# FCC RF Test Report

| | | |
|---|---|---|
| **APPLICANT** | : | **Solnik S.A.** |
| **EQUIPMENT** | : | **mobile phone** |
| **BRAND NAME** | : | **HYUNDAI** |
| **MODEL NAME** | : | **HY1-1716** |
| **FCC ID** | : | **2AFRUHY1-1716** |
| **STANDARD** | : | **47 CFR Part 2, 27(L)** |
| **CLASSIFICATION** | : | **PCS Licensed Transmitter Held to Ear (PCE)** |

**The product was received on Nov. 16, 2017 and completely tested on Dec. 14, 2017. We, Sporton International (Shenzhen) 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 the testing has shown the tested sample to be in compliance with the applicable technical standards. The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.**

Eric Shih

**Approved by: Eric Shih / Manager**

TESTING
NVLAP LAB CODE 600156-0

***Sporton International (Shenzhen) Inc.***
***1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China***

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**APPENDIX A. TEST RESULTS OF CONDUCTED TEST**

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# REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FG7N1621B | Rev. 01 | Initial issue of report | Dec. 28, 2017 |
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# SUMMARY OF TEST RESULT

| Report Section | FCC Rule | Description | Limit | Result | Remark |
|---|---|---|---|---|---|
| 3.4 | §2.1046 | Conducted Output Power | Reporting Only | PASS | - |
| | §27.50(d)(4) | Equivalent Isotropic Radiated Power (Band 4) | EIRP < 1Watt | PASS | - |
| 3.5 | N/A | Peak-to-Average Ratio | <13 dB | PASS | - |
| 3.6 | §2.1049 | Occupied Bandwidth | Reporting Only | PASS | - |
| 3.7 | §2.1051 §27.53(h) | Conducted Band Edge Measurement (Band 4) | < 43+10log10(P[Watts]) | PASS | - |
| 3.8 | §2.1051 §27.53(h) | Conducted Spurious Emission (Band 4) | < 43+10log10(P[Watts]) | PASS | - |
| 3.9 | §2.1055 §27.54 | Frequency Stability Temperature & Voltage | Within Authorized Band | PASS | - |
| 4.4 | §2.1053 §27.53(h) | Radiated Spurious Emission (Band 4) | < 43+10$\log_{10}$(P[Watts]) | PASS | Under limit 38.74 dB at 3463.740 MHz |

# 1 General Description

## 1.1 Applicant

**Solnik S.A.**
Dr. Emilio Ravignani 1724 Ciudad Autonoma de Buenos Aires Zip Code 1414 Argentina

## 1.2 Manufacturer

**ShenZhen Chenyee Technology Co., Ltd.**
32F, Tower A, East Pacific International Center, No.7888 Shennan Avenue, Futian District, Shenzhen-518040, China

## 1.3 Product Feature of Equipment Under Test

| Product Feature | |
|---|---|
| **Equipment** | mobile phone |
| **Brand Name** | HYUNDAI |
| **Model Name** | HY1-1716 |
| **FCC ID** | 2AFRUHY1-1716 |
| **EUT supports Radios application** | GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/<br>HSPA+ (16QAM uplink is not supported)/LTE<br>WLAN 2.4GHz 802.11b/g/n HT20/HT40<br>Bluetooth v3.0+EDR/ Bluetooth v4.0 LE<br>Bluetooth v4.1 LE/ Bluetooth v4.2 LE |
| **IMEI Code** | Conducted: 354147042072992/354147042087990<br>Radiation: 354147042340936/354147042390931 |
| **HW Version** | Ultra Vision_Mainboard_P3 |
| **SW Version** | Ultra Vision_2302_V0525 |
| **EUT Stage** | Pre-Production |

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This project is Class II permission change application base on change ID application (Original FCC ID: N2GSL558): updated HW/SW Version and accessories, shutting down LTE Band 2 and Band 7 by software. Based on the similarity between two products, there is no influence on the test results, all the test results were leverage from original report (Sporton Report Number FG7D0406B).

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification | |
|---|---|
| **Tx Frequency** | LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz |
| **Rx Frequency** | LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz |
| **Bandwidth** | LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz |
| **Maximum Output Power to Antenna** | LTE Band 4 : 22.93 dBm |
| **Antenna Gain** | LTE Band 4 : 0.98 dBi |
| **Type of Modulation** | QPSK / 16QAM |

## 1.5 Modification of EUT

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

## 1.6 Maximum EIRP Power, Frequency Tolerance, and Emission Designator

| LTE Band 4 | | QPSK | | | 16QAM | | |
|---|---|---|---|---|---|---|---|
| BW (MHz) | Frequency Range (MHz) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) |
| **1.4** | 1710.7 ~ 1754.3 | 1M09G7D | - | 0.2449 | 1M10W7D | - | 0.2218 |
| **3** | 1711.5 ~ 1753.5 | 2M73G7D | - | 0.2421 | 2M72W7D | - | 0.2123 |
| **5** | 1712.5 ~ 1752.5 | 4M51G7D | - | 0.2449 | 4M52W7D | - | 0.2128 |
| **10** | 1715.0 ~ 1750.0 | 9M07G7D | 0.0109 | 0.2438 | 9M03W7D | - | 0.2218 |
| **15** | 1717.5 ~ 1747.5 | 13M5G7D | - | 0.2432 | 13M5W7D | - | 0.2228 |
| **20** | 1720.0 ~ 1745.0 | 18M5G7D | - | 0.2460 | 18M5W7D | - | 0.2183 |

## 1.7 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No are CN5018 and CN5019.

| | | |
|---|---|---|
| **Test Site** | Sporton International (Shenzhen) Inc. | |
| **Test Site Location** | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China<br>TEL: +86-755-8637-9589<br>FAX: +86-755-8637-9595 | |
| **Test Site No.** | **Sporton Site No.** | **FCC Test Firm Registration No.** |
| | TH01-SZ | 251365 |

| | | |
|---|---|---|
| **Test Site** | Sporton International (Shenzhen) Inc. | |
| **Test Site Location** | No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China<br>TEL: +86-755-3320-2398 | |
| **Test Site No.** | **Sporton Site No.** | **FCC Test Firm Registration No.** |
| | 03CH03-SZ | 577730 |

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

## 1.8 Applicable Standards

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

- 47 CFR Part 2, 27(L)
- ANSI/TIA-603-E
- FCC KDB 971168 D01 Power Meas License Digital Systems v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

**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

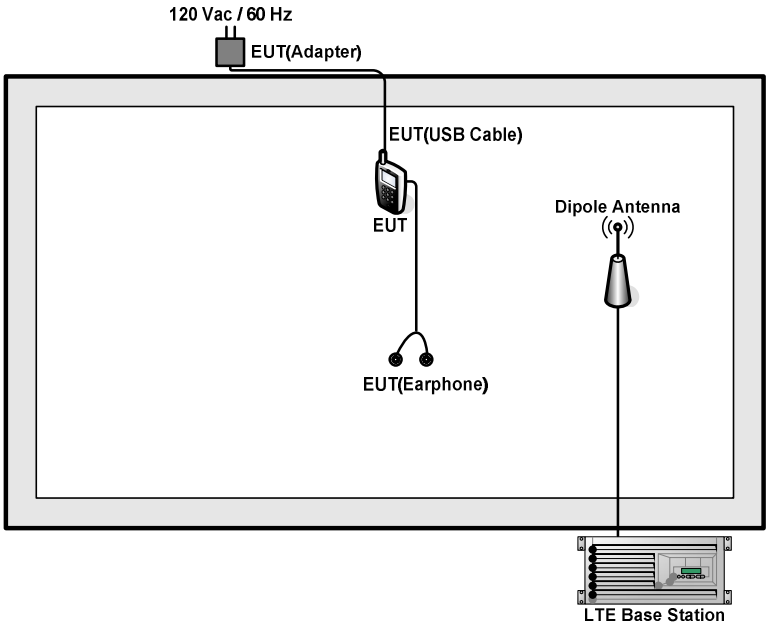
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

