

# FCC TEST REPORT

## (PART 90S&90R)

|            |                                                                                             |
|------------|---------------------------------------------------------------------------------------------|
| Applicant: | Lenovo(Shanghai) Electronics Technology Co., Ltd.                                           |
| Address:   | Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone |

|                           |                                                                          |
|---------------------------|--------------------------------------------------------------------------|
| Manufacturer or Supplier: | Lenovo PC HK Limited                                                     |
| Address:                  | 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong |
| Product:                  | Portable Tablet Computer                                                 |
| Brand Name:               | Lenovo                                                                   |
| Model Name:               | Lenovo TB-X605LC                                                         |
| FCC ID:                   | O57TBX605LC                                                              |
| Date of tests:            | Sep. 19, 2020 ~ Oct. 22, 2020                                            |

The tests have been carried out according to the requirements of the following standard:

☒ FCC Part 90, Subpart S, Subpart R    ☒ ANSI/TIA/EIA-603- D  
☒ FCC Part 2                      ☒ ANSI/TIA/EIA-603-E    ☒ ANSI C63.26-2015

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Prepared by Alex Chen<br>Engineer / Mobile Department                               | Approved by Luke Lu<br>Manager / Mobile Department                                    |
|  |  |
| Date: Oct. 23, 2020                                                                 | Date: Oct. 23, 2020                                                                   |

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## RELEASE CONTROL RECORD

| ISSUE NO.      | REASON FOR CHANGE | DATE ISSUED   |
|----------------|-------------------|---------------|
| RF200918W001-7 | Original release  | Oct. 23, 2020 |

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 90S & Part 90R & Part 2 |                              |            |
|----------------------------------------------------|------------------------------|------------|
| STANDARD SECTION                                   | TEST TYPE                    | RESULT     |
| 2.1046<br>90.635(b)                                | Maximum Peak Output Power    | Compliance |
| 2.1055<br>90.213                                   | Frequency Stability          | Compliance |
| 2.1049<br>90.209                                   | Occupied Bandwidth           | Compliance |
| 2.1051<br>90.691<br>90.543e                        | Emission Masks               | Compliance |
| 2.1051<br>90.691<br>90.543e                        | Conducted Spurious Emissions | Compliance |
| 2.1053<br>90.691<br>90.543e                        | Radiated Spurious Emissions  | Compliance |

### 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| MEASUREMENT                                        | UNCERTAINTY           |
|----------------------------------------------------|-----------------------|
| Frequency Stability                                | $\pm 76.97\text{Hz}$  |
| Radiated emissions & Radiated Power (30MHz~1GMHz)  | $\pm 4.98\text{dB}$   |
| Radiated emissions & Radiated Power (1GMHz ~6GMHz) | $\pm 4.70\text{dB}$   |
| Radiated emissions (6GMHz ~18GMHz)                 | $\pm 4.60\text{dB}$   |
| Radiated emissions (18GMHz ~40GMHz)                | $\pm 4.12\text{dB}$   |
| Conducted emissions                                | $\pm 4.01\text{dB}$   |
| Occupied Channel Bandwidth                         | $\pm 43.58\text{KHz}$ |
| Conducted Output power                             | $\pm 2.06\text{dB}$   |
| Band Edge Measurements                             | $\pm 4.70\text{dB}$   |
| Emission Mask Measurements                         | $\pm 4.48\text{dB}$   |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 1.2 TEST SITE AND INSTRUMENTS

| Equipment                                   | Manufacturer  | Model No.                           | Serial No.                      | Last Cal.   | Next Cal.   |
|---------------------------------------------|---------------|-------------------------------------|---------------------------------|-------------|-------------|
| MXE EMI Receiver                            | KEYSIGHT      | N9038A-544                          | MY54450026                      | Apr. 27,20  | Apr. 26,21  |
| EXA Signal Analyzer                         | KEYSIGHT      | N9010A-526                          | MY54510322                      | Feb. 26,20  | Feb. 25,21  |
| Signal Analyzer                             | Rohde&Schwarz | FSV7                                | 101561                          | Mar. 31,20  | Mar. 30,21  |
| Bilog Antenna                               | ETS-LINDGREN  | 3143B                               | 00161965                        | Mar. 27,20  | Mar. 26,21  |
| Horn Antenna<br>(1GHz-18GHz)                | ETS-LINDGREN  | 3117                                | 00168692                        | Mar. 27,20  | Mar. 26,21  |
| Horn Antenna<br>(18GHz-40GHz)               | N/A           | QWH-SL-18-40<br>-K-SG/QMS-00<br>361 | 15433                           | Nov. 24, 19 | Nov. 23, 20 |
| Radio<br>Communication<br>Analyzer          | ANRITSU       | MT8820C                             | 6201465426                      | Feb. 27,20  | Feb. 26,21  |
| Signal Pre-Amplifier                        | EMSI          | EMC 9135                            | 980249                          | Jun. 02,20  | Jun. 01,21  |
| Signal Pre-Amplifier                        | EMSI          | EMC 012645B                         | 980257                          | Jun. 02,20  | Jun. 01,21  |
| Signal Pre-Amplifier                        | EMSI          | EMC 184045B                         | 980259                          | Apr. 30,20  | Apr. 29,21  |
| 3m Semi-anechoic<br>Chamber                 | ETS-LINDGREN  | 9m*6m*6m                            | Euroshieldpn-<br>CT0001143-1216 | May. 19,20  | May. 18,23  |
| Test Software                               | E3            | V 9.160323                          | N/A                             | N/A         | N/A         |
| Test Software                               | ADT           | ADT_Radiated<br>_v7.6.15.9.2        | N/A                             | N/A         | N/A         |
| 10dB Attenuator                             | JFW/USA       | 50HF-010-SM<br>A                    | 1505                            | Jun. 03,20  | Jun. 02,21  |
| Power Meter                                 | Anritsu       | ML2495A                             | 1506002                         | Feb. 26,20  | Feb. 25,21  |
| Power Sensor                                | Anritsu       | MA2411B                             | 1339352                         | Feb. 26,20  | Feb. 25,21  |
| Humid & Temp<br>Programmable Tester         | Juyi          | ITH-120-45-CP<br>-AR                | IAA1504-001                     | Jun. 02,20  | Jun. 01,21  |
| MXG Analog<br>Microvave<br>Signal Generator | KEYSIGHT      | N5183A                              | MY50143024                      | Mar. 11,20  | Mar. 10,21  |
| Power Divider                               | MCLI/USA      | PS2-15                              | 24880                           | N/A         | N/A         |

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
  2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
  3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
  4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                                     |                                                                 |                     |
|-------------------------------------|-----------------------------------------------------------------|---------------------|
| <b>PRODUCT</b>                      | Portable Tablet Computer                                        |                     |
| <b>BRAND NAME</b>                   | Lenovo                                                          |                     |
| <b>MODEL NAME</b>                   | Lenovo TB-X605LC                                                |                     |
| <b>NOMINAL VOLTAGE</b>              | 5.0Vdc (adapter or host equipment)<br>3.85Vdc (Li-ion, battery) |                     |
| <b>MODULATION TYPE</b>              | LTE                                                             | QPSK, 16QAM         |
| <b>FREQUENCY RANGE</b>              | LTE Band 26<br>(Channel Bandwidth: 1.4MHz)                      | 814.7MHz ~ 823.3MHz |
|                                     | LTE Band 26<br>(Channel Bandwidth: 3MHz)                        | 815.5MHz ~ 822.5MHz |
|                                     | LTE Band 26<br>(Channel Bandwidth: 5MHz)                        | 816.5MHz ~ 821.5MHz |
|                                     | LTE Band 26<br>(Channel Bandwidth: 10MHz)                       | 819MHz              |
| <b>MAX. ERP POWER</b>               | LTE Band 26<br>(Channel Bandwidth: 1.4MHz)                      | 96mW                |
|                                     | LTE Band 26<br>(Channel Bandwidth: 3MHz)                        | 96mW                |
|                                     | LTE Band 26<br>(Channel Bandwidth: 5MHz)                        | 96mW                |
|                                     | LTE Band 26<br>(Channel Bandwidth: 10MHz)                       | 96mW                |
| <b>EMISSION<br/>DESIGNATOR GOGN</b> | LTE Band 26<br>(Channel Bandwidth: 1.4MHz)                      | QPSK: 1M09G7D       |
|                                     |                                                                 | 16QAM: 1M09W7D      |
|                                     | LTE Band 26<br>(Channel Bandwidth: 3MHz)                        | QPSK: 2M69G7D       |
|                                     |                                                                 | 16QAM: 2M68W7D      |
|                                     | LTE Band 26<br>(Channel Bandwidth: 5MHz)                        | QPSK: 4M47G7D       |
|                                     |                                                                 | 16QAM: 4M47W7D      |
|                                     | LTE Band 26<br>(Channel Bandwidth: 10MHz)                       | QPSK: 8M94G7D       |
|                                     |                                                                 | 16QAM: 8M93W7D      |
| <b>ANTENNA TYPE</b>                 | Fixed Internal Antenna with -1.23dBi gain for LTE Band 26       |                     |
| <b>HW VERSION</b>                   | Lenovo Tablet TB-X605LC                                         |                     |
| <b>SW VERSION</b>                   | TB-X605LC_RF01_20190604                                         |                     |
| <b>I/O PORTS</b>                    | Refer to user's manual                                          |                     |
| <b>CABLE SUPPLIED</b>               | USB cable: shielded, detachable, 1meter                         |                     |

**NOTE:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. There were Sample 1, 2, 3, 4, 5 and 6 for this project, the difference is as below:

| SAMPLE | EUT CONFIGURATION INFORMATION                                                                                               |
|--------|-----------------------------------------------------------------------------------------------------------------------------|
| 1      | LCD Panel 1+Photo Camera 1+Photo Camera 3+CPU1+EMMC1+DDR1+speaker 1+speaker 2+motor1+Main Broad 1+BT/WLAN Module+ Battery 1 |
| 2      | LCD Panel 2+Photo Camera 2+Photo Camera 4+CPU1+EMMC2+DDR2+speaker 1+speaker 2+motor2+Main Broad 2+BT/WLAN Module+ Battery 2 |
| 3      | LCD Panel 1+Photo Camera 1+Photo Camera 3+CPU1+EMMC3+DDR3+speaker 1+speaker 2+motor1+Main Broad 1+BT/WLAN Module+ Battery 1 |
| 4      | LCD Panel 2+Photo Camera 2+Photo Camera 4+CPU1+EMMC4+DDR4+speaker 1+speaker 2+motor2+Main Broad 2+BT/WLAN Module+ Battery 2 |
| 5      | LCD Panel 1+Photo Camera 1+Photo Camera 3+CPU1+EMMC5+DDR5+speaker 1+speaker 2+motor1+Main Broad 1+BT/WLAN Module+ Battery 1 |
| 6      | LCD Panel 2+Photo Camera 2+Photo Camera 4+CPU1+EMMC6+DDR6+speaker 1+speaker 2+motor2+Main Broad 2+BT/WLAN Module+ Battery 2 |

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

| MODULATION MODE | TX FUNCTION |
|-----------------|-------------|
| LTE             | 1TX/1RX     |

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



**BUREAU  
VERITAS**

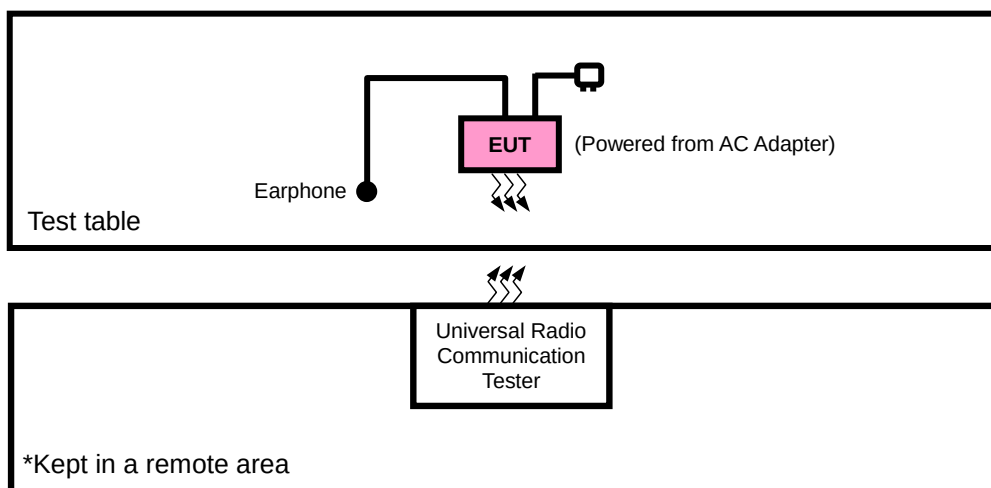
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**List of Accessory:**

| ACCESSORIES    | BRAND     | MODEL                        | SPECIFICATION                         |
|----------------|-----------|------------------------------|---------------------------------------|
| AC Adapter 1   | Salom     | SC-41                        | I/P:100-240Vac, 0.3A<br>O/P: 5Vdc, 2A |
| AC Adapter 2   | AcBel     | SC-41                        | I/P:100-240Vac, 0.3A<br>O/P: 5Vdc, 2A |
| Battery 1      | SCUD      | L16D2P31                     | Rating: 3.85Vdc, 7000mAh              |
| Battery 2      | Celxpert  | L16D2P31                     | Rating: 3.85Vdc, 7000mAh              |
| USB Cable 1    | LiQi      | L27B-052000100-TCCS          | 1.0m shielded cable w/o core          |
| USB Cable 2    | SaiBao    | S27B-052000100-TCCS          | 1.0m shielded cable w/o core          |
| LCD Panel1     | BOE       | TV101WUM-LL4                 | 10.1 "                                |
| LCD Panel2     | BOE       | TV101WUM-LL5                 | 10.1 "                                |
| Photo Camera 1 | O-film    | L4H7A00                      | 8M AF                                 |
| Photo Camera 2 | Q-tech    | F4H7YAZ                      | 8M AF                                 |
| Photo Camera 3 | Lianyi    | LE5220FM                     | 5M FF                                 |
| Photo Camera 4 | Jinkang   | G7B5-QL607XFF                | 5M FF                                 |
| CPU            | Qualcomm  | SDA-450-A-792NSP-TR-01-0-AA  | -                                     |
| EMMC1+DDR1     | SAMSUNG   | KMRP60014M-B614(4+64)        | 64G                                   |
| EMMC2+DDR2     | HYNIX     | H9TQ52ACLTMCUR-KUM(4+64)     | 64G                                   |
| EMMC3+DDR3     | SAMSUNG   | KMGD6001BM-B421(3+32)        | 32G                                   |
| EMMC4+DDR4     | HYNIX     | H9TQ27ADFTMCUR-KUM(3+32)     | 32G                                   |
| EMMC5+DDR5     | SAMSUNG   | KMQE60013M-B318(2+16)        | 16G                                   |
| EMMC6+DDR6     | HYNIX     | H9TQ17ABJTCCUR-KUM(2+16)     | 16G                                   |
| Speaker 1      | Xichun    | KFSC1712SBC-S-B232-20J-GT    | -                                     |
| Speaker 2      | Xichun    | KFSC1712SBC-S-B233-20J-W     | -                                     |
| speaker 1      | Haosheng  | HB171219B08-13-B1F-RH        | -                                     |
| speaker 2      | Haosheng  | XHB171219B08-14-B1F-RH       | -                                     |
| motor1         | Hongzhifa | HZF-Z04BE-RL67B25-90         | -                                     |
| Motor2         | Kunwang   | CY0408L-021HB-064            | -                                     |
| Main Broad 1   | Hongban   | Aae_MB_PCB_V3                | -                                     |
| Main Broad 2   | Huashen   | Aae_MB_PCB_V3                | -                                     |
| BT/WLAN Module | Qualcomm  | WCN-3680B-0-79BWLNSP-TR-05-1 | -                                     |

## 2.2 CONFIGURATION OF SYSTEM UNDER TEST

### FOR RADIATION EMISSION



## 2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT   | BRAND    | MODEL NO.  | SERIAL NO. | FCC ID |
|-----|-----------|----------|------------|------------|--------|
| 1   | Adapter   | JINGSAI  | CLS-050200 | N/A        | N/A    |
| 2   | DC source | LONG WEI | PS-6403D   | 010934269  | N/A    |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|-----------------------------------------------------|
| 1   | Unshielded, Detachable 1.8m                         |
| 2   | DC Line: Unshielded, Detachable 1.0m                |

## 2.4 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case in ERP/EIRP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

| EUT<br>CONFIGURE<br>MODE | DESCRIPTION                 |
|--------------------------|-----------------------------|
| -                        | EUT + Adapter with LTE link |

**LTE BAND 26**

| EUT CONFIGURE MODE | TEST ITEM           | AVAILABLE CHANNEL | TESTED CHANNEL      | CHANNEL BANDWIDTH | MODULATION  | MODE                |
|--------------------|---------------------|-------------------|---------------------|-------------------|-------------|---------------------|
| B                  | ERP                 | 26679 to 26783    | 26679, 26740, 26783 | 1.4MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26705, 26740, 26775 | 3MHz              | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                     | 26715 to 26765    | 26715, 26740, 26765 | 5MHz              | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset  |
| B                  | FREQUENCY STABILITY | 26679 to 26783    | 26679, 26783        | 1.4MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26705, 26775        | 3MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26715 to 26765    | 26715, 26765        | 5MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK        | 1 RB / 0 RB Offset  |
| B                  | OCCUPIED BANDWIDTH  | 26679 to 26783    | 26679, 26740, 26783 | 1.4MHz            | QPSK, 16QAM | 6 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26705, 26740, 26775 | 3MHz              | QPSK, 16QAM | 15 RB / 0 RB Offset |
|                    |                     | 26715 to 26765    | 26715, 26740, 26765 | 5MHz              | QPSK, 16QAM | 25 RB / 0 RB Offset |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK, 16QAM | 50 RB / 0 RB Offset |
| B                  | BAND EDGE           | 26679 to 26783    | 26679               | 1.4MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     |                   |                     |                   |             | 6 RB / 0 RB Offset  |
|                    |                     |                   | 26783               | 1.4MHz            | QPSK        | 1 RB / 5 RB Offset  |
|                    |                     |                   |                     |                   |             | 6 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26705               | 3MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     |                   |                     |                   |             | 15 RB / 0 RB Offset |
|                    |                     |                   | 26775               | 3MHz              | QPSK        | 1 RB / 14 RB Offset |
|                    |                     |                   |                     |                   |             | 15 RB / 0 RB Offset |
|                    |                     | 26715 to 26765    | 26715               | 5MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     |                   |                     |                   |             | 25 RB / 0 RB Offset |
|                    |                     |                   | 26765               | 5MHz              | QPSK        | 1 RB / 24 RB Offset |
|                    |                     |                   |                     |                   |             | 25 RB / 0 RB Offset |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     |                   |                     |                   |             | 50 RB / 0 RB Offset |
|                    |                     |                   | 26740               | 10MHz             | QPSK        | 1 RB / 49 RB Offset |
|                    |                     |                   |                     |                   |             | 50 RB / 0 RB Offset |
| B                  | CONDCUDED EMISSION  | 26679 to 26783    | 26679, 26740, 26783 | 1.4MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26705, 26740, 26775 | 3MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26715 to 26765    | 26715, 26740, 26765 | 5MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK        | 1 RB / 0 RB Offset  |
| A                  | RADIATED EMISSION   | 26679 to 26783    | 26740               | 1.4MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26705 to 26775    | 26740               | 3MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26715 to 26765    | 26715, 26740, 26765 | 5MHz              | QPSK        | 1 RB / 0 RB Offset  |
|                    |                     | 26740             | 26740               | 10MHz             | QPSK        | 1 RB / 0 RB Offset  |

