

# RF TEST REPORT



Report No.: 17070225-FCC-R5

Supersede Report No.: N/A

|                                                                                                                                      |                                                                        |  |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--|
| Applicant                                                                                                                            | Shenzhen Konka Telecommunications Technology Co., Ltd.                 |  |
| Product Name                                                                                                                         | Smart Phone                                                            |  |
| Model No.                                                                                                                            | ADR9                                                                   |  |
| Serial No.                                                                                                                           | N/A                                                                    |  |
| Test Standard                                                                                                                        | FCC Part 27: 2016; ANSI/TIA-603-D: 2010                                |  |
| Test Date                                                                                                                            | March 29 to April 16, 2017                                             |  |
| Issue Date                                                                                                                           | April 17, 2017                                                         |  |
| Test Result                                                                                                                          | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |  |
| Equipment complied with the specification <input checked="" type="checkbox"/>                                                        |                                                                        |  |
| Equipment did not comply with the specification <input type="checkbox"/>                                                             |                                                                        |  |
|                                                                                                                                      |                                                                        |  |
| Loren Luo<br>Test Engineer                                                                                                           | David Huang<br>Checked By                                              |  |
| This test report may be reproduced in full only<br>Test result presented in this test report is applicable to the tested sample only |                                                                        |  |

Issued by:

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## Laboratories Introduction

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### 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      |

|             |                 |
|-------------|-----------------|
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## 1. Report Revision History

| Report No.      | Report Version | Description | Issue Date     |
|-----------------|----------------|-------------|----------------|
| 17070225-FCC-R5 | NONE           | Original    | April 17, 2017 |
|                 |                |             |                |
|                 |                |             |                |
|                 |                |             |                |

## 2. Customer information

|                  |                                                                       |
|------------------|-----------------------------------------------------------------------|
| Applicant Name   | Shenzhen Konka Telecommunications Technology Co., Ltd.                |
| Applicant Add    | No.9008 Shennan Road,Overseas Chinese Town, ShenZhen, Guangdong,China |
| Manufacturer     | Shenzhen Konka Telecommunications Technology Co., Ltd.                |
| Manufacturer Add | No.9008 Shennan Road,Overseas Chinese Town, ShenZhen, Guangdong,China |

## 3. Test site information

|                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>518108 |
| FCC Test Site No.    | 718246                                                                                                                                       |
| IC Test Site No.     | 4842E-1                                                                                                                                      |
| Test Software        | Radiated Emission Program-To Shenzhen v2.0                                                                                                   |

## 4. Equipment under Test (EUT) Information

Description of EUT: Smart Phone

Main Model: ADR9

Serial Model: N/A

Date EUT received: March 28, 2017

Test Date(s): March 29 to April 16, 2017

Equipment Category : PCE

Antenna Gain:

- GSM850: -0.43dBi
- PCS1900: 0.79dBi
- UMTS-FDD Band V: -0.43dBi
- UMTS-FDD Band II: 0.79dBi
- LTE Band IV: 0.89 dBi
- Bluetooth/BLE/WiFi: -0.56dBi
- GPS: 0.79dBi

Antenna Type: PIFA antenna

Type of Modulation:

- GSM / GPRS: GMSK
- EGPRS: GMSK, 8PSK
- UMTS-FDD: QPSK
- LTE Band: QPSK, 16QAM
- 802.11b/g/n: DSSS, OFDM
- Bluetooth: GFSK,  $\pi$  /4DQPSK, 8DPSK
- BLE: GFSK
- GPS: BPSK

RF Operating Frequency (ies):

- GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
- PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
- UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
- UMTS-FDD Band II TX: 1852.4 ~ 1907.6 MHz;  
RX: 1932.4 ~ 1987.6 MHz
- LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7 ~ 2154.3 MHz
- WIFI: 802.11b/g/n(20M): 2412-2462 MHz

WIFI: 802.11n(40M): 2422-2452 MHz  
Bluetooth& BLE: 2402-2480 MHz  
GPS: 1575.42 MHz

Number of Channels:  
GSM 850: 124CH  
PCS1900: 299CH  
UMTS-FDD Band V: 102CH  
UMTS-FDD Band II: 277CH  
WIFI :802.11b/g/n(20M): 11CH  
WIFI :802.11n(40M): 7CH  
Bluetooth: 79CH  
BLE: 40CH  
GPS:1CH

Maximum Conducted  
AV Power to Antenna: LTE Band IV: 23.91 dBm

ERP/EIRP: LTE Band IV: 24.8 dBm / EIRP

Port: USB Port, Earphone Port

Input Power:  
Adapter:  
Model: HJ-050100-AR  
Input: AC100-240V~50/60Hz,0.15A  
Output: DC 5.0V,1.0A  
Battery:  
Model: KLB250P373  
Spec : 3.8V,2500mAh,9.5Wh  
Maximum chargeable voltage: 4.35V

Trade Name : ADMIRAL

GPRS/EGPRS Multi-slot class 8/10/12

FCC ID: UT3ADR9

## 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;§ 27.50(c.10); § 27.50(d.4) | RF Output Power                                                        | Compliance |
| § 27.50(d)                          | Peak-Average Ratio                                                     | Compliance |
| § 2.1047                            | Modulation Characteristics                                             | N/A        |
| § 2.1049; § 27.53(a.5)              | 99% & -26 dB Occupied Bandwidth                                        | Compliance |
| § 2.1051; § 27.53(h)                | Spurious Emissions at Antenna Terminal                                 | Compliance |
| § 2.1053;§ 27.53(h)                 | Field Strength of Spurious Radiation                                   | Compliance |
| § 27.53(h)                          | Out of band emission, Band Edge                                        | Compliance |
| § 27.53(m)                          | Band Edge 27.53(m)                                                     | N/A        |
| § 2.1055; § 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

| Parameter                                           | Uncertainty         |
|-----------------------------------------------------|---------------------|
| AC Power Line Conducted Emissions<br>(150kHz~30MHz) | $\pm 3.71\text{dB}$ |
| Radiated Emission(30MHz~1GHz)                       | $\pm 5.12\text{dB}$ |
| Radiated Emission(1GHz~6GHz)                        | $\pm 5.34\text{dB}$ |

## 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

### 6.1 RF Exposure (SAR)

Test Result: Pass

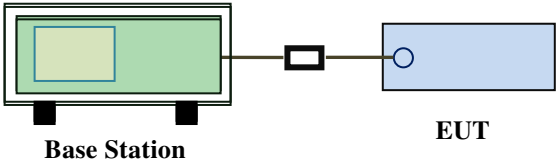
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17070225-FCC-H.

## 6.2 RF Output Power

|                      |                |
|----------------------|----------------|
| Temperature          | 25 °C          |
| Relative Humidity    | 58%            |
| Atmospheric Pressure | 1016mbar       |
| Test date :          | April 16, 2017 |
| Tested By :          | Loren Luo      |

### Requirement(s):

| Spec           | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Requirement | Applicable                          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------|
| §27.50 (c)     | c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EIRP: 30dBm | <input checked="" type="checkbox"/> |
| Test Setup     |  <p style="text-align: center;">Base Station                      EUT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                                     |
| Test Procedure | <p>For Conducted Power:</p> <ul style="list-style-type: none"> <li>- The transmitter output port was connected to base station.</li> <li>- Set EUT at maximum power through base station.</li> <li>- Select lowest, middle, and highest channels for each band and different test mode.</li> </ul> <p>For ERP/EIRP:</p> <ul style="list-style-type: none"> <li>- The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.</li> <li>- 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.</li> <li>- The frequency range up to tenth harmonic of the fundamental frequency was investigated.</li> <li>- Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-</li> </ul> |             |                                     |

|        |                                                                                                                                                                                                                                                                                                                                 |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>radiating cable. The absolute levels of the spurious emissions were measured by the substitution.</p> <ul style="list-style-type: none"> <li>- Spurious emissions in dB = 10 log (TX power in Watts/0.001) – the absolute level</li> <li>- Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts).</li> </ul> |
| Remark |                                                                                                                                                                                                                                                                                                                                 |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                          |

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

## Conducted Power

### 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 | 1720.0      | QPSK  | 1                | 0            | 0   | 23.9                | 23±1                   |
|          |       |             |       | 1                | 49           | 0   | 23.91               | 23±1                   |
|          |       |             |       | 1                | 99           | 0   | 23.9                | 23±1                   |
|          |       |             |       | 50               | 0            | 1   | 22.85               | 23±1                   |
|          |       |             |       | 50               | 24           | 1   | 22.86               | 23±1                   |
|          |       |             |       | 50               | 49           | 1   | 22.85               | 23±1                   |
|          |       |             |       | 100              | 0            | 1   | 22.8                | 23±1                   |
|          |       |             | 16QAM | 1                | 0            | 1   | 22.82               | 22±1                   |
|          |       |             |       | 1                | 49           | 1   | 22.8                | 22±1                   |
|          |       |             |       | 1                | 99           | 1   | 22.82               | 22±1                   |
|          |       |             |       | 50               | 0            | 2   | 22.85               | 22±1                   |
|          |       |             |       | 50               | 24           | 2   | 22.85               | 22±1                   |
|          |       |             |       | 50               | 49           | 2   | 22.86               | 22±1                   |
|          |       |             |       | 100              | 0            | 2   | 21.84               | 22±1                   |
|          | 20175 | 1732.5      | QPSK  | 1                | 0            | 0   | 23.64               | 23±1                   |
|          |       |             |       | 1                | 49           | 0   | 23.63               | 23±1                   |
|          |       |             |       | 1                | 99           | 0   | 23.65               | 23±1                   |
|          |       |             |       | 50               | 0            | 1   | 22.78               | 23±1                   |
|          |       |             |       | 50               | 24           | 1   | 22.76               | 23±1                   |
|          |       |             |       | 50               | 49           | 1   | 22.74               | 23±1                   |
|          |       |             |       | 100              | 0            | 1   | 22.73               | 23±1                   |
|          |       |             | 16QAM | 1                | 0            | 1   | 22.91               | 22±1                   |
|          |       |             |       | 1                | 49           | 1   | 22.93               | 22±1                   |
|          |       |             |       | 1                | 99           | 1   | 22.9                | 22±1                   |
|          |       |             |       | 50               | 0            | 2   | 22.78               | 22±1                   |
|          |       |             |       | 50               | 24           | 2   | 22.78               | 22±1                   |
|          |       |             |       | 50               | 49           | 2   | 22.78               | 22±1                   |
|          |       |             |       | 100              | 0            | 2   | 21.76               | 22±1                   |
|          | 20300 | 1745.0      | QPSK  | 1                | 0            | 0   | 23.67               | 23±1                   |
|          |       |             |       | 1                | 49           | 0   | 23.65               | 23±1                   |
|          |       |             |       | 1                | 99           | 0   | 23.68               | 23±1                   |
|          |       |             |       | 50               | 0            | 1   | 22.68               | 23±1                   |
|          |       |             |       | 50               | 24           | 1   | 22.68               | 23±1                   |

|  |  |  |       |     |    |   |       |      |
|--|--|--|-------|-----|----|---|-------|------|
|  |  |  |       | 50  | 49 | 1 | 22.71 | 23±1 |
|  |  |  |       | 100 | 0  | 1 | 22.69 | 23±1 |
|  |  |  | 16QAM | 1   | 0  | 1 | 23.1  | 23±1 |
|  |  |  |       | 1   | 49 | 1 | 23.13 | 23±1 |
|  |  |  |       | 1   | 99 | 1 | 23.14 | 23±1 |
|  |  |  |       | 50  | 0  | 2 | 22.68 | 23±1 |
|  |  |  |       | 50  | 24 | 2 | 22.67 | 23±1 |
|  |  |  |       | 50  | 49 | 2 | 22.66 | 23±1 |
|  |  |  |       | 100 | 0  | 2 | 21.74 | 23±1 |
|  |  |  |       |     |    |   |       |      |

