 25               | 0            | 24.6                    | 24.6  | 24.5  | 22.8  | 22.8  | 22.8  |
|                    |            | 25               | 12           | 24.7                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    |            | 25               | 24           | 24.6                    | 24.6  | 24.7  | 22.9  | 22.9  | 22.9  |
|                    |            | 50               | 0            | 24.7                    | 24.6  | 24.6  | 22.9  | 22.9  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.6  | 25.0  | 23.0  | 22.9  | 23.2  |
|                    |            | 1                | 24           | 24.7                    | 24.5  | 25.0  | 22.8  | 22.8  | 23.3  |
|                    |            | 1                | 49           | 24.6                    | 24.6  | 25.1  | 22.9  | 22.9  | 23.3  |
|                    |            | 25               | 0            | 23.7                    | 23.6  | 23.5  | 21.9  | 21.8  | 21.9  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.6  | 22.0  | 21.9  | 21.9  |
|                    |            | 25               | 24           | 23.7                    | 23.6  | 23.7  | 22.0  | 21.9  | 21.9  |
|                    |            | 50               | 0            | 23.7                    | 23.6  | 23.6  | 21.9  | 21.8  | 21.8  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1  | 23.8  | 22.2  | 22.2  | 21.9  |
|                    |            | 1                | 24           | 24.1                    | 24.1  | 23.9  | 22.1  | 22.3  | 22.1  |
|                    |            | 1                | 49           | 24.0                    | 24.2  | 24.1  | 22.2  | 22.3  | 22.1  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.8  | 21.0  | 20.9  | 21.0  |
|                    |            | 25               | 12           | 23.0                    | 22.9  | 22.9  | 21.1  | 21.0  | 21.1  |
|                    |            | 25               | 24           | 22.9                    | 22.9  | 22.9  | 21.0  | 21.0  | 21.1  |
|                    |            | 50               | 0            | 22.9                    | 22.8  | 22.9  | 21.0  | 20.9  | 20.9  |
|                    | 256QAM     | 1                | 0            | 20.9                    | 20.5  | 20.6  | 18.1  | 18.3  | 18.7  |
|                    |            | 1                | 24           | 20.9                    | 20.5  | 20.6  | 18.0  | 18.3  | 18.6  |
|                    |            | 1                | 49           | 21.0                    | 20.5  | 20.6  | 18.0  | 18.3  | 18.6  |
|                    |            | 25               | 0            | 20.9                    | 20.7  | 20.6  | 18.4  | 18.3  | 18.2  |
|                    |            | 25               | 12           | 20.9                    | 20.8  | 20.6  | 18.3  | 18.4  | 18.2  |
|                    |            | 25               | 24           | 20.7                    | 20.7  | 20.6  | 18.3  | 18.3  | 18.2  |
|                    |            | 50               | 0            | 20.8                    | 20.8  | 20.6  | 18.4  | 18.2  | 18.2  |

## 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         | 24.9                    | 24.5      | 24.7      | 23.2                    | 23.2      | 23.2      |
|                    |            | 1                | 1         | 24.8                    | 25.5      | 25.4      | 23.8                    | 23.3      | 23.8      |
|                    |            | 36               | 18        | 25.2                    | 25.3      | 25.1      | 23.4                    | 23.5      | 23.6      |
|                    |            | 75               | 0         | 24.6                    | 24.6      | 24.7      | 23.0                    | 23.0      | 22.9      |
|                    | QPSK       | 1                | 0         | 24.4                    | 23.8      | 23.9      | 22.4                    | 22.4      | 22.4      |
|                    |            | 1                | 1         | 25.5                    | 25.7      | 25.1      | 23.9                    | 23.6      | 23.5      |
|                    |            | 36               | 18        | 25.1                    | 25.4      | 25.4      | 23.6                    | 23.4      | 23.5      |
|                    |            | 75               | 0         | 24.2                    | 24.3      | 24.3      | 22.5                    | 22.5      | 22.4      |
|                    | 16QAM      | 1                | 0         | 23.4                    | 23.2      | 23.3      | 22.2                    | 21.8      | 21.7      |
|                    |            | 1                | 1         | 24.4                    | 24.2      | 24.7      | 22.8                    | 22.4      | 22.6      |
|                    |            | 36               | 18        | 24.2                    | 24.3      | 24.4      | 22.5                    | 22.4      | 22.4      |
|                    |            | 75               | 0         | 23.2                    | 23.2      | 23.3      | 21.5                    | 21.6      | 21.5      |
|                    | 64QAM      | 1                | 0         | 23.1                    | 22.9      | 22.8      | 20.8                    | 21.6      | 20.8      |
|                    |            | 1                | 1         | 23.0                    | 23.0      | 22.7      | 21.5                    | 21.4      | 21.4      |
|                    |            | 36               | 18        | 22.5                    | 22.7      | 22.8      | 21.1                    | 21.0      | 21.0      |
|                    |            | 75               | 0         | 22.7                    | 22.8      | 22.7      | 21.1                    | 21.1      | 21.1      |
|                    | 256QAM     | 1                | 0         | 20.2                    | 20.6      | 20.4      | 19.0                    | 18.3      | 18.8      |
|                    |            | 1                | 1         | 20.5                    | 20.8      | 20.5      | 19.0                    | 18.8      | 18.9      |
|                    |            | 36               | 18        | 20.1                    | 20.3      | 20.4      | 18.7                    | 18.3      | 18.7      |
|                    |            | 75               | 0         | 20.4                    | 20.3      | 20.3      | 18.6                    | 18.5      | 18.6      |

## 7.7. LTE BAND 13

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
|                    |            |                  |              | 779.5                   | 782.0 | 784.5 | 779.5 | 782.0 | 784.5 |
| 5.0                | QPSK       | 1                | 0            | 25.5                    | 25.6  | 25.6  | 23.8  | 23.9  | 23.8  |
|                    |            | 1                | 12           | 25.5                    | 25.7  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 24           | 25.7                    | 25.7  | 25.6  | 23.9  | 23.9  | 23.9  |
|                    |            | 12               | 0            | 24.6                    | 24.6  | 24.6  | 22.9  | 22.8  | 22.8  |
|                    |            | 12               | 6            | 24.7                    | 24.7  | 24.6  | 23.0  | 22.9  | 22.9  |
|                    |            | 12               | 11           | 24.7                    | 24.6  | 24.7  | 23.0  | 22.9  | 22.9  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.7  | 22.9  | 22.9  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7  | 25.1  | 23.1  | 23.0  | 23.3  |
|                    |            | 1                | 12           | 25.0                    | 24.9  | 25.2  | 22.9  | 23.0  | 23.3  |
|                    |            | 1                | 24           | 24.9                    | 24.9  | 25.3  | 23.0  | 23.0  | 23.4  |
|                    |            | 12               | 0            | 23.7                    | 23.7  | 23.7  | 22.0  | 21.9  | 22.0  |
|                    |            | 12               | 6            | 23.7                    | 23.8  | 23.8  | 22.1  | 22.0  | 22.0  |
|                    |            | 12               | 11           | 23.7                    | 23.8  | 23.8  | 22.0  | 22.0  | 22.0  |
|                    |            | 25               | 0            | 23.6                    | 23.7  | 23.7  | 21.9  | 21.9  | 21.9  |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.7  | 24.1  | 22.2  | 21.8  | 22.2  |
|                    |            | 1                | 12           | 24.1                    | 23.8  | 24.1  | 22.2  | 21.8  | 22.2  |
|                    |            | 1                | 24           | 24.2                    | 23.8  | 24.2  | 22.3  | 21.8  | 22.2  |
|                    |            | 12               | 0            | 22.8                    | 22.8  | 22.7  | 20.9  | 20.9  | 20.8  |
|                    |            | 12               | 6            | 22.9                    | 22.9  | 22.7  | 21.0  | 21.0  | 20.8  |
|                    |            | 12               | 11           | 22.9                    | 22.9  | 22.8  | 21.0  | 20.9  | 20.8  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.8  | 21.0  | 20.9  | 20.8  |
|                    | 256QAM     | 1                | 0            | 20.2                    | 20.4  | 20.3  | 17.9  | 17.6  | 18.1  |
|                    |            | 1                | 12           | 19.9                    | 20.3  | 20.3  | 17.9  | 17.6  | 18.0  |
|                    |            | 1                | 24           | 19.9                    | 20.4  | 20.5  | 17.9  | 17.7  | 18.1  |
|                    |            | 12               | 0            | 20.4                    | 20.3  | 20.2  | 17.9  | 17.9  | 18.0  |
|                    |            | 12               | 6            | 20.3                    | 20.2  | 20.2  | 17.9  | 18.0  | 18.0  |
|                    |            | 12               | 11           | 20.2                    | 20.2  | 20.3  | 17.9  | 18.0  | 18.0  |
|                    |            | 25               | 0            | 20.4                    | 20.3  | 20.3  | 18.0  | 18.1  | 18.0  |

# 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            |                         | 25.6  |     |       | 23.9  |     |
|                    |            | 1                | 24           |                         | 25.7  |     |       | 23.9  |     |
|                    |            | 1                | 49           |                         | 25.7  |     |       | 23.9  |     |
|                    |            | 25               | 0            |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 12           |                         | 24.9  |     |       | 23.1  |     |
|                    |            | 25               | 24           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 50               | 0            |                         | 24.8  |     |       | 23.0  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.8  |     |       | 23.1  |     |
|                    |            | 1                | 24           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 1                | 49           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 0            |                         | 23.9  |     |       | 22.1  |     |
|                    |            | 25               | 12           |                         | 24.0  |     |       | 22.2  |     |
|                    |            | 25               | 24           |                         | 24.0  |     |       | 22.2  |     |
|                    |            | 50               | 0            |                         | 23.8  |     |       | 22.1  |     |
|                    | 64QAM      | 1                | 0            |                         | 24.2  |     |       | 22.2  |     |
|                    |            | 1                | 24           |                         | 24.2  |     |       | 22.3  |     |
|                    |            | 1                | 49           |                         | 24.2  |     |       | 22.2  |     |
|                    |            | 25               | 0            |                         | 23.0  |     |       | 21.1  |     |
|                    |            | 25               | 12           |                         | 23.1  |     |       | 21.2  |     |
|                    |            | 25               | 24           |                         | 23.1  |     |       | 21.1  |     |
|                    |            | 50               | 0            |                         | 23.0  |     |       | 21.1  |     |
|                    | 256QAM     | 1                | 0            |                         | 20.6  |     |       | 18.0  |     |
|                    |            | 1                | 24           |                         | 20.4  |     |       | 18.0  |     |
|                    |            | 1                | 49           |                         | 20.6  |     |       | 18.0  |     |
|                    |            | 25               | 0            |                         | 20.6  |     |       | 18.3  |     |
|                    |            | 25               | 12           |                         | 20.6  |     |       | 18.4  |     |
|                    |            | 25               | 24           |                         | 20.5  |     |       | 18.3  |     |
|                    |            | 50               | 0            |                         | 20.5  |     |       | 18.3  |     |

## 7.8. LTE BAND 14

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
|                    |            |                  |              | 790.5                   | 793.0 | 795.5 | 790.5 | 793.0 | 795.5 |
| 5.0                | QPSK       | 1                | 0            | 25.5                    | 25.7  | 25.6  | 23.8  | 23.8  | 23.7  |
|                    |            | 1                | 12           | 25.6                    | 25.7  | 25.6  | 23.9  | 23.9  | 23.9  |
|                    |            | 1                | 24           | 25.6                    | 25.7  | 25.5  | 23.8  | 23.9  | 23.8  |
|                    |            | 12               | 0            | 24.7                    | 24.7  | 24.7  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 6            | 24.7                    | 24.7  | 24.7  | 23.0  | 22.9  | 23.0  |
|                    |            | 12               | 11           | 24.7                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    |            | 25               | 0            | 24.7                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.8  | 25.1  | 23.0  | 22.9  | 23.3  |
|                    |            | 1                | 12           | 24.8                    | 24.9  | 25.1  | 23.0  | 23.0  | 23.4  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 25.1  | 22.9  | 23.0  | 23.4  |
|                    |            | 12               | 0            | 23.8                    | 23.8  | 23.8  | 22.0  | 22.0  | 22.0  |
|                    |            | 12               | 6            | 23.8                    | 23.9  | 23.8  | 22.0  | 22.0  | 22.1  |
|                    |            | 12               | 11           | 23.8                    | 23.7  | 23.8  | 22.0  | 22.0  | 22.1  |
|                    |            | 25               | 0            | 23.7                    | 23.8  | 23.7  | 21.9  | 21.9  | 22.0  |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.8  | 24.1  | 22.1  | 21.7  | 22.1  |
|                    |            | 1                | 12           | 24.0                    | 23.9  | 24.2  | 22.1  | 21.9  | 22.2  |
|                    |            | 1                | 24           | 24.2                    | 23.8  | 24.1  | 22.1  | 21.8  | 22.2  |
|                    |            | 12               | 0            | 22.8                    | 23.0  | 22.9  | 21.0  | 21.0  | 20.9  |
|                    |            | 12               | 6            | 22.8                    | 23.0  | 22.9  | 21.0  | 21.0  | 21.0  |
|                    |            | 12               | 11           | 22.8                    | 22.9  | 22.8  | 21.0  | 21.0  | 20.9  |
|                    |            | 25               | 0            | 22.7                    | 22.9  | 22.9  | 21.0  | 20.9  | 20.9  |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.5  | 20.6  | 18.3  | 18.5  | 18.5  |
|                    |            | 1                | 12           | 20.1                    | 20.7  | 20.6  | 18.3  | 18.4  | 18.6  |
|                    |            | 1                | 24           | 20.2                    | 20.5  | 20.4  | 18.3  | 18.5  | 18.6  |
|                    |            | 12               | 0            | 20.3                    | 20.4  | 20.5  | 18.3  | 18.4  | 18.3  |
|                    |            | 12               | 6            | 20.4                    | 20.5  | 20.4  | 18.4  | 18.4  | 18.4  |
|                    |            | 12               | 11           | 20.4                    | 20.4  | 20.3  | 18.4  | 18.4  | 18.4  |
|                    |            | 25               | 0            | 20.5                    | 20.4  | 20.4  | 18.4  | 18.4  | 18.4  |

# 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  |     |       | 23.8  |     |
|                    |            | 1                | 49           |                         | 25.6  |     |       | 23.9  |     |
|                    |            | 25               | 0            |                         | 24.7  |     |       | 22.9  |     |
|                    |            | 25               | 12           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 24           |                         | 24.7  |     |       | 22.9  |     |
|                    |            | 50               | 0            |                         | 24.7  |     |       | 22.9  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 1                | 24           |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 1                | 49           |                         | 24.7  |     |       | 23.1  |     |
|                    |            | 25               | 0            |                         | 23.8  |     |       | 22.0  |     |
|                    |            | 25               | 12           |                         | 23.9  |     |       | 22.1  |     |
|                    |            | 25               | 24           |                         | 23.8  |     |       | 22.0  |     |
|                    |            | 50               | 0            |                         | 23.8  |     |       | 22.0  |     |
|                    | 64QAM      | 1                | 0            |                         | 24.3  |     |       | 22.2  |     |
|                    |            | 1                | 24           |                         | 24.2  |     |       | 22.2  |     |
|                    |            | 1                | 49           |                         | 24.1  |     |       | 22.4  |     |
|                    |            | 25               | 0            |                         | 23.0  |     |       | 21.0  |     |
|                    |            | 25               | 12           |                         | 23.1  |     |       | 21.1  |     |
|                    |            | 25               | 24           |                         | 23.0  |     |       | 21.0  |     |
|                    |            | 50               | 0            |                         | 23.0  |     |       | 21.0  |     |
|                    | 256QAM     | 1                | 0            |                         | 20.4  |     |       | 18.4  |     |
|                    |            | 1                | 24           |                         | 20.7  |     |       | 18.5  |     |
|                    |            | 1                | 49           |                         | 20.5  |     |       | 18.6  |     |
|                    |            | 25               | 0            |                         | 20.5  |     |       | 18.5  |     |
|                    |            | 25               | 12           |                         | 20.6  |     |       | 18.4  |     |
|                    |            | 25               | 24           |                         | 20.6  |     |       | 18.4  |     |
|                    |            | 50               | 0            |                         | 20.5  |     |       | 18.3  |     |

## 7.9. LTE BAND 17

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/8/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
|                    |            |                  |              | 706.5                   | 710.0 | 713.5 | 706.5 | 710.0 | 713.5 |
| 5.0                | QPSK       | 1                | 0            | 25.7                    | 25.7  | 25.5  | 23.8  | 23.8  | 23.7  |
|                    |            | 1                | 12           | 25.7                    | 25.6  | 25.7  | 23.8  | 23.9  | 23.8  |
|                    |            | 1                | 24           | 25.6                    | 25.7  | 25.6  | 23.9  | 23.9  | 23.8  |
|                    |            | 12               | 0            | 24.7                    | 24.6  | 24.6  | 22.8  | 22.8  | 22.8  |
|                    |            | 12               | 6            | 24.8                    | 24.7  | 24.7  | 22.9  | 22.9  | 22.9  |
|                    |            | 12               | 11           | 24.7                    | 24.7  | 24.7  | 22.9  | 22.9  | 22.9  |
|                    |            | 25               | 0            | 24.8                    | 24.6  | 24.7  | 22.9  | 22.9  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.8  | 25.1  | 23.0  | 23.0  | 23.4  |
|                    |            | 1                | 12           | 25.0                    | 24.8  | 25.2  | 23.1  | 23.0  | 23.4  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 25.2  | 23.0  | 23.1  | 23.4  |
|                    |            | 12               | 0            | 23.8                    | 23.7  | 23.8  | 21.9  | 21.9  | 22.0  |
|                    |            | 12               | 6            | 23.8                    | 23.8  | 23.9  | 22.0  | 22.0  | 22.1  |
|                    |            | 12               | 11           | 23.8                    | 23.7  | 23.9  | 22.0  | 22.0  | 22.0  |
|                    |            | 25               | 0            | 23.7                    | 23.7  | 23.7  | 21.9  | 21.9  | 21.9  |
|                    | 64QAM      | 1                | 0            | 23.8                    | 24.1  | 24.0  | 22.1  | 21.7  | 22.2  |
|                    |            | 1                | 12           | 23.8                    | 24.1  | 23.9  | 22.2  | 21.8  | 22.2  |
|                    |            | 1                | 24           | 23.8                    | 24.1  | 23.7  | 22.2  | 21.8  | 22.2  |
|                    |            | 12               | 0            | 22.9                    | 22.7  | 22.8  | 20.9  | 20.9  | 20.8  |
|                    |            | 12               | 6            | 23.0                    | 22.8  | 22.9  | 21.0  | 21.0  | 20.9  |
|                    |            | 12               | 11           | 22.9                    | 22.8  | 22.9  | 21.0  | 20.9  | 20.9  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.8  | 20.9  | 20.9  | 20.8  |
|                    | 256QAM     | 1                | 0            | 20.1                    | 20.5  | 20.4  | 18.5  | 18.2  | 18.6  |
|                    |            | 1                | 12           | 20.2                    | 20.5  | 20.4  | 18.5  | 18.3  | 18.6  |
|                    |            | 1                | 24           | 20.2                    | 20.6  | 20.5  | 18.6  | 18.3  | 18.6  |
|                    |            | 12               | 0            | 20.3                    | 20.4  | 20.4  | 18.5  | 18.5  | 18.5  |
|                    |            | 12               | 6            | 20.4                    | 20.4  | 20.4  | 18.6  | 18.5  | 18.5  |
|                    |            | 12               | 11           | 20.4                    | 20.5  | 20.4  | 18.6  | 18.5  | 18.5  |
|                    |            | 25               | 0            | 20.5                    | 20.4  | 20.4  | 18.6  | 18.6  | 18.4  |

## 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                    | 25.7  | 25.6  | 23.7  | 23.8  | 23.9  |
|                    |            | 1                | 24           | 25.5                    | 25.5  | 25.5  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 49           | 25.6                    | 25.7  | 25.6  | 23.8  | 23.9  | 23.8  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.6  | 22.9  | 22.9  | 22.9  |
|                    |            | 25               | 12           | 24.7                    | 24.7  | 24.7  | 23.0  | 23.0  | 22.9  |
|                    |            | 25               | 24           | 24.7                    | 24.7  | 24.7  | 23.0  | 22.9  | 23.0  |
|                    |            | 50               | 0            | 24.7                    | 24.7  | 24.7  | 23.0  | 23.0  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.6  | 25.0  | 22.9  | 22.8  | 23.2  |
|                    |            | 1                | 24           | 24.6                    | 24.5  | 25.0  | 22.9  | 22.8  | 23.3  |
|                    |            | 1                | 49           | 24.8                    | 24.7  | 25.0  | 23.0  | 22.8  | 23.3  |
|                    |            | 25               | 0            | 23.8                    | 23.7  | 23.7  | 22.0  | 21.9  | 22.0  |
|                    |            | 25               | 12           | 23.8                    | 23.7  | 23.7  | 22.1  | 22.0  | 22.0  |
|                    |            | 25               | 24           | 23.8                    | 23.7  | 23.7  | 22.1  | 22.0  | 22.0  |
|                    |            | 50               | 0            | 23.8                    | 23.7  | 23.7  | 22.0  | 21.9  | 21.9  |
|                    | 64QAM      | 1                | 0            | 24.0                    | 24.1  | 23.8  | 22.1  | 22.2  | 21.9  |
|                    |            | 1                | 24           | 23.9                    | 24.1  | 23.9  | 22.1  | 22.2  | 22.0  |
|                    |            | 1                | 49           | 24.2                    | 24.2  | 23.9  | 22.2  | 22.3  | 22.1  |
|                    |            | 25               | 0            | 22.9                    | 22.8  | 22.9  | 21.0  | 20.9  | 21.0  |
|                    |            | 25               | 12           | 23.0                    | 22.9  | 23.0  | 21.1  | 21.1  | 21.0  |
|                    |            | 25               | 24           | 23.0                    | 22.9  | 22.9  | 21.1  | 21.0  | 21.1  |
|                    |            | 50               | 0            | 22.9                    | 22.9  | 22.9  | 21.0  | 21.0  | 20.9  |
|                    | 256QAM     | 1                | 0            | 20.3                    | 20.7  | 20.2  | 18.1  | 18.3  | 18.8  |
|                    |            | 1                | 24           | 20.4                    | 20.8  | 20.1  | 18.1  | 18.4  | 18.9  |
|                    |            | 1                | 49           | 20.5                    | 20.9  | 20.3  | 18.3  | 18.5  | 19.0  |
|                    |            | 25               | 0            | 20.4                    | 20.3  | 20.4  | 18.4  | 18.4  | 18.4  |
|                    |            | 25               | 12           | 20.5                    | 20.5  | 20.4  | 18.5  | 18.6  | 18.4  |
|                    |            | 25               | 24           | 20.4                    | 20.5  | 20.5  | 18.5  | 18.5  | 18.5  |
|                    |            | 50               | 0            | 20.5                    | 20.4  | 20.4  | 18.4  | 18.5  | 18.4  |

## 7.10. LTE BAND 25

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/8/2020 & 8/31/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
| 1.4                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.6  | 23.1  | 22.8  | 22.6  | 24.6  | 24.4  | 24.3  | 22.7  | 22.5  | 20.9  |
|                    |            | 1                | 2            | 25.7                    | 25.7  | 25.7  | 23.1  | 22.9  | 22.8  | 24.7  | 24.5  | 24.0  | 22.7  | 22.4  | 20.6  |
|                    |            | 1                | 5            | 25.7                    | 25.6  | 25.7  | 23.1  | 22.9  | 22.7  | 24.7  | 24.5  | 23.6  | 22.6  | 22.3  | 20.2  |
|                    |            | 3                | 0            | 25.6                    | 25.6  | 25.6  | 23.0  | 22.9  | 22.6  | 24.6  | 24.4  | 23.8  | 22.5  | 22.3  | 20.4  |
|                    |            | 3                | 1            | 25.7                    | 25.7  | 25.7  | 23.1  | 22.9  | 22.8  | 24.7  | 24.5  | 23.7  | 22.5  | 22.2  | 20.3  |
|                    |            | 3                | 2            | 25.7                    | 25.7  | 25.7  | 23.0  | 22.9  | 22.7  | 24.7  | 24.5  | 23.5  | 22.5  | 22.2  | 20.2  |
|                    | 16QAM      | 6                | 0            | 24.8                    | 24.6  | 24.6  | 22.1  | 21.9  | 21.7  | 23.7  | 23.5  | 22.9  | 21.7  | 21.5  | 19.6  |
|                    |            | 1                | 0            | 24.8                    | 24.8  | 25.0  | 22.2  | 22.3  | 21.8  | 23.7  | 23.5  | 23.4  | 21.7  | 21.4  | 19.9  |
|                    |            | 1                | 2            | 24.8                    | 24.8  | 25.1  | 22.2  | 22.3  | 21.9  | 23.8  | 23.7  | 23.3  | 21.7  | 21.4  | 19.8  |
|                    |            | 1                | 5            | 24.8                    | 24.8  | 25.1  | 22.2  | 22.3  | 21.8  | 23.8  | 23.6  | 23.0  | 21.6  | 21.4  | 19.5  |
|                    |            | 3                | 0            | 24.9                    | 24.7  | 24.8  | 22.1  | 22.1  | 21.9  | 23.9  | 23.5  | 23.2  | 21.8  | 21.6  | 19.9  |
|                    |            | 3                | 1            | 25.0                    | 24.8  | 24.9  | 22.2  | 22.2  | 22.0  | 24.0  | 23.6  | 23.1  | 21.8  | 21.6  | 19.8  |
|                    | 64QAM      | 3                | 2            | 25.0                    | 24.8  | 24.9  | 22.2  | 22.2  | 22.1  | 24.0  | 23.6  | 23.1  | 21.8  | 21.6  | 19.7  |
|                    |            | 6                | 0            | 23.9                    | 23.8  | 23.5  | 21.3  | 20.8  | 20.9  | 22.9  | 22.6  | 22.1  | 20.9  | 20.8  | 19.1  |
|                    |            | 1                | 0            | 24.1                    | 24.1  | 23.8  | 21.6  | 21.2  | 21.0  | 22.3  | 22.5  | 22.2  | 20.3  | 20.2  | 19.2  |
|                    |            | 1                | 2            | 24.1                    | 24.2  | 24.0  | 21.7  | 21.3  | 21.1  | 22.3  | 22.5  | 22.0  | 20.3  | 20.2  | 19.1  |
|                    |            | 1                | 5            | 24.1                    | 24.2  | 23.9  | 21.6  | 21.2  | 21.1  | 22.3  | 22.4  | 21.6  | 20.2  | 20.2  | 18.8  |
|                    |            | 3                | 0            | 23.8                    | 24.1  | 23.8  | 21.5  | 21.2  | 20.8  | 22.0  | 22.4  | 22.0  | 20.1  | 20.2  | 18.8  |
|                    | 256QAM     | 3                | 1            | 23.9                    | 24.1  | 23.9  | 21.6  | 21.3  | 20.9  | 22.0  | 22.4  | 21.9  | 20.2  | 20.2  | 18.7  |
|                    |            | 3                | 2            | 23.9                    | 24.1  | 24.0  | 21.6  | 21.3  | 21.0  | 22.0  | 22.4  | 21.8  | 20.2  | 20.2  | 18.7  |
|                    |            | 6                | 0            | 23.0                    | 22.8  | 23.1  | 20.2  | 20.3  | 19.9  | 21.1  | 21.1  | 21.1  | 18.8  | 19.4  | 17.9  |
|                    |            | 1                | 0            | 20.0                    | 19.5  | 20.4  | 17.5  | 17.4  | 17.5  | 19.5  | 19.3  | 19.6  | 17.5  | 17.3  | 17.5  |
|                    |            | 1                | 2            | 20.1                    | 20.3  | 20.6  | 17.5  | 17.5  | 17.6  | 19.6  | 19.4  | 19.7  | 17.7  | 17.5  | 17.7  |
|                    |            | 1                | 5            | 20.1                    | 20.4  | 20.5  | 17.5  | 17.5  | 17.6  | 19.6  | 19.5  | 19.7  | 17.6  | 17.4  | 17.7  |
|                    |            | 3                | 0            | 19.8                    | 20.4  | 20.6  | 17.4  | 17.5  | 17.4  | 19.4  | 19.4  | 19.7  | 17.5  | 17.4  | 17.5  |
|                    |            | 3                | 1            | 19.9                    | 20.4  | 20.6  | 17.5  | 17.6  | 17.5  | 19.5  | 19.5  | 19.8  | 17.5  | 17.5  | 17.6  |
|                    |            | 3                | 2            | 20.0                    | 20.5  | 20.7  | 17.6  | 17.6  | 17.5  | 19.5  | 19.5  | 19.8  | 17.6  | 17.6  | 17.6  |
|                    |            | 6                | 0            | 19.9                    | 20.6  | 20.5  | 17.7  | 17.5  | 17.4  | 19.4  | 19.7  | 19.6  | 17.4  | 17.6  | 17.5  |

## 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  |
|                    |            |                  |              | 1851.5                  | 1882.5 | 1913.5 | 1851.5 | 1882.5 | 1913.5 | 1851.5 | 1882.5 | 1913.5 | 1851.5 | 1882.5 | 1913.5 |
| 3.0                | QPSK       | 1                | 0            | 25.6                    | 25.5   | 25.6   | 23.0   | 22.9   | 22.9   | 24.6   | 24.4   | 24.4   | 22.6   | 22.6   | 22.3   |
|                    |            | 1                | 7            | 25.6                    | 25.5   | 25.7   | 23.0   | 22.9   | 22.9   | 24.6   | 24.4   | 24.2   | 22.6   | 22.6   | 21.6   |
|                    |            | 1                | 14           | 25.7                    | 25.7   | 25.7   | 23.1   | 23.0   | 22.9   | 24.7   | 24.6   | 23.5   | 22.7   | 22.7   | 21.1   |
|                    |            | 8                | 0            | 24.7                    | 24.6   | 24.7   | 22.2   | 21.9   | 21.8   | 23.7   | 23.5   | 23.5   | 21.7   | 21.7   | 21.1   |
|                    |            | 8                | 4            | 24.8                    | 24.7   | 24.7   | 22.1   | 22.0   | 21.9   | 23.8   | 23.5   | 23.3   | 21.7   | 21.7   | 20.9   |
|                    |            | 8                | 7            | 24.8                    | 24.7   | 24.7   | 22.2   | 22.1   | 21.9   | 23.8   | 23.6   | 23.2   | 21.8   | 21.8   | 20.8   |
|                    |            | 15               | 0            | 24.7                    | 24.7   | 24.7   | 22.2   | 22.0   | 21.9   | 23.7   | 23.5   | 23.2   | 21.8   | 21.7   | 20.9   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.7   | 25.0   | 22.2   | 22.0   | 22.2   | 23.7   | 23.4   | 23.9   | 22.1   | 21.8   | 21.2   |
|                    |            | 1                | 7            | 24.8                    | 24.6   | 25.0   | 22.2   | 22.0   | 22.1   | 23.7   | 23.5   | 23.5   | 22.1   | 21.8   | 20.6   |
|                    |            | 1                | 14           | 24.8                    | 24.7   | 25.1   | 22.2   | 22.1   | 22.4   | 23.8   | 23.4   | 22.9   | 22.2   | 21.8   | 20.2   |
|                    |            | 8                | 0            | 23.8                    | 23.7   | 23.7   | 21.2   | 21.1   | 20.9   | 22.8   | 22.6   | 22.5   | 20.9   | 20.8   | 20.4   |
|                    |            | 8                | 4            | 23.8                    | 23.8   | 23.8   | 21.3   | 21.2   | 21.0   | 22.8   | 22.6   | 22.6   | 20.9   | 20.8   | 20.3   |
|                    |            | 8                | 7            | 23.8                    | 23.8   | 23.8   | 21.3   | 21.2   | 21.0   | 22.8   | 22.7   | 22.5   | 20.9   | 20.9   | 20.2   |
|                    |            | 15               | 0            | 23.7                    | 23.7   | 23.7   | 21.2   | 21.1   | 21.0   | 22.7   | 22.5   | 22.6   | 20.8   | 20.8   | 20.2   |
|                    | 64QAM      | 1                | 0            | 24.0                    | 24.0   | 23.8   | 21.5   | 21.4   | 21.1   | 22.2   | 22.3   | 22.4   | 20.1   | 20.1   | 20.0   |
|                    |            | 1                | 7            | 24.0                    | 24.0   | 23.8   | 21.5   | 21.4   | 21.1   | 22.2   | 22.3   | 22.1   | 20.2   | 20.1   | 19.3   |
|                    |            | 1                | 14           | 24.1                    | 24.1   | 23.9   | 21.5   | 21.5   | 21.1   | 22.3   | 22.2   | 21.5   | 20.3   | 20.2   | 18.8   |
|                    |            | 8                | 0            | 22.8                    | 22.8   | 22.8   | 20.2   | 20.2   | 20.1   | 21.0   | 21.1   | 21.3   | 18.9   | 19.1   | 18.6   |
|                    |            | 8                | 4            | 22.8                    | 22.8   | 22.9   | 20.3   | 20.2   | 20.1   | 21.0   | 21.2   | 21.2   | 19.0   | 19.2   | 18.4   |
|                    |            | 8                | 7            | 22.8                    | 22.8   | 22.8   | 20.3   | 20.2   | 20.1   | 21.1   | 21.2   | 21.1   | 19.1   | 19.2   | 18.3   |
|                    |            | 15               | 0            | 22.9                    | 22.7   | 22.8   | 20.4   | 20.2   | 20.1   | 21.1   | 21.1   | 21.1   | 18.9   | 19.2   | 18.5   |
|                    | 256QAM     | 1                | 0            | 21.1                    | 19.5   | 19.7   | 17.8   | 18.0   | 17.4   | 19.5   | 20.1   | 19.5   | 17.5   | 17.6   | 17.5   |
|                    |            | 1                | 7            | 21.2                    | 19.6   | 19.8   | 17.8   | 18.1   | 17.3   | 19.6   | 20.1   | 19.4   | 17.5   | 17.5   | 17.6   |
|                    |            | 1                | 14           | 20.6                    | 19.7   | 19.9   | 17.9   | 18.3   | 17.5   | 19.7   | 20.3   | 19.6   | 17.7   | 17.4   | 17.7   |
|                    |            | 8                | 0            | 20.0                    | 19.7   | 19.8   | 17.9   | 17.7   | 17.5   | 19.7   | 19.8   | 19.7   | 17.6   | 17.4   | 17.7   |
|                    |            | 8                | 4            | 20.1                    | 19.8   | 19.9   | 18.0   | 17.8   | 17.6   | 19.7   | 19.8   | 19.7   | 17.5   | 17.5   | 17.7   |
|                    |            | 8                | 7            | 20.1                    | 19.8   | 20.0   | 18.0   | 17.8   | 17.6   | 19.8   | 19.9   | 19.8   | 17.5   | 17.6   | 17.8   |
|                    |            | 15               | 0            | 20.0                    | 19.9   | 19.9   | 18.0   | 17.7   | 17.7   | 19.7   | 19.8   | 19.9   | 17.5   | 17.6   | 17.7   |

## 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            | 25.6                    | 25.6   | 25.5   | 23.0   | 22.9   | 22.7   | 24.5   | 24.4   | 24.3   | 22.5   | 22.6   | 22.2   |
|                    |            | 1                | 12           | 25.7                    | 25.6   | 25.6   | 23.1   | 23.0   | 22.8   | 24.6   | 24.5   | 24.4   | 22.5   | 22.6   | 21.7   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.6   | 23.1   | 23.0   | 22.8   | 24.7   | 24.5   | 23.4   | 22.6   | 22.7   | 20.8   |
|                    |            | 12               | 0            | 24.7                    | 24.5   | 24.5   | 22.1   | 21.8   | 21.7   | 23.7   | 23.4   | 23.4   | 21.6   | 21.5   | 21.3   |
|                    |            | 12               | 6            | 24.7                    | 24.6   | 24.5   | 22.1   | 22.0   | 21.8   | 23.7   | 23.4   | 23.5   | 21.6   | 21.5   | 21.1   |
|                    |            | 12               | 11           | 24.7                    | 24.6   | 24.6   | 22.1   | 22.0   | 21.8   | 23.7   | 23.5   | 23.2   | 21.6   | 21.6   | 20.7   |
|                    |            | 25               | 0            | 24.7                    | 24.6   | 24.6   | 22.1   | 21.9   | 21.8   | 23.6   | 23.4   | 23.4   | 21.6   | 21.5   | 21.0   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7   | 25.1   | 22.2   | 22.1   | 22.4   | 23.6   | 23.5   | 24.0   | 21.7   | 21.6   | 21.8   |
|                    |            | 1                | 12           | 24.9                    | 24.8   | 25.2   | 22.4   | 22.2   | 22.3   | 23.8   | 23.6   | 23.9   | 21.8   | 21.8   | 21.4   |
|                    |            | 1                | 24           | 24.9                    | 24.8   | 25.2   | 22.4   | 22.2   | 22.3   | 23.9   | 23.6   | 22.9   | 21.8   | 21.8   | 20.5   |
|                    |            | 12               | 0            | 23.7                    | 23.6   | 23.7   | 21.2   | 21.0   | 20.9   | 22.7   | 22.4   | 22.5   | 20.7   | 20.6   | 20.4   |
|                    |            | 12               | 6            | 23.8                    | 23.7   | 23.7   | 21.2   | 21.0   | 20.9   | 22.7   | 22.5   | 22.6   | 20.7   | 20.6   | 20.5   |
|                    |            | 12               | 11           | 23.7                    | 23.7   | 23.8   | 21.2   | 21.1   | 21.0   | 22.7   | 22.5   | 22.6   | 20.7   | 20.7   | 20.1   |
|                    |            | 25               | 0            | 23.6                    | 23.6   | 23.6   | 21.1   | 21.0   | 20.8   | 22.6   | 22.4   | 22.5   | 20.6   | 20.6   | 20.4   |
|                    | 64QAM      | 1                | 0            | 23.9                    | 23.5   | 23.9   | 21.4   | 20.8   | 21.2   | 22.1   | 21.9   | 22.6   | 19.3   | 19.8   | 19.9   |
|                    |            | 1                | 12           | 24.0                    | 23.6   | 24.0   | 21.5   | 20.9   | 21.2   | 22.2   | 21.8   | 22.5   | 19.6   | 20.0   | 19.3   |
|                    |            | 1                | 24           | 24.0                    | 23.6   | 24.0   | 21.5   | 21.0   | 21.2   | 22.3   | 21.8   | 21.6   | 19.7   | 20.0   | 18.4   |
|                    |            | 12               | 0            | 22.8                    | 22.7   | 22.5   | 20.3   | 20.0   | 19.8   | 20.9   | 21.0   | 21.1   | 18.5   | 18.6   | 18.7   |
|                    |            | 12               | 6            | 22.9                    | 22.7   | 22.6   | 20.3   | 20.1   | 19.8   | 21.0   | 21.1   | 21.2   | 18.7   | 18.7   | 18.4   |
|                    |            | 12               | 11           | 22.9                    | 22.7   | 22.7   | 20.3   | 20.1   | 19.9   | 21.1   | 21.0   | 21.0   | 18.7   | 18.7   | 18.1   |
|                    |            | 25               | 0            | 22.8                    | 22.7   | 22.6   | 20.2   | 20.0   | 19.8   | 20.9   | 20.9   | 21.1   | 18.5   | 18.7   | 18.2   |
|                    | 256QAM     | 1                | 0            | 19.9                    | 19.4   | 19.9   | 18.1   | 17.6   | 17.3   | 19.8   | 19.8   | 19.6   | 17.4   | 17.3   | 17.9   |
|                    |            | 1                | 12           | 19.9                    | 19.5   | 19.9   | 18.1   | 17.7   | 17.4   | 19.8   | 19.9   | 19.6   | 17.5   | 17.4   | 17.9   |
|                    |            | 1                | 24           | 19.9                    | 19.5   | 19.9   | 18.1   | 17.7   | 17.5   | 19.8   | 19.9   | 19.6   | 17.5   | 17.5   | 18.0   |
|                    |            | 12               | 0            | 19.8                    | 19.6   | 19.7   | 17.9   | 17.6   | 17.6   | 19.7   | 19.8   | 19.8   | 17.5   | 17.7   | 17.7   |
|                    |            | 12               | 6            | 19.9                    | 19.7   | 19.8   | 18.0   | 17.7   | 17.7   | 19.7   | 19.8   | 19.8   | 17.6   | 17.7   | 17.8   |
|                    |            | 12               | 11           | 19.9                    | 19.8   | 19.8   | 18.0   | 17.8   | 17.7   | 19.7   | 19.9   | 19.9   | 17.6   | 17.8   | 17.9   |
|                    |            | 25               | 0            | 19.9                    | 19.8   | 19.7   | 17.9   | 17.7   | 17.7   | 19.6   | 19.8   | 19.9   | 17.6   | 17.8   | 17.8   |

## 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  |
|                    |            |                  |              | 1855.0                  | 1882.5 | 1910.0 | 1855.0 | 1882.5 | 1910.0 | 1855.0 | 1882.5 | 1910.0 | 1855.0 | 1882.5 | 1910.0 |
| 10.0               | QPSK       | 1                | 0            | 25.4                    | 25.5   | 25.6   | 22.9   | 22.7   | 22.9   | 24.4   | 24.4   | 24.6   | 22.4   | 22.4   | 22.6   |
|                    |            | 1                | 24           | 25.6                    | 25.6   | 25.6   | 23.1   | 23.0   | 22.9   | 24.7   | 24.6   | 24.6   | 22.6   | 22.7   | 22.4   |
|                    |            | 1                | 49           | 25.4                    | 25.5   | 25.7   | 22.8   | 22.9   | 22.9   | 24.5   | 24.4   | 23.6   | 22.3   | 22.5   | 20.9   |
|                    |            | 25               | 0            | 24.6                    | 24.6   | 24.6   | 22.2   | 21.9   | 21.8   | 23.7   | 23.5   | 23.5   | 21.6   | 21.6   | 21.4   |
|                    |            | 25               | 12           | 24.8                    | 24.7   | 24.7   | 22.2   | 22.1   | 21.9   | 23.9   | 23.6   | 23.7   | 21.7   | 21.7   | 21.6   |
|                    |            | 25               | 24           | 24.7                    | 24.7   | 24.7   | 22.2   | 22.1   | 21.9   | 23.8   | 23.6   | 23.5   | 21.6   | 21.7   | 21.0   |
|                    |            | 50               | 0            | 24.7                    | 24.7   | 24.7   | 22.1   | 22.0   | 21.9   | 23.8   | 23.5   | 23.6   | 21.6   | 21.6   | 21.4   |
|                    | 16QAM      | 1                | 0            | 24.5                    | 24.4   | 25.0   | 22.0   | 21.7   | 22.3   | 23.2   | 23.5   | 24.0   | 21.2   | 21.4   | 22.0   |
|                    |            | 1                | 24           | 24.7                    | 24.6   | 25.0   | 22.2   | 22.0   | 22.3   | 23.8   | 23.6   | 23.9   | 21.6   | 21.7   | 21.9   |
|                    |            | 1                | 49           | 24.5                    | 24.4   | 25.1   | 22.0   | 21.9   | 22.3   | 23.6   | 23.3   | 23.0   | 21.3   | 21.5   | 20.4   |
|                    |            | 25               | 0            | 23.7                    | 23.6   | 23.6   | 21.3   | 21.0   | 20.9   | 22.8   | 22.5   | 22.6   | 20.7   | 20.6   | 20.5   |
|                    |            | 25               | 12           | 23.9                    | 23.7   | 23.7   | 21.4   | 21.1   | 21.0   | 23.0   | 22.6   | 22.7   | 20.8   | 20.7   | 20.6   |
|                    |            | 25               | 24           | 23.8                    | 23.7   | 23.7   | 21.2   | 21.1   | 20.9   | 22.9   | 22.6   | 22.6   | 20.7   | 20.7   | 20.4   |
|                    |            | 50               | 0            | 23.7                    | 23.6   | 23.7   | 21.2   | 21.0   | 20.9   | 22.8   | 22.5   | 22.6   | 20.7   | 20.6   | 20.6   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.7   | 23.7   | 21.2   | 21.1   | 21.8   | 21.8   | 22.2   | 22.6   | 19.3   | 19.3   | 20.0   |
|                    |            | 1                | 24           | 24.0                    | 24.0   | 23.7   | 21.4   | 21.1   | 22.1   | 22.5   | 22.3   | 22.5   | 20.2   | 19.8   | 19.9   |
|                    |            | 1                | 49           | 23.7                    | 23.8   | 23.8   | 21.1   | 21.2   | 21.9   | 22.6   | 22.0   | 21.8   | 19.9   | 19.5   | 18.5   |
|                    |            | 25               | 0            | 22.7                    | 22.6   | 22.7   | 20.3   | 20.0   | 20.4   | 21.0   | 21.1   | 21.4   | 18.4   | 18.6   | 18.7   |
|                    |            | 25               | 12           | 22.9                    | 22.8   | 22.8   | 20.4   | 20.1   | 20.6   | 21.4   | 21.2   | 21.6   | 18.9   | 18.8   | 18.9   |
|                    |            | 25               | 24           | 22.8                    | 22.8   | 22.8   | 20.3   | 20.1   | 20.5   | 21.5   | 21.1   | 21.4   | 19.0   | 18.7   | 18.4   |
|                    |            | 50               | 0            | 22.8                    | 22.7   | 22.7   | 20.3   | 20.0   | 20.5   | 21.1   | 21.1   | 21.4   | 18.6   | 18.6   | 18.5   |
|                    | 256QAM     | 1                | 0            | 19.7                    | 19.7   | 20.2   | 17.8   | 17.7   | 18.1   | 19.5   | 19.8   | 20.3   | 17.8   | 17.3   | 17.7   |
|                    |            | 1                | 24           | 19.7                    | 19.8   | 20.2   | 17.7   | 17.8   | 18.1   | 19.4   | 19.8   | 20.3   | 17.8   | 17.3   | 17.6   |
|                    |            | 1                | 49           | 19.6                    | 19.9   | 20.3   | 17.7   | 17.8   | 18.2   | 19.4   | 19.9   | 20.3   | 17.9   | 17.3   | 17.6   |
|                    |            | 25               | 0            | 20.0                    | 19.8   | 19.7   | 18.0   | 17.8   | 17.6   | 19.7   | 19.9   | 19.8   | 17.5   | 17.7   | 17.6   |
|                    |            | 25               | 12           | 20.0                    | 19.9   | 19.7   | 18.1   | 17.8   | 17.7   | 19.8   | 19.9   | 19.8   | 17.5   | 17.7   | 17.6   |
|                    |            | 25               | 24           | 20.0                    | 19.9   | 19.8   | 18.0   | 17.8   | 17.8   | 19.7   | 20.0   | 19.9   | 17.4   | 17.8   | 17.7   |
|                    |            | 50               | 0            | 19.9                    | 19.8   | 19.8   | 18.0   | 17.8   | 17.7   | 19.7   | 19.9   | 19.8   | 17.4   | 17.7   | 17.7   |