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

**TEST CONDITION:**

| TEST ITEM             | ENVIRONMENTAL CONDITIONS | INPUT POWER         | TESTED BY   |
|-----------------------|--------------------------|---------------------|-------------|
| ERP                   | 23deg. C, 70%RH          | DC 5V By Adapter    | Star Le     |
| FREQUENCY STABILITY   | 23deg. C, 70%RH          | DC 3.5V/3.8V/4.4V   | Kevin Zhang |
| OCCUPIED BANDWIDTH    | 23deg. C, 70%RH          | DC 3.85V By Battery | Kevin Zhang |
| BAND EDGE             | 23deg. C, 70%RH          | DC 3.85V By Battery | Kevin Zhang |
| CONDCUDED EMISSION    | 23deg. C, 70%RH          | DC 3.85V By Battery | Kevin Zhang |
| RADIATED EMISSION     | 23deg. C, 70%RH          | DC 5V By Adapter    | Star Le     |
| PEAK TO AVERAGE RATIO | 23deg. C, 70%RH          | DC 3.85V By Battery | Kevin Zhang |



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## 2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 90**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

**ANSI/TIA/EIA-603-D**

**ANSI/TIA/EIA-603-E**

**ANSI C63.26-2015**

**NOTE:** All test items have been performed and recorded as per the above standards.

### 3 TEST TYPES AND RESULTS

#### 3.1 OUTPUT POWER MEASUREMENT

##### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Per FCC Part 90.635(a)(b)

Mobile stations are limited to 100 watts e.r.p. Portable stations are limited to 3 watts e.r.p.

##### 3.1.2 TEST PROCEDURES

###### EIRP / ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as  $P_{\text{Meas}}$ , typically dBW or dBm);

$P_{\text{Meas}}$  = measured transmitter output power or PSD, in dBm or dBW;

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

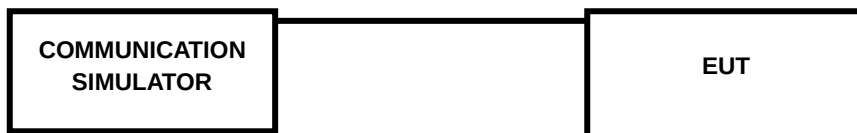
$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

###### CONDUCTED POWER MEASUREMENT:

- The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

### 3.1.3 TEST SETUP

#### CONDUCTED POWER MEASUREMENT:



### 3.1.4 TEST RESULTS

#### AVERAGE CONDUCTED OUTPUT POWER (dBm)

##### LTE BAND 26

| Band/BW | Modulation | RB<br>Size | RB<br>Offset | Low CH<br>26697        | Mid CH<br>26740      | High CH<br>26783       | MPR |
|---------|------------|------------|--------------|------------------------|----------------------|------------------------|-----|
|         |            |            |              | Frequency<br>814.7 MHz | Frequency<br>819 MHz | Frequency<br>823.3 MHz |     |
| 26/ 1.4 | QPSK       | 1          | 0            | 22.90                  | 22.94                | 22.93                  | 0   |
|         |            | 1          | 2            | 23.19                  | 23.16                | 23.20                  | 0   |
|         |            | 1          | 5            | 22.93                  | 22.88                | 22.90                  | 0   |
|         |            | 3          | 0            | 22.74                  | 22.72                | 22.78                  | 0   |
|         |            | 3          | 1            | 22.82                  | 22.81                | 22.75                  | 0   |
|         |            | 3          | 3            | 22.77                  | 22.74                | 22.76                  | 0   |
|         |            | 6          | 0            | 21.77                  | 21.72                | 21.76                  | 1   |
|         | 16QAM      | 1          | 0            | 21.73                  | 21.71                | 21.73                  | 1   |
|         |            | 1          | 2            | 21.83                  | 21.77                | 21.83                  | 1   |
|         |            | 1          | 5            | 21.76                  | 21.73                | 21.80                  | 1   |
|         |            | 3          | 0            | 21.96                  | 21.95                | 21.95                  | 1   |
|         |            | 3          | 1            | 21.87                  | 21.94                | 21.90                  | 1   |
|         |            | 3          | 3            | 21.93                  | 21.92                | 21.96                  | 1   |

| Band/BW | Modulation | RB Size | RB Offset | Low CH<br>CH26705     | Mid CH<br>CH26740     | High CH<br>CH26775    | MPR |
|---------|------------|---------|-----------|-----------------------|-----------------------|-----------------------|-----|
|         |            |         |           | Frequency<br>815.5MHz | Frequency<br>819.0MHz | Frequency<br>822.5MHz |     |
| 26/ 3   | QPSK       | 1       | 0         | 22.92                 | 22.96                 | 22.92                 | 0   |
|         |            | 1       | 7         | 23.15                 | 23.17                 | 23.20                 | 0   |
|         |            | 1       | 14        | 22.89                 | 22.88                 | 22.90                 | 0   |
|         |            | 8       | 0         | 21.73                 | 21.75                 | 21.78                 | 1   |
|         |            | 8       | 3         | 21.75                 | 21.81                 | 21.77                 | 1   |
|         |            | 8       | 7         | 21.74                 | 21.81                 | 21.80                 | 1   |
|         |            | 15      | 0         | 21.74                 | 21.73                 | 21.70                 | 1   |
|         | 16QAM      | 1       | 0         | 21.70                 | 21.77                 | 21.76                 | 1   |
|         |            | 1       | 7         | 21.80                 | 21.80                 | 21.81                 | 1   |
|         |            | 1       | 14        | 21.79                 | 21.73                 | 21.80                 | 1   |
|         |            | 8       | 0         | 20.92                 | 20.96                 | 20.95                 | 2   |
|         |            | 8       | 3         | 20.92                 | 20.89                 | 20.93                 | 2   |
|         |            | 8       | 7         | 20.95                 | 20.90                 | 20.92                 | 2   |

| Band/BW | Modulation | RB Size | RB Offset | Low CH<br>CH26715     | Mid CH<br>CH26740     | High CH<br>CH26765    | MPR |
|---------|------------|---------|-----------|-----------------------|-----------------------|-----------------------|-----|
|         |            |         |           | Frequency<br>816.5MHz | Frequency<br>819.0MHz | Frequency<br>821.5MHz |     |
| 26/ 5   | QPSK       | 1       | 0         | 22.93                 | 22.91                 | 22.93                 | 0   |
|         |            | 1       | 12        | 23.20                 | 23.14                 | 23.20                 | 0   |
|         |            | 1       | 24        | 22.90                 | 22.87                 | 22.94                 | 0   |
|         |            | 12      | 0         | 21.76                 | 21.75                 | 21.75                 | 1   |
|         |            | 12      | 6         | 21.75                 | 21.82                 | 21.78                 | 1   |
|         |            | 12      | 13        | 21.78                 | 21.77                 | 21.81                 | 1   |
|         |            | 25      | 0         | 21.72                 | 21.76                 | 21.73                 | 1   |
|         | 16QAM      | 1       | 0         | 21.71                 | 21.73                 | 21.76                 | 1   |
|         |            | 1       | 12        | 21.77                 | 21.83                 | 21.80                 | 1   |
|         |            | 1       | 24        | 21.79                 | 21.73                 | 21.79                 | 1   |
|         |            | 12      | 0         | 20.92                 | 20.94                 | 20.92                 | 2   |
|         |            | 12      | 6         | 20.89                 | 20.93                 | 20.89                 | 2   |
|         |            | 12      | 13        | 20.90                 | 20.92                 | 20.95                 | 2   |

| Band/BW | Modulation | RB<br>Size | RB<br>Offset | CH  | Mid CH<br>CH26740     | CH  | MPR |
|---------|------------|------------|--------------|-----|-----------------------|-----|-----|
|         |            |            |              | MHz | Frequency<br>819.0MHz | MHz |     |
| 26/ 10  | QPSK       | 1          | 0            | -   | 22.98                 | -   | 0   |
|         |            | 1          | 24           | -   | 23.22                 | -   | 0   |
|         |            | 1          | 49           | -   | 22.95                 | -   | 0   |
|         |            | 25         | 0            | -   | 21.80                 | -   | 1   |
|         |            | 25         | 12           | -   | 21.83                 | -   | 1   |
|         |            | 25         | 25           | -   | 21.82                 | -   | 1   |
|         |            | 50         | 0            | -   | 21.78                 | -   | 1   |
|         | 16QAM      | 1          | 0            | -   | 21.78                 | -   | 1   |
|         |            | 1          | 24           | -   | 21.85                 | -   | 1   |
|         |            | 1          | 49           | -   | 21.81                 | -   | 1   |
|         |            | 25         | 0            | -   | 21.00                 | -   | 2   |
|         |            | 25         | 12           | -   | 20.95                 | -   | 2   |
|         |            | 25         | 25           | -   | 20.97                 | -   | 2   |

## ERP

### LTE BAND 26

#### CHANNEL BANDWIDTH: 1.4MHz QPSK

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW)     | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|--------------|-----------|
| 26679   | 814.7           | 23.19                 | -1.23                               | 19.81     | 95.72        | 7         |
| 26740   | 819.0           | 23.16                 | -1.23                               | 19.78     | 95.06        | 7         |
| 26783   | 823.3           | 23.20                 | -1.23                               | 19.82     | <b>95.94</b> | 7         |

#### CHANNEL BANDWIDTH: 1.4MHz 16QAM

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|----------|-----------|
| 26679   | 814.7           | 21.96                 | -1.23                               | 18.58     | 72.11    | 7         |
| 26740   | 819.0           | 21.95                 | -1.23                               | 18.57     | 71.94    | 7         |
| 26783   | 823.3           | 21.96                 | -1.23                               | 18.58     | 72.11    | 7         |

#### CHANNEL BANDWIDTH: 3MHz QPSK

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW)     | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|--------------|-----------|
| 26705   | 815.5           | 23.15                 | -1.23                               | 19.77     | 94.84        | 7         |
| 26740   | 819.0           | 23.17                 | -1.23                               | 19.79     | 95.28        | 7         |
| 26775   | 822.5           | 23.20                 | -1.23                               | 19.82     | <b>95.94</b> | 7         |

#### CHANNEL BANDWIDTH: 3MHz 16QAM

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|----------|-----------|
| 26705   | 815.5           | 21.80                 | -1.23                               | 18.42     | 69.5     | 7         |
| 26740   | 819.0           | 21.80                 | -1.23                               | 18.42     | 69.5     | 7         |
| 26775   | 822.5           | 21.81                 | -1.23                               | 18.43     | 69.66    | 7         |

**LTE BAND 26**

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW)     | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|--------------|-----------|
| 26715   | 816.5           | 23.20                 | -1.23                               | 19.82     | <b>95.94</b> | 7         |
| 26740   | 819.0           | 23.14                 | -1.23                               | 19.76     | 94.62        | 7         |
| 26765   | 821.5           | 23.20                 | -1.23                               | 19.82     | 95.94        | 7         |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|----------|-----------|
| 26715   | 816.5           | 21.79                 | -1.23                               | 18.41     | 69.34    | 7         |
| 26740   | 819.0           | 21.83                 | -1.23                               | 18.45     | 69.98    | 7         |
| 26765   | 821.5           | 21.80                 | -1.23                               | 18.42     | 69.50    | 7         |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|----------|-----------|
| 26740   | 819.0           | 23.22                 | -1.23                               | 19.84     | 96.38    | 7         |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | G <sub>T</sub> -L <sub>C</sub> (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---------|-----------------|-----------------------|-------------------------------------|-----------|----------|-----------|
| 26740   | 819.0           | 21.85                 | -1.23                               | 18.47     | 70.31    | 7         |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

## 3.2 FREQUENCY STABILITY MEASUREMENT

### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

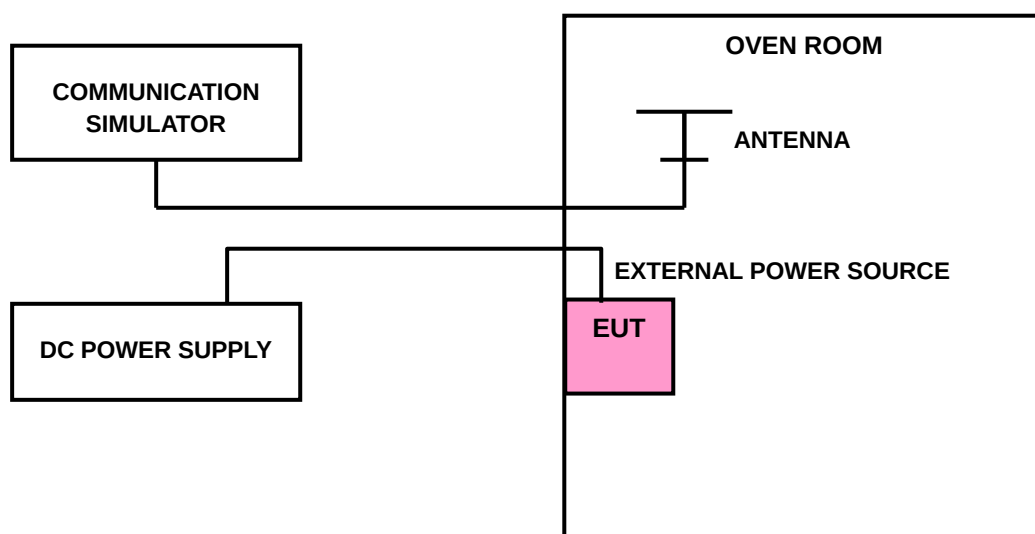
The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

### 3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 3.2.3 TEST SETUP



### 3.2.4 TEST RESULTS

#### LTE Band 26

##### FREQUENCY ERROR VS. VOLTAGE

| VOLTAGE (Volts)  | 1.4MHz                |              | LIMIT (ppm) |
|------------------|-----------------------|--------------|-------------|
|                  | FREQUENCY ERROR (ppm) |              |             |
|                  | Low Channel           | High Channel |             |
| V <sub>nor</sub> | 0.0021                | 0.0026       | 2.5         |
| V <sub>min</sub> | -0.0031               | -0.0031      | 2.5         |
| V <sub>max</sub> | 0.0021                | 0.0021       | 2.5         |

**NOTE:** The applicant defined the normal working voltage of the battery is from  $V_{min}$  Vdc to  $V_{max}$  Vdc.

##### FREQUENCY ERROR vs. TEMPERATURE.

| TEMP. (°C) | 1.4MHz                |              | LIMIT (ppm) |
|------------|-----------------------|--------------|-------------|
|            | FREQUENCY ERROR (ppm) |              |             |
|            | Low Channel           | High Channel |             |
| -30        | -0.0114               | -0.0121      | 2.5         |
| -20        | -0.0104               | -0.0100      | 2.5         |
| -10        | -0.0082               | -0.0083      | 2.5         |
| 0          | -0.0075               | -0.0077      | 2.5         |
| 10         | -0.0055               | -0.0049      | 2.5         |
| 20         | -0.0041               | -0.0041      | 2.5         |
| 30         | -0.0030               | -0.0026      | 2.5         |
| 40         | -0.0022               | -0.0018      | 2.5         |
| 50         | -0.0004               | -0.0004      | 2.5         |

#### FREQUENCY ERROR VS. VOLTAGE

| VOLTAGE (Volts)  | 3MHz                  |              | LIMIT (ppm) |
|------------------|-----------------------|--------------|-------------|
|                  | FREQUENCY ERROR (ppm) |              |             |
|                  | Low Channel           | High Channel |             |
| V <sub>nor</sub> | 0.0021                | 0.0021       | 2.5         |
| V <sub>min</sub> | -0.0021               | -0.0025      | 2.5         |
| V <sub>max</sub> | 0.0018                | 0.0018       | 2.5         |

**NOTE:** The applicant defined the normal working voltage of the battery is from  $V_{min}$  Vdc to  $V_{max}$  Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

| TEMP. (°C) | 3MHz                  |              | LIMIT (ppm) |
|------------|-----------------------|--------------|-------------|
|            | FREQUENCY ERROR (ppm) |              |             |
|            | Low Channel           | High Channel |             |
| -30        | -0.0120               | -0.0117      | 2.5         |
| -20        | -0.0106               | -0.0108      | 2.5         |
| -10        | -0.0082               | -0.0085      | 2.5         |
| 0          | -0.0075               | -0.0078      | 2.5         |
| 10         | -0.0051               | -0.0045      | 2.5         |
| 20         | -0.0045               | -0.0040      | 2.5         |
| 30         | -0.0027               | -0.0040      | 2.5         |
| 40         | -0.0017               | -0.0015      | 2.5         |
| 50         | -0.0006               | -0.0004      | 2.5         |

#### FREQUENCY ERROR VS. VOLTAGE

| VOLTAGE (Volts)  | 5MHz                  |              | LIMIT (ppm) |
|------------------|-----------------------|--------------|-------------|
|                  | FREQUENCY ERROR (ppm) |              |             |
|                  | Low Channel           | High Channel |             |
| V <sub>nor</sub> | 0.0022                | 0.0026       | 2.5         |
| V <sub>min</sub> | -0.0023               | -0.0031      | 2.5         |
| V <sub>max</sub> | 0.0021                | 0.0022       | 2.5         |