| Test Items | Band | Bandwidth (MHz) | | | | | | Modulation | | RB # | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 1 | Half | Full | L | M | H |
| Max. Output Power | 4 | v | v | v | v | v | v | v | v | v | v | v | v | v | v |
| Peak-to-Average Ratio | 4 | | | | | | v | v | v | v | | v | v | v | v |
| 26dB and 99% Bandwidth | 4 | v | v | v | v | v | v | v | v | | | v | v | v | v |
| Conducted Band Edge | 4 | v | v | v | v | v | v | v | v | v | | v | v | | v |

| Test Items | Band | Bandwidth (MHz) | | | | | | Modulation | | RB # | | | Test Channel | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 1 | Half | Full | L | M | H |
| Conducted Spurious Emission | 4 | v | v | v | v | v | v | v | v | v | | | v | v | v |
| Frequency Stability | 4 | | | | v | | | v | | | | v | | v | |
| E.R.P./ E.I.R.P. | 4 | v | v | v | v | v | v | v | v | v | | | v | v | v |
| Radiated Spurious Emission | 4 | v | v | v | v | v | v | v | | v | | | | v | |
| Note | 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. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. | | | | | | | | | | | | | | |

## 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. | LTE Base Station | Anritsu | MT8820C | N/A | N/A | Unshielded, 1.8 m |
| 2. | DC Power Supply | GW INSTEK | GPS-3030D | 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 EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

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

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 4.5 dB and 10dB attenuator.

Example :

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

= 4.5 + 10 = 14.5 (dB)

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

| LTE Band 4 Channel and Frequency List | | | | |
|---|---|---|---|---|
| **BW [MHz]** | **Channel/Frequency(MHz)** | **Lowest** | **Middle** | **Highest** |
| 20 | Channel | 20050 | 20175 | 20300 |
| | Frequency | 1720 | 1732.5 | 1745 |
| 15 | Channel | 20025 | 20175 | 20325 |
| | Frequency | 1717.5 | 1732.5 | 1747.5 |
| 10 | Channel | 20000 | 20175 | 20350 |
| | Frequency | 1715 | 1732.5 | 1750 |
| 5 | Channel | 19975 | 20175 | 20375 |
| | Frequency | 1712.5 | 1732.5 | 1752.5 |
| 3 | Channel | 19965 | 20175 | 20385 |
| | Frequency | 1711.5 | 1732.5 | 1753.5 |
| 1.4 | Channel | 19957 | 20175 | 20393 |
| | Frequency | 1710.7 | 1732.5 | 1754.3 |

# 3 Conducted Test Items

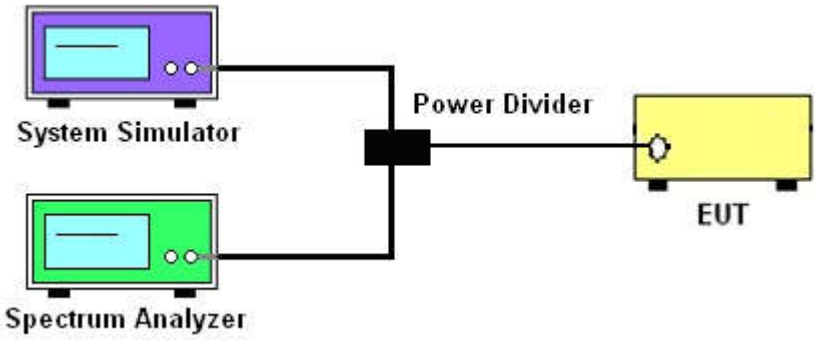
## 3.1 Measuring Instruments

See list of measuring instruments of this test report.

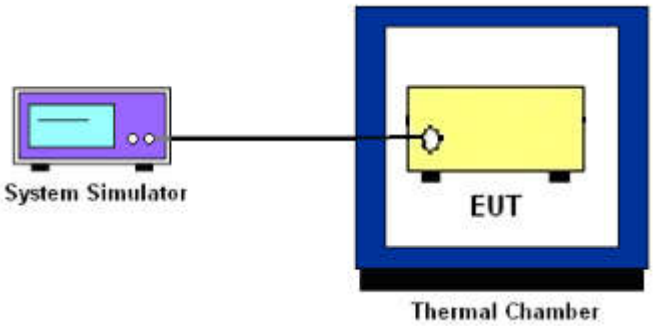
## 3.2 Test Setup

### 3.2.1 Conducted Output Power

### 3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission




### 3.2.3 Frequency Stability




## 3.3 Test Result of Conducted Test

Please refer to Appendix A.

## 3.4 Conducted Output Power and EIRP

### 3.4.1 Description of the Conducted Output Power Measurement and EIRP Measurement

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

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, 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

### 3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the 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.

## 3.5 Peak-to-Average Ratio

### 3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### 3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 5.7.1.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

## 3.6 Occupied Bandwidth

### 3.6.1 Description of Occupied Bandwidth Measurement

The 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 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

### 3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 4.1 and 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
   (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

## 3.7 Conducted Band Edge

### 3.7.1 Description of Conducted Band Edge Measurement

27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### 3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [43 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

## 3.8 Conducted Spurious Emission

### 3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its $10^{th}$ harmonic.

### 3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

## 3.9 Frequency Stability

### 3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

### 3.9.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v03 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. 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.

### 3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v03 Section 9.0.
2. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