| BW<br>(MHz) | Ch    | Freq.<br>(MHz) | Mode  | UL RB<br>Allocation | UL RB<br>Offset | MPR | Average<br>power<br>(dBm) | Tune up<br>Power tolerant |
|-------------|-------|----------------|-------|---------------------|-----------------|-----|---------------------------|---------------------------|
| 15MHz       | 20025 | 1717.5         | QPSK  | 1                   | 0               | 0   | 23.86                     | 23±1                      |
|             |       |                |       | 1                   | 37              | 0   | 23.84                     | 23±1                      |
|             |       |                |       | 1                   | 74              | 0   | 23.81                     | 23±1                      |
|             |       |                |       | 36                  | 0               | 1   | 22.87                     | 23±1                      |
|             |       |                |       | 36                  | 16              | 1   | 22.88                     | 23±1                      |
|             |       |                |       | 36                  | 35              | 1   | 22.85                     | 23±1                      |
|             |       |                |       | 75                  | 0               | 1   | 22.81                     | 23±1                      |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.67                     | 22±1                      |
|             |       |                |       | 1                   | 37              | 1   | 22.67                     | 22±1                      |
|             |       |                |       | 1                   | 74              | 1   | 22.66                     | 22±1                      |
|             |       |                |       | 36                  | 0               | 2   | 22.87                     | 22±1                      |
|             |       |                |       | 36                  | 16              | 2   | 22.86                     | 22±1                      |
|             |       |                |       | 36                  | 35              | 2   | 22.83                     | 22±1                      |
|             |       |                |       | 75                  | 0               | 2   | 21.85                     | 22±1                      |
|             | 20175 | 1732.5         | QPSK  | 1                   | 0               | 0   | 23.64                     | 23±1                      |
|             |       |                |       | 1                   | 37              | 0   | 23.66                     | 23±1                      |
|             |       |                |       | 1                   | 74              | 0   | 23.67                     | 23±1                      |
|             |       |                |       | 36                  | 0               | 1   | 22.76                     | 23±1                      |
|             |       |                |       | 36                  | 16              | 1   | 22.75                     | 23±1                      |
|             |       |                |       | 36                  | 35              | 1   | 22.75                     | 23±1                      |
|             |       |                |       | 75                  | 0               | 1   | 22.78                     | 23±1                      |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.91                     | 22±1                      |
|             |       |                |       | 1                   | 37              | 1   | 22.9                      | 22±1                      |
|             |       |                |       | 1                   | 74              | 1   | 22.89                     | 22±1                      |
|             |       |                |       | 36                  | 0               | 2   | 22.76                     | 22±1                      |
|             |       |                |       | 36                  | 16              | 2   | 22.74                     | 22±1                      |

|  |       |        |       |    |    |   |       |      |
|--|-------|--------|-------|----|----|---|-------|------|
|  | 20325 | 1747.5 |       | 36 | 35 | 2 | 22.72 | 22±1 |
|  |       |        |       | 75 | 0  | 2 | 21.76 | 22±1 |
|  |       |        | QPSK  | 1  | 0  | 0 | 23.54 | 23±1 |
|  |       |        |       | 1  | 37 | 0 | 23.53 | 23±1 |
|  |       |        |       | 1  | 74 | 0 | 23.56 | 23±1 |
|  |       |        |       | 36 | 0  | 1 | 22.74 | 23±1 |
|  |       |        |       | 36 | 16 | 1 | 22.76 | 23±1 |
|  |       |        |       | 36 | 35 | 1 | 22.77 | 23±1 |
|  |       |        |       | 75 | 0  | 1 | 22.76 | 23±1 |
|  |       |        |       | 1  | 0  | 1 | 23.14 | 23±1 |
|  |       |        | 16QAM | 1  | 37 | 1 | 23.13 | 23±1 |
|  |       |        |       | 1  | 74 | 1 | 23.13 | 23±1 |
|  |       |        |       | 36 | 0  | 2 | 22.74 | 23±1 |
|  |       |        |       | 36 | 16 | 2 | 22.71 | 23±1 |
|  |       |        |       | 36 | 35 | 2 | 22.7  | 23±1 |
|  |       |        |       | 75 | 0  | 2 | 21.8  | 23±1 |

| BW (MHz) | Ch    | Freq. (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power (dBm) | Tune up Power tolerant |
|----------|-------|-------------|-------|------------------|--------------|-----|---------------------|------------------------|
| 10MHz    | 20000 | 1715.0      | QPSK  | 1                | 0            | 0   | 23.81               | 23±1                   |
|          |       |             |       | 1                | 24           | 0   | 23.83               | 23±1                   |
|          |       |             |       | 1                | 49           | 0   | 23.86               | 23±1                   |
|          |       |             |       | 25               | 0            | 1   | 22.78               | 23±1                   |
|          |       |             |       | 25               | 12           | 1   | 22.8                | 23±1                   |
|          |       |             |       | 25               | 24           | 1   | 22.77               | 23±1                   |
|          |       |             |       | 50               | 0            | 1   | 22.78               | 23±1                   |
|          |       |             | 16QAM | 1                | 0            | 1   | 22.65               | 22±1                   |
|          |       |             |       | 1                | 24           | 1   | 22.67               | 22±1                   |
|          |       |             |       | 1                | 49           | 1   | 22.69               | 22±1                   |
|          |       |             |       | 25               | 0            | 2   | 22.78               | 22±1                   |
|          |       |             |       | 25               | 12           | 2   | 22.77               | 22±1                   |
|          |       |             |       | 25               | 24           | 2   | 22.8                | 22±1                   |
|          |       |             |       | 50               | 0            | 2   | 21.82               | 22±1                   |
|          | 20175 | 1732.5      | QPSK  | 1                | 0            | 0   | 23.73               | 23±1                   |
|          |       |             |       | 1                | 24           | 0   | 23.74               | 23±1                   |
|          |       |             |       | 1                | 49           | 0   | 23.77               | 23±1                   |
|          |       |             |       | 25               | 0            | 1   | 22.7                | 23±1                   |
|          |       |             |       | 25               | 12           | 1   | 22.7                | 23±1                   |

|  |       |        |       |    |    |   |       |      |
|--|-------|--------|-------|----|----|---|-------|------|
|  |       |        |       | 25 | 24 | 1 | 22.72 | 23±1 |
|  |       |        |       | 50 | 0  | 1 | 22.69 | 23±1 |
|  |       |        | 16QAM | 1  | 0  | 1 | 22.69 | 22±1 |
|  |       |        |       | 1  | 24 | 1 | 22.69 | 22±1 |
|  |       |        |       | 1  | 49 | 1 | 22.69 | 22±1 |
|  |       |        |       | 25 | 0  | 2 | 22.7  | 22±1 |
|  |       |        |       | 25 | 12 | 2 | 22.72 | 22±1 |
|  |       |        |       | 25 | 24 | 2 | 22.75 | 22±1 |
|  |       |        |       | 50 | 0  | 2 | 21.75 | 22±1 |
|  |       |        | QPSK  | 1  | 0  | 0 | 23.55 | 23±1 |
|  |       |        |       | 1  | 24 | 0 | 23.56 | 23±1 |
|  |       |        |       | 1  | 49 | 0 | 23.54 | 23±1 |
|  |       |        |       | 25 | 0  | 1 | 22.66 | 23±1 |
|  |       |        |       | 25 | 12 | 1 | 22.69 | 23±1 |
|  |       |        |       | 25 | 24 | 1 | 22.72 | 23±1 |
|  |       |        |       | 50 | 0  | 1 | 22.7  | 23±1 |
|  | 20350 | 1750.0 | 16QAM | 1  | 0  | 1 | 23.14 | 23±1 |
|  |       |        |       | 1  | 24 | 1 | 23.16 | 23±1 |
|  |       |        |       | 1  | 49 | 1 | 23.15 | 23±1 |
|  |       |        |       | 25 | 0  | 2 | 22.66 | 23±1 |
|  |       |        |       | 25 | 12 | 2 | 22.69 | 23±1 |
|  |       |        |       | 25 | 24 | 2 | 22.7  | 23±1 |
|  |       |        |       | 50 | 0  | 2 | 21.75 | 23±1 |

| BW<br>(MHz) | Ch    | Freq.<br>(MHz) | Mode  | UL RB<br>Allocation | UL RB<br>Offset | MPR | Average<br>power<br>(dBm) | Tune up<br>Power<br>tolerant |
|-------------|-------|----------------|-------|---------------------|-----------------|-----|---------------------------|------------------------------|
| 5MHz        | 20000 | 1715.0         | QPSK  | 1                   | 0               | 0   | 23.68                     | 23±1                         |
|             |       |                |       | 1                   | 12              | 0   | 23.66                     | 23±1                         |
|             |       |                |       | 1                   | 24              | 0   | 23.64                     | 23±1                         |
|             |       |                |       | 12                  | 0               | 1   | 22.7                      | 23±1                         |
|             |       |                |       | 12                  | 6               | 1   | 22.72                     | 23±1                         |
|             |       |                |       | 12                  | 11              | 1   | 22.75                     | 23±1                         |
|             |       |                |       | 25                  | 0               | 1   | 22.74                     | 23±1                         |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.56                     | 23±1                         |
|             |       |                |       | 1                   | 12              | 1   | 22.57                     | 23±1                         |
|             |       |                |       | 1                   | 24              | 1   | 22.57                     | 23±1                         |
|             |       |                |       | 12                  | 0               | 2   | 21.71                     | 23±1                         |
|             |       |                |       | 12                  | 6               | 2   | 21.74                     | 23±1                         |
|             |       |                |       | 12                  | 11              | 2   | 21.76                     | 23±1                         |
|             |       |                |       | 25                  | 0               | 2   | 21.74                     | 23±1                         |
|             | 20175 | 1732.5         | QPSK  | 1                   | 0               | 0   | 23.63                     | 23±1                         |
|             |       |                |       | 1                   | 12              | 0   | 23.64                     | 23±1                         |
|             |       |                |       | 1                   | 24              | 0   | 23.65                     | 23±1                         |
|             |       |                |       | 12                  | 0               | 1   | 22.58                     | 23±1                         |
|             |       |                |       | 12                  | 6               | 1   | 22.6                      | 23±1                         |
|             |       |                |       | 12                  | 11              | 1   | 22.59                     | 23±1                         |
|             |       |                |       | 25                  | 0               | 1   | 22.67                     | 23±1                         |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.61                     | 22±1                         |
|             |       |                |       | 1                   | 12              | 1   | 22.58                     | 22±1                         |
|             |       |                |       | 1                   | 24              | 1   | 22.59                     | 22±1                         |
|             |       |                |       | 12                  | 0               | 2   | 21.49                     | 22±1                         |
|             |       |                |       | 12                  | 6               | 2   | 21.5                      | 22±1                         |
|             |       |                |       | 12                  | 11              | 2   | 21.53                     | 22±1                         |
|             |       |                |       | 25                  | 0               | 2   | 21.72                     | 22±1                         |
|             | 20350 | 1750.0         | QPSK  | 1                   | 0               | 0   | 23.55                     | 23±1                         |
|             |       |                |       | 1                   | 12              | 0   | 23.54                     | 23±1                         |
|             |       |                |       | 1                   | 24              | 0   | 23.53                     | 23±1                         |
|             |       |                |       | 12                  | 0               | 1   | 22.69                     | 23±1                         |
|             |       |                |       | 12                  | 6               | 1   | 22.69                     | 23±1                         |
|             |       |                |       | 12                  | 11              | 1   | 22.67                     | 23±1                         |
|             |       |                |       | 25                  | 0               | 1   | 22.73                     | 23±1                         |