**NOTE:** The applicant defined the normal working voltage of the battery is from  $V_{min}$  Vdc to  $V_{max}$  Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

| TEMP. (°C) | 5MHz                  |              | LIMIT (ppm) |
|------------|-----------------------|--------------|-------------|
|            | FREQUENCY ERROR (ppm) |              |             |
|            | Low Channel           | High Channel |             |
| -30        | -0.0119               | -0.0114      | 2.5         |
| -20        | -0.0110               | -0.0099      | 2.5         |
| -10        | -0.0084               | -0.0083      | 2.5         |
| 0          | -0.0074               | -0.0075      | 2.5         |
| 10         | -0.0057               | -0.0050      | 2.5         |
| 20         | -0.0038               | -0.0042      | 2.5         |
| 30         | -0.0043               | -0.0037      | 2.5         |
| 40         | -0.0016               | -0.0022      | 2.5         |
| 50         | -0.0003               | -0.0005      | 2.5         |

#### FREQUENCY ERROR VS. VOLTAGE

| VOLTAGE (Volts) | 10MHz                 | LIMIT (ppm) |
|-----------------|-----------------------|-------------|
|                 | FREQUENCY ERROR (ppm) |             |
|                 | Mid Channel           |             |
| $V_{nor}$       | 0.0026                | 2.5         |
| $V_{min}$       | -0.0031               | 2.5         |
| $V_{max}$       | 0.0026                | 2.5         |

**NOTE:** The applicant defined the normal working voltage of the battery is from  $V_{min}$  Vdc to  $V_{max}$  Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

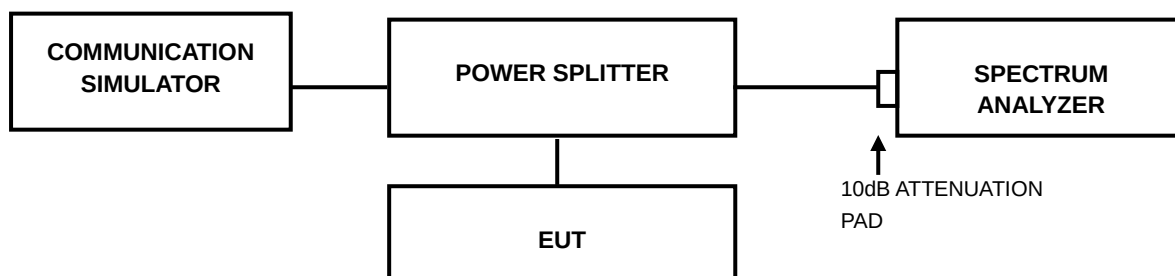
| TEMP. (°C) | 10MHz                 | LIMIT (ppm) |
|------------|-----------------------|-------------|
|            | FREQUENCY ERROR (ppm) |             |
|            | Mid Channel           |             |
| -30        | -0.0117               | 2.5         |
| -20        | -0.0103               | 2.5         |
| -10        | -0.0081               | 2.5         |
| 0          | -0.0078               | 2.5         |
| 10         | -0.0049               | 2.5         |
| 20         | -0.0040               | 2.5         |
| 30         | -0.0034               | 2.5         |
| 40         | -0.0016               | 2.5         |
| 50         | -0.0004               | 2.5         |

### 3.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

#### 3.3.2 TEST SETUP



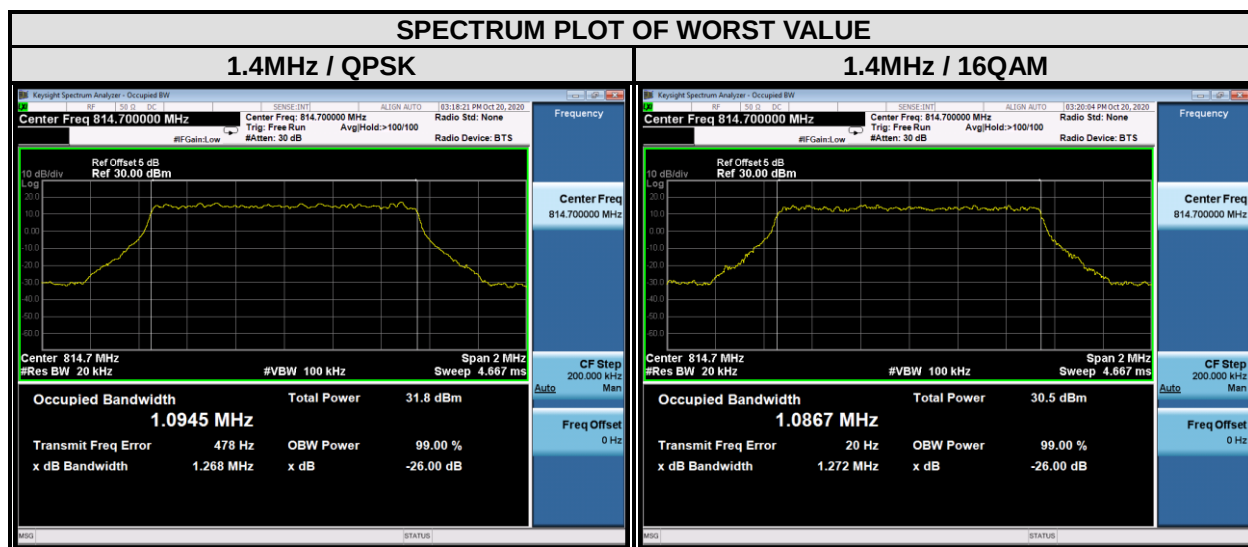
#### 3.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

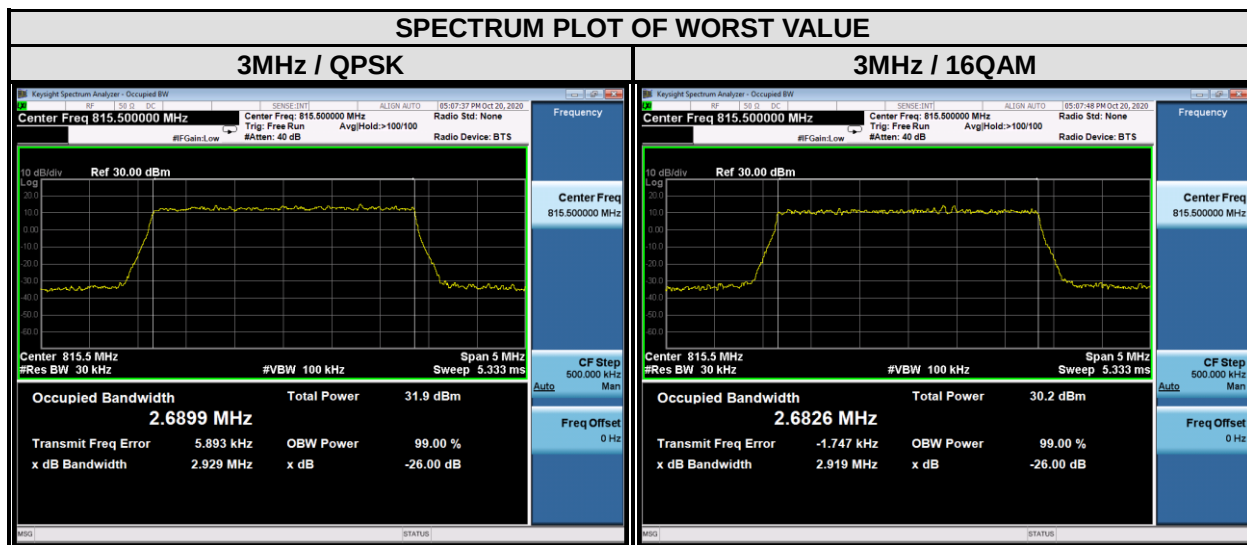
### 3.3.4 TEST RESULTS

#### LTE BAND 26

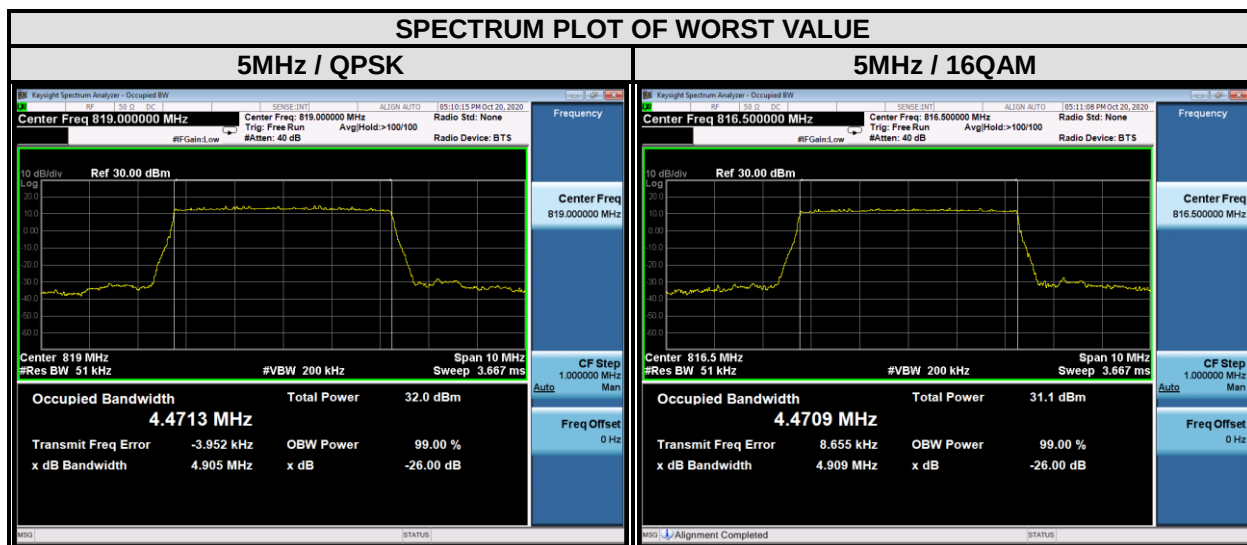
| CHANNEL BANDWIDTH: 1.4MHz |                 |                              |       |                      |       |
|---------------------------|-----------------|------------------------------|-------|----------------------|-------|
| CHANNEL                   | Frequency (MHz) | 99% OCCUPIED Bandwidth (MHz) |       | 26dB Bandwidth (MHz) |       |
|                           |                 | QPSK                         | 16QAM | QPSK                 | 16QAM |
| 26697                     | 814.7           | 1.09                         | 1.09  | 1.27                 | 1.27  |
| 26740                     | 819             | 1.09                         | 1.09  | 1.27                 | 1.26  |
| 26783                     | 823.3           | 1.09                         | 1.08  | 1.28                 | 1.24  |



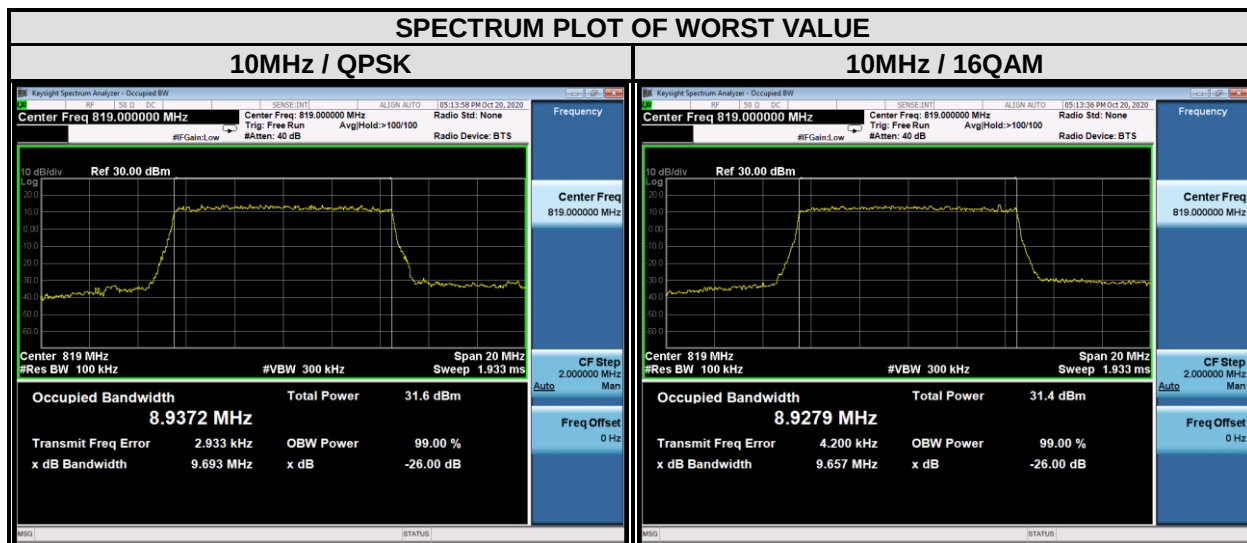
| CHANNEL BANDWIDTH: 3MHz |                 |                              |       |                      |       |
|-------------------------|-----------------|------------------------------|-------|----------------------|-------|
| CHANNEL                 | Frequency (MHz) | 99% OCCUPIED Bandwidth (MHz) |       | 26dB Bandwidth (MHz) |       |
|                         |                 | QPSK                         | 16QAM | QPSK                 | 16QAM |
| 26705                   | 815.5           | 2.69                         | 2.68  | 2.93                 | 2.92  |
| 26740                   | 819             | 2.68                         | 2.68  | 2.91                 | 2.94  |
| 26775                   | 822.5           | 2.69                         | 2.68  | 2.92                 | 2.93  |



| CHANNEL BANDWIDTH: 5MHz |                 |                              |       |                      |       |
|-------------------------|-----------------|------------------------------|-------|----------------------|-------|
| CHANNEL                 | Frequency (MHz) | 99% OCCUPIED Bandwidth (MHz) |       | 26dB Bandwidth (MHz) |       |
|                         |                 | QPSK                         | 16QAM | QPSK                 | 16QAM |
| 26715                   | 816.5           | 4.46                         | 4.47  | 4.89                 | 4.91  |
| 26740                   | 819             | 4.47                         | 4.46  | 4.91                 | 4.85  |
| 26765                   | 821.5           | 4.46                         | 4.46  | 4.86                 | 4.94  |



| CHANNEL BANDWIDTH: 10MHz |                 |                              |       |                      |       |
|--------------------------|-----------------|------------------------------|-------|----------------------|-------|
| CHANNEL                  | Frequency (MHz) | 99% OCCUPIED Bandwidth (MHz) |       | 26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                         | 16QAM | QPSK                 | 16QAM |
| -                        | -               | -                            | -     | -                    | -     |
| 26740                    | 819             | 8.94                         | 8.93  | 9.69                 | 9.66  |
| -                        | -               | -                            | -     | -                    | -     |

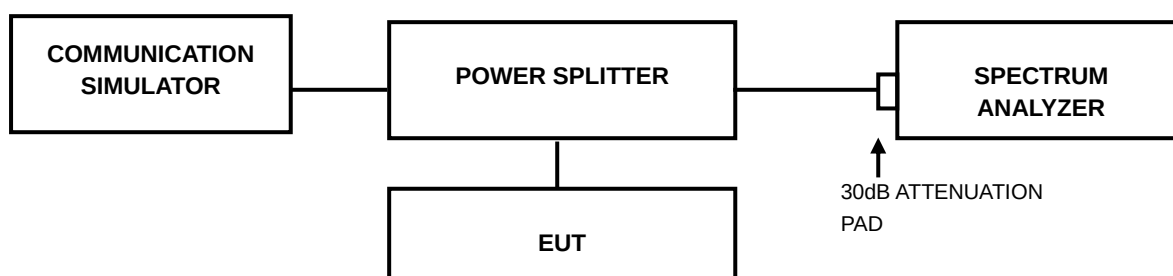


### 3.4 PEAK TO AVERAGE RATIO

#### 3.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

#### 3.4.2 TEST SETUP



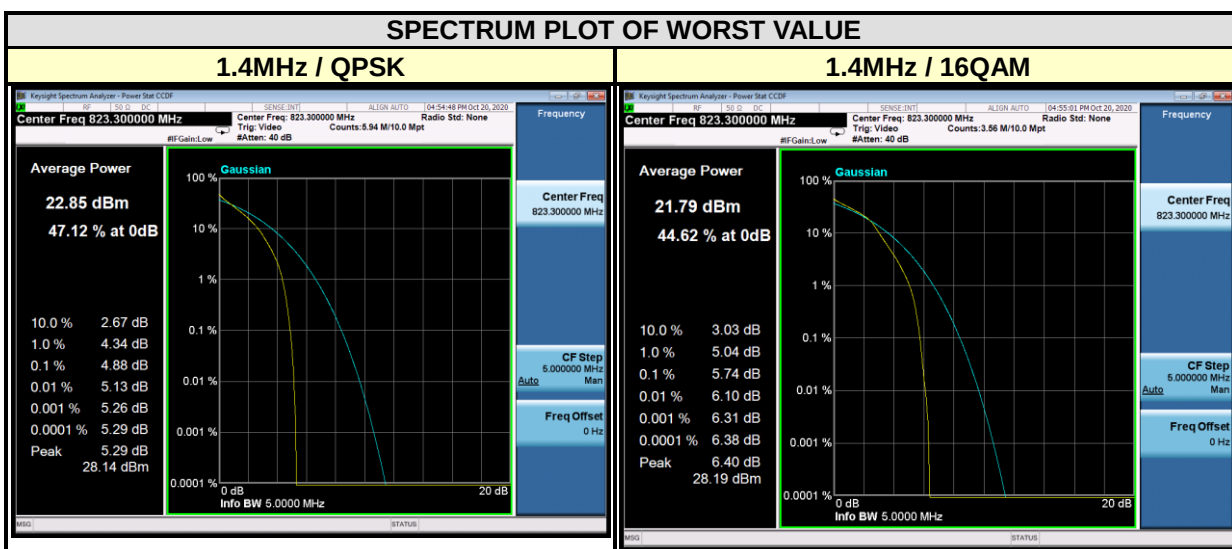
#### 3.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