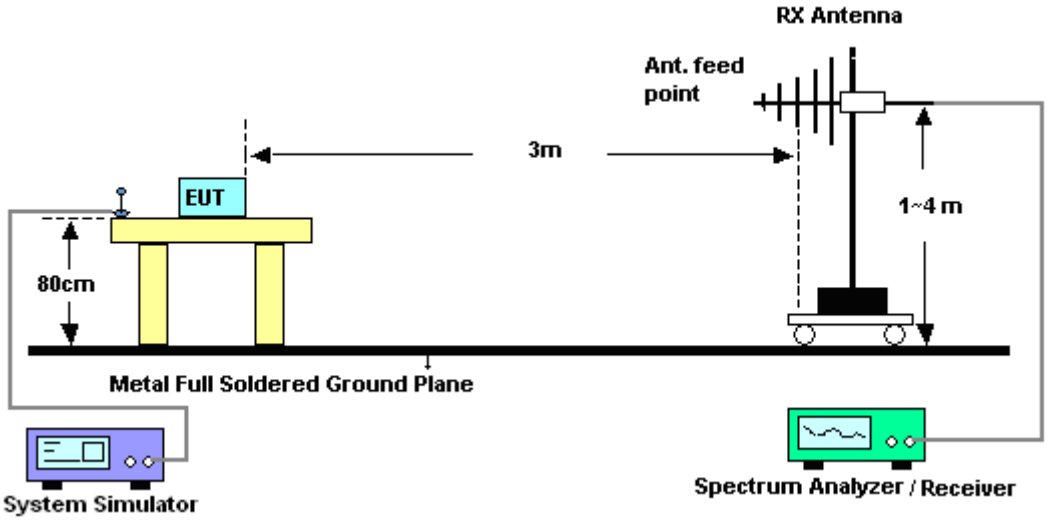
# 4 Radiated Test Items

## 4.1 Measuring Instruments

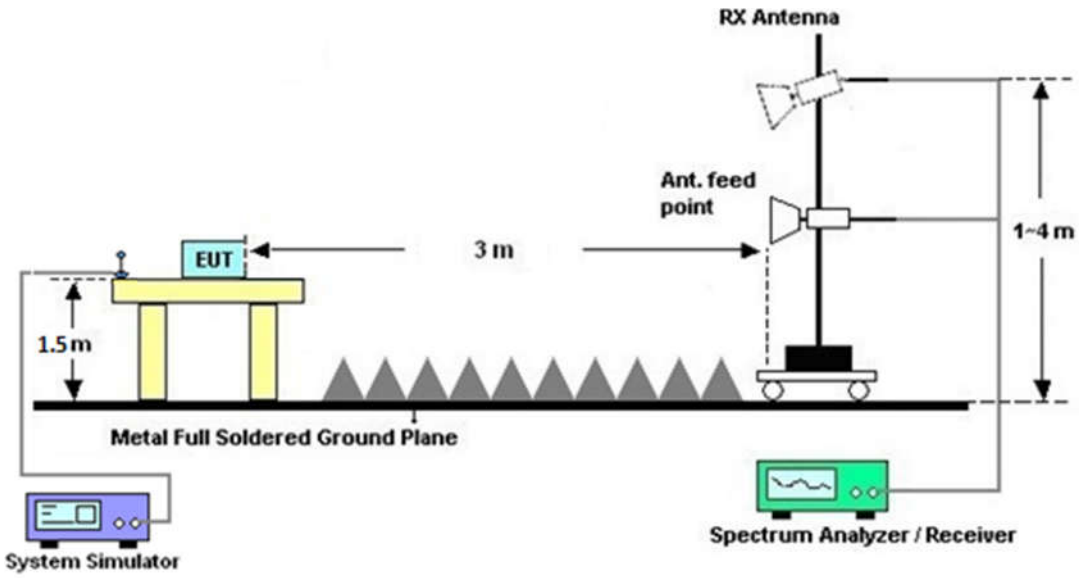
See list of measuring instruments of this test report.

## 4.2 Test Setup

### 4.2.1 For radiated test from 30MHz to 1GHz




### 4.2.2 For radiated test above 1GHz




## 4.3 Test Result of Radiated Test

Please refer to Appendix B.

## 4.4 Radiated Spurious Emission

### 4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E. 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 (P) dB.

For Band 7

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 55 + 10 log (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI/TIA-603-E Section 2.2.12.
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
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.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

# 5 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---|---|---|---|---|---|---|---|---|
| Spectrum Analyzer | R&S | FSV40 | 101078 | 9kHz~40GHz | Apr. 20, 2017 | Dec. 08, 2017 | Apr. 19, 2018 | Conducted (TH01-SZ) |
| Radio Communicatio n Analyzer | Anritsu | MT8820C | 6201563777 | 2G/3G/4G (CDMA) | Jan. 03, 2017 | Dec. 08, 2017 | Jan. 02, 2018 | Conducted (TH01-SZ) |
| Thermal Chamber | Ten Billion Hongzhangroup | LP-150U | H2014081803 | -40~+150°C | Jul. 20, 2017 | Dec. 08, 2017 | Jul. 19, 2018 | Conducted (TH01-SZ) |
| EMI Test Receiver&SA | KEYSIGHT | N9038A | MY54450083 | 20Hz~8.4GHz | Apr. 20, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Apr. 19, 2018 | Radiation (03CH03-SZ) |
| EXA Spectrum Anaiyzer | KEYSIGHT | N9010A | MY55150246 | 10Hz~44GHz; | Apr. 20, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Apr. 19, 2018 | Radiation (03CH03-SZ) |
| Bilog Antenna | TeseQ | CBL6112D | 35408 | 30MHz-2GHz | May 14, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | May 13, 2018 | Radiation (03CH03-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-1355 | 1GHz~18GHz | Jul. 09, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Jul. 08, 2018 | Radiation (03CH03-SZ) |
| SHF-EHF Horn | com-power | AH-840 | 101071 | 18Ghz-40GHz | Jun. 16, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Jun. 15, 2018 | Radiation (03CH03-SZ) |
| Amplifier | Burgeon | BPA-530 | 102210 | 0.01Hz ~3000MHz | Oct. 19, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Oct. 18, 2018 | Radiation (03CH03-SZ) |
| Amplifier | Agilent Technologies | 83017A | MY39501302 | 500MHz~26.5GHz | Jan. 06, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Jan. 05, 2018 | Radiation (03CH03-SZ) |
| HF Amplifier | MITEQ | TTA1840-35 -HG | 1871923 | 18GHz~40GHz | Jul. 18, 2017 | Dec. 13, 2017~ Dec. 14, 2017 | Jul. 17, 2018 | Radiation (03CH03-SZ) |
| AC Power Source | Chroma | 61601 | 616010001985 | N/A | NCR | Dec. 13, 2017~ Dec. 14, 2017 | NCR | Radiation (03CH03-SZ) |
| Turn Table | EM | EM1000 | N/A | 0~360 degree | NCR | Dec. 13, 2017~ Dec. 14, 2017 | NCR | Radiation (03CH03-SZ) |
| Antenna Mast | EM | EM1000 | N/A | 1 m~4 m | NCR | Dec. 13, 2017~ Dec. 14, 2017 | NCR | Radiation (03CH03-SZ) |

NCR: No Calibration Required

# 6 Uncertainty of Evaluation

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

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 3.0dB |

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

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 3.6dB |

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

| | |
|---|---|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 3.8dB |

# Appendix A. Test Results of Conducted Test

## Conducted Output Power(Average power)

| LTE Band 4 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 20 | 1 | 0 | QPSK | 22.57 | 22.85 | 22.79 |
| 20 | 1 | 49 | | 22.62 | 22.79 | 22.59 |
| 20 | 1 | 99 | | 22.84 | 22.86 | 22.93 |
| 20 | 50 | 0 | | 21.87 | 21.92 | 21.88 |
| 20 | 50 | 24 | | 21.76 | 21.90 | 21.74 |
| 20 | 50 | 50 | | 21.86 | 21.80 | 21.87 |
| 20 | 100 | 0 | | 21.80 | 21.84 | 21.86 |
| 20 | 1 | 0 | 16-QAM | 21.89 | 22.06 | 22.04 |
| 20 | 1 | 49 | | 22.39 | 22.34 | 22.19 |
| 20 | 1 | 99 | | 21.96 | 22.17 | 22.41 |
| 20 | 50 | 0 | | 20.78 | 21.00 | 20.79 |
| 20 | 50 | 24 | | 20.80 | 20.88 | 20.76 |
| 20 | 50 | 50 | | 20.88 | 20.82 | 20.95 |
| 20 | 100 | 0 | | 20.77 | 20.86 | 20.87 |
| 15 | 1 | 0 | QPSK | 22.60 | 22.88 | 22.74 |
| 15 | 1 | 37 | | 22.77 | 22.80 | 22.74 |
| 15 | 1 | 74 | | 22.77 | 22.69 | 22.88 |
| 15 | 36 | 0 | | 21.77 | 21.95 | 21.75 |
| 15 | 36 | 20 | | 21.81 | 21.94 | 21.88 |
| 15 | 36 | 39 | | 21.85 | 21.84 | 21.94 |
| 15 | 75 | 0 | | 21.79 | 21.92 | 21.95 |
| 15 | 1 | 0 | 16-QAM | 21.88 | 22.15 | 22.03 |
| 15 | 1 | 37 | | 21.98 | 22.11 | 22.04 |
| 15 | 1 | 74 | | 22.02 | 21.75 | 22.50 |
| 15 | 36 | 0 | | 20.75 | 20.97 | 20.80 |
| 15 | 36 | 20 | | 20.78 | 20.98 | 20.92 |
| 15 | 36 | 39 | | 20.88 | 20.86 | 20.94 |
| 15 | 75 | 0 | | 20.80 | 20.89 | 20.98 |

