# FCC RADIO TEST REPORT

| | | |
|---|---|---|
| **FCC ID** | : | **IHDT56XP1** |
| **Equipment** | : | **Mobile Cellular Phone** |
| **Brand Name** | : | **Motorola** |
| **Model Name** | : | **XT1962-1** |
| **Marketing Name** | : | **Motorola Mobility LLC**<br>**222 W,Merchandise Mart Plaza, Chicago IL 60654 USA** |
| **Applicant** | : | **Motorola Mobility LLC**<br>**222 W,Merchandise Mart Plaza, Chicago IL 60654 USA** |
| **Manufacturer** | : | **IHDT56XP1** |
| **Standard** | : | **FCC 47 CFR Part 2, and 90(S)** |

**The product was received on Sep. 08, 208 and testing was started from mm. dd, yyyy and completed on mm. dd, yyyy. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.**

**The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.**

**The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.**

**Approved by: Joseph Lin**

***SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory***
*No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)*

# Table of Contents

**History of this test report** ..... **3**
**Summary of Test Result** ..... **4**
**1 General Description** ..... **5**
1.1 Product Feature of Equipment Under Test ..... 5
1.2 Product Specification of Equipment Under Test ..... 6
1.3 Modification of EUT ..... 6
1.4 Emission Designator ..... 6
1.5 Testing Site ..... 7
1.6 Applied Standards ..... 7
**2 Test Configuration of Equipment Under Test** ..... **8**
2.1 Test Mode ..... 8
2.2 Connection Diagram of Test System ..... 9
2.3 Support Unit used in test configuration and system ..... 9
2.4 Measurement Results Explanation Example ..... 9
2.5 Frequency List of Low/Middle/High Channels ..... 10
**3 Conducted Test Items** ..... **11**
3.1 Measuring Instruments ..... 11
3.2 Conducted Output Power Measurement and ERP Measurement ..... 12
3.3 Peak-to-Average Ratio ..... 13
3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement ..... 14
3.5 Emissions Mask Measurement ..... 15
3.6 Emissions Mask – Out Of Band Emissions Measurement ..... 16
3.7 Frequency Stability Measurement ..... 17
3.8 Field Strength of Spurious Radiation Measurement ..... 18
**4 List of Measuring Equipment** ..... **20**
**5 Uncertainty of Evaluation** ..... **22**
**Appendix A. Test Results of Conducted Test**
**Appendix B. Test Results of ERP and Radiated Test**

# History of this test report

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FG890804D | 01 | Initial issue of report | Oct. 12, 2018 |
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# Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---|---|---|---|---|
| 3.2 | §2.1046<br>§90.635 | Conducted Output Power and Effective Radiated Power | Pass | - |
| 3.3 | - | Peak-to-Average Ratio | Reporting only | - |
| 3.4 | §2.1049<br>§90.209 | Occupied Bandwidth and 26dB Bandwidth | Reporting only | - |
| 3.5 | §2.1051<br>§90.691 | Emission masks – In-band emissions | Pass | - |
| 3.6 | §2.1051<br>§90.691 | Emission masks – Out of band emissions | Pass | - |
| 3.7 | §2.1055<br>§90.213 | Frequency Stability for Temperature & Voltage | Pass | - |
| 3.8 | §2.1053<br>§90.691 | Field Strength of Spurious Radiation | Pass | Under limit 34.83 dB at 2472.000 MHz |

**Reviewed by: Wii Chang**

**Report Producer: Natasha Hsieh**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

| Product Feature | |
|---|---|
| **Equipment** | Mobile Cellular Phone |
| **Brand Name** | Motorola |
| **Model Name** | XT1962-1 |
| **FCC ID** | IHDT56XP1 |
| **IMEI Code** | **Conducted :** IMEI : 355569090014213<br>**Radiation :** IMEI : 355569090016853 |
| **EUT supports Radios application** | CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/GNSS/FM<br>WLAN 11b/g/n HT20<br>WLAN 11a/n HT20/HT40<br>Bluetooth BR/EDR/LE |
| **HW Version** | DVT1-B |
| **EUT Stage** | Identical Prototype |

**Remark:** The above EUT's information was declared by manufacturer.

| Accessory List | |
|---|---|
| **AC Adapter 1** | Brand Name : Motorola |
| | Model Name : SC-51 |
| | Manufacturer : Salom |
| **AC Adapter 2** | Brand Name : Motorola |
| | Model Name : SC-51 |
| | Manufacturer : Chenyang |
| **Battery** | Brand Name : Motorola |
| | Model Name : JG30 |
| | Manufacturer : Amperex |
| **Earphone** | Brand Name : Motorola |
| | Model Name : SH38C37773 |
| | Manufacturer : Lyand |
| **USB Cable 1** | Brand Name : Cabletech |
| | Model Name : SKN6473A |
| **USB Cable 2** | Brand Name : Saibao |
| | Model Name : SKN6473A |
| **USB Cable 3** | Brand Name : Luxshare |
| | Model Name : SKN6473A |

## 1.2 Product Specification of Equipment Under Test

| Product Specification subjective to this standard | |
|---|---|
| **Tx Frequency** | LTE Band 26 : 814.7 ~ 823.3 MHz |
| **Rx Frequency** | LTE Band 26 : 859.7 ~ 868.3 MHz |
| **Bandwidth** | 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz |
| **Maximum Output Power to Antenna** | 22.68 dBm |
| **Antenna Type** | Fixed Internal Antenna and Dipole Antenna |
| **Antenna Gain** | 0.0 dBi |
| **Type of Modulation** | QPSK / 16QAM |

## 1.3 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.4 Emission Designator

| LTE Band 26 | | QPSK | | 16QAM | |
|---|---|---|---|---|---|
| **BW (MHz)** | **Frequency Range (MHz)** | **Emission Designator (99%OBW)** | **Frequency Tolerance (ppm)** | **Emission Designator (99%OBW)** | **Frequency Tolerance (ppm)** |
| **1.4** | 814.7 ~ 823.3 | 1M10G7D | - | 1M10W7D | - |
| **3** | 815.5 ~ 822.5 | 2M74G7D | - | 2M73W7D | - |
| **5** | 816.5 ~ 821.5 | 4M50G7D | - | 4M51W7D | - |
| **10** | 819.0 | 9M05G7D | 0.0074 | 9M03W7D | - |
| **15** | 821.5 | 13M4G7D | 0.0138 | 13M5W7D | - |

## 1.5 Testing Site

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

| | |
|---|---|
| **Test Site** | SPORTON INTERNATIONAL INC. |
| **Test Site Location** | No.52, Huaya 1st Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |
| **Test Site No.** | **Sporton Site No.** |
| | TH05-HY |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

| | |
|---|---|
| **Test Site** | SPORTON INTERNATIONAL INC. |
| **Test Site Location** | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-0868<br>FAX: +886-3-327-0855 |
| **Test Site No.** | **Sporton Site No.** |
| | 03CH15-HY |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

## 1.6 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

# 2 Test Configuration of Equipment Under Test

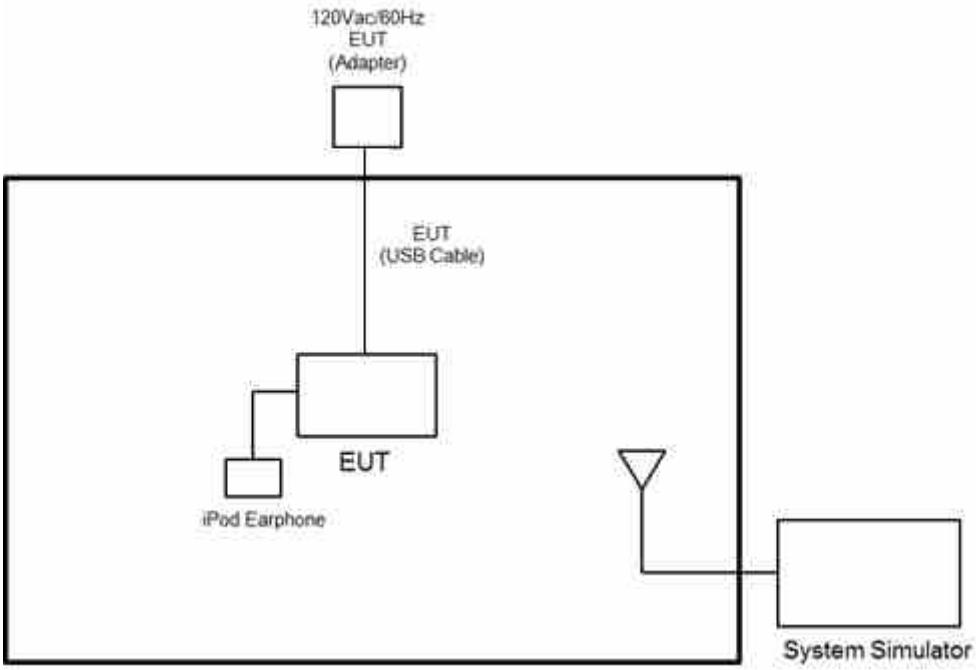
## 2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

| Conducted Test Cases | Band | Bandwidth (MHz) | | | | | | Modulation | | | RB # | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 64QAM | 1 | Half | Full | L | M | H |
| Max. Output Power | 26 | v | v | v | v | v | - | v | v | | v | v | v | v | v | v |
| Peak-to-Average Ratio | 26 | | | | | v | - | v | v | | v | | v | v | v | v |
| 26dB and 99% Bandwidth | 26 | v | v | v | v | v | - | v | v | | | | v | v | v | v |
| Emission masks In-band emissions | 26 | v | v | v | v | v | - | v | v | | v | | v | v | | v |
| Emission masks – Out of band emissions | 26 | v | v | v | v | v | - | v | v | | v | | | v | v | v |
| Frequency Stability | 26 | - | - | | v | v | - | v | v | | | | v | | v | |
| E.R.P. | 26 | | | | | v | - | v | v | | v | | | v | v | v |
| Radiated Spurious Emission | 26 | Worst Case | | | | | | | | | | | | v | v | v |
| Remark | 1. The mark "**v** " means that this configuration is chosen for testing<br>2. The mark "-" means that this bandwidth is not supported.<br>3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz. ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies.<br>4. All the radiated test cases were performed with Adapter 1 and USB Cable 1. | | | | | | | | | | | | | | | |

## 2.2 Connection Diagram of Test System




## 2.3 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model No. | FCC ID | Data Cable | Power Cord |
|---|---|---|---|---|---|---|
| 1. | System Simulator | Anritsu | MT8820C | N/A | N/A | Unshielded, 1.8 m |

## 2.4 Measurement Results Explanation Example

**For all conducted test items:**

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

*Offset(dB) = RF cable loss(dB) + attenuator factor(dB).*

= 4.2 + 10 = 14.2 (dB)

## 2.5 Frequency List of Low/Middle/High Channels

| LTE Band 26 Channel and Frequency List | | | | |
|---|---|---|---|---|
| **BW [MHz]** | **Channel/Frequency(MHz)** | **Lowest** | **Middle** | **Highest** |
| 15 | Channel | 26765 | - | - |
| | Frequency | 821.5 | - | - |
| 10 | Channel | - | 26740 | - |
| | Frequency | - | 819 | - |
| 5 | Channel | 26715 | 26740 | 26765 |
| | Frequency | 816.5 | 819 | 821.5 |
| 3 | Channel | 26705 | 26740 | 26775 |
| | Frequency | 815.5 | 819 | 822.5 |
| 1.4 | Channel | 26697 | 26740 | 26783 |
| | Frequency | 814.7 | 819 | 823.3 |

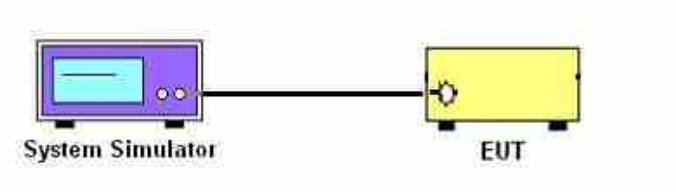
# 3 Conducted Test Items

## 3.1 Measuring Instruments

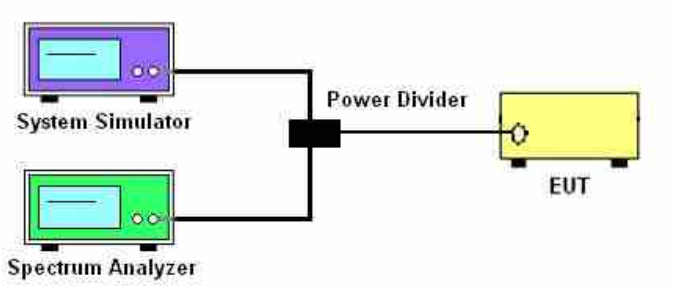
See list of measuring instruments of this test report.

### 3.1.1 Test Setup

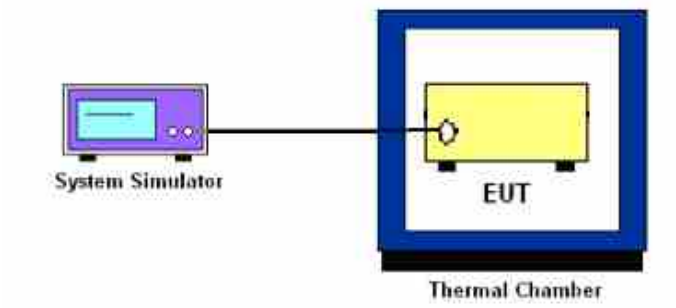
### 3.1.2 Conducted Output Power




### 3.1.3 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge, Emission Mask, Emissions Mask – Out Of Band Emissions, and Conducted Spurious Emission




### 3.1.4 Frequency Stability




### 3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

## 3.2 Conducted Output Power Measurement and ERP Measurement

### 3.2.1 Description of the Conducted Output Power Measurement and ERP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 26.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, where

$P_T$ = transmitter output power in dBm

$G_T$ = gain of the transmitting antenna in dBi

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

### 3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

## 3.3 Peak-to-Average Ratio

### 3.3.1 Description of the PAR Measurement

Reporting only

### 3.3.2 Test Procedures

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

## 3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

### 3.4.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% occupied bandwidth is 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 transmitted power.

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### 3.4.2 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

## 3.5 Emissions Mask Measurement

### 3.5.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a)

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

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

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

### 3.5.2 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The emissions mask of low and high channels for the highest RF powers were measured.
3. The measured RBW and the VBW set 3 times of RBW are then set in spectrum analyzer, and
4. the RBW correction factor 10log (1% of OBW/measured RBW)(dB) was compensated, if required.
5. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

## 3.6 Emissions Mask – Out Of Band Emissions Measurement

### 3.6.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 10 log (P) dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its $10^{th}$ harmonic.

### 3.6.2 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

## 3.7 Frequency Stability Measurement

### 3.7.1 Description of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

### 3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.7.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

### 3.7.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

## 3.8 Field Strength of Spurious Radiation Measurement

### 3.8.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

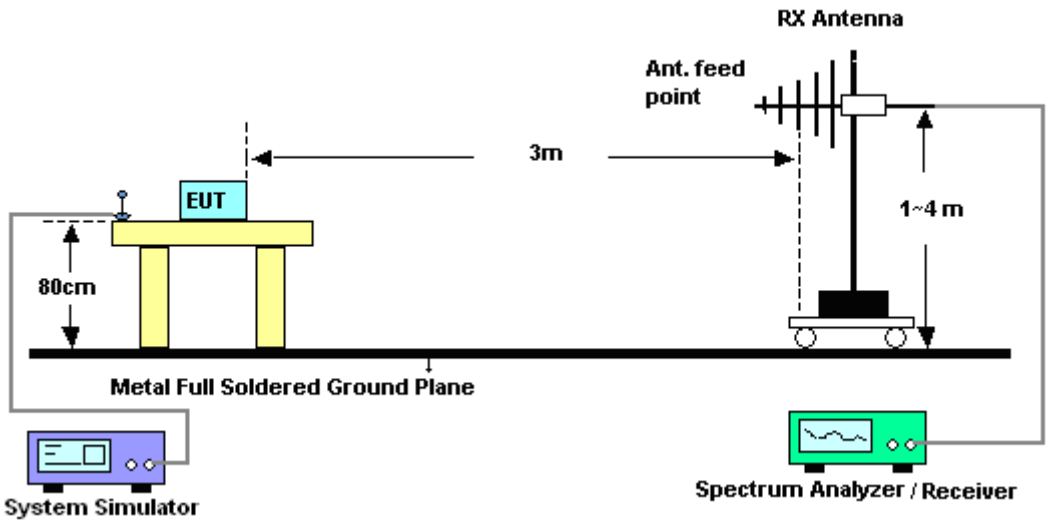
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43+10\log_{10}$(P[Watts]) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 3.8.2 Test Procedures

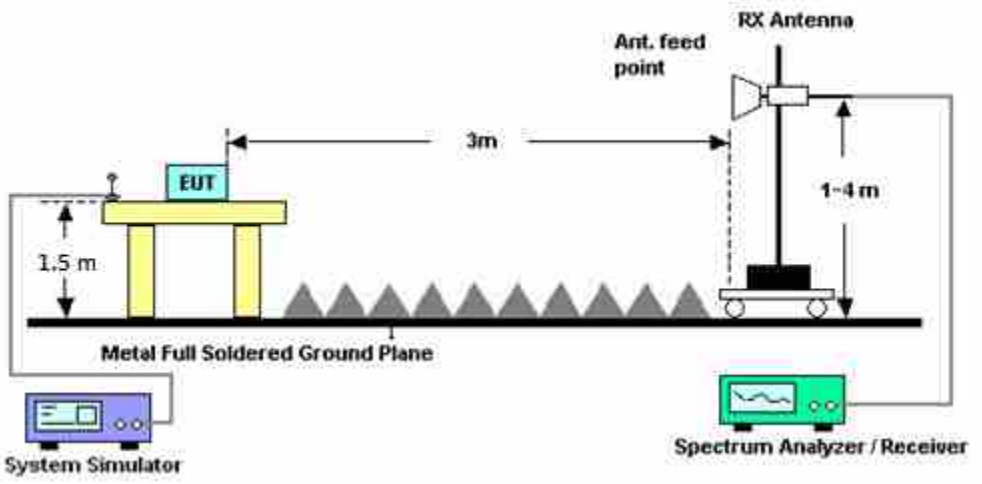
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

### 3.8.3 Test Setup

**For radiated test from 30MHz to 1GHz**




**For radiated test above 1GHz**




### 3.8.4 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.

# 4 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| LTE Base Station | Anritsu | MT8820C | 6201432821 | GSM/GPRS /WCDMA/LTE | Oct. 13, 2017 | Sep. 21, 2018~ Oct. 06, 2018 | Oct. 12, 2018 | Conducted (TH05-HY) |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 101397 | 10Hz~40GHz | Nov. 07, 2017 | Sep. 21, 2018~ Oct. 06, 2018 | Nov. 06, 2018 | Conducted (TH05-HY) |
| Temperature Chamber | ESPEC | SH-641 | 92013720 | -40℃~90℃ | Aug. 29, 2018 | Sep. 21, 2018~ Oct. 06, 2018 | Aug. 28, 2019 | Conducted (TH05-HY) |
| Programmable Power Supply | GW Instek | PSS-2005 | EL890089 | 1V~20V 0.5A~5A | Jan. 12, 2018 | Sep. 21, 2018~ Oct. 06, 2018 | Jan. 11, 2019 | Conducted (TH05-HY) |
| Coupler | Warison | 1-18GHz 20dB 25WSMA Directional Coupler | #B | 1G~18GHz | Dec. 04, 2017 | Sep. 21, 2018~ Oct. 06, 2018 | Dec. 03, 2018 | Conducted (TH05-HY) |
| Bilog Antenna | TESEQ | CBL6111D&00800N1D01N-06 | 41912&05 | 30MHz to 1GHz | Jan. 10, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Jan. 09, 2019 | Radiation (03CH15-HY) |
| Horn Antenna | SCHWARZBECK | BBHA 9120D | 9120D-1620 | 1G~18GHz | Oct. 03, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Oct. 02, 2018 | Radiation (03CH15-HY) |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | 9120D-1522 | 1G~18GHz | May. 10, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | May. 09, 2019 | Radiation (03CH15-HY) |
| Loop Antenna | Rohde & Schwarz | HFH2-Z2 | 100488 | 9 kHz~30 MHz | Nov. 23, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Nov. 22, 2018 | Radiation (03CH15-HY) |
| Preamplifier | Keysight | 83017A | MY53270195 | 1GHz~26.5GHz | Aug. 23, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Aug. 22, 2019 | Radiation (03CH15-HY) |
| Preamplifier | EMEC | EM18G40G | 060715 | 18GHz ~ 40GHz | Dec. 05, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Dec. 04, 2018 | Radiation (03CH15-HY) |
| Amplifier | SONOMA | 310N | 363440 | 9kHz~1GHz | Dec. 26, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Dec. 25, 2018 | Radiation (03CH15-HY) |
| Spectrum Analyzer | Agilent | E4446A | MY50180136 | 3Hz~44GHz | Apr. 25, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Apr. 24, 2019 | Radiation (03CH15-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 104 | MY2859/2 | 30MHz-40GHz | Mar. 04, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Mar. 03, 2019 | Radiation (03CH15-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | MY4274/2 | 30MHz-40GHz | Mar. 14, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Mar. 13, 2019 | Radiation (03CH15-HY) |
| Controller | ChainTek | 3000-1 | N/A | Control Turn table & Ant Mast | N/A | Sep. 24, 2018~ Sep. 28, 2018 | N/A | Radiation (03CH15-HY) |
| Antenna Mast | ChainTek | MBS-520-1 | N/A | 1m~4m | N/A | Sep. 24, 2018~ Sep. 28, 2018 | N/A | Radiation (03CH15-HY) |
| Turn Table | ChainTek | T-200-S-1 | N/A | 0~360 Degree | N/A | Sep. 24, 2018~ Sep. 28, 2018 | N/A | Radiation (03CH15-HY) |

