# RF TEST REPORT

Report No.: 18070621-FCC-R5

Supersede Report No.: N/A

| | |
|---|---|
| Applicant | TECNO MOBILE LIMITED |
| Product Name | Mobile Phone |
| Model No. | F4 |
| Serial No. | N/A |
| Test Standard | FCC Part 22(H), FCC Part 24(E), FCC Part 27; ANSI/TIA-603-D: 2010 |
| Test Date | June 17 to July 01, 2018 |
| Issue Date | July 02, 2018 |
| Test Result | ☑ Pass ☐ Fail |
| Equipment complied with the specification | ☑ |
| Equipment did not comply with the specification | ☐ |

| | | |
|---|---|---|
| Aarron Liang | David Huang | |
| Aarron Liang<br>Test Engineer | David Huang<br>Checked By | |

This test report may be reproduced in full only

Test result presented in this test report is applicable to the tested sample only


Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn

# Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

## Accreditations for Conformity Assessment

| Country/Region | Scope |
|---|---|
| USA | EMC, RF/Wireless, SAR, Telecom |
| Canada | EMC, RF/Wireless, SAR, Telecom |
| Taiwan | EMC, RF, Telecom, SAR, Safety |
| Hong Kong | RF/Wireless, SAR, Telecom |
| Australia | EMC, RF, Telecom, SAR, Safety |
| Korea | EMI, EMS, RF, SAR, Telecom, Safety |
| Japan | EMI, RF/Wireless, SAR, Telecom |
| Singapore | EMC, RF, SAR, Telecom |
| Europe | EMC, RF, SAR, Telecom, Safety |

This page has been left blank intentionally.

# CONTENTS

1. REPORT REVISION HISTORY ..... 5

2. CUSTOMER INFORMATION ..... 5

3. TEST SITE INFORMATION ..... 5

4. EQUIPMENT UNDER TEST (EUT) INFORMATION ..... 6

5. TEST SUMMARY ..... 8

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS ..... 9

6.1 RF EXPOSURE (SAR) ..... 9

6.2 RF OUTPUT POWER ..... 10

6.3 PEAK-AVERAGE RATIO ..... 62

6.4 OCCUPIED BANDWIDTH ..... 66

6.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS ..... 93

6.6 SPURIOUS RADIATED EMISSIONS ..... 98

6.7 BAND EDGE ..... 104

6.8 BAND EDGE 27.53(M) ..... 121

6.9 FREQUENCY STABILITY ..... 127

ANNEX A. TEST INSTRUMENT ..... 131

ANNEX B. TEST SETUP AND SUPPORTING EQUIPMENT ..... 133

ANNEX C. EUT OPERATING CONKITIONS ..... 135

ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST/ DECLARATION OF SIMILARITY ..... 136

# 1. Report Revision History

| Report No. | Report Version | Description | Issue Date |
|---|---|---|---|
| 18070621-FCC-R5 | NONE | Original | July 02, 2018 |
| | | | |
| | | | |
| | | | |

# 2. Customer information

| | |
|---|---|
| Applicant Name | TECNO MOBILE LIMITED |
| Applicant Add | ROOMS 05-15, 13A/F., SOUTH TOWER, WORLD FINANCE CENTRE, HARBOUR CITY, 17 CANTON ROAD, TSIM SHA TSUI, KOWLOON, HONG KONG |
| Manufacturer | SHENZHEN TECNO TECHNOLOGY CO.,LTD. |
| Manufacturer Add | 1/-4/TH FLOOR,7TH FLOOR, 3RD BUILDING, PACIFIC INDUSTRIAL PARK, NO.2088, SHENYAN ROAD, YANTIAN DISTRICT, SHENZHEN , GUANGDONG ,CHINA |

# 3. Test site information

Test Lab A:

| | |
|---|---|
| Lab performing tests | SIEMIC (Shenzhen-China) LABORATORIES |
| Lab Address | Zone A, Floor 1, Building 2 Wan Ye Long Technology Park<br>South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108 |
| FCC Test Site No. | 535293 |
| IC Test Site No. | 4842E-1 |
| Test Software | Radiated Emission Program-To Shenzhen v2.0 |

Test Lab B:

| | |
|---|---|
| Lab performing tests | SIEMIC (Nanjing-China) Laboratories |
| Lab Address | 2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China |
| FCC Test Site No. | 694825 |
| IC Test Site No. | 4842B-1 |
| Test Software | EZ_EMC(ver.lcp-03A1) |

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

# 4. Equipment under Test (EUT) Information

| | |
| --- | --- |
| Description of EUT: | Mobile Phone |
| Main Model: | F4 |
| Serial Model: | N/A |
| Date EUT received: | June 16, 2018 |
| Test Date(s): | June 17 to July 01, 2018 |
| Equipment Category： | PCE |
| Antenna Gain: | LTE Band II: -0.8dBi<br>LTE Band IV: -0.8dBi<br>LTE Band V: -2.3dBi<br>LTE Band VII: -0.6dBi |
| Antenna Type: | PIFA antenna |
| Type of Modulation: | LTE Band: QPSK, 16QAM |
| RF Operating Frequency (ies): | LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz<br>LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz<br>LTE Band V TX: 824.7~ 848.3 MHz; RX : 869.7 ~ 893.3MHz<br>LTE Band VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz |
| Maximum Conducted AV Power to Antenna: | LTE Band II: 22.08 dBm<br>LTE Band IV: 22.05 dBm<br>LTE Band V: 20.87 dBm<br>LTE Band VII: 21.88 dBm |
| ERP/EIRP: | LTE Band II: 21.28 dBm / EIRP<br>LTE Band IV: 22.66 dBm / EIRP<br>LTE Band V: 16.39 dBm / EIRP<br>LTE Band VII: 21.22 dBm / EIRP |
| Port: | Please refer to the user’ s manual |

| | |
| --- | --- |
| | Adapter :<br>Model: A8-501000<br>Input: AC100-240V~50/60Hz,200mA<br>Output: DC 5.0V, 1.0A |
| Input Power: | Battery :<br>Model: BL-30VT<br>Rating: 3.85V, 3000mAh/3050mAh (min/typ)<br>11.55Wh/11.74Wh (min/typ)<br>Limited charge voltage: 4.4V |
| Trade Name : | TECNO |
| FCC ID: | 2ADYY-F4 |

# 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

| FCC Rules | Description of Test | Result |
|---|---|---|
| § 1.1307; § 2.1093 | RF Exposure (SAR) | Compliance |
| §2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10); § 27.50(d.4) | RF Output Power | Compliance |
| § 24.232 (d); § 27.50(d) | Peak-Average Ratio | Compliance |
| § 2.1049; § 22.905; § 22.917; § 24.238; § 27.53(a.5) | 99% & -26 dB Occupied Bandwidth | Compliance |
| § 2.1051; § 22.917(a); § 24.238(a); § 27.53(h) | Spurious Emissions at Antenna Terminal | Compliance |
| § 2.1053; § 22.917(a); § 24.238(a); § 27.53(h) | Field Strength of Spurious Radiation | Compliance |
| § 22.917(a); § 24.238(a); | Out of band emission, Band Edge | Compliance |
| § 27.53(m) | Band Edge 27.53(m) | Compliance |
| § 2.1055; § 22.355; § 24.235; § 27.5(h); § 27.54 | Frequency stability vs. temperature<br>Frequency stability vs. voltage | Compliance |

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

**Measurement Uncertainty**

| Emissions | | |
|---|---|---|
| **Test Item** | **Description** | **Uncertainty** |
| Band Edge and Radiated Spurious Emissions | Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m) | +5.6dB/-4.5dB |
| - | - | - |

# 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

## 6.1 RF Exposure (SAR)

Test Result: Pass

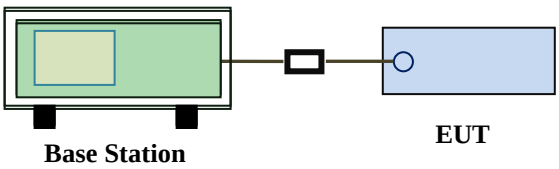
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 18070621-FCC-H.

## 6.2 RF Output Power

| | |
|---|---|
| Temperature | 24℃ |
| Relative Humidity | 57% |
| Atmospheric Pressure | 1023mbar |
| Test date : | June 27, 2018 |
| Tested By : | Aarron Liang |

**Requirement(s):**

| Spec | Item | Requirement | Applicable |
|---|---|---|---|
| §22.913 (a) | a) | ERP:38.45dBm | ☑ |
| §24.232 (c) | b) | EIRP:33dBm | ☑ |
| §27.50 (c) | c) | EIRP: 30dBm | ☑ |
| Test Setup |   | | |
| Test Procedure | For Conducted Power:<br>- The transmitter output port was connected to base station.<br>- Set EUT at maximum power through base station.<br>- Select lowest, middle, and highest channels for each band and different test mode.<br>For ERP/EIRP:<br>- The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.<br>- The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.<br>- The frequency range up to tenth harmonic of the fundamental frequency was investigated. | | |

| | |
| --- | --- |
| | - Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.<br>- Spurious emissions in dB = 10 log (TX power in Watts/0.001) – the absolute level<br>- Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts. |
| Remark | |
| Result | ☑ Pass ☐ Fail |

**Test Data** ☑ Yes ☐ N/A

**Test Plot** ☐ Yes (See below) ☑ N/A

## Conducted Power

### LTE Band II:

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 20MHz | 18700 | 1860 | QPSK | 1 | 0 | 0 | 21.93 | 21.5±1 |
| | | | | 1 | 49 | 0 | 21.9 | |
| | | | | 1 | 99 | 0 | 21.88 | |
| | | | | 50 | 0 | 1 | 21.18 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.16 | |
| | | | | 50 | 49 | 1 | 21.15 | |
| | | | | 100 | 0 | 1 | 21.09 | |
| | | | 16QAM | 1 | 0 | 1 | 21.26 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.23 | |
| | | | | 1 | 99 | 1 | 21.21 | |
| | | | | 50 | 0 | 2 | 20.18 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.16 | |
| | | | | 50 | 49 | 2 | 20.17 | |
| | | | | 100 | 0 | 2 | 20.16 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 22.08 | 21.5±1 |
| | | | | 1 | 49 | 0 | 22.05 | |
| | | | | 1 | 99 | 0 | 22.03 | |
| | | | | 50 | 0 | 1 | 21.33 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.31 | |
| | | | | 50 | 49 | 1 | 21.3 | |
| | | | | 100 | 0 | 1 | 21.24 | |
| | | | 16QAM | 1 | 0 | 1 | 21.41 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.38 | |
| | | | | 1 | 99 | 1 | 21.36 | |
| | | | | 50 | 0 | 2 | 20.33 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.31 | |
| | | | | 50 | 49 | 2 | 20.32 | |
| | | | | 100 | 0 | 2 | 20.31 | |
| | 19100 | 1900 | QPSK | 1 | 0 | 0 | 22.05 | 21.5±1 |
| | | | | 1 | 49 | 0 | 22.02 | |
| | | | | 1 | 99 | 0 | 22 | |
| | | | | 50 | 0 | 1 | 21.3 | 20.5±1 |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 24 | 1 | 21.28 | |
| | | | | 50 | 49 | 1 | 21.27 | |
| | | | | 100 | 0 | 1 | 21.21 | |
| | | | | 1 | 0 | 1 | 21.38 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.35 | |
| | | | | 1 | 99 | 1 | 21.33 | |
| | | | 16QAM | 50 | 0 | 2 | 20.3 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.28 | |
| | | | | 50 | 49 | 2 | 20.29 | |
| | | | | 100 | 0 | 2 | 20.28 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 15MHz | 18675 | 1857.5 | QPSK | 1 | 0 | 0 | 21.88 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.85 | |
| | | | | 1 | 74 | 0 | 21.83 | |
| | | | | 36 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.11 | |
| | | | | 36 | 35 | 1 | 21.1 | |
| | | | | 75 | 0 | 1 | 21.04 | |
| | | | 16QAM | 1 | 0 | 1 | 21.21 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.18 | |
| | | | | 1 | 74 | 1 | 21.16 | |
| | | | | 36 | 0 | 2 | 20.13 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.11 | |
| | | | | 36 | 35 | 2 | 20.12 | |
| | | | | 75 | 0 | 2 | 20.11 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 22.03 | 21.5±1 |
| | | | | 1 | 37 | 0 | 22 | |
| | | | | 1 | 74 | 0 | 21.98 | |
| | | | | 36 | 0 | 1 | 21.28 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.26 | |
| | | | | 36 | 35 | 1 | 21.25 | |
| | | | | 75 | 0 | 1 | 21.19 | |
| | | | 16QAM | 1 | 0 | 1 | 21.36 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.33 | |
| | | | | 1 | 74 | 1 | 21.31 | |
| | | | | 36 | 0 | 2 | 20.28 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.26 | |
| | | | | 36 | 35 | 2 | 20.27 | |
| | | | | 75 | 0 | 2 | 20.26 | |
| | 19125 | 1902.5 | QPSK | 1 | 0 | 0 | 22 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.97 | |
| | | | | 1 | 74 | 0 | 21.95 | |
| | | | | 36 | 0 | 1 | 21.25 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.23 | |
| | | | | 36 | 35 | 1 | 21.22 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 75 | 0 | 1 | 21.16 | |
| | | | 16QAM | 1 | 0 | 1 | 21.33 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.3 | |
| | | | | 1 | 74 | 1 | 21.28 | |
| | | | | 36 | 0 | 2 | 20.25 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.23 | |
| | | | | 36 | 35 | 2 | 20.24 | |
| | | | | 75 | 0 | 2 | 20.23 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 10MHz | 18650 | 1855 | QPSK | 1 | 0 | 0 | 21.85 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.82 | |
| | | | | 1 | 49 | 0 | 21.8 | |
| | | | | 25 | 0 | 1 | 21.1 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.08 | |
| | | | | 25 | 24 | 1 | 21.07 | |
| | | | | 50 | 0 | 1 | 21.01 | |
| | | | 16QAM | 1 | 0 | 1 | 21.18 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.15 | |
| | | | | 1 | 49 | 1 | 21.13 | |
| | | | | 25 | 0 | 2 | 20.1 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.08 | |
| | | | | 25 | 24 | 2 | 20.09 | |
| | | | | 50 | 0 | 2 | 20.08 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 22 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.97 | |
| | | | | 1 | 49 | 0 | 21.95 | |
| | | | | 25 | 0 | 1 | 21.25 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.23 | |
| | | | | 25 | 24 | 1 | 21.22 | |
| | | | | 50 | 0 | 1 | 21.16 | |
| | | | 16QAM | 1 | 0 | 1 | 21.33 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.3 | |
| | | | | 1 | 49 | 1 | 21.28 | |
| | | | | 25 | 0 | 2 | 20.25 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.23 | |
| | | | | 25 | 24 | 2 | 20.24 | |
| | | | | 50 | 0 | 2 | 20.23 | |
| | 19150 | 1905 | QPSK | 1 | 0 | 0 | 21.97 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.94 | |
| | | | | 1 | 49 | 0 | 21.92 | |
| | | | | 25 | 0 | 1 | 21.22 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.2 | |
| | | | | 25 | 24 | 1 | 21.19 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 0 | 1 | 21.13 | |
| | | | 16QAM | 1 | 0 | 1 | 21.3 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.27 | |
| | | | | 1 | 49 | 1 | 21.25 | |
| | | | | 25 | 0 | 2 | 20.22 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.2 | |
| | | | | 25 | 24 | 2 | 20.21 | |
| | | | | 50 | 0 | 2 | 20.2 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 5MHz | 18625 | 1852.5 | QPSK | 1 | 0 | 0 | 21.83 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.8 | |
| | | | | 1 | 24 | 0 | 21.78 | |
| | | | | 12 | 0 | 1 | 21.08 | 20.5±1 |
| | | | | 12 | 6 | 1 | 21.06 | |
| | | | | 12 | 11 | 1 | 21.05 | |
| | | | | 25 | 0 | 1 | 20.99 | |
| | | | 16QAM | 1 | 0 | 1 | 21.16 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.13 | |
| | | | | 1 | 24 | 1 | 21.11 | |
| | | | | 12 | 0 | 2 | 20.08 | 19.5±1 |
| | | | | 12 | 6 | 2 | 20.06 | |
| | | | | 12 | 11 | 2 | 20.07 | |
| | | | | 25 | 0 | 2 | 20.06 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 21.98 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.95 | |
| | | | | 1 | 24 | 0 | 21.93 | |
| | | | | 12 | 0 | 1 | 21.23 | 20.5±1 |
| | | | | 12 | 6 | 1 | 21.21 | |
| | | | | 12 | 11 | 1 | 21.2 | |
| | | | | 25 | 0 | 1 | 21.14 | |
| | | | 16QAM | 1 | 0 | 1 | 21.31 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.28 | |
| | | | | 1 | 24 | 1 | 21.26 | |
| | | | | 12 | 0 | 2 | 20.23 | 19.5±1 |
| | | | | 12 | 6 | 2 | 20.21 | |
| | | | | 12 | 11 | 2 | 20.22 | |
| | | | | 25 | 0 | 2 | 20.21 | |
| | 19175 | 1907.5 | QPSK | 1 | 0 | 0 | 21.95 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.92 | |
| | | | | 1 | 24 | 0 | 21.9 | |
| | | | | 12 | 0 | 1 | 21.2 | 20.5±1 |
| | | | | 12 | 6 | 1 | 21.18 | |
| | | | | 12 | 11 | 1 | 21.17 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 25 | 0 | 1 | 21.11 | |
| | | | 16QAM | 1 | 0 | 1 | 21.28 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.25 | |
| | | | | 1 | 24 | 1 | 21.23 | |
| | | | | 12 | 0 | 2 | 20.2 | 19.5±1 |
| | | | | 12 | 6 | 2 | 20.18 | |
| | | | | 12 | 11 | 2 | 20.19 | |
| | | | | 25 | 0 | 2 | 20.18 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 3MHz | 18625 | 1852.5 | QPSK | 1 | 0 | 0 | 21.8 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.77 | |
| | | | | 1 | 14 | 0 | 21.75 | |
| | | | | 8 | 0 | 1 | 21.05 | 20.5±1 |
| | | | | 8 | 4 | 1 | 21.03 | |
| | | | | 8 | 7 | 1 | 21.02 | |
| | | | | 15 | 0 | 1 | 20.96 | |
| | | | 16QAM | 1 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 1 | 7 | 1 | 21.1 | |
| | | | | 1 | 14 | 1 | 21.08 | |
| | | | | 8 | 0 | 2 | 20.05 | 19.5±1 |
| | | | | 8 | 4 | 2 | 20.03 | |
| | | | | 8 | 7 | 2 | 20.04 | |
| | | | | 15 | 0 | 2 | 20.03 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 21.95 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.92 | |
| | | | | 1 | 14 | 0 | 21.9 | |
| | | | | 8 | 0 | 1 | 21.2 | 20.5±1 |
| | | | | 8 | 4 | 1 | 21.18 | |
| | | | | 8 | 7 | 1 | 21.17 | |
| | | | | 15 | 0 | 1 | 21.11 | |
| | | | 16QAM | 1 | 0 | 1 | 21.28 | 20.5±1 |
| | | | | 1 | 7 | 1 | 21.25 | |
| | | | | 1 | 14 | 1 | 21.23 | |
| | | | | 8 | 0 | 2 | 20.2 | 19.5±1 |
| | | | | 8 | 4 | 2 | 20.18 | |
| | | | | 8 | 7 | 2 | 20.19 | |
| | | | | 15 | 0 | 2 | 20.18 | |
| | 19175 | 1907.5 | QPSK | 1 | 0 | 0 | 21.92 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.89 | |
| | | | | 1 | 14 | 0 | 21.87 | |
| | | | | 8 | 0 | 1 | 21.17 | 20.5±1 |
| | | | | 8 | 4 | 1 | 21.15 | |
| | | | | 8 | 7 | 1 | 21.14 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 15 | 0 | 1 | 21.08 | |
| | | | 16QAM | 1 | 0 | 1 | 21.25 | 20.5±1 |
| | | | | 1 | 7 | 1 | 21.22 | |
| | | | | 1 | 14 | 1 | 21.2 | |
| | | | | 8 | 0 | 2 | 20.17 | 19.5±1 |
| | | | | 8 | 4 | 2 | 20.15 | |
| | | | | 8 | 7 | 2 | 20.16 | |
| | | | | 15 | 0 | 2 | 20.15 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz | 18607 | 1850.7 | QPSK | 1 | 0 | 0 | 21.77 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.74 | |
| | | | | 1 | 5 | 0 | 21.72 | |
| | | | | 3 | 0 | 0 | 21.04 | 20.5±1 |
| | | | | 3 | 1 | 0 | 21.02 | |
| | | | | 3 | 2 | 0 | 21.01 | |
| | | | | 6 | 0 | 1 | 20.93 | |
| | | | 16QAM | 1 | 0 | 1 | 21.1 | 20.5±1 |
| | | | | 1 | 2 | 1 | 21.07 | |
| | | | | 1 | 5 | 1 | 21.05 | |
| | | | | 3 | 0 | 1 | 20.03 | 19.5±1 |
| | | | | 3 | 1 | 1 | 20.01 | |
| | | | | 3 | 2 | 1 | 20.02 | |
| | | | | 6 | 0 | 2 | 20 | |
| | 18900 | 1880 | QPSK | 1 | 0 | 0 | 21.92 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.89 | |
| | | | | 1 | 5 | 0 | 21.87 | |
| | | | | 3 | 0 | 0 | 21.19 | 20.5±1 |
| | | | | 3 | 1 | 0 | 21.17 | |
| | | | | 3 | 2 | 0 | 21.16 | |
| | | | | 6 | 0 | 1 | 21.08 | |
| | | | 16QAM | 1 | 0 | 1 | 21.25 | 20.5±1 |
| | | | | 1 | 2 | 1 | 21.22 | |
| | | | | 1 | 5 | 1 | 21.2 | |
| | | | | 3 | 0 | 1 | 20.18 | 19.5±1 |
| | | | | 3 | 1 | 1 | 20.16 | |
| | | | | 3 | 2 | 1 | 20.17 | |
| | | | | 6 | 0 | 2 | 20.15 | |
| | 19193 | 1909.3 | QPSK | 1 | 0 | 0 | 21.89 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.86 | |
| | | | | 1 | 5 | 0 | 21.84 | |
| | | | | 3 | 0 | 0 | 21.16 | 20.5±1 |
| | | | | 3 | 1 | 0 | 21.14 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 3 | 2 | 0 | 21.13 | |
| | | | | 6 | 0 | 1 | 21.05 | |
| | | | 16QAM | 1 | 0 | 1 | 21.22 | 20.5±1 |
| | | | | 1 | 2 | 1 | 21.19 | |
| | | | | 1 | 5 | 1 | 21.17 | |
| | | | | 3 | 0 | 1 | 20.15 | 19.5±1 |
| | | | | 3 | 1 | 1 | 20.13 | |
| | | | | 3 | 2 | 1 | 20.14 | |
| | | | | 6 | 0 | 2 | 20.12 | |