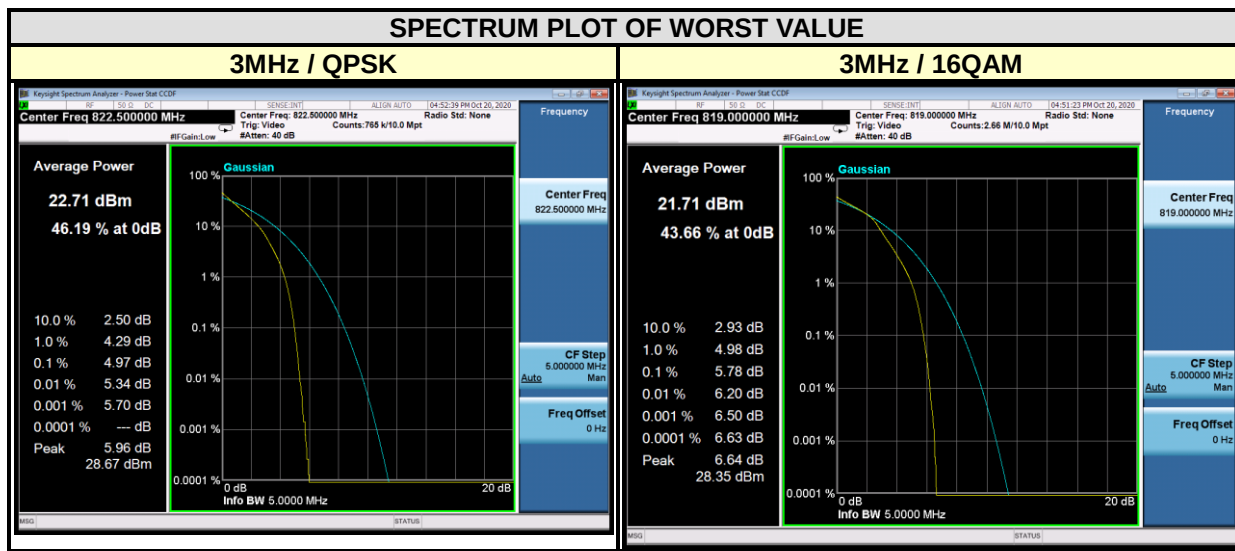
### 3.4.4 TEST RESULTS

#### LTE BAND 26

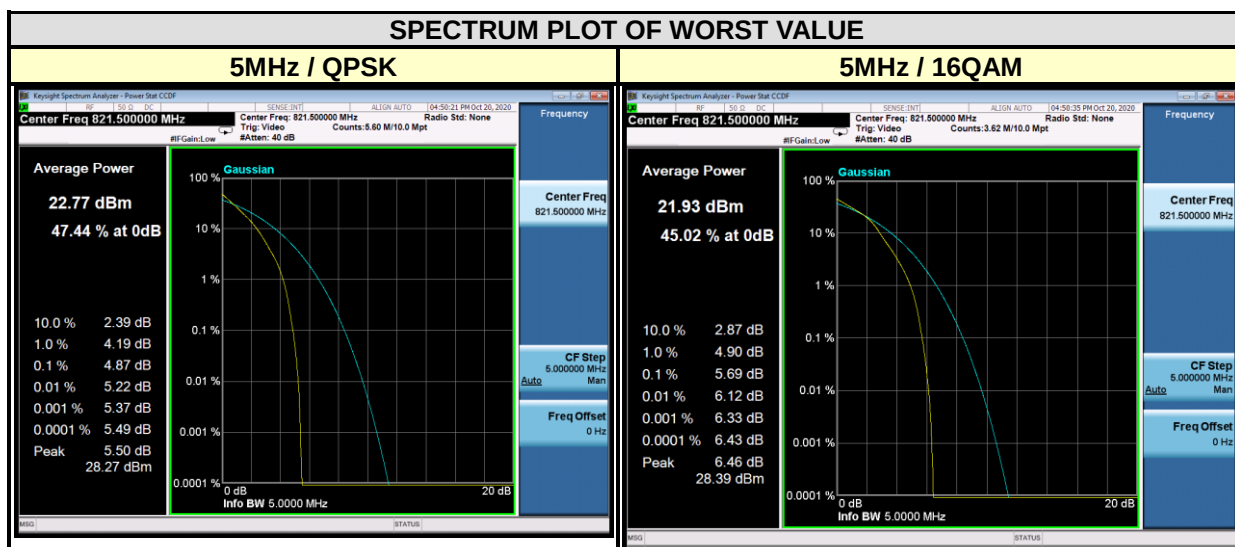
| CHANNEL BANDWIDTH: 1.4MHz |                    |                            |       |
|---------------------------|--------------------|----------------------------|-------|
| CHANNEL                   | FREQUENCY<br>(MHz) | PEAK TO AVERAGE RATIO (dB) |       |
|                           |                    | QPSK                       | 16QAM |
| 26697                     | 814.7              | 4.62                       | 5.61  |
| 26740                     | 819                | 4.83                       | 5.66  |
| 26783                     | 823.3              | 4.88                       | 5.74  |



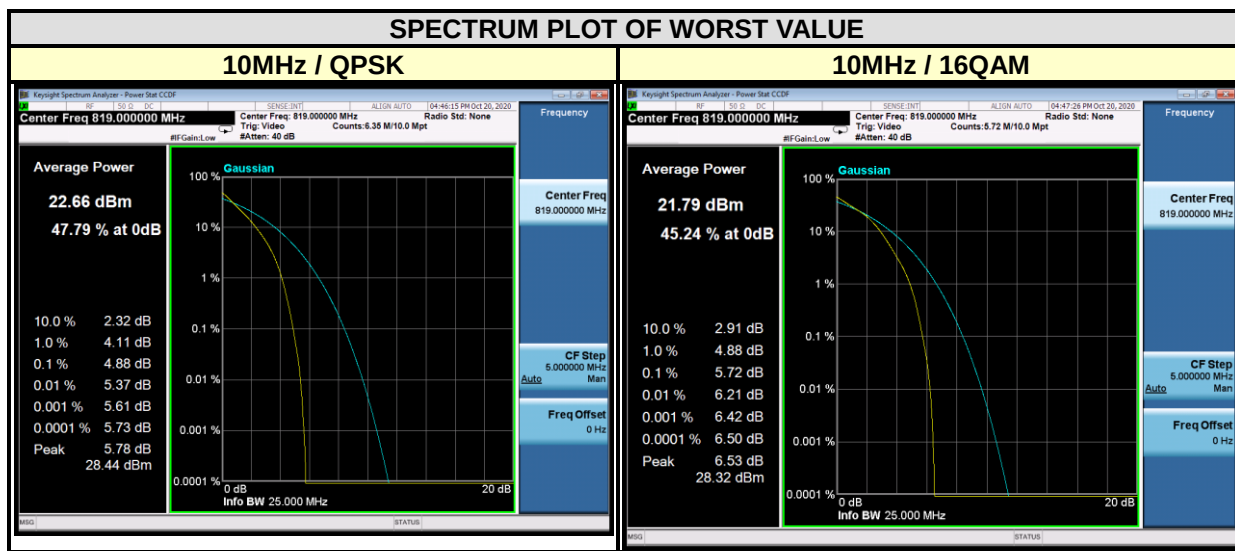
| CHANNEL BANDWIDTH: 3MHz |                    |                            |       |
|-------------------------|--------------------|----------------------------|-------|
| CHANNEL                 | FREQUENCY<br>(MHz) | PEAK TO AVERAGE RATIO (dB) |       |
|                         |                    | QPSK                       | 16QAM |
| 26705                   | 815.5              | 4.81                       | 5.68  |
| 26740                   | 819                | 4.92                       | 5.78  |
| 26775                   | 822.5              | 4.97                       | 5.77  |



| CHANNEL BANDWIDTH: 5MHz |                    |                            |       |
|-------------------------|--------------------|----------------------------|-------|
| CHANNEL                 | FREQUENCY<br>(MHz) | PEAK TO AVERAGE RATIO (dB) |       |
|                         |                    | QPSK                       | 16QAM |
| 26715                   | 816.5              | 4.80                       | 5.65  |
| 26740                   | 819                | 4.83                       | 5.65  |
| 26765                   | 821.5              | 4.87                       | 5.69  |



| CHANNEL BANDWIDTH: 10MHz |                    |                            |       |
|--------------------------|--------------------|----------------------------|-------|
| CHANNEL                  | FREQUENCY<br>(MHz) | PEAK TO AVERAGE RATIO (dB) |       |
|                          |                    | QPSK                       | 16QAM |
| -                        | -                  | -                          | -     |
| 26740                    | 819                | 4.88                       | 5.72  |
| -                        | -                  | -                          | -     |



### 3.5 EMISSION MASK MEASUREMENT

#### 3.5.1 LIMITS OF EMISSION MASK MEASUREMENT

According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

FCC part 90.543e as below:

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

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations.

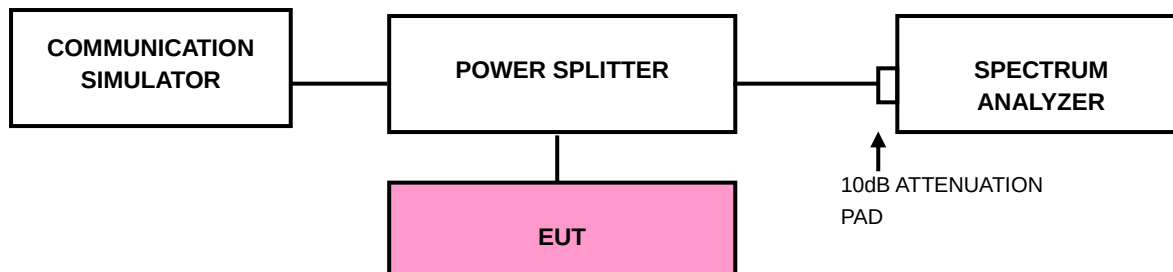
(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations.

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

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

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

### 3.5.2 TEST SETUP

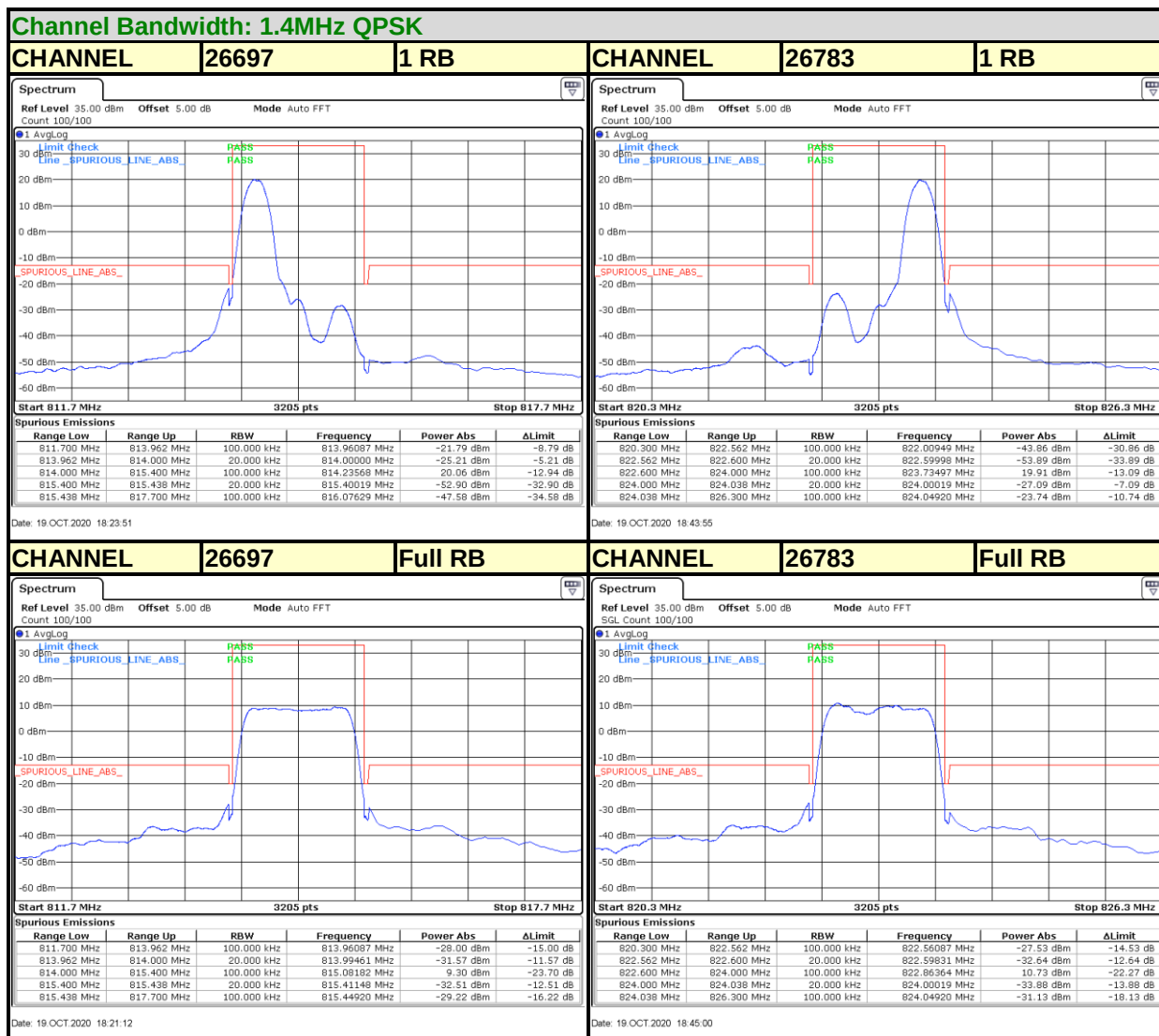


### 3.5.3 TEST PROCEDURES

- The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- Record the max trace plot into the test report.