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| SHF-EHF Horn Antenna | SCHWARZBECK | BBHA 9170 | BBHA9170576 | 18GHz ~ 40GHz | May 08, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | May 07, 2019 | Radiation (03CH15-HY) |
| Signal Generator | Rohde & Schwarz | SMF100A | 101107 | 100kHz~40GHz | May. 21, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | May. 20, 2019 | Radiation (03CH15-HY) |
| Software | Audix | E3 6.2009-8-24(K5) | ARD-SPR-000185 | N/A | N/A | Sep. 24, 2018~ Sep. 28, 2018 | N/A | Radiation (03CH15-HY) |
| Filter | Wainwright | WLK4-1000-1530-8000-40SS | SN11 | 1G Low Pass | Sep. 16, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Sep. 15, 2019 | Radiation (03CH15-HY) |
| Filter | Wainwright | WHKX12-2700-3000-18000-60ST | SN2 | 3 GHz Highpass | Jul. 15, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Jul. 14, 2019 | Radiation (03CH15-HY) |
| Notch Filter | Wainwright | WRCT800/960-0.2/40-8SSK | SN22 | GSM850 | Nov. 03, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Nov. 02, 2018 | Radiation (03CH15-HY) |
| Notch Filter | Wainwright | WRCT1747.5-0.4/40-8SS | SN2 | DCS 1800 | Aug. 22, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Aug. 21, 2019 | Radiation (03CH15-HY) |
| Notch Filter | Wainwright | WRCT2500/2570-10/40-10SSK | SN1 R | LTE Band7 | Aug. 22, 2018 | Sep. 24, 2018~ Sep. 28, 2018 | Aug. 21, 2019 | Radiation (03CH15-HY) |
| Notch Filter | Wainwright | WRCT698/798-10/40 8SSK | SN1 | AWS Band | Nov. 08, 2017 | Sep. 24, 2018~ Sep. 28, 2018 | Nov. 07, 2018 | Radiation (03CH15-HY) |

# 5 Uncertainty of Evaluation

**Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)**

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 3.37 |

**Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)**

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 3.67 |

**Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)**

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 4.03 |

# Appendix A. Test Results of Conducted Test

## Conducted Output Power(Average power)

| LTE Band 26 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 15 | 1 | 0 | QPSK | 22.99 | - | - |
| 15 | 1 | 37 | | **23.32** | - | - |
| 15 | 1 | 74 | | 23.02 | - | - |
| 15 | 36 | 0 | | 22.22 | - | - |
| 15 | 36 | 20 | | 22.20 | - | - |
| 15 | 36 | 39 | | 22.05 | - | - |
| 15 | 75 | 0 | | 22.20 | - | - |
| 15 | 1 | 0 | 16-QAM | 22.51 | - | - |
| 15 | 1 | 37 | | 22.35 | - | - |
| 15 | 1 | 74 | | 22.30 | - | - |
| 15 | 36 | 0 | | 21.18 | - | - |
| 15 | 36 | 20 | | 21.17 | - | - |
| 15 | 36 | 39 | | 21.04 | - | - |
| 15 | 75 | 0 | | 21.16 | - | - |
| 10 | 1 | 0 | QPSK | - | 22.79 | - |
| 10 | 1 | 25 | | - | 23.01 | - |
| 10 | 1 | 49 | | - | 22.86 | - |
| 10 | 25 | 0 | | - | 21.97 | - |
| 10 | 25 | 12 | | - | 22.06 | - |
| 10 | 25 | 25 | | - | 21.85 | - |
| 10 | 50 | 0 | | - | 21.89 | - |
| 10 | 1 | 0 | 16-QAM | - | 21.91 | - |
| 10 | 1 | 25 | | - | 22.23 | - |
| 10 | 1 | 49 | | - | 21.71 | - |
| 10 | 25 | 0 | | - | 20.96 | - |
| 10 | 25 | 12 | | - | 21.06 | - |
| 10 | 25 | 25 | | - | 20.86 | - |
| 10 | 50 | 0 | | - | 20.89 | - |

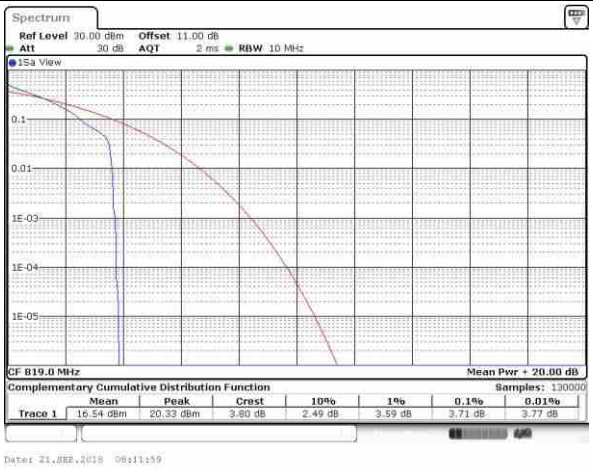
| LTE Band 26 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 5 | 1 | 0 | QPSK | 22.86 | 22.95 | 22.78 |
| 5 | 1 | 12 | | 23.10 | 22.93 | 22.80 |
| 5 | 1 | 24 | | 23.16 | 22.93 | 22.89 |
| 5 | 12 | 0 | | 22.24 | 22.06 | 21.98 |
| 5 | 12 | 7 | | 22.23 | 22.03 | 21.95 |
| 5 | 12 | 13 | | 22.20 | 21.99 | 21.92 |
| 5 | 25 | 0 | | 22.23 | 22.01 | 21.95 |
| 5 | 1 | 0 | 16-QAM | 22.37 | 22.27 | 22.19 |
| 5 | 1 | 12 | | 22.31 | 22.17 | 22.05 |
| 5 | 1 | 24 | | 22.37 | 22.19 | 22.03 |
| 5 | 12 | 0 | | 21.24 | 21.12 | 21.01 |
| 5 | 12 | 7 | | 21.25 | 21.10 | 21.01 |
| 5 | 12 | 13 | | 21.24 | 21.08 | 20.98 |
| 5 | 25 | 0 | | 21.18 | 21.02 | 20.87 |
| 3 | 1 | 0 | QPSK | 22.95 | 23.00 | 22.86 |
| 3 | 1 | 8 | | 23.15 | 22.98 | 22.87 |
| 3 | 1 | 14 | | 23.05 | 22.90 | 22.82 |
| 3 | 8 | 0 | | 22.17 | 22.00 | 21.92 |
| 3 | 8 | 4 | | 22.19 | 22.00 | 21.94 |
| 3 | 8 | 7 | | 22.16 | 21.97 | 21.90 |
| 3 | 15 | 0 | | 22.17 | 21.98 | 21.92 |
| 3 | 1 | 0 | 16-QAM | 22.39 | 22.23 | 22.07 |
| 3 | 1 | 8 | | 22.38 | 22.18 | 22.12 |
| 3 | 1 | 14 | | 22.32 | 22.14 | 22.04 |
| 3 | 8 | 0 | | 21.29 | 21.13 | 21.03 |
| 3 | 8 | 4 | | 21.28 | 21.14 | 21.06 |
| 3 | 8 | 7 | | 21.31 | 21.09 | 21.03 |
| 3 | 15 | 0 | | 21.21 | 21.00 | 20.90 |

| LTE Band 26 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 1.4 | 1 | 0 | QPSK | 22.86 | 22.65 | 22.63 |
| 1.4 | 1 | 3 | | 22.94 | 22.73 | 22.68 |
| 1.4 | 1 | 5 | | 22.91 | 22.64 | 22.61 |
| 1.4 | 3 | 0 | | 22.88 | 22.71 | 22.69 |
| 1.4 | 3 | 1 | | 22.90 | 22.73 | 22.66 |
| 1.4 | 3 | 3 | | 22.84 | 22.66 | 22.57 |
| 1.4 | 6 | 0 | | 22.30 | 22.21 | 22.20 |
| 1.4 | 1 | 0 | 16-QAM | 22.78 | 22.53 | 22.51 |
| 1.4 | 1 | 3 | | 22.78 | 22.58 | 22.57 |
| 1.4 | 1 | 5 | | 22.70 | 22.50 | 22.51 |
| 1.4 | 3 | 0 | | 22.29 | 22.22 | 22.27 |
| 1.4 | 3 | 1 | | 22.36 | 22.33 | 22.34 |
| 1.4 | 3 | 3 | | 22.32 | 22.18 | 22.18 |
| 1.4 | 6 | 0 | | 21.48 | 21.26 | 21.14 |

# LTE Band 26_Part 90S

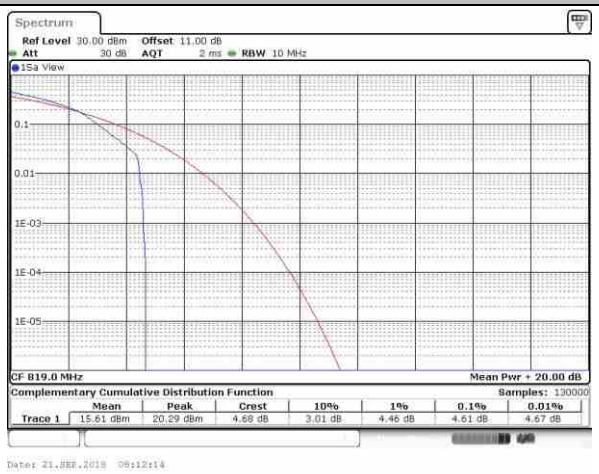
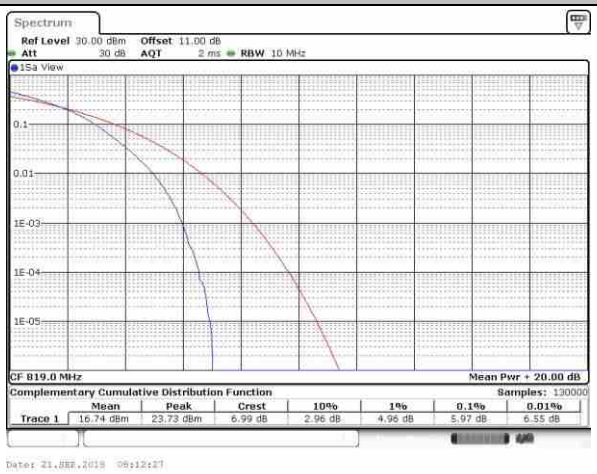
## Peak-to-Average Ratio

| Mode | LTE Band 26 / 10MHz | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | - | - | - | - | PASS |
| Middle CH | 3.71 | 5.13 | 4.61 | 5.97 | |
| Highest CH | - | - | - | - | |

| LTE Band 26 / 10MHz / QPSK | |
|---|---|
| **Middle Channel / 1RB** | **Middle Channel / Full RB** |
|  | |





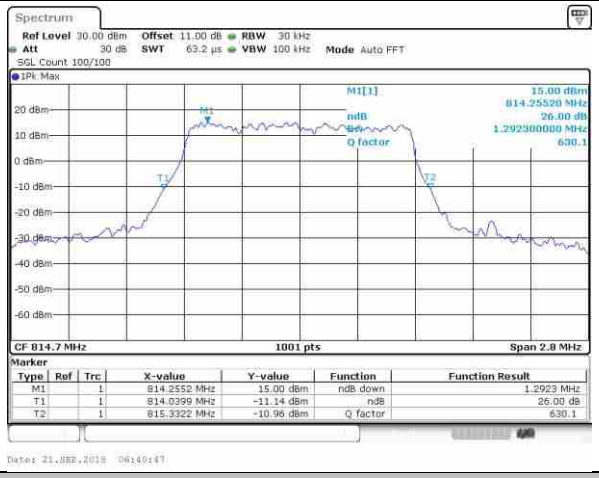
| LTE Band 26 / 10MHz / 16QAM | |
|---|---|
| **Middle Channel / 1RB** | **Middle Channel / Full RB** |
|  |  |

# 26dB Bandwidth

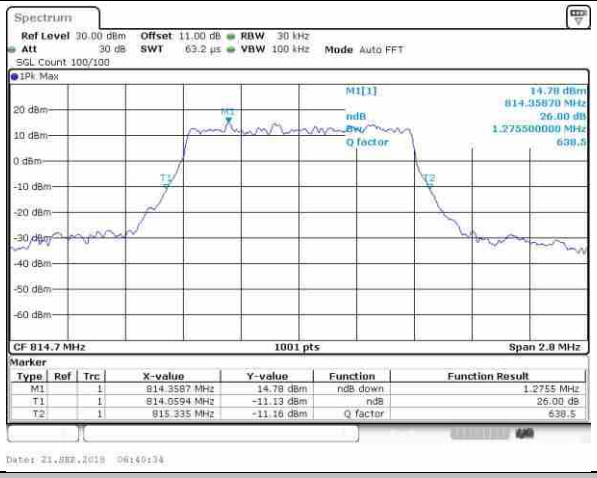
| Mode | LTE Band 26 : 26dB BW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.29 | 1.28 | 3.05 | 3.03 | 5.02 | 4.90 | - | - | 14.27 | 14.36 | - | - |
| Middle CH | 1.28 | 1.28 | 3.01 | 2.97 | 5.03 | 4.85 | 9.67 | 9.77 | - | - | - | - |
| Highest CH | 1.27 | 1.27 | 3.02 | 3.04 | 4.93 | 4.91 | - | - | - | - | - | - |