| LTE Band 4 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 10 | 1 | 0 | QPSK | 22.70 | 22.80 | 22.70 |
| 10 | 1 | 25 | | 22.64 | 22.78 | 22.89 |
| 10 | 1 | 49 | | 22.64 | 22.69 | 22.84 |
| 10 | 25 | 0 | | 21.69 | 21.93 | 21.82 |
| 10 | 25 | 12 | | 21.71 | 21.95 | 21.96 |
| 10 | 25 | 25 | | 21.73 | 21.86 | 21.94 |
| 10 | 50 | 0 | | 21.74 | 21.91 | 21.95 |
| 10 | 1 | 0 | 16-QAM | 22.24 | 22.08 | 22.28 |
| 10 | 1 | 25 | | 21.87 | 22.42 | 22.48 |
| 10 | 1 | 49 | | 22.03 | 21.93 | 21.96 |
| 10 | 25 | 0 | | 20.76 | 20.98 | 20.90 |
| 10 | 25 | 12 | | 20.75 | 20.97 | 20.91 |
| 10 | 25 | 25 | | 20.75 | 20.91 | 20.94 |
| 10 | 50 | 0 | | 20.79 | 20.84 | 20.95 |
| 5 | 1 | 0 | QPSK | 22.57 | 22.83 | 22.84 |
| 5 | 1 | 12 | | 22.50 | 22.73 | 22.91 |
| 5 | 1 | 24 | | 22.44 | 22.61 | 22.76 |
| 5 | 12 | 0 | | 21.67 | 21.85 | 21.75 |
| 5 | 12 | 7 | | 21.61 | 21.87 | 21.80 |
| 5 | 12 | 13 | | 21.65 | 21.80 | 21.90 |
| 5 | 25 | 0 | | 21.58 | 21.78 | 21.79 |
| 5 | 1 | 0 | 16-QAM | 22.10 | 21.74 | 21.73 |
| 5 | 1 | 12 | | 21.82 | 22.30 | 22.30 |
| 5 | 1 | 24 | | 22.05 | 21.92 | 22.02 |
| 5 | 12 | 0 | | 20.54 | 20.92 | 20.81 |
| 5 | 12 | 7 | | 20.65 | 20.92 | 20.86 |
| 5 | 12 | 13 | | 20.66 | 20.79 | 20.92 |
| 5 | 25 | 0 | | 20.59 | 20.80 | 20.90 |

| LTE Band 4 Maximum Average Power [dBm] | | | | | | |
|---|---|---|---|---|---|---|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 3 | 1 | 0 | QPSK | 22.58 | 22.68 | 22.76 |
| 3 | 1 | 8 | | 22.63 | 22.74 | 22.79 |
| 3 | 1 | 14 | | 22.52 | 22.80 | 22.86 |
| 3 | 8 | 0 | | 21.70 | 21.93 | 21.93 |
| 3 | 8 | 4 | | 21.70 | 21.92 | 21.94 |
| 3 | 8 | 7 | | 21.67 | 21.93 | 22.00 |
| 3 | 15 | 0 | | 21.70 | 21.92 | 21.99 |
| 3 | 1 | 0 | 16-QAM | 21.76 | 22.29 | 22.18 |
| 3 | 1 | 8 | | 21.92 | 22.24 | 22.06 |
| 3 | 1 | 14 | | 22.16 | 21.93 | 22.12 |
| 3 | 8 | 0 | | 20.70 | 20.90 | 20.90 |
| 3 | 8 | 4 | | 20.79 | 20.91 | 20.90 |
| 3 | 8 | 7 | | 20.76 | 20.89 | 20.93 |
| 3 | 15 | 0 | | 20.79 | 21.00 | 21.00 |
| 1.4 | 1 | 0 | QPSK | 22.54 | 22.79 | 22.90 |
| 1.4 | 1 | 3 | | 22.62 | 22.86 | 22.88 |
| 1.4 | 1 | 5 | | 22.57 | 22.79 | 22.91 |
| 1.4 | 3 | 0 | | 22.73 | 22.85 | 22.86 |
| 1.4 | 3 | 1 | | 22.62 | 22.84 | 22.85 |
| 1.4 | 3 | 3 | | 22.68 | 22.91 | 22.91 |
| 1.4 | 6 | 0 | | 21.64 | 21.92 | 21.92 |
| 1.4 | 1 | 0 | 16-QAM | 21.82 | 22.01 | 22.48 |
| 1.4 | 1 | 3 | | 22.20 | 21.90 | 22.29 |
| 1.4 | 1 | 5 | | 21.84 | 22.30 | 22.33 |
| 1.4 | 3 | 0 | | 21.62 | 21.91 | 22.13 |
| 1.4 | 3 | 1 | | 21.78 | 21.90 | 22.13 |
| 1.4 | 3 | 3 | | 21.59 | 21.91 | 22.24 |
| 1.4 | 6 | 0 | | 20.69 | 20.97 | 20.91 |

# ERP/EIRP

| LTE Band 4 ($G_T$ - $L_C$ = 0.98 dB) QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 19957 | 20175 | 20393 | 19965 | 20175 | 20385 | 19975 | 20175 | 20375 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1710.7 | 1732.5 | 1754.3 | 1711.5 | 1732.5 | 1753.5 | 1712.5 | 1732.5 | 1752.5 |
| Conducted Power (dBm) | 22.68 | 22.91 | 22.91 | 22.52 | 22.80 | 22.86 | 22.50 | 22.73 | 22.91 |
| Conducted Power (Watts) | 0.1854 | 0.1954 | 0.1954 | 0.1786 | 0.1905 | 0.1932 | 0.1778 | 0.1875 | 0.1954 |
| EIRP(dBm) | 23.66 | 23.89 | 23.89 | 23.50 | 23.78 | 23.84 | 23.48 | 23.71 | 23.89 |
| EIRP(Watts) | 0.2323 | 0.2449 | 0.2449 | 0.2239 | 0.2388 | 0.2421 | 0.2228 | 0.2350 | 0.2449 |

| LTE Band 4 ($G_T$ - $L_C$ = 0.98 dB) QPSK | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 20000 | 20175 | 20350 | 20025 | 20175 | 20325 | 20050 | 20175 | 20300 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1715 | 1732.5 | 1750 | 1717.5 | 1732.5 | 1747.5 | 1720 | 1732.5 | 1745 |
| Conducted Power (dBm) | 22.64 | 22.78 | 22.89 | 22.77 | 22.69 | 22.88 | 22.84 | 22.86 | 22.93 |
| Conducted Power (Watts) | 0.1837 | 0.1897 | 0.1945 | 0.1892 | 0.1858 | 0.1941 | 0.1923 | 0.1932 | 0.1963 |
| EIRP(dBm) | 23.62 | 23.76 | 23.87 | 23.75 | 23.67 | 23.86 | 23.82 | 23.84 | 23.91 |
| EIRP(Watts) | 0.2301 | 0.2377 | 0.2438 | 0.2371 | 0.2328 | 0.2432 | 0.2410 | 0.2421 | 0.2460 |

| LTE Band 4 ($G_T$ - $L_C$ = 0.98 dB) 16QAM | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 19957 | 20175 | 20393 | 19965 | 20175 | 20385 | 19975 | 20175 | 20375 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1710.7 | 1732.5 | 1754.3 | 1711.5 | 1732.5 | 1753.5 | 1712.5 | 1732.5 | 1752.5 |
| Conducted Power (dBm) | 21.82 | 22.01 | 22.48 | 21.76 | 22.29 | 22.18 | 21.82 | 22.30 | 22.30 |
| Conducted Power (Watts) | 0.1521 | 0.1589 | 0.1770 | 0.1500 | 0.1694 | 0.1652 | 0.1521 | 0.1698 | 0.1698 |
| EIRP(dBm) | 22.80 | 22.99 | 23.46 | 22.74 | 23.27 | 23.16 | 22.80 | 23.28 | 23.28 |
| EIRP(Watts) | 0.1905 | 0.1991 | 0.2218 | 0.1879 | 0.2123 | 0.2070 | 0.1905 | 0.2128 | 0.2128 |