### 3.5.4 TEST RESULTS

#### LTE BAND 26

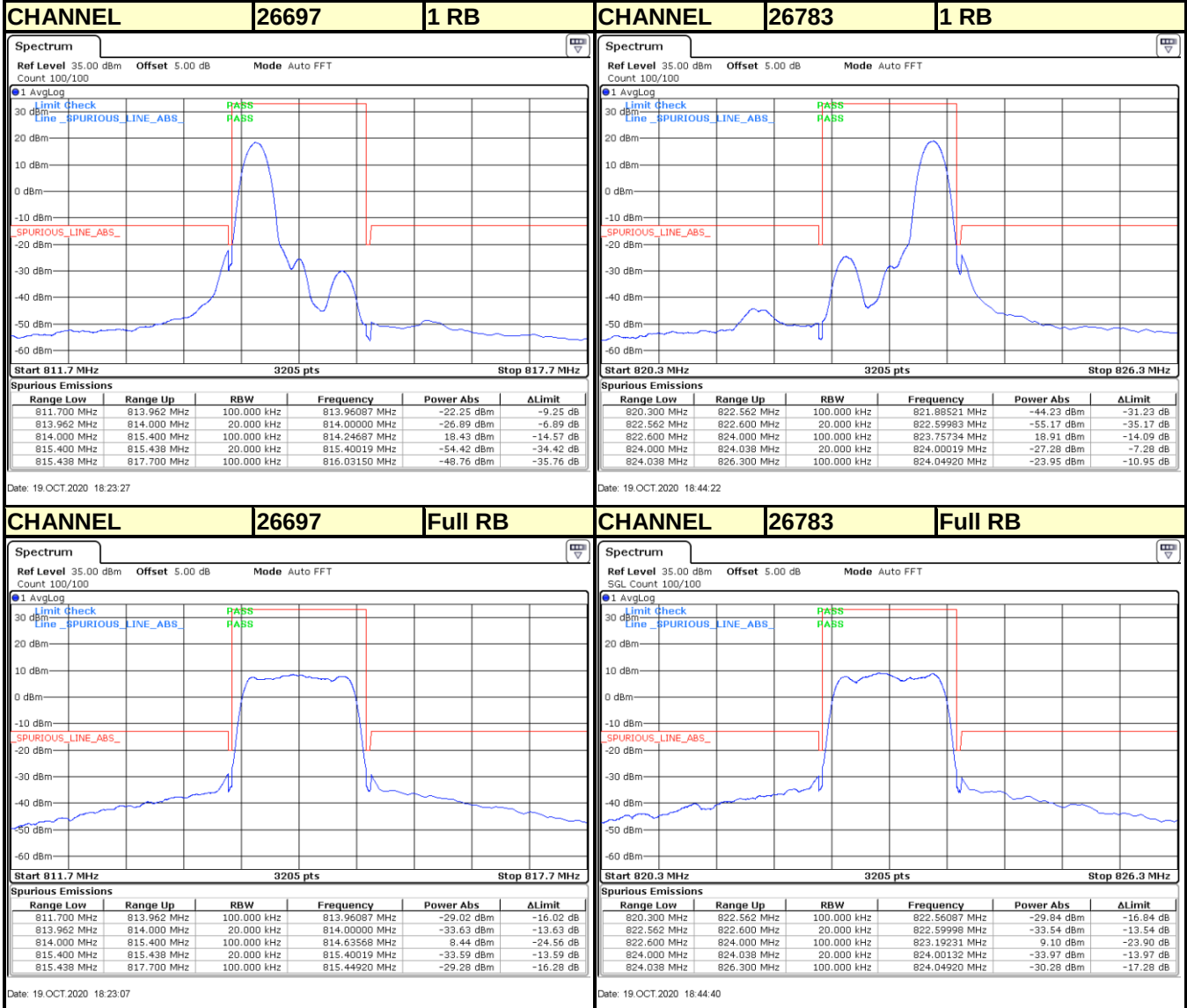




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

Channel Bandwidth: 1.4MHz 16QAM

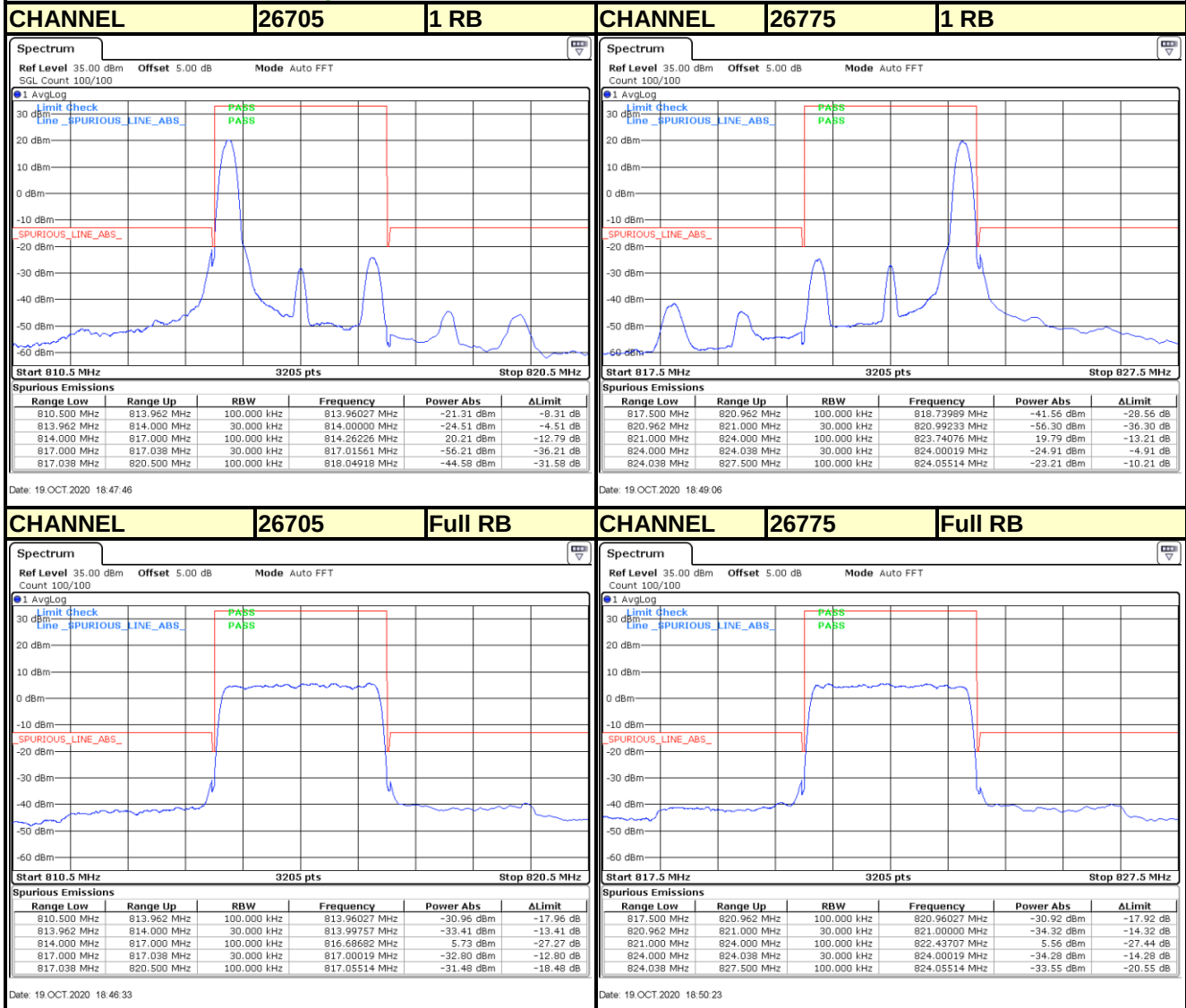




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

### Channel Bandwidth: 3MHz QPSK

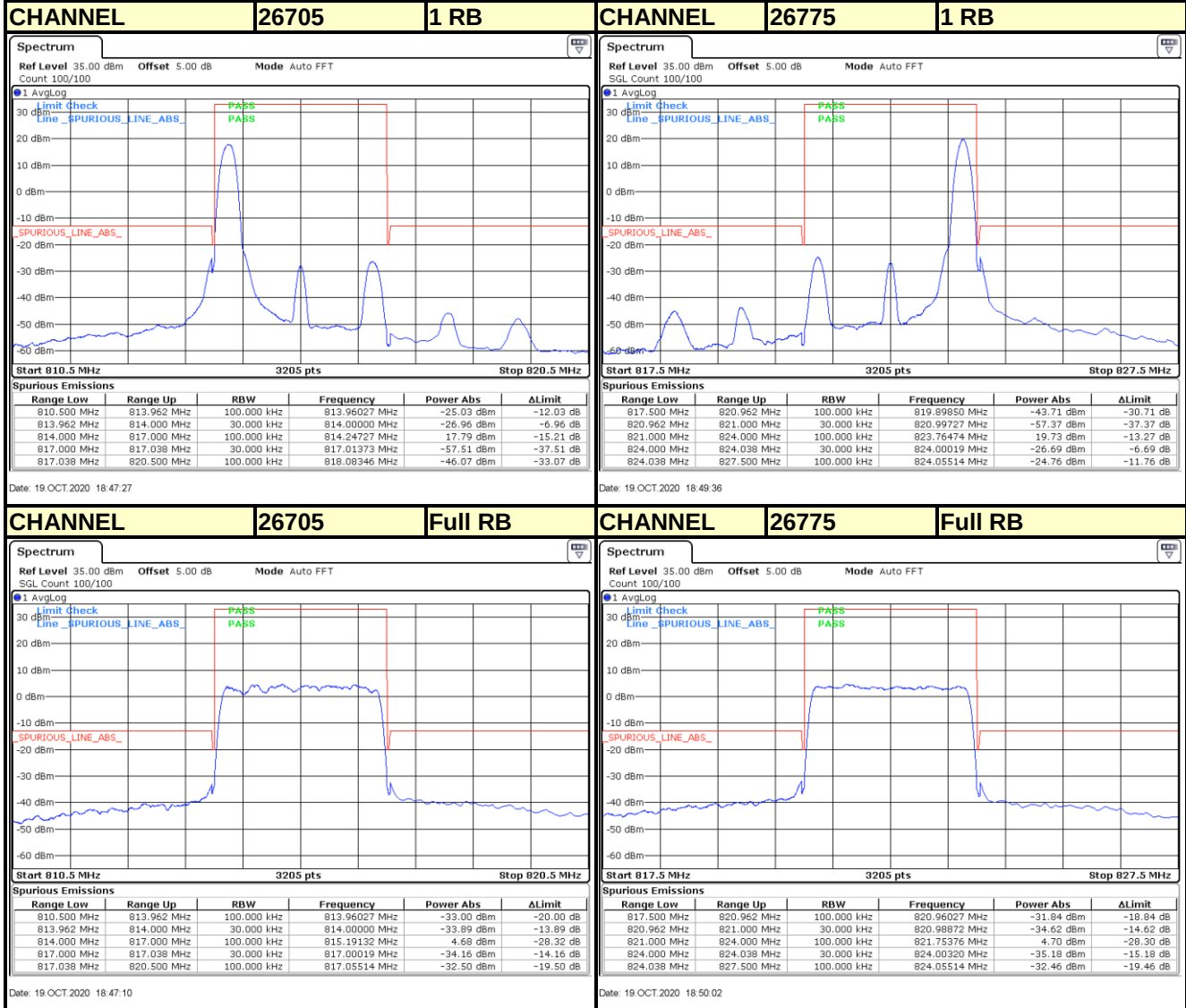




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

### Channel Bandwidth: 3MHz 16QAM

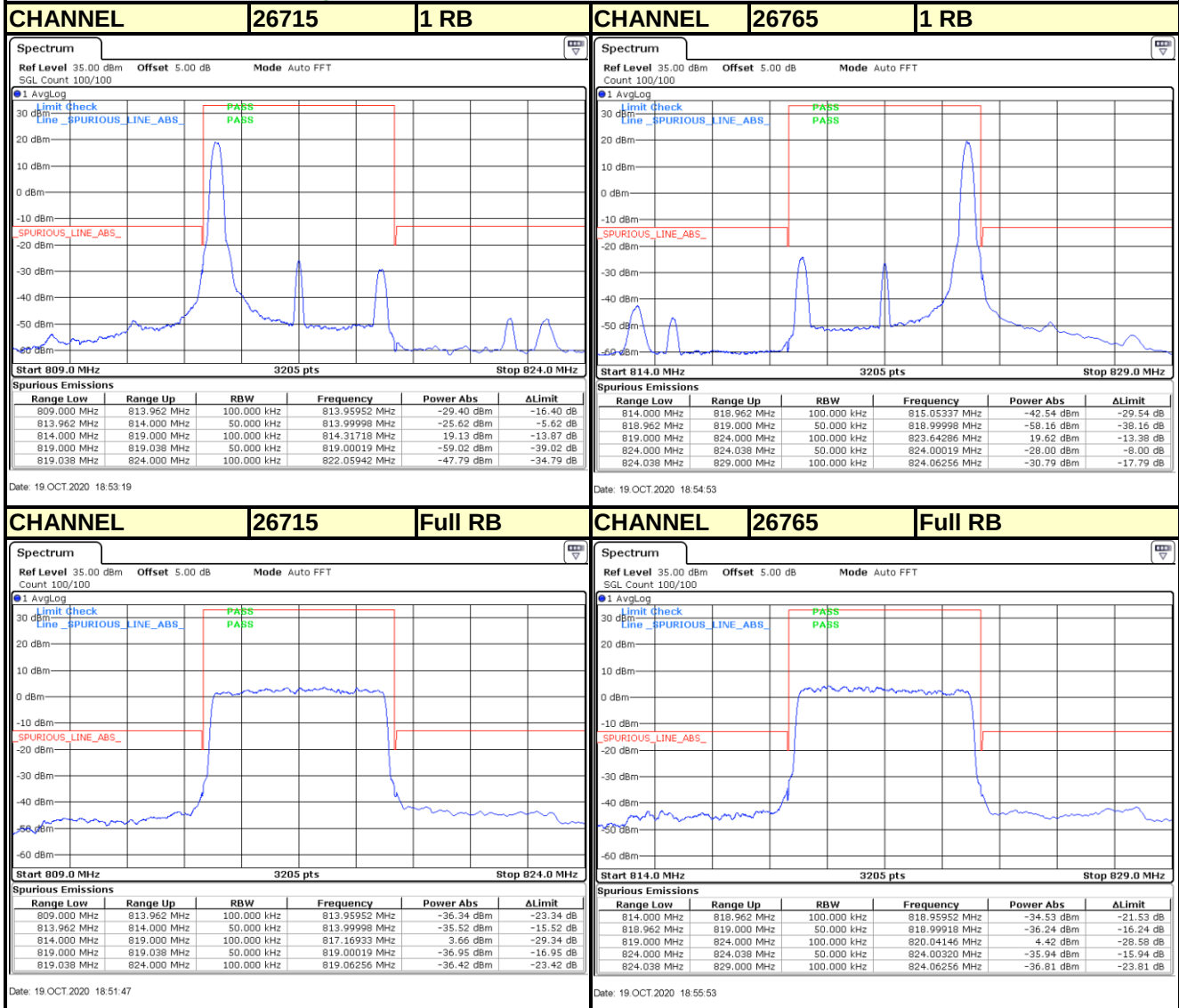




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

### Channel Bandwidth: 5MHz QPSK

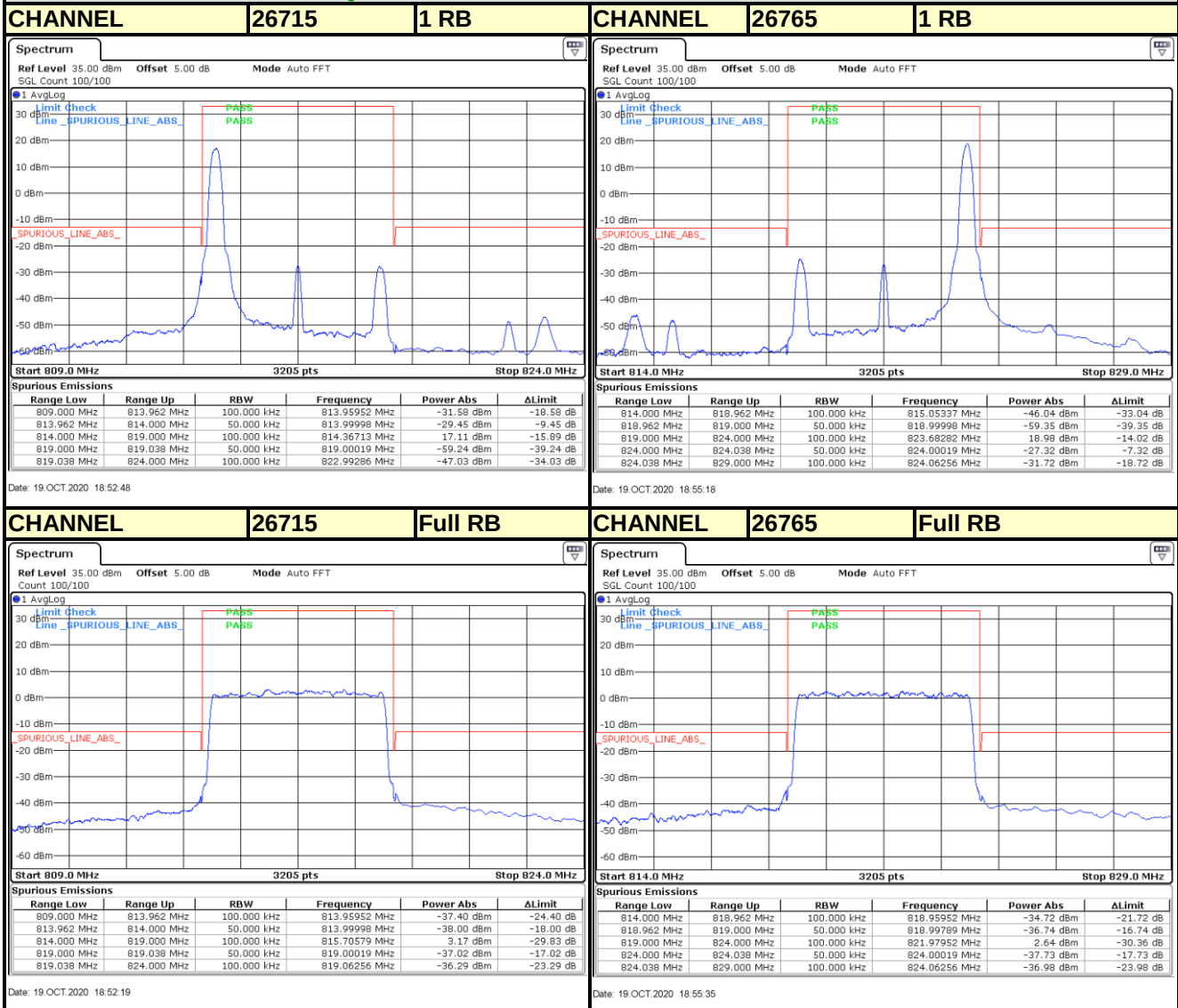




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

Channel Bandwidth: 5MHz 16QAM

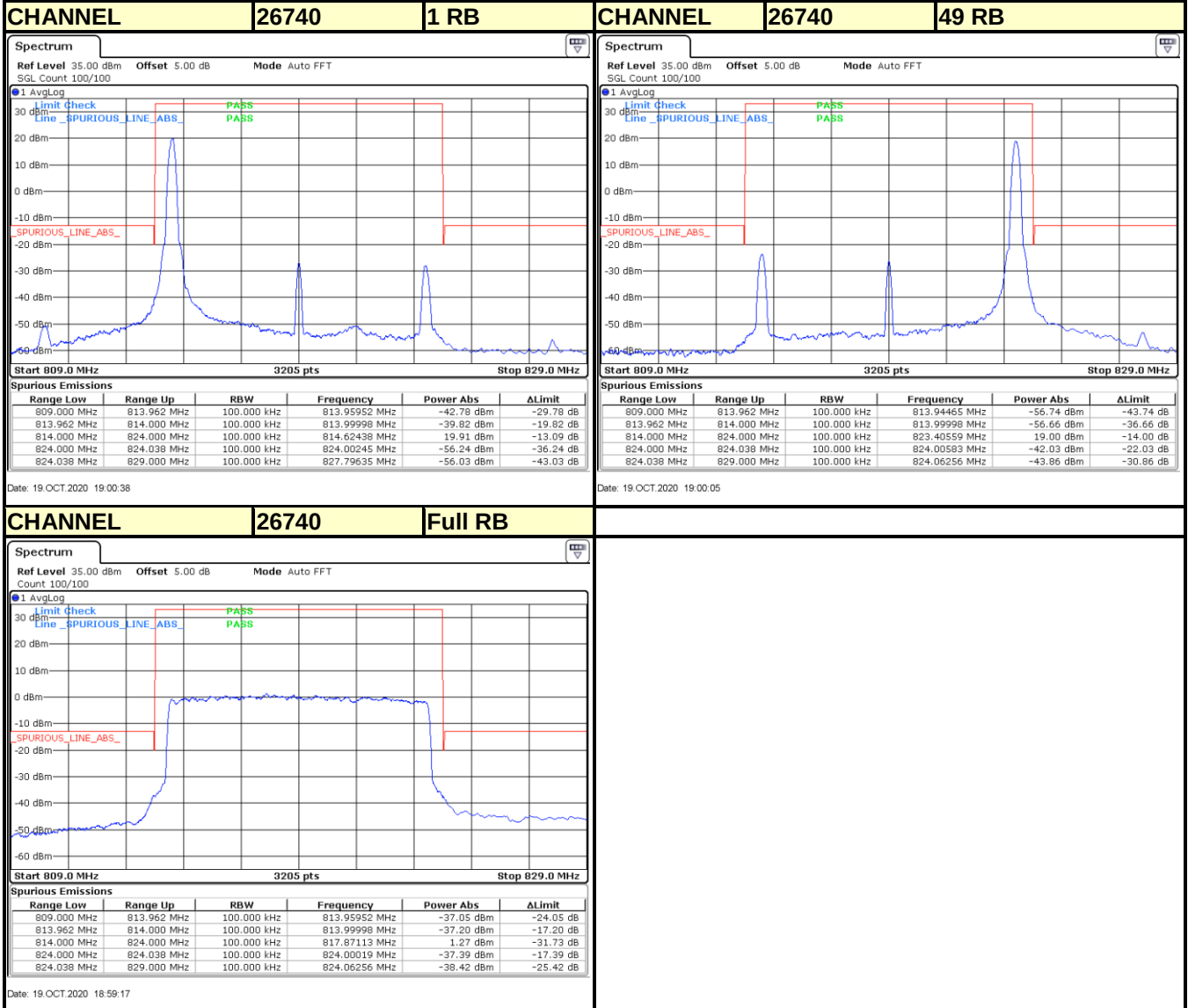




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

### Channel Bandwidth: 10MHz QPSK

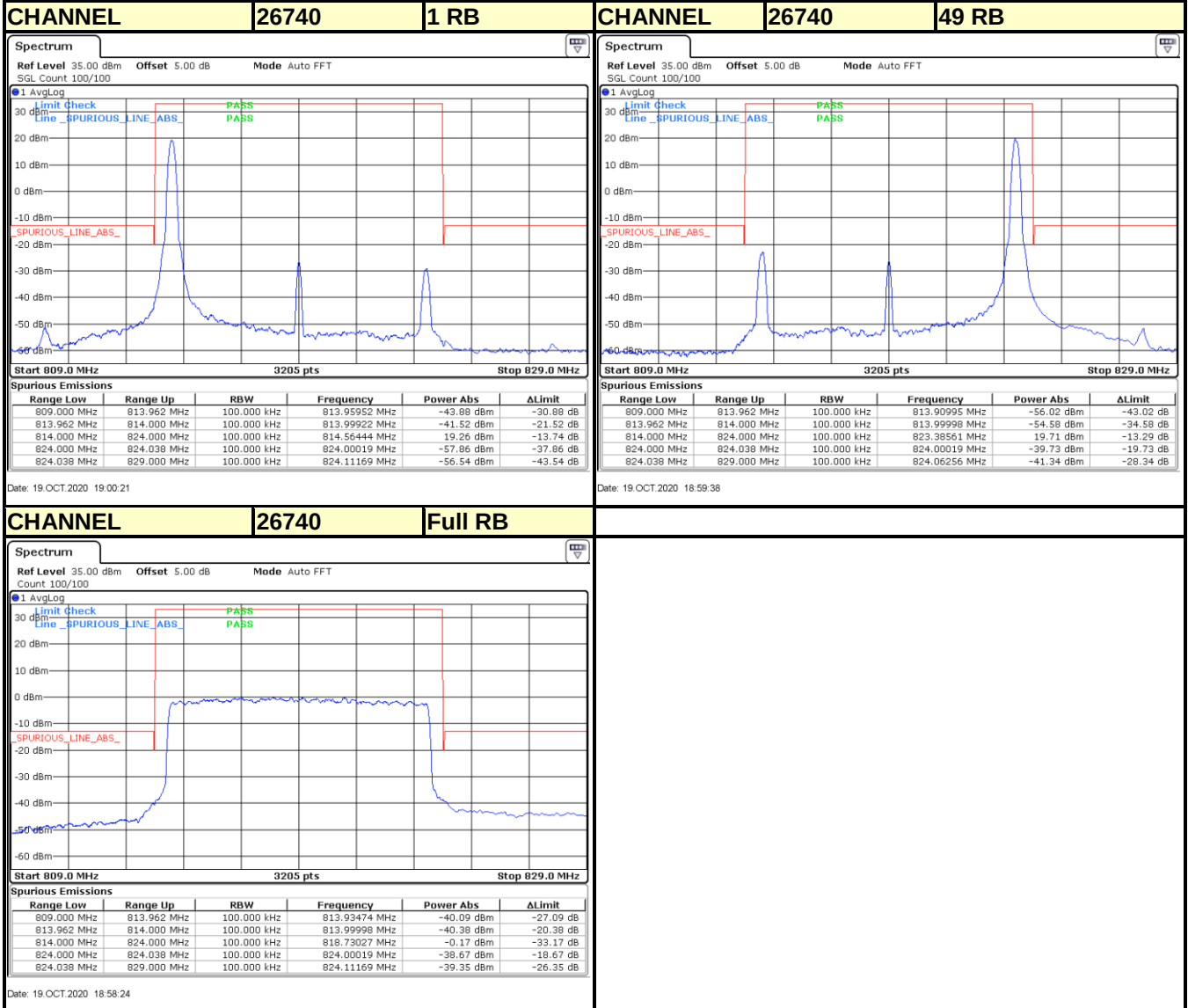




BUREAU  
VERITAS

Test Report No.: RF200918W001-7

Channel Bandwidth: 10MHz 16QAM



### 3.6 CONDUCTED SPURIOUS EMISSIONS

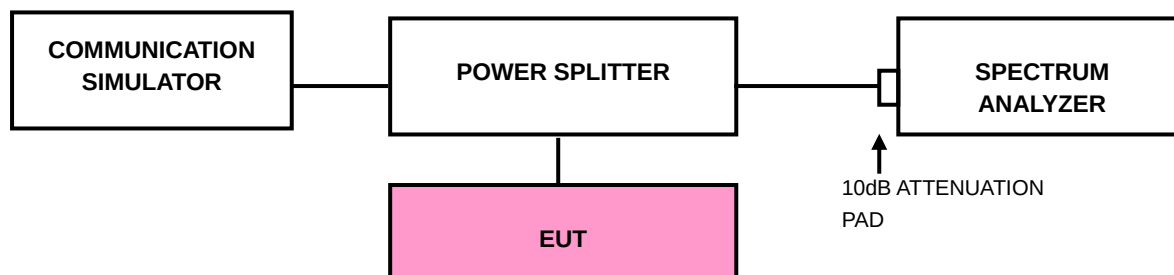
