



# **CERTIFICATION TEST REPORT**

**Report Number. :** 12607346-E7V2

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

**Model :** A2160, A2216, A2217

**FCC ID :** BCG-E3305A

**EUT Description :** SMARTPHONE

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

**Date Of Issue:**  
AUGUST 16, 2019

**Prepared by:**  
UL Verification Services Inc.  
47173 Benicia Street  
Fremont, CA 94538, U.S.A.  
TEL: (510) 319-4000  
FAX: (510) 661-0888



NVLAP Lab code: 200065-0

Revision History

| Rev. | Issue Date | Revisions             | Revised By  |
|------|------------|-----------------------|-------------|
| V1   | 8/8/2019   | Initial Review        | Lieu Nguyen |
| V2   | 8/16/2019  | Address TCB Questions | Lieu Nguyen |

## TABLE OF CONTENTS

|                                                |           |
|------------------------------------------------|-----------|
| <b>1. ATTESTATION OF TEST RESULTS .....</b>    | <b>8</b>  |
| <b>2. TEST METHODOLOGY .....</b>               | <b>9</b>  |
| <b>3. FACILITIES AND ACCREDITATION .....</b>   | <b>9</b>  |
| <b>4. CALIBRATION AND UNCERTAINTY .....</b>    | <b>10</b> |
| 4.1. MEASURING INSTRUMENT CALIBRATION .....    | 10        |
| 4.2. SAMPLE CALCULATION .....                  | 10        |
| 4.3. MEASUREMENT UNCERTAINTY .....             | 10        |
| <b>5. EQUIPMENT UNDER TEST .....</b>           | <b>11</b> |
| 5.1. DESCRIPTION OF EUT .....                  | 11        |
| 5.2. DIFFERENCE IN MODEL NUMBER .....          | 11        |
| 5.3. MAXIMUM OUTPUT POWER .....                | 11        |
| 5.4. SOFTWARE AND FIRMWARE .....               | 19        |
| 5.5. MAXIMUM ANTENNA GAIN .....                | 19        |
| 5.6. WORST-CASE CONFIGURATION AND MODE .....   | 20        |
| 5.7. DESCRIPTION OF TEST SETUP .....           | 21        |
| <b>6. TEST AND MEASUREMENT EQUIPMENT .....</b> | <b>23</b> |
| <b>7. RF OUTPUT POWER VERIFICATION .....</b>   | <b>24</b> |
| 7.1. LTE BAND 2 .....                          | 26        |
| 7.2. LTE BAND 5 .....                          | 29        |
| 7.3. LTE BAND 7 .....                          | 31        |
| 7.4. LTE BAND 12 .....                         | 33        |
| 7.5. LTE BAND 13 .....                         | 35        |
| 7.6. LTE BAND 14 .....                         | 36        |
| 7.7. LTE BAND 17 .....                         | 37        |
| 7.8. LTE BAND 25 .....                         | 38        |
| 7.9. LTE BAND 26 .....                         | 41        |
| 7.10. LTE BAND 30 .....                        | 43        |
| 7.11. LTE BAND 41 .....                        | 44        |
| 7.12. LTE BAND 48 .....                        | 46        |
| 7.13. LTE BAND 66 .....                        | 48        |
| 7.14. LTE BAND 71 .....                        | 51        |

|                                                  |           |
|--------------------------------------------------|-----------|
| <b>8. CONDUCTED TEST RESULTS .....</b>           | <b>53</b> |
| 8.1. OCCUPIED BANDWIDTH .....                    | 53        |
| 8.1.1. LTE BAND 2.....                           | 61        |
| 8.1.2. LTE BAND 5.....                           | 64        |
| 8.1.3. LTE BAND 7.....                           | 66        |
| 8.1.4. LTE BAND 12.....                          | 68        |
| 8.1.5. LTE BAND 13.....                          | 70        |
| 8.1.6. LTE BAND 14.....                          | 71        |
| 8.1.7. LTE BAND 17.....                          | 72        |
| 8.1.8. LTE BAND 25.....                          | 73        |
| 8.1.9. LTE BAND 26.....                          | 76        |
| 8.1.10. LTE BAND 30 .....                        | 80        |
| 8.1.11. LTE BAND 41 .....                        | 81        |
| 8.1.12. LTE BAND 48 .....                        | 83        |
| 8.1.13. LTE BAND 66 .....                        | 85        |
| 8.1.14. LTE BAND 71 .....                        | 88        |
| 8.2. BAND EDGE AND EMISSION MASK .....           | 92        |
| 8.2.1. LTE BAND 2 BANDEDGE .....                 | 97        |
| 8.2.2. LTE BAND 5 BANDEDGE .....                 | 105       |
| 8.2.3. LTE BAND 7 ADJACENT CHANNEL POWER .....   | 111       |
| 8.2.4. LTE BAND 12 ADJACENT CHANNEL POWER .....  | 123       |
| 8.2.5. LTE BAND 13 ADJACENT CHANNEL POWER .....  | 135       |
| 8.2.6. LTE BAND 14 ADJACENT CHANNEL .....        | 138       |
| 8.2.7. LTE BAND 17 BANDEDGE .....                | 141       |
| 8.2.8. LTE BAND 25 BANDEDGE .....                | 144       |
| 8.2.9. LTE BAND 26 EMISSION MASK.....            | 152       |
| 8.2.10. LTE BAND 30 ADJACENT CHANNEL POWER ..... | 157       |
| 8.2.11. LTE BAND 41 ADJACENT CHANNEL POWER ..... | 160       |
| 8.2.12. LTE BAND 48 ADJACENT CHANNEL POWER ..... | 172       |
| 8.2.13. LTE BAND 66 BANDEDGE .....               | 185       |
| 8.2.14. LTE BAND 71 ADJACENT CHANNEL POWER ..... | 193       |
| 8.3. OUT OF BAND EMISSIONS .....                 | 205       |
| 8.3.1. LTE BAND 2.....                           | 206       |
| 8.3.2. LTE BAND 5.....                           | 212       |

|         |                                        |     |
|---------|----------------------------------------|-----|
| 8.3.3.  | LTE BAND 7.....                        | 216 |
| 8.3.4.  | LTE BAND 12.....                       | 220 |
| 8.3.5.  | LTE BAND 13.....                       | 224 |
| 8.3.6.  | LTE BAND 14.....                       | 226 |
| 8.3.7.  | LTE BAND 17.....                       | 228 |
| 8.3.8.  | LTE BAND 25.....                       | 230 |
| 8.3.9.  | LTE BAND 26.....                       | 236 |
| 8.3.10. | LTE BAND 30.....                       | 240 |
| 8.3.11. | LTE BAND 41.....                       | 243 |
| 8.3.12. | LTE BAND 48.....                       | 247 |
| 8.3.13. | LTE BAND 66.....                       | 255 |
| 8.3.14. | LTE BAND 71.....                       | 261 |
| 8.4.    | FREQUENCY STABILITY.....               | 265 |
| 8.4.1.  | LTE BAND 2.....                        | 266 |
| 8.4.2.  | LTE BAND 5.....                        | 266 |
| 8.4.3.  | LTE BAND 7.....                        | 267 |
| 8.4.4.  | LTE BAND 12.....                       | 267 |
| 8.4.5.  | LTE BAND 13.....                       | 268 |
| 8.4.6.  | LTE BAND 14.....                       | 268 |
| 8.4.7.  | LTE BAND 17.....                       | 269 |
| 8.4.8.  | LTE BAND 25.....                       | 269 |
| 8.4.9.  | LTE BAND 26.....                       | 270 |
| 8.4.10. | LTE BAND 30.....                       | 270 |
| 8.4.11. | LTE BAND 41.....                       | 271 |
| 8.4.12. | LTE BAND 48.....                       | 272 |
| 8.4.13. | LTE BAND 66.....                       | 272 |
| 8.4.14. | LTE BAND 71.....                       | 273 |
| 8.5.    | PEAK-TO-AVERAGE POWER RATIO LIMIT..... | 274 |
| 8.5.1.  | LTE BAND 2.....                        | 275 |
| 8.5.2.  | LTE BAND 5.....                        | 277 |
| 8.5.3.  | LTE BAND 7.....                        | 279 |
| 8.5.4.  | LTE BAND 12.....                       | 281 |
| 8.5.5.  | LTE BAND 13.....                       | 283 |
| 8.5.6.  | LTE BAND 14.....                       | 284 |

|           |                                                   |            |
|-----------|---------------------------------------------------|------------|
| 8.5.7.    | LTE BAND 17.....                                  | 285        |
| 8.5.8.    | LTE BAND 25.....                                  | 286        |
| 8.5.9.    | LTE BAND 26.....                                  | 288        |
| 8.5.10.   | LTE BAND 30.....                                  | 290        |
| 8.5.11.   | LTE BAND 41.....                                  | 291        |
| 8.5.12.   | LTE BAND 48.....                                  | 291        |
| 8.5.13.   | LTE BAND 66.....                                  | 292        |
| 8.5.14.   | LTE BAND 71.....                                  | 294        |
| <b>9.</b> | <b>RADIATED TEST RESULTS .....</b>                | <b>296</b> |
| 9.1.      | FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1 ..... | 298        |
| 9.1.1.    | LTE BAND 2.....                                   | 298        |
| 9.1.2.    | LTE BAND 5.....                                   | 300        |
| 9.1.3.    | LTE BAND 7.....                                   | 302        |
| 9.1.4.    | LTE BAND 12.....                                  | 304        |
| 9.1.5.    | LTE BAND 13.....                                  | 306        |
| 9.1.6.    | LTE BAND 14.....                                  | 307        |
| 9.1.7.    | LTE BAND 17.....                                  | 308        |
| 9.1.8.    | LTE BAND 25.....                                  | 309        |
| 9.1.9.    | LTE BAND 26.....                                  | 311        |
| 9.1.10.   | LTE BAND 30.....                                  | 312        |
| 9.1.11.   | LTE BAND 41.....                                  | 313        |
| 9.1.12.   | LTE BAND 48.....                                  | 315        |
| 9.1.13.   | LTE BAND 66.....                                  | 317        |
| 9.1.14.   | LTE BAND 71.....                                  | 319        |
| 9.2.      | FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2 ..... | 321        |
| 9.2.1.    | LTE BAND 2.....                                   | 321        |
| 9.2.2.    | LTE BAND 5.....                                   | 323        |
| 9.2.3.    | LTE BAND 7.....                                   | 325        |
| 9.2.4.    | LTE BAND 12.....                                  | 327        |
| 9.2.5.    | LTE BAND 13.....                                  | 329        |
| 9.2.6.    | LTE BAND 14.....                                  | 330        |
| 9.2.7.    | LTE BAND 17.....                                  | 331        |
| 9.2.8.    | LTE BAND 25.....                                  | 332        |
| 9.2.9.    | LTE BAND 26.....                                  | 334        |

|         |                                                   |     |
|---------|---------------------------------------------------|-----|
| 9.2.10. | LTE BAND 30 .....                                 | 335 |
| 9.2.11. | LTE BAND 41 .....                                 | 336 |
| 9.2.13. | LTE BAND 66 .....                                 | 339 |
| 9.2.14. | LTE BAND 71 .....                                 | 341 |
| 9.3.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3 ..... | 343 |
| 9.3.1.  | LTE BAND 2.....                                   | 343 |
| 9.3.2.  | LTE BAND 7.....                                   | 345 |
| 9.3.3.  | LTE BAND 25.....                                  | 347 |
| 9.3.4.  | LTE BAND 30.....                                  | 349 |
| 9.3.5.  | LTE BAND 41.....                                  | 350 |
| 9.3.6.  | LTE BAND 48.....                                  | 352 |
| 9.3.7.  | LTE BAND 66.....                                  | 354 |
| 9.4.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4 ..... | 356 |
| 9.4.1.  | LTE BAND 2.....                                   | 356 |
| 9.4.2.  | LTE BAND 7.....                                   | 358 |
| 9.4.3.  | LTE BAND 25.....                                  | 360 |
| 9.4.4.  | LTE BAND 30.....                                  | 362 |
| 9.4.5.  | LTE BAND 41.....                                  | 363 |
| 9.4.6.  | LTE BAND 48.....                                  | 365 |
| 9.4.7.  | LTE BAND 66.....                                  | 367 |
| 9.5.    | FIELD STRENGTH OF SPURIOUS RADIATION, ANT 6 ..... | 369 |
| 9.5.1.  | LTE BAND 48.....                                  | 369 |
| 10.     | SETUP PHOTOS.....                                 | 371 |

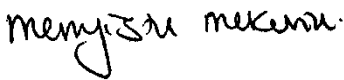
## 1. ATTESTATION OF TEST RESULTS

|                            |                                                                |
|----------------------------|----------------------------------------------------------------|
| Applicant Name and Address | APPLE, INC.<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A. |
| Model                      | A2160, A2216, A2217                                            |
| FCC ID                     | BCG-E3305A                                                     |
| EUT Description            | SMARTPHONE                                                     |
| Serial Number              | C39YV073N2R5 (Conducted), C39YJ033MKLX (Radiated)              |
| Date Tested                | MARCH 29, 2019 to AUGUST 14, 2019                              |
| Applicable Standards       | PART 22H, 24E, 27, 90S, AND 96                                 |
| Test Results               | COMPLIES                                                       |

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.

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.

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.

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

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.26:2015, FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90S, Part 90S, and 96, FCC KDB 971168 D01 v03r01/ D02 v02r01, KDB 412172 D01 v01r01.

## 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 (ISED:2324B-1) | <input type="checkbox"/> Chamber D (ISED:22541-1) | <input type="checkbox"/> Chamber I (ISED: 2324A-5) |
| <input checked="" type="checkbox"/> Chamber B (ISED:2324B-2) | <input type="checkbox"/> Chamber E (ISED:22541-2) | <input type="checkbox"/> Chamber J (ISED: 2324A-6) |
| <input type="checkbox"/> Chamber C (ISED:2324B-3)            | <input type="checkbox"/> Chamber F (ISED:22541-3) | <input type="checkbox"/> Chamber K (ISED: 2324A-1) |
|                                                              | <input type="checkbox"/> Chamber G (ISED:22541-4) | <input type="checkbox"/> Chamber L (ISED: 2324A-3) |
|                                                              | <input type="checkbox"/> Chamber H (ISED:22541-5) |                                                    |

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.

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

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

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

### 4.2. SAMPLE CALCULATION

#### 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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB + 10.1 dB + 0 dB = 46.6 dBuV

### 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER                                | UNCERTAINTY |
|------------------------------------------|-------------|
| Conducted Disturbance, 9KHz to 0.15 MHz  | 3.84 dB     |
| Conducted Disturbance, 0.15 to 30 MHz    | 3.65 dB     |
| Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB     |
| Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB     |
| Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB     |
| Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB     |
| 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%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

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

### 5.2. DIFFERENCE IN MODEL NUMBER

Model A2160, A2216 and A2217 is electrically identical to Model A2160. Three model numbers are allocated for marketing and logistic purposes only. A2160 was used to perform all final tests.

### 5.3. MAXIMUM OUTPUT POWER

#### ERP/EIRP LIMIT

FCC: \$2.1046, \$22.913, \$24.232, \$27.50, \$90.635, \$90.541, and \$96.41

#### EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015  
KDB 971168 D01 Section 5.6

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

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

$P_{Meas}$  = 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            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.50               |                       |                         |                    |                  |              |                     |
| 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                | 24.8                    | 22.30              | 0.170            | 1090.8       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 21.60              | 0.145            | 1083.9       | 1M08D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 20.80              | 0.120            | 1093.3       | 1M09D7W             |
| 3.0                | QPSK       | 1851.5              | 1908.5                | 24.8                    | 22.30              | 0.170            | 2693.4       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 21.50              | 0.141            | 2696.5       | 2M70D7W             |
|                    | 64QAM      |                     |                       | 23.2                    | 20.70              | 0.117            | 2697.6       | 2M70D7W             |
| 5.0                | QPSK       | 1852.5              | 1907.5                | 24.9                    | 22.40              | 0.174            | 4495.2       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 21.80              | 0.151            | 4492.2       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 23.4                    | 20.90              | 0.123            | 4507.6       | 4M51D7W             |
| 10.0               | QPSK       | 1855.0              | 1905.0                | 25.0                    | 22.50              | 0.178            | 8990.4       | 8M99G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 21.80              | 0.151            | 8993.1       | 8M99D7W             |
|                    | 64QAM      |                     |                       | 23.7                    | 21.20              | 0.132            | 9006.9       | 9M01D7W             |
| 15.0               | QPSK       | 1857.5              | 1902.5                | 25.0                    | 22.50              | 0.178            | 13427.8      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 21.80              | 0.151            | 13434        | 13M4D7W             |
|                    | 64QAM      |                     |                       | 23.7                    | 21.20              | 0.132            | 13465.3      | 13M5D7W             |
| 20.0               | QPSK       | 1860.0              | 1900.0                | 25.0                    | 22.50              | 0.178            | 17903.7      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 21.80              | 0.151            | 17935.4      | 17M9D7W             |
|                    | 64QAM      |                     |                       | 23.8                    | 21.30              | 0.135            | 17936.6      | 17M9D7W             |

## LTE BAND 5

| Part 22H           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 7.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.00               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 824.7               | 848.3                 | 25.7                    | 18.54             | 0.071           | 1088.6       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 17.68             | 0.059           | 1087.1       | 1M09D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 16.96             | 0.050           | 1096.3       | 1M10D7W             |
| 3.0                | QPSK       | 825.5               | 847.5                 | 25.7                    | 18.54             | 0.071           | 2696         | 2M70G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 17.78             | 0.060           | 2701.9       | 2M70D7W             |
|                    | 64QAM      |                     |                       | 24.0                    | 16.80             | 0.048           | 2694.7       | 2M69D7W             |
| 5.0                | QPSK       | 826.5               | 846.5                 | 25.7                    | 18.52             | 0.071           | 4507         | 4M51G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.90             | 0.062           | 4492.6       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 16.95             | 0.050           | 4504.9       | 4M50D7W             |
| 10.0               | QPSK       | 829.0               | 844.0                 | 25.7                    | 18.55             | 0.072           | 8980.2       | 8M98G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.90             | 0.062           | 8975.4       | 8M98D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 16.98             | 0.050           | 8994.8       | 8M99D7W             |

## LTE BAND 7

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.70               |                       |                         |                    |                  |              |                     |
| 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                    | 22.96              | 0.198            | 4502.1       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 22.26              | 0.168            | 4493.4       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 21.36              | 0.137            | 4514         | 4M51D7W             |
| 10.0               | QPSK       | 2505.0              | 2565.0                | 25.7                    | 22.98              | 0.199            | 8990.3       | 8M99G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 22.39              | 0.173            | 8987.5       | 8M99D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 21.45              | 0.140            | 8991.3       | 8M99D7W             |
| 15.0               | QPSK       | 2507.5              | 2562.5                | 25.7                    | 23.00              | 0.200            | 13442.1      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 22.34              | 0.171            | 13438        | 13M4D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 21.53              | 0.142            | 13445.1      | 13M4D7W             |
| 20.0               | QPSK       | 2510.0              | 2560.0                | 25.6                    | 22.94              | 0.197            | 17911        | 17M9G7W             |
|                    | 16QAM      |                     |                       | 25.2                    | 22.46              | 0.176            | 17899.2      | 17M9D7W             |
|                    | 64QAM      |                     |                       | 24.3                    | 21.62              | 0.145            | 17939.4      | 17M9D7W             |

## LTE BAND 12

| Part 27            |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -6.20               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 699.7               | 715.3                 | 25.7                    | 17.35             | 0.054           | 1095.3       | 1M10G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 16.49             | 0.045           | 1087.9       | 1M09D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 15.87             | 0.039           | 1092.6       | 1M09D7W             |
| 3.0                | QPSK       | 700.5               | 714.5                 | 25.6                    | 17.28             | 0.053           | 2694.7       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 16.57             | 0.045           | 2693.4       | 2M69D7W             |
|                    | 64QAM      |                     |                       | 24.0                    | 15.69             | 0.037           | 2696.9       | 2M70D7W             |
| 5.0                | QPSK       | 701.5               | 713.5                 | 25.7                    | 17.32             | 0.054           | 4501.9       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 16.59             | 0.046           | 4489.2       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 15.80             | 0.038           | 4494.2       | 4M49D7W             |
| 10.0               | QPSK       | 704.0               | 711.0                 | 25.7                    | 17.30             | 0.054           | 8974.8       | 8M97G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 16.62             | 0.046           | 8970.3       | 8M97D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 15.76             | 0.038           | 8968.6       | 8M97D7W             |

### LTE BAND 13

| Part 27            |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.50               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 779.5               | 784.5                 | 25.7                    | 18.05             | 0.064           | 4519.8       | 4M52G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 17.28             | 0.053           | 4493.7       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 23.9                    | 16.28             | 0.042           | 4493.1       | 4M49D7W             |
| 10.0               | QPSK       | 782.0               | 782.0                 | 25.6                    | 17.97             | 0.063           | 8959.1       | 8M96G7W             |
|                    | 16QAM      |                     |                       | 24.9                    | 17.26             | 0.053           | 8971.1       | 8M97D7W             |
|                    | 64QAM      |                     |                       | 23.9                    | 16.21             | 0.042           | 8970.3       | 8M97D7W             |

### LTE BAND 14

| Part 90R           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.70               |                       |                         |                   |                 |              |                     |
| 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                    | 17.85             | 0.061           | 4498.1       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.16             | 0.052           | 4507.3       | 4M51D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 16.29             | 0.043           | 4495.7       | 4M50D7W             |
| 10.0               | QPSK       | 793.0               | 793.0                 | 25.7                    | 17.83             | 0.061           | 8980.8       | 8M98G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.23             | 0.053           | 8957.2       | 8M96D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 16.38             | 0.043           | 8998.5       | 9M00D7W             |

### LTE BAND 17

| Part 27            |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -6.20               |                       |                         |                   |                 |              |                     |
| 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                    | 17.35             | 0.054           | 4488.7       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 16.72             | 0.047           | 4507.1       | 4M51D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 15.87             | 0.039           | 4509         | 4M51D7W             |
| 10.0               | QPSK       | 709.0               | 711.0                 | 25.7                    | 17.33             | 0.054           | 8977.5       | 8M98G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 16.69             | 0.047           | 8960.7       | 8M96D7W             |
|                    | 64QAM      |                     |                       | 24.3                    | 15.92             | 0.039           | 8989.2       | 8M99D7W             |

## LTE BAND 25

| Part 24            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.50               |                       |                         |                    |                  |              |                     |
| 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                | 24.8                    | 22.30              | 0.170            | 1088.2       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 21.50              | 0.141            | 1086.4       | 1M09D7W             |
|                    | 64QAM      |                     |                       | 23.2                    | 20.70              | 0.117            | 1089.2       | 1M09D7W             |
| 3.0                | QPSK       | 1851.5              | 1913.5                | 24.7                    | 22.20              | 0.166            | 2691.3       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 24.0                    | 21.50              | 0.141            | 2690.6       | 2M69D7W             |
|                    | 64QAM      |                     |                       | 23.1                    | 20.60              | 0.115            | 2690.4       | 2M69D7W             |
| 5.0                | QPSK       | 1852.5              | 1912.5                | 24.9                    | 22.40              | 0.174            | 4495.4       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 21.70              | 0.148            | 4499         | 4M50D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 20.80              | 0.120            | 4488.5       | 4M49D7W             |
| 10.0               | QPSK       | 1855.0              | 1910.0                | 24.9                    | 22.40              | 0.174            | 8996.5       | 9M00G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 21.70              | 0.148            | 9007.7       | 9M01D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 20.80              | 0.120            | 9009.1       | 9M01D7W             |
| 15.0               | QPSK       | 1857.5              | 1907.5                | 25.0                    | 22.50              | 0.178            | 13456.7      | 13M5G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 21.80              | 0.151            | 13472.1      | 13M5D7W             |
|                    | 64QAM      |                     |                       | 23.6                    | 21.10              | 0.129            | 13473.1      | 13M5D7W             |
| 20.0               | QPSK       | 1860.0              | 1905.0                | 24.9                    | 22.40              | 0.174            | 17912.2      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.4                    | 21.90              | 0.155            | 17913.5      | 17M9D7W             |
|                    | 64QAM      |                     |                       | 23.6                    | 21.10              | 0.129            | 17935.9      | 17M9D7W             |

## LTE BAND 26

| Part 90S           |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 100.00              |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.00               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 814.7               | 823.3                 | 25.7                    | 18.55             | 0.072           | 1078.3       | 1M08G7W             |
|                    | 16QAM      |                     |                       | 24.6                    | 17.50             | 0.056           | 1088.5       | 1M09D7W             |
|                    | 64QAM      |                     |                       | 23.7                    | 16.52             | 0.045           | 1086.6       | 1M09D7W             |
| 3.0                | QPSK       | 815.5               | 822.5                 | 25.5                    | 18.33             | 0.068           | 2696.6       | 2M70G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 17.58             | 0.057           | 2696.4       | 2M70D7W             |
|                    | 64QAM      |                     |                       | 23.6                    | 16.43             | 0.044           | 2686.6       | 2M69D7W             |
| 5.0                | QPSK       | 816.5               | 821.5                 | 25.4                    | 18.30             | 0.068           | 4521.7       | 4M52G7W             |
|                    | 16QAM      |                     |                       | 24.8                    | 17.69             | 0.059           | 4508.4       | 4M51D7W             |
|                    | 64QAM      |                     |                       | 23.6                    | 16.43             | 0.044           | 4499.3       | 4M50D7W             |
| 10.0               | QPSK       | 819.0               | 819.0                 | 25.5                    | 18.37             | 0.069           | 9001.3       | 9M00G7W             |
|                    | 16QAM      |                     |                       | 24.7                    | 17.53             | 0.057           | 8996.8       | 9M00D7W             |
|                    | 64QAM      |                     |                       | 23.7                    | 16.50             | 0.045           | 9008.7       | 9M01D7W             |

### LTE BAND 30

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 0.25                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.20               |                       |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 2307.5              | 2312.5                | 25.7                    | 23.47              | 0.222            | 4477.6       | 4M48G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 22.94              | 0.197            | 4498.9       | 4M50D7W             |
|                    | 64QAM      |                     |                       | 24.4                    | 22.19              | 0.166            | 4498.1       | 4M50D7W             |
| 10.0               | QPSK       | 2310.0              | 2310.0                | 25.7                    | 23.50              | 0.224            | 8977.7       | 8M98G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 22.90              | 0.195            | 8984.4       | 8M98D7W             |
|                    | 64QAM      |                     |                       | 24.4                    | 22.16              | 0.164            | 8991.3       | 8M99D7W             |

### LTE BAND 41

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.70               |                       |                         |                    |                  |              |                     |
| 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                | 28.7                    | 26.00              | 0.398            | 4451.8       | 4M45G7W             |
|                    | 16QAM      |                     |                       | 28.2                    | 25.50              | 0.355            | 4494.6       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 27.3                    | 24.60              | 0.288            | 4504.3       | 4M50D7W             |
| 10.0               | QPSK       | 2501.0              | 2685.0                | 28.6                    | 25.88              | 0.387            | 8983         | 8M98G7W             |
|                    | 16QAM      |                     |                       | 27.8                    | 25.10              | 0.324            | 8918         | 8M92D7W             |
|                    | 64QAM      |                     |                       | 27.2                    | 24.50              | 0.282            | 8933         | 8M93D7W             |
| 15.0               | QPSK       | 2503.5              | 2682.5                | 28.6                    | 25.90              | 0.389            | 13401.4      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 27.9                    | 25.20              | 0.331            | 13500.4      | 13M5D7W             |
|                    | 64QAM      |                     |                       | 27.1                    | 24.40              | 0.275            | 13411.7      | 13M4D7W             |
| 20.0               | QPSK       | 2506.0              | 2680.0                | 28.7                    | 26.00              | 0.398            | 17929.3      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 28.0                    | 25.31              | 0.340            | 17825.8      | 17M8D7W             |
|                    | 64QAM      |                     |                       | 27.2                    | 24.50              | 0.282            | 17875.9      | 17M9D7W             |

### LTE BAND 48

| Part 96            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 2.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -4.60               |                       |                         |                    |                  |              |                     |
| 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                | 25.6                    | 21.00              | 0.126            | 4502.8       | 4M50G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 20.50              | 0.112            | 4483.1       | 4M48D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 19.50              | 0.089            | 4492.6       | 4M49D7W             |
| 10.0               | QPSK       | 3555.0              | 3695.0                | 25.7                    | 21.10              | 0.129            | 8906.2       | 8M91G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 20.50              | 0.112            | 8965.3       | 8M97D7W             |
|                    | 64QAM      |                     |                       | 23.9                    | 19.30              | 0.085            | 8998.6       | 9M00D7W             |
| 15.0               | QPSK       | 3557.5              | 3692.5                | 25.7                    | 21.10              | 0.129            | 13447.2      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 20.40              | 0.110            | 13377.9      | 13M4D7W             |
|                    | 64QAM      |                     |                       | 24.0                    | 19.40              | 0.087            | 13466.3      | 13M5D7W             |
| 20.0               | QPSK       | 3560.0              | 3690.0                | 25.7                    | 21.10              | 0.129            | 17830.9      | 17M8G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 20.50              | 0.112            | 17873.7      | 17M9D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 19.60              | 0.091            | 17850.7      | 17M9D7W             |

### LTE BAND 66

| Part 27            |            |                     |                       |                         |                    |                  |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|--------------------|------------------|--------------|---------------------|
| EIRP Limit (W)     |            | 1.00                |                       |                         |                    |                  |              |                     |
| Antenna Gain (dBi) |            | -2.30               |                       |                         |                    |                  |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 1.4                | QPSK       | 1710.7              | 1779.3                | 25.0                    | 22.70              | 0.186            | 1088.2       | 1M09G7W             |
|                    | 16QAM      |                     |                       | 24.3                    | 22.00              | 0.158            | 1087.3       | 1M09D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 21.00              | 0.126            | 1087.4       | 1M09D7W             |
| 3.0                | QPSK       | 1711.5              | 1778.5                | 24.5                    | 22.20              | 0.166            | 2692.6       | 2M69G7W             |
|                    | 16QAM      |                     |                       | 23.8                    | 21.50              | 0.141            | 2700.9       | 2M70D7W             |
|                    | 64QAM      |                     |                       | 23.1                    | 20.80              | 0.120            | 2696.4       | 2M70D7W             |
| 5.0                | QPSK       | 1712.5              | 1777.5                | 24.5                    | 22.20              | 0.166            | 4492.3       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 23.9                    | 21.60              | 0.145            | 4497.1       | 4M50D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 21.00              | 0.126            | 4487         | 4M49D7W             |
| 10.0               | QPSK       | 1715.0              | 1775.0                | 24.7                    | 22.40              | 0.174            | 9015.1       | 9M02G7W             |
|                    | 16QAM      |                     |                       | 23.9                    | 21.60              | 0.145            | 9002.9       | 9M00D7W             |
|                    | 64QAM      |                     |                       | 23.3                    | 21.00              | 0.126            | 8976.3       | 8M98D7W             |
| 15.0               | QPSK       | 1717.5              | 1772.5                | 24.7                    | 22.40              | 0.174            | 13460        | 13M5G7W             |
|                    | 16QAM      |                     |                       | 24.1                    | 21.80              | 0.151            | 13483        | 13M5D7W             |
|                    | 64QAM      |                     |                       | 23.4                    | 21.10              | 0.129            | 13449.8      | 13M4D7W             |
| 20.0               | QPSK       | 1720.0              | 1770.0                | 24.7                    | 22.40              | 0.174            | 17928        | 17M9G7W             |
|                    | 16QAM      |                     |                       | 24.2                    | 21.90              | 0.155            | 17943        | 17M9D7W             |
|                    | 64QAM      |                     |                       | 23.5                    | 21.20              | 0.132            | 17944.7      | 17M9D7W             |

**LTE BAND 71**

| Part 27            |            |                     |                       |                         |                   |                 |              |                     |
|--------------------|------------|---------------------|-----------------------|-------------------------|-------------------|-----------------|--------------|---------------------|
| ERP Limit (W)      |            | 3.00                |                       |                         |                   |                 |              |                     |
| Antenna Gain (dBi) |            | -5.80               |                       |                         |                   |                 |              |                     |
| Bandwidth (MHz)    | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | ERP Average (dBm) | ERP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0                | QPSK       | 665.5               | 695.5                 | 25.7                    | 17.74             | 0.059           | 4492.7       | 4M49G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.19             | 0.052           | 4493.6       | 4M49D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 16.28             | 0.042           | 4500.9       | 4M50D7W             |
| 10.0               | QPSK       | 668.0               | 693.0                 | 25.7                    | 17.75             | 0.060           | 9005.1       | 9M01G7W             |
|                    | 16QAM      |                     |                       | 25.1                    | 17.19             | 0.052           | 8959.6       | 8M96D7W             |
|                    | 64QAM      |                     |                       | 24.2                    | 16.26             | 0.042           | 8986         | 8M99D7W             |
| 15.0               | QPSK       | 670.5               | 690.5                 | 25.6                    | 17.66             | 0.058           | 13433.4      | 13M4G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.07             | 0.051           | 13475.4      | 13M5D7W             |
|                    | 64QAM      |                     |                       | 24.1                    | 16.18             | 0.041           | 13438.3      | 13M4D7W             |
| 20.0               | QPSK       | 673.0               | 688.0                 | 25.6                    | 17.69             | 0.059           | 17917.8      | 17M9G7W             |
|                    | 16QAM      |                     |                       | 25.0                    | 17.07             | 0.051           | 17885        | 17M9D7W             |
|                    | 64QAM      |                     |                       | 24.3                    | 16.37             | 0.043           | 17891.8      | 17M9D7W             |

## 5.4. SOFTWARE AND FIRMWARE

The EUT Firmware installed during testing was version: 19-01.1919.01\_27-0.22.00-27.

## 5.5. MAXIMUM ANTENNA GAIN

Please see table below:

| LTE Bands                             | Ant 1 Gain (dBi) | Ant 2 Gain (dBi) | Ant 3 Gain (dBi) | Ant 4 Gain (dBi) | Ant 6 Gain (dBi) |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|
| LTE Band 2, 1850 – 1910 MHz           | -3.5             | -2.3             | -2.5             | -5.9             |                  |
| LTE Band 4, 1710 – 1755 MHz           | -3.6             | -3.0             | -2.6             | -6.8             |                  |
| LTE Band 5, 824 – 849 MHz             | -5.0             | -5.1             | N/A              | N/A              |                  |
| LTE Band 7, 2500 – 2570 MHz           | -2.7             | -4.6             | -8.4             | -2.0             |                  |
| LTE Band 12, 699 – 716 MHz            | -6.2             | -5.9             | N/A              | N/A              |                  |
| LTE Band 13, 777 – 787 MHz            | -5.5             | -5.0             | N/A              | N/A              |                  |
| LTE Band 14, 788 – 798 MHz            | -5.7             | -5.0             | N/A              | N/A              |                  |
| LTE Band 17, 704 – 716 MHz            | -6.2             | -5.9             | N/A              | N/A              |                  |
| LTE Band 25, 1850 – 1915 MHz          | -3.5             | -2.3             | -2.5             | -5.9             |                  |
| LTE Band 26, 814 – 824 MHz (Part 90S) | -5.0             | -5.1             | N/A              | N/A              |                  |
| LTE Band 30, 2305 – 2315 MHz          | -2.2             | -5.9             | -2.8             | -2.0             |                  |
| LTE Band 41, 2496 – 2690 MHz          | -2.7             | -3.9             | -7.5             | -1.9             |                  |
| LTE Band 48, 3550 – 3700 MHz          | -4.6             |                  | -7.0             | -7.5             | -8.3             |
| LTE Band 66, 1710 – 1780 MHz          | -3.6             | -2.8             | -2.3             | -6.4             |                  |
| LTE Band 71, 663 – 698 MHz            | -5.8             | -5.9             | N/A              | N/A              |                  |

### Note:

Conducted Port 1 can support Ant 1 and Ant 3 while Port 2 supports Ant 2 and Ant 4. These ports have a switching system between the two antennas of different frequency ranges.

## 5.6. WORST-CASE CONFIGURATION AND MODE

The EUT supports LTE Bands of:

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, and Band 71.

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.

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

The EUT was investigated in three orthogonal orientations X/Y/Z on antennas 1, 2, 3, 4, and 6. For ANT 1 antenna, it was determined that Y (Landscape) orientation was worst-case orientation for PCS bands and bands 7, 30, and 41; X (Flatbed) orientation was worst-case orientation for AWS bands, cell bands and band 48 without AC/DC adapter. For ANT 2 antenna, it was determined that X (Flatbed) orientation was worst-case orientation for all bands without AC/DC adapter.

For ANT 3 antenna, it was determined that X (Flatbed) orientation was worst-case orientation for all bands without AC/DC adapter.

For ANT 4 antenna, it was determined that X (Flatbed) orientation was worst-case orientation for cell bands, AWS bands and PCS bands; Y (Landscape) orientation was worst-case for bands 7, 30, 41, and 48 without AC/DC adapter

For ANT 6 antenna, it was determined that Y (Landscape) orientation was worst-case orientation for band 48 without AC/DC adapter.

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

For simultaneous transmission of multiple channels in the 2.4GHz/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.

## 5.7. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Support Equipment List |              |               |                  |
|------------------------|--------------|---------------|------------------|
| Description            | Manufacturer | Model         | Serial Number    |
| Laptop AC/DC adapter   | Apple        | 85W MagSafe 2 | C0651730MMM6P4AL |
| Laptop                 | Apple        | Macbook Pro   | C02PM012G3QD     |
| Laptop                 | Apple        | Macbook Pro   | C02P52HGG085     |

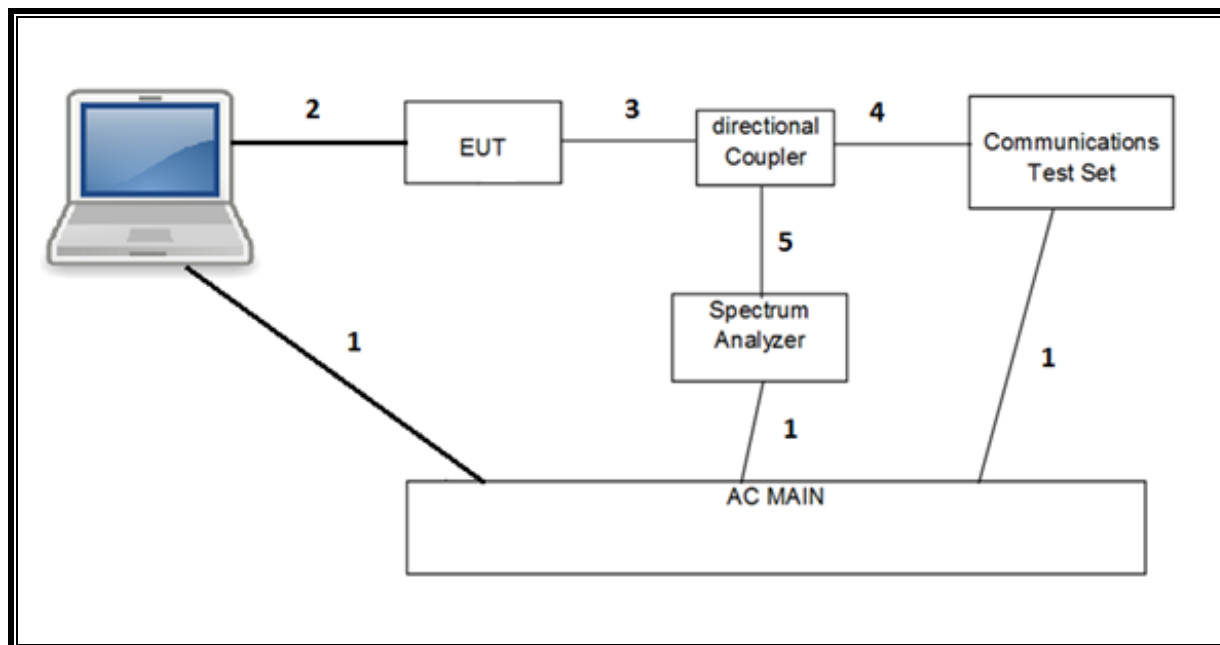
### I/O CABLES (RF Conducted Test)

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

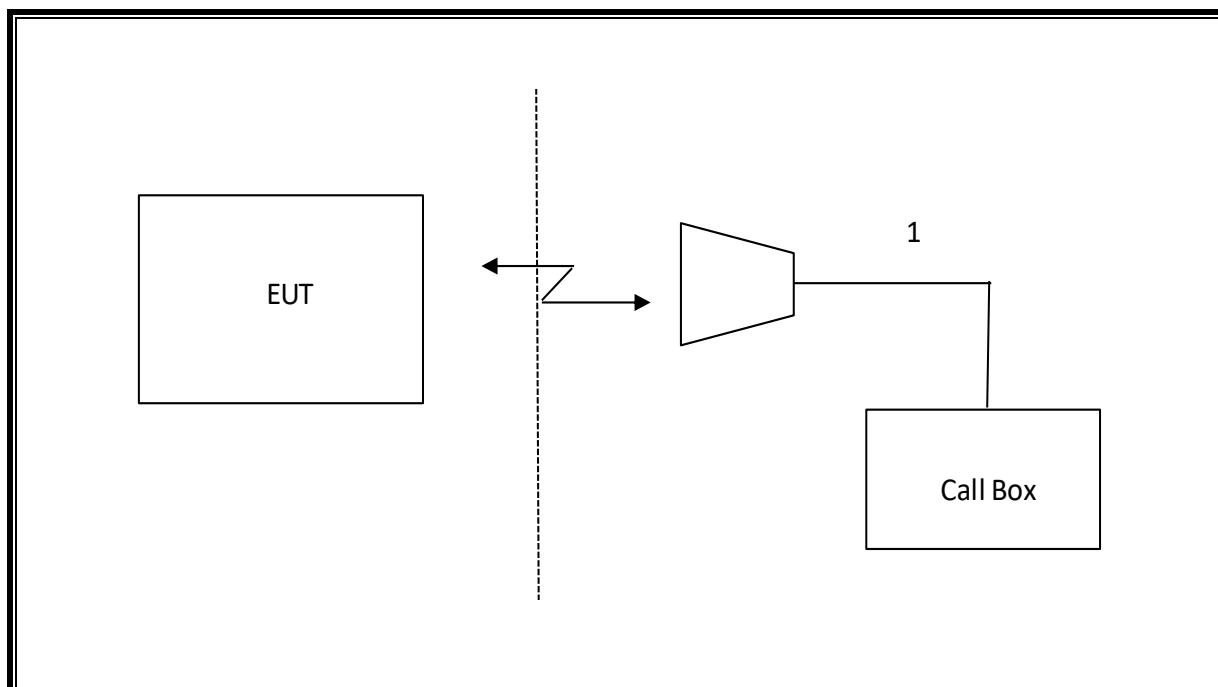
### I/O CABLES (RF Radiated Test)

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

### CONDUCTED SETUP



### RADIATED SETUP



## 6. TEST AND MEASUREMENT EQUIPMENT

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

| TEST EQUIPMENT LIST                              |                     |                        |                         |            |
|--------------------------------------------------|---------------------|------------------------|-------------------------|------------|
| Description                                      | Manufacturer        | Model                  | Asset                   | Cal Due    |
| Antenna, Horn 1-18GHz                            | ETS Lindgren        | 3117                   | T344                    | 05/07/2020 |
| Antenna, Horn 18-26GHz                           | ARA                 | MWH-1826/B             | T447                    | 6/16/2019  |
| Antenna, Horn 26-40GHz                           | ARA                 | MWH-2640/B             | T446                    | 8/9/2019   |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz      | Sunol Sciences      | JB3                    | PRE0181574              | 08/01/2019 |
| Amplifier, 10KHz to 1GHz, 32dB                   | Sonoma              | 310N                   | T15                     | 08/15/2019 |
| Amplifier, 18-26GHz                              | Agilent             | 8449B                  | T404                    | 3/23/2020  |
| Amplifier, 26-40GHz                              | Miteq               | TTA2640                | T1804                   | 3/23/2020  |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Agilent             | N9030A                 | T905                    | 1/24/2020  |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T340                    | 01/22/2020 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T1454                   | 01/23/2020 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T908                    | 01/23/2020 |
| Spectrum Analyzer, PXA 3Hz to 44GHz              | Keysight            | N9030A                 | T339                    | 01/29/2020 |
| Amplifier, 1 to 18GHz                            | MITEQ               | AFS42-00101800-25-S-42 | T931                    | 05/11/2020 |
| Amplifier, 10KHz to 1GHz, 32dB                   | Sonoma              | 310N                   | PRE0180176              | 11/01/2019 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | E4446A                 | T177                    | 04/12/2019 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | E4446A                 | T123                    | 01/28/2020 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | E4440A                 | T198                    | 01/30/2020 |
| Spectrum Analyzer, PSA, 3Hz to 44GHz             | Keysight            | E4440A                 | T99                     | 1/28/2020  |
| Directional Coupler                              | KRYTAR              | 152610                 | T1536                   | 04/27/2019 |
| Directional Coupler                              | KRYTAR              | 152610                 | T1537                   | 04/27/2019 |
| Wireless Communications Test Set, 8960 Series 10 | Agilent             | E5515C                 | T211                    | 05/10/2020 |
| Filter, HPF 3.0GHz                               | Micro-Tronics       | HPM17543               | T487                    | 12/04/2019 |
| Filter, HPF 1.2GHz                               | Micro-Tronics       | WHKX1.2/15G-6ST        | T1182                   | 05/19/2019 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz             | Keysight            | N9030A                 | T459                    | 07/25/2019 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T959                    | 02/16/2020 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T1871                   | 02/18/2020 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T921                    | 02/18/2020 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T376                    | 02/21/2020 |
| Wideband Communication Test Set, Call Box        | R&S GmbH & Co. KG   | CMW500                 | T958                    | 02/20/2020 |
| Chamber, Environmental                           | Cincinnati Sub Zero | ZPHS-8-3.5-SCT/WC      | T754                    | 08/15/2019 |
| Power Meter, P-series single channel             | Keysight            | N1911A                 | T1268                   | 01/31/2020 |
| Power Sensor                                     | Keysight            | N1921A                 | T1228                   | 07/10/2019 |
| Antenna, Horn 1-18GHz                            | ETS Lindgren        | T3117                  | T346                    | 05/14/2020 |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz      | Sunol Sciences      | JB3                    | PRE0077974              | 05/13/2020 |
| Antenna, Active Loop 9KHz to 30MHz               | EMCO                | 6502                   | T1616                   | 10/18/2019 |
| UL AUTOMATION SOFTWARE                           |                     |                        |                         |            |
| CLT Software                                     | UL                  | UL RF                  | Ver 9.5, April 26, 2016 |            |
| Power Measurement Software                       | UL                  | UL RF                  | Ver 2.2, June 2017      |            |

### NOTES:

- For equipment listed above that had a calibration due during the testing period, its use was paused to allow for calibration.

## 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 TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). 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 TS36.101.

**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      |

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 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".3

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

| Network Signalling value | Requirements (sub-clause) | 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                   | NA            |
| NS_03                    | 6.6.2.2.1                 | 2, 4, 10, 23, 25, 35, 36 | 3                       | >5                            | ≤ 1           |
|                          |                           |                          | 5                       | >6                            | ≤ 1           |
|                          |                           |                          | 10                      | >6                            | ≤ 1           |
|                          |                           |                          | 15                      | >8                            | ≤ 1           |
|                          |                           |                          | 20                      | >10                           | ≤ 1           |
| NS_04                    | 6.6.2.2.2                 | 41                       | 5                       | >6                            | ≤ 1           |
|                          |                           |                          | 10, 15, 20              | See Table 6.2.4-4             |               |
| NS_05                    | 6.6.3.3.1                 | 1                        | 10, 15, 20              | ≥ 50                          | ≤ 1           |
| NS_06                    | 6.6.2.2.3                 | 12, 13, 14, 17           | 1.4, 3, 5, 10           | Table 5.6-1                   | n/a           |
| NS_07                    | 6.6.2.2.3<br>6.6.3.3.2    | 13                       | 10                      | Table 6.2.4-2                 | Table 6.2.4-2 |
| NS_08                    | 6.6.3.3.3                 | 19                       | 10, 15                  | > 44                          | ≤ 3           |
| NS_09                    | 6.6.3.3.4                 | 21                       | 10, 15                  | > 40                          | ≤ 1           |
|                          |                           |                          |                         | > 55                          | ≤ 2           |
| NS_10                    |                           | 20                       | 15, 20                  | Table 6.2.4-3                 | Table 6.2.4-3 |
| NS_11                    | 6.6.2.2.1                 | 23 <sup>1</sup>          | 1.4, 3, 5, 10           | Table 6.2.4-5                 | Table 6.2.4-5 |
| ..                       |                           |                          |                         |                               |               |
| NS_32                    | -                         | -                        | -                       | -                             | -             |