## LTE Band 26

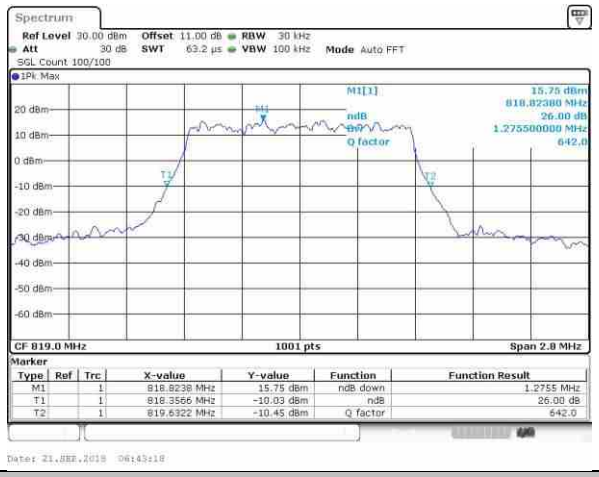
### Lowest Channel / 1.4MHz / QPSK



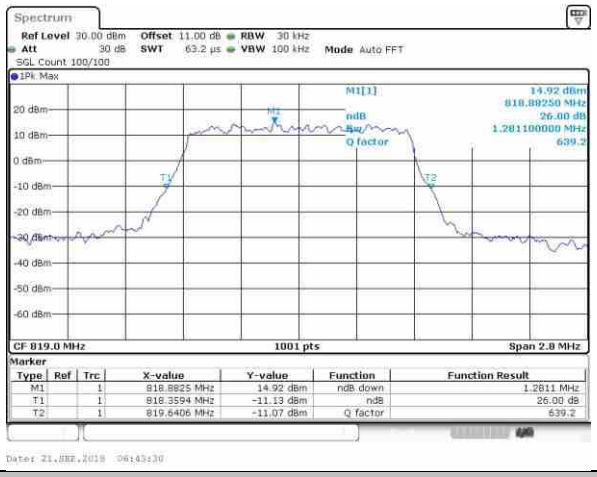

### Lowest Channel / 1.4MHz / 16QAM



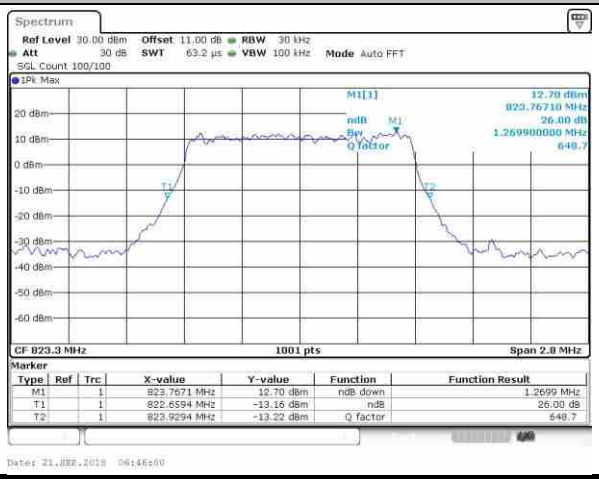

### Middle Channel / 1.4MHz / QPSK



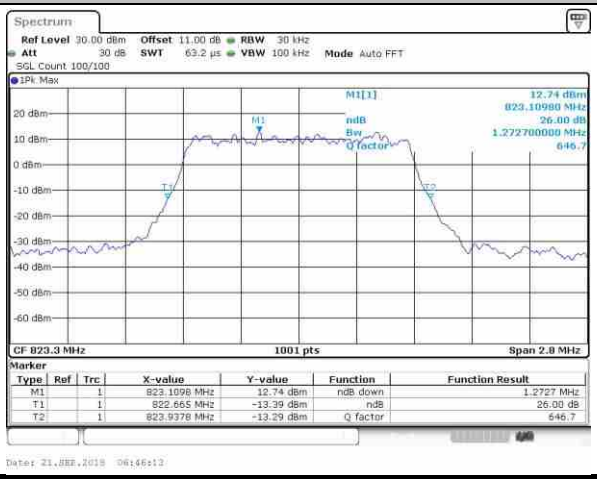

### Middle Channel / 1.4MHz / 16QAM




### Highest Channel / 1.4MHz / QPSK

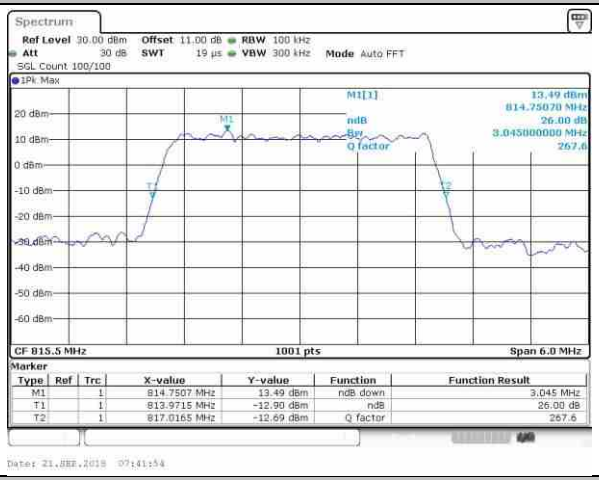



### Highest Channel / 1.4MHz / 16QAM

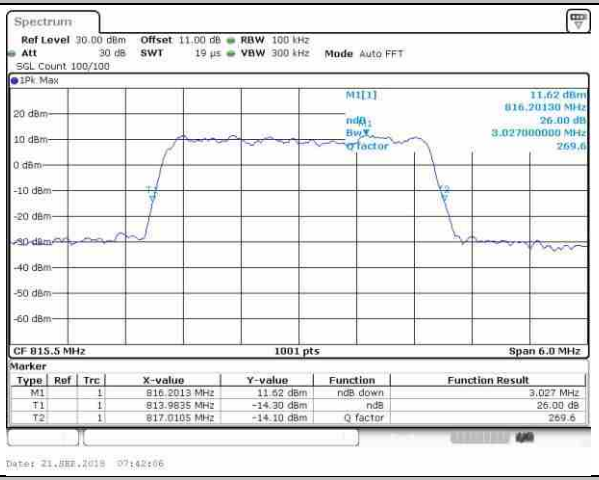


## LTE Band 26

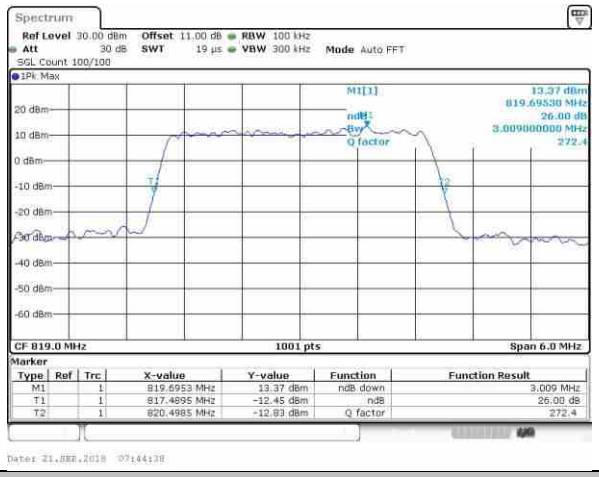
### Lowest Channel / 3MHz / QPSK



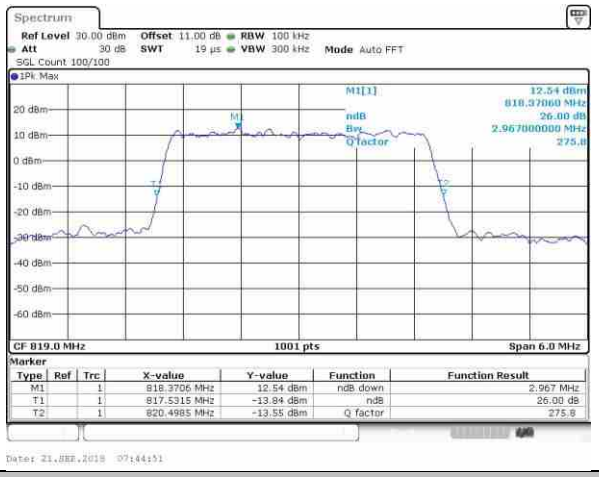

### Lowest Channel / 3MHz / 16QAM



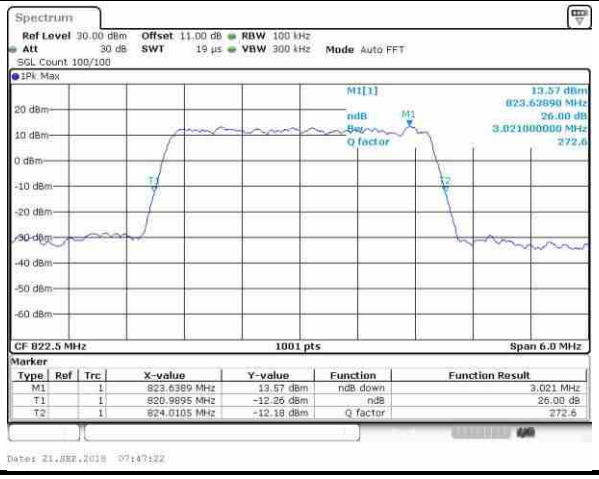

### Middle Channel / 3MHz / QPSK



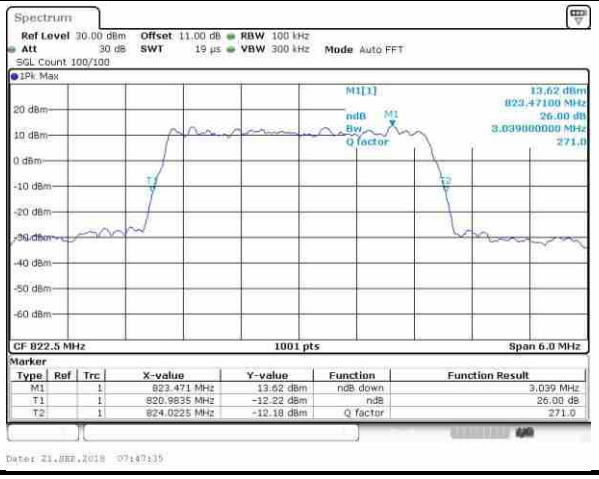

### Middle Channel /3MHz / 16QAM




### Highest Channel /3MHz / QPSK

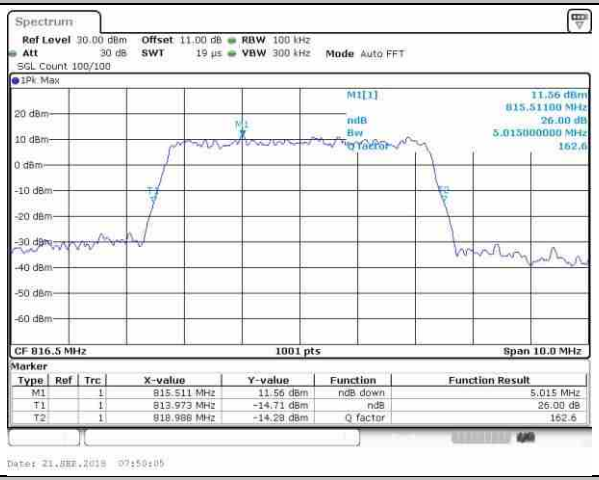



### Highest Channel /3MHz / 16QAM

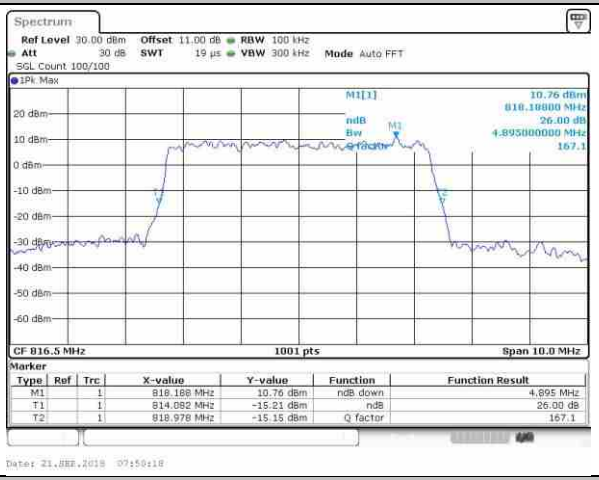


## LTE Band 26

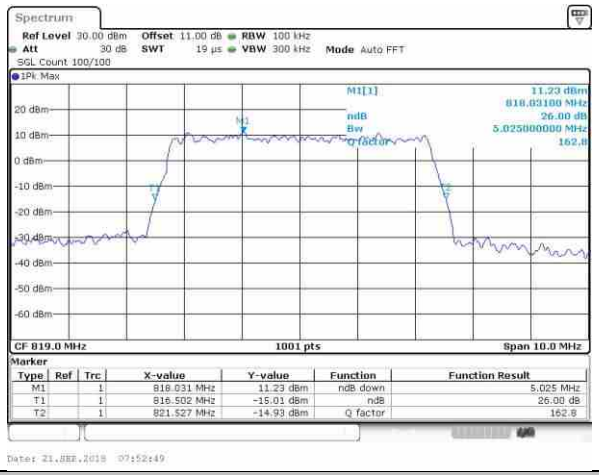
### Lowest Channel / 5MHz / QPSK



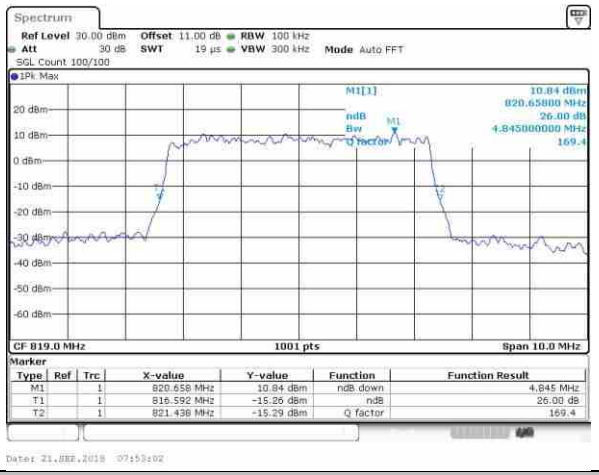

### Lowest Channel / 5MHz / 16QAM



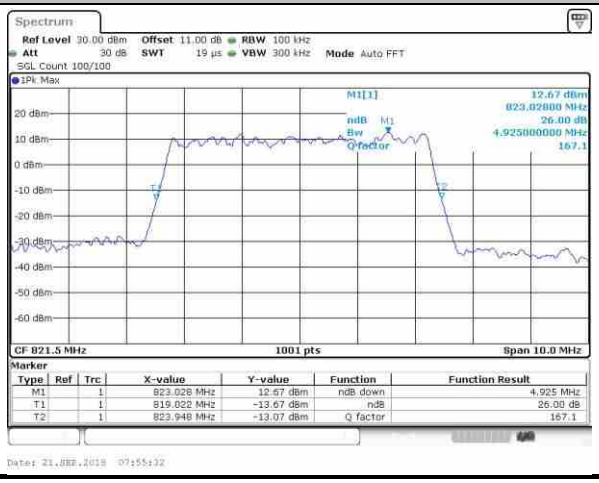

### Middle Channel / 5MHz / QPSK



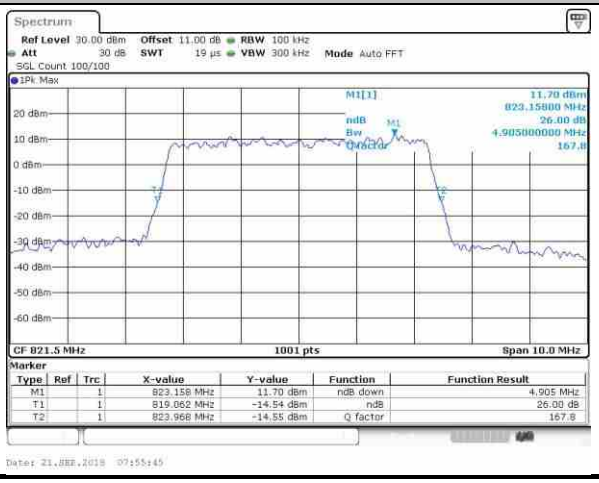

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

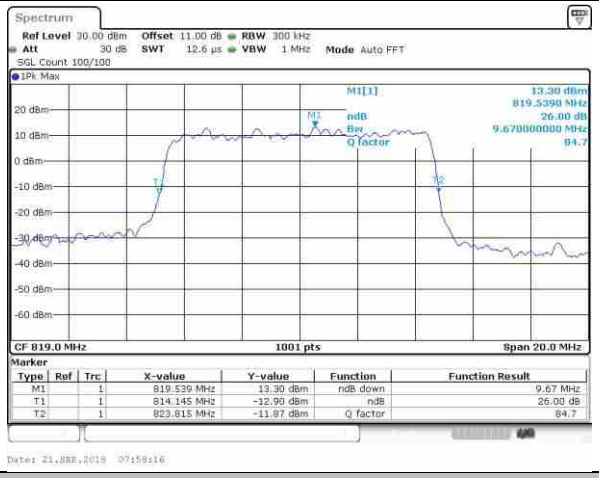



### Highest Channel / 5MHz / 16QAM

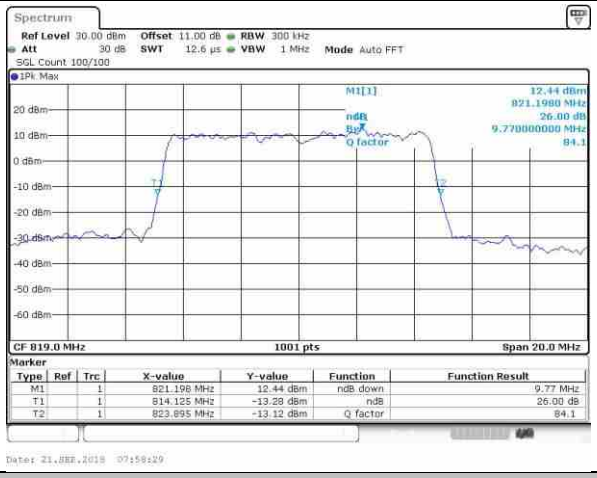


## LTE Band 26

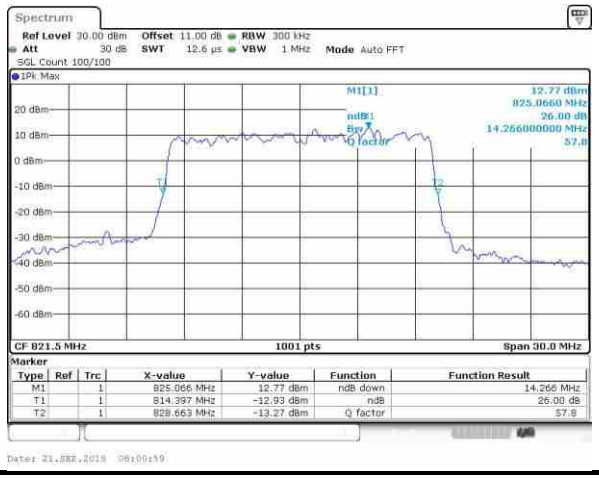
### Middle Channel / 10MHz / QPSK



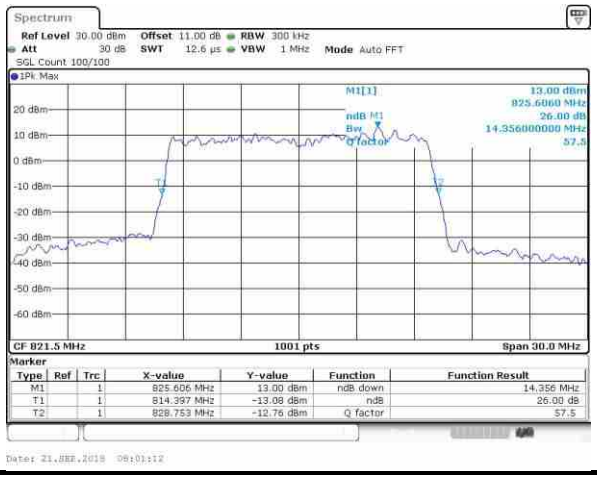

### Middle Channel / 10MHz / 16QAM




### Lowest Channel / 15MHz / QPSK




### Lowest Channel / 15MHz / 16QAM

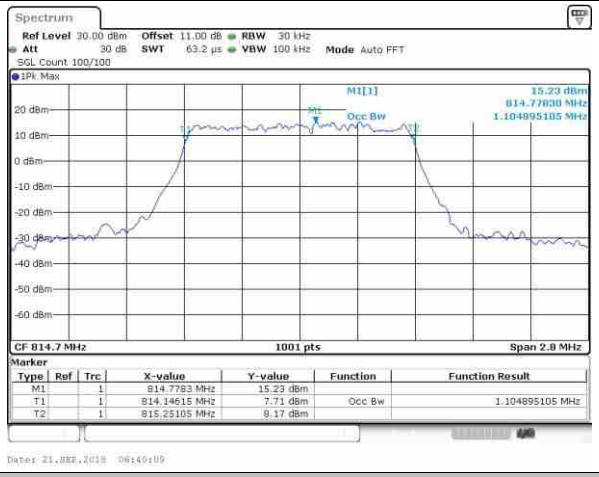


# Occupied Bandwidth

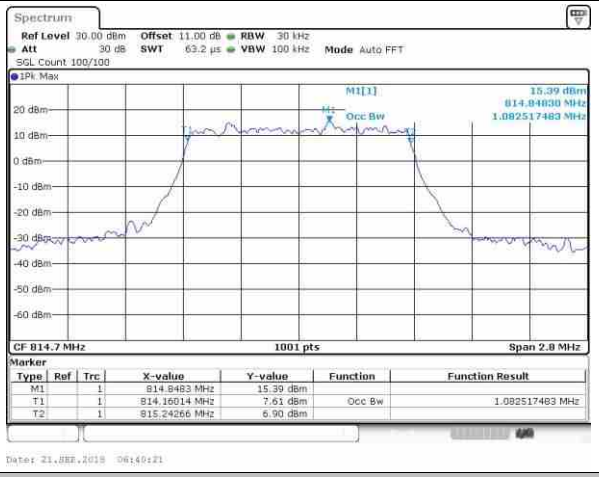
| Mode | LTE Band 26 : 99%OBW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.1 | 1.08 | 2.73 | 2.72 | 4.5 | 4.47 | - | - | 13.4 | 13.49 | - | - |
| Middle CH | 1.09 | 1.1 | 2.72 | 2.73 | 4.48 | 4.49 | 9.05 | 9.03 | - | - | - | - |
| Highest CH | 1.09 | 1.1 | 2.74 | 2.73 | 4.48 | 4.51 | - | - | - | - | - | - |