|  |  |  |       |    |    |   |       |      |
|--|--|--|-------|----|----|---|-------|------|
|  |  |  | 16QAM | 1  | 0  | 1 | 22.97 | 22±1 |
|  |  |  |       | 1  | 12 | 1 | 22.96 | 22±1 |
|  |  |  |       | 1  | 24 | 1 | 22.93 | 22±1 |
|  |  |  |       | 12 | 0  | 2 | 21.71 | 22±1 |
|  |  |  |       | 12 | 6  | 2 | 21.69 | 22±1 |
|  |  |  |       | 12 | 11 | 2 | 21.7  | 22±1 |
|  |  |  |       | 25 | 0  | 2 | 21.84 | 22±1 |

| BW<br>(MHz) | Ch    | Freq.<br>(MHz) | Mode  | UL RB<br>Allocation | UL RB<br>Offset | MPR | Average<br>power<br>(dBm) | Tune up<br>Power<br>tolerant |
|-------------|-------|----------------|-------|---------------------|-----------------|-----|---------------------------|------------------------------|
| 3MHz        | 19965 | 1711.5         | QPSK  | 1                   | 0               | 0   | 23.86                     | 23±1                         |
|             |       |                |       | 1                   | 7               | 0   | 23.88                     | 23±1                         |
|             |       |                |       | 1                   | 14              | 0   | 23.89                     | 23±1                         |
|             |       |                |       | 8                   | 0               | 1   | 22.8                      | 23±1                         |
|             |       |                |       | 8                   | 4               | 1   | 22.78                     | 23±1                         |
|             |       |                |       | 8                   | 7               | 1   | 22.76                     | 23±1                         |
|             |       |                |       | 15                  | 0               | 1   | 22.73                     | 23±1                         |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.81                     | 22±1                         |
|             |       |                |       | 1                   | 7               | 1   | 22.8                      | 22±1                         |
|             |       |                |       | 1                   | 14              | 1   | 22.83                     | 22±1                         |
|             |       |                |       | 8                   | 0               | 2   | 22.8                      | 22±1                         |
|             |       |                |       | 8                   | 4               | 2   | 22.8                      | 22±1                         |
|             |       |                |       | 8                   | 7               | 2   | 22.8                      | 22±1                         |
|             |       |                |       | 15                  | 0               | 2   | 21.78                     | 22±1                         |
|             | 20175 | 1732.5         | QPSK  | 1                   | 0               | 0   | 23.63                     | 23±1                         |
|             |       |                |       | 1                   | 7               | 0   | 23.65                     | 23±1                         |
|             |       |                |       | 1                   | 14              | 0   | 23.64                     | 23±1                         |
|             |       |                |       | 8                   | 0               | 1   | 22.75                     | 23±1                         |
|             |       |                |       | 8                   | 4               | 1   | 22.72                     | 23±1                         |
|             |       |                |       | 8                   | 7               | 1   | 22.69                     | 23±1                         |
|             |       |                |       | 15                  | 0               | 1   | 22.68                     | 23±1                         |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.95                     | 22±1                         |
|             |       |                |       | 1                   | 7               | 1   | 22.95                     | 22±1                         |
|             |       |                |       | 1                   | 14              | 1   | 22.94                     | 22±1                         |
|             |       |                |       | 8                   | 0               | 2   | 22.75                     | 22±1                         |
|             |       |                |       | 8                   | 4               | 2   | 22.77                     | 22±1                         |

|  |       |        |       |    |    |   |       |      |
|--|-------|--------|-------|----|----|---|-------|------|
|  | 20385 | 1753.5 |       | 8  | 7  | 2 | 22.78 | 22±1 |
|  |       |        |       | 15 | 0  | 2 | 21.72 | 22±1 |
|  |       |        | QPSK  | 1  | 0  | 0 | 23.77 | 23±1 |
|  |       |        |       | 1  | 7  | 0 | 23.79 | 23±1 |
|  |       |        |       | 1  | 14 | 0 | 23.78 | 23±1 |
|  |       |        |       | 8  | 0  | 1 | 22.78 | 23±1 |
|  |       |        |       | 8  | 4  | 1 | 22.78 | 23±1 |
|  |       |        |       | 8  | 7  | 1 | 22.77 | 23±1 |
|  |       |        |       | 15 | 0  | 1 | 22.72 | 23±1 |
|  |       |        | 16QAM | 1  | 0  | 1 | 22.72 | 22±1 |
|  |       |        |       | 1  | 7  | 1 | 22.74 | 22±1 |
|  |       |        |       | 1  | 14 | 1 | 22.71 | 22±1 |
|  |       |        |       | 8  | 0  | 2 | 22.78 | 22±1 |
|  |       |        |       | 8  | 4  | 2 | 22.8  | 22±1 |
|  |       |        |       | 8  | 7  | 2 | 22.78 | 22±1 |
|  |       |        |       | 15 | 0  | 2 | 21.88 | 22±1 |

| BW<br>(MHz) | Ch    | Freq.<br>(MHz) | Mode  | UL RB<br>Allocation | UL RB<br>Offset | MPR | Average<br>power<br>(dBm) | Tune up<br>Power<br>tolerant |
|-------------|-------|----------------|-------|---------------------|-----------------|-----|---------------------------|------------------------------|
| 1.4MHz      | 19957 | 1710.7         | QPSK  | 1                   | 0               | 0   | 23.69                     | 23±1                         |
|             |       |                |       | 1                   | 2               | 0   | 23.69                     | 23±1                         |
|             |       |                |       | 1                   | 5               | 0   | 23.7                      | 23±1                         |
|             |       |                |       | 3                   | 0               | 0   | 23.83                     | 23±1                         |
|             |       |                |       | 3                   | 1               | 0   | 23.83                     | 23±1                         |
|             |       |                |       | 3                   | 2               | 0   | 23.8                      | 23±1                         |
|             |       |                |       | 6                   | 0               | 1   | 22.71                     | 23±1                         |
|             |       |                | 16QAM | 1                   | 0               | 1   | 22.56                     | 23±1                         |
|             |       |                |       | 1                   | 2               | 1   | 22.57                     | 23±1                         |
|             |       |                |       | 1                   | 5               | 1   | 22.6                      | 23±1                         |
|             |       |                |       | 3                   | 0               | 1   | 23.83                     | 23±1                         |
|             |       |                |       | 3                   | 1               | 1   | 23.8                      | 23±1                         |
|             |       |                |       | 3                   | 2               | 1   | 23.78                     | 23±1                         |
|             |       |                |       | 6                   | 0               | 2   | 21.72                     | 23±1                         |
|             | 20175 | 1732.5         | QPSK  | 1                   | 0               | 0   | 23.64                     | 23±1                         |
|             |       |                |       | 1                   | 2               | 0   | 23.62                     | 23±1                         |
|             |       |                |       | 1                   | 5               | 0   | 23.65                     | 23±1                         |

|  |       |        |       |   |   |   |       |      |
|--|-------|--------|-------|---|---|---|-------|------|
|  |       |        |       | 3 | 0 | 0 | 23.66 | 23±1 |
|  |       |        |       | 3 | 1 | 0 | 23.68 | 23±1 |
|  |       |        |       | 3 | 2 | 0 | 23.68 | 23±1 |
|  |       |        |       | 6 | 0 | 1 | 22.59 | 23±1 |
|  |       |        | 16QAM | 1 | 0 | 1 | 22.59 | 22±1 |
|  |       |        |       | 1 | 2 | 1 | 22.58 | 22±1 |
|  |       |        |       | 1 | 5 | 1 | 22.59 | 22±1 |
|  |       |        |       | 3 | 0 | 1 | 22.95 | 22±1 |
|  |       |        |       | 3 | 1 | 1 | 22.92 | 22±1 |
|  |       |        |       | 3 | 2 | 1 | 22.9  | 22±1 |
|  |       |        |       | 6 | 0 | 2 | 21.48 | 22±1 |
|  | 20393 | 1754.3 | QPSK  | 1 | 0 | 0 | 23.6  | 23±1 |
|  |       |        |       | 1 | 2 | 0 | 23.57 | 23±1 |
|  |       |        |       | 1 | 5 | 0 | 23.59 | 23±1 |
|  |       |        |       | 3 | 0 | 0 | 23.73 | 23±1 |
|  |       |        |       | 3 | 1 | 0 | 23.72 | 23±1 |
|  |       |        |       | 3 | 2 | 0 | 23.72 | 23±1 |
|  |       |        |       | 6 | 0 | 1 | 22.65 | 23±1 |
|  |       |        | 16QAM | 1 | 0 | 1 | 22.26 | 23±1 |
|  |       |        |       | 1 | 2 | 1 | 22.29 | 23±1 |
|  |       |        |       | 1 | 5 | 1 | 22.31 | 23±1 |
|  |       |        |       | 3 | 0 | 1 | 23.73 | 23±1 |
|  |       |        |       | 3 | 1 | 1 | 23.76 | 23±1 |
|  |       |        |       | 3 | 2 | 1 | 23.76 | 23±1 |
|  |       |        |       | 6 | 0 | 2 | 22.1  | 23±1 |

## ERP & EIRP

### EIRP for LTE Band IV (Part 27)

| Frequency (MHz) | BW (MHz) | Modulation | RB Size/Offset | Substituted level (dBm) | Antenna Polarization | Antenna Gain correction (dBi) | Cable Loss (dB) | Absolute Level (dBm) | Limit (dBm) |
|-----------------|----------|------------|----------------|-------------------------|----------------------|-------------------------------|-----------------|----------------------|-------------|
| 1710.7          | 1.4      | QPSK       | 1/0            | 17.57                   | V                    | 7.95                          | 0.79            | 24.73                | 30          |
| 1732.5          | 1.4      | QPSK       | 1/0            | 17.41                   | V                    | 7.95                          | 0.79            | 24.57                | 30          |
| 1754.3          | 1.4      | QPSK       | 1/0            | 17.46                   | V                    | 7.95                          | 0.79            | 24.62                | 30          |
| 1710.7          | 1.4      | QPSK       | 1/0            | 16.5                    | H                    | 7.95                          | 0.79            | 23.66                | 30          |
| 1732.5          | 1.4      | QPSK       | 1/0            | 16.32                   | H                    | 7.95                          | 0.79            | 23.48                | 30          |
| 1754.3          | 1.4      | QPSK       | 1/0            | 16.29                   | H                    | 7.95                          | 0.79            | 23.45                | 30          |
| 1710.7          | 1.4      | 16-QAM     | 1/5            | 17.57                   | V                    | 7.95                          | 0.79            | 24.73                | 30          |
| 1732.5          | 1.4      | 16-QAM     | 1/0            | 16.71                   | V                    | 7.95                          | 0.79            | 23.87                | 30          |
| 1754.3          | 1.4      | 16-QAM     | 1/0            | 17.5                    | V                    | 7.95                          | 0.79            | 24.66                | 30          |
| 1710.7          | 1.4      | 16-QAM     | 1/5            | 16.35                   | H                    | 7.95                          | 0.79            | 23.51                | 30          |
| 1732.5          | 1.4      | 16-QAM     | 1/0            | 15.6                    | H                    | 7.95                          | 0.79            | 22.76                | 30          |
| 1754.3          | 1.4      | 16-QAM     | 1/0            | 16.37                   | H                    | 7.95                          | 0.79            | 23.53                | 30          |
| 1711.5          | 3        | QPSK       | 1/0            | 17.63                   | V                    | 7.95                          | 0.79            | 24.79                | 30          |
| 1732.5          | 3        | QPSK       | 1/0            | 17.39                   | V                    | 7.95                          | 0.79            | 24.55                | 30          |
| 1753.5          | 3        | QPSK       | 1/0            | 17.5                    | V                    | 7.95                          | 0.79            | 24.66                | 30          |
| 1711.5          | 3        | QPSK       | 1/0            | 16.46                   | H                    | 7.95                          | 0.79            | 23.62                | 30          |
| 1732.5          | 3        | QPSK       | 1/0            | 16.31                   | H                    | 7.95                          | 0.79            | 23.47                | 30          |
| 1753.5          | 3        | QPSK       | 1/0            | 16.4                    | H                    | 7.95                          | 0.79            | 23.56                | 30          |
| 1711.5          | 3        | 16-QAM     | 1/0            | 16.57                   | V                    | 7.95                          | 0.79            | 23.73                | 30          |
| 1732.5          | 3        | 16-QAM     | 1/0            | 16.68                   | V                    | 7.95                          | 0.79            | 23.84                | 30          |
| 1753.5          | 3        | 16-QAM     | 1/0            | 16.51                   | V                    | 7.95                          | 0.79            | 23.67                | 30          |
| 1711.5          | 3        | 16-QAM     | 1/0            | 15.49                   | H                    | 7.95                          | 0.79            | 22.65                | 30          |
| 1732.5          | 3        | 16-QAM     | 1/0            | 15.61                   | H                    | 7.95                          | 0.79            | 22.77                | 30          |
| 1753.5          | 3        | 16-QAM     | 1/0            | 15.43                   | H                    | 7.95                          | 0.79            | 22.59                | 30          |
| 1712.5          | 5        | QPSK       | 1/0            | 17.45                   | V                    | 7.95                          | 0.79            | 24.61                | 30          |
| 1732.5          | 5        | QPSK       | 1/0            | 17.37                   | V                    | 7.95                          | 0.79            | 24.53                | 30          |
| 1752.5          | 5        | QPSK       | 1/24           | 17.28                   | V                    | 7.95                          | 0.79            | 24.44                | 30          |
| 1712.5          | 5        | QPSK       | 1/0            | 16.27                   | H                    | 7.95                          | 0.79            | 23.43                | 30          |
| 1732.5          | 5        | QPSK       | 1/0            | 16.23                   | H                    | 7.95                          | 0.79            | 23.39                | 30          |