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

## **MODES TESTED**

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

## **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

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/15/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 18607                   | 18900  | 19193  | 18607  | 18900  | 19193  | 18607  | 18900  | 19193  | 18607  | 18900  | 19193  |
|                 |            |               |           | 1850.7                  | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 | 1850.7 | 1880.0 | 1909.3 |
| 1.4             | QPSK       | 1             | 0         | 25.2                    | 25.2   | 25.2   | 20.2   | 20.0   | 20.5   | 24.8   | 24.8   | 24.8   | 18.9   | 19.2   | 19.6   |
|                 |            | 1             | 2         | 25.2                    | 25.1   | 25.2   | 20.2   | 19.9   | 20.3   | 24.8   | 24.8   | 24.7   | 18.9   | 19.4   | 19.5   |
|                 |            | 1             | 5         | 25.2                    | 25.1   | 25.2   | 20.2   | 20.0   | 20.4   | 24.8   | 24.7   | 24.8   | 18.9   | 19.4   | 19.6   |
|                 |            | 3             | 0         | 25.2                    | 25.0   | 25.1   | 20.1   | 19.8   | 20.2   | 24.7   | 24.6   | 24.6   | 18.7   | 19.3   | 19.5   |
|                 |            | 3             | 1         | 25.1                    | 25.0   | 25.0   | 20.1   | 19.8   | 20.2   | 24.6   | 24.6   | 24.6   | 18.8   | 19.3   | 19.5   |
|                 |            | 3             | 2         | 25.2                    | 24.9   | 25.1   | 20.1   | 19.9   | 20.2   | 24.6   | 24.6   | 24.6   | 18.8   | 19.2   | 19.5   |
|                 | 16QAM      | 6             | 0         | 24.1                    | 23.9   | 24.1   | 19.1   | 18.8   | 19.1   | 23.6   | 23.6   | 23.5   | 17.8   | 18.1   | 18.4   |
|                 |            | 1             | 0         | 24.4                    | 24.3   | 24.4   | 19.4   | 19.3   | 19.7   | 24.0   | 24.1   | 24.0   | 18.1   | 18.7   | 18.8   |
|                 |            | 1             | 2         | 24.4                    | 24.4   | 24.4   | 19.3   | 19.3   | 19.6   | 23.9   | 24.0   | 24.0   | 18.2   | 18.7   | 18.7   |
|                 |            | 1             | 5         | 24.4                    | 24.3   | 24.4   | 19.4   | 19.4   | 19.6   | 24.0   | 24.0   | 24.0   | 18.2   | 18.6   | 18.7   |
|                 |            | 3             | 0         | 24.2                    | 24.1   | 24.2   | 19.0   | 19.0   | 19.3   | 23.7   | 23.8   | 23.7   | 17.9   | 18.4   | 18.5   |
|                 |            | 3             | 1         | 24.2                    | 24.1   | 24.1   | 19.1   | 18.9   | 19.3   | 23.7   | 23.8   | 23.7   | 17.9   | 18.4   | 18.5   |
|                 | 64QAM      | 3             | 2         | 24.2                    | 24.1   | 24.1   | 19.2   | 19.0   | 19.3   | 23.7   | 23.7   | 23.7   | 17.9   | 18.3   | 18.5   |
|                 |            | 6             | 0         | 23.1                    | 22.9   | 23.0   | 18.0   | 17.8   | 18.2   | 22.5   | 22.5   | 22.6   | 16.7   | 17.3   | 17.4   |
|                 |            | 1             | 0         | 23.4                    | 23.2   | 23.5   | 17.9   | 17.7   | 17.9   | 23.3   | 23.1   | 23.1   | 17.7   | 18.0   | 18.0   |
|                 |            | 1             | 2         | 23.4                    | 23.2   | 23.5   | 17.9   | 17.6   | 17.9   | 23.3   | 23.0   | 23.1   | 17.7   | 18.1   | 18.0   |
|                 |            | 1             | 5         | 23.4                    | 23.2   | 23.5   | 17.9   | 17.7   | 17.8   | 23.3   | 23.0   | 23.2   | 17.7   | 18.0   | 17.9   |
|                 |            | 3             | 0         | 23.2                    | 23.0   | 23.1   | 17.6   | 17.4   | 17.7   | 23.0   | 22.9   | 23.0   | 17.4   | 17.8   | 17.7   |
|                 |            | 3             | 1         | 23.1                    | 23.0   | 23.1   | 17.5   | 17.4   | 17.7   | 23.0   | 22.9   | 23.0   | 17.5   | 17.8   | 17.7   |
|                 |            | 3             | 2         | 23.2                    | 23.1   | 23.1   | 17.5   | 17.3   | 17.7   | 23.0   | 22.9   | 22.9   | 17.5   | 17.7   | 17.8   |
|                 |            | 6             | 0         | 22.0                    | 22.0   | 22.0   | 16.3   | 16.4   | 16.6   | 21.8   | 21.9   | 21.9   | 16.4   | 16.6   | 16.7   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 18615                   | 18900  | 19185  | 18615  | 18900  | 19185  | 18615  | 18900  | 19185  | 18615  | 18900  | 19185  |
|                 |            |               |           | 1851.5                  | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 | 1851.5 | 1880.0 | 1908.5 |
| 3.0             | QPSK       | 1             | 0         | 25.2                    | 25.1   | 25.2   | 20.1   | 19.9   | 20.3   | 24.8   | 24.7   | 24.7   | 19.1   | 19.3   | 19.8   |
|                 |            | 1             | 7         | 25.1                    | 25.0   | 25.2   | 20.3   | 20.0   | 20.4   | 24.8   | 24.7   | 24.7   | 19.1   | 19.5   | 19.9   |
|                 |            | 1             | 14        | 25.1                    | 24.9   | 25.2   | 20.1   | 19.9   | 20.3   | 24.8   | 24.7   | 24.6   | 19.0   | 19.6   | 19.8   |
|                 |            | 8             | 0         | 24.0                    | 23.9   | 24.1   | 19.0   | 18.8   | 19.2   | 23.6   | 23.6   | 23.6   | 18.0   | 18.5   | 18.7   |
|                 |            | 8             | 4         | 24.0                    | 23.9   | 24.0   | 19.0   | 18.8   | 19.2   | 23.6   | 23.6   | 23.5   | 18.0   | 18.5   | 18.7   |
|                 |            | 8             | 7         | 24.0                    | 23.8   | 24.0   | 19.0   | 18.8   | 19.2   | 23.6   | 23.5   | 23.5   | 18.0   | 18.4   | 18.8   |
|                 | 16QAM      | 15            | 0         | 24.1                    | 23.9   | 24.1   | 19.1   | 18.9   | 19.2   | 23.6   | 23.6   | 23.5   | 18.0   | 18.4   | 18.8   |
|                 |            | 1             | 0         | 24.4                    | 24.3   | 24.3   | 19.4   | 19.2   | 19.6   | 23.9   | 23.9   | 24.0   | 18.4   | 18.8   | 19.0   |
|                 |            | 1             | 7         | 24.4                    | 24.2   | 24.4   | 19.5   | 19.4   | 19.7   | 24.0   | 23.9   | 24.0   | 18.4   | 18.8   | 19.2   |
|                 |            | 1             | 14        | 24.4                    | 24.2   | 24.4   | 19.3   | 19.4   | 19.5   | 24.0   | 23.9   | 23.9   | 18.4   | 18.8   | 19.0   |
|                 |            | 8             | 0         | 23.0                    | 22.9   | 23.0   | 18.0   | 17.8   | 18.1   | 22.6   | 22.5   | 22.5   | 17.0   | 17.5   | 17.7   |
|                 |            | 8             | 4         | 23.0                    | 22.9   | 23.0   | 18.0   | 17.8   | 18.2   | 22.6   | 22.5   | 22.5   | 17.0   | 17.5   | 17.7   |
|                 | 64QAM      | 8             | 7         | 23.0                    | 22.8   | 23.0   | 18.1   | 17.8   | 18.2   | 22.6   | 22.5   | 22.5   | 17.0   | 17.5   | 17.7   |
|                 |            | 15            | 0         | 23.0                    | 22.8   | 23.0   | 18.0   | 17.8   | 18.2   | 22.6   | 22.5   | 22.5   | 17.0   | 17.4   | 17.7   |
|                 |            | 1             | 0         | 23.2                    | 23.2   | 23.4   | 17.7   | 17.6   | 17.8   | 23.1   | 23.1   | 23.1   | 17.7   | 17.8   | 17.9   |
|                 |            | 1             | 7         | 23.2                    | 23.3   | 23.3   | 17.8   | 17.6   | 17.9   | 23.2   | 23.2   | 23.2   | 17.7   | 17.8   | 18.1   |
|                 |            | 1             | 14        | 23.1                    | 23.2   | 23.2   | 17.6   | 17.5   | 17.7   | 23.0   | 23.0   | 23.1   | 17.5   | 17.8   | 17.9   |
|                 |            | 8             | 0         | 22.0                    | 21.9   | 22.0   | 16.3   | 16.3   | 16.6   | 21.8   | 21.8   | 21.9   | 16.4   | 16.5   | 16.7   |
|                 |            | 8             | 4         | 21.9                    | 21.9   | 21.9   | 16.3   | 16.3   | 16.6   | 21.8   | 21.8   | 21.8   | 16.3   | 16.5   | 16.7   |
|                 |            | 8             | 7         | 21.9                    | 21.9   | 22.0   | 16.3   | 16.2   | 16.6   | 21.8   | 21.8   | 21.8   | 16.3   | 16.5   | 16.7   |
|                 |            | 15            | 0         | 21.9                    | 21.9   | 22.0   | 16.3   | 16.2   | 16.6   | 21.8   | 21.8   | 21.8   | 16.2   | 16.5   | 16.7   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18625                   | 18900  | 19175  | 18625  | 18900  | 19175  | 18625  | 18900  | 19175  | 18625  | 18900  | 19175  |
|                    |            |                  |              | 1852.5                  | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 | 1852.5 | 1880.0 | 1907.5 |
| 5.0                | QPSK       | 1                | 0            | 25.4                    | 25.2   | 25.4   | 20.2   | 20.0   | 20.4   | 24.9   | 24.9   | 24.9   | 19.4   | 19.7   | 19.8   |
|                    |            | 1                | 12           | 25.3                    | 25.1   | 25.3   | 20.3   | 20.1   | 20.3   | 24.8   | 24.8   | 24.8   | 19.4   | 19.6   | 19.9   |
|                    |            | 1                | 24           | 25.3                    | 25.1   | 25.3   | 20.3   | 20.1   | 20.4   | 24.7   | 24.8   | 24.8   | 19.5   | 19.7   | 19.9   |
|                    |            | 12               | 0            | 24.3                    | 24.1   | 24.3   | 19.2   | 18.9   | 19.3   | 23.7   | 23.8   | 23.8   | 18.3   | 18.6   | 18.8   |
|                    |            | 12               | 6            | 24.3                    | 24.1   | 24.2   | 19.2   | 18.9   | 19.3   | 23.8   | 23.8   | 23.8   | 18.3   | 18.6   | 18.8   |
|                    |            | 12               | 11           | 24.3                    | 24.1   | 24.1   | 19.2   | 19.0   | 19.4   | 23.7   | 23.7   | 23.7   | 18.4   | 18.6   | 18.9   |
|                    |            | 25               | 0            | 24.3                    | 24.0   | 24.3   | 19.1   | 19.0   | 19.4   | 23.7   | 23.7   | 23.8   | 18.4   | 18.6   | 18.8   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.5   | 24.7   | 19.6   | 19.4   | 19.8   | 24.2   | 24.1   | 24.3   | 18.9   | 19.1   | 19.1   |
|                    |            | 1                | 12           | 24.6                    | 24.4   | 24.5   | 19.6   | 19.4   | 19.8   | 24.2   | 24.0   | 24.2   | 18.8   | 19.0   | 19.1   |
|                    |            | 1                | 24           | 24.5                    | 24.3   | 24.5   | 19.7   | 19.4   | 19.8   | 24.1   | 24.1   | 24.2   | 18.9   | 19.1   | 19.1   |
|                    |            | 12               | 0            | 23.3                    | 23.1   | 23.2   | 18.2   | 18.0   | 18.4   | 22.7   | 22.7   | 22.8   | 17.4   | 17.6   | 17.8   |
|                    |            | 12               | 6            | 23.2                    | 23.1   | 23.3   | 18.1   | 18.0   | 18.3   | 22.8   | 22.7   | 22.8   | 17.4   | 17.6   | 17.8   |
|                    |            | 12               | 11           | 23.2                    | 23.1   | 23.2   | 18.2   | 18.1   | 18.4   | 22.7   | 22.7   | 22.7   | 17.4   | 17.6   | 17.9   |
|                    |            | 25               | 0            | 23.2                    | 23.0   | 23.2   | 18.1   | 18.0   | 18.3   | 22.7   | 22.7   | 22.7   | 17.3   | 17.6   | 17.8   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.2   | 23.6   | 17.8   | 17.9   | 18.0   | 23.2   | 23.2   | 23.4   | 17.8   | 18.1   | 18.0   |
|                    |            | 1                | 12           | 23.3                    | 23.3   | 23.4   | 17.8   | 17.8   | 18.0   | 23.1   | 23.3   | 23.3   | 17.7   | 18.0   | 18.1   |
|                    |            | 1                | 24           | 23.4                    | 23.4   | 23.5   | 17.9   | 17.9   | 17.9   | 23.2   | 23.3   | 23.3   | 17.9   | 18.1   | 18.1   |
|                    |            | 12               | 0            | 22.1                    | 22.1   | 22.2   | 16.4   | 16.5   | 16.7   | 21.9   | 21.9   | 22.2   | 16.4   | 16.7   | 16.8   |
|                    |            | 12               | 6            | 22.1                    | 22.1   | 22.2   | 16.4   | 16.4   | 16.8   | 21.9   | 21.9   | 22.1   | 16.4   | 16.7   | 16.9   |
|                    |            | 12               | 11           | 22.1                    | 22.2   | 22.0   | 16.5   | 16.4   | 16.8   | 21.9   | 21.9   | 22.0   | 16.5   | 16.6   | 16.9   |
|                    |            | 25               | 0            | 22.1                    | 22.1   | 22.2   | 16.5   | 16.4   | 16.7   | 21.9   | 21.9   | 22.1   | 16.4   | 16.6   | 16.9   |

### 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  |
|                    |            |                  |              | 1855.0                  | 1880.0 | 1905.0 | 1855.0 | 1880.0 | 1905.0 | 1855.0 | 1880.0 | 1905.0 | 1855.0 | 1880.0 | 1905.0 |
| 10.0               | QPSK       | 1                | 0            | 25.4                    | 25.3   | 25.7   | 20.4   | 20.2   | 20.4   | 24.9   | 24.9   | 25.0   | 19.6   | 19.9   | 19.9   |
|                    |            | 1                | 24           | 25.3                    | 25.2   | 25.5   | 20.3   | 20.1   | 20.5   | 24.7   | 24.8   | 25.0   | 19.6   | 19.8   | 19.8   |
|                    |            | 1                | 49           | 25.2                    | 25.1   | 25.3   | 20.4   | 20.2   | 20.5   | 24.8   | 24.8   | 24.9   | 19.7   | 19.8   | 20.0   |
|                    |            | 25               | 0            | 24.4                    | 24.2   | 24.5   | 19.3   | 19.1   | 19.5   | 23.9   | 23.9   | 24.0   | 18.5   | 18.8   | 18.8   |
|                    |            | 25               | 12           | 24.4                    | 24.3   | 24.4   | 19.3   | 19.1   | 19.5   | 23.8   | 23.8   | 24.0   | 18.6   | 18.8   | 18.9   |
|                    |            | 25               | 24           | 24.3                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.5   | 23.7   | 23.8   | 23.9   | 18.7   | 18.8   | 19.0   |
|                    |            | 50               | 0            | 24.4                    | 24.2   | 24.5   | 19.4   | 19.2   | 19.4   | 23.8   | 23.8   | 23.9   | 18.6   | 18.8   | 18.9   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.6   | 25.0   | 19.7   | 19.5   | 19.7   | 24.2   | 24.2   | 24.3   | 18.9   | 19.2   | 19.3   |
|                    |            | 1                | 24           | 24.7                    | 24.5   | 24.7   | 19.7   | 19.5   | 19.8   | 24.0   | 24.2   | 24.2   | 18.9   | 19.0   | 19.2   |
|                    |            | 1                | 49           | 24.6                    | 24.4   | 24.6   | 19.7   | 19.5   | 19.7   | 24.3   | 24.1   | 24.1   | 18.9   | 19.1   | 19.3   |
|                    |            | 25               | 0            | 23.5                    | 23.3   | 23.6   | 18.4   | 18.2   | 18.5   | 23.0   | 22.9   | 23.1   | 17.5   | 17.9   | 17.9   |
|                    |            | 25               | 12           | 23.5                    | 23.3   | 23.5   | 18.4   | 18.1   | 18.5   | 22.9   | 22.9   | 23.0   | 17.7   | 17.9   | 17.9   |
|                    |            | 25               | 24           | 23.4                    | 23.2   | 23.5   | 18.4   | 18.3   | 18.5   | 22.8   | 22.9   | 22.9   | 17.7   | 17.8   | 18.0   |
|                    |            | 50               | 0            | 23.4                    | 23.3   | 23.5   | 18.4   | 18.3   | 18.5   | 22.9   | 22.9   | 23.0   | 17.6   | 17.8   | 18.0   |
|                    | 64QAM      | 1                | 0            | 23.4                    | 23.3   | 23.8   | 17.8   | 18.0   | 17.9   | 23.2   | 23.1   | 23.7   | 17.9   | 18.1   | 18.1   |
|                    |            | 1                | 24           | 23.4                    | 23.3   | 23.7   | 17.9   | 17.8   | 17.9   | 23.2   | 23.2   | 23.6   | 17.9   | 18.0   | 18.1   |
|                    |            | 1                | 49           | 23.4                    | 23.3   | 23.6   | 18.0   | 17.9   | 18.0   | 23.3   | 23.1   | 23.5   | 17.9   | 18.0   | 18.2   |
|                    |            | 25               | 0            | 22.3                    | 22.2   | 22.6   | 16.7   | 16.7   | 16.8   | 22.1   | 22.1   | 22.5   | 16.7   | 16.9   | 16.9   |
|                    |            | 25               | 12           | 22.3                    | 22.3   | 22.5   | 16.7   | 16.7   | 16.8   | 22.1   | 22.1   | 22.4   | 16.7   | 16.9   | 17.0   |
|                    |            | 25               | 24           | 22.3                    | 22.3   | 22.5   | 16.8   | 16.6   | 16.9   | 22.2   | 22.2   | 22.4   | 16.9   | 16.9   | 17.1   |
|                    |            | 50               | 0            | 22.3                    | 22.3   | 22.5   | 16.8   | 16.6   | 16.8   | 22.1   | 22.2   | 22.4   | 16.7   | 16.8   | 17.0   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18675                   | 18900  | 19125  | 18675  | 18900  | 19125  | 18675  | 18900  | 19125  | 18675  | 18900  | 19125  |
|                    |            |                  |              | 1857.5                  | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 | 1857.5 | 1880.0 | 1902.5 |
| 15.0               | QPSK       | 1                | 0            | 25.4                    | 25.2   | 25.6   | 20.4   | 20.2   | 20.3   | 24.9   | 24.9   | 24.9   | 19.6   | 19.9   | 19.8   |
|                    |            | 1                | 37           | 25.2                    | 25.1   | 25.5   | 20.4   | 20.2   | 20.5   | 24.7   | 24.8   | 25.0   | 19.7   | 19.7   | 19.8   |
|                    |            | 1                | 74           | 25.2                    | 25.2   | 25.3   | 20.2   | 20.0   | 20.4   | 24.6   | 24.7   | 24.8   | 19.8   | 19.8   | 19.9   |
|                    |            | 36               | 0            | 24.4                    | 24.2   | 24.8   | 19.4   | 19.1   | 19.3   | 23.9   | 23.9   | 24.0   | 18.6   | 18.8   | 18.8   |
|                    |            | 36               | 16           | 24.3                    | 24.3   | 24.6   | 19.4   | 19.1   | 19.4   | 23.7   | 23.9   | 24.0   | 18.8   | 18.8   | 18.8   |
|                    |            | 36               | 35           | 24.3                    | 24.3   | 24.5   | 19.4   | 19.2   | 19.5   | 23.7   | 23.8   | 23.9   | 18.7   | 18.7   | 18.9   |
|                    |            | 75               | 0            | 24.4                    | 24.2   | 24.6   | 19.4   | 19.2   | 19.4   | 23.7   | 23.8   | 24.0   | 18.8   | 18.7   | 18.8   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.5   | 25.0   | 19.6   | 19.5   | 19.6   | 24.1   | 24.2   | 24.2   | 18.9   | 19.2   | 19.0   |
|                    |            | 1                | 37           | 24.5                    | 24.4   | 24.9   | 19.6   | 19.5   | 19.8   | 24.1   | 24.1   | 24.3   | 19.0   | 19.0   | 19.2   |
|                    |            | 1                | 74           | 24.6                    | 24.5   | 24.6   | 19.4   | 19.4   | 19.7   | 23.9   | 24.0   | 24.2   | 19.2   | 19.0   | 19.3   |
|                    |            | 36               | 0            | 23.4                    | 23.3   | 23.8   | 18.4   | 18.1   | 18.4   | 22.9   | 23.0   | 23.0   | 17.6   | 17.8   | 17.8   |
|                    |            | 36               | 16           | 23.3                    | 23.3   | 23.7   | 18.5   | 18.1   | 18.5   | 22.8   | 22.9   | 23.0   | 17.8   | 17.8   | 17.9   |
|                    |            | 36               | 35           | 23.3                    | 23.3   | 23.5   | 18.4   | 18.2   | 18.5   | 22.7   | 22.9   | 23.0   | 17.7   | 17.8   | 17.9   |
|                    |            | 75               | 0            | 23.4                    | 23.3   | 23.6   | 18.5   | 18.2   | 18.5   | 22.7   | 22.9   | 23.0   | 17.8   | 17.7   | 17.8   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.4   | 23.6   | 17.9   | 17.9   | 17.8   | 23.2   | 23.3   | 23.6   | 17.8   | 18.2   | 18.0   |
|                    |            | 1                | 37           | 23.5                    | 23.5   | 23.7   | 18.0   | 17.8   | 18.0   | 23.2   | 23.4   | 23.7   | 17.8   | 18.0   | 18.1   |
|                    |            | 1                | 74           | 23.6                    | 23.4   | 23.4   | 18.0   | 17.7   | 18.0   | 23.4   | 23.3   | 23.5   | 18.0   | 18.1   | 18.2   |
|                    |            | 36               | 0            | 22.3                    | 22.2   | 22.5   | 16.7   | 16.7   | 16.7   | 22.1   | 22.1   | 22.5   | 16.7   | 16.9   | 16.9   |
|                    |            | 36               | 16           | 22.3                    | 22.3   | 22.6   | 16.8   | 16.7   | 16.8   | 22.2   | 22.1   | 22.5   | 16.8   | 16.9   | 17.0   |
|                    |            | 36               | 35           | 22.4                    | 22.3   | 22.5   | 16.7   | 16.6   | 16.9   | 22.2   | 22.2   | 22.5   | 16.8   | 16.8   | 17.0   |
|                    |            | 75               | 0            | 22.4                    | 22.3   | 22.5   | 16.8   | 16.6   | 16.8   | 22.2   | 22.1   | 22.5   | 16.8   | 16.9   | 16.9   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 18700                   | 18900  | 19100  | 18700  | 18900  | 19100  | 18700  | 18900  | 19100  | 18700  | 18900  | 19100  |
|                    |            |                  |              | 1860.0                  | 1880.0 | 1900.0 | 1860.0 | 1880.0 | 1900.0 | 1860.0 | 1880.0 | 1900.0 | 1860.0 | 1880.0 | 1900.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.2   | 25.5   | 20.4   | 20.2   | 20.2   | 24.9   | 24.8   | 25.0   | 19.5   | 19.8   | 19.7   |
|                    |            | 1                | 49           | 25.2                    | 25.2   | 25.7   | 20.3   | 20.1   | 20.3   | 24.8   | 24.9   | 25.0   | 19.6   | 19.8   | 19.9   |
|                    |            | 1                | 99           | 25.3                    | 25.3   | 25.4   | 20.2   | 20.1   | 20.5   | 24.7   | 24.8   | 24.8   | 19.8   | 19.8   | 20.0   |
|                    |            | 50               | 0            | 24.4                    | 24.4   | 24.8   | 19.4   | 19.2   | 19.3   | 23.9   | 23.9   | 24.0   | 18.6   | 18.8   | 18.7   |
|                    |            | 50               | 24           | 24.3                    | 24.3   | 24.7   | 19.4   | 19.2   | 19.4   | 23.8   | 23.8   | 24.1   | 18.7   | 18.8   | 18.9   |
|                    |            | 50               | 49           | 24.3                    | 24.3   | 24.6   | 19.3   | 19.2   | 19.5   | 23.7   | 23.9   | 24.0   | 18.8   | 18.8   | 18.9   |
|                    |            | 100              | 0            | 24.3                    | 24.3   | 24.7   | 19.4   | 19.2   | 19.4   | 23.7   | 23.8   | 24.1   | 18.8   | 18.8   | 18.9   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6   | 25.0   | 19.8   | 19.6   | 19.5   | 24.2   | 24.2   | 24.3   | 18.8   | 19.3   | 19.0   |
|                    |            | 1                | 49           | 24.6                    | 24.6   | 25.2   | 19.8   | 19.5   | 19.6   | 24.2   | 24.2   | 24.3   | 18.9   | 19.2   | 19.1   |
|                    |            | 1                | 99           | 24.7                    | 24.7   | 24.8   | 19.6   | 19.5   | 19.8   | 24.0   | 24.3   | 24.2   | 19.2   | 19.2   | 19.3   |
|                    |            | 50               | 0            | 23.3                    | 23.4   | 23.8   | 18.4   | 18.2   | 18.3   | 22.9   | 22.9   | 23.0   | 17.7   | 17.9   | 17.8   |
|                    |            | 50               | 24           | 23.3                    | 23.3   | 23.7   | 18.4   | 18.2   | 18.5   | 22.7   | 22.9   | 23.1   | 17.7   | 17.8   | 17.9   |
|                    |            | 50               | 49           | 23.3                    | 23.3   | 23.6   | 18.3   | 18.3   | 18.6   | 22.8   | 22.9   | 22.9   | 17.8   | 17.9   | 18.0   |
|                    |            | 100              | 0            | 23.4                    | 23.3   | 23.8   | 18.5   | 18.2   | 18.5   | 22.8   | 22.9   | 23.1   | 17.8   | 17.8   | 17.9   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.2   | 23.7   | 18.0   | 18.0   | 17.6   | 23.4   | 23.4   | 23.6   | 17.8   | 18.3   | 18.0   |
|                    |            | 1                | 49           | 23.7                    | 23.2   | 23.9   | 18.0   | 18.0   | 17.8   | 23.5   | 23.3   | 23.8   | 17.8   | 18.2   | 18.3   |
|                    |            | 1                | 99           | 23.7                    | 23.4   | 23.7   | 18.1   | 18.0   | 18.0   | 23.5   | 23.5   | 23.6   | 18.0   | 18.2   | 18.4   |
|                    |            | 50               | 0            | 22.3                    | 22.3   | 22.5   | 16.7   | 16.8   | 16.7   | 22.2   | 22.1   | 22.4   | 16.7   | 16.9   | 16.8   |
|                    |            | 50               | 24           | 22.4                    | 22.3   | 22.6   | 16.7   | 16.6   | 16.8   | 22.2   | 22.2   | 22.5   | 16.8   | 16.9   | 16.9   |
|                    |            | 50               | 49           | 22.4                    | 22.3   | 22.5   | 16.8   | 16.7   | 16.9   | 22.2   | 22.2   | 22.4   | 16.9   | 16.9   | 17.0   |
|                    |            | 100              | 0            | 22.4                    | 22.3   | 22.6   | 16.8   | 16.6   | 16.8   | 22.2   | 22.2   | 22.5   | 16.9   | 16.9   | 16.9   |

## 7.2. LTE BAND 5

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 20407                   | 20525 | 20643 | 20407 | 20525 | 20643 |
| 1.4             | QPSK       | 1             | 0         | 25.6                    | 25.6  | 25.4  | 24.2  | 24.4  | 24.2  |
|                 |            | 1             | 2         | 25.6                    | 25.6  | 25.4  | 24.2  | 24.3  | 24.2  |
|                 |            | 1             | 5         | 25.7                    | 25.6  | 25.5  | 24.2  | 24.3  | 24.2  |
|                 |            | 3             | 0         | 25.5                    | 25.4  | 25.3  | 24.1  | 24.2  | 24.0  |
|                 |            | 3             | 1         | 25.5                    | 25.4  | 25.3  | 24.1  | 24.2  | 24.0  |
|                 |            | 3             | 2         | 25.5                    | 25.4  | 25.3  | 24.1  | 24.1  | 24.0  |
|                 |            | 6             | 0         | 24.4                    | 24.3  | 24.2  | 23.0  | 23.1  | 22.9  |
|                 | 16QAM      | 1             | 0         | 24.8                    | 24.7  | 24.4  | 23.4  | 23.6  | 23.4  |
|                 |            | 1             | 2         | 24.8                    | 24.7  | 24.5  | 23.4  | 23.6  | 23.4  |
|                 |            | 1             | 5         | 24.8                    | 24.7  | 24.6  | 23.4  | 23.5  | 23.5  |
|                 |            | 3             | 0         | 24.5                    | 24.5  | 24.3  | 23.1  | 23.3  | 23.1  |
|                 |            | 3             | 1         | 24.5                    | 24.5  | 24.3  | 23.1  | 23.3  | 23.1  |
|                 |            | 3             | 2         | 24.4                    | 24.5  | 24.2  | 23.1  | 23.2  | 23.0  |
|                 |            | 6             | 0         | 23.4                    | 23.3  | 23.1  | 22.0  | 22.0  | 22.0  |
|                 | 64QAM      | 1             | 0         | 24.1                    | 23.9  | 23.6  | 22.4  | 22.4  | 22.2  |
|                 |            | 1             | 2         | 24.0                    | 23.9  | 23.7  | 22.3  | 22.3  | 22.1  |
|                 |            | 1             | 5         | 24.0                    | 23.9  | 23.7  | 22.4  | 22.2  | 22.2  |
|                 |            | 3             | 0         | 23.8                    | 23.6  | 23.5  | 22.2  | 22.1  | 22.1  |
|                 |            | 3             | 1         | 23.7                    | 23.6  | 23.5  | 22.1  | 22.1  | 22.0  |
|                 |            | 3             | 2         | 23.7                    | 23.6  | 23.5  | 22.1  | 22.1  | 22.0  |
|                 |            | 6             | 0         | 22.5                    | 22.7  | 22.4  | 21.0  | 21.1  | 20.9  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 20415                   | 20525 | 20635 | 20415 | 20525 | 20635 |
| 3.0             | QPSK       | 1             | 0         | 25.6                    | 25.5  | 25.4  | 24.3  | 24.4  | 24.2  |
|                 |            | 1             | 7         | 25.7                    | 25.6  | 25.4  | 24.3  | 24.3  | 24.2  |
|                 |            | 1             | 14        | 25.6                    | 25.5  | 25.5  | 24.3  | 24.2  | 24.1  |
|                 |            | 8             | 0         | 24.5                    | 24.4  | 24.2  | 23.1  | 23.2  | 23.0  |
|                 |            | 8             | 4         | 24.5                    | 24.4  | 24.2  | 23.1  | 23.1  | 23.0  |
|                 |            | 8             | 7         | 24.5                    | 24.4  | 24.2  | 23.1  | 23.1  | 23.0  |
|                 |            | 15            | 0         | 24.6                    | 24.4  | 24.3  | 23.2  | 23.1  | 23.1  |
|                 | 16QAM      | 1             | 0         | 24.9                    | 24.9  | 24.7  | 23.5  | 23.6  | 23.5  |
|                 |            | 1             | 7         | 24.9                    | 24.9  | 24.7  | 23.6  | 23.5  | 23.5  |
|                 |            | 1             | 14        | 24.9                    | 24.8  | 24.7  | 23.7  | 23.3  | 23.5  |
|                 |            | 8             | 0         | 23.4                    | 23.3  | 23.2  | 22.0  | 22.2  | 22.0  |
|                 |            | 8             | 4         | 23.4                    | 23.3  | 23.2  | 22.0  | 22.2  | 22.0  |
|                 |            | 8             | 7         | 23.5                    | 23.4  | 23.1  | 22.0  | 22.1  | 22.0  |
|                 |            | 15            | 0         | 23.5                    | 23.3  | 23.1  | 22.0  | 22.1  | 22.0  |
|                 | 64QAM      | 1             | 0         | 23.8                    | 23.8  | 23.7  | 22.3  | 22.4  | 22.2  |
|                 |            | 1             | 7         | 23.8                    | 23.9  | 23.7  | 22.2  | 22.3  | 22.3  |
|                 |            | 1             | 14        | 23.8                    | 23.8  | 23.8  | 22.3  | 22.2  | 22.1  |
|                 |            | 8             | 0         | 22.5                    | 22.5  | 22.4  | 20.9  | 21.1  | 20.9  |
|                 |            | 8             | 4         | 22.5                    | 22.5  | 22.3  | 20.9  | 21.0  | 20.9  |
|                 |            | 8             | 7         | 22.5                    | 22.6  | 22.3  | 20.9  | 21.0  | 20.8  |
|                 |            | 15            | 0         | 22.5                    | 22.6  | 22.4  | 21.0  | 21.0  | 20.8  |

**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  | 25.5  | 24.2  | 24.5  | 24.2  |
|                    |            | 1                | 12           | 25.7                    | 25.6  | 25.4  | 24.3  | 24.3  | 24.2  |
|                    |            | 1                | 24           | 25.7                    | 25.6  | 25.5  | 24.4  | 24.2  | 24.2  |
|                    |            | 12               | 0            | 24.5                    | 24.5  | 24.4  | 23.1  | 23.3  | 23.1  |
|                    |            | 12               | 6            | 24.6                    | 24.5  | 24.3  | 23.2  | 23.3  | 23.1  |
|                    |            | 12               | 11           | 24.6                    | 24.5  | 24.3  | 23.3  | 23.2  | 23.1  |
|                    |            | 25               | 0            | 24.6                    | 24.5  | 24.3  | 23.3  | 23.2  | 23.1  |
|                    | 16QAM      | 1                | 0            | 25.0                    | 24.9  | 24.7  | 23.6  | 23.8  | 23.5  |
|                    |            | 1                | 12           | 25.0                    | 24.8  | 24.6  | 23.7  | 23.6  | 23.4  |
|                    |            | 1                | 24           | 25.1                    | 24.8  | 24.7  | 23.9  | 23.6  | 23.5  |
|                    |            | 12               | 0            | 23.6                    | 23.5  | 23.3  | 22.2  | 22.3  | 22.1  |
|                    |            | 12               | 6            | 23.6                    | 23.4  | 23.2  | 22.2  | 22.2  | 22.1  |
|                    |            | 12               | 11           | 23.6                    | 23.4  | 23.2  | 22.3  | 22.2  | 22.0  |
|                    |            | 25               | 0            | 23.5                    | 23.4  | 23.2  | 22.2  | 22.2  | 22.0  |
|                    | 64QAM      | 1                | 0            | 24.1                    | 24.1  | 23.8  | 22.3  | 22.4  | 22.6  |
|                    |            | 1                | 12           | 24.0                    | 24.0  | 23.8  | 22.4  | 22.3  | 22.5  |
|                    |            | 1                | 24           | 24.1                    | 24.0  | 23.9  | 22.6  | 22.5  | 22.4  |
|                    |            | 12               | 0            | 22.6                    | 22.7  | 22.5  | 21.1  | 21.1  | 21.1  |
|                    |            | 12               | 6            | 22.6                    | 22.7  | 22.4  | 21.1  | 21.0  | 21.0  |
|                    |            | 12               | 11           | 22.6                    | 22.7  | 22.4  | 21.1  | 21.0  | 21.0  |
|                    |            | 25               | 0            | 22.6                    | 22.7  | 22.4  | 21.1  | 21.1  | 21.0  |

**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            | 25.6                    | 25.7  | 25.5  | 24.3  | 24.4  | 24.2  |
|                    |            | 1                | 24           | 25.7                    | 25.6  | 25.5  | 24.5  | 24.3  | 24.2  |
|                    |            | 1                | 49           | 25.6                    | 25.5  | 25.4  | 24.5  | 24.2  | 24.2  |
|                    |            | 25               | 0            | 24.7                    | 24.6  | 24.6  | 23.3  | 23.4  | 23.2  |
|                    |            | 25               | 12           | 24.7                    | 24.6  | 24.5  | 23.4  | 23.3  | 23.2  |
|                    |            | 25               | 24           | 24.7                    | 24.6  | 24.4  | 23.4  | 23.2  | 23.2  |
|                    |            | 50               | 0            | 24.8                    | 24.6  | 24.5  | 23.5  | 23.3  | 23.2  |
|                    | 16QAM      | 1                | 0            | 25.0                    | 25.1  | 24.9  | 23.5  | 23.8  | 23.5  |
|                    |            | 1                | 24           | 25.0                    | 24.9  | 24.9  | 23.8  | 23.7  | 23.5  |
|                    |            | 1                | 49           | 25.0                    | 24.9  | 24.7  | 23.8  | 23.5  | 23.5  |
|                    |            | 25               | 0            | 23.7                    | 23.6  | 23.6  | 22.4  | 22.5  | 22.2  |
|                    |            | 25               | 12           | 23.7                    | 23.6  | 23.5  | 22.4  | 22.4  | 22.2  |
|                    |            | 25               | 24           | 23.8                    | 23.6  | 23.3  | 22.4  | 22.2  | 22.2  |
|                    |            | 50               | 0            | 23.7                    | 23.6  | 23.5  | 22.5  | 22.3  | 22.2  |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.0  | 24.0  | 22.3  | 22.6  | 22.4  |
|                    |            | 1                | 24           | 24.0                    | 23.9  | 23.8  | 22.6  | 22.3  | 22.4  |
|                    |            | 1                | 49           | 24.1                    | 23.9  | 23.8  | 22.6  | 22.5  | 22.3  |
|                    |            | 25               | 0            | 22.8                    | 22.9  | 22.7  | 21.3  | 21.3  | 21.4  |
|                    |            | 25               | 12           | 22.9                    | 22.8  | 22.7  | 21.4  | 21.3  | 21.3  |
|                    |            | 25               | 24           | 22.9                    | 22.9  | 22.6  | 21.5  | 21.3  | 21.2  |
|                    |            | 50               | 0            | 22.9                    | 22.9  | 22.7  | 21.5  | 21.3  | 21.3  |

### 7.3. LTE BAND 7

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                 |            |               |           | 20775                   | 21100 | 21425 | 20775 | 21100 | 21425 | 20775 | 21100 | 21425 | 20775 | 21100 | 21425 |
| 5.0             | QPSK       | 1             | 0         | 25.5                    | 25.5  | 25.6  | 20.4  | 20.2  | 20.1  | 24.3  | 24.3  | 24.2  | 18.2  | 18.0  | 17.9  |
|                 |            | 1             | 12        | 25.6                    | 25.4  | 25.6  | 20.4  | 20.1  | 20.1  | 24.2  | 24.3  | 24.1  | 18.1  | 17.9  | 17.9  |
|                 |            | 1             | 24        | 25.7                    | 25.3  | 25.4  | 20.3  | 20.1  | 20.2  | 24.3  | 24.2  | 24.2  | 18.0  | 18.0  | 18.0  |
|                 |            | 12            | 0         | 24.4                    | 24.2  | 24.5  | 19.3  | 19.1  | 18.9  | 23.3  | 23.3  | 23.1  | 17.1  | 16.9  | 16.8  |
|                 |            | 12            | 6         | 24.5                    | 24.2  | 24.3  | 19.3  | 19.1  | 19.0  | 23.2  | 23.3  | 23.1  | 17.0  | 16.9  | 16.8  |
|                 |            | 12            | 11        | 24.6                    | 24.2  | 24.3  | 19.2  | 19.0  | 19.0  | 23.2  | 23.2  | 23.1  | 16.9  | 16.9  | 16.9  |
|                 |            | 25            | 0         | 24.5                    | 24.3  | 24.3  | 19.3  | 19.0  | 19.0  | 23.2  | 23.2  | 23.1  | 17.0  | 16.8  | 16.8  |
|                 | 16QAM      | 1             | 0         | 24.8                    | 24.7  | 24.7  | 19.7  | 19.8  | 19.5  | 23.6  | 23.9  | 23.5  | 17.5  | 17.4  | 17.2  |
|                 |            | 1             | 12        | 24.9                    | 24.7  | 24.8  | 19.6  | 19.6  | 19.4  | 23.5  | 23.8  | 23.5  | 17.3  | 17.4  | 17.3  |
|                 |            | 1             | 24        | 25.0                    | 24.7  | 24.7  | 19.6  | 19.5  | 19.6  | 23.6  | 23.7  | 23.4  | 17.3  | 17.4  | 17.5  |
|                 |            | 12            | 0         | 23.4                    | 23.3  | 23.3  | 18.3  | 18.1  | 17.9  | 22.3  | 22.4  | 22.2  | 16.2  | 15.9  | 15.8  |
|                 |            | 12            | 6         | 23.5                    | 23.3  | 23.4  | 18.3  | 18.1  | 18.0  | 22.3  | 22.4  | 22.2  | 16.0  | 15.9  | 15.8  |
|                 |            | 12            | 11        | 23.6                    | 23.3  | 23.4  | 18.2  | 18.1  | 18.0  | 22.2  | 22.3  | 22.2  | 16.0  | 15.9  | 15.8  |
|                 |            | 25            | 0         | 23.5                    | 23.3  | 23.4  | 18.2  | 18.1  | 18.0  | 22.2  | 22.2  | 22.1  | 16.0  | 15.9  | 15.8  |
|                 | 64QAM      | 1             | 0         | 23.9                    | 24.1  | 23.7  | 18.7  | 18.9  | 18.5  | 22.3  | 22.5  | 21.9  | 16.7  | 16.5  | 16.1  |
|                 |            | 1             | 12        | 23.9                    | 24.0  | 23.8  | 18.7  | 18.8  | 18.5  | 22.2  | 22.4  | 21.8  | 16.5  | 16.4  | 16.4  |
|                 |            | 1             | 24        | 24.0                    | 23.9  | 23.9  | 18.7  | 18.7  | 18.6  | 22.2  | 22.4  | 21.9  | 16.5  | 16.5  | 16.5  |
|                 |            | 12            | 0         | 22.5                    | 22.5  | 22.5  | 17.3  | 17.3  | 17.1  | 20.9  | 20.9  | 20.6  | 15.2  | 15.0  | 14.9  |
|                 |            | 12            | 6         | 22.5                    | 22.5  | 22.5  | 17.2  | 17.3  | 17.2  | 20.8  | 21.0  | 20.5  | 15.1  | 15.0  | 15.0  |
|                 |            | 12            | 11        | 22.5                    | 22.5  | 22.5  | 17.3  | 17.3  | 17.1  | 20.8  | 20.9  | 20.6  | 15.1  | 15.0  | 15.0  |
|                 |            | 25            | 0         | 22.5                    | 22.5  | 22.5  | 17.3  | 17.2  | 17.1  | 20.8  | 20.9  | 20.5  | 15.1  | 15.0  | 15.0  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                 |            |               |           | 20800                   | 21100 | 21400 | 20800 | 21100 | 21400 | 20800 | 21100 | 21400 | 20800 | 21100 | 21400 |
| 10.0            | QPSK       | 1             | 0         | 25.5                    | 25.6  | 25.6  | 20.4  | 20.3  | 20.2  | 24.4  | 24.4  | 24.3  | 18.2  | 18.1  | 17.9  |
|                 |            | 1             | 24        | 25.7                    | 25.3  | 25.4  | 20.3  | 20.2  | 20.2  | 24.3  | 24.4  | 24.3  | 18.1  | 18.0  | 17.9  |
|                 |            | 1             | 49        | 25.6                    | 25.3  | 25.5  | 20.3  | 20.2  | 20.3  | 24.5  | 24.3  | 24.2  | 18.1  | 18.0  | 18.0  |
|                 |            | 25            | 0         | 24.6                    | 24.5  | 24.4  | 19.3  | 19.3  | 19.1  | 23.4  | 23.4  | 23.3  | 17.1  | 17.1  | 16.9  |
|                 |            | 25            | 12        | 24.7                    | 24.4  | 24.4  | 19.3  | 19.2  | 19.2  | 23.4  | 23.4  | 23.3  | 17.1  | 17.0  | 16.9  |
|                 |            | 25            | 24        | 24.7                    | 24.4  | 24.5  | 19.3  | 19.2  | 19.2  | 23.4  | 23.3  | 23.2  | 17.1  | 17.1  | 17.0  |
|                 |            | 50            | 0         | 24.7                    | 24.4  | 24.5  | 19.3  | 19.2  | 19.2  | 23.2  | 23.3  | 23.2  | 17.1  | 17.1  | 16.9  |
|                 | 16QAM      | 1             | 0         | 25.0                    | 24.9  | 24.9  | 19.8  | 19.7  | 19.5  | 23.7  | 23.9  | 23.8  | 17.5  | 17.4  | 17.2  |
|                 |            | 1             | 24        | 25.1                    | 24.8  | 24.9  | 19.7  | 19.6  | 19.5  | 23.6  | 23.8  | 23.7  | 17.3  | 17.4  | 17.3  |
|                 |            | 1             | 49        | 25.1                    | 24.8  | 24.9  | 19.8  | 19.6  | 19.6  | 23.9  | 23.7  | 23.5  | 17.4  | 17.5  | 17.4  |
|                 |            | 25            | 0         | 23.7                    | 23.6  | 23.5  | 18.4  | 18.3  | 18.2  | 22.4  | 22.5  | 22.4  | 16.2  | 16.1  | 15.9  |
|                 |            | 25            | 12        | 23.8                    | 23.5  | 23.5  | 18.4  | 18.2  | 18.2  | 22.4  | 22.5  | 22.3  | 16.2  | 16.1  | 16.0  |
|                 |            | 25            | 24        | 23.8                    | 23.5  | 23.6  | 18.4  | 18.2  | 18.2  | 22.4  | 22.4  | 22.3  | 16.1  | 16.1  | 16.1  |
|                 |            | 50            | 0         | 23.8                    | 23.5  | 23.6  | 18.3  | 18.2  | 18.2  | 22.3  | 22.4  | 22.3  | 16.1  | 16.1  | 16.0  |
|                 | 64QAM      | 1             | 0         | 24.0                    | 24.0  | 23.8  | 18.8  | 18.7  | 18.5  | 22.3  | 22.4  | 22.2  | 16.7  | 16.5  | 16.3  |
|                 |            | 1             | 24        | 24.1                    | 23.9  | 23.8  | 18.7  | 18.6  | 18.6  | 22.2  | 22.4  | 22.0  | 16.4  | 16.3  | 16.3  |
|                 |            | 1             | 49        | 24.2                    | 23.9  | 24.0  | 18.8  | 18.7  | 18.7  | 22.5  | 22.4  | 21.9  | 16.6  | 16.4  | 16.5  |
|                 |            | 25            | 0         | 22.7                    | 22.8  | 22.6  | 17.5  | 17.5  | 17.3  | 21.0  | 21.3  | 20.9  | 15.3  | 15.3  | 15.1  |
|                 |            | 25            | 12        | 22.8                    | 22.8  | 22.6  | 17.5  | 17.5  | 17.3  | 21.1  | 21.2  | 20.8  | 15.3  | 15.2  | 15.1  |
|                 |            | 25            | 24        | 22.9                    | 22.8  | 22.7  | 17.5  | 17.5  | 17.4  | 21.1  | 21.2  | 20.8  | 15.3  | 15.3  | 15.3  |
|                 |            | 50            | 0         | 22.8                    | 22.8  | 22.6  | 17.5  | 17.5  | 17.3  | 21.1  | 21.2  | 20.8  | 15.3  | 15.2  | 15.2  |

### 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            | 25.5                    | 25.5   | 25.4   | 20.4   | 20.3   | 20.2   | 24.4   | 24.9   | 24.8   | 17.9   | 18.0   | 17.9   |
|                    |            | 1                | 37           | 25.7                    | 25.3   | 25.4   | 20.2   | 20.3   | 20.1   | 24.4   | 24.8   | 24.8   | 18.0   | 18.0   | 17.9   |
|                    |            | 1                | 74           | 25.6                    | 25.4   | 25.5   | 20.5   | 20.2   | 20.2   | 24.4   | 24.7   | 24.7   | 18.1   | 18.0   | 17.9   |
|                    |            | 36               | 0            | 24.8                    | 24.5   | 24.5   | 19.3   | 19.2   | 19.1   | 23.4   | 24.0   | 23.9   | 17.0   | 17.0   | 16.8   |
|                    |            | 36               | 16           | 24.7                    | 24.4   | 24.5   | 19.2   | 19.2   | 19.1   | 23.9   | 23.9   | 23.8   | 17.0   | 17.0   | 16.9   |
|                    |            | 36               | 35           | 24.7                    | 24.4   | 24.5   | 19.4   | 19.2   | 19.1   | 24.0   | 23.8   | 23.8   | 17.0   | 17.0   | 17.0   |
|                    |            | 75               | 0            | 24.8                    | 24.4   | 24.5   | 19.2   | 19.2   | 19.1   | 23.9   | 23.8   | 23.8   | 17.0   | 17.0   | 16.9   |
|                    | 16QAM      | 1                | 0            | 25.0                    | 25.0   | 24.8   | 19.7   | 19.7   | 19.6   | 24.2   | 24.3   | 24.2   | 17.4   | 17.5   | 17.3   |
|                    |            | 1                | 37           | 25.0                    | 24.8   | 24.9   | 19.6   | 19.6   | 19.4   | 24.3   | 24.2   | 24.2   | 17.4   | 17.3   | 17.2   |
|                    |            | 1                | 74           | 25.0                    | 24.8   | 24.9   | 19.9   | 19.6   | 19.5   | 24.3   | 24.1   | 24.0   | 17.5   | 17.4   | 17.4   |
|                    |            | 36               | 0            | 23.8                    | 23.5   | 23.5   | 18.3   | 18.4   | 18.2   | 22.9   | 23.0   | 23.0   | 16.1   | 16.2   | 15.9   |
|                    |            | 36               | 16           | 23.8                    | 23.5   | 23.6   | 18.3   | 18.3   | 18.2   | 23.0   | 23.0   | 22.9   | 16.1   | 16.1   | 16.0   |
|                    |            | 36               | 35           | 23.6                    | 23.5   | 23.6   | 18.4   | 18.3   | 18.2   | 23.0   | 22.9   | 22.8   | 16.1   | 16.1   | 16.0   |
|                    |            | 75               | 0            | 23.7                    | 23.5   | 23.5   | 18.3   | 18.3   | 18.2   | 22.9   | 22.9   | 22.8   | 16.1   | 16.1   | 16.0   |
|                    | 64QAM      | 1                | 0            | 24.0                    | 24.1   | 23.8   | 18.8   | 18.8   | 18.6   | 22.2   | 22.4   | 22.2   | 16.6   | 16.6   | 16.3   |
|                    |            | 1                | 37           | 24.1                    | 24.0   | 23.8   | 18.6   | 18.8   | 18.5   | 22.3   | 22.4   | 22.1   | 16.4   | 16.4   | 16.3   |
|                    |            | 1                | 74           | 24.2                    | 23.9   | 24.0   | 18.8   | 18.7   | 18.6   | 22.4   | 22.4   | 21.9   | 16.4   | 16.5   | 16.4   |
|                    |            | 36               | 0            | 22.8                    | 22.8   | 22.5   | 17.5   | 17.5   | 17.2   | 21.0   | 21.2   | 20.9   | 15.3   | 15.3   | 15.0   |
|                    |            | 36               | 16           | 22.9                    | 22.7   | 22.6   | 17.5   | 17.5   | 17.3   | 21.1   | 21.1   | 20.8   | 15.3   | 15.2   | 15.1   |
|                    |            | 36               | 35           | 23.0                    | 22.6   | 22.7   | 17.5   | 17.5   | 17.3   | 21.2   | 21.1   | 20.8   | 15.3   | 15.3   | 15.2   |
|                    |            | 75               | 0            | 22.9                    | 22.7   | 22.6   | 17.5   | 17.4   | 17.2   | 21.1   | 21.1   | 20.7   | 15.3   | 15.2   | 15.1   |

### 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            | 25.6                    | 25.6   | 25.4   | 20.4   | 20.4   | 20.3   | 24.9   | 25.0   | 24.6   | 17.8   | 18.1   | 18.0   |
|                    |            | 1                | 49           | 25.6                    | 25.4   | 25.4   | 20.4   | 20.2   | 20.1   | 24.9   | 24.8   | 24.7   | 18.1   | 17.9   | 17.6   |
|                    |            | 1                | 99           | 25.6                    | 25.4   | 25.5   | 20.5   | 20.3   | 20.2   | 25.0   | 24.7   | 24.7   | 18.0   | 18.0   | 17.9   |
|                    |            | 50               | 0            | 24.8                    | 24.5   | 24.4   | 19.2   | 19.2   | 19.1   | 23.9   | 24.0   | 23.8   | 17.1   | 17.1   | 16.8   |
|                    |            | 50               | 24           | 24.6                    | 24.4   | 24.4   | 19.3   | 19.2   | 19.0   | 24.0   | 23.8   | 23.8   | 17.1   | 17.0   | 16.8   |
|                    |            | 50               | 49           | 24.6                    | 24.5   | 24.5   | 19.4   | 19.2   | 19.1   | 23.9   | 23.8   | 23.8   | 17.0   | 17.0   | 16.9   |
|                    |            | 100              | 0            | 24.7                    | 24.5   | 24.5   | 19.4   | 19.2   | 19.1   | 23.9   | 23.8   | 23.8   | 17.0   | 17.0   | 16.8   |
|                    | 16QAM      | 1                | 0            | 25.2                    | 25.2   | 25.0   | 19.9   | 19.8   | 19.8   | 24.3   | 24.4   | 24.1   | 17.3   | 17.4   | 17.6   |
|                    |            | 1                | 49           | 25.1                    | 24.9   | 24.9   | 19.9   | 19.5   | 19.5   | 24.5   | 24.3   | 24.3   | 17.3   | 17.3   | 17.3   |
|                    |            | 1                | 99           | 25.2                    | 24.9   | 25.0   | 20.0   | 19.6   | 19.5   | 24.5   | 24.2   | 24.1   | 17.5   | 17.4   | 17.5   |
|                    |            | 50               | 0            | 23.8                    | 23.6   | 23.5   | 18.3   | 18.4   | 18.2   | 22.9   | 23.0   | 22.9   | 16.2   | 16.2   | 15.9   |
|                    |            | 50               | 24           | 23.7                    | 23.5   | 23.5   | 18.4   | 18.3   | 18.1   | 23.0   | 22.9   | 22.8   | 16.1   | 16.1   | 15.9   |
|                    |            | 50               | 49           | 23.6                    | 23.5   | 23.6   | 18.5   | 18.2   | 18.1   | 23.0   | 22.8   | 22.8   | 16.1   | 16.2   | 16.0   |
|                    |            | 100              | 0            | 23.7                    | 23.5   | 23.5   | 18.4   | 18.2   | 18.1   | 22.9   | 22.9   | 22.8   | 16.1   | 16.1   | 15.9   |
|                    | 64QAM      | 1                | 0            | 23.9                    | 24.3   | 23.9   | 18.8   | 18.7   | 18.9   | 22.4   | 22.2   | 22.3   | 16.8   | 16.4   | 16.5   |
|                    |            | 1                | 49           | 24.0                    | 24.0   | 24.0   | 18.8   | 18.5   | 18.6   | 22.5   | 22.2   | 22.3   | 16.6   | 16.1   | 16.3   |
|                    |            | 1                | 99           | 24.1                    | 23.9   | 24.1   | 19.1   | 18.6   | 18.8   | 22.6   | 22.2   | 22.0   | 16.9   | 16.3   | 16.6   |
|                    |            | 50               | 0            | 22.8                    | 22.8   | 22.5   | 17.4   | 17.5   | 17.2   | 21.1   | 21.1   | 20.9   | 15.3   | 15.2   | 14.9   |
|                    |            | 50               | 24           | 22.9                    | 22.7   | 22.6   | 17.4   | 17.5   | 17.3   | 21.1   | 21.1   | 20.9   | 15.2   | 15.2   | 15.0   |
|                    |            | 50               | 49           | 23.0                    | 22.6   | 22.6   | 17.5   | 17.5   | 17.2   | 21.1   | 21.1   | 20.8   | 15.3   | 15.3   | 15.1   |
|                    |            | 100              | 0            | 22.9                    | 22.7   | 22.6   | 17.4   | 17.4   | 17.2   | 21.0   | 21.1   | 20.8   | 15.2   | 15.2   | 14.9   |

## 7.4. LTE BAND 12

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB 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                    | 25.5  | 25.7  | 23.6  | 23.5  | 24.3  |
|                 |            | 1             | 2         | 25.5                    | 25.5  | 25.7  | 23.5  | 23.9  | 24.5  |
|                 |            | 1             | 5         | 25.6                    | 25.5  | 25.7  | 23.6  | 23.9  | 24.5  |
|                 |            | 3             | 0         | 25.3                    | 25.4  | 25.5  | 23.5  | 23.7  | 24.3  |
|                 |            | 3             | 1         | 25.4                    | 25.3  | 25.5  | 23.5  | 23.7  | 24.3  |
|                 |            | 3             | 2         | 25.4                    | 25.3  | 25.4  | 23.5  | 23.7  | 24.2  |
|                 |            | 6             | 0         | 24.3                    | 24.3  | 24.4  | 22.3  | 22.7  | 23.2  |
|                 | 16QAM      | 1             | 0         | 24.8                    | 24.7  | 24.8  | 22.8  | 23.2  | 23.7  |
|                 |            | 1             | 2         | 24.7                    | 24.6  | 24.8  | 22.7  | 23.2  | 23.7  |
|                 |            | 1             | 5         | 24.8                    | 24.6  | 24.8  | 22.8  | 23.3  | 23.7  |
|                 |            | 3             | 0         | 24.4                    | 24.4  | 24.5  | 22.5  | 22.8  | 23.4  |
|                 |            | 3             | 1         | 24.5                    | 24.4  | 24.5  | 22.5  | 22.8  | 23.4  |
|                 |            | 3             | 2         | 24.5                    | 24.4  | 24.5  | 22.5  | 22.8  | 23.4  |
|                 |            | 6             | 0         | 23.3                    | 23.3  | 23.4  | 21.3  | 21.6  | 22.3  |
|                 | 64QAM      | 1             | 0         | 24.2                    | 23.8  | 23.9  | 22.2  | 22.2  | 22.1  |
|                 |            | 1             | 2         | 24.2                    | 23.7  | 23.9  | 22.0  | 22.2  | 22.0  |
|                 |            | 1             | 5         | 24.1                    | 23.7  | 23.9  | 22.1  | 22.2  | 22.1  |
|                 |            | 3             | 0         | 23.8                    | 23.5  | 23.7  | 21.9  | 21.9  | 21.8  |
|                 |            | 3             | 1         | 23.8                    | 23.5  | 23.7  | 21.9  | 21.9  | 21.8  |
|                 |            | 3             | 2         | 23.8                    | 23.5  | 23.7  | 21.9  | 21.9  | 21.8  |
|                 |            | 6             | 0         | 22.7                    | 22.5  | 22.6  | 20.8  | 20.7  | 20.8  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 23025                   | 23095 | 23165 | 23025 | 23095 | 23165 |
|                 |            |               |           | 700.5                   | 707.5 | 714.5 | 700.5 | 707.5 | 714.5 |
| 3.0             | QPSK       | 1             | 0         | 25.5                    | 25.5  | 25.6  | 24.2  | 24.1  | 24.3  |
|                 |            | 1             | 7         | 25.6                    | 25.5  | 25.6  | 24.3  | 24.2  | 24.3  |
|                 |            | 1             | 14        | 25.5                    | 25.6  | 25.6  | 24.2  | 24.2  | 24.3  |
|                 |            | 8             | 0         | 24.3                    | 24.4  | 24.4  | 23.0  | 22.9  | 23.1  |
|                 |            | 8             | 4         | 24.3                    | 24.4  | 24.5  | 23.0  | 22.9  | 23.1  |
|                 |            | 8             | 7         | 24.3                    | 24.4  | 24.5  | 23.0  | 22.9  | 23.1  |
|                 |            | 15            | 0         | 24.4                    | 24.4  | 24.6  | 23.0  | 23.0  | 23.2  |
|                 | 16QAM      | 1             | 0         | 24.7                    | 24.8  | 24.8  | 23.3  | 23.3  | 23.5  |
|                 |            | 1             | 7         | 24.9                    | 24.8  | 24.9  | 23.5  | 23.4  | 23.6  |
|                 |            | 1             | 14        | 24.8                    | 24.7  | 24.8  | 23.4  | 23.4  | 23.5  |
|                 |            | 8             | 0         | 23.2                    | 23.3  | 23.3  | 22.0  | 21.9  | 22.1  |
|                 |            | 8             | 4         | 23.3                    | 23.2  | 23.4  | 22.0  | 21.9  | 22.1  |
|                 |            | 8             | 7         | 23.3                    | 23.2  | 23.4  | 22.0  | 21.9  | 22.0  |
|                 |            | 15            | 0         | 23.3                    | 23.2  | 23.5  | 22.0  | 21.9  | 22.1  |
|                 | 64QAM      | 1             | 0         | 24.0                    | 23.8  | 23.9  | 22.1  | 21.8  | 22.1  |
|                 |            | 1             | 7         | 24.0                    | 23.7  | 24.0  | 22.0  | 21.9  | 22.2  |
|                 |            | 1             | 14        | 23.7                    | 23.9  | 23.9  | 21.9  | 22.0  | 22.1  |
|                 |            | 8             | 0         | 22.6                    | 22.5  | 22.6  | 20.7  | 20.6  | 20.7  |
|                 |            | 8             | 4         | 22.6                    | 22.4  | 22.6  | 20.6  | 20.6  | 20.7  |
|                 |            | 8             | 7         | 22.5                    | 22.4  | 22.6  | 20.6  | 20.6  | 20.7  |
|                 |            | 15            | 0         | 22.5                    | 22.4  | 22.7  | 20.7  | 20.6  | 20.7  |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 23035                   | 23095 | 23155 | 23035 | 23095 | 23155 |
|                    |            |                  |              | 701.5                   | 707.5 | 713.5 | 701.5 | 707.5 | 713.5 |
| 5.0                | QPSK       | 1                | 0            | 25.5                    | 25.5  | 25.5  | 24.2  | 24.1  | 24.2  |
|                    |            | 1                | 12           | 25.6                    | 25.4  | 25.5  | 24.1  | 24.1  | 24.3  |
|                    |            | 1                | 24           | 25.5                    | 25.6  | 25.7  | 24.1  | 24.2  | 24.3  |
|                    |            | 12               | 0            | 24.4                    | 24.5  | 24.5  | 23.1  | 23.0  | 23.1  |
|                    |            | 12               | 6            | 24.4                    | 24.3  | 24.5  | 23.0  | 23.0  | 23.1  |
|                    |            | 12               | 11           | 24.4                    | 24.4  | 24.5  | 23.0  | 23.0  | 23.2  |
|                    | 16QAM      | 25               | 0            | 24.5                    | 24.4  | 24.5  | 23.0  | 23.0  | 23.2  |
|                    |            | 1                | 0            | 24.9                    | 24.9  | 24.8  | 23.5  | 23.5  | 23.6  |
|                    |            | 1                | 12           | 24.9                    | 24.7  | 24.8  | 23.4  | 23.5  | 23.6  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 24.9  | 23.4  | 23.6  | 23.6  |
|                    |            | 12               | 0            | 23.4                    | 23.4  | 23.5  | 22.1  | 22.0  | 22.1  |
|                    |            | 12               | 6            | 23.5                    | 23.3  | 23.4  | 22.0  | 22.0  | 22.1  |
|                    | 64QAM      | 12               | 11           | 23.4                    | 23.4  | 23.5  | 22.0  | 22.1  | 22.1  |
|                    |            | 25               | 0            | 23.5                    | 23.3  | 23.5  | 22.0  | 22.0  | 22.2  |
|                    |            | 1                | 0            | 24.1                    | 23.9  | 24.1  | 22.3  | 22.0  | 22.1  |
|                    |            | 1                | 12           | 23.8                    | 23.8  | 24.1  | 22.1  | 22.0  | 22.1  |
|                    |            | 1                | 24           | 24.0                    | 24.0  | 24.1  | 22.2  | 22.2  | 22.2  |
|                    |            | 12               | 0            | 22.7                    | 22.5  | 22.6  | 20.8  | 20.7  | 20.7  |
|                    |            | 12               | 6            | 22.6                    | 22.4  | 22.7  | 20.7  | 20.7  | 20.8  |
|                    |            | 12               | 11           | 22.6                    | 22.5  | 22.7  | 20.7  | 20.7  | 20.8  |
|                    |            | 25               | 0            | 22.5                    | 22.5  | 22.7  | 20.7  | 20.7  | 20.8  |