## LTE Band 26

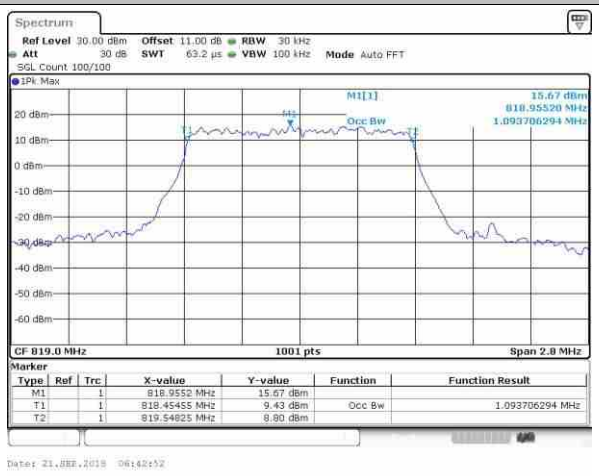
### Lowest Channel / 1.4MHz / QPSK



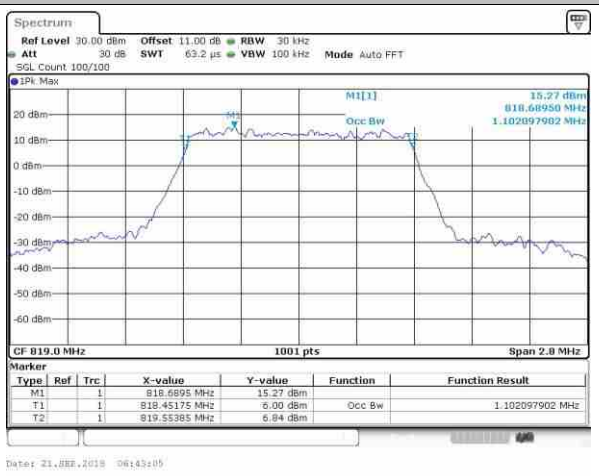

### Lowest Channel / 1.4MHz / 16QAM



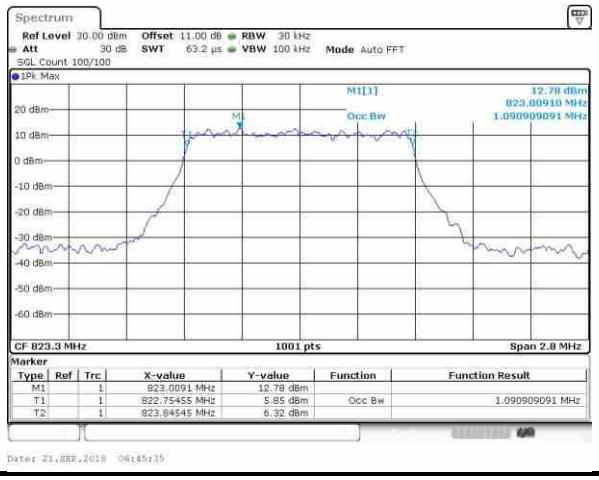

### Middle Channel / 1.4MHz / QPSK



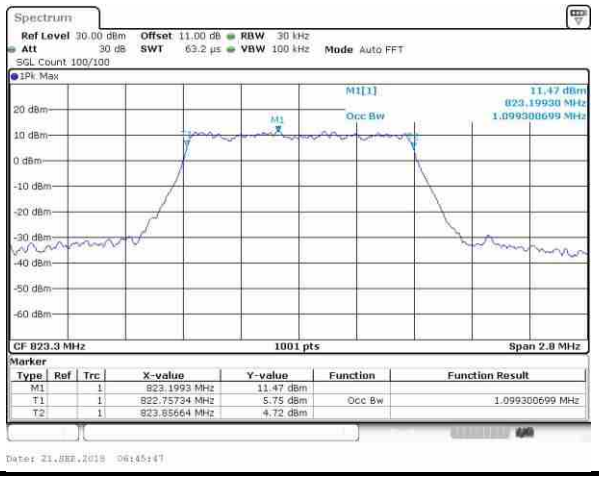

### Middle Channel / 1.4MHz / 16QAM




### Highest Channel / 1.4MHz / QPSK

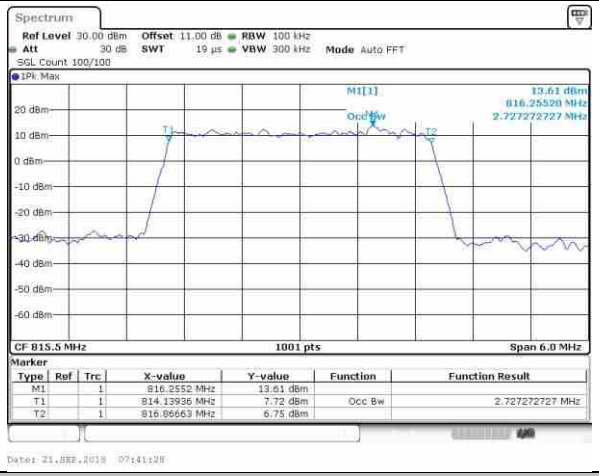



### Highest Channel / 1.4MHz / 16QAM

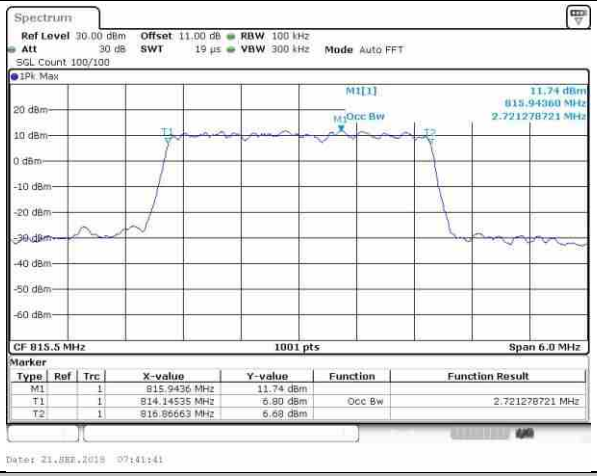


## LTE Band 26

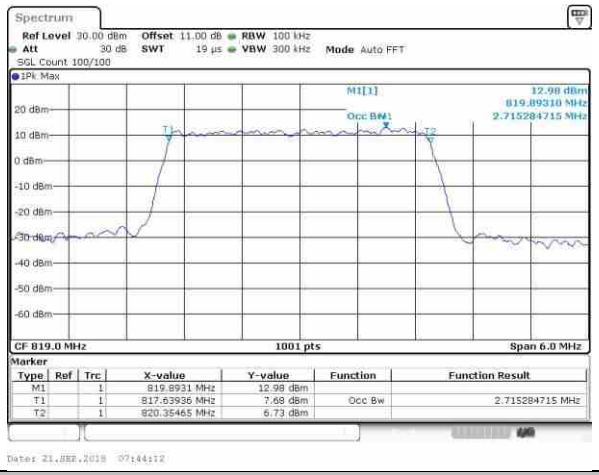
### Lowest Channel / 3MHz / QPSK



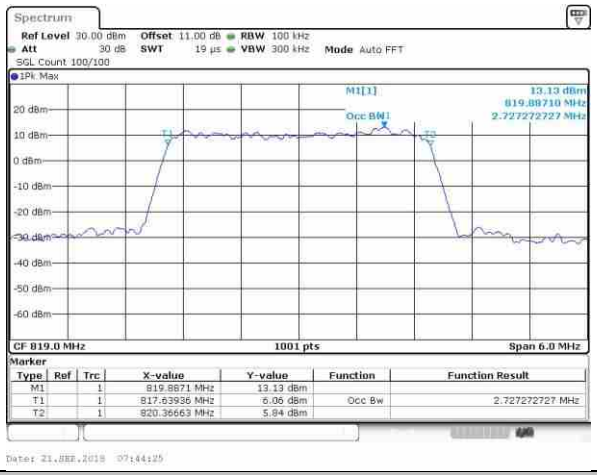

### Lowest Channel / 3MHz / 16QAM



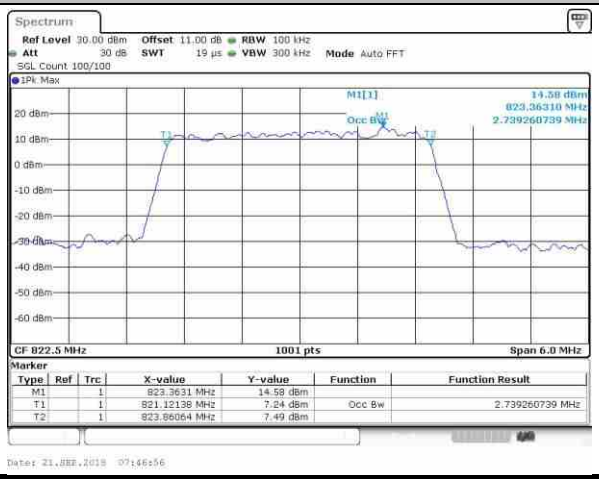

### Middle Channel / 3MHz / QPSK



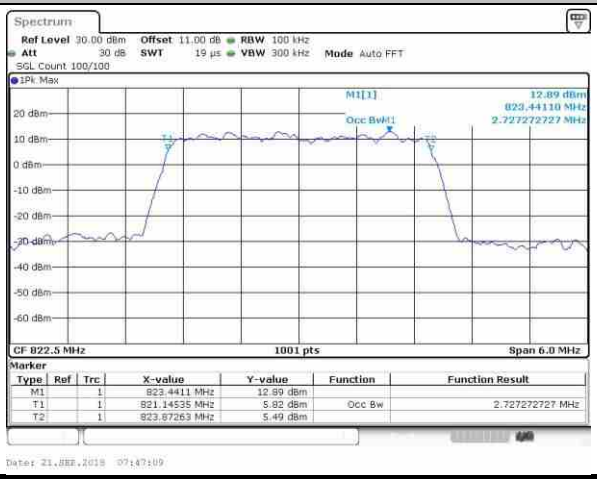

### Middle Channel / 3MHz / 16QAM




### Highest Channel / 3MHz / QPSK

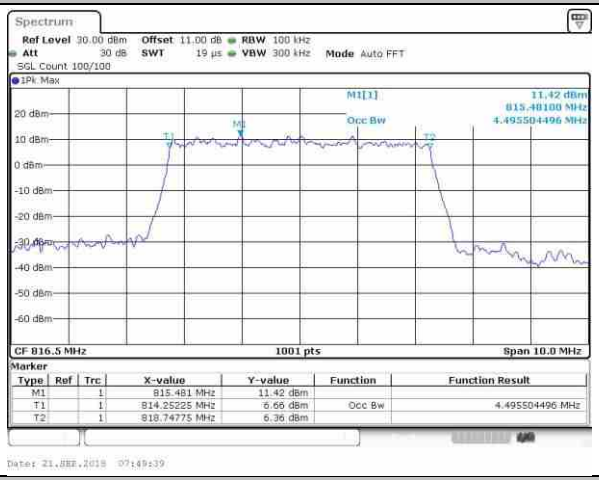



### Highest Channel / 3MHz / 16QAM

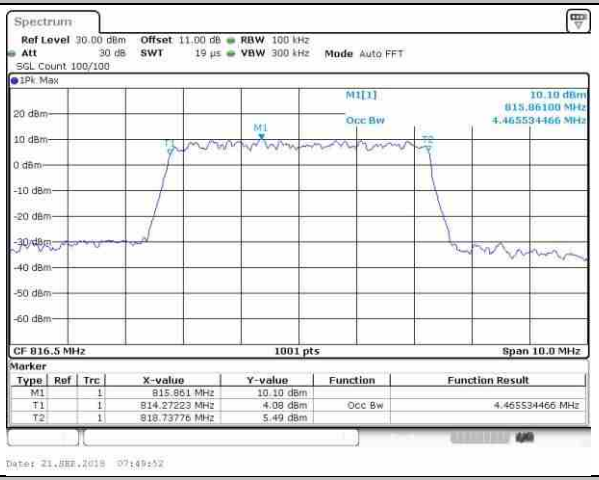


## LTE Band 26

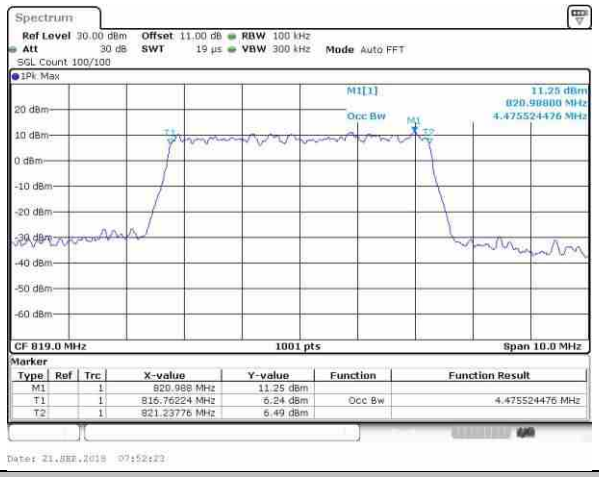
### Lowest Channel / 5MHz / QPSK



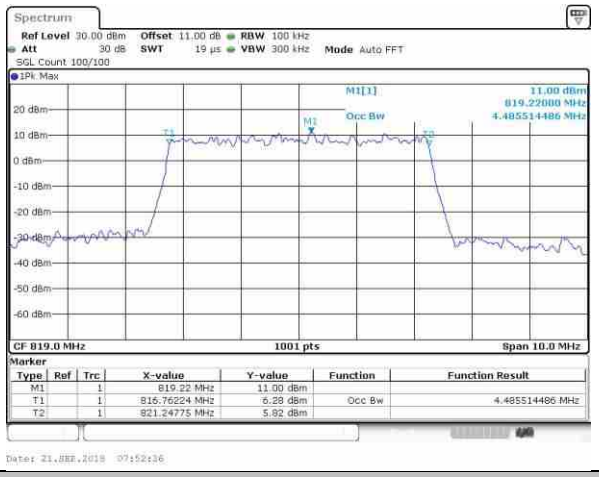

### Lowest Channel / 5MHz / 16QAM



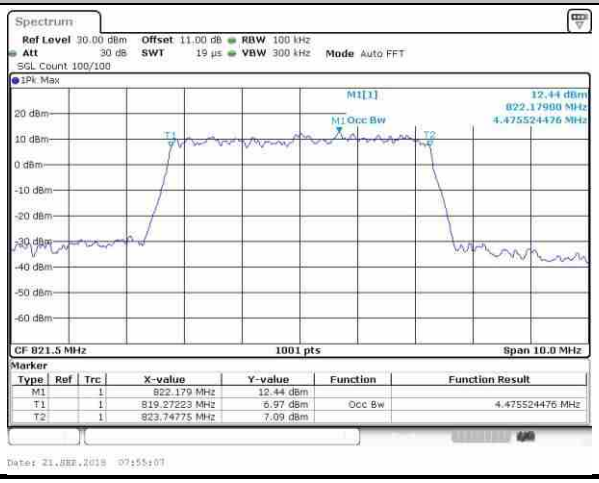

### Middle Channel / 5MHz / QPSK



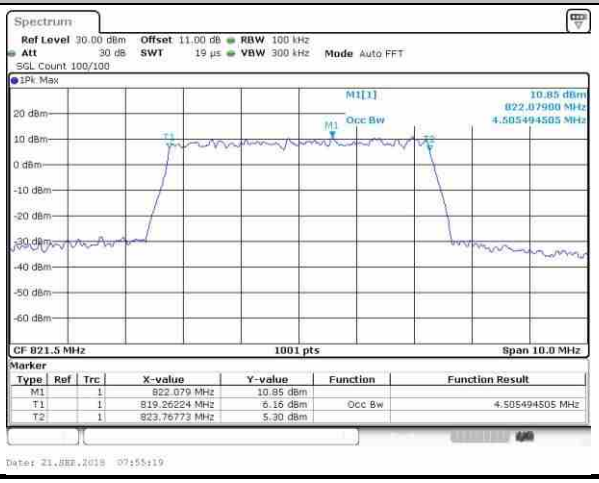

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

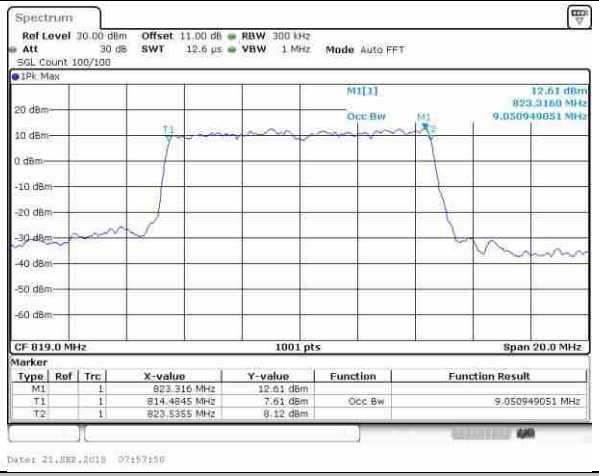



### Highest Channel / 5MHz / 16QAM

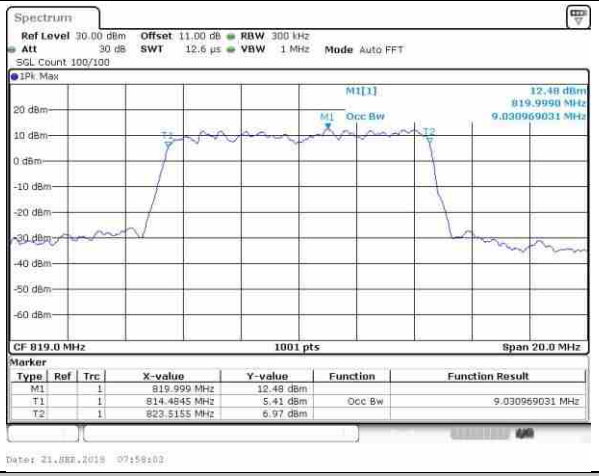


## LTE Band 26

### Middle Channel / 10MHz / QPSK

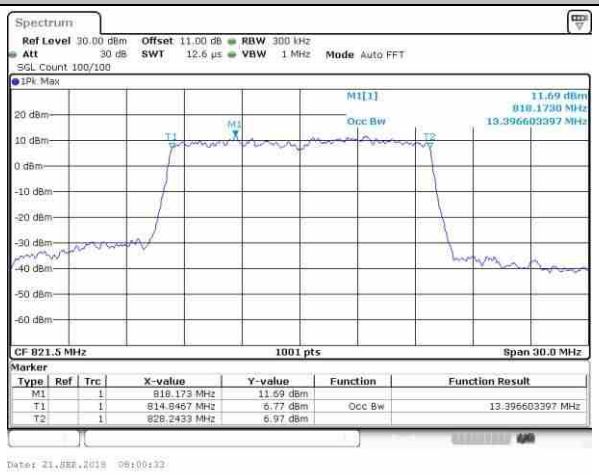



### Middle Channel / 10MHz / 16QAM

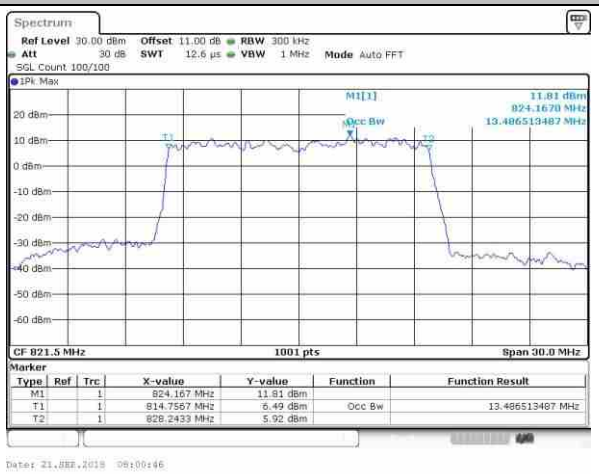



## LTE Band 26

### Lowest Channel / 15MHz / QPSK



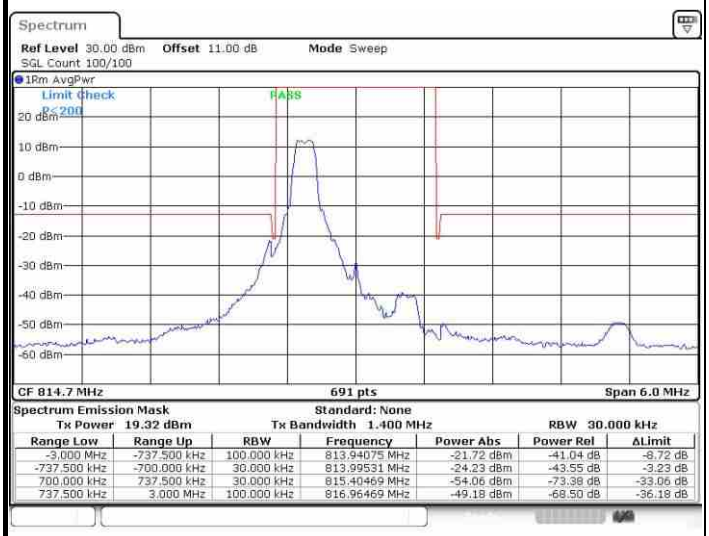

### Lowest Channel / 15MHz / 16QAM



# Conducted Band Edge

## LTE Band 26 / 1.4MHz / QPSK

### Lowest Band Edge / 1RB

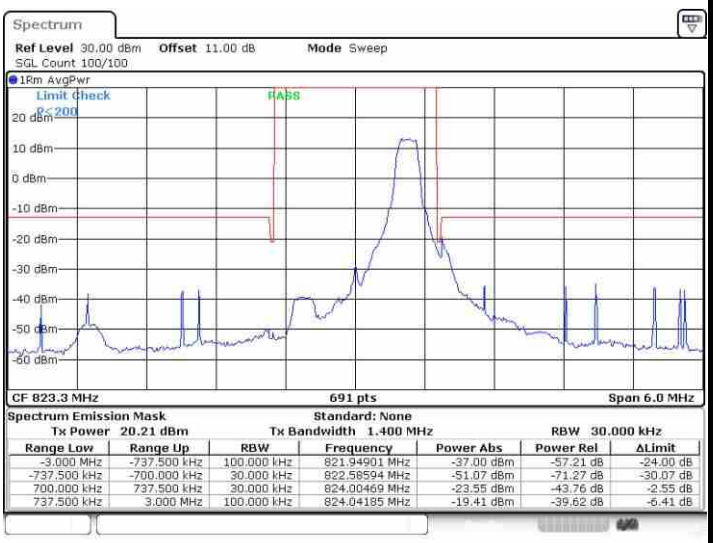



Spectrum Emission Mask Standard: None
Tx Power 19.32 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 813.94075 MHz | -21.72 dBm | -41.04 dB | -8.72 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 813.99531 MHz | -24.23 dBm | -43.55 dB | -3.23 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 815.40469 MHz | -54.06 dBm | -73.38 dB | -33.06 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 816.96469 MHz | -49.18 dBm | -68.50 dB | -36.18 dB |

Date: 21.SEP.2018 06:49:17

### Highest Band Edge / 1RB

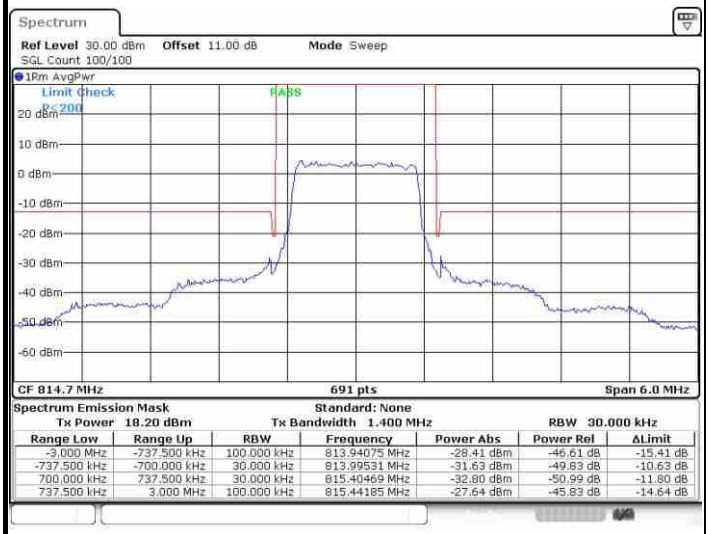



Spectrum Emission Mask Standard: None
Tx Power 20.21 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 821.94901 MHz | -37.00 dBm | -57.21 dB | -24.00 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 822.58594 MHz | -51.07 dBm | -71.27 dB | -30.07 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 824.00469 MHz | -23.55 dBm | -43.76 dB | -2.55 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 824.04185 MHz | -19.41 dBm | -39.62 dB | -6.41 dB |

Date: 21.SEP.2018 06:54:02

### Lowest Band Edge / Full RB

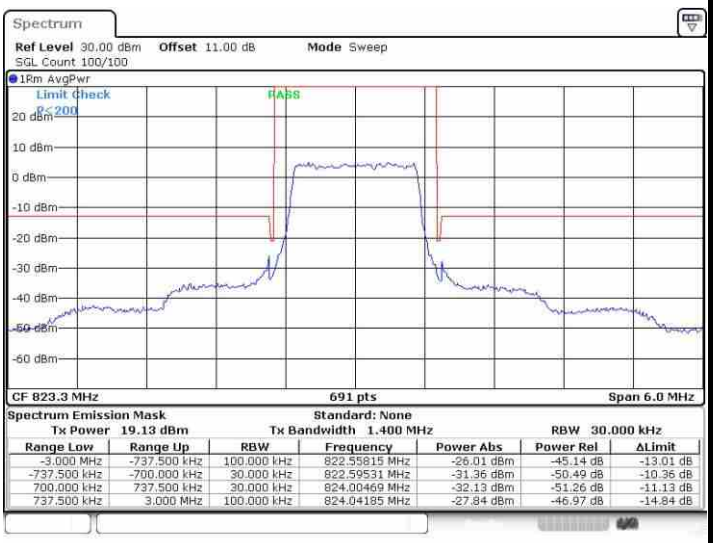



Spectrum Emission Mask Standard: None
Tx Power 18.20 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 813.94075 MHz | -28.41 dBm | -46.61 dB | -15.41 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 813.99531 MHz | -31.63 dBm | -49.83 dB | -10.63 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 815.40469 MHz | -32.80 dBm | -50.99 dB | -11.80 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 815.44185 MHz | -27.64 dBm | -45.83 dB | -14.64 dB |

Date: 21.SEP.2018 06:51:39

### Highest Band Edge / Full RB



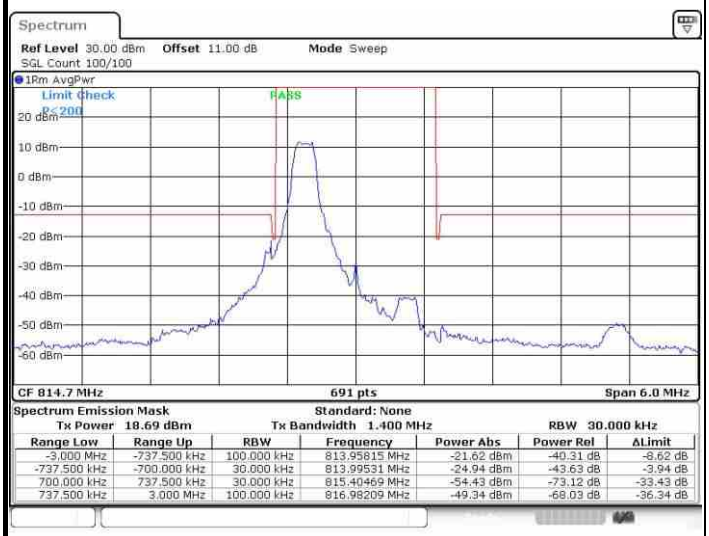

Spectrum Emission Mask Standard: None
Tx Power 19.13 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 822.55815 MHz | -26.01 dBm | -45.14 dB | -13.01 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 822.59531 MHz | -31.36 dBm | -50.49 dB | -10.36 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 824.00469 MHz | -32.13 dBm | -51.26 dB | -11.13 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 824.04185 MHz | -27.84 dBm | -46.97 dB | -14.84 dB |

Date: 21.SEP.2018 06:56:27

## LTE Band 26 / 1.4MHz / 16QAM

### Lowest Band Edge / 1 RB

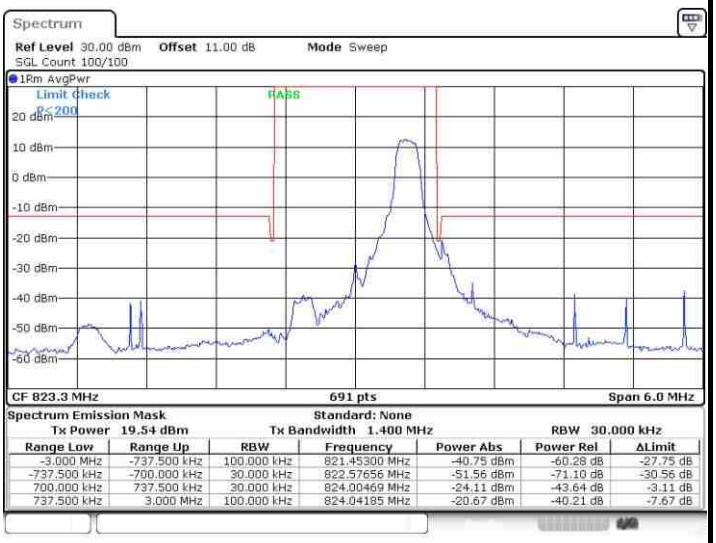



Spectrum Emission Mask Standard: None
Tx Power 18.69 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 813.95815 MHz | -21.62 dBm | -40.31 dB | -8.62 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 813.99531 MHz | -24.94 dBm | -43.63 dB | -3.94 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 815.40469 MHz | -54.43 dBm | -73.12 dB | -33.43 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 816.98209 MHz | -49.34 dBm | -68.03 dB | -36.34 dB |