**LTE Band IV:**

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 20MHz | 20050 | 1720 | QPSK | 1 | 0 | 0 | 22.04 | 21.5±1 |
| | | | | 1 | 49 | 0 | 22.02 | |
| | | | | 1 | 99 | 0 | 21.94 | |
| | | | | 50 | 0 | 1 | 21.22 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.2 | |
| | | | | 50 | 49 | 1 | 21.18 | |
| | | | | 100 | 0 | 1 | 21.13 | |
| | | | 16QAM | 1 | 0 | 1 | 21.31 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.29 | |
| | | | | 1 | 99 | 1 | 21.27 | |
| | | | | 50 | 0 | 2 | 20.24 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.22 | |
| | | | | 50 | 49 | 2 | 20.2 | |
| | | | | 100 | 0 | 2 | 20.21 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 22.05 | 21.5±1 |
| | | | | 1 | 49 | 0 | 22.03 | |
| | | | | 1 | 99 | 0 | 21.95 | |
| | | | | 50 | 0 | 1 | 21.23 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.21 | |
| | | | | 50 | 49 | 1 | 21.19 | |
| | | | | 100 | 0 | 1 | 21.14 | |
| | | | 16QAM | 1 | 0 | 1 | 21.32 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.3 | |
| | | | | 1 | 99 | 1 | 21.28 | |
| | | | | 50 | 0 | 2 | 20.25 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.23 | |
| | | | | 50 | 49 | 2 | 20.21 | |
| | | | | 100 | 0 | 2 | 20.22 | |
| | 20300 | 1745 | QPSK | 1 | 0 | 0 | 21.86 | 21.5±1 |
| | | | | 1 | 49 | 0 | 21.84 | |
| | | | | 1 | 99 | 0 | 21.76 | |
| | | | | 50 | 0 | 1 | 21.04 | 20.5±1 |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 24 | 1 | 21.02 | |
| | | | | 50 | 49 | 1 | 21 | |
| | | | | 100 | 0 | 1 | 20.95 | |
| | | | 16QAM | 1 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.11 | |
| | | | | 1 | 99 | 1 | 21.09 | |
| | | | | 50 | 0 | 2 | 20.06 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.04 | |
| | | | | 50 | 49 | 2 | 20.02 | |
| | | | | 100 | 0 | 2 | 20.03 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 15MHz | 20025 | 1717.5 | QPSK | 1 | 0 | 0 | 22.01 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.99 | |
| | | | | 1 | 74 | 0 | 21.91 | |
| | | | | 36 | 0 | 1 | 21.19 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.17 | |
| | | | | 36 | 35 | 1 | 21.15 | |
| | | | | 75 | 0 | 1 | 21.1 | |
| | | | 16QAM | 1 | 0 | 1 | 21.28 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.26 | |
| | | | | 1 | 74 | 1 | 21.24 | |
| | | | | 36 | 0 | 2 | 20.21 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.19 | |
| | | | | 36 | 35 | 2 | 20.17 | |
| | | | | 75 | 0 | 2 | 20.18 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 22.02 | 21.5±1 |
| | | | | 1 | 37 | 0 | 22 | |
| | | | | 1 | 74 | 0 | 21.92 | |
| | | | | 36 | 0 | 1 | 21.2 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.18 | |
| | | | | 36 | 35 | 1 | 21.16 | |
| | | | | 75 | 0 | 1 | 21.11 | |
| | | | 16QAM | 1 | 0 | 1 | 21.29 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.27 | |
| | | | | 1 | 74 | 1 | 21.25 | |
| | | | | 36 | 0 | 2 | 20.22 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.2 | |
| | | | | 36 | 35 | 2 | 20.18 | |
| | | | | 75 | 0 | 2 | 20.19 | |
| | 20325 | 1747.5 | QPSK | 1 | 0 | 0 | 21.83 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.81 | |
| | | | | 1 | 74 | 0 | 21.73 | |
| | | | | 36 | 0 | 1 | 21.01 | 20.5±1 |
| | | | | 36 | 16 | 1 | 20.99 | |
| | | | | 36 | 35 | 1 | 20.97 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 75 | 0 | 1 | 20.92 | |
| | | | 16QAM | 1 | 0 | 1 | 21.1 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.08 | |
| | | | | 1 | 74 | 1 | 21.06 | |
| | | | | 36 | 0 | 2 | 20.03 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.01 | |
| | | | | 36 | 35 | 2 | 19.99 | |
| | | | | 75 | 0 | 2 | 20 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 10MHz | 20000 | 1715 | QPSK | 1 | 0 | 0 | 21.95 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.93 | |
| | | | | 1 | 49 | 0 | 21.85 | |
| | | | | 25 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.11 | |
| | | | | 25 | 24 | 1 | 21.09 | |
| | | | | 50 | 0 | 1 | 21.04 | |
| | | | 16QAM | 1 | 0 | 1 | 21.22 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.2 | |
| | | | | 1 | 49 | 1 | 21.18 | |
| | | | | 25 | 0 | 2 | 20.15 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.13 | |
| | | | | 25 | 24 | 2 | 20.11 | |
| | | | | 50 | 0 | 2 | 20.12 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 21.96 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.94 | |
| | | | | 1 | 49 | 0 | 21.86 | |
| | | | | 25 | 0 | 1 | 21.14 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.12 | |
| | | | | 25 | 24 | 1 | 21.1 | |
| | | | | 50 | 0 | 1 | 21.05 | |
| | | | 16QAM | 1 | 0 | 1 | 21.23 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.21 | |
| | | | | 1 | 49 | 1 | 21.19 | |
| | | | | 25 | 0 | 2 | 20.16 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.14 | |
| | | | | 25 | 24 | 2 | 20.12 | |
| | | | | 50 | 0 | 2 | 20.13 | |
| | 20350 | 1750 | QPSK | 1 | 0 | 0 | 21.77 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.75 | |
| | | | | 1 | 49 | 0 | 21.67 | |
| | | | | 25 | 0 | 1 | 20.95 | 20.5±1 |
| | | | | 25 | 12 | 1 | 20.93 | |
| | | | | 25 | 24 | 1 | 20.91 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 0 | 1 | 20.86 | |
| | | | 16QAM | 1 | 0 | 1 | 21.04 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.02 | |
| | | | | 1 | 49 | 1 | 21 | |
| | | | | 25 | 0 | 2 | 19.97 | 19.5±1 |
| | | | | 25 | 12 | 2 | 19.95 | |
| | | | | 25 | 24 | 2 | 19.93 | |
| | | | | 50 | 0 | 2 | 19.94 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 5MHz | 19975 | 1712.5 | QPSK | 1 | 0 | 0 | 21.91 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.89 | |
| | | | | 1 | 24 | 0 | 21.81 | |
| | | | | 12 | 0 | 1 | 21.09 | 20.5±1 |
| | | | | 12 | 6 | 1 | 21.07 | |
| | | | | 12 | 11 | 1 | 21.05 | |
| | | | | 25 | 0 | 1 | 21 | |
| | | | 16QAM | 1 | 0 | 1 | 21.18 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.16 | |
| | | | | 1 | 24 | 1 | 21.14 | |
| | | | | 12 | 0 | 2 | 20.11 | 19.5±1 |
| | | | | 12 | 6 | 2 | 20.09 | |
| | | | | 12 | 11 | 2 | 20.07 | |
| | | | | 25 | 0 | 2 | 20.08 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 21.92 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.9 | |
| | | | | 1 | 24 | 0 | 21.82 | |
| | | | | 12 | 0 | 1 | 21.1 | 20.5±1 |
| | | | | 12 | 6 | 1 | 21.08 | |
| | | | | 12 | 11 | 1 | 21.06 | |
| | | | | 25 | 0 | 1 | 21.01 | |
| | | | 16QAM | 1 | 0 | 1 | 21.19 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.17 | |
| | | | | 1 | 24 | 1 | 21.15 | |
| | | | | 12 | 0 | 2 | 20.12 | 19.5±1 |
| | | | | 12 | 6 | 2 | 20.1 | |
| | | | | 12 | 11 | 2 | 20.08 | |
| | | | | 25 | 0 | 2 | 20.09 | |
| | 20375 | 1752.5 | QPSK | 1 | 0 | 0 | 21.73 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.71 | |
| | | | | 1 | 24 | 0 | 21.63 | |
| | | | | 12 | 0 | 1 | 20.91 | 20.5±1 |
| | | | | 12 | 6 | 1 | 20.89 | |
| | | | | 12 | 11 | 1 | 20.87 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 25 | 0 | 1 | 20.82 | |
| | | | 16QAM | 1 | 0 | 1 | 21 | 20.5±1 |
| | | | | 1 | 12 | 1 | 20.98 | |
| | | | | 1 | 24 | 1 | 20.96 | |
| | | | | 12 | 0 | 2 | 19.93 | 19.5±1 |
| | | | | 12 | 6 | 2 | 19.91 | |
| | | | | 12 | 11 | 2 | 19.89 | |
| | | | | 25 | 0 | 2 | 19.9 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 3MHz | 19965 | 1711.5 | QPSK | 1 | 0 | 0 | 21.88 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.86 | |
| | | | | 1 | 14 | 0 | 21.78 | |
| | | | | 8 | 0 | 1 | 21.06 | 20.5±1 |
| | | | | 8 | 4 | 1 | 21.04 | |
| | | | | 8 | 7 | 1 | 21.02 | |
| | | | | 15 | 0 | 1 | 20.97 | |
| | | | 16QAM | 1 | 0 | 1 | 21.15 | 20.5±1 |
| | | | | 1 | 7 | 1 | 21.13 | |
| | | | | 1 | 14 | 1 | 21.11 | |
| | | | | 8 | 0 | 2 | 20.08 | 19.5±1 |
| | | | | 8 | 4 | 2 | 20.06 | |
| | | | | 8 | 7 | 2 | 20.04 | |
| | | | | 15 | 0 | 2 | 20.05 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 21.89 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.87 | |
| | | | | 1 | 14 | 0 | 21.79 | |
| | | | | 8 | 0 | 1 | 21.07 | 20.5±1 |
| | | | | 8 | 4 | 1 | 21.05 | |
| | | | | 8 | 7 | 1 | 21.03 | |
| | | | | 15 | 0 | 1 | 20.98 | |
| | | | 16QAM | 1 | 0 | 1 | 21.16 | 20.5±1 |
| | | | | 1 | 7 | 1 | 21.14 | |
| | | | | 1 | 14 | 1 | 21.12 | |
| | | | | 8 | 0 | 2 | 20.09 | 19.5±1 |
| | | | | 8 | 4 | 2 | 20.07 | |
| | | | | 8 | 7 | 2 | 20.05 | |
| | | | | 15 | 0 | 2 | 20.06 | |
| | 20385 | 1753.5 | QPSK | 1 | 0 | 0 | 21.7 | 21.5±1 |
| | | | | 1 | 7 | 0 | 21.68 | |
| | | | | 1 | 14 | 0 | 21.6 | |
| | | | | 8 | 0 | 1 | 20.88 | 20.5±1 |
| | | | | 8 | 4 | 1 | 20.86 | |
| | | | | 8 | 7 | 1 | 20.84 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 15 | 0 | 1 | 20.79 | |
| | | | 16QAM | 1 | 0 | 1 | 20.97 | 20.5±1 |
| | | | | 1 | 7 | 1 | 20.95 | |
| | | | | 1 | 14 | 1 | 20.93 | |
| | | | | 8 | 0 | 2 | 19.9 | 19.5±1 |
| | | | | 8 | 4 | 2 | 19.88 | |
| | | | | 8 | 7 | 2 | 19.86 | |
| | | | | 15 | 0 | 2 | 19.87 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz | 19957 | 1710.7 | QPSK | 1 | 0 | 0 | 21.87 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.85 | |
| | | | | 1 | 5 | 0 | 21.77 | |
| | | | | 3 | 0 | 0 | 21.04 | 20.5±1 |
| | | | | 3 | 1 | 0 | 21.02 | |
| | | | | 3 | 2 | 0 | 21 | |
| | | | | 6 | 0 | 1 | 20.96 | |
| | | | 16QAM | 1 | 0 | 1 | 21.14 | 20.5±1 |
| | | | | 1 | 2 | 1 | 21.12 | |
| | | | | 1 | 5 | 1 | 21.1 | |
| | | | | 3 | 0 | 1 | 20.07 | 19.5±1 |
| | | | | 3 | 1 | 1 | 20.05 | |
| | | | | 3 | 2 | 1 | 20.03 | |
| | | | | 6 | 0 | 2 | 20.04 | |
| | 20175 | 1732.5 | QPSK | 1 | 0 | 0 | 21.88 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.86 | |
| | | | | 1 | 5 | 0 | 21.78 | |
| | | | | 3 | 0 | 0 | 21.05 | 20.5±1 |
| | | | | 3 | 1 | 0 | 21.03 | |
| | | | | 3 | 2 | 0 | 21.01 | |
| | | | | 6 | 0 | 1 | 20.97 | |
| | | | 16QAM | 1 | 0 | 1 | 21.15 | 20.5±1 |
| | | | | 1 | 2 | 1 | 21.13 | |
| | | | | 1 | 5 | 1 | 21.11 | |
| | | | | 3 | 0 | 1 | 20.08 | 19.5±1 |
| | | | | 3 | 1 | 1 | 20.06 | |
| | | | | 3 | 2 | 1 | 20.04 | |
| | | | | 6 | 0 | 2 | 20.05 | |
| | 20393 | 1754.3 | QPSK | 1 | 0 | 0 | 21.69 | 21.5±1 |
| | | | | 1 | 2 | 0 | 21.67 | |
| | | | | 1 | 5 | 0 | 21.59 | |
| | | | | 3 | 0 | 0 | 20.86 | 20.5±1 |
| | | | | 3 | 1 | 0 | 20.84 | |
| | | | | 3 | 2 | 0 | 20.82 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 6 | 0 | 1 | 20.78 | |
| | | | 16QAM | 1 | 0 | 1 | 20.96 | 20.5±1 |
| | | | | 1 | 2 | 1 | 20.94 | |
| | | | | 1 | 5 | 1 | 20.92 | |
| | | | | 3 | 0 | 1 | 19.89 | 19.5±1 |
| | | | | 3 | 1 | 1 | 19.87 | |
| | | | | 3 | 2 | 1 | 19.85 | |
| | | | | 6 | 0 | 2 | 19.86 | |

**LTE Band V:**

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 5MHz | 20425 | 826.5 | QPSK | 1 | 0 | 0 | 20.81 | 20.5±1 |
| | | | | 1 | 24 | 0 | 20.8 | |
| | | | | 1 | 49 | 0 | 20.78 | |
| | | | | 25 | 0 | 1 | 19.82 | 19.5±1 |
| | | | | 25 | 12 | 1 | 19.79 | |
| | | | | 25 | 24 | 1 | 19.78 | |
| | | | | 50 | 0 | 1 | 19.79 | |
| | | | 16QAM | 1 | 0 | 1 | 19.89 | 19.5±1 |
| | | | | 1 | 24 | 1 | 19.87 | |
| | | | | 1 | 49 | 1 | 19.85 | |
| | | | | 25 | 0 | 2 | 18.83 | 18.5±1 |
| | | | | 25 | 12 | 2 | 18.79 | |
| | | | | 25 | 24 | 2 | 18.75 | |
| | | | | 50 | 0 | 2 | 18.86 | |
| | 20525 | 836.5 | QPSK | 1 | 0 | 0 | 20.84 | 20.5±1 |
| | | | | 1 | 24 | 0 | 20.83 | |
| | | | | 1 | 49 | 0 | 20.81 | |
| | | | | 25 | 0 | 1 | 19.85 | 19.5±1 |
| | | | | 25 | 12 | 1 | 19.82 | |
| | | | | 25 | 24 | 1 | 19.81 | |
| | | | | 50 | 0 | 1 | 19.82 | |
| | | | 16QAM | 1 | 0 | 1 | 19.92 | 19.5±1 |
| | | | | 1 | 24 | 1 | 19.9 | |
| | | | | 1 | 49 | 1 | 19.88 | |
| | | | | 25 | 0 | 2 | 18.86 | 18.5±1 |
| | | | | 25 | 12 | 2 | 18.82 | |
| | | | | 25 | 24 | 2 | 18.78 | |
| | | | | 50 | 0 | 2 | 18.89 | |
| | 20625 | 846.5 | QPSK | 1 | 0 | 0 | 20.82 | 20.5±1 |
| | | | | 1 | 24 | 0 | 20.81 | |
| | | | | 1 | 49 | 0 | 20.79 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 25 | 0 | 1 | 19.83 | 19.5±1 |
| | | | | 25 | 12 | 1 | 19.8 | |
| | | | | 25 | 24 | 1 | 19.79 | |
| | | | | 50 | 0 | 1 | 19.8 | |
| | | | 16QAM | 1 | 0 | 1 | 19.9 | 19.5±1 |
| | | | | 1 | 24 | 1 | 19.88 | |
| | | | | 1 | 49 | 1 | 19.86 | |
| | | | | 25 | 0 | 2 | 18.84 | 18.5±1 |
| | | | | 25 | 12 | 2 | 18.8 | |
| | | | | 25 | 24 | 2 | 18.76 | |
| | | | | 50 | 0 | 2 | 18.87 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 10MHz | 20450 | 829 | QPSK | 1 | 0 | 0 | 20.84 | 20.5±1 |
| | | | | 1 | 12 | 0 | 20.83 | |
| | | | | 1 | 24 | 0 | 20.81 | |
| | | | | 12 | 0 | 1 | 19.85 | 19.5±1 |
| | | | | 12 | 6 | 1 | 19.82 | |
| | | | | 12 | 11 | 1 | 19.81 | |
| | | | | 25 | 0 | 1 | 19.82 | |
| | | | 16QAM | 1 | 0 | 1 | 19.92 | 19.5±1 |
| | | | | 1 | 12 | 1 | 19.9 | |
| | | | | 1 | 24 | 1 | 19.88 | |
| | | | | 12 | 0 | 2 | 18.86 | 18.5±1 |
| | | | | 12 | 6 | 2 | 18.82 | |
| | | | | 12 | 11 | 2 | 18.78 | |
| | | | | 25 | 0 | 2 | 18.89 | |
| | 20525 | 836.5 | QPSK | 1 | 0 | 0 | 20.87 | 20.5±1 |
| | | | | 1 | 12 | 0 | 20.86 | |
| | | | | 1 | 24 | 0 | 20.84 | |
| | | | | 12 | 0 | 1 | 19.88 | 19.5±1 |
| | | | | 12 | 6 | 1 | 19.85 | |
| | | | | 12 | 11 | 1 | 19.84 | |
| | | | | 25 | 0 | 1 | 19.85 | |
| | | | 16QAM | 1 | 0 | 1 | 19.95 | 19.5±1 |
| | | | | 1 | 12 | 1 | 19.93 | |
| | | | | 1 | 24 | 1 | 19.91 | |
| | | | | 12 | 0 | 2 | 18.89 | 18.5±1 |
| | | | | 12 | 6 | 2 | 18.85 | |
| | | | | 12 | 11 | 2 | 18.81 | |
| | | | | 25 | 0 | 2 | 18.92 | |
| | 20600 | 844 | QPSK | 1 | 0 | 0 | 20.85 | 20.5±1 |
| | | | | 1 | 12 | 0 | 20.84 | |
| | | | | 1 | 24 | 0 | 20.82 | |
| | | | | 12 | 0 | 1 | 19.86 | 19.5±1 |
| | | | | 12 | 6 | 1 | 19.83 | |
| | | | | 12 | 11 | 1 | 19.82 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 25 | 0 | 1 | 19.83 | |
| | | | 16QAM | 1 | 0 | 1 | 19.93 | 19.5±1 |
| | | | | 1 | 12 | 1 | 19.91 | |
| | | | | 1 | 24 | 1 | 19.89 | |
| | | | | 12 | 0 | 2 | 18.87 | 18.5±1 |
| | | | | 12 | 6 | 2 | 18.83 | |
| | | | | 12 | 11 | 2 | 18.79 | |
| | | | | 25 | 0 | 2 | 18.9 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 3MHz | 20415 | 825.5 | QPSK | 1 | 0 | 0 | 20.75 | 20.5±1 |
| | | | | 1 | 7 | 0 | 20.74 | |
| | | | | 1 | 14 | 0 | 20.72 | |
| | | | | 8 | 0 | 1 | 19.76 | 19.5±1 |
| | | | | 8 | 4 | 1 | 19.73 | |
| | | | | 8 | 7 | 1 | 19.72 | |
| | | | | 15 | 0 | 1 | 19.73 | |
| | | | 16QAM | 1 | 0 | 1 | 19.83 | 19.5±1 |
| | | | | 1 | 7 | 1 | 19.81 | |
| | | | | 1 | 14 | 1 | 19.79 | |
| | | | | 8 | 0 | 2 | 18.77 | 18.5±1 |
| | | | | 8 | 4 | 2 | 18.73 | |
| | | | | 8 | 7 | 2 | 18.69 | |
| | | | | 15 | 0 | 2 | 18.8 | |
| | 20525 | 836.5 | QPSK | 1 | 0 | 0 | 20.78 | 20.5±1 |
| | | | | 1 | 7 | 0 | 20.77 | |
| | | | | 1 | 14 | 0 | 20.75 | |
| | | | | 8 | 0 | 1 | 19.79 | 19.5±1 |
| | | | | 8 | 4 | 1 | 19.76 | |
| | | | | 8 | 7 | 1 | 19.75 | |
| | | | | 15 | 0 | 1 | 19.76 | |
| | | | 16QAM | 1 | 0 | 1 | 19.86 | 19.5±1 |
| | | | | 1 | 7 | 1 | 19.84 | |
| | | | | 1 | 14 | 1 | 19.82 | |
| | | | | 8 | 0 | 2 | 18.8 | 18.5±1 |
| | | | | 8 | 4 | 2 | 18.76 | |
| | | | | 8 | 7 | 2 | 18.72 | |
| | | | | 15 | 0 | 2 | 18.83 | |
| | 20635 | 847.5 | QPSK | 1 | 0 | 0 | 20.76 | 20.5±1 |
| | | | | 1 | 7 | 0 | 20.75 | |
| | | | | 1 | 14 | 0 | 20.73 | |
| | | | | 8 | 0 | 1 | 19.77 | 19.5±1 |
| | | | | 8 | 4 | 1 | 19.74 | |
| | | | | 8 | 7 | 1 | 19.73 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 15 | 0 | 1 | 19.74 | |
| | | | 16QAM | 1 | 0 | 1 | 19.84 | 19.5±1 |
| | | | | 1 | 7 | 1 | 19.82 | |
| | | | | 1 | 14 | 1 | 19.8 | |
| | | | | 8 | 0 | 2 | 18.78 | 18.5±1 |
| | | | | 8 | 4 | 2 | 18.74 | |
| | | | | 8 | 7 | 2 | 18.7 | |
| | | | | 15 | 0 | 2 | 18.81 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 1.4MHz | 20407 | 824.7 | QPSK | 1 | 0 | 0 | 20.71 | 20.5±1 |
| | | | | 1 | 2 | 0 | 20.7 | |
| | | | | 1 | 5 | 0 | 20.68 | |
| | | | | 3 | 0 | 0 | 19.74 | 19.5±1 |
| | | | | 3 | 1 | 0 | 19.71 | |
| | | | | 3 | 2 | 0 | 19.7 | |
| | | | | 6 | 0 | 1 | 19.69 | |
| | | | 16QAM | 1 | 0 | 1 | 19.79 | 19.5±1 |
| | | | | 1 | 2 | 1 | 19.77 | |
| | | | | 1 | 5 | 1 | 19.75 | |
| | | | | 3 | 0 | 1 | 18.76 | 18.5±1 |
| | | | | 3 | 1 | 1 | 18.72 | |
| | | | | 3 | 2 | 1 | 18.68 | |
| | | | | 6 | 0 | 2 | 18.76 | |
| | 20525 | 836.5 | QPSK | 1 | 0 | 0 | 20.74 | 20.5±1 |
| | | | | 1 | 2 | 0 | 20.73 | |
| | | | | 1 | 5 | 0 | 20.71 | |
| | | | | 3 | 0 | 0 | 19.77 | 19.5±1 |
| | | | | 3 | 1 | 0 | 19.74 | |
| | | | | 3 | 2 | 0 | 19.73 | |
| | | | | 6 | 0 | 1 | 19.72 | |
| | | | 16QAM | 1 | 0 | 1 | 19.82 | 19.5±1 |
| | | | | 1 | 2 | 1 | 19.8 | |
| | | | | 1 | 5 | 1 | 19.78 | |
| | | | | 3 | 0 | 1 | 18.79 | 18.5±1 |
| | | | | 3 | 1 | 1 | 18.75 | |
| | | | | 3 | 2 | 1 | 18.71 | |
| | | | | 6 | 0 | 2 | 18.79 | |
| | 20643 | 848.3 | QPSK | 1 | 0 | 0 | 20.72 | 20.5±1 |
| | | | | 1 | 2 | 0 | 20.71 | |
| | | | | 1 | 5 | 0 | 20.69 | |
| | | | | 3 | 0 | 0 | 19.75 | 19.5±1 |
| | | | | 3 | 1 | 0 | 19.72 | |
| | | | | 3 | 2 | 0 | 19.71 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 6 | 0 | 1 | 19.7 | |
| | | | 16QAM | 1 | 0 | 1 | 19.8 | 19.5±1 |
| | | | | 1 | 2 | 1 | 19.78 | |
| | | | | 1 | 5 | 1 | 19.76 | |
| | | | | 3 | 0 | 1 | 18.77 | 18.5±1 |
| | | | | 3 | 1 | 1 | 18.73 | |
| | | | | 3 | 2 | 1 | 18.69 | |
| | | | | 6 | 0 | 2 | 18.77 | |