**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            | 25.6                    | 25.5  | 25.5  | 24.2  | 24.1  | 24.2  |
|                    |            | 1                | 24           | 25.5                    | 25.4  | 25.6  | 24.1  | 24.1  | 24.2  |
|                    |            | 1                | 49           | 25.6                    | 25.6  | 25.7  | 24.2  | 24.2  | 24.4  |
|                    |            | 25               | 0            | 24.6                    | 24.5  | 24.5  | 23.1  | 23.1  | 23.1  |
|                    |            | 25               | 12           | 24.5                    | 24.4  | 24.6  | 23.1  | 23.1  | 23.2  |
|                    |            | 25               | 24           | 24.5                    | 24.5  | 24.5  | 23.1  | 23.1  | 23.3  |
|                    | 16QAM      | 50               | 0            | 24.6                    | 24.4  | 24.6  | 23.2  | 23.1  | 23.2  |
|                    |            | 1                | 0            | 24.8                    | 24.9  | 24.8  | 23.5  | 23.5  | 23.5  |
|                    |            | 1                | 24           | 24.8                    | 24.8  | 24.9  | 23.4  | 23.5  | 23.6  |
|                    |            | 1                | 49           | 24.7                    | 24.9  | 25.0  | 23.4  | 23.6  | 23.6  |
|                    |            | 25               | 0            | 23.6                    | 23.5  | 23.4  | 22.2  | 22.1  | 22.2  |
|                    |            | 25               | 12           | 23.5                    | 23.4  | 23.6  | 22.1  | 22.1  | 22.2  |
|                    | 64QAM      | 25               | 24           | 23.5                    | 23.5  | 23.5  | 22.1  | 22.1  | 22.3  |
|                    |            | 50               | 0            | 23.6                    | 23.4  | 23.5  | 22.2  | 22.1  | 22.2  |
|                    |            | 1                | 0            | 24.1                    | 23.9  | 23.8  | 22.2  | 22.0  | 22.0  |
|                    |            | 1                | 24           | 24.0                    | 23.7  | 24.1  | 22.1  | 22.0  | 22.0  |
|                    |            | 1                | 49           | 23.9                    | 24.1  | 24.1  | 22.2  | 22.2  | 22.2  |
|                    |            | 25               | 0            | 22.7                    | 22.6  | 22.7  | 20.9  | 20.8  | 20.9  |
|                    |            | 25               | 12           | 22.7                    | 22.6  | 22.8  | 20.9  | 20.8  | 20.9  |
|                    |            | 25               | 24           | 22.7                    | 22.8  | 22.8  | 20.9  | 20.8  | 21.0  |
|                    |            | 50               | 0            | 22.7                    | 22.6  | 22.8  | 20.8  | 20.8  | 20.9  |

## 7.5. LTE BAND 13

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 23205                   | 23230 | 23255 | 23205 | 23230 | 23255 |
| 5.0             | QPSK       | 1             | 0         | 25.7                    | 25.5  | 25.6  | 24.5  | 24.4  | 24.3  |
|                 |            | 1             | 12        | 25.5                    | 25.5  | 25.5  | 24.4  | 24.3  | 24.4  |
|                 |            | 1             | 24        | 25.6                    | 25.6  | 25.5  | 24.4  | 24.4  | 24.4  |
|                 |            | 12            | 0         | 24.6                    | 24.4  | 24.4  | 23.4  | 23.2  | 23.3  |
|                 |            | 12            | 6         | 24.4                    | 24.4  | 24.4  | 23.3  | 23.2  | 23.3  |
|                 |            | 12            | 11        | 24.4                    | 24.4  | 24.4  | 23.3  | 23.2  | 23.3  |
|                 |            | 25            | 0         | 24.5                    | 24.4  | 24.4  | 23.3  | 23.3  | 23.3  |
|                 | 16QAM      | 1             | 0         | 24.9                    | 24.8  | 24.8  | 23.7  | 23.9  | 23.7  |
|                 |            | 1             | 12        | 24.8                    | 24.8  | 24.8  | 23.7  | 23.7  | 23.8  |
|                 |            | 1             | 24        | 24.9                    | 24.8  | 24.7  | 23.7  | 23.8  | 23.7  |
|                 |            | 12            | 0         | 23.5                    | 23.3  | 23.4  | 22.3  | 22.3  | 22.2  |
|                 |            | 12            | 6         | 23.4                    | 23.4  | 23.4  | 22.3  | 22.2  | 22.2  |
|                 |            | 12            | 11        | 23.4                    | 23.4  | 23.4  | 22.3  | 22.2  | 22.2  |
|                 |            | 25            | 0         | 23.4                    | 23.4  | 23.4  | 22.3  | 22.2  | 22.2  |
|                 | 64QAM      | 1             | 0         | 23.9                    | 23.9  | 23.9  | 22.1  | 22.2  | 22.2  |
|                 |            | 1             | 12        | 23.8                    | 23.8  | 23.8  | 22.2  | 22.0  | 22.1  |
|                 |            | 1             | 24        | 23.9                    | 23.7  | 23.8  | 22.1  | 21.9  | 22.1  |
|                 |            | 12            | 0         | 22.5                    | 22.5  | 22.4  | 20.8  | 20.7  | 20.6  |
|                 |            | 12            | 6         | 22.6                    | 22.4  | 22.4  | 20.8  | 20.7  | 20.7  |
|                 |            | 12            | 11        | 22.5                    | 22.3  | 22.4  | 20.8  | 20.6  | 20.7  |
|                 |            | 25            | 0         | 22.5                    | 22.5  | 22.4  | 20.8  | 20.7  | 20.7  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |     |       |       |     |
|-----------------|------------|---------------|-----------|-------------------------|-------|-----|-------|-------|-----|
|                 |            |               |           | ANT 1                   |       |     | ANT 2 |       |     |
|                 |            |               |           | N/A                     | 23230 | N/A | N/A   | 23230 | N/A |
| 10.0            | QPSK       | 1             | 0         |                         | 25.6  |     |       | 24.5  |     |
|                 |            | 1             | 24        |                         | 25.6  |     |       | 24.3  |     |
|                 |            | 1             | 49        |                         | 25.6  |     |       | 24.3  |     |
|                 |            | 25            | 0         |                         | 24.6  |     |       | 23.4  |     |
|                 |            | 25            | 12        |                         | 24.6  |     |       | 23.3  |     |
|                 |            | 25            | 24        |                         | 24.5  |     |       | 23.3  |     |
|                 |            | 50            | 0         |                         | 24.6  |     |       | 23.3  |     |
|                 | 16QAM      | 1             | 0         |                         | 24.9  |     |       | 23.8  |     |
|                 |            | 1             | 24        |                         | 24.9  |     |       | 23.7  |     |
|                 |            | 1             | 49        |                         | 24.8  |     |       | 23.6  |     |
|                 |            | 25            | 0         |                         | 23.5  |     |       | 22.3  |     |
|                 |            | 25            | 12        |                         | 23.6  |     |       | 22.3  |     |
|                 |            | 25            | 24        |                         | 23.6  |     |       | 22.3  |     |
|                 |            | 50            | 0         |                         | 23.6  |     |       | 22.3  |     |
|                 | 64QAM      | 1             | 0         |                         | 23.9  |     |       | 22.1  |     |
|                 |            | 1             | 24        |                         | 23.8  |     |       | 22.1  |     |
|                 |            | 1             | 49        |                         | 23.7  |     |       | 22.0  |     |
|                 |            | 25            | 0         |                         | 22.7  |     |       | 20.9  |     |
|                 |            | 25            | 12        |                         | 22.6  |     |       | 21.0  |     |
|                 |            | 25            | 24        |                         | 22.5  |     |       | 20.8  |     |
|                 |            | 50            | 0         |                         | 22.6  |     |       | 20.9  |     |

## 7.6. LTE BAND 14

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 23305                   | 23330 | 23355 | 23305 | 23330 | 23355 |
| 5.0             | QPSK       | 1             | 0         | 25.5                    | 25.6  | 25.6  | 24.3  | 24.3  | 24.2  |
|                 |            | 1             | 12        | 25.5                    | 25.6  | 25.6  | 24.2  | 24.3  | 24.3  |
|                 |            | 1             | 24        | 25.6                    | 25.6  | 25.7  | 24.3  | 24.4  | 24.4  |
|                 |            | 12            | 0         | 24.4                    | 24.4  | 24.5  | 23.2  | 23.2  | 23.1  |
|                 |            | 12            | 6         | 24.5                    | 24.5  | 24.4  | 23.2  | 23.2  | 23.2  |
|                 |            | 12            | 11        | 24.4                    | 24.5  | 24.5  | 23.2  | 23.1  | 23.2  |
|                 |            | 25            | 0         | 24.4                    | 24.5  | 24.5  | 23.2  | 23.2  | 23.2  |
|                 | 16QAM      | 1             | 0         | 24.9                    | 24.9  | 24.8  | 23.5  | 23.8  | 23.6  |
|                 |            | 1             | 12        | 24.9                    | 24.9  | 24.8  | 23.6  | 23.8  | 23.7  |
|                 |            | 1             | 24        | 25.0                    | 24.9  | 25.0  | 23.6  | 23.9  | 23.8  |
|                 |            | 12            | 0         | 23.5                    | 23.4  | 23.4  | 22.2  | 22.2  | 22.1  |
|                 |            | 12            | 6         | 23.5                    | 23.5  | 23.4  | 22.1  | 22.2  | 22.2  |
|                 |            | 12            | 11        | 23.5                    | 23.5  | 23.5  | 22.1  | 22.2  | 22.2  |
|                 |            | 25            | 0         | 23.4                    | 23.5  | 23.5  | 22.1  | 22.2  | 22.2  |
|                 | 64QAM      | 1             | 0         | 24.0                    | 24.0  | 23.9  | 22.3  | 22.4  | 22.3  |
|                 |            | 1             | 12        | 23.9                    | 24.0  | 24.0  | 22.3  | 22.3  | 22.4  |
|                 |            | 1             | 24        | 24.0                    | 24.1  | 24.1  | 22.2  | 22.5  | 22.5  |
|                 |            | 12            | 0         | 22.5                    | 22.6  | 22.7  | 20.8  | 20.9  | 21.0  |
|                 |            | 12            | 6         | 22.5                    | 22.6  | 22.7  | 20.9  | 20.9  | 21.0  |
|                 |            | 12            | 11        | 22.5                    | 22.6  | 22.7  | 20.9  | 20.9  | 21.0  |
|                 |            | 25            | 0         | 22.6                    | 22.6  | 22.7  | 20.9  | 20.9  | 21.0  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |     |       |       |     |
|-----------------|------------|---------------|-----------|-------------------------|-------|-----|-------|-------|-----|
|                 |            |               |           | ANT 1                   |       |     | ANT 2 |       |     |
|                 |            |               |           | N/A                     | 23330 | N/A | N/A   | 23330 | N/A |
| 10.0            | QPSK       | 1             | 0         |                         | 25.4  |     |       | 24.3  |     |
|                 |            | 1             | 24        |                         | 25.6  |     |       | 24.3  |     |
|                 |            | 1             | 49        |                         | 25.7  |     |       | 24.5  |     |
|                 |            | 25            | 0         |                         | 24.5  |     |       | 23.3  |     |
|                 |            | 25            | 12        |                         | 24.5  |     |       | 23.3  |     |
|                 |            | 25            | 24        |                         | 24.6  |     |       | 23.4  |     |
|                 |            | 50            | 0         |                         | 24.6  |     |       | 23.3  |     |
|                 | 16QAM      | 1             | 0         |                         | 24.9  |     |       | 23.6  |     |
|                 |            | 1             | 24        |                         | 24.9  |     |       | 23.6  |     |
|                 |            | 1             | 49        |                         | 25.1  |     |       | 23.8  |     |
|                 |            | 25            | 0         |                         | 23.6  |     |       | 22.3  |     |
|                 |            | 25            | 12        |                         | 23.6  |     |       | 22.3  |     |
|                 |            | 25            | 24        |                         | 23.7  |     |       | 22.4  |     |
|                 |            | 50            | 0         |                         | 23.7  |     |       | 22.3  |     |
|                 | 64QAM      | 1             | 0         |                         | 24.0  |     |       | 22.3  |     |
|                 |            | 1             | 24        |                         | 23.9  |     |       | 22.3  |     |
|                 |            | 1             | 49        |                         | 24.2  |     |       | 22.4  |     |
|                 |            | 25            | 0         |                         | 22.8  |     |       | 21.1  |     |
|                 |            | 25            | 12        |                         | 22.8  |     |       | 21.1  |     |
|                 |            | 25            | 24        |                         | 22.9  |     |       | 21.2  |     |
|                 |            | 50            | 0         |                         | 22.8  |     |       | 21.1  |     |

## 7.7. LTE BAND 17

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB 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         | 25.5                    | 25.5  | 25.6  | 24.4  | 24.2  | 24.4  |
|                 |            | 1             | 12        | 25.5                    | 25.6  | 25.6  | 24.2  | 24.4  | 24.4  |
|                 |            | 1             | 24        | 25.6                    | 25.6  | 25.7  | 24.3  | 24.4  | 24.5  |
|                 |            | 12            | 0         | 24.5                    | 24.5  | 24.5  | 23.1  | 23.2  | 23.3  |
|                 |            | 12            | 6         | 24.5                    | 24.5  | 24.5  | 23.2  | 23.2  | 23.3  |
|                 |            | 12            | 11        | 24.4                    | 24.5  | 24.5  | 23.2  | 23.2  | 23.3  |
|                 |            | 25            | 0         | 24.5                    | 24.6  | 24.6  | 23.2  | 23.3  | 23.4  |
|                 | 16QAM      | 1             | 0         | 24.8                    | 24.8  | 25.0  | 23.6  | 23.7  | 23.7  |
|                 |            | 1             | 12        | 24.8                    | 25.0  | 25.0  | 23.5  | 23.8  | 23.8  |
|                 |            | 1             | 24        | 24.8                    | 25.0  | 25.1  | 23.6  | 23.8  | 23.8  |
|                 |            | 12            | 0         | 23.4                    | 23.5  | 23.5  | 22.1  | 22.2  | 22.3  |
|                 |            | 12            | 6         | 23.4                    | 23.5  | 23.4  | 22.1  | 22.2  | 22.2  |
|                 |            | 12            | 11        | 23.3                    | 23.5  | 23.5  | 22.1  | 22.3  | 22.3  |
|                 |            | 25            | 0         | 23.4                    | 23.5  | 23.5  | 22.1  | 22.2  | 22.3  |
|                 | 64QAM      | 1             | 0         | 24.0                    | 24.0  | 24.1  | 22.3  | 22.4  | 22.4  |
|                 |            | 1             | 12        | 24.0                    | 24.1  | 24.2  | 22.3  | 22.5  | 22.5  |
|                 |            | 1             | 24        | 24.0                    | 24.2  | 24.1  | 22.4  | 22.5  | 22.6  |
|                 |            | 12            | 0         | 22.6                    | 22.6  | 22.8  | 21.0  | 20.9  | 21.0  |
|                 |            | 12            | 6         | 22.5                    | 22.7  | 22.8  | 21.0  | 20.9  | 21.1  |
|                 |            | 12            | 11        | 22.6                    | 22.7  | 22.8  | 21.0  | 21.0  | 21.1  |
|                 |            | 25            | 0         | 22.6                    | 22.8  | 22.8  | 21.0  | 21.0  | 21.1  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 23780                   | 23790 | 23800 | 23780 | 23790 | 23800 |
|                 |            |               |           | 709.0                   | 710.0 | 711.0 | 709.0 | 710.0 | 711.0 |
| 10.0            | QPSK       | 1             | 0         | 25.6                    | 25.6  | 25.5  | 24.3  | 24.3  | 24.3  |
|                 |            | 1             | 24        | 25.5                    | 25.6  | 25.6  | 24.2  | 24.3  | 24.3  |
|                 |            | 1             | 49        | 25.7                    | 25.7  | 25.7  | 24.4  | 24.4  | 24.5  |
|                 |            | 25            | 0         | 24.5                    | 24.4  | 24.5  | 23.2  | 23.2  | 23.2  |
|                 |            | 25            | 12        | 24.5                    | 24.5  | 24.6  | 23.2  | 23.2  | 23.2  |
|                 |            | 25            | 24        | 24.6                    | 24.6  | 24.6  | 23.3  | 23.3  | 23.3  |
|                 |            | 50            | 0         | 24.6                    | 24.6  | 24.6  | 23.3  | 23.3  | 23.3  |
|                 | 16QAM      | 1             | 0         | 24.9                    | 24.8  | 24.8  | 23.7  | 23.5  | 23.5  |
|                 |            | 1             | 24        | 24.9                    | 24.8  | 24.9  | 23.6  | 23.6  | 23.6  |
|                 |            | 1             | 49        | 25.0                    | 24.9  | 25.0  | 23.8  | 23.8  | 23.7  |
|                 |            | 25            | 0         | 23.5                    | 23.4  | 23.5  | 22.3  | 22.2  | 22.3  |
|                 |            | 25            | 12        | 23.5                    | 23.6  | 23.6  | 22.3  | 22.3  | 22.3  |
|                 |            | 25            | 24        | 23.6                    | 23.7  | 23.6  | 22.3  | 22.4  | 22.4  |
|                 |            | 50            | 0         | 23.6                    | 23.7  | 23.6  | 22.3  | 22.3  | 22.3  |
|                 | 64QAM      | 1             | 0         | 24.0                    | 24.0  | 23.9  | 22.2  | 22.2  | 22.3  |
|                 |            | 1             | 24        | 24.0                    | 24.0  | 24.2  | 22.3  | 22.3  | 22.3  |
|                 |            | 1             | 49        | 24.3                    | 24.3  | 24.2  | 22.2  | 22.5  | 22.6  |
|                 |            | 25            | 0         | 22.7                    | 22.7  | 22.9  | 21.0  | 21.1  | 21.1  |
|                 |            | 25            | 12        | 22.8                    | 22.9  | 22.9  | 21.1  | 21.1  | 21.2  |
|                 |            | 25            | 24        | 23.0                    | 22.9  | 23.0  | 21.2  | 21.2  | 21.3  |
|                 |            | 50            | 0         | 22.8                    | 22.9  | 22.9  | 21.1  | 21.1  | 21.2  |

## 7.8. LTE BAND 25

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 26047                   | 26365  | 26683  | 26047  | 26365  | 26683  | 26047  | 26365  | 26683  | 26047  | 26365  | 26683  |
|                 |            |               |           | 1850.7                  | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 | 1850.7 | 1882.5 | 1914.3 |
| 1.4             | QPSK       | 1             | 0         | 25.2                    | 25.0   | 25.2   | 20.2   | 20.1   | 20.1   | 24.8   | 24.7   | 24.6   | 19.2   | 19.4   | 19.5   |
|                 |            | 1             | 2         | 25.2                    | 25.0   | 25.3   | 20.2   | 20.0   | 20.1   | 24.7   | 24.7   | 24.6   | 19.2   | 19.4   | 19.4   |
|                 |            | 1             | 5         | 25.3                    | 25.1   | 25.2   | 20.2   | 20.0   | 20.1   | 24.7   | 24.8   | 24.6   | 19.2   | 19.3   | 19.4   |
|                 |            | 3             | 0         | 25.2                    | 24.9   | 25.1   | 20.1   | 19.9   | 19.9   | 24.7   | 24.6   | 24.4   | 19.0   | 19.3   | 19.3   |
|                 |            | 3             | 1         | 25.2                    | 24.9   | 25.1   | 20.1   | 19.9   | 19.9   | 24.6   | 24.6   | 24.4   | 19.1   | 19.3   | 19.2   |
|                 |            | 3             | 2         | 25.2                    | 25.0   | 25.2   | 20.2   | 19.9   | 19.9   | 24.6   | 24.6   | 24.4   | 19.1   | 19.3   | 19.2   |
|                 | 16QAM      | 6             | 0         | 24.1                    | 23.9   | 24.1   | 19.1   | 18.9   | 18.9   | 23.5   | 23.6   | 23.3   | 18.0   | 18.2   | 18.1   |
|                 |            | 1             | 0         | 24.5                    | 24.2   | 24.5   | 19.4   | 19.3   | 19.4   | 24.0   | 24.0   | 23.8   | 18.3   | 18.7   | 18.7   |
|                 |            | 1             | 2         | 24.4                    | 24.2   | 24.5   | 19.4   | 19.3   | 19.2   | 23.9   | 24.0   | 23.8   | 18.4   | 18.7   | 18.6   |
|                 |            | 1             | 5         | 24.5                    | 24.3   | 24.4   | 19.4   | 19.4   | 19.4   | 23.9   | 24.0   | 23.8   | 18.3   | 18.6   | 18.6   |
|                 |            | 3             | 0         | 24.2                    | 24.0   | 24.3   | 19.1   | 19.0   | 19.0   | 23.7   | 23.7   | 23.5   | 18.1   | 18.4   | 18.4   |
|                 |            | 3             | 1         | 24.2                    | 24.0   | 24.2   | 19.2   | 19.1   | 19.0   | 23.7   | 23.7   | 23.5   | 18.1   | 18.4   | 18.4   |
|                 | 64QAM      | 3             | 2         | 24.1                    | 24.0   | 24.2   | 19.1   | 19.0   | 19.0   | 23.7   | 23.6   | 23.5   | 18.1   | 18.4   | 18.4   |
|                 |            | 6             | 0         | 23.1                    | 22.9   | 23.0   | 18.0   | 17.9   | 17.9   | 22.5   | 22.5   | 22.5   | 17.0   | 17.2   | 17.4   |
|                 |            | 1             | 0         | 23.5                    | 23.3   | 23.3   | 17.9   | 17.6   | 17.6   | 23.2   | 23.0   | 23.1   | 17.7   | 17.6   | 17.6   |
|                 |            | 1             | 2         | 23.5                    | 23.3   | 23.3   | 17.9   | 17.6   | 17.6   | 23.2   | 23.0   | 23.1   | 17.6   | 17.6   | 17.6   |
|                 |            | 1             | 5         | 23.5                    | 23.3   | 23.3   | 17.9   | 17.5   | 17.8   | 23.2   | 23.0   | 23.1   | 17.7   | 17.6   | 17.6   |
|                 |            | 3             | 0         | 23.3                    | 23.1   | 23.1   | 17.5   | 17.3   | 17.5   | 23.0   | 22.8   | 22.9   | 17.3   | 17.4   | 17.4   |
|                 | 64QAM      | 3             | 1         | 23.2                    | 23.1   | 23.2   | 17.5   | 17.3   | 17.5   | 22.9   | 22.9   | 22.9   | 17.4   | 17.4   | 17.4   |
|                 |            | 3             | 2         | 23.2                    | 23.2   | 23.2   | 17.6   | 17.3   | 17.5   | 23.0   | 22.8   | 22.9   | 17.3   | 17.4   | 17.4   |
|                 |            | 6             | 0         | 22.1                    | 22.1   | 22.0   | 16.4   | 16.3   | 16.3   | 21.8   | 21.8   | 21.8   | 16.1   | 16.4   | 16.3   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB 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         | 25.2                    | 25.0   | 25.3   | 20.2   | 20.0   | 20.1   | 24.7   | 24.7   | 24.5   | 19.1   | 19.4   | 19.5   |
|                 |            | 1             | 7         | 25.3                    | 25.1   | 25.3   | 20.3   | 20.1   | 20.1   | 24.7   | 24.7   | 24.5   | 19.1   | 19.4   | 19.5   |
|                 |            | 1             | 14        | 25.2                    | 25.1   | 25.2   | 20.2   | 20.1   | 20.0   | 24.7   | 24.7   | 24.5   | 19.1   | 19.4   | 19.3   |
|                 |            | 8             | 0         | 24.1                    | 23.9   | 24.1   | 19.1   | 18.9   | 19.0   | 23.6   | 23.5   | 23.4   | 18.0   | 18.2   | 18.3   |
|                 |            | 8             | 4         | 24.0                    | 23.9   | 24.1   | 19.1   | 18.9   | 19.0   | 23.6   | 23.5   | 23.4   | 18.0   | 18.2   | 18.3   |
|                 |            | 8             | 7         | 24.0                    | 24.0   | 24.1   | 19.1   | 18.9   | 18.9   | 23.6   | 23.5   | 23.4   | 18.0   | 18.2   | 18.2   |
|                 | 16QAM      | 15            | 0         | 24.1                    | 24.0   | 24.2   | 19.1   | 18.9   | 19.1   | 23.6   | 23.6   | 23.4   | 18.0   | 18.2   | 18.3   |
|                 |            | 1             | 0         | 24.5                    | 24.2   | 24.5   | 19.5   | 19.4   | 19.4   | 24.0   | 23.9   | 23.7   | 18.4   | 18.5   | 18.6   |
|                 |            | 1             | 7         | 24.4                    | 24.4   | 24.6   | 19.5   | 19.4   | 19.5   | 24.0   | 24.0   | 23.8   | 18.5   | 18.6   | 18.7   |
|                 |            | 1             | 14        | 24.4                    | 24.4   | 24.4   | 19.4   | 19.4   | 19.3   | 23.9   | 23.9   | 23.8   | 18.4   | 18.5   | 18.6   |
|                 |            | 8             | 0         | 23.1                    | 22.9   | 23.1   | 18.1   | 17.9   | 18.0   | 22.5   | 22.5   | 22.3   | 17.0   | 17.3   | 17.3   |
|                 |            | 8             | 4         | 23.0                    | 22.8   | 23.0   | 18.1   | 17.9   | 18.0   | 22.5   | 22.5   | 22.3   | 17.0   | 17.2   | 17.3   |
|                 | 64QAM      | 8             | 7         | 23.0                    | 22.9   | 23.0   | 18.0   | 17.9   | 17.9   | 22.5   | 22.5   | 22.3   | 17.0   | 17.2   | 17.2   |
|                 |            | 15            | 0         | 23.0                    | 22.9   | 23.1   | 18.0   | 17.9   | 18.0   | 22.6   | 22.5   | 22.3   | 17.0   | 17.2   | 17.3   |
|                 |            | 1             | 0         | 23.3                    | 23.2   | 23.3   | 17.8   | 17.6   | 17.6   | 23.0   | 23.1   | 23.0   | 17.4   | 17.6   | 17.6   |
|                 |            | 1             | 7         | 23.3                    | 23.3   | 23.4   | 17.8   | 17.6   | 17.7   | 22.9   | 23.0   | 23.1   | 17.4   | 17.6   | 17.7   |
|                 |            | 1             | 14        | 23.2                    | 23.3   | 23.3   | 17.7   | 17.6   | 17.6   | 22.9   | 23.0   | 23.0   | 17.3   | 17.5   | 17.7   |
|                 |            | 8             | 0         | 22.1                    | 22.1   | 22.0   | 16.3   | 16.3   | 16.3   | 21.7   | 21.8   | 21.7   | 16.1   | 16.3   | 16.3   |
|                 | 64QAM      | 8             | 4         | 22.0                    | 22.1   | 22.0   | 16.4   | 16.3   | 16.3   | 21.7   | 21.8   | 21.7   | 16.1   | 16.3   | 16.3   |
|                 |            | 8             | 7         | 22.0                    | 22.0   | 22.0   | 16.4   | 16.3   | 16.3   | 21.7   | 21.8   | 21.7   | 16.1   | 16.3   | 16.3   |
|                 |            | 15            | 0         | 22.0                    | 22.0   | 22.0   | 16.3   | 16.2   | 16.3   | 21.7   | 21.8   | 21.6   | 16.1   | 16.3   | 16.3   |

### 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            | 25.3                    | 25.1   | 25.2   | 20.2   | 20.2   | 20.4   | 24.9   | 24.8   | 24.7   | 19.2   | 19.4   | 19.6   |
|                    |            | 1                | 12           | 25.3                    | 25.1   | 25.3   | 20.3   | 20.1   | 20.2   | 24.8   | 24.8   | 24.6   | 19.2   | 19.4   | 19.5   |
|                    |            | 1                | 24           | 25.3                    | 25.1   | 25.3   | 20.3   | 20.1   | 20.1   | 24.7   | 24.7   | 24.6   | 19.3   | 19.5   | 19.4   |
|                    |            | 12               | 0            | 24.3                    | 24.1   | 24.2   | 19.2   | 19.0   | 19.3   | 23.7   | 23.7   | 23.6   | 18.1   | 18.4   | 18.5   |
|                    |            | 12               | 6            | 24.3                    | 24.1   | 24.2   | 19.2   | 19.0   | 19.2   | 23.7   | 23.7   | 23.6   | 18.1   | 18.4   | 18.4   |
|                    |            | 12               | 11           | 24.2                    | 24.1   | 24.1   | 19.2   | 19.1   | 19.2   | 23.7   | 23.7   | 23.5   | 18.2   | 18.3   | 18.4   |
|                    |            | 25               | 0            | 24.3                    | 24.1   | 24.3   | 19.2   | 19.0   | 19.2   | 23.7   | 23.7   | 23.6   | 18.1   | 18.4   | 18.5   |
|                    | 16QAM      | 1                | 0            | 24.6                    | 24.4   | 24.5   | 19.6   | 19.4   | 19.8   | 24.2   | 24.0   | 24.1   | 18.6   | 18.8   | 18.9   |
|                    |            | 1                | 12           | 24.5                    | 24.4   | 24.6   | 19.7   | 19.4   | 19.5   | 24.2   | 24.0   | 23.9   | 18.6   | 18.7   | 18.8   |
|                    |            | 1                | 24           | 24.5                    | 24.4   | 24.5   | 19.7   | 19.4   | 19.5   | 24.0   | 24.0   | 24.0   | 18.7   | 18.8   | 18.7   |
|                    |            | 12               | 0            | 23.3                    | 23.0   | 23.2   | 18.2   | 18.1   | 18.2   | 22.7   | 22.7   | 22.6   | 17.2   | 17.4   | 17.5   |
|                    |            | 12               | 6            | 23.3                    | 23.1   | 23.2   | 18.2   | 18.1   | 18.1   | 22.7   | 22.7   | 22.5   | 17.2   | 17.4   | 17.5   |
|                    |            | 12               | 11           | 23.2                    | 23.1   | 23.2   | 18.3   | 18.1   | 18.2   | 22.7   | 22.7   | 22.6   | 17.2   | 17.4   | 17.5   |
|                    |            | 25               | 0            | 23.2                    | 23.1   | 23.2   | 18.2   | 18.0   | 18.2   | 22.7   | 22.7   | 22.6   | 17.1   | 17.4   | 17.4   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.5   | 23.4   | 17.8   | 17.8   | 18.0   | 23.3   | 23.2   | 23.2   | 17.7   | 17.7   | 17.8   |
|                    |            | 1                | 12           | 23.4                    | 23.5   | 23.4   | 17.8   | 17.8   | 17.7   | 23.2   | 23.1   | 23.2   | 17.6   | 17.8   | 17.8   |
|                    |            | 1                | 24           | 23.5                    | 23.3   | 23.5   | 17.9   | 17.8   | 17.9   | 23.2   | 23.0   | 23.2   | 17.7   | 17.7   | 17.8   |
|                    |            | 12               | 0            | 22.1                    | 22.2   | 22.2   | 16.5   | 16.5   | 16.5   | 21.9   | 22.0   | 21.9   | 16.2   | 16.5   | 16.5   |
|                    |            | 12               | 6            | 22.1                    | 22.2   | 22.2   | 16.4   | 16.4   | 16.5   | 21.9   | 22.0   | 21.8   | 16.2   | 16.4   | 16.5   |
|                    |            | 12               | 11           | 22.2                    | 22.2   | 22.1   | 16.5   | 16.4   | 16.5   | 21.9   | 22.0   | 21.8   | 16.2   | 16.5   | 16.4   |
|                    |            | 25               | 0            | 22.1                    | 22.2   | 22.1   | 16.4   | 16.4   | 16.5   | 21.9   | 21.9   | 21.8   | 16.1   | 16.5   | 16.5   |

### 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                    | 25.2   | 25.4   | 20.4   | 20.1   | 20.5   | 24.9   | 24.8   | 24.9   | 19.3   | 19.6   | 19.9   |
|                    |            | 1                | 24           | 25.3                    | 25.1   | 25.3   | 20.4   | 20.2   | 20.5   | 24.7   | 24.8   | 24.8   | 19.4   | 19.5   | 20.0   |
|                    |            | 1                | 49           | 25.2                    | 25.3   | 25.3   | 20.4   | 20.1   | 20.2   | 24.8   | 24.7   | 24.7   | 19.5   | 19.6   | 19.8   |
|                    |            | 25               | 0            | 24.4                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.4   | 23.9   | 23.8   | 23.9   | 18.3   | 18.5   | 19.0   |
|                    |            | 25               | 12           | 24.4                    | 24.2   | 24.3   | 19.4   | 19.2   | 19.5   | 23.8   | 23.8   | 23.8   | 18.4   | 18.5   | 19.0   |
|                    |            | 25               | 24           | 24.3                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.3   | 23.7   | 23.8   | 23.7   | 18.5   | 18.6   | 18.9   |
|                    |            | 50               | 0            | 24.3                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.4   | 23.8   | 23.8   | 23.8   | 18.4   | 18.8   | 19.0   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.6   | 24.7   | 19.7   | 19.6   | 19.8   | 24.1   | 24.2   | 24.2   | 18.7   | 19.1   | 19.3   |
|                    |            | 1                | 24           | 24.6                    | 24.4   | 24.6   | 19.7   | 19.5   | 19.7   | 24.0   | 24.1   | 24.1   | 18.7   | 19.0   | 19.3   |
|                    |            | 1                | 49           | 24.5                    | 24.5   | 24.7   | 19.7   | 19.4   | 19.5   | 24.2   | 24.1   | 23.9   | 18.8   | 19.1   | 19.2   |
|                    |            | 25               | 0            | 23.4                    | 23.2   | 23.5   | 18.4   | 18.2   | 18.5   | 22.9   | 22.8   | 22.9   | 17.4   | 17.9   | 18.0   |
|                    |            | 25               | 12           | 23.4                    | 23.1   | 23.3   | 18.4   | 18.2   | 18.5   | 22.8   | 22.9   | 22.8   | 17.4   | 17.9   | 18.0   |
|                    |            | 25               | 24           | 23.3                    | 23.2   | 23.4   | 18.5   | 18.2   | 18.3   | 22.8   | 22.8   | 22.7   | 17.5   | 17.9   | 17.9   |
|                    |            | 50               | 0            | 23.3                    | 23.2   | 23.3   | 18.4   | 18.2   | 18.5   | 22.8   | 22.8   | 22.8   | 17.4   | 17.8   | 18.0   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.4   | 23.7   | 17.8   | 17.8   | 18.0   | 23.3   | 23.1   | 23.3   | 17.6   | 17.9   | 18.0   |
|                    |            | 1                | 24           | 23.5                    | 23.5   | 23.6   | 17.9   | 17.7   | 18.0   | 23.2   | 23.2   | 23.3   | 17.7   | 17.9   | 18.0   |
|                    |            | 1                | 49           | 23.5                    | 23.4   | 23.6   | 17.9   | 17.8   | 18.0   | 23.2   | 23.1   | 23.3   | 17.6   | 17.9   | 17.8   |
|                    |            | 25               | 0            | 22.3                    | 22.4   | 22.5   | 16.6   | 16.6   | 17.0   | 22.1   | 22.1   | 22.3   | 16.4   | 16.7   | 16.8   |
|                    |            | 25               | 12           | 22.4                    | 22.4   | 22.4   | 16.7   | 16.7   | 16.9   | 22.1   | 22.1   | 22.2   | 16.5   | 16.7   | 16.8   |
|                    |            | 25               | 24           | 22.4                    | 22.4   | 22.4   | 16.8   | 16.7   | 16.7   | 22.2   | 22.0   | 22.1   | 16.6   | 16.7   | 16.7   |
|                    |            | 50               | 0            | 22.4                    | 22.4   | 22.4   | 16.8   | 16.7   | 16.9   | 22.1   | 22.1   | 22.2   | 16.6   | 16.7   | 16.8   |

### 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            | 25.3                    | 25.2   | 25.6   | 20.4   | 20.2   | 20.4   | 24.8   | 24.9   | 25.0   | 19.6   | 19.9   | 19.9   |
|                    |            | 1                | 37           | 25.2                    | 25.2   | 25.3   | 20.4   | 20.2   | 20.4   | 24.8   | 24.7   | 24.9   | 19.7   | 19.7   | 20.0   |
|                    |            | 1                | 74           | 25.2                    | 25.3   | 25.3   | 20.2   | 20.2   | 20.2   | 24.6   | 24.8   | 24.6   | 19.8   | 19.8   | 19.8   |
|                    |            | 36               | 0            | 24.3                    | 24.3   | 24.5   | 19.4   | 19.2   | 19.5   | 23.8   | 23.8   | 23.9   | 18.6   | 18.8   | 18.9   |
|                    |            | 36               | 16           | 24.2                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.4   | 23.7   | 23.8   | 23.9   | 18.7   | 18.8   | 19.0   |
|                    |            | 36               | 35           | 24.3                    | 24.3   | 24.4   | 19.4   | 19.2   | 19.4   | 23.7   | 23.8   | 23.7   | 18.8   | 18.8   | 19.0   |
|                    |            | 75               | 0            | 24.2                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.5   | 23.7   | 23.8   | 23.9   | 18.8   | 18.8   | 19.0   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 24.5   | 25.0   | 19.7   | 19.5   | 19.6   | 24.1   | 24.2   | 24.3   | 18.9   | 19.1   | 19.2   |
|                    |            | 1                | 37           | 24.5                    | 24.5   | 24.6   | 19.7   | 19.6   | 19.7   | 24.1   | 24.1   | 24.2   | 19.0   | 19.0   | 19.2   |
|                    |            | 1                | 74           | 24.6                    | 24.6   | 24.7   | 19.5   | 19.6   | 19.4   | 23.9   | 24.2   | 23.9   | 19.1   | 19.0   | 19.1   |
|                    |            | 36               | 0            | 23.4                    | 23.3   | 23.5   | 18.5   | 18.2   | 18.5   | 22.8   | 22.9   | 23.0   | 17.6   | 17.9   | 17.9   |
|                    |            | 36               | 16           | 23.2                    | 23.2   | 23.5   | 18.5   | 18.3   | 18.6   | 22.8   | 22.9   | 23.0   | 17.8   | 17.9   | 18.1   |
|                    |            | 36               | 35           | 23.3                    | 23.3   | 23.4   | 18.4   | 18.2   | 18.5   | 22.8   | 22.8   | 22.8   | 17.8   | 17.9   | 18.0   |
|                    |            | 75               | 0            | 23.3                    | 23.3   | 23.4   | 18.5   | 18.2   | 18.5   | 22.8   | 22.8   | 22.9   | 17.8   | 17.8   | 18.1   |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.5   | 23.9   | 17.9   | 17.9   | 17.9   | 23.3   | 23.2   | 23.6   | 17.5   | 18.0   | 18.0   |
|                    |            | 1                | 37           | 23.5                    | 23.6   | 23.7   | 18.0   | 17.8   | 18.1   | 23.3   | 23.2   | 23.3   | 17.6   | 17.9   | 18.0   |
|                    |            | 1                | 74           | 23.6                    | 23.7   | 23.5   | 18.0   | 17.8   | 17.8   | 23.4   | 23.4   | 23.2   | 17.8   | 17.9   | 17.9   |
|                    |            | 36               | 0            | 22.4                    | 22.4   | 22.6   | 16.7   | 16.7   | 16.8   | 22.1   | 22.1   | 22.3   | 16.5   | 16.8   | 16.7   |
|                    |            | 36               | 16           | 22.4                    | 22.4   | 22.5   | 16.8   | 16.6   | 16.9   | 22.1   | 22.1   | 22.3   | 16.6   | 16.7   | 16.9   |
|                    |            | 36               | 35           | 22.5                    | 22.4   | 22.4   | 16.8   | 16.6   | 16.9   | 22.2   | 22.2   | 22.2   | 16.6   | 16.7   | 16.8   |
|                    |            | 75               | 0            | 22.4                    | 22.4   | 22.5   | 16.7   | 16.6   | 16.9   | 22.2   | 22.1   | 22.3   | 16.6   | 16.6   | 16.8   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 26140                   | 26365  | 26590  | 26140  | 26365  | 26590  | 26140  | 26365  | 26590  | 26140  | 26365  | 26590  |
|                    |            |                  |              | 1860.0                  | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 | 1860.0 | 1882.5 | 1905.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.2   | 25.7   | 20.4   | 20.3   | 20.3   | 24.9   | 24.9   | 24.9   | 19.6   | 19.9   | 19.9   |
|                    |            | 1                | 49           | 25.2                    | 25.1   | 25.4   | 20.3   | 20.2   | 20.5   | 24.8   | 24.8   | 24.9   | 19.7   | 19.7   | 19.9   |
|                    |            | 1                | 99           | 25.3                    | 25.4   | 25.3   | 20.2   | 20.2   | 20.2   | 24.7   | 24.9   | 24.6   | 19.8   | 19.8   | 19.8   |
|                    |            | 50               | 0            | 24.3                    | 24.3   | 24.6   | 19.4   | 19.2   | 19.4   | 23.9   | 23.9   | 24.1   | 18.7   | 18.8   | 18.9   |
|                    |            | 50               | 24           | 24.3                    | 24.2   | 24.5   | 19.3   | 19.2   | 19.4   | 23.7   | 23.8   | 23.9   | 18.8   | 18.8   | 18.9   |
|                    |            | 50               | 49           | 24.2                    | 24.3   | 24.3   | 19.3   | 19.2   | 19.4   | 23.7   | 23.8   | 23.8   | 18.8   | 18.9   | 19.1   |
|                    |            | 100              | 0            | 24.3                    | 24.2   | 24.4   | 19.4   | 19.2   | 19.5   | 23.7   | 23.8   | 23.9   | 18.8   | 18.8   | 19.0   |
|                    | 16QAM      | 1                | 0            | 24.9                    | 24.7   | 25.1   | 19.8   | 19.6   | 19.6   | 24.2   | 24.3   | 24.2   | 18.9   | 19.3   | 19.2   |
|                    |            | 1                | 49           | 24.5                    | 24.5   | 24.8   | 19.7   | 19.5   | 19.8   | 24.2   | 24.2   | 24.2   | 19.0   | 19.1   | 19.2   |
|                    |            | 1                | 99           | 24.8                    | 24.9   | 24.8   | 19.6   | 19.5   | 19.5   | 24.0   | 24.4   | 23.9   | 19.2   | 19.1   | 19.3   |
|                    |            | 50               | 0            | 23.3                    | 23.3   | 23.6   | 18.4   | 18.2   | 18.4   | 22.9   | 22.9   | 23.1   | 17.7   | 17.9   | 18.0   |
|                    |            | 50               | 24           | 23.3                    | 23.3   | 23.4   | 18.4   | 18.3   | 18.5   | 22.7   | 22.8   | 23.0   | 17.8   | 17.9   | 17.9   |
|                    |            | 50               | 49           | 23.3                    | 23.3   | 23.4   | 18.3   | 18.2   | 18.5   | 22.8   | 22.8   | 22.8   | 17.9   | 17.9   | 18.0   |
|                    |            | 100              | 0            | 23.3                    | 23.2   | 23.4   | 18.5   | 18.3   | 18.5   | 22.8   | 22.8   | 23.0   | 17.9   | 17.8   | 18.0   |
|                    | 64QAM      | 1                | 0            | 23.6                    | 23.4   | 23.9   | 18.0   | 17.8   | 18.0   | 23.4   | 23.4   | 23.4   | 17.8   | 17.8   | 18.0   |
|                    |            | 1                | 49           | 23.7                    | 23.4   | 23.8   | 18.1   | 17.7   | 18.1   | 23.4   | 23.3   | 23.3   | 17.8   | 17.7   | 18.1   |
|                    |            | 1                | 99           | 23.8                    | 23.6   | 23.7   | 18.1   | 17.7   | 18.1   | 23.4   | 23.6   | 23.2   | 18.1   | 17.7   | 18.0   |
|                    |            | 50               | 0            | 22.4                    | 22.4   | 22.7   | 16.7   | 16.7   | 16.7   | 22.1   | 22.1   | 22.4   | 16.6   | 16.7   | 16.7   |
|                    |            | 50               | 24           | 22.5                    | 22.4   | 22.6   | 16.7   | 16.6   | 16.8   | 22.1   | 22.1   | 22.3   | 16.6   | 16.7   | 16.8   |
|                    |            | 50               | 49           | 22.5                    | 22.5   | 22.4   | 16.8   | 16.7   | 17.0   | 22.2   | 22.2   | 22.2   | 16.7   | 16.7   | 16.8   |
|                    |            | 100              | 0            | 22.5                    | 22.4   | 22.6   | 16.8   | 16.6   | 16.9   | 22.2   | 22.1   | 22.3   | 16.7   | 16.6   | 16.8   |

## 7.9. LTE BAND 26

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 26697                   | 26740 | 26783 | 26697 | 26740 | 26783 |
| 1.4             | QPSK       | 1             | 0         | 25.4                    | 25.4  | 25.7  | 24.4  | 24.4  | 24.4  |
|                 |            | 1             | 2         | 25.4                    | 25.4  | 25.5  | 24.4  | 24.4  | 24.4  |
|                 |            | 1             | 5         | 25.4                    | 25.4  | 25.5  | 24.4  | 24.4  | 24.4  |
|                 |            | 3             | 0         | 25.4                    | 25.3  | 25.3  | 24.2  | 24.3  | 24.3  |
|                 |            | 3             | 1         | 25.3                    | 25.2  | 25.4  | 24.2  | 24.2  | 24.3  |
|                 |            | 3             | 2         | 25.3                    | 25.2  | 25.3  | 24.3  | 24.2  | 24.3  |
|                 |            | 6             | 0         | 24.2                    | 24.1  | 24.3  | 23.3  | 23.1  | 23.2  |
|                 | 16QAM      | 1             | 0         | 24.6                    | 24.6  | 24.6  | 23.7  | 23.6  | 23.6  |
|                 |            | 1             | 2         | 24.6                    | 24.5  | 24.6  | 23.6  | 23.5  | 23.6  |
|                 |            | 1             | 5         | 24.5                    | 24.5  | 24.6  | 23.6  | 23.6  | 23.6  |
|                 |            | 3             | 0         | 24.3                    | 24.3  | 24.4  | 23.4  | 23.3  | 23.3  |
|                 |            | 3             | 1         | 24.3                    | 24.3  | 24.4  | 23.4  | 23.3  | 23.4  |
|                 |            | 3             | 2         | 24.3                    | 24.3  | 24.4  | 23.4  | 23.2  | 23.3  |
|                 |            | 6             | 0         | 23.2                    | 23.2  | 23.2  | 22.1  | 22.2  | 22.2  |
|                 | 64QAM      | 1             | 0         | 23.7                    | 23.5  | 23.5  | 22.5  | 22.6  | 22.6  |
|                 |            | 1             | 2         | 23.6                    | 23.4  | 23.5  | 22.4  | 22.6  | 22.5  |
|                 |            | 1             | 5         | 23.6                    | 23.5  | 23.5  | 22.5  | 22.6  | 22.6  |
|                 |            | 3             | 0         | 23.4                    | 23.2  | 23.4  | 22.4  | 22.3  | 22.3  |
|                 |            | 3             | 1         | 23.3                    | 23.2  | 23.4  | 22.3  | 22.3  | 22.3  |
|                 |            | 3             | 2         | 23.3                    | 23.2  | 23.4  | 22.3  | 22.3  | 22.3  |
|                 |            | 6             | 0         | 22.2                    | 22.2  | 22.3  | 21.2  | 21.1  | 21.3  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       |
|                 |            |               |           | 26705                   | 26740 | 26775 | 26705 | 26740 | 26775 |
| 3.0             | QPSK       | 1             | 0         | 25.4                    | 25.3  | 25.4  | 24.5  | 24.3  | 24.3  |
|                 |            | 1             | 7         | 25.4                    | 25.4  | 25.5  | 24.4  | 24.3  | 24.4  |
|                 |            | 1             | 14        | 25.3                    | 25.4  | 25.4  | 24.4  | 24.2  | 24.4  |
|                 |            | 8             | 0         | 24.2                    | 24.2  | 24.3  | 23.3  | 23.2  | 23.2  |
|                 |            | 8             | 4         | 24.2                    | 24.2  | 24.3  | 23.2  | 23.2  | 23.3  |
|                 |            | 8             | 7         | 24.2                    | 24.2  | 24.3  | 23.2  | 23.2  | 23.3  |
|                 |            | 15            | 0         | 24.2                    | 24.3  | 24.4  | 23.2  | 23.2  | 23.3  |
|                 | 16QAM      | 1             | 0         | 24.6                    | 24.6  | 24.7  | 23.7  | 23.6  | 23.6  |
|                 |            | 1             | 7         | 24.6                    | 24.7  | 24.7  | 23.6  | 23.5  | 23.7  |
|                 |            | 1             | 14        | 24.6                    | 24.7  | 24.7  | 23.6  | 23.5  | 23.7  |
|                 |            | 8             | 0         | 23.2                    | 23.2  | 23.2  | 22.2  | 22.1  | 22.1  |
|                 |            | 8             | 4         | 23.1                    | 23.1  | 23.2  | 22.1  | 22.1  | 22.2  |
|                 |            | 8             | 7         | 23.1                    | 23.1  | 23.2  | 22.2  | 22.2  | 22.2  |
|                 |            | 15            | 0         | 23.1                    | 23.2  | 23.3  | 22.2  | 22.2  | 22.2  |
|                 | 64QAM      | 1             | 0         | 23.4                    | 23.4  | 23.4  | 22.3  | 22.6  | 23.7  |
|                 |            | 1             | 7         | 23.4                    | 23.6  | 23.6  | 22.5  | 22.5  | 22.5  |
|                 |            | 1             | 14        | 23.3                    | 23.5  | 23.5  | 22.5  | 22.4  | 22.6  |
|                 |            | 8             | 0         | 22.2                    | 22.1  | 22.2  | 21.0  | 21.2  | 21.1  |
|                 |            | 8             | 4         | 22.1                    | 22.1  | 22.2  | 21.1  | 21.2  | 21.1  |
|                 |            | 8             | 7         | 22.1                    | 22.2  | 22.2  | 21.1  | 21.2  | 21.1  |
|                 |            | 15            | 0         | 22.1                    | 22.2  | 22.2  | 21.1  | 21.2  | 21.1  |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |       |       |       |       |       |
|--------------------|------------|------------------|--------------|-------------------------|-------|-------|-------|-------|-------|
|                    |            |                  |              | ANT 1                   |       |       | ANT 2 |       |       |
|                    |            |                  |              | 26715                   | 26740 | 26765 | 26715 | 26740 | 26765 |
|                    |            |                  |              | 816.5                   | 819.0 | 821.5 | 816.5 | 819.0 | 821.5 |
| 5.0                | QPSK       | 1                | 0            | 25.4                    | 25.3  | 25.3  | 24.5  | 24.4  | 24.3  |
|                    |            | 1                | 12           | 25.3                    | 25.3  | 25.3  | 24.4  | 24.3  | 24.3  |
|                    |            | 1                | 24           | 25.3                    | 25.4  | 25.4  | 24.4  | 24.3  | 24.4  |
|                    |            | 12               | 0            | 24.2                    | 24.2  | 24.2  | 23.2  | 23.3  | 23.2  |
|                    |            | 12               | 6            | 24.2                    | 24.3  | 24.3  | 23.2  | 23.3  | 23.2  |
|                    |            | 12               | 11           | 24.2                    | 24.2  | 24.3  | 23.3  | 23.3  | 23.3  |
|                    |            | 25               | 0            | 24.2                    | 24.2  | 24.3  | 23.3  | 23.3  | 23.3  |
|                    | 16QAM      | 1                | 0            | 24.8                    | 24.6  | 24.7  | 23.9  | 23.7  | 23.6  |
|                    |            | 1                | 12           | 24.7                    | 24.6  | 24.7  | 23.8  | 23.5  | 23.6  |
|                    |            | 1                | 24           | 24.7                    | 24.6  | 24.7  | 23.8  | 23.6  | 23.8  |
|                    |            | 12               | 0            | 23.2                    | 23.2  | 23.3  | 22.2  | 22.3  | 22.2  |
|                    |            | 12               | 6            | 23.2                    | 23.2  | 23.3  | 22.3  | 22.3  | 22.2  |
|                    |            | 12               | 11           | 23.2                    | 23.2  | 23.4  | 22.3  | 22.3  | 22.3  |
|                    |            | 25               | 0            | 23.2                    | 23.2  | 23.3  | 22.3  | 22.2  | 22.3  |
|                    | 64QAM      | 1                | 0            | 23.5                    | 23.5  | 23.6  | 22.4  | 22.7  | 22.8  |
|                    |            | 1                | 12           | 23.5                    | 23.6  | 23.6  | 22.4  | 22.5  | 22.6  |
|                    |            | 1                | 24           | 23.5                    | 23.6  | 23.7  | 22.6  | 22.5  | 22.6  |
|                    |            | 12               | 0            | 22.2                    | 22.1  | 22.3  | 21.1  | 21.2  | 21.2  |
|                    |            | 12               | 6            | 22.2                    | 22.1  | 22.3  | 21.2  | 21.1  | 21.2  |
|                    |            | 12               | 11           | 22.1                    | 22.2  | 22.3  | 21.2  | 21.2  | 21.3  |
|                    |            | 25               | 0            | 22.1                    | 22.3  | 22.2  | 21.2  | 21.2  | 21.2  |