#### 3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

#### 3.6.2 TEST PROCEDURE

- The EUT makes a phone call to the communication simulator. All measurements were done at middle operational frequency range.
- Measuring frequency range is from 30 MHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

#### 3.6.3 TEST SETUP



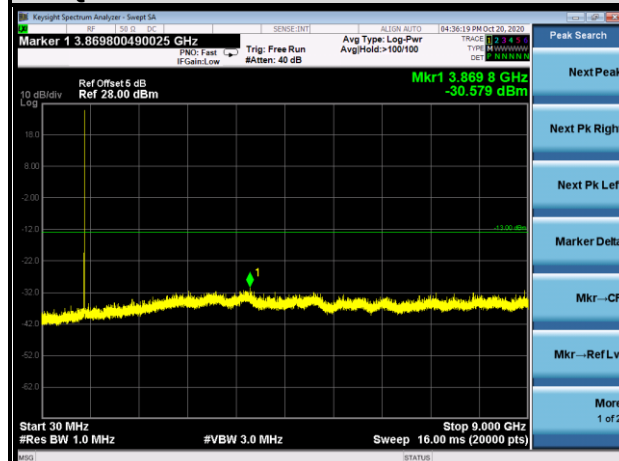
### 3.6.4 TEST RESULTS

#### LTE BAND 26

##### 1.4MHz / QPSK

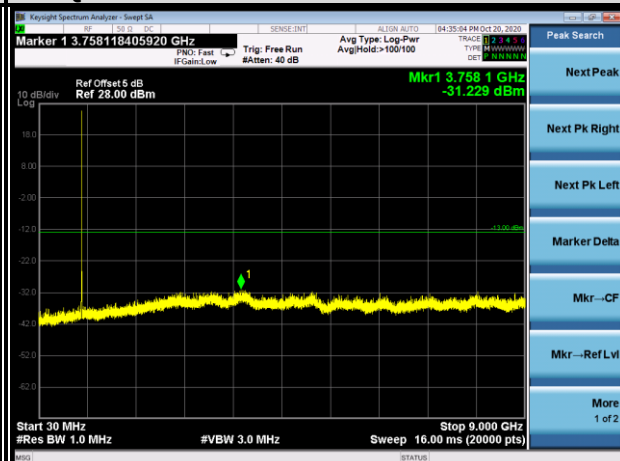
##### CHANNEL 26697

FREQUENCY RANGE : 30MHz~9.0GHz



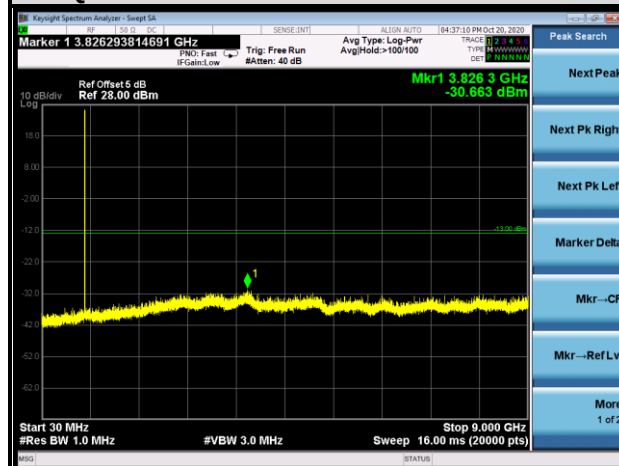
##### CHANNEL 26740

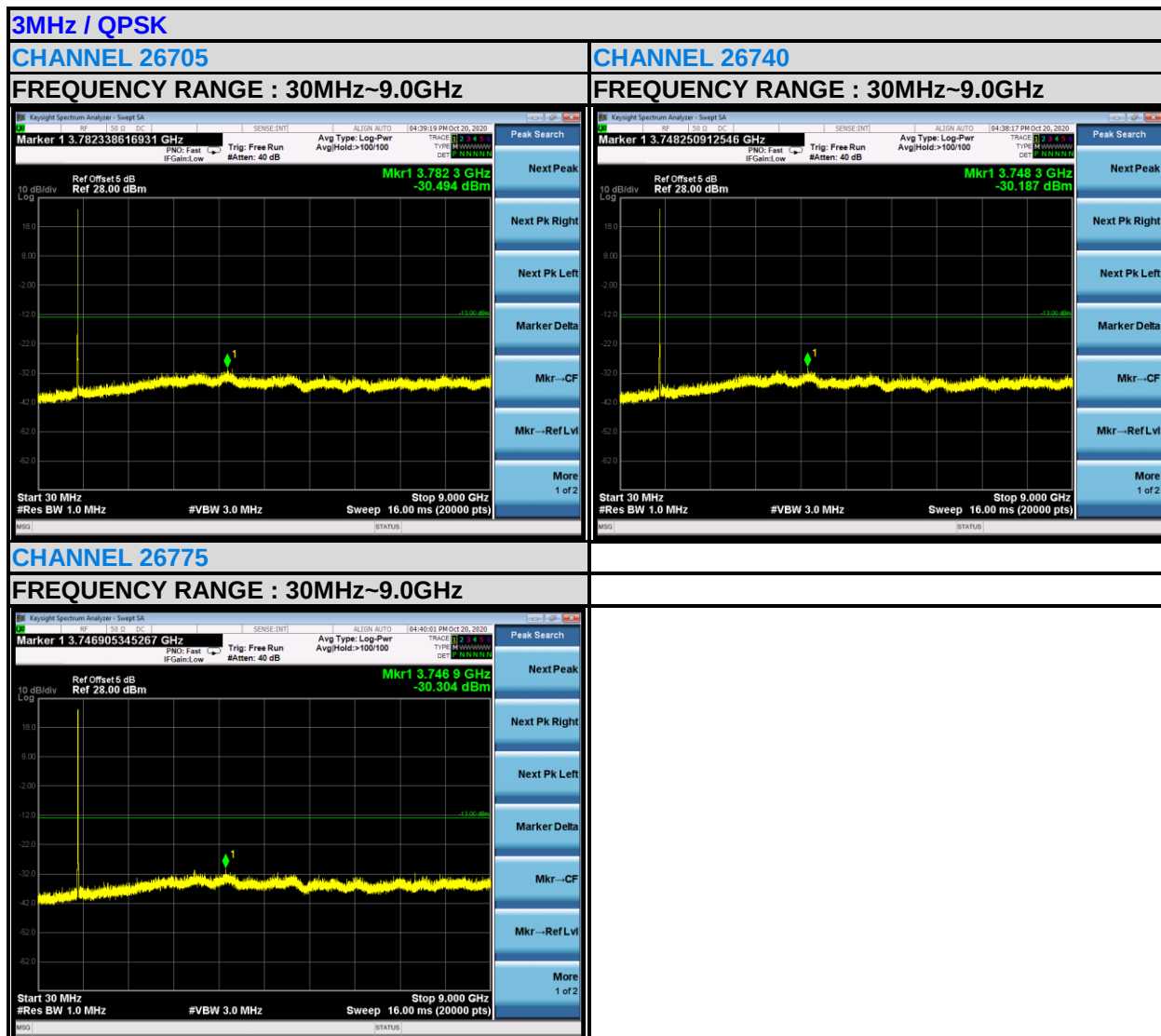
FREQUENCY RANGE : 30MHz~9.0GHz

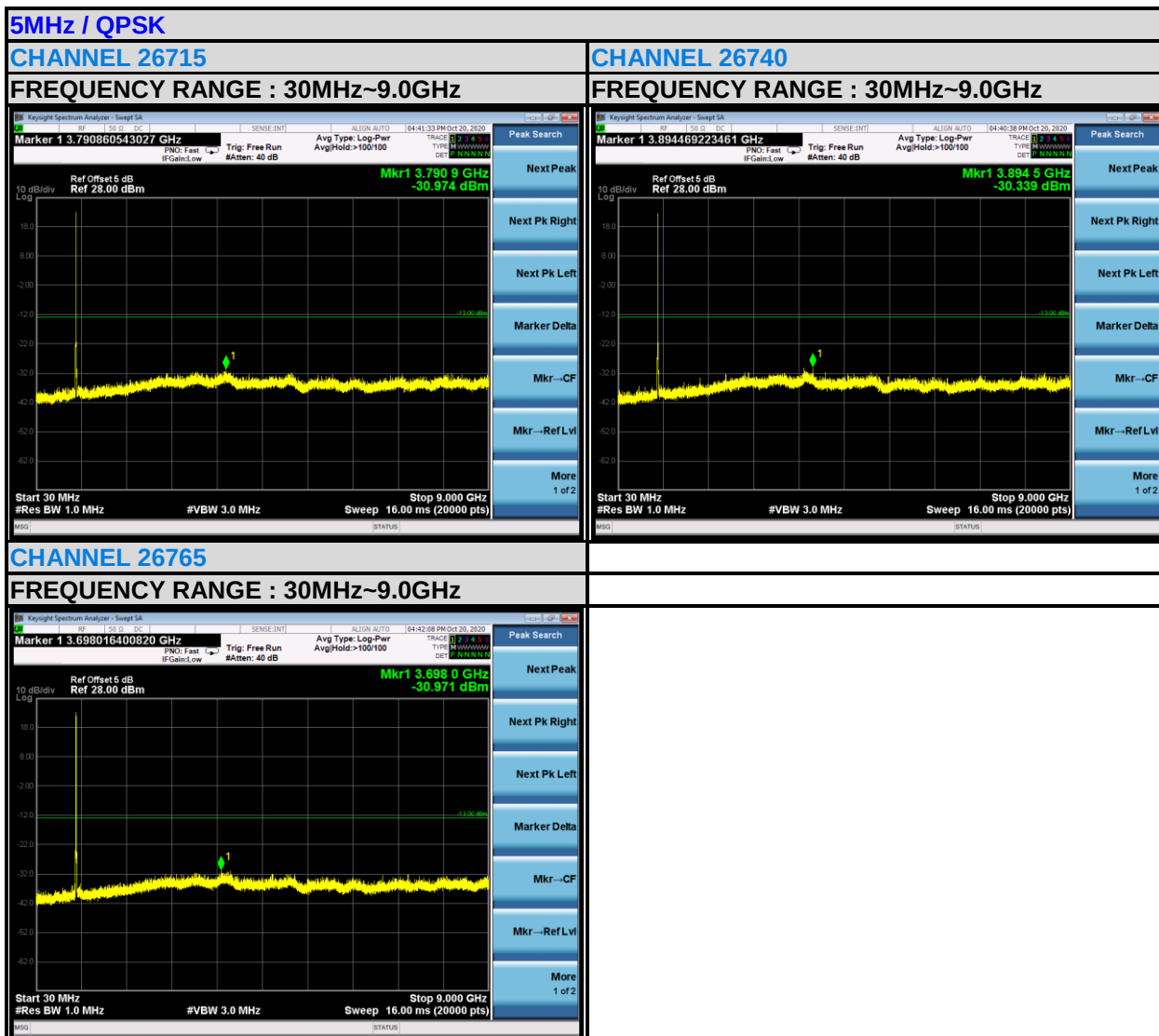


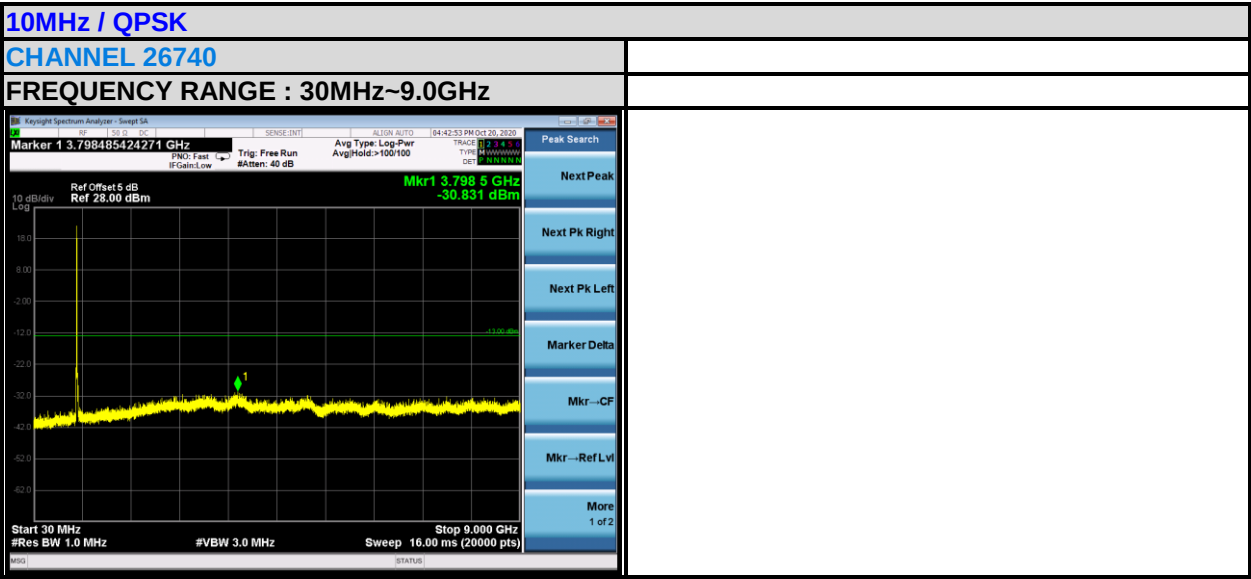
##### CHANNEL 26783

FREQUENCY RANGE : 30MHz~9.0GHz









### 3.7 RADIATED EMISSION MEASUREMENT

#### 3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to  $-70\text{ dBW/MHz}$  equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80\text{ dBW}$  EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