**LTE Band VII:**

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 20MHz | 20850 | 2510 | QPSK | 1 | 0 | 0 | 21.84 | 21.5±1 |
| | | | | 1 | 49 | 0 | 21.7 | |
| | | | | 1 | 99 | 0 | 21.64 | |
| | | | | 50 | 0 | 1 | 21.09 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.07 | |
| | | | | 50 | 49 | 1 | 21.06 | |
| | | | | 100 | 0 | 1 | 21.08 | |
| | | | 16QAM | 1 | 0 | 1 | 21.18 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.16 | |
| | | | | 1 | 99 | 1 | 21.13 | |
| | | | | 50 | 0 | 2 | 20.08 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.07 | |
| | | | | 50 | 49 | 2 | 20.06 | |
| | | | | 100 | 0 | 2 | 20.1 | |
| | 21100 | 2535 | QPSK | 1 | 0 | 0 | 21.88 | 21.5±1 |
| | | | | 1 | 49 | 0 | 21.74 | |
| | | | | 1 | 99 | 0 | 21.68 | |
| | | | | 50 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 50 | 24 | 1 | 21.11 | |
| | | | | 50 | 49 | 1 | 21.1 | |
| | | | | 100 | 0 | 1 | 21.12 | |
| | | | 16QAM | 1 | 0 | 1 | 21.22 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.2 | |
| | | | | 1 | 99 | 1 | 21.17 | |
| | | | | 50 | 0 | 2 | 20.12 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.11 | |
| | | | | 50 | 49 | 2 | 20.1 | |
| | | | | 100 | 0 | 2 | 20.14 | |
| | 21350 | 2560 | QPSK | 1 | 0 | 0 | 21.82 | 21.5±1 |
| | | | | 1 | 49 | 0 | 21.68 | |
| | | | | 1 | 99 | 0 | 21.62 | |
| | | | | 50 | 0 | 1 | 21.07 | 20.5±1 |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 24 | 1 | 21.05 | |
| | | | | 50 | 49 | 1 | 21.04 | |
| | | | | 100 | 0 | 1 | 21.06 | |
| | | | 16QAM | 1 | 0 | 1 | 21.16 | 20.5±1 |
| | | | | 1 | 49 | 1 | 21.14 | |
| | | | | 1 | 99 | 1 | 21.11 | |
| | | | | 50 | 0 | 2 | 20.06 | 19.5±1 |
| | | | | 50 | 24 | 2 | 20.05 | |
| | | | | 50 | 49 | 2 | 20.04 | |
| | | | | 100 | 0 | 2 | 20.08 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 15MHz | 20825 | 2507.5 | QPSK | 1 | 0 | 0 | 21.81 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.67 | |
| | | | | 1 | 74 | 0 | 21.61 | |
| | | | | 36 | 0 | 1 | 21.06 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.04 | |
| | | | | 36 | 35 | 1 | 21.03 | |
| | | | | 75 | 0 | 1 | 21.05 | |
| | | | 16QAM | 1 | 0 | 1 | 21.15 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.13 | |
| | | | | 1 | 74 | 1 | 21.1 | |
| | | | | 36 | 0 | 2 | 20.05 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.04 | |
| | | | | 36 | 35 | 2 | 20.03 | |
| | | | | 75 | 0 | 2 | 20.07 | |
| | 21100 | 2535 | QPSK | 1 | 0 | 0 | 21.85 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.71 | |
| | | | | 1 | 74 | 0 | 21.65 | |
| | | | | 36 | 0 | 1 | 21.1 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.08 | |
| | | | | 36 | 35 | 1 | 21.07 | |
| | | | | 75 | 0 | 1 | 21.09 | |
| | | | 16QAM | 1 | 0 | 1 | 21.19 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.17 | |
| | | | | 1 | 74 | 1 | 21.14 | |
| | | | | 36 | 0 | 2 | 20.09 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.08 | |
| | | | | 36 | 35 | 2 | 20.07 | |
| | | | | 75 | 0 | 2 | 20.11 | |
| | 21375 | 2562.5 | QPSK | 1 | 0 | 0 | 21.79 | 21.5±1 |
| | | | | 1 | 37 | 0 | 21.65 | |
| | | | | 1 | 74 | 0 | 21.59 | |
| | | | | 36 | 0 | 1 | 21.04 | 20.5±1 |
| | | | | 36 | 16 | 1 | 21.02 | |
| | | | | 36 | 35 | 1 | 21.01 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 75 | 0 | 1 | 21.03 | |
| | | | 16QAM | 1 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 1 | 37 | 1 | 21.11 | |
| | | | | 1 | 74 | 1 | 21.08 | |
| | | | | 36 | 0 | 2 | 20.03 | 19.5±1 |
| | | | | 36 | 16 | 2 | 20.02 | |
| | | | | 36 | 35 | 2 | 20.01 | |
| | | | | 75 | 0 | 2 | 20.05 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 10MHz | 20800 | 2505 | QPSK | 1 | 0 | 0 | 21.75 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.61 | |
| | | | | 1 | 49 | 0 | 21.55 | |
| | | | | 25 | 0 | 1 | 21 | 20.5±1 |
| | | | | 25 | 12 | 1 | 20.98 | |
| | | | | 25 | 24 | 1 | 20.97 | |
| | | | | 50 | 0 | 1 | 20.99 | |
| | | | 16QAM | 1 | 0 | 1 | 21.09 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.07 | |
| | | | | 1 | 49 | 1 | 21.04 | |
| | | | | 25 | 0 | 2 | 19.99 | 19.5±1 |
| | | | | 25 | 12 | 2 | 19.98 | |
| | | | | 25 | 24 | 2 | 19.97 | |
| | | | | 50 | 0 | 2 | 20.01 | |
| | 21100 | 2535 | QPSK | 1 | 0 | 0 | 21.79 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.65 | |
| | | | | 1 | 49 | 0 | 21.59 | |
| | | | | 25 | 0 | 1 | 21.04 | 20.5±1 |
| | | | | 25 | 12 | 1 | 21.02 | |
| | | | | 25 | 24 | 1 | 21.01 | |
| | | | | 50 | 0 | 1 | 21.03 | |
| | | | 16QAM | 1 | 0 | 1 | 21.13 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.11 | |
| | | | | 1 | 49 | 1 | 21.08 | |
| | | | | 25 | 0 | 2 | 20.03 | 19.5±1 |
| | | | | 25 | 12 | 2 | 20.02 | |
| | | | | 25 | 24 | 2 | 20.01 | |
| | | | | 50 | 0 | 2 | 20.05 | |
| | 21400 | 2562.5 | QPSK | 1 | 0 | 0 | 21.73 | 21.5±1 |
| | | | | 1 | 24 | 0 | 21.59 | |
| | | | | 1 | 49 | 0 | 21.53 | |
| | | | | 25 | 0 | 1 | 20.98 | 20.5±1 |
| | | | | 25 | 12 | 1 | 20.96 | |
| | | | | 25 | 24 | 1 | 20.95 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 50 | 0 | 1 | 20.97 | |
| | | | 16QAM | 1 | 0 | 1 | 21.07 | 20.5±1 |
| | | | | 1 | 24 | 1 | 21.05 | |
| | | | | 1 | 49 | 1 | 21.02 | |
| | | | | 25 | 0 | 2 | 19.97 | 19.5±1 |
| | | | | 25 | 12 | 2 | 19.96 | |
| | | | | 25 | 24 | 2 | 19.95 | |
| | | | | 50 | 0 | 2 | 19.99 | |

| BW (MHz) | Ch | Freq. (MHz) | Mode | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|---|---|---|---|---|---|---|---|---|
| 5MHz | 20775 | 2502.5 | QPSK | 1 | 0 | 0 | 21.71 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.57 | |
| | | | | 1 | 24 | 0 | 21.51 | |
| | | | | 12 | 0 | 1 | 20.96 | 20.5±1 |
| | | | | 12 | 6 | 1 | 20.94 | |
| | | | | 12 | 11 | 1 | 20.93 | |
| | | | | 25 | 0 | 1 | 20.95 | |
| | | | 16QAM | 1 | 0 | 1 | 21.05 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.03 | |
| | | | | 1 | 24 | 1 | 21 | |
| | | | | 12 | 0 | 2 | 19.95 | 19.5±1 |
| | | | | 12 | 6 | 2 | 19.94 | |
| | | | | 12 | 11 | 2 | 19.93 | |
| | | | | 25 | 0 | 2 | 19.97 | |
| | 21100 | 2535 | QPSK | 1 | 0 | 0 | 21.75 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.61 | |
| | | | | 1 | 24 | 0 | 21.55 | |
| | | | | 12 | 0 | 1 | 21 | 20.5±1 |
| | | | | 12 | 6 | 1 | 20.98 | |
| | | | | 12 | 11 | 1 | 20.97 | |
| | | | | 25 | 0 | 1 | 20.99 | |
| | | | 16QAM | 1 | 0 | 1 | 21.09 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.07 | |
| | | | | 1 | 24 | 1 | 21.04 | |
| | | | | 12 | 0 | 2 | 19.99 | 19.5±1 |
| | | | | 12 | 6 | 2 | 19.98 | |
| | | | | 12 | 11 | 2 | 19.97 | |
| | | | | 25 | 0 | 2 | 20.01 | |
| | 21425 | 2567.5 | QPSK | 1 | 0 | 0 | 21.69 | 21.5±1 |
| | | | | 1 | 12 | 0 | 21.55 | |
| | | | | 1 | 24 | 0 | 21.49 | |
| | | | | 12 | 0 | 1 | 20.94 | 20.5±1 |
| | | | | 12 | 6 | 1 | 20.92 | |
| | | | | 12 | 11 | 1 | 20.91 | |

| | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | 25 | 0 | 1 | 20.93 | |
| | | | 16QAM | 1 | 0 | 1 | 21.03 | 20.5±1 |
| | | | | 1 | 12 | 1 | 21.01 | |
| | | | | 1 | 24 | 1 | 20.98 | |
| | | | | 12 | 0 | 2 | 19.93 | 19.5±1 |
| | | | | 12 | 6 | 2 | 19.92 | |
| | | | | 12 | 11 | 2 | 19.91 | |
| | | | | 25 | 0 | 2 | 19.95 | |

## ERP & EIRP

## EIRP for LTE Band II (Part 24E)

| Frequency (MHz) | Channel Bandwidth (MHz) | Mod. | RB Size/Offset | Antenna Polarization (H/V) | Absolute Level (dBm) | Limit (dBm) |
| --- | --- | --- | --- | --- | --- | --- |
| 1850.7 | 1.4 | QPSK | 1/0 | V | 20.97 | 33.01 |
| 1880 | 1.4 | QPSK | 1/0 | V | 21.12 | 33.01 |
| 1909.3 | 1.4 | QPSK | 1/0 | V | 21.09 | 33.01 |
| 1850.7 | 1.4 | QPSK | 1/0 | H | 18.72 | 33.01 |
| 1880 | 1.4 | QPSK | 1/0 | H | 18.86 | 33.01 |
| 1909.3 | 1.4 | QPSK | 1/0 | H | 19.28 | 33.01 |
| 1850.7 | 1.4 | 16-QAM | 1/0 | V | 20.3 | 33.01 |
| 1880 | 1.4 | 16-QAM | 1/0 | V | 20.45 | 33.01 |
| 1909.3 | 1.4 | 16-QAM | 1/0 | V | 20.42 | 33.01 |
| 1850.7 | 1.4 | 16-QAM | 1/0 | H | 18.62 | 33.01 |
| 1880 | 1.4 | 16-QAM | 1/0 | H | 19.42 | 33.01 |
| 1909.3 | 1.4 | 16-QAM | 1/0 | H | 18.82 | 33.01 |
| 1851.5 | 3 | QPSK | 1/0 | V | 21 | 33.01 |
| 1880 | 3 | QPSK | 1/0 | V | 21.15 | 33.01 |
| 1908.5 | 3 | QPSK | 1/0 | V | 21.12 | 33.01 |
| 1851.5 | 3 | QPSK | 1/0 | H | 19.36 | 33.01 |
| 1880 | 3 | QPSK | 1/0 | H | 19.08 | 33.01 |
| 1908.5 | 3 | QPSK | 1/0 | H | 19.37 | 33.01 |
| 1851.5 | 3 | 16-QAM | 1/0 | V | 20.33 | 33.01 |
| 1880 | 3 | 16-QAM | 1/0 | V | 20.48 | 33.01 |
| 1908.5 | 3 | 16-QAM | 1/0 | V | 20.45 | 33.01 |
| 1851.5 | 3 | 16-QAM | 1/0 | H | 18.99 | 33.01 |
| 1880 | 3 | 16-QAM | 1/0 | H | 18.84 | 33.01 |
| 1908.5 | 3 | 16-QAM | 1/0 | H | 19.22 | 33.01 |
| 1852.5 | 5 | QPSK | 1/24 | V | 20.98 | 33.01 |
| 1880 | 5 | QPSK | 1/0 | V | 21.18 | 33.01 |
| 1907.5 | 5 | QPSK | 1/24 | V | 21.1 | 33.01 |
| 1852.5 | 5 | QPSK | 1/24 | H | 19.01 | 33.01 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 1880 | 5 | QPSK | 1/0 | H | 20.11 | 33.01 |
| 1907.5 | 5 | QPSK | 1/24 | H | 18.77 | 33.01 |
| 1852.5 | 5 | 16-QAM | 1/24 | V | 20.31 | 33.01 |
| 1880 | 5 | 16-QAM | 1/0 | V | 20.51 | 33.01 |
| 1907.5 | 5 | 16-QAM | 1/24 | V | 20.43 | 33.01 |
| 1852.5 | 5 | 16-QAM | 1/24 | H | 18.1 | 33.01 |
| 1880 | 5 | 16-QAM | 1/0 | H | 18.99 | 33.01 |
| 1907.5 | 5 | 16-QAM | 1/24 | H | 18.06 | 33.01 |
| 1855 | 10 | QPSK | 1/0 | V | 21.05 | 33.01 |
| 1880 | 10 | QPSK | 1/0 | V | 21.2 | 33.01 |
| 1905 | 10 | QPSK | 1/49 | V | 21.12 | 33.01 |
| 1855 | 10 | QPSK | 1/0 | H | 19.85 | 33.01 |
| 1880 | 10 | QPSK | 1/0 | H | 20.06 | 33.01 |
| 1905 | 10 | QPSK | 1/49 | H | 18.71 | 33.01 |
| 1855 | 10 | 16-QAM | 1/0 | V | 20.38 | 33.01 |
| 1880 | 10 | 16-QAM | 1/0 | V | 20.53 | 33.01 |
| 1905 | 10 | 16-QAM | 1/49 | V | 20.45 | 33.01 |
| 1855 | 10 | 16-QAM | 1/0 | H | 18.6 | 33.01 |
| 1880 | 10 | 16-QAM | 1/0 | H | 18.25 | 33.01 |
| 1905 | 10 | 16-QAM | 1/49 | H | 19.26 | 33.01 |
| 1857.5 | 15 | QPSK | 1/0 | V | 21.08 | 33.01 |
| 1880 | 15 | QPSK | 1/0 | V | 21.23 | 33.01 |
| 1902.5 | 15 | QPSK | 1/0 | V | 21.2 | 33.01 |
| 1857.5 | 15 | QPSK | 1/0 | H | 19.39 | 33.01 |
| 1880 | 15 | QPSK | 1/0 | H | 19.05 | 33.01 |
| 1902.5 | 15 | QPSK | 1/0 | H | 19.73 | 33.01 |
| 1857.5 | 15 | 16-QAM | 1/0 | V | 20.41 | 33.01 |
| 1880 | 15 | 16-QAM | 1/0 | V | 20.56 | 33.01 |
| 1902.5 | 15 | 16-QAM | 1/0 | V | 20.53 | 33.01 |
| 1857.5 | 15 | 16-QAM | 1/0 | H | 17.91 | 33.01 |
| 1880 | 15 | 16-QAM | 1/0 | H | 19.26 | 33.01 |
| 1902.5 | 15 | 16-QAM | 1/0 | H | 18.46 | 33.01 |
| 1860 | 20 | QPSK | 1/0 | V | 21.13 | 33.01 |
| 1880 | 20 | QPSK | 1/0 | V | 21.28 | 33.01 |
| 1900 | 20 | QPSK | 1/0 | V | 21.25 | 33.01 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 1860 | 20 | QPSK | 1/0 | H | 20 | 33.01 |
| 1880 | 20 | QPSK | 1/0 | H | 19.1 | 33.01 |
| 1900 | 20 | QPSK | 1/0 | H | 19.9 | 33.01 |
| 1860 | 20 | 16-QAM | 1/0 | V | 20.46 | 33.01 |
| 1880 | 20 | 16-QAM | 1/0 | V | 20.61 | 33.01 |
| 1900 | 20 | 16-QAM | 1/0 | V | 20.58 | 33.01 |
| 1860 | 20 | 16-QAM | 1/0 | H | 19.46 | 33.01 |
| 1880 | 20 | 16-QAM | 1/0 | H | 18.33 | 33.01 |
| 1900 | 20 | 16-QAM | 1/0 | H | 18.67 | 33.01 |

## EIRP for LTE Band IV (Part 27)

| Frequency (MHz) | Channel Bandwidth (MHz) | Mod. | RB Size/Offset | Antenna Polarization (H/V) | Absolute Level (dBm) | Limit (dBm) |
| --- | --- | --- | --- | --- | --- | --- |
| 1710.7 | 1.4 | QPSK | 1/0 | V | 22.4 | 30 |
| 1732.5 | 1.4 | QPSK | 1/0 | V | 22.45 | 30 |
| 1754.3 | 1.4 | QPSK | 1/0 | V | 22.53 | 30 |
| 1710.7 | 1.4 | QPSK | 1/0 | H | 20.35 | 30 |
| 1732.5 | 1.4 | QPSK | 1/0 | H | 20.77 | 30 |
| 1754.3 | 1.4 | QPSK | 1/0 | H | 21.1 | 30 |
| 1710.7 | 1.4 | 16-QAM | 1/5 | V | 21.31 | 30 |
| 1732.5 | 1.4 | 16-QAM | 1/0 | V | 21.36 | 30 |
| 1754.3 | 1.4 | 16-QAM | 1/0 | V | 21.29 | 30 |
| 1710.7 | 1.4 | 16-QAM | 1/5 | H | 19.99 | 30 |
| 1732.5 | 1.4 | 16-QAM | 1/0 | H | 20.22 | 30 |
| 1754.3 | 1.4 | 16-QAM | 1/0 | H | 19.63 | 30 |
| 1711.5 | 3 | QPSK | 1/0 | V | 22.41 | 30 |
| 1732.5 | 3 | QPSK | 1/0 | V | 22.47 | 30 |
| 1753.5 | 3 | QPSK | 1/0 | V | 22.57 | 30 |
| 1711.5 | 3 | QPSK | 1/0 | H | 21.18 | 30 |
| 1732.5 | 3 | QPSK | 1/0 | H | 20.15 | 30 |
| 1753.5 | 3 | QPSK | 1/0 | H | 20.12 | 30 |
| 1711.5 | 3 | 16-QAM | 1/0 | V | 21.23 | 30 |
| 1732.5 | 3 | 16-QAM | 1/0 | V | 21.42 | 30 |
| 1753.5 | 3 | 16-QAM | 1/0 | V | 22.01 | 30 |
| 1711.5 | 3 | 16-QAM | 1/0 | H | 19.37 | 30 |
| 1732.5 | 3 | 16-QAM | 1/0 | H | 19.26 | 30 |
| 1753.5 | 3 | 16-QAM | 1/0 | H | 20.69 | 30 |
| 1712.5 | 5 | QPSK | 1/0 | V | 22.42 | 30 |
| 1732.5 | 5 | QPSK | 1/0 | V | 22.43 | 30 |
| 1752.5 | 5 | QPSK | 1/24 | V | 22.66 | 30 |
| 1712.5 | 5 | QPSK | 1/0 | H | 21.15 | 30 |
| 1732.5 | 5 | QPSK | 1/0 | H | 21.28 | 30 |
| 1752.5 | 5 | QPSK | 1/24 | H | 20.65 | 30 |
| 1712.5 | 5 | 16-QAM | 1/0 | V | 21.77 | 30 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 1732.5 | 5 | 16-QAM | 1/0 | V | 21.45 | 30 |
| 1752.5 | 5 | 16-QAM | 1/24 | V | 21.55 | 30 |
| 1712.5 | 5 | 16-QAM | 1/0 | H | 19.42 | 30 |
| 1732.5 | 5 | 16-QAM | 1/0 | H | 18.95 | 30 |
| 1752.5 | 5 | 16-QAM | 1/24 | H | 19.95 | 30 |
| 1715 | 10 | QPSK | 1/0 | V | 22.48 | 30 |
| 1732.5 | 10 | QPSK | 1/49 | V | 22.41 | 30 |
| 1750 | 10 | QPSK | 1/0 | V | 22.4 | 30 |
| 1715 | 10 | QPSK | 1/0 | H | 21.18 | 30 |
| 1732.5 | 10 | QPSK | 1/49 | H | 21.17 | 30 |
| 1750 | 10 | QPSK | 1/0 | H | 20.54 | 30 |
| 1715 | 10 | 16-QAM | 1/0 | V | 21.29 | 30 |
| 1732.5 | 10 | 16-QAM | 1/49 | V | 21.44 | 30 |
| 1750 | 10 | 16-QAM | 1/0 | V | 22.05 | 30 |
| 1715 | 10 | 16-QAM | 1/0 | H | 20.16 | 30 |
| 1732.5 | 10 | 16-QAM | 1/49 | H | 20.14 | 30 |
| 1750 | 10 | 16-QAM | 1/0 | H | 19.98 | 30 |
| 1717.5 | 15 | QPSK | 1/0 | V | 22.51 | 30 |
| 1732.5 | 15 | QPSK | 1/74 | V | 22.43 | 30 |
| 1747.5 | 15 | QPSK | 1/0 | V | 22.57 | 30 |
| 1717.5 | 15 | QPSK | 1/0 | H | 21.5 | 30 |
| 1732.5 | 15 | QPSK | 1/74 | H | 20.68 | 30 |
| 1747.5 | 15 | QPSK | 1/0 | H | 20.58 | 30 |
| 1717.5 | 15 | 16-QAM | 1/0 | V | 21.32 | 30 |
| 1732.5 | 15 | 16-QAM | 1/74 | V | 21.57 | 30 |
| 1747.5 | 15 | 16-QAM | 1/0 | V | 22.07 | 30 |
| 1717.5 | 15 | 16-QAM | 1/0 | H | 19.3 | 30 |
| 1732.5 | 15 | 16-QAM | 1/74 | H | 19.77 | 30 |
| 1747.5 | 15 | 16-QAM | 1/0 | H | 20.71 | 30 |
| 1720 | 20 | QPSK | 1/99 | V | 22.51 | 30 |
| 1732.5 | 20 | QPSK | 1/99 | V | 22.49 | 30 |
| 1745 | 20 | QPSK | 1/0 | V | 22.66 | 30 |
| 1720 | 20 | QPSK | 1/99 | H | 21.04 | 30 |
| 1732.5 | 20 | QPSK | 1/99 | H | 20.89 | 30 |
| 1745 | 20 | QPSK | 1/0 | H | 20.37 | 30 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 1720 | 20 | 16-QAM | 1/99 | V | 21.37 | 30 |
| 1732.5 | 20 | 16-QAM | 1/99 | V | 21.92 | 30 |
| 1745 | 20 | 16-QAM | 1/0 | V | 21.57 | 30 |
| 1720 | 20 | 16-QAM | 1/99 | H | 19.18 | 30 |
| 1732.5 | 20 | 16-QAM | 1/99 | H | 19.93 | 30 |
| 1745 | 20 | 16-QAM | 1/0 | H | 19.95 | 30 |