## 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            | 25.5                    | 25.6   | 25.7   | 22.9   | 22.9   | 23.0   | 24.4   | 24.5   | 24.5   | 22.6   | 22.6   | 22.7   |
|                    |            | 1                | 37           | 25.7                    | 25.6   | 25.6   | 23.1   | 23.0   | 22.9   | 24.7   | 24.4   | 24.3   | 22.7   | 22.6   | 22.5   |
|                    |            | 1                | 74           | 25.5                    | 25.6   | 25.6   | 22.9   | 23.1   | 22.9   | 24.5   | 24.6   | 23.2   | 22.5   | 22.7   | 20.7   |
|                    |            | 36               | 0            | 24.6                    | 24.6   | 24.6   | 22.0   | 21.9   | 21.9   | 23.6   | 23.4   | 23.3   | 21.6   | 21.6   | 21.5   |
|                    |            | 36               | 16           | 24.8                    | 24.7   | 24.6   | 22.2   | 22.1   | 22.0   | 23.8   | 23.5   | 23.4   | 21.6   | 21.7   | 21.7   |
|                    |            | 36               | 35           | 24.7                    | 24.7   | 24.7   | 22.1   | 22.1   | 22.0   | 23.7   | 23.6   | 23.4   | 21.5   | 21.8   | 21.5   |
|                    |            | 75               | 0            | 24.7                    | 24.6   | 24.6   | 22.1   | 22.0   | 21.9   | 23.7   | 23.4   | 23.3   | 21.5   | 21.7   | 21.6   |
|                    | 16QAM      | 1                | 0            | 25.0                    | 24.6   | 25.1   | 22.5   | 21.9   | 22.4   | 23.6   | 23.6   | 23.9   | 21.6   | 21.8   | 22.2   |
|                    |            | 1                | 37           | 25.2                    | 24.7   | 25.0   | 22.7   | 22.0   | 22.4   | 24.3   | 23.2   | 23.8   | 22.2   | 21.7   | 22.1   |
|                    |            | 1                | 74           | 25.2                    | 24.7   | 25.1   | 22.5   | 22.1   | 22.3   | 24.2   | 23.4   | 22.9   | 22.0   | 22.0   | 20.5   |
|                    |            | 36               | 0            | 23.6                    | 23.5   | 23.6   | 21.0   | 20.9   | 20.9   | 22.6   | 22.3   | 22.4   | 20.5   | 20.7   | 20.6   |
|                    |            | 36               | 16           | 23.7                    | 23.7   | 23.6   | 21.2   | 21.1   | 21.1   | 22.7   | 22.4   | 22.5   | 20.6   | 20.7   | 20.8   |
|                    |            | 36               | 35           | 23.7                    | 23.6   | 23.7   | 21.1   | 21.1   | 21.0   | 22.7   | 22.4   | 22.5   | 20.5   | 20.8   | 20.7   |
|                    |            | 75               | 0            | 23.7                    | 23.6   | 23.6   | 21.1   | 21.0   | 21.0   | 22.7   | 22.3   | 22.4   | 20.6   | 20.7   | 20.7   |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.9   | 23.8   | 21.6   | 21.3   | 21.2   | 22.2   | 22.7   | 22.6   | 19.7   | 19.8   | 20.4   |
|                    |            | 1                | 37           | 24.2                    | 23.9   | 23.8   | 21.8   | 21.4   | 21.1   | 22.8   | 22.0   | 22.5   | 20.4   | 19.7   | 20.5   |
|                    |            | 1                | 74           | 24.2                    | 23.9   | 23.6   | 21.7   | 21.4   | 21.1   | 23.1   | 22.4   | 21.6   | 20.2   | 20.1   | 18.9   |
|                    |            | 36               | 0            | 22.6                    | 22.6   | 22.7   | 20.1   | 20.0   | 20.0   | 20.8   | 21.1   | 21.4   | 18.6   | 18.7   | 18.9   |
|                    |            | 36               | 16           | 22.8                    | 22.7   | 22.7   | 20.3   | 20.2   | 20.2   | 21.2   | 20.9   | 21.5   | 19.1   | 18.8   | 19.0   |
|                    |            | 36               | 35           | 22.7                    | 22.7   | 22.7   | 20.2   | 20.2   | 20.1   | 21.6   | 21.0   | 21.4   | 19.2   | 18.9   | 18.8   |
|                    |            | 75               | 0            | 22.7                    | 22.6   | 22.6   | 20.2   | 20.1   | 20.1   | 21.4   | 21.1   | 21.4   | 19.1   | 18.8   | 18.7   |
|                    | 256QAM     | 1                | 0            | 20.0                    | 19.2   | 19.8   | 17.7   | 17.9   | 18.1   | 19.4   | 20.1   | 20.2   | 17.6   | 17.3   | 17.9   |
|                    |            | 1                | 37           | 20.0                    | 19.3   | 19.7   | 17.7   | 18.0   | 18.1   | 19.5   | 20.1   | 20.3   | 17.7   | 17.4   | 17.8   |
|                    |            | 1                | 74           | 20.0                    | 19.3   | 19.7   | 17.7   | 18.0   | 18.2   | 19.5   | 20.1   | 20.3   | 17.8   | 17.4   | 17.9   |
|                    |            | 36               | 0            | 19.7                    | 19.5   | 19.5   | 18.0   | 17.7   | 17.8   | 19.7   | 19.9   | 19.9   | 17.4   | 17.6   | 17.6   |
|                    |            | 36               | 16           | 19.7                    | 19.5   | 19.5   | 18.0   | 17.7   | 17.8   | 19.7   | 19.9   | 19.9   | 17.5   | 17.6   | 17.6   |
|                    |            | 36               | 35           | 19.6                    | 19.5   | 19.5   | 17.9   | 17.8   | 17.8   | 19.7   | 19.9   | 19.9   | 17.4   | 17.7   | 17.7   |
|                    |            | 75               | 0            | 19.7                    | 19.5   | 19.4   | 17.9   | 17.8   | 17.8   | 19.7   | 19.9   | 19.9   | 17.5   | 17.5   | 17.6   |

## 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<br>1860.0         | 26365<br>1882.5 | 26590<br>1905.0 | 26140<br>1860.0 | 26365<br>1882.5 | 26590<br>1905.0 | 26140<br>1860.0 | 26365<br>1882.5 | 26590<br>1905.0 | 26140<br>1860.0 | 26365<br>1882.5 | 26590<br>1905.0 |
| 20.0               | QPSK       | 1                | 0            | 25.7                    | 25.7            | <b>25.7</b>     | <b>23.1</b>     | 22.9            | 23.0            | 24.7            | 24.6            | <b>24.7</b>     | <b>22.7</b>     | 22.7            | 22.6            |
|                    |            | 1                | 49           | 25.6                    | 25.6            | 25.7            | 23.0            | 22.9            | 22.9            | 24.7            | 24.4            | 24.6            | 22.5            | 22.6            | 22.5            |
|                    |            | 1                | 99           | 25.6                    | 25.6            | 25.7            | 22.9            | 23.0            | 22.9            | 24.6            | 24.6            | 23.6            | 22.5            | 22.6            | 20.9            |
|                    |            | 50               | 0            | 24.7                    | 24.6            | 24.7            | 22.1            | 21.9            | 22.0            | 23.7            | 23.6            | 23.6            | 21.6            | 21.6            | 21.6            |
|                    |            | 50               | 24           | 24.8                    | 24.7            | 24.7            | 22.1            | 22.0            | 22.1            | 23.8            | 23.6            | 23.6            | 21.6            | 21.6            | 21.6            |
|                    |            | 50               | 49           | 24.7                    | 24.7            | 24.7            | 22.0            | 22.0            | 22.0            | 23.7            | 23.6            | 23.6            | 21.6            | 21.7            | 21.5            |
|                    |            | 100              | 0            | 24.6                    | 24.6            | 24.6            | 22.0            | 21.9            | 22.0            | 23.7            | 23.5            | 23.5            | 21.6            | 21.5            | 21.5            |
|                    | 16QAM      | 1                | 0            | 25.1                    | 25.2            | 25.2            | 22.6            | 22.5            | 22.5            | 23.9            | 24.2            | 24.1            | 22.1            | <b>22.4</b>     | 22.2            |
|                    |            | 1                | 49           | 25.1                    | 25.2            | 25.1            | 22.5            | 22.5            | 22.4            | 24.1            | 24.0            | 24.2            | 22.0            | 22.3            | 22.1            |
|                    |            | 1                | 99           | 25.1                    | 25.2            | <b>25.4</b>     | 22.4            | <b>22.6</b>     | 22.5            | 24.0            | <b>24.3</b>     | 23.2            | 22.0            | 22.3            | 20.6            |
|                    |            | 50               | 0            | 23.7                    | 23.7            | 23.7            | 21.1            | 21.0            | 21.0            | 22.7            | 22.6            | 22.7            | 20.6            | 20.7            | 20.7            |
|                    |            | 50               | 24           | 23.7                    | 23.7            | 23.7            | 21.1            | 21.1            | 21.0            | 22.7            | 22.6            | 22.7            | 20.6            | 20.7            | 20.7            |
|                    |            | 50               | 49           | 23.7                    | 23.7            | 23.7            | 21.0            | 21.1            | 21.0            | 22.7            | 22.6            | 22.6            | 20.6            | 20.7            | 20.5            |
|                    |            | 100              | 0            | 23.7                    | 23.6            | 23.6            | 21.1            | 21.0            | 21.0            | 22.7            | 22.6            | 22.5            | 20.6            | 20.6            | 20.4            |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.0            | 24.3            | 21.4            | 21.3            | <b>21.7</b>     | 22.3            | 22.9            | <b>23.3</b>     | 19.8            | 20.4            | 20.0            |
|                    |            | 1                | 49           | 23.9                    | 24.0            | <b>24.4</b>     | 21.4            | 21.4            | 21.7            | 23.1            | 22.1            | 23.2            | 20.2            | 20.1            | 19.9            |
|                    |            | 1                | 99           | 23.9                    | 24.0            | 24.3            | 21.2            | 21.5            | 21.6            | 22.8            | 22.9            | 22.4            | 20.2            | <b>20.5</b>     | 18.6            |
|                    |            | 50               | 0            | 22.7                    | 22.7            | 22.7            | 20.2            | 20.1            | 20.1            | 21.2            | 21.4            | 21.7            | 18.7            | 18.6            | 18.9            |
|                    |            | 50               | 24           | 22.8                    | 22.8            | 22.7            | 20.2            | 20.2            | 20.2            | 21.7            | 21.0            | 21.6            | 19.1            | 18.5            | 18.8            |
|                    |            | 50               | 49           | 22.8                    | 22.8            | 22.7            | 20.2            | 20.2            | 20.0            | 21.7            | 21.1            | 21.5            | 19.0            | 18.7            | 18.6            |
|                    |            | 100              | 0            | 22.7                    | 22.7            | 22.6            | 20.1            | 20.1            | 20.0            | 21.4            | 21.1            | 21.5            | 18.9            | 18.4            | 18.6            |
|                    | 256QAM     | 1                | 0            | <b>19.8</b>             | 19.6            | 19.5            | 18.0            | 17.7            | 18.0            | 19.6            | 19.7            | <b>19.9</b>     | 17.1            | 17.4            | <b>17.8</b>     |
|                    |            | 1                | 49           | 19.7                    | 19.7            | 19.4            | <b>18.1</b>     | 17.7            | 18.0            | 19.6            | 19.6            | 19.9            | 17.2            | 17.5            | 17.7            |
|                    |            | 1                | 99           | 19.7                    | 19.7            | 19.3            | 18.1            | 17.7            | 18.0            | 19.6            | 19.6            | 19.9            | 17.3            | 17.5            | 17.8            |
|                    |            | 50               | 0            | 19.6                    | 19.5            | 19.6            | 17.9            | 17.8            | 17.9            | 19.4            | 19.8            | 19.8            | 17.2            | 17.6            | 17.6            |
|                    |            | 50               | 24           | 19.6                    | 19.6            | 19.5            | 18.0            | 17.9            | 17.9            | 19.5            | 19.8            | 19.8            | 17.3            | 17.6            | 17.7            |
|                    |            | 50               | 49           | 19.6                    | 19.6            | 19.6            | 18.0            | 17.8            | 17.9            | 19.6            | 19.8            | 19.8            | 17.3            | 17.7            | 17.6            |
|                    |            | 100              | 0            | 19.6                    | 19.5            | 19.5            | 18.0            | 17.9            | 17.8            | 19.6            | 19.8            | 19.7            | 17.3            | 17.7            | 17.6            |

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

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 39004 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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 |
|                    |            |                  |              | 814.7                   | 819.0 | 823.3 | 814.7 | 819.0 | 823.3 |
| 1.4                | QPSK       | 1                | 0            | 25.5                    | 25.5  | 25.7  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 2            | 25.6                    | 25.7  | 25.7  | 23.9  | 23.8  | 23.9  |
|                    |            | 1                | 5            | 25.6                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 3                | 0            | 25.6                    | 25.6  | 25.6  | 23.8  | 23.7  | 23.7  |
|                    |            | 3                | 1            | 25.6                    | 25.7  | 25.6  | 23.9  | 23.8  | 23.8  |
|                    |            | 3                | 2            | 25.6                    | 25.7  | 25.6  | 23.9  | 23.8  | 23.8  |
|                    |            | 6                | 0            | 24.6                    | 24.7  | 24.7  | 22.9  | 22.9  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.9                    | 24.7  | 24.8  | 23.2  | 22.9  | 22.9  |
|                    |            | 1                | 2            | 25.0                    | 24.8  | 24.9  | 23.3  | 22.9  | 23.0  |
|                    |            | 1                | 5            | 25.0                    | 24.8  | 24.8  | 23.3  | 22.9  | 22.9  |
|                    |            | 3                | 0            | 24.8                    | 24.9  | 24.7  | 23.1  | 23.0  | 22.8  |
|                    |            | 3                | 1            | 24.9                    | 24.9  | 24.8  | 23.1  | 23.1  | 22.9  |
|                    |            | 3                | 2            | 24.9                    | 24.9  | 24.8  | 23.1  | 23.1  | 22.9  |
|                    |            | 6                | 0            | 23.6                    | 23.9  | 23.8  | 21.8  | 22.0  | 22.0  |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.8  | 23.9  | 22.3  | 22.0  | 22.0  |
|                    |            | 1                | 2            | 24.2                    | 23.9  | 23.9  | 22.4  | 22.1  | 22.2  |
|                    |            | 1                | 5            | 24.1                    | 23.8  | 23.9  | 22.3  | 22.0  | 22.1  |
|                    |            | 3                | 0            | 24.0                    | 23.8  | 23.7  | 22.2  | 22.0  | 21.9  |
|                    |            | 3                | 1            | 24.0                    | 23.9  | 23.7  | 22.2  | 22.1  | 21.9  |
|                    |            | 3                | 2            | 24.1                    | 23.9  | 23.7  | 22.3  | 22.1  | 22.0  |
|                    |            | 6                | 0            | 22.7                    | 23.0  | 22.8  | 20.9  | 21.2  | 21.0  |
|                    | 256QAM     | 1                | 0            | 20.1                    | 19.8  | 19.7  | 17.9  | 17.9  | 17.8  |
|                    |            | 1                | 2            | 20.2                    | 20.0  | 20.0  | 18.0  | 18.0  | 17.9  |
|                    |            | 1                | 5            | 20.0                    | 19.9  | 19.9  | 17.8  | 17.8  | 17.8  |
|                    |            | 3                | 0            | 19.9                    | 19.9  | 19.8  | 17.6  | 17.7  | 17.7  |
|                    |            | 3                | 1            | 20.0                    | 19.9  | 19.8  | 17.7  | 17.8  | 17.8  |
|                    |            | 3                | 2            | 20.0                    | 19.9  | 19.9  | 17.7  | 17.8  | 17.8  |
|                    |            | 6                | 0            | 19.9                    | 19.8  | 19.8  | 17.6  | 17.7  | 17.7  |

# 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                    | 25.6  | 25.6  | 23.8  | 23.8  | 23.8  |
|                    |            | 1                | 7            | 25.5                    | 25.6  | 25.7  | 23.8  | 23.8  | 23.9  |
|                    |            | 1                | 14           | 25.6                    | 25.7  | 25.6  | 23.8  | 23.9  | 23.9  |
|                    |            | 8                | 0            | 24.7                    | 24.7  | 24.7  | 23.0  | 22.9  | 22.8  |
|                    |            | 8                | 4            | 24.7                    | 24.8  | 24.7  | 23.0  | 23.0  | 22.9  |
|                    |            | 8                | 7            | 24.7                    | 24.8  | 24.8  | 23.0  | 23.0  | 22.9  |
|                    |            | 15               | 0            | 24.7                    | 24.8  | 24.7  | 23.0  | 22.9  | 22.9  |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.6  | 25.1  | 22.9  | 22.7  | 23.2  |
|                    |            | 1                | 7            | 24.6                    | 24.6  | 25.0  | 22.9  | 22.9  | 23.3  |
|                    |            | 1                | 14           | 24.7                    | 24.7  | 25.1  | 22.9  | 22.9  | 23.4  |
|                    |            | 8                | 0            | 23.7                    | 23.8  | 23.8  | 22.0  | 22.0  | 21.9  |
|                    |            | 8                | 4            | 23.7                    | 23.9  | 23.8  | 22.1  | 22.1  | 22.0  |
|                    |            | 8                | 7            | 23.8                    | 23.9  | 23.8  | 22.0  | 22.1  | 22.0  |
|                    |            | 15               | 0            | 23.6                    | 23.8  | 23.7  | 21.9  | 22.0  | 22.0  |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.0  | 23.7  | 22.2  | 22.3  | 22.0  |
|                    |            | 1                | 7            | 23.9                    | 24.0  | 23.7  | 22.2  | 22.2  | 22.0  |
|                    |            | 1                | 14           | 24.0                    | 24.1  | 23.8  | 22.2  | 22.3  | 22.1  |
|                    |            | 8                | 0            | 22.7                    | 22.7  | 22.7  | 20.9  | 21.0  | 21.0  |
|                    |            | 8                | 4            | 22.7                    | 22.8  | 22.8  | 21.0  | 21.1  | 21.1  |
|                    |            | 8                | 7            | 22.7                    | 22.9  | 22.8  | 21.0  | 21.1  | 21.1  |
|                    |            | 15               | 0            | 22.8                    | 22.7  | 22.7  | 21.0  | 21.0  | 21.1  |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.5  | 19.7  | 17.8  | 18.2  | 17.1  |
|                    |            | 1                | 7            | 20.0                    | 20.3  | 19.7  | 17.8  | 18.0  | 17.1  |
|                    |            | 1                | 14           | 19.9                    | 20.3  | 19.6  | 17.7  | 17.8  | 17.0  |
|                    |            | 8                | 0            | 20.1                    | 20.1  | 19.9  | 17.9  | 17.5  | 17.3  |
|                    |            | 8                | 4            | 20.2                    | 20.1  | 19.9  | 17.9  | 17.5  | 17.3  |
|                    |            | 8                | 7            | 20.2                    | 20.1  | 19.8  | 17.9  | 17.5  | 17.3  |
|                    |            | 15               | 0            | 20.1                    | 20.0  | 20.0  | 17.7  | 17.4  | 17.5  |

# 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  | 23.7  | 23.8  | 23.7  |
|                    |            | 1                | 12           | 25.5                    | 25.6  | 25.5  | 23.8  | 23.8  | 23.7  |
|                    |            | 1                | 24           | 25.6                    | 25.7  | 25.5  | 23.8  | 23.9  | 23.8  |
|                    |            | 12               | 0            | 24.5                    | 24.5  | 24.5  | 22.8  | 22.7  | 22.7  |
|                    |            | 12               | 6            | 24.6                    | 24.7  | 24.6  | 22.9  | 22.9  | 22.8  |
|                    |            | 12               | 11           | 24.6                    | 24.6  | 24.6  | 22.8  | 22.8  | 22.8  |
|                    |            | 25               | 0            | 24.6                    | 24.6  | 24.6  | 22.8  | 22.8  | 22.8  |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.7  | 25.1  | 22.9  | 23.0  | 23.2  |
|                    |            | 1                | 12           | 24.7                    | 24.8  | 25.1  | 23.0  | 23.0  | 23.4  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 25.2  | 23.0  | 23.1  | 23.4  |
|                    |            | 12               | 0            | 23.5                    | 23.6  | 23.7  | 21.9  | 21.8  | 21.9  |
|                    |            | 12               | 6            | 23.7                    | 23.7  | 23.7  | 21.9  | 21.9  | 22.0  |
|                    |            | 12               | 11           | 23.7                    | 23.7  | 23.7  | 21.9  | 21.9  | 22.0  |
|                    |            | 25               | 0            | 23.5                    | 23.6  | 23.6  | 21.8  | 21.8  | 21.9  |
|                    | 64QAM      | 1                | 0            | 23.8                    | 23.5  | 23.7  | 22.1  | 21.8  | 22.1  |
|                    |            | 1                | 12           | 23.9                    | 23.6  | 23.9  | 22.2  | 21.8  | 22.2  |
|                    |            | 1                | 24           | 23.9                    | 23.6  | 23.9  | 22.2  | 21.8  | 22.1  |
|                    |            | 12               | 0            | 22.6                    | 22.6  | 22.5  | 20.8  | 20.8  | 20.8  |
|                    |            | 12               | 6            | 22.7                    | 22.7  | 22.6  | 21.0  | 20.9  | 20.8  |
|                    |            | 12               | 11           | 22.7                    | 22.7  | 22.6  | 20.9  | 20.9  | 20.8  |
|                    |            | 25               | 0            | 22.6                    | 22.6  | 22.6  | 20.9  | 20.8  | 20.9  |
|                    | 256QAM     | 1                | 0            | 20.0                    | 19.7  | 20.0  | 18.6  | 18.3  | 18.7  |
|                    |            | 1                | 12           | 19.9                    | 19.6  | 19.9  | 18.5  | 18.2  | 18.7  |
|                    |            | 1                | 24           | 19.9                    | 19.5  | 19.9  | 18.4  | 18.1  | 18.6  |
|                    |            | 12               | 0            | 19.9                    | 19.9  | 19.8  | 18.5  | 18.5  | 18.5  |
|                    |            | 12               | 6            | 19.9                    | 19.8  | 19.8  | 18.5  | 18.5  | 18.6  |
|                    |            | 12               | 11           | 19.8                    | 19.8  | 19.8  | 18.4  | 18.5  | 18.6  |
|                    |            | 25               | 0            | 19.9                    | 19.9  | 19.8  | 18.5  | 18.6  | 18.5  |

# 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            |                         | 25.6  |     |       | 23.9  |     |
|                    |            | 1                | 24           |                         | 25.7  |     |       | 23.8  |     |
|                    |            | 1                | 49           |                         | 25.6  |     |       | 23.8  |     |
|                    |            | 25               | 0            |                         | 24.6  |     |       | 22.8  |     |
|                    |            | 25               | 12           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 24           |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 50               | 0            |                         | 24.7  |     |       | 22.9  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 1                | 24           |                         | 24.8  |     |       | 22.9  |     |
|                    |            | 1                | 49           |                         | 24.8  |     |       | 23.0  |     |
|                    |            | 25               | 0            |                         | 23.8  |     |       | 21.9  |     |
|                    |            | 25               | 12           |                         | 24.0  |     |       | 22.1  |     |
|                    |            | 25               | 24           |                         | 23.9  |     |       | 22.0  |     |
|                    |            | 50               | 0            |                         | 23.8  |     |       | 21.9  |     |
|                    | 64QAM      | 1                | 0            |                         | 23.9  |     |       | 22.2  |     |
|                    |            | 1                | 24           |                         | 24.0  |     |       | 22.2  |     |
|                    |            | 1                | 49           |                         | 24.0  |     |       | 22.1  |     |
|                    |            | 25               | 0            |                         | 22.7  |     |       | 21.0  |     |
|                    |            | 25               | 12           |                         | 23.0  |     |       | 21.1  |     |
|                    |            | 25               | 24           |                         | 22.9  |     |       | 21.1  |     |
|                    |            | 50               | 0            |                         | 22.8  |     |       | 20.9  |     |
|                    | 256QAM     | 1                | 0            |                         | 20.1  |     |       | 18.6  |     |
|                    |            | 1                | 24           |                         | 20.0  |     |       | 18.5  |     |
|                    |            | 1                | 49           |                         | 20.0  |     |       | 18.5  |     |
|                    |            | 25               | 0            |                         | 20.2  |     |       | 18.7  |     |
|                    |            | 25               | 12           |                         | 20.2  |     |       | 18.7  |     |
|                    |            | 25               | 24           |                         | 20.0  |     |       | 18.6  |     |
|                    |            | 50               | 0            |                         | 20.1  |     |       | 18.6  |     |

## 7.12. LTE BAND 30(NS21)

|                   |       |            |           |
|-------------------|-------|------------|-----------|
| Test Engineer ID: | 39006 | Test Date: | 7/10/2020 |
|-------------------|-------|------------|-----------|

### 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 |
| 5.0                | QPSK       | 1                | 0            | 25.6                    | 25.6  | 25.0  | 22.6  | 22.6  | 22.6  | 23.1  | 22.1  | 21.8  | 21.9  | 22.0  | 22.0  |
|                    |            | 1                | 12           | 25.7                    | 25.5  | 25.1  | 22.7  | 22.7  | 22.6  | 23.1  | 22.2  | 22.2  | 22.1  | 22.1  | 22.1  |
|                    |            | 1                | 24           | 25.7                    | 25.3  | 24.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.3  | 22.2  | 22.2  | 22.2  | 22.2  |
|                    |            | 12               | 0            | 24.7                    | 24.6  | 24.1  | 21.7  | 21.8  | 21.7  | 21.9  | 21.2  | 21.1  | 21.2  | 21.2  | 21.2  |
|                    |            | 12               | 6            | 24.7                    | 24.6  | 24.2  | 21.9  | 21.8  | 21.9  | 21.9  | 21.3  | 21.3  | 21.3  | 21.3  | 21.3  |
|                    |            | 12               | 11           | 24.7                    | 24.5  | 24.2  | 21.8  | 21.8  | 21.9  | 21.8  | 21.4  | 21.4  | 21.3  | 21.3  | 21.3  |
|                    | 16QAM      | 25               | 0            | 24.7                    | 24.5  | 24.1  | 21.8  | 21.8  | 21.8  | 21.7  | 21.3  | 21.3  | 21.2  | 21.3  | 21.3  |
|                    |            | 1                | 0            | 24.8                    | 25.0  | 24.0  | 21.8  | 21.7  | 21.7  | 21.6  | 21.6  | 20.9  | 21.5  | 21.4  | 21.5  |
|                    |            | 1                | 12           | 24.8                    | 24.9  | 24.2  | 21.9  | 21.7  | 21.8  | 21.8  | 21.7  | 21.3  | 21.6  | 21.4  | 21.5  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 24.0  | 21.9  | 21.8  | 21.8  | 21.6  | 21.8  | 21.5  | 21.7  | 21.6  | 21.6  |
|                    |            | 12               | 0            | 23.8                    | 23.7  | 23.2  | 20.8  | 20.8  | 20.8  | 20.8  | 20.4  | 20.2  | 20.3  | 20.3  | 20.3  |
|                    |            | 12               | 6            | 23.8                    | 23.7  | 23.3  | 20.8  | 20.8  | 20.9  | 20.9  | 20.5  | 20.4  | 20.4  | 20.4  | 20.4  |
|                    | 64QAM      | 12               | 11           | 23.8                    | 23.7  | 23.4  | 20.8  | 20.9  | 20.9  | 20.8  | 20.5  | 20.6  | 20.3  | 20.3  | 20.4  |
|                    |            | 25               | 0            | 23.7                    | 23.6  | 23.2  | 20.8  | 20.8  | 20.8  | 20.7  | 20.4  | 20.4  | 20.3  | 20.3  | 20.3  |
|                    |            | 1                | 0            | 22.3                    | 23.3  | 23.2  | 20.8  | 20.8  | 20.8  | 19.2  | 19.5  | 19.4  | 20.5  | 20.5  | 20.5  |
|                    |            | 1                | 12           | 22.4                    | 23.3  | 23.3  | 20.9  | 20.9  | 20.9  | 19.3  | 19.6  | 18.7  | 20.6  | 20.6  | 20.4  |
|                    |            | 1                | 24           | 22.4                    | 23.4  | 23.3  | 20.9  | 21.0  | 20.9  | 19.3  | 19.1  | 19.5  | 20.6  | 20.5  | 20.3  |
|                    |            | 12               | 0            | 22.5                    | 22.5  | 22.6  | 19.8  | 19.8  | 19.7  | 19.4  | 19.3  | 19.4  | 19.3  | 19.3  | 19.4  |
|                    | 256QAM     | 12               | 6            | 22.6                    | 22.6  | 22.7  | 19.9  | 19.9  | 19.9  | 19.4  | 19.3  | 19.4  | 19.4  | 19.4  | 19.4  |
|                    |            | 12               | 11           | 22.6                    | 22.6  | 22.7  | 19.9  | 19.9  | 19.9  | 19.4  | 19.3  | 19.4  | 19.4  | 19.4  | 19.3  |
|                    |            | 25               | 0            | 22.6                    | 22.6  | 22.7  | 19.9  | 19.8  | 19.9  | 19.4  | 19.3  | 19.4  | 19.3  | 19.3  | 19.3  |
|                    |            | 1                | 0            | 19.5                    | 20.6  | 20.4  | 17.7  | 17.8  | 17.7  | 19.1  | 19.5  | 19.4  | 17.4  | 17.3  | 17.4  |
|                    |            | 1                | 12           | 20.2                    | 20.6  | 20.5  | 17.8  | 17.9  | 17.8  | 19.2  | 19.6  | 19.5  | 17.4  | 17.3  | 17.4  |
|                    |            | 1                | 24           | 20.3                    | 20.7  | 20.6  | 18.0  | 17.8  | 17.9  | 19.3  | 19.7  | 19.6  | 17.5  | 17.5  | 17.4  |
|                    |            | 12               | 0            | 20.5                    | 20.5  | 20.4  | 17.8  | 17.8  | 17.8  | 19.4  | 19.5  | 19.4  | 17.3  | 17.3  | 17.3  |
|                    |            | 12               | 6            | 20.5                    | 20.6  | 20.5  | 17.9  | 17.9  | 17.9  | 19.5  | 19.5  | 19.5  | 17.3  | 17.3  | 17.3  |
|                    |            | 12               | 11           | 20.5                    | 20.5  | 20.6  | 17.9  | 17.9  | 17.9  | 19.5  | 19.6  | 19.6  | 17.3  | 17.3  | 17.3  |
|                    |            | 25               | 0            | 20.5                    | 20.5  | 20.5  | 17.9  | 17.9  | 17.9  | 19.6  | 19.5  | 19.6  | 17.3  | 17.3  | 17.3  |

# 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            |                         | 21.5   |     |       | 18.8   |     |       | 20.0   |     |       | 18.2   |     |
|                    |            | 1                | 24           |                         | 25.4   |     |       | 22.8   |     |       | 23.1   |     |       | 22.2   |     |
|                    |            | 1                | 49           |                         | 21.5   |     |       | 18.8   |     |       | 20.0   |     |       | 18.2   |     |
|                    |            | 25               | 0            |                         | 24.4   |     |       | 21.8   |     |       | 22.0   |     |       | 21.3   |     |
|                    |            | 25               | 12           |                         | 24.4   |     |       | 21.8   |     |       | 22.2   |     |       | 21.4   |     |
|                    |            | 25               | 24           |                         | 24.2   |     |       | 21.9   |     |       | 22.2   |     |       | 21.4   |     |
|                    | 16QAM      | 50               | 0            |                         | 21.6   |     |       | 18.9   |     |       | 20.1   |     |       | 18.4   |     |
|                    |            | 1                | 0            |                         | 20.7   |     |       | 17.7   |     |       | 19.1   |     |       | 17.5   |     |
|                    |            | 1                | 24           |                         | 24.4   |     |       | 21.7   |     |       | 22.1   |     |       | 21.5   |     |
|                    |            | 1                | 49           |                         | 20.6   |     |       | 17.8   |     |       | 19.1   |     |       | 17.5   |     |
|                    |            | 25               | 0            |                         | 23.5   |     |       | 20.8   |     |       | 21.2   |     |       | 20.4   |     |
|                    |            | 25               | 12           |                         | 23.6   |     |       | 20.9   |     |       | 21.3   |     |       | 20.4   |     |
|                    | 64QAM      | 25               | 24           |                         | 23.4   |     |       | 20.9   |     |       | 21.4   |     |       | 20.4   |     |
|                    |            | 50               | 0            |                         | 20.7   |     |       | 17.9   |     |       | 19.1   |     |       | 17.4   |     |
|                    |            | 1                | 0            |                         | 23.1   |     |       | 16.9   |     |       | 20.3   |     |       | 16.6   |     |
|                    |            | 1                | 24           |                         | 23.1   |     |       | 21.0   |     |       | 20.3   |     |       | 20.8   |     |
|                    |            | 1                | 49           |                         | 23.1   |     |       | 17.0   |     |       | 20.2   |     |       | 16.6   |     |
|                    |            | 25               | 0            |                         | 22.6   |     |       | 19.9   |     |       | 20.3   |     |       | 19.3   |     |
|                    | 256QAM     | 25               | 12           |                         | 22.8   |     |       | 19.9   |     |       | 20.4   |     |       | 19.4   |     |
|                    |            | 25               | 24           |                         | 22.7   |     |       | 19.9   |     |       | 20.3   |     |       | 19.4   |     |
|                    |            | 50               | 0            |                         | 22.7   |     |       | 16.9   |     |       | 20.3   |     |       | 16.4   |     |
|                    |            | 1                | 0            |                         | 20.4   |     |       | 13.6   |     |       | 14.1   |     |       | 13.4   |     |
|                    |            | 1                | 24           |                         | 20.5   |     |       | 17.8   |     |       | 17.9   |     |       | 17.5   |     |
|                    |            | 1                | 49           |                         | 20.6   |     |       | 13.9   |     |       | 14.2   |     |       | 13.4   |     |
|                    |            | 25               | 0            |                         | 20.6   |     |       | 17.9   |     |       | 18.0   |     |       | 17.4   |     |
|                    |            | 25               | 12           |                         | 20.6   |     |       | 17.9   |     |       | 18.1   |     |       | 17.4   |     |
|                    |            | 25               | 24           |                         | 20.6   |     |       | 17.9   |     |       | 18.1   |     |       | 17.4   |     |
|                    |            | 50               | 0            |                         | 20.6   |     |       | 14.9   |     |       | 15.2   |     |       | 14.4   |     |

### 7.13. LTE BAND 41 (NS04)

|                   |       |            |           |
|-------------------|-------|------------|-----------|
| Test Engineer ID: | 39004 | Test Date: | 7/22/2020 |
|-------------------|-------|------------|-----------|

#### 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            | 24.6                    | 27.6  | 27.5  | 21.7  | 24.6  | 24.5  | 22.6  | 25.1  | 24.9  | 20.9  | 23.8  | 23.4  |
|                    |            | 1                | 12           | 27.6                    | 27.6  | 27.5  | 24.8  | 24.6  | 24.5  | 25.6  | 25.1  | 25.0  | 24.1  | 23.8  | 23.5  |
|                    |            | 1                | 24           | 27.7                    | 27.7  | 27.6  | 24.8  | 24.7  | 24.5  | 25.7  | 25.1  | 25.0  | 24.2  | 23.8  | 23.5  |
|                    |            | 12               | 0            | 23.8                    | 26.7  | 26.6  | 20.8  | 24.7  | 24.5  | 21.6  | 24.3  | 24.0  | 20.1  | 22.9  | 22.6  |
|                    |            | 12               | 6            | 23.8                    | 26.8  | 26.6  | 20.8  | 24.8  | 24.6  | 21.7  | 24.2  | 24.0  | 20.2  | 22.9  | 22.6  |
|                    |            | 12               | 11           | 26.8                    | 26.8  | 26.6  | 23.9  | 24.8  | 24.5  | 24.6  | 24.2  | 24.0  | 23.1  | 22.9  | 22.6  |
|                    |            | 25               | 0            | 23.8                    | 26.7  | 26.6  | 20.7  | 24.7  | 24.5  | 21.6  | 24.2  | 24.0  | 20.1  | 22.9  | 22.6  |
|                    | 16QAM      | 1                | 0            | 23.7                    | 26.7  | 26.7  | 20.7  | 24.0  | 23.9  | 21.7  | 24.1  | 24.1  | 20.0  | 23.0  | 22.5  |
|                    |            | 1                | 12           | 26.6                    | 26.8  | 26.7  | 23.7  | 24.0  | 23.9  | 24.7  | 24.1  | 24.1  | 23.2  | 23.0  | 22.5  |
|                    |            | 1                | 24           | 26.7                    | 26.8  | 26.7  | 23.7  | 24.0  | 24.0  | 24.7  | 24.1  | 24.2  | 23.3  | 23.0  | 22.5  |
|                    |            | 12               | 0            | 22.8                    | 25.7  | 25.6  | 19.7  | 23.7  | 23.7  | 20.6  | 23.2  | 23.1  | 19.1  | 21.9  | 21.6  |
|                    |            | 12               | 6            | 22.8                    | 25.7  | 25.6  | 19.8  | 23.8  | 23.7  | 20.6  | 23.2  | 23.1  | 19.2  | 22.0  | 21.6  |
|                    |            | 12               | 11           | 25.8                    | 25.7  | 25.7  | 22.8  | 23.8  | 23.6  | 23.6  | 23.1  | 23.1  | 22.1  | 21.9  | 21.6  |
|                    |            | 25               | 0            | 22.8                    | 25.8  | 25.6  | 19.9  | 23.8  | 23.5  | 20.7  | 23.2  | 23.0  | 19.1  | 21.9  | 21.6  |
|                    | 64QAM      | 1                | 0            | 22.4                    | 26.1  | 25.7  | 19.7  | 22.0  | 21.7  | 20.5  | 22.9  | 23.5  | 19.4  | 22.1  | 21.3  |
|                    |            | 1                | 12           | 24.6                    | 26.2  | 25.8  | 22.8  | 23.1  | 22.6  | 23.6  | 22.9  | 23.7  | 22.5  | 22.1  | 21.3  |
|                    |            | 1                | 24           | 25.1                    | 26.2  | 25.7  | 22.8  | 23.0  | 22.6  | 23.7  | 22.9  | 23.9  | 22.6  | 22.0  | 21.3  |
|                    |            | 12               | 0            | 21.8                    | 24.8  | 24.5  | 18.8  | 21.7  | 21.6  | 19.7  | 22.2  | 22.4  | 18.2  | 20.9  | 20.6  |
|                    |            | 12               | 6            | 21.8                    | 24.8  | 24.6  | 18.7  | 21.7  | 21.6  | 19.6  | 22.2  | 22.5  | 18.2  | 20.9  | 20.6  |
|                    |            | 12               | 11           | 24.1                    | 24.8  | 24.5  | 21.9  | 21.8  | 21.6  | 22.7  | 22.2  | 22.6  | 21.2  | 20.8  | 20.6  |
|                    |            | 25               | 0            | 21.8                    | 24.7  | 24.5  | 18.8  | 21.7  | 21.6  | 19.7  | 22.2  | 22.2  | 18.1  | 20.8  | 20.6  |
|                    | 256QAM     | 1                | 0            | 19.9                    | 22.9  | 22.9  | 16.9  | 19.9  | 19.9  | 17.6  | 19.2  | 19.3  | 16.3  | 19.3  | 19.0  |
|                    |            | 1                | 12           | 22.9                    | 23.0  | 22.8  | 19.7  | 20.0  | 19.8  | 20.6  | 19.1  | 19.3  | 19.5  | 19.3  | 18.9  |
|                    |            | 1                | 24           | 22.9                    | 22.9  | 22.9  | 19.9  | 20.0  | 19.9  | 20.7  | 19.1  | 19.3  | 19.5  | 19.4  | 18.9  |
|                    |            | 12               | 0            | 19.8                    | 22.6  | 22.6  | 16.8  | 19.8  | 19.6  | 17.7  | 19.1  | 19.2  | 16.2  | 19.0  | 18.7  |
|                    |            | 12               | 6            | 19.7                    | 22.7  | 22.6  | 16.7  | 19.8  | 19.6  | 17.6  | 19.1  | 19.3  | 16.3  | 19.1  | 18.7  |
|                    |            | 12               | 11           | 22.7                    | 22.6  | 22.5  | 19.7  | 19.8  | 19.6  | 20.6  | 19.1  | 19.2  | 19.3  | 19.0  | 18.7  |
|                    |            | 25               | 0            | 19.8                    | 22.7  | 22.5  | 16.7  | 19.8  | 19.6  | 17.6  | 19.1  | 19.2  | 16.2  | 19.0  | 18.7  |

## 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            | 22.6                    | 27.6   | 27.5   | 19.8   | 24.5   | 24.3   | 22.2   | 24.6   | 24.4   | 18.7   | 23.7   | 23.4   |
|                    |            | 1                | 24           | 27.7                    | 27.7   | 27.4   | 24.8   | 24.5   | 24.3   | 25.5   | 24.8   | 24.7   | 24.0   | 23.6   | 23.3   |
|                    |            | 1                | 49           | 27.7                    | 27.7   | 27.5   | 24.8   | 24.5   | 24.3   | 25.7   | 24.6   | 24.4   | 24.2   | 23.6   | 23.3   |
|                    |            | 25               | 0            | 23.8                    | 26.7   | 26.5   | 20.8   | 24.7   | 24.5   | 22.5   | 23.9   | 23.7   | 20.0   | 22.7   | 22.4   |
|                    |            | 25               | 12           | 26.8                    | 26.8   | 26.6   | 23.8   | 24.7   | 24.5   | 24.6   | 24.0   | 23.7   | 23.1   | 22.7   | 22.4   |
|                    |            | 25               | 24           | 25.8                    | 26.7   | 26.6   | 23.7   | 24.7   | 24.5   | 23.7   | 23.9   | 23.7   | 22.1   | 22.7   | 22.4   |
|                    | 16QAM      | 50               | 0            | 23.8                    | 26.7   | 26.5   | 20.8   | 24.7   | 24.5   | 22.6   | 23.9   | 23.7   | 20.0   | 22.7   | 22.4   |
|                    |            | 1                | 0            | 21.6                    | 26.9   | 26.5   | 18.7   | 24.0   | 23.9   | 21.5   | 23.6   | 23.5   | 17.6   | 22.9   | 22.4   |
|                    |            | 1                | 24           | 26.6                    | 26.8   | 26.5   | 23.7   | 24.0   | 23.8   | 24.5   | 23.8   | 23.7   | 23.0   | 22.8   | 22.3   |
|                    |            | 1                | 49           | 26.7                    | 26.8   | 26.6   | 23.7   | 24.0   | 23.9   | 24.9   | 23.6   | 23.5   | 23.2   | 22.9   | 22.4   |
|                    |            | 25               | 0            | 22.8                    | 25.8   | 25.6   | 19.7   | 23.8   | 23.5   | 21.6   | 22.9   | 22.7   | 19.0   | 21.8   | 21.5   |
|                    |            | 25               | 12           | 25.8                    | 25.8   | 25.6   | 22.7   | 23.8   | 23.5   | 23.7   | 23.0   | 22.7   | 22.1   | 21.8   | 21.4   |
|                    | 64QAM      | 25               | 24           | 24.8                    | 25.8   | 25.6   | 22.8   | 23.8   | 23.5   | 22.8   | 22.9   | 22.7   | 21.1   | 21.8   | 21.4   |
|                    |            | 50               | 0            | 22.8                    | 25.8   | 25.5   | 19.7   | 23.8   | 23.5   | 21.7   | 22.9   | 22.7   | 19.1   | 21.8   | 21.4   |
|                    |            | 1                | 0            | 20.9                    | 25.8   | 25.0   | 17.7   | 22.2   | 22.9   | 22.7   | 22.2   | 23.0   | 17.0   | 21.8   | 21.0   |
|                    |            | 1                | 24           | 25.6                    | 25.8   | 25.1   | 22.8   | 22.3   | 22.9   | 22.9   | 22.4   | 23.3   | 22.1   | 21.8   | 20.9   |
|                    |            | 1                | 49           | 26.0                    | 25.9   | 25.1   | 22.8   | 22.3   | 23.0   | 22.6   | 22.3   | 23.9   | 22.2   | 21.8   | 21.0   |
|                    |            | 25               | 0            | 21.8                    | 24.7   | 24.6   | 18.7   | 21.5   | 21.2   | 21.6   | 21.9   | 22.1   | 18.0   | 20.7   | 20.5   |
|                    | 256QAM     | 25               | 12           | 24.4                    | 24.7   | 24.7   | 21.8   | 21.5   | 21.2   | 21.7   | 22.0   | 22.3   | 20.9   | 20.7   | 20.5   |
|                    |            | 25               | 24           | 23.8                    | 24.7   | 24.7   | 21.8   | 21.5   | 21.2   | 21.7   | 21.9   | 22.5   | 20.1   | 20.7   | 20.5   |
|                    |            | 50               | 0            | 21.8                    | 24.7   | 24.5   | 18.8   | 21.5   | 21.2   | 21.7   | 21.9   | 22.1   | 18.0   | 20.7   | 20.4   |
|                    |            | 1                | 0            | 17.3                    | 23.1   | 22.4   | 14.8   | 19.6   | 19.1   | 18.3   | 21.2   | 19.4   | 13.4   | 19.0   | 18.5   |
|                    |            | 1                | 24           | 22.3                    | 23.0   | 22.5   | 19.8   | 19.7   | 19.1   | 21.1   | 21.1   | 19.3   | 18.6   | 19.0   | 18.4   |
|                    |            | 1                | 49           | 22.4                    | 23.1   | 22.5   | 19.7   | 19.7   | 19.1   | 22.0   | 21.2   | 19.3   | 18.8   | 19.0   | 18.3   |
|                    |            | 25               | 0            | 19.9                    | 22.7   | 22.5   | 16.8   | 19.5   | 19.3   | 19.7   | 19.0   | 19.2   | 16.1   | 18.7   | 18.5   |
|                    |            | 25               | 12           | 22.8                    | 22.7   | 22.6   | 19.7   | 19.5   | 19.3   | 21.4   | 19.0   | 19.2   | 19.1   | 18.7   | 18.5   |
|                    |            | 25               | 24           | 21.8                    | 22.7   | 22.6   | 19.7   | 19.5   | 19.3   | 21.0   | 19.0   | 19.2   | 18.2   | 18.7   | 18.4   |
|                    |            | 50               | 0            | 19.8                    | 22.7   | 22.5   | 16.8   | 19.6   | 19.2   | 19.9   | 19.0   | 19.2   | 16.0   | 18.7   | 18.5   |