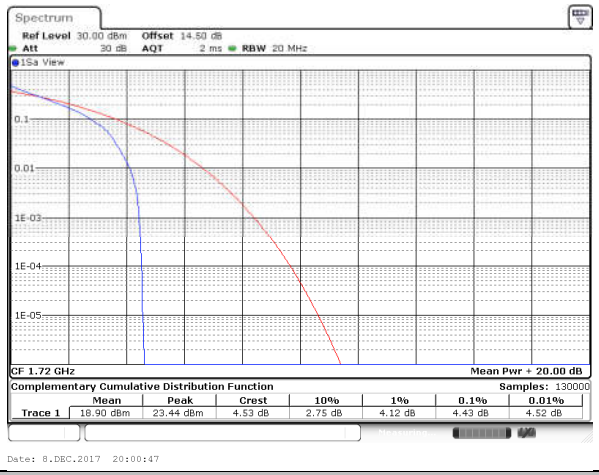
| LTE Band 4 ($G_T$ - $L_C$ = 0.98 dB) 16QAM | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 20000 | 20175 | 20350 | 20025 | 20175 | 20325 | 20050 | 20175 | 20300 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1715 | 1732.5 | 1750 | 1717.5 | 1732.5 | 1747.5 | 1720 | 1732.5 | 1745 |
| Conducted Power (dBm) | 21.87 | 22.42 | 22.48 | 22.02 | 21.75 | 22.50 | 21.96 | 22.17 | 22.41 |
| Conducted Power (Watts) | 0.1538 | 0.1746 | 0.1770 | 0.1592 | 0.1496 | 0.1778 | 0.1570 | 0.1648 | 0.1742 |
| EIRP(dBm) | 22.85 | 23.40 | 23.46 | 23.00 | 22.73 | 23.48 | 22.94 | 23.15 | 23.39 |
| EIRP(Watts) | 0.1928 | 0.2188 | 0.2218 | 0.1995 | 0.1875 | 0.2228 | 0.1968 | 0.2065 | 0.2183 |

# Peak-to-Average Ratio

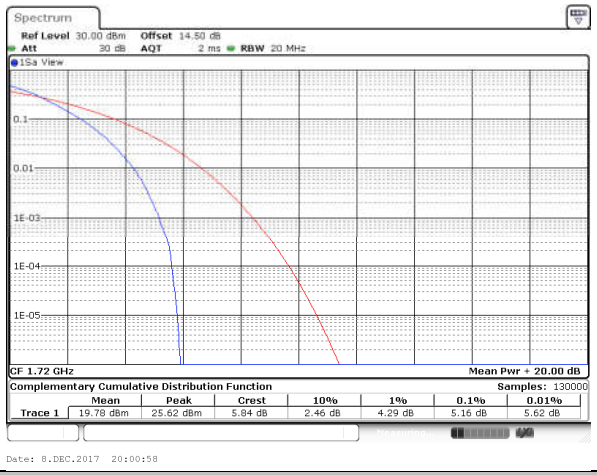
| Mode | LTE Band 4 / 20MHz | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 4.43 | 5.16 | 5.80 | 6.14 | PASS |
| Middle CH | 4.38 | 5.22 | 5.42 | 6.17 | |
| Highest CH | 4.12 | 5.36 | 5.39 | 6.26 | |