|        |    |        |      |       |   |      |      |       |    |
|--------|----|--------|------|-------|---|------|------|-------|----|
| 1752.5 | 5  | QPSK   | 1/24 | 16.19 | H | 7.95 | 0.79 | 23.35 | 30 |
| 1712.5 | 5  | 16-QAM | 1/0  | 16.29 | V | 7.95 | 0.79 | 23.45 | 30 |
| 1732.5 | 5  | 16-QAM | 1/0  | 16.34 | V | 7.95 | 0.79 | 23.5  | 30 |
| 1752.5 | 5  | 16-QAM | 1/24 | 16.7  | V | 7.95 | 0.79 | 23.86 | 30 |
| 1712.5 | 5  | 16-QAM | 1/0  | 15.26 | H | 7.95 | 0.79 | 22.42 | 30 |
| 1732.5 | 5  | 16-QAM | 1/0  | 15.32 | H | 7.95 | 0.79 | 22.48 | 30 |
| 1752.5 | 5  | 16-QAM | 1/24 | 15.53 | H | 7.95 | 0.79 | 22.69 | 30 |
| 1715   | 10 | QPSK   | 1/0  | 17.59 | V | 7.95 | 0.79 | 24.75 | 30 |
| 1732.5 | 10 | QPSK   | 1/49 | 17.49 | V | 7.95 | 0.79 | 24.65 | 30 |
| 1750   | 10 | QPSK   | 1/0  | 17.3  | V | 7.95 | 0.79 | 24.46 | 30 |
| 1715   | 10 | QPSK   | 1/0  | 16.51 | H | 7.95 | 0.79 | 23.67 | 30 |
| 1732.5 | 10 | QPSK   | 1/49 | 16.45 | H | 7.95 | 0.79 | 23.61 | 30 |
| 1750   | 10 | QPSK   | 1/0  | 16.28 | H | 7.95 | 0.79 | 23.44 | 30 |
| 1715   | 10 | 16-QAM | 1/0  | 16.53 | V | 7.95 | 0.79 | 23.69 | 30 |
| 1732.5 | 10 | 16-QAM | 1/49 | 16.45 | V | 7.95 | 0.79 | 23.61 | 30 |
| 1750   | 10 | 16-QAM | 1/0  | 16.87 | V | 7.95 | 0.79 | 24.03 | 30 |
| 1715   | 10 | 16-QAM | 1/0  | 15.39 | H | 7.95 | 0.79 | 22.55 | 30 |
| 1732.5 | 10 | 16-QAM | 1/49 | 15.33 | H | 7.95 | 0.79 | 22.49 | 30 |
| 1750   | 10 | 16-QAM | 1/0  | 15.78 | H | 7.95 | 0.79 | 22.94 | 30 |
| 1717.5 | 15 | QPSK   | 1/0  | 17.61 | V | 7.95 | 0.79 | 24.77 | 30 |
| 1732.5 | 15 | QPSK   | 1/74 | 17.39 | V | 7.95 | 0.79 | 24.55 | 30 |
| 1747.5 | 15 | QPSK   | 1/0  | 17.27 | V | 7.95 | 0.79 | 24.43 | 30 |
| 1717.5 | 15 | QPSK   | 1/0  | 16.49 | H | 7.95 | 0.79 | 23.65 | 30 |
| 1732.5 | 15 | QPSK   | 1/74 | 16.27 | H | 7.95 | 0.79 | 23.43 | 30 |
| 1747.5 | 15 | QPSK   | 1/0  | 16.21 | H | 7.95 | 0.79 | 23.37 | 30 |
| 1717.5 | 15 | 16-QAM | 1/0  | 16.65 | V | 7.95 | 0.79 | 23.81 | 30 |
| 1732.5 | 15 | 16-QAM | 1/74 | 16.65 | V | 7.95 | 0.79 | 23.81 | 30 |
| 1747.5 | 15 | 16-QAM | 1/0  | 16.91 | V | 7.95 | 0.79 | 24.07 | 30 |
| 1717.5 | 15 | 16-QAM | 1/0  | 15.54 | H | 7.95 | 0.79 | 22.7  | 30 |
| 1732.5 | 15 | 16-QAM | 1/74 | 15.52 | H | 7.95 | 0.79 | 22.68 | 30 |
| 1747.5 | 15 | 16-QAM | 1/0  | 15.79 | H | 7.95 | 0.79 | 22.95 | 30 |
| 1720   | 20 | QPSK   | 1/99 | 17.64 | V | 7.95 | 0.79 | 24.8  | 30 |
| 1732.5 | 20 | QPSK   | 1/99 | 17.37 | V | 7.95 | 0.79 | 24.53 | 30 |
| 1745   | 20 | QPSK   | 1/0  | 17.41 | V | 7.95 | 0.79 | 24.57 | 30 |
| 1720   | 20 | QPSK   | 1/99 | 16.6  | H | 7.95 | 0.79 | 23.76 | 30 |

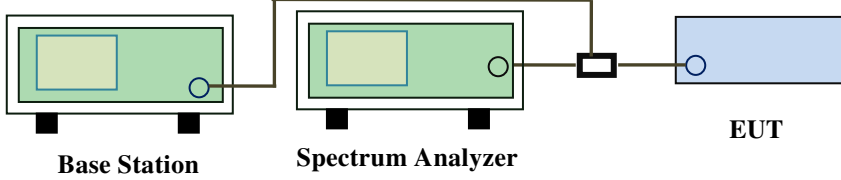
|        |    |        |      |       |   |      |      |       |    |
|--------|----|--------|------|-------|---|------|------|-------|----|
| 1732.5 | 20 | QPSK   | 1/99 | 16.25 | H | 7.95 | 0.79 | 23.41 | 30 |
| 1745   | 20 | QPSK   | 1/0  | 16.3  | H | 7.95 | 0.79 | 23.46 | 30 |
| 1720   | 20 | 16-QAM | 1/99 | 16.59 | V | 7.95 | 0.79 | 23.75 | 30 |
| 1732.5 | 20 | 16-QAM | 1/99 | 16.64 | V | 7.95 | 0.79 | 23.8  | 30 |
| 1745   | 20 | 16-QAM | 1/0  | 16.86 | V | 7.95 | 0.79 | 24.02 | 30 |
| 1720   | 20 | 16-QAM | 1/99 | 15.5  | H | 7.95 | 0.79 | 22.66 | 30 |
| 1732.5 | 20 | 16-QAM | 1/99 | 15.57 | H | 7.95 | 0.79 | 22.73 | 30 |
| 1745   | 20 | 16-QAM | 1/0  | 15.73 | H | 7.95 | 0.79 | 22.89 | 30 |

### 6.3 Peak-Average Ratio

|                      |                  |
|----------------------|------------------|
| Temperature          | 23°C             |
| Relative Humidity    | 53%              |
| Atmospheric Pressure | 1010mbar         |
| Test date :          | October 12, 2016 |
| Tested By :          | Loren Luo        |

#### Requirement(s):

| Spec       | Item | Requirement                                                               | Applicable                          |
|------------|------|---------------------------------------------------------------------------|-------------------------------------|
| § 27.50(d) | a)   | The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. | <input checked="" type="checkbox"/> |

|            |                                                                                                                                                                     |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Setup |  <p style="text-align: center;">Base Station      Spectrum Analyzer      EUT</p> |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Procedure | <p><b>According with KDB 971168 v02r02</b></p> <p><b>5.7.2 Alternate procedure for PAPR</b></p> <p><b>5.1.2 Peak power measurements with a peak power meter</b></p> <p>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.</p> <p><b>5.2.3 Average power measurement with average power meter</b></p> <p>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</p> <p>If the EUT can be configured to transmit continuously (i.e., the burst duty</p> |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>cycle <math>\geq</math> 98%) and at all times the EUT is transmitting at its maximum output power level, then a conventional wide-band RF power meter can be used. If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle <math>&lt;</math> 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 <math>\pm</math> 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to <math>10\log(1/\text{duty cycle})</math></p> |
| Remark |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Test Data ☒ Yes ☐ N/A  
 Test Plot ☐ Yes (See below) ☒ N/A

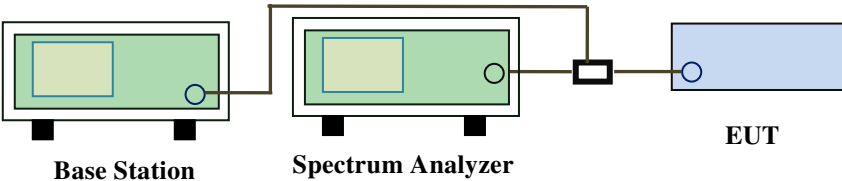
### LTE Band IV (part 27)

| BW(MHz) | Frequency (MHz) | Mode   | Modulation | Conducted Power (dBm) |         | Peak-Average Ratio (PAR) |
|---------|-----------------|--------|------------|-----------------------|---------|--------------------------|
|         |                 |        |            | Peak                  | Average |                          |
| 1.4     | 1732.5          | RB 1/0 | QPSK       | 25.69                 | 23.64   | 2.05                     |
|         |                 |        | 16QAM      | 25.61                 | 22.59   | 3.02                     |
| 3       | 1732.5          | RB 1/0 | QPSK       | 25.69                 | 23.63   | 2.06                     |
|         |                 |        | 16QAM      | 25.66                 | 22.95   | 2.71                     |
| 5       | 1732.5          | RB 1/0 | QPSK       | 25.36                 | 23.63   | 1.73                     |
|         |                 |        | 16QAM      | 25.36                 | 22.61   | 2.75                     |
| 10      | 1732.5          | RB 1/0 | QPSK       | 25.69                 | 23.73   | 1.96                     |
|         |                 |        | 16QAM      | 25.45                 | 21.56   | 3.89                     |
| 15      | 1732.5          | RB 1/0 | QPSK       | 25.33                 | 23.64   | 1.69                     |
|         |                 |        | 16QAM      | 25.35                 | 22.91   | 2.44                     |
| 20      | 1732.5          | RB 1/0 | QPSK       | 25.61                 | 23.64   | 1.97                     |
|         |                 |        | 16QAM      | 25.45                 | 22.91   | 2.54                     |