## 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            | 22.6                    | 27.6   | 27.4   | 19.7   | 24.6   | 24.4   | 22.5   | 24.5   | 24.3   | 18.8   | 23.7   | 23.4   |
|                    |            | 1                | 37           | 27.5                    | 27.6   | 27.5   | 24.8   | 24.5   | 24.3   | 25.7   | 24.8   | 24.7   | 24.1   | 23.6   | 23.3   |
|                    |            | 1                | 74           | 27.6                    | 27.7   | 27.5   | 24.6   | 24.6   | 24.4   | 25.7   | 24.5   | 24.6   | 24.2   | 23.8   | 23.3   |
|                    |            | 36               | 0            | 22.8                    | 26.7   | 26.5   | 19.7   | 24.7   | 24.4   | 21.6   | 23.8   | 23.5   | 19.1   | 22.8   | 22.5   |
|                    |            | 36               | 16           | 26.8                    | 26.7   | 26.5   | 23.8   | 24.7   | 24.4   | 24.7   | 23.9   | 23.7   | 23.1   | 22.7   | 22.5   |
|                    |            | 36               | 35           | 23.8                    | 26.7   | 26.6   | 20.7   | 24.7   | 24.5   | 23.7   | 23.8   | 23.7   | 20.2   | 22.7   | 22.5   |
|                    |            | 75               | 0            | 22.7                    | 26.7   | 26.5   | 19.7   | 24.6   | 24.4   | 21.6   | 23.8   | 23.6   | 19.1   | 22.7   | 22.5   |
|                    | 16QAM      | 1                | 0            | 21.6                    | 26.7   | 26.5   | 18.8   | 23.9   | 23.5   | 21.6   | 23.5   | 23.2   | 17.8   | 22.7   | 22.4   |
|                    |            | 1                | 37           | 26.6                    | 26.7   | 26.5   | 23.7   | 23.9   | 23.5   | 24.8   | 23.8   | 23.6   | 23.1   | 22.5   | 22.3   |
|                    |            | 1                | 74           | 26.6                    | 26.7   | 26.7   | 23.7   | 24.0   | 23.5   | 24.9   | 23.7   | 23.4   | 23.2   | 22.6   | 22.4   |
|                    |            | 36               | 0            | 21.7                    | 25.7   | 25.5   | 18.7   | 23.6   | 23.5   | 20.7   | 22.8   | 22.5   | 18.1   | 21.8   | 21.5   |
|                    |            | 36               | 16           | 25.8                    | 25.8   | 25.5   | 22.7   | 23.8   | 23.5   | 23.7   | 22.9   | 22.7   | 22.1   | 21.8   | 21.5   |
|                    |            | 36               | 35           | 22.7                    | 25.7   | 25.6   | 19.8   | 23.7   | 23.5   | 22.7   | 22.8   | 22.7   | 19.2   | 21.7   | 21.4   |
|                    |            | 75               | 0            | 21.8                    | 25.7   | 25.5   | 18.7   | 23.6   | 23.5   | 20.6   | 22.8   | 22.6   | 18.2   | 21.7   | 21.5   |
|                    | 64QAM      | 1                | 0            | 20.9                    | 25.5   | 24.9   | 17.7   | 22.9   | 22.6   | 22.5   | 22.9   | 22.5   | 16.7   | 21.3   | 21.8   |
|                    |            | 1                | 37           | 25.9                    | 25.5   | 25.0   | 22.8   | 22.9   | 22.4   | 22.7   | 23.1   | 23.2   | 21.9   | 21.2   | 21.8   |
|                    |            | 1                | 74           | 25.9                    | 25.7   | 25.1   | 22.8   | 23.0   | 22.5   | 22.6   | 22.9   | 23.7   | 22.0   | 21.3   | 21.8   |
|                    |            | 36               | 0            | 20.9                    | 24.6   | 24.6   | 17.7   | 21.5   | 21.3   | 21.6   | 21.8   | 22.0   | 17.1   | 20.8   | 20.6   |
|                    |            | 36               | 16           | 24.7                    | 24.7   | 24.6   | 21.7   | 21.6   | 21.3   | 21.7   | 21.9   | 22.5   | 21.0   | 20.8   | 20.6   |
|                    |            | 36               | 35           | 21.8                    | 24.7   | 24.7   | 18.7   | 21.6   | 21.3   | 21.7   | 21.9   | 22.7   | 18.2   | 20.8   | 20.6   |
|                    |            | 75               | 0            | 20.8                    | 24.7   | 24.5   | 17.7   | 21.5   | 21.3   | 21.6   | 21.8   | 22.3   | 17.2   | 20.8   | 20.5   |
|                    | 256QAM     | 1                | 0            | 17.2                    | 22.8   | 22.5   | 14.8   | 19.6   | 19.4   | 15.9   | 19.0   | 18.7   | 14.1   | 18.8   | 18.2   |
|                    |            | 1                | 37           | 22.3                    | 22.8   | 22.5   | 19.8   | 19.7   | 19.3   | 19.7   | 18.6   | 18.7   | 19.3   | 18.7   | 18.1   |
|                    |            | 1                | 74           | 22.4                    | 23.0   | 22.6   | 19.8   | 19.7   | 19.3   | 20.4   | 18.8   | 18.8   | 19.6   | 18.7   | 18.1   |
|                    |            | 36               | 0            | 18.8                    | 22.6   | 22.6   | 15.8   | 19.5   | 19.3   | 16.3   | 18.8   | 18.8   | 15.2   | 18.8   | 18.5   |
|                    |            | 36               | 16           | 22.8                    | 22.7   | 22.5   | 19.8   | 19.5   | 19.3   | 19.8   | 18.8   | 19.0   | 19.1   | 18.8   | 18.5   |
|                    |            | 36               | 35           | 19.8                    | 22.7   | 22.6   | 16.7   | 19.5   | 19.3   | 18.9   | 18.7   | 18.9   | 16.2   | 18.8   | 18.5   |
|                    |            | 75               | 0            | 18.7                    | 22.7   | 22.5   | 15.7   | 19.4   | 19.3   | 16.6   | 18.7   | 18.8   | 15.2   | 18.8   | 18.5   |

## 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<br>2506.0         | 40620<br>2593.0 | 41490<br>2680.0 | 39750<br>2506.0 | 40620<br>2593.0 | 41490<br>2680.0 | 39750<br>2506.0 | 40620<br>2593.0 | 41490<br>2680.0 | 39750<br>2506.0 | 40620<br>2593.0 | 41490<br>2680.0 |
| 20.0               | QPSK       | 1                | 0            | 22.6                    | 27.7            | 27.4            | 21.8            | 24.7            | 24.5            | 22.5            | 24.5            | 24.3            | 18.7            | 23.7            | 23.3            |
|                    |            | 1                | 49           | 27.6                    | 27.6            | 27.4            | 24.6            | 24.6            | 24.3            | 25.7            | 24.8            | 24.7            | 24.1            | 23.5            | 23.2            |
|                    |            | 1                | 99           | 27.6                    | 27.7            | 27.5            | 24.7            | 24.6            | 24.5            | 25.7            | 24.5            | 24.6            | 24.2            | 23.6            | 23.3            |
|                    |            | 50               | 0            | 22.7                    | 26.6            | 26.5            | 21.8            | 24.7            | 24.5            | 21.6            | 23.8            | 23.5            | 19.0            | 22.6            | 22.4            |
|                    |            | 50               | 24           | 26.8                    | 26.7            | 26.6            | 24.8            | 24.8            | 24.5            | 24.7            | 23.9            | 23.7            | 23.2            | 22.7            | 22.4            |
|                    |            | 50               | 49           | 23.8                    | 26.7            | 26.6            | 22.9            | 24.8            | 24.5            | 23.7            | 23.8            | 23.7            | 20.2            | 22.6            | 22.4            |
|                    |            | 100              | 0            | 22.8                    | 26.7            | 26.5            | 22.0            | 24.7            | 24.5            | 21.6            | 23.8            | 23.6            | 19.2            | 22.6            | 22.4            |
|                    | 16QAM      | 1                | 0            | 21.5                    | 26.8            | 26.5            | 20.2            | 24.0            | 23.6            | 21.6            | 23.5            | 23.2            | 17.5            | 22.8            | 22.3            |
|                    |            | 1                | 49           | 26.4                    | 26.7            | 26.5            | 24.0            | 24.0            | 23.5            | 24.8            | 23.8            | 23.6            | 23.0            | 22.7            | 22.3            |
|                    |            | 1                | 99           | 26.5                    | 26.8            | 26.5            | 24.0            | 24.0            | 23.6            | 24.9            | 23.7            | 23.4            | 23.1            | 22.8            | 22.4            |
|                    |            | 50               | 0            | 21.7                    | 25.7            | 25.5            | 19.9            | 23.7            | 23.5            | 20.7            | 22.8            | 22.5            | 18.1            | 21.7            | 21.4            |
|                    |            | 50               | 24           | 25.8                    | 25.7            | 25.6            | 23.3            | 23.8            | 23.5            | 23.7            | 22.9            | 22.7            | 22.2            | 21.7            | 21.4            |
|                    |            | 50               | 49           | 22.7                    | 25.7            | 25.5            | 21.0            | 23.8            | 23.5            | 22.7            | 22.8            | 22.7            | 19.2            | 21.7            | 21.4            |
|                    |            | 100              | 0            | 21.8                    | 25.7            | 25.5            | 20.0            | 23.7            | 23.5            | 20.6            | 22.8            | 22.6            | 18.2            | 21.7            | 21.4            |
|                    | 64QAM      | 1                | 0            | 20.5                    | 25.7            | 24.9            | 22.7            | 23.0            | 22.6            | 22.5            | 22.9            | 22.5            | 16.6            | 21.8            | 21.8            |
|                    |            | 1                | 49           | 25.7                    | 25.7            | 25.9            | 22.7            | 22.9            | 22.5            | 22.7            | 23.1            | 23.2            | 21.9            | 21.6            | 21.7            |
|                    |            | 1                | 99           | 25.7                    | 25.7            | 26.0            | 22.7            | 23.0            | 22.5            | 22.6            | 22.9            | 23.7            | 22.1            | 21.7            | 21.8            |
|                    |            | 50               | 0            | 20.7                    | 24.7            | 24.5            | 21.5            | 21.5            | 21.4            | 21.6            | 21.8            | 22.0            | 17.1            | 20.7            | 20.5            |
|                    |            | 50               | 24           | 24.8                    | 24.8            | 24.6            | 21.6            | 21.6            | 21.4            | 21.7            | 21.9            | 22.5            | 20.9            | 20.7            | 20.5            |
|                    |            | 50               | 49           | 21.8                    | 24.7            | 24.6            | 21.6            | 21.6            | 21.3            | 21.7            | 21.9            | 22.7            | 18.2            | 20.7            | 20.4            |
|                    |            | 100              | 0            | 20.8                    | 24.8            | 24.6            | 21.6            | 21.5            | 21.3            | 21.6            | 21.8            | 22.3            | 17.2            | 20.7            | 20.4            |
|                    | 256QAM     | 1                | 0            | 17.6                    | 23.0            | 22.7            | 20.0            | 19.7            | 19.5            | 15.9            | 19.0            | 18.7            | 13.8            | 19.1            | 18.8            |
|                    |            | 1                | 49           | 22.6                    | 22.9            | 22.6            | 19.9            | 19.7            | 19.3            | 19.7            | 18.6            | 18.7            | 19.1            | 18.9            | 18.6            |
|                    |            | 1                | 99           | 22.7                    | 23.0            | 22.8            | 20.1            | 19.8            | 19.4            | 20.4            | 18.8            | 18.8            | 19.3            | 18.9            | 18.6            |
|                    |            | 50               | 0            | 18.7                    | 22.6            | 22.4            | 19.4            | 19.5            | 19.4            | 16.3            | 18.8            | 18.8            | 15.2            | 18.7            | 18.4            |
|                    |            | 50               | 24           | 22.8                    | 22.7            | 22.5            | 19.6            | 19.6            | 19.3            | 19.8            | 18.8            | 19.0            | 19.2            | 18.7            | 18.5            |
|                    |            | 50               | 49           | 19.8                    | 22.7            | 22.5            | 19.6            | 19.5            | 19.3            | 18.9            | 18.7            | 18.9            | 16.3            | 18.7            | 18.4            |
|                    |            | 100              | 0            | 18.8                    | 22.7            | 22.5            | 19.6            | 19.5            | 19.3            | 16.6            | 18.7            | 18.8            | 15.2            | 18.7            | 18.5            |

## 7.14. 5G NR BAND n41 (NS04)

|                   |       |            |          |
|-------------------|-------|------------|----------|
| Test Engineer ID: | 10646 | Test Date: | 8/222/20 |
|-------------------|-------|------------|----------|

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>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            | 20.9                    | 23.3   | 23.3   |        |        |        | 20.2   | 22.7   | 22.5   |        |        |        |
|                    |            | 1                | 1            | 21.0                    | 26.3   | 26.1   |        |        |        | 20.3   | 25.9   | 26.0   |        |        |        |
|                    |            | 25               | 12           | 23.2                    | 26.5   | 26.7   |        |        |        | 22.7   | 26.0   | 26.0   |        |        |        |
|                    |            | 50               | 0            | 22.0                    | 26.0   | 26.1   |        |        |        | 22.6   | 25.5   | 25.6   |        |        |        |
|                    | QPSK       | 1                | 0            | 20.6                    | 23.3   | 23.3   |        |        |        | 20.0   | 22.5   | 22.7   |        |        |        |
|                    |            | 1                | 1            | 20.6                    | 26.3   | 25.4   |        |        |        | 19.5   | 26.2   | 26.0   |        |        |        |
|                    |            | 25               | 12           | 22.1                    | 26.5   | 26.6   |        |        |        | 21.6   | 26.0   | 26.0   |        |        |        |
|                    |            | 50               | 0            | 21.0                    | 25.5   | 25.7   |        |        |        | 21.6   | 25.0   | 25.0   |        |        |        |
|                    | 16QAM      | 1                | 0            | 20.3                    | 22.6   | 23.0   |        |        |        | 19.8   | 22.5   | 22.7   |        |        |        |
|                    |            | 1                | 1            | 20.4                    | 25.5   | 25.3   |        |        |        | 19.7   | 25.0   | 25.4   |        |        |        |
|                    |            | 25               | 12           | 21.7                    | 25.4   | 25.7   |        |        |        | 21.0   | 24.9   | 24.9   |        |        |        |
|                    |            | 50               | 0            | 20.6                    | 24.6   | 24.6   |        |        |        | 21.1   | 24.1   | 24.1   |        |        |        |
|                    | 64QAM      | 1                | 0            | 19.9                    | 23.1   | 23.3   |        |        |        | 19.7   | 22.7   | 22.9   |        |        |        |
|                    |            | 1                | 1            | 20.2                    | 24.2   | 23.3   |        |        |        | 19.4   | 24.0   | 24.0   |        |        |        |
|                    |            | 25               | 12           | 21.5                    | 24.0   | 24.1   |        |        |        | 21.0   | 23.4   | 23.5   |        |        |        |
|                    |            | 50               | 0            | 20.6                    | 24.0   | 24.1   |        |        |        | 21.1   | 23.6   | 23.6   |        |        |        |
|                    | 256QAM     | 1                | 0            | 18.5                    | 21.9   | 22.3   |        |        |        | 17.6   | 21.4   | 21.6   |        |        |        |
|                    |            | 1                | 1            | 18.5                    | 21.7   | 22.0   |        |        |        | 17.6   | 21.5   | 21.7   |        |        |        |
|                    |            | 25               | 12           | 20.2                    | 21.9   | 22.2   |        |        |        | 19.5   | 21.5   | 21.5   |        |        |        |
|                    |            | 50               | 0            | 19.1                    | 22.0   | 22.0   |        |        |        | 19.5   | 21.5   | 21.6   |        |        |        |

Ant1 and Ant3 are covered by LTE Band 41

**OUTPUT POWER FOR 5G NR BAND n41 (40.0 MHz)**

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>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            | 21.1                    | 23.6   | 22.7   | 19.3   | 24.2   | 21.0   | 19.4   | 22.0   | 22.4   | 16.8   | 20.0   | 18.7   |
|                    |            | 1                | 1            | 21.4                    | 26.6   | 26.6   | 18.5   | 24.4   | 24.4   | 19.3   | 26.2   | 25.4   | 17.1   | 22.7   | 22.2   |
|                    |            | 50               | 25           | 23.2                    | 26.7   | 26.6   | 20.7   | 24.2   | 24.2   | 22.2   | 25.6   | 25.8   | 20.2   | 22.0   | 22.2   |
|                    |            | 100              | 0            | 23.2                    | 26.3   | 26.2   | 20.8   | 23.8   | 23.7   | 22.2   | 25.2   | 25.3   | 20.1   | 22.2   | 21.7   |
|                    | QPSK       | 1                | 0            | 21.0                    | 23.3   | 22.9   | 18.8   | 21.2   | 20.6   | 18.8   | 22.6   | 22.2   | 16.7   | 20.1   | 18.5   |
|                    |            | 1                | 1            | 20.8                    | 26.7   | 26.7   | 18.2   | 24.2   | 24.5   | 19.3   | 26.1   | 25.2   | 16.5   | 22.3   | 22.1   |
|                    |            | 50               | 25           | 22.1                    | 26.7   | 26.7   | 19.8   | 24.2   | 24.1   | 21.3   | 25.6   | 25.8   | 19.3   | 21.9   | 22.1   |
|                    |            | 100              | 0            | 22.2                    | 25.7   | 25.6   | 19.9   | 23.3   | 23.3   | 21.2   | 24.7   | 24.8   | 19.2   | 22.2   | 21.1   |
|                    | 16QAM      | 1                | 0            | 20.0                    | 22.9   | 22.5   | 19.0   | 21.3   | 20.7   | 19.2   | 22.8   | 22.6   | 16.3   | 19.6   | 18.5   |
|                    |            | 1                | 1            | 20.2                    | 25.5   | 25.7   | 18.6   | 23.5   | 23.3   | 19.5   | 25.1   | 25.4   | 16.5   | 21.7   | 21.1   |
|                    |            | 50               | 25           | 21.2                    | 25.2   | 25.1   | 19.2   | 23.2   | 23.1   | 20.7   | 24.6   | 24.7   | 18.2   | 21.6   | 20.6   |
|                    |            | 100              | 0            | 21.2                    | 24.1   | 24.2   | 19.3   | 22.3   | 22.2   | 20.8   | 23.7   | 23.8   | 18.2   | 20.6   | 19.7   |
|                    | 64QAM      | 1                | 0            | 20.4                    | 23.5   | 23.2   | 18.3   | 21.3   | 20.9   | 19.1   | 22.9   | 22.5   | 15.4   | 19.4   | 18.1   |
|                    |            | 1                | 1            | 20.8                    | 24.0   | 24.1   | 18.0   | 22.0   | 22.4   | 19.3   | 23.9   | 23.8   | 15.5   | 20.7   | 19.3   |
|                    |            | 50               | 25           | 21.7                    | 24.2   | 24.1   | 19.2   | 21.8   | 21.7   | 20.7   | 23.2   | 23.2   | 17.7   | 19.6   | 18.6   |
|                    |            | 100              | 0            | 21.7                    | 24.2   | 24.2   | 19.4   | 21.8   | 21.7   | 20.8   | 23.2   | 23.3   | 17.7   | 19.6   | 18.7   |
|                    | 256QAM     | 1                | 0            | 18.9                    | 22.5   | 22.2   | 15.3   | 18.9   | 18.5   | 17.1   | 21.2   | 21.3   | 13.5   | 18.1   | 16.8   |
|                    |            | 1                | 1            | 18.2                    | 22.4   | 22.4   | 15.5   | 19.0   | 18.8   | 16.9   | 20.9   | 20.8   | 14.1   | 17.9   | 16.7   |
|                    |            | 50               | 25           | 20.2                    | 22.1   | 22.0   | 16.9   | 18.7   | 18.7   | 19.2   | 21.2   | 21.2   | 16.1   | 17.6   | 16.7   |
|                    |            | 100              | 0            | 20.2                    | 22.1   | 22.1   | 16.9   | 18.8   | 18.8   | 19.2   | 21.1   | 21.3   | 16.1   | 17.6   | 16.6   |

## 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            | 20.8                    | 23.2   | 23.2   | 18.4   | 20.7   | 21.0   | 20.1   | 23.0   | 22.5   | 16.7   | 19.4   | 19.5   |
|                    |            | 1                | 1            | 21.3                    | 26.7   | 26.3   | 19.0   | 24.4   | 24.2   | 20.1   | 26.2   | 26.2   | 17.3   | 22.7   | 22.0   |
|                    |            | 64               | 32           | 23.0                    | 26.3   | 26.4   | 20.8   | 24.2   | 24.2   | 22.6   | 26.2   | 26.1   | 19.9   | 21.7   | 21.8   |
|                    |            | 128              | 0            | 23.0                    | 26.0   | 25.9   | 20.9   | 23.8   | 23.7   | 22.7   | 25.7   | 25.6   | 19.8   | 21.9   | 21.7   |
|                    | QPSK       | 1                | 0            | 20.4                    | 23.1   | 23.1   | 18.7   | 20.4   | 20.4   | 19.4   | 22.7   | 22.8   | 16.4   | 19.9   | 19.5   |
|                    |            | 1                | 1            | 20.3                    | 26.6   | 26.6   | 18.2   | 24.6   | 24.7   | 19.6   | 26.2   | 25.9   | 16.3   | 22.1   | 22.0   |
|                    |            | 64               | 32           | 21.9                    | 26.5   | 26.4   | 19.8   | 24.3   | 24.3   | 21.6   | 26.2   | 26.2   | 18.9   | 21.7   | 21.9   |
|                    |            | 128              | 0            | 22.0                    | 25.5   | 25.4   | 19.8   | 23.3   | 23.2   | 21.6   | 25.2   | 25.2   | 18.8   | 21.8   | 21.7   |
|                    | 16QAM      | 1                | 0            | 20.6                    | 22.8   | 22.5   | 18.5   | 21.3   | 20.9   | 19.6   | 23.0   | 22.8   | 16.2   | 19.5   | 19.4   |
|                    |            | 1                | 1            | 20.6                    | 25.2   | 25.8   | 18.7   | 23.5   | 23.2   | 19.8   | 25.4   | 25.2   | 16.0   | 21.8   | 21.9   |
|                    |            | 64               | 32           | 21.1                    | 25.2   | 25.1   | 19.3   | 23.3   | 23.3   | 21.2   | 25.2   | 25.1   | 18.0   | 21.3   | 21.3   |
|                    |            | 128              | 0            | 21.3                    | 24.2   | 24.1   | 19.4   | 22.3   | 22.2   | 21.2   | 24.2   | 24.2   | 17.8   | 20.4   | 20.3   |
|                    | 64QAM      | 1                | 0            | 20.0                    | 23.1   | 23.3   | 18.3   | 21.3   | 20.6   | 19.5   | 23.3   | 22.6   | 15.7   | 19.6   | 18.9   |
|                    |            | 1                | 1            | 20.5                    | 24.2   | 24.1   | 18.2   | 22.0   | 22.3   | 19.3   | 24.2   | 23.6   | 15.7   | 20.5   | 20.1   |
|                    |            | 64               | 32           | 21.4                    | 23.9   | 23.8   | 19.4   | 21.8   | 21.8   | 21.1   | 23.7   | 23.6   | 17.7   | 19.5   | 19.6   |
|                    |            | 128              | 0            | 21.5                    | 24.0   | 23.9   | 19.4   | 21.8   | 21.8   | 21.2   | 23.7   | 23.7   | 17.5   | 19.6   | 19.5   |
|                    | 256QAM     | 1                | 0            | 17.6                    | 21.2   | 21.1   | 15.3   | 19.0   | 19.1   | 18.7   | 20.8   | 20.6   | 13.2   | 17.8   | 17.9   |
|                    |            | 1                | 1            | 17.2                    | 21.2   | 20.7   | 15.8   | 18.8   | 18.7   | 16.4   | 21.0   | 20.5   | 13.3   | 17.7   | 17.3   |
|                    |            | 64               | 32           | 18.9                    | 21.0   | 20.9   | 16.8   | 18.7   | 18.7   | 18.6   | 20.7   | 20.7   | 15.9   | 17.3   | 17.3   |
|                    |            | 128              | 0            | 19.0                    | 21.0   | 20.9   | 16.8   | 18.8   | 18.7   | 18.6   | 20.7   | 20.7   | 15.8   | 17.4   | 17.4   |

## 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            | 21.5                    | 23.0   | 22.9   | 18.6   | 20.7   | 20.6   | 19.9   | 22.5   | 22.4   | 16.9   | 19.7   | 19.6   |
|                    |            | 1                | 1            | 21.4                    | 26.7   | 26.7   | 18.4   | 24.2   | 24.1   | 19.6   | 26.2   | 25.9   | 16.3   | 22.7   | 22.1   |
|                    |            | 81               | 40           | 23.1                    | 26.6   | 26.5   | 20.8   | 24.2   | 24.3   | 22.6   | 25.9   | 26.0   | 20.2   | 21.9   | 22.0   |
|                    |            | 162              | 0            | 23.1                    | 26.1   | 26.2   | 20.9   | 23.8   | 23.8   | 22.5   | 25.5   | 25.5   | 20.0   | 21.9   | 22.0   |
|                    | QPSK       | 1                | 0            | 20.5                    | 23.2   | 23.4   | 18.4   | 21.0   | 20.7   | 19.3   | 22.5   | 22.5   | 16.5   | 19.8   | 19.4   |
|                    |            | 1                | 1            | 20.9                    | 26.5   | 26.5   | 18.3   | 24.1   | 23.8   | 19.6   | 26.0   | 25.7   | 16.3   | 22.2   | 21.7   |
|                    |            | 81               | 40           | 22.2                    | 26.6   | 26.6   | 19.8   | 24.2   | 24.2   | 21.6   | 25.9   | 26.0   | 19.2   | 21.8   | 22.0   |
|                    |            | 162              | 0            | 22.2                    | 25.7   | 25.7   | 19.9   | 23.3   | 23.3   | 21.5   | 24.9   | 25.0   | 19.0   | 22.0   | 22.0   |
|                    | 16QAM      | 1                | 0            | 20.2                    | 22.5   | 22.5   | 18.9   | 21.2   | 20.8   | 19.4   | 22.7   | 22.6   | 16.0   | 19.5   | 18.6   |
|                    |            | 1                | 1            | 20.3                    | 25.3   | 25.6   | 18.6   | 23.5   | 23.2   | 19.9   | 25.2   | 24.7   | 16.1   | 22.1   | 21.1   |
|                    |            | 81               | 40           | 21.1                    | 25.2   | 25.1   | 19.3   | 23.3   | 23.3   | 21.1   | 24.9   | 25.0   | 18.1   | 21.4   | 21.5   |
|                    |            | 162              | 0            | 21.1                    | 24.1   | 24.1   | 19.4   | 22.2   | 22.3   | 21.0   | 24.0   | 24.0   | 18.0   | 20.5   | 20.5   |
|                    | 64QAM      | 1                | 0            | 20.6                    | 23.5   | 23.2   | 17.8   | 20.8   | 20.7   | 18.9   | 22.9   | 22.8   | 16.3   | 20.2   | 19.2   |
|                    |            | 1                | 1            | 20.5                    | 24.0   | 23.9   | 18.0   | 21.9   | 21.6   | 19.1   | 23.7   | 23.4   | 16.4   | 20.8   | 20.7   |
|                    |            | 81               | 40           | 21.6                    | 24.1   | 24.1   | 19.3   | 21.7   | 21.8   | 21.1   | 23.4   | 23.5   | 18.6   | 20.4   | 20.4   |
|                    |            | 162              | 0            | 21.7                    | 24.2   | 24.0   | 19.4   | 21.8   | 21.7   | 20.5   | 23.4   | 23.5   | 18.5   | 20.5   | 20.5   |
|                    | 256QAM     | 1                | 0            | 17.7                    | 20.8   | 21.1   | 15.8   | 19.0   | 18.8   | 16.5   | 20.9   | 20.2   | 13.7   | 17.9   | 17.1   |
|                    |            | 1                | 1            | 17.9                    | 20.7   | 20.9   | 15.3   | 18.6   | 18.7   | 16.6   | 20.6   | 20.7   | 13.6   | 17.8   | 17.6   |
|                    |            | 81               | 40           | 18.9                    | 20.9   | 20.8   | 16.8   | 18.7   | 18.7   | 18.8   | 20.6   | 20.7   | 16.0   | 17.3   | 17.2   |
|                    |            | 162              | 0            | 18.9                    | 20.9   | 20.8   | 16.9   | 18.8   | 18.8   | 18.8   | 20.7   | 20.7   | 15.8   | 17.4   | 17.3   |

# 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            | 21.2                    | 20.8   | 23.1   | 18.6   | 19.2   | 21.0   | 19.9   | 20.9   | 22.4   | 16.8   | 18.0   | 19.6   |
|                    |            | 1                | 1            | 21.2                    | 21.0   | 26.7   | 18.8   | 19.5   | 24.5   | 20.3   | 21.1   | 26.0   | 17.0   | 17.8   | 22.7   |
|                    |            | 108              | 54           | 23.1                    | 26.5   | 26.4   | 20.9   | 24.3   | 24.2   | 22.9   | 26.2   | 26.2   | 20.2   | 22.1   | 22.0   |
|                    |            | 216              | 0            | 23.0                    | 26.0   | 25.9   | 20.9   | 23.8   | 23.7   | 22.8   | 25.7   | 25.7   | 20.0   | 22.3   | 22.0   |
|                    | QPSK       | 1                | 0            | 20.3                    | 20.6   | 22.8   | 18.2   | 18.8   | 20.9   | 19.6   | 20.0   | 22.6   | 16.5   | 17.4   | 19.4   |
|                    |            | 1                | 1            | 20.5                    | 20.6   | 26.5   | 17.9   | 18.3   | 24.6   | 19.6   | 20.3   | 26.0   | 16.2   | 17.7   | 22.1   |
|                    |            | 108              | 54           | 22.1                    | 26.4   | 26.4   | 19.9   | 24.3   | 24.2   | 22.0   | 26.2   | 26.2   | 19.2   | 22.1   | 22.0   |
|                    |            | 216              | 0            | 22.0                    | 25.5   | 25.5   | 19.9   | 23.3   | 23.2   | 21.8   | 25.2   | 25.2   | 19.0   | 22.3   | 22.0   |
|                    | 16QAM      | 1                | 0            | 20.1                    | 20.7   | 23.1   | 18.6   | 18.8   | 21.1   | 19.6   | 20.3   | 22.7   | 15.8   | 17.4   | 19.1   |
|                    |            | 1                | 1            | 20.3                    | 20.4   | 25.6   | 18.7   | 18.6   | 23.5   | 19.8   | 20.9   | 25.4   | 16.0   | 17.3   | 21.6   |
|                    |            | 108              | 54           | 21.3                    | 25.2   | 25.2   | 19.5   | 23.4   | 23.2   | 21.4   | 25.2   | 25.2   | 18.2   | 21.7   | 21.5   |
|                    |            | 216              | 0            | 21.2                    | 24.2   | 24.2   | 19.4   | 22.4   | 22.2   | 21.4   | 24.2   | 24.2   | 18.0   | 20.7   | 20.5   |
|                    | 64QAM      | 1                | 0            | 20.4                    | 20.3   | 23.3   | 17.7   | 18.1   | 20.9   | 19.1   | 20.0   | 22.6   | 15.3   | 16.7   | 19.3   |
|                    |            | 1                | 1            | 20.4                    | 20.3   | 23.8   | 18.3   | 18.1   | 21.9   | 19.3   | 20.3   | 23.8   | 15.3   | 16.5   | 20.1   |
|                    |            | 108              | 54           | 21.5                    | 24.0   | 24.0   | 19.5   | 21.8   | 21.7   | 21.4   | 23.7   | 23.7   | 17.7   | 19.6   | 19.5   |
|                    |            | 216              | 0            | 21.5                    | 24.0   | 24.0   | 19.4   | 21.9   | 21.7   | 21.3   | 23.7   | 23.7   | 17.5   | 19.8   | 19.5   |
|                    | 256QAM     | 1                | 0            | 17.6                    | 17.4   | 20.4   | 15.7   | 15.5   | 18.4   | 16.4   | 17.6   | 20.2   | 13.9   | 14.3   | 17.7   |
|                    |            | 1                | 1            | 17.9                    | 17.6   | 21.0   | 15.4   | 15.4   | 18.6   | 16.5   | 17.0   | 20.6   | 13.4   | 14.4   | 17.4   |
|                    |            | 108              | 54           | 19.0                    | 21.0   | 21.0   | 16.9   | 18.8   | 18.7   | 18.9   | 20.7   | 20.7   | 15.8   | 17.3   | 17.1   |
|                    |            | 216              | 0            | 19.1                    | 21.0   | 21.1   | 16.9   | 18.9   | 18.7   | 18.9   | 20.7   | 20.7   | 15.7   | 17.4   | 17.2   |

## 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<br>2541.0        | 518600<br>2593.0 | 529000<br>2645.0 | 508200<br>2541.0 | 518600<br>2593.0 | 529000<br>2645.0 | 508200<br>2541.0 | 518600<br>2593.0 | 529000<br>2645.0 | 508200<br>2541.0 | 518600<br>2593.0 | 529000<br>2645.0 |
| 90.0               | BPSK       | 1                | 0            | 21.0                    | 20.9             | 22.7             | 18.8             | 19.2             | 20.7             | 20.2             | 20.9             | 22.3             | 17.3             | 19.1             | 20.0             |
|                    |            | 1                | 1            | 20.6                    | 20.7             | 26.7             | 18.8             | 18.8             | 24.4             | 20.6             | 20.9             | 26.2             | 17.2             | 18.8             | 22.5             |
|                    |            | 120              | 60           | 22.6                    | 26.2             | 26.1             | 20.9             | 24.4             | 24.3             | 22.8             | 26.1             | 26.1             | 20.7             | 22.6             | 22.5             |
|                    |            | 240              | 0            | 22.7                    | 25.7             | 25.6             | 21.0             | 23.9             | 23.8             | 22.7             | 25.6             | 25.6             | 20.5             | 22.7             | 22.5             |
|                    | QPSK       | 1                | 0            | 20.0                    | 20.2             | 22.6             | 18.3             | 18.9             | 20.7             | 19.8             | 20.3             | 22.5             | 17.0             | 18.2             | 20.2             |
|                    |            | 1                | 1            | 20.2                    | 20.2             | 26.6             | 18.5             | 18.3             | 23.7             | 19.5             | 20.8             | 26.0             | 17.0             | 17.8             | 22.5             |
|                    |            | 120              | 60           | 21.6                    | 26.2             | 26.0             | 19.9             | 24.4             | 24.3             | 21.9             | 26.1             | 26.1             | 19.7             | 22.6             | 22.5             |
|                    |            | 240              | 0            | 21.6                    | 25.0             | 25.1             | 19.9             | 23.4             | 23.3             | 21.8             | 25.1             | 25.1             | 19.5             | 22.7             | 22.5             |
|                    | 16QAM      | 1                | 0            | 20.3                    | 20.4             | 22.8             | 18.9             | 18.7             | 21.3             | 19.6             | 20.6             | 22.8             | 16.6             | 17.8             | 19.9             |
|                    |            | 1                | 1            | 20.5                    | 20.3             | 25.4             | 18.9             | 18.7             | 23.4             | 19.3             | 20.4             | 25.2             | 16.5             | 18.0             | 22.1             |
|                    |            | 120              | 60           | 21.1                    | 25.2             | 25.1             | 19.4             | 23.4             | 23.4             | 21.4             | 25.0             | 25.1             | 18.6             | 22.2             | 22.0             |
|                    |            | 240              | 0            | 21.1                    | 24.0             | 24.1             | 19.4             | 22.3             | 22.3             | 21.3             | 24.1             | 24.1             | 18.5             | 21.2             | 21.0             |
|                    | 64QAM      | 1                | 0            | 19.8                    | 19.8             | 22.8             | 17.8             | 18.3             | 20.6             | 19.2             | 20.3             | 22.9             | 15.4             | 16.5             | 19.1             |
|                    |            | 1                | 1            | 20.0                    | 19.7             | 23.5             | 18.0             | 18.2             | 21.7             | 19.1             | 19.9             | 23.8             | 15.6             | 16.3             | 20.2             |
|                    |            | 120              | 60           | 21.2                    | 23.7             | 23.6             | 19.4             | 21.8             | 21.8             | 21.4             | 23.6             | 23.6             | 17.7             | 19.7             | 19.5             |
|                    |            | 240              | 0            | 21.2                    | 23.6             | 23.6             | 19.4             | 21.9             | 21.8             | 21.3             | 23.6             | 20.6             | 17.5             | 19.8             | 19.5             |
|                    | 256QAM     | 1                | 0            | 17.7                    | 17.5             | 21.0             | 15.1             | 15.5             | 18.7             | 15.7             | 17.6             | 21.0             | 13.4             | 14.8             | 17.6             |
|                    |            | 1                | 1            | 17.7                    | 17.4             | 21.2             | 15.3             | 15.5             | 18.9             | 16.3             | 17.6             | 20.7             | 13.4             | 14.4             | 17.8             |
|                    |            | 120              | 60           | 19.1                    | 21.1             | 21.0             | 16.9             | 18.8             | 18.7             | 18.9             | 20.7             | 20.7             | 15.8             | 17.3             | 17.2             |
|                    |            | 240              | 0            | 19.1                    | 21.0             | 21.0             | 16.9             | 18.8             | 18.8             | 18.9             | 20.7             | 20.8             | 15.7             | 17.4             | 17.2             |

# 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<br>2546.0        | 528600<br>2593.0 | 528000<br>2640.0 | 509200<br>2546.0 | 528600<br>2593.0 | 528000<br>2640.0 | 509200<br>2546.0 | 528600<br>2593.0 | 528000<br>2640.0 | 509200<br>2546.0 | 528600<br>2593.0 | 528000<br>2640.0 |
| 100.0              | BPSK       | 1                | 0            | 21.4                    | 20.8             | 23.2             | 19.3             | 18.8             | 21.1             | 19.6             | 20.2             | 22.1             | 18.0             | 18.8             | 20.0             |
|                    |            | 1                | 1            | 21.6                    | 21.4             | 26.6             | 18.9             | 18.8             | 24.2             | 19.4             | 20.3             | 25.8             | 17.6             | 18.8             | 22.7             |
|                    |            | 135              | 67           | 23.1                    | 26.4             | 26.6             | 20.9             | 24.3             | 24.3             | 22.4             | 25.7             | 25.7             | 20.7             | 22.7             | 22.5             |
|                    |            | 270              | 0            | 23.2                    | 26.7             | 26.1             | 20.9             | 23.8             | 23.8             | 22.3             | 25.1             | 25.1             | 20.6             | 22.7             | 22.5             |
|                    | QPSK       | 1                | 0            | 20.9                    | 26.2             | 22.9             | 18.2             | 18.1             | 20.9             | 19.1             | 20.0             | 22.0             | 17.1             | 18.3             | 20.1             |
|                    |            | 1                | 1            | 21.2                    | 20.7             | 26.5             | 18.2             | 18.5             | 24.5             | 19.1             | 20.0             | 26.2             | 16.8             | 18.3             | 22.5             |
|                    |            | 135              | 67           | 22.2                    | 20.8             | 26.6             | 19.9             | 24.3             | 24.2             | 21.4             | 25.6             | 25.6             | 19.7             | 22.7             | 22.5             |
|                    |            | 270              | 0            | 22.2                    | 26.6             | 25.6             | 19.9             | 23.4             | 23.4             | 21.3             | 24.6             | 24.7             | 19.6             | 22.7             | 22.5             |
|                    | 16QAM      | 1                | 0            | 21.0                    | 25.6             | 23.3             | 18.5             | 18.7             | 21.0             | 19.2             | 20.0             | 22.2             | 16.5             | 18.0             | 19.8             |
|                    |            | 1                | 1            | 21.1                    | 20.5             | 25.8             | 18.3             | 18.9             | 23.6             | 19.6             | 20.2             | 24.6             | 16.7             | 17.8             | 22.3             |
|                    |            | 135              | 67           | 21.6                    | 20.8             | 25.5             | 19.5             | 23.3             | 23.3             | 20.9             | 24.6             | 24.6             | 18.8             | 22.2             | 22.0             |
|                    |            | 270              | 0            | 21.6                    | 25.5             | 24.6             | 19.4             | 22.3             | 22.4             | 20.8             | 23.6             | 23.7             | 18.6             | 21.3             | 21.1             |
|                    | 64QAM      | 1                | 0            | 20.4                    | 24.7             | 23.2             | 18.0             | 18.3             | 21.5             | 18.8             | 19.1             | 22.1             | 15.7             | 16.7             | 18.9             |
|                    |            | 1                | 1            | 20.3                    | 20.5             | 24.2             | 18.0             | 18.1             | 21.8             | 18.9             | 19.8             | 23.0             | 15.7             | 16.8             | 20.2             |
|                    |            | 135              | 67           | 21.7                    | 20.2             | 24.0             | 19.4             | 21.8             | 21.8             | 20.9             | 23.1             | 23.1             | 17.7             | 19.6             | 19.5             |
|                    |            | 270              | 0            | 21.7                    | 24.2             | 24.1             | 19.4             | 21.8             | 21.9             | 20.8             | 23.2             | 23.1             | 17.5             | 19.8             | 19.5             |
|                    | 256QAM     | 1                | 0            | 17.7                    | 17.4             | 21.3             | 15.5             | 15.1             | 18.8             | 16.4             | 17.4             | 20.4             | 12.8             | 14.7             | 17.8             |
|                    |            | 1                | 1            | 17.6                    | 18.0             | 21.4             | 15.4             | 15.1             | 19.0             | 16.6             | 17.6             | 20.6             | 13.6             | 14.7             | 17.5             |
|                    |            | 135              | 67           | 19.1                    | 21.0             | 21.0             | 16.9             | 18.8             | 18.9             | 19.0             | 20.7             | 20.7             | 15.9             | 17.3             | 17.2             |
|                    |            | 270              | 0            | 19.1                    | 21.1             | 21.0             | 16.9             | 18.8             | 18.9             | 18.9             | 20.8             | 20.7             | 15.7             | 17.4             | 17.2             |

## 7.15. LTE BAND 48

|                   |       |            |           |
|-------------------|-------|------------|-----------|
| Test Engineer ID: | 19467 | Test Date: | 7/23/2020 |
|-------------------|-------|------------|-----------|