## LTE Band 4 / 20MHz / QPSK

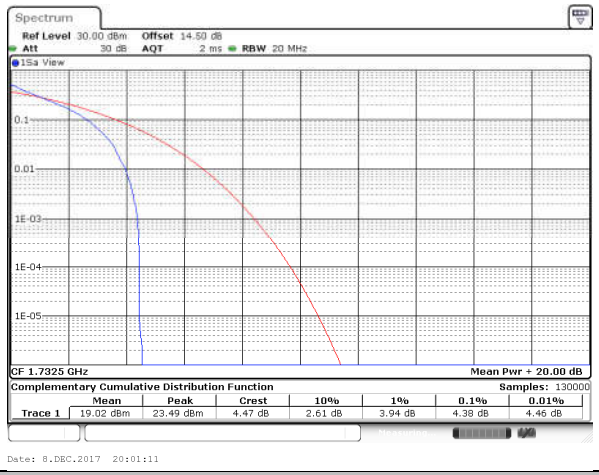
### Lowest Channel / 1RB



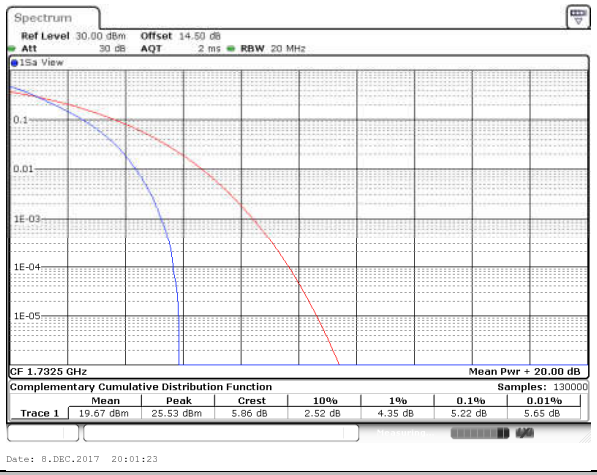

### Lowest Channel / Full RB



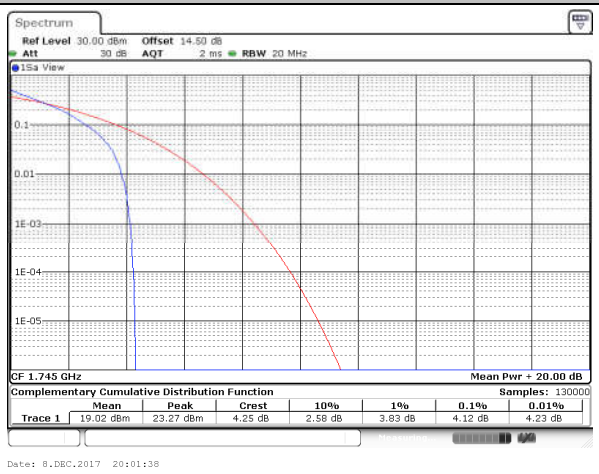

### Middle Channel / 1RB



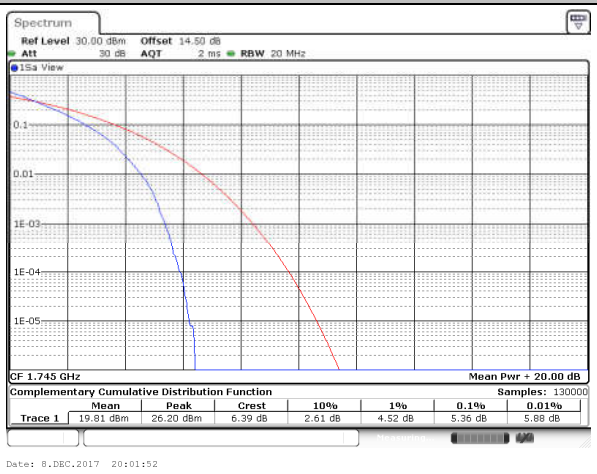

### Middle Channel / Full RB




### Highest Channel / 1RB

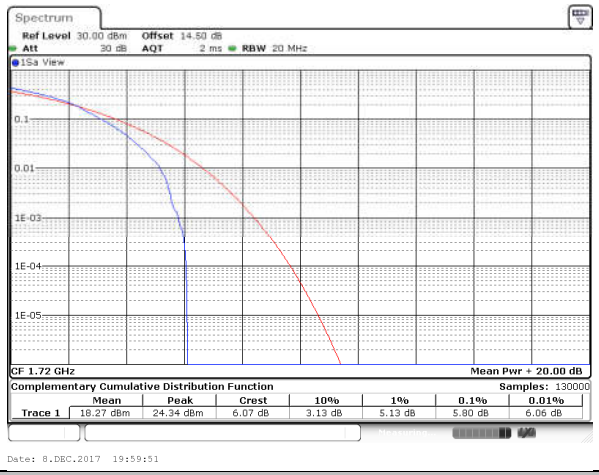



### Highest Channel / Full RB

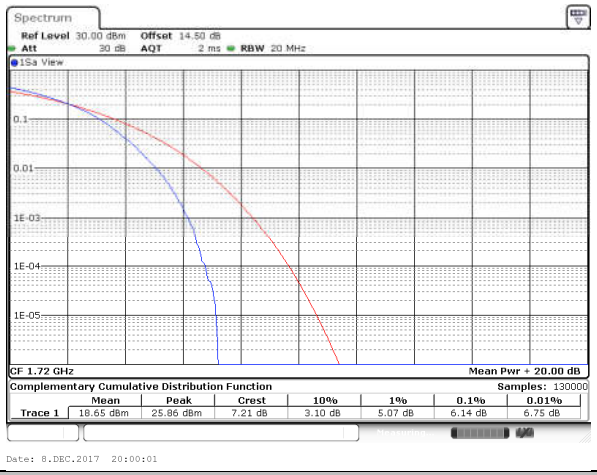


## LTE Band 4 / 20MHz / 16QAM

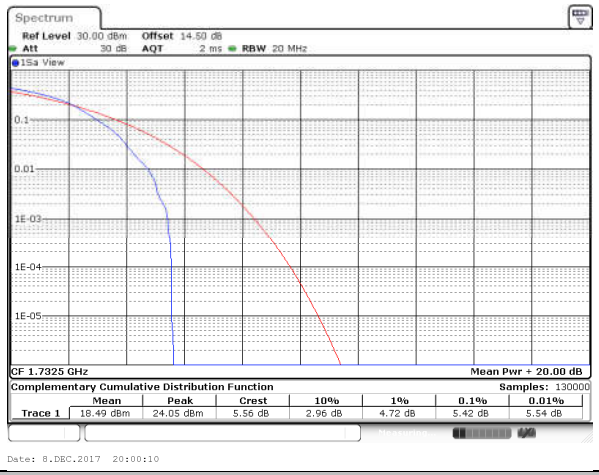
### Lowest Channel / 1RB



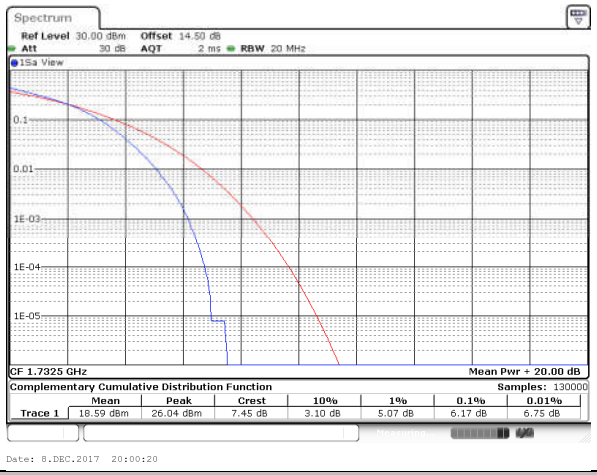

### Lowest Channel / Full RB



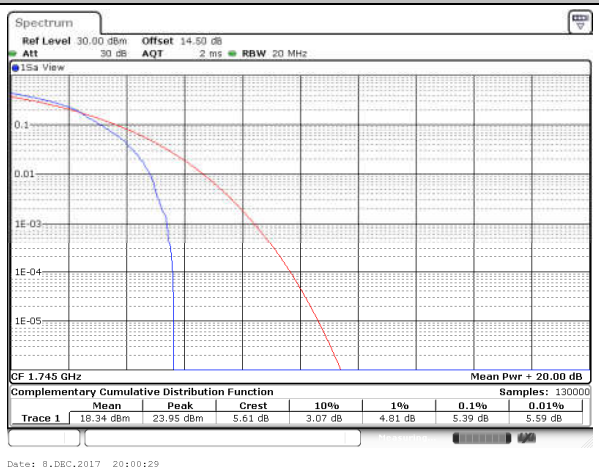

### Middle Channel / 1RB



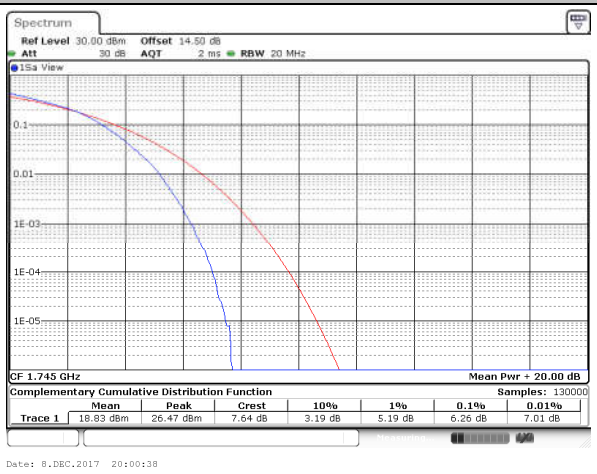

### Middle Channel / Full RB




### Highest Channel / 1RB




### Highest Channel / Full RB

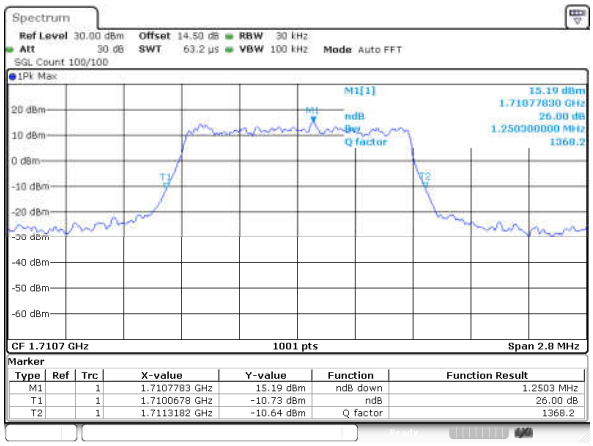


# 26dB Bandwidth

| Mode | LTE Band 4 : 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 | 1.25 | 1.25 | 3.00 | 3.00 | 5.02 | 4.94 | 9.83 | 9.79 | 14.15 | 14.66 | 20.14 | 20.18 |
| Middle CH | 1.25 | 1.26 | 2.99 | 2.95 | 5.06 | 4.96 | 10.01 | 9.87 | 14.57 | 14.57 | 20.42 | 20.26 |
| Highest CH | 1.26 | 1.27 | 3.00 | 3.02 | 5.09 | 4.93 | 9.89 | 9.85 | 14.15 | 14.60 | 20.22 | 20.26 |