#### 3.7.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}.$

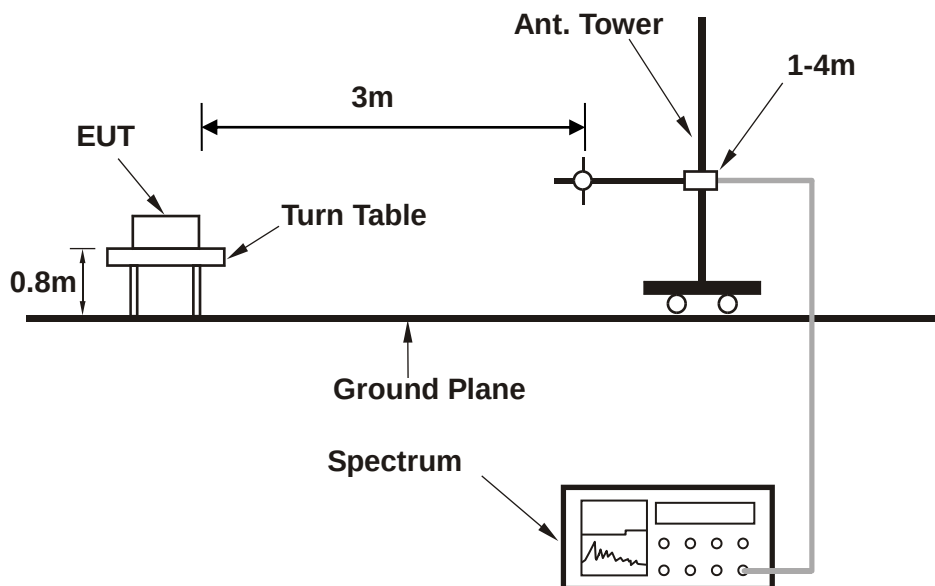
**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

#### 3.7.3 DEVIATION FROM TEST STANDARD

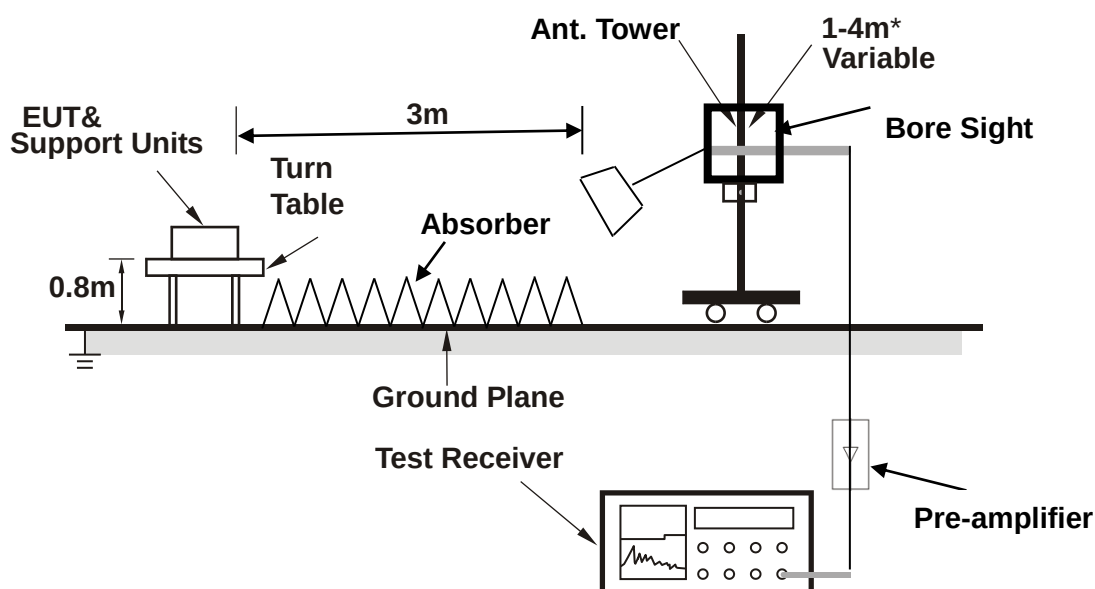
No deviation

### 3.7.4 TEST SETUP

#### < Frequency Range 30MHz~1GHz >



#### <Frequency Range above 1GHz>



**Note:** Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 3.7.5 TEST RESULTS

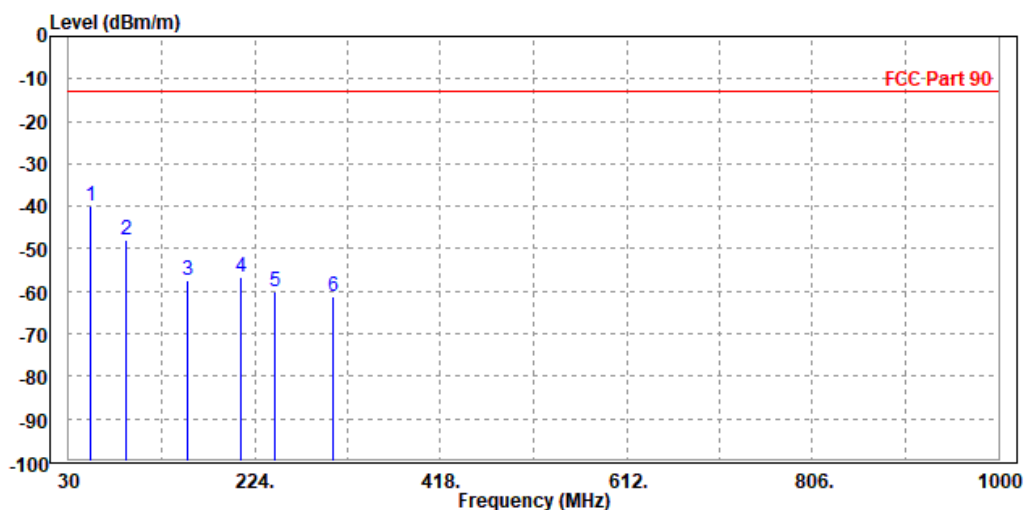
#### BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:  
LTE BAND 26

CHANNEL BANDWIDTH: 10MHz / QPSK

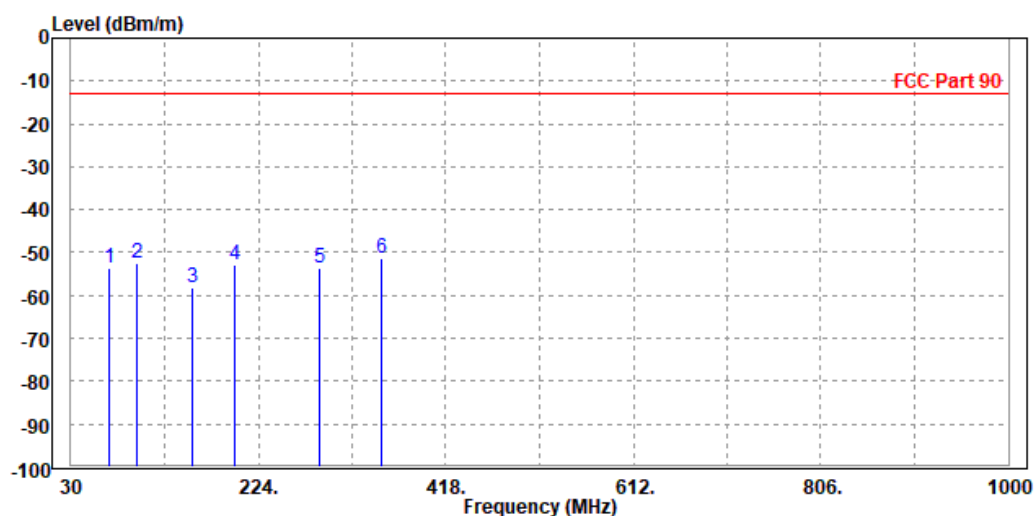
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26740 | FREQUENCY RANGE | Below 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|      | Freq    | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|------|---------|--------|------------|------------|------------|--------|--------|------------|
|      | MHz     | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1 PP | 52.330  | -39.85 | -40.57     | -13.00     | -26.85     | 0.72   | Peak   | Horizontal |
| 2    | 89.740  | -47.98 | -38.97     | -13.00     | -34.98     | -9.01  | Peak   | Horizontal |
| 3    | 154.380 | -57.25 | -38.41     | -13.00     | -44.25     | -18.84 | Peak   | Horizontal |
| 4    | 208.920 | -56.84 | -39.78     | -13.00     | -43.84     | -17.06 | Peak   | Horizontal |
| 5    | 245.310 | -60.24 | -43.87     | -13.00     | -47.24     | -16.37 | Peak   | Horizontal |
| 6    | 306.550 | -61.27 | -47.68     | -13.00     | -48.27     | -13.59 | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26740 | FREQUENCY RANGE | Below 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

|      | Freq    | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|------|---------|--------|------------|------------|------------|--------|--------|-----------|
|      | MHz     | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |           |
| 1    | 69.130  | -53.44 | -38.14     | -13.00     | -40.44     | -15.30 | Peak   | Vertical  |
| 2    | 98.290  | -52.64 | -41.99     | -13.00     | -39.64     | -10.65 | Peak   | Vertical  |
| 3    | 156.220 | -58.27 | -42.73     | -13.00     | -45.27     | -15.54 | Peak   | Vertical  |
| 4    | 198.990 | -52.87 | -42.11     | -13.00     | -39.87     | -10.76 | Peak   | Vertical  |
| 5    | 288.100 | -53.54 | -42.19     | -13.00     | -40.54     | -11.35 | Peak   | Vertical  |
| 6 PP | 351.000 | -51.24 | -40.13     | -13.00     | -38.24     | -11.11 | Peak   | Vertical  |



### ABOVE 1GHz

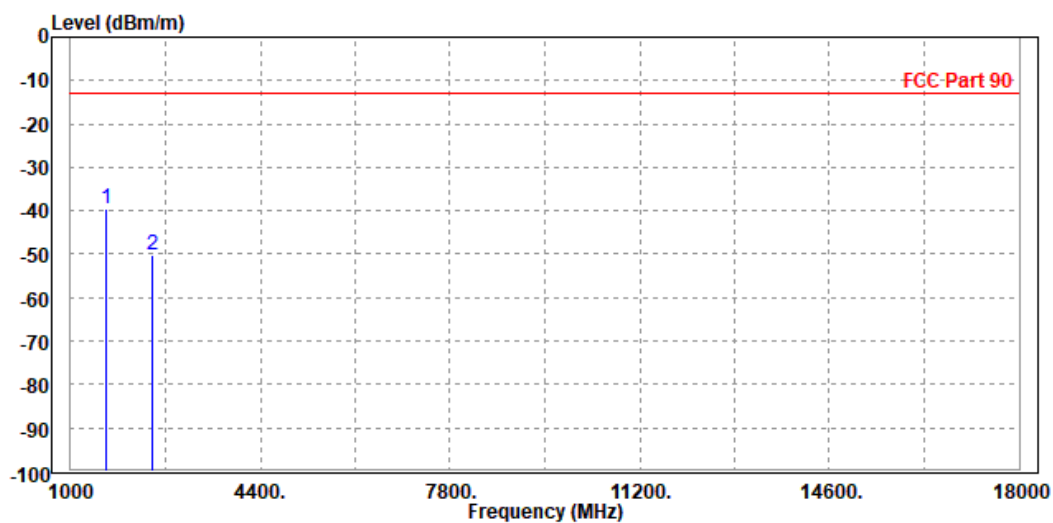
**Note:** For higher frequency, the emission is too low to be detected.

### LTE BAND 26

### CHANNEL BANDWIDTH: 1.4MHz / QPSK

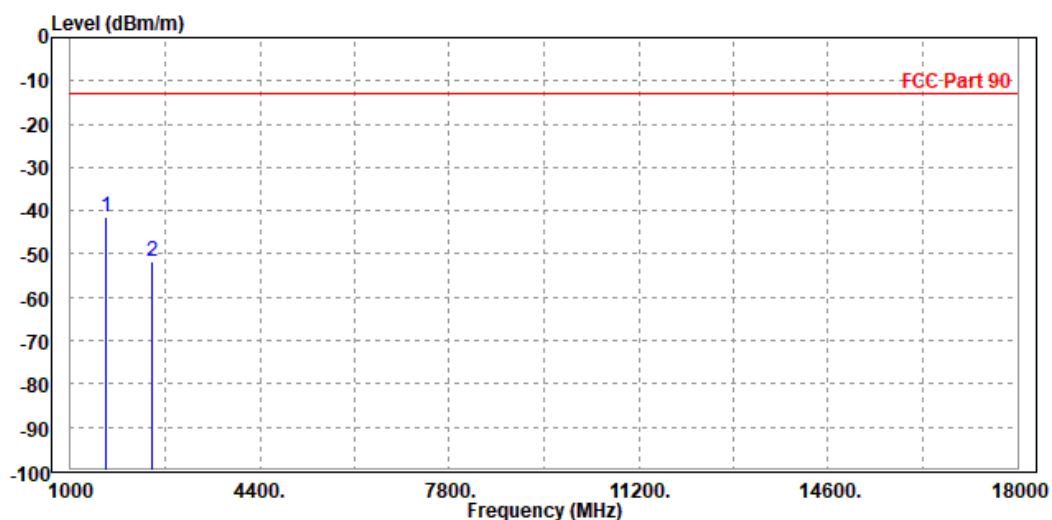
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|   |    | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|---|----|----------|--------|------------|------------|------------|--------|--------|------------|
|   |    | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1 | PP | 1646.000 | -39.37 | -42.60     | -13.00     | -26.37     | 3.23   | Peak   | Horizontal |
| 2 |    | 2457.000 | -50.11 | -58.12     | -13.00     | -37.11     | 8.01   | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

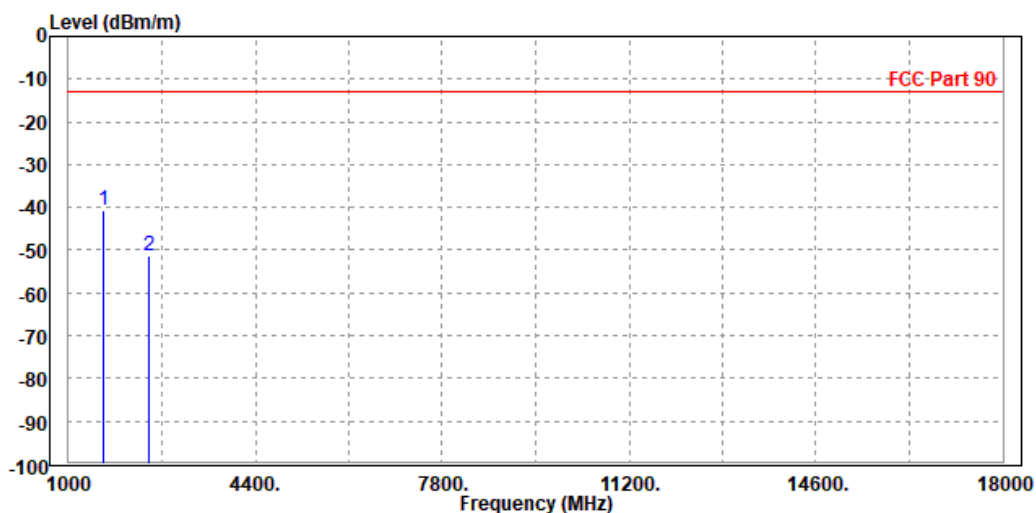
|   |    | Freq     | Level  | Read<br>Level | Limit<br>Line | Over<br>Limit | Factor | Remark | Pol/Phase |
|---|----|----------|--------|---------------|---------------|---------------|--------|--------|-----------|
|   |    | MHz      | dBm/m  | dBm           | dBm/m         | dB            | dB/m   |        |           |
| 1 | PP | 1646.000 | -41.50 | -44.86        | -13.00        | -28.50        | 3.36   | Peak   | Vertical  |
| 2 |    | 2457.000 | -51.72 | -58.74        | -13.00        | -38.72        | 7.02   | Peak   | Vertical  |



**CHANNEL BANDWIDTH: 3MHz / QPSK**

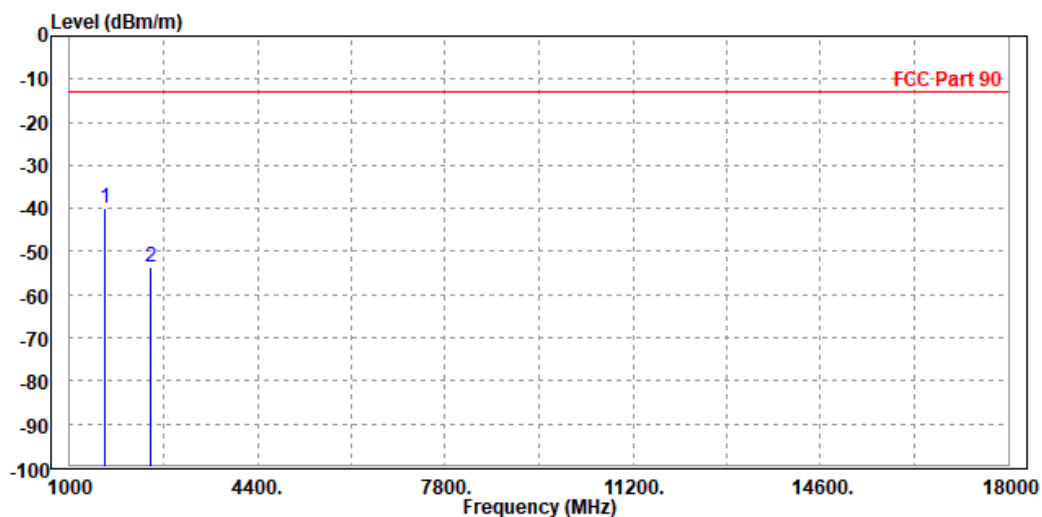
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|      | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|------|----------|--------|------------|------------|------------|--------|--------|------------|
|      | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1 PP | 1646.000 | -40.86 | -44.09     | -13.00     | -27.86     | 3.23   | Peak   | Horizontal |
| 2    | 2457.000 | -51.21 | -59.22     | -13.00     | -38.21     | 8.01   | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

|   | Freq        | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|-------------|--------|------------|------------|------------|--------|--------|-----------|
|   | MHz         | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |           |
| 1 | PP 1646.000 | -39.84 | -43.20     | -13.00     | -26.84     | 3.36   | Peak   | Vertical  |
| 2 | 2457.000    | -53.59 | -60.61     | -13.00     | -40.59     | 7.02   | Peak   | Vertical  |