## 6.4 Occupied Bandwidth

|                      |                |
|----------------------|----------------|
| Temperature          | 23 °C          |
| Relative Humidity    | 56%            |
| Atmospheric Pressure | 1014mbar       |
| Test date :          | April 14, 2017 |
| Tested By :          | Loren Luo      |

### Requirement(s):

| Spec                  | Item                                                                                                                                                                                                                                     | Requirement                 | Applicable                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------|
| §2.1049,<br>§27.53(a) | a)                                                                                                                                                                                                                                       | 99% Occupied Bandwidth(kHz) | <input checked="" type="checkbox"/> |
|                       | b)                                                                                                                                                                                                                                       | 26 dB Bandwidth(kHz)        | <input checked="" type="checkbox"/> |
| Test Setup            |                                                                                                                                                       |                             |                                     |
| Test Procedure        | <ul style="list-style-type: none"> <li>- The EUT was connected to Spectrum Analyzer and Base Station via power divider.</li> <li>- The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.</li> </ul> |                             |                                     |
| Remark                |                                                                                                                                                                                                                                          |                             |                                     |
| Result                | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                   |                             |                                     |

Test Data    ☒ Yes      ☐ N/A  
 Test Plot    ☒ Yes (See below)      ☐ N/A

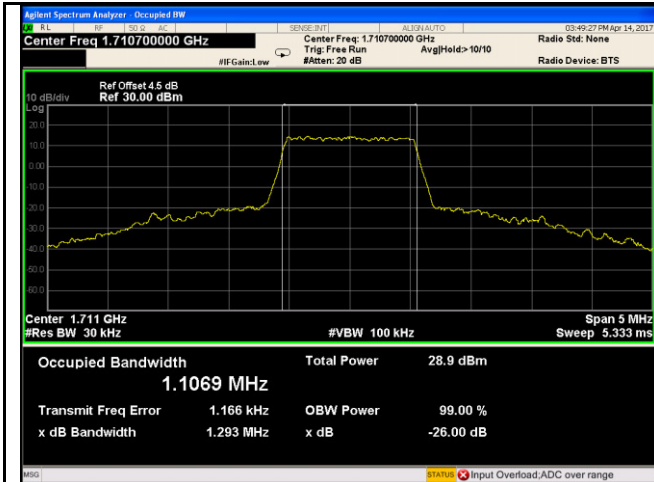
### LTE Band IV (Part 27)

| BW(MHz) | Channel | Frequency (MHz) | Modulation | 99% Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|---------|---------|-----------------|------------|------------------------------|-----------------------|
| 1.4     | 19957   | 1710.7          | 16QAM      | 1.1018                       | 1.271                 |
|         |         |                 | QPSK       | 1.1069                       | 1.293                 |
| 1.4     | 20175   | 1732.5          | 16QAM      | 1.1028                       | 1.291                 |
|         |         |                 | QPSK       | 1.1075                       | 1.278                 |
| 1.4     | 20393   | 1754.3          | 16QAM      | 1.1076                       | 1.302                 |
|         |         |                 | QPSK       | 1.1034                       | 1.287                 |
| 3       | 19965   | 1711.5          | 16QAM      | 2.7565                       | 3.052                 |
|         |         |                 | QPSK       | 2.7392                       | 3.032                 |
| 3       | 20175   | 1732.5          | 16QAM      | 2.7422                       | 3.052                 |
|         |         |                 | QPSK       | 2.7494                       | 3.067                 |
| 3       | 20385   | 1753.5          | 16QAM      | 2.7646                       | 3.070                 |
|         |         |                 | QPSK       | 2.7514                       | 3.054                 |
| 5       | 19975   | 1712.5          | 16QAM      | 4.5354                       | 5.066                 |
|         |         |                 | QPSK       | 4.5283                       | 5.093                 |
| 5       | 20175   | 1732.5          | 16QAM      | 4.5423                       | 5.065                 |
|         |         |                 | QPSK       | 4.5280                       | 5.044                 |
| 5       | 20375   | 1752.5          | 16QAM      | 4.5262                       | 5.062                 |
|         |         |                 | QPSK       | 4.5427                       | 5.062                 |
| 10      | 20000   | 1715            | 16QAM      | 9.0665                       | 10.10                 |
|         |         |                 | QPSK       | 9.0691                       | 10.16                 |
| 10      | 20175   | 1732.5          | 16QAM      | 9.0504                       | 10.13                 |
|         |         |                 | QPSK       | 9.0808                       | 10.10                 |
| 10      | 20350   | 1750            | 16QAM      | 9.0894                       | 10.12                 |
|         |         |                 | QPSK       | 9.0942                       | 10.21                 |
| 15      | 20025   | 1717.5          | 16QAM      | 13.532                       | 14.87                 |
|         |         |                 | QPSK       | 13.488                       | 14.85                 |
| 15      | 20175   | 1732.5          | 16QAM      | 13.489                       | 14.79                 |
|         |         |                 | QPSK       | 13.478                       | 14.82                 |
| 15      | 20325   | 1747.5          | 16QAM      | 13.525                       | 14.83                 |
|         |         |                 | QPSK       | 13.522                       | 14.88                 |

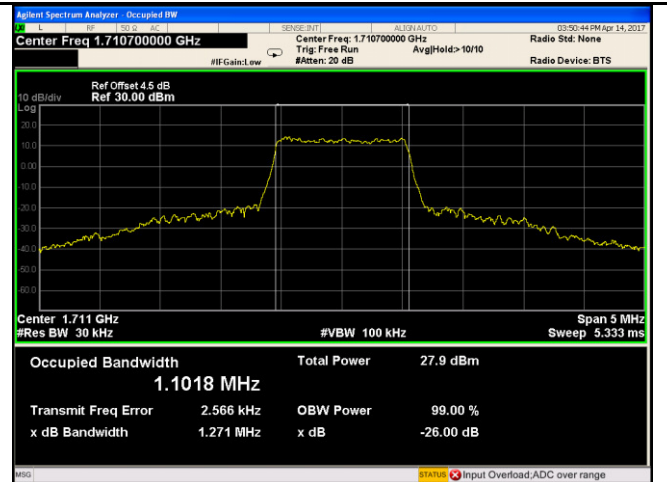
|    |       |        |       |        |       |
|----|-------|--------|-------|--------|-------|
| 20 | 20050 | 1720   | 16QAM | 17.985 | 19.44 |
|    |       |        | QPSK  | 17.952 | 19.42 |
| 20 | 20175 | 1732.5 | 16QAM | 17.894 | 19.34 |
|    |       |        | QPSK  | 17.902 | 19.62 |
| 20 | 20300 | 1745   | 16QAM | 17.956 | 19.36 |
|    |       |        | QPSK  | 17.933 | 19.28 |

## Test Plots

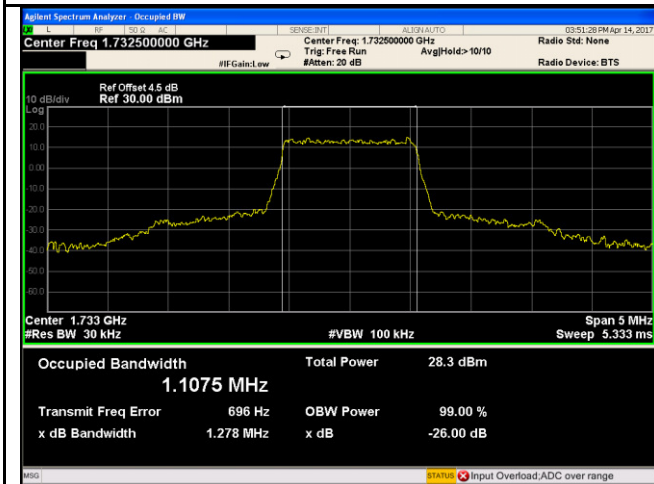
### LTE Band IV (Part 27)