## EIRP for LTE Band V (Part 22)

| Frequency (MHz) | Channel Bandwidth (MHz) | Mod. | RB Size/Offset | Antenna Polarization (H/V) | Absolute Level (dBm) | Limit (dBm) |
| --- | --- | --- | --- | --- | --- | --- |
| 824.7 | 1.4 | QPSK | 1/5 | V | 16.25 | 34.77 |
| 836.5 | 1.4 | QPSK | 1/5 | V | 16.28 | 34.77 |
| 848.3 | 1.4 | QPSK | 1/5 | V | 16.26 | 34.77 |
| 824.7 | 1.4 | QPSK | 1/5 | H | 15.17 | 34.77 |
| 836.5 | 1.4 | QPSK | 1/5 | H | 13.83 | 34.77 |
| 848.3 | 1.4 | QPSK | 1/5 | H | 13.77 | 34.77 |
| 824.7 | 1.4 | 16-QAM | 1/5 | V | 15.32 | 34.77 |
| 836.5 | 1.4 | 16-QAM | 1/5 | V | 15.35 | 34.77 |
| 848.3 | 1.4 | 16-QAM | 1/5 | V | 15.33 | 34.77 |
| 824.7 | 1.4 | 16-QAM | 1/5 | H | 12.87 | 34.77 |
| 836.5 | 1.4 | 16-QAM | 1/5 | H | 13.28 | 34.77 |
| 848.3 | 1.4 | 16-QAM | 1/5 | H | 14.28 | 34.77 |
| 825.5 | 3 | QPSK | 1/14 | V | 16.3 | 34.77 |
| 836.5 | 3 | QPSK | 1/0 | V | 15.3 | 34.77 |
| 847.5 | 3 | QPSK | 1/14 | V | 16.31 | 34.77 |
| 825.5 | 3 | QPSK | 1/14 | H | 15.08 | 34.77 |
| 836.5 | 3 | QPSK | 1/0 | H | 13.33 | 34.77 |
| 847.5 | 3 | QPSK | 1/14 | H | 13.98 | 34.77 |
| 825.5 | 3 | 16-QAM | 1/14 | V | 15.38 | 34.77 |
| 836.5 | 3 | 16-QAM | 1/0 | V | 14.27 | 34.77 |
| 847.5 | 3 | 16-QAM | 1/14 | V | 15.39 | 34.77 |
| 825.5 | 3 | 16-QAM | 1/14 | H | 13.32 | 34.77 |
| 836.5 | 3 | 16-QAM | 1/0 | H | 12.42 | 34.77 |
| 847.5 | 3 | 16-QAM | 1/14 | H | 12.98 | 34.77 |
| 826.5 | 5 | QPSK | 1/24 | V | 16.36 | 34.77 |
| 836.5 | 5 | QPSK | 1/24 | V | 16.39 | 34.77 |
| 846.5 | 5 | QPSK | 1/24 | V | 16.37 | 34.77 |
| 826.5 | 5 | QPSK | 1/24 | H | 14.98 | 34.77 |
| 836.5 | 5 | QPSK | 1/24 | H | 14.92 | 34.77 |
| 846.5 | 5 | QPSK | 1/24 | H | 14.59 | 34.77 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 826.5 | 5 | 16-QAM | 1/24 | V | 15.43 | 34.77 |
| 836.5 | 5 | 16-QAM | 1/24 | V | 15.46 | 34.77 |
| 846.5 | 5 | 16-QAM | 1/24 | V | 15.44 | 34.77 |
| 826.5 | 5 | 16-QAM | 1/24 | H | 13.63 | 34.77 |
| 836.5 | 5 | 16-QAM | 1/24 | H | 14.29 | 34.77 |
| 846.5 | 5 | 16-QAM | 1/24 | H | 13.62 | 34.77 |
| 829 | 10 | QPSK | 1/49 | V | 16.33 | 34.77 |
| 836.5 | 10 | QPSK | 1/49 | V | 16.36 | 34.77 |
| 844 | 10 | QPSK | 1/49 | V | 16.34 | 34.77 |
| 829 | 10 | QPSK | 1/49 | H | 14.95 | 34.77 |
| 836.5 | 10 | QPSK | 1/49 | H | 14.27 | 34.77 |
| 844 | 10 | QPSK | 1/49 | H | 14.4 | 34.77 |
| 829 | 10 | 16-QAM | 1/49 | V | 15.4 | 34.77 |
| 836.5 | 10 | 16-QAM | 1/49 | V | 15.43 | 34.77 |
| 844 | 10 | 16-QAM | 1/49 | V | 15.41 | 34.77 |
| 829 | 10 | 16-QAM | 1/49 | H | 14.14 | 34.77 |
| 836.5 | 10 | 16-QAM | 1/49 | H | 13.7 | 34.77 |
| 844 | 10 | 16-QAM | 1/49 | H | 13.34 | 34.77 |

## ERP for LTE Band VII (Part 27)

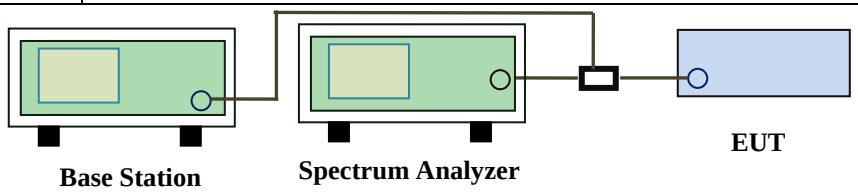
| Frequency (MHz) | Channel Bandwidth (MHz) | Mod. | RB Size/Offset | Antenna Polarization (H/V) | Absolute Level (dBm) | Limit (dBm) |
| --- | --- | --- | --- | --- | --- | --- |
| 2502.5 | 5 | QPSK | 1/0 | V | 21.11 | 30 |
| 2535 | 5 | QPSK | 1/0 | V | 21.15 | 30 |
| 2567.5 | 5 | QPSK | 1/24 | V | 21.09 | 30 |
| 2502.5 | 5 | QPSK | 1/0 | H | 19.66 | 30 |
| 2535 | 5 | QPSK | 1/0 | H | 20.07 | 30 |
| 2567.5 | 5 | QPSK | 1/24 | H | 18.75 | 30 |
| 2502.5 | 5 | 16-QAM | 1/0 | V | 20.45 | 30 |
| 2535 | 5 | 16-QAM | 1/0 | V | 20.49 | 30 |
| 2567.5 | 5 | 16-QAM | 1/24 | V | 20.43 | 30 |
| 2502.5 | 5 | 16-QAM | 1/0 | H | 17.99 | 30 |
| 2535 | 5 | 16-QAM | 1/0 | H | 18.39 | 30 |
| 2567.5 | 5 | 16-QAM | 1/24 | H | 18.75 | 30 |
| 2505 | 10 | QPSK | 1/0 | V | 21.15 | 30 |
| 2535 | 10 | QPSK | 1/49 | V | 20.99 | 30 |
| 2565 | 10 | QPSK | 1/0 | V | 21.13 | 30 |
| 2505 | 10 | QPSK | 1/0 | H | 19.85 | 30 |
| 2535 | 10 | QPSK | 1/49 | H | 19.05 | 30 |
| 2565 | 10 | QPSK | 1/0 | H | 18.74 | 30 |
| 2505 | 10 | 16-QAM | 1/0 | V | 20.49 | 30 |
| 2535 | 10 | 16-QAM | 1/49 | V | 20.48 | 30 |
| 2565 | 10 | 16-QAM | 1/0 | V | 20.47 | 30 |
| 2505 | 10 | 16-QAM | 1/0 | H | 18.19 | 30 |
| 2535 | 10 | 16-QAM | 1/49 | H | 19.43 | 30 |
| 2565 | 10 | 16-QAM | 1/0 | H | 19.03 | 30 |
| 2507.5 | 15 | QPSK | 1/0 | V | 21.21 | 30 |
| 2535 | 15 | QPSK | 1/74 | V | 21.05 | 30 |
| 2562.5 | 15 | QPSK | 1/0 | V | 21.19 | 30 |
| 2507.5 | 15 | QPSK | 1/0 | H | 19.76 | 30 |
| 2535 | 15 | QPSK | 1/74 | H | 19.73 | 30 |
| 2562.5 | 15 | QPSK | 1/0 | H | 18.97 | 30 |

| | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| 2507.5 | 15 | 16-QAM | 1/0 | V | 20.55 | 30 |
| 2535 | 15 | 16-QAM | 1/74 | V | 20.54 | 30 |
| 2562.5 | 15 | 16-QAM | 1/0 | V | 20.53 | 30 |
| 2507.5 | 15 | 16-QAM | 1/0 | H | 19.28 | 30 |
| 2535 | 15 | 16-QAM | 1/74 | H | 19.54 | 30 |
| 2562.5 | 15 | 16-QAM | 1/0 | H | 18.12 | 30 |
| 2510 | 20 | QPSK | 1/99 | V | 21.04 | 30 |
| 2535 | 20 | QPSK | 1/99 | V | 21.08 | 30 |
| 2560 | 20 | QPSK | 1/0 | V | 21.22 | 30 |
| 2510 | 20 | QPSK | 1/99 | H | 19.88 | 30 |
| 2535 | 20 | QPSK | 1/99 | H | 19.17 | 30 |
| 2560 | 20 | QPSK | 1/0 | H | 19.54 | 30 |
| 2510 | 20 | 16-QAM | 1/99 | V | 20.53 | 30 |
| 2535 | 20 | 16-QAM | 1/99 | V | 20.57 | 30 |
| 2560 | 20 | 16-QAM | 1/0 | V | 20.56 | 30 |
| 2510 | 20 | 16-QAM | 1/99 | H | 18.59 | 30 |
| 2535 | 20 | 16-QAM | 1/99 | H | 19.2 | 30 |
| 2560 | 20 | 16-QAM | 1/0 | H | 18.59 | 30 |

## 6.3 Peak-Average Ratio

| | |
|---|---|
| Temperature | 24℃ |
| Relative Humidity | 57% |
| Atmospheric Pressure | 1023mbar |
| Test date : | June 27, 2018 |
| Tested By : | Aarron Liang |

Requirement(s):

| Spec | Item | Requirement | Applicable |
|---|---|---|---|
| §24.232(d)<br>§ 27.50(d) | a) | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. | ☑ |
| Test Setup |  | | |
| Test Procedure | According with KDB 971168 v02r02<br><br>5.7.2 Alternate procedure for PAPR<br><br>5.1.2 Peak power measurements with a peak power meter<br><br>The total peak output power may be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.<br><br>5.2.3 Average power measurement with average power meter<br><br>As an alternative to the use of a spectrum/signal analyzer or EMI receiver to perform a measurement of the total in-band average output power, a wideband RF average power meter with a thermocouple detector or equivalent can be used under certain conditions<br>If the EUT can be configured to transmit continuously (i.e., the burst duty | | |

| | |
| --- | --- |
| | cycle ≥ 98%) and at all times the EUT is transmitting at is maximum output power level, then a conventional wide-band RF power meter can be used.<br>If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle < 98%), then there are two options for the use of an average power meter. First, a gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only over active transmission bursts at maximum output power levels. A conventional average power meter can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to 10log(1/duty cycle) |
| Remark | |
| Result | ☑ Pass ☐ Fail |

**Test Data** ☑ Yes ☐ N/A

**Test Plot** ☐ Yes (See below) ☑ N/A

## LTE Band II (part 24E)

| BW(MHz) | Frequency (MHz) | Mode | Modulation | Conducted Power (dBm) | | Peak-Average Ratio (PAR) |
| --- | --- | --- | --- | --- | --- | --- |
| | | | | Peak | Average | |
| 1.4 | 1880 | RB 1/0 | QPSK | 25.78 | 22.63 | 3.15 |
| | | | 16QAM | 25.35 | 21.52 | 3.83 |
| 3 | 1880 | RB 1/0 | QPSK | 25.46 | 22.62 | 2.84 |
| | | | 16QAM | 25.26 | 21.41 | 3.85 |
| 5 | 1880 | RB 1/0 | QPSK | 25.38 | 22.74 | 2.64 |
| | | | 16QAM | 25.46 | 21.63 | 3.83 |
| 10 | 1880 | RB 1/0 | QPSK | 25.86 | 22.62 | 3.24 |
| | | | 16QAM | 24.97 | 22.16 | 2.81 |
| 15 | 1880 | RB 1/0 | QPSK | 25.68 | 22.75 | 2.93 |
| | | | 16QAM | 25.27 | 21.59 | 3.68 |
| 20 | 1880 | RB 1/0 | QPSK | 25.28 | 22.81 | 2.47 |
| | | | 16QAM | 25.75 | 21.73 | 4.02 |

## LTE Band IV (part 27)

| BW(MHz) | Frequency (MHz) | Mode | Modulation | Conducted Power (dBm) | | Peak-Average Ratio (PAR) |
| --- | --- | --- | --- | --- | --- | --- |
| | | | | Peak | Average | |
| 1.4 | 1732.5 | RB 1/0 | QPSK | 25.35 | 22.91 | 2.44 |
| | | | 16QAM | 25.26 | 21.94 | 3.32 |
| 3 | 1732.5 | RB 1/0 | QPSK | 25.4 | 23.23 | 2.17 |
| | | | 16QAM | 25.15 | 22.04 | 3.11 |
| 5 | 1732.5 | RB 1/0 | QPSK | 25.28 | 23.3 | 1.98 |
| | | | 16QAM | 25.64 | 22.35 | 3.29 |
| 10 | 1732.5 | RB 1/0 | QPSK | 25.38 | 22.56 | 2.82 |
| | | | 16QAM | 25.84 | 21.56 | 4.28 |
| 15 | 1732.5 | RB 1/0 | QPSK | 25.66 | 22.81 | 2.85 |
| | | | 16QAM | 25.35 | 21.73 | 3.62 |
| 20 | 1732.5 | RB 1/0 | QPSK | 25.75 | 23.29 | 2.46 |
| | | | 16QAM | 25.49 | 22.25 | 3.24 |

## LTE Band V (part 27)

| BW(MHz) | Frequency (MHz) | Mode | Modulation | Conducted Power (dBm) | | Peak-Average Ratio (PAR) |
| --- | --- | --- | --- | --- | --- | --- |
| | | | | Peak | Average | |
| 1.4 | 836.5 | RB 1/0 | QPSK | 25.55 | 22.6 | 2.95 |
| | | | 16QAM | 25.74 | 21.55 | 4.19 |
| 3 | 836.5 | RB 1/0 | QPSK | 24.64 | 22.63 | 2.01 |
| | | | 16QAM | 24.62 | 21.61 | 3.01 |
| 5 | 836.5 | RB 1/0 | QPSK | 25.03 | 22.73 | 2.3 |
| | | | 16QAM | 24.83 | 22.06 | 2.77 |
| 10 | 836.5 | RB 1/0 | QPSK | 25.08 | 22.91 | 2.17 |
| | | | 16QAM | 24.92 | 22.09 | 2.83 |

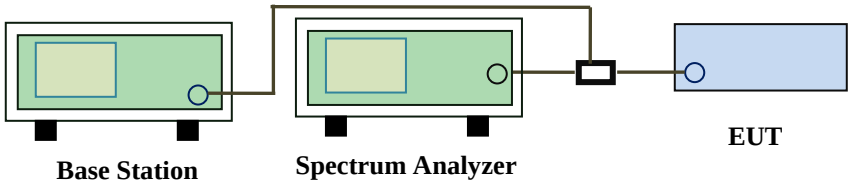
## LTE Band VII (part 27)

| BW(MHz) | Frequency (MHz) | Mode | Modulation | Conducted Power (dBm) | | Peak-Average Ratio (PAR) |
| --- | --- | --- | --- | --- | --- | --- |
| | | | | Peak | Average | |
| 5 | 2535 | RB 1/0 | QPSK | 25.55 | 22.6 | 2.95 |
| | | | 16QAM | 25.74 | 21.55 | 4.19 |
| 10 | 2535 | RB 1/0 | QPSK | 24.64 | 22.63 | 2.01 |
| | | | 16QAM | 24.62 | 21.61 | 3.01 |
| 15 | 2535 | RB 1/0 | QPSK | 25.03 | 22.73 | 2.30 |
| | | | 16QAM | 24.83 | 22.06 | 2.77 |
| 20 | 2535 | RB 1/0 | QPSK | 25.08 | 22.91 | 2.17 |
| | | | 16QAM | 24.92 | 22.09 | 2.83 |

## 6.4 Occupied Bandwidth

| | |
|---|---|
| Temperature | 24℃ |
| Relative Humidity | 57% |
| Atmospheric Pressure | 1023mbar |
| Test date : | June 27&28, 2018 |
| Tested By : | Aarron Liang |

**Requirement(s):**

| Spec | Item | Requirement | Applicable |
|---|---|---|---|
| §2.1049, §22.917, §22.905 §24.238 §27.53(a) | a) | 99% Occupied Bandwidth(kHz) | ☑ |
| | b) | 26 dB Bandwidth(kHz) | ☑ |
| Test Setup |   | | |
| Test Procedure | - The EUT was connected to Spectrum Analyzer and Base Station via power divider.<br>- The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers. | | |
| Remark | | | |
| Result | ☑ Pass ☐ Fail | | |

**Test Data** ☑ Yes ☐ N/A

**Test Plot** ☑ Yes (See below) ☐ N/A

## LTE Band II (Part 24E)

| BW(MHz) | Channel | Frequency (MHz) | Modulation | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
| --- | --- | --- | --- | --- | --- |
| 1.4 | 18607 | 1851 | 16QAM | 1.1070 | 1.325 |
| | | | QPSK | 1.1061 | 1.319 |
| 1.4 | 18900 | 1880 | 16QAM | 1.1048 | 1.324 |
| | | | QPSK | 1.1031 | 1.319 |
| 1.4 | 19193 | 1909 | 16QAM | 1.1066 | 1.307 |
| | | | QPSK | 1.1086 | 1.304 |
| 3 | 18615 | 1852 | 16QAM | 2.7373 | 3.014 |
| | | | QPSK | 2.5473 | 5.215 |
| 3 | 18900 | 1880 | 16QAM | 2.7403 | 3.014 |
| | | | QPSK | 2.7374 | 3.006 |
| 3 | 19185 | 1909 | 16QAM | 2.7423 | 3.028 |
| | | | QPSK | 2.7385 | 3.030 |
| 5 | 18625 | 1853 | 16QAM | 4.5444 | 5.207 |
| | | | QPSK | 4.5483 | 5.183 |
| 5 | 18900 | 1880 | 16QAM | 4.5242 | 5.218 |
| | | | QPSK | 4.5246 | 5.223 |
| 5 | 19175 | 1908 | 16QAM | 4.5244 | 5.142 |
| | | | QPSK | 4.5230 | 5.213 |
| 10 | 18650 | 1855 | 16QAM | 9.0526 | 10.27 |
| | | | QPSK | 9.0768 | 10.36 |
| 10 | 18900 | 1880 | 16QAM | 9.1134 | 10.40 |
| | | | QPSK | 9.1198 | 10.36 |
| 10 | 19150 | 1905 | 16QAM | 9.1149 | 10.06 |
| | | | QPSK | 9.1263 | 10.17 |
| 15 | 18675 | 1858 | 16QAM | 13.496 | 15.08 |
| | | | QPSK | 13.492 | 15.07 |
| 15 | 18900 | 1880 | 16QAM | 13.515 | 15.15 |
| | | | QPSK | 13.520 | 15.23 |
| 15 | 19125 | 1903 | 16QAM | 13.520 | 15.15 |
| | | | QPSK | 13.546 | 15.26 |

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| 20 | 18700 | 1860 | 16QAM | 17.968 | 19.48 |
| | | | QPSK | 17.958 | 19.53 |
| 20 | 18900 | 1880 | 16QAM | 17.918 | 19.54 |
| | | | QPSK | 17.911 | 19.55 |
| 20 | 19100 | 1900 | 16QAM | 17.960 | 19.72 |
| | | | QPSK | 17.949 | 19.81 |