### 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            | 25.7                    | 25.1  | 25.5  | 21.8  | 22.0  | 22.1  | 24.8  | 25.0  | 24.7  | 22.1  | 22.1  | 21.8  |
|                    |            | 1                | 12           | 25.6                    | 25.1  | 25.4  | 21.6  | 21.9  | 22.0  | 24.7  | 24.9  | 24.7  | 22.1  | 22.0  | 21.7  |
|                    |            | 1                | 24           | 25.7                    | 25.2  | 25.5  | 21.8  | 22.0  | 22.1  | 24.8  | 25.0  | 24.7  | 22.1  | 22.1  | 21.7  |
|                    |            | 12               | 0            | 24.7                    | 24.4  | 24.6  | 20.8  | 21.0  | 21.2  | 23.9  | 24.0  | 23.8  | 21.2  | 21.2  | 20.9  |
|                    |            | 12               | 6            | 24.7                    | 24.4  | 24.5  | 20.9  | 21.0  | 21.1  | 23.8  | 24.0  | 23.8  | 21.2  | 21.3  | 21.0  |
|                    |            | 12               | 11           | 24.7                    | 24.4  | 24.5  | 20.8  | 21.0  | 21.1  | 23.8  | 24.0  | 23.8  | 21.2  | 21.3  | 21.0  |
|                    |            | 25               | 0            | 24.7                    | 24.4  | 24.6  | 20.8  | 21.0  | 21.1  | 23.8  | 24.0  | 23.8  | 21.2  | 21.2  | 20.9  |
|                    | 16QAM      | 1                | 0            | 25.1                    | 24.7  | 24.9  | 21.2  | 21.3  | 21.6  | 24.1  | 24.3  | 24.2  | 21.3  | 21.3  | 20.8  |
|                    |            | 1                | 12           | 25.0                    | 24.7  | 24.8  | 21.2  | 21.3  | 21.5  | 24.1  | 24.3  | 24.0  | 21.3  | 21.3  | 20.7  |
|                    |            | 1                | 24           | 25.1                    | 24.7  | 25.0  | 21.2  | 21.3  | 21.6  | 24.2  | 24.3  | 24.2  | 21.3  | 21.3  | 20.8  |
|                    |            | 12               | 0            | 23.9                    | 23.5  | 23.7  | 20.0  | 20.0  | 20.2  | 22.9  | 23.1  | 22.9  | 20.2  | 20.3  | 20.0  |
|                    |            | 12               | 6            | 23.8                    | 23.6  | 23.7  | 19.9  | 20.0  | 20.3  | 22.9  | 23.1  | 22.9  | 20.1  | 20.3  | 19.9  |
|                    |            | 12               | 11           | 23.8                    | 23.5  | 23.7  | 20.0  | 20.0  | 20.2  | 22.9  | 23.0  | 22.9  | 20.2  | 20.2  | 19.9  |
|                    |            | 25               | 0            | 23.8                    | 23.5  | 23.6  | 19.9  | 20.0  | 20.1  | 22.9  | 23.1  | 22.8  | 20.2  | 20.2  | 19.9  |
|                    | 64QAM      | 1                | 0            | 23.9                    | 23.6  | 23.7  | 20.1  | 20.6  | 20.7  | 23.0  | 23.6  | 23.2  | 20.7  | 20.4  | 19.6  |
|                    |            | 1                | 12           | 23.7                    | 23.5  | 23.6  | 20.0  | 20.6  | 20.7  | 22.9  | 23.6  | 23.3  | 20.7  | 20.3  | 19.5  |
|                    |            | 1                | 24           | 23.8                    | 23.6  | 23.6  | 20.1  | 20.6  | 20.6  | 23.0  | 23.6  | 23.3  | 20.7  | 20.4  | 19.6  |
|                    |            | 12               | 0            | 22.8                    | 22.7  | 22.7  | 19.1  | 20.6  | 20.6  | 22.0  | 23.6  | 23.3  | 19.3  | 19.2  | 19.0  |
|                    |            | 12               | 6            | 22.8                    | 22.7  | 22.7  | 19.1  | 20.6  | 20.6  | 22.0  | 23.6  | 23.3  | 19.3  | 19.2  | 19.0  |
|                    |            | 12               | 11           | 22.8                    | 22.6  | 22.7  | 19.1  | 20.6  | 20.6  | 22.0  | 23.6  | 23.3  | 19.3  | 19.2  | 19.0  |
|                    |            | 25               | 0            | 22.8                    | 22.7  | 22.6  | 19.1  | 20.6  | 20.6  | 22.0  | 23.6  | 23.3  | 19.2  | 19.1  | 19.0  |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.9  | 21.0  | 17.4  | 17.5  | 17.5  | 20.3  | 20.4  | 20.1  | 17.6  | 17.6  | 17.2  |
|                    |            | 1                | 12           | 21.1                    | 20.9  | 20.9  | 17.4  | 17.4  | 17.4  | 20.3  | 20.4  | 20.1  | 17.5  | 17.5  | 17.1  |
|                    |            | 1                | 24           | 21.2                    | 20.9  | 21.0  | 17.4  | 17.5  | 17.5  | 20.3  | 20.5  | 20.1  | 17.5  | 17.6  | 17.0  |
|                    |            | 12               | 0            | 20.8                    | 20.7  | 20.6  | 17.1  | 17.1  | 17.2  | 19.9  | 20.1  | 19.9  | 17.3  | 17.2  | 16.9  |
|                    |            | 12               | 6            | 20.7                    | 20.6  | 20.6  | 17.0  | 17.1  | 17.2  | 20.0  | 20.1  | 19.9  | 17.2  | 17.2  | 16.9  |
|                    |            | 12               | 11           | 20.8                    | 20.6  | 20.6  | 17.0  | 17.0  | 17.2  | 19.9  | 20.1  | 19.8  | 17.2  | 17.2  | 16.8  |
|                    |            | 25               | 0            | 20.8                    | 20.6  | 20.6  | 17.1  | 17.1  | 17.2  | 20.0  | 20.1  | 19.8  | 17.2  | 17.2  | 16.9  |

## 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 |
| 10.0               | QPSK       | 1                | 0            | 25.5                    | 25.7  | 25.5  | 21.8  | 22.0  | 22.0  | 24.7  | 25.0  | 24.8  | 22.2  | 22.2  | 21.9  |
|                    |            | 1                | 24           | 25.4                    | 25.7  | 25.5  | 21.7  | 22.0  | 21.9  | 24.6  | 24.9  | 24.7  | 22.1  | 22.2  | 21.8  |
|                    |            | 1                | 49           | 25.5                    | 25.7  | 25.5  | 21.8  | 22.0  | 22.0  | 24.7  | 24.9  | 24.8  | 22.2  | 22.1  | 21.9  |
|                    |            | 25               | 0            | 24.5                    | 24.8  | 24.6  | 20.9  | 21.1  | 21.1  | 23.9  | 24.1  | 23.8  | 21.3  | 21.3  | 21.1  |
|                    |            | 25               | 12           | 24.5                    | 24.8  | 24.7  | 21.0  | 21.0  | 21.1  | 23.9  | 24.2  | 23.9  | 21.3  | 21.3  | 21.1  |
|                    |            | 25               | 24           | 24.5                    | 24.8  | 24.7  | 20.9  | 21.0  | 21.2  | 23.9  | 24.1  | 23.9  | 21.3  | 21.3  | 21.0  |
|                    |            | 50               | 0            | 24.5                    | 24.9  | 24.6  | 21.0  | 21.0  | 21.1  | 23.9  | 24.1  | 23.9  | 21.3  | 21.3  | 21.0  |
|                    | 16QAM      | 1                | 0            | 25.0                    | 25.2  | 25.0  | 21.4  | 21.5  | 21.4  | 24.2  | 24.4  | 24.3  | 21.2  | 21.5  | 21.0  |
|                    |            | 1                | 24           | 24.8                    | 25.1  | 25.0  | 21.3  | 21.5  | 21.4  | 24.1  | 24.4  | 24.2  | 21.1  | 21.4  | 20.8  |
|                    |            | 1                | 49           | 24.9                    | 25.1  | 25.0  | 21.3  | 21.5  | 21.5  | 24.2  | 24.3  | 24.3  | 21.2  | 21.5  | 20.9  |
|                    |            | 25               | 0            | 23.5                    | 23.8  | 23.6  | 20.0  | 20.1  | 20.1  | 22.9  | 23.0  | 22.9  | 20.3  | 20.3  | 20.1  |
|                    |            | 25               | 12           | 23.6                    | 23.9  | 23.7  | 19.9  | 20.1  | 20.1  | 22.9  | 23.1  | 22.9  | 20.2  | 20.4  | 20.0  |
|                    |            | 25               | 24           | 23.6                    | 23.9  | 23.7  | 19.9  | 20.1  | 20.1  | 22.9  | 23.1  | 22.9  | 20.2  | 20.4  | 20.0  |
|                    |            | 50               | 0            | 23.5                    | 23.9  | 23.6  | 20.0  | 20.1  | 20.0  | 22.9  | 23.2  | 22.9  | 20.3  | 20.3  | 20.0  |
|                    | 64QAM      | 1                | 0            | 23.4                    | 23.6  | 23.4  | 20.8  | 20.2  | 20.3  | 23.2  | 23.2  | 23.3  | 20.7  | 20.3  | 19.6  |
|                    |            | 1                | 24           | 23.3                    | 23.6  | 23.4  | 20.6  | 20.2  | 20.3  | 23.1  | 23.2  | 23.4  | 20.5  | 20.3  | 19.5  |
|                    |            | 1                | 49           | 23.4                    | 23.6  | 23.5  | 20.7  | 20.2  | 20.3  | 23.3  | 23.3  | 23.4  | 20.6  | 20.4  | 19.5  |
|                    |            | 25               | 0            | 22.6                    | 22.8  | 22.6  | 19.0  | 20.2  | 20.3  | 21.9  | 23.3  | 23.4  | 19.3  | 19.3  | 19.1  |
|                    |            | 25               | 12           | 22.6                    | 22.9  | 22.7  | 19.1  | 20.2  | 20.3  | 22.0  | 23.3  | 23.4  | 19.3  | 19.3  | 19.1  |
|                    |            | 25               | 24           | 22.5                    | 22.8  | 22.7  | 19.0  | 20.2  | 20.4  | 21.9  | 23.3  | 23.4  | 19.3  | 19.3  | 19.1  |
|                    |            | 50               | 0            | 22.5                    | 22.9  | 22.6  | 19.0  | 20.2  | 20.4  | 21.9  | 23.3  | 23.4  | 19.3  | 19.3  | 19.0  |
|                    | 256QAM     | 1                | 0            | 20.8                    | 21.0  | 20.8  | 16.9  | 17.3  | 17.4  | 20.1  | 20.3  | 19.8  | 17.0  | 17.6  | 17.1  |
|                    |            | 1                | 24           | 20.7                    | 21.0  | 20.8  | 16.9  | 17.2  | 17.4  | 20.1  | 20.3  | 19.7  | 16.9  | 17.5  | 17.0  |
|                    |            | 1                | 49           | 20.7                    | 21.0  | 20.8  | 16.9  | 17.2  | 17.5  | 20.1  | 20.3  | 19.7  | 17.0  | 17.7  | 16.8  |
|                    |            | 25               | 0            | 20.6                    | 20.8  | 20.6  | 17.1  | 17.1  | 17.2  | 20.0  | 20.1  | 20.0  | 17.4  | 17.2  | 17.0  |
|                    |            | 25               | 12           | 20.6                    | 20.8  | 20.7  | 17.1  | 17.1  | 17.2  | 20.0  | 20.2  | 20.0  | 17.4  | 17.3  | 17.1  |
|                    |            | 25               | 24           | 20.5                    | 20.8  | 20.6  | 17.1  | 17.1  | 17.3  | 20.0  | 20.1  | 20.0  | 17.3  | 17.3  | 17.0  |
|                    |            | 50               | 0            | 20.6                    | 20.9  | 20.6  | 17.0  | 17.1  | 17.2  | 20.0  | 20.2  | 19.9  | 17.3  | 17.3  | 17.1  |

## 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  |
| 15.0               | QPSK       | 1                | 0            | 3557.5                  | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 | 3557.5 | 3625.0 | 3692.5 |
|                    |            | 1                | 37           | 25.5                    | 25.7   | 25.5   | 21.8   | 22.0   | 22.0   | 24.7   | 25.0   | 24.8   | 22.1   | 22.1   | 21.8   |
|                    |            | 1                | 74           | 25.4                    | 25.6   | 25.5   | 21.7   | 21.9   | 21.9   | 24.7   | 24.9   | 24.7   | 22.0   | 22.1   | 21.8   |
|                    |            | 36               | 0            | 25.5                    | 25.7   | 25.6   | 21.9   | 22.0   | 22.1   | 24.9   | 25.0   | 24.8   | 22.2   | 22.2   | 21.8   |
|                    |            | 36               | 16           | 24.7                    | 24.9   | 24.7   | 20.9   | 21.2   | 21.2   | 24.0   | 24.1   | 23.9   | 21.2   | 21.2   | 21.0   |
|                    |            | 36               | 35           | 24.6                    | 24.9   | 24.6   | 21.0   | 21.1   | 21.2   | 24.0   | 24.2   | 23.9   | 21.3   | 21.2   | 21.0   |
|                    |            | 75               | 0            | 24.6                    | 24.9   | 24.7   | 21.0   | 21.1   | 21.2   | 23.9   | 24.1   | 23.9   | 21.2   | 21.2   | 21.0   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.9   | 24.6   | 21.0   | 21.1   | 21.1   | 24.0   | 24.0   | 23.9   | 21.2   | 21.1   | 20.9   |
|                    |            | 1                | 37           | 24.9                    | 25.2   | 25.0   | 21.4   | 21.5   | 21.4   | 24.3   | 24.5   | 24.2   | 21.1   | 21.3   | 20.9   |
|                    |            | 1                | 74           | 24.9                    | 25.2   | 25.0   | 21.4   | 21.4   | 21.5   | 24.2   | 24.4   | 24.2   | 21.1   | 21.2   | 20.8   |
|                    |            | 36               | 0            | 25.0                    | 25.2   | 25.2   | 21.4   | 21.4   | 21.6   | 24.3   | 24.5   | 24.3   | 21.1   | 21.3   | 20.8   |
|                    |            | 36               | 16           | 23.7                    | 23.9   | 23.7   | 20.0   | 20.2   | 20.1   | 23.0   | 23.1   | 22.9   | 20.2   | 20.3   | 19.9   |
|                    |            | 36               | 35           | 23.6                    | 23.9   | 23.7   | 20.0   | 20.2   | 20.1   | 22.9   | 23.2   | 22.9   | 20.2   | 20.2   | 20.0   |
|                    |            | 75               | 0            | 23.7                    | 23.8   | 23.7   | 20.0   | 20.1   | 20.2   | 22.9   | 23.1   | 22.9   | 20.2   | 20.2   | 19.9   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.9   | 23.7   | 20.0   | 20.1   | 20.2   | 23.0   | 23.0   | 22.9   | 20.2   | 20.2   | 20.0   |
|                    |            | 1                | 37           | 23.4                    | 23.7   | 23.5   | 20.6   | 20.4   | 20.2   | 23.5   | 23.5   | 23.0   | 20.5   | 20.2   | 19.5   |
|                    |            | 1                | 74           | 23.4                    | 23.7   | 23.5   | 20.6   | 20.4   | 20.2   | 23.5   | 23.4   | 23.0   | 20.5   | 20.2   | 19.4   |
|                    |            | 36               | 0            | 23.5                    | 23.7   | 23.7   | 20.7   | 20.4   | 20.2   | 23.6   | 23.5   | 23.0   | 20.6   | 20.2   | 19.5   |
|                    |            | 36               | 16           | 22.8                    | 23.0   | 22.8   | 19.1   | 20.4   | 20.2   | 22.1   | 23.5   | 23.0   | 19.3   | 19.2   | 19.1   |
|                    |            | 36               | 35           | 22.8                    | 23.0   | 22.8   | 19.1   | 20.4   | 20.3   | 22.1   | 23.5   | 23.0   | 19.3   | 19.2   | 19.1   |
|                    |            | 75               | 0            | 22.7                    | 22.9   | 22.7   | 19.1   | 20.4   | 20.2   | 22.0   | 23.5   | 23.0   | 19.3   | 19.2   | 19.0   |
|                    | 256QAM     | 1                | 0            | 20.8                    | 21.1   | 20.9   | 16.9   | 17.4   | 17.3   | 19.7   | 20.4   | 20.1   | 16.8   | 17.4   | 17.0   |
|                    |            | 1                | 37           | 20.7                    | 21.0   | 20.9   | 16.8   | 17.3   | 17.3   | 19.8   | 20.3   | 19.9   | 16.8   | 17.4   | 16.8   |
|                    |            | 1                | 74           | 20.9                    | 21.1   | 21.1   | 16.9   | 17.4   | 17.5   | 19.8   | 20.4   | 20.1   | 16.9   | 17.5   | 17.0   |
|                    |            | 36               | 0            | 20.8                    | 21.0   | 20.8   | 17.1   | 17.1   | 17.2   | 20.0   | 20.1   | 19.9   | 17.3   | 17.2   | 17.0   |
|                    |            | 36               | 16           | 20.7                    | 21.0   | 20.7   | 17.1   | 17.1   | 17.2   | 20.0   | 20.2   | 19.9   | 17.3   | 17.2   | 17.0   |
|                    |            | 36               | 35           | 20.7                    | 21.0   | 20.8   | 17.1   | 17.1   | 17.3   | 20.0   | 20.1   | 20.0   | 17.2   | 17.2   | 17.0   |
|                    |            | 75               | 0            | 20.7                    | 21.0   | 20.7   | 17.1   | 17.1   | 17.2   | 20.0   | 20.1   | 19.9   | 17.3   | 17.3   | 17.0   |

## 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            | 25.6                    | 23.6   | 25.7   | 22.1   | 22.2   | 22.1   | 24.9   | 25.2   | 25.0   | 22.2   | 22.2   | 21.9   |
|                    |            | 1                | 49           | 25.5                    | 23.5   | 25.6   | 21.9   | 22.0   | 22.1   | 24.8   | 25.1   | 24.8   | 22.0   | 22.1   | 21.7   |
|                    |            | 1                | 99           | 25.6                    | 23.5   | 25.7   | 22.1   | 22.1   | 22.2   | 24.9   | 25.0   | 24.9   | 22.0   | 22.1   | 21.7   |
|                    |            | 50               | 0            | 24.6                    | 23.5   | 24.7   | 21.1   | 21.2   | 21.2   | 23.9   | 24.1   | 23.9   | 21.2   | 21.2   | 20.9   |
|                    |            | 50               | 24           | 24.6                    | 23.6   | 24.7   | 21.0   | 21.1   | 21.1   | 24.0   | 24.2   | 23.9   | 21.1   | 21.2   | 20.9   |
|                    |            | 50               | 49           | 24.6                    | 23.6   | 24.7   | 21.0   | 21.1   | 20.9   | 24.0   | 24.2   | 23.9   | 21.1   | 21.2   | 20.9   |
|                    |            | 100              | 0            | 24.7                    | 23.5   | 24.7   | 21.1   | 21.2   | 20.6   | 24.0   | 24.1   | 24.0   | 21.2   | 21.2   | 20.9   |
|                    | 16QAM      | 1                | 0            | 25.1                    | 23.7   | 25.1   | 21.1   | 21.6   | 20.9   | 24.3   | 24.3   | 24.4   | 21.1   | 21.3   | 21.0   |
|                    |            | 1                | 49           | 24.9                    | 23.6   | 25.0   | 21.0   | 21.5   | 20.9   | 24.2   | 24.1   | 24.3   | 21.0   | 21.2   | 20.7   |
|                    |            | 1                | 99           | 25.1                    | 23.6   | 25.2   | 21.1   | 21.5   | 21.0   | 24.3   | 24.2   | 24.3   | 21.1   | 21.3   | 20.8   |
|                    |            | 50               | 0            | 23.6                    | 22.9   | 23.7   | 20.1   | 20.2   | 19.8   | 22.9   | 23.1   | 23.0   | 20.2   | 20.2   | 19.9   |
|                    |            | 50               | 24           | 23.7                    | 23.0   | 23.8   | 20.1   | 20.2   | 19.8   | 23.0   | 23.2   | 23.0   | 20.2   | 20.2   | 19.9   |
|                    |            | 50               | 49           | 23.7                    | 23.0   | 23.7   | 20.0   | 20.1   | 20.0   | 23.0   | 23.2   | 23.0   | 20.2   | 20.2   | 19.8   |
|                    |            | 100              | 0            | 23.6                    | 23.0   | 23.7   | 20.1   | 20.1   | 19.9   | 23.0   | 23.1   | 22.9   | 20.2   | 20.1   | 19.8   |
|                    | 64QAM      | 1                | 0            | 24.1                    | 23.6   | 24.2   | 20.3   | 20.5   | 20.6   | 23.2   | 23.5   | 23.4   | 20.1   | 20.1   | 20.3   |
|                    |            | 1                | 49           | 24.0                    | 23.4   | 24.1   | 20.2   | 20.5   | 20.6   | 23.2   | 23.4   | 23.5   | 20.1   | 20.1   | 20.1   |
|                    |            | 1                | 99           | 24.2                    | 23.4   | 24.2   | 20.3   | 20.5   | 20.6   | 23.3   | 23.4   | 23.5   | 20.2   | 20.2   | 20.1   |
|                    |            | 50               | 0            | 22.6                    | 22.9   | 22.7   | 19.1   | 20.5   | 20.6   | 22.0   | 23.5   | 23.5   | 19.2   | 19.2   | 19.0   |
|                    |            | 50               | 24           | 22.7                    | 23.0   | 22.8   | 19.1   | 20.5   | 20.7   | 22.1   | 23.5   | 23.5   | 19.2   | 19.2   | 19.0   |
|                    |            | 50               | 49           | 22.7                    | 23.0   | 22.7   | 19.1   | 20.5   | 20.6   | 22.1   | 23.4   | 23.5   | 19.2   | 19.2   | 18.9   |
|                    |            | 100              | 0            | 22.7                    | 22.9   | 22.7   | 19.1   | 20.5   | 20.6   | 22.0   | 23.5   | 23.5   | 19.2   | 19.2   | 18.9   |
|                    | 256QAM     | 1                | 0            | 20.9                    | 20.2   | 21.0   | 17.4   | 17.6   | 17.4   | 20.3   | 20.5   | 20.2   | 17.1   | 17.4   | 17.3   |
|                    |            | 1                | 49           | 20.8                    | 20.2   | 20.9   | 17.2   | 17.5   | 17.4   | 20.2   | 20.5   | 20.1   | 17.1   | 17.4   | 17.0   |
|                    |            | 1                | 99           | 20.9                    | 20.2   | 21.0   | 17.3   | 17.6   | 17.5   | 20.3   | 20.6   | 20.1   | 17.2   | 17.5   | 17.0   |
|                    |            | 50               | 0            | 20.6                    | 20.0   | 20.7   | 17.2   | 17.2   | 17.0   | 20.0   | 20.2   | 20.0   | 17.3   | 17.2   | 16.9   |
|                    |            | 50               | 24           | 20.7                    | 20.1   | 20.8   | 17.1   | 17.2   | 17.1   | 20.1   | 20.2   | 20.0   | 17.2   | 17.2   | 16.9   |
|                    |            | 50               | 49           | 20.7                    | 20.0   | 20.8   | 17.1   | 17.2   | 17.2   | 20.1   | 20.2   | 20.0   | 17.2   | 17.1   | 16.9   |
|                    |            | 100              | 0            | 20.7                    | 20.0   | 20.8   | 17.1   | 17.2   | 17.1   | 20.1   | 20.2   | 20.0   | 17.2   | 17.2   | 16.9   |



## 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            | 25.7                    | 25.7   | 25.7   | 23.0   | 23.0   | 23.1   | 24.6   | 24.6   | 24.7   | 22.7   | 22.6   | 22.5   |
|                    |            | 1                | 7            | 25.7                    | 25.6   | 25.6   | 22.9   | 23.0   | 22.9   | 24.6   | 24.6   | 24.7   | 22.7   | 22.7   | 22.4   |
|                    |            | 1                | 14           | 25.6                    | 25.6   | 25.6   | 22.9   | 23.0   | 22.9   | 24.5   | 24.6   | 24.6   | 22.7   | 22.7   | 22.5   |
|                    |            | 8                | 0            | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.7   | 23.7   | 23.7   | 21.8   | 21.7   | 21.5   |
|                    |            | 8                | 4            | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.7   | 23.7   | 23.7   | 21.8   | 21.7   | 21.6   |
|                    |            | 8                | 7            | 24.8                    | 24.8   | 24.8   | 22.0   | 22.1   | 22.1   | 23.7   | 23.7   | 23.7   | 21.8   | 21.7   | 21.6   |
|                    | 16QAM      | 15               | 0            | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.7   | 23.7   | 23.7   | 21.8   | 21.7   | 21.5   |
|                    |            | 1                | 0            | 24.8                    | 24.8   | 24.8   | 22.1   | 22.2   | 22.2   | 23.7   | 23.7   | 24.1   | 21.7   | 21.8   | 21.5   |
|                    |            | 1                | 7            | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.7   | 23.6   | 24.0   | 21.6   | 21.8   | 21.5   |
|                    |            | 1                | 14           | 24.8                    | 24.8   | 24.7   | 22.0   | 22.1   | 22.0   | 23.6   | 23.6   | 23.9   | 21.7   | 21.9   | 21.4   |
|                    |            | 8                | 0            | 23.9                    | 23.9   | 23.8   | 21.2   | 21.2   | 21.2   | 22.8   | 22.8   | 22.8   | 20.7   | 20.7   | 20.6   |
|                    |            | 8                | 4            | 23.9                    | 23.9   | 23.8   | 21.2   | 21.2   | 21.2   | 22.8   | 22.8   | 22.8   | 20.7   | 20.7   | 20.6   |
|                    | 64QAM      | 8                | 7            | 23.9                    | 23.8   | 23.8   | 21.2   | 21.2   | 21.2   | 22.7   | 22.8   | 22.8   | 20.7   | 20.7   | 20.5   |
|                    |            | 15               | 0            | 23.8                    | 23.7   | 23.7   | 21.1   | 21.1   | 21.1   | 22.7   | 22.7   | 22.7   | 20.8   | 20.7   | 20.5   |
|                    |            | 1                | 0            | 24.1                    | 24.0   | 24.0   | 21.4   | 21.4   | 21.4   | 23.0   | 23.0   | 22.8   | 21.1   | 20.8   | 20.1   |
|                    |            | 1                | 7            | 24.0                    | 24.0   | 23.8   | 21.3   | 21.3   | 21.2   | 22.9   | 23.0   | 22.8   | 21.0   | 20.9   | 20.1   |
|                    |            | 1                | 14           | 24.0                    | 24.0   | 23.9   | 21.3   | 21.3   | 21.3   | 22.9   | 22.9   | 22.7   | 21.1   | 20.8   | 20.1   |
|                    |            | 8                | 0            | 22.8                    | 22.8   | 22.8   | 20.1   | 20.1   | 20.2   | 21.7   | 21.8   | 21.8   | 19.8   | 19.7   | 19.6   |
|                    | 256QAM     | 8                | 4            | 22.8                    | 22.8   | 22.8   | 20.2   | 20.2   | 20.2   | 21.8   | 21.8   | 21.8   | 19.9   | 19.7   | 19.6   |
|                    |            | 8                | 7            | 22.8                    | 22.8   | 22.8   | 20.2   | 20.2   | 20.1   | 21.7   | 21.8   | 21.8   | 19.8   | 19.7   | 19.6   |
|                    |            | 15               | 0            | 22.8                    | 22.8   | 22.8   | 20.2   | 20.2   | 20.2   | 21.8   | 21.7   | 21.8   | 19.8   | 19.7   | 19.5   |
|                    |            | 1                | 0            | 20.6                    | 20.8   | 20.2   | 18.4   | 17.8   | 17.7   | 19.8   | 19.3   | 19.4   | 17.6   | 18.2   | 17.8   |
|                    |            | 1                | 7            | 20.5                    | 20.8   | 20.1   | 18.3   | 17.8   | 17.8   | 19.8   | 19.1   | 19.4   | 17.6   | 18.2   | 17.7   |
|                    |            | 1                | 14           | 20.5                    | 20.8   | 20.2   | 18.5   | 17.8   | 17.7   | 19.8   | 19.2   | 19.4   | 17.6   | 18.2   | 17.8   |
|                    |            | 8                | 0            | 20.7                    | 20.6   | 20.4   | 18.1   | 18.0   | 17.9   | 19.6   | 19.3   | 19.6   | 18.1   | 17.9   | 17.8   |
|                    |            | 8                | 4            | 20.7                    | 20.5   | 20.5   | 18.1   | 18.0   | 17.9   | 19.6   | 19.4   | 19.6   | 18.0   | 18.0   | 17.8   |
|                    |            | 8                | 7            | 20.7                    | 20.5   | 20.5   | 18.2   | 18.1   | 17.9   | 19.6   | 19.4   | 19.6   | 18.0   | 17.9   | 17.8   |
|                    |            | 15               | 0            | 20.6                    | 20.5   | 20.6   | 18.2   | 18.2   | 17.9   | 19.5   | 19.5   | 19.5   | 18.0   | 17.9   | 17.8   |

## 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   | 23.0   | 23.1   | 24.6   | 24.7   | 24.5   | 22.6   | 22.6   | 22.5   |
|                    |            | 1                | 12           | 25.7                    | 25.7   | 25.7   | 23.1   | 23.0   | 23.0   | 24.7   | 24.7   | 24.5   | 22.7   | 22.7   | 22.5   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.6   | 23.0   | 23.0   | 22.9   | 24.6   | 24.7   | 24.4   | 22.7   | 22.7   | 22.5   |
|                    |            | 12               | 0            | 24.7                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.6   | 23.6   | 23.6   | 21.8   | 21.8   | 21.6   |
|                    |            | 12               | 6            | 24.8                    | 24.7   | 24.7   | 22.1   | 22.1   | 22.1   | 23.6   | 23.6   | 23.6   | 21.9   | 21.7   | 21.6   |
|                    |            | 12               | 11           | 24.7                    | 24.7   | 24.7   | 22.0   | 22.1   | 22.0   | 23.6   | 23.6   | 23.5   | 21.8   | 21.8   | 21.6   |
|                    |            | 25               | 0            | 24.7                    | 24.7   | 24.6   | 22.1   | 22.1   | 22.0   | 23.6   | 23.6   | 23.6   | 21.9   | 21.8   | 21.6   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.9   | 25.0   | 22.3   | 22.2   | 22.3   | 23.8   | 23.7   | 24.2   | 21.7   | 21.8   | 21.7   |
|                    |            | 1                | 12           | 24.9                    | 24.9   | 25.1   | 22.4   | 22.2   | 22.3   | 23.9   | 23.8   | 24.2   | 21.7   | 21.8   | 21.7   |
|                    |            | 1                | 24           | 24.8                    | 24.8   | 24.9   | 22.3   | 22.2   | 22.2   | 23.8   | 23.7   | 24.1   | 21.7   | 21.8   | 21.7   |
|                    |            | 12               | 0            | 23.8                    | 23.8   | 23.8   | 21.2   | 21.2   | 21.2   | 22.7   | 22.7   | 22.7   | 20.9   | 20.7   | 20.7   |
|                    |            | 12               | 6            | 23.8                    | 23.8   | 23.8   | 21.2   | 21.2   | 21.2   | 22.7   | 22.7   | 22.7   | 20.9   | 20.8   | 20.7   |
|                    |            | 12               | 11           | 23.7                    | 23.8   | 23.7   | 21.2   | 21.1   | 21.0   | 22.6   | 22.7   | 22.7   | 20.9   | 20.8   | 20.7   |
|                    |            | 25               | 0            | 23.7                    | 23.7   | 23.6   | 21.1   | 21.0   | 21.0   | 22.5   | 22.6   | 22.6   | 20.9   | 20.8   | 20.6   |
|                    | 64QAM      | 1                | 0            | 23.9                    | 23.9   | 24.0   | 21.4   | 21.3   | 21.5   | 22.8   | 22.5   | 23.0   | 20.6   | 21.2   | 20.8   |
|                    |            | 1                | 12           | 24.0                    | 24.0   | 24.0   | 21.5   | 21.4   | 21.4   | 22.9   | 22.5   | 22.9   | 20.6   | 21.2   | 20.8   |
|                    |            | 1                | 24           | 23.9                    | 23.9   | 23.9   | 21.4   | 21.3   | 21.3   | 22.8   | 22.5   | 22.8   | 20.6   | 21.2   | 20.8   |
|                    |            | 12               | 0            | 22.8                    | 22.8   | 22.8   | 20.3   | 20.2   | 20.2   | 21.8   | 21.7   | 21.6   | 19.9   | 19.9   | 19.6   |
|                    |            | 12               | 6            | 22.8                    | 22.8   | 22.8   | 20.3   | 20.2   | 20.2   | 21.8   | 21.7   | 21.6   | 19.9   | 19.9   | 19.7   |
|                    |            | 12               | 11           | 22.8                    | 22.8   | 22.8   | 20.2   | 20.1   | 20.1   | 21.7   | 21.7   | 21.5   | 19.9   | 19.9   | 19.6   |
|                    |            | 25               | 0            | 22.7                    | 22.8   | 22.7   | 20.2   | 20.1   | 20.1   | 21.6   | 21.6   | 21.6   | 19.9   | 19.8   | 19.6   |
|                    | 256QAM     | 1                | 0            | 20.5                    | 20.0   | 20.6   | 18.4   | 18.0   | 17.6   | 19.4   | 19.5   | 19.6   | 18.2   | 18.1   | 18.1   |
|                    |            | 1                | 12           | 20.4                    | 20.1   | 20.5   | 18.3   | 18.1   | 17.5   | 19.4   | 19.6   | 19.6   | 18.3   | 18.0   | 18.1   |
|                    |            | 1                | 24           | 20.4                    | 20.1   | 20.5   | 18.3   | 18.1   | 17.5   | 19.3   | 19.6   | 19.6   | 18.2   | 18.1   | 18.0   |
|                    |            | 12               | 0            | 20.5                    | 20.3   | 20.5   | 18.3   | 18.1   | 17.8   | 19.6   | 19.5   | 19.6   | 18.0   | 17.9   | 17.8   |
|                    |            | 12               | 6            | 20.5                    | 20.4   | 20.5   | 18.3   | 18.1   | 17.7   | 19.6   | 19.6   | 19.6   | 18.0   | 17.9   | 17.8   |
|                    |            | 12               | 11           | 20.5                    | 20.3   | 20.4   | 18.2   | 18.1   | 17.7   | 19.6   | 19.6   | 19.6   | 18.0   | 17.9   | 17.8   |
|                    |            | 25               | 0            | 20.5                    | 20.4   | 20.4   | 18.2   | 18.1   | 17.8   | 19.7   | 19.5   | 19.6   | 18.0   | 17.9   | 17.8   |

## 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   | 25.4   | 22.8   | 22.8   | 22.8   | 24.3   | 24.4   | 24.4   | 22.5   | 22.7   | 22.5   |
|                    |            | 1                | 24           | 25.7                    | 25.7   | 25.7   | 23.1   | 23.0   | 23.1   | 24.6   | 24.7   | 24.7   | 22.7   | 22.7   | 22.5   |
|                    |            | 1                | 49           | 25.5                    | 25.5   | 25.4   | 22.9   | 22.8   | 22.8   | 24.4   | 24.6   | 24.5   | 22.7   | 22.7   | 22.4   |
|                    |            | 25               | 0            | 24.7                    | 24.7   | 24.7   | 22.1   | 22.0   | 22.1   | 23.7   | 23.7   | 23.7   | 21.8   | 21.7   | 21.5   |
|                    |            | 25               | 12           | 24.9                    | 24.9   | 24.8   | 22.2   | 22.2   | 22.1   | 23.7   | 23.7   | 23.7   | 21.9   | 21.7   | 21.5   |
|                    |            | 25               | 24           | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.1   | 23.7   | 23.7   | 23.6   | 21.8   | 21.7   | 21.5   |
|                    |            | 50               | 0            | 24.8                    | 24.8   | 24.7   | 22.1   | 22.1   | 22.0   | 23.7   | 23.7   | 23.6   | 21.9   | 21.8   | 21.5   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.6   | 24.6   | 21.9   | 21.9   | 21.9   | 23.4   | 23.5   | 23.9   | 21.8   | 21.9   | 21.6   |
|                    |            | 1                | 24           | 24.8                    | 24.8   | 24.8   | 22.2   | 22.2   | 22.2   | 23.7   | 23.7   | 24.1   | 21.7   | 21.8   | 21.5   |
|                    |            | 1                | 49           | 24.6                    | 24.7   | 24.6   | 22.0   | 22.0   | 21.9   | 23.5   | 23.5   | 23.9   | 21.7   | 21.9   | 21.5   |
|                    |            | 25               | 0            | 23.8                    | 23.8   | 23.8   | 21.2   | 21.1   | 21.2   | 22.8   | 22.6   | 22.7   | 20.8   | 20.7   | 20.5   |
|                    |            | 25               | 12           | 24.0                    | 24.0   | 23.8   | 21.3   | 21.3   | 21.2   | 22.9   | 22.8   | 22.7   | 20.9   | 20.8   | 20.5   |
|                    |            | 25               | 24           | 23.9                    | 23.9   | 23.8   | 21.3   | 21.2   | 21.2   | 22.8   | 22.7   | 22.7   | 20.9   | 20.8   | 20.6   |
|                    |            | 50               | 0            | 23.8                    | 23.8   | 23.7   | 21.2   | 21.1   | 21.1   | 22.7   | 22.7   | 22.6   | 20.9   | 20.7   | 20.5   |
|                    | 64QAM      | 1                | 0            | 23.7                    | 23.6   | 23.6   | 21.1   | 21.1   | 21.1   | 22.6   | 22.7   | 22.4   | 21.1   | 20.9   | 20.1   |
|                    |            | 1                | 24           | 24.1                    | 24.1   | 23.9   | 21.4   | 21.4   | 21.4   | 23.1   | 23.1   | 22.8   | 21.1   | 20.9   | 20.2   |
|                    |            | 1                | 49           | 23.8                    | 23.9   | 23.7   | 21.1   | 21.2   | 21.0   | 22.8   | 22.7   | 22.5   | 21.2   | 20.9   | 20.1   |
|                    |            | 25               | 0            | 22.8                    | 22.8   | 22.8   | 20.2   | 20.2   | 20.2   | 21.8   | 21.7   | 21.7   | 19.8   | 19.6   | 19.6   |
|                    |            | 25               | 12           | 23.0                    | 23.0   | 22.8   | 20.4   | 20.3   | 20.2   | 21.9   | 21.9   | 21.8   | 19.8   | 19.7   | 19.6   |
|                    |            | 25               | 24           | 22.9                    | 22.9   | 22.8   | 20.3   | 20.3   | 20.2   | 21.8   | 21.8   | 21.8   | 19.8   | 19.7   | 19.6   |
|                    |            | 50               | 0            | 22.8                    | 22.8   | 22.7   | 20.2   | 20.2   | 20.1   | 21.8   | 21.8   | 21.7   | 19.8   | 19.7   | 19.5   |
|                    | 256QAM     | 1                | 0            | 20.4                    | 20.4   | 21.0   | 18.0   | 18.0   | 18.1   | 20.0   | 19.2   | 19.5   | 18.2   | 18.3   | 18.0   |
|                    |            | 1                | 24           | 20.4                    | 20.4   | 20.9   | 17.9   | 18.0   | 18.1   | 20.0   | 19.3   | 19.5   | 18.2   | 18.2   | 18.1   |
|                    |            | 1                | 49           | 20.3                    | 20.5   | 21.0   | 17.8   | 18.0   | 18.1   | 19.9   | 19.2   | 19.5   | 18.3   | 18.3   | 18.0   |
|                    |            | 25               | 0            | 20.6                    | 20.5   | 20.5   | 18.2   | 18.0   | 17.7   | 19.6   | 19.6   | 19.5   | 18.1   | 17.9   | 17.8   |
|                    |            | 25               | 12           | 20.7                    | 20.6   | 20.5   | 18.2   | 18.1   | 17.7   | 19.6   | 19.6   | 19.5   | 18.1   | 18.0   | 17.8   |
|                    |            | 25               | 24           | 20.7                    | 20.5   | 20.6   | 18.1   | 18.1   | 17.8   | 19.6   | 19.5   | 19.6   | 18.1   | 18.0   | 17.8   |
|                    |            | 50               | 0            | 20.6                    | 20.5   | 20.5   | 18.1   | 18.0   | 17.7   | 19.6   | 19.5   | 19.5   | 18.0   | 18.0   | 17.8   |

## 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<br>1717.5        | 132322<br>1745.0 | 132597<br>1772.5 | 132047<br>1717.5 | 132322<br>1745.0 | 132597<br>1772.5 | 132047<br>1717.5 | 132322<br>1745.0 | 132597<br>1772.5 | 132047<br>1717.5 | 132322<br>1745.0 | 132597<br>1772.5 |
| 15.0               | QPSK       | 1                | 0            | 25.6                    | 25.5             | 25.7             | 23.0             | 23.0             | 23.1             | 24.5             | 24.6             | 24.7             | 22.5             | 22.5             | 22.7             |
|                    |            | 1                | 37           | 25.6                    | 25.7             | 25.6             | 23.1             | 23.0             | 23.0             | 24.6             | 24.7             | 24.6             | 22.6             | 22.5             | 22.6             |
|                    |            | 1                | 74           | 25.5                    | 25.6             | 25.6             | 23.0             | 23.0             | 22.9             | 24.5             | 24.5             | 24.6             | 22.4             | 22.4             | 22.5             |
|                    |            | 36               | 0            | 24.7                    | 24.7             | 24.7             | 22.1             | 22.1             | 22.0             | 23.7             | 23.7             | 23.7             | 21.6             | 21.6             | 21.7             |
|                    |            | 36               | 16           | 24.8                    | 24.8             | 24.7             | 22.2             | 22.2             | 22.0             | 23.8             | 23.8             | 23.7             | 21.7             | 21.6             | 21.7             |
|                    |            | 36               | 35           | 24.7                    | 24.7             | 24.7             | 22.2             | 22.1             | 22.0             | 23.7             | 23.7             | 23.7             | 21.7             | 21.6             | 21.7             |
|                    |            | 75               | 0            | 24.7                    | 24.7             | 24.7             | 22.1             | 22.1             | 22.0             | 23.7             | 23.7             | 23.6             | 21.6             | 21.6             | 21.6             |
|                    | 16QAM      | 1                | 0            | 25.0                    | 25.2             | 25.2             | 22.6             | 22.5             | 22.7             | 24.0             | 23.6             | 24.1             | 21.9             | 21.5             | 22.1             |
|                    |            | 1                | 37           | 25.2                    | 25.2             | 25.3             | 22.7             | 22.5             | 22.6             | 24.2             | 23.8             | 24.2             | 22.1             | 21.7             | 22.1             |
|                    |            | 1                | 74           | 25.1                    | 25.0             | 25.2             | 22.6             | 22.5             | 22.5             | 24.2             | 23.6             | 24.1             | 22.1             | 21.4             | 22.0             |
|                    |            | 36               | 0            | 23.7                    | 23.7             | 23.7             | 21.1             | 21.1             | 21.0             | 22.7             | 22.6             | 22.7             | 20.6             | 20.6             | 20.7             |
|                    |            | 36               | 16           | 23.8                    | 23.8             | 23.7             | 21.2             | 21.2             | 21.0             | 22.7             | 22.7             | 22.8             | 20.7             | 20.7             | 20.7             |
|                    |            | 36               | 35           | 23.7                    | 23.7             | 23.7             | 21.2             | 21.1             | 21.0             | 22.7             | 22.7             | 22.8             | 20.7             | 20.6             | 20.7             |
|                    |            | 75               | 0            | 23.7                    | 23.8             | 23.7             | 21.2             | 21.1             | 21.0             | 22.7             | 22.7             | 22.7             | 20.7             | 20.6             | 20.7             |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1             | 24.0             | 21.6             | 21.6             | 21.8             | 23.1             | 22.8             | 22.7             | 20.7             | 20.4             | 20.9             |
|                    |            | 1                | 37           | 24.3                    | 24.2             | 24.0             | 21.9             | 21.7             | 21.7             | 23.2             | 22.9             | 22.8             | 20.8             | 20.2             | 21.1             |
|                    |            | 1                | 74           | 24.1                    | 24.1             | 23.9             | 21.7             | 21.6             | 21.6             | 23.2             | 22.6             | 22.7             | 20.7             | 19.8             | 21.0             |
|                    |            | 36               | 0            | 22.7                    | 22.7             | 22.7             | 20.2             | 20.1             | 20.1             | 21.7             | 21.7             | 21.8             | 19.5             | 19.6             | 19.4             |
|                    |            | 36               | 16           | 22.8                    | 22.8             | 22.8             | 20.3             | 20.2             | 20.1             | 21.8             | 21.8             | 21.8             | 19.6             | 19.3             | 19.5             |
|                    |            | 36               | 35           | 22.7                    | 22.7             | 22.8             | 20.2             | 20.2             | 20.1             | 21.8             | 21.7             | 21.8             | 19.6             | 19.1             | 19.5             |
|                    |            | 75               | 0            | 22.8                    | 22.8             | 22.7             | 20.3             | 20.3             | 20.1             | 21.8             | 21.7             | 21.7             | 19.6             | 19.2             | 19.5             |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.3             | 20.6             | 17.8             | 18.2             | 18.0             | 20.1             | 19.3             | 19.7             | 18.8             | 18.1             | 18.5             |
|                    |            | 1                | 37           | 20.1                    | 20.4             | 20.7             | 17.8             | 18.2             | 18.1             | 20.0             | 19.4             | 19.8             | 18.8             | 18.2             | 18.6             |
|                    |            | 1                | 74           | 20.0                    | 20.5             | 20.6             | 17.9             | 18.2             | 18.1             | 20.0             | 19.4             | 19.8             | 18.8             | 18.2             | 18.5             |
|                    |            | 36               | 0            | 20.3                    | 20.1             | 20.3             | 18.0             | 18.0             | 17.7             | 19.8             | 19.6             | 19.5             | 18.4             | 18.4             | 18.3             |
|                    |            | 36               | 16           | 20.3                    | 20.2             | 20.3             | 18.1             | 18.0             | 17.7             | 19.8             | 19.7             | 19.6             | 18.5             | 18.5             | 18.3             |
|                    |            | 36               | 35           | 20.3                    | 20.2             | 20.3             | 18.1             | 17.9             | 17.8             | 19.7             | 19.6             | 19.6             | 18.5             | 18.4             | 18.3             |
|                    |            | 75               | 0            | 20.3                    | 20.2             | 20.3             | 18.1             | 18.0             | 17.7             | 19.7             | 19.6             | 19.6             | 18.5             | 18.4             | 18.3             |