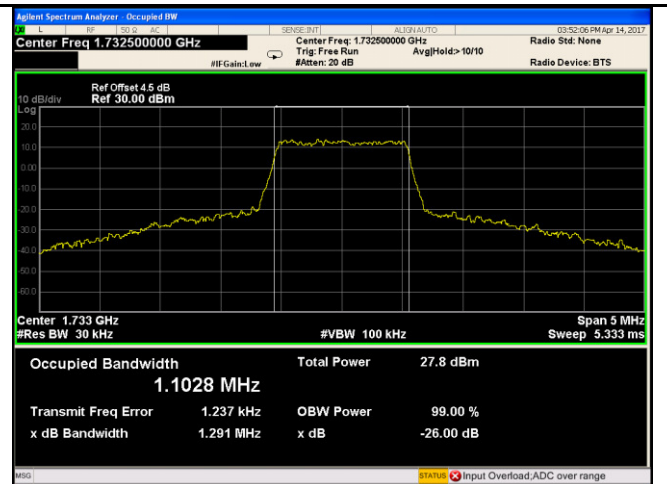
LTE band IV - Low CH QPSK-1.4



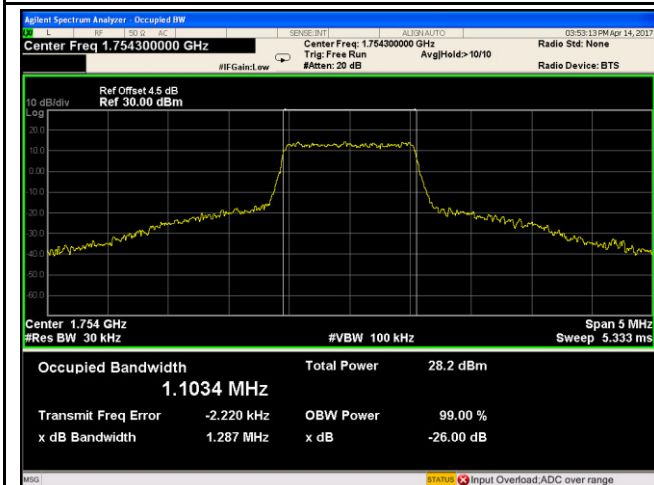
LTE band IV - Low CH 16QAM-1.4



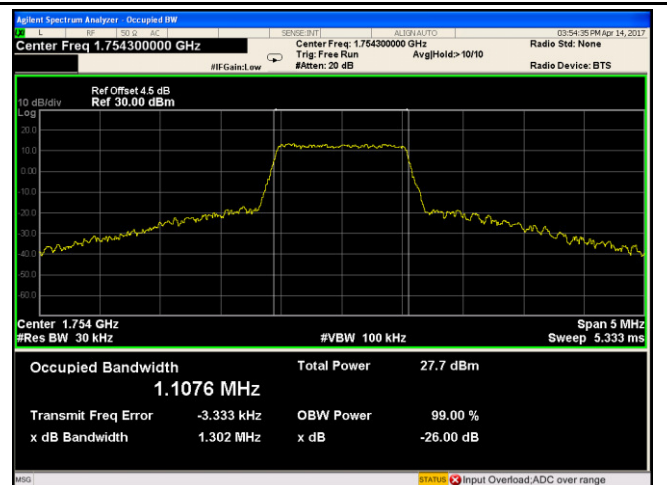
LTE band IV - Middle CH QPSK-1.4



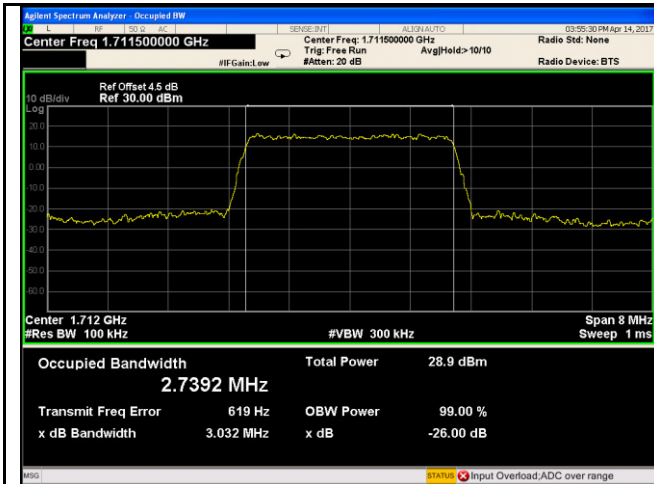
LTE band IV - Middle CH 16QAM-1.4



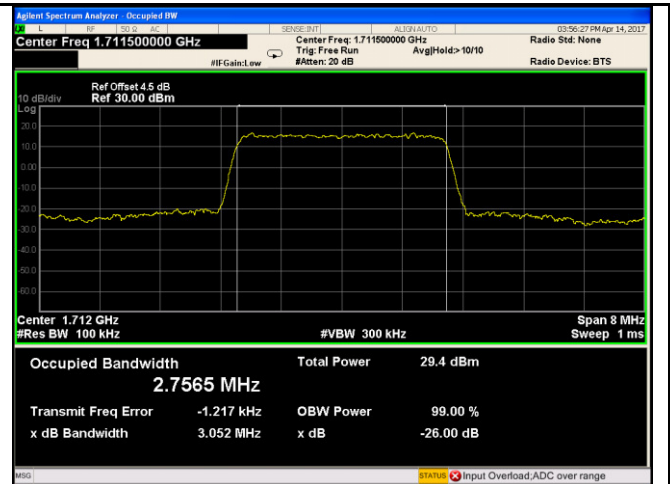
LTE band IV - High CH QPSK-1.4



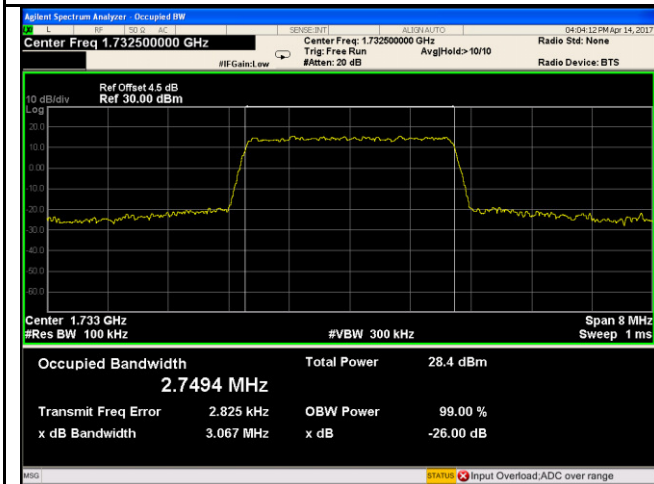
LTE band IV - High CH 16QAM-1.4



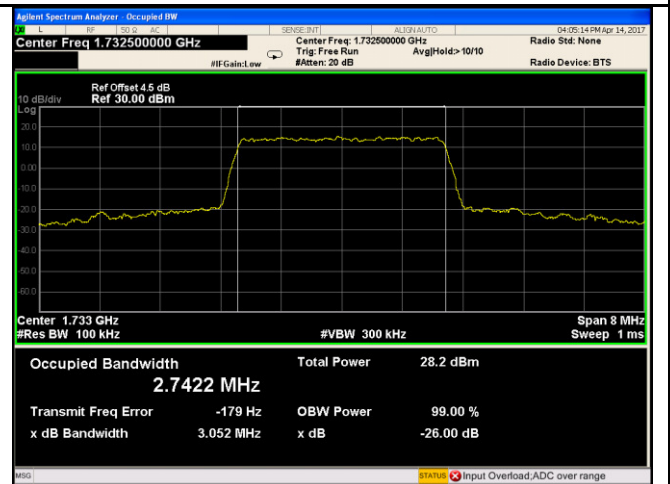
LTE band IV - Low CH QPSK-3



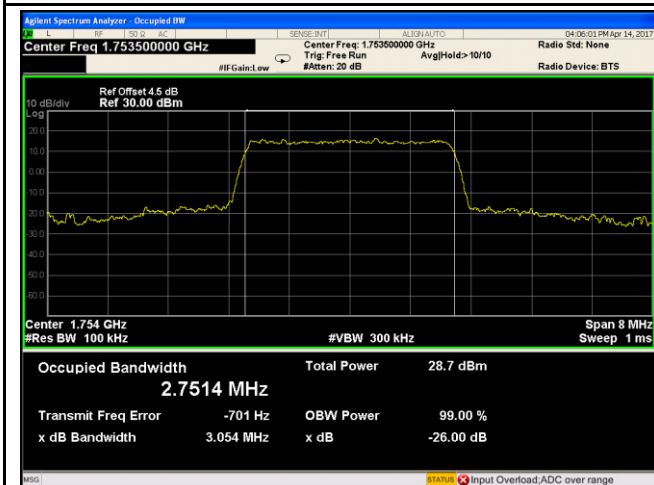
LTE band IV - Low CH 16QAM-3



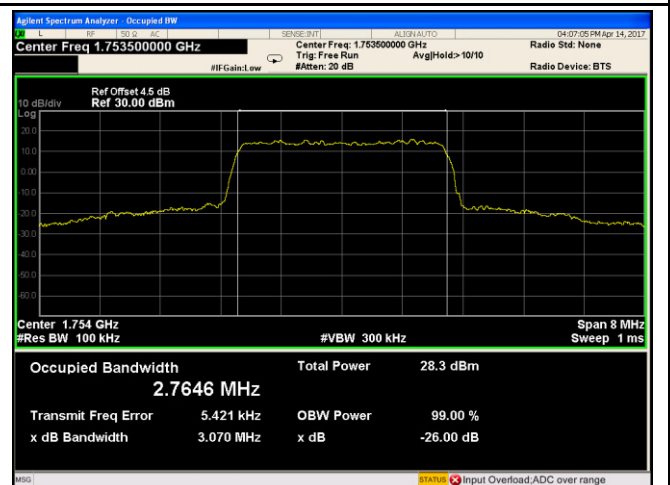
LTE band IV - Middle CH QPSK-3



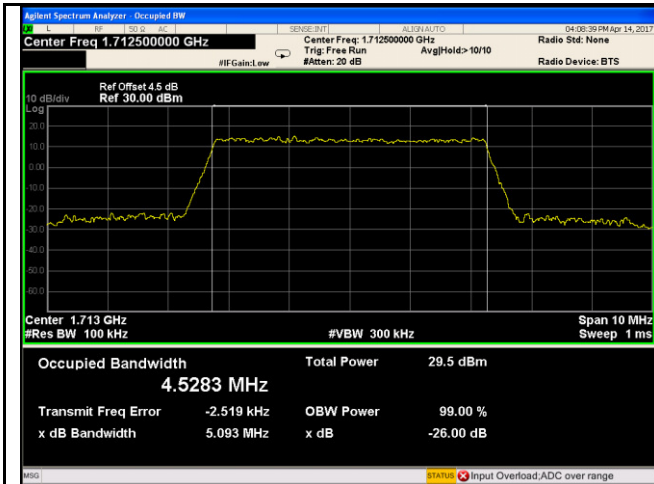
LTE band IV - Middle CH 16QAM-3



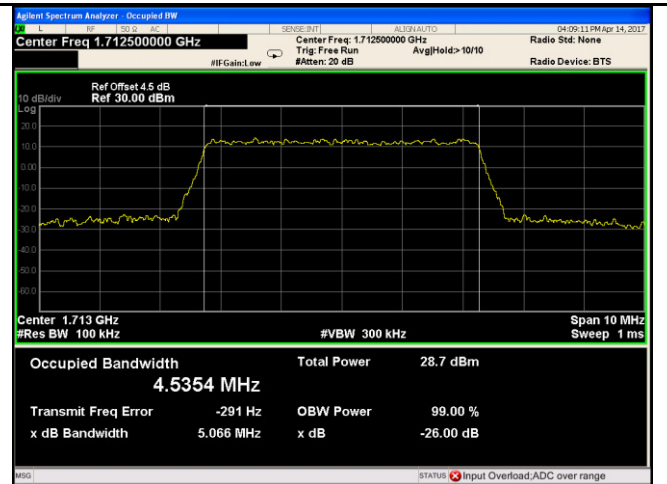
LTE band IV - High CH QPSK-3



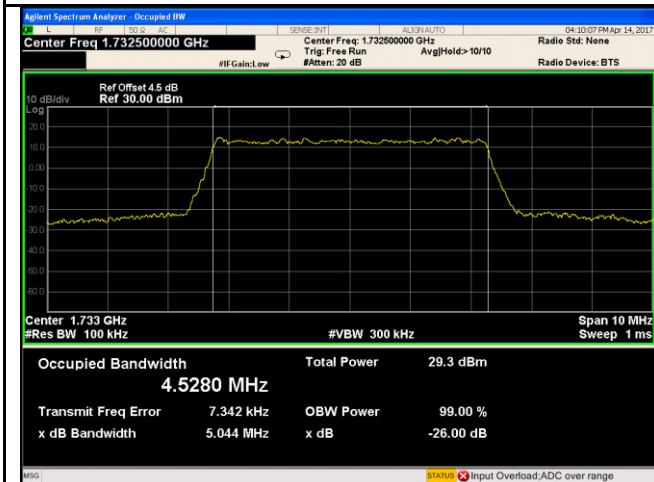
LTE band IV - High CH 16QAM-3



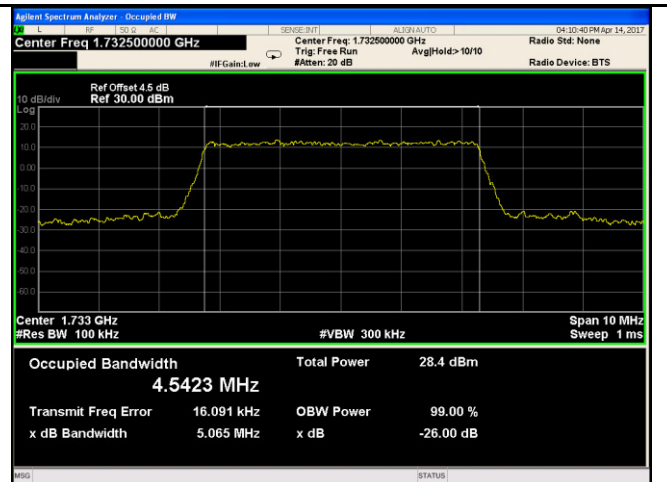
LTE band IV - Low CH QPSK-5



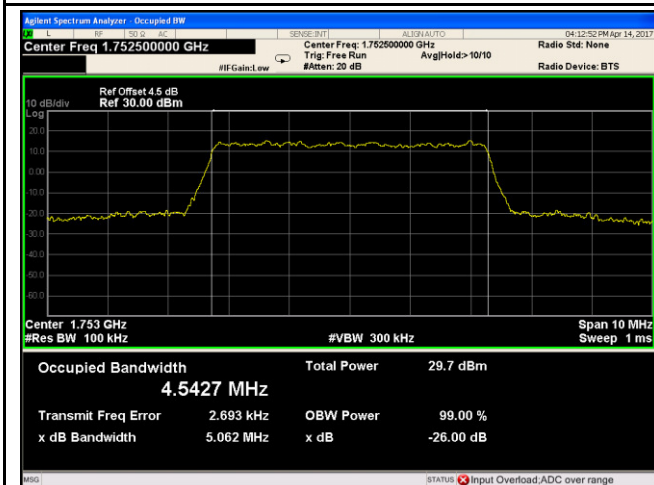
LTE band IV - Low CH 16QAM-5



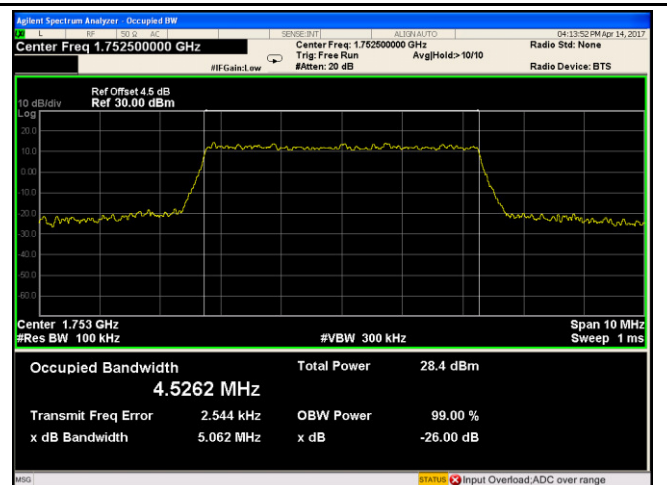
LTE band IV - Middle CH QPSK-5



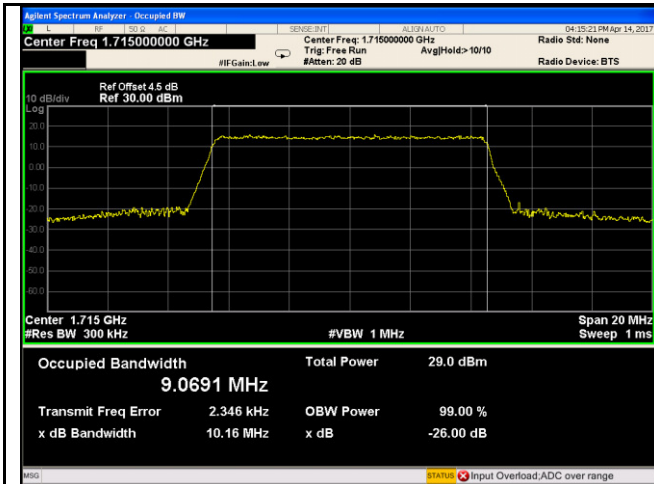
LTE band IV - Middle CH 16QAM-5



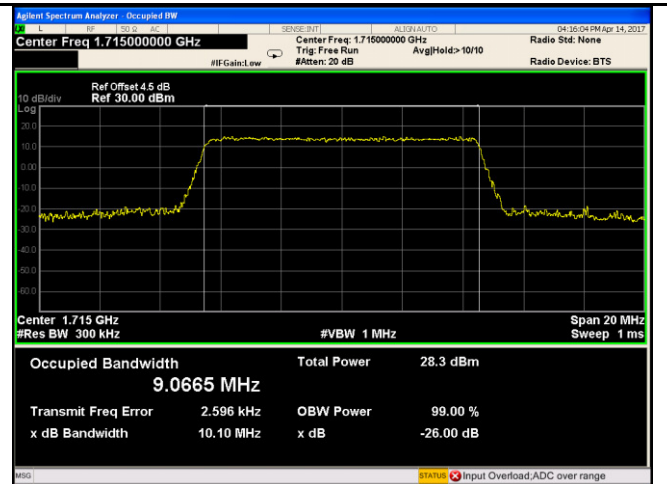
LTE band IV - High CH QPSK-5



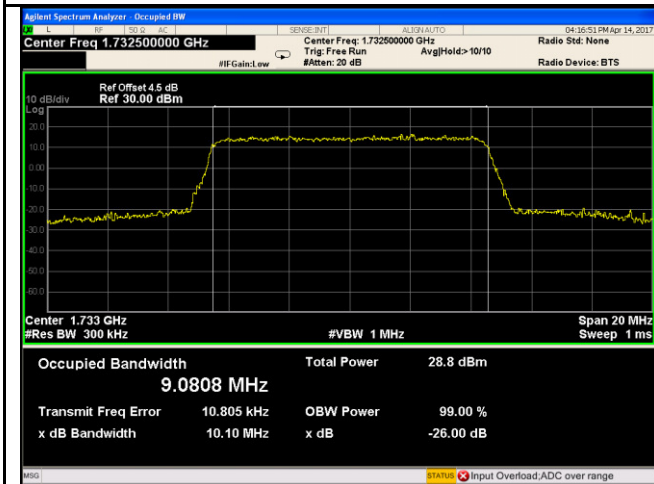
LTE band IV - High CH 16QAM-5



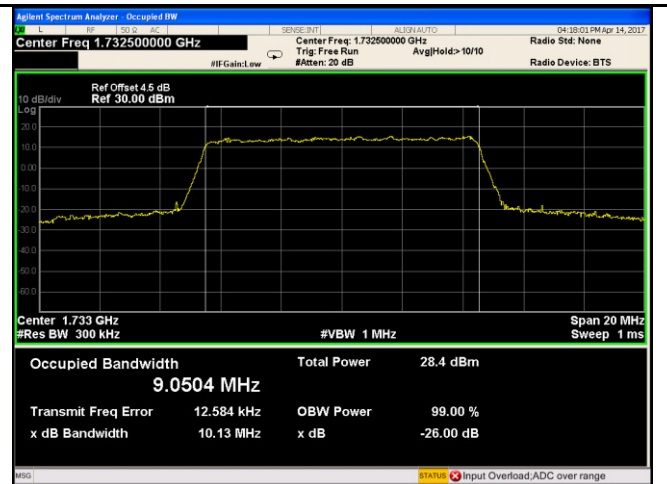
LTE band IV - Low CH QPSK-10



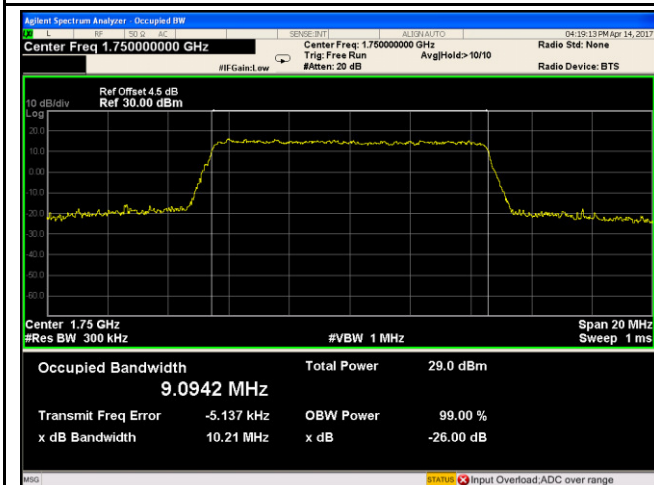
LTE band IV - Low CH 16QAM-10



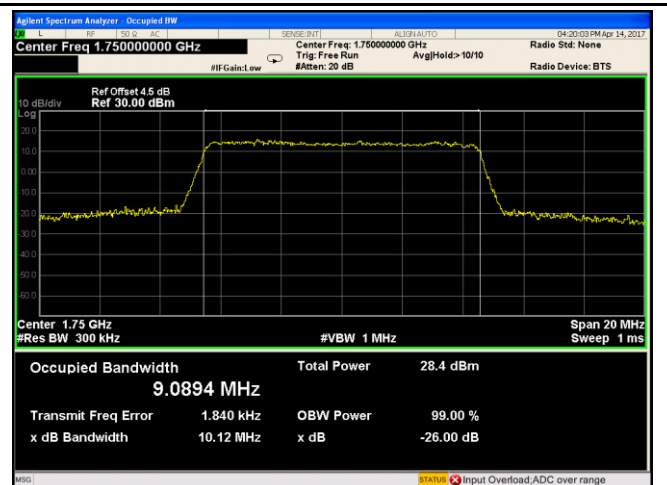
LTE band IV - Middle CH QPSK-10



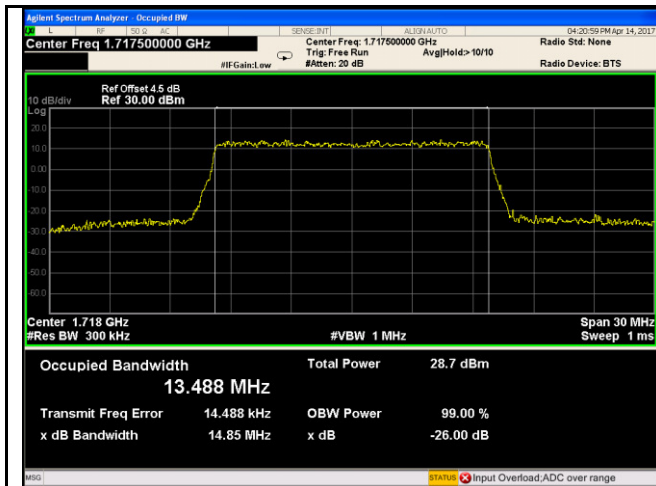
LTE band IV - Middle CH 16QAM-10



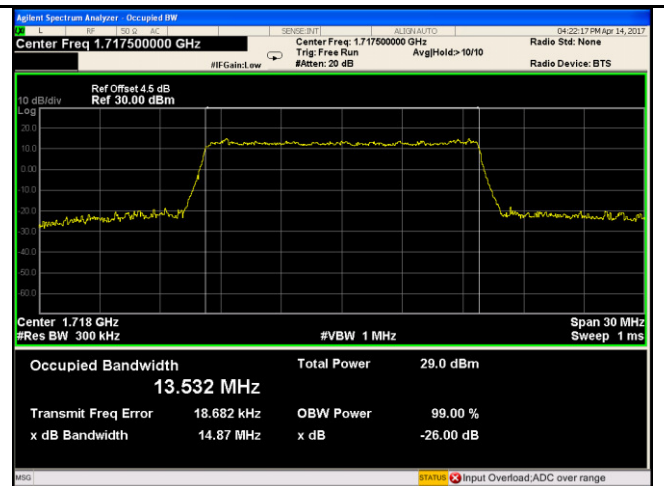
LTE band IV - High CH QPSK-10



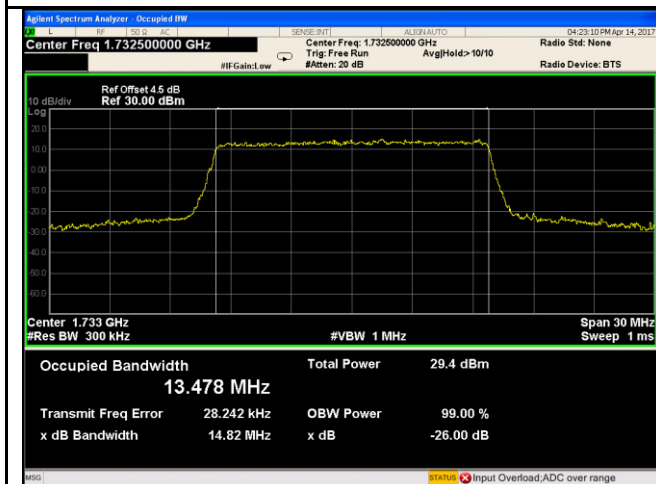
LTE band IV - High CH 16QAM-10



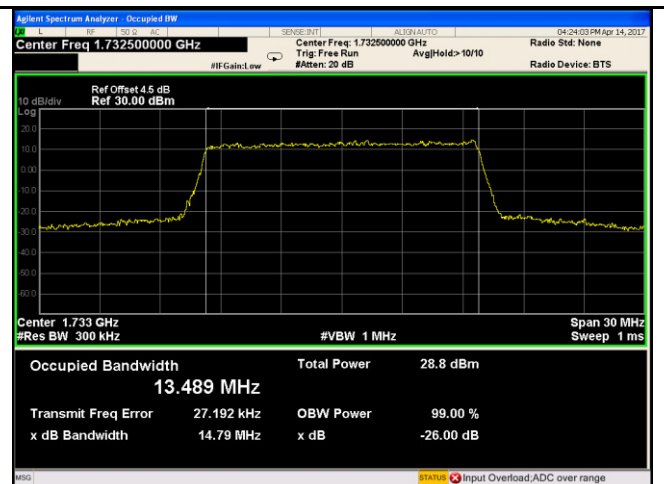
LTE band IV - Low CH QPSK-15



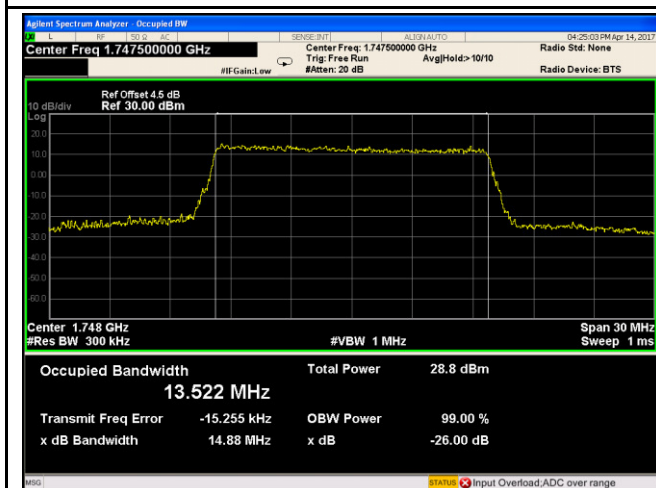