LTE Band IV (Part 27)

| BW(MHz) | Channel | Frequency (MHz) | Modulation | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
| --- | --- | --- | --- | --- | --- |
| 1.4 | 19957 | 1711 | 16QAM | 1.1188 | 1.646 |
| | | | QPSK | 1.1084 | 1.348 |
| 1.4 | 20175 | 1733 | 16QAM | 1.1028 | 1.319 |
| | | | QPSK | 1.0996 | 1.299 |
| 1.4 | 20393 | 1754 | 16QAM | 1.1062 | 1.301 |
| | | | QPSK | 1.1059 | 1.302 |
| 3 | 19965 | 1712 | 16QAM | 2.7489 | 3.019 |
| | | | QPSK | 2.7501 | 3.028 |
| 3 | 20175 | 1733 | 16QAM | 2.7439 | 3.004 |
| | | | QPSK | 2.7416 | 3.018 |
| 3 | 20385 | 1754 | 16QAM | 2.7317 | 3.027 |
| | | | QPSK | 2.7329 | 3.030 |
| 5 | 19975 | 1713 | 16QAM | 4.5451 | 5.223 |
| | | | QPSK | 4.5439 | 5.243 |
| 5 | 20175 | 1733 | 16QAM | 4.5356 | 5.105 |
| | | | QPSK | 4.5327 | 5.182 |
| 5 | 20375 | 1753 | 16QAM | 4.5251 | 5.139 |
| | | | QPSK | 4.5265 | 5.177 |
| 10 | 20000 | 1715 | 16QAM | 9.1098 | 10.31 |
| | | | QPSK | 9.1212 | 10.50 |
| 10 | 20175 | 1733 | 16QAM | 9.0787 | 10.34 |
| | | | QPSK | 9.0893 | 10.34 |
| 10 | 20350 | 1750 | 16QAM | 9.0803 | 12.29 |
| | | | QPSK | 9.1032 | 12.28 |
| 15 | 20025 | 1718 | 16QAM | 13.525 | 15.13 |
| | | | QPSK | 13.528 | 15.09 |
| 15 | 20175 | 1733 | 16QAM | 13.483 | 14.96 |
| | | | QPSK | 13.500 | 15.12 |
| 15 | 20325 | 1748 | 16QAM | 13.547 | 15.04 |
| | | | QPSK | 13.530 | 14.84 |

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| 20 | 20050 | 1720 | 16QAM | 17.949 | 19.67 |
| | | | QPSK | 17.963 | 19.72 |
| 20 | 20175 | 1733 | 16QAM | 17.898 | 19.45 |
| | | | QPSK | 17.905 | 19.54 |
| 20 | 20300 | 1745 | 16QAM | 17.980 | 19.39 |
| | | | QPSK | 17.969 | 19.45 |

## LTE Band V (Part 22H)

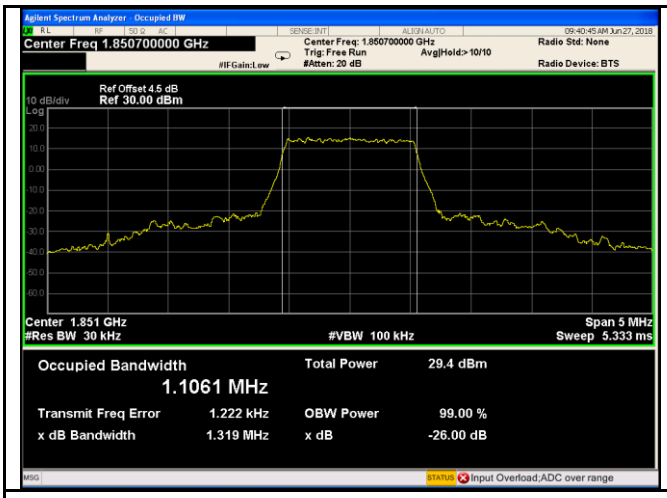
| BW(MHz) | Channel | Frequency (MHz) | Modulation | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
| --- | --- | --- | --- | --- | --- |
| 1.4 | 20407 | 824.7 | 16QAM | 1.1045 | 1.305 |
| | | | QPSK | 1.1091 | 1.313 |
| 1.4 | 20525 | 836.5 | 16QAM | 1.1067 | 1.318 |
| | | | QPSK | 1.1099 | 1.423 |
| 1.4 | 20643 | 848.3 | 16QAM | 1.1013 | 1.291 |
| | | | QPSK | 1.1012 | 1.303 |
| 3 | 20415 | 825.5 | 16QAM | 2.7542 | 3.009 |
| | | | QPSK | 2.7520 | 3.010 |
| 3 | 20525 | 836.5 | 16QAM | 2.7380 | 3.024 |
| | | | QPSK | 2.7451 | 3.026 |
| 3 | 20635 | 847.5 | 16QAM | 2.7269 | 3.015 |
| | | | QPSK | 2.7285 | 3.017 |
| 5 | 20425 | 826.5 | 16QAM | 4.5397 | 5.164 |
| | | | QPSK | 4.5405 | 5.179 |
| 5 | 20525 | 836.5 | 16QAM | 4.5247 | 4.995 |
| | | | QPSK | 4.5277 | 5.069 |
| 5 | 20625 | 846.5 | 16QAM | 4.5330 | 5.150 |
| | | | QPSK | 4.5292 | 5.181 |
| 10 | 20450 | 829 | 16QAM | 9.0883 | 10.29 |
| | | | QPSK | 9.1058 | 10.31 |
| 10 | 20525 | 836.5 | 16QAM | 9.1020 | 10.17 |
| | | | QPSK | 9.1179 | 10.21 |
| 10 | 20800 | 844 | 16QAM | 9.1058 | 10.38 |
| | | | QPSK | 9.1196 | 10.45 |

## LTE Band VII (Part 27) result

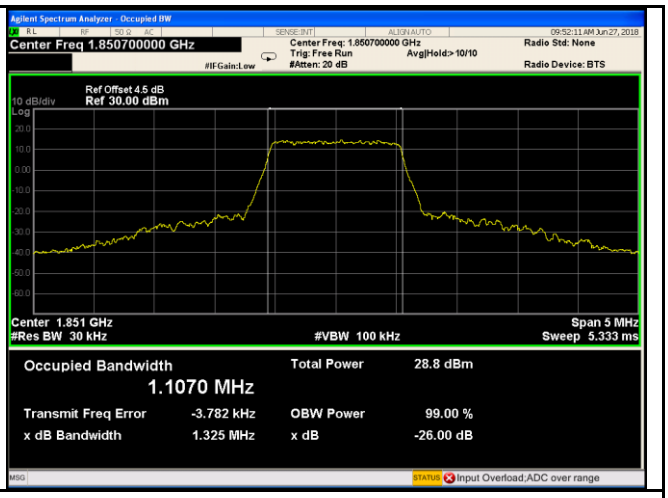
| BW(MHz) | Channel | Frequency (MHz) | Modulation | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
| --- | --- | --- | --- | --- | --- |
| 5 | 20775 | 2503 | 16QAM | 4.5357 | 5.298 |
| | | | QPSK | 4.5448 | 5.293 |
| 5 | 21100 | 2535 | 16QAM | 4.5184 | 5.121 |
| | | | QPSK | 4.5222 | 5.150 |
| 5 | 21425 | 2568 | 16QAM | 4.5196 | 5.183 |
| | | | QPSK | 4.5306 | 5.116 |
| 10 | 20800 | 2505 | 16QAM | 9.0630 | 10.25 |
| | | | QPSK | 9.0599 | 10.47 |
| 10 | 21100 | 2535 | 16QAM | 9.0816 | 10.28 |
| | | | QPSK | 9.1021 | 10.34 |
| 10 | 21400 | 2565 | 16QAM | 9.0952 | 10.30 |
| | | | QPSK | 9.1135 | 10.49 |
| 15 | 20825 | 2508 | 16QAM | 13.483 | 14.86 |
| | | | QPSK | 13.476 | 15.13 |
| 15 | 21100 | 2535 | 16QAM | 13.493 | 15.01 |
| | | | QPSK | 13.508 | 15.09 |
| 15 | 21400 | 2563 | 16QAM | 13.556 | 15.14 |
| | | | QPSK | 13.551 | 15.15 |
| 20 | 20850 | 2510 | 16QAM | 17.899 | 19.37 |
| | | | QPSK | 17.907 | 19.48 |
| 20 | 21100 | 2535 | 16QAM | 17.946 | 19.82 |
| | | | QPSK | 17.971 | 19.74 |
| 20 | 21350 | 2560 | 16QAM | 17.960 | 19.45 |
| | | | QPSK | 17.966 | 19.60 |

## Test Plots

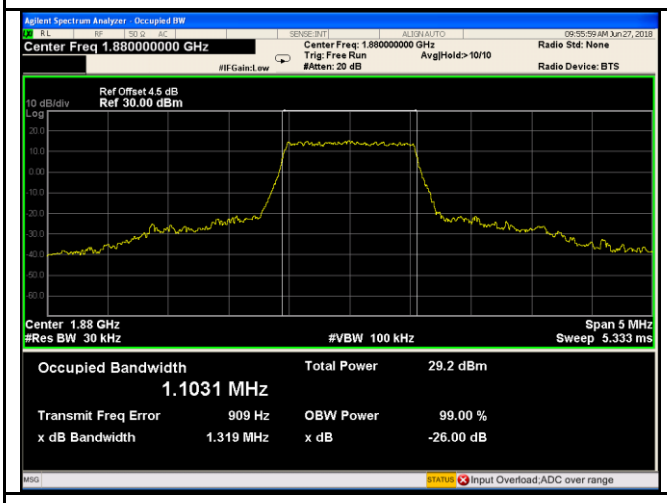
### LTE Band II (Part 24E)