## 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<br>1720.0        | 132322<br>1745.0 | 132572<br>1770.0 | 132072<br>1720.0 | 132322<br>1745.0 | 132572<br>1770.0 | 132072<br>1720.0 | 132322<br>1745.0 | 132572<br>1770.0 | 132072<br>1720.0 | 132322<br>1745.0 | 132572<br>1770.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.3             | 25.7             | 22.7             | 22.7             | 23.1             | 24.3             | 24.3             | 24.6             | 22.4             | 22.3             | 22.7             |
|                    |            | 1                | 49           | 25.6                    | 25.6             | 25.6             | 23.0             | 22.9             | 23.0             | 24.6             | 24.6             | 24.7             | 22.6             | 22.6             | 22.7             |
|                    |            | 1                | 99           | 25.4                    | 25.5             | 25.6             | 22.7             | 22.8             | 22.9             | 24.4             | 24.4             | 24.6             | 22.4             | 22.3             | 22.6             |
|                    |            | 50               | 0            | 24.7                    | 24.6             | 24.6             | 21.9             | 21.9             | 22.0             | 23.6             | 23.6             | 23.6             | 21.6             | 21.6             | 21.7             |
|                    |            | 50               | 24           | 24.8                    | 24.8             | 24.7             | 22.1             | 22.0             | 22.1             | 23.7             | 23.7             | 23.6             | 21.8             | 21.8             | 21.8             |
|                    |            | 50               | 49           | 24.7                    | 24.7             | 24.6             | 22.0             | 22.0             | 22.0             | 23.6             | 23.6             | 23.6             | 21.7             | 21.6             | 21.7             |
|                    |            | 100              | 0            | 24.7                    | 24.7             | 24.6             | 22.0             | 22.0             | 22.0             | 23.6             | 23.6             | 23.5             | 21.7             | 21.7             | 21.6             |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7             | 25.1             | 22.1             | 22.1             | 22.5             | 23.7             | 23.9             | 24.1             | 21.8             | 21.9             | 22.1             |
|                    |            | 1                | 49           | 25.1                    | 25.1             | 25.0             | 22.4             | 22.4             | 22.5             | 24.0             | 24.3             | 24.0             | 22.1             | 22.3             | 22.0             |
|                    |            | 1                | 99           | 24.8                    | 24.9             | 25.0             | 22.2             | 22.2             | 22.4             | 23.8             | 24.1             | 24.0             | 21.8             | 21.8             | 22.1             |
|                    |            | 50               | 0            | 23.6                    | 23.6             | 23.6             | 20.9             | 20.9             | 21.0             | 22.6             | 22.6             | 22.6             | 20.6             | 20.7             | 20.7             |
|                    |            | 50               | 24           | 23.7                    | 23.8             | 23.7             | 21.1             | 21.1             | 21.1             | 22.7             | 22.7             | 22.6             | 20.8             | 20.8             | 20.9             |
|                    |            | 50               | 49           | 23.6                    | 23.7             | 23.6             | 21.0             | 21.0             | 21.0             | 22.6             | 22.6             | 22.6             | 20.7             | 20.7             | 20.7             |
|                    |            | 100              | 0            | 23.7                    | 23.7             | 23.6             | 21.0             | 21.0             | 21.0             | 22.7             | 22.7             | 22.6             | 20.7             | 20.7             | 20.7             |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.5             | 23.8             | 20.9             | 20.9             | 21.3             | 22.5             | 22.6             | 22.8             | 20.6             | 20.8             | 20.3             |
|                    |            | 1                | 49           | 23.9                    | 23.9             | 23.8             | 21.3             | 21.2             | 21.3             | 22.9             | 22.9             | 23.2             | 20.9             | 20.8             | 20.8             |
|                    |            | 1                | 99           | 23.7                    | 23.5             | 23.8             | 21.0             | 21.1             | 21.2             | 22.7             | 22.2             | 23.2             | 20.7             | 20.2             | 20.7             |
|                    |            | 50               | 0            | 22.7                    | 22.7             | 22.5             | 20.1             | 20.0             | 20.1             | 21.6             | 21.7             | 21.2             | 19.6             | 19.6             | 19.1             |
|                    |            | 50               | 24           | 22.8                    | 22.8             | 22.8             | 20.2             | 20.2             | 20.2             | 21.8             | 21.7             | 21.7             | 19.8             | 19.3             | 19.7             |
|                    |            | 50               | 49           | 22.7                    | 22.7             | 22.7             | 20.1             | 20.1             | 20.1             | 21.7             | 21.4             | 21.7             | 19.7             | 19.0             | 19.6             |
|                    |            | 100              | 0            | 22.7                    | 22.7             | 22.6             | 20.1             | 20.1             | 20.0             | 21.7             | 21.5             | 21.4             | 19.6             | 19.2             | 19.4             |
|                    | 256QAM     | 1                | 0            | 20.5                    | 20.0             | 20.4             | 18.2             | 17.8             | 17.8             | 19.7             | 19.8             | 19.8             | 18.3             | 18.5             | 18.5             |
|                    |            | 1                | 49           | 20.5                    | 20.1             | 20.4             | 18.2             | 17.8             | 17.8             | 19.6             | 19.8             | 19.8             | 18.2             | 18.5             | 18.5             |
|                    |            | 1                | 99           | 20.4                    | 20.2             | 20.4             | 18.2             | 17.9             | 17.8             | 19.5             | 19.8             | 19.8             | 18.4             | 18.5             | 18.5             |
|                    |            | 50               | 0            | 20.3                    | 20.2             | 20.2             | 18.0             | 17.9             | 17.6             | 19.7             | 19.6             | 19.6             | 18.1             | 18.3             | 18.3             |
|                    |            | 50               | 24           | 20.4                    | 20.2             | 20.2             | 18.1             | 18.0             | 17.7             | 19.7             | 19.7             | 19.7             | 18.2             | 18.4             | 18.4             |
|                    |            | 50               | 49           | 20.3                    | 20.2             | 20.2             | 18.0             | 17.9             | 17.7             | 19.7             | 19.7             | 19.7             | 18.0             | 18.4             | 18.3             |
|                    |            | 100              | 0            | 20.3                    | 20.2             | 20.1             | 18.0             | 17.9             | 17.5             | 19.7             | 19.6             | 19.6             | 18.1             | 18.4             | 18.3             |

## 7.17. LTE BAND 71

|                   |       |            |                      |
|-------------------|-------|------------|----------------------|
| Test Engineer ID: | 10646 | Test Date: | 5/7/2020 & 8/29/2020 |
|-------------------|-------|------------|----------------------|

### 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                    | 25.4   | 25.3   | 23.9   | 23.5   | 23.5   |
|                    |            | 1                | 12           | 25.6                    | 25.6   | 25.3   | 23.8   | 23.6   | 23.5   |
|                    |            | 1                | 24           | 25.7                    | 25.6   | 25.3   | 23.9   | 23.6   | 23.5   |
|                    |            | 12               | 0            | 24.6                    | 24.5   | 24.4   | 22.8   | 22.6   | 22.5   |
|                    |            | 12               | 6            | 24.7                    | 24.6   | 24.5   | 22.8   | 22.7   | 22.6   |
|                    |            | 12               | 11           | 24.7                    | 24.6   | 24.4   | 22.8   | 22.7   | 22.5   |
|                    |            | 25               | 0            | 24.7                    | 24.6   | 24.5   | 22.8   | 22.7   | 22.5   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.5   | 24.9   | 23.0   | 23.1   | 22.6   |
|                    |            | 1                | 12           | 24.8                    | 24.7   | 25.0   | 23.0   | 23.2   | 22.7   |
|                    |            | 1                | 24           | 24.9                    | 24.7   | 24.9   | 23.0   | 23.3   | 22.6   |
|                    |            | 12               | 0            | 23.7                    | 23.6   | 23.6   | 21.8   | 21.8   | 21.6   |
|                    |            | 12               | 6            | 23.8                    | 23.7   | 23.6   | 21.9   | 21.9   | 21.6   |
|                    |            | 12               | 11           | 23.8                    | 23.7   | 23.6   | 21.9   | 21.8   | 21.6   |
|                    |            | 25               | 0            | 23.7                    | 23.6   | 23.5   | 21.9   | 21.7   | 21.4   |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.5   | 23.8   | 21.9   | 21.3   | 21.5   |
|                    |            | 1                | 12           | 24.1                    | 23.6   | 23.9   | 21.9   | 21.4   | 21.6   |
|                    |            | 1                | 24           | 24.1                    | 23.6   | 23.8   | 21.9   | 21.3   | 21.5   |
|                    |            | 12               | 0            | 22.8                    | 22.7   | 22.5   | 20.6   | 20.4   | 20.2   |
|                    |            | 12               | 6            | 22.9                    | 22.8   | 22.6   | 20.7   | 20.5   | 20.2   |
|                    |            | 12               | 11           | 22.9                    | 22.8   | 22.6   | 20.6   | 20.5   | 20.2   |
|                    |            | 25               | 0            | 22.9                    | 22.7   | 22.5   | 20.6   | 20.4   | 20.3   |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.4   | 20.3   | 18.0   | 17.6   | 18.0   |
|                    |            | 1                | 12           | 19.9                    | 20.3   | 20.0   | 17.9   | 17.5   | 17.8   |
|                    |            | 1                | 24           | 19.9                    | 20.3   | 20.0   | 17.8   | 17.5   | 17.8   |
|                    |            | 12               | 0            | 20.3                    | 20.3   | 20.1   | 17.9   | 17.8   | 17.9   |
|                    |            | 12               | 6            | 20.2                    | 20.3   | 20.0   | 17.8   | 17.8   | 17.9   |
|                    |            | 12               | 11           | 20.1                    | 20.2   | 20.0   | 17.8   | 17.8   | 17.8   |
|                    |            | 25               | 0            | 20.2                    | 20.2   | 20.0   | 17.8   | 17.9   | 17.8   |

# 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<br>668.0         | 133297<br>680.5 | 133422<br>693.0 | 133172<br>668.0 | 133297<br>680.5 | 133422<br>693.0 |
| 10.0               | QPSK       | 1                | 0            | 25.7                    | 25.6            | 25.6            | 23.9            | 23.8            | 23.8            |
|                    |            | 1                | 24           | 25.7                    | 25.6            | 25.6            | 23.8            | 23.7            | 23.7            |
|                    |            | 1                | 49           | 25.5                    | 25.5            | 25.5            | 23.8            | 23.7            | 23.6            |
|                    |            | 25               | 0            | 24.8                    | 24.7            | 24.6            | 22.9            | 22.8            | 22.7            |
|                    |            | 25               | 12           | 24.8                    | 24.7            | 24.6            | 22.9            | 22.9            | 22.7            |
|                    |            | 25               | 24           | 24.7                    | 24.7            | 24.6            | 22.9            | 22.8            | 22.7            |
|                    |            | 50               | 0            | 24.7                    | 24.5            | 24.5            | 22.9            | 22.8            | 22.6            |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.7            | 25.0            | 23.0            | 22.8            | 23.2            |
|                    |            | 1                | 24           | 24.7                    | 24.7            | 25.0            | 22.9            | 22.7            | 23.1            |
|                    |            | 1                | 49           | 24.7                    | 24.6            | 24.9            | 23.0            | 22.7            | 23.1            |
|                    |            | 25               | 0            | 23.9                    | 23.7            | 23.6            | 22.0            | 21.8            | 21.8            |
|                    |            | 25               | 12           | 23.9                    | 23.7            | 23.6            | 22.1            | 21.9            | 21.8            |
|                    |            | 25               | 24           | 23.8                    | 23.7            | 23.7            | 22.0            | 21.8            | 21.8            |
|                    |            | 50               | 0            | 23.8                    | 23.5            | 23.6            | 22.0            | 21.8            | 21.7            |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1            | 23.8            | 22.0            | 22.0            | 21.7            |
|                    |            | 1                | 24           | 24.1                    | 24.1            | 23.9            | 21.9            | 21.9            | 21.7            |
|                    |            | 1                | 49           | 24.0                    | 24.0            | 23.8            | 21.9            | 22.0            | 21.6            |
|                    |            | 25               | 0            | 23.0                    | 22.8            | 22.8            | 20.8            | 20.7            | 20.6            |
|                    |            | 25               | 12           | 23.0                    | 22.8            | 22.8            | 20.9            | 20.7            | 20.6            |
|                    |            | 25               | 24           | 23.0                    | 22.8            | 22.8            | 20.8            | 20.7            | 20.6            |
|                    |            | 50               | 0            | 22.9                    | 22.7            | 22.7            | 20.8            | 20.6            | 20.5            |
|                    | 256QAM     | 1                | 0            | 20.4                    | 20.8            | 20.0            | 18.4            | 18.6            | 17.7            |
|                    |            | 1                | 24           | 20.3                    | 20.7            | 20.0            | 18.3            | 18.6            | 18.3            |
|                    |            | 1                | 49           | 20.4                    | 20.8            | 19.9            | 18.3            | 18.4            | 18.4            |
|                    |            | 25               | 0            | 20.5                    | 20.4            | 20.3            | 18.4            | 18.0            | 18.4            |
|                    |            | 25               | 12           | 20.4                    | 20.3            | 20.2            | 18.3            | 18.1            | 17.9            |
|                    |            | 25               | 24           | 20.4                    | 20.3            | 20.2            | 18.2            | 18.0            | 18.0            |
|                    |            | 50               | 0            | 20.3                    | 20.3            | 20.2            | 18.3            | 18.1            | 17.9            |

## 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<br>670.5         | 133297<br>680.5 | 133397<br>690.5 | 133197<br>670.5 | 133297<br>680.5 | 133397<br>690.5 |
| 15.0               | QPSK       | 1                | 0            | 25.7                    | 25.5            | 25.6            | 23.9            | 23.8            | 23.8            |
|                    |            | 1                | 37           | 25.6                    | 25.5            | 25.5            | 23.8            | 23.7            | 23.7            |
|                    |            | 1                | 74           | 25.6                    | 25.5            | 25.4            | 23.8            | 23.7            | 23.6            |
|                    |            | 36               | 0            | 24.7                    | 24.6            | 24.6            | 22.9            | 22.9            | 22.8            |
|                    |            | 36               | 16           | 24.7                    | 24.6            | 24.5            | 23.0            | 22.9            | 22.8            |
|                    |            | 36               | 35           | 24.6                    | 24.6            | 24.6            | 22.9            | 22.8            | 22.7            |
|                    |            | 75               | 0            | 24.7                    | 24.5            | 24.5            | 22.9            | 22.8            | 22.7            |
|                    | 16QAM      | 1                | 0            | 25.1                    | 25.1            | 25.1            | 23.4            | 23.4            | 23.4            |
|                    |            | 1                | 37           | 25.0                    | 25.1            | 24.9            | 23.3            | 23.4            | 23.2            |
|                    |            | 1                | 74           | 25.0                    | 25.1            | 24.9            | 23.3            | 23.3            | 23.3            |
|                    |            | 36               | 0            | 23.7                    | 23.6            | 23.6            | 21.9            | 21.9            | 21.8            |
|                    |            | 36               | 16           | 23.7                    | 23.6            | 23.6            | 22.0            | 21.9            | 21.9            |
|                    |            | 36               | 35           | 23.7                    | 23.6            | 23.6            | 21.9            | 21.8            | 21.8            |
|                    |            | 75               | 0            | 23.7                    | 23.5            | 23.5            | 21.9            | 21.8            | 21.7            |
|                    | 64QAM      | 1                | 0            | 24.0                    | 23.9            | 24.3            | 22.0            | 22.0            | 22.3            |
|                    |            | 1                | 37           | 23.9                    | 24.0            | 24.1            | 22.0            | 22.0            | 22.3            |
|                    |            | 1                | 74           | 24.0                    | 24.0            | 24.2            | 22.0            | 22.0            | 22.1            |
|                    |            | 36               | 0            | 22.9                    | 22.8            | 22.7            | 20.8            | 20.8            | 20.7            |
|                    |            | 36               | 16           | 22.9                    | 22.8            | 22.7            | 20.9            | 20.8            | 20.8            |
|                    |            | 36               | 35           | 22.8                    | 22.8            | 22.7            | 20.8            | 20.8            | 20.6            |
|                    |            | 75               | 0            | 22.8                    | 22.6            | 22.6            | 20.8            | 20.7            | 20.6            |
|                    | 256QAM     | 1                | 0            | 19.9                    | 20.1            | 20.1            | 17.9            | 17.9            | 17.8            |
|                    |            | 1                | 37           | 19.9                    | 20.2            | 20.2            | 17.9            | 17.8            | 17.9            |
|                    |            | 1                | 74           | 20.0                    | 20.2            | 20.1            | 17.9            | 17.8            | 17.9            |
|                    |            | 36               | 0            | 20.0                    | 20.1            | 20.1            | 17.8            | 17.7            | 17.8            |
|                    |            | 36               | 16           | 20.1                    | 20.1            | 20.0            | 17.8            | 17.6            | 17.8            |
|                    |            | 36               | 35           | 20.2                    | 20.0            | 20.0            | 17.8            | 17.8            | 17.8            |
|                    |            | 75               | 0            | 20.1                    | 20.0            | 20.0            | 17.8            | 17.8            | 17.7            |

## 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   | 23.8   | 23.9   | 23.9   |
|                    |            | 1                | 49           | 25.5                    | 25.7   | 25.6   | 23.7   | 23.8   | 23.8   |
|                    |            | 1                | 99           | 25.6                    | 25.6   | 25.6   | 23.7   | 23.8   | 23.7   |
|                    |            | 50               | 0            | 24.7                    | 24.8   | 24.7   | 22.8   | 22.9   | 22.9   |
|                    |            | 50               | 24           | 24.7                    | 24.7   | 24.7   | 22.9   | 22.9   | 22.9   |
|                    |            | 50               | 49           | 24.6                    | 24.7   | 24.7   | 22.8   | 22.9   | 22.8   |
|                    |            | 100              | 0            | 24.7                    | 24.6   | 24.6   | 22.8   | 22.9   | 22.8   |
|                    | 16QAM      | 1                | 0            | 25.1                    | 25.2   | 25.2   | 23.3   | 23.5   | 23.5   |
|                    |            | 1                | 49           | 25.0                    | 25.3   | 25.0   | 23.2   | 23.5   | 23.3   |
|                    |            | 1                | 99           | 25.0                    | 25.2   | 25.1   | 23.2   | 23.4   | 23.4   |
|                    |            | 50               | 0            | 23.7                    | 23.8   | 23.8   | 21.9   | 22.0   | 21.9   |
|                    |            | 50               | 24           | 23.7                    | 23.7   | 23.7   | 21.9   | 22.0   | 22.0   |
|                    |            | 50               | 49           | 23.6                    | 23.7   | 23.7   | 21.8   | 21.9   | 21.9   |
|                    |            | 100              | 0            | 23.7                    | 23.6   | 23.7   | 21.9   | 21.9   | 21.8   |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.1   | 24.4   | 21.9   | 22.1   | 22.4   |
|                    |            | 1                | 49           | 23.9                    | 24.1   | 24.3   | 21.9   | 22.0   | 22.4   |
|                    |            | 1                | 99           | 24.0                    | 24.2   | 24.4   | 21.9   | 22.1   | 22.2   |
|                    |            | 50               | 0            | 22.9                    | 23.0   | 22.9   | 20.8   | 20.9   | 20.8   |
|                    |            | 50               | 24           | 22.9                    | 22.9   | 22.8   | 20.8   | 20.9   | 20.9   |
|                    |            | 50               | 49           | 22.8                    | 22.9   | 22.8   | 20.7   | 20.8   | 20.7   |
|                    |            | 100              | 0            | 22.8                    | 22.8   | 22.8   | 20.7   | 20.7   | 20.7   |
|                    | 256QAM     | 1                | 0            | 19.9                    | 20.3   | 20.3   | 17.8   | 17.7   | 17.9   |
|                    |            | 1                | 49           | 19.9                    | 20.3   | 20.3   | 17.8   | 17.7   | 18.0   |
|                    |            | 1                | 99           | 20.0                    | 20.4   | 20.2   | 17.8   | 17.8   | 18.0   |
|                    |            | 50               | 0            | 20.0                    | 20.2   | 20.2   | 17.7   | 17.9   | 17.9   |
|                    |            | 50               | 24           | 20.1                    | 20.2   | 20.2   | 17.7   | 17.9   | 17.9   |
|                    |            | 50               | 49           | 20.1                    | 20.2   | 20.1   | 17.7   | 17.9   | 17.9   |
|                    |            | 100              | 0            | 20.1                    | 20.1   | 20.1   | 17.7   | 17.9   | 17.8   |

## 7.18. 5G NR BAND n77

|                   |       |            |           |
|-------------------|-------|------------|-----------|
| Test Engineer ID: | 10646 | 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            | 22.3                    | 22.2             | 22.7             | 18.7             | 18.9             | 18.8             | 22.0             | 22.0             | 22.1             | 18.6             | 15.5             | 18.1             |
|                    |            | 1                | 1            | 24.8                    | 25.6             | 25.2             | 22.3             | 22.3             | 22.4             | 24.7             | 25.2             | 25.0             | 22.2             | 16.2             | 21.5             |
|                    |            | 25               | 12           | 24.9                    | 25.7             | 25.4             | 22.3             | 22.5             | 22.4             | 24.7             | 25.1             | 25.0             | 21.8             | 21.4             | 21.4             |
|                    |            | 50               | 0            | 25.1                    | 25.6             | 25.4             | 21.9             | 22.0             | 21.9             | 24.8             | 25.2             | 25.0             | 21.4             | 21.1             | 20.9             |
|                    | QPSK       | 1                | 0            | 22.4                    | 22.6             | 22.9             | 18.7             | 19.0             | 18.9             | 21.6             | 21.9             | 22.0             | 20.8             | 20.6             | 20.4             |
|                    |            | 1                | 1            | 24.6                    | 25.7             | 25.3             | 22.0             | 22.5             | 22.4             | 24.9             | 24.9             | 25.0             | 21.8             | 21.2             | 21.4             |
|                    |            | 25               | 12           | 24.8                    | 25.7             | 25.3             | 22.4             | 22.4             | 22.4             | 24.7             | 25.1             | 25.0             | 22.0             | 16.1             | 21.5             |
|                    |            | 50               | 0            | 24.8                    | 25.4             | 25.4             | 21.4             | 21.6             | 21.4             | 24.6             | 24.9             | 24.8             | 18.3             | 15.2             | 17.9             |
|                    | 16QAM      | 1                | 0            | 21.9                    | 22.0             | 22.2             | 19.2             | 19.2             | 19.4             | 21.8             | 22.3             | 22.2             | 18.1             | 15.0             | 18.0             |
|                    |            | 1                | 1            | 24.1                    | 24.6             | 24.7             | 21.8             | 22.0             | 21.9             | 23.5             | 23.9             | 23.8             | 20.9             | 15.9             | 20.6             |
|                    |            | 25               | 12           | 24.3                    | 24.8             | 24.9             | 21.2             | 21.5             | 21.4             | 23.5             | 23.8             | 23.8             | 20.8             | 20.4             | 20.5             |
|                    |            | 50               | 0            | 23.4                    | 23.9             | 24.0             | 20.4             | 20.5             | 20.5             | 22.5             | 22.9             | 22.7             | 19.8             | 19.5             | 19.4             |
|                    | 64QAM      | 1                | 0            | 22.8                    | 22.8             | 23.4             | 18.7             | 19.0             | 19.1             | 21.9             | 22.3             | 22.4             | 19.5             | 19.2             | 18.8             |
|                    |            | 1                | 1            | 23.7                    | 24.2             | 24.1             | 20.1             | 20.4             | 20.1             | 23.2             | 23.3             | 23.6             | 19.4             | 18.9             | 18.9             |
|                    |            | 25               | 12           | 23.3                    | 23.9             | 23.8             | 19.9             | 20.0             | 19.9             | 23.0             | 23.4             | 23.3             | 19.5             | 15.7             | 19.3             |
|                    |            | 50               | 0            | 23.3                    | 23.9             | 23.9             | 20.0             | 20.0             | 20.0             | 23.1             | 23.4             | 23.3             | 18.6             | 15.4             | 18.4             |
|                    | 256QAM     | 1                | 0            | 20.7                    | 20.4             | 21.1             | 17.2             | 17.6             | 17.5             | 20.3             | 20.4             | 20.4             | 17.6             | 14.8             | 17.4             |
|                    |            | 1                | 1            | 20.3                    | 21.0             | 21.1             | 17.0             | 17.1             | 17.3             | 20.0             | 20.7             | 20.5             | 17.4             | 14.7             | 17.2             |
|                    |            | 25               | 12           | 20.3                    | 20.9             | 20.8             | 17.4             | 17.5             | 17.4             | 20.1             | 20.4             | 20.3             | 17.3             | 17.1             | 16.9             |
|                    |            | 50               | 0            | 20.2                    | 20.9             | 20.9             | 17.3             | 17.4             | 17.4             | 20.0             | 20.4             | 20.2             | 17.3             | 17.1             | 16.9             |

# 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                  | 656000 | 664000 | 648000 | 656000 | 664000 | 648000 | 656000 | 664000 | 648000 | 656000 | 664000 |
|                    |            |                  |              | 3720.0                  | 3840.0 | 3960.0 | 3720.0 | 3840.0 | 3960.0 | 3720.0 | 3840.0 | 3960.0 | 3720.0 | 3840.0 | 3960.0 |
| 40.0               | BPSK       | 1                | 0            | 21.9                    | 22.3   | 21.5   | 19.1   | 19.1   | 19.2   | 21.1   | 21.0   | 21.3   | 18.8   | 18.5   | 18.4   |
|                    |            | 1                | 1            | 25.3                    | 25.7   | 25.3   | 22.5   | 22.3   | 22.0   | 24.7   | 24.6   | 24.8   | 22.2   | 21.9   | 22.0   |
|                    |            | 50               | 25           | 25.3                    | 25.5   | 25.1   | 22.1   | 22.3   | 22.0   | 24.3   | 24.3   | 24.6   | 22.1   | 22.0   | 21.7   |
|                    |            | 100              | 0            | 24.8                    | 25.1   | 24.7   | 22.2   | 22.3   | 22.1   | 23.9   | 23.9   | 24.2   | 21.6   | 21.4   | 21.3   |
|                    | QPSK       | 1                | 0            | 21.6                    | 22.2   | 22.0   | 19.2   | 19.0   | 19.1   | 20.7   | 21.0   | 21.3   | 18.7   | 18.5   | 18.5   |
|                    |            | 1                | 1            | 25.6                    | 25.7   | 25.5   | 22.2   | 22.5   | 22.4   | 24.6   | 24.4   | 25.2   | 22.2   | 21.9   | 21.9   |
|                    |            | 50               | 25           | 25.3                    | 25.6   | 25.2   | 22.2   | 22.3   | 22.0   | 24.4   | 24.4   | 24.6   | 22.0   | 21.9   | 21.7   |
|                    |            | 100              | 0            | 24.4                    | 24.5   | 24.2   | 21.7   | 21.8   | 21.5   | 23.3   | 23.5   | 23.7   | 21.1   | 20.9   | 20.7   |
|                    | 16QAM      | 1                | 0            | 21.5                    | 21.7   | 21.3   | 19.5   | 19.6   | 19.5   | 20.4   | 20.8   | 21.0   | 18.9   | 18.5   | 18.7   |
|                    |            | 1                | 1            | 24.1                    | 24.5   | 24.0   | 21.9   | 22.1   | 21.9   | 23.4   | 23.0   | 23.3   | 21.2   | 21.1   | 20.9   |
|                    |            | 50               | 25           | 24.2                    | 24.5   | 24.1   | 21.7   | 21.8   | 21.5   | 22.9   | 22.9   | 23.0   | 21.0   | 21.0   | 20.8   |
|                    |            | 100              | 0            | 23.5                    | 23.6   | 23.3   | 20.7   | 20.8   | 20.5   | 22.0   | 22.0   | 22.2   | 20.1   | 20.0   | 19.7   |
|                    | 64QAM      | 1                | 0            | 21.7                    | 22.3   | 21.9   | 19.2   | 19.5   | 19.0   | 21.1   | 21.2   | 21.2   | 18.8   | 18.6   | 18.8   |
|                    |            | 1                | 1            | 22.8                    | 22.9   | 22.7   | 20.0   | 20.3   | 20.1   | 22.4   | 22.0   | 22.4   | 19.9   | 19.8   | 19.6   |
|                    |            | 50               | 25           | 22.8                    | 23.1   | 22.7   | 20.1   | 20.3   | 20.0   | 21.9   | 22.0   | 22.1   | 19.5   | 19.5   | 19.2   |
|                    |            | 100              | 0            | 22.9                    | 23.0   | 22.8   | 20.2   | 20.3   | 20.0   | 22.0   | 22.0   | 22.3   | 19.6   | 19.4   | 19.3   |
|                    | 256QAM     | 1                | 0            | 21.2                    | 21.0   | 20.9   | 17.4   | 17.5   | 17.1   | 20.2   | 19.8   | 20.3   | 17.3   | 17.1   | 17.3   |
|                    |            | 1                | 1            | 21.4                    | 21.0   | 20.3   | 17.3   | 17.1   | 16.9   | 19.9   | 20.1   | 20.4   | 17.6   | 17.2   | 17.4   |
|                    |            | 50               | 25           | 20.8                    | 21.1   | 20.6   | 17.1   | 17.2   | 16.9   | 20.0   | 20.0   | 20.1   | 17.1   | 16.9   | 16.7   |
|                    |            | 100              | 0            | 20.9                    | 21.1   | 20.8   | 17.1   | 17.2   | 16.9   | 19.8   | 20.0   | 20.2   | 17.1   | 16.9   | 16.8   |

**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                  | 656000 | 663666 | 648333 | 656000 | 663666 | 648333 | 656000 | 663666 | 648333 | 656000 | 663666 |
|                    |            |                  |              | 3725.0                  | 3840.0 | 3955.0 | 3725.0 | 3840.0 | 3955.0 | 3725.0 | 3840.0 | 3955.0 | 3725.0 | 3840.0 | 3955.0 |
| 50.0               | BPSK       | 1                | 0            | 22.1                    | 21.6   | 22.0   | 19.3   | 19.7   | 18.9   | 21.3   | 20.8   | 21.0   | 18.7   | 18.4   | 18.5   |
|                    |            | 1                | 1            | 25.6                    | 25.7   | 25.6   | 22.5   | 22.3   | 22.1   | 25.2   | 24.2   | 24.7   | 22.0   | 22.1   | 22.1   |
|                    |            | 64               | 32           | 25.5                    | 25.6   | 25.4   | 22.3   | 22.4   | 22.1   | 24.6   | 24.7   | 24.8   | 22.2   | 22.0   | 21.7   |
|                    |            | 128              | 0            | 24.9                    | 25.2   | 25.0   | 22.2   | 22.4   | 22.1   | 24.0   | 24.2   | 24.3   | 21.6   | 21.5   | 21.3   |
|                    | QPSK       | 1                | 0            | 21.9                    | 22.0   | 21.9   | 19.1   | 19.3   | 19.6   | 22.2   | 21.2   | 21.4   | 18.6   | 18.2   | 18.5   |
|                    |            | 1                | 1            | 25.6                    | 25.6   | 25.6   | 22.4   | 22.5   | 22.2   | 24.8   | 24.9   | 24.9   | 22.1   | 21.8   | 21.9   |
|                    |            | 64               | 32           | 25.5                    | 25.7   | 25.4   | 22.3   | 22.4   | 22.1   | 24.6   | 24.5   | 24.8   | 22.1   | 22.0   | 21.8   |
|                    |            | 128              | 0            | 24.4                    | 24.7   | 24.4   | 21.7   | 21.9   | 21.6   | 23.5   | 23.6   | 23.8   | 21.1   | 21.0   | 20.7   |
|                    | 16QAM      | 1                | 0            | 21.3                    | 21.9   | 21.6   | 19.0   | 19.0   | 19.0   | 20.8   | 20.9   | 20.7   | 18.6   | 18.5   | 18.6   |
|                    |            | 1                | 1            | 24.2                    | 24.3   | 24.1   | 21.7   | 21.6   | 21.8   | 23.3   | 23.1   | 23.4   | 21.1   | 20.7   | 21.0   |
|                    |            | 64               | 32           | 24.5                    | 24.7   | 24.4   | 21.7   | 21.9   | 21.5   | 23.5   | 23.6   | 23.8   | 21.2   | 21.0   | 20.8   |
|                    |            | 128              | 0            | 23.4                    | 23.6   | 23.4   | 20.7   | 20.8   | 20.6   | 22.6   | 22.6   | 22.8   | 20.2   | 19.9   | 19.8   |
|                    | 64QAM      | 1                | 0            | 22.2                    | 21.7   | 22.1   | 19.2   | 19.1   | 19.4   | 21.3   | 21.0   | 21.5   | 18.7   | 18.7   | 18.7   |
|                    |            | 1                | 1            | 22.9                    | 23.1   | 23.1   | 20.3   | 20.1   | 20.0   | 22.3   | 21.8   | 22.2   | 19.8   | 19.5   | 19.5   |
|                    |            | 64               | 32           | 23.0                    | 23.2   | 22.9   | 20.3   | 20.4   | 20.1   | 22.1   | 22.2   | 22.3   | 19.6   | 19.5   | 19.2   |
|                    |            | 128              | 0            | 23.0                    | 23.2   | 22.9   | 20.3   | 20.4   | 20.1   | 22.1   | 22.1   | 22.3   | 19.6   | 19.4   | 19.3   |
|                    | 256QAM     | 1                | 0            | 20.6                    | 20.5   | 20.9   | 17.5   | 17.6   | 17.4   | 20.2   | 20.1   | 20.2   | 17.8   | 17.0   | 17.3   |
|                    |            | 1                | 1            | 20.9                    | 21.0   | 21.0   | 17.4   | 17.3   | 17.4   | 20.2   | 20.1   | 20.6   | 17.4   | 17.2   | 17.8   |
|                    |            | 64               | 32           | 20.8                    | 21.1   | 21.0   | 17.2   | 17.4   | 17.0   | 20.0   | 20.1   | 20.2   | 17.3   | 17.1   | 16.8   |
|                    |            | 128              | 0            | 20.9                    | 21.2   | 20.9   | 17.1   | 17.3   | 17.0   | 20.1   | 20.1   | 20.3   | 17.2   | 17.0   | 16.9   |

## 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            | 21.8                    | 22.0             | 22.0             | 19.1             | 19.1             | 19.2             | 21.5             | 21.5             | 21.4             | 18.6             | 18.2             | 18.2             |
|                    |            | 1                | 1            | 25.7                    | 25.5             | 25.4             | 22.5             | 22.3             | 22.0             | 25.2             | 24.9             | 24.9             | 22.2             | 22.0             | 21.6             |
|                    |            | 81               | 40           | 25.5                    | 25.7             | 25.4             | 22.1             | 22.3             | 22.0             | 25.1             | 25.1             | 25.1             | 22.1             | 21.9             | 21.6             |
|                    |            | 162              | 0            | 25.0                    | 25.1             | 24.9             | 22.2             | 22.3             | 22.1             | 24.7             | 24.8             | 24.6             | 21.5             | 21.4             | 21.1             |
|                    | QPSK       | 1                | 0            | 22.0                    | 22.1             | 21.8             | 19.2             | 19.0             | 19.1             | 21.6             | 21.5             | 21.6             | 18.6             | 18.2             | 18.2             |
|                    |            | 1                | 1            | 25.2                    | 25.7             | 25.0             | 22.2             | 22.5             | 22.4             | 25.1             | 25.2             | 25.2             | 22.2             | 21.8             | 21.5             |
|                    |            | 81               | 40           | 25.5                    | 25.5             | 25.4             | 22.2             | 22.3             | 22.0             | 25.1             | 25.2             | 25.1             | 22.1             | 21.9             | 21.6             |
|                    |            | 162              | 0            | 24.5                    | 24.6             | 24.4             | 21.7             | 21.8             | 21.5             | 24.1             | 24.3             | 24.1             | 21.0             | 20.9             | 20.6             |
|                    | 16QAM      | 1                | 0            | 22.3                    | 22.2             | 23.9             | 19.5             | 19.6             | 19.5             | 21.0             | 21.0             | 20.9             | 18.5             | 18.3             | 18.1             |
|                    |            | 1                | 1            | 24.8                    | 24.6             | 24.6             | 21.9             | 22.1             | 21.9             | 23.5             | 23.6             | 23.2             | 21.2             | 20.8             | 20.6             |
|                    |            | 81               | 40           | 24.4                    | 24.6             | 24.4             | 21.7             | 21.8             | 21.5             | 23.6             | 23.7             | 23.6             | 21.1             | 21.0             | 20.6             |
|                    |            | 162              | 0            | 23.5                    | 23.6             | 23.5             | 20.7             | 20.8             | 20.5             | 22.7             | 22.8             | 22.6             | 19.0             | 19.9             | 19.5             |
|                    | 64QAM      | 1                | 0            | 21.8                    | 21.7             | 21.6             | 19.2             | 19.5             | 19.0             | 21.7             | 21.7             | 21.4             | 18.8             | 18.4             | 18.1             |
|                    |            | 1                | 1            | 22.5                    | 22.8             | 22.9             | 20.0             | 20.3             | 20.1             | 22.2             | 22.5             | 22.4             | 19.9             | 19.8             | 19.3             |
|                    |            | 81               | 40           | 23.0                    | 23.1             | 23.0             | 20.1             | 20.3             | 20.0             | 22.7             | 22.7             | 22.6             | 19.5             | 19.4             | 19.0             |
|                    |            | 162              | 0            | 23.0                    | 23.1             | 22.9             | 20.2             | 20.3             | 20.0             | 22.7             | 22.6             | 22.5             | 19.4             | 19.4             | 19.0             |
|                    | 256QAM     | 1                | 0            | 21.1                    | 20.8             | 21.0             | 17.5             | 17.6             | 17.2             | 19.6             | 19.5             | 19.4             | 17.8             | 17.4             | 17.4             |
|                    |            | 1                | 1            | 21.0                    | 20.9             | 21.0             | 17.4             | 17.2             | 17.0             | 19.5             | 19.1             | 18.9             | 17.6             | 17.2             | 17.2             |
|                    |            | 81               | 40           | 20.9                    | 21.0             | 20.9             | 17.2             | 17.3             | 17.0             | 19.0             | 19.1             | 19.0             | 17.2             | 17.1             | 16.8             |
|                    |            | 162              | 0            | 20.9                    | 21.1             | 20.9             | 17.2             | 17.3             | 17.0             | 19.0             | 19.2             | 19.0             | 17.3             | 17.1             | 16.8             |

## 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                  | 656000 | 662666 | 649333 | 656000 | 662666 | 649333 | 656000 | 662666 | 649333 | 656000 | 662666 |
|                    |            |                  |              | 3740.0                  | 3840.0 | 3940.0 | 3740.0 | 3840.0 | 3940.0 | 3740.0 | 3840.0 | 3940.0 | 3740.0 | 3840.0 | 3940.0 |
| 80.0               | BPSK       | 1                | 0            | 21.8                    | 22.0   | 21.6   | 19.1   | 19.1   | 19.2   | 22.7   | 23.0   | 22.3   | 18.8   | 18.6   | 18.3   |
|                    |            | 1                | 1            | 25.1                    | 25.6   | 25.1   | 22.5   | 22.3   | 22.0   | 25.2   | 24.9   | 24.9   | 22.2   | 22.1   | 22.1   |
|                    |            | 108              | 54           | 25.3                    | 25.7   | 25.2   | 22.1   | 22.3   | 22.0   | 24.7   | 24.8   | 24.3   | 22.2   | 22.0   | 21.8   |
|                    |            | 216              | 0            | 24.8                    | 25.1   | 24.7   | 22.2   | 22.3   | 22.1   | 24.8   | 24.8   | 24.3   | 20.6   | 21.5   | 21.3   |
|                    | QPSK       | 1                | 0            | 21.4                    | 22.3   | 21.7   | 19.2   | 19.0   | 19.1   | 22.9   | 22.9   | 22.7   | 18.7   | 18.5   | 18.2   |
|                    |            | 1                | 1            | 25.1                    | 25.5   | 25.5   | 22.2   | 22.5   | 22.4   | 25.2   | 24.9   | 24.9   | 22.2   | 22.1   | 21.8   |
|                    |            | 108              | 54           | 25.3                    | 25.7   | 25.2   | 22.2   | 22.3   | 22.0   | 24.7   | 24.8   | 24.2   | 22.1   | 22.0   | 21.8   |
|                    |            | 216              | 0            | 24.3                    | 24.5   | 24.2   | 21.7   | 21.8   | 21.5   | 24.8   | 24.9   | 24.3   | 20.0   | 21.1   | 20.8   |
|                    | 16QAM      | 1                | 0            | 22.0                    | 22.3   | 21.7   | 19.5   | 19.6   | 19.5   | 22.3   | 22.7   | 22.1   | 18.7   | 18.3   | 18.0   |
|                    |            | 1                | 1            | 24.6                    | 24.7   | 21.2   | 21.9   | 22.1   | 21.9   | 23.1   | 24.3   | 23.8   | 21.2   | 21.2   | 20.8   |
|                    |            | 108              | 54           | 24.3                    | 24.7   | 24.3   | 21.7   | 21.8   | 21.5   | 23.3   | 23.4   | 23.4   | 21.2   | 21.1   | 20.8   |
|                    |            | 216              | 0            | 22.3                    | 23.5   | 23.2   | 20.7   | 20.8   | 20.5   | 23.3   | 23.1   | 22.9   | 19.1   | 20.1   | 19.8   |
|                    | 64QAM      | 1                | 0            | 21.6                    | 21.6   | 21.1   | 19.2   | 19.5   | 19.0   | 23.0   | 22.8   | 22.2   | 18.6   | 18.7   | 18.5   |
|                    |            | 1                | 1            | 22.7                    | 22.7   | 22.9   | 20.0   | 20.3   | 20.1   | 23.3   | 23.7   | 23.0   | 20.1   | 19.7   | 19.5   |
|                    |            | 108              | 54           | 22.8                    | 23.2   | 22.7   | 20.1   | 20.3   | 20.0   | 22.6   | 22.8   | 22.3   | 19.7   | 19.6   | 19.3   |
|                    |            | 216              | 0            | 22.7                    | 23.1   | 22.7   | 20.2   | 20.3   | 20.0   | 22.7   | 22.8   | 23.0   | 18.6   | 19.6   | 19.3   |
|                    | 256QAM     | 1                | 0            | 20.2                    | 21.1   | 20.5   | 17.5   | 17.6   | 17.2   | 19.9   | 20.5   | 19.9   | 17.7   | 17.2   | 17.2   |
|                    |            | 1                | 1            | 20.0                    | 20.9   | 20.5   | 17.4   | 17.2   | 17.0   | 20.4   | 20.6   | 20.0   | 17.8   | 17.1   | 17.6   |
|                    |            | 108              | 54           | 20.5                    | 20.8   | 20.4   | 17.2   | 17.3   | 17.0   | 19.8   | 20.0   | 19.4   | 17.2   | 17.0   | 16.8   |
|                    |            | 216              | 0            | 20.4                    | 20.8   | 20.4   | 17.2   | 17.3   | 17.0   | 19.9   | 20.0   | 19.5   | 16.1   | 17.1   | 16.8   |

## 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            | 21.8                    | 22.1             | 22.4             | 19.1             | 19.1             | 19.2             | 22.6             | 22.8             | 22.3             | 18.5             | 18.3             | 18.0             |
|                    |            | 1                | 1            | 25.4                    | 25.7             | 25.3             | 22.5             | 22.3             | 22.0             | 25.0             | 24.9             | 24.8             | 22.1             | 22.2             | 21.7             |
|                    |            | 120              | 60           | 25.2                    | 25.6             | 25.1             | 22.1             | 22.3             | 22.0             | 24.6             | 24.7             | 24.2             | 22.0             | 21.9             | 21.6             |
|                    |            | 240              | 0            | 24.9                    | 25.3             | 24.7             | 22.2             | 22.3             | 22.1             | 24.3             | 24.9             | 24.2             | 21.5             | 21.5             | 21.2             |
|                    | QPSK       | 1                | 0            | 22.2                    | 22.2             | 22.2             | 19.2             | 19.0             | 19.1             | 22.6             | 19.8             | 22.4             | 18.4             | 18.2             | 18.0             |
|                    |            | 1                | 1            | 25.2                    | 25.5             | 25.6             | 22.2             | 22.5             | 22.4             | 25.2             | 24.7             | 24.8             | 22.0             | 22.0             | 21.6             |
|                    |            | 120              | 60           | 25.3                    | 25.6             | 25.2             | 22.2             | 22.3             | 22.0             | 24.5             | 24.8             | 24.3             | 21.9             | 21.9             | 21.6             |
|                    |            | 240              | 0            | 24.5                    | 24.9             | 24.3             | 21.7             | 21.8             | 21.5             | 24.3             | 24.8             | 24.2             | 21.0             | 20.9             | 20.6             |
|                    | 16QAM      | 1                | 0            | 21.8                    | 21.8             | 21.6             | 19.5             | 19.6             | 19.5             | 21.7             | 21.6             | 21.1             | 18.5             | 18.1             | 18.0             |
|                    |            | 1                | 1            | 23.7                    | 24.7             | 24.2             | 21.9             | 22.1             | 21.9             | 23.2             | 23.7             | 23.2             | 21.2             | 21.1             | 20.7             |
|                    |            | 120              | 60           | 23.8                    | 24.1             | 23.7             | 21.7             | 21.8             | 21.5             | 22.7             | 22.8             | 22.5             | 20.9             | 20.9             | 20.7             |
|                    |            | 240              | 0            | 22.9                    | 23.2             | 22.8             | 20.7             | 20.8             | 20.5             | 22.3             | 22.9             | 22.4             | 19.9             | 19.9             | 19.6             |
|                    | 64QAM      | 1                | 0            | 22.0                    | 21.7             | 21.8             | 19.2             | 19.5             | 19.0             | 21.8             | 21.8             | 21.3             | 18.7             | 18.6             | 18.1             |
|                    |            | 1                | 1            | 22.2                    | 22.8             | 22.8             | 20.0             | 20.3             | 20.1             | 21.9             | 22.9             | 22.0             | 19.7             | 19.5             | 19.3             |
|                    |            | 120              | 60           | 23.0                    | 23.3             | 22.7             | 20.1             | 20.3             | 20.0             | 21.6             | 21.8             | 21.2             | 19.4             | 19.5             | 19.1             |
|                    |            | 240              | 0            | 23.0                    | 23.4             | 22.7             | 20.2             | 20.3             | 20.0             | 21.3             | 21.8             | 21.2             | 19.4             | 19.4             | 19.2             |
|                    | 256QAM     | 1                | 0            | 20.8                    | 21.1             | 20.7             | 17.5             | 17.6             | 17.2             | 20.0             | 19.9             | 19.5             | 17.6             | 17.3             | 16.8             |
|                    |            | 1                | 1            | 20.5                    | 20.8             | 20.8             | 17.4             | 17.2             | 17.0             | 20.3             | 20.3             | 20.1             | 17.8             | 17.8             | 16.8             |
|                    |            | 120              | 60           | 20.5                    | 20.9             | 20.3             | 17.2             | 17.3             | 17.0             | 19.1             | 20.0             | 19.4             | 17.1             | 17.1             | 16.9             |
|                    |            | 240              | 0            | 20.3                    | 20.8             | 20.3             | 17.2             | 17.3             | 17.0             | 19.5             | 20.1             | 19.5             | 17.2             | 17.2             | 16.9             |