## LTE Band 4

### Lowest Channel / 1.4MHz / QPSK

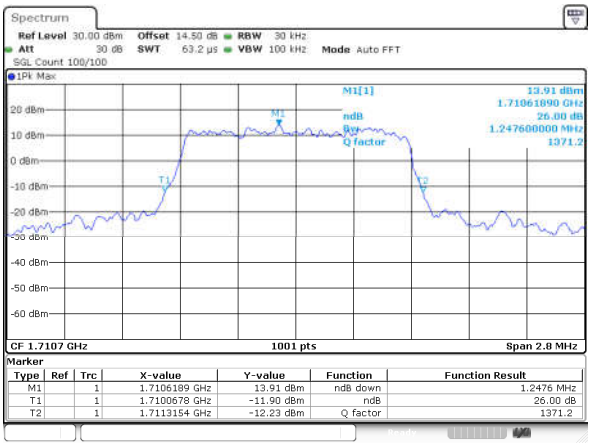



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7107783 GHz | 15.19 dBm | ndB down | 1.2503 MHz |
| T1 | | 1 | 1.7100678 GHz | -10.73 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7113182 GHz | -10.64 dBm | Q factor | 1368.2 |

Date: 8.DEC.2017 18:18:49

### Lowest Channel / 1.4MHz / 16QAM

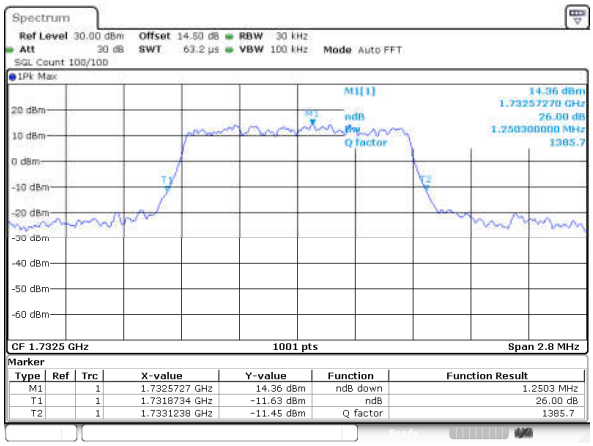



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7106189 GHz | 13.91 dBm | ndB down | 1.2476 MHz |
| T1 | | 1 | 1.7100678 GHz | -11.90 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7113154 GHz | -12.23 dBm | Q factor | 1371.2 |

Date: 8.DEC.2017 18:18:59

### Middle Channel / 1.4MHz / QPSK

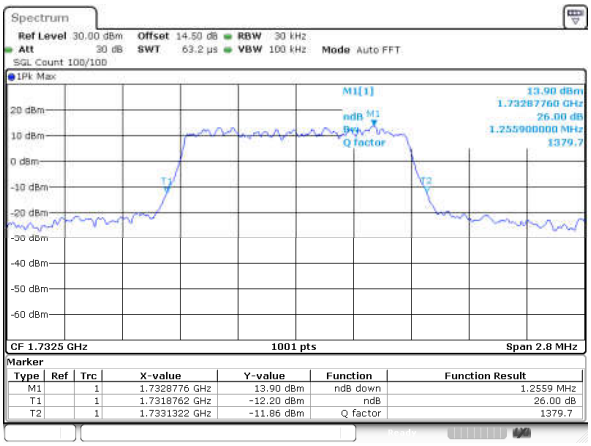



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7325727 GHz | 14.36 dBm | ndB down | 1.2503 MHz |
| T1 | | 1 | 1.7318734 GHz | -11.63 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7331238 GHz | -11.45 dBm | Q factor | 1385.7 |

Date: 8.DEC.2017 18:25:59

### Middle Channel / 1.4MHz / 16QAM

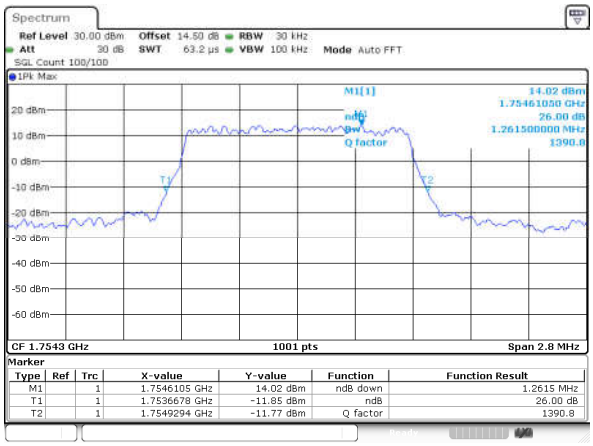



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7328776 GHz | 13.90 dBm | ndB down | 1.2559 MHz |
| T1 | | 1 | 1.7318762 GHz | -12.20 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7331322 GHz | -11.86 dBm | Q factor | 1379.7 |

Date: 8.DEC.2017 18:26:09

### Highest Channel / 1.4MHz / QPSK

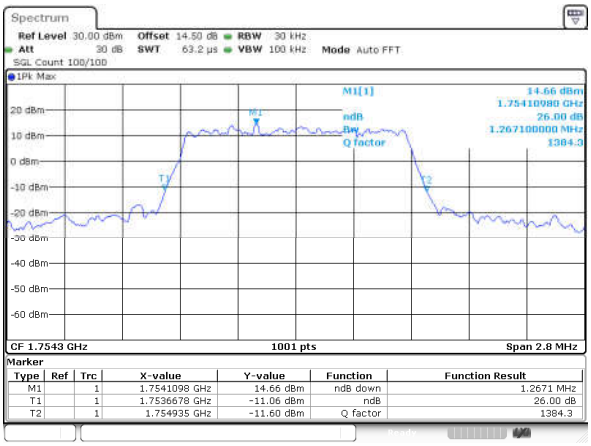



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7546105 GHz | 14.02 dBm | ndB down | 1.2615 MHz |
| T1 | | 1 | 1.7536678 GHz | -11.85 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7549294 GHz | -11.77 dBm | Q factor | 1390.8 |

Date: 8.DEC.2017 18:28:30

### Highest Channel / 1.4MHz / 16QAM



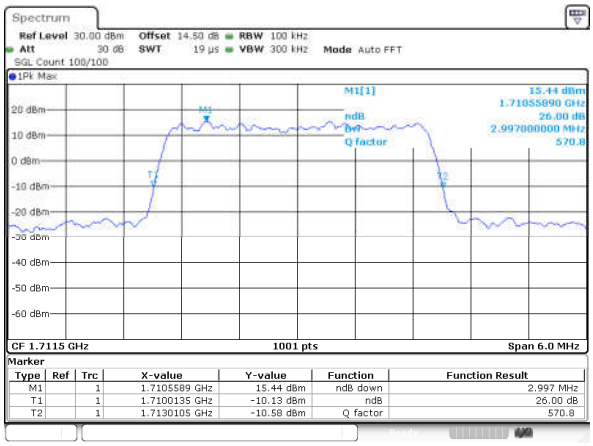

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7541098 GHz | 14.66 dBm | ndB down | 1.2671 MHz |
| T1 | | 1 | 1.7536678 GHz | -11.06 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.754935 GHz | -11.60 dBm | Q factor | 1384.3 |