Date: 21.SEP.2018 06:50:28

### Highest Band Edge / 1 RB

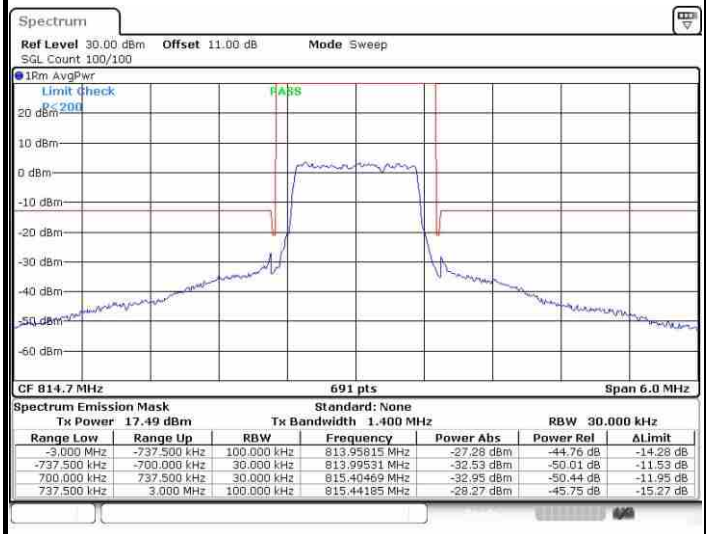



Spectrum Emission Mask Standard: None
Tx Power 19.54 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 821.45300 MHz | -40.75 dBm | -60.28 dB | -27.75 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 822.57656 MHz | -51.56 dBm | -71.10 dB | -30.56 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 824.00469 MHz | -24.11 dBm | -43.64 dB | -3.11 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 824.04185 MHz | -20.67 dBm | -40.21 dB | -7.67 dB |

Date: 21.SEP.2018 06:55:15

### Lowest Band Edge / Full RB

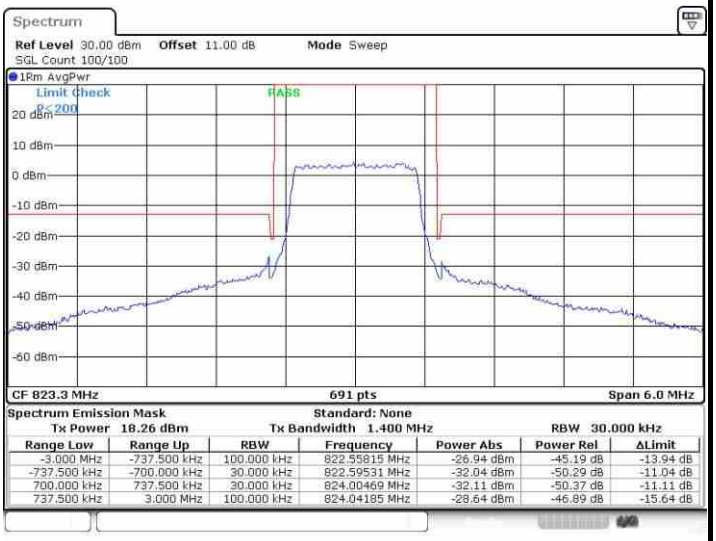



Spectrum Emission Mask Standard: None
Tx Power 17.49 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 813.95815 MHz | -27.28 dBm | -44.76 dB | -14.28 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 813.99531 MHz | -32.53 dBm | -50.01 dB | -11.53 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 815.40469 MHz | -32.95 dBm | -50.44 dB | -11.95 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 815.44185 MHz | -28.27 dBm | -45.75 dB | -15.27 dB |

Date: 21.SEP.2018 06:52:50

### Highest Band Edge / Full RB



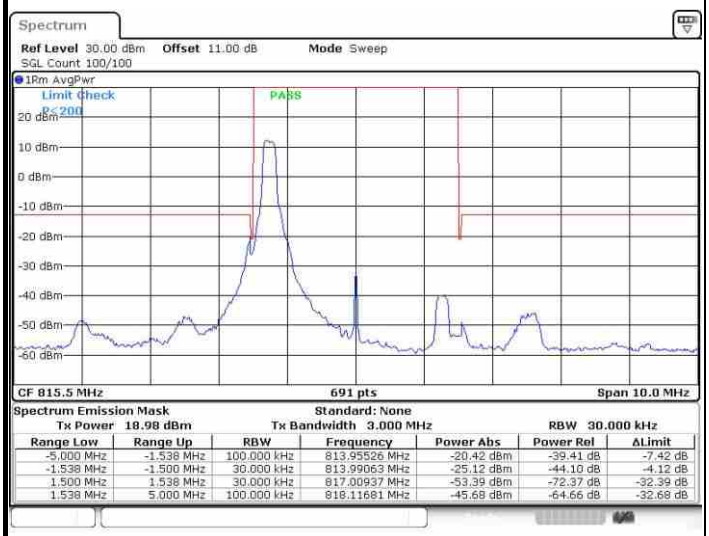

Spectrum Emission Mask Standard: None
Tx Power 18.26 dBm Tx Bandwidth 1.400 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -3.000 MHz | -737.500 kHz | 100.000 kHz | 822.55815 MHz | -26.94 dBm | -45.19 dB | -13.94 dB |
| -737.500 kHz | -700.000 kHz | 30.000 kHz | 822.59531 MHz | -32.04 dBm | -50.29 dB | -11.04 dB |
| 700.000 kHz | 737.500 kHz | 30.000 kHz | 824.00469 MHz | -32.11 dBm | -50.37 dB | -11.11 dB |
| 737.500 kHz | 3.000 MHz | 100.000 kHz | 824.04185 MHz | -28.64 dBm | -46.89 dB | -15.64 dB |

Date: 21.SEP.2018 06:57:39

## LTE Band 26 / 3MHz / QPSK

### Lowest Band Edge / 1RB

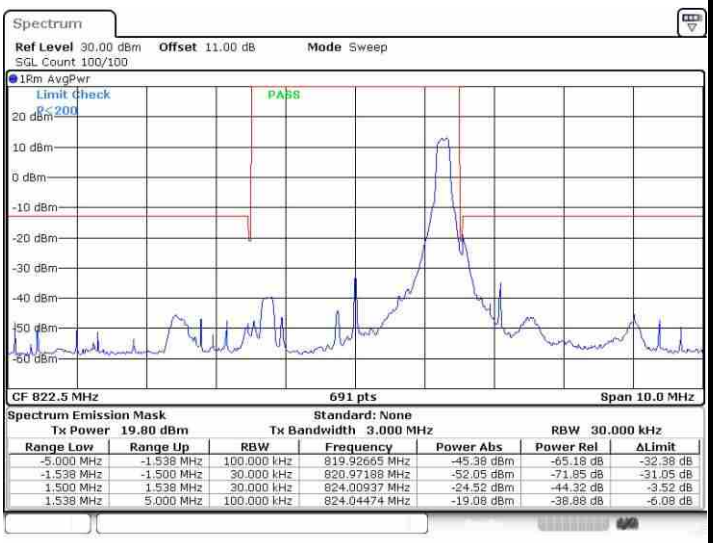



Spectrum Emission Mask Standard: None
Tx Power 18.98 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 813.95526 MHz | -20.42 dBm | -39.41 dB | -7.42 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 813.99063 MHz | -25.12 dBm | -44.10 dB | -4.12 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 817.00937 MHz | -53.39 dBm | -72.37 dB | -32.39 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 818.11681 MHz | -45.68 dBm | -64.66 dB | -32.68 dB |

Date: 21.SEP.2018 06:58:51

### Highest Band Edge / 1 RB

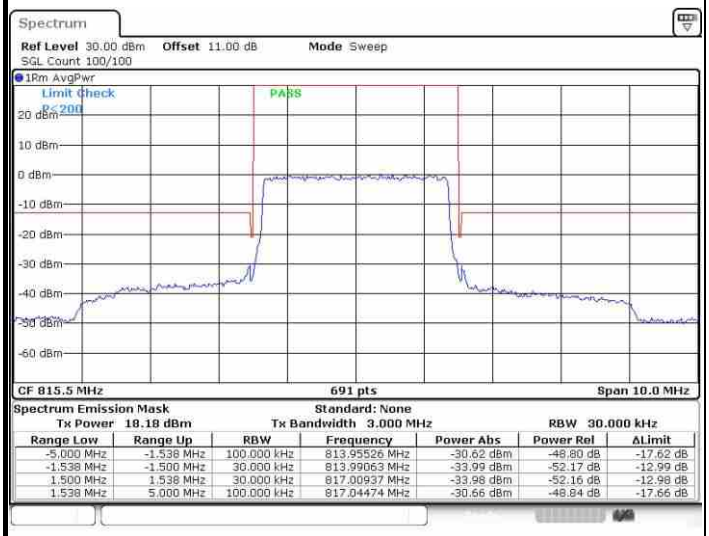



Spectrum Emission Mask Standard: None
Tx Power 19.80 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 819.92665 MHz | -45.38 dBm | -65.18 dB | -32.38 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 820.97188 MHz | -52.05 dBm | -71.85 dB | -31.05 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 824.00937 MHz | -24.52 dBm | -44.32 dB | -3.52 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 824.04474 MHz | -19.08 dBm | -38.88 dB | -6.08 dB |

Date: 21.SEP.2018 07:03:43

### Lowest Band Edge / Full RB

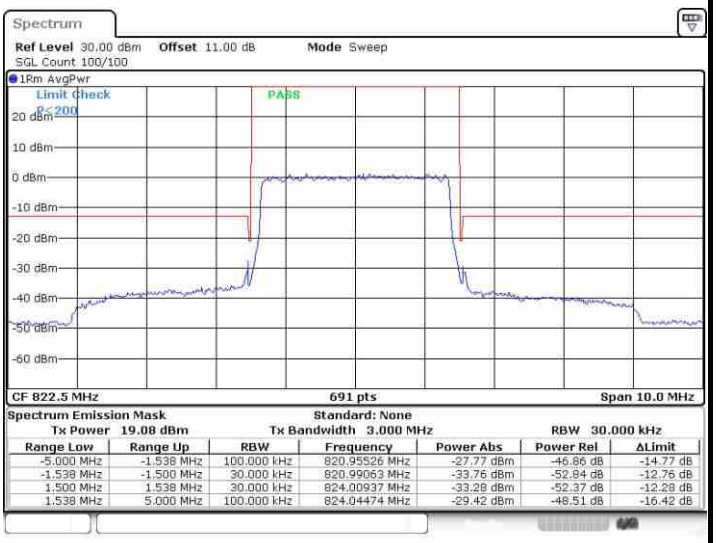



Spectrum Emission Mask Standard: None
Tx Power 18.18 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 813.95526 MHz | -30.62 dBm | -48.80 dB | -17.62 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 813.99063 MHz | -33.99 dBm | -52.17 dB | -12.99 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 817.00937 MHz | -33.98 dBm | -52.16 dB | -12.98 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 817.04474 MHz | -30.66 dBm | -48.84 dB | -17.66 dB |

Date: 21.SEP.2018 07:01:17

### Highest Band Edge / Full RB



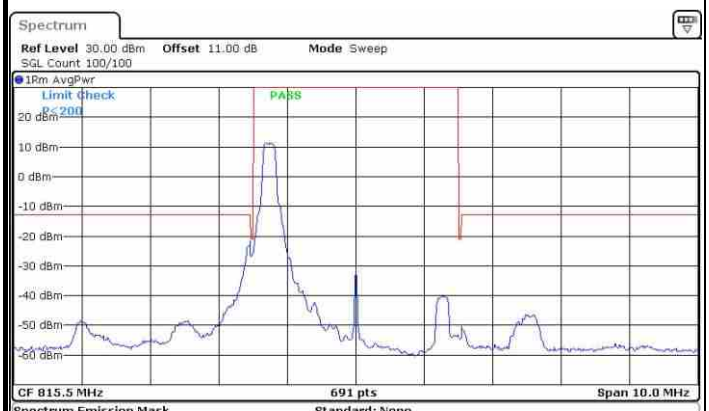

Spectrum Emission Mask Standard: None
Tx Power 19.08 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 820.95526 MHz | -27.77 dBm | -46.86 dB | -14.77 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 820.99063 MHz | -33.76 dBm | -52.84 dB | -12.76 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 824.00937 MHz | -33.28 dBm | -52.37 dB | -12.28 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 824.04474 MHz | -29.42 dBm | -48.51 dB | -16.42 dB |

Date: 21.SEP.2018 07:06:08

## LTE Band 26 / 3MHz / 16QAM

### Lowest Band Edge / 1 RB

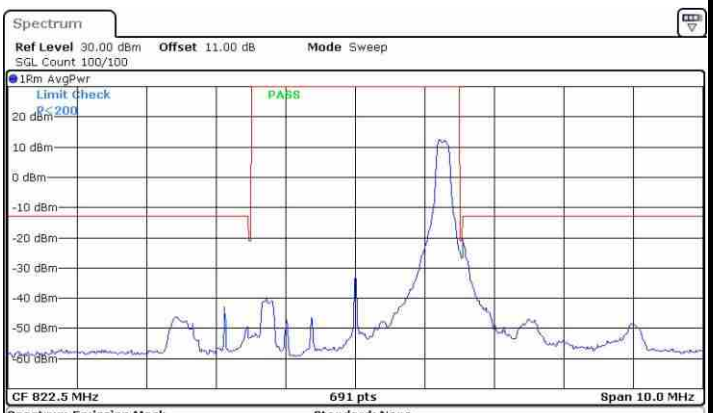



Spectrum Emission Mask Standard: None
Tx Power 18.30 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 813.95526 MHz | -21.61 dBm | -39.91 dB | -8.61 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 813.99063 MHz | -25.58 dBm | -43.88 dB | -4.58 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 817.00937 MHz | -54.30 dBm | -72.60 dB | -33.30 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 818.10233 MHz | -46.47 dBm | -64.77 dB | -33.47 dB |

Date: 21.SEP.2018 07:00:04

### Highest Band Edge /1 RB

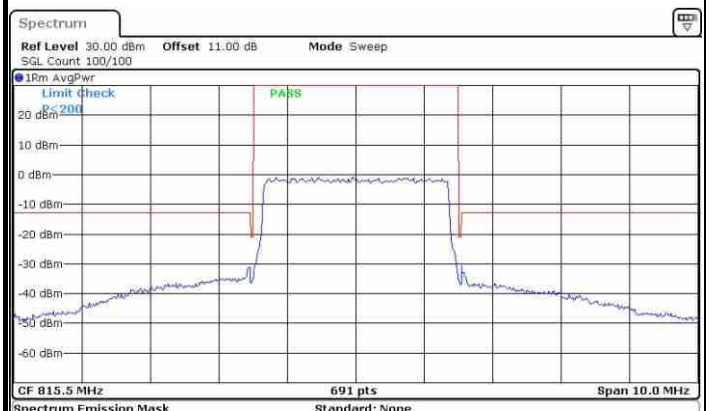



Spectrum Emission Mask Standard: None
Tx Power 19.21 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 820.62204 MHz | -42.82 dBm | -62.03 dB | -29.82 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 820.99063 MHz | -53.17 dBm | -72.38 dB | -32.17 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 824.00937 MHz | -24.54 dBm | -43.75 dB | -3.54 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 824.04474 MHz | -20.25 dBm | -39.46 dB | -7.25 dB |

Date: 21.SEP.2018 07:04:55

### Lowest Band Edge / Full RB

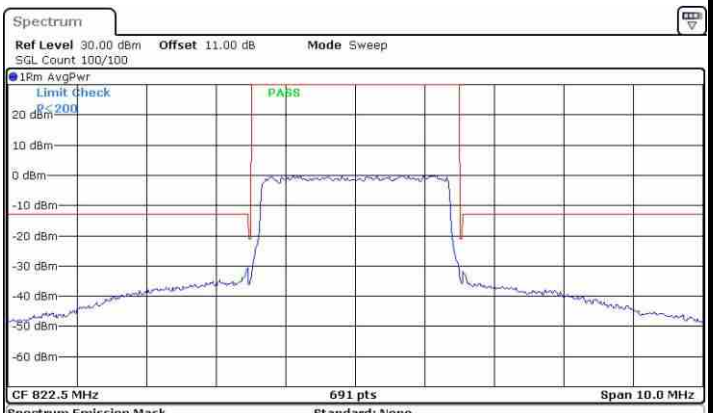



Spectrum Emission Mask Standard: None
Tx Power 17.30 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 813.94077 MHz | -31.23 dBm | -48.54 dB | -18.23 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 813.99063 MHz | -34.76 dBm | -52.06 dB | -13.76 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 817.00937 MHz | -35.35 dBm | -52.65 dB | -14.35 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 817.04474 MHz | -30.67 dBm | -47.97 dB | -17.67 dB |

Date: 21.SEP.2018 07:02:30

### Highest Band Edge / Full RB



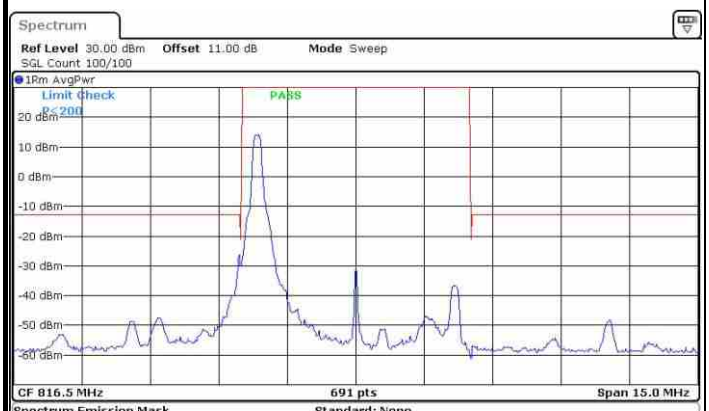

Spectrum Emission Mask Standard: None
Tx Power 18.13 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -5.000 MHz | -1.538 MHz | 100.000 kHz | 820.95526 MHz | -30.70 dBm | -48.83 dB | -17.70 dB |
| -1.538 MHz | -1.500 MHz | 30.000 kHz | 820.99063 MHz | -34.24 dBm | -52.37 dB | -13.24 dB |
| 1.500 MHz | 1.538 MHz | 30.000 kHz | 824.00937 MHz | -33.97 dBm | -52.11 dB | -12.97 dB |
| 1.538 MHz | 5.000 MHz | 100.000 kHz | 824.04474 MHz | -31.72 dBm | -49.85 dB | -18.72 dB |

Date: 21.SEP.2018 07:07:21

## LTE Band 26 / 5MHz / QPSK

### Lowest Band Edge / 1 RB

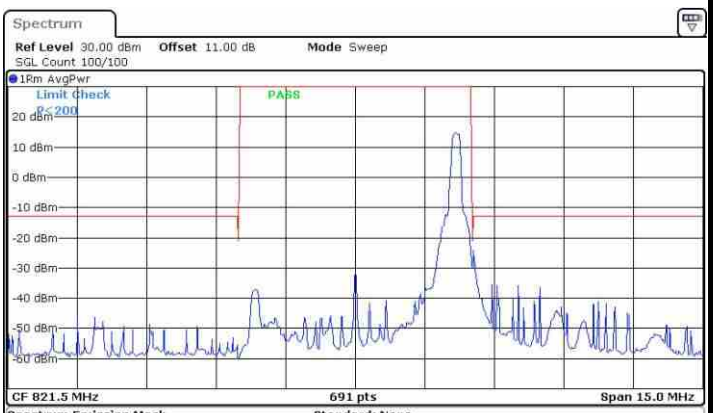



Spectrum Emission Mask Standard: None
Tx Power 18.69 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 813.95162 MHz | -26.41 dBm | -45.09 dB | -13.41 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 813.98125 MHz | -30.13 dBm | -48.81 dB | -9.13 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 819.01875 MHz | -61.23 dBm | -79.92 dB | -40.23 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 822.05200 MHz | -48.14 dBm | -66.82 dB | -35.14 dB |

Date: 21.SEP.2018 07:18:45

### Highest Band Edge / 1 RB

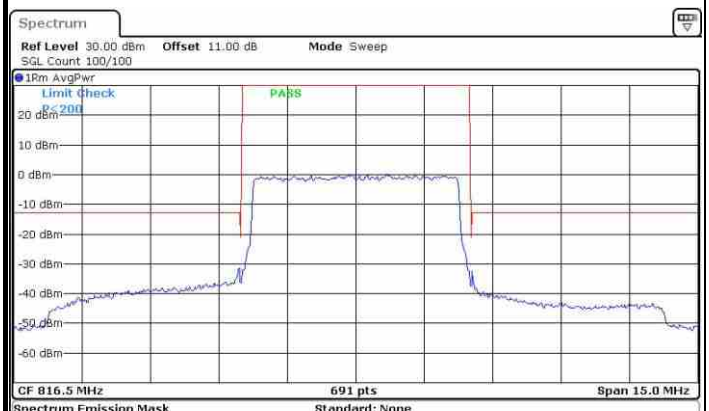



Spectrum Emission Mask Standard: None
Tx Power 19.45 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 815.88270 MHz | -46.34 dBm | -65.80 dB | -33.34 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 818.98125 MHz | -59.95 dBm | -79.41 dB | -38.95 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 824.01875 MHz | -29.83 dBm | -49.29 dB | -8.83 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 824.04838 MHz | -24.33 dBm | -43.79 dB | -11.33 dB |