### 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            |                         | 25.4  |     |       | 24.4  |     |
|                    |            | 1                | 24           |                         | 25.4  |     |       | 24.3  |     |
|                    |            | 1                | 49           |                         | 25.5  |     |       | 24.5  |     |
|                    |            | 25               | 0            |                         | 24.3  |     |       | 23.3  |     |
|                    |            | 25               | 12           |                         | 24.4  |     |       | 23.4  |     |
|                    |            | 25               | 24           |                         | 24.4  |     |       | 23.3  |     |
|                    |            | 50               | 0            |                         | 24.3  |     |       | 23.4  |     |
|                    | 16QAM      | 1                | 0            |                         | 24.7  |     |       | 23.6  |     |
|                    |            | 1                | 24           |                         | 24.6  |     |       | 23.5  |     |
|                    |            | 1                | 49           |                         | 24.7  |     |       | 23.7  |     |
|                    |            | 25               | 0            |                         | 23.3  |     |       | 22.3  |     |
|                    |            | 25               | 12           |                         | 23.4  |     |       | 22.4  |     |
|                    |            | 25               | 24           |                         | 23.5  |     |       | 22.4  |     |
|                    |            | 50               | 0            |                         | 23.4  |     |       | 22.4  |     |
|                    | 64QAM      | 1                | 0            |                         | 23.5  |     |       | 22.6  |     |
|                    |            | 1                | 24           |                         | 23.4  |     |       | 22.5  |     |
|                    |            | 1                | 49           |                         | 23.7  |     |       | 22.6  |     |
|                    |            | 25               | 0            |                         | 22.3  |     |       | 21.4  |     |
|                    |            | 25               | 12           |                         | 22.4  |     |       | 21.4  |     |
|                    |            | 25               | 24           |                         | 22.5  |     |       | 21.4  |     |
|                    |            | 50               | 0            |                         | 22.5  |     |       | 21.3  |     |

## 7.10. LTE BAND 30

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 27685                   | 27710  | 27735  | 27685  | 27710  | 27735  | 27685  | 27710  | 27735  | 27685  | 27710  | 27735  |
|                 |            |               |           | 2307.5                  | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 | 2307.5 | 2310.0 | 2312.5 |
| 5.0             | QPSK       | 1             | 0         | 25.7                    | 25.6   | 25.5   | 20.8   | 20.9   | 21.0   | 24.3   | 24.3   | 24.4   | 18.7   | 18.6   | 18.8   |
|                 |            | 1             | 12        | 25.6                    | 25.5   | 25.5   | 20.9   | 20.9   | 20.9   | 24.3   | 24.4   | 24.5   | 18.6   | 18.7   | 18.7   |
|                 |            | 1             | 24        | 25.6                    | 25.4   | 25.5   | 20.9   | 20.9   | 21.0   | 24.3   | 24.5   | 24.4   | 18.8   | 18.7   | 18.9   |
|                 |            | 12            | 0         | 24.5                    | 24.5   | 24.4   | 19.8   | 19.8   | 19.9   | 23.3   | 23.3   | 23.4   | 17.6   | 17.6   | 17.6   |
|                 |            | 12            | 6         | 24.5                    | 24.5   | 24.4   | 19.8   | 19.8   | 19.8   | 23.2   | 23.3   | 23.4   | 17.5   | 17.7   | 17.6   |
|                 |            | 12            | 11        | 24.4                    | 24.4   | 24.4   | 19.8   | 19.8   | 19.8   | 23.2   | 23.4   | 23.4   | 17.6   | 17.7   | 17.6   |
|                 |            | 25            | 0         | 24.5                    | 24.4   | 24.4   | 19.8   | 19.8   | 19.9   | 23.3   | 23.4   | 23.5   | 17.6   | 17.7   | 17.6   |
|                 | 16QAM      | 1             | 0         | 25.1                    | 25.1   | 25.0   | 20.2   | 20.4   | 20.4   | 23.6   | 23.8   | 23.8   | 18.0   | 18.1   | 18.1   |
|                 |            | 1             | 12        | 25.0                    | 25.0   | 25.0   | 20.2   | 20.5   | 20.4   | 23.6   | 23.8   | 23.9   | 18.0   | 18.2   | 18.1   |
|                 |            | 1             | 24        | 24.9                    | 24.9   | 25.0   | 20.2   | 20.4   | 20.4   | 23.6   | 24.0   | 23.8   | 18.1   | 18.3   | 18.3   |
|                 |            | 12            | 0         | 23.6                    | 23.6   | 23.4   | 18.7   | 18.9   | 18.9   | 22.4   | 22.3   | 22.5   | 16.6   | 16.7   | 16.7   |
|                 |            | 12            | 6         | 23.6                    | 23.6   | 23.5   | 18.9   | 18.8   | 18.9   | 22.3   | 22.3   | 22.4   | 16.6   | 16.7   | 16.7   |
|                 |            | 12            | 11        | 23.5                    | 23.5   | 23.4   | 18.8   | 18.9   | 18.8   | 22.3   | 22.5   | 22.4   | 16.7   | 16.7   | 16.8   |
|                 |            | 25            | 0         | 23.5                    | 23.4   | 23.4   | 18.8   | 18.8   | 18.9   | 22.3   | 22.4   | 22.4   | 16.6   | 16.7   | 16.7   |
|                 | 64QAM      | 1             | 0         | 24.2                    | 24.3   | 24.4   | 18.9   | 18.9   | 18.8   | 21.3   | 21.0   | 21.2   | 17.6   | 17.7   | 17.6   |
|                 |            | 1             | 12        | 24.2                    | 24.2   | 24.4   | 18.9   | 19.0   | 18.9   | 21.2   | 21.1   | 21.3   | 17.6   | 17.8   | 17.7   |
|                 |            | 1             | 24        | 24.2                    | 24.3   | 24.3   | 18.9   | 19.0   | 18.8   | 21.5   | 21.3   | 21.4   | 17.7   | 17.7   | 17.9   |
|                 |            | 12            | 0         | 22.9                    | 22.8   | 22.9   | 17.3   | 17.4   | 17.5   | 19.8   | 19.9   | 19.8   | 16.2   | 16.2   | 16.3   |
|                 |            | 12            | 6         | 23.0                    | 22.8   | 22.8   | 17.4   | 17.4   | 17.5   | 19.8   | 19.9   | 19.9   | 16.2   | 16.2   | 16.3   |
|                 |            | 12            | 11        | 22.9                    | 22.7   | 22.8   | 17.5   | 17.4   | 17.5   | 19.8   | 19.9   | 19.9   | 16.2   | 16.2   | 16.3   |
|                 |            | 25            | 0         | 22.9                    | 22.8   | 22.9   | 17.4   | 17.4   | 17.4   | 19.7   | 19.8   | 20.0   | 16.2   | 16.2   | 16.2   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |     |       |        |     |       |        |     |       |        |     |
|-----------------|------------|---------------|-----------|-------------------------|--------|-----|-------|--------|-----|-------|--------|-----|-------|--------|-----|
|                 |            |               |           | ANT 1                   |        |     | ANT 2 |        |     | ANT 3 |        |     | ANT 4 |        |     |
|                 |            |               |           | N/A                     | 27710  | N/A | N/A   | 27710  | N/A | N/A   | 27710  | N/A | N/A   | 27710  | N/A |
|                 |            |               |           | N/A                     | 2310.0 | N/A | N/A   | 2310.0 | N/A | N/A   | 2310.0 | N/A | N/A   | 2310.0 | N/A |
| 10.0            | QPSK       | 1             | 0         |                         | 25.7   |     |       | 20.9   |     |       | 24.4   |     |       | 18.8   |     |
|                 |            | 1             | 24        |                         | 25.6   |     |       | 21.0   |     |       | 24.3   |     |       | 18.9   |     |
|                 |            | 1             | 49        |                         | 25.4   |     |       | 21.0   |     |       | 24.4   |     |       | 19.0   |     |
|                 |            | 25            | 0         |                         | 24.6   |     |       | 20.0   |     |       | 23.5   |     |       | 17.7   |     |
|                 |            | 25            | 12        |                         | 24.6   |     |       | 19.9   |     |       | 23.4   |     |       | 17.8   |     |
|                 |            | 25            | 24        |                         | 24.5   |     |       | 20.0   |     |       | 23.5   |     |       | 17.7   |     |
|                 |            | 50            | 0         |                         | 24.5   |     |       | 20.0   |     |       | 23.5   |     |       | 17.8   |     |
|                 | 16QAM      | 1             | 0         |                         | 25.1   |     |       | 20.3   |     |       | 23.8   |     |       | 18.2   |     |
|                 |            | 1             | 24        |                         | 25.1   |     |       | 20.2   |     |       | 23.7   |     |       | 18.2   |     |
|                 |            | 1             | 49        |                         | 24.9   |     |       | 20.2   |     |       | 23.9   |     |       | 18.4   |     |
|                 |            | 25            | 0         |                         | 23.7   |     |       | 19.0   |     |       | 22.5   |     |       | 16.8   |     |
|                 |            | 25            | 12        |                         | 23.6   |     |       | 19.0   |     |       | 22.5   |     |       | 16.9   |     |
|                 |            | 25            | 24        |                         | 23.6   |     |       | 19.0   |     |       | 22.6   |     |       | 16.8   |     |
|                 |            | 50            | 0         |                         | 23.6   |     |       | 19.0   |     |       | 22.6   |     |       | 16.9   |     |
|                 | 64QAM      | 1             | 0         |                         | 24.4   |     |       | 18.9   |     |       | 21.2   |     |       | 17.6   |     |
|                 |            | 1             | 24        |                         | 24.3   |     |       | 18.9   |     |       | 21.3   |     |       | 17.7   |     |
|                 |            | 1             | 49        |                         | 24.2   |     |       | 18.9   |     |       | 21.4   |     |       | 18.0   |     |
|                 |            | 25            | 0         |                         | 23.1   |     |       | 17.5   |     |       | 20.0   |     |       | 16.4   |     |
|                 |            | 25            | 12        |                         | 23.0   |     |       | 17.6   |     |       | 20.2   |     |       | 16.5   |     |
|                 |            | 25            | 24        |                         | 23.1   |     |       | 17.6   |     |       | 20.2   |     |       | 16.4   |     |
|                 |            | 50            | 0         |                         | 23.0   |     |       | 17.7   |     |       | 20.1   |     |       | 16.5   |     |

## 7.11. LTE BAND 41

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 10646 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB 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         | 25.6                    | 28.6  | 28.5  | 19.7  | 22.6  | 22.6  | 25.0  | 27.9  | 27.8  | 18.0  | 21.0  | 20.9  |
|                 |            | 1             | 12        | 27.6                    | 28.6  | 28.5  | 21.7  | 22.6  | 22.5  | 27.0  | 28.0  | 27.8  | 19.7  | 21.0  | 20.9  |
|                 |            | 1             | 24        | 27.7                    | 28.7  | 28.5  | 21.7  | 22.6  | 22.6  | 27.0  | 28.0  | 27.8  | 19.6  | 21.0  | 20.9  |
|                 |            | 12            | 0         | 24.6                    | 27.6  | 27.3  | 18.6  | 21.4  | 21.5  | 23.8  | 26.8  | 26.7  | 17.8  | 20.0  | 19.8  |
|                 |            | 12            | 6         | 24.6                    | 27.6  | 27.3  | 18.6  | 21.4  | 21.4  | 23.8  | 26.8  | 26.7  | 17.7  | 19.9  | 19.8  |
|                 |            | 12            | 11        | 26.6                    | 27.6  | 27.3  | 20.6  | 21.4  | 21.4  | 25.9  | 26.8  | 26.7  | 18.7  | 20.0  | 19.8  |
|                 |            | 25            | 0         | 24.6                    | 27.6  | 27.4  | 18.6  | 21.4  | 21.4  | 23.9  | 26.9  | 26.7  | 17.7  | 20.0  | 19.8  |
|                 | 16QAM      | 1             | 0         | 24.2                    | 27.1  | 27.0  | 19.1  | 22.0  | 22.0  | 24.4  | 27.4  | 27.2  | 17.3  | 20.4  | 20.3  |
|                 |            | 1             | 12        | 26.1                    | 27.0  | 27.0  | 21.1  | 22.0  | 21.9  | 26.3  | 27.4  | 27.1  | 19.2  | 20.4  | 20.3  |
|                 |            | 1             | 24        | 26.1                    | 27.1  | 26.9  | 21.1  | 22.0  | 21.9  | 26.4  | 27.5  | 27.1  | 19.0  | 20.4  | 20.2  |
|                 |            | 12            | 0         | 22.6                    | 25.6  | 28.2  | 17.6  | 20.5  | 20.5  | 22.8  | 25.9  | 25.7  | 16.8  | 18.9  | 18.9  |
|                 |            | 12            | 6         | 22.6                    | 25.6  | 28.2  | 17.6  | 20.5  | 20.4  | 22.8  | 25.9  | 25.7  | 16.8  | 18.9  | 18.9  |
|                 |            | 12            | 11        | 24.6                    | 25.5  | 28.2  | 19.6  | 20.4  | 20.4  | 24.8  | 25.9  | 25.7  | 17.7  | 18.9  | 18.8  |
|                 |            | 25            | 0         | 22.6                    | 25.5  | 28.2  | 17.6  | 20.4  | 20.4  | 22.8  | 25.8  | 25.7  | 16.7  | 18.9  | 18.8  |
|                 | 64QAM      | 1             | 0         | 24.3                    | 27.2  | 27.3  | 15.2  | 18.5  | 18.0  | 20.1  | 23.1  | 22.5  | 16.5  | 19.6  | 16.6  |
|                 |            | 1             | 12        | 26.3                    | 27.2  | 27.3  | 17.5  | 18.4  | 18.1  | 22.0  | 23.0  | 22.5  | 18.0  | 19.5  | 16.6  |
|                 |            | 1             | 24        | 26.4                    | 27.2  | 27.3  | 17.5  | 18.5  | 18.0  | 21.9  | 23.0  | 22.3  | 18.0  | 19.6  | 16.6  |
|                 |            | 12            | 0         | 22.9                    | 25.8  | 25.9  | 13.9  | 17.0  | 16.8  | 18.6  | 21.7  | 21.3  | 15.0  | 18.3  | 15.3  |
|                 |            | 12            | 6         | 22.8                    | 25.9  | 25.9  | 14.0  | 16.9  | 16.8  | 18.6  | 21.6  | 21.3  | 15.0  | 18.2  | 15.3  |
|                 |            | 12            | 11        | 24.9                    | 25.8  | 25.9  | 16.1  | 16.9  | 16.8  | 20.6  | 21.6  | 21.2  | 16.9  | 18.3  | 15.3  |
|                 |            | 25            | 0         | 22.8                    | 25.8  | 25.9  | 14.0  | 16.9  | 16.7  | 18.6  | 21.6  | 21.2  | 15.0  | 18.3  | 15.3  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 2 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                 |            |               |           | 39700                   | 40620 | 41540 | 39700 | 40620 | 41540 | 39700 | 40620 | 41540 | 39700 | 40620 | 41540 |
| 10.0            | QPSK       | 1             | 0         | 24.6                    | 28.6  | 28.4  | 18.7  | 22.7  | 22.7  | 23.8  | 28.0  | 27.8  | 17.3  | 21.0  | 20.9  |
|                 |            | 1             | 24        | 27.6                    | 28.6  | 28.4  | 21.7  | 22.7  | 22.7  | 26.8  | 28.0  | 27.8  | 20.0  | 21.0  | 20.9  |
|                 |            | 1             | 49        | 27.7                    | 28.6  | 28.3  | 21.7  | 22.7  | 22.7  | 27.0  | 28.0  | 27.8  | 19.7  | 21.0  | 20.9  |
|                 |            | 25            | 0         | 24.6                    | 27.6  | 27.4  | 18.7  | 21.7  | 21.7  | 23.8  | 27.0  | 26.8  | 17.2  | 20.0  | 19.9  |
|                 |            | 25            | 12        | 26.7                    | 27.6  | 27.4  | 20.7  | 21.7  | 21.7  | 25.8  | 27.0  | 26.8  | 19.0  | 20.0  | 19.9  |
|                 |            | 25            | 24        | 25.9                    | 27.5  | 27.4  | 19.7  | 21.7  | 21.7  | 24.9  | 27.0  | 26.9  | 17.7  | 20.0  | 19.9  |
|                 |            | 50            | 0         | 24.9                    | 27.4  | 27.4  | 18.7  | 21.7  | 21.7  | 23.8  | 27.0  | 26.8  | 17.0  | 20.0  | 19.8  |
|                 | 16QAM      | 1             | 0         | 24.2                    | 27.8  | 27.7  | 18.1  | 22.2  | 22.1  | 23.1  | 27.4  | 27.2  | 16.7  | 20.3  | 20.2  |
|                 |            | 1             | 24        | 27.2                    | 27.8  | 27.7  | 21.1  | 22.1  | 22.0  | 26.1  | 27.3  | 27.2  | 19.4  | 20.3  | 20.1  |
|                 |            | 1             | 49        | 27.3                    | 27.8  | 27.7  | 21.1  | 22.2  | 22.0  | 26.3  | 27.4  | 27.3  | 19.1  | 20.3  | 20.1  |
|                 |            | 25            | 0         | 23.9                    | 26.5  | 26.5  | 17.8  | 20.8  | 20.8  | 22.8  | 26.1  | 25.9  | 16.3  | 19.1  | 19.0  |
|                 |            | 25            | 12        | 25.9                    | 26.6  | 26.4  | 19.8  | 20.8  | 20.8  | 24.9  | 26.1  | 25.9  | 18.1  | 19.1  | 18.9  |
|                 |            | 25            | 24        | 25.0                    | 26.6  | 26.4  | 18.8  | 20.8  | 20.8  | 24.0  | 26.1  | 25.9  | 16.9  | 19.1  | 19.0  |
|                 |            | 50            | 0         | 23.9                    | 26.6  | 26.4  | 17.8  | 20.8  | 20.8  | 22.9  | 26.0  | 25.9  | 16.1  | 19.1  | 18.9  |
|                 | 64QAM      | 1             | 0         | 23.3                    | 27.0  | 27.1  | 14.2  | 18.7  | 18.4  | 18.8  | 23.0  | 22.8  | 15.8  | 19.5  | 16.5  |
|                 |            | 1             | 24        | 26.3                    | 26.9  | 27.0  | 17.5  | 18.6  | 18.3  | 21.6  | 23.0  | 22.6  | 18.2  | 19.5  | 16.5  |
|                 |            | 1             | 49        | 26.5                    | 27.0  | 27.2  | 17.5  | 18.6  | 18.3  | 21.6  | 23.2  | 22.6  | 18.1  | 19.6  | 16.6  |
|                 |            | 25            | 0         | 23.1                    | 25.7  | 25.8  | 14.2  | 17.4  | 17.2  | 18.7  | 21.8  | 21.6  | 15.5  | 18.4  | 15.4  |
|                 |            | 25            | 12        | 25.2                    | 25.7  | 25.8  | 16.3  | 17.3  | 17.1  | 20.6  | 21.8  | 21.4  | 17.3  | 18.5  | 15.4  |
|                 |            | 25            | 24        | 24.2                    | 25.8  | 25.8  | 15.3  | 17.3  | 17.1  | 19.6  | 21.9  | 21.5  | 16.2  | 18.4  | 15.3  |
|                 |            | 50            | 0         | 23.2                    | 25.8  | 25.8  | 14.3  | 17.3  | 17.1  | 18.6  | 21.8  | 21.4  | 15.4  | 18.4  | 15.4  |

### 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            | 24.6                    | 28.5   | 28.5   | 18.7   | 22.6   | 22.7   | 23.7   | 28.0   | 27.9   | 17.7   | 20.8   | 20.9   |
|                    |            | 1                | 37           | 27.6                    | 28.6   | 28.4   | 21.7   | 22.7   | 22.7   | 26.8   | 28.0   | 27.8   | 20.0   | 20.9   | 20.8   |
|                    |            | 1                | 74           | 27.7                    | 28.5   | 28.3   | 21.7   | 22.6   | 22.6   | 27.0   | 27.9   | 27.8   | 19.9   | 20.7   | 20.7   |
|                    |            | 36               | 0            | 23.7                    | 27.5   | 27.4   | 17.7   | 21.7   | 21.8   | 22.8   | 26.9   | 26.8   | 16.5   | 19.9   | 19.8   |
|                    |            | 36               | 16           | 26.8                    | 27.5   | 27.4   | 20.7   | 21.7   | 21.7   | 25.9   | 27.0   | 26.8   | 19.1   | 19.9   | 19.8   |
|                    |            | 36               | 35           | 25.8                    | 27.5   | 27.4   | 19.7   | 21.7   | 21.7   | 25.0   | 27.0   | 26.8   | 18.0   | 19.9   | 19.7   |
|                    |            | 75               | 0            | 23.7                    | 27.5   | 27.4   | 17.7   | 21.6   | 21.7   | 22.9   | 27.0   | 26.8   | 16.0   | 19.9   | 19.8   |
|                    | 16QAM      | 1                | 0            | 23.9                    | 27.9   | 27.7   | 17.9   | 22.0   | 22.1   | 23.1   | 27.4   | 27.1   | 16.9   | 20.1   | 20.1   |
|                    |            | 1                | 37           | 27.0                    | 27.8   | 27.7   | 20.9   | 22.0   | 22.1   | 26.2   | 27.4   | 27.0   | 19.3   | 20.2   | 20.1   |
|                    |            | 1                | 74           | 27.0                    | 27.8   | 27.7   | 20.8   | 22.0   | 22.0   | 26.3   | 27.4   | 27.1   | 19.1   | 20.1   | 19.9   |
|                    |            | 36               | 0            | 22.7                    | 26.6   | 26.5   | 16.7   | 20.8   | 20.8   | 21.9   | 26.0   | 25.9   | 15.5   | 19.0   | 18.9   |
|                    |            | 36               | 16           | 25.8                    | 26.6   | 26.5   | 19.8   | 20.8   | 20.8   | 25.0   | 26.0   | 25.9   | 18.2   | 19.0   | 18.8   |
|                    |            | 36               | 35           | 24.8                    | 26.6   | 26.5   | 18.7   | 20.8   | 20.7   | 24.0   | 26.1   | 25.9   | 17.1   | 19.0   | 18.8   |
|                    |            | 75               | 0            | 22.7                    | 26.6   | 26.4   | 16.7   | 20.7   | 20.7   | 21.9   | 26.0   | 25.9   | 15.1   | 18.9   | 18.8   |
|                    | 64QAM      | 1                | 0            | 23.1                    | 26.9   | 27.1   | 14.4   | 18.5   | 18.5   | 18.8   | 22.9   | 22.8   | 16.3   | 19.3   | 16.2   |
|                    |            | 1                | 37           | 26.3                    | 27.0   | 27.1   | 17.6   | 18.5   | 18.5   | 21.7   | 23.0   | 22.8   | 18.4   | 19.4   | 16.3   |
|                    |            | 1                | 74           | 26.3                    | 26.8   | 27.1   | 17.5   | 18.4   | 18.3   | 21.8   | 23.1   | 22.6   | 18.3   | 19.3   | 16.3   |
|                    |            | 36               | 0            | 21.9                    | 25.6   | 25.8   | 13.2   | 17.4   | 17.2   | 17.6   | 21.9   | 21.7   | 14.8   | 18.2   | 15.1   |
|                    |            | 36               | 16           | 24.9                    | 25.7   | 25.8   | 16.3   | 17.3   | 17.2   | 20.5   | 21.8   | 21.5   | 17.5   | 18.3   | 15.2   |
|                    |            | 36               | 35           | 23.9                    | 25.8   | 25.8   | 15.2   | 17.3   | 17.2   | 19.5   | 21.8   | 21.5   | 16.5   | 18.3   | 15.2   |
|                    |            | 75               | 0            | 21.8                    | 25.6   | 25.8   | 13.2   | 17.3   | 17.2   | 17.4   | 21.8   | 21.5   | 14.5   | 18.2   | 15.2   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 39750                   | 40620  | 41490  | 39750  | 40620  | 41490  | 39750  | 40620  | 41490  | 39750  | 40620  | 41490  |
|                    |            |                  |              | 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               | QPSK       | 1                | 0            | 24.6                    | 28.5   | 28.7   | 18.8   | 22.7   | 22.6   | 23.8   | 27.9   | 28.0   | 17.0   | 21.0   | 20.9   |
|                    |            | 1                | 49           | 27.7                    | 28.6   | 28.4   | 21.7   | 22.6   | 22.6   | 27.0   | 28.0   | 27.8   | 19.9   | 21.0   | 20.9   |
|                    |            | 1                | 99           | 27.7                    | 28.5   | 28.4   | 21.7   | 22.6   | 22.5   | 27.0   | 28.0   | 27.9   | 20.0   | 20.9   | 20.8   |
|                    |            | 50               | 0            | 23.6                    | 27.5   | 27.5   | 17.7   | 21.6   | 21.5   | 22.8   | 26.9   | 26.9   | 16.2   | 20.0   | 19.8   |
|                    |            | 50               | 24           | 26.7                    | 27.5   | 27.4   | 20.6   | 21.5   | 21.5   | 25.9   | 27.0   | 26.8   | 18.9   | 20.0   | 19.8   |
|                    |            | 50               | 49           | 25.6                    | 27.5   | 27.4   | 19.6   | 21.5   | 21.5   | 24.9   | 27.0   | 26.8   | 17.9   | 20.0   | 19.8   |
|                    |            | 100              | 0            | 23.6                    | 27.5   | 27.4   | 17.6   | 21.5   | 21.5   | 22.9   | 26.9   | 26.9   | 15.9   | 20.0   | 19.8   |
|                    | 16QAM      | 1                | 0            | 24.0                    | 28.0   | 28.0   | 18.2   | 22.0   | 21.9   | 23.2   | 27.3   | 27.4   | 16.6   | 20.4   | 20.3   |
|                    |            | 1                | 49           | 27.0                    | 28.0   | 27.8   | 21.1   | 22.0   | 21.9   | 26.4   | 27.4   | 27.3   | 19.3   | 20.4   | 20.2   |
|                    |            | 1                | 99           | 27.2                    | 28.0   | 27.9   | 21.1   | 21.9   | 21.9   | 26.5   | 27.4   | 27.3   | 19.3   | 20.3   | 20.1   |
|                    |            | 50               | 0            | 22.6                    | 26.5   | 26.5   | 16.7   | 20.7   | 20.6   | 21.8   | 26.0   | 26.0   | 15.2   | 19.0   | 18.9   |
|                    |            | 50               | 24           | 25.7                    | 26.6   | 26.4   | 19.7   | 20.6   | 20.6   | 24.9   | 26.0   | 25.9   | 18.0   | 19.0   | 18.9   |
|                    |            | 50               | 49           | 24.7                    | 26.6   | 26.4   | 18.7   | 20.6   | 20.5   | 23.9   | 26.0   | 25.9   | 17.0   | 19.1   | 18.9   |
|                    |            | 100              | 0            | 22.6                    | 26.5   | 26.4   | 16.6   | 20.6   | 20.6   | 21.9   | 26.0   | 25.9   | 15.0   | 19.0   | 18.9   |
|                    | 64QAM      | 1                | 0            | 23.0                    | 27.1   | 27.2   | 14.3   | 18.5   | 18.3   | 18.8   | 23.0   | 22.7   | 16.2   | 19.5   | 16.4   |
|                    |            | 1                | 49           | 26.0                    | 27.0   | 27.0   | 17.5   | 18.5   | 18.4   | 21.6   | 23.1   | 22.7   | 18.3   | 19.6   | 16.4   |
|                    |            | 1                | 99           | 26.2                    | 27.0   | 27.1   | 17.6   | 18.5   | 18.3   | 21.8   | 23.2   | 22.6   | 18.4   | 19.6   | 16.5   |
|                    |            | 50               | 0            | 21.7                    | 25.6   | 25.8   | 13.2   | 17.2   | 17.0   | 17.6   | 21.7   | 21.5   | 14.6   | 18.3   | 15.2   |
|                    |            | 50               | 24           | 24.8                    | 25.7   | 25.8   | 16.2   | 17.2   | 17.1   | 20.5   | 21.8   | 21.5   | 17.3   | 18.4   | 15.3   |
|                    |            | 50               | 49           | 23.8                    | 25.7   | 25.8   | 15.2   | 17.2   | 17.0   | 19.7   | 21.8   | 21.5   | 16.4   | 18.4   | 15.3   |
|                    |            | 100              | 0            | 21.7                    | 25.6   | 25.8   | 13.1   | 17.2   | 17.1   | 17.4   | 21.7   | 21.5   | 14.4   | 18.3   | 15.2   |

## 7.12. LTE BAND 48

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 5/30/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 6 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                 |            |               |           | 55265                   | 55990 | 56715 | 55265 | 55990 | 56715 | 55265 | 55990 | 56715 | 55265 | 55990 | 56715 |
| 5.0             | QPSK       | 1             | 0         | 20.8                    | 25.6  | 21.0  | 18.5  | 22.3  | 18.4  | 20.5  | 25.4  | 20.4  | 18.5  | 22.2  | 18.3  |
|                 |            | 1             | 12        | 20.8                    | 25.3  | 20.8  | 18.3  | 22.1  | 18.1  | 20.1  | 25.4  | 20.2  | 18.3  | 22.0  | 18.2  |
|                 |            | 1             | 24        | 20.8                    | 25.6  | 21.0  | 18.4  | 22.4  | 18.4  | 20.5  | 25.5  | 20.6  | 18.5  | 22.3  | 18.4  |
|                 |            | 12            | 0         | 19.8                    | 24.6  | 20.0  | 17.4  | 21.3  | 17.3  | 19.5  | 24.6  | 19.5  | 17.6  | 21.2  | 17.4  |
|                 |            | 12            | 6         | 19.7                    | 24.5  | 19.9  | 17.3  | 21.2  | 17.2  | 19.4  | 24.5  | 19.4  | 17.4  | 21.1  | 17.4  |
|                 |            | 12            | 11        | 19.7                    | 24.5  | 20.0  | 17.4  | 21.3  | 17.3  | 19.5  | 24.5  | 19.4  | 17.4  | 21.1  | 17.4  |
|                 |            | 25            | 0         | 19.8                    | 24.7  | 20.2  | 17.5  | 21.5  | 17.4  | 19.6  | 24.7  | 19.6  | 17.6  | 21.3  | 17.6  |
|                 | 16QAM      | 1             | 0         | 20.2                    | 25.1  | 20.3  | 17.9  | 21.8  | 17.8  | 19.9  | 25.0  | 19.8  | 17.8  | 21.6  | 17.8  |
|                 |            | 1             | 12        | 19.9                    | 24.8  | 20.1  | 17.8  | 21.6  | 17.6  | 19.7  | 24.8  | 19.5  | 17.8  | 21.4  | 17.6  |
|                 |            | 1             | 24        | 20.2                    | 25.1  | 20.4  | 17.9  | 21.8  | 17.9  | 19.7  | 25.0  | 19.7  | 17.8  | 21.7  | 17.9  |
|                 |            | 12            | 0         | 18.6                    | 23.4  | 18.9  | 16.3  | 20.2  | 16.2  | 18.4  | 23.4  | 18.4  | 16.4  | 20.0  | 16.3  |
|                 |            | 12            | 6         | 18.5                    | 23.3  | 18.8  | 16.2  | 20.0  | 16.1  | 18.3  | 23.4  | 18.3  | 16.3  | 20.0  | 16.2  |
|                 |            | 12            | 11        | 18.6                    | 23.3  | 18.8  | 16.3  | 20.1  | 16.1  | 18.3  | 23.4  | 18.4  | 16.4  | 20.0  | 16.3  |
|                 |            | 25            | 0         | 18.8                    | 23.5  | 19.0  | 16.5  | 20.3  | 16.3  | 18.5  | 23.5  | 18.4  | 16.5  | 20.1  | 16.4  |
|                 | 64QAM      | 1             | 0         | 19.1                    | 24.1  | 19.5  | 16.9  | 20.9  | 16.8  | 18.9  | 24.1  | 18.7  | 16.9  | 20.6  | 16.7  |
|                 |            | 1             | 12        | 18.7                    | 23.8  | 19.3  | 16.4  | 20.6  | 16.5  | 18.8  | 23.9  | 18.4  | 16.7  | 20.2  | 16.4  |
|                 |            | 1             | 24        | 19.1                    | 23.9  | 19.4  | 16.8  | 20.9  | 16.7  | 19.0  | 24.0  | 18.7  | 16.9  | 20.6  | 16.7  |
|                 |            | 12            | 0         | 17.8                    | 22.3  | 17.7  | 15.5  | 19.1  | 14.9  | 17.3  | 22.2  | 17.4  | 15.2  | 19.0  | 15.5  |
|                 |            | 12            | 6         | 17.6                    | 22.3  | 17.6  | 15.3  | 19.0  | 15.1  | 17.2  | 22.2  | 17.4  | 15.1  | 18.8  | 15.3  |
|                 |            | 12            | 11        | 17.6                    | 22.2  | 17.6  | 15.4  | 19.0  | 14.9  | 17.2  | 22.2  | 17.4  | 15.2  | 18.9  | 15.4  |
|                 |            | 25            | 0         | 17.8                    | 22.5  | 17.9  | 15.5  | 19.3  | 15.3  | 17.5  | 22.6  | 17.6  | 15.5  | 19.2  | 15.5  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |            |               |           | ANT 1                   |       |       | ANT 6 |       |       | ANT 3 |       |       | ANT 4 |       |       |
|                 |            |               |           | 55290                   | 55990 | 56690 | 55290 | 55990 | 56690 | 55290 | 55990 | 56690 | 55290 | 55990 | 56690 |
| 10.0            | QPSK       | 1             | 0         | 21.0                    | 25.6  | 20.9  | 18.5  | 22.5  | 18.5  | 20.5  | 25.5  | 20.5  | 18.5  | 22.5  | 18.5  |
|                 |            | 1             | 24        | 20.7                    | 25.4  | 20.7  | 18.3  | 22.3  | 18.2  | 20.2  | 25.3  | 20.2  | 18.2  | 22.1  | 18.2  |
|                 |            | 1             | 49        | 21.0                    | 25.7  | 20.9  | 18.4  | 22.5  | 18.5  | 20.4  | 25.5  | 20.5  | 18.4  | 22.4  | 18.5  |
|                 |            | 25            | 0         | 19.8                    | 24.5  | 19.8  | 17.4  | 21.4  | 17.4  | 19.4  | 24.4  | 19.5  | 17.4  | 21.2  | 17.4  |
|                 |            | 25            | 12        | 19.8                    | 24.5  | 19.7  | 17.3  | 21.3  | 17.3  | 19.3  | 24.3  | 19.4  | 17.3  | 21.2  | 17.3  |
|                 |            | 25            | 24        | 19.8                    | 24.5  | 19.7  | 17.3  | 21.4  | 17.4  | 19.4  | 24.4  | 19.5  | 17.4  | 21.2  | 17.4  |
|                 |            | 50            | 0         | 19.9                    | 24.6  | 19.8  | 17.3  | 21.5  | 17.4  | 19.4  | 24.4  | 19.5  | 17.4  | 21.3  | 17.4  |
|                 | 16QAM      | 1             | 0         | 20.4                    | 25.1  | 20.3  | 17.9  | 22.0  | 18.0  | 19.7  | 24.9  | 20.0  | 17.9  | 21.7  | 17.9  |
|                 |            | 1             | 24        | 20.0                    | 24.8  | 20.1  | 17.6  | 21.8  | 17.8  | 19.6  | 24.6  | 19.7  | 17.7  | 21.4  | 17.5  |
|                 |            | 1             | 49        | 20.3                    | 25.1  | 20.3  | 17.7  | 22.0  | 17.9  | 19.8  | 24.9  | 19.9  | 17.9  | 21.7  | 17.9  |
|                 |            | 25            | 0         | 18.8                    | 23.4  | 18.7  | 16.3  | 20.3  | 16.3  | 18.4  | 23.4  | 18.4  | 16.3  | 20.2  | 16.3  |
|                 |            | 25            | 12        | 18.7                    | 23.4  | 18.6  | 16.2  | 20.2  | 16.2  | 18.3  | 23.3  | 18.3  | 16.2  | 20.1  | 16.2  |
|                 |            | 25            | 24        | 18.8                    | 23.4  | 18.7  | 16.2  | 20.3  | 16.3  | 18.4  | 23.3  | 18.3  | 16.3  | 20.1  | 16.3  |
|                 |            | 50            | 0         | 18.9                    | 23.5  | 18.8  | 16.3  | 20.4  | 16.4  | 18.4  | 23.5  | 18.5  | 16.4  | 20.3  | 16.4  |
|                 | 64QAM      | 1             | 0         | 19.2                    | 23.9  | 19.3  | 16.9  | 20.8  | 16.7  | 18.7  | 23.8  | 18.9  | 16.9  | 20.6  | 16.7  |
|                 |            | 1             | 24        | 18.9                    | 23.7  | 19.1  | 16.6  | 20.4  | 16.5  | 18.5  | 23.6  | 18.6  | 16.6  | 20.4  | 16.4  |
|                 |            | 1             | 49        | 19.2                    | 23.8  | 19.3  | 16.7  | 20.8  | 16.7  | 18.8  | 23.9  | 18.8  | 16.8  | 20.6  | 16.7  |
|                 |            | 25            | 0         | 17.7                    | 22.4  | 17.7  | 15.2  | 19.3  | 15.3  | 17.4  | 22.3  | 17.4  | 15.3  | 19.2  | 15.3  |
|                 |            | 25            | 12        | 17.8                    | 22.3  | 17.6  | 15.1  | 19.2  | 15.2  | 17.3  | 22.3  | 17.3  | 15.3  | 19.2  | 15.2  |
|                 |            | 25            | 24        | 17.7                    | 22.4  | 17.7  | 15.2  | 19.3  | 15.3  | 17.4  | 22.4  | 17.4  | 15.3  | 19.2  | 15.3  |
|                 |            | 50            | 0         | 17.8                    | 22.5  | 17.9  | 15.3  | 19.4  | 15.4  | 17.4  | 22.5  | 17.5  | 15.5  | 19.3  | 15.4  |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 6  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 55315                   | 55990  | 56665  | 55315  | 55990  | 56665  | 55315  | 55990  | 56665  | 55315  | 55990  | 56665  |
|                 |            |               |           | 3667.5                  | 3625.0 | 3692.5 | 3667.5 | 3625.0 | 3692.5 | 3667.5 | 3625.0 | 3692.5 | 3667.5 | 3625.0 | 3692.5 |
| 15.0            | QPSK       | 1             | 0         | 21.0                    | 25.6   | 20.9   | 18.5   | 22.3   | 18.5   | 20.4   | 25.5   | 20.5   | 18.5   | 22.5   | 18.4   |
|                 |            | 1             | 37        | 20.8                    | 25.5   | 20.8   | 18.4   | 22.2   | 18.4   | 20.4   | 25.4   | 20.4   | 18.3   | 22.4   | 18.3   |
|                 |            | 1             | 74        | 21.0                    | 25.7   | 20.9   | 18.5   | 22.4   | 18.5   | 20.5   | 25.5   | 20.4   | 18.5   | 22.5   | 18.4   |
|                 |            | 36            | 0         | 19.9                    | 24.6   | 19.8   | 17.4   | 21.3   | 17.4   | 19.5   | 24.5   | 19.4   | 17.5   | 21.4   | 17.3   |
|                 |            | 36            | 16        | 19.9                    | 24.5   | 19.8   | 17.4   | 21.2   | 17.4   | 19.4   | 24.5   | 19.4   | 17.4   | 21.3   | 17.3   |
|                 |            | 36            | 35        | 19.9                    | 24.6   | 19.8   | 17.4   | 21.3   | 17.4   | 19.4   | 24.5   | 19.4   | 17.4   | 21.3   | 17.3   |
|                 |            | 75            | 0         | 19.9                    | 24.6   | 19.9   | 17.4   | 21.3   | 17.4   | 19.4   | 24.5   | 19.4   | 17.4   | 21.4   | 17.3   |
|                 | 16QAM      | 1             | 0         | 20.5                    | 25.0   | 20.3   | 17.7   | 21.8   | 17.9   | 19.6   | 25.0   | 19.8   | 17.9   | 21.7   | 17.7   |
|                 |            | 1             | 37        | 20.3                    | 24.9   | 20.1   | 17.5   | 21.7   | 17.9   | 19.6   | 25.0   | 19.8   | 17.8   | 21.6   | 17.6   |
|                 |            | 1             | 74        | 20.5                    | 24.9   | 20.3   | 17.7   | 21.9   | 18.0   | 19.7   | 25.0   | 19.8   | 17.9   | 21.7   | 17.8   |
|                 |            | 36            | 0         | 18.9                    | 23.5   | 18.8   | 16.4   | 20.3   | 16.4   | 18.4   | 23.5   | 18.4   | 16.4   | 20.3   | 16.3   |
|                 |            | 36            | 16        | 18.8                    | 23.5   | 18.8   | 16.3   | 20.2   | 16.4   | 18.4   | 23.4   | 18.4   | 16.4   | 20.3   | 16.3   |
|                 |            | 36            | 35        | 18.8                    | 23.6   | 18.8   | 16.4   | 20.3   | 16.4   | 18.4   | 23.5   | 18.3   | 16.4   | 20.3   | 16.3   |
|                 |            | 75            | 0         | 19.0                    | 23.6   | 18.9   | 16.4   | 20.3   | 16.4   | 18.4   | 23.5   | 18.4   | 16.5   | 20.4   | 16.3   |
|                 | 64QAM      | 1             | 0         | 19.5                    | 24.0   | 19.3   | 17.0   | 20.8   | 16.8   | 18.9   | 23.9   | 18.8   | 17.0   | 20.9   | 16.7   |
|                 |            | 1             | 37        | 19.3                    | 23.9   | 19.2   | 16.8   | 20.8   | 16.8   | 18.9   | 23.8   | 18.7   | 16.7   | 20.7   | 16.5   |
|                 |            | 1             | 74        | 19.4                    | 24.0   | 19.3   | 17.0   | 20.8   | 16.9   | 19.0   | 23.9   | 18.8   | 16.9   | 20.8   | 16.7   |
|                 |            | 36            | 0         | 17.8                    | 22.5   | 17.8   | 15.4   | 19.2   | 15.4   | 17.5   | 22.5   | 17.4   | 15.4   | 19.3   | 15.3   |
|                 |            | 36            | 16        | 17.8                    | 22.5   | 17.7   | 15.3   | 19.2   | 15.4   | 17.4   | 22.5   | 17.4   | 15.4   | 19.2   | 15.3   |
|                 |            | 36            | 35        | 17.8                    | 22.5   | 17.7   | 15.4   | 19.2   | 15.4   | 17.4   | 22.5   | 17.4   | 15.4   | 19.3   | 15.3   |
|                 |            | 75            | 0         | 18.0                    | 22.6   | 17.8   | 15.4   | 19.3   | 15.5   | 17.6   | 22.5   | 17.5   | 15.5   | 19.4   | 15.3   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 6  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 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         | 21.0                    | 25.7   | 21.0   | 18.4   | 22.5   | 18.4   | 20.5   | 25.4   | 20.4   | 18.5   | 22.4   | 18.4   |
|                 |            | 1             | 49        | 20.7                    | 25.4   | 20.7   | 18.1   | 22.2   | 18.2   | 20.2   | 25.1   | 20.1   | 18.2   | 22.1   | 18.1   |
|                 |            | 1             | 99        | 21.0                    | 25.7   | 21.0   | 18.4   | 22.5   | 18.4   | 20.5   | 25.5   | 20.3   | 18.5   | 22.3   | 18.4   |
|                 |            | 50            | 0         | 19.8                    | 24.5   | 19.9   | 17.2   | 21.3   | 17.3   | 19.4   | 24.2   | 19.3   | 17.4   | 21.2   | 17.3   |
|                 |            | 50            | 24        | 19.7                    | 24.5   | 19.8   | 17.1   | 21.3   | 17.2   | 19.3   | 24.2   | 19.2   | 17.3   | 21.1   | 17.2   |
|                 |            | 50            | 49        | 19.8                    | 24.5   | 19.9   | 17.2   | 21.3   | 17.2   | 19.4   | 24.2   | 19.3   | 17.4   | 21.1   | 17.3   |
|                 |            | 100           | 0         | 19.8                    | 24.5   | 19.9   | 17.2   | 21.3   | 17.3   | 19.4   | 24.3   | 19.3   | 17.4   | 21.2   | 17.3   |
|                 | 16QAM      | 1             | 0         | 20.4                    | 25.1   | 20.4   | 17.8   | 22.0   | 17.7   | 19.9   | 24.9   | 19.7   | 17.8   | 21.7   | 17.9   |
|                 |            | 1             | 49        | 20.1                    | 24.9   | 20.2   | 17.4   | 21.8   | 17.5   | 19.6   | 24.7   | 19.4   | 17.5   | 21.5   | 17.6   |
|                 |            | 1             | 99        | 20.3                    | 25.1   | 20.5   | 17.8   | 22.0   | 17.7   | 19.8   | 24.9   | 19.6   | 17.8   | 21.7   | 17.8   |
|                 |            | 50            | 0         | 18.7                    | 23.5   | 18.9   | 16.2   | 20.3   | 16.3   | 18.4   | 23.2   | 18.3   | 16.4   | 20.1   | 16.3   |
|                 |            | 50            | 24        | 18.7                    | 23.5   | 18.8   | 16.1   | 20.2   | 16.2   | 18.3   | 23.2   | 18.2   | 16.3   | 20.1   | 16.2   |
|                 |            | 50            | 49        | 18.7                    | 23.6   | 18.8   | 16.2   | 20.3   | 16.2   | 18.4   | 23.2   | 18.2   | 16.4   | 20.1   | 16.2   |
|                 |            | 100           | 0         | 18.8                    | 23.6   | 18.9   | 16.2   | 20.4   | 16.3   | 18.5   | 23.3   | 18.3   | 16.4   | 20.1   | 16.3   |
|                 | 64QAM      | 1             | 0         | 19.5                    | 24.2   | 19.4   | 16.8   | 21.0   | 16.8   | 18.9   | 23.8   | 18.8   | 17.0   | 20.8   | 16.8   |
|                 |            | 1             | 49        | 19.2                    | 23.9   | 19.1   | 16.4   | 20.8   | 16.6   | 18.7   | 23.7   | 18.5   | 16.8   | 20.5   | 16.5   |
|                 |            | 1             | 99        | 19.4                    | 24.2   | 19.4   | 16.8   | 21.0   | 16.8   | 18.8   | 23.9   | 18.7   | 17.0   | 20.8   | 16.7   |
|                 |            | 50            | 0         | 17.8                    | 22.5   | 17.9   | 15.2   | 19.3   | 15.3   | 17.4   | 22.2   | 17.3   | 15.4   | 19.2   | 15.3   |
|                 |            | 50            | 24        | 17.7                    | 22.5   | 17.8   | 15.1   | 19.3   | 15.2   | 17.3   | 22.2   | 17.2   | 15.4   | 19.2   | 15.2   |
|                 |            | 50            | 49        | 17.8                    | 22.6   | 17.9   | 15.2   | 19.3   | 15.3   | 17.4   | 22.2   | 17.3   | 15.4   | 19.2   | 15.2   |
|                 |            | 100           | 0         | 17.8                    | 22.7   | 18.0   | 15.3   | 19.4   | 15.3   | 17.5   | 22.3   | 17.3   | 15.5   | 19.3   | 15.3   |

## 7.13. LTE BAND 66

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 131979                  | 132322 | 132665 | 131979 | 132322 | 132665 | 131979 | 132322 | 132665 | 131979 | 132322 | 132665 |
| 1.4             | QPSK       | 1             | 0         | 25.4                    | 25.7   | 25.3   | 21.8   | 21.8   | 21.6   | 24.6   | 25.0   | 23.9   | 21.6   | 21.8   | 21.3   |
|                 |            | 1             | 2         | 25.3                    | 25.6   | 25.3   | 21.8   | 21.8   | 21.6   | 24.6   | 25.0   | 23.9   | 21.5   | 21.8   | 21.4   |
|                 |            | 1             | 5         | 25.4                    | 25.7   | 25.4   | 21.8   | 21.8   | 21.6   | 24.6   | 25.0   | 23.8   | 21.5   | 21.8   | 21.4   |
|                 |            | 3             | 0         | 25.3                    | 25.5   | 25.2   | 21.7   | 21.7   | 21.4   | 24.6   | 25.0   | 23.8   | 21.5   | 21.7   | 21.3   |
|                 |            | 3             | 1         | 25.2                    | 25.5   | 25.2   | 21.7   | 21.7   | 21.5   | 24.6   | 24.9   | 23.8   | 21.4   | 21.7   | 21.3   |
|                 |            | 3             | 2         | 25.3                    | 25.5   | 25.2   | 21.7   | 21.7   | 21.4   | 24.6   | 24.8   | 23.8   | 21.4   | 21.7   | 21.3   |
|                 |            | 6             | 0         | 24.2                    | 24.5   | 24.1   | 20.6   | 20.6   | 20.4   | 23.6   | 23.9   | 22.8   | 20.4   | 20.7   | 20.2   |
|                 | 16QAM      | 1             | 0         | 24.6                    | 25.1   | 24.7   | 21.1   | 21.1   | 20.9   | 23.9   | 24.3   | 23.1   | 20.7   | 21.1   | 20.5   |
|                 |            | 1             | 2         | 24.6                    | 25.0   | 24.6   | 21.0   | 21.1   | 20.9   | 23.9   | 23.8   | 23.2   | 20.7   | 21.1   | 20.6   |
|                 |            | 1             | 5         | 24.6                    | 25.0   | 24.7   | 21.0   | 21.1   | 20.9   | 23.9   | 23.7   | 23.1   | 20.7   | 21.1   | 20.6   |
|                 |            | 3             | 0         | 24.4                    | 24.7   | 24.4   | 20.8   | 20.8   | 20.6   | 23.6   | 23.5   | 22.9   | 20.4   | 20.8   | 20.3   |
|                 |            | 3             | 1         | 24.3                    | 24.6   | 24.4   | 20.7   | 20.8   | 20.6   | 23.6   | 23.5   | 22.9   | 20.4   | 20.8   | 20.3   |
|                 |            | 3             | 2         | 24.4                    | 24.7   | 24.3   | 20.8   | 20.8   | 20.6   | 23.6   | 23.4   | 22.9   | 20.5   | 20.8   | 20.4   |
|                 |            | 6             | 0         | 23.3                    | 23.5   | 23.3   | 19.6   | 19.6   | 19.4   | 22.6   | 22.3   | 21.8   | 19.4   | 19.6   | 19.3   |
|                 | 64QAM      | 1             | 0         | 23.5                    | 24.0   | 23.5   | 20.1   | 19.9   | 19.6   | 22.8   | 23.3   | 22.6   | 19.2   | 19.3   | 18.8   |
|                 |            | 1             | 2         | 23.5                    | 23.9   | 23.5   | 20.0   | 20.0   | 19.7   | 22.7   | 23.2   | 22.6   | 19.2   | 19.3   | 18.7   |
|                 |            | 1             | 5         | 23.4                    | 24.1   | 23.5   | 20.0   | 20.0   | 19.5   | 22.7   | 23.3   | 22.6   | 19.2   | 19.3   | 18.8   |
|                 |            | 3             | 0         | 23.3                    | 23.7   | 23.2   | 19.7   | 19.7   | 19.4   | 22.6   | 23.0   | 22.3   | 18.9   | 19.2   | 18.7   |
|                 |            | 3             | 1         | 23.3                    | 23.7   | 23.2   | 19.7   | 19.8   | 19.4   | 22.5   | 23.0   | 22.3   | 18.9   | 19.2   | 18.6   |
|                 |            | 3             | 2         | 23.3                    | 23.7   | 23.2   | 19.7   | 19.7   | 19.4   | 22.6   | 23.0   | 22.3   | 18.9   | 19.2   | 18.6   |
|                 |            | 6             | 0         | 22.2                    | 22.5   | 22.2   | 18.5   | 18.7   | 18.4   | 21.4   | 21.7   | 21.3   | 17.7   | 18.1   | 17.6   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                 |            |               |           | 131987                  | 132322 | 132657 | 131987 | 132322 | 132657 | 131987 | 132322 | 132657 | 131987 | 132322 | 132657 |
| 3.0             | QPSK       | 1             | 0         | 25.4                    | 25.6   | 25.2   | 21.8   | 21.7   | 21.5   | 23.9   | 24.4   | 23.9   | 21.5   | 21.8   | 21.4   |
|                 |            | 1             | 7         | 25.4                    | 25.6   | 25.2   | 21.8   | 21.8   | 21.5   | 23.9   | 24.5   | 24.0   | 21.6   | 21.8   | 21.4   |
|                 |            | 1             | 14        | 25.4                    | 25.5   | 25.2   | 21.7   | 21.7   | 21.5   | 23.9   | 24.4   | 23.9   | 21.5   | 21.8   | 21.3   |
|                 |            | 8             | 0         | 24.2                    | 24.4   | 24.1   | 20.6   | 20.6   | 20.4   | 22.8   | 23.4   | 22.8   | 20.4   | 20.7   | 20.3   |
|                 |            | 8             | 4         | 24.2                    | 24.4   | 24.1   | 20.7   | 20.6   | 20.4   | 22.8   | 23.4   | 22.8   | 20.4   | 20.7   | 20.3   |
|                 |            | 8             | 7         | 24.2                    | 24.4   | 24.1   | 20.7   | 20.6   | 20.4   | 22.8   | 23.4   | 22.8   | 20.4   | 20.7   | 20.2   |
|                 |            | 15            | 0         | 24.2                    | 24.5   | 24.1   | 20.6   | 20.7   | 20.4   | 22.8   | 23.4   | 22.9   | 20.4   | 20.7   | 20.3   |
|                 | 16QAM      | 1             | 0         | 24.8                    | 25.0   | 24.6   | 21.0   | 21.1   | 20.9   | 23.1   | 23.6   | 23.2   | 20.7   | 21.0   | 20.7   |
|                 |            | 1             | 7         | 24.6                    | 25.0   | 24.7   | 21.1   | 21.1   | 20.8   | 23.1   | 23.8   | 23.2   | 20.8   | 21.0   | 20.6   |
|                 |            | 1             | 14        | 24.6                    | 24.9   | 24.6   | 20.9   | 21.0   | 20.8   | 23.0   | 23.6   | 23.1   | 20.8   | 21.0   | 20.6   |
|                 |            | 8             | 0         | 23.2                    | 23.5   | 23.1   | 19.6   | 19.6   | 19.4   | 21.8   | 22.3   | 21.9   | 19.4   | 19.6   | 19.2   |
|                 |            | 8             | 4         | 23.2                    | 23.4   | 23.0   | 19.6   | 19.6   | 19.4   | 21.7   | 22.4   | 21.9   | 19.4   | 19.6   | 19.2   |
|                 |            | 8             | 7         | 23.2                    | 23.4   | 23.1   | 19.6   | 19.6   | 19.3   | 21.7   | 22.3   | 21.9   | 19.4   | 19.6   | 19.2   |
|                 |            | 15            | 0         | 23.2                    | 23.4   | 23.0   | 19.6   | 19.6   | 19.4   | 21.7   | 22.3   | 21.9   | 19.3   | 19.6   | 19.2   |
|                 | 64QAM      | 1             | 0         | 23.5                    | 23.9   | 23.4   | 19.8   | 19.9   | 19.7   | 22.7   | 23.1   | 22.6   | 19.1   | 19.3   | 18.8   |
|                 |            | 1             | 7         | 23.5                    | 23.8   | 23.5   | 19.8   | 20.0   | 19.7   | 22.8   | 23.1   | 22.7   | 19.1   | 19.4   | 18.8   |
|                 |            | 1             | 14        | 23.5                    | 23.7   | 23.5   | 19.8   | 19.9   | 19.5   | 22.7   | 23.0   | 22.7   | 19.1   | 19.3   | 18.8   |
|                 |            | 8             | 0         | 22.2                    | 22.5   | 22.1   | 18.5   | 18.6   | 18.3   | 21.3   | 21.7   | 21.3   | 17.8   | 18.1   | 17.6   |
|                 |            | 8             | 4         | 22.2                    | 22.5   | 22.1   | 18.5   | 18.6   | 18.3   | 21.3   | 21.7   | 21.3   | 17.8   | 18.1   | 17.6   |
|                 |            | 8             | 7         | 22.2                    | 22.5   | 22.1   | 18.5   | 18.6   | 18.3   | 21.4   | 21.7   | 21.3   | 17.8   | 18.1   | 17.5   |
|                 |            | 15            | 0         | 22.1                    | 22.5   | 22.0   | 18.5   | 18.7   | 18.3   | 21.3   | 21.7   | 21.2   | 17.7   | 18.0   | 17.6   |