LTE band IV - Low CH 16QAM-15



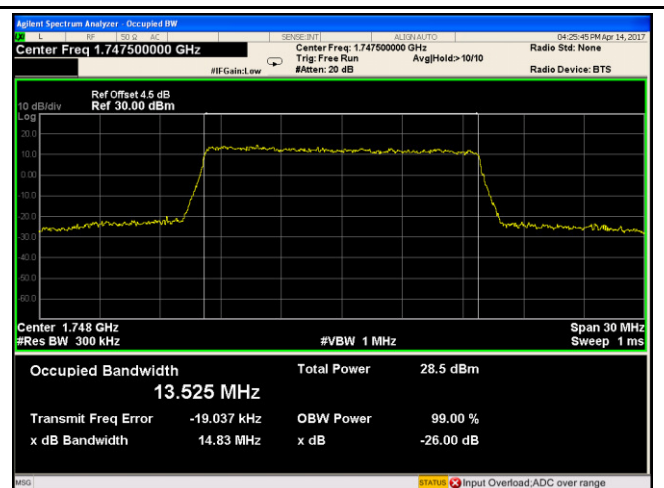
LTE band IV - Middle CH QPSK-15



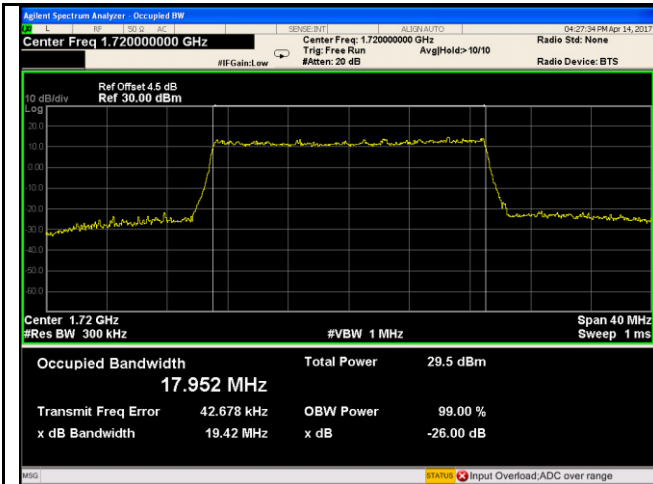
LTE band IV - Middle CH 16QAM-15



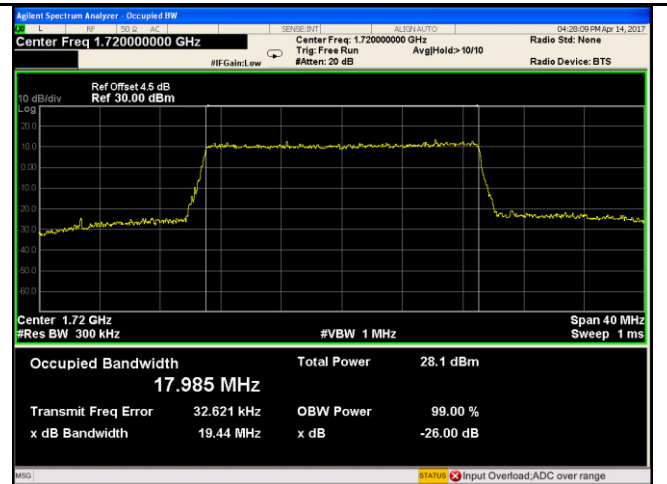
LTE band IV - High CH QPSK-15



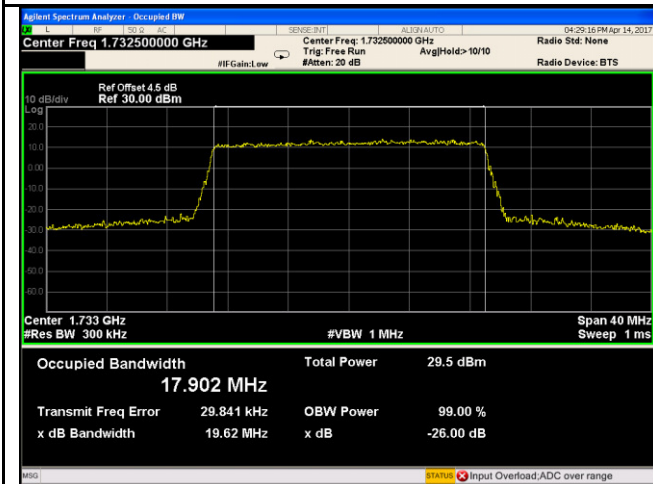
LTE band IV - High CH 16QAM-15



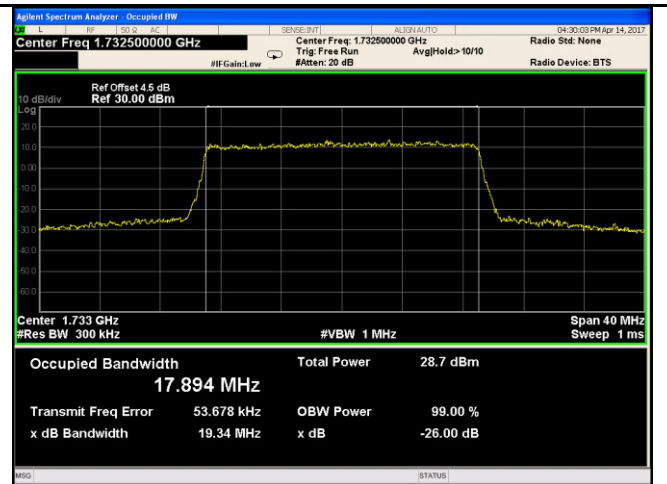
LTE band IV - Low CH QPSK-20



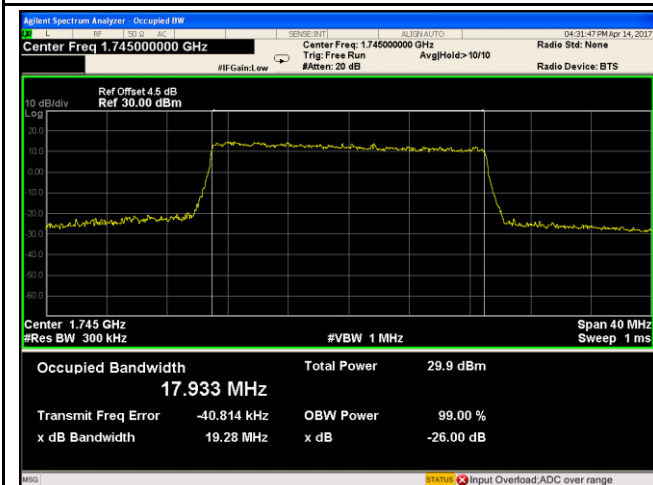
LTE band IV - Low CH 16QAM-20



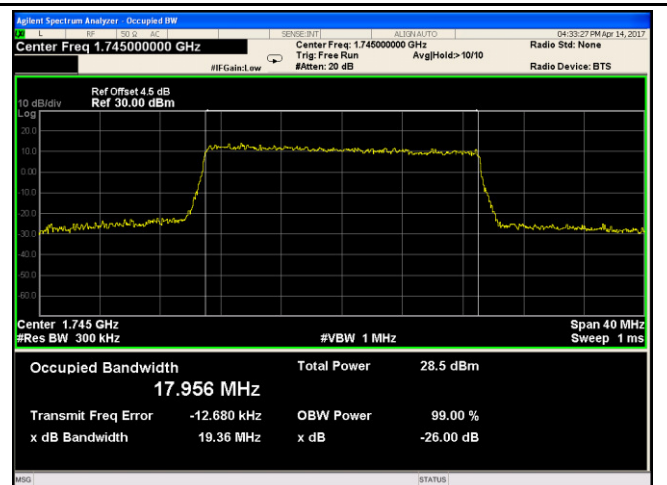
LTE band IV - Middle CH QPSK-20



LTE band IV - Middle CH 16QAM-20



LTE band IV - High CH QPSK-20

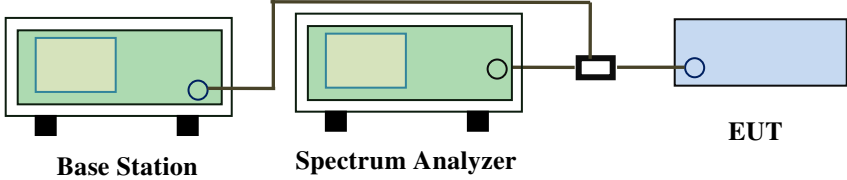


LTE band IV - High CH 16QAM-20

## 6.5 Spurious Emissions at Antenna Terminals

|                      |                |
|----------------------|----------------|
| Temperature          | 23 °C          |
| Relative Humidity    | 56%            |
| Atmospheric Pressure | 1014mbar       |
| Test date :          | April 14, 2017 |
| Tested By :          | Loren Luo      |

### Requirement(s):

| Spec                   | Item                                                                                                                                                                                                                                                                     | Requirement                                                                                                                                                               | Applicable                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| §2.1051,<br>§ 27.53(h) | a)                                                                                                                                                                                                                                                                       | The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB | <input checked="" type="checkbox"/> |
| Test Setup             |                                                                                                                                                                                      |                                                                                                                                                                           |                                     |
| Test Procedure         | <ul style="list-style-type: none"> <li>- The EUT was connected to Spectrum Analyzer and Base Station via power divider.</li> <li>- The Band Edges of low and high channels for the highest RF powers were measured.</li> <li>- Setting RBW as roughly BW/100.</li> </ul> |                                                                                                                                                                           |                                     |
| Remark                 |                                                                                                                                                                                                                                                                          |                                                                                                                                                                           |                                     |
| Result                 | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                   |                                                                                                                                                                           |                                     |

Test Data    ☒ Yes      ☐ N/A  
 Test Plot    ☒ Yes (See below)      ☐ N/A