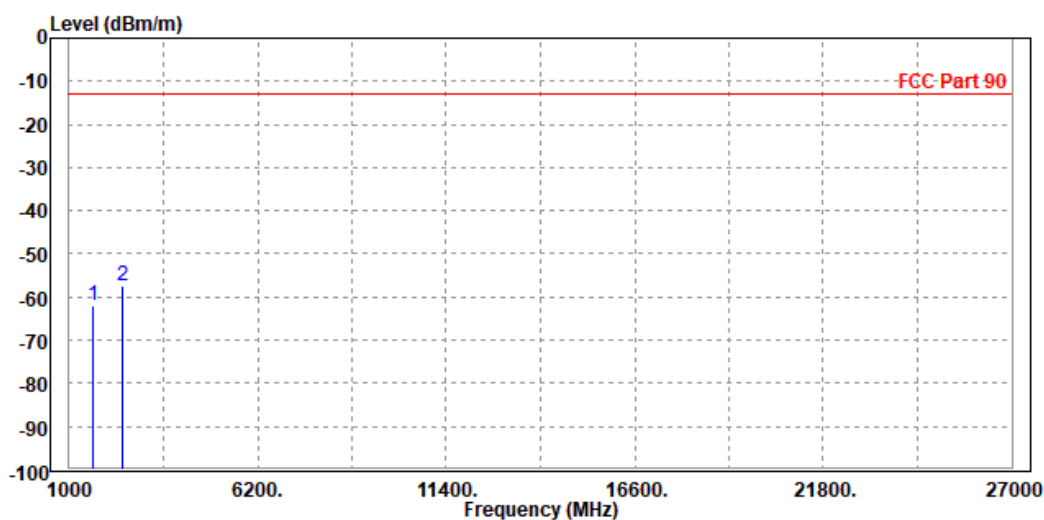


CHANNEL BANDWIDTH: 5MHz / QPSK

CH 26715

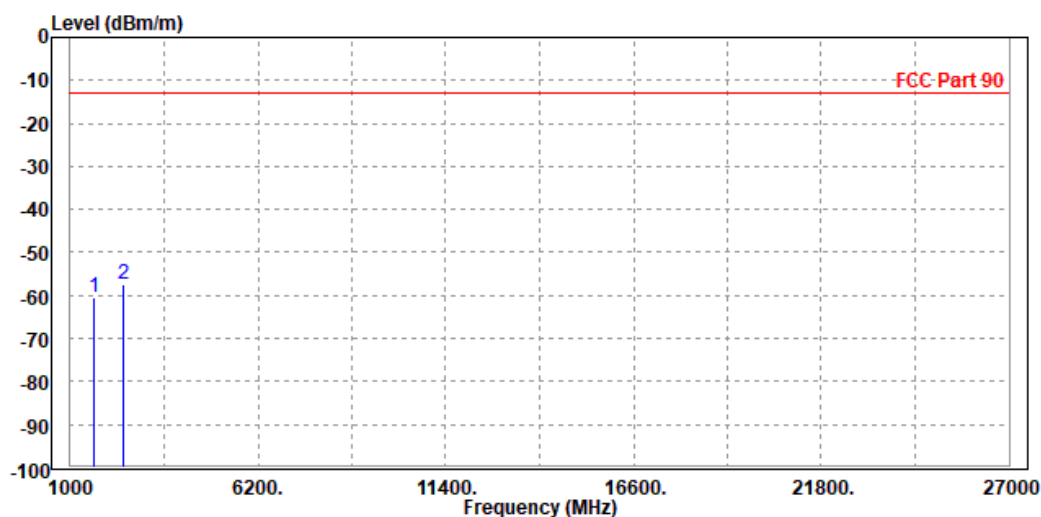
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26715 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|   | Freq        | Level  | Read Level | Limit  | Over Limit | Factor | Remark | Pol/Phase  |
|---|-------------|--------|------------|--------|------------|--------|--------|------------|
|   | MHz         | dBm/m  | dBm        | dBm/m  | dB         | dB/m   |        |            |
| 1 | 1638.000    | -61.99 | -56.94     | -13.00 | -48.99     | -5.05  | Peak   | Horizontal |
| 2 | PP 2457.000 | -57.56 | -55.89     | -13.00 | -44.56     | -1.67  | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26715 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

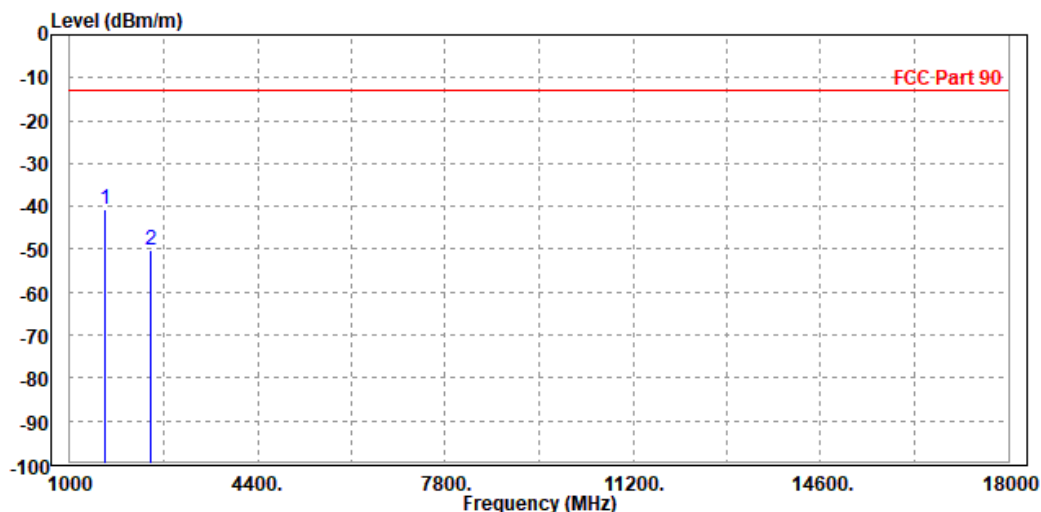
|   | Freq        | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|-------------|--------|------------|------------|------------|--------|--------|-----------|
|   | MHz         | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |           |
| 1 | 1638.000    | -60.63 | -56.99     | -13.00     | -47.63     | -3.64  | Peak   | Vertical  |
| 2 | PP 2457.000 | -57.30 | -57.12     | -13.00     | -44.30     | -0.18  | Peak   | Vertical  |



CH 26740

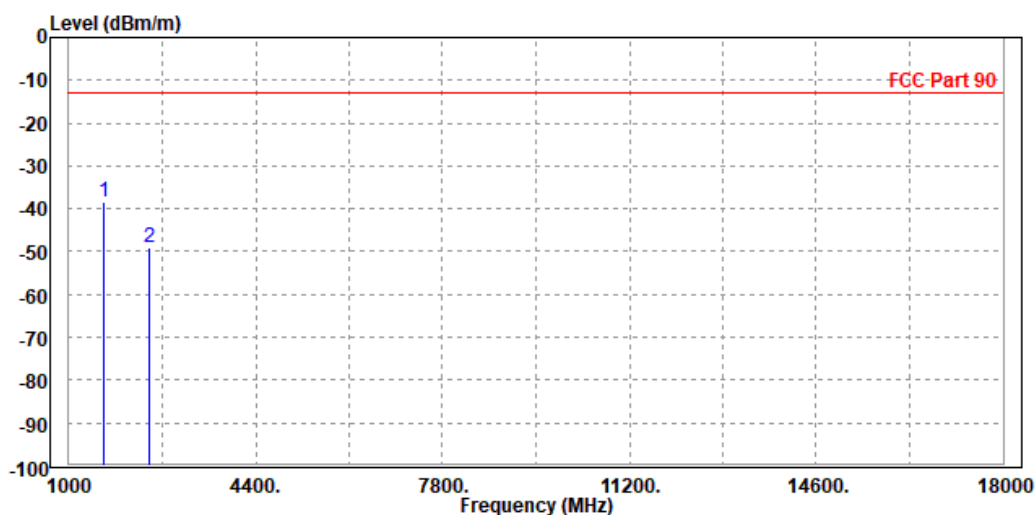
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|   |    | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|---|----|----------|--------|------------|------------|------------|--------|--------|------------|
|   |    | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1 | PP | 1646.000 | -40.69 | -43.92     | -13.00     | -27.69     | 3.23   | Peak   | Horizontal |
| 2 |    | 2457.000 | -50.18 | -58.19     | -13.00     | -37.18     | 8.01   | Peak   | Horizontal |



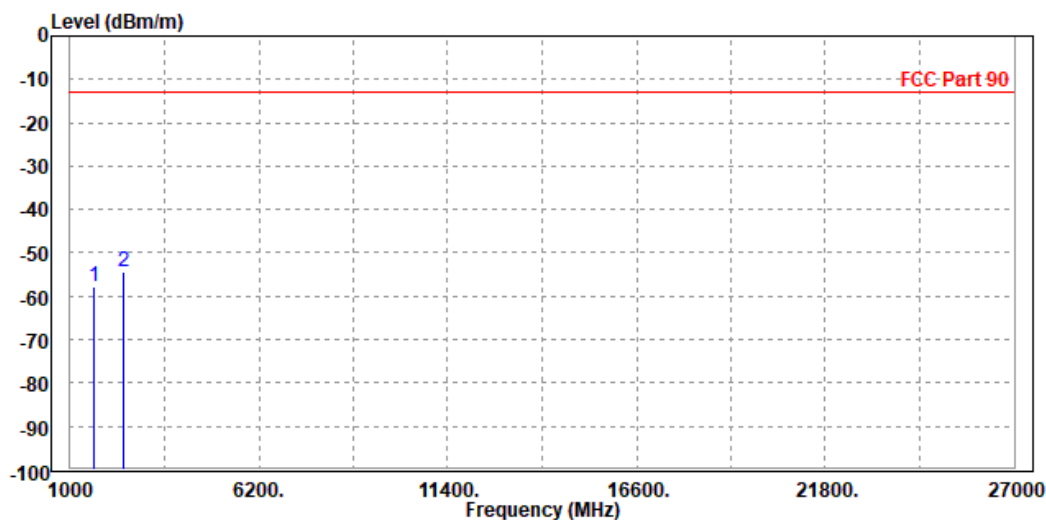
|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

|      |          |        | Read   | Limit  | Over   |        |        |           |
|------|----------|--------|--------|--------|--------|--------|--------|-----------|
|      | Freq     | Level  | Level  | Line   | Limit  | Factor | Remark | Pol/Phase |
|      | MHz      | dBm/m  | dBm    | dBm/m  | dB     | dB/m   |        |           |
| 1 PP | 1646.000 | -38.30 | -41.66 | -13.00 | -25.30 | 3.36   | Peak   | Vertical  |
| 2    | 2457.000 | -49.06 | -56.08 | -13.00 | -36.06 | 7.02   | Peak   | Vertical  |



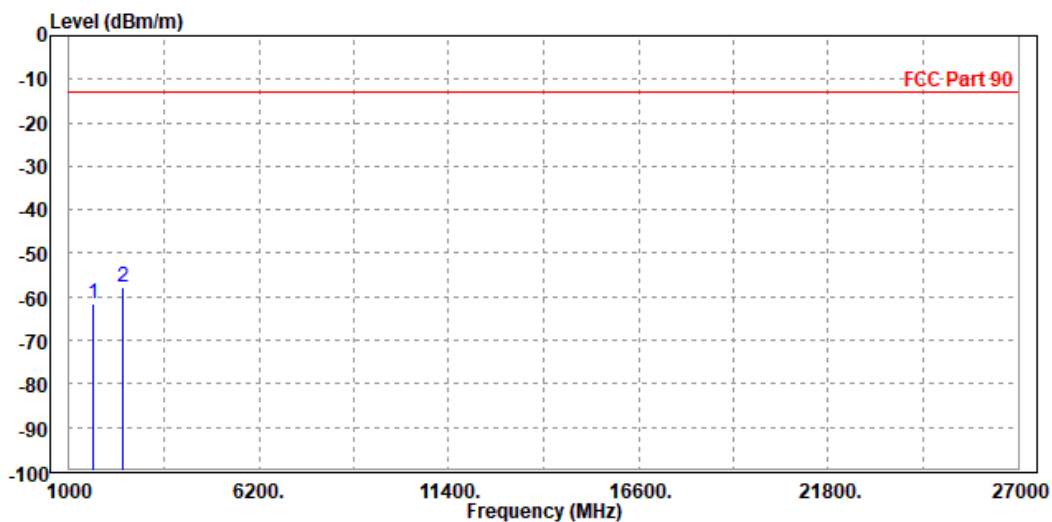
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26765 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|      | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|------|----------|--------|------------|------------|------------|--------|--------|------------|
|      | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1    | 1638.000 | -57.66 | -52.61     | -13.00     | -44.66     | -5.05  | Peak   | Horizontal |
| 2 PP | 2457.000 | -54.39 | -52.72     | -13.00     | -41.39     | -1.67  | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26765 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

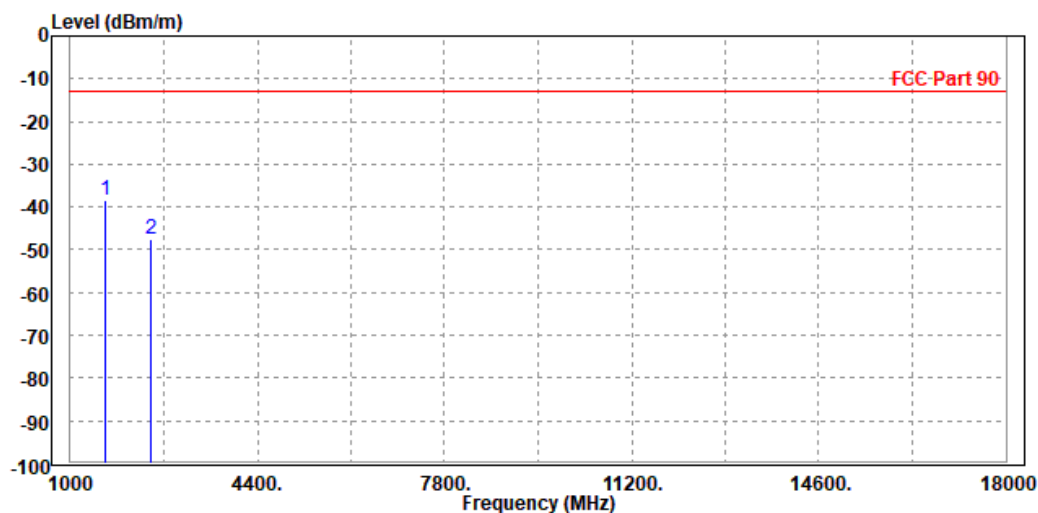
|      | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|------|----------|--------|------------|------------|------------|--------|--------|-----------|
|      | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |           |
| 1    | 1638.000 | -61.77 | -58.13     | -13.00     | -48.77     | -3.64  | Peak   | Vertical  |
| 2 PP | 2457.000 | -57.97 | -57.79     | -13.00     | -44.97     | -0.18  | Peak   | Vertical  |



**CHANNEL BANDWIDTH: 10MHz / QPSK**

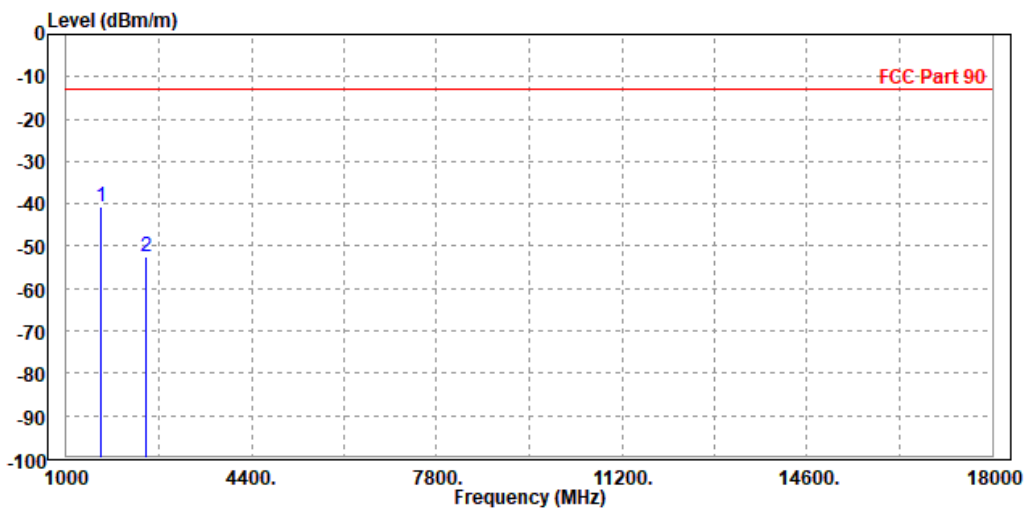
|                                                     |                  |                 |                    |
|-----------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                                | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                            | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                           | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                  |                 |                    |

|   |    | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase  |
|---|----|----------|--------|------------|------------|------------|--------|--------|------------|
|   |    | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |            |
| 1 | PP | 1646.000 | -38.29 | -41.52     | -13.00     | -25.29     | 3.23   | Peak   | Horizontal |
| 2 |    | 2457.000 | -47.54 | -55.55     | -13.00     | -34.54     | 8.01   | Peak   | Horizontal |



|                                                   |                  |                 |                    |
|---------------------------------------------------|------------------|-----------------|--------------------|
| MODE                                              | TX channel 26740 | FREQUENCY RANGE | Above 1000MHz      |
| ENVIRONMENTAL CONDITIONS                          | 23deg. C, 70%RH  | INPUT POWER     | DC 5V from adapter |
| TESTED BY                                         | Star Le          |                 |                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                  |                 |                    |

|      | Freq     | Level  | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|------|----------|--------|------------|------------|------------|--------|--------|-----------|
|      | MHz      | dBm/m  | dBm        | dBm/m      | dB         | dB/m   |        |           |
| 1 PP | 1646.000 | -40.79 | -44.15     | -13.00     | -27.79     | 3.36   | Peak   | Vertical  |
| 2    | 2457.000 | -52.54 | -59.56     | -13.00     | -39.54     | 7.02   | Peak   | Vertical  |





Test Report No.: RF200918W001-7

## 4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also.

## 5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---