Date: 8.DEC.2017 18:28:40

## LTE Band 4

### Lowest Channel / 3MHz / QPSK

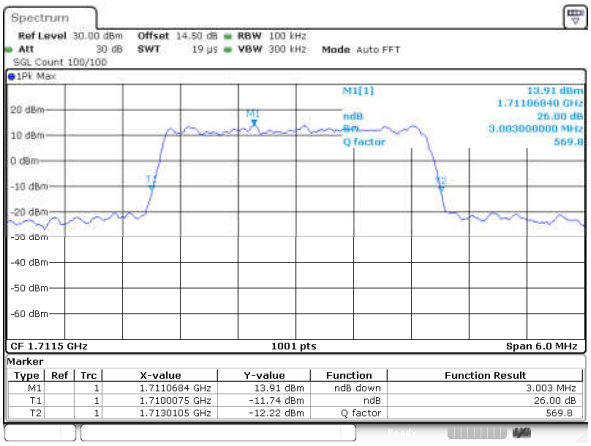



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7105589 GHz | 15.44 dBm | ndB down | 2.997 MHz |
| T1 | | 1 | 1.7100135 GHz | -10.13 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7130105 GHz | -10.58 dBm | Q factor | 570.8 |

Date: 8.DEC.2017 18:35:40

### Lowest Channel / 3MHz / 16QAM

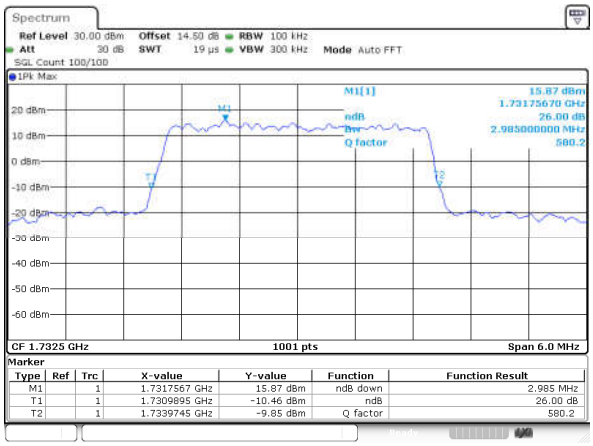



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7110684 GHz | 13.91 dBm | ndB down | 3.003 MHz |
| T1 | | 1 | 1.7100075 GHz | -11.74 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7130105 GHz | -12.22 dBm | Q factor | 569.8 |

Date: 8.DEC.2017 18:35:50

### Middle Channel / 3MHz / QPSK

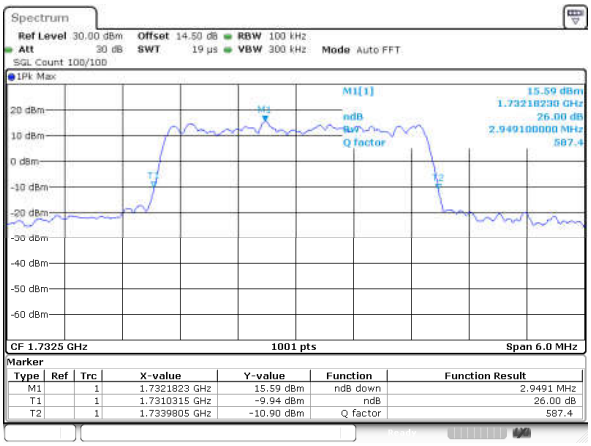



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7317567 GHz | 15.87 dBm | ndB down | 2.985 MHz |
| T1 | | 1 | 1.7309895 GHz | -10.46 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7339745 GHz | -9.85 dBm | Q factor | 580.2 |

Date: 8.DEC.2017 18:42:51

### Middle Channel /3MHz / 16QAM

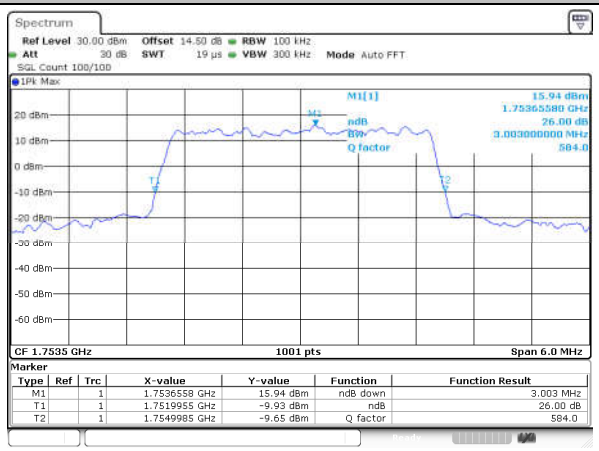



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7321823 GHz | 15.59 dBm | ndB down | 2.9491 MHz |
| T1 | | 1 | 1.7310315 GHz | -9.94 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7339805 GHz | -10.90 dBm | Q factor | 587.4 |

Date: 8.DEC.2017 18:43:01

### Highest Channel /3MHz / QPSK

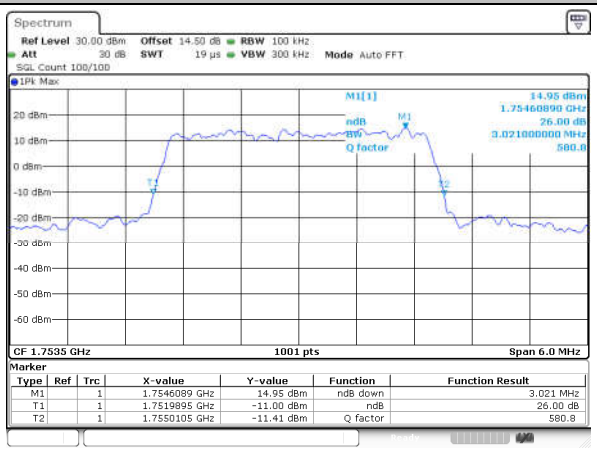



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7536558 GHz | 15.94 dBm | ndB down | 3.003 MHz |
| T1 | | 1 | 1.7519955 GHz | -9.93 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7549985 GHz | -9.65 dBm | Q factor | 584.0 |

Date: 8.DEC.2017 18:45:23

### Highest Channel /3MHz / 16QAM



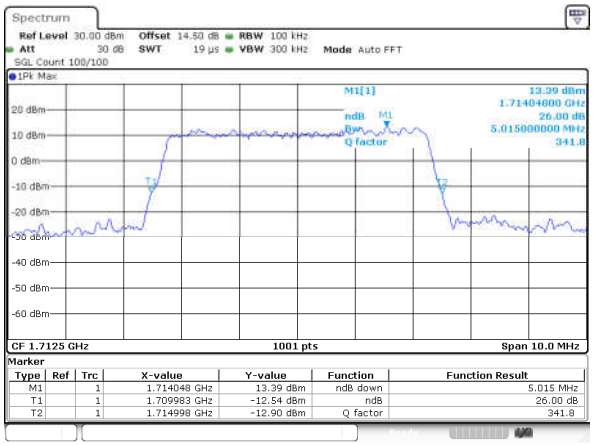

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.7546089 GHz | 14.95 dBm | ndB down | 3.021 MHz |
| T1 | | 1 | 1.7519895 GHz | -11.00 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.7550105 GHz | -11.41 dBm | Q factor | 580.8 |

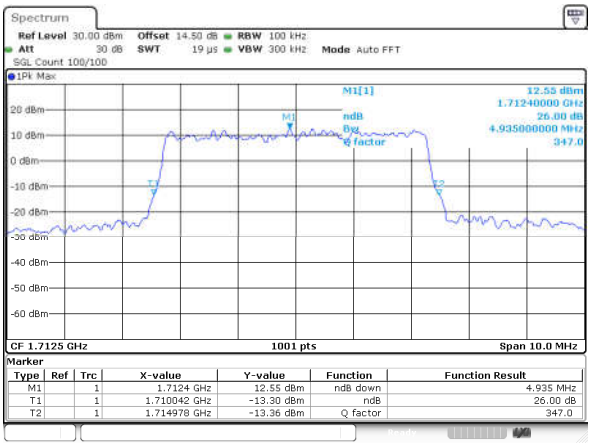
Date: 8.DEC.2017 18:45:33

## LTE Band 4