Date: 21.SEP.2018 07:23:31

### Lowest Band Edge / Full RB

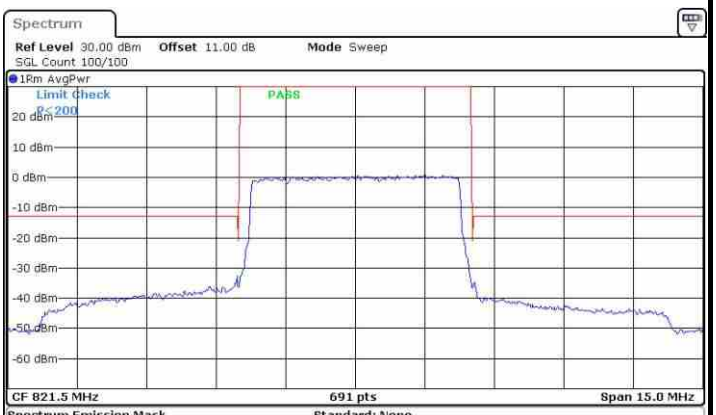



Spectrum Emission Mask Standard: None
Tx Power 18.15 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 813.95162 MHz | -31.51 dBm | -49.66 dB | -18.51 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 813.98125 MHz | -36.58 dBm | -54.73 dB | -15.58 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 819.01875 MHz | -37.60 dBm | -55.75 dB | -16.60 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 819.04838 MHz | -32.28 dBm | -50.43 dB | -19.28 dB |

Date: 21.SEP.2018 07:21:09

### Highest Band Edge / Full RB



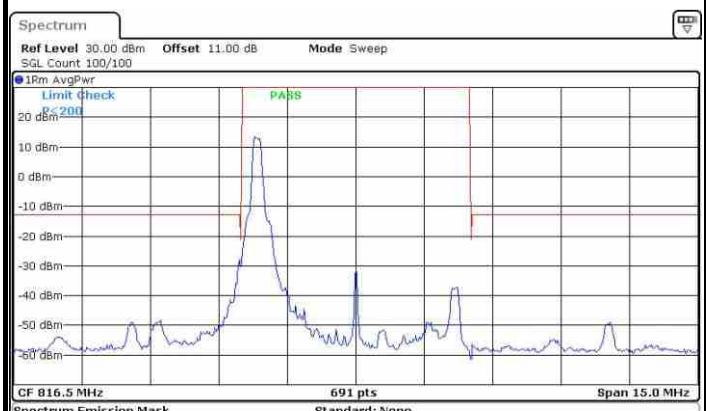

Spectrum Emission Mask Standard: None
Tx Power 18.93 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 818.95162 MHz | -32.74 dBm | -51.67 dB | -19.74 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 818.98125 MHz | -36.58 dBm | -55.51 dB | -15.58 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 824.01875 MHz | -36.76 dBm | -55.69 dB | -15.76 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 824.07015 MHz | -34.59 dBm | -53.52 dB | -21.59 dB |

Date: 21.SEP.2018 07:25:53

## LTE Band 26 / 5MHz / 16QAM

### Lowest Band Edge / 1RB

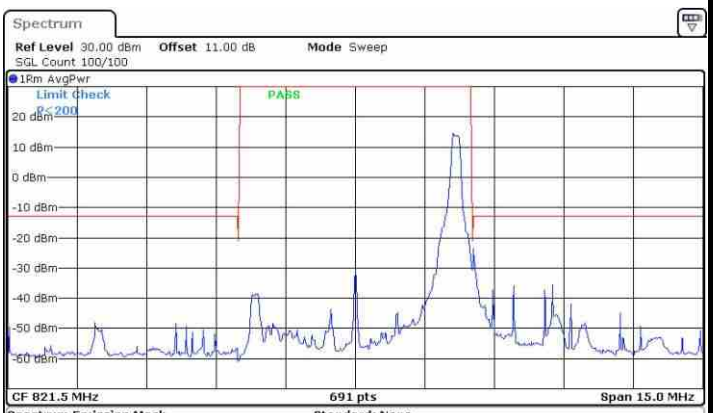



Spectrum Emission Mask Standard: None
Tx Power 17.95 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 813.95162 MHz | -27.76 dBm | -45.71 dB | -14.76 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 813.98125 MHz | -30.21 dBm | -48.16 dB | -9.21 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 819.01875 MHz | -61.65 dBm | -79.60 dB | -40.65 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 822.05200 MHz | -49.11 dBm | -67.06 dB | -36.11 dB |

Date: 21.SEP.2018 07:19:57

### Highest Band Edge / 1 RB

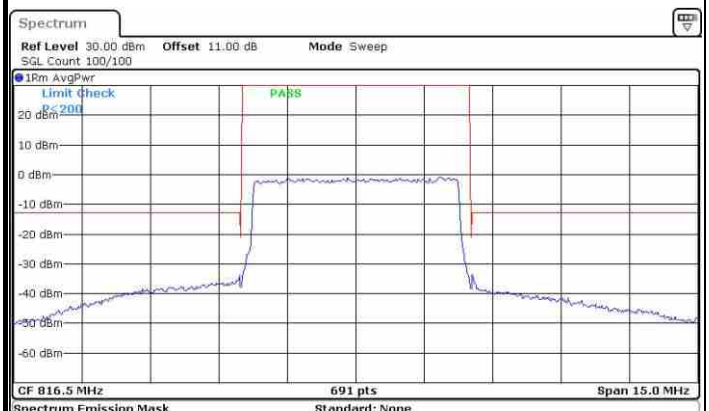



Spectrum Emission Mask Standard: None
Tx Power 18.90 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 815.88270 MHz | -48.22 dBm | -67.13 dB | -35.22 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 818.98125 MHz | -61.07 dBm | -79.97 dB | -40.07 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 824.01875 MHz | -30.50 dBm | -49.40 dB | -9.50 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 824.04838 MHz | -23.70 dBm | -42.60 dB | -10.70 dB |

Date: 21.SEP.2018 07:24:42

### Lowest Band Edge / Full RB

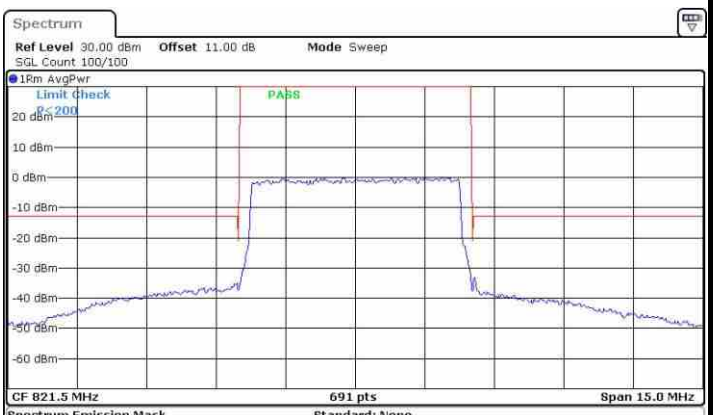



Spectrum Emission Mask Standard: None
Tx Power 17.25 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 813.95162 MHz | -33.75 dBm | -51.00 dB | -20.75 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 813.98125 MHz | -37.79 dBm | -55.04 dB | -16.79 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 819.01875 MHz | -38.59 dBm | -55.83 dB | -17.59 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 819.04838 MHz | -33.64 dBm | -50.89 dB | -20.64 dB |

Date: 21.SEP.2018 07:22:20

### Highest Band Edge / Full RB



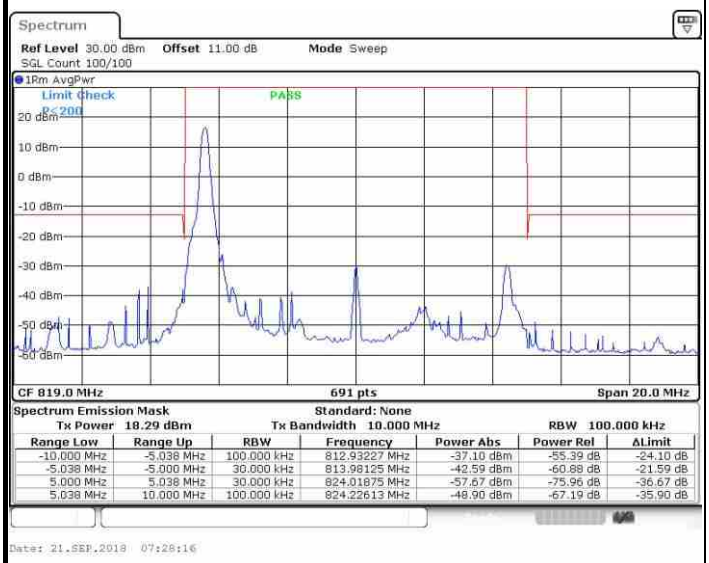

Spectrum Emission Mask Standard: None
Tx Power 18.12 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -7.500 MHz | -2.538 MHz | 100.000 kHz | 818.95162 MHz | -35.15 dBm | -53.27 dB | -22.15 dB |
| -2.538 MHz | -2.500 MHz | 30.000 kHz | 818.98125 MHz | -37.43 dBm | -55.55 dB | -16.43 dB |
| 2.500 MHz | 2.538 MHz | 30.000 kHz | 824.01875 MHz | -37.59 dBm | -55.70 dB | -16.59 dB |
| 2.538 MHz | 7.500 MHz | 100.000 kHz | 824.07015 MHz | -33.32 dBm | -51.44 dB | -20.32 dB |

Date: 21.SEP.2018 07:27:05

## LTE Band 26 / 10MHz / QPSK

### Lowest Band Edge / 1 RB

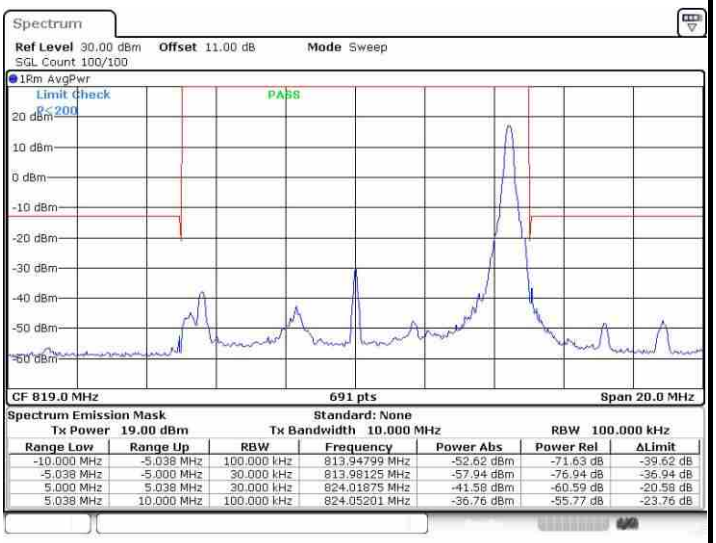



Spectrum Emission Mask Standard: None
Tx Power 18.29 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 812.93227 MHz | -37.10 dBm | -55.39 dB | -24.10 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -42.59 dBm | -60.88 dB | -21.59 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -57.67 dBm | -75.96 dB | -36.67 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.22613 MHz | -49.90 dBm | -67.19 dB | -35.90 dB |

Date: 21.SEP.2018 07:28:16

### Highest Band Edge / 1 RB

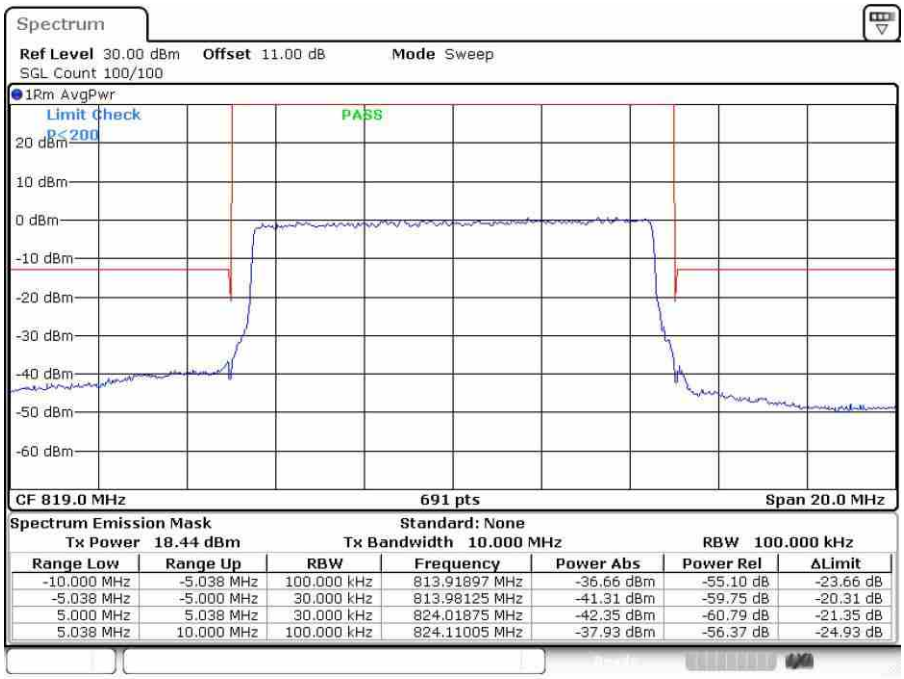



Spectrum Emission Mask Standard: None
Tx Power 19.00 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 813.94799 MHz | -52.62 dBm | -71.63 dB | -39.62 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -57.94 dBm | -76.94 dB | -36.94 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -41.58 dBm | -60.59 dB | -20.58 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.05201 MHz | -36.76 dBm | -55.77 dB | -23.76 dB |

Date: 21.SEP.2018 07:30:37

### Band Edge / Full RB



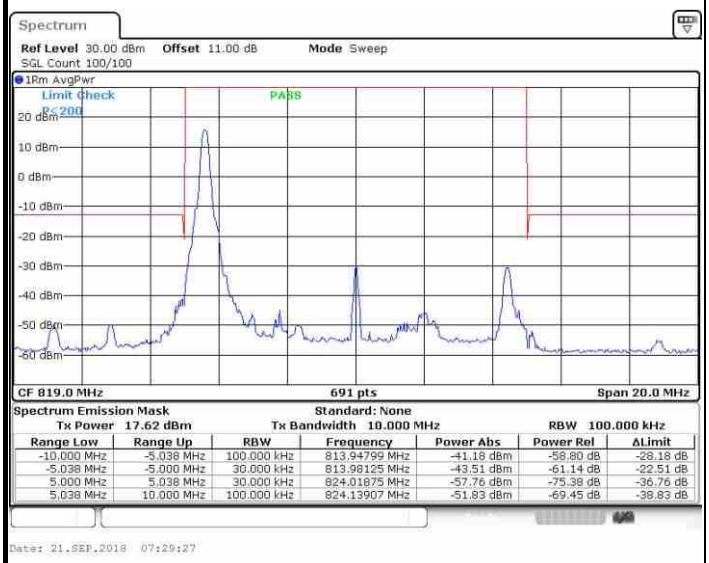

Spectrum Emission Mask Standard: None
Tx Power 18.44 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 813.91897 MHz | -36.66 dBm | -55.10 dB | -23.66 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -41.31 dBm | -59.75 dB | -20.31 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -42.35 dBm | -60.79 dB | -21.35 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.11005 MHz | -37.93 dBm | -56.37 dB | -24.93 dB |

Date: 21.SEP.2018 07:32:59

## LTE Band 26 / 10MHz / 16QAM

### Lowest Band Edge / 1 RB

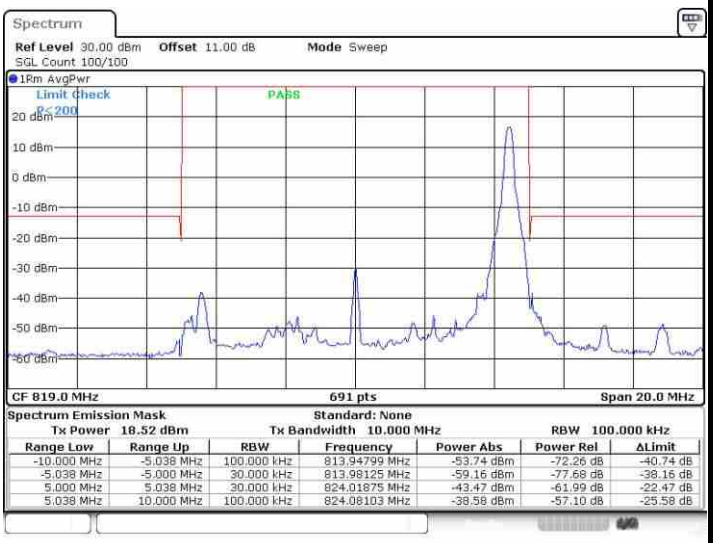



Spectrum Emission Mask Standard: None
Tx Power 17.62 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 813.94799 MHz | -41.18 dBm | -58.80 dB | -28.18 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -43.51 dBm | -61.14 dB | -22.51 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -57.76 dBm | -75.38 dB | -36.76 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.13907 MHz | -51.83 dBm | -69.45 dB | -38.83 dB |

Date: 21.SEP.2018 07:29:27

### Highest Band Edge / 1 RB

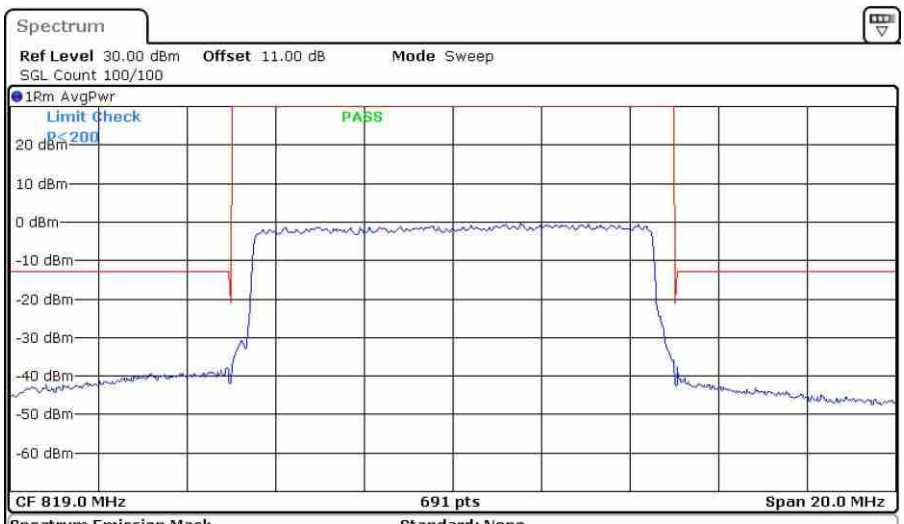



Spectrum Emission Mask Standard: None
Tx Power 18.52 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 813.94799 MHz | -53.74 dBm | -72.26 dB | -40.74 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -59.16 dBm | -77.68 dB | -38.16 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -43.47 dBm | -61.99 dB | -22.47 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.08103 MHz | -38.58 dBm | -57.10 dB | -25.58 dB |

Date: 21.SEP.2018 07:31:48

### Band Edge / Full RB



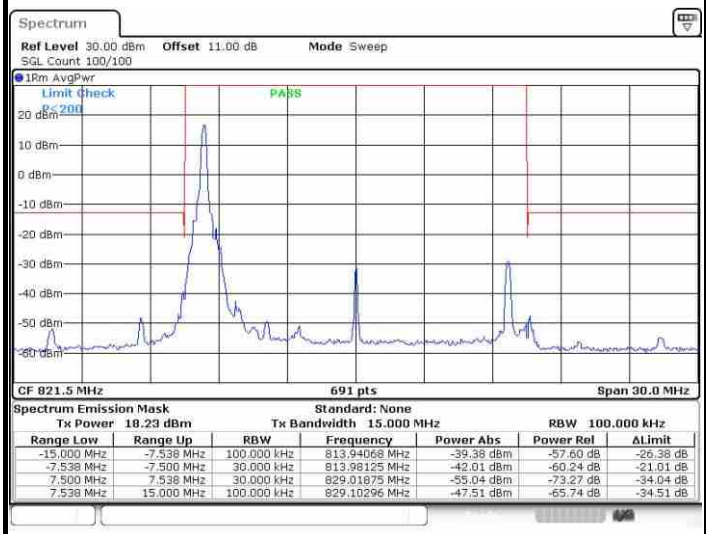

Spectrum Emission Mask Standard: None
Tx Power 17.47 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

| Range Low | Range Up | RBW | Frequency | Power Abs | Power Rel | ΔLimit |
|---|---|---|---|---|---|---|
| -10.000 MHz | -5.038 MHz | 100.000 kHz | 813.91897 MHz | -37.99 dBm | -55.46 dB | -24.99 dB |
| -5.038 MHz | -5.000 MHz | 30.000 kHz | 813.98125 MHz | -42.04 dBm | -59.52 dB | -21.04 dB |
| 5.000 MHz | 5.038 MHz | 30.000 kHz | 824.01875 MHz | -42.72 dBm | -60.20 dB | -21.72 dB |
| 5.038 MHz | 10.000 MHz | 100.000 kHz | 824.05201 MHz | -37.70 dBm | -55.17 dB | -24.70 dB |