**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                  | 656000 | 662000 | 650000 | 656000 | 662000 | 650000 | 656000 | 662000 | 650000 | 656000 | 662000 |
|                    |            |                  |              | 3750.0                  | 3840.0 | 3930.0 | 3750.0 | 3840.0 | 3930.0 | 3750.0 | 3840.0 | 3930.0 | 3750.0 | 3840.0 | 3930.0 |
| 100.0              | BPSK       | 1                | 0            | 21.9                    | 21.8   | 22.2   | 19.1   | 19.4   | 19.5   | 22.5   | 22.8   | 22.4   | 18.3   | 18.2   | 17.8   |
|                    |            | 1                | 1            | 25.0                    | 25.2   | 25.5   | 22.3   | 22.1   | 22.3   | 25.1   | 24.8   | 24.8   | 22.2   | 21.9   | 21.7   |
|                    |            | 135              | 67           | 25.4                    | 25.7   | 25.3   | 22.4   | 22.5   | 22.3   | 24.8   | 24.2   | 24.3   | 22.0   | 22.0   | 21.9   |
|                    |            | 270              | 0            | 24.8                    | 25.2   | 24.8   | 22.4   | 22.5   | 22.2   | 24.8   | 24.3   | 24.1   | 21.5   | 21.4   | 21.3   |
|                    | QPSK       | 1                | 0            | 22.0                    | 21.8   | 21.8   | 19.4   | 19.4   | 19.4   | 22.6   | 22.6   | 22.4   | 18.5   | 18.0   | 17.9   |
|                    |            | 1                | 1            | 25.6                    | 25.6   | 25.1   | 22.1   | 22.5   | 22.5   | 25.2   | 24.7   | 25.1   | 22.2   | 21.9   | 21.6   |
|                    |            | 135              | 67           | 25.4                    | 25.6   | 25.3   | 22.3   | 22.5   | 22.3   | 24.7   | 24.3   | 24.3   | 22.0   | 22.0   | 21.8   |
|                    |            | 270              | 0            | 24.3                    | 24.5   | 24.3   | 21.9   | 22.0   | 21.8   | 24.8   | 24.3   | 24.0   | 20.9   | 21.0   | 20.8   |
|                    | 16QAM      | 1                | 0            | 22.1                    | 22.2   | 22.0   | 19.3   | 19.4   | 19.6   | 22.6   | 22.4   | 22.0   | 18.3   | 18.3   | 18.0   |
|                    |            | 1                | 1            | 24.4                    | 24.3   | 24.8   | 21.7   | 21.6   | 21.8   | 23.8   | 23.7   | 23.3   | 21.2   | 20.9   | 21.2   |
|                    |            | 135              | 67           | 24.4                    | 24.7   | 24.4   | 21.8   | 21.9   | 21.7   | 22.7   | 23.2   | 22.9   | 21.0   | 20.9   | 20.7   |
|                    |            | 270              | 0            | 23.4                    | 23.6   | 23.3   | 20.9   | 21.0   | 20.7   | 22.8   | 23.0   | 22.6   | 19.9   | 20.0   | 19.7   |
|                    | 64QAM      | 1                | 0            | 22.1                    | 22.2   | 22.3   | 19.1   | 19.7   | 19.1   | 21.6   | 21.8   | 20.7   | 18.5   | 18.4   | 18.1   |
|                    |            | 1                | 1            | 23.2                    | 23.2   | 23.1   | 20.4   | 20.5   | 20.7   | 22.3   | 23.0   | 21.9   | 19.6   | 19.7   | 19.4   |
|                    |            | 135              | 67           | 22.9                    | 23.2   | 22.7   | 20.4   | 20.4   | 20.1   | 21.7   | 22.2   | 21.3   | 19.5   | 19.4   | 19.3   |
|                    |            | 270              | 0            | 22.9                    | 23.2   | 22.8   | 20.4   | 20.5   | 20.2   | 21.7   | 22.4   | 22.1   | 19.4   | 19.5   | 19.3   |
|                    | 256QAM     | 1                | 0            | 20.0                    | 20.2   | 20.7   | 17.1   | 17.4   | 17.1   | 20.3   | 19.9   | 19.8   | 17.3   | 16.9   | 16.6   |
|                    |            | 1                | 1            | 20.7                    | 20.7   | 21.0   | 17.5   | 17.6   | 17.6   | 20.5   | 20.4   | 19.8   | 17.7   | 17.4   | 17.1   |
|                    |            | 135              | 67           | 20.5                    | 20.7   | 20.3   | 17.3   | 17.5   | 17.3   | 19.9   | 19.8   | 19.6   | 17.5   | 17.5   | 17.3   |
|                    |            | 270              | 0            | 20.4                    | 20.7   | 20.4   | 17.4   | 17.5   | 17.3   | 19.9   | 19.9   | 19.6   | 17.5   | 17.5   | 17.3   |

## 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 | 1.0853       | 1.219          |
|            | 1.4MHz, 16QAM |                         |        | 1.0898       | 1.233          |
|            | 3MHz, QPSK    | 15/0                    |        | 2.6898       | 2.989          |
|            | 3MHz, 16QAM   |                         |        | 2.6854       | 2.980          |
|            | 5MHz, QPSK    | 25/0                    |        | 4.4940       | 4.882          |
|            | 5MHz, 16QAM   |                         |        | 4.4957       | 4.913          |
|            | 10MHz, QPSK   | 50/0                    |        | 8.9483       | 9.659          |
|            | 10MHz, 16QAM  |                         |        | 8.9241       | 9.674          |
|            | 15MHz, QPSK   | 75/0                    |        | 13.3866      | 14.483         |
|            | 15MHz, 16QAM  |                         |        | 13.3906      | 14.519         |
|            | 20MHz, QPSK   | 100/0                   |        | 17.8808      | 19.202         |
|            | 20MHz, 16QAM  |                         |        | 17.8739      | 19.308         |
|            | 20MHz, QPSK   | 1/0                     |        | 0.3259       | 0.4932         |

## 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  | 1.0815       | 1.222          |
|            | 1.4MHz, 16QAM |                         |        | 1.0861       | 1.221          |
|            | 3MHz, QPSK    | 15/0                    |        | 2.6906       | 2.984          |
|            | 3MHz, 16QAM   |                         |        | 2.6811       | 3.012          |
|            | 5MHz, QPSK    | 25/0                    |        | 4.4961       | 4.881          |
|            | 5MHz, 16QAM   |                         |        | 4.4993       | 4.949          |
|            | 10MHz, QPSK   | 50/0                    |        | 8.9407       | 9.684          |
|            | 10MHz, 16QAM  |                         |        | 8.9214       | 9.582          |

## 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  | 13.368       | 14.10          |  |
|               | 15MHz, QPSK  |                         |        | 13.374       | 13.98          |  |
|               | 15MHz, 16QAM |                         |        | 13.361       | 14.02          |  |
|               | 20MHz, BPSK  | 100/0                   |        | 17.795       | 18.53          |  |
|               | 20MHz, QPSK  |                         |        | 17.804       | 18.56          |  |
|               | 20MHz, 16QAM |                         |        | 17.765       | 18.51          |  |

## 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 | 4.5049       | 4.935          |
|            | 5MHz, 16QAM  |                         |        | 4.4874       | 4.892          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.9227       | 9.622          |
|            | 10MHz, 16QAM |                         |        | 8.9238       | 9.661          |
|            | 15MHz, QPSK  | 75/0                    |        | 13.3982      | 14.486         |
|            | 15MHz, 16QAM |                         |        | 13.4110      | 14.346         |
|            | 20MHz, QPSK  | 100/0                   |        | 17.7972      | 19.088         |
|            | 20MHz, 16QAM |                         |        | 17.8489      | 19.386         |
|            | 20MHz, QPSK  | 1/0                     |        | 0.3044       | 0.5282         |

## 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  | 1.0817       | 1.222          |
|             | 1.4MHz, 16QAM |                         |        | 1.0840       | 1.221          |
|             | 3MHz, QPSK    | 15/0                    |        | 2.6831       | 2.965          |
|             | 3MHz, 16QAM   |                         |        | 2.6781       | 2.988          |
|             | 5MHz, QPSK    | 25/0                    |        | 4.4961       | 4.895          |
|             | 5MHz, 16QAM   |                         |        | 4.4927       | 4.885          |
|             | 10MHz, QPSK   | 50/0                    |        | 8.9253       | 9.692          |
|             | 10MHz, 16QAM  |                         |        | 8.9541       | 9.627          |

## 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  | 13.370       | 14.01          |
|                | 15MHz, QPSK  |                         |        | 13.375       | 13.91          |
|                | 15MHz, 16QAM |                         |        | 13.373       | 13.96          |
|                | 15MHz, QPSK  | 1/0                     |        | 0.3372       | 0.5445         |

## 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  | 4.4892       | 4.903          |
|             | 5MHz, 16QAM  |                         |        | 4.4996       | 4.961          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9354       | 9.615          |
|             | 10MHz, 16QAM |                         |        | 8.9527       | 9.566          |

## 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  | 4.4907       | 4.936          |
|             | 5MHz, 16QAM  |                         |        | 4.5033       | 4.946          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9504       | 9.631          |
|             | 10MHz, 16QAM |                         |        | 8.9330       | 9.579          |

## 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  | 4.5068       | 4.883          |
|             | 5MHz, 16QAM  |                         |        | 4.4989       | 4.903          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9383       | 9.760          |
|             | 10MHz, 16QAM |                         |        | 8.9275       | 9.619          |

## 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 | 1.0848       | 1.229          |
|             | 1.4MHz, 16QAM |                         |        | 1.0923       | 1.232          |
|             | 3MHz, QPSK    | 15/0                    |        | 2.6965       | 2.980          |
|             | 3MHz, 16QAM   |                         |        | 2.6852       | 3.002          |
|             | 5MHz, QPSK    | 25/0                    |        | 4.4906       | 4.937          |
|             | 5MHz, 16QAM   |                         |        | 4.5005       | 4.913          |
|             | 10MHz, QPSK   | 50/0                    |        | 8.9633       | 9.652          |
|             | 10MHz, 16QAM  |                         |        | 8.9316       | 9.671          |
|             | 15MHz, QPSK   | 75/0                    |        | 13.3821      | 14.633         |
|             | 15MHz, 16QAM  |                         |        | 13.4268      | 14.445         |
|             | 20MHz, QPSK   | 100/0                   |        | 17.8062      | 19.377         |
|             | 20MHz, 16QAM  |                         |        | 17.8719      | 19.199         |
|             | 20MHz, QPSK   | 1/0                     |        | 0.3037       | 0.516          |

### 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  | 1.0803       | 1.220          |
|             | 1.4MHz, 16QAM |                         |        | 1.0803       | 1.222          |
|             | 3MHz, QPSK    | 15/0                    |        | 2.6868       | 2.966          |
|             | 3MHz, 16QAM   |                         |        | 2.6874       | 2.994          |
|             | 5MHz, QPSK    | 25/0                    |        | 4.4983       | 4.900          |
|             | 5MHz, 16QAM   |                         |        | 4.4935       | 4.882          |
|             | 10MHz, QPSK   | 50/0                    |        | 8.9420       | 9.605          |
|             | 10MHz, 16QAM  |                         |        | 8.9391       | 9.666          |

### 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 | 4.4882       | 4.880          |
|             | 5MHz, 16QAM  |                         |        | 4.4941       | 4.896          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9544       | 9.665          |
|             | 10MHz, 16QAM |                         |        | 8.9544       | 9.688          |

## 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 | 4.5042       | 4.875          |
|             | 5MHz, 16QAM  |                         |        | 4.4897       | 4.909          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9499       | 9.760          |
|             | 10MHz, 16QAM |                         |        | 8.8983       | 9.470          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.3762      | 14.243         |
|             | 15MHz, 16QAM |                         |        | 13.3901      | 14.454         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.8010      | 19.129         |
|             | 20MHz, 16QAM |                         |        | 17.8429      | 18.919         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.3016       | 0.4924         |

## 5G NR BAND n41

| Band         | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|--------------|---------------|-------------------------|--------|--------------|----------------|
| LET BAND n41 | 20MHz, BPSK   | 50/0                    | 2593.0 | 17.9131      | 19.565         |
|              | 20MHz, QPSK   |                         |        | 17.9861      | 19.780         |
|              | 20MHz, 16QAM  |                         |        | 17.9254      | 19.709         |
|              | 40MHz, BPSK   | 100/0                   |        | 35.5162      | 36.753         |
|              | 40MHz, QPSK   |                         |        | 35.6784      | 37.400         |
|              | 40MHz, 16QAM  |                         |        | 35.6240      | 37.289         |
|              | 50MHz, BPSK   | 128/0                   |        | 45.6130      | 47.158         |
|              | 50MHz, QPSK   |                         |        | 45.6748      | 48.310         |
|              | 50MHz, 16QAM  |                         |        | 45.4892      | 47.791         |
|              | 60MHz, BPSK   | 162/0                   |        | 57.8532      | 59.578         |
|              | 60MHz, QPSK   |                         |        | 57.7002      | 60.122         |
|              | 60MHz, 16QAM  |                         |        | 57.7430      | 60.247         |
|              | 80MHz, BPSK   | 216/0                   |        | 76.9678      | 79.154         |
|              | 80MHz, QPSK   |                         |        | 76.9709      | 80.035         |
|              | 80MHz, 16QAM  |                         |        | 76.9545      | 79.929         |
|              | 90MHz, BPSK   | 240/0                   |        | 85.6494      | 88.344         |
|              | 90MHz, QPSK   |                         |        | 85.4138      | 88.394         |
|              | 90MHz, 16QAM  |                         |        | 85.6894      | 88.440         |
|              | 100MHz, BPSK  | 270/0                   |        | 96.0656      | 99.105         |
|              | 100MHz, QPSK  |                         |        | 96.0255      | 99.395         |
|              | 100MHz, 16QAM |                         |        | 96.0422      | 99.465         |
|              | 100MHz, QPSK  | 1/0                     |        | 0.4898       | 0.7892         |

## 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 | 4.5576       | 5.119          |
|             | 5MHz, 16QAM |                         |        | 4.4631       | 4.908          |

|  |              |       |  |         |        |
|--|--------------|-------|--|---------|--------|
|  | 10MHz, QPSK  | 50/0  |  | 8.9338  | 9.653  |
|  | 10MHz, 16QAM |       |  | 8.9331  | 9.660  |
|  | 15MHz, QPSK  | 75/0  |  | 13.3915 | 14.405 |
|  | 15MHz, 16QAM |       |  | 13.4091 | 14.353 |
|  | 20MHz, QPSK  | 100/0 |  | 17.8911 | 19.218 |
|  | 20MHz, 16QAM |       |  | 17.9069 | 19.023 |
|  | 20MHz, QPSK  | 1/0   |  | 0.32768 | 0.5627 |

## 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 | 1.0854       | 1.224          |
|             | 1.4MHz, 16QAM |                         |        | 1.0879       | 1.235          |
|             | 3MHz, QPSK    | 15/0                    |        | 2.6831       | 2.957          |
|             | 3MHz, 16QAM   |                         |        | 2.6833       | 2.960          |
|             | 5MHz, QPSK    | 25/0                    |        | 4.4928       | 4.860          |
|             | 5MHz, 16QAM   |                         |        | 4.4858       | 4.939          |
|             | 10MHz, QPSK   | 50/0                    |        | 8.9425       | 9.676          |
|             | 10MHz, 16QAM  |                         |        | 8.9540       | 9.652          |
|             | 15MHz, QPSK   | 75/0                    |        | 13.3790      | 14.418         |
|             | 15MHz, 16QAM  |                         |        | 13.3918      | 14.363         |
|             | 20MHz, QPSK   | 100/0                   |        | 17.8530      | 19.191         |
|             | 20MHz, 16QAM  |                         |        | 17.8489      | 19.328         |
|             | 20MHz, QPSK   | 1/0                     |        | 0.3079       | 0.5001         |

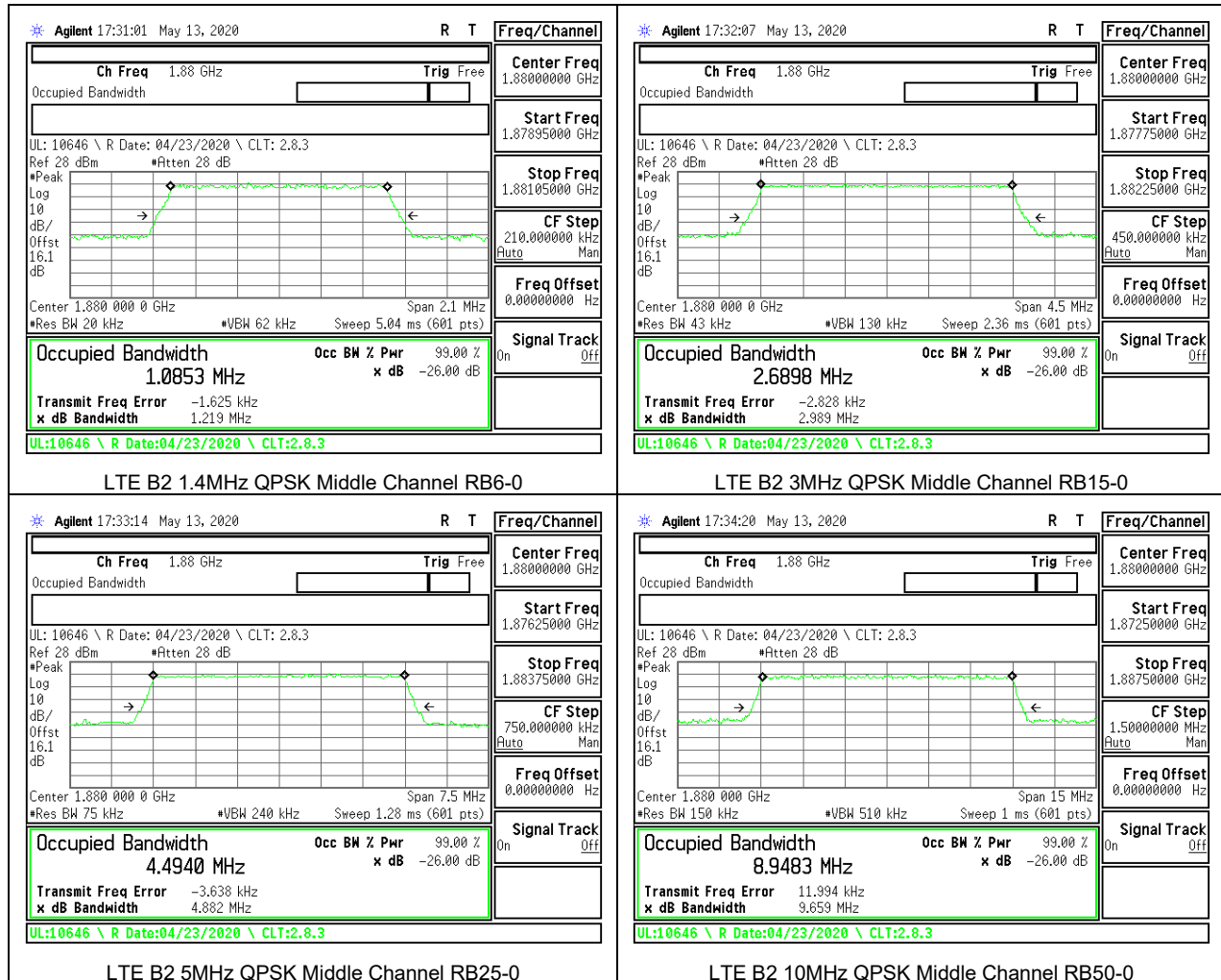
## LTE BAND 71

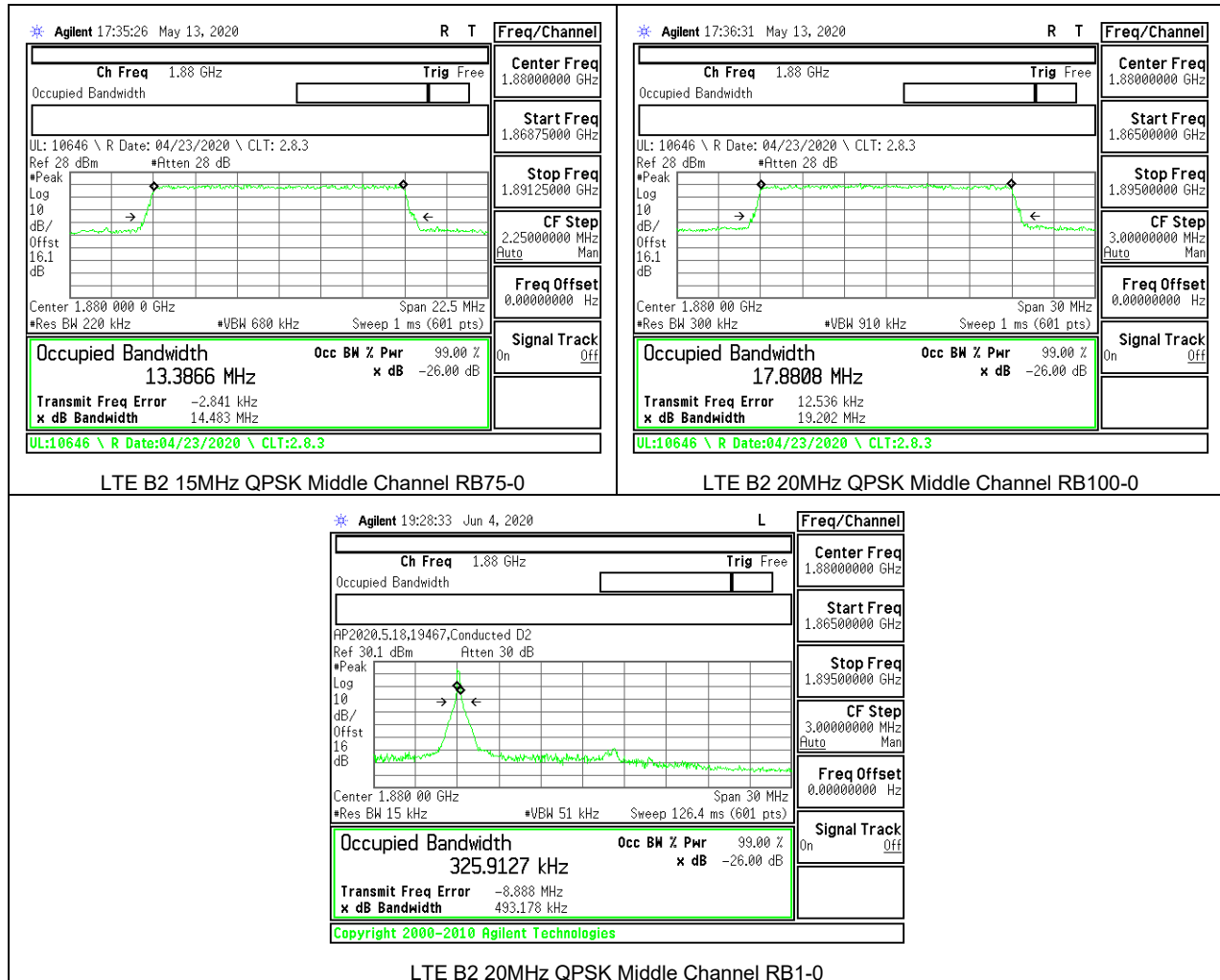
| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 71 | 5MHz, QPSK   | 25/0                    | 680.5  | 4.4939       | 4.925          |
|             | 5MHz, 16QAM  |                         |        | 4.4903       | 4.851          |
|             | 10MHz, QPSK  | 50/0                    | 683    | 8.9560       | 9.688          |
|             | 10MHz, 16QAM |                         |        | 8.9609       | 9.696          |
|             | 15MHz, QPSK  | 75/0                    | 680.5  | 13.4419      | 14.534         |
|             | 15MHz, 16QAM |                         |        | 13.4458      | 14.505         |
|             | 20MHz, QPSK  | 100/0                   | 683    | 17.9214      | 19.387         |
|             | 20MHz, 16QAM |                         |        | 17.8446      | 19.154         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.3176       | 0.5806         |

## 5G NR BAND n77

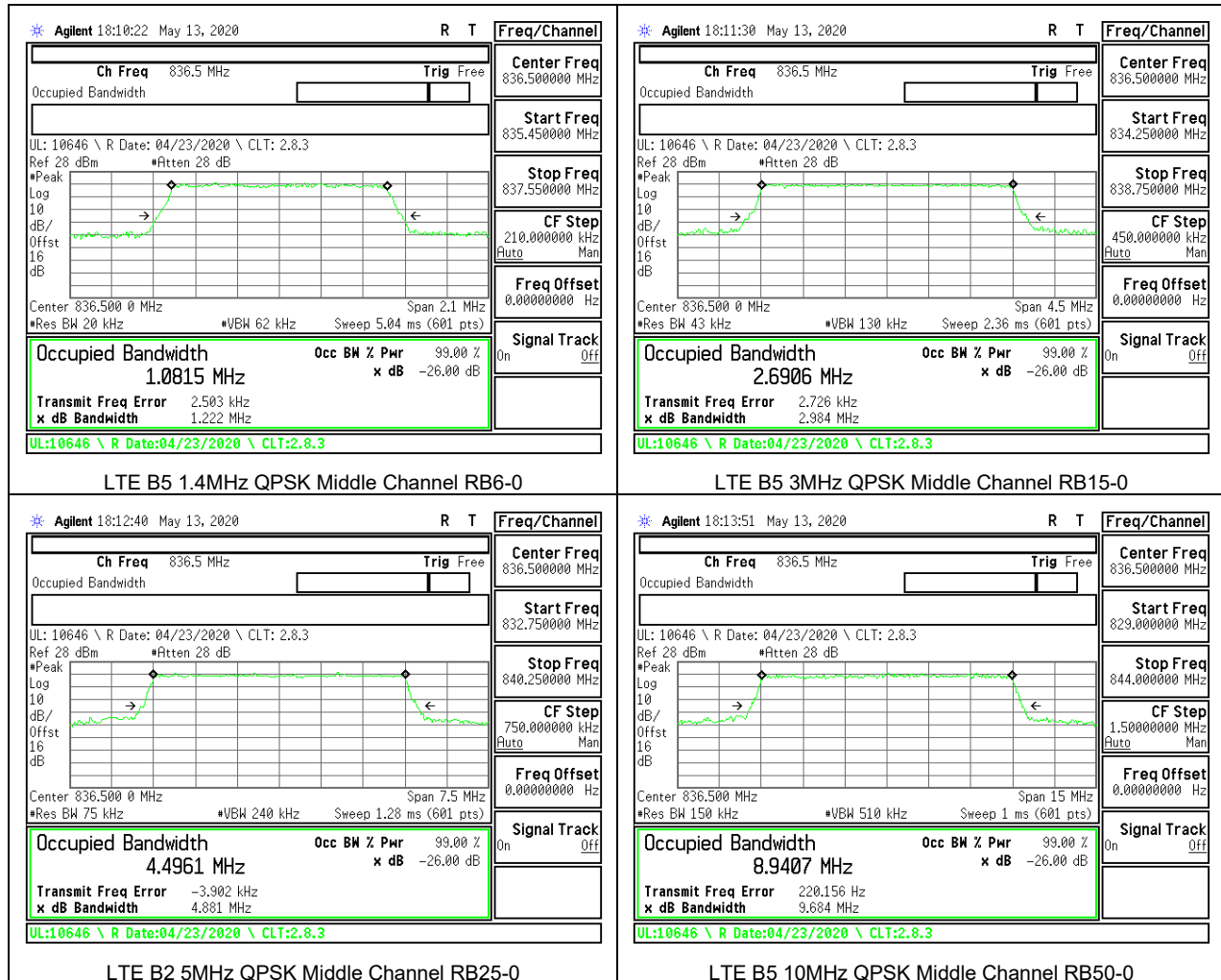
| Band           | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------------|---------------|-------------------------|--------|--------------|----------------|
| 5G NR BAND n77 | 20MHz, BPSK   | 50/0                    | 3840.0 | 17.775       | 18.61          |
|                | 20MHz, QPSK   |                         |        | 17.823       | 18.84          |
|                | 20MHz, 16QAM  |                         |        | 17.899       | 18.72          |
|                | 40MHz, BPSK   | 100/0                   |        | 35.638       | 37.14          |
|                | 40MHz, QPSK   |                         |        | 35.690       | 37.10          |
|                | 40MHz, 16QAM  |                         |        | 35.695       | 37.10          |
|                | 50MHz, BPSK   | 128/0                   |        | 45.657       | 47.21          |
|                | 50MHz, QPSK   |                         |        | 45.608       | 47.61          |
|                | 50MHz, 16QAM  |                         |        | 45.640       | 47.34          |
|                | 60MHz, BPSK   | 162/0                   |        | 57.710       | 59.85          |
|                | 60MHz, QPSK   |                         |        | 57.844       | 59.73          |
|                | 60MHz, 16QAM  |                         |        | 57.862       | 59.92          |
|                | 80MHz, BPSK   | 216/0                   |        | 77.047       | 79.57          |
|                | 80MHz, QPSK   |                         |        | 76.934       | 79.59          |
|                | 80MHz, 16QAM  |                         |        | 77.084       | 79.68          |
|                | 90MHz, BPSK   | 240/0                   |        | 85.608       | 88.37          |
|                | 90MHz, QPSK   |                         |        | 85.868       | 88.58          |
|                | 90MHz, 16QAM  |                         |        | 85.585       | 88.47          |
|                | 100MHz, BPSK  | 270/0                   |        | 96.520       | 99.60          |
|                | 100MHz, QPSK  |                         |        | 96.490       | 99.44          |
|                | 100MHz, 16QAM |                         |        | 96.519       | 99.35          |
|                |               | 100MHz, QPSK            |        | 1/0          | 0.4670         |