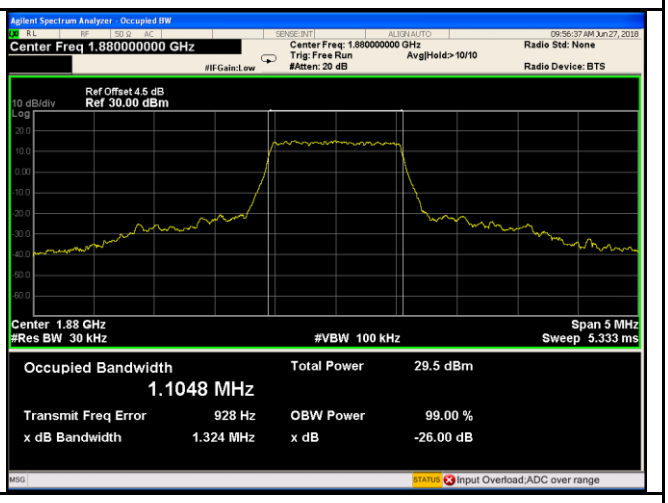

LTE Band II - Low CH QPSK-1.4



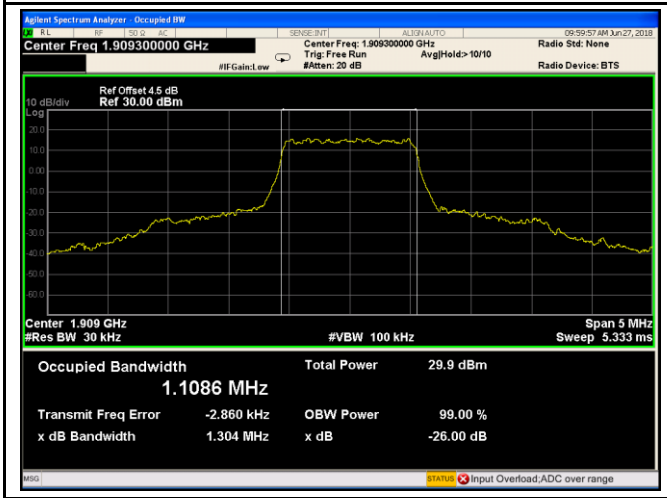

LTE Band II - Low CH 16QAM-1.4



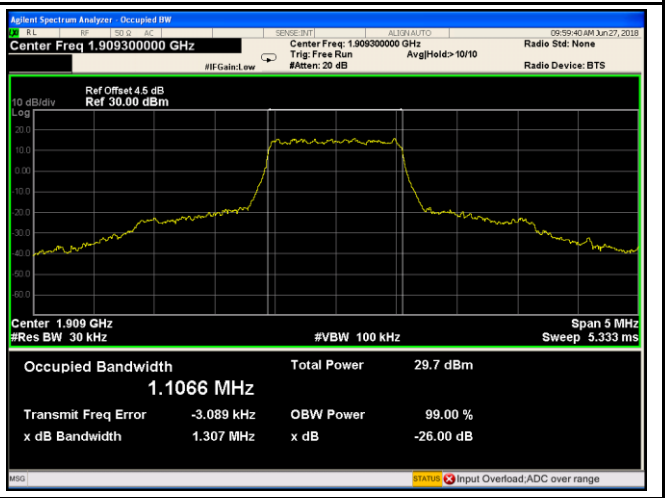

LTE Band II - Middle CH QPSK-1.4



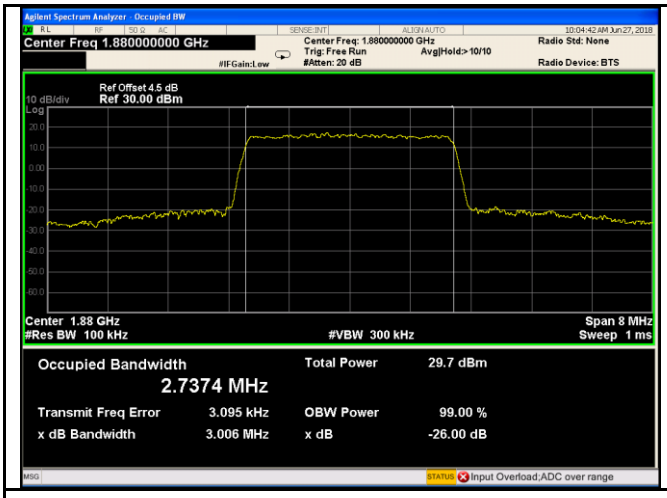

LTE Band II - Middle CH 16QAM-1.4



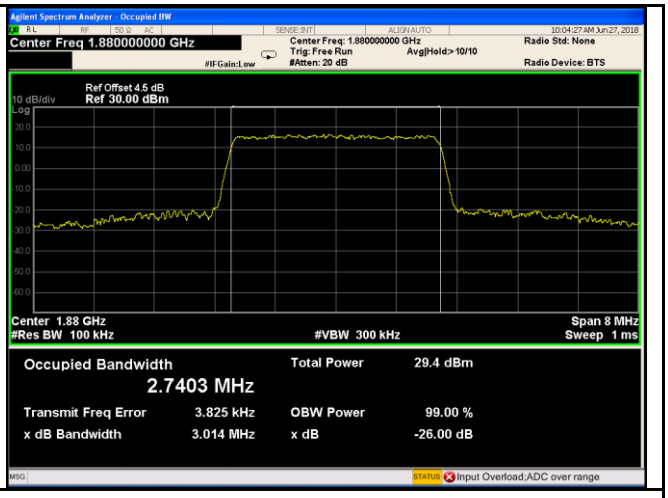

LTE Band II - High CH QPSK-1.4



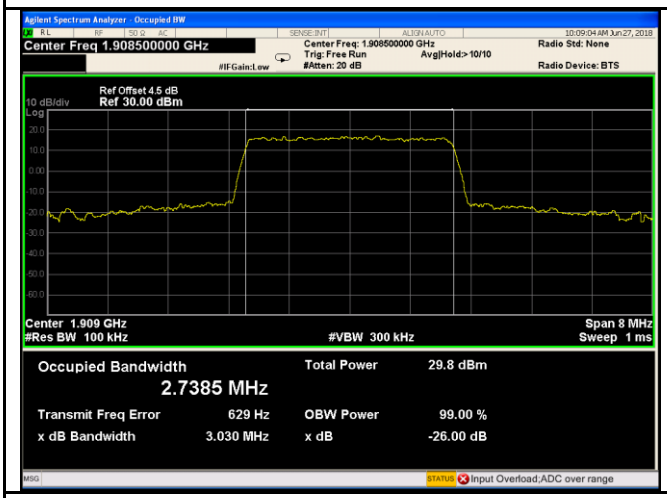

LTE Band II - High CH 16QAM-1.4



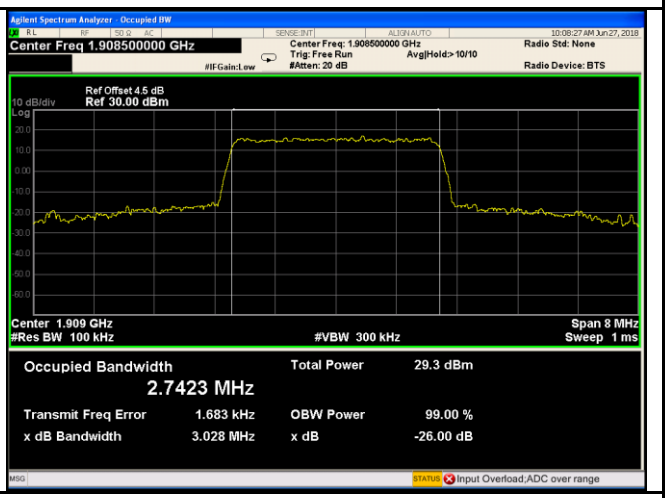

LTE Band II - Low CH QPSK-3



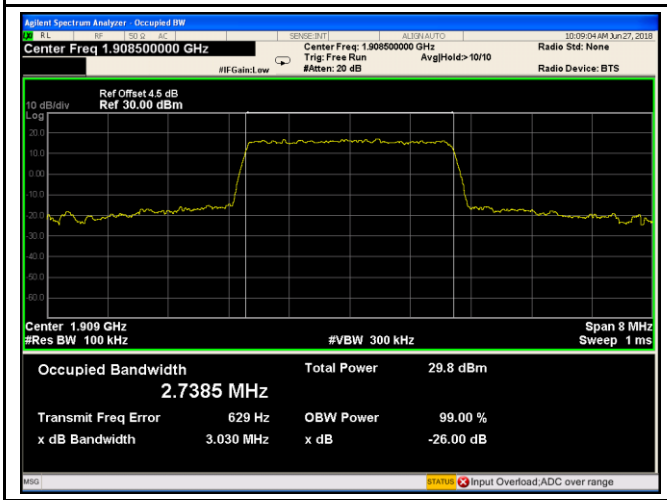

LTE Band II - Low CH 16QAM-3



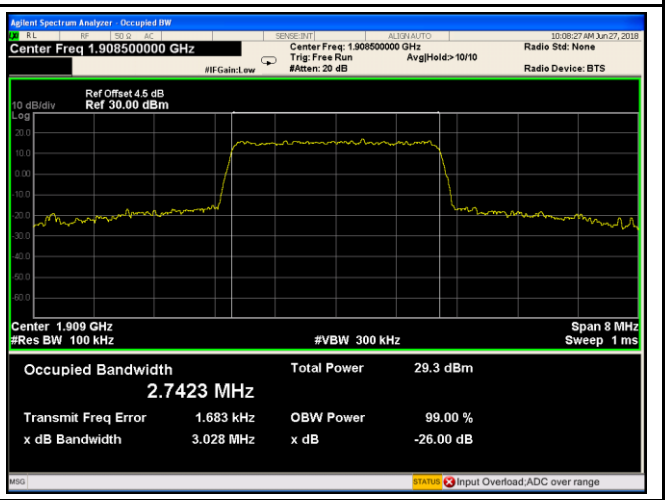

LTE Band II - Middle CH QPSK-3



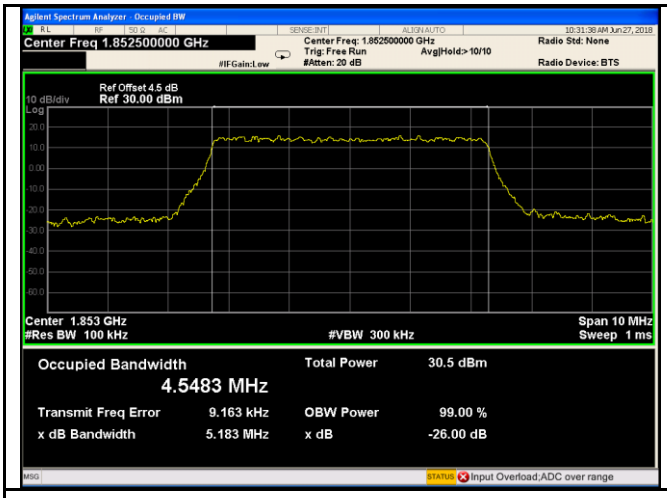

LTE Band II - Middle CH 16QAM-3



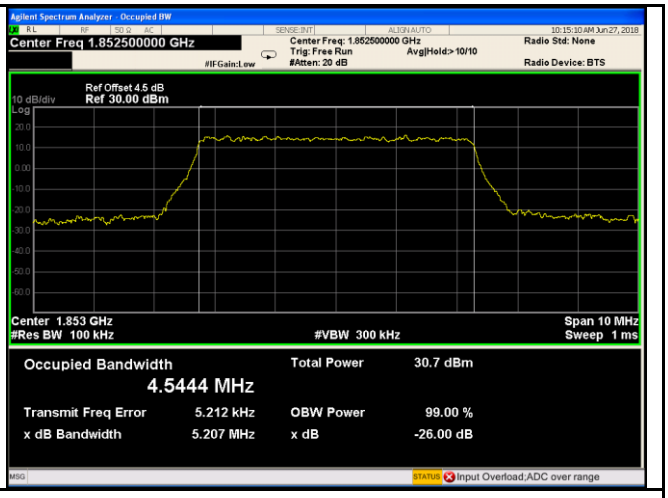

LTE Band II - High CH QPSK-3



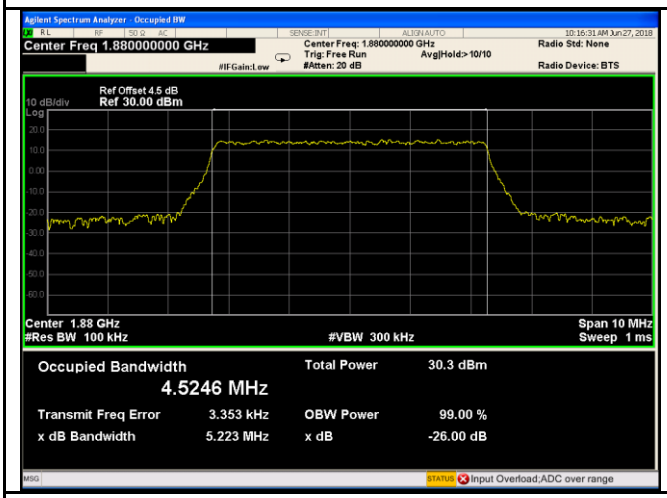

LTE Band II - High CH 16QAM-3



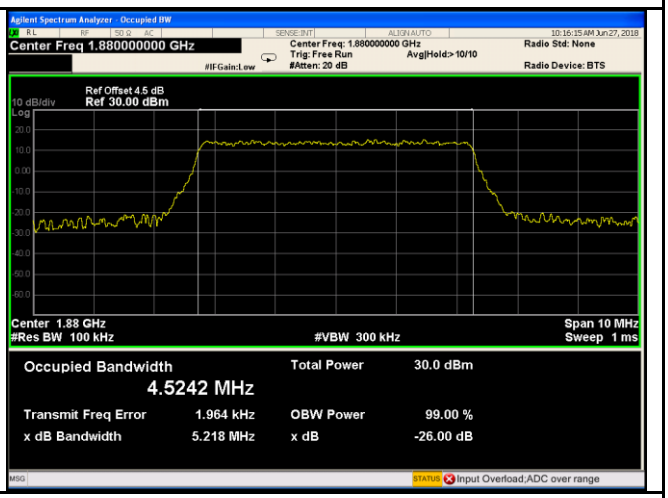

LTE Band II - Low CH QPSK-5



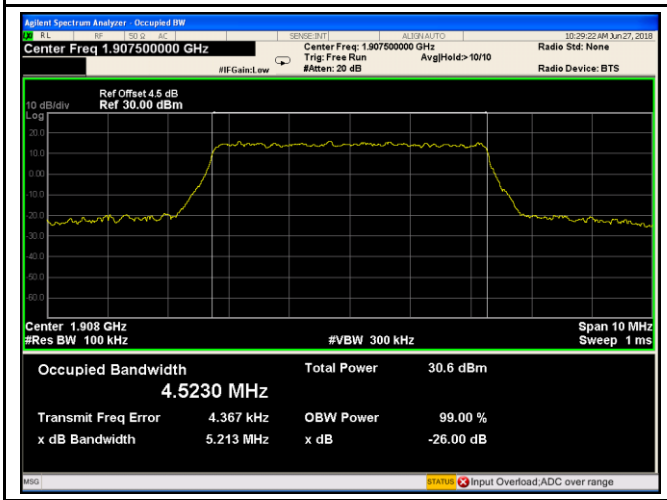

LTE Band II - Low CH 16QAM-5



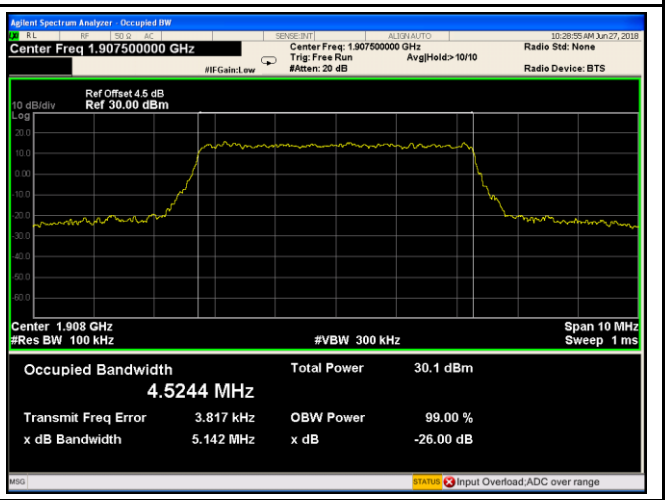

LTE Band II - Middle CH QPSK-5



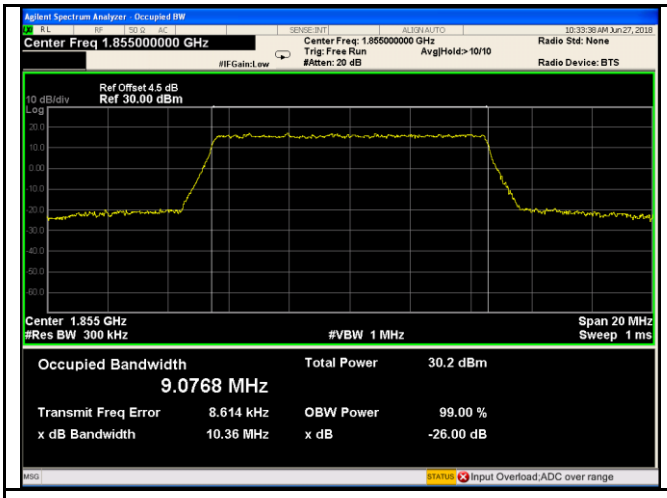

LTE Band II - Middle CH 16QAM-5



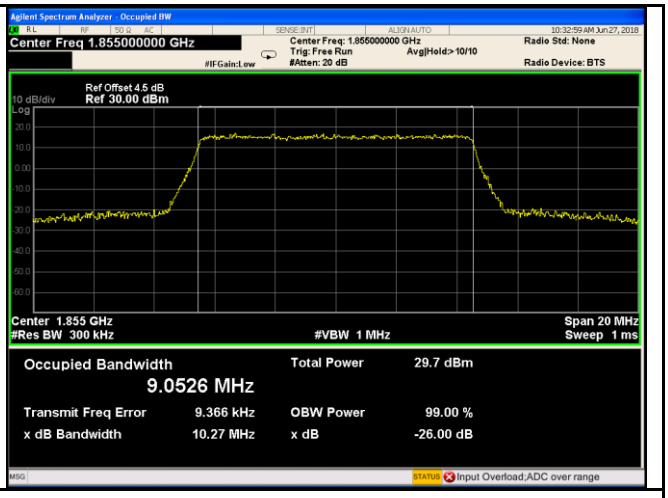

LTE Band II - High CH QPSK-5



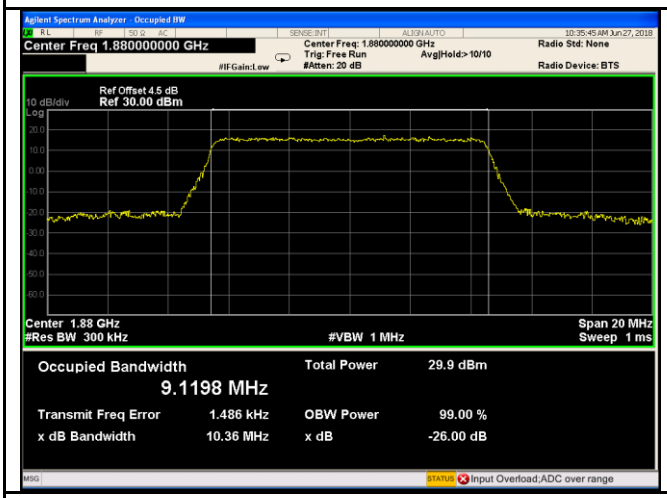

LTE Band II - High CH 16QAM-5



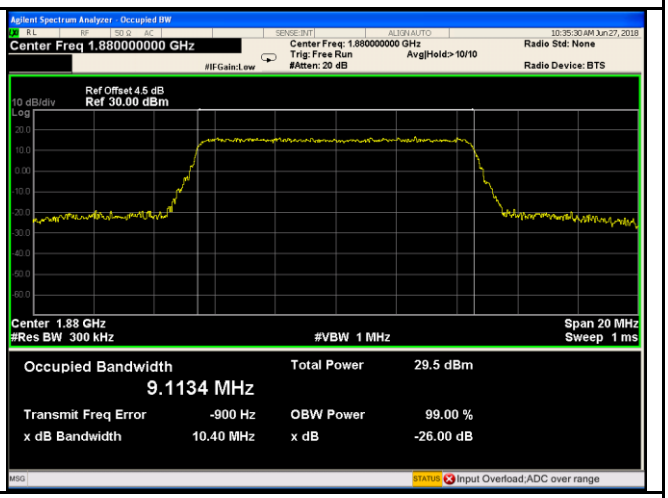

LTE Band II - Low CH QPSK-10



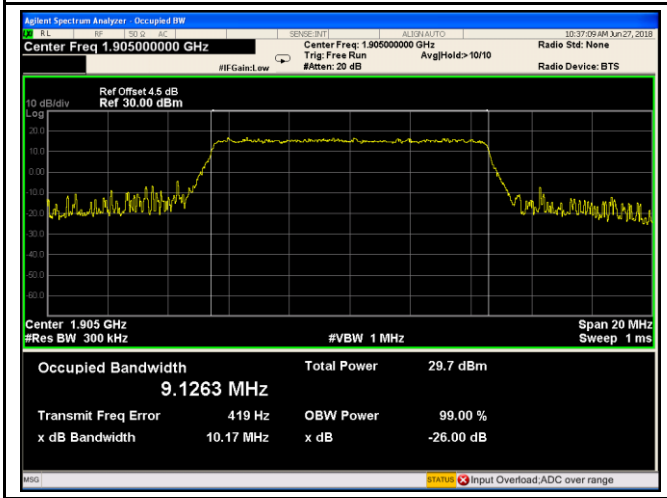

LTE Band II - Low CH 16QAM-10



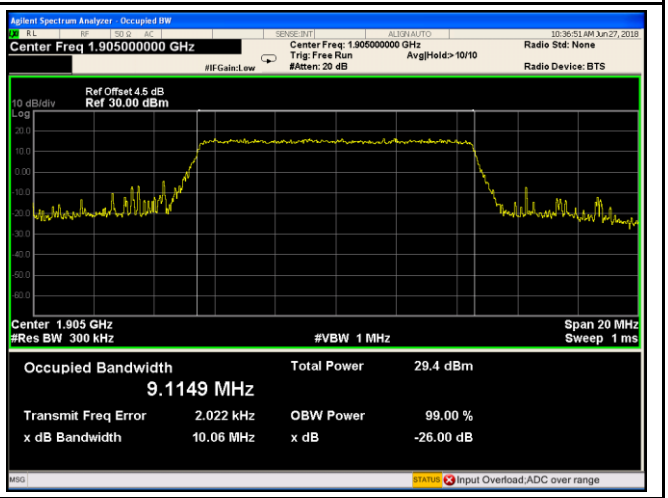

LTE Band II - Middle CH QPSK-10



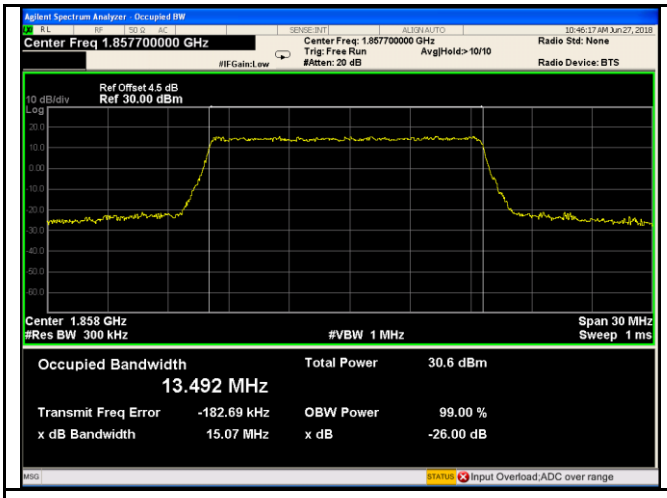

LTE Band II - Middle CH 16QAM-10



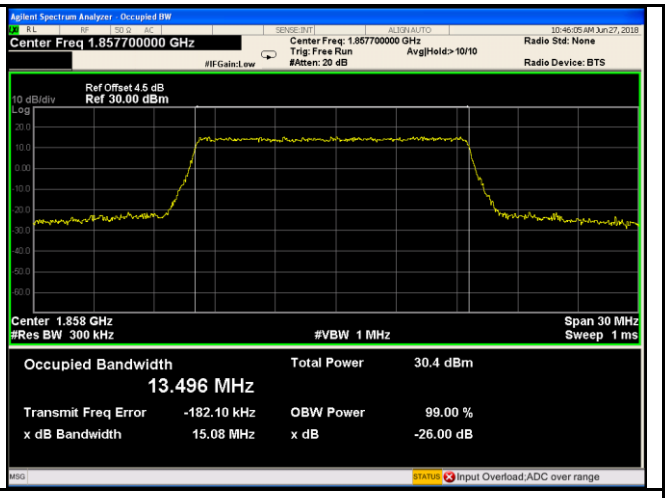

LTE Band II - High CH QPSK-10



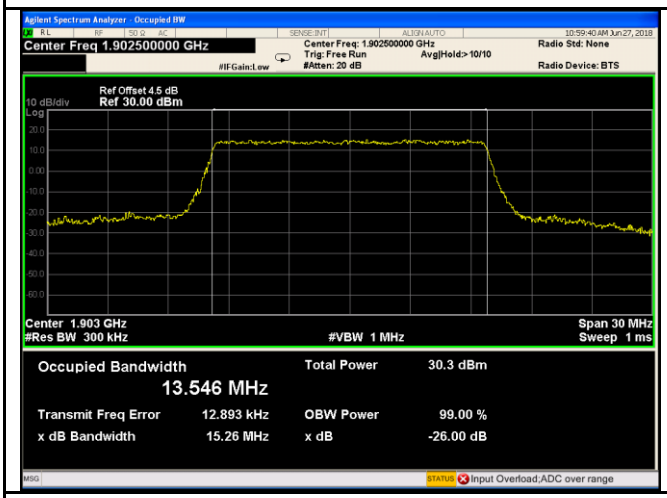

LTE Band II - High CH 16QAM-10



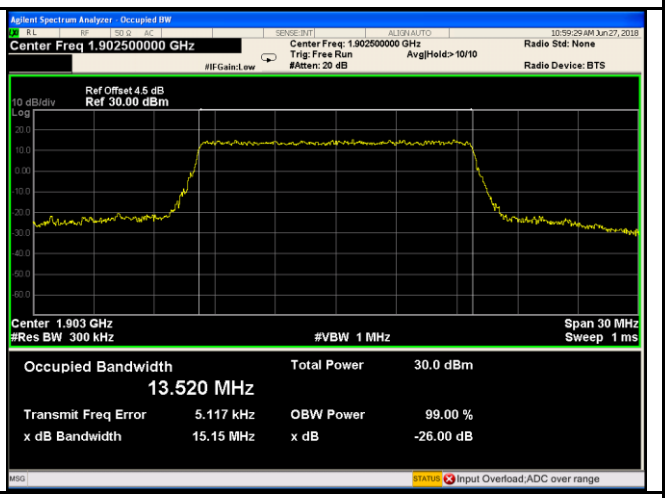

LTE Band II - Low CH QPSK-15



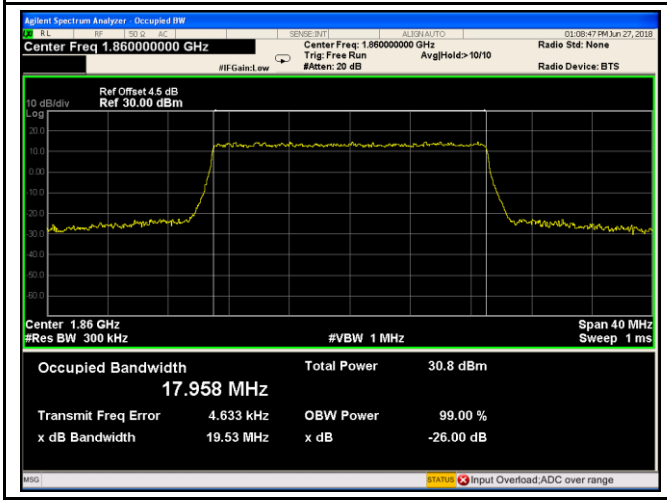

LTE Band II - Low CH 16QAM-15



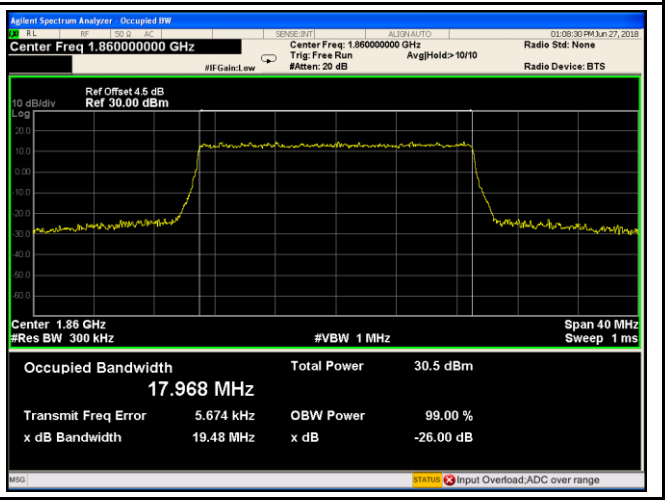

LTE Band II - Middle CH QPSK-15



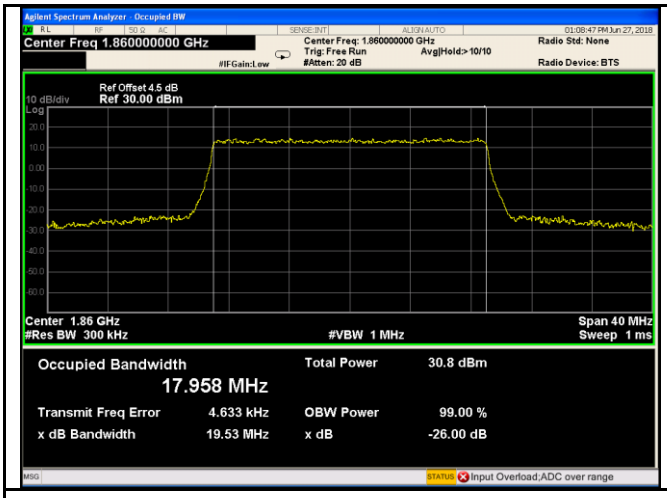

LTE Band II - Middle CH 16QAM-15



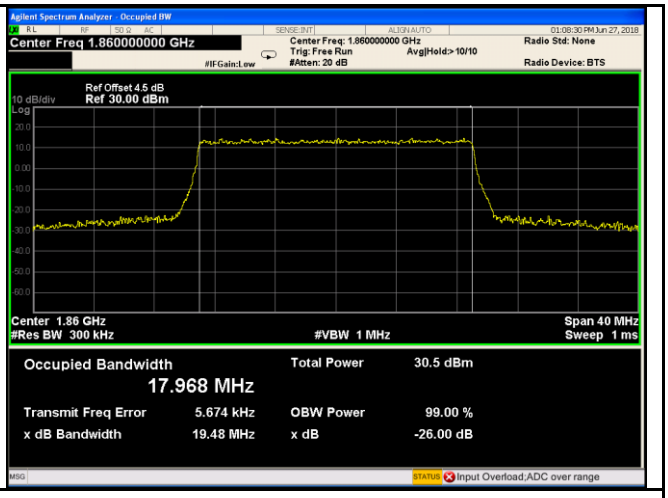

LTE Band II - High CH QPSK-15



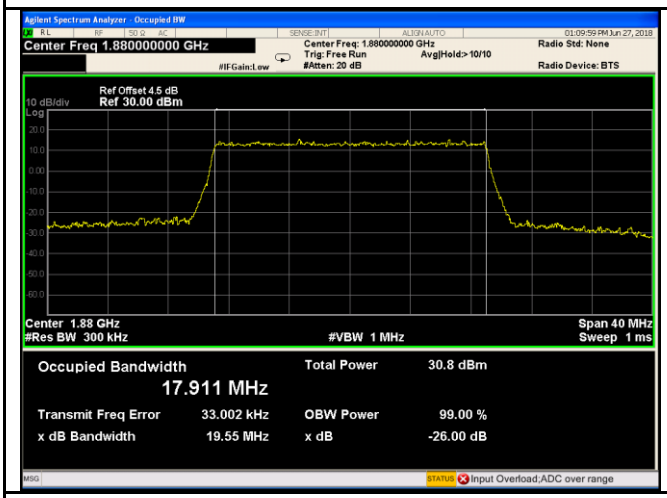

LTE Band II - High CH 16QAM-15



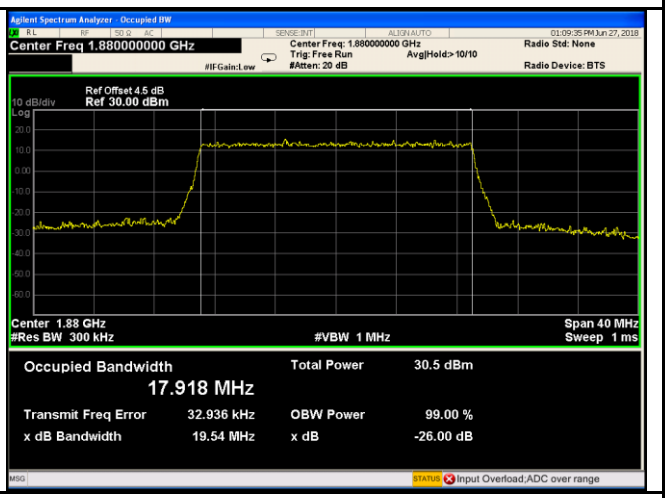

LTE Band II - Low CH QPSK-20



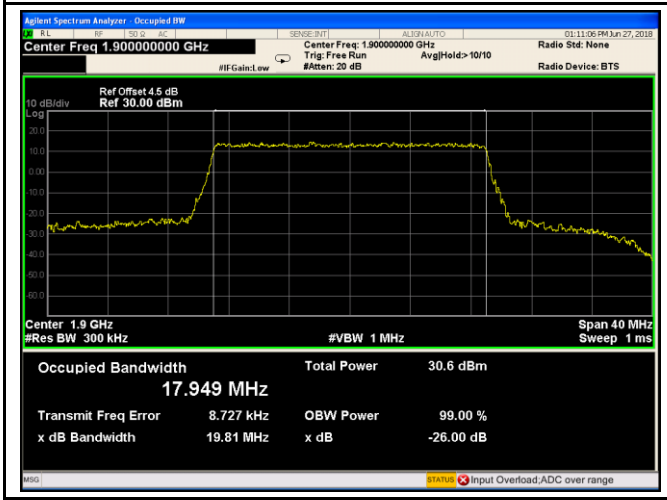

LTE Band II - Low CH 16QAM-20



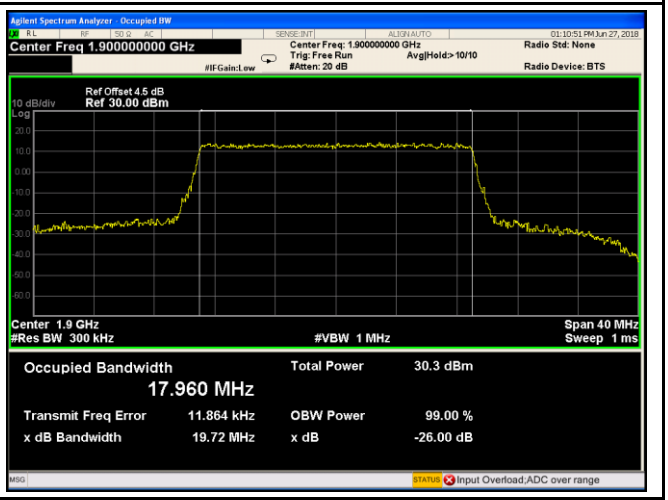

LTE Band II - Middle CH QPSK-20




LTE Band II - Middle CH 16QAM-20

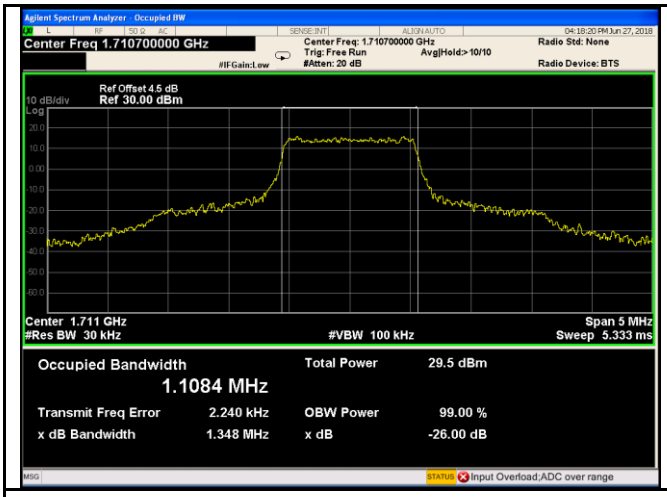



LTE Band II - High CH QPSK-20

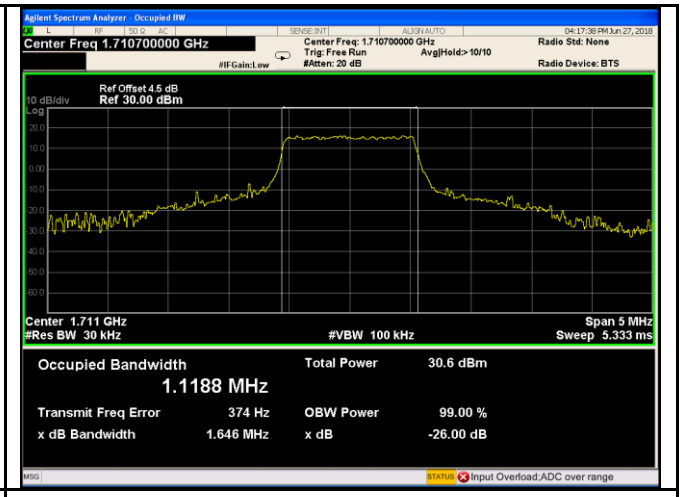



LTE Band II - High CH 16QAM-20

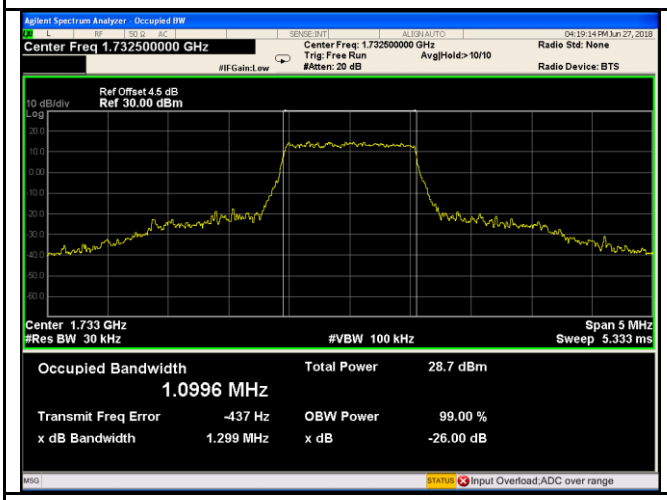
## LTE Band IV (Part 27)