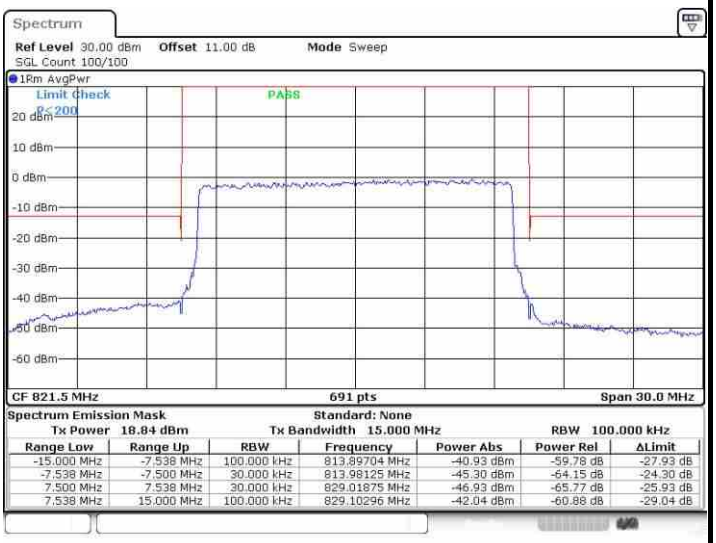
Date: 21.SEP.2018 07:34:10

## LTE Band 26 / 15MHz QPSK

### Lowest Band Edge / 1 RB

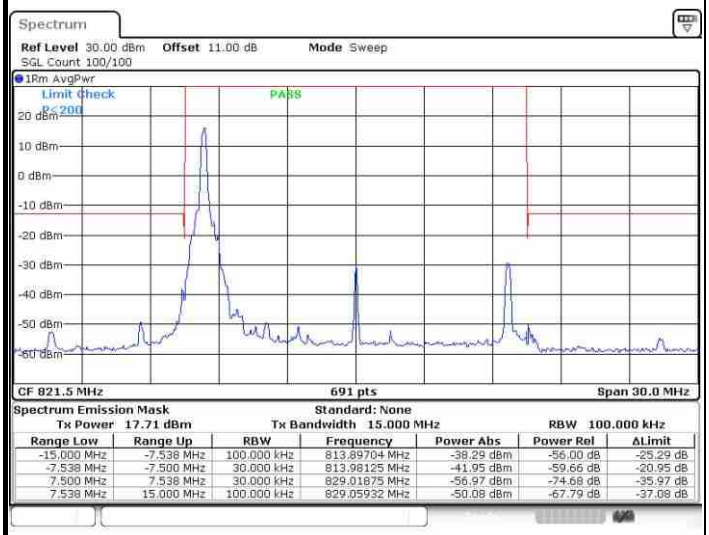



### Lowest Band Edge / Full RB

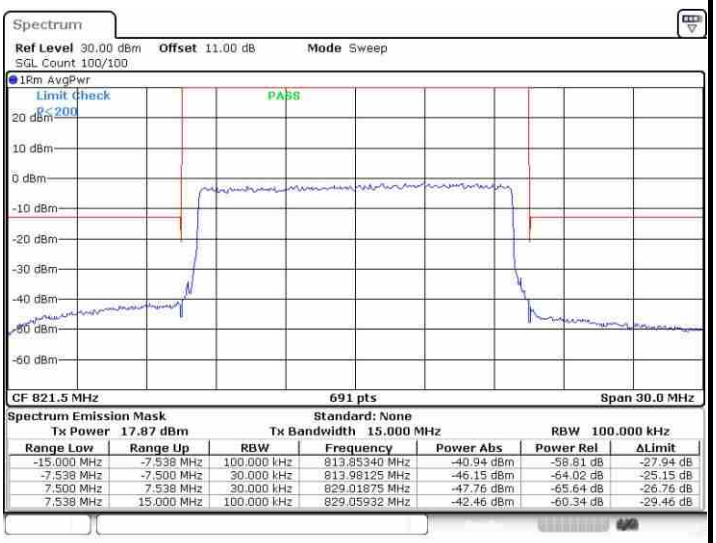



## LTE Band 26 / 15MHz 16QAM

### Lowest Band Edge / 1 RB



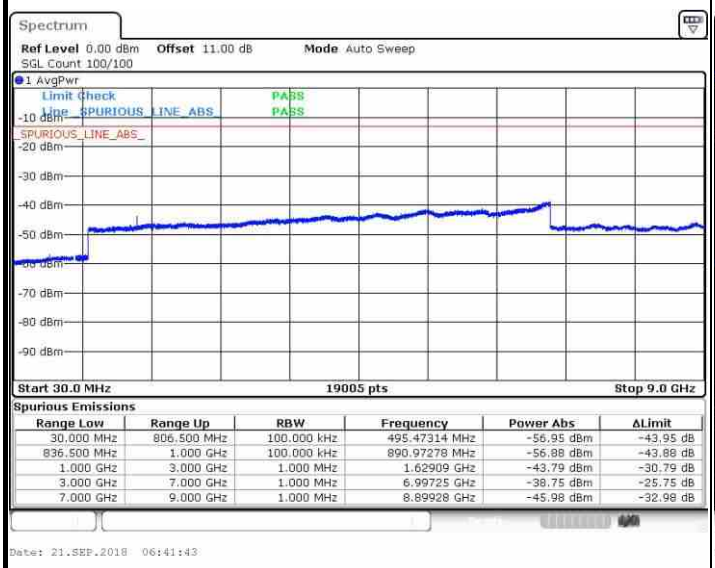

### Lowest Band Edge / Full RB



# Conducted Spurious Emission

## LTE Band 26 / 1.4MHz

### Lowest Channel / QPSK

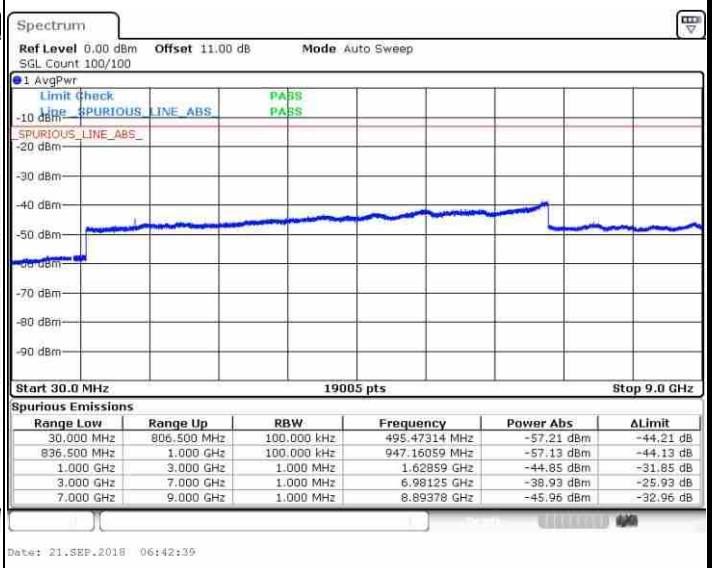



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 495.47314 MHz | -56.95 dBm | -43.95 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 890.97278 MHz | -56.88 dBm | -43.88 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.62909 GHz | -43.79 dBm | -30.79 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99725 GHz | -38.75 dBm | -25.75 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89928 GHz | -45.98 dBm | -32.98 dB |

Date: 21.SEP.2018 06:41:43

### Lowest Channel / 16QAM

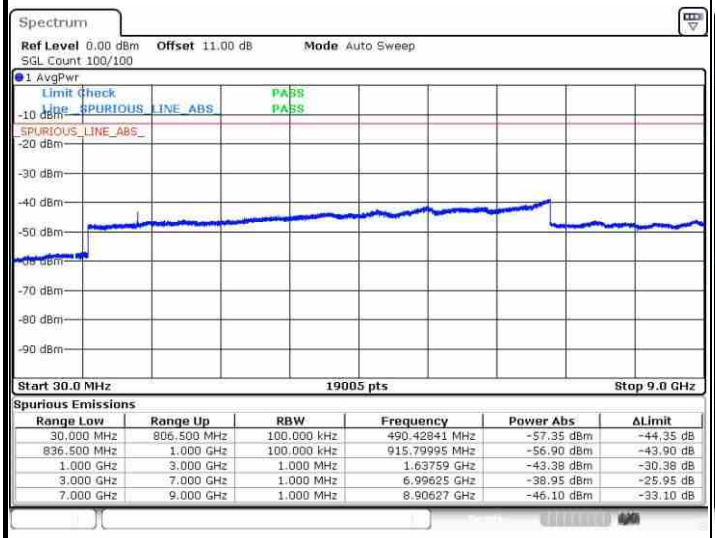



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 495.47314 MHz | -57.21 dBm | -44.21 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 947.16059 MHz | -57.13 dBm | -44.13 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.62859 GHz | -44.85 dBm | -31.85 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98125 GHz | -38.93 dBm | -25.93 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89378 GHz | -45.96 dBm | -32.96 dB |

Date: 21.SEP.2018 06:42:39

### Middle Channel / QPSK

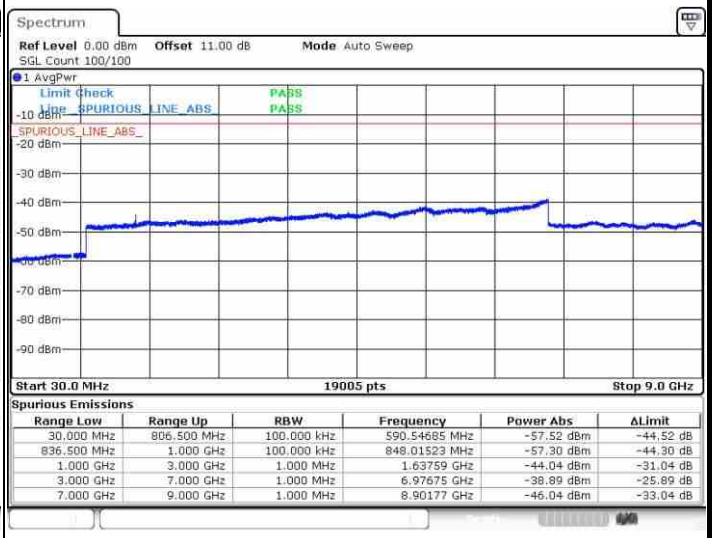



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 490.42841 MHz | -57.35 dBm | -44.35 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 915.79995 MHz | -56.90 dBm | -43.90 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.63759 GHz | -43.38 dBm | -30.38 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99625 GHz | -38.95 dBm | -25.95 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.90627 GHz | -46.10 dBm | -33.10 dB |

Date: 21.SEP.2018 06:44:26

### Middle Channel / 16QAM



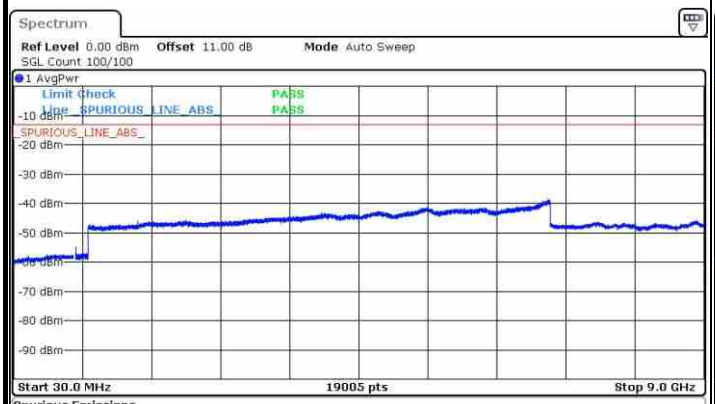

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 590.54685 MHz | -57.52 dBm | -44.52 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 848.01523 MHz | -57.30 dBm | -44.30 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.63759 GHz | -44.04 dBm | -31.04 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.97675 GHz | -38.89 dBm | -25.89 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.90177 GHz | -46.04 dBm | -33.04 dB |

Date: 21.SEP.2018 06:45:21

## LTE Band 26 / 1.4MHz

### Highest Channel / QPSK

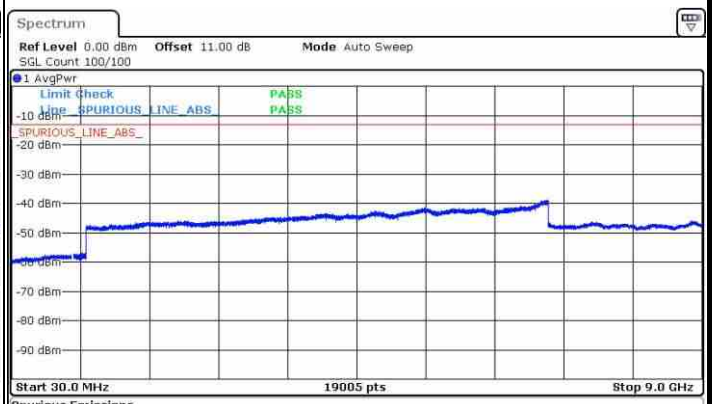



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 656.90442 MHz | -57.52 dBm | -44.52 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 840.66508 MHz | -55.02 dBm | -42.02 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.26943 GHz | -45.76 dBm | -32.76 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98575 GHz | -38.87 dBm | -25.87 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89528 GHz | -45.94 dBm | -32.94 dB |

Date: 21.SEP.2018 06:47:09

### Highest Channel / 16QAM



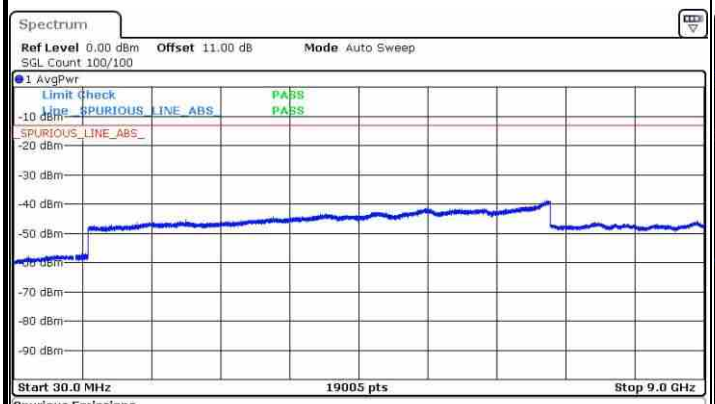

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 623.91967 MHz | -57.49 dBm | -44.49 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 942.58716 MHz | -56.99 dBm | -43.99 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.28343 GHz | -45.97 dBm | -32.97 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99175 GHz | -38.90 dBm | -25.90 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.86228 GHz | -45.99 dBm | -32.99 dB |

Date: 21.SEP.2018 06:48:05

## LTE Band 26 / 3MHz

### Lowest Channel / QPSK

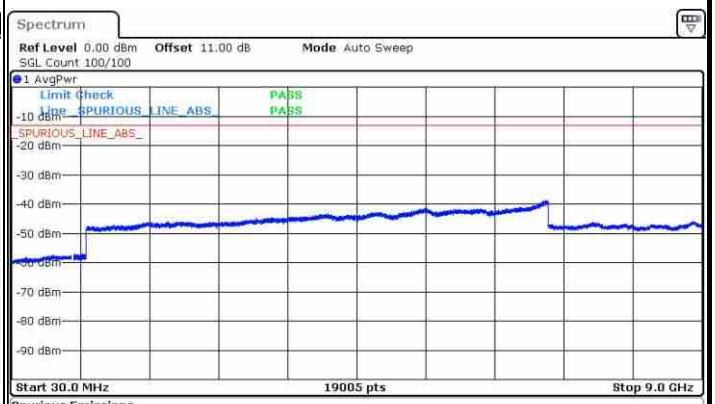



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 710.06809 MHz | -57.50 dBm | -44.50 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 965.45430 MHz | -57.01 dBm | -44.01 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.26193 GHz | -45.43 dBm | -32.43 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.96125 GHz | -38.87 dBm | -25.87 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.91977 GHz | -46.02 dBm | -33.02 dB |

Date: 21.SEP.2018 07:43:02

### Lowest Channel / 16QAM



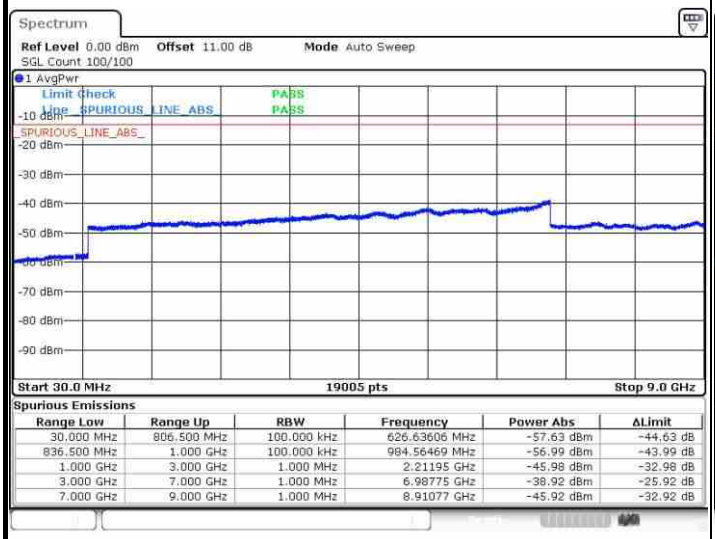

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 564.54710 MHz | -57.67 dBm | -44.67 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 844.91184 MHz | -56.98 dBm | -43.98 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.04649 GHz | -45.88 dBm | -32.88 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.97125 GHz | -38.79 dBm | -25.79 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.87828 GHz | -46.04 dBm | -33.04 dB |

Date: 21.SEP.2018 07:43:59

## LTE Band 26 / 3MHz

### Middle Channel / QPSK

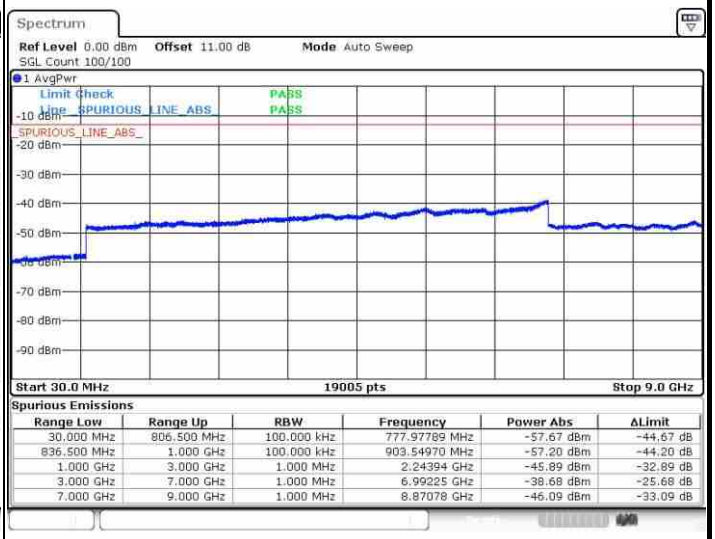



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 626.63606 MHz | -57.63 dBm | -44.63 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 984.56469 MHz | -56.99 dBm | -43.99 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.21195 GHz | -45.98 dBm | -32.98 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98775 GHz | -38.92 dBm | -25.92 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.91077 GHz | -45.92 dBm | -32.92 dB |

Date: 21.SEP.2018 07:45:47

### Middle Channel / 16QAM

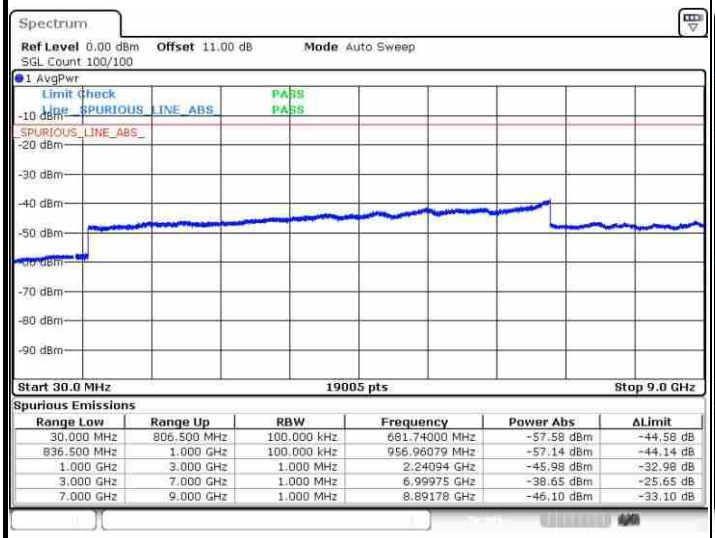



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 777.97789 MHz | -57.67 dBm | -44.67 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 903.54970 MHz | -57.20 dBm | -44.20 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.24394 GHz | -45.89 dBm | -32.89 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99225 GHz | -38.68 dBm | -25.68 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.87078 GHz | -46.09 dBm | -33.09 dB |

Date: 21.SEP.2018 07:46:42

### Highest Channel / QPSK

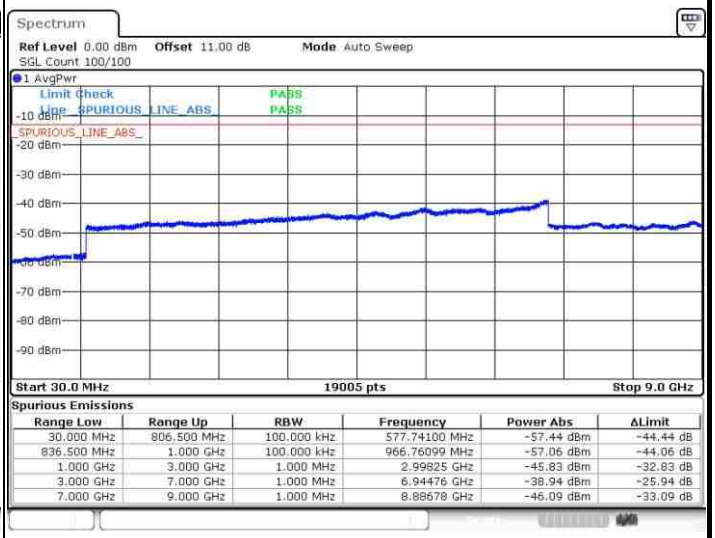



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 681.74000 MHz | -57.58 dBm | -44.58 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 956.96079 MHz | -57.14 dBm | -44.14 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.24094 GHz | -45.98 dBm | -32.98 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99975 GHz | -38.65 dBm | -25.65 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89178 GHz | -46.10 dBm | -33.10 dB |