## 8.1.1. LTE BAND 2





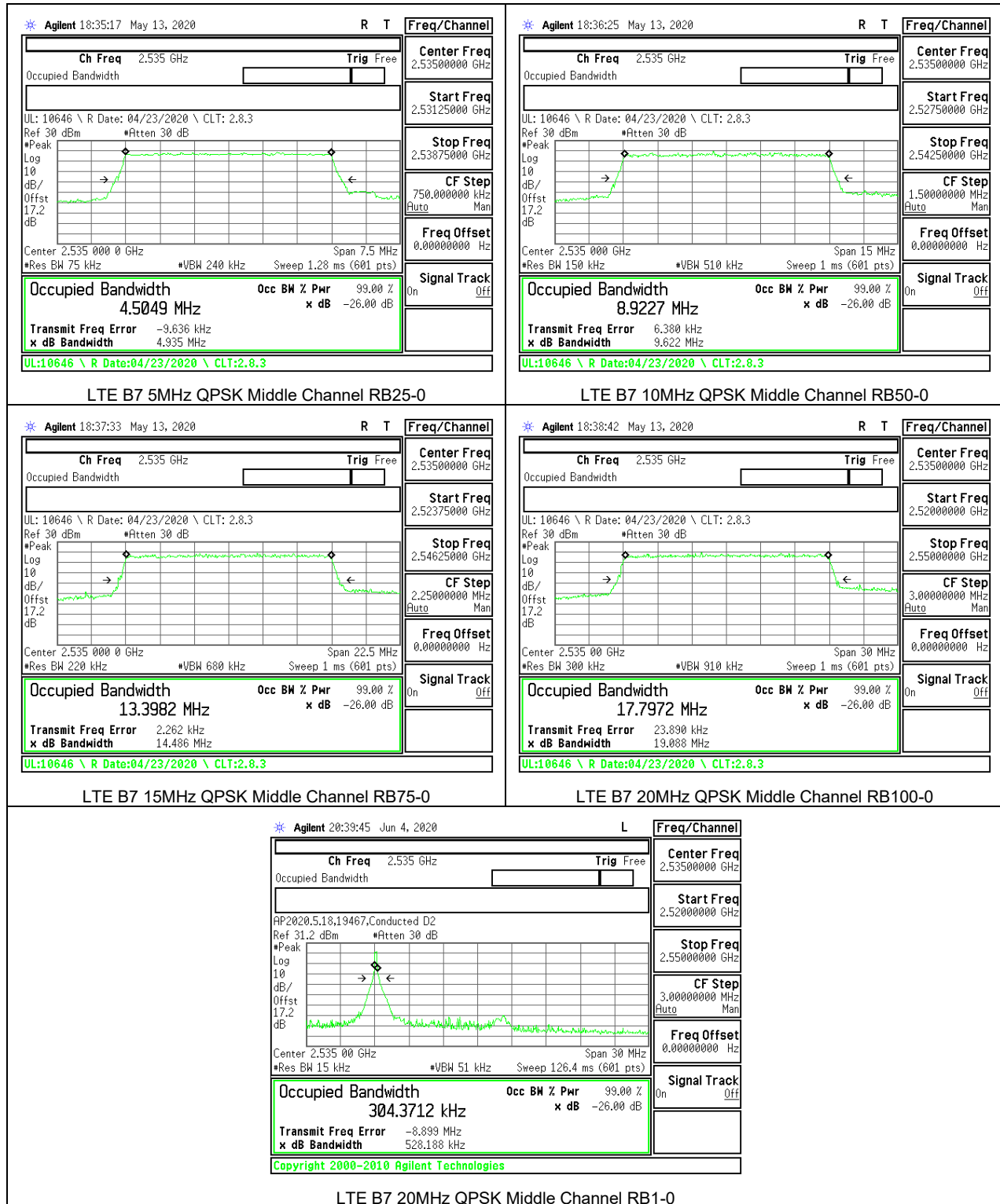
## 8.1.2. LTE BAND 5



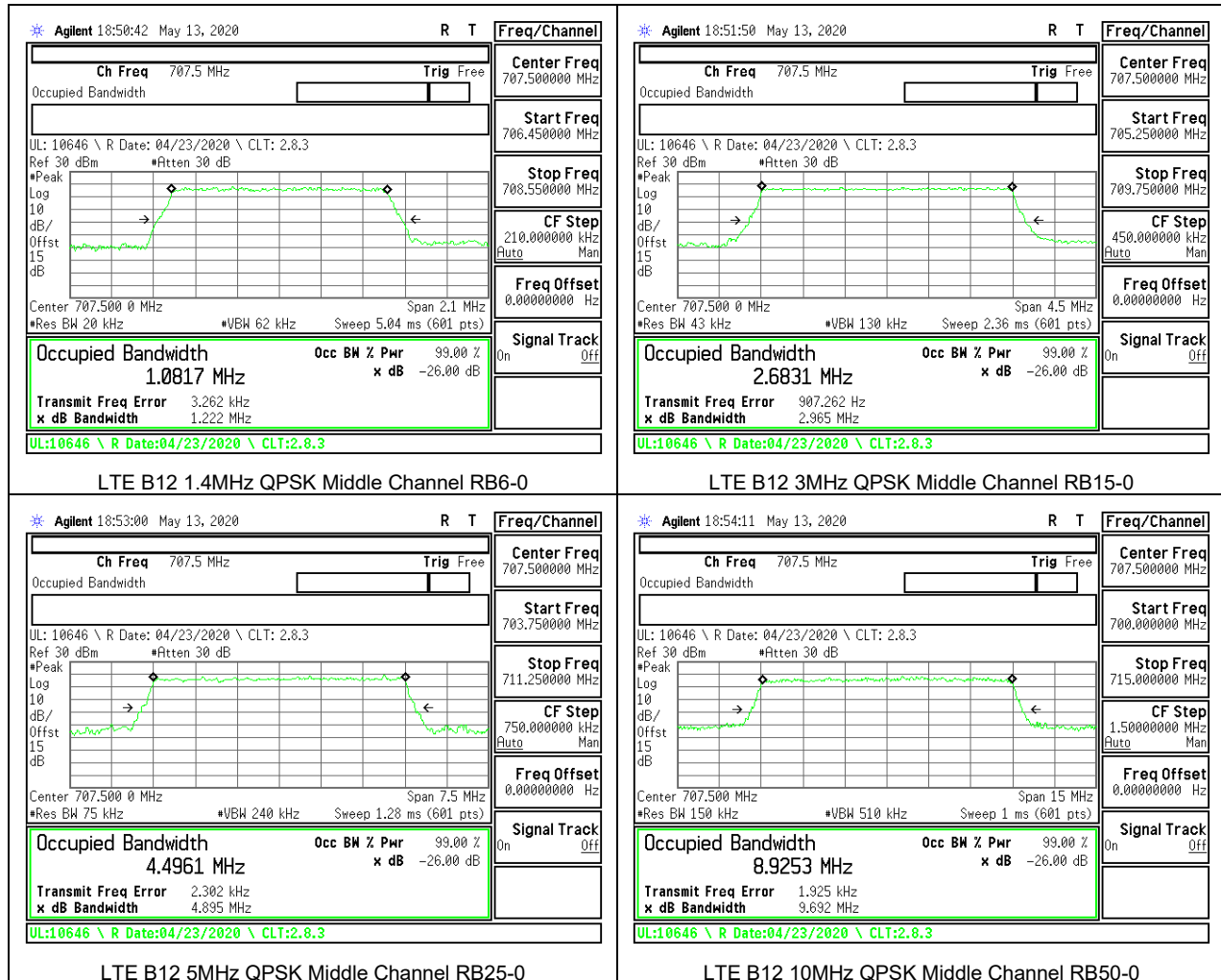
### 8.1.3. 5G NR BAND n5



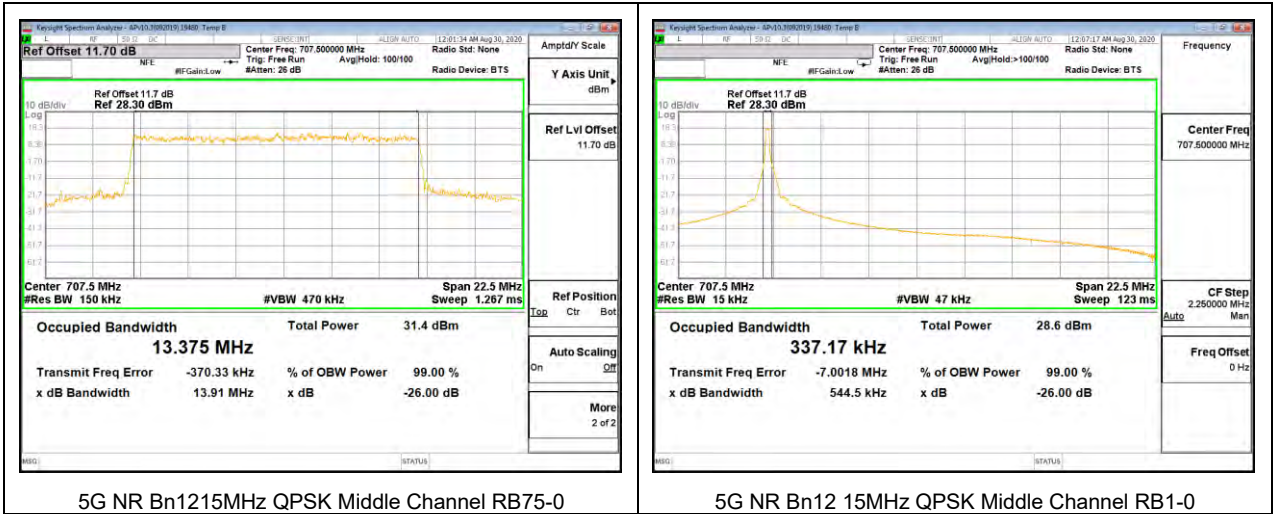
## 8.1.4. LTE BAND 7



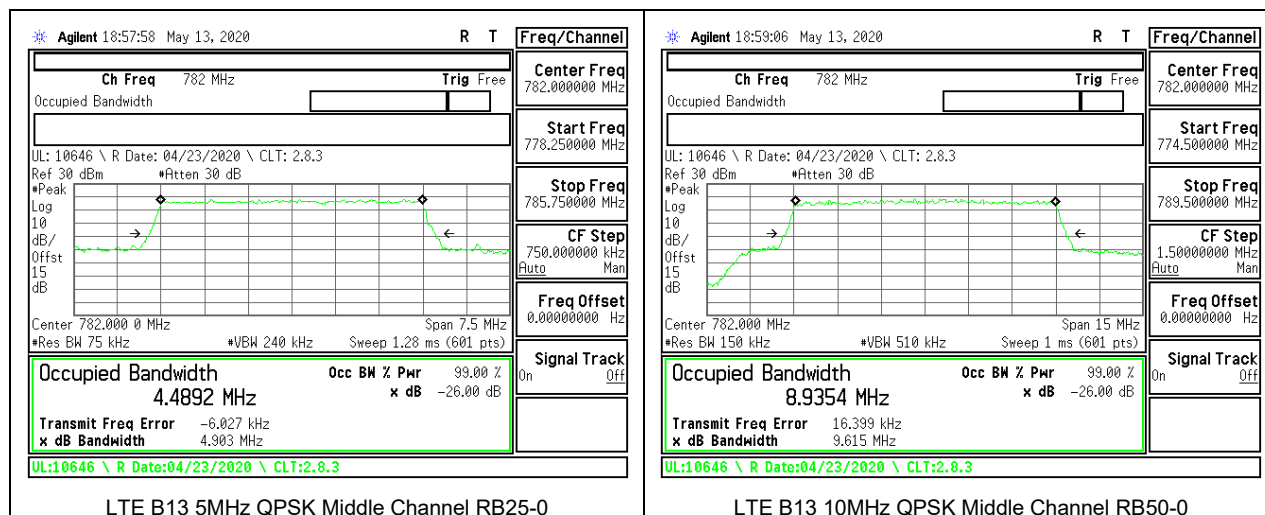
## 8.1.5. LTE BAND 12



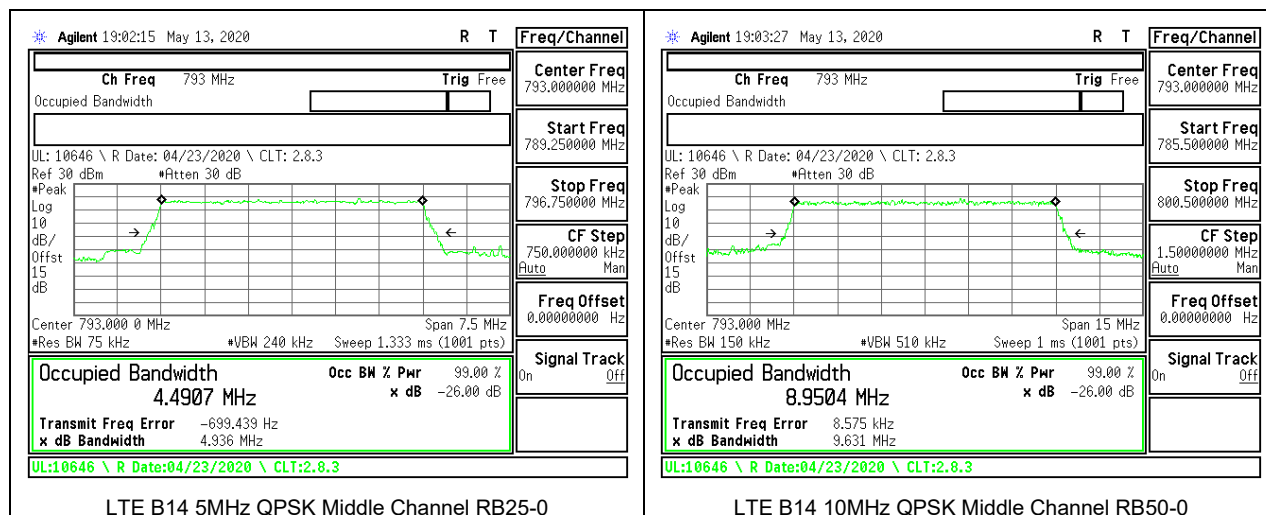
8.1.6. 5G NR BAND n12



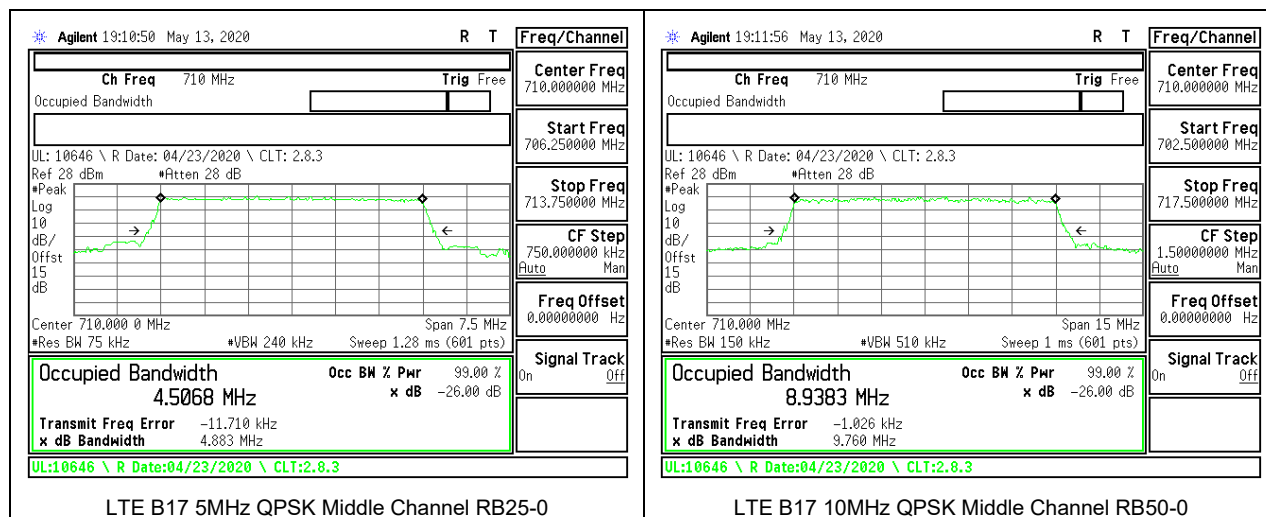
### 8.1.7. LTE BAND 13



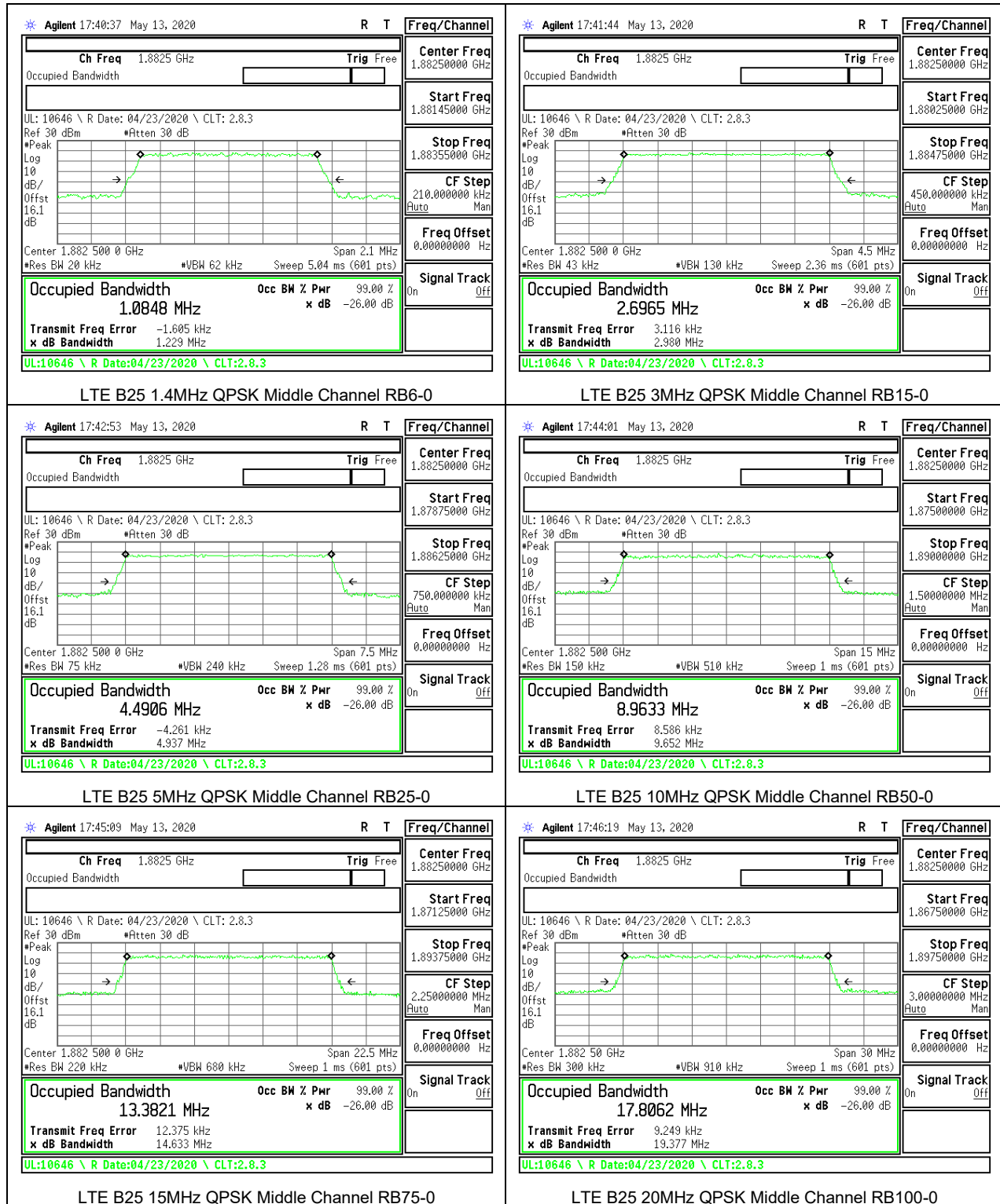
## 8.1.8. LTE BAND 14



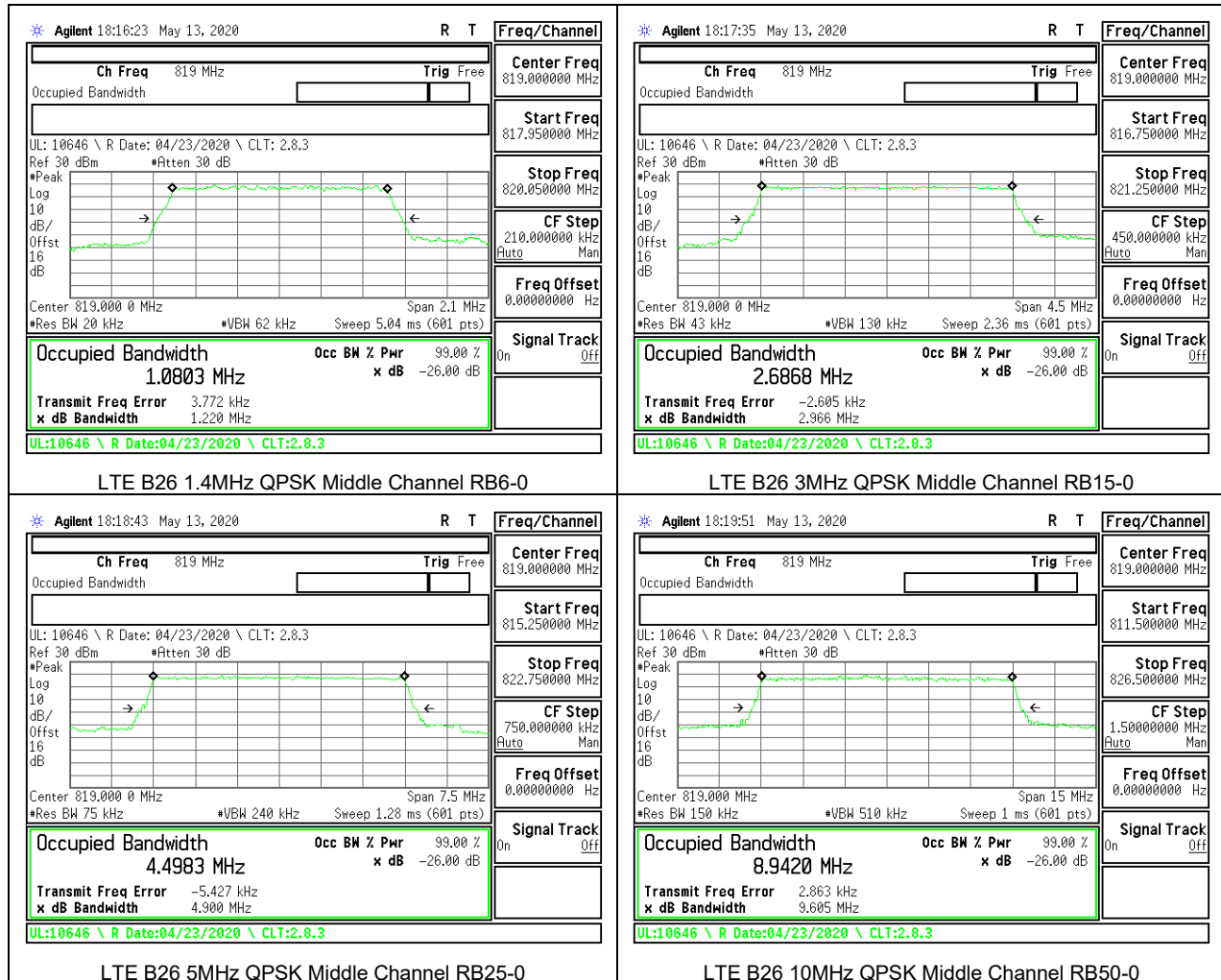
### 8.1.9. LTE BAND 17



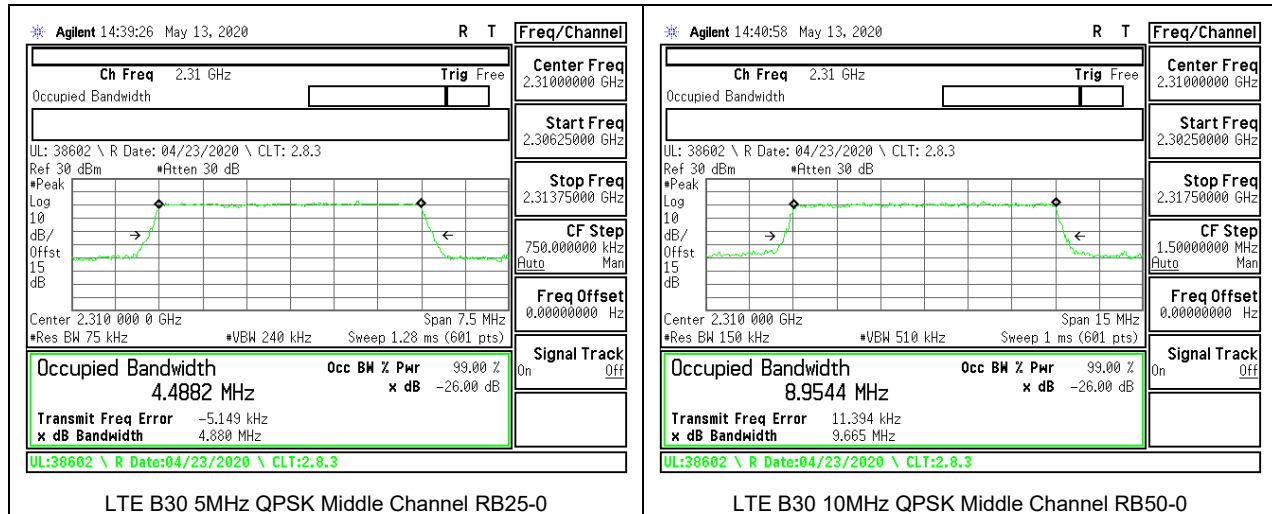
## 8.1.10. LTE BAND 25



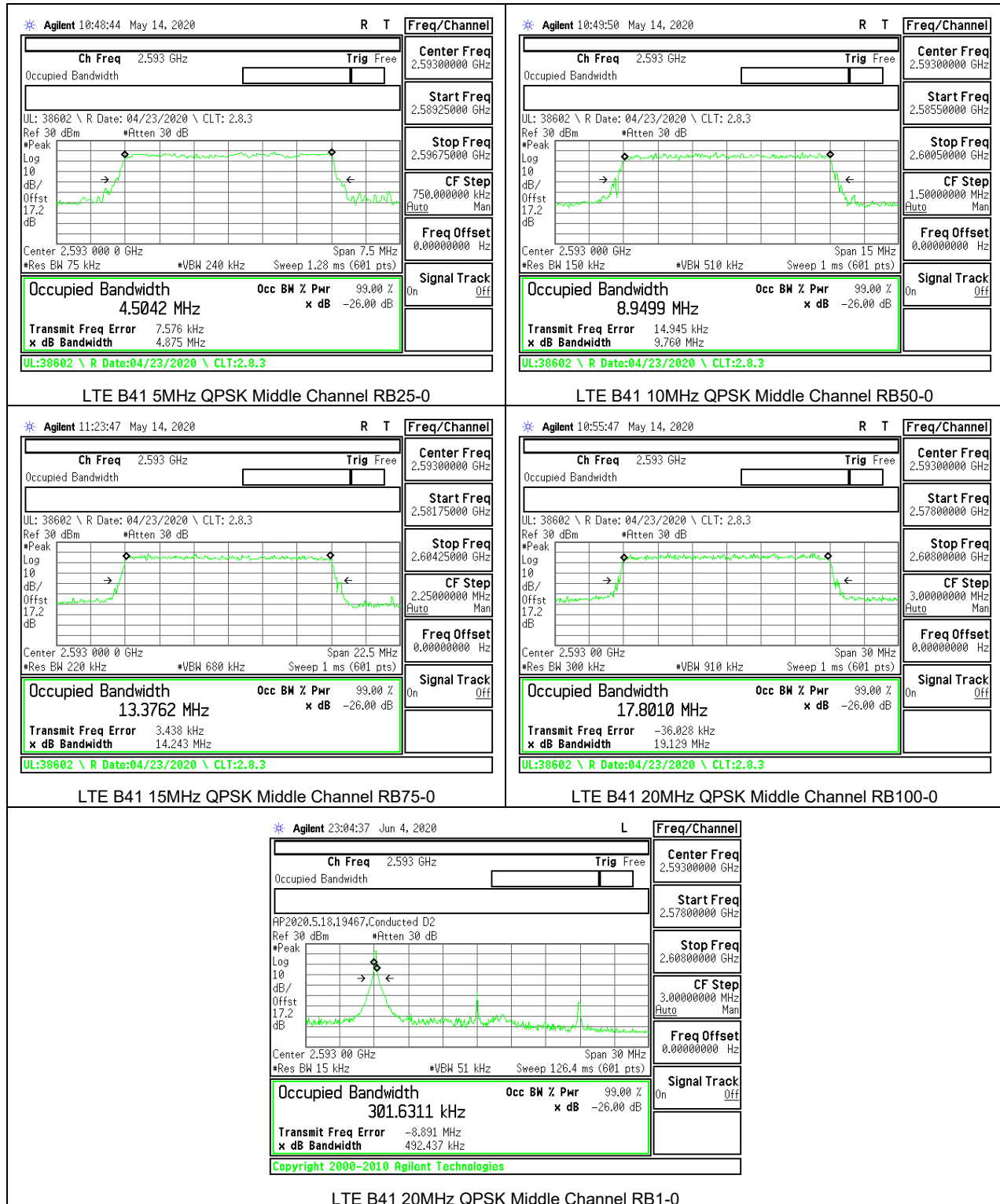
### 8.1.11. LTE BAND 26 (PART 90S)



## 8.1.12. LTE BAND 30



### 8.1.13. LTE BAND 41

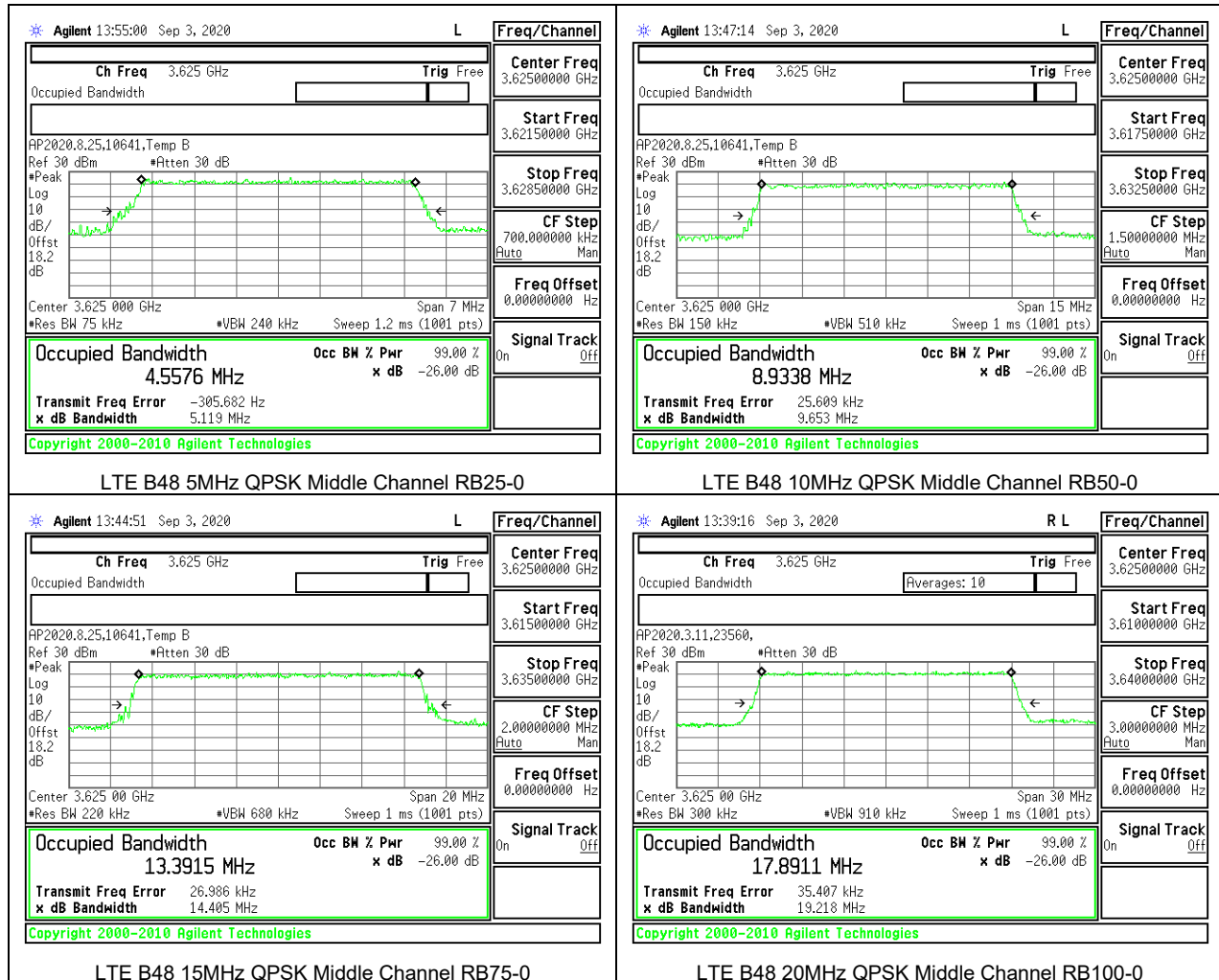


### 8.1.14. 5G NR BAND n41

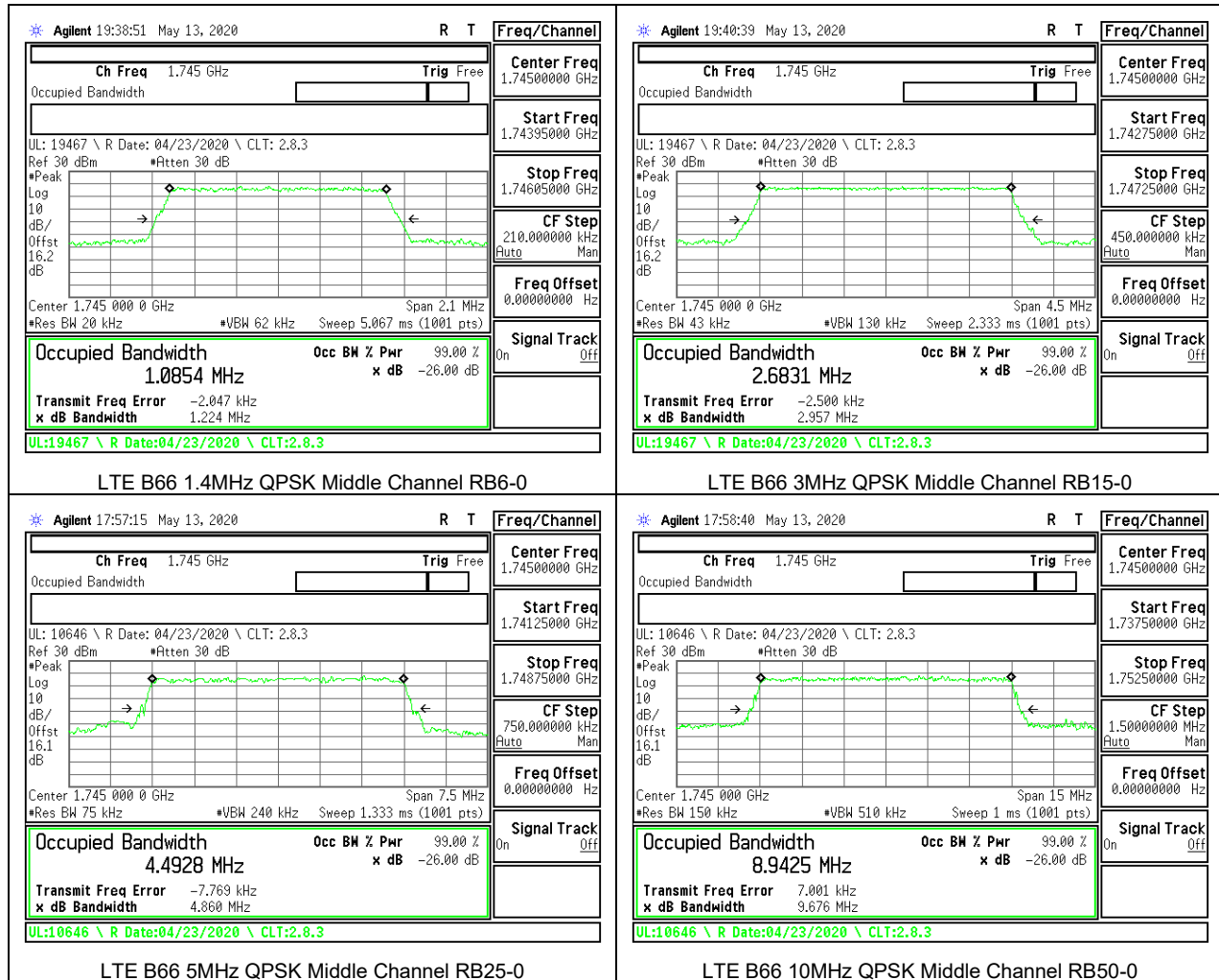


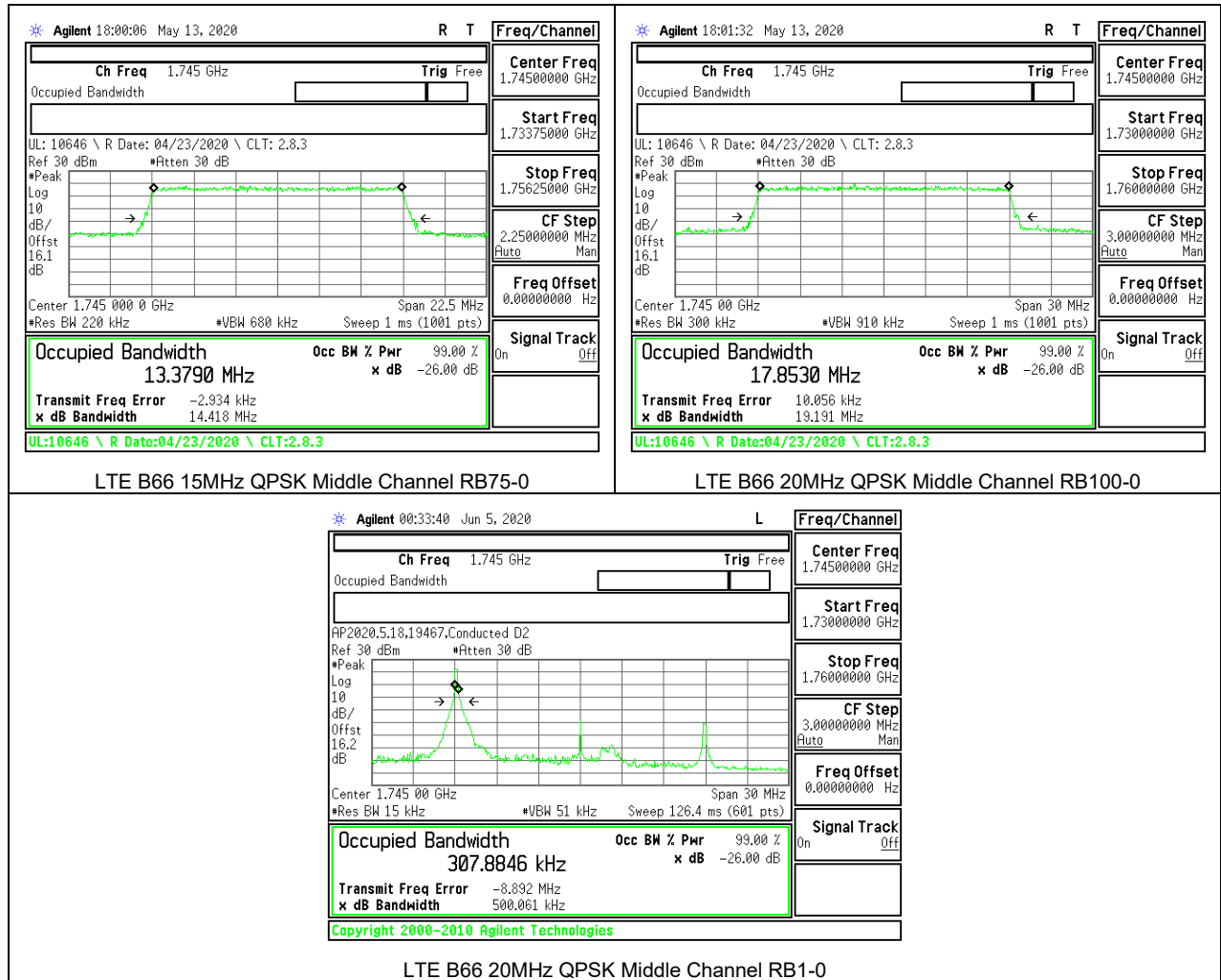


## 8.1.15. LTE BAND 48

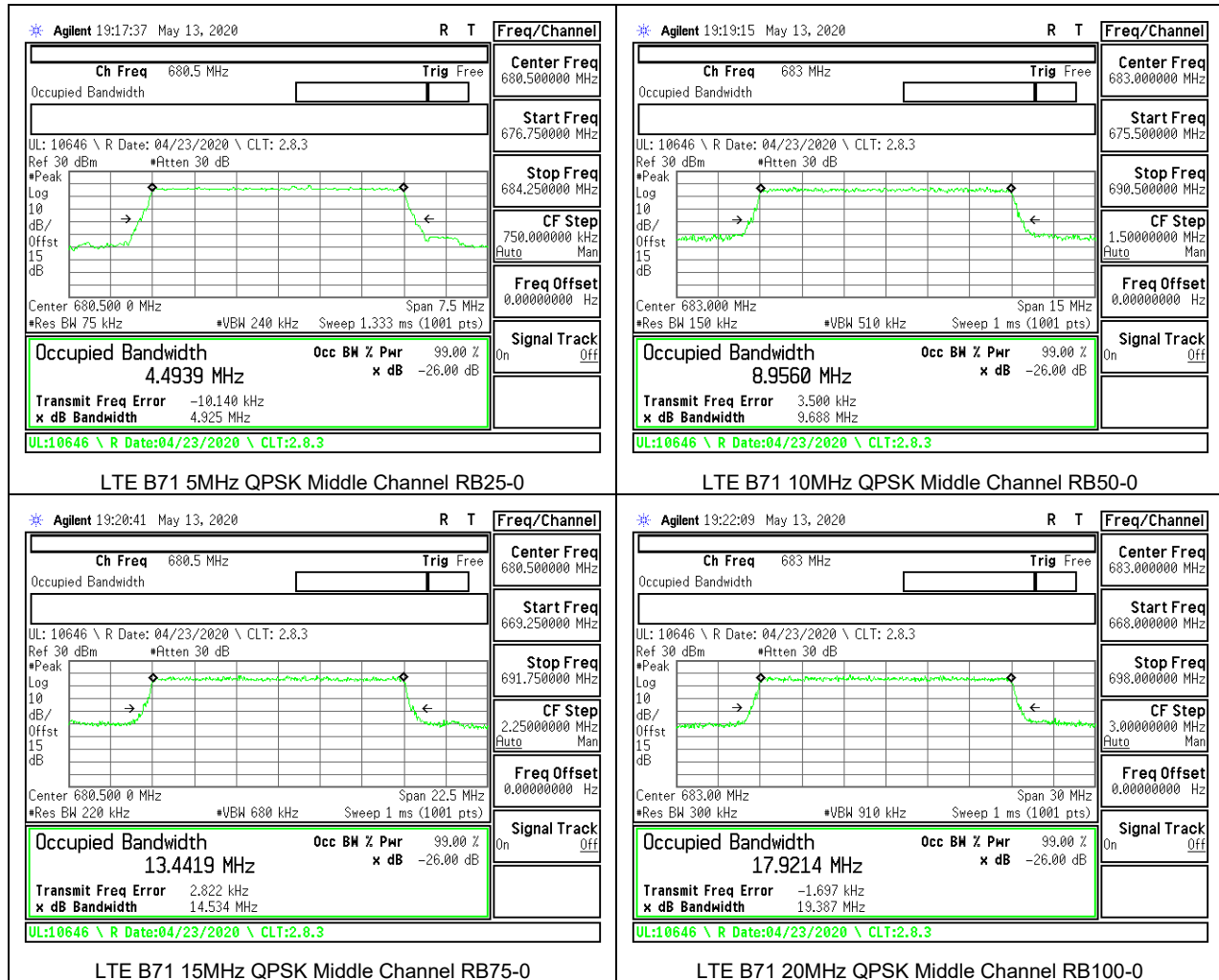


## 8.1.16. LTE BAND 66

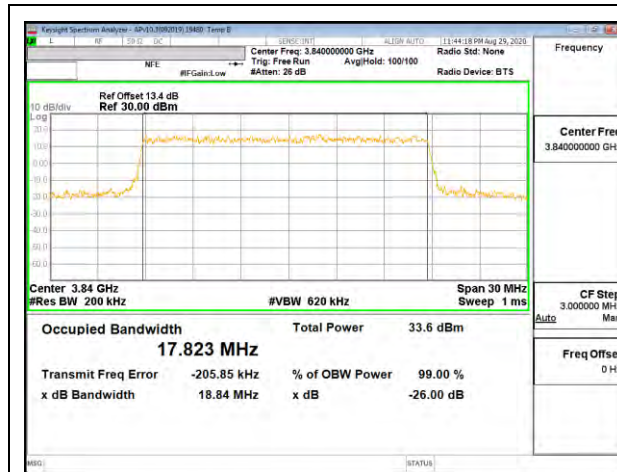




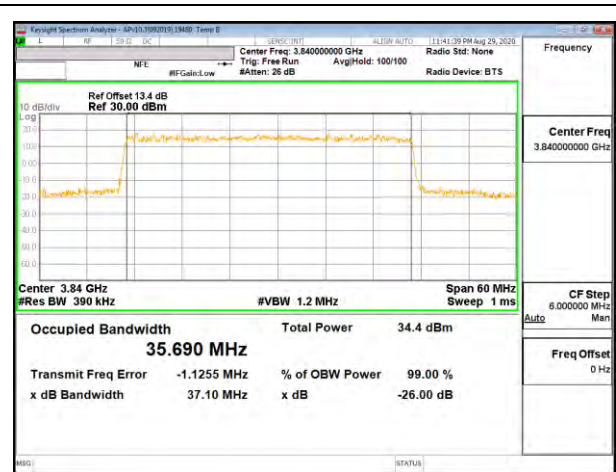
### 8.1.17. LTE BAND 71



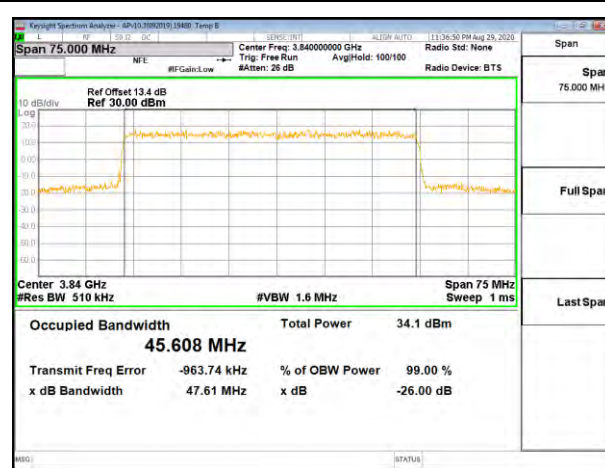
### 8.1.18. 5G NR BAND n77



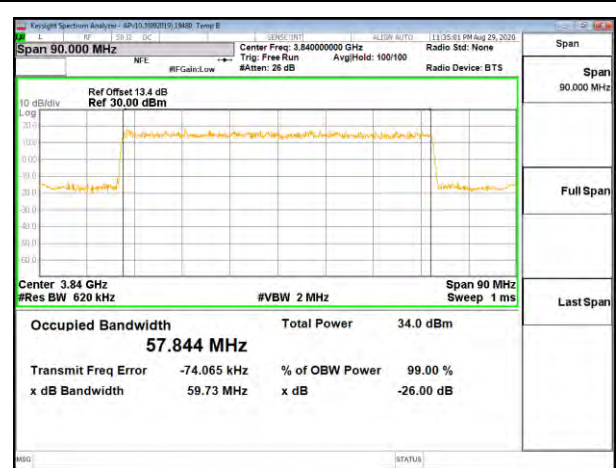
5G NR Bn77 20MHz QPSK Middle Channel RB100-0



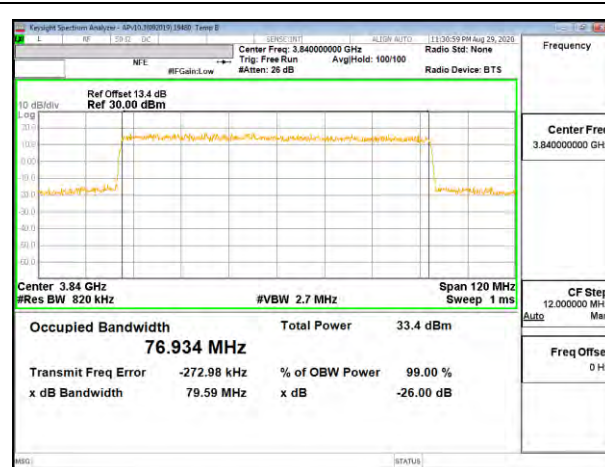
5G NR Bn77 40MHz QPSK Middle Channel RB100-0



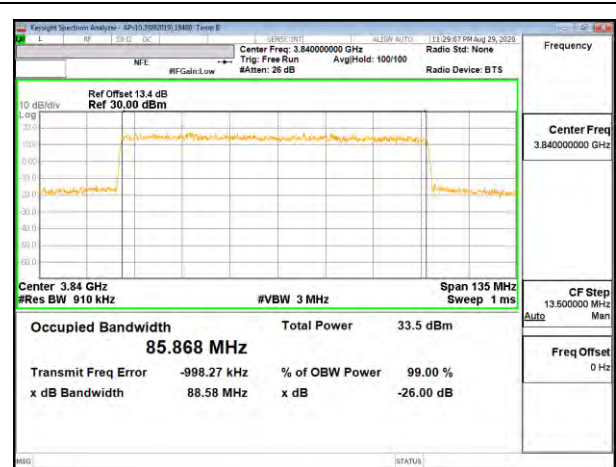
5G NR Bn77 50MHz QPSK Middle Channel RB128-0



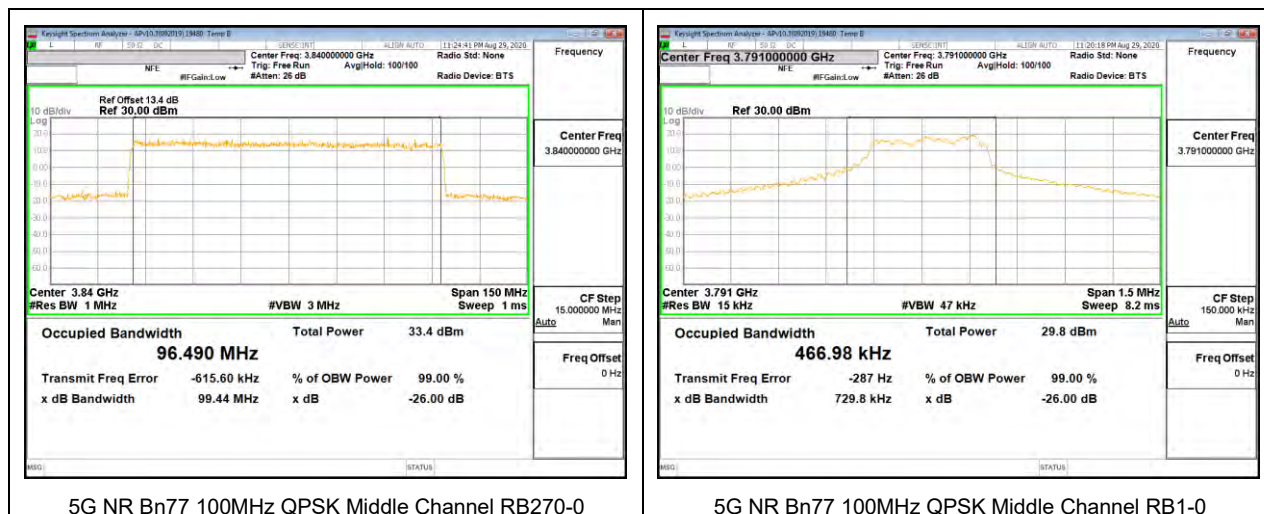
5G NR Bn77 60MHz QPSK Middle Channel RB162-0



5G NR Bn77 80MHz QPSK Middle Channel RB216-0



5G NR Bn77 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.