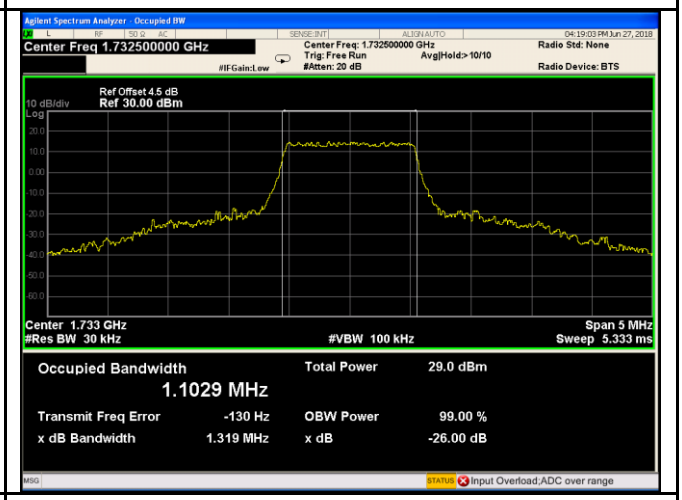

LTE Band IV - Low CH QPSK-1.4



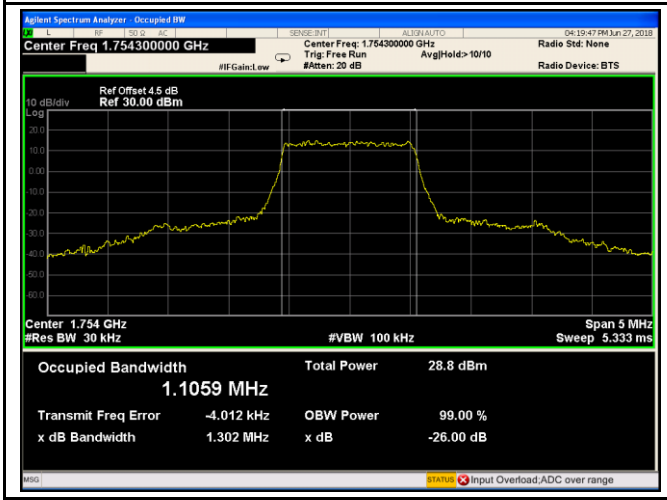

LTE Band IV - Low CH 16QAM-1.4



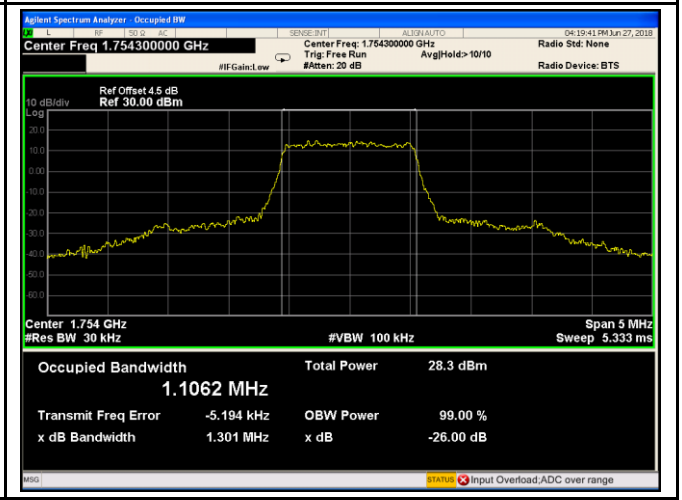

LTE Band IV - Middle CH QPSK-1.4



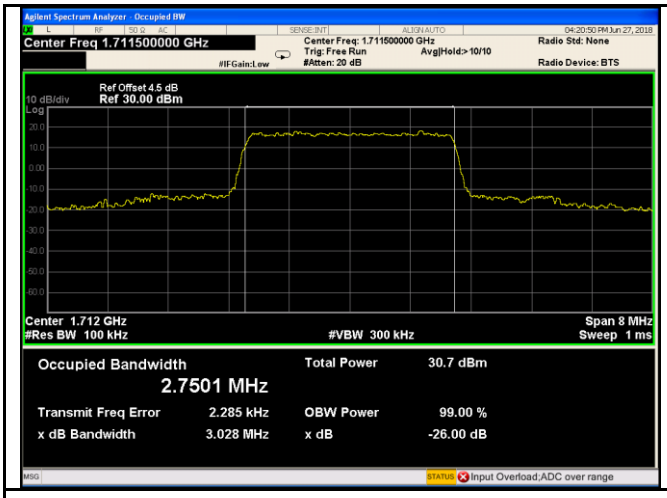

LTE Band IV - Middle CH 16QAM-1.4



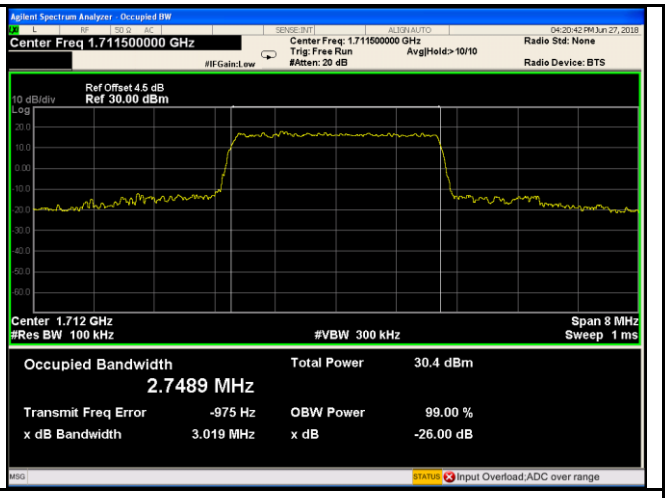

LTE Band IV - High CH QPSK-1.4



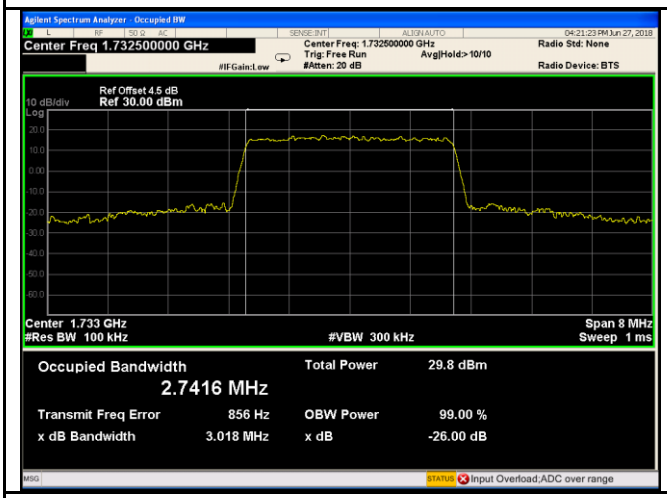

LTE Band IV - High CH 16QAM-1.4



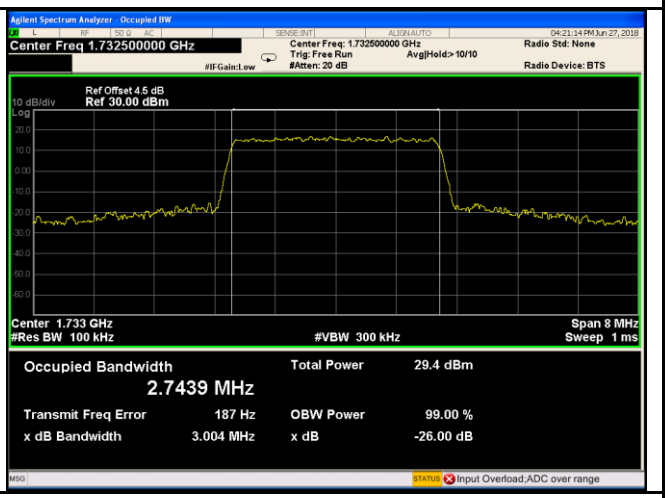

LTE Band IV - Low CH QPSK-3



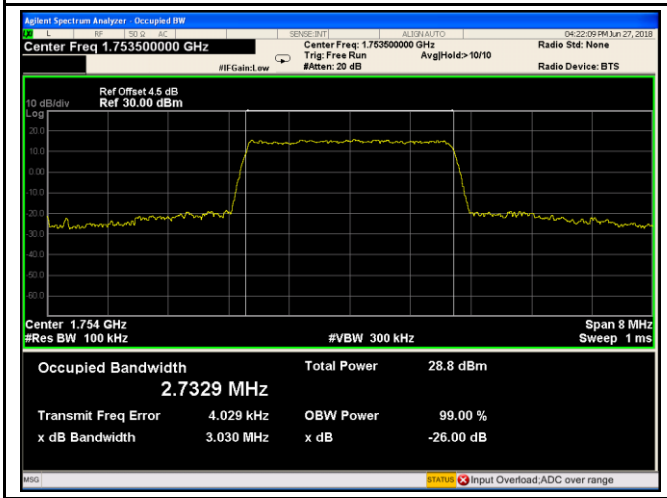

LTE Band IV - Low CH 16QAM-3



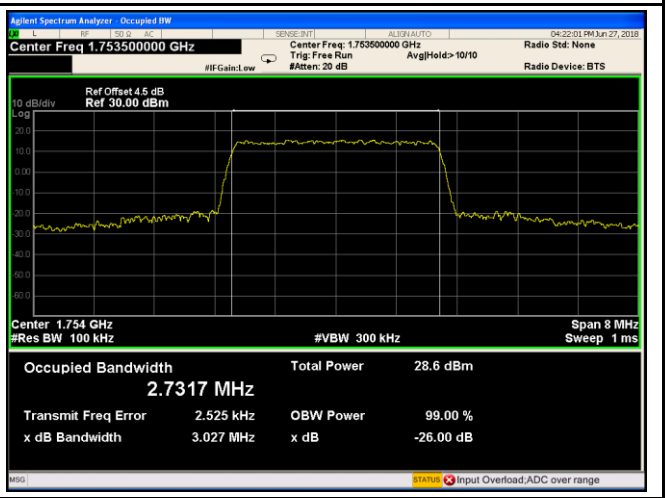

LTE Band IV - Middle CH QPSK-3



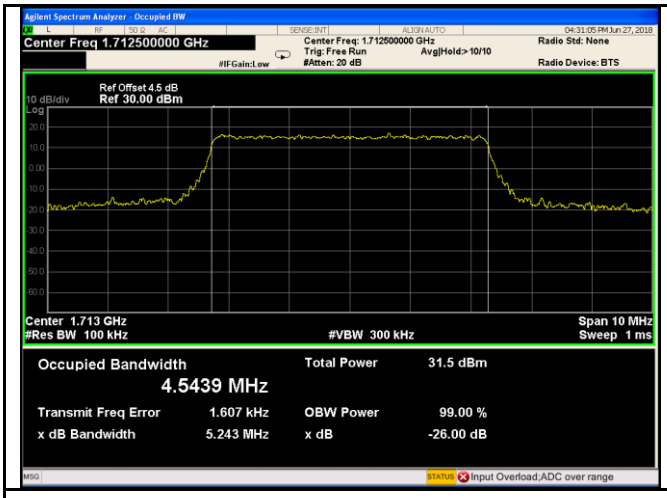

LTE Band IV - Middle CH 16QAM-3



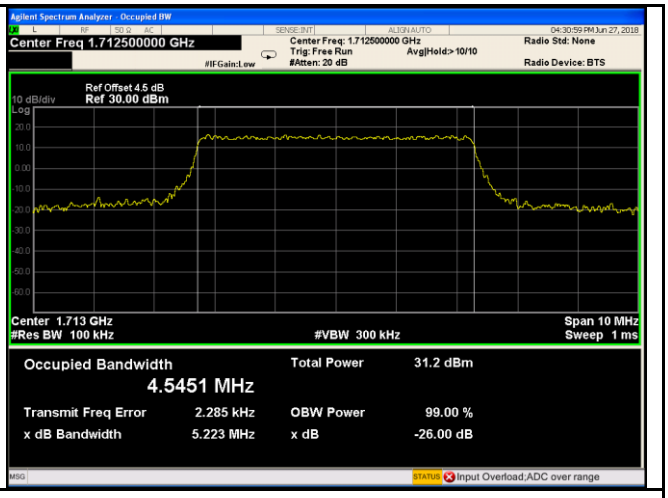

LTE Band IV - High CH QPSK-3



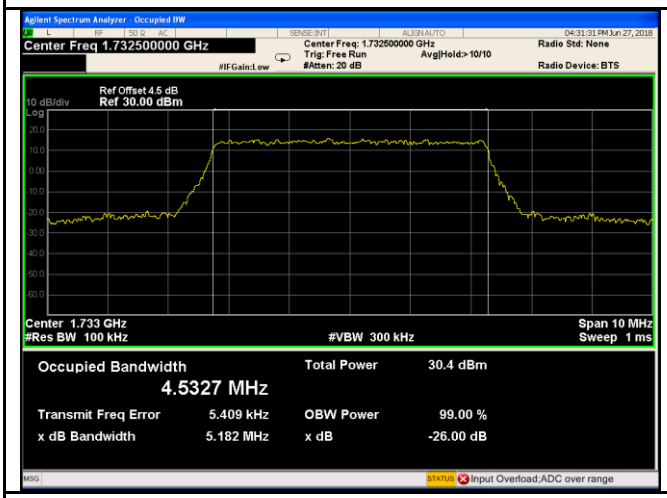

LTE Band IV - High CH 16QAM-3



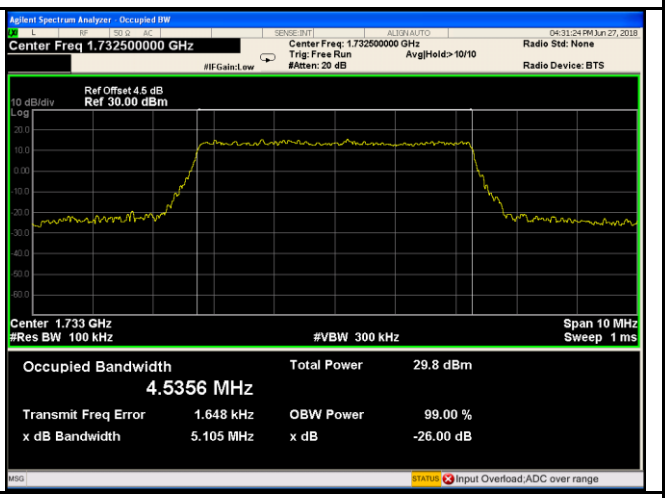

LTE Band IV - Low CH QPSK-5



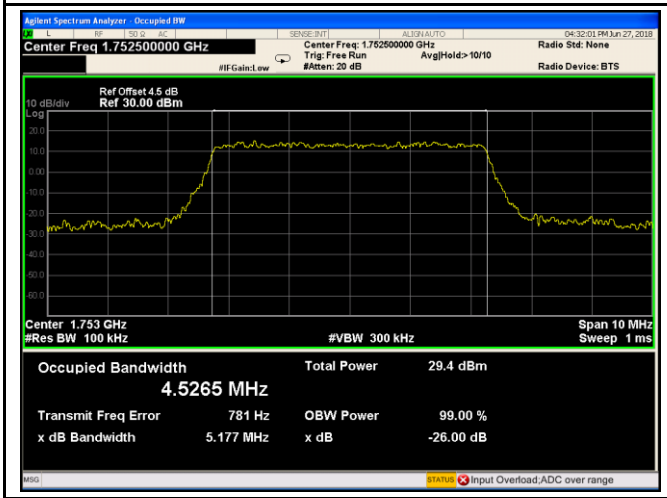

LTE Band IV - Low CH 16QAM-5



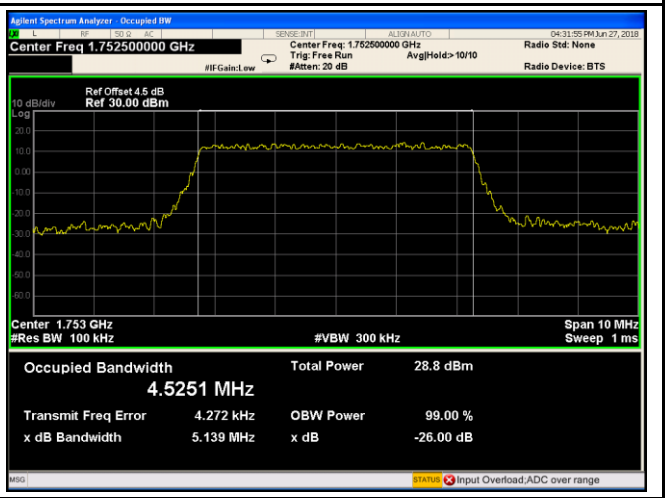

LTE Band IV - Middle CH QPSK-5



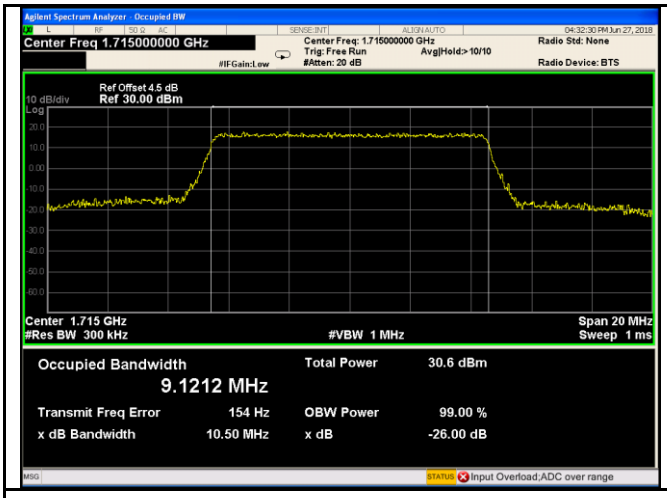

LTE Band IV - Middle CH 16QAM-5



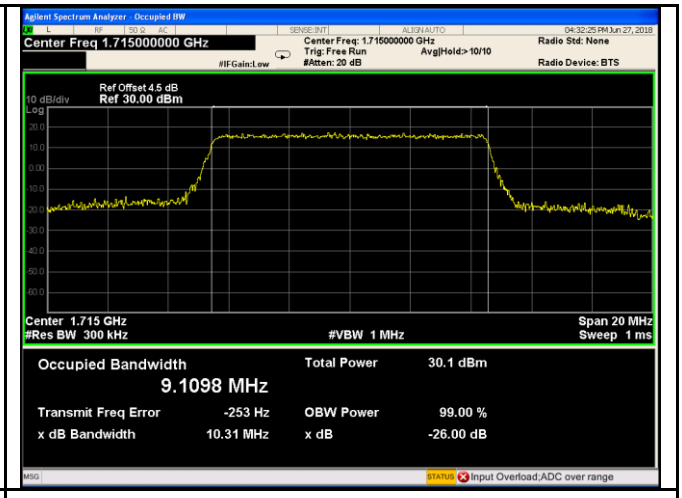

LTE Band IV - High CH QPSK-5



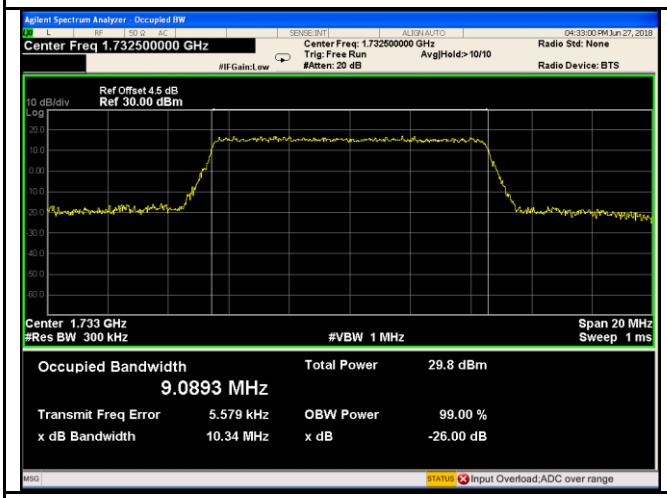

LTE Band IV - High CH 16QAM-5



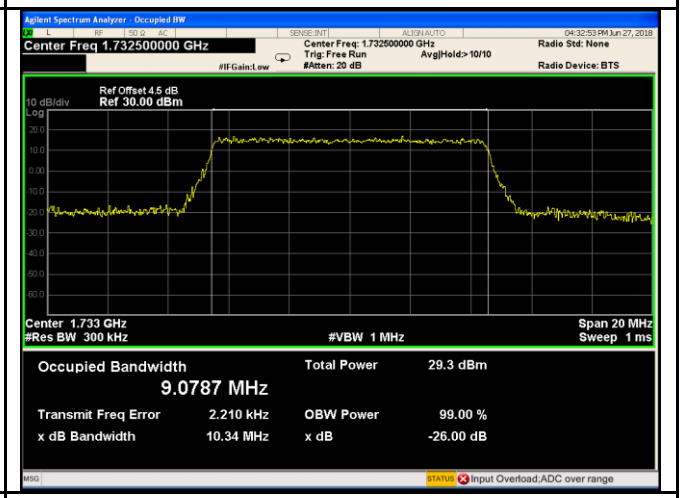

LTE Band IV - Low CH QPSK-10



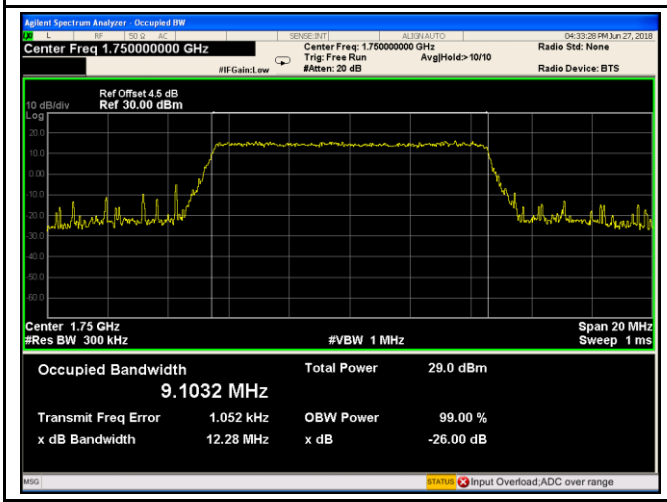

LTE Band IV - Low CH 16QAM-10



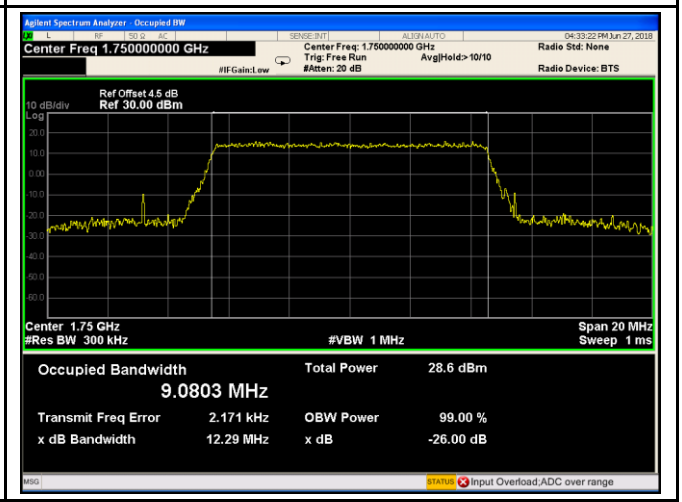