**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            | 25.3                    | 25.7   | 25.1   | 21.9   | 21.7   | 21.7   | 24.0   | 24.5   | 24.1   | 21.6   | 21.8   | 21.6   |
|                    |            | 1                | 12           | 25.3                    | 25.6   | 25.1   | 21.8   | 21.8   | 21.7   | 23.9   | 24.5   | 24.0   | 21.6   | 21.8   | 21.4   |
|                    |            | 1                | 24           | 25.2                    | 25.6   | 25.1   | 21.7   | 21.9   | 21.6   | 24.0   | 24.4   | 24.0   | 21.7   | 21.9   | 21.4   |
|                    |            | 12               | 0            | 24.2                    | 24.5   | 24.1   | 20.8   | 20.7   | 20.6   | 23.0   | 23.5   | 23.0   | 20.5   | 20.8   | 20.6   |
|                    |            | 12               | 6            | 24.2                    | 24.6   | 24.0   | 20.8   | 20.7   | 20.6   | 23.0   | 23.6   | 23.0   | 20.5   | 20.8   | 20.4   |
|                    |            | 12               | 11           | 24.2                    | 24.6   | 24.1   | 20.7   | 20.7   | 20.6   | 23.0   | 23.5   | 23.0   | 20.6   | 20.7   | 20.4   |
|                    |            | 25               | 0            | 24.2                    | 24.6   | 24.1   | 20.8   | 20.7   | 20.6   | 23.0   | 23.5   | 23.0   | 20.5   | 20.8   | 20.5   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 25.1   | 24.4   | 21.4   | 21.1   | 21.3   | 23.3   | 23.8   | 23.5   | 20.9   | 21.2   | 21.0   |
|                    |            | 1                | 12           | 24.6                    | 24.9   | 24.5   | 21.2   | 21.1   | 21.1   | 23.1   | 23.9   | 23.4   | 20.9   | 21.2   | 20.8   |
|                    |            | 1                | 24           | 24.5                    | 24.9   | 24.5   | 21.1   | 21.2   | 21.0   | 23.2   | 23.8   | 23.3   | 21.0   | 21.3   | 20.8   |
|                    |            | 12               | 0            | 23.3                    | 23.5   | 23.1   | 19.8   | 19.7   | 19.6   | 21.9   | 22.5   | 22.0   | 19.5   | 19.8   | 19.5   |
|                    |            | 12               | 6            | 23.3                    | 23.5   | 23.1   | 19.7   | 19.8   | 19.6   | 21.9   | 22.6   | 22.1   | 19.5   | 19.8   | 19.4   |
|                    |            | 12               | 11           | 23.2                    | 23.6   | 23.1   | 19.7   | 19.7   | 19.6   | 21.9   | 22.5   | 22.1   | 19.6   | 19.7   | 19.4   |
|                    |            | 25               | 0            | 23.2                    | 23.5   | 23.0   | 19.8   | 19.7   | 19.6   | 21.9   | 22.5   | 22.1   | 19.5   | 19.7   | 19.4   |
|                    | 64QAM      | 1                | 0            | 23.7                    | 24.2   | 23.6   | 20.0   | 20.1   | 20.0   | 23.0   | 23.3   | 22.8   | 19.9   | 20.1   | 19.8   |
|                    |            | 1                | 12           | 23.7                    | 24.1   | 23.6   | 20.0   | 20.1   | 19.7   | 22.9   | 23.2   | 22.8   | 20.0   | 20.2   | 19.7   |
|                    |            | 1                | 24           | 23.6                    | 24.0   | 23.6   | 19.9   | 20.1   | 19.7   | 22.9   | 23.2   | 22.8   | 20.0   | 20.3   | 19.6   |
|                    |            | 12               | 0            | 22.3                    | 22.6   | 22.4   | 18.7   | 18.8   | 18.6   | 21.5   | 21.9   | 21.4   | 18.6   | 18.9   | 18.6   |
|                    |            | 12               | 6            | 22.2                    | 22.6   | 22.3   | 18.7   | 18.7   | 18.5   | 21.5   | 21.9   | 21.4   | 18.6   | 18.9   | 18.5   |
|                    |            | 12               | 11           | 22.2                    | 22.6   | 22.3   | 18.6   | 18.7   | 18.5   | 21.4   | 21.9   | 21.4   | 18.7   | 18.9   | 18.5   |
|                    |            | 25               | 0            | 22.3                    | 22.6   | 22.2   | 18.7   | 18.7   | 18.5   | 21.5   | 21.8   | 21.4   | 18.6   | 18.8   | 18.5   |

**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            | 25.3                    | 25.7   | 25.3   | 21.9   | 21.8   | 21.8   | 24.0   | 24.7   | 24.3   | 21.7   | 21.9   | 21.7   |
|                    |            | 1                | 24           | 25.2                    | 25.6   | 25.2   | 21.8   | 21.9   | 21.8   | 24.1   | 24.6   | 24.1   | 21.7   | 21.9   | 21.6   |
|                    |            | 1                | 49           | 25.3                    | 25.4   | 25.2   | 21.8   | 22.0   | 21.7   | 24.3   | 24.5   | 24.0   | 21.7   | 21.9   | 21.6   |
|                    |            | 25               | 0            | 24.3                    | 24.7   | 24.2   | 20.9   | 20.8   | 20.7   | 23.1   | 23.7   | 23.2   | 20.7   | 20.9   | 20.8   |
|                    |            | 25               | 12           | 24.3                    | 24.7   | 24.2   | 20.8   | 20.9   | 20.7   | 23.2   | 23.7   | 23.2   | 20.7   | 20.9   | 20.7   |
|                    |            | 25               | 24           | 24.3                    | 24.6   | 24.2   | 20.8   | 20.9   | 20.7   | 23.3   | 23.5   | 23.1   | 20.6   | 21.0   | 20.6   |
|                    |            | 50               | 0            | 24.3                    | 24.7   | 24.2   | 20.8   | 20.9   | 20.7   | 23.2   | 23.6   | 23.1   | 20.7   | 20.9   | 20.8   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 25.1   | 24.6   | 21.4   | 21.1   | 21.1   | 23.3   | 23.9   | 23.5   | 21.0   | 21.1   | 21.0   |
|                    |            | 1                | 24           | 24.6                    | 25.0   | 24.5   | 21.1   | 21.3   | 21.1   | 23.4   | 23.9   | 23.4   | 21.1   | 21.2   | 21.0   |
|                    |            | 1                | 49           | 24.7                    | 24.8   | 24.6   | 21.2   | 21.4   | 21.0   | 23.6   | 23.7   | 23.3   | 21.1   | 21.1   | 20.8   |
|                    |            | 25               | 0            | 23.4                    | 23.8   | 23.3   | 20.0   | 19.9   | 19.8   | 22.1   | 22.7   | 22.3   | 19.8   | 19.9   | 19.8   |
|                    |            | 25               | 12           | 23.3                    | 23.7   | 23.3   | 19.9   | 20.0   | 19.8   | 22.2   | 22.8   | 22.2   | 19.8   | 20.0   | 19.8   |
|                    |            | 25               | 24           | 23.3                    | 23.6   | 23.3   | 19.9   | 20.0   | 19.8   | 22.3   | 22.7   | 22.2   | 19.7   | 20.0   | 19.6   |
|                    |            | 50               | 0            | 23.3                    | 23.7   | 23.3   | 19.8   | 20.0   | 19.8   | 22.2   | 22.7   | 22.2   | 19.8   | 19.9   | 19.8   |
|                    | 64QAM      | 1                | 0            | 23.8                    | 24.2   | 23.6   | 19.9   | 20.1   | 20.2   | 22.9   | 23.2   | 22.7   | 19.9   | 20.0   | 20.0   |
|                    |            | 1                | 24           | 23.5                    | 24.0   | 23.6   | 19.9   | 20.1   | 20.1   | 22.9   | 23.3   | 22.7   | 20.0   | 20.1   | 20.0   |
|                    |            | 1                | 49           | 23.6                    | 23.9   | 23.7   | 20.1   | 19.8   | 19.9   | 22.9   | 23.2   | 22.8   | 20.1   | 20.3   | 19.6   |
|                    |            | 25               | 0            | 22.4                    | 22.9   | 22.5   | 18.9   | 18.9   | 19.0   | 21.7   | 22.1   | 21.7   | 18.9   | 19.0   | 18.9   |
|                    |            | 25               | 12           | 22.4                    | 22.9   | 22.5   | 18.9   | 19.0   | 18.9   | 21.7   | 22.0   | 21.7   | 18.9   | 19.1   | 18.9   |
|                    |            | 25               | 24           | 22.5                    | 22.9   | 22.5   | 18.9   | 18.9   | 18.7   | 21.7   | 22.1   | 21.7   | 18.8   | 19.2   | 18.8   |
|                    |            | 50               | 0            | 22.4                    | 22.9   | 22.5   | 18.9   | 19.0   | 18.9   | 21.6   | 22.0   | 21.7   | 18.9   | 19.1   | 18.9   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 132047                  | 132322 | 132597 | 132047 | 132322 | 132597 | 132047 | 132322 | 132597 | 132047 | 132322 | 132597 |
|                    |            |                  |              | 1717.5                  | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 | 1717.5 | 1745.0 | 1772.5 |
| 15.0               | QPSK       | 1                | 0            | 25.3                    | 25.6   | 25.3   | 21.9   | 21.7   | 21.8   | 24.0   | 24.7   | 24.2   | 21.7   | 21.8   | 22.0   |
|                    |            | 1                | 37           | 25.2                    | 25.6   | 25.2   | 21.8   | 21.9   | 21.7   | 24.2   | 24.6   | 24.1   | 21.7   | 21.9   | 21.8   |
|                    |            | 1                | 74           | 25.3                    | 25.4   | 25.2   | 21.8   | 21.8   | 21.6   | 24.4   | 24.5   | 23.9   | 21.6   | 21.9   | 21.5   |
|                    |            | 36               | 0            | 24.3                    | 24.7   | 24.3   | 20.9   | 20.8   | 20.8   | 23.2   | 23.7   | 23.3   | 20.7   | 20.9   | 20.7   |
|                    |            | 36               | 16           | 24.3                    | 24.6   | 24.2   | 20.8   | 20.9   | 20.6   | 23.3   | 23.7   | 23.2   | 20.6   | 20.9   | 20.8   |
|                    |            | 36               | 35           | 24.4                    | 24.5   | 24.2   | 20.8   | 20.9   | 20.6   | 23.3   | 23.6   | 23.1   | 20.6   | 21.0   | 20.7   |
|                    |            | 75               | 0            | 24.3                    | 24.6   | 24.1   | 20.8   | 20.9   | 20.6   | 23.3   | 23.6   | 23.1   | 20.6   | 20.9   | 20.7   |
|                    | 16QAM      | 1                | 0            | 24.7                    | 25.1   | 24.6   | 21.3   | 21.1   | 21.1   | 23.3   | 24.1   | 23.5   | 21.0   | 21.1   | 21.3   |
|                    |            | 1                | 37           | 24.6                    | 25.0   | 24.5   | 21.1   | 21.2   | 21.0   | 23.5   | 23.9   | 23.5   | 21.1   | 21.1   | 21.2   |
|                    |            | 1                | 74           | 24.7                    | 24.8   | 24.5   | 21.3   | 21.0   | 20.9   | 23.8   | 23.8   | 23.2   | 21.0   | 21.1   | 20.8   |
|                    |            | 36               | 0            | 23.3                    | 23.7   | 23.4   | 19.8   | 19.9   | 19.8   | 22.2   | 22.7   | 22.3   | 19.8   | 19.9   | 19.8   |
|                    |            | 36               | 16           | 23.3                    | 23.7   | 23.3   | 19.9   | 19.9   | 19.7   | 22.3   | 22.8   | 22.2   | 19.7   | 20.0   | 19.9   |
|                    |            | 36               | 35           | 23.4                    | 23.6   | 23.3   | 19.9   | 19.9   | 19.7   | 22.3   | 22.6   | 22.2   | 19.6   | 20.0   | 19.8   |
|                    |            | 75               | 0            | 23.3                    | 23.6   | 23.2   | 19.9   | 19.9   | 19.6   | 22.3   | 22.7   | 22.1   | 19.6   | 19.9   | 19.8   |
|                    | 64QAM      | 1                | 0            | 23.7                    | 24.2   | 23.6   | 20.0   | 20.1   | 20.2   | 22.9   | 23.4   | 22.9   | 19.9   | 20.0   | 20.4   |
|                    |            | 1                | 37           | 23.6                    | 24.0   | 23.6   | 20.1   | 20.2   | 20.1   | 22.9   | 23.4   | 22.8   | 20.0   | 20.2   | 20.2   |
|                    |            | 1                | 74           | 23.8                    | 24.0   | 23.6   | 20.2   | 20.0   | 19.9   | 22.9   | 23.2   | 22.8   | 20.0   | 20.1   | 19.6   |
|                    |            | 36               | 0            | 22.5                    | 22.9   | 22.5   | 18.9   | 18.9   | 18.9   | 21.7   | 22.1   | 21.7   | 18.9   | 19.0   | 18.9   |
|                    |            | 36               | 16           | 22.5                    | 22.8   | 22.5   | 19.0   | 19.0   | 19.0   | 21.7   | 22.1   | 21.7   | 18.8   | 19.1   | 18.9   |
|                    |            | 36               | 35           | 22.5                    | 22.8   | 22.5   | 18.9   | 18.9   | 18.9   | 21.8   | 22.0   | 21.7   | 18.8   | 19.1   | 18.9   |
|                    |            | 75               | 0            | 22.5                    | 22.8   | 22.4   | 18.9   | 19.0   | 18.9   | 21.7   | 22.0   | 21.7   | 18.8   | 19.0   | 18.9   |

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

| Bandwidth<br>(MHz) | Modulation | RB<br>Allocation | RB<br>Offset | Conducted Average (dBm) |        |        |        |        |        |        |        |        |        |        |        |
|--------------------|------------|------------------|--------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |            |                  |              | ANT 1                   |        |        | ANT 2  |        |        | ANT 3  |        |        | ANT 4  |        |        |
|                    |            |                  |              | 132072                  | 132322 | 132572 | 132072 | 132322 | 132572 | 132072 | 132322 | 132572 | 132072 | 132322 | 132572 |
|                    |            |                  |              | 1720.0                  | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 | 1720.0 | 1745.0 | 1770.0 |
| 20.0               | QPSK       | 1                | 0            | 25.4                    | 25.7   | 25.3   | 21.9   | 21.7   | 22.0   | 24.0   | 24.7   | 24.3   | 21.7   | 21.7   | 22.2   |
|                    |            | 1                | 49           | 25.3                    | 25.6   | 25.2   | 21.8   | 21.8   | 21.8   | 24.3   | 24.6   | 24.2   | 21.6   | 21.9   | 21.7   |
|                    |            | 1                | 99           | 25.7                    | 25.4   | 25.1   | 21.8   | 21.8   | 21.7   | 24.6   | 24.3   | 23.9   | 21.5   | 22.1   | 21.5   |
|                    |            | 50               | 0            | 24.3                    | 24.7   | 24.3   | 20.8   | 20.7   | 20.9   | 23.2   | 23.7   | 23.3   | 20.7   | 20.9   | 20.9   |
|                    |            | 50               | 24           | 24.4                    | 24.6   | 24.3   | 20.8   | 20.9   | 20.7   | 23.3   | 23.6   | 23.2   | 20.5   | 20.9   | 20.7   |
|                    |            | 50               | 49           | 24.5                    | 24.5   | 24.2   | 20.8   | 20.9   | 20.6   | 23.4   | 23.5   | 23.1   | 20.5   | 21.0   | 20.8   |
|                    |            | 100              | 0            | 24.4                    | 24.6   | 24.3   | 20.8   | 20.9   | 20.7   | 23.4   | 23.6   | 23.2   | 20.5   | 20.9   | 20.8   |
|                    | 16QAM      | 1                | 0            | 24.8                    | 25.2   | 24.8   | 21.4   | 21.1   | 21.4   | 23.3   | 24.1   | 23.6   | 21.0   | 21.1   | 21.6   |
|                    |            | 1                | 49           | 24.7                    | 25.1   | 24.6   | 21.3   | 21.2   | 21.1   | 23.6   | 23.9   | 23.6   | 21.0   | 21.3   | 20.9   |
|                    |            | 1                | 99           | 25.2                    | 24.8   | 24.6   | 21.3   | 21.1   | 21.0   | 24.2   | 23.6   | 23.3   | 20.8   | 21.4   | 20.9   |
|                    |            | 50               | 0            | 23.4                    | 23.7   | 23.4   | 19.8   | 19.8   | 19.9   | 22.2   | 22.8   | 22.3   | 19.7   | 19.9   | 20.0   |
|                    |            | 50               | 24           | 23.4                    | 23.6   | 23.3   | 19.9   | 19.9   | 19.8   | 22.3   | 22.7   | 22.3   | 19.6   | 19.9   | 19.8   |
|                    |            | 50               | 49           | 23.6                    | 23.5   | 23.2   | 19.9   | 19.9   | 19.6   | 22.5   | 22.6   | 22.1   | 19.6   | 20.0   | 19.8   |
|                    |            | 100              | 0            | 23.4                    | 23.7   | 23.3   | 19.9   | 19.8   | 19.7   | 22.4   | 22.7   | 22.3   | 19.6   | 19.9   | 19.8   |
|                    | 64QAM      | 1                | 0            | 23.9                    | 23.9   | 24.0   | 20.1   | 20.0   | 20.4   | 22.8   | 23.5   | 23.2   | 20.0   | 19.8   | 20.6   |
|                    |            | 1                | 49           | 23.7                    | 23.9   | 23.6   | 20.3   | 20.0   | 20.3   | 22.7   | 23.4   | 22.8   | 20.2   | 20.0   | 20.1   |
|                    |            | 1                | 99           | 24.1                    | 23.8   | 23.8   | 20.4   | 20.0   | 20.0   | 23.1   | 23.3   | 22.9   | 20.0   | 20.1   | 19.7   |
|                    |            | 50               | 0            | 22.5                    | 22.9   | 22.5   | 18.9   | 18.9   | 18.9   | 21.7   | 22.1   | 21.7   | 18.8   | 19.0   | 19.0   |
|                    |            | 50               | 24           | 22.5                    | 22.8   | 22.4   | 18.9   | 19.0   | 18.9   | 21.8   | 22.0   | 21.7   | 18.7   | 19.1   | 18.9   |
|                    |            | 50               | 49           | 22.7                    | 22.8   | 22.4   | 18.9   | 18.9   | 18.8   | 21.9   | 22.0   | 21.7   | 18.8   | 19.1   | 18.9   |
|                    |            | 100              | 0            | 22.5                    | 22.8   | 22.4   | 18.9   | 19.0   | 18.8   | 21.8   | 22.0   | 21.7   | 18.7   | 19.0   | 18.8   |

## 7.14. LTE BAND 71

|     |       |       |           |
|-----|-------|-------|-----------|
| ID: | 39004 | Date: | 4/14/2019 |
|-----|-------|-------|-----------|

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        |
|                 |            |               |           | 133147                  | 133297 | 133447 | 133147 | 133297 | 133447 |
| 5.0             | QPSK       | 1             | 0         | 25.7                    | 25.4   | 25.3   | 24.4   | 24.2   | 24.0   |
|                 |            | 1             | 12        | 25.7                    | 25.3   | 25.4   | 24.4   | 24.1   | 24.0   |
|                 |            | 1             | 24        | 25.6                    | 25.4   | 25.5   | 24.4   | 24.1   | 24.2   |
|                 |            | 12            | 0         | 24.5                    | 24.2   | 24.3   | 23.3   | 23.0   | 22.9   |
|                 |            | 12            | 6         | 24.5                    | 24.2   | 24.3   | 23.3   | 23.0   | 22.9   |
|                 |            | 12            | 11        | 24.5                    | 24.3   | 24.4   | 23.3   | 23.0   | 23.0   |
|                 |            | 25            | 0         | 24.6                    | 24.2   | 24.4   | 23.3   | 23.0   | 22.9   |
|                 | 16QAM      | 1             | 0         | 25.1                    | 24.6   | 24.7   | 23.9   | 23.6   | 23.4   |
|                 |            | 1             | 12        | 25.0                    | 24.6   | 24.8   | 23.7   | 23.4   | 23.4   |
|                 |            | 1             | 24        | 25.0                    | 24.7   | 25.0   | 23.8   | 23.4   | 23.6   |
|                 |            | 12            | 0         | 23.6                    | 23.2   | 23.3   | 22.2   | 22.0   | 21.9   |
|                 |            | 12            | 6         | 23.5                    | 23.2   | 23.3   | 22.2   | 22.0   | 21.9   |
|                 |            | 12            | 11        | 23.5                    | 23.3   | 23.4   | 22.3   | 22.0   | 21.9   |
|                 |            | 25            | 0         | 23.6                    | 23.2   | 23.3   | 22.3   | 22.0   | 21.8   |
|                 | 64QAM      | 1             | 0         | 24.2                    | 24.0   | 23.8   | 23.0   | 22.9   | 22.5   |
|                 |            | 1             | 12        | 24.1                    | 24.0   | 24.0   | 23.0   | 22.9   | 22.6   |
|                 |            | 1             | 24        | 24.1                    | 24.0   | 23.9   | 23.1   | 22.9   | 22.6   |
|                 |            | 12            | 0         | 22.7                    | 22.5   | 22.5   | 21.5   | 21.4   | 21.3   |
|                 |            | 12            | 6         | 22.7                    | 22.6   | 22.5   | 21.7   | 21.4   | 21.2   |
|                 |            | 12            | 11        | 22.7                    | 22.5   | 22.6   | 21.6   | 21.5   | 21.2   |
|                 |            | 25            | 0         | 22.8                    | 22.6   | 22.5   | 21.7   | 21.4   | 21.2   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        |
|                 |            |               |           | 133172                  | 133322 | 133422 | 133172 | 133322 | 133422 |
| 10.0            | QPSK       | 1             | 0         | 25.7                    | 25.4   | 25.2   | 24.5   | 24.3   | 23.9   |
|                 |            | 1             | 24        | 25.5                    | 25.4   | 25.3   | 24.4   | 24.2   | 24.0   |
|                 |            | 1             | 49        | 25.5                    | 25.4   | 25.5   | 24.3   | 24.0   | 24.1   |
|                 |            | 25            | 0         | 24.6                    | 24.3   | 24.3   | 23.4   | 23.2   | 22.9   |
|                 |            | 25            | 12        | 24.5                    | 24.3   | 24.3   | 23.4   | 23.1   | 22.9   |
|                 |            | 25            | 24        | 24.5                    | 24.4   | 24.4   | 23.3   | 23.1   | 23.0   |
|                 |            | 50            | 0         | 24.5                    | 24.3   | 24.3   | 23.4   | 23.1   | 22.9   |
|                 | 16QAM      | 1             | 0         | 25.1                    | 24.7   | 24.5   | 23.9   | 23.5   | 23.2   |
|                 |            | 1             | 24        | 24.8                    | 24.6   | 24.6   | 23.8   | 23.4   | 23.2   |
|                 |            | 1             | 49        | 24.9                    | 24.7   | 24.8   | 23.7   | 23.3   | 23.5   |
|                 |            | 25            | 0         | 23.6                    | 23.3   | 23.2   | 22.4   | 22.1   | 22.0   |
|                 |            | 25            | 12        | 23.5                    | 23.3   | 23.3   | 22.4   | 22.1   | 22.0   |
|                 |            | 25            | 24        | 23.5                    | 23.4   | 23.4   | 22.3   | 22.1   | 22.0   |
|                 |            | 50            | 0         | 23.5                    | 23.3   | 23.3   | 22.3   | 22.1   | 22.0   |
|                 | 64QAM      | 1             | 0         | 24.2                    | 23.9   | 23.7   | 22.8   | 22.8   | 22.6   |
|                 |            | 1             | 24        | 24.1                    | 23.9   | 23.8   | 22.9   | 22.8   | 22.4   |
|                 |            | 1             | 49        | 24.2                    | 23.9   | 24.0   | 23.0   | 22.8   | 22.6   |
|                 |            | 25            | 0         | 23.0                    | 22.7   | 22.6   | 21.7   | 21.7   | 21.3   |
|                 |            | 25            | 12        | 22.9                    | 22.7   | 22.6   | 21.8   | 21.6   | 21.3   |
|                 |            | 25            | 24        | 22.9                    | 22.7   | 22.7   | 21.8   | 21.7   | 21.4   |
|                 |            | 50            | 0         | 22.9                    | 22.7   | 22.6   | 21.8   | 21.6   | 21.3   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        |
|                 |            |               |           | 133197                  | 133297 | 133397 | 133197 | 133297 | 133397 |
|                 |            |               |           | 670.5                   | 680.5  | 690.5  | 670.5  | 680.5  | 690.5  |
| 15.0            | QPSK       | 1             | 0         | 25.6                    | 25.5   | 25.4   | 24.4   | 24.2   | 23.9   |
|                 |            | 1             | 37        | 25.5                    | 25.4   | 25.3   | 24.3   | 24.1   | 23.9   |
|                 |            | 1             | 74        | 25.5                    | 25.3   | 25.5   | 24.2   | 23.9   | 24.1   |
|                 |            | 36            | 0         | 24.5                    | 24.4   | 24.3   | 23.5   | 23.2   | 23.0   |
|                 |            | 36            | 16        | 24.5                    | 24.3   | 24.3   | 23.3   | 23.1   | 22.9   |
|                 |            | 36            | 35        | 24.4                    | 24.4   | 24.3   | 23.2   | 22.9   | 22.9   |
|                 |            | 75            | 0         | 24.5                    | 24.4   | 24.3   | 23.3   | 23.1   | 23.0   |
|                 | 16QAM      | 1             | 0         | 25.0                    | 24.9   | 24.7   | 23.7   | 23.5   | 23.3   |
|                 |            | 1             | 37        | 24.9                    | 24.7   | 24.5   | 23.7   | 23.5   | 23.3   |
|                 |            | 1             | 74        | 24.9                    | 24.6   | 24.8   | 23.4   | 23.3   | 23.4   |
|                 |            | 36            | 0         | 23.5                    | 23.4   | 23.3   | 22.4   | 22.2   | 22.0   |
|                 |            | 36            | 16        | 23.5                    | 23.3   | 23.3   | 22.3   | 22.1   | 22.0   |
|                 |            | 36            | 35        | 23.5                    | 23.4   | 23.3   | 22.2   | 22.0   | 22.0   |
|                 |            | 75            | 0         | 23.5                    | 23.3   | 23.3   | 22.3   | 22.1   | 22.0   |
|                 | 64QAM      | 1             | 0         | 24.1                    | 24.1   | 23.9   | 23.0   | 22.8   | 22.7   |
|                 |            | 1             | 37        | 24.0                    | 24.1   | 23.8   | 23.1   | 22.9   | 22.5   |
|                 |            | 1             | 74        | 23.8                    | 23.8   | 24.0   | 22.7   | 22.5   | 22.6   |
|                 |            | 36            | 0         | 22.9                    | 22.8   | 22.5   | 21.7   | 21.5   | 21.3   |
|                 |            | 36            | 16        | 22.9                    | 22.7   | 22.6   | 21.7   | 21.6   | 21.3   |
|                 |            | 36            | 35        | 22.8                    | 22.7   | 22.6   | 21.8   | 21.6   | 21.4   |
|                 |            | 75            | 0         | 22.9                    | 22.7   | 22.6   | 21.8   | 21.5   | 21.3   |

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

| Bandwidth (MHz) | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) |        |        |        |        |        |
|-----------------|------------|---------------|-----------|-------------------------|--------|--------|--------|--------|--------|
|                 |            |               |           | ANT 1                   |        |        | ANT 2  |        |        |
|                 |            |               |           | 133222                  | 133322 | 133372 | 133222 | 133322 | 133372 |
|                 |            |               |           | 673.0                   | 683.0  | 688.0  | 673.0  | 683.0  | 688.0  |
| 20.0            | QPSK       | 1             | 0         | 25.6                    | 25.5   | 25.3   | 24.4   | 24.3   | 24.0   |
|                 |            | 1             | 49        | 25.5                    | 25.2   | 25.3   | 24.2   | 24.0   | 23.9   |
|                 |            | 1             | 99        | 25.3                    | 25.5   | 25.6   | 24.1   | 24.2   | 24.1   |
|                 |            | 50            | 0         | 24.5                    | 24.3   | 24.3   | 23.4   | 23.1   | 22.9   |
|                 |            | 50            | 24        | 24.5                    | 24.3   | 24.3   | 23.2   | 23.0   | 22.9   |
|                 |            | 50            | 49        | 24.5                    | 24.5   | 24.4   | 23.2   | 23.0   | 22.9   |
|                 |            | 100           | 0         | 24.5                    | 24.3   | 24.3   | 23.2   | 23.1   | 22.9   |
|                 | 16QAM      | 1             | 0         | 25.0                    | 24.9   | 24.7   | 23.8   | 23.7   | 23.4   |
|                 |            | 1             | 49        | 24.9                    | 24.7   | 24.6   | 23.7   | 23.3   | 23.2   |
|                 |            | 1             | 99        | 24.7                    | 24.9   | 24.9   | 23.5   | 23.5   | 23.4   |
|                 |            | 50            | 0         | 23.5                    | 23.4   | 23.4   | 22.4   | 22.1   | 21.9   |
|                 |            | 50            | 24        | 23.5                    | 23.3   | 23.3   | 22.2   | 22.0   | 21.9   |
|                 |            | 50            | 49        | 23.5                    | 23.5   | 23.3   | 22.3   | 22.0   | 22.0   |
|                 |            | 100           | 0         | 23.5                    | 23.3   | 23.3   | 22.3   | 22.1   | 22.0   |
|                 | 64QAM      | 1             | 0         | 24.3                    | 24.0   | 24.0   | 22.8   | 23.1   | 23.0   |
|                 |            | 1             | 49        | 24.3                    | 23.6   | 23.8   | 22.9   | 22.8   | 22.7   |
|                 |            | 1             | 99        | 23.9                    | 23.8   | 24.3   | 22.5   | 22.8   | 22.8   |
|                 |            | 50            | 0         | 22.9                    | 22.7   | 22.6   | 21.8   | 21.5   | 21.5   |
|                 |            | 50            | 24        | 22.8                    | 22.6   | 22.5   | 21.7   | 21.4   | 21.3   |
|                 |            | 50            | 49        | 22.6                    | 22.6   | 22.6   | 21.5   | 21.4   | 21.3   |
|                 |            | 100           | 0         | 22.8                    | 22.6   | 22.6   | 21.8   | 21.4   | 21.3   |

## 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.

#### MODES TESTED

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

#### RESULTS

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

## LTE BAND 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 | 1.0908       | 1.239          |
|            | 1.4MHz,16QAM |                         |        | 1.0839       | 1.244          |
|            | 1.4MHz 64QAM |                         |        | 1.0933       | 1.321          |
|            | 3MHz, QPSK   | 15/0                    |        | 2.6934       | 2.976          |
|            | 3MHz, 16QAM  |                         |        | 2.6965       | 2.986          |
|            | 3MHz 64QAM   |                         |        | 2.6976       | 2.964          |
|            | 5MHz, QPSK   | 25/0                    |        | 4.4952       | 4.933          |
|            | 5MHz, 16QAM  |                         |        | 4.4922       | 4.916          |
|            | 5MHz 64QAM   |                         |        | 4.5076       | 4.907          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.9904       | 10.287         |
|            | 10MHz, 16QAM |                         |        | 8.9931       | 10.433         |
|            | 10MHz 64QAM  |                         |        | 9.0069       | 10.303         |
|            | 15MHz, QPSK  | 75/0                    |        | 13.4278      | 14.586         |
|            | 15MHz, 16QAM |                         |        | 13.4340      | 15.471         |
|            | 15MHz 64QAM  |                         |        | 13.4653      | 15.384         |
|            | 20MHz, QPSK  | 100/0                   |        | 17.9037      | 19.662         |
|            | 20MHz, 16QAM |                         |        | 17.9354      | 19.859         |
|            | 20MHz 64QAM  |                         |        | 17.9366      | 19.602         |

## 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  | 1.0886       | 1.242          |
|            | 1.4MHz,16QAM |                         |        | 1.0871       | 1.249          |
|            | 1.4MHz 64QAM |                         |        | 1.0963       | 1.248          |
|            | 3MHz, QPSK   | 15/0                    |        | 2.6960       | 2.993          |
|            | 3MHz, 16QAM  |                         |        | 2.7019       | 2.988          |
|            | 3MHz 64QAM   |                         |        | 2.6947       | 2.979          |
|            | 5MHz, QPSK   | 25/0                    |        | 4.5070       | 4.899          |
|            | 5MHz, 16QAM  |                         |        | 4.4926       | 4.921          |
|            | 5MHz 64QAM   |                         |        | 4.5049       | 4.920          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.9802       | 10.465         |
|            | 10MHz, 16QAM |                         |        | 8.9754       | 10.415         |
|            | 10MHz 64QAM  |                         |        | 8.9948       | 10.331         |

### 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 | 4.5021       | 4.898          |
|            | 5MHz, 16QAM  |                         |        | 4.4934       | 4.937          |
|            | 5MHz 64QAM   |                         |        | 4.5140       | 4.891          |
|            | 10MHz, QPSK  | 50/0                    |        | 8.9903       | 10.495         |
|            | 10MHz, 16QAM |                         |        | 8.9875       | 10.292         |
|            | 10MHz 64QAM  |                         |        | 8.9913       | 10.207         |
|            | 15MHz, QPSK  | 75/0                    |        | 13.4421      | 15.144         |
|            | 15MHz, 16QAM |                         |        | 13.4380      | 15.443         |
|            | 15MHz 64QAM  |                         |        | 13.4451      | 15.568         |
|            | 20MHz, QPSK  | 100/0                   |        | 17.9110      | 19.817         |
|            | 20MHz, 16QAM |                         |        | 17.8992      | 19.841         |
|            | 20MHz 64QAM  |                         |        | 17.9394      | 19.706         |

### LTE BAND 12

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 12 | 1.4 MHz, QPSK | 6/0                     | 707.5  | 1.0953       | 1.248          |
|             | 1.4 MHz,16QAM |                         |        | 1.0879       | 1.243          |
|             | 1.4 MHz 64QAM |                         |        | 1.0926       | 1.240          |
|             | 3 MHz, QPSK   | 15/0                    |        | 2.6947       | 2.984          |
|             | 3 MHz, 16QAM  |                         |        | 2.6934       | 2.983          |
|             | 3 MHz 64QAM   |                         |        | 2.6969       | 2.994          |
|             | 5 MHz, QPSK   | 25/0                    |        | 4.5019       | 4.928          |
|             | 5 MHz, 16QAM  |                         |        | 4.4892       | 4.930          |
|             | 5 MHz 64QAM   |                         |        | 4.4942       | 4.961          |
|             | 10 MHz, QPSK  | 50/0                    |        | 8.9748       | 10.289         |
|             | 10 MHz, 16QAM |                         |        | 8.9703       | 10.267         |
|             | 10 MHz 64QAM  |                         |        | 8.9686       | 10.276         |

### LTE BAND 13

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 13 | 5 MHz, QPSK   | 25/0                    | 782.0  | 4.5198       | 4.907          |
|             | 5 MHz, 16QAM  |                         |        | 4.4937       | 4.957          |
|             | 5 MHz 64QAM   |                         |        | 4.4931       | 4.942          |
|             | 10 MHz, QPSK  | 50/0                    |        | 8.9591       | 10.348         |
|             | 10 MHz, 16QAM |                         |        | 8.9711       | 10.342         |
|             | 10 MHz 64QAM  |                         |        | 8.9703       | 10.343         |

#### LTE BAND 14

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 14 | 5 MHz, QPSK   | 25/0                    | 793.0  | 4.4981       | 4.891          |
|             | 5 MHz, 16QAM  |                         |        | 4.5073       | 4.927          |
|             | 5M Hz 64QAM   |                         |        | 4.4957       | 4.882          |
|             | 10 MHz, QPSK  | 50/0                    |        | 8.9808       | 10.348         |
|             | 10 MHz, 16QAM |                         |        | 8.9572       | 10.364         |
|             | 10 MHz 64QAM  |                         |        | 8.9985       | 10.382         |

#### LTE BAND 17

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 17 | 5 MHz, QPSK   | 25/0                    | 710.0  | 4.4887       | 4.907          |
|             | 5 MHz, 16QAM  |                         |        | 4.5071       | 4.933          |
|             | 5 MHz 64QAM   |                         |        | 4.5090       | 4.894          |
|             | 10 MHz, QPSK  | 50/0                    |        | 8.9775       | 10.283         |
|             | 10 MHz, 16QAM |                         |        | 8.9607       | 10.210         |
|             | 10 MHz 64QAM  |                         |        | 8.9892       | 10.403         |

#### 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 | 1.0882       | 1.242          |
|             | 1.4MHz,16QAM |                         |        | 1.0864       | 1.245          |
|             | 1.4MHz 64QAM |                         |        | 1.0892       | 1.243          |
|             | 3MHz, QPSK   | 15/0                    |        | 2.6913       | 2.992          |
|             | 3MHz, 16QAM  |                         |        | 2.6906       | 2.991          |
|             | 3MHz 64QAM   |                         |        | 2.6904       | 2.975          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.4954       | 4.928          |
|             | 5MHz, 16QAM  |                         |        | 4.4990       | 4.910          |
|             | 5MHz 64QAM   |                         |        | 4.4885       | 4.904          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9965       | 10.382         |
|             | 10MHz, 16QAM |                         |        | 9.0077       | 10.290         |
|             | 10MHz 64QAM  |                         |        | 9.0091       | 10.419         |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4567      | 15.305         |
|             | 15MHz, 16QAM |                         |        | 13.4721      | 15.398         |
|             | 15MHz 64QAM  |                         |        | 13.4731      | 15.341         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.9122      | 19.720         |
|             | 20MHz, 16QAM |                         |        | 17.9135      | 19.597         |
|             | 20MHz 64QAM  |                         |        | 17.9359      | 19.739         |

# **LTE BAND 26**

| Band        | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|---------------|-------------------------|--------|--------------|----------------|
| LTE BAND 26 | 1.4 MHz, QPSK | 1/0                     | 819.0  | 0.2453       | 0.369          |
|             | 1.4 MHz,16QAM |                         |        | 0.2543       | 0.377          |
|             | 1.4 MHz, QPSK | 6/0                     |        | 1.0783       | 1.230          |
|             | 1.4 MHz,16QAM |                         |        | 1.0885       | 1.238          |
|             | 1.4 MHz 64QAM |                         |        | 1.0866       | 1.246          |
|             | 3 MHz, QPSK   | 1/0                     |        | 0.2613       | 0.409          |
|             | 3 MHz, 16QAM  |                         |        | 0.2791       | 0.416          |
|             | 3 MHz, QPSK   | 15/0                    |        | 2.6966       | 2.992          |
|             | 3 MHz, 16QAM  |                         |        | 2.6964       | 2.962          |
|             | 3 MHz 64QAM   |                         |        | 2.6866       | 2.977          |
|             | 5 MHz, QPSK   | 1/0                     |        | 0.2373       | 0.416          |
|             | 5 MHz, 16QAM  |                         |        | 0.2255       | 0.389          |
|             | 5 MHz, QPSK   | 25/0                    |        | 4.5217       | 4.890          |
|             | 5 MHz, 16QAM  |                         |        | 4.5084       | 4.908          |
|             | 5 MHz 64QAM   |                         |        | 4.4993       | 4.939          |
|             | 10 MHz, QPSK  | 1/0                     |        | 0.2621       | 0.409          |
|             | 10 MHz, 16QAM |                         |        | 0.2713       | 0.458          |
|             | 10 MHz, QPSK  | 50/0                    |        | 9.0013       | 10.334         |
|             | 10 MHz, 16QAM |                         |        | 8.9968       | 10.254         |
|             | 10 MHz 64QAM  |                         |        | 9.0087       | 10.362         |

# **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 | 4.4776       | 4.709          |
|             | 5MHz, 16QAM  |                         |        | 4.4989       | 4.914          |
|             | 5MHz 64QAM   |                         |        | 4.4981       | 4.922          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9777       | 10.227         |
|             | 10MHz, 16QAM |                         |        | 8.9844       | 10.440         |
|             | 10MHz 64QAM  |                         |        | 8.9913       | 10.357         |

### 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 | 4.4518       | 4.710          |
|             | 5MHz, 16QAM  |                         |        | 4.4946       | 4.816          |
|             | 5MHz 64QAM   |                         |        | 4.5043       | 4.890          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9830       | 10.284         |
|             | 10MHz, 16QAM |                         |        | 8.9186       | 10.076         |
|             | 10MHz 64QAM  |                         |        | 8.9330       | 10.140         |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4014      | 17.010         |
|             | 15MHz, 16QAM |                         |        | 13.5004      | 14.775         |
|             | 15MHz 64QAM  |                         |        | 13.4117      | 15.416         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.9293      | 21.195         |
|             | 20MHz, 16QAM |                         |        | 17.8258      | 19.409         |
|             | 20MHz 64QAM  |                         |        | 17.8759      | 19.143         |

### 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 | 4.5028       | 5.025          |
|             | 5MHz, 16QAM  |                         |        | 4.4831       | 4.896          |
|             | 5MHz 64QAM   |                         |        | 4.4926       | 4.872          |
|             | 10MHz, QPSK  | 50/0                    |        | 8.9062       | 10.253         |
|             | 10MHz, 16QAM |                         |        | 8.9653       | 10.258         |
|             | 10MHz 64QAM  |                         |        | 8.9986       | 10.287         |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4472      | 15.109         |
|             | 15MHz, 16QAM |                         |        | 13.3779      | 14.856         |
|             | 15MHz 64QAM  |                         |        | 13.4663      | 14.840         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.8309      | 20.025         |
|             | 20MHz, 16QAM |                         |        | 17.8737      | 19.437         |
|             | 20MHz 64QAM  |                         |        | 17.8507      | 19.351         |

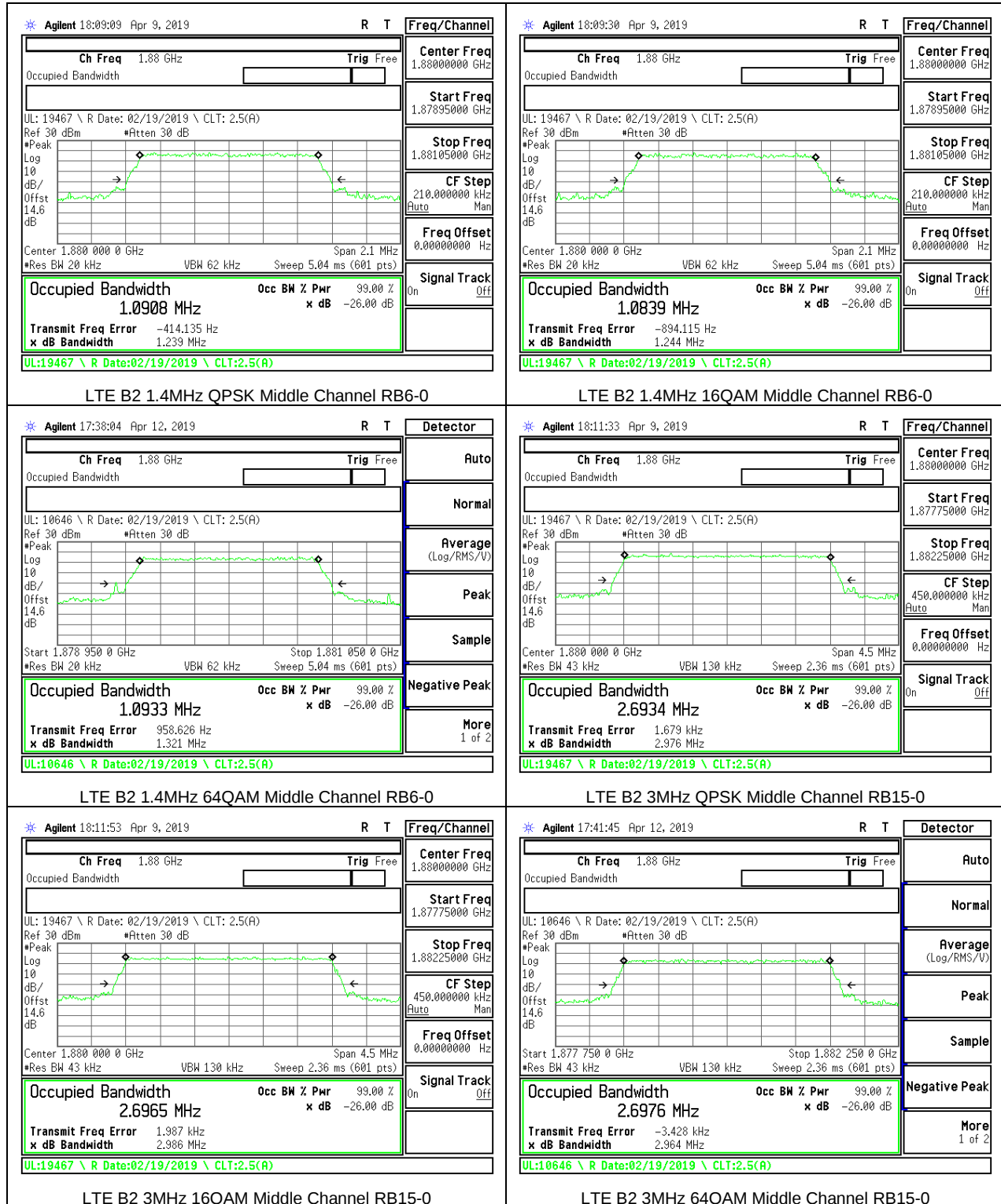
### LTE BAND 66

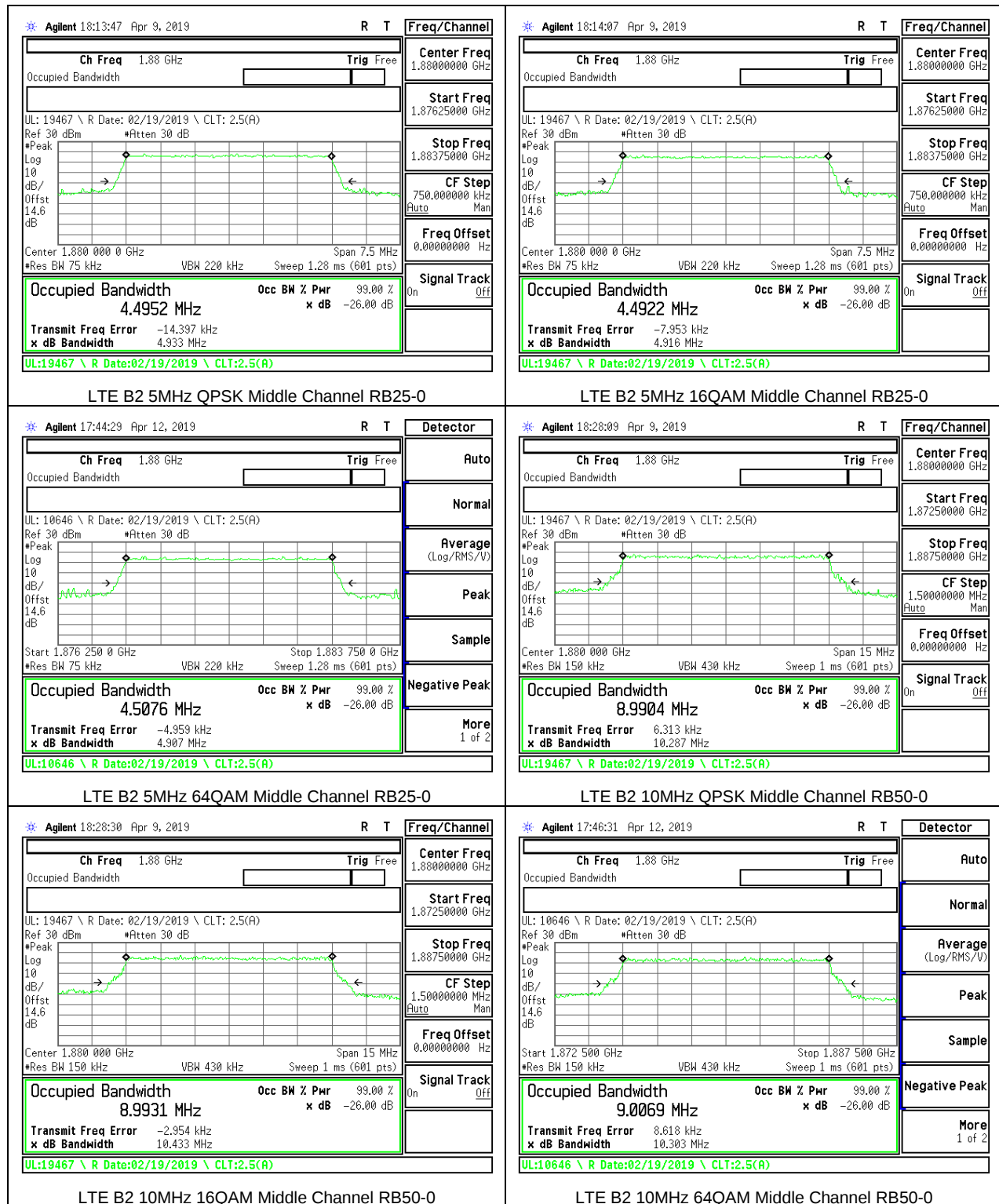
| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 66 | 1.4MHz, QPSK | 6/0                     | 1745.0 | 1.0882       | 1.238          |
|             | 1.4MHz,16QAM |                         |        | 1.0873       | 1.243          |
|             | 1.4MHz 64QAM |                         |        | 1.0874       | 1.243          |
|             | 3MHz, QPSK   | 15/0                    |        | 2.6926       | 2.982          |
|             | 3MHz, 16QAM  |                         |        | 2.7009       | 2.973          |
|             | 3MHz 64QAM   |                         |        | 2.6964       | 2.977          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.4923       | 4.912          |
|             | 5MHz, 16QAM  |                         |        | 4.4971       | 4.929          |
|             | 5MHz 64QAM   |                         |        | 4.4870       | 4.947          |
|             | 10MHz, QPSK  | 50/0                    |        | 9.0151       | 10.440         |
|             | 10MHz, 16QAM |                         |        | 9.0029       | 10.440         |
|             | 10MHz 64QAM  |                         |        | 8.9763       | 10.113         |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4600      | 15.490         |
|             | 15MHz, 16QAM |                         |        | 13.4830      | 15.340         |
|             | 15MHz 64QAM  |                         |        | 13.4498      | 15.448         |
|             | 20MHz, QPSK  | 100/0                   |        | 17.9280      | 19.790         |
|             | 20MHz, 16QAM |                         |        | 17.9430      | 20.040         |
|             | 20MHz 64QAM  |                         |        | 17.9447      | 19.637         |