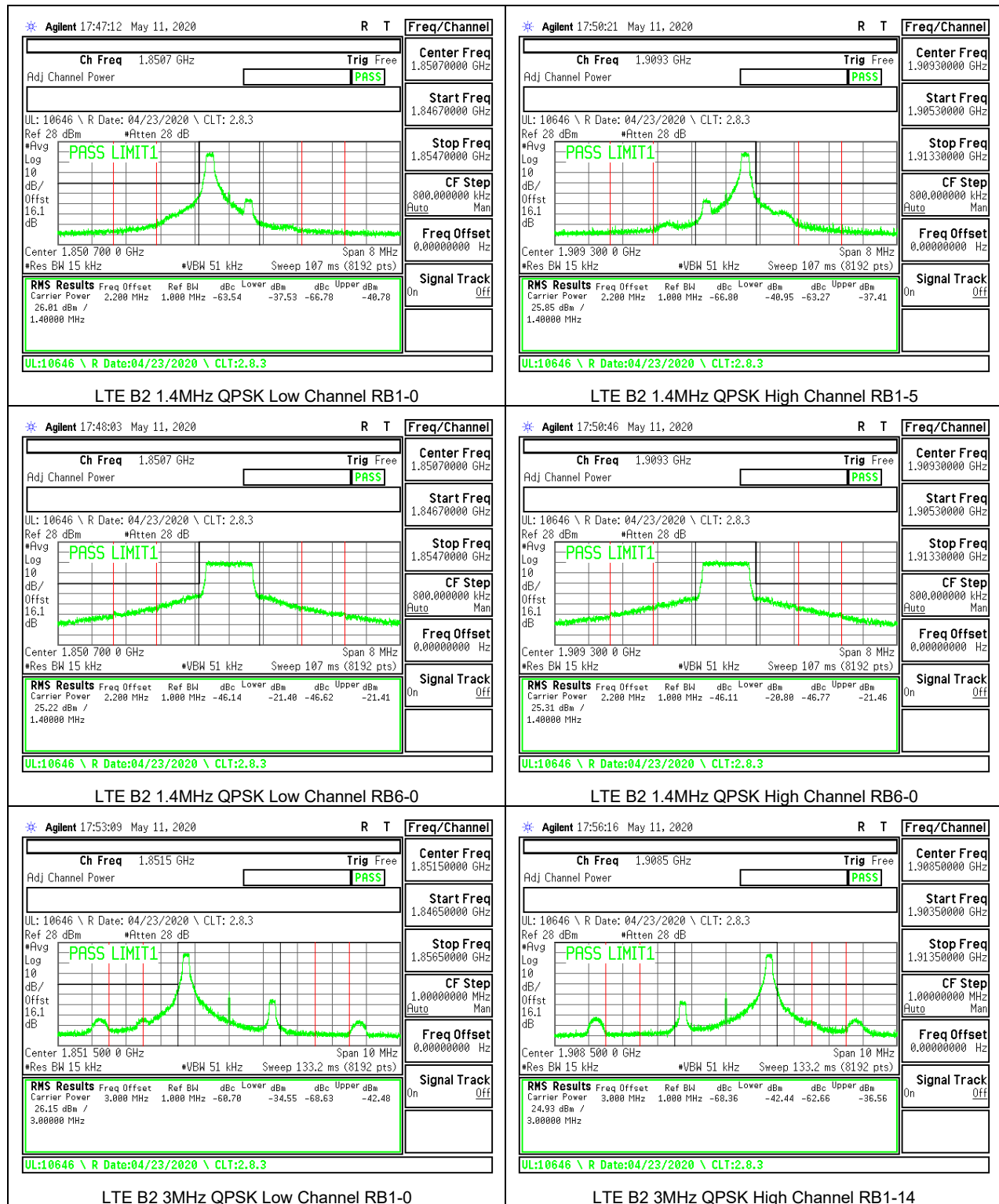
### **RESULTS**

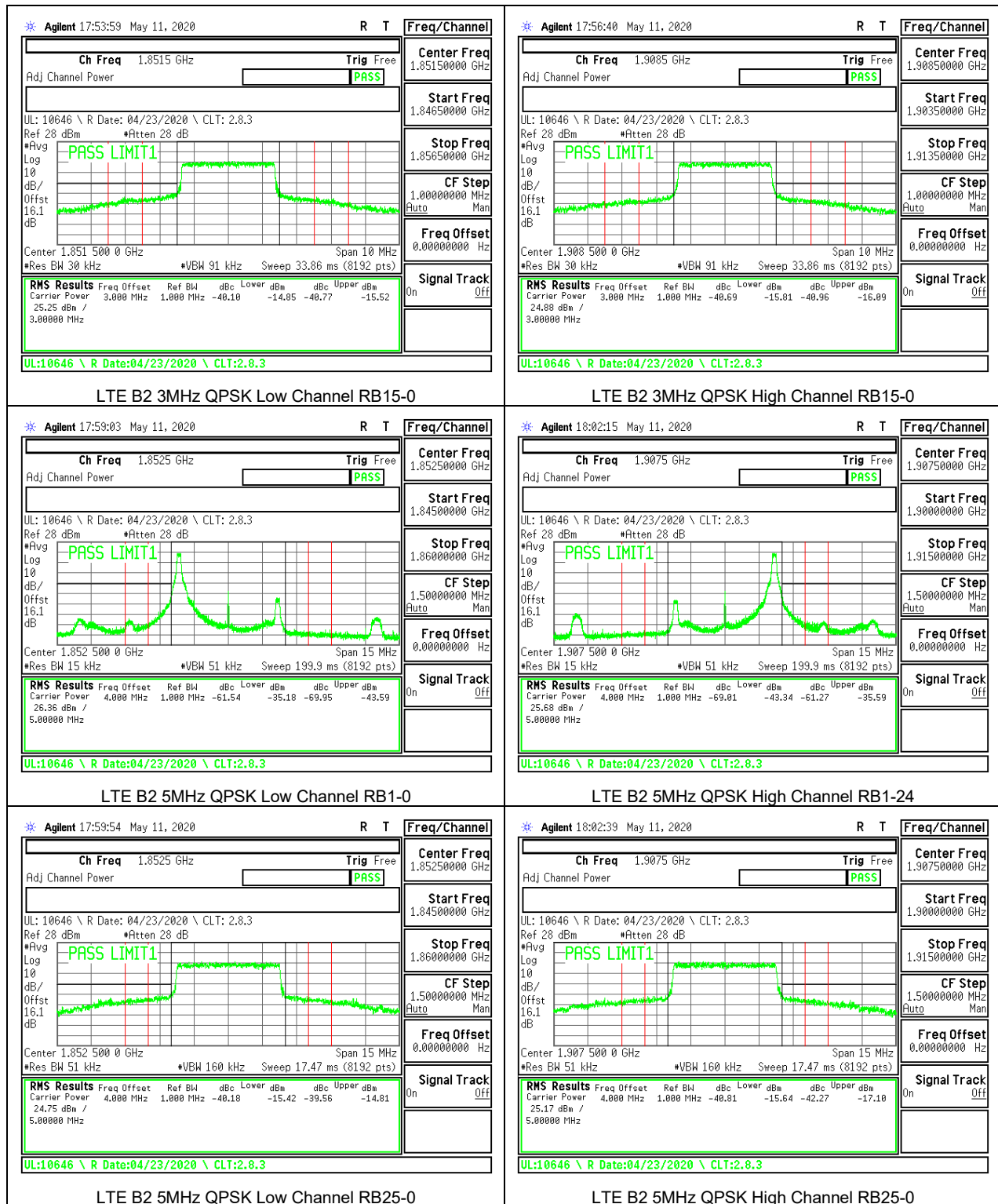
### 8.2.1. LTE BAND 2 BANDEDGE

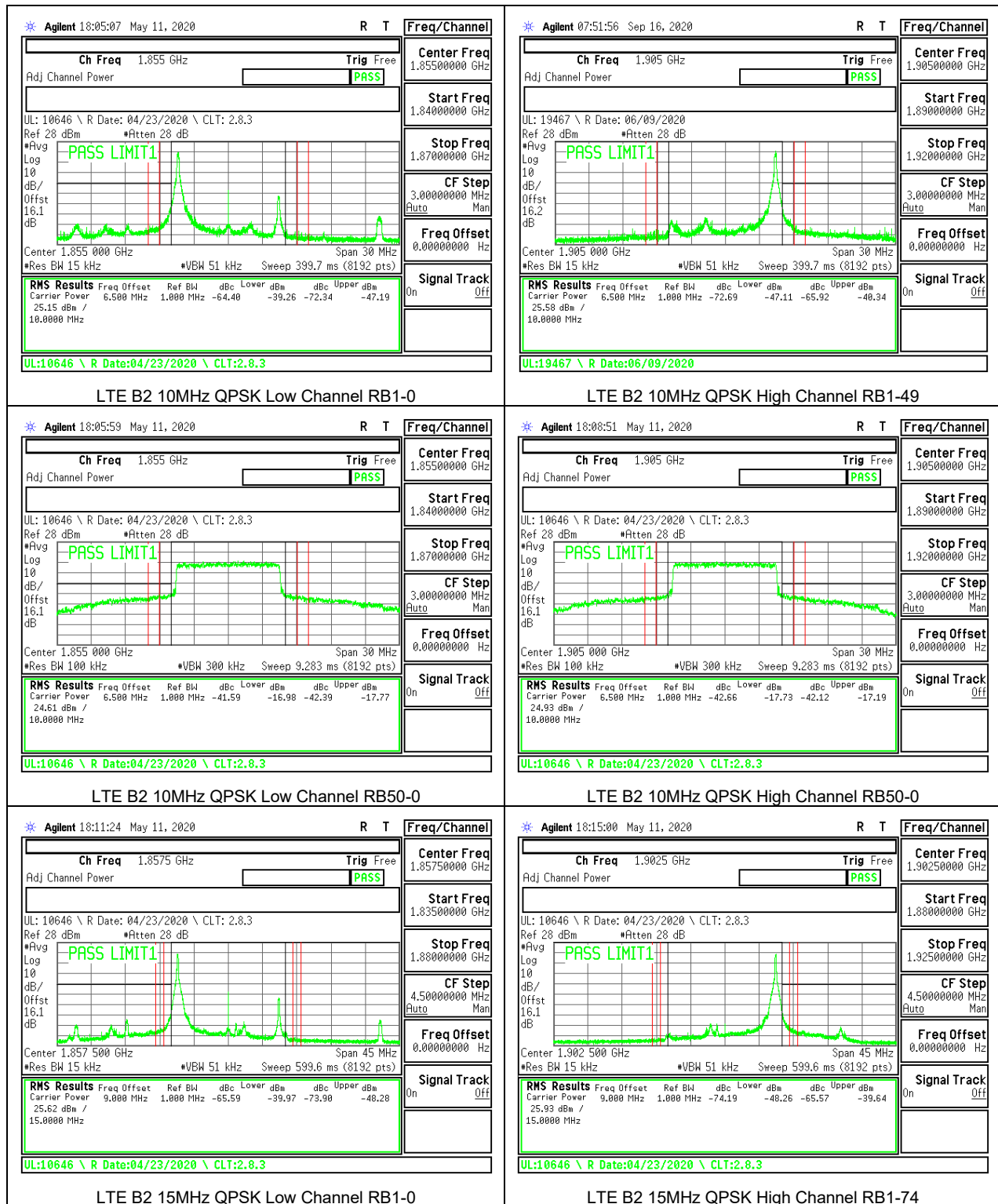
#### **LIMITS**

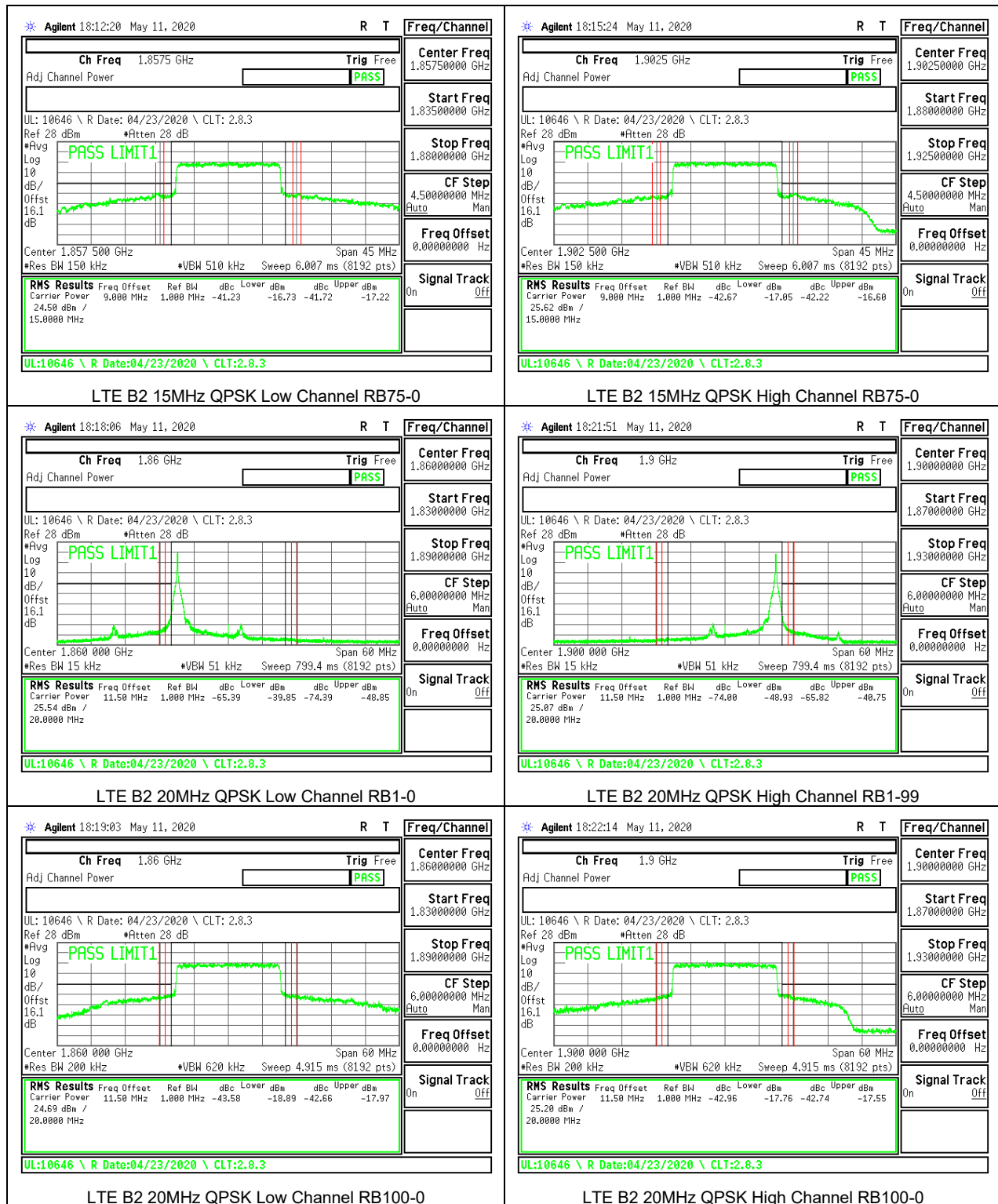
FCC: §24.238

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.









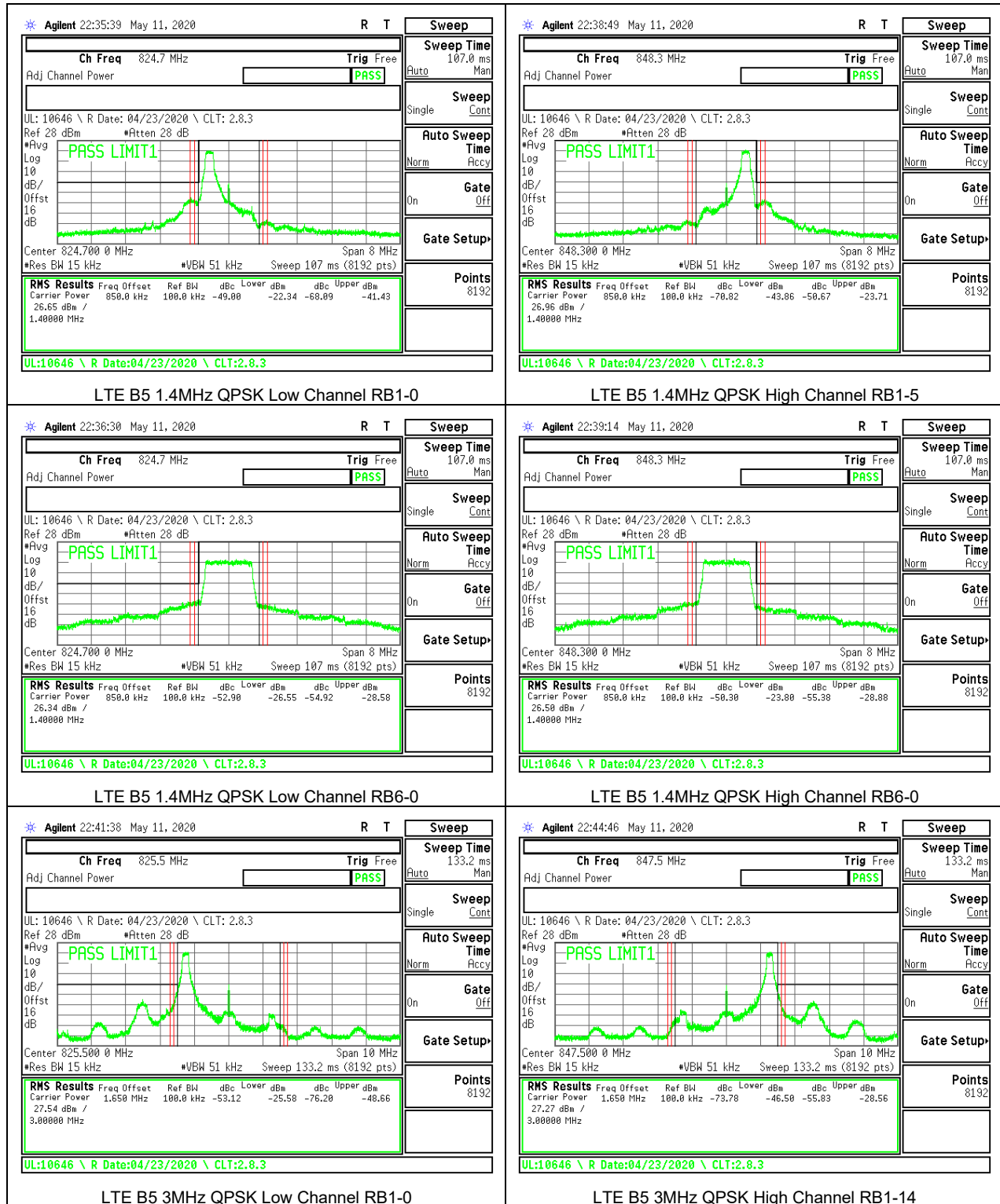
### 8.2.2. LTE BAND 5 AND 5G NR BAND n5 BANDEDGE

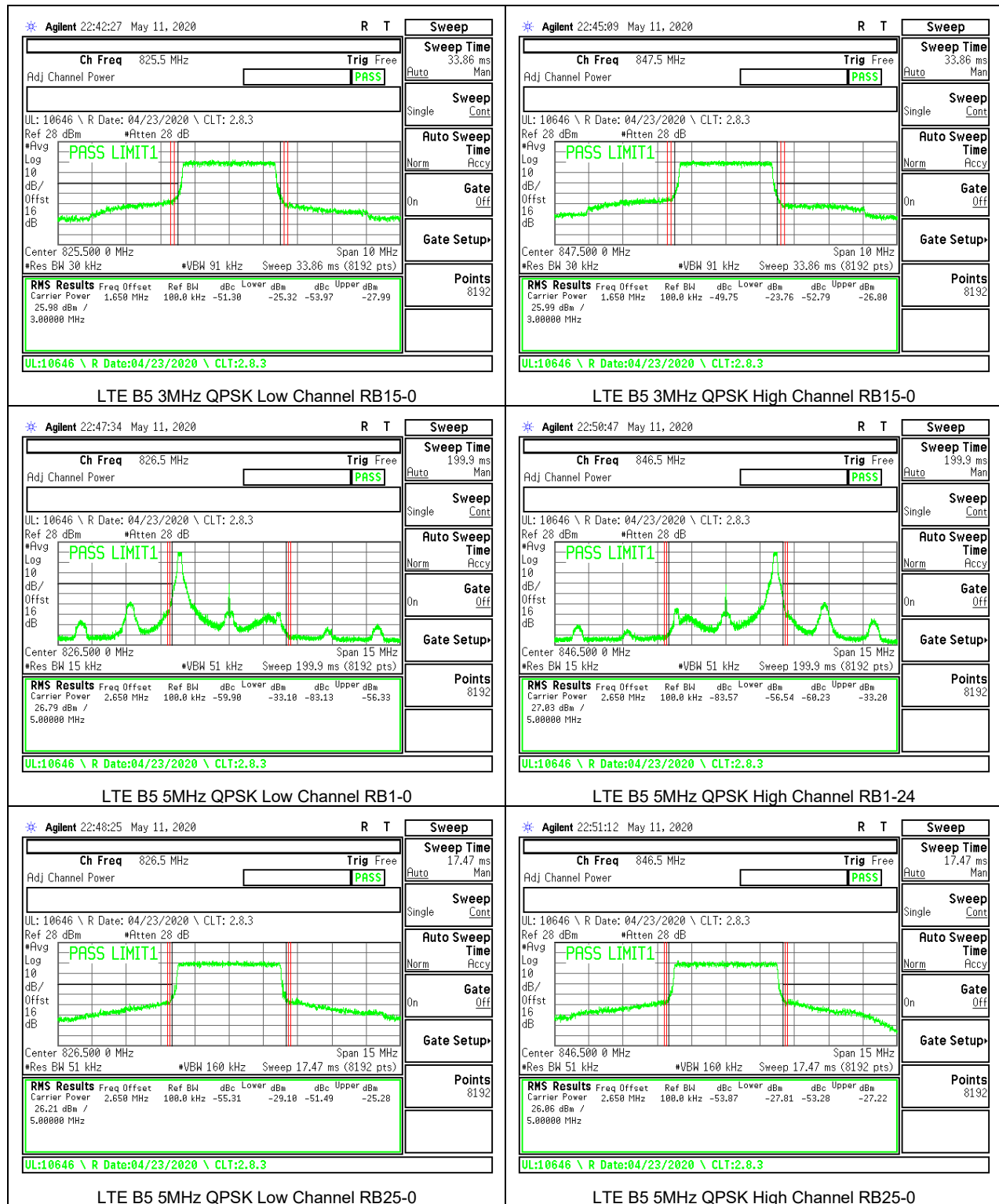
#### **LIMITS**

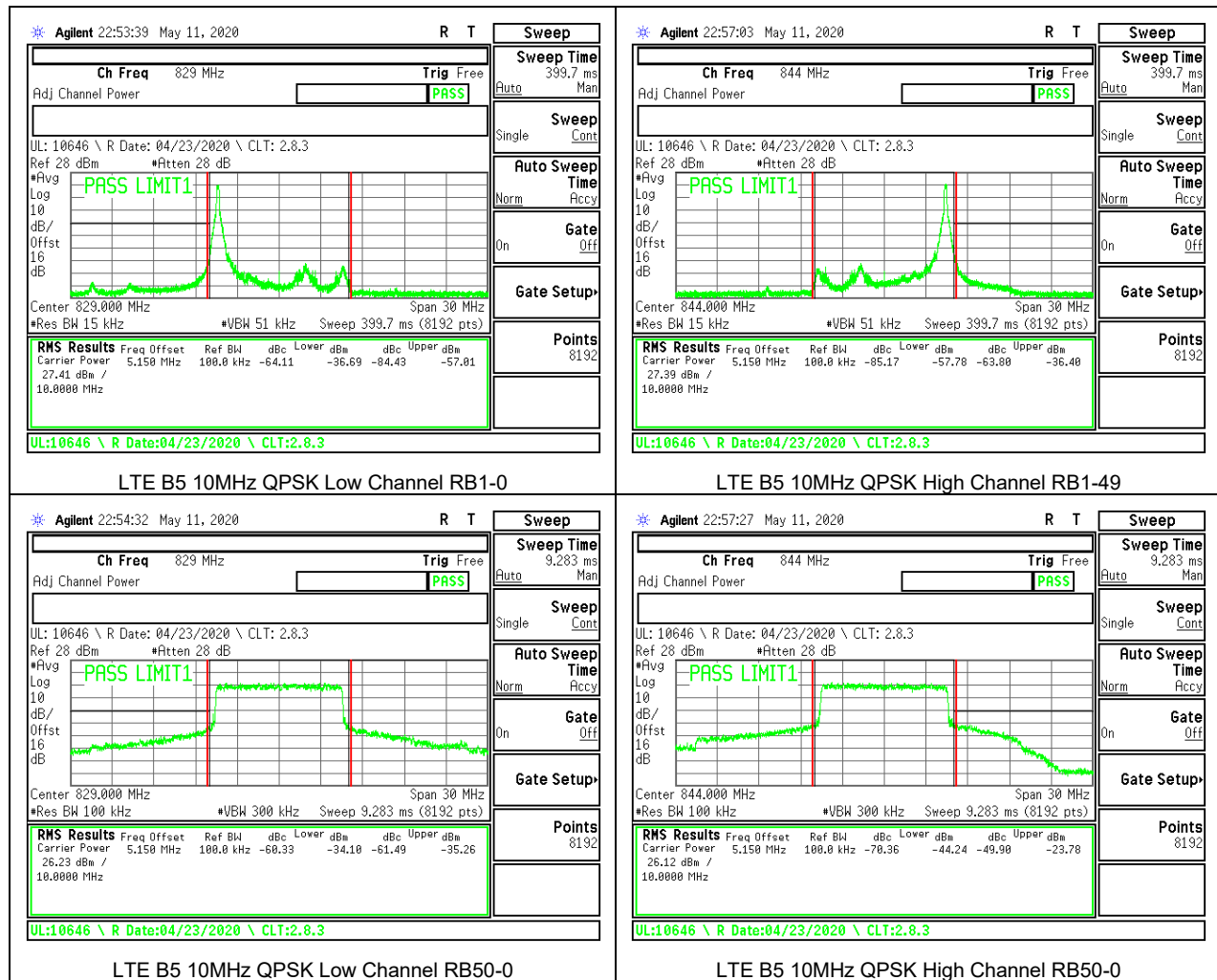
FCC: §22.917

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.

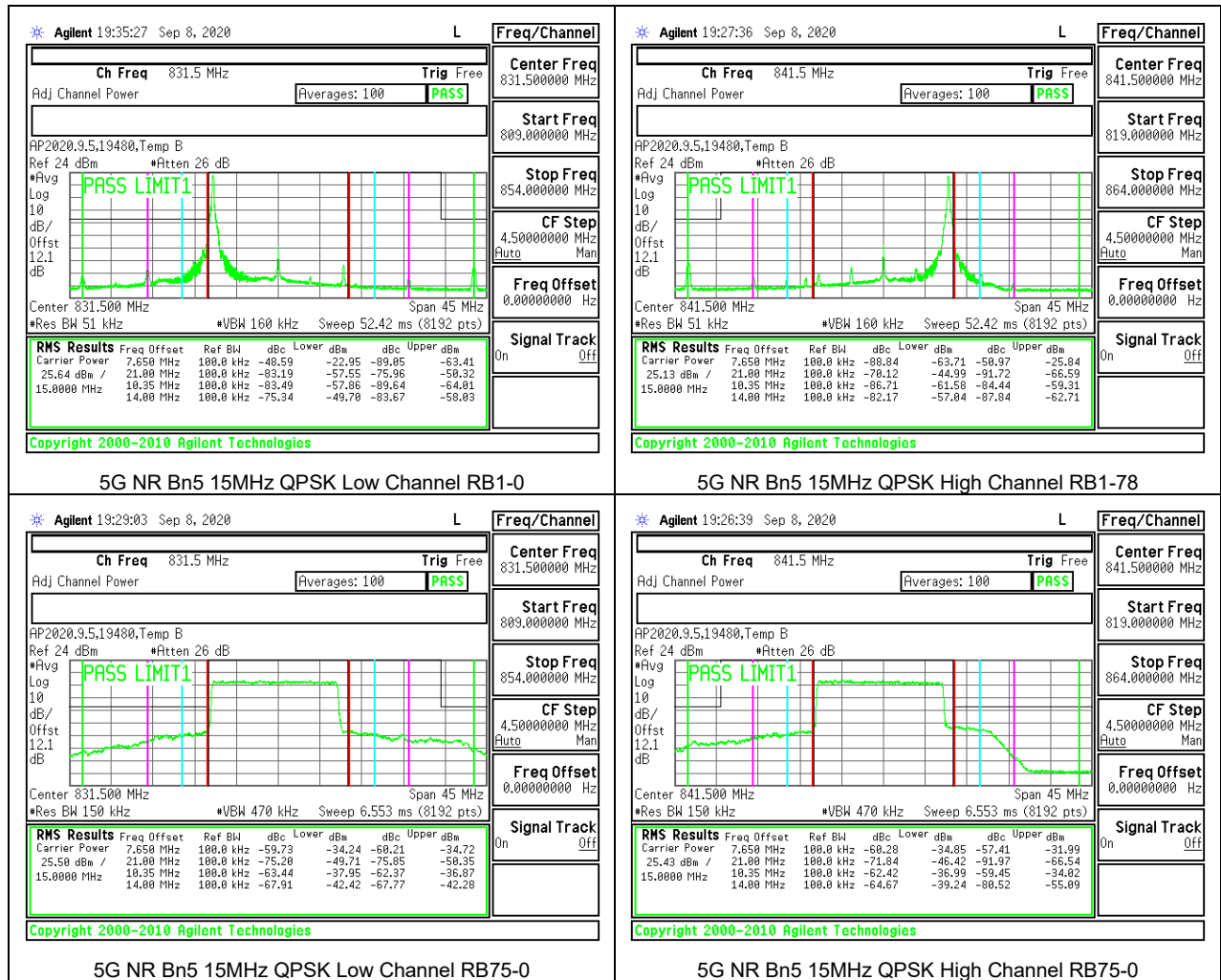
## LTE BAND 5 BANDEGE

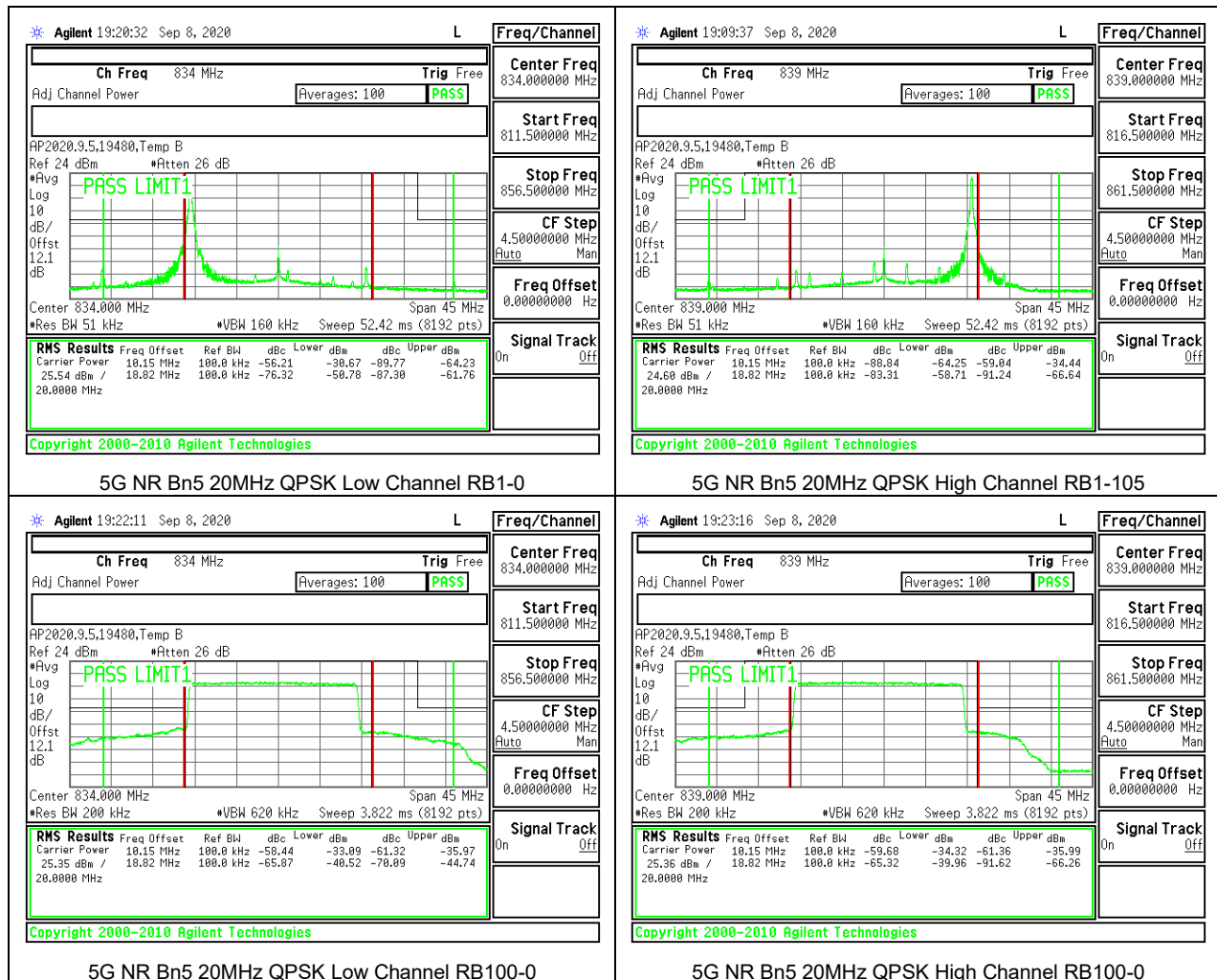






## 5G NR BAND n5 BANDEDGE





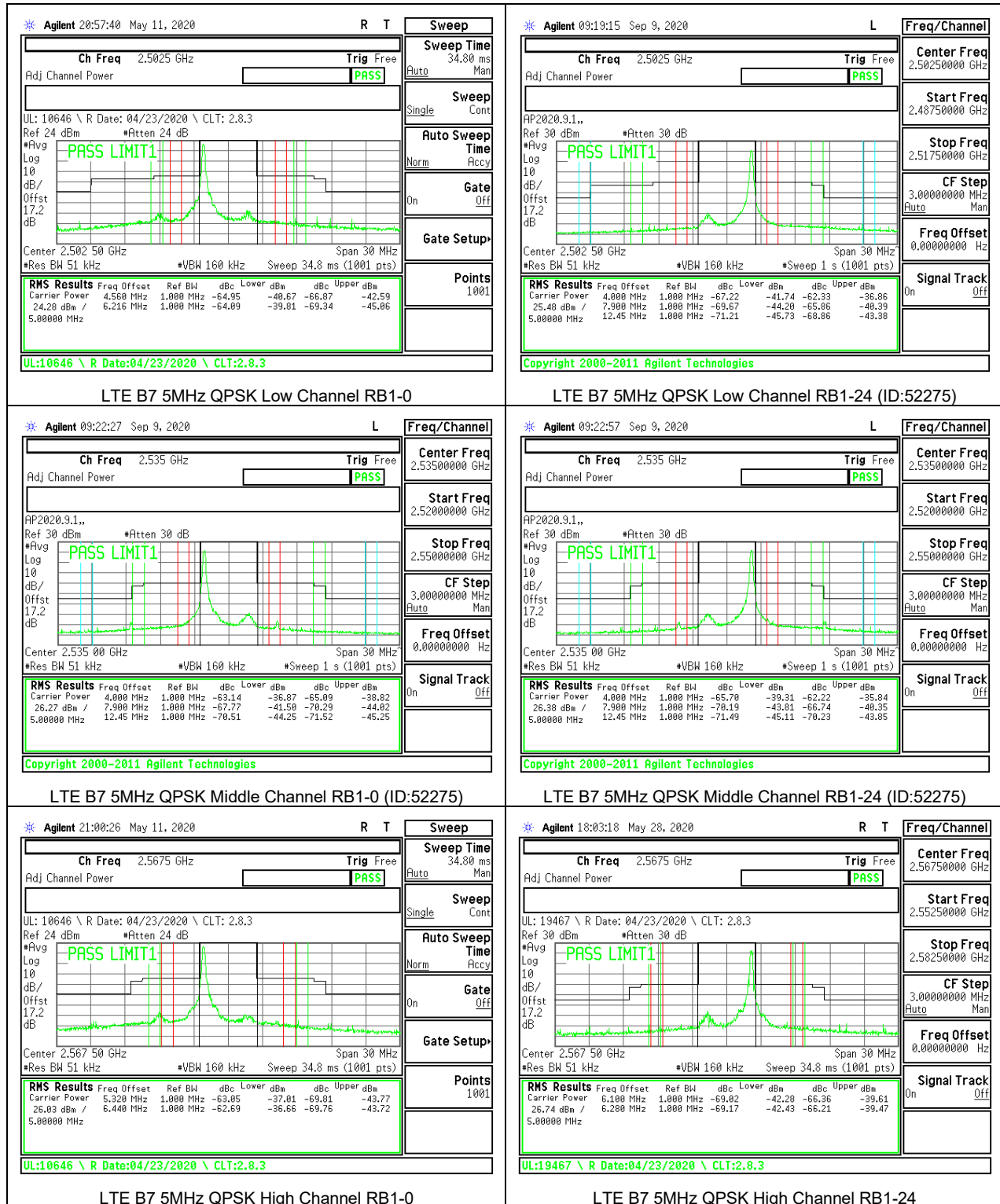
### 8.2.3. LTE BAND 7 ADJACENT CHANNEL POWER

#### **LIMITS**

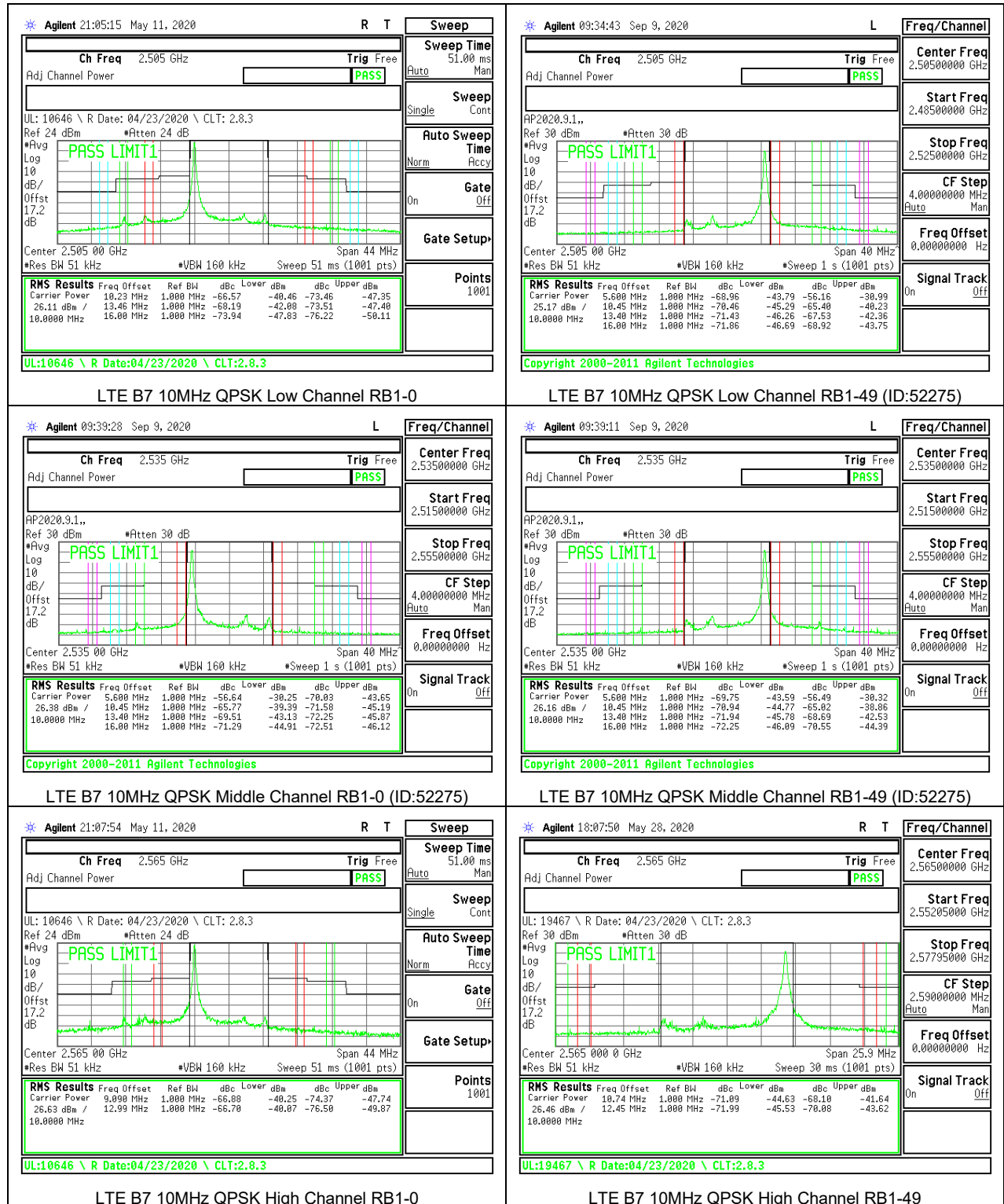
FCC: §27.53

(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.

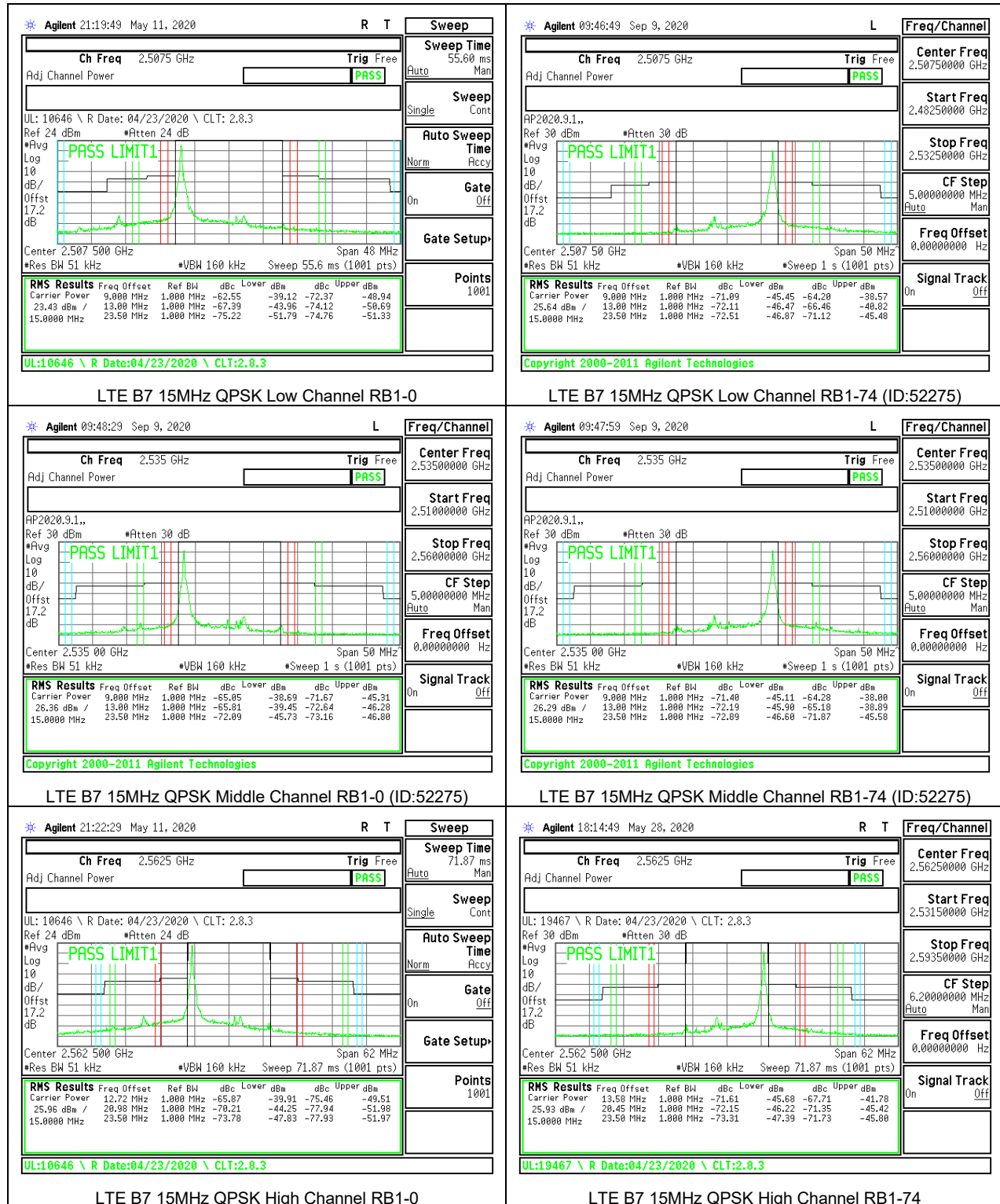
y

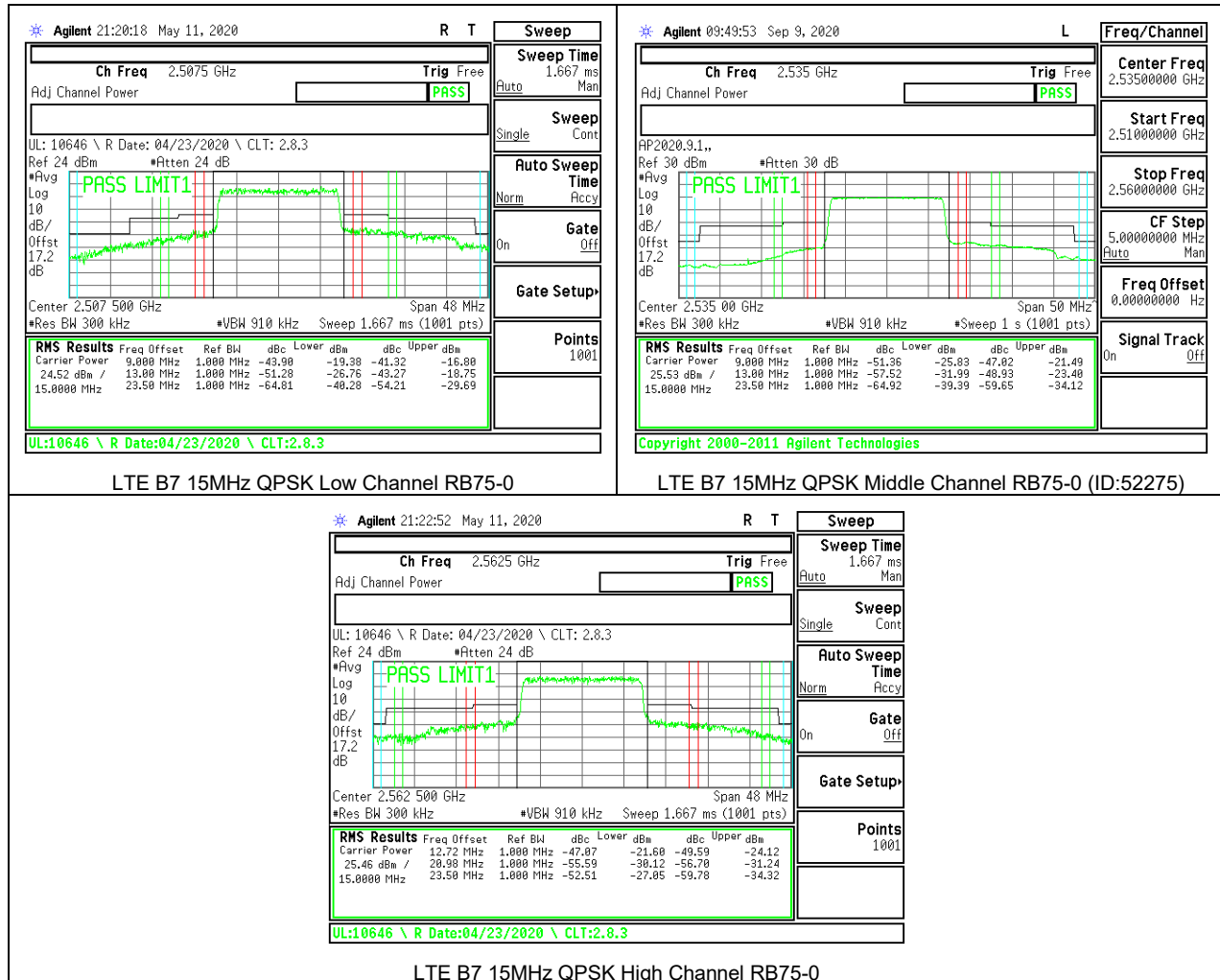


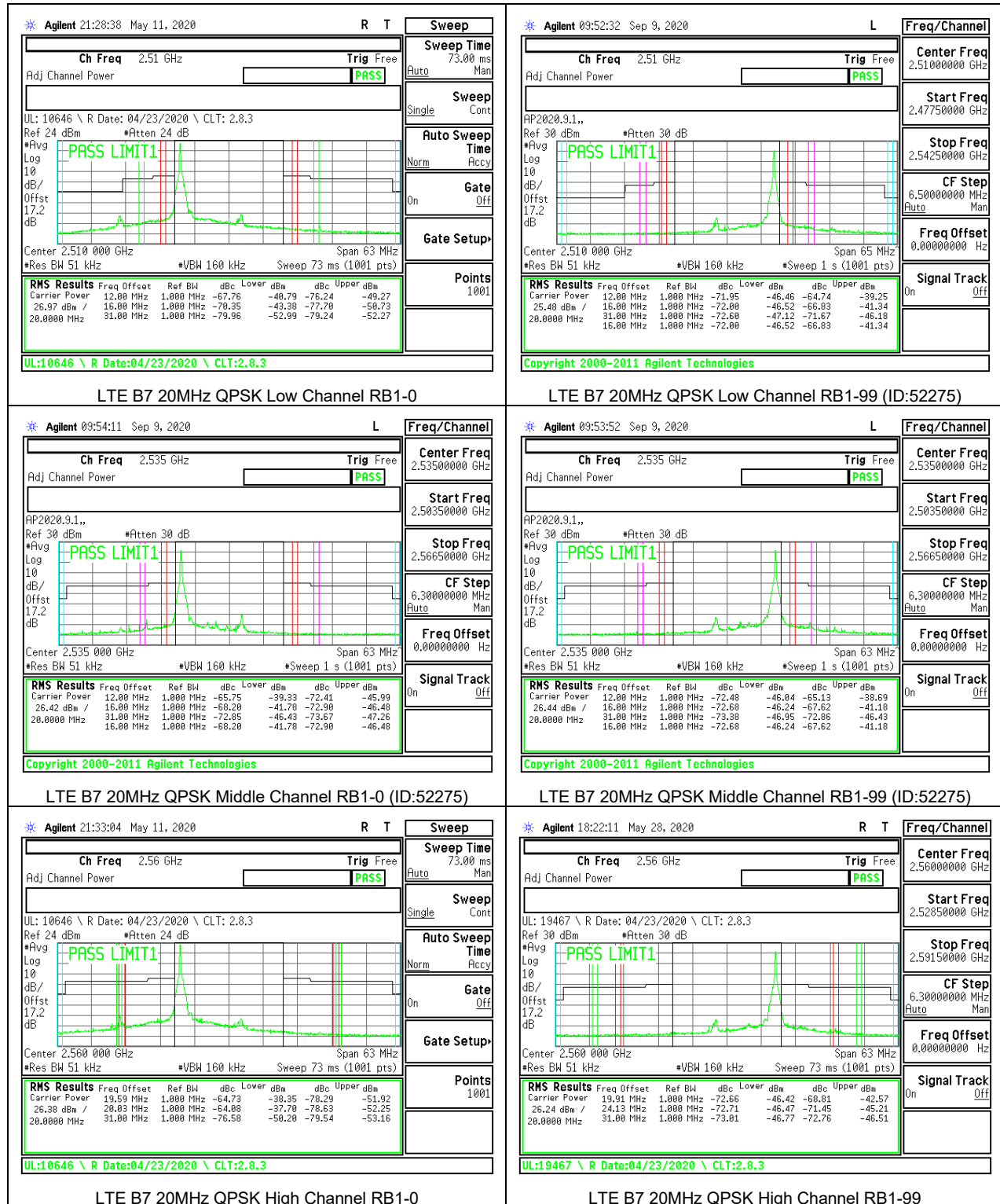














## 8.2.4. LTE BAND 12 AND 5G NR BAND n12 ADJACENT CHANNEL POWER

### **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