Date: 21.SEP.2018 07:48:30

### Highest Channel / 16QAM



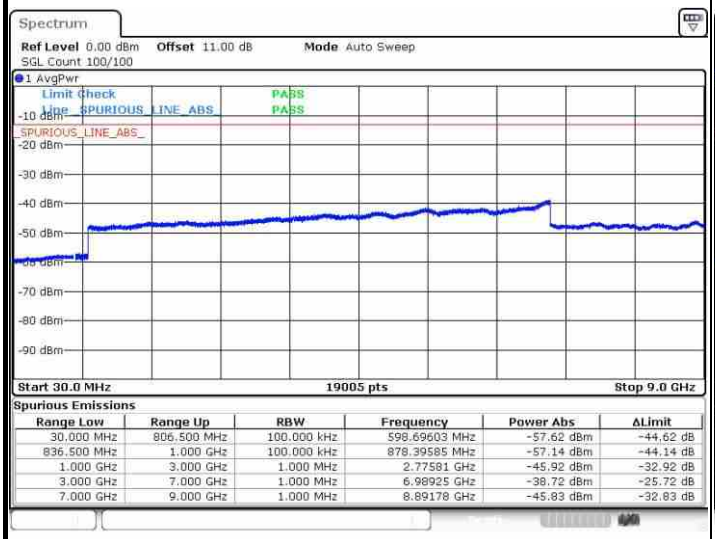

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 577.74100 MHz | -57.44 dBm | -44.44 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 966.76099 MHz | -57.06 dBm | -44.06 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.99825 GHz | -45.83 dBm | -32.83 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.94476 GHz | -38.94 dBm | -25.94 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.88678 GHz | -46.09 dBm | -33.09 dB |

Date: 21.SEP.2018 07:49:26

## LTE Band 26 / 5MHz

### Lowest Channel / QPSK

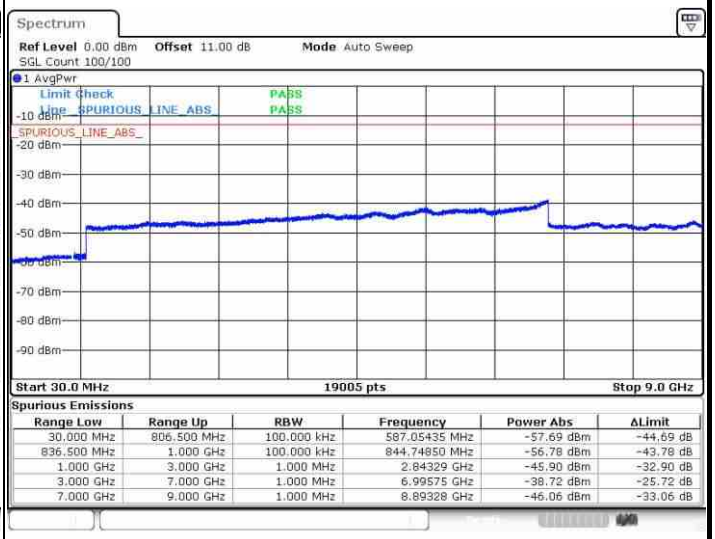



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 598.69603 MHz | -57.62 dBm | -44.62 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 878.39585 MHz | -57.14 dBm | -44.14 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.77581 GHz | -45.92 dBm | -32.92 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98925 GHz | -38.72 dBm | -25.72 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89178 GHz | -45.83 dBm | -32.83 dB |

Date: 21.SEP.2018 07:51:13

### Lowest Channel / 16QAM

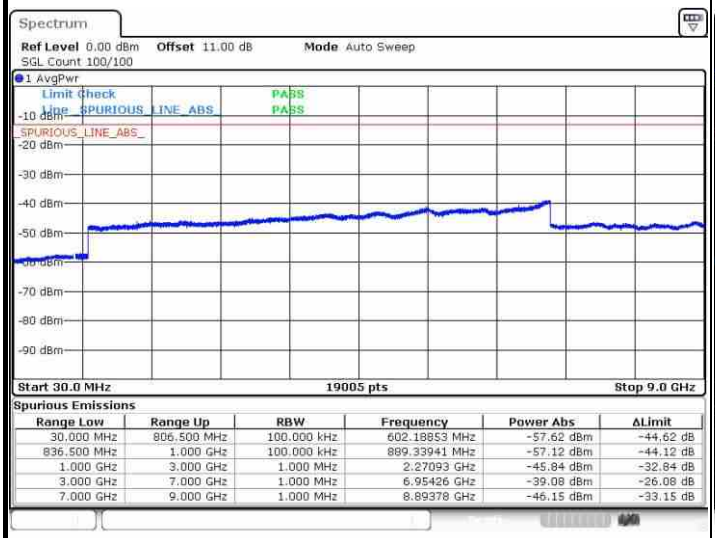



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 587.05435 MHz | -57.69 dBm | -44.69 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 844.74850 MHz | -56.78 dBm | -43.78 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.84329 GHz | -45.90 dBm | -32.90 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99575 GHz | -38.72 dBm | -25.72 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89328 GHz | -46.06 dBm | -33.06 dB |

Date: 21.SEP.2018 07:52:09

### Middle Channel / QPSK

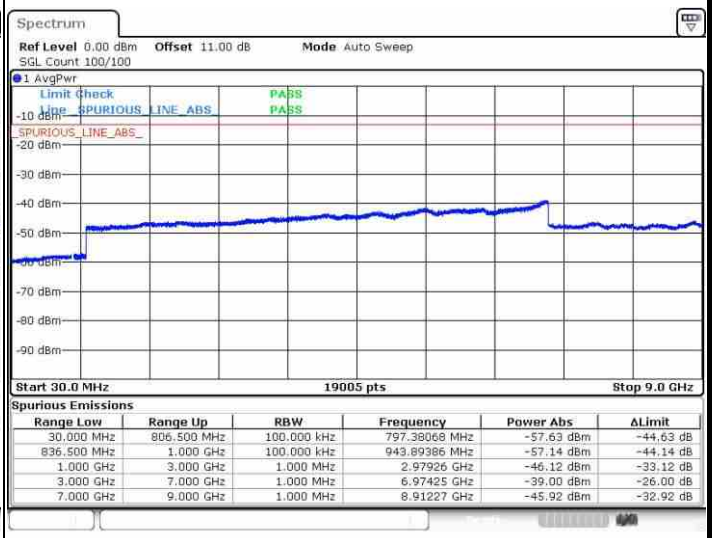



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 602.18853 MHz | -57.62 dBm | -44.62 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 889.33941 MHz | -57.12 dBm | -44.12 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.27093 GHz | -45.84 dBm | -32.84 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.95426 GHz | -39.08 dBm | -26.08 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89378 GHz | -46.15 dBm | -33.15 dB |

Date: 21.SEP.2018 07:53:57

### Middle Channel / 16QAM



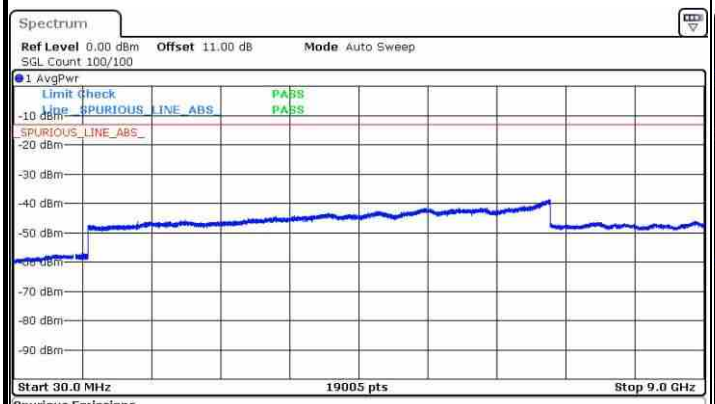

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 797.38068 MHz | -57.63 dBm | -44.63 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 943.89386 MHz | -57.14 dBm | -44.14 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.97926 GHz | -46.12 dBm | -33.12 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.97425 GHz | -39.00 dBm | -26.00 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.91227 GHz | -45.92 dBm | -32.92 dB |

Date: 21.SEP.2018 07:54:53

## LTE Band 26 / 5MHz

### Highest Channel / QPSK

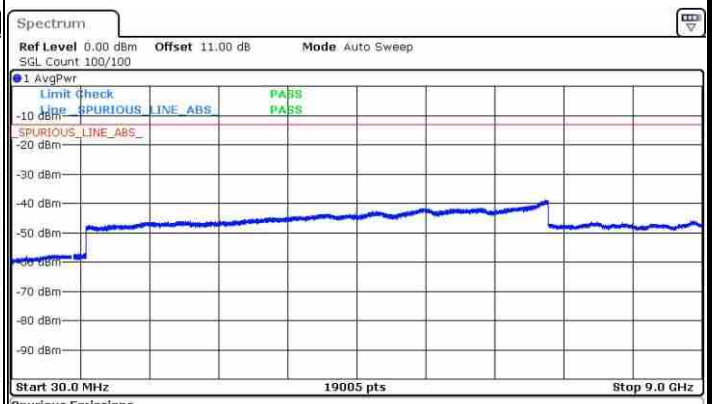



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 680.57584 MHz | -57.53 dBm | -44.53 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 911.22652 MHz | -57.08 dBm | -44.08 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.25044 GHz | -45.81 dBm | -32.81 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.97625 GHz | -38.88 dBm | -25.88 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.87278 GHz | -46.05 dBm | -33.05 dB |

Date: 21.SEP.2018 07:56:41

### Highest Channel / 16QAM



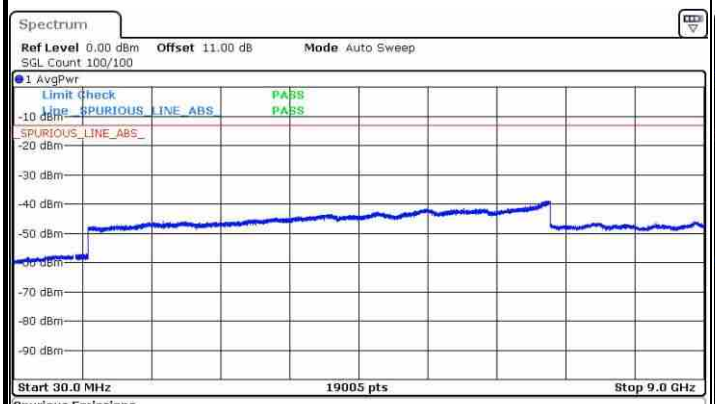

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 684.84445 MHz | -57.63 dBm | -44.63 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 987.50475 MHz | -57.01 dBm | -44.01 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.34491 GHz | -45.93 dBm | -32.93 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.96975 GHz | -38.85 dBm | -25.85 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.89378 GHz | -45.90 dBm | -32.90 dB |

Date: 21.SEP.2018 07:57:37

## LTE Band 26 / 10MHz

### Middle Channel / QPSK

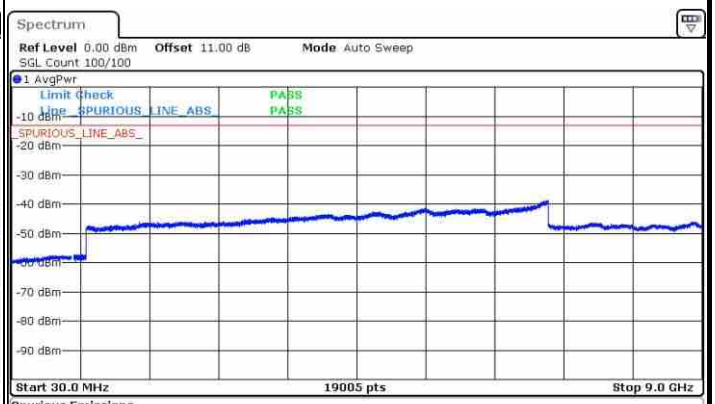



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 805.91792 MHz | -57.59 dBm | -44.59 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 970.35440 MHz | -56.99 dBm | -43.99 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.95726 GHz | -45.82 dBm | -32.82 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.97975 GHz | -38.98 dBm | -25.98 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.87928 GHz | -46.04 dBm | -33.04 dB |

Date: 21.SEP.2018 07:59:24

### Middle Channel / 16QAM



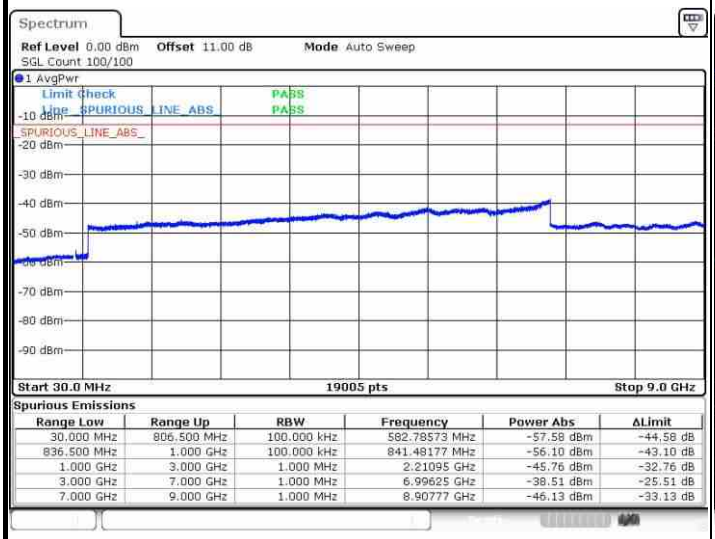

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 598.69603 MHz | -57.52 dBm | -44.52 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 992.40485 MHz | -57.13 dBm | -44.13 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.78180 GHz | -45.98 dBm | -32.98 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99525 GHz | -38.74 dBm | -25.74 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.87428 GHz | -46.14 dBm | -33.14 dB |

Date: 21.SEP.2018 08:00:20

## LTE Band 26 / 15MHz

### Lowest Channel / QPSK

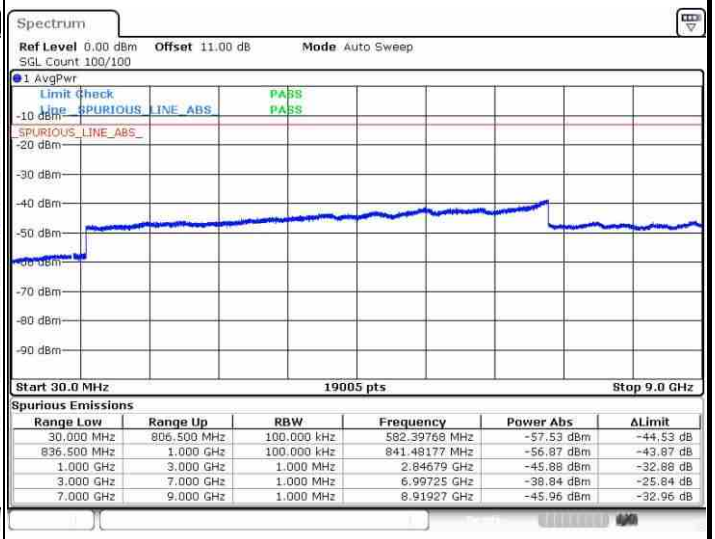



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 582.78573 MHz | -57.58 dBm | -44.58 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 841.48177 MHz | -56.10 dBm | -43.10 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.21095 GHz | -45.76 dBm | -32.76 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99625 GHz | -38.51 dBm | -25.51 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.90777 GHz | -46.13 dBm | -33.13 dB |

Date: 21.SEP.2018 08:02:07

### Lowest Channel / 16QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 806.500 MHz | 100.000 kHz | 582.39768 MHz | -57.53 dBm | -44.53 dB |
| 836.500 MHz | 1.000 GHz | 100.000 kHz | 841.48177 MHz | -56.87 dBm | -43.87 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 2.84679 GHz | -45.88 dBm | -32.88 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99725 GHz | -38.84 dBm | -25.84 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.91927 GHz | -45.96 dBm | -32.96 dB |

Date: 21.SEP.2018 08:03:03

# Frequency Stability

| Test Conditions | | LTE Band 26 (QPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 10MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0073 | PASS |
| 40 | Normal Voltage | 0.0063 | |
| 30 | Normal Voltage | 0.0020 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0022 | |
| 0 | Normal Voltage | 0.0016 | |
| -10 | Normal Voltage | 0.0066 | |
| -20 | Normal Voltage | 0.0057 | |
| -30 | Normal Voltage | 0.0012 | |
| 20 | Maximum Voltage | 0.0074 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0049 | |

**Note:**

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.4 V.；Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

| Test Conditions | | LTE Band 26 (QPSK) / Low Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 15MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0033 | PASS |
| 40 | Normal Voltage | 0.0019 | |
| 30 | Normal Voltage | 0.0035 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0006 | |
| 0 | Normal Voltage | 0.0039 | |
| -10 | Normal Voltage | 0.0026 | |
| -20 | Normal Voltage | 0.0138 | |
| -30 | Normal Voltage | 0.0127 | |
| 20 | Maximum Voltage | 0.0088 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0012 | |

**Note:**

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.4 V.；Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

# Appendix B. Test Results of ERP and Radiated Test

## ERP

**<Reporting Only>**

| LTE Band 26 / 15MHz (Channel 26765) (GT - LC = 0 dB) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Mode | RB | | Conducted | | ERP | |
| | | Size | Offset | Power (dBm) | Power (Watts) | ERP(dBm) | ERP(W) |
| Lowest | QPSK | 1 | 37 | 23.32 | 0.2148 | 21.17 | 0.1309 |
| Middle | | - | - | - | - | - | - |
| Highest | | - | - | - | - | - | - |
| Lowest | 16QAM | 1 | 0 | 22.51 | 0.1782 | 20.36 | 0.1086 |
| Middle | | - | - | - | - | - | - |
| Highest | | - | - | - | - | - | - |
| Limit | ERP < 7W | | | Result | | PASS | |

# Radiated Spurious Emission

## Part 90S LTE Band 26

| LTE Band 26 / 5MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | ERP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 1638 | -63.46 | -13 | -50.46 | -74.51 | -69.27 | 0.69 | 8.65 | H |
| | 2456 | -49.57 | -13 | -36.57 | -65.53 | -57.21 | 0.94 | 10.74 | H |
| | 3275 | -57.60 | -13 | -44.60 | -75.81 | -66.06 | 1.20 | 11.81 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1638 | -63.07 | -13 | -50.07 | -73.99 | -68.88 | 0.69 | 8.65 | V |
| | 2456 | -50.94 | -13 | -37.94 | -66.94 | -58.58 | 0.94 | 10.74 | V |
| | 3275 | -57.67 | -13 | -44.67 | -75.79 | -66.13 | 1.20 | 11.81 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| Middle | 1643 | -63.14 | -13 | -50.14 | -74.2 | -68.97 | 0.69 | 8.67 | H |
| | 2464 | -48.70 | -13 | -35.70 | -64.66 | -56.35 | 0.95 | 10.75 | H |
| | 3288 | -57.77 | -13 | -44.77 | -75.96 | -66.25 | 1.20 | 11.83 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1643 | -63.37 | -13 | -50.37 | -74.31 | -69.20 | 0.69 | 8.67 | V |
| | 2464 | -49.52 | -13 | -36.52 | -65.49 | -57.17 | 0.95 | 10.75 | V |
| | 3288 | -57.63 | -13 | -44.63 | -75.68 | -66.11 | 1.20 | 11.83 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Highest | 1648 | -63.38 | -13 | -50.38 | -74.47 | -69.23 | 0.69 | 8.69 | H |
| | 2472 | -47.83 | -13 | -34.83 | -63.8 | -55.49 | 0.95 | 10.76 | H |
| | 3295 | -58.03 | -13 | -45.03 | -76.19 | -66.53 | 1.20 | 11.85 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1648 | -63.21 | -13 | -50.21 | -74.18 | -69.06 | 0.69 | 8.69 | V |
| | 2472 | -49.95 | -13 | -36.95 | -65.92 | -57.61 | 0.95 | 10.76 | V |
| | 3295 | -57.96 | -13 | -44.96 | -75.97 | -66.46 | 1.20 | 11.85 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

| LTE Band 26 / 10MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle | 1638 | -63.16 | -13 | -50.16 | -74.21 | -68.97 | 0.69 | 8.65 | H |
| | 2456 | -48.25 | -13 | -35.25 | -64.21 | -55.89 | 0.94 | 10.74 | H |
| | 3276 | -57.68 | -13 | -44.68 | -75.89 | -66.14 | 1.20 | 11.81 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1638 | -63.53 | -13 | -50.53 | -74.45 | -69.34 | 0.69 | 8.65 | V |
| | 2456 | -49.95 | -13 | -36.95 | -65.95 | -57.59 | 0.94 | 10.74 | V |
| | 3276 | -57.61 | -13 | -44.61 | -75.73 | -66.07 | 1.20 | 11.81 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |

| LTE Band 26 / 15MHz / QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Channel | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 1643 | -63.38 | -13 | -50.38 | -74.45 | -69.21 | 0.69 | 8.67 | H |
| | 2464 | -49.68 | -13 | -36.68 | -65.64 | -57.33 | 0.95 | 10.75 | H |
| | 3286 | -57.73 | -13 | -44.73 | -75.92 | -66.21 | 1.20 | 11.83 | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | | | | | | | | | H |
| | 1643 | -63.25 | -13 | -50.25 | -74.19 | -69.08 | 0.69 | 8.67 | V |
| | 2464 | -51.63 | -13 | -38.63 | -67.6 | -59.28 | 0.95 | 10.75 | V |
| | 3286 | -57.91 | -13 | -44.91 | -75.98 | -66.39 | 1.20 | 11.83 | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |
| | | | | | | | | | V |