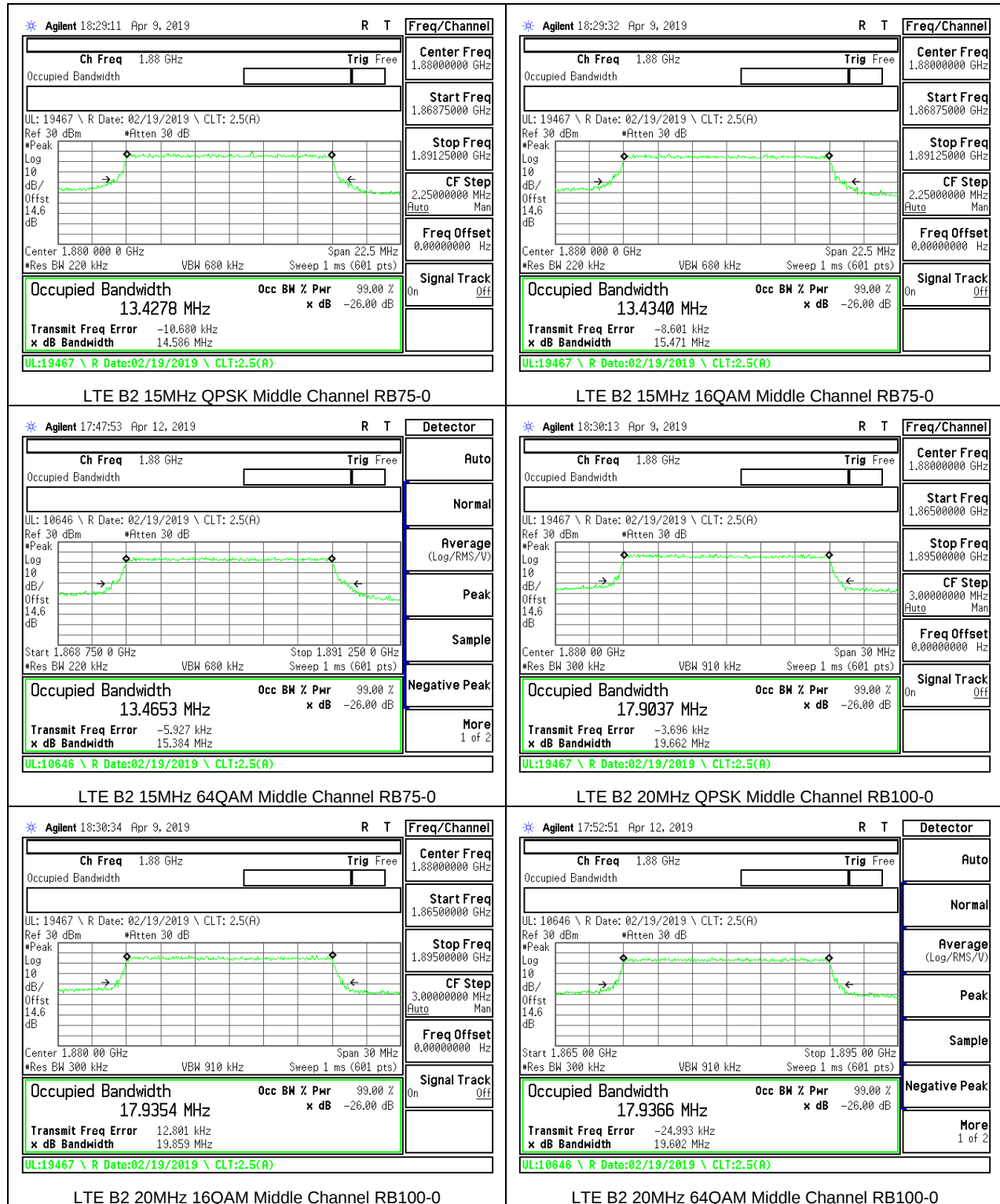
**LTE BAND 71**

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 71 | 5MHz, QPSK   | 1/0                     | 680.5  | 0.2671       | 0.431          |
|             | 5MHz, 16QAM  |                         |        | 0.2502       | 0.433          |
|             | 5MHz, QPSK   | 25/0                    |        | 4.4927       | 4.941          |
|             | 5MHz, 16QAM  |                         |        | 4.4936       | 4.977          |
|             | 5MHz 64QAM   |                         |        | 4.5009       | 4.954          |
|             | 10MHz, QPSK  | 1/0                     |        | 0.5741       | 0.672          |
|             | 10MHz, 16QAM |                         |        | 0.5138       | 0.594          |
|             | 10MHz, QPSK  | 50/0                    |        | 9.0051       | 10.191         |
|             | 10MHz, 16QAM |                         |        | 8.9596       | 10.203         |
|             | 10MHz 64QAM  |                         |        | 8.9860       | 10.309         |
|             | 15MHz, QPSK  | 1/0                     |        | 0.7029       | 0.980          |
|             | 15MHz, 16QAM |                         |        | 0.7498       | 1.053          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.4334      | 15.005         |
|             | 15MHz, 16QAM |                         |        | 13.4754      | 15.284         |
|             | 15MHz 64QAM  |                         |        | 13.4383      | 15.649         |
|             | 20MHz, QPSK  | 1/0                     |        | 0.7926       | 1.094          |
|             | 20MHz, 16QAM |                         |        | 0.7070       | 0.939          |
|             | 20MHz, QPSK  | 100/0                   |        | 17.9178      | 19.504         |
|             | 20MHz, 16QAM |                         |        | 17.8850      | 19.624         |
|             | 20MHz 64QAM  |                         |        | 17.8918      | 18.792         |