LTE Band IV - Middle CH QPSK-10



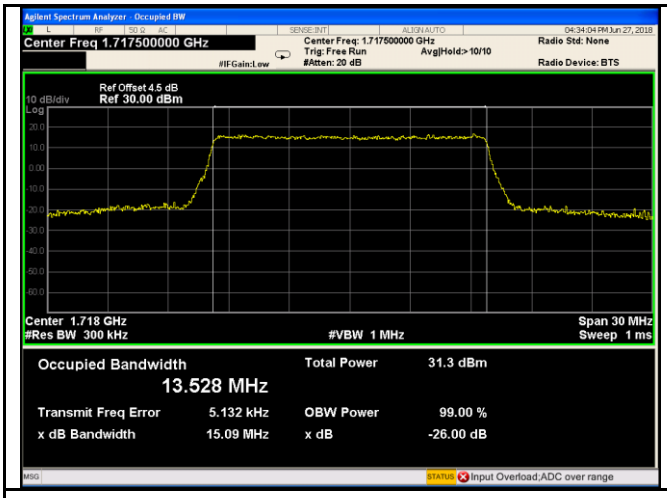

LTE Band IV - Middle CH 16QAM-10



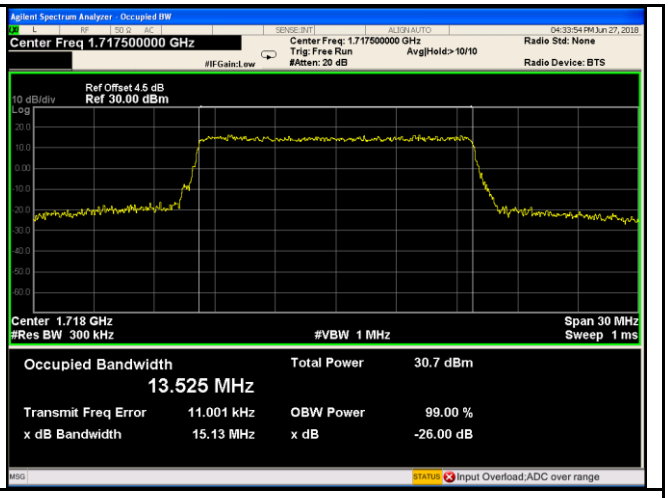

LTE Band IV - High CH QPSK-10



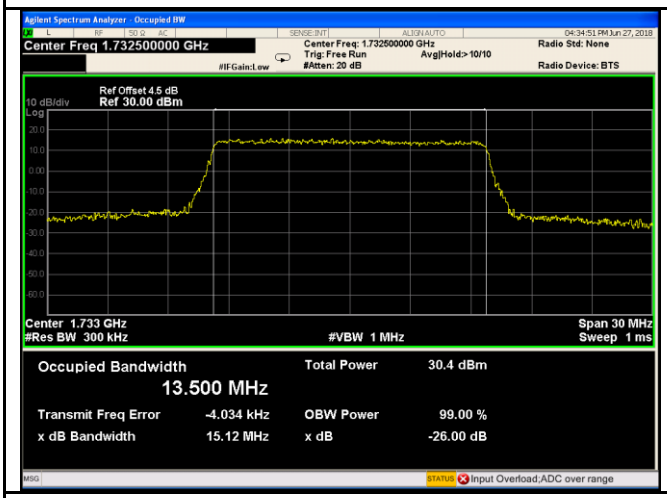

LTE Band IV - High CH 16QAM-10



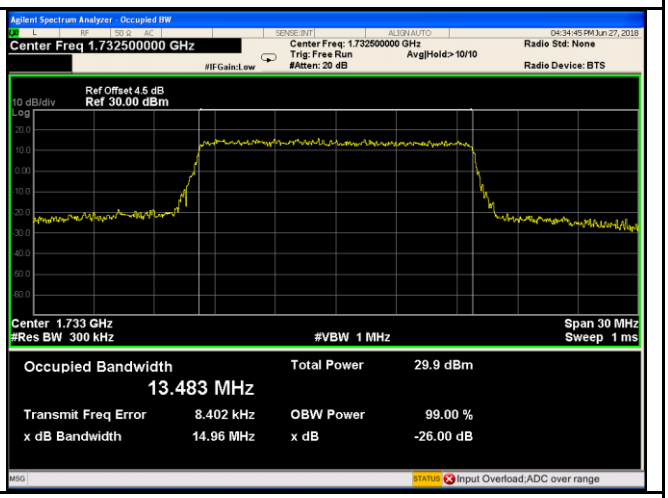

LTE Band IV - Low CH QPSK-15



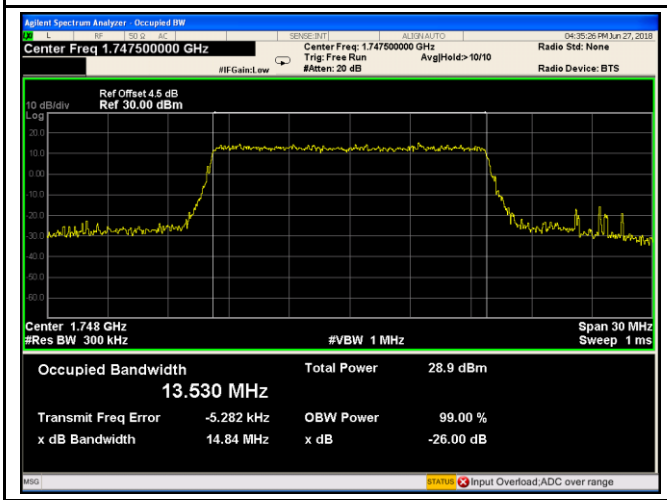

LTE Band IV - Low CH 16QAM-15



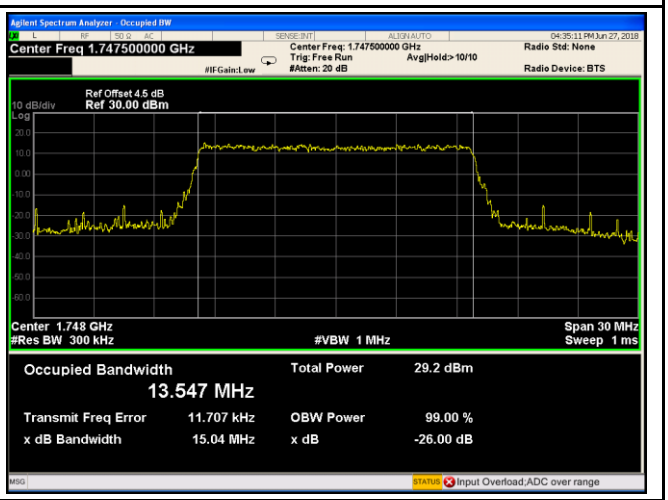

LTE Band IV - Middle CH QPSK-15



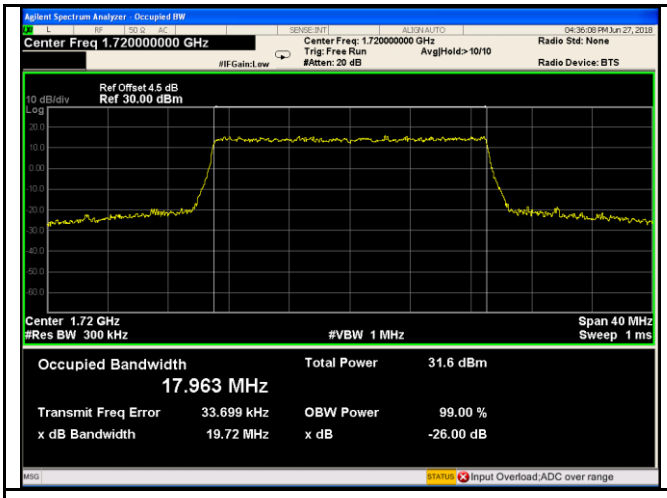

LTE Band IV - Middle CH 16QAM-15



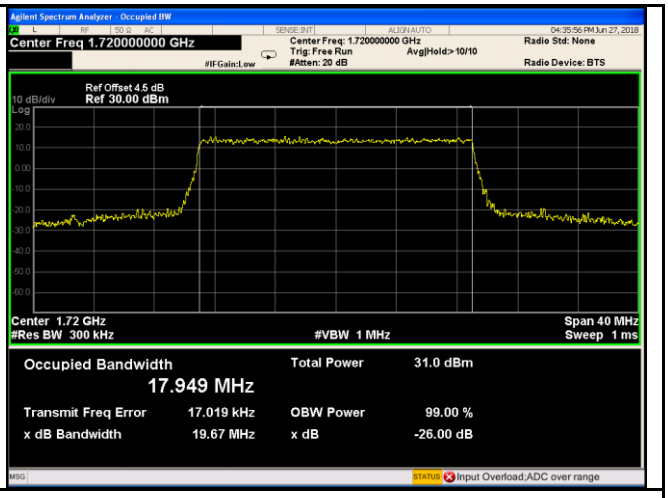

LTE Band IV - High CH QPSK-15



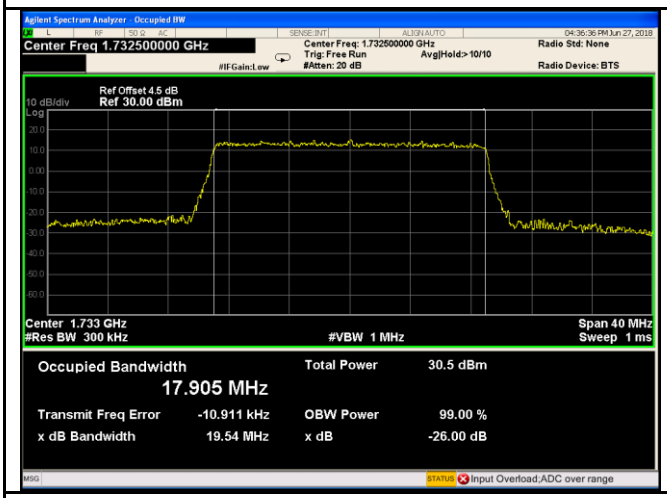

LTE Band IV - High CH 16QAM-15



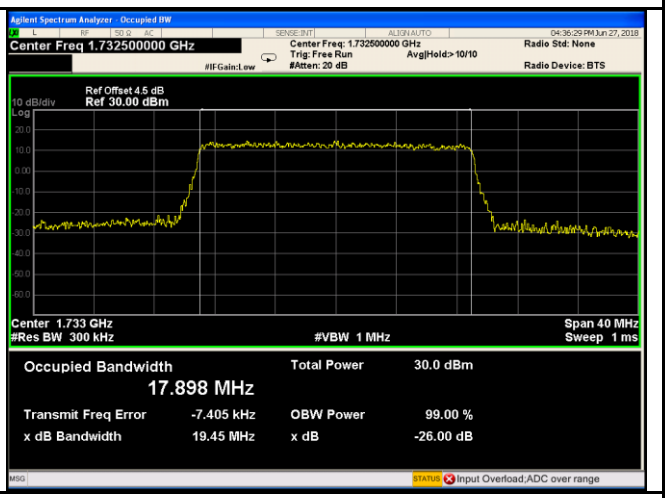

LTE Band IV - Low CH QPSK-20



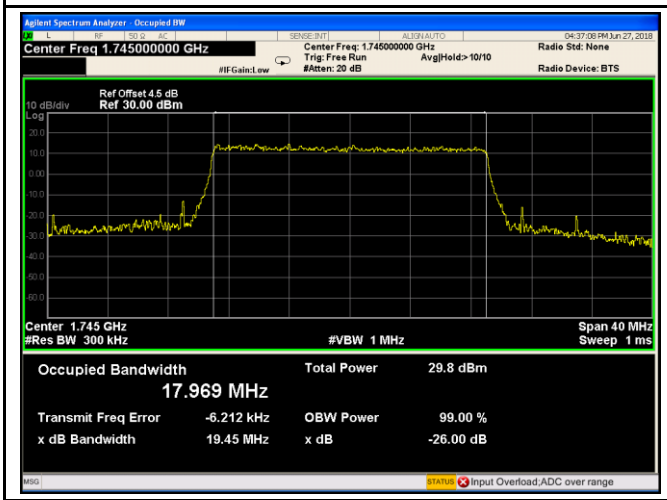

LTE Band IV - Low CH 16QAM-20



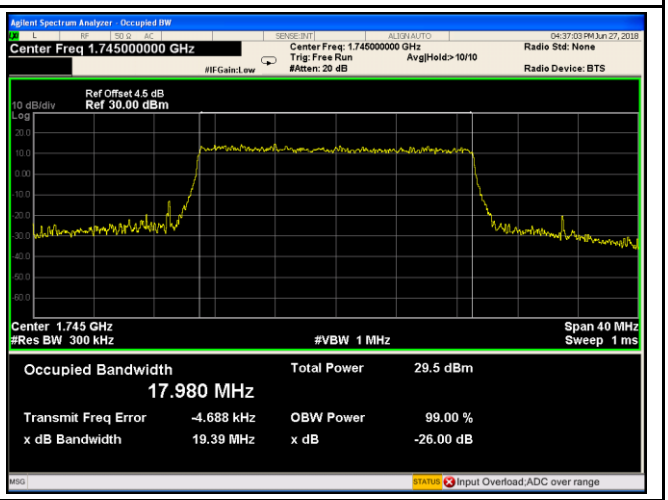

LTE Band IV - Middle CH QPSK-20




LTE Band IV - Middle CH 16QAM-20

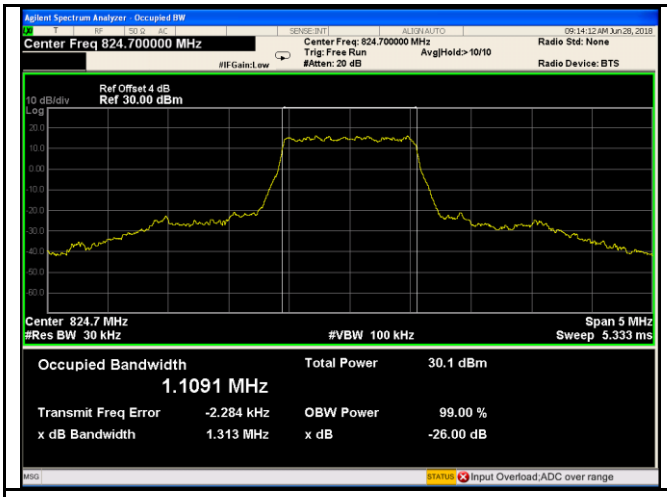



LTE Band IV - High CH QPSK-20

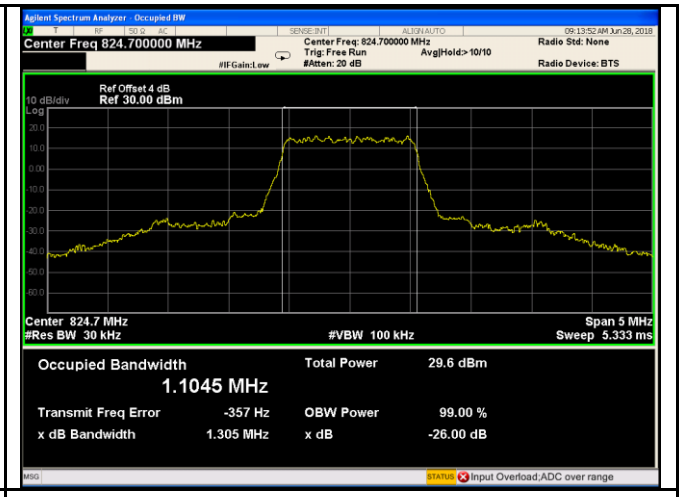



LTE Band IV - High CH 16QAM-20

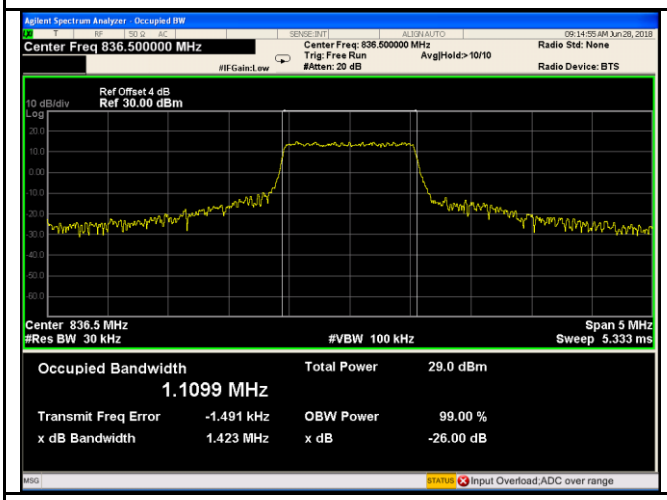
## LTE Band V (Part 22H)



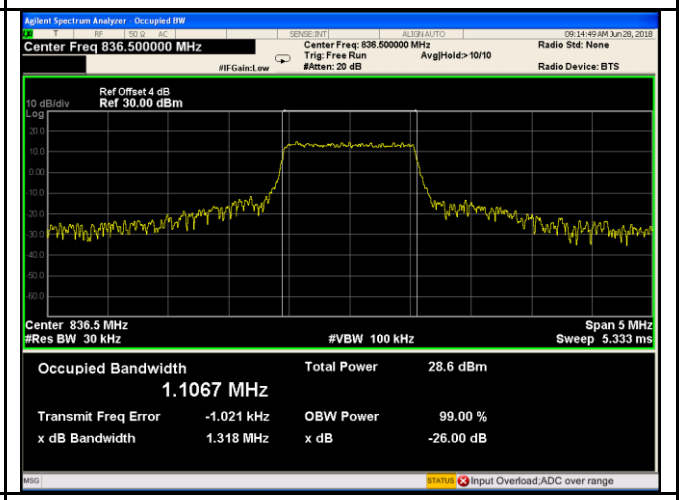

LTE Band V - Low CH QPSK-1.4



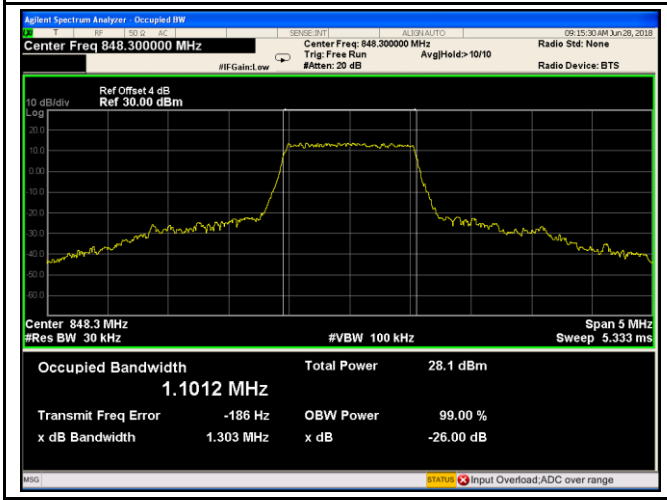

LTE Band V - Low CH 16QAM-1.4



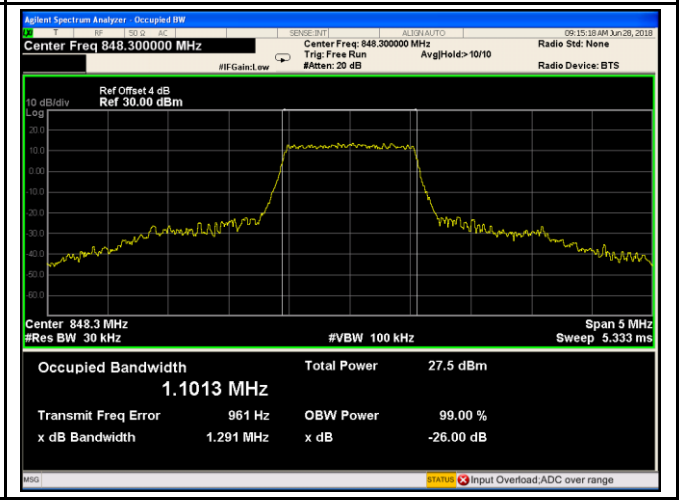

LTE Band V - Middle CH QPSK-1.4




LTE Band V - Middle CH 16QAM-1.4




LTE Band V - High CH QPSK-1.4




LTE Band V - High CH 16QAM-1.4