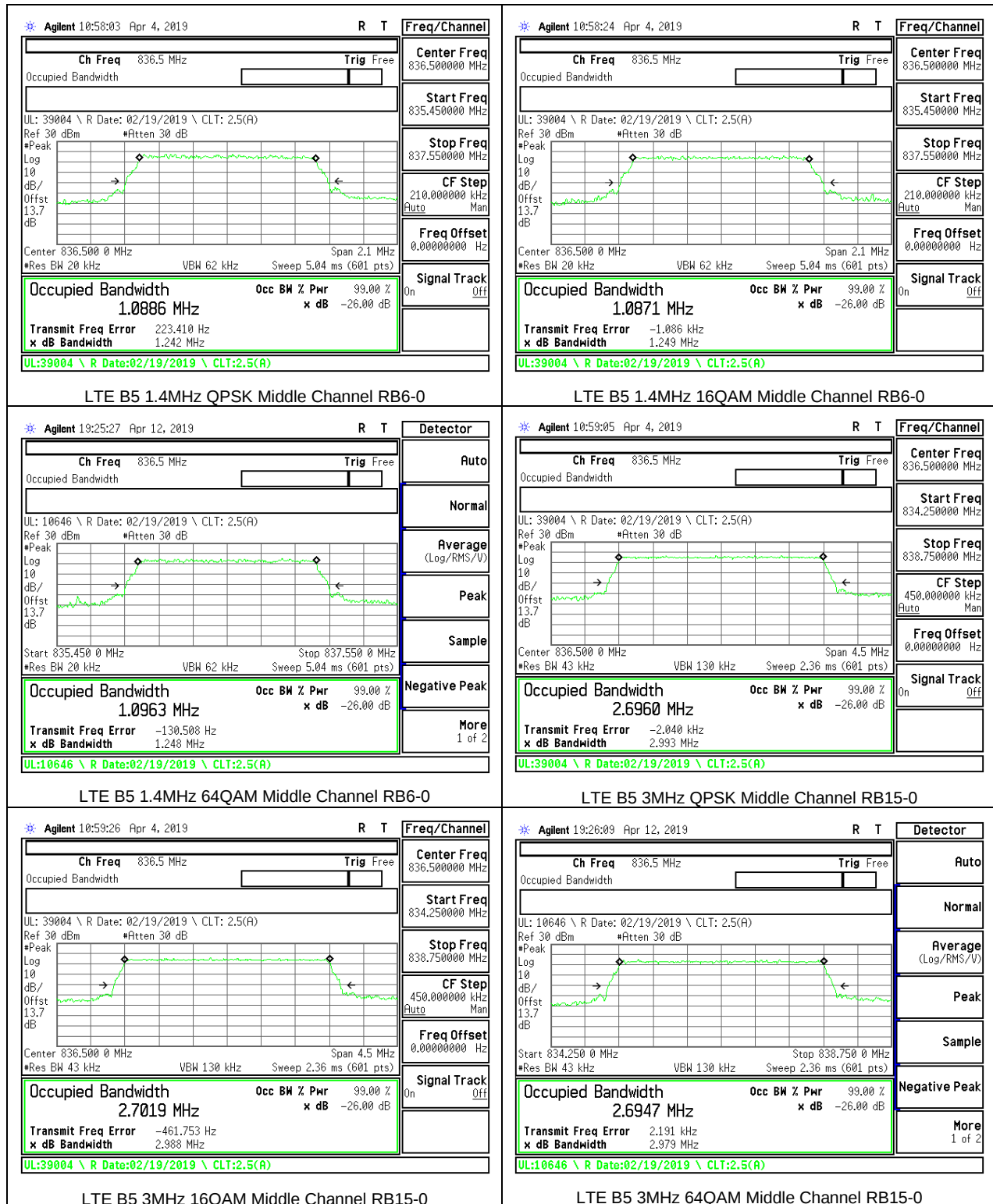
## 8.1.1. LTE BAND 2

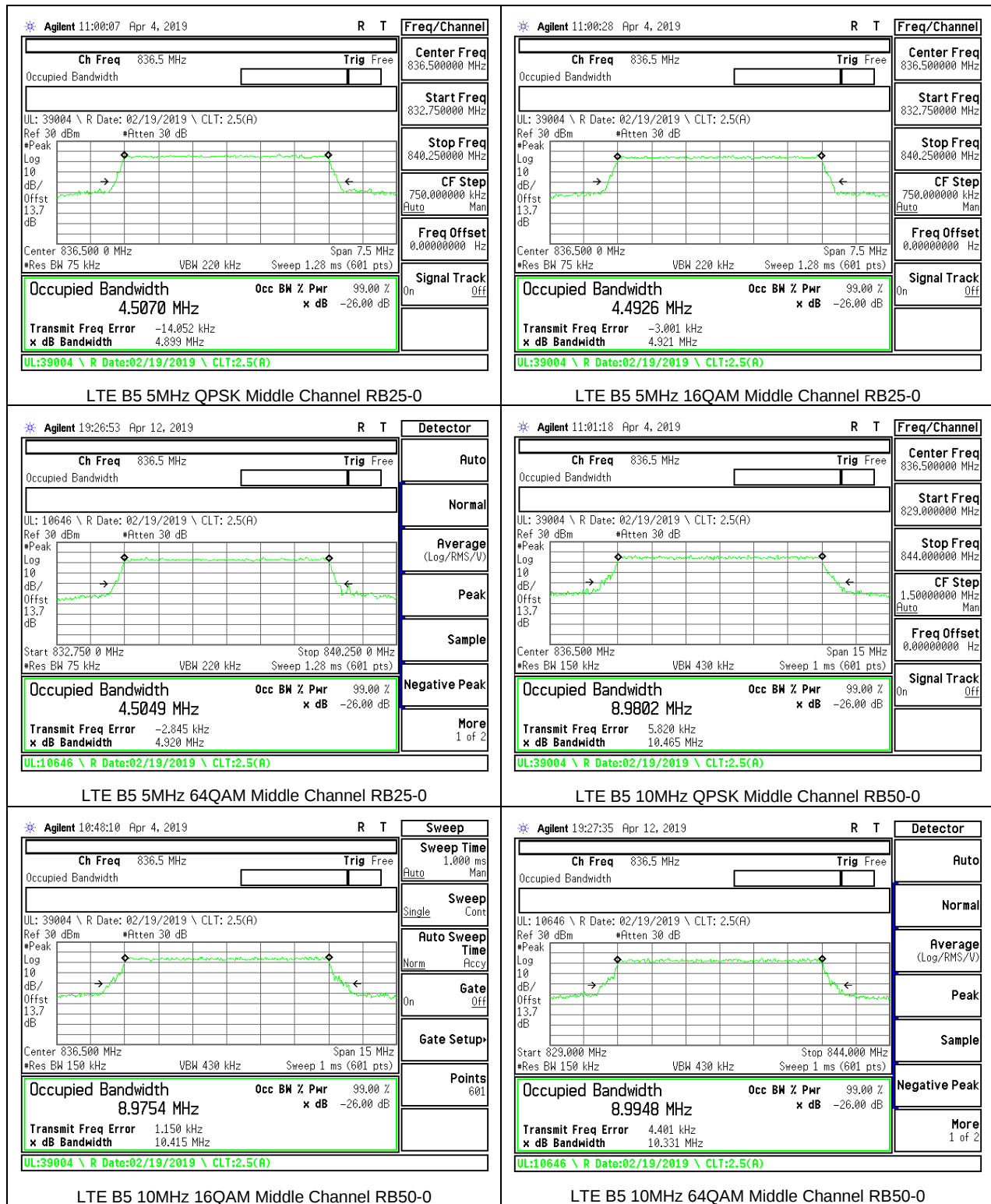




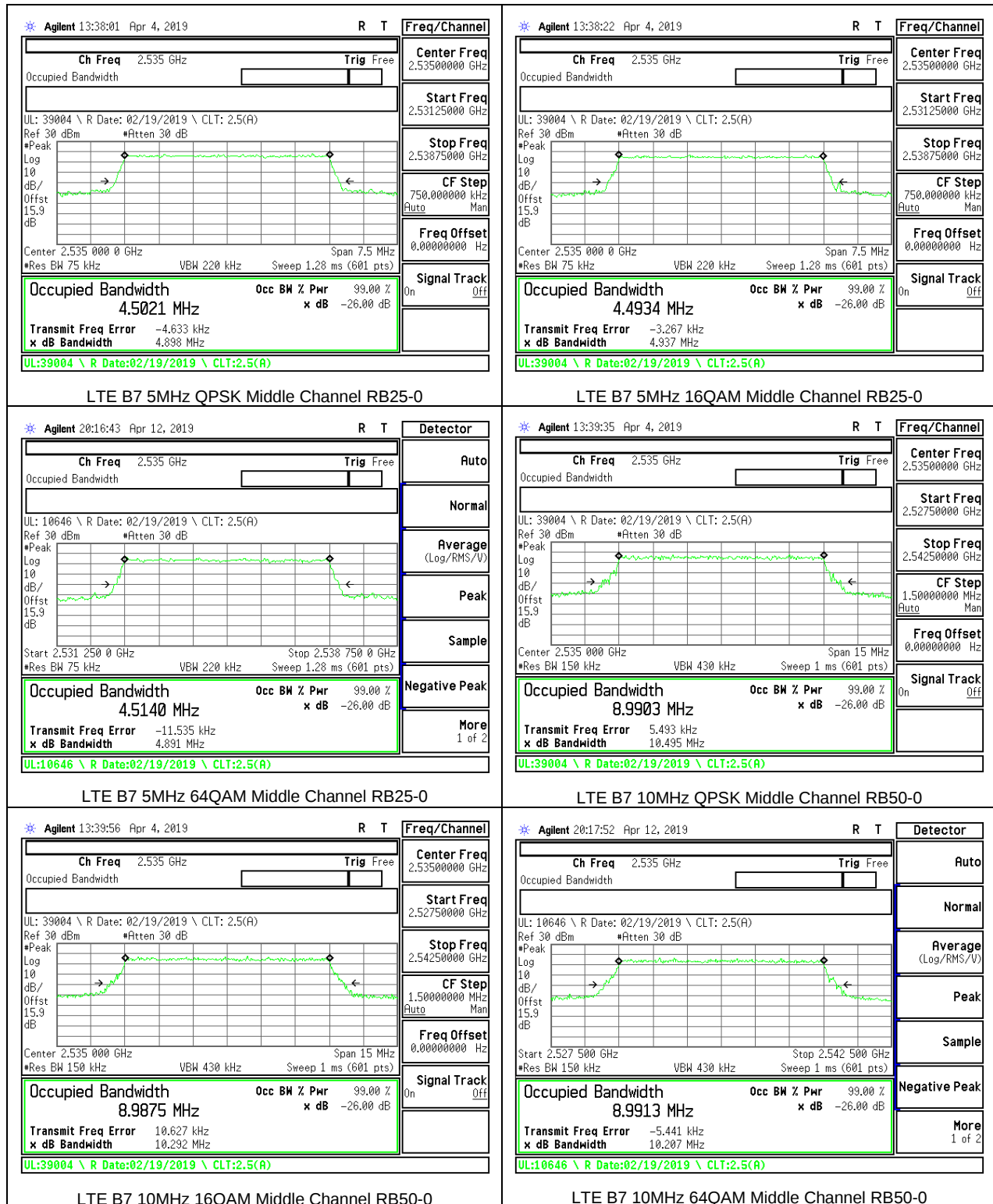


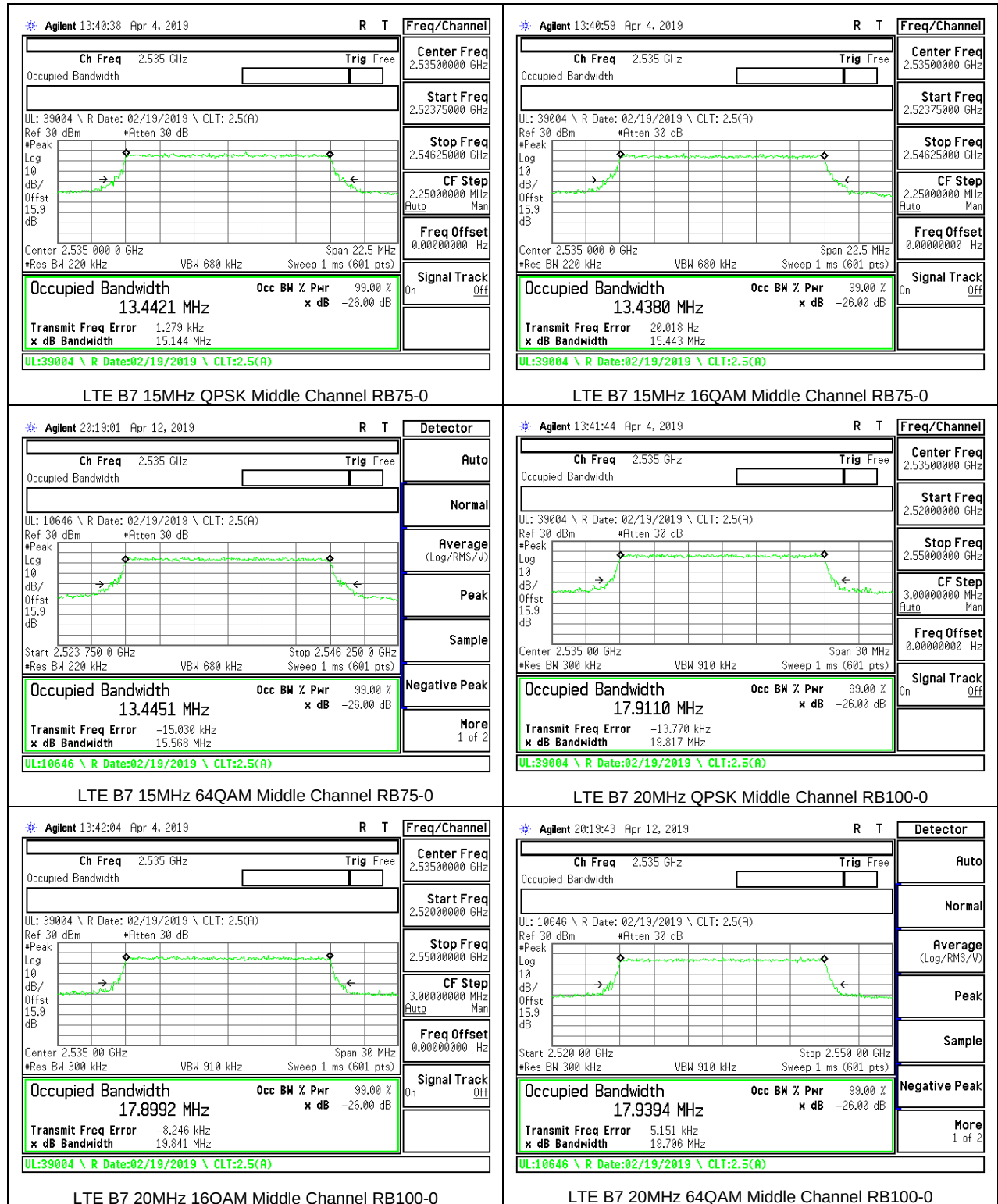
## 8.1.2. LTE BAND 5



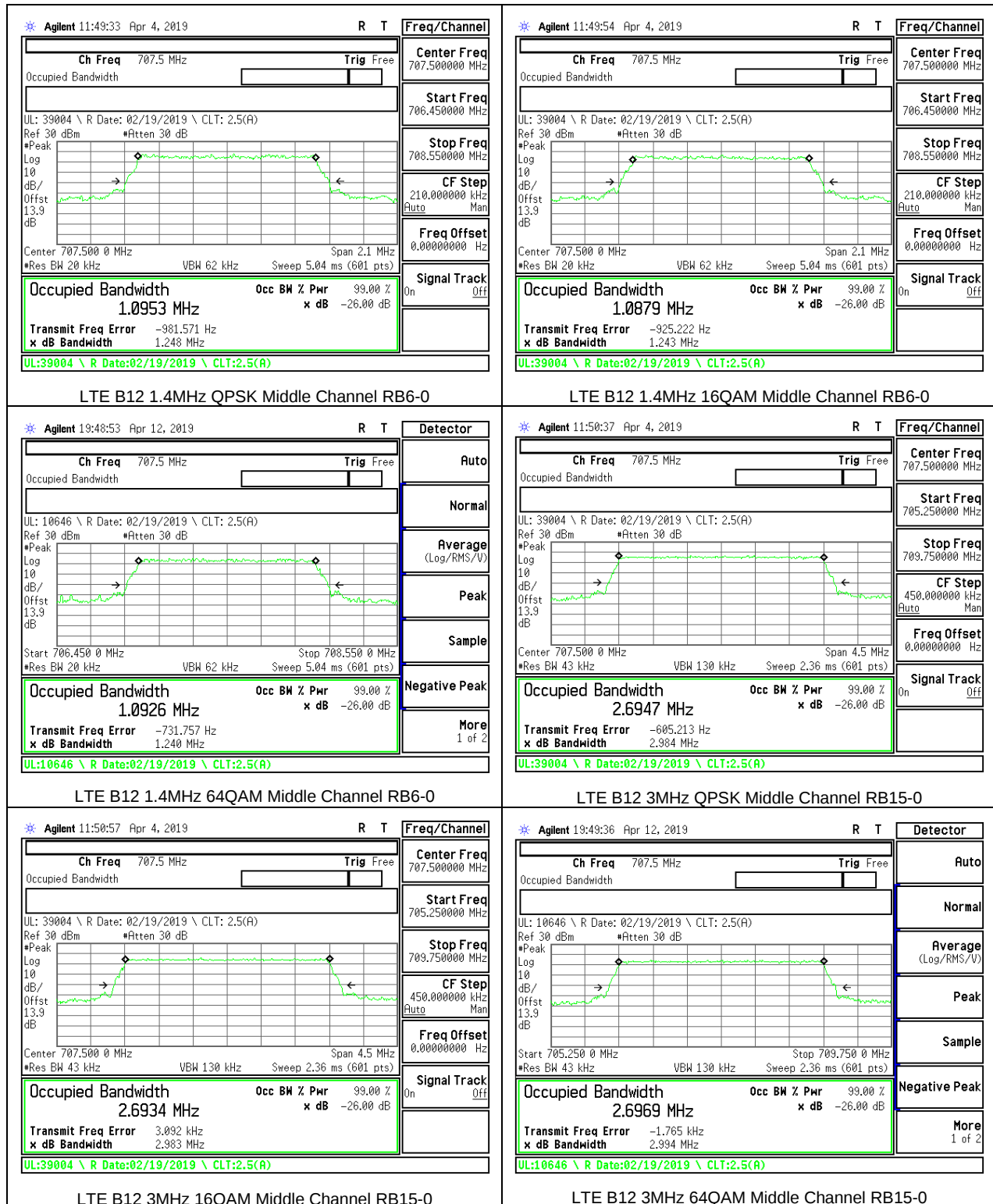


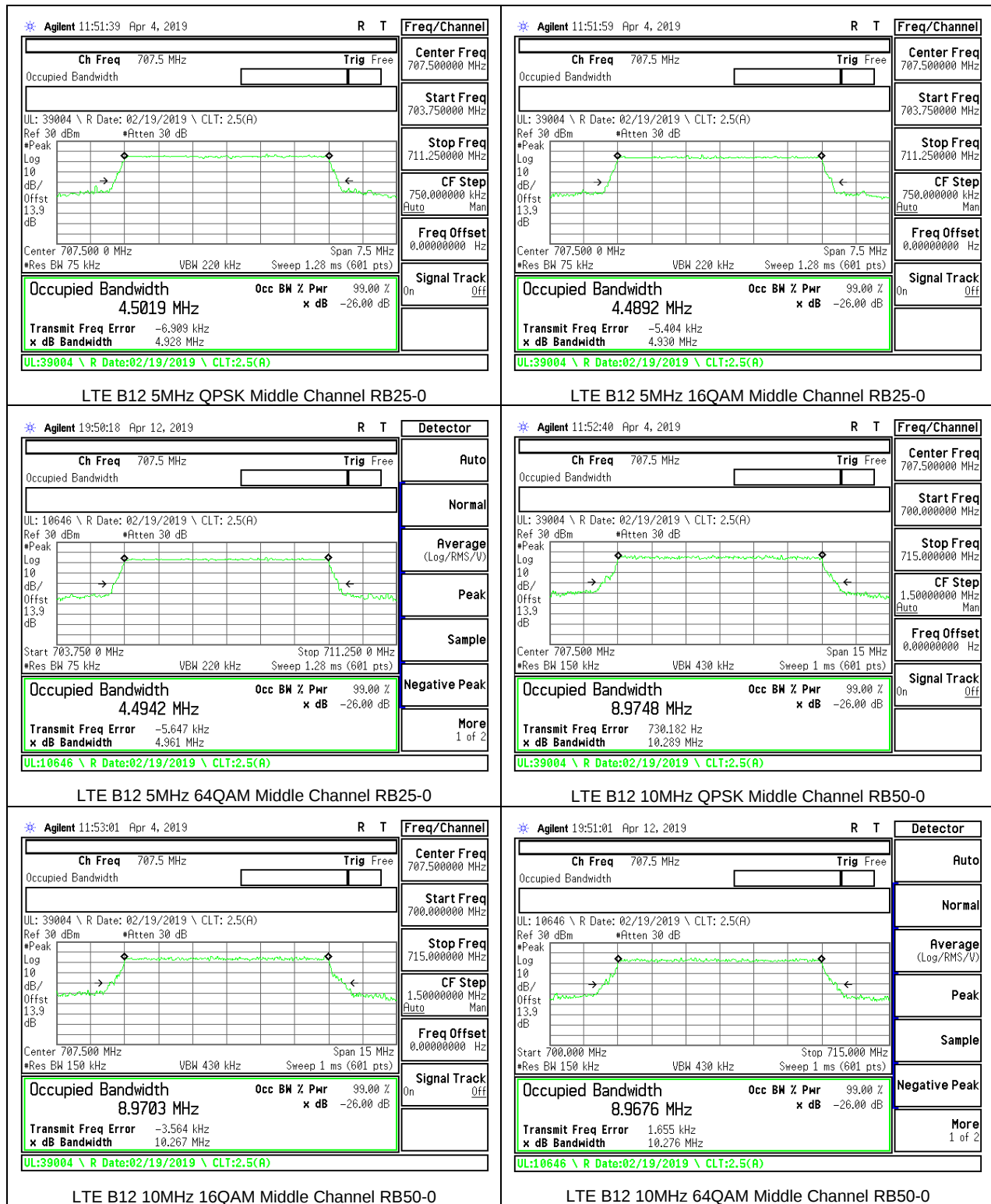
### 8.1.3. LTE BAND 7



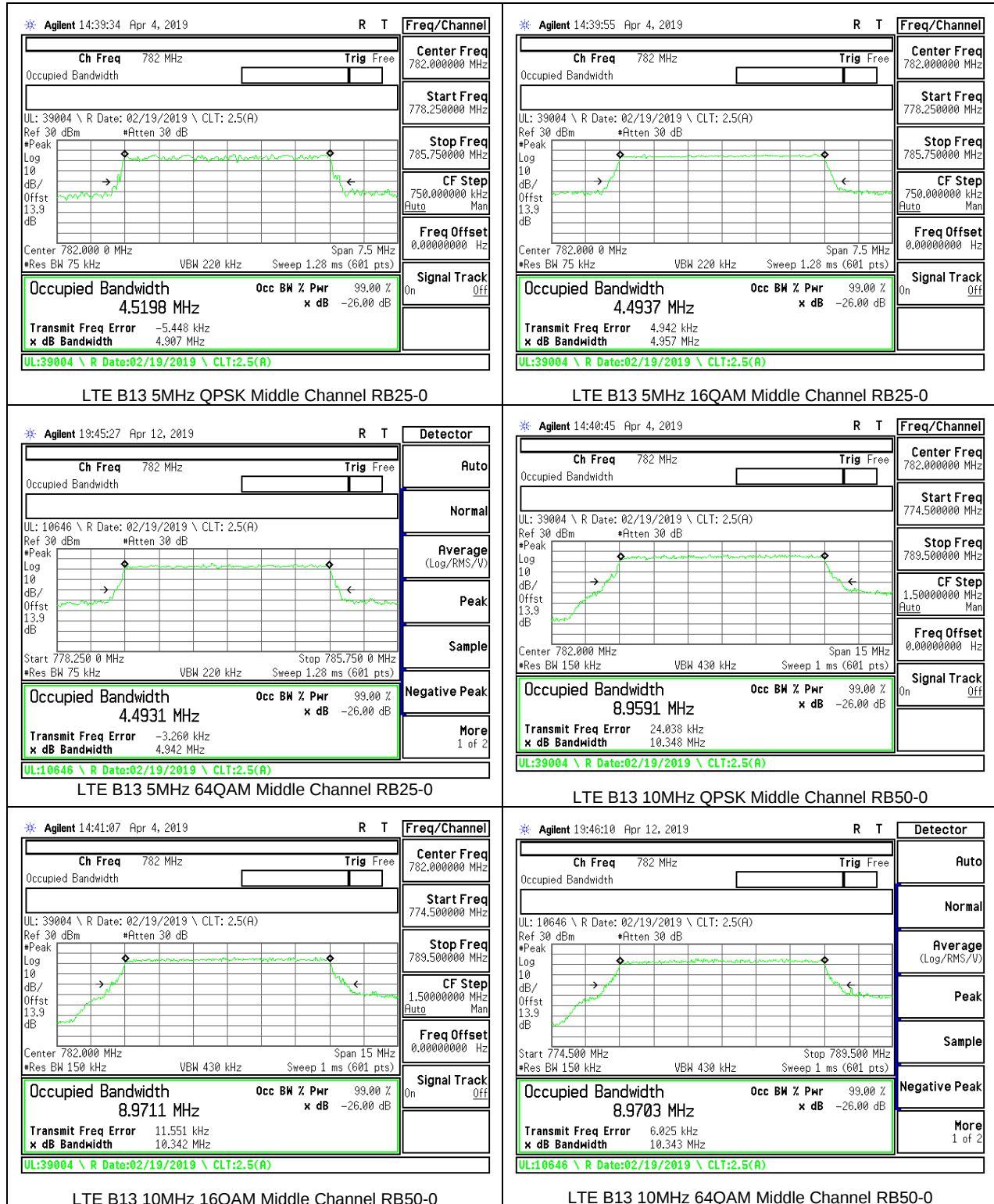


## 8.1.4. LTE BAND 12

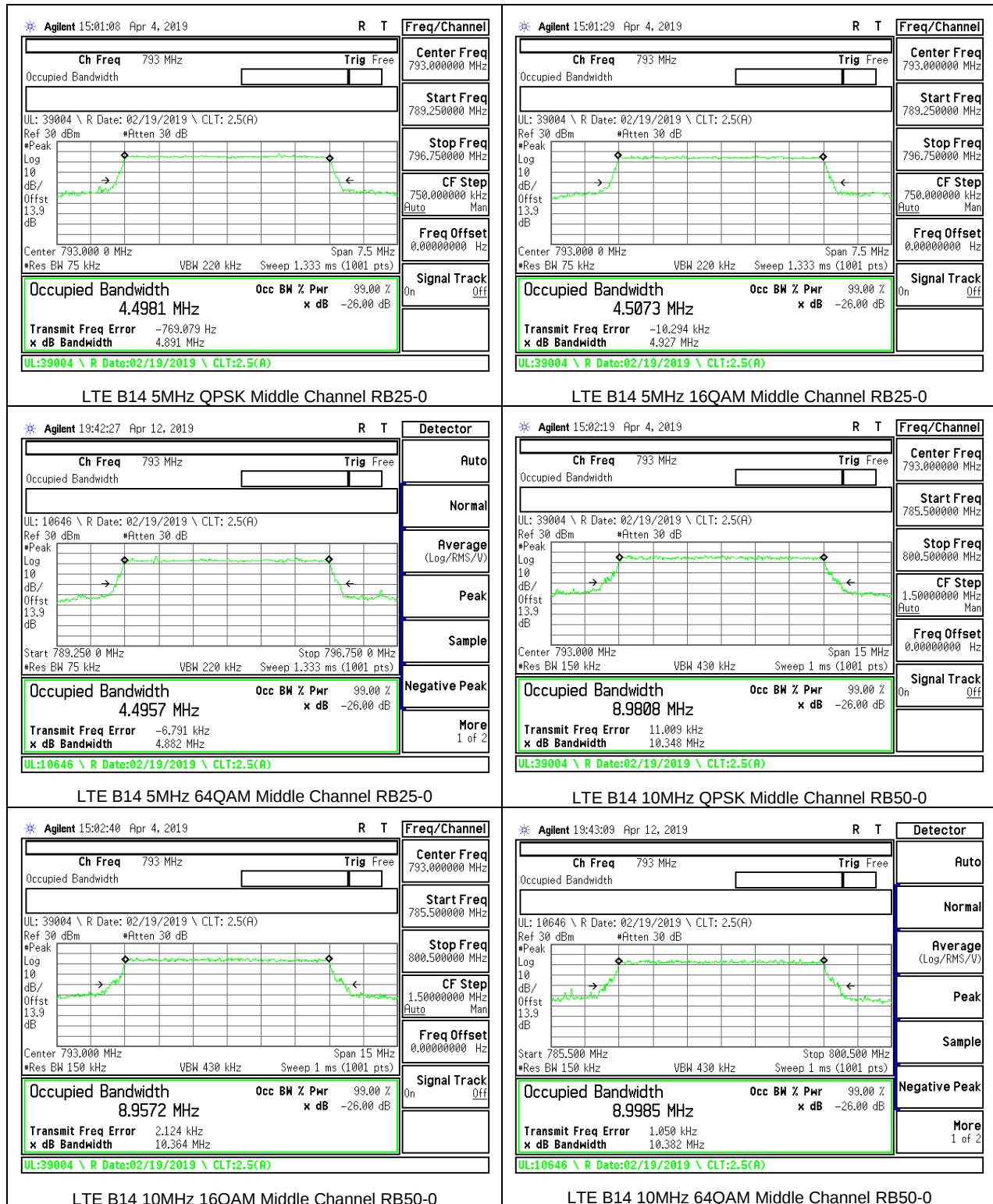




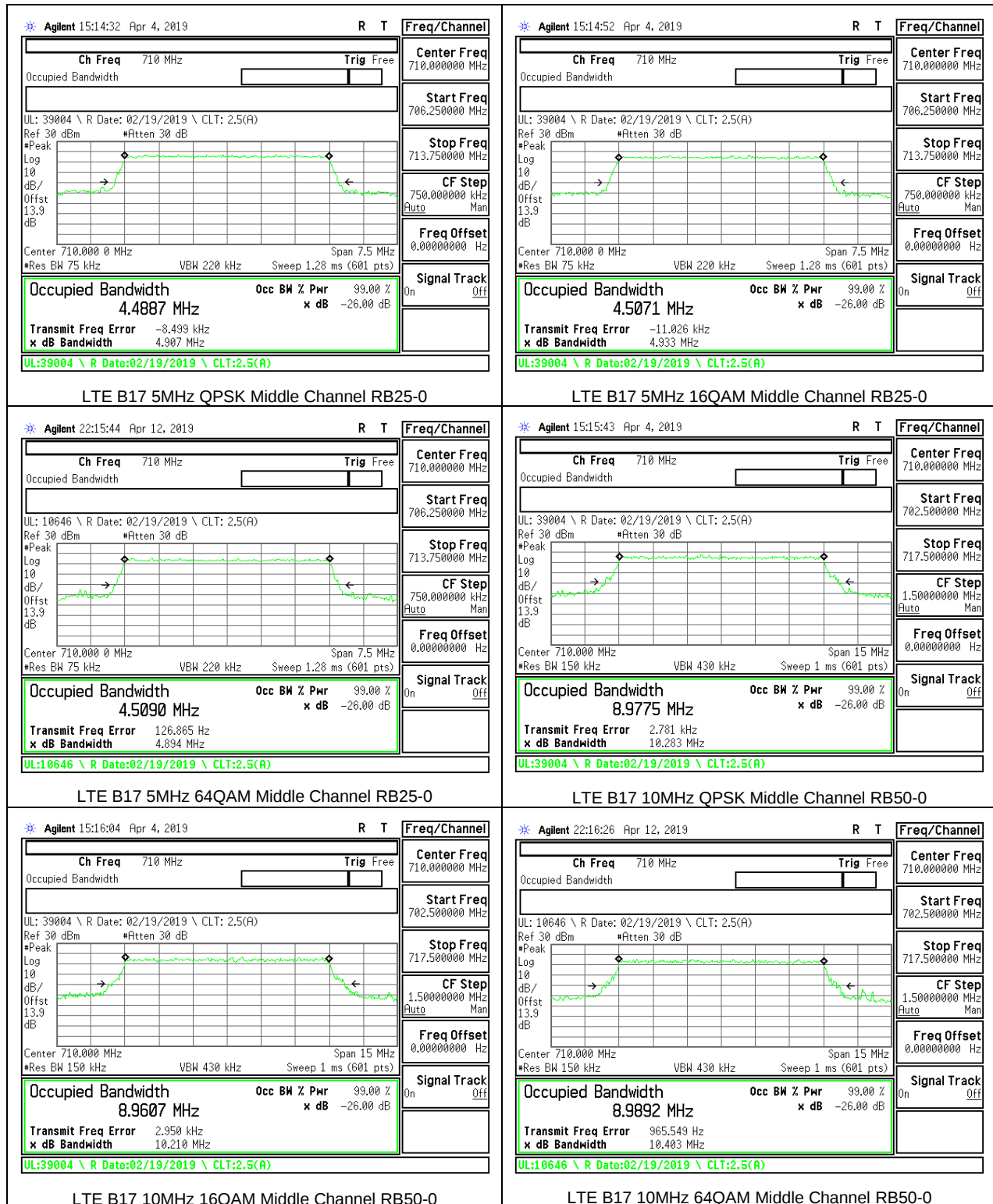
### 8.1.5. LTE BAND 13



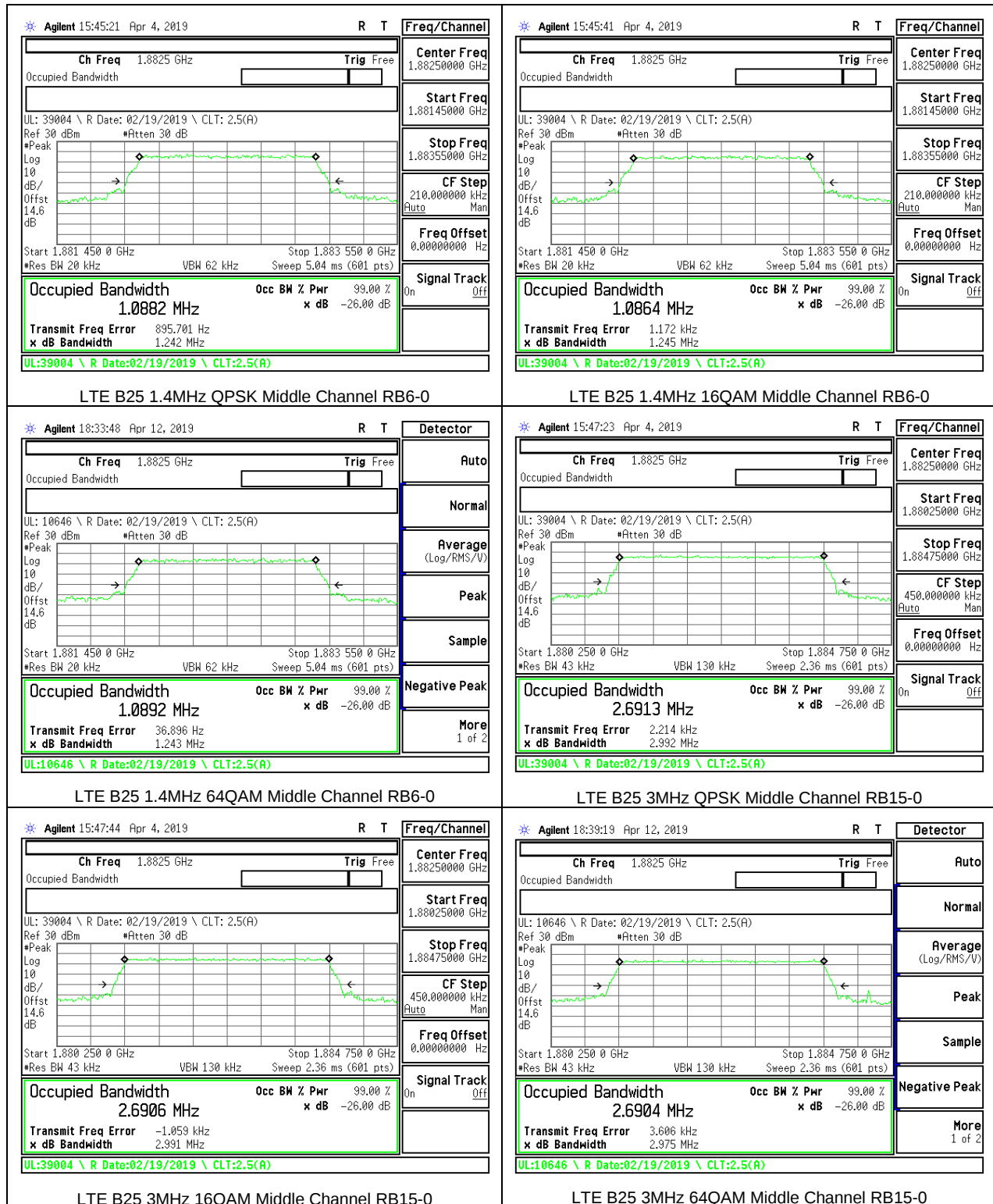
## 8.1.6. LTE BAND 14

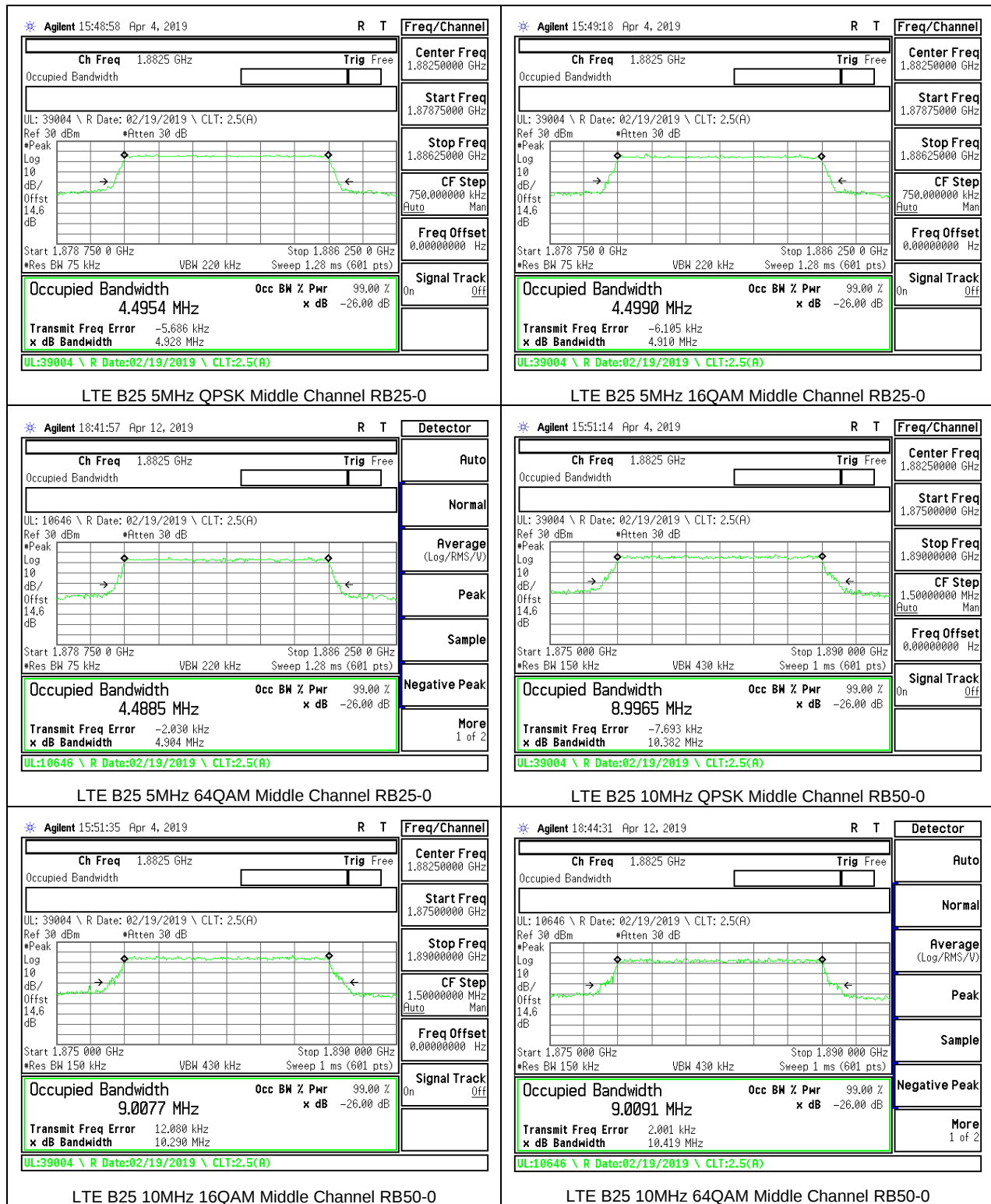


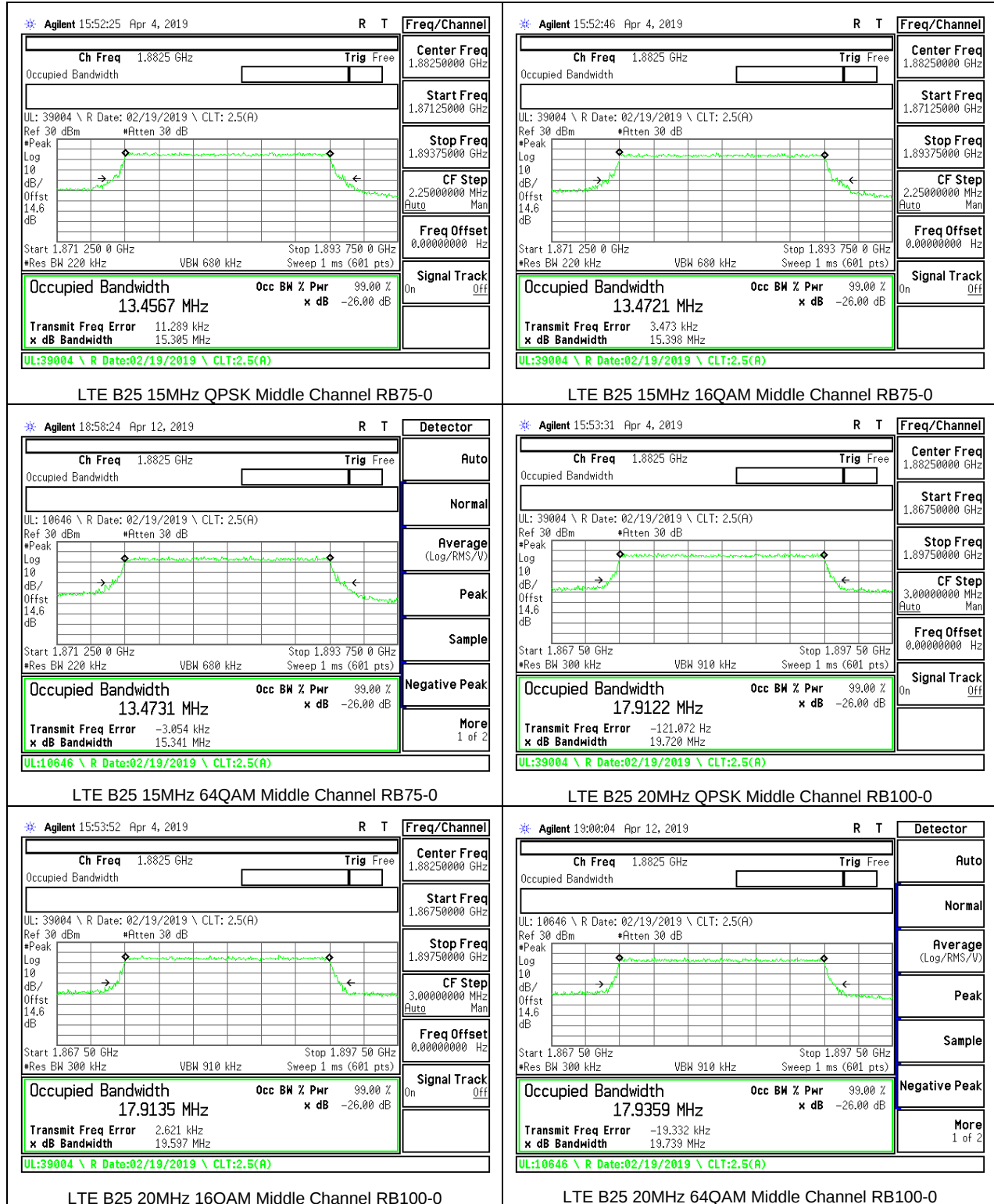
## 8.1.7. LTE BAND 17



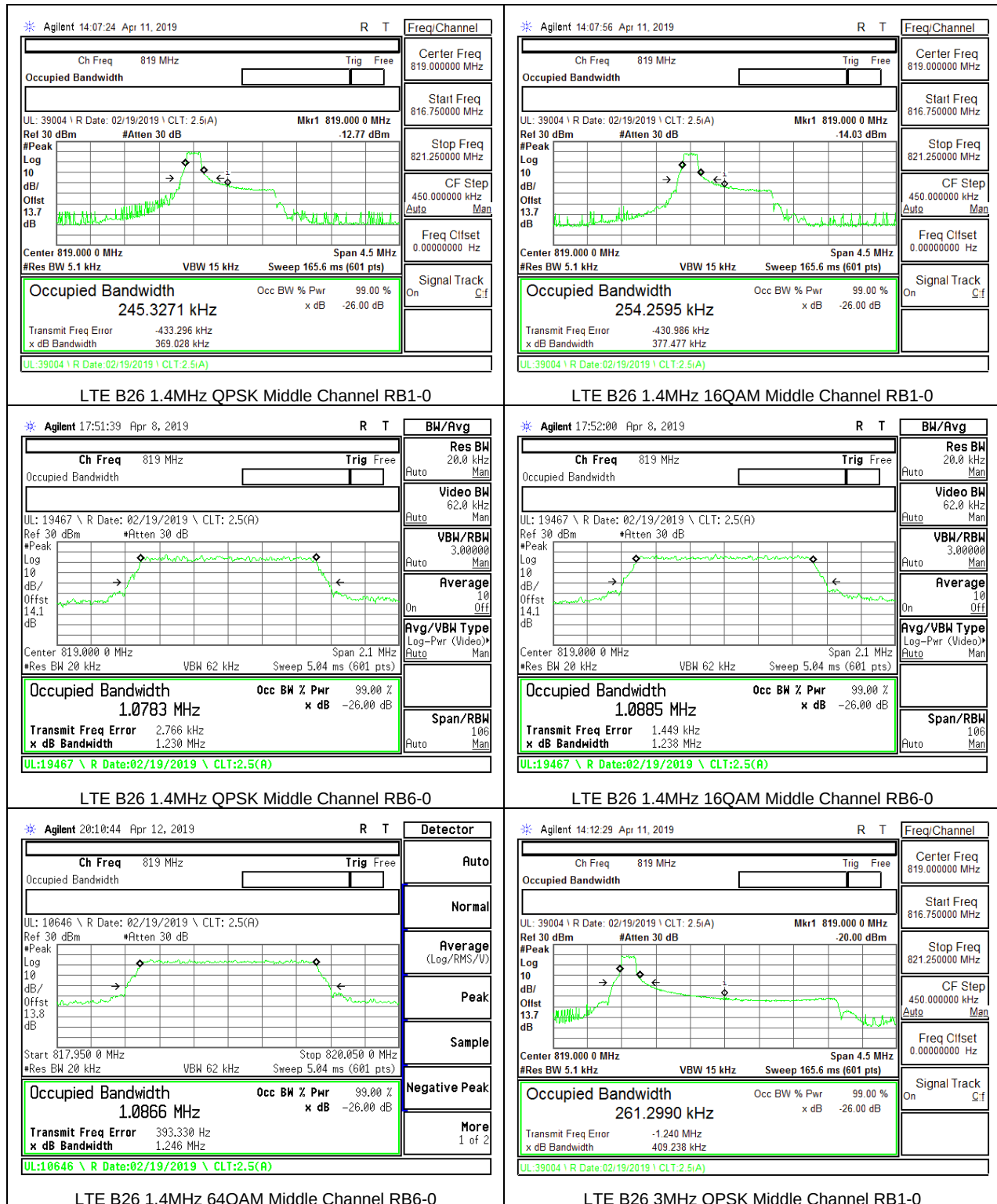
## 8.1.8. LTE BAND 25

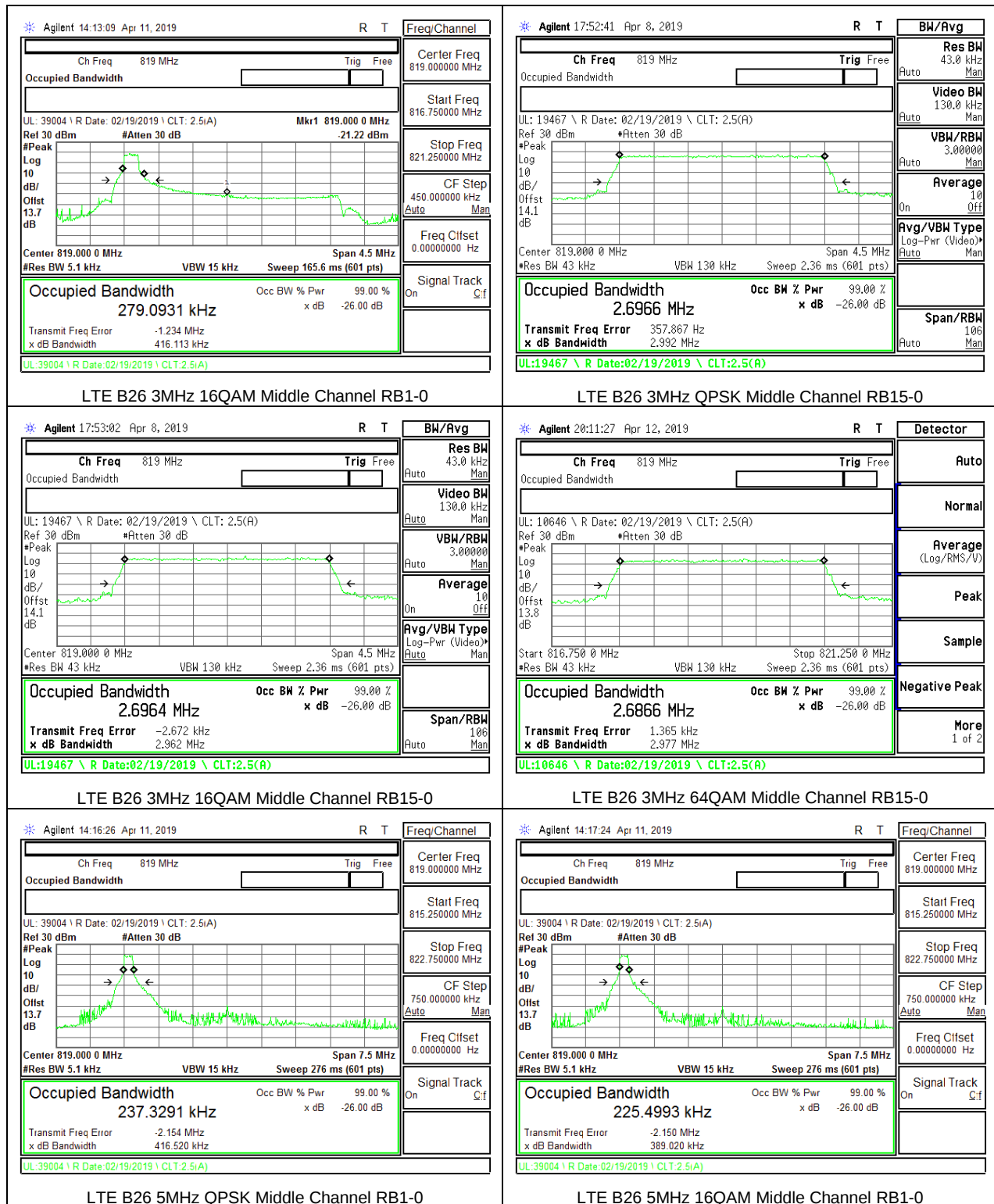


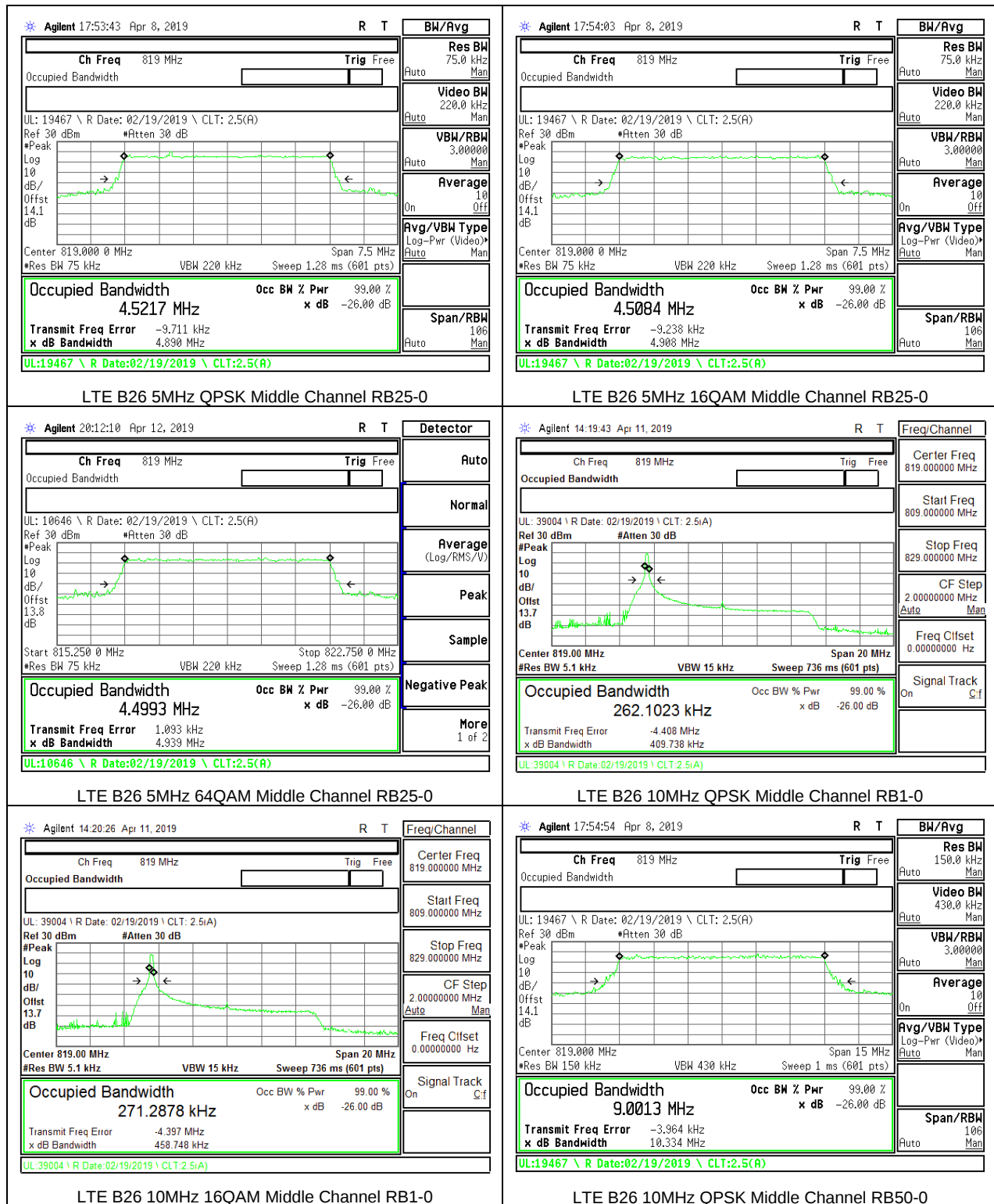


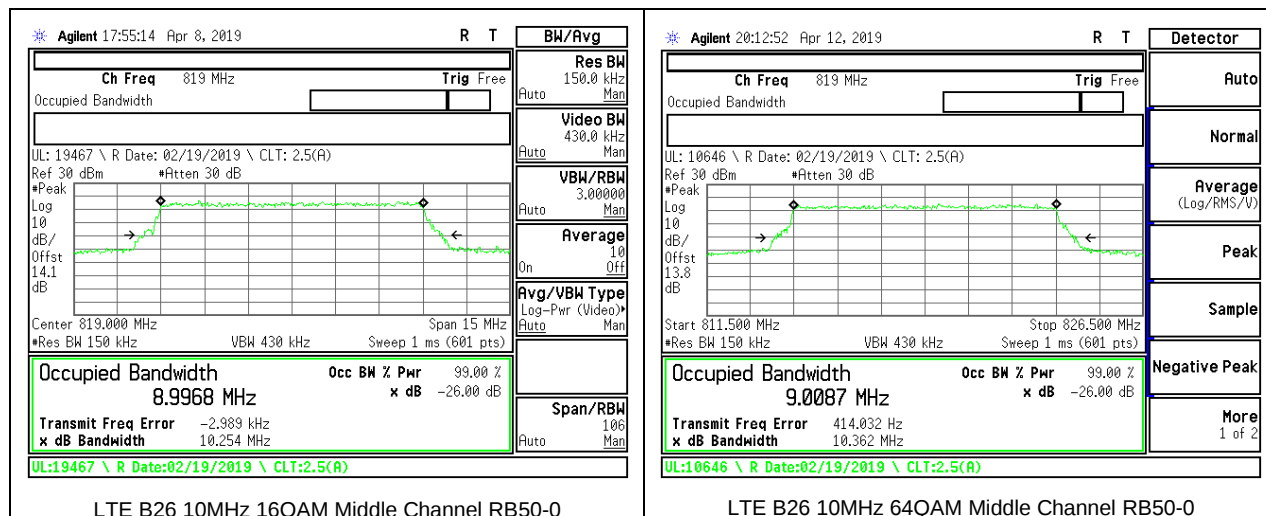


## 8.1.9. LTE BAND 26

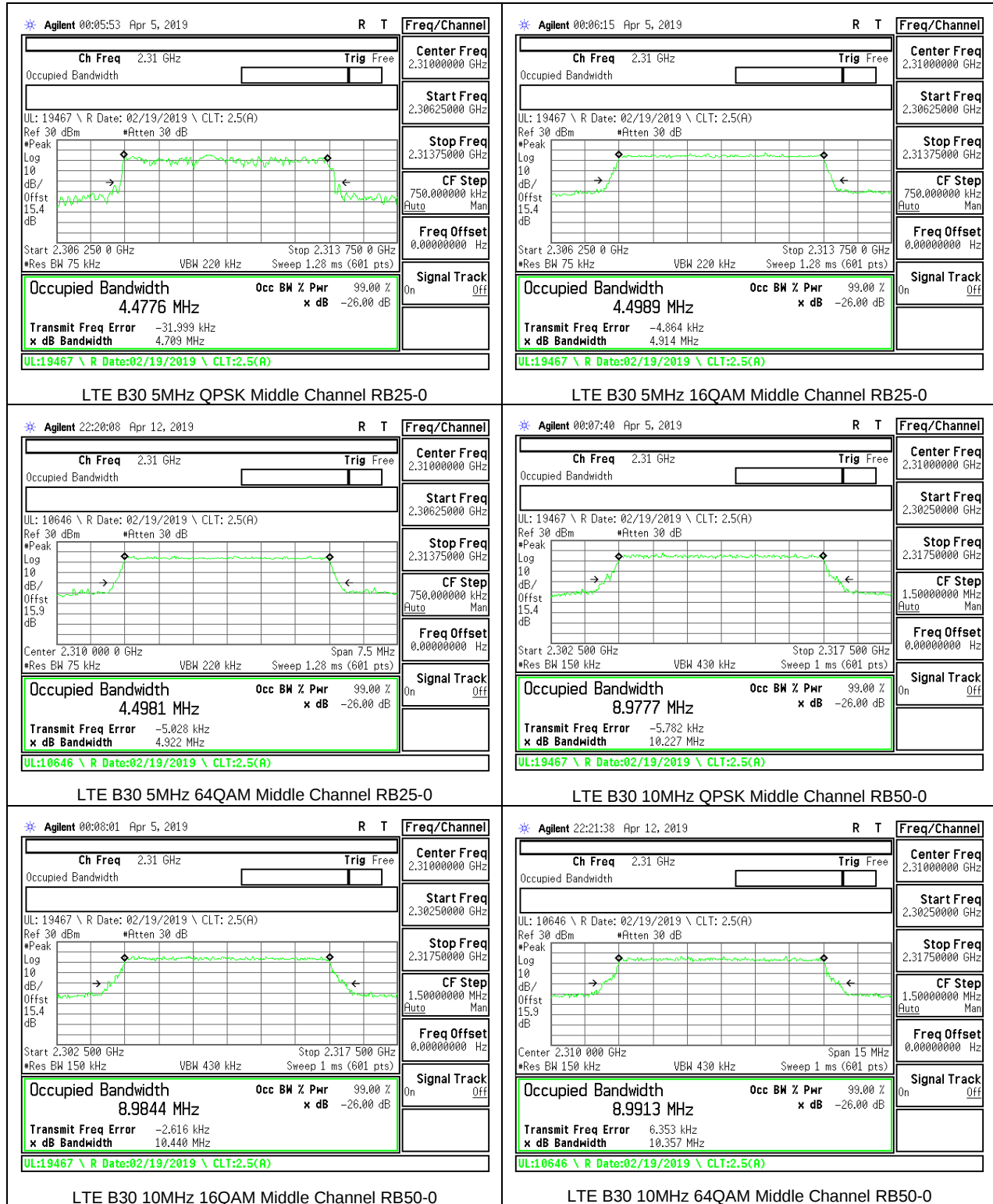




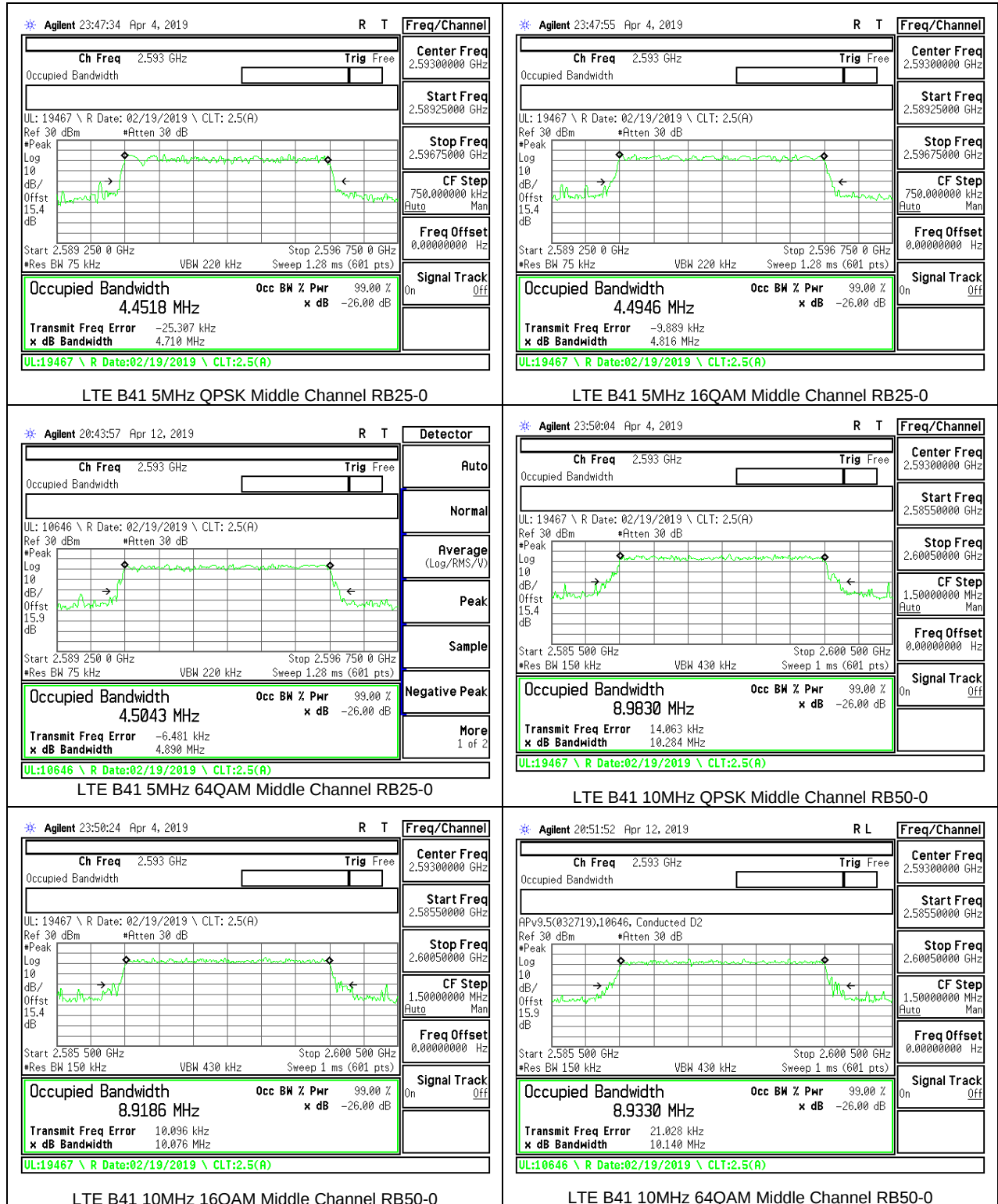


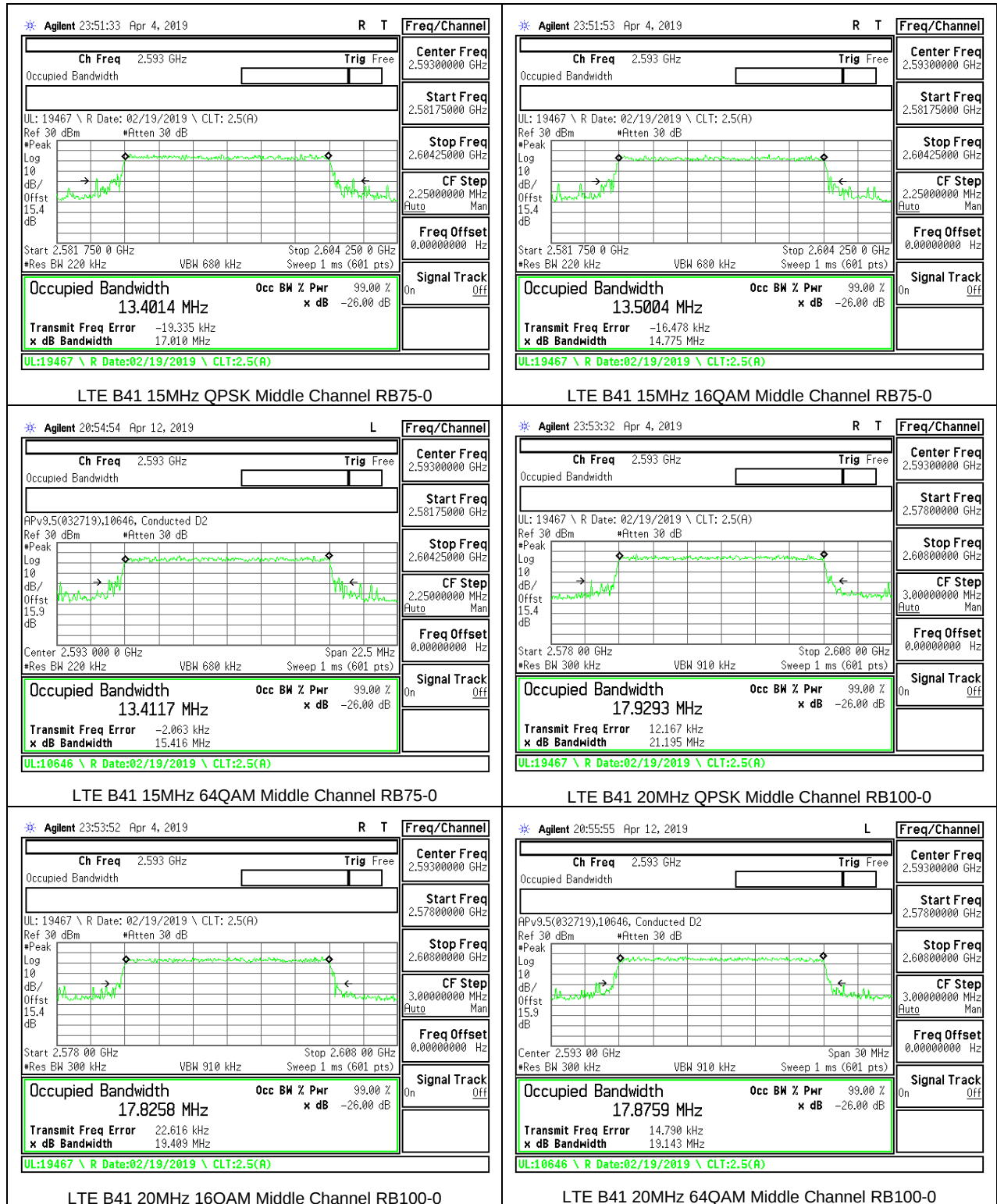


## 8.1.10. LTE BAND 30

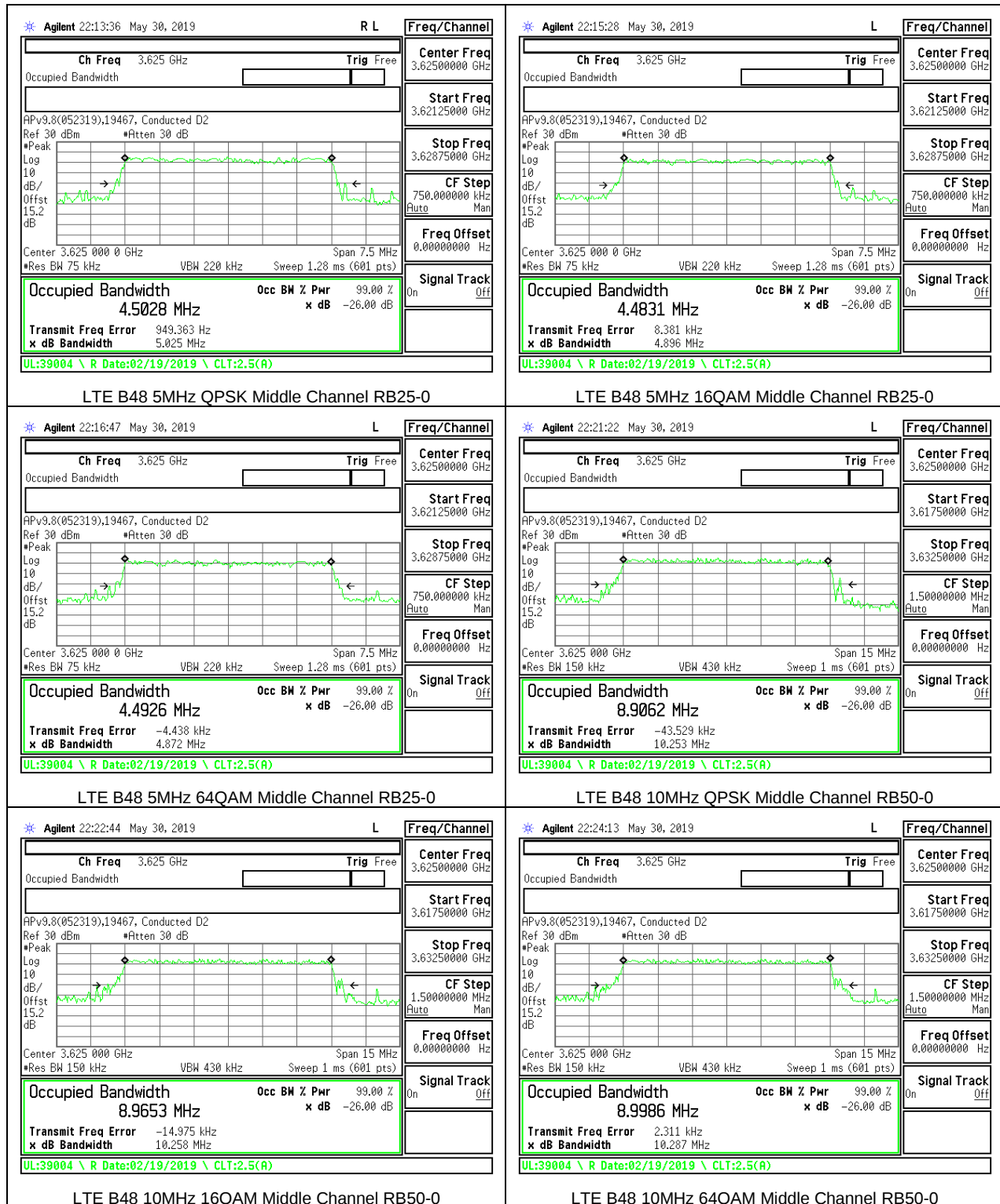


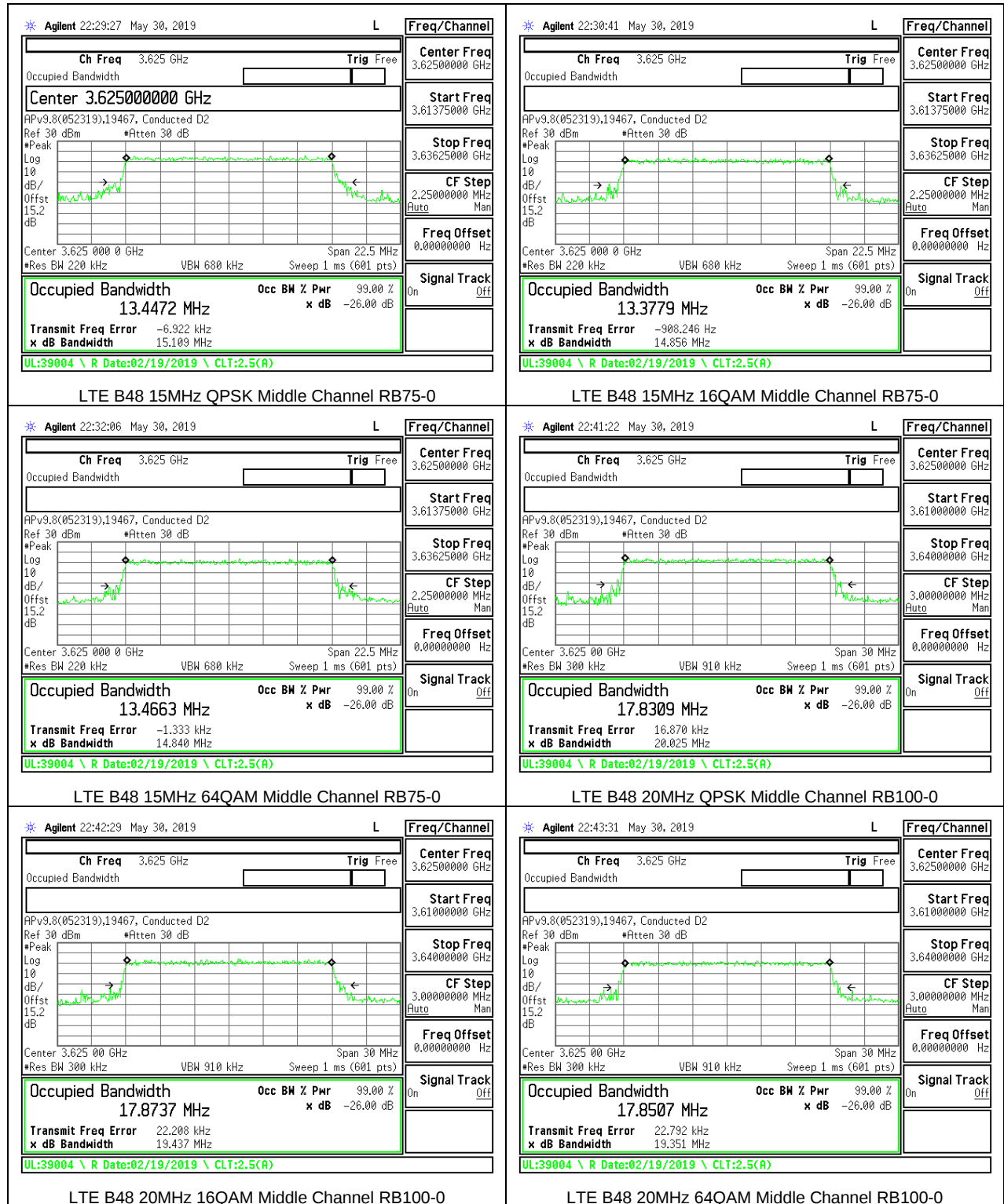
# 8.1.11. LTE BAND 41



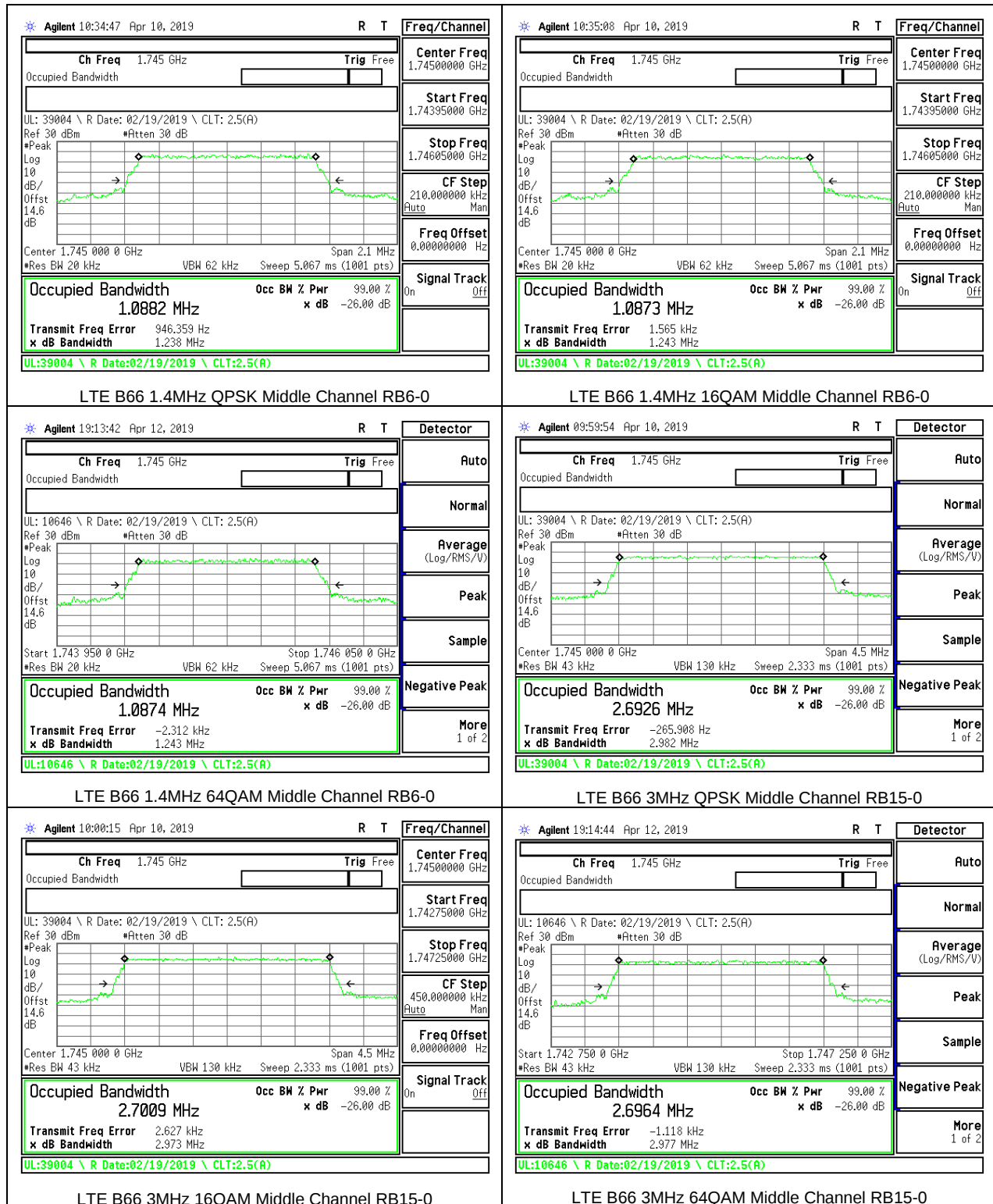


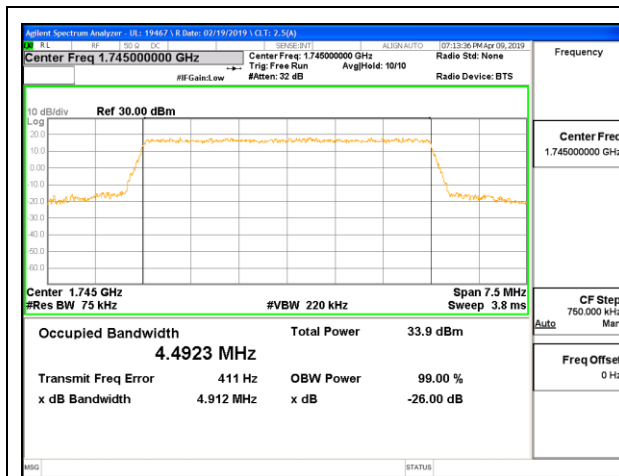
## 8.1.12. LTE BAND 48



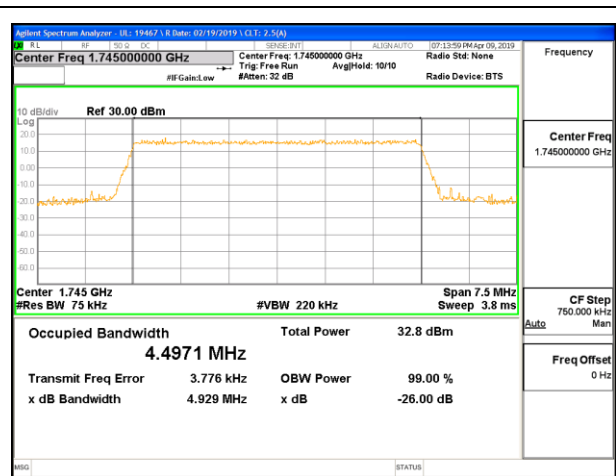


### 8.1.13. LTE BAND 66

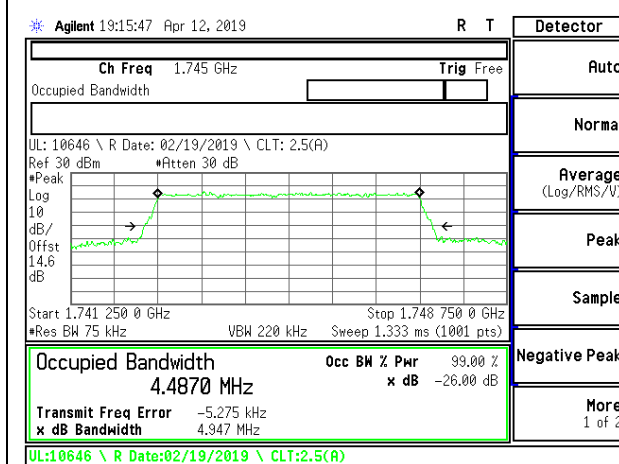




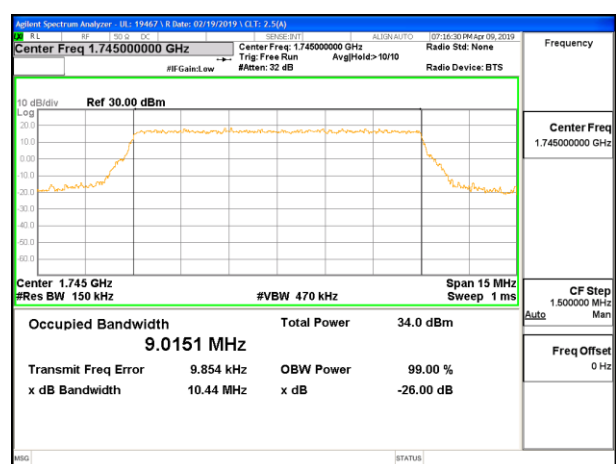
LTE B66 5MHz QPSK Middle Channel RB25-0



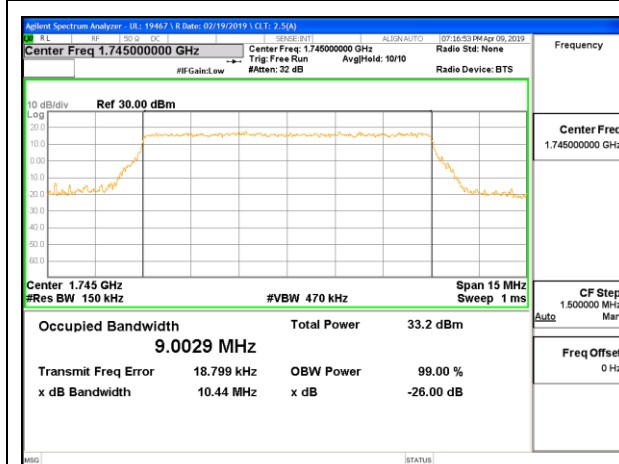
LTE B66 5MHz 16QAM Middle Channel RB25-0



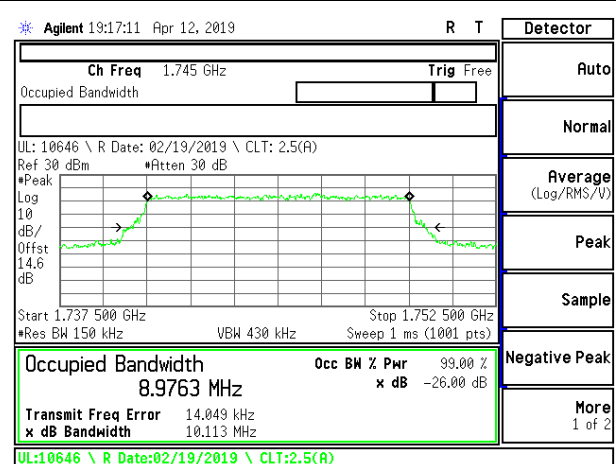
LTE B66 5MHz 64QAM Middle Channel RB25-0



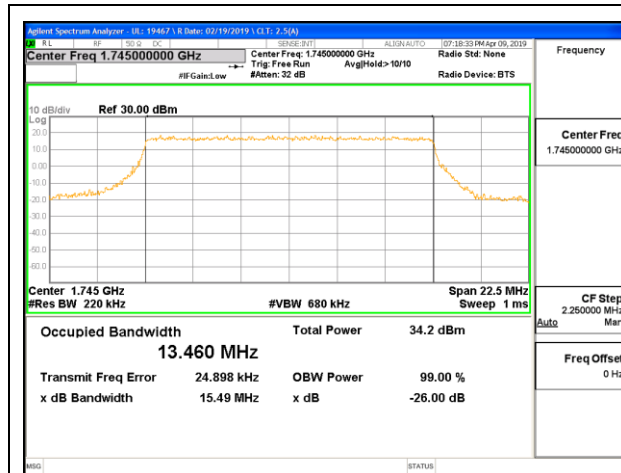
LTE B66 10MHz QPSK Middle Channel RB50-0



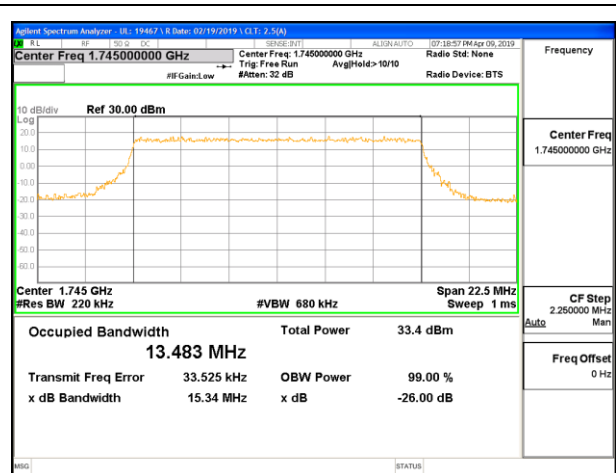
LTE B66 10MHz 16QAM Middle Channel RB50-0



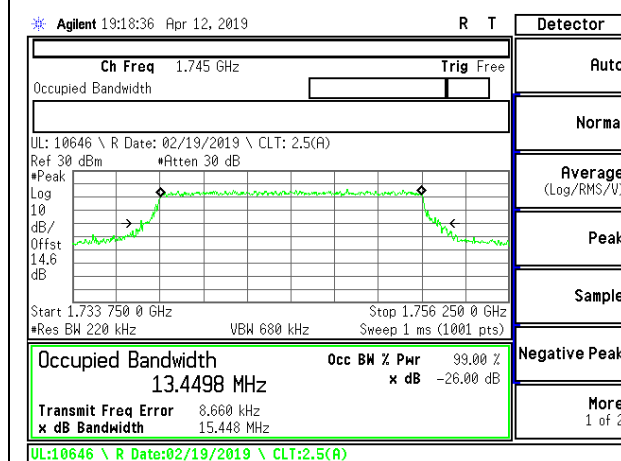
LTE B66 10MHz 64QAM Middle Channel RB50-0



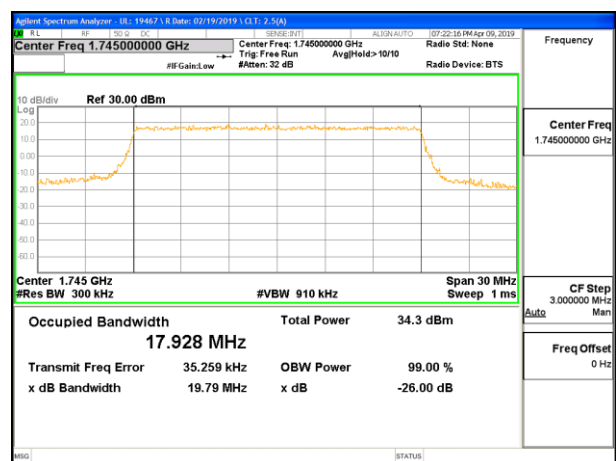
LTE B66 15MHz QPSK Middle Channel RB75-0



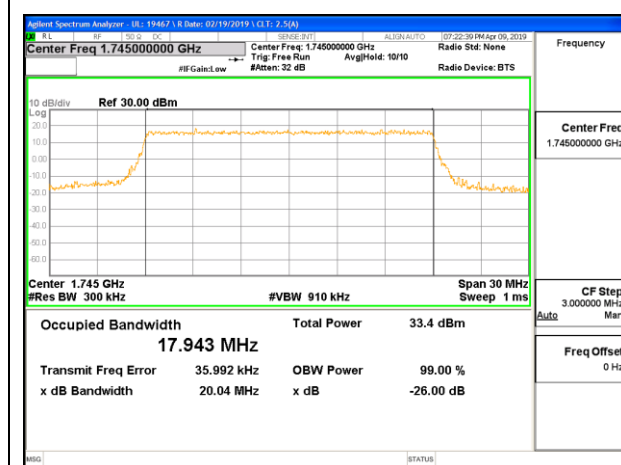
LTE B66 15MHz 16QAM Middle Channel RB75-0



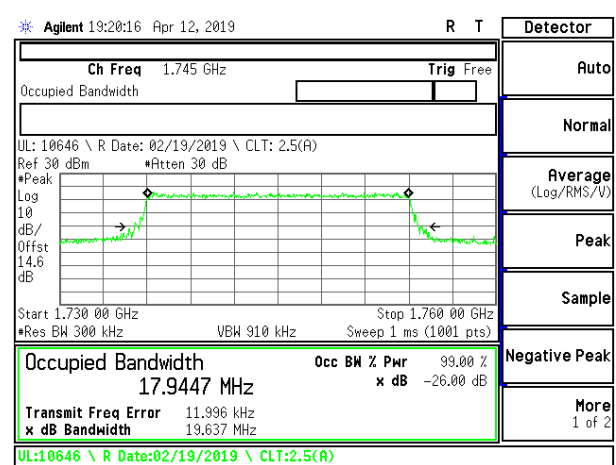
LTE B66 15MHz 64QAM Middle Channel RB75-0



LTE B66 20MHz QPSK Middle Channel RB100-0

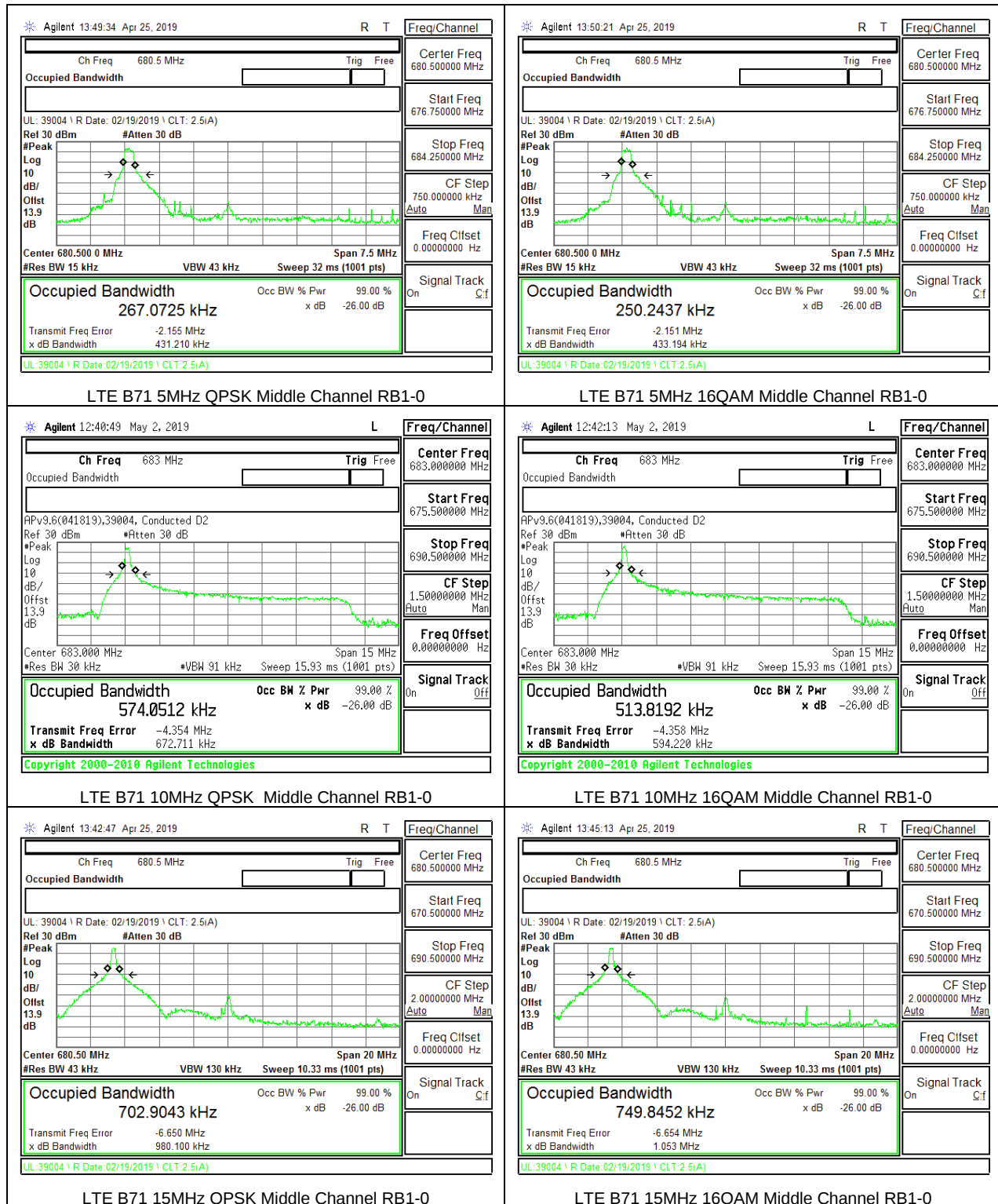


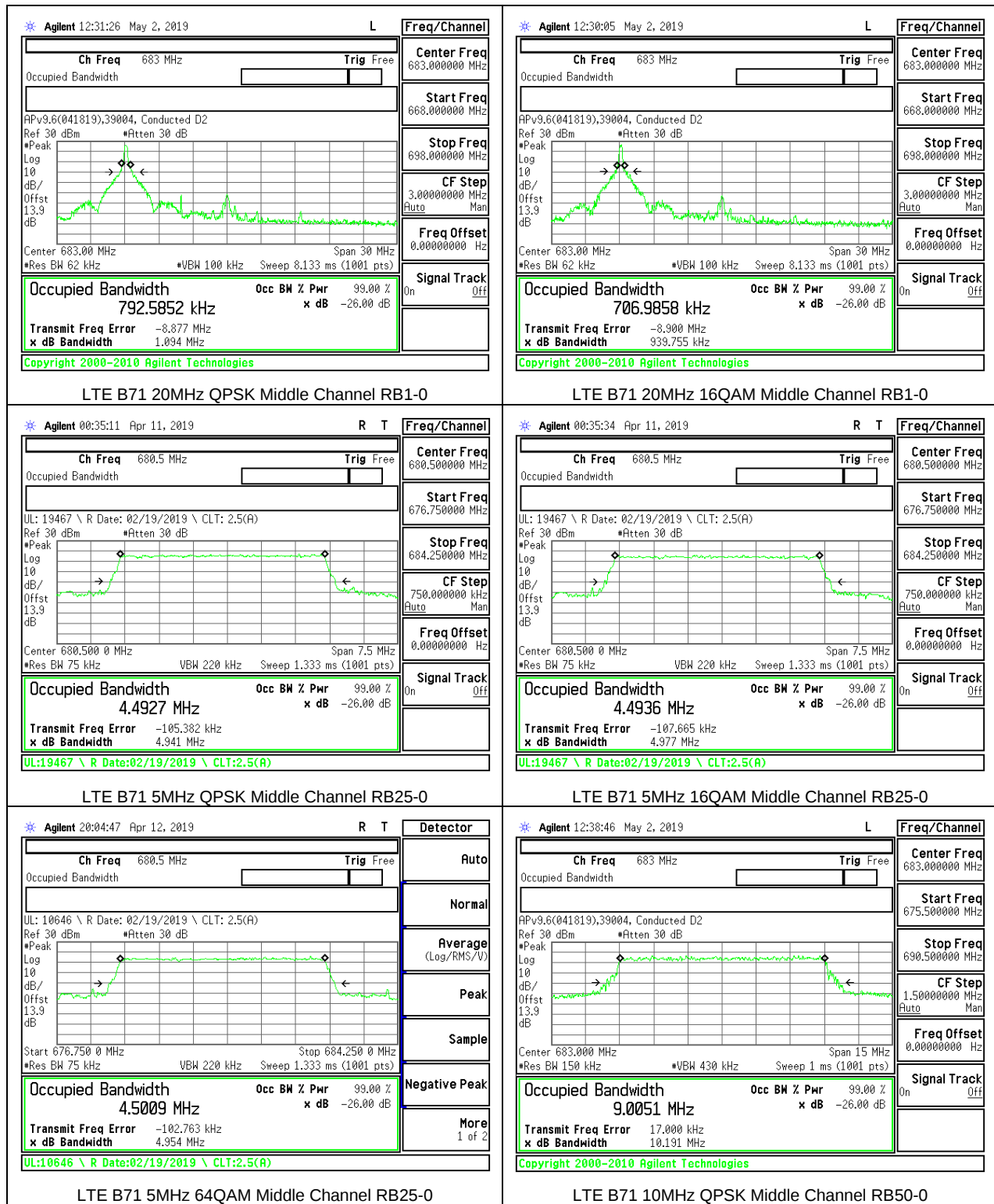
LTE B66 20MHz 16QAM Middle Channel RB100-0

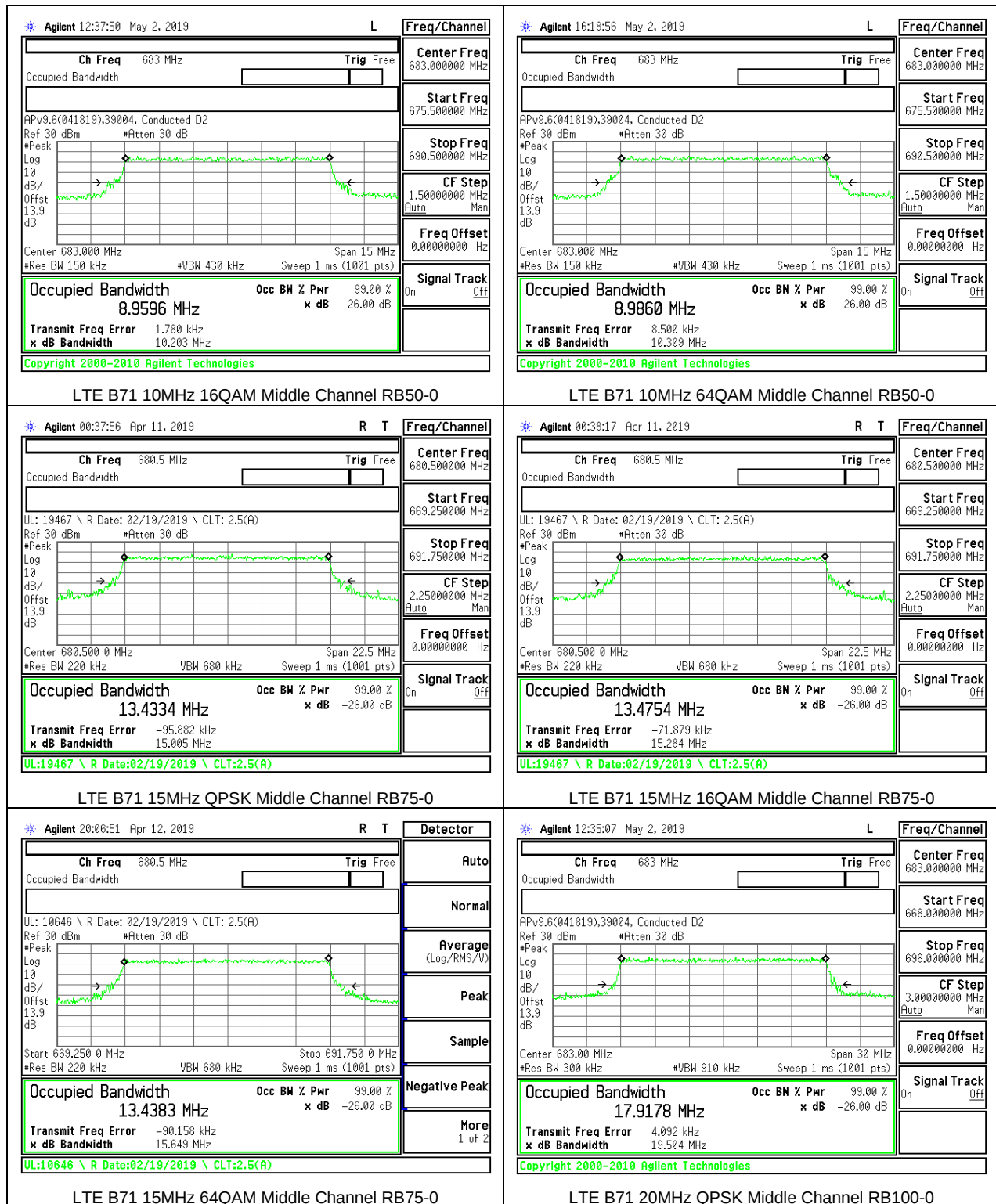


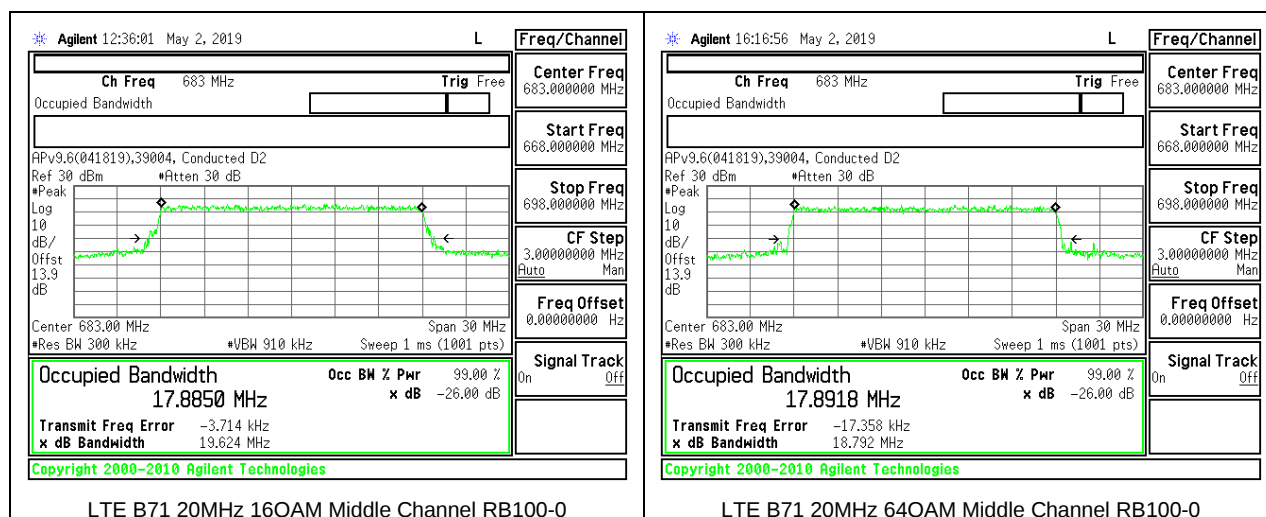
LTE B66 20MHz 64QAM Middle Channel RB100-0

## 8.1.14. LTE BAND 71









## 8.2. BAND EDGE AND EMISSION MASK

### RULE PART(S)

FCC: §2.1051, §22.917, §24.238, §27.53, §90.691, §96.41, and §90.543

### LIMITS

§22.917, §24.238, §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.

§90.691 Emission mask requirements for EA-based systems.

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

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

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

§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:

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

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

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

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

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

§27.53 (Band 30)

(a) For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a

licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

(4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than:  $43 + 10 \log (P)$  dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than  $55 + 10 \log (P)$  dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than  $61 + 10 \log (P)$  dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than  $67 + 10 \log (P)$  dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2300 and 2305 MHz,  $55 + 10 \log (P)$  dB on all frequencies between 2296 and 2300 MHz,  $61 + 10 \log (P)$  dB on all frequencies between 2292 and 2296 MHz,  $67 + 10 \log (P)$  dB on all frequencies between 2288 and 2292 MHz, and  $70 + 10 \log (P)$  dB below 2288 MHz;

(iii) 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.

#### §27.53 (Band 13)

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

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

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

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

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

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

#### §27.53 (Band 12, 17, 71)

(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.

#### §27.53 (Band 7, 41)

(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.

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—(1) General protection levels. Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by the SAS to CBSDs, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed  $-13$  dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed  $-25$  dBm/MHz. The upper and lower SAS assigned channel edges are the upper and lower limits of any channel assigned to a CBSD by an SAS, or in the case of multiple contiguous channels, the upper and lower limits of the combined contiguous channels.

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed  $-40$  dBm/MHz.

### **TEST PROCEDURE**

The transmitter output was connected to a CMW500 Test 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 (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 (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 (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.

#### **Notes:**

### Band 12

1.4MHz BW: For emissions within 100kHz of the band edge the value measured in 13kHz, after correction of  $10\log(13/30)$ , 3.6dB, to account for reference bandwidth of 30kHz and measurement bandwidth of 13 kHz, are below -13dBm. For emissions more than 100kHz from the band edge the value measured in 13kHz, after correction of  $10\log(13/100)$ , 8.9dB, to account for reference bandwidth of 100kHz and measurement bandwidth of 30 kHz, are below -13dBm.

3MHz BW: For emissions more than 100kHz from the band edge the value measured in 30kHz, after correction of  $10\log(30/100)$ , 5.2dB, to account for reference bandwidth of 100kHz and measurement bandwidth of 30 kHz, are below -13dBm.

5MHz BW: For emissions more than 100kHz from the band edge the value measured in 51kHz, after correction of  $10\log(51/100)$ , 2.9dB, to account for reference bandwidth of 100kHz and measurement bandwidth of 51 kHz, are below -13dBm.

### Band 17

For emissions more than 100kHz from the band edge the value measured in 51kHz, after correction of  $10\log(51/100)$ , 2.9dB, to account for reference bandwidth of 100kHz and measurement bandwidth of 51 kHz, are below -13dBm.

### Band 48

The worst case ACLR is determined through the following calculations:

The Channel Power is noted as  $P_{\text{fundamental}}$ .

The Bandwidth of the adjacent channel is noted as  $BW_{\text{adj}}$ . It is restricted to multiples of 10MHz, and it is the least bandwidth needed to be equal or greater than the signal bandwidth.

The highest reference bandwidth in the Adjacent Channel is noted as  $P_{\text{reference}}$ .

The Adjacent Channel Power,  $P_{\text{adj}}$ , is then extrapolated with the equation:  $P_{\text{adj}} = P_{\text{reference}} + 10\log(BW_{\text{adj}})$ .

The ACLR is then:  $\text{ACLR} = P_{\text{adj}} - P_{\text{fundamental}}$ .

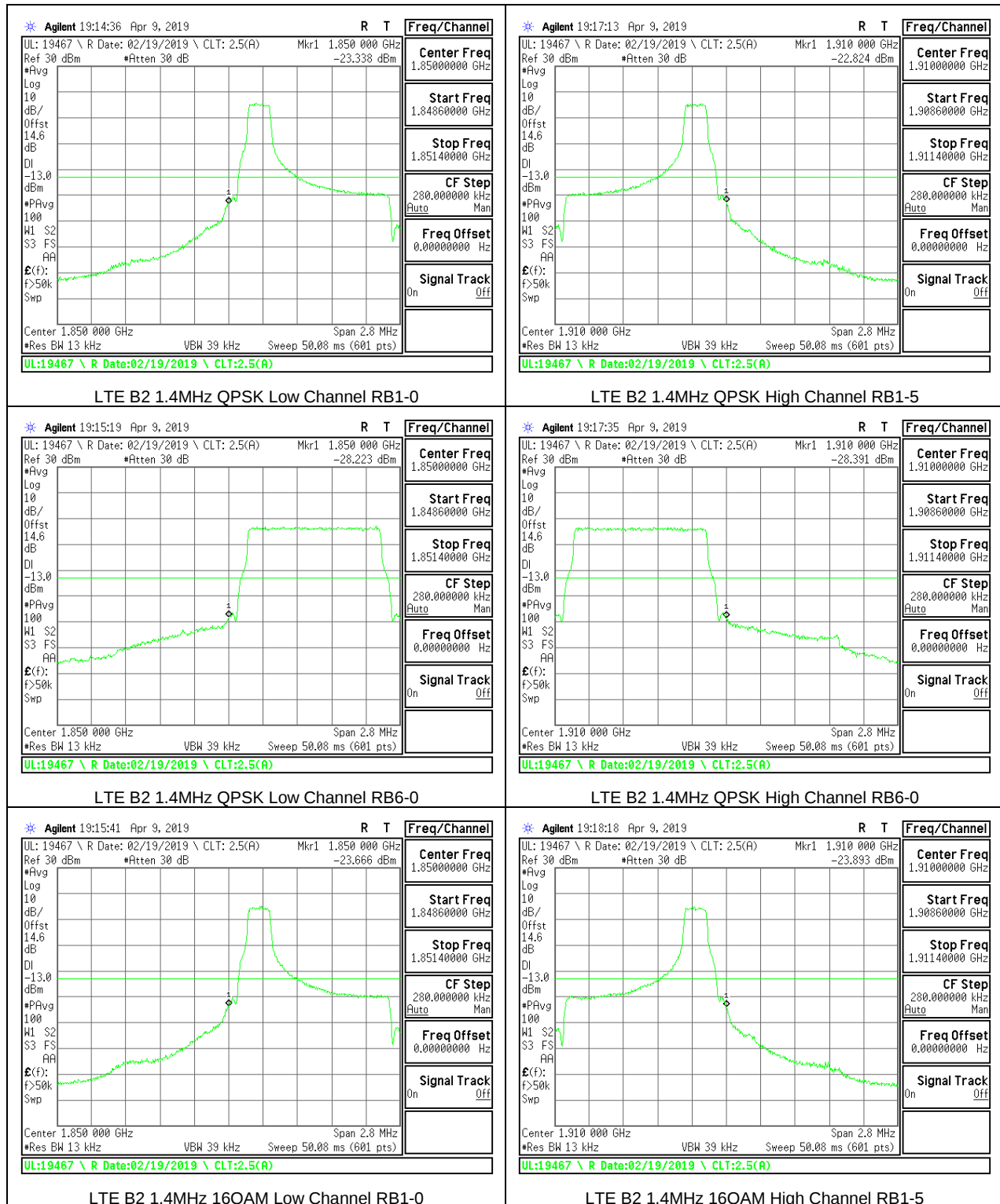
This calculation was run for every plot, and the one with the highest (worst case) ACLR is displayed for each bandwidth at the end of section 8.2.12 of this report.

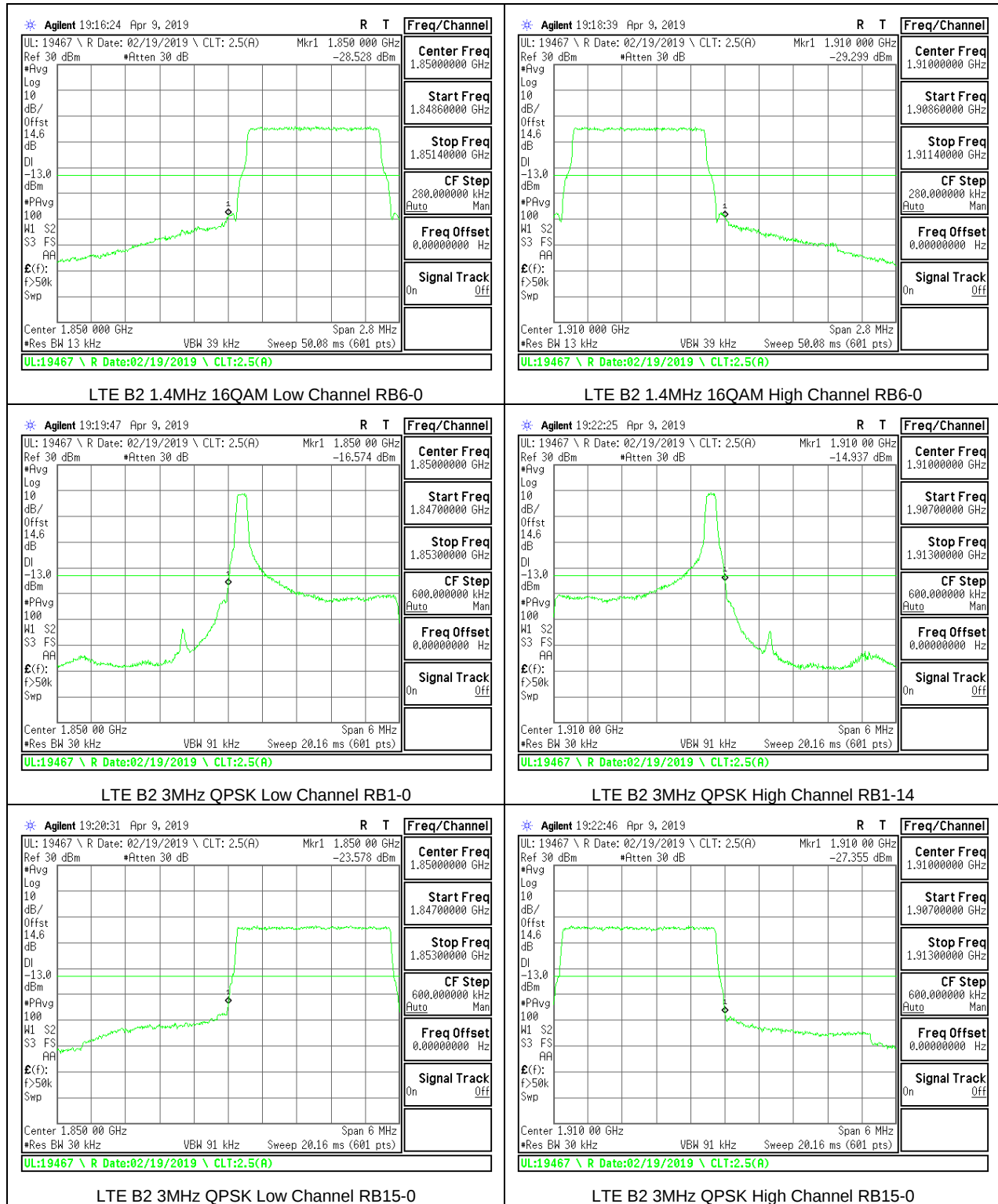
## MODES TESTED

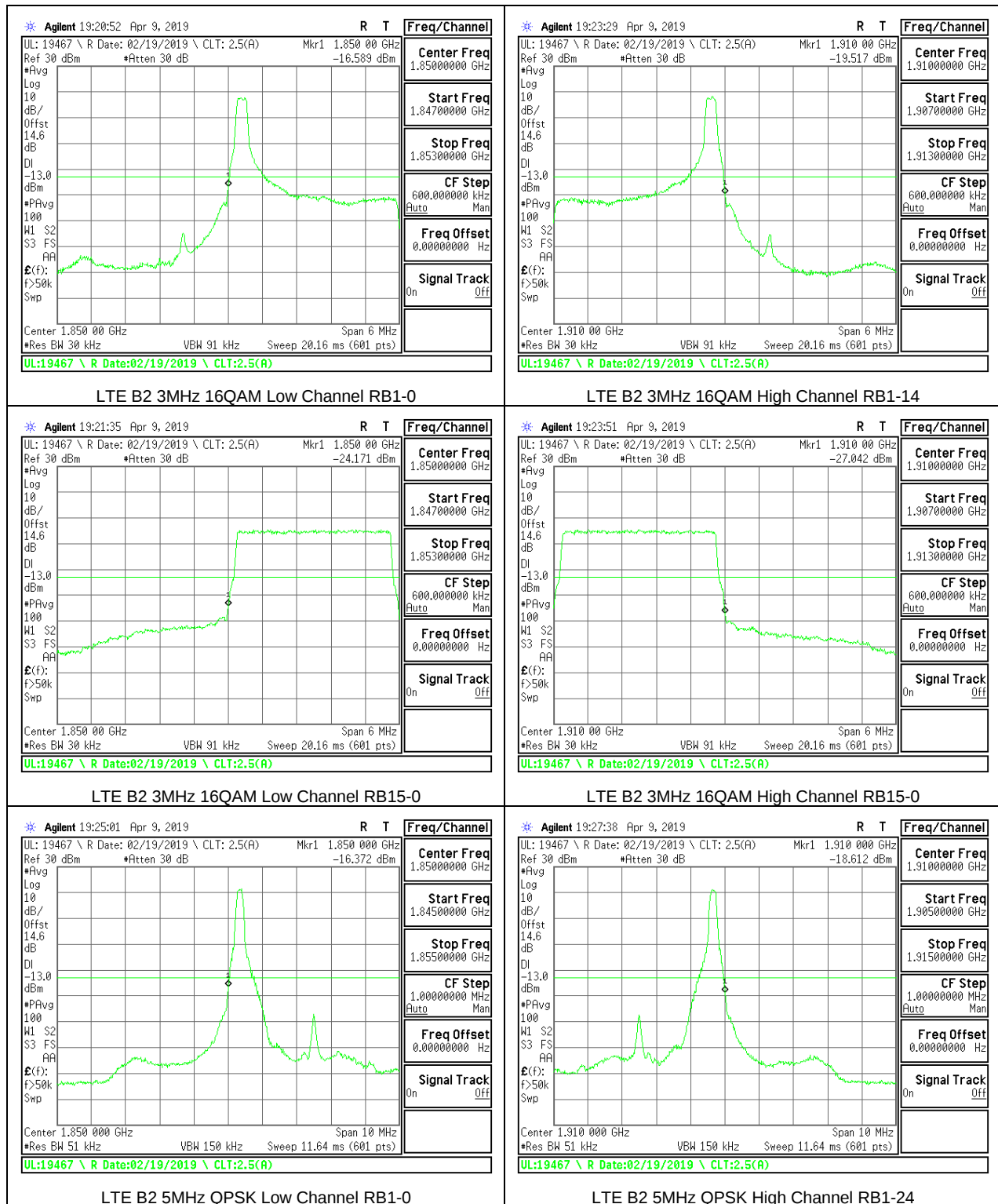
- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

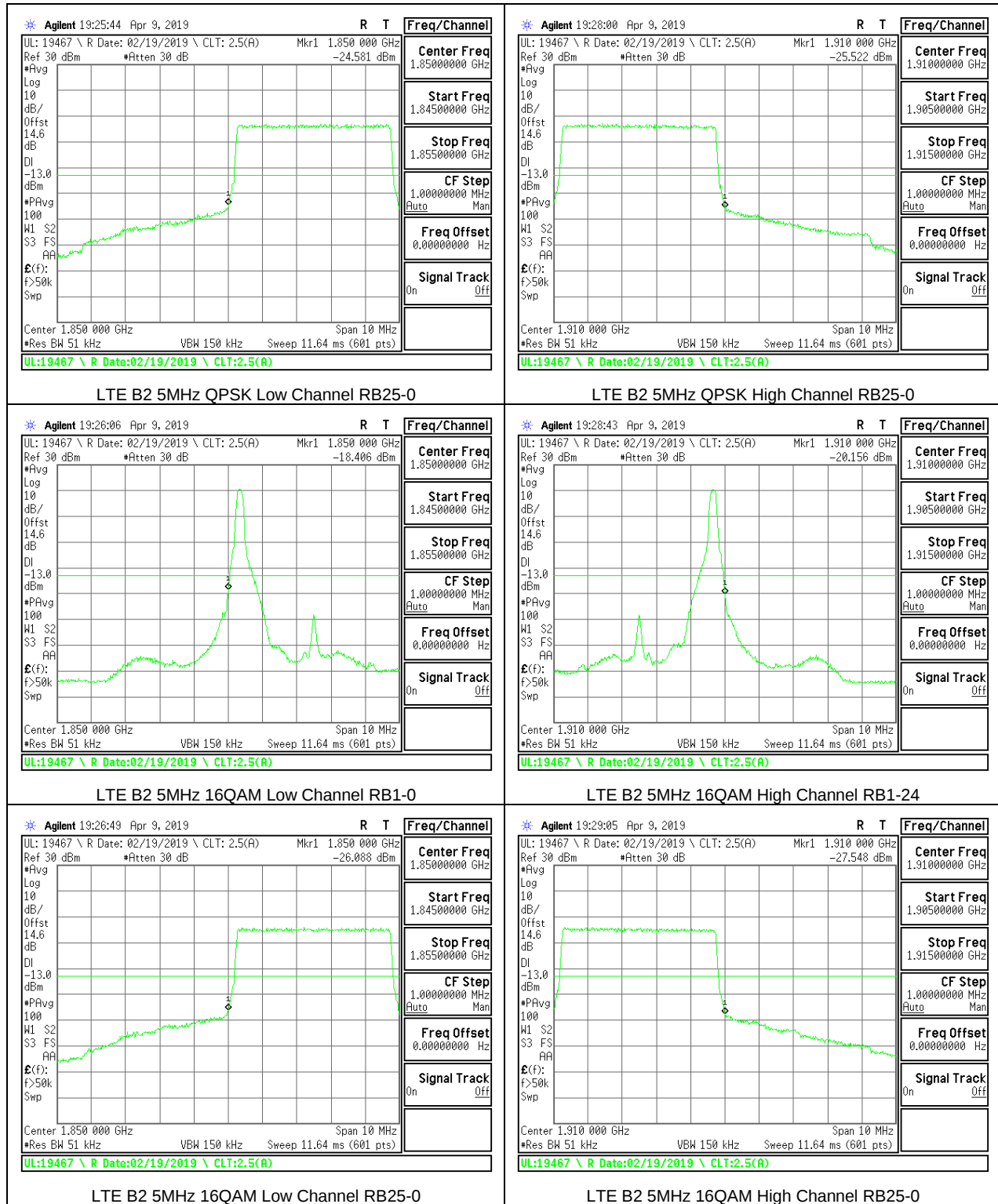
## RESULTS

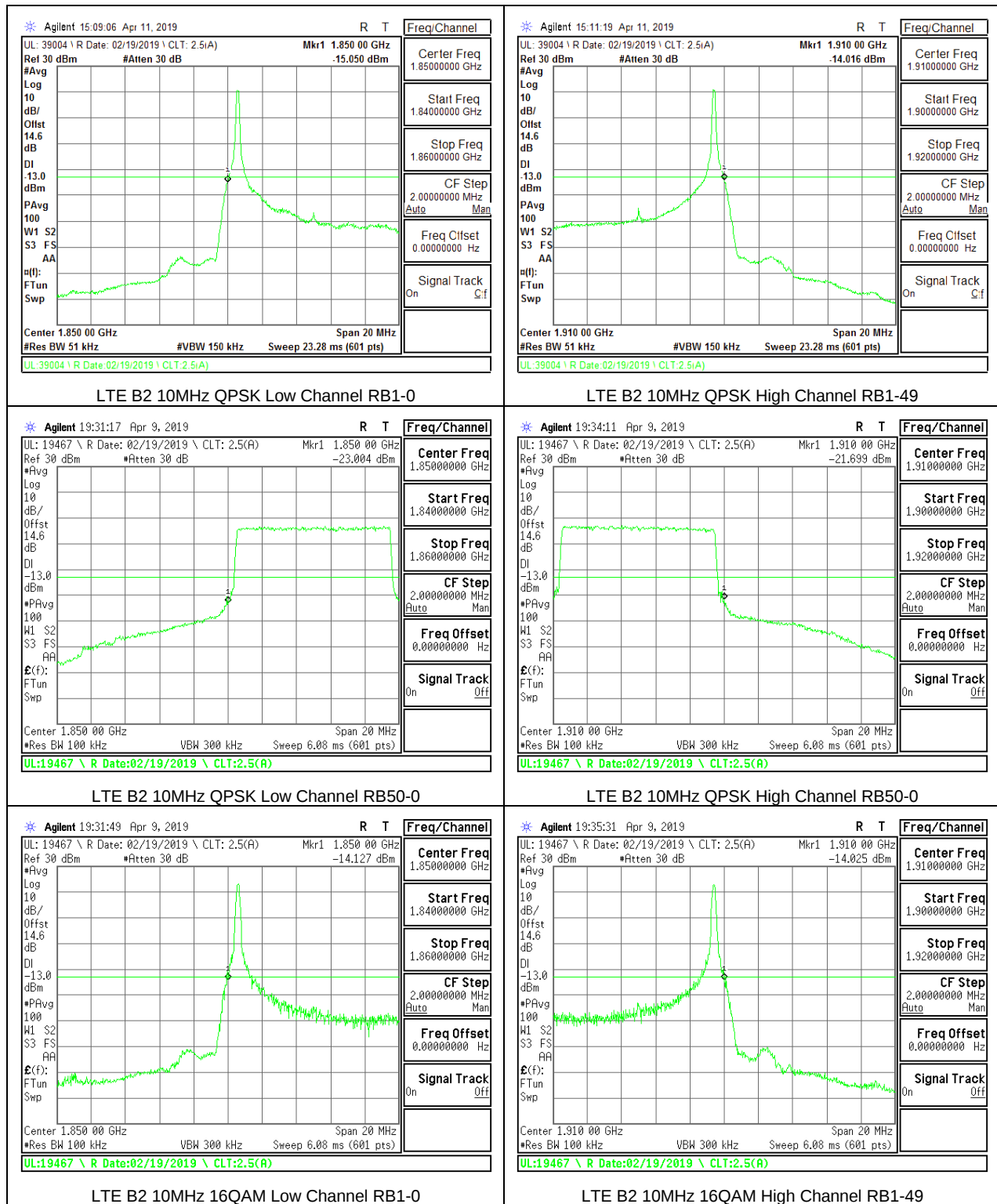
## 8.2.1. LTE BAND 2 BANDEDGE

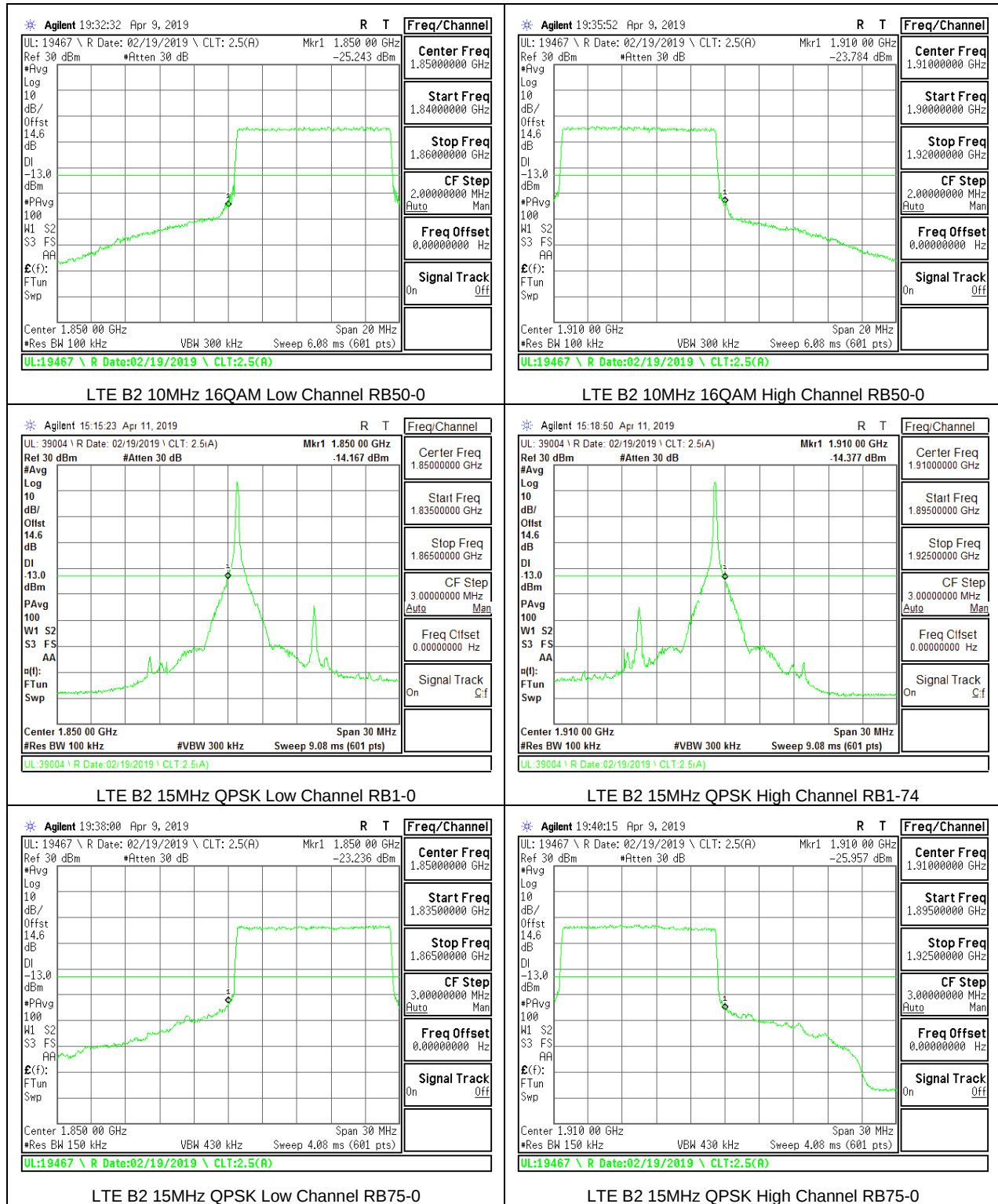


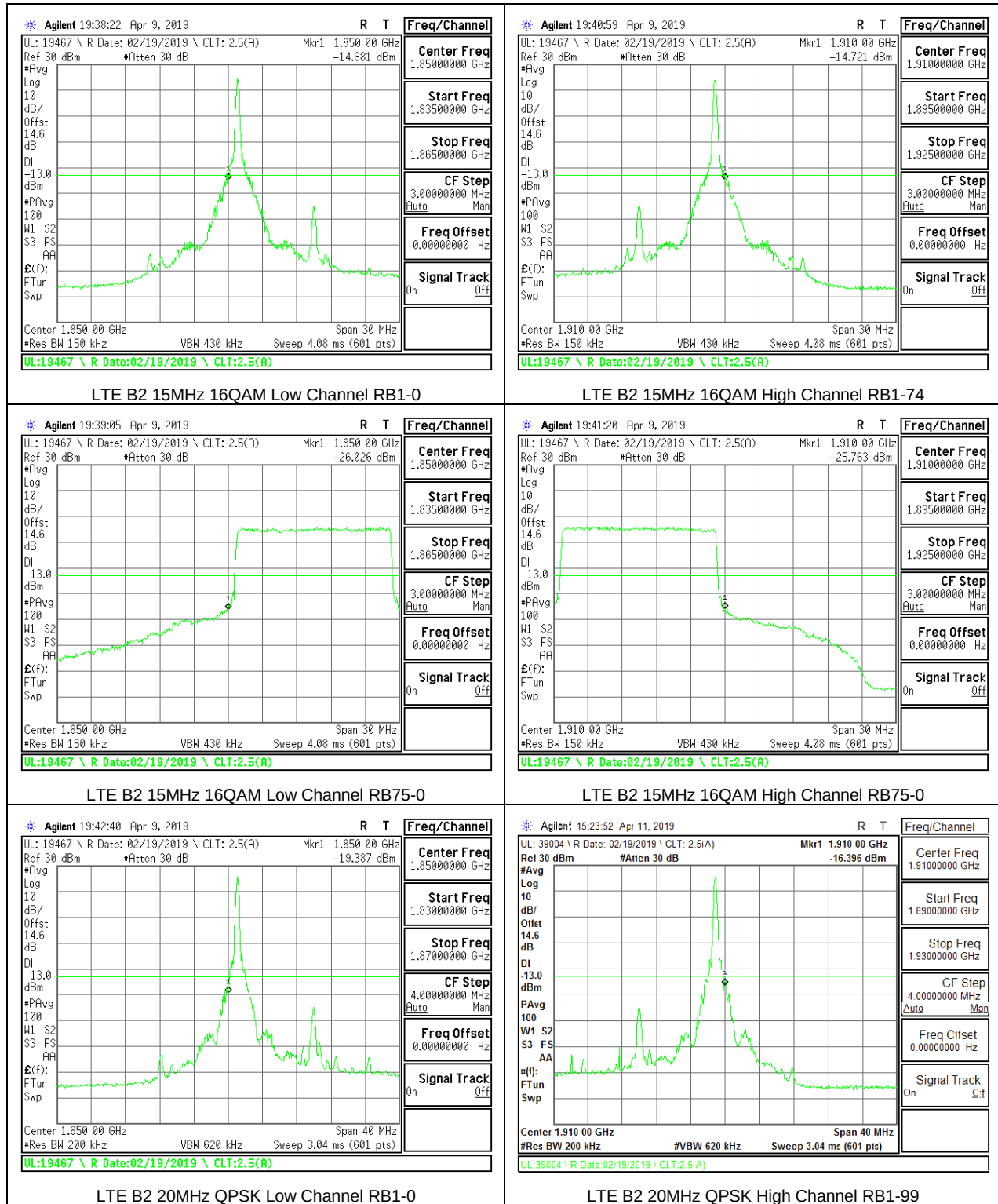


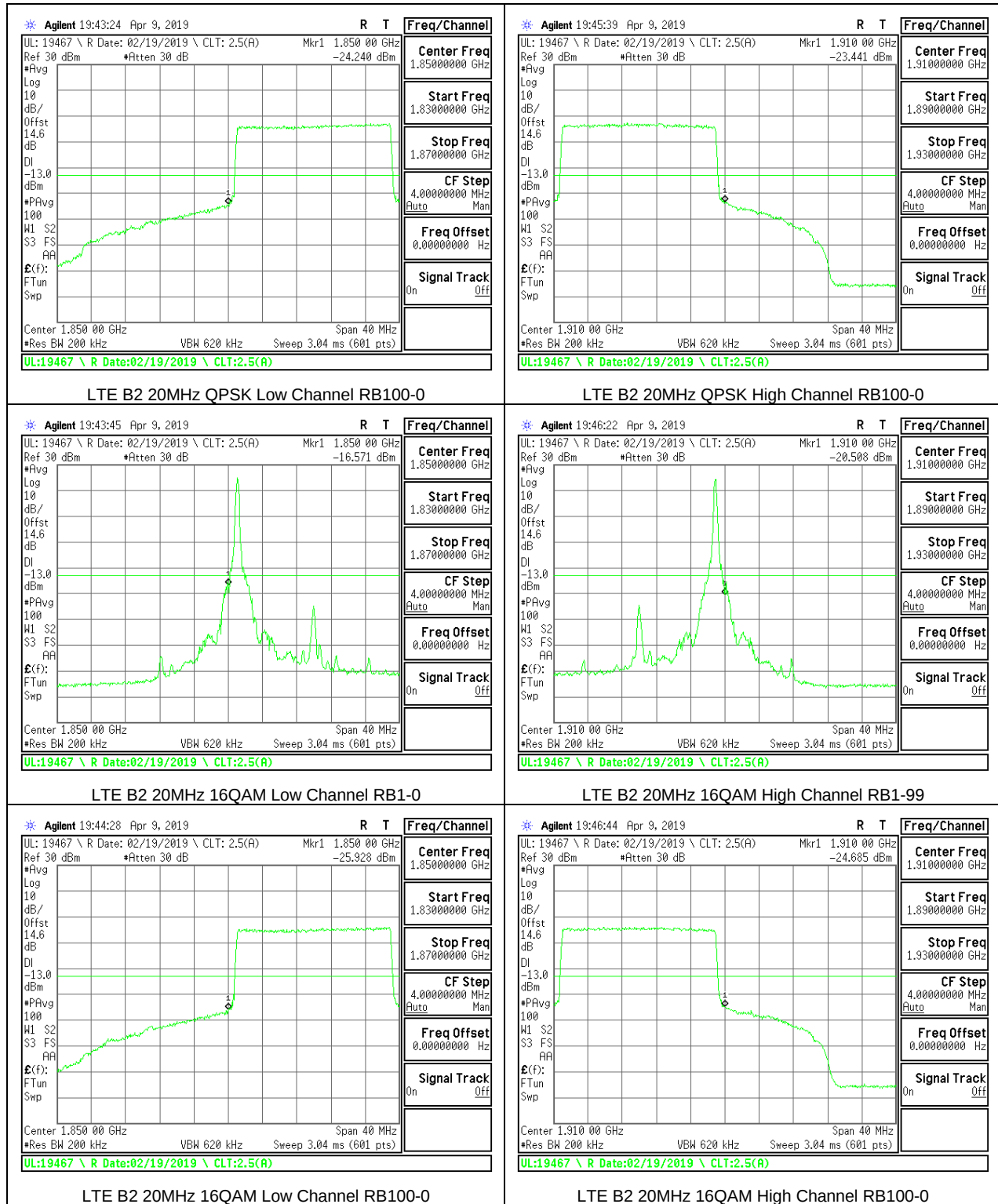




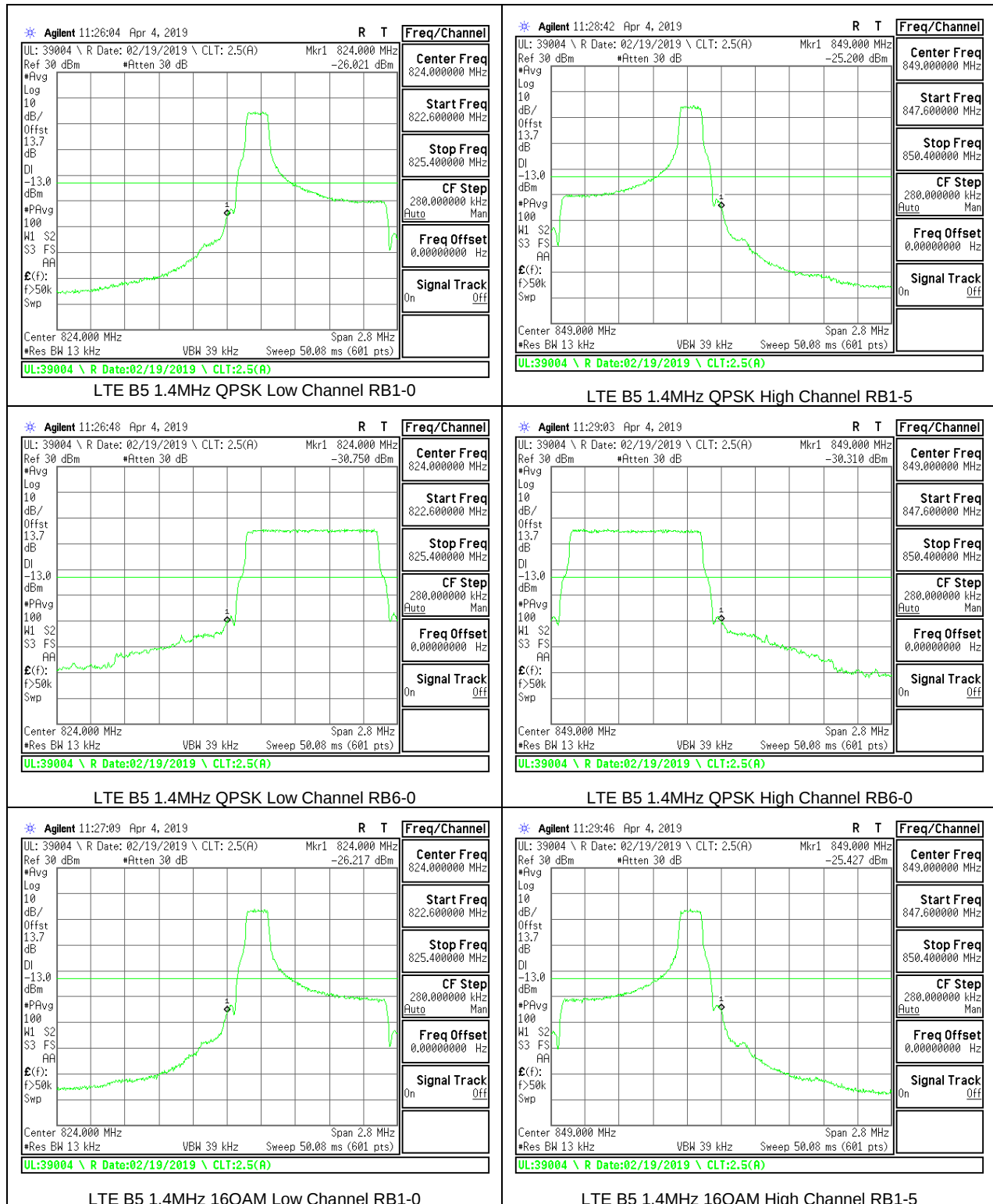


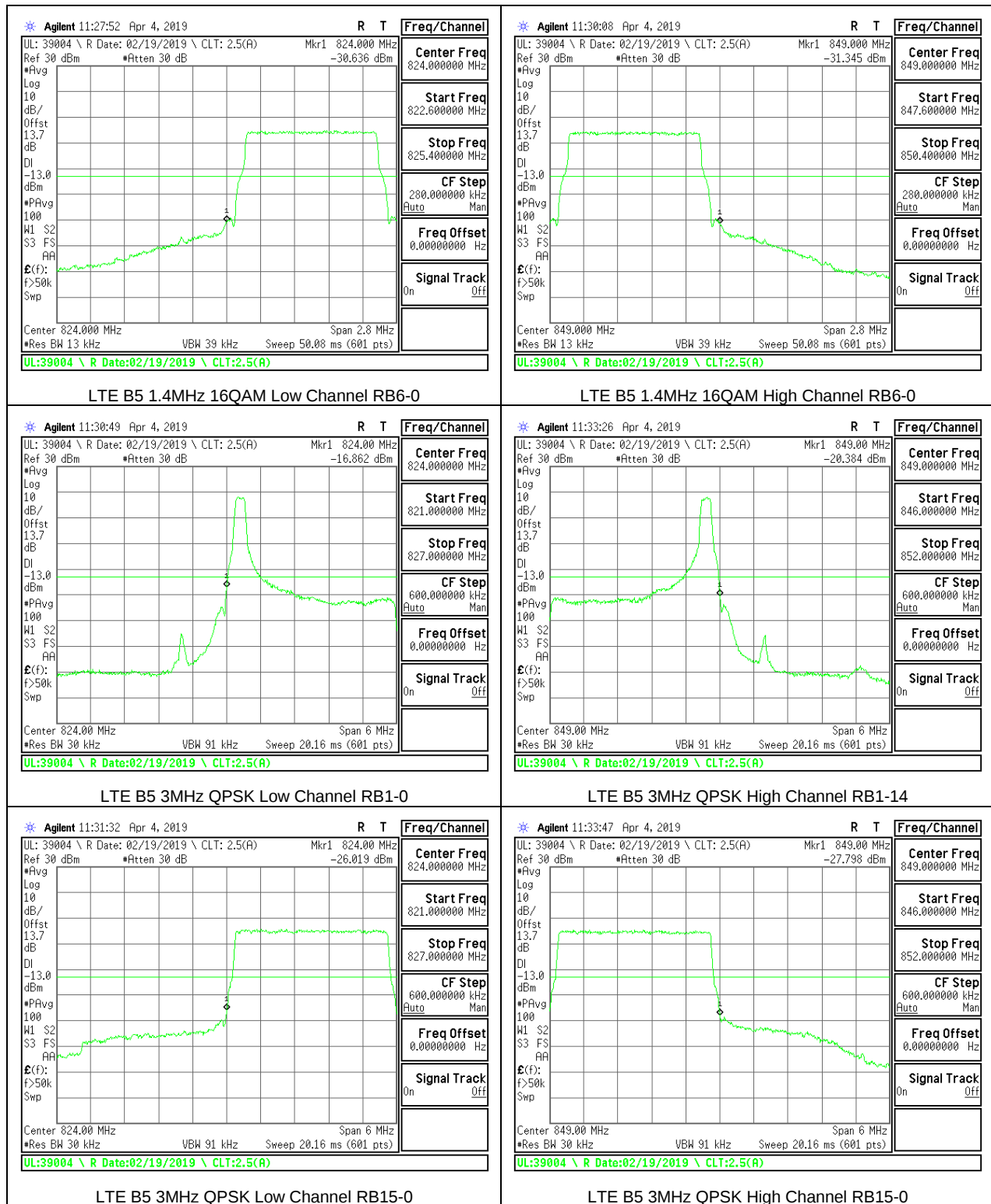


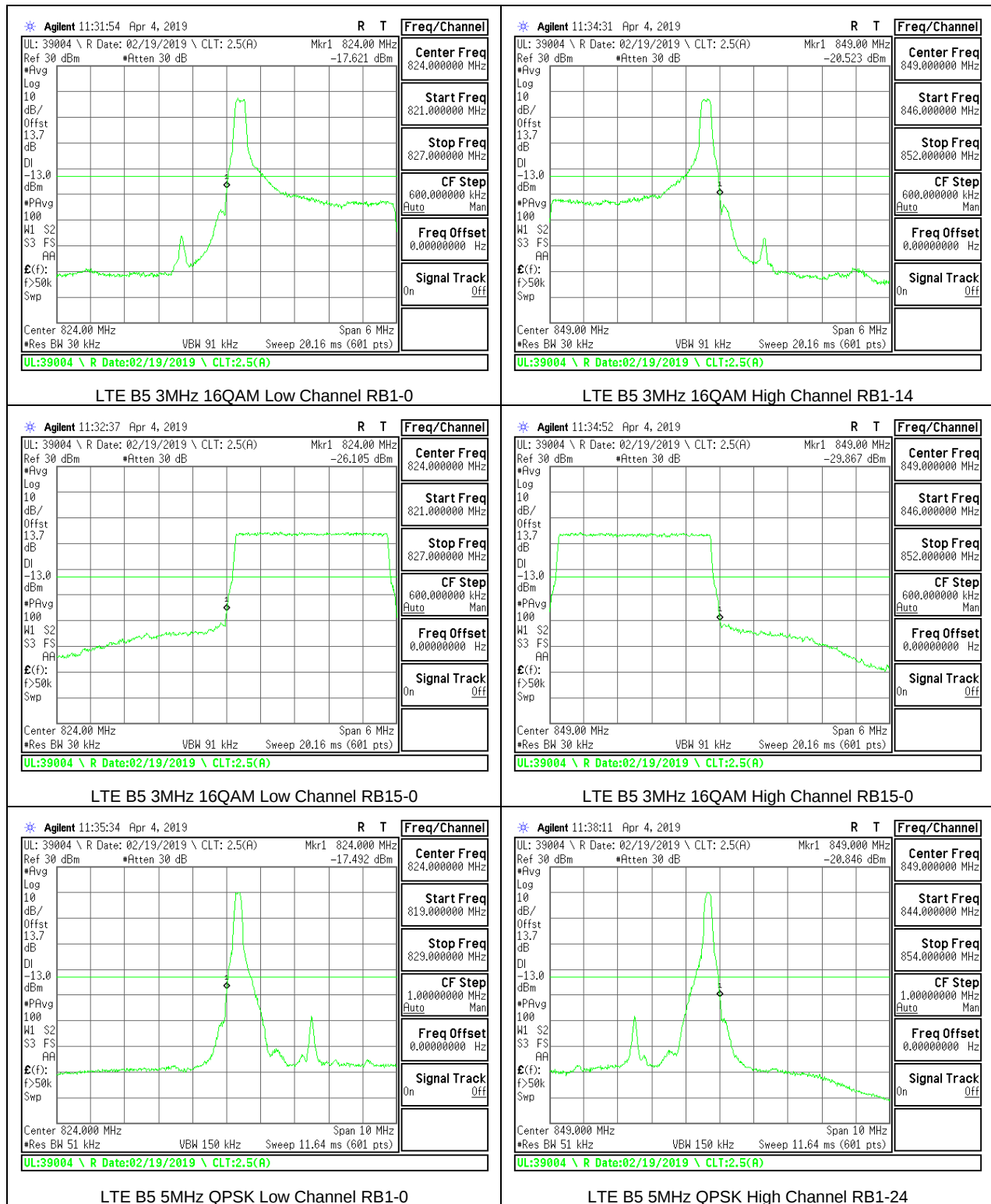


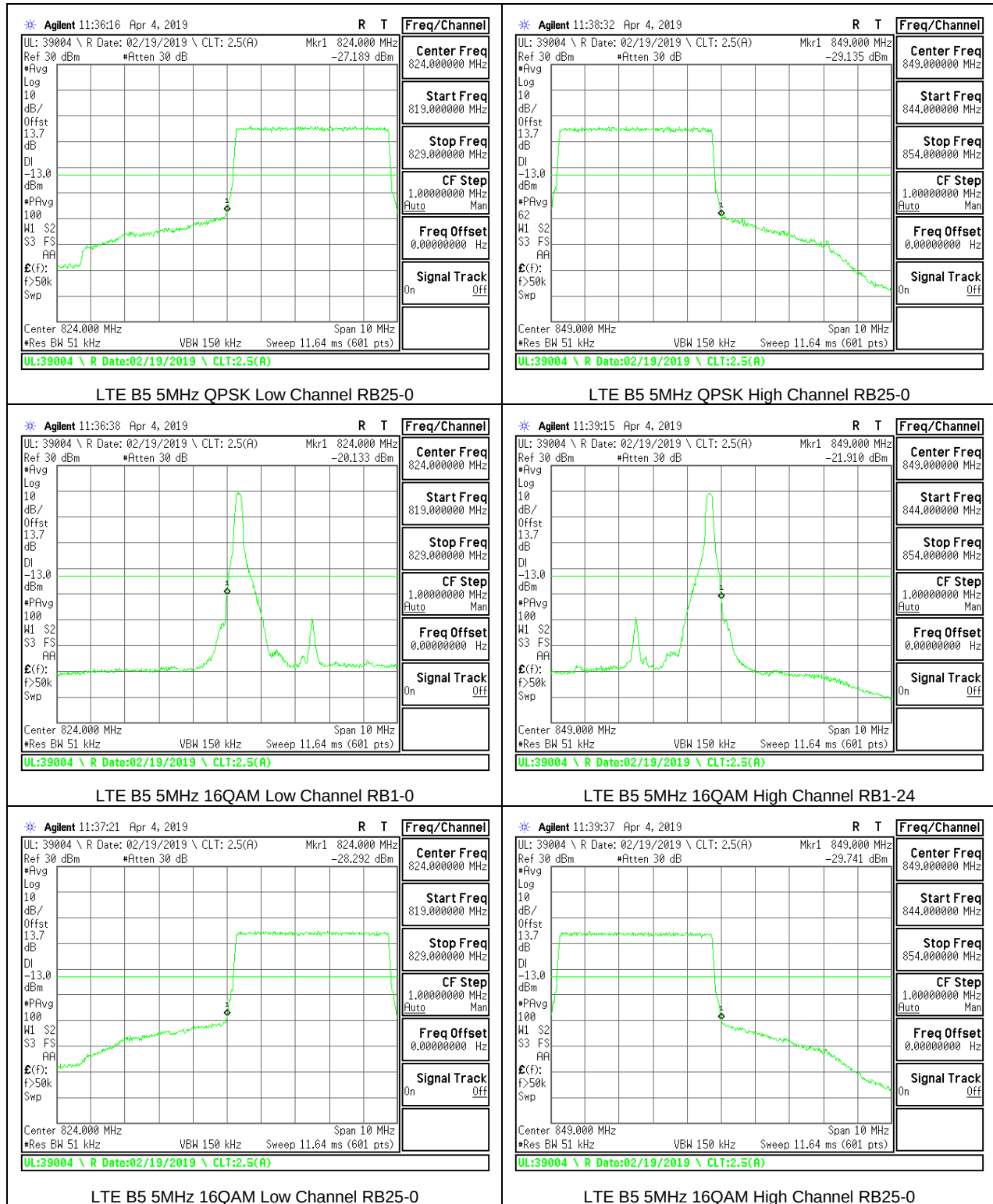


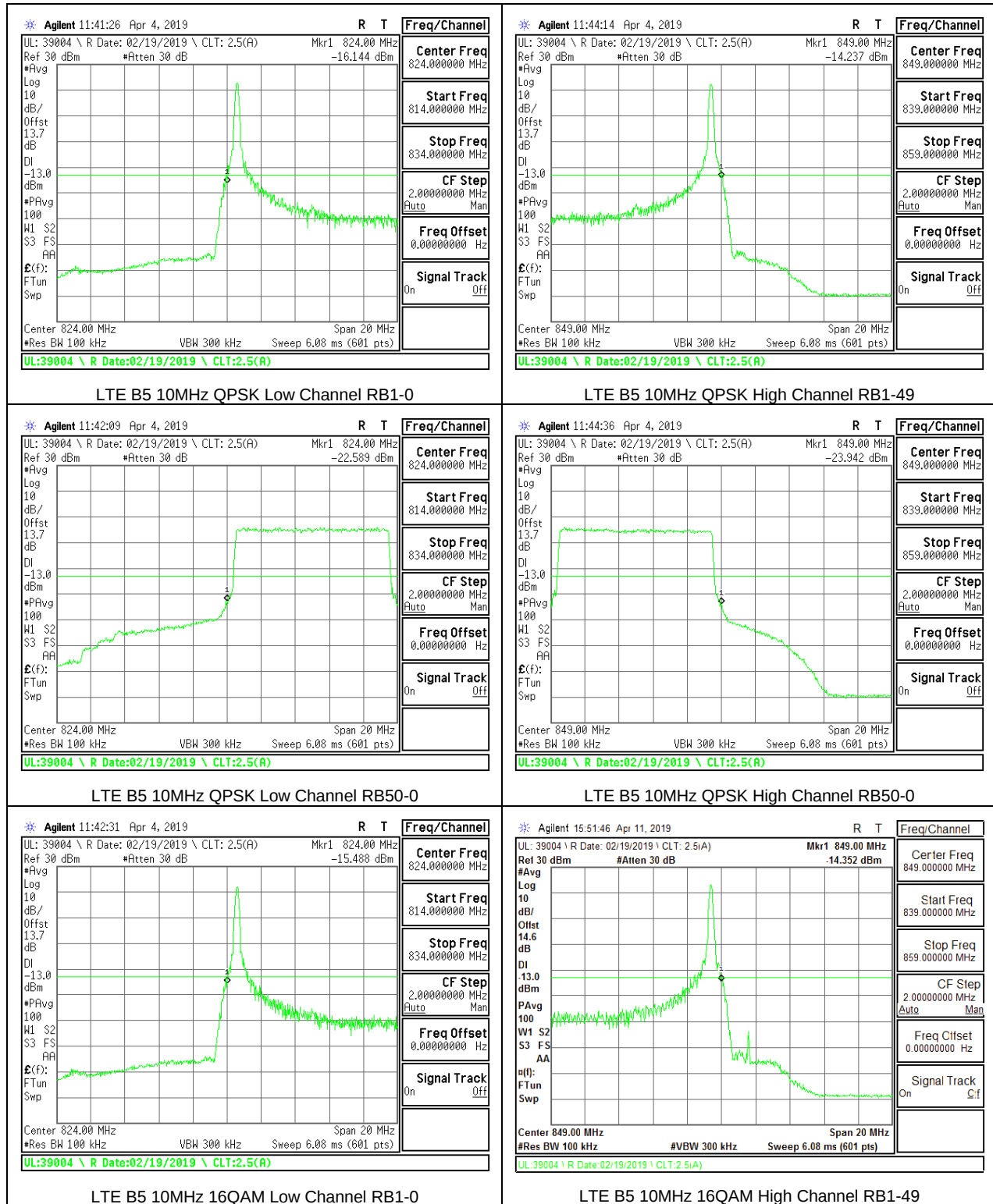
## 8.2.2. LTE BAND 5 BANDEDGE

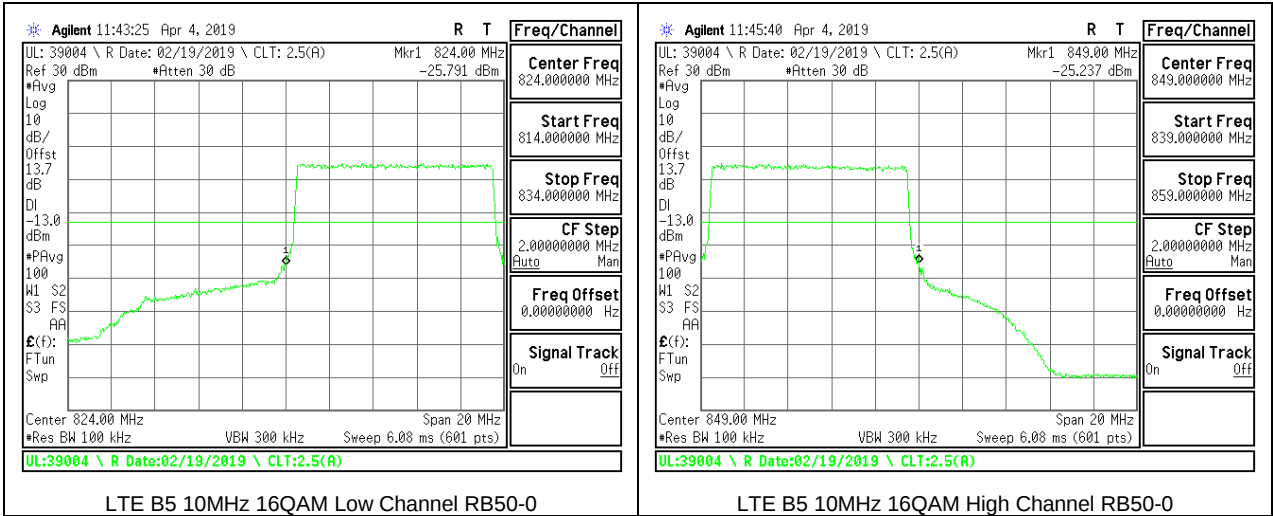












### 8.2.3. LTE BAND 7 ADJACENT CHANNEL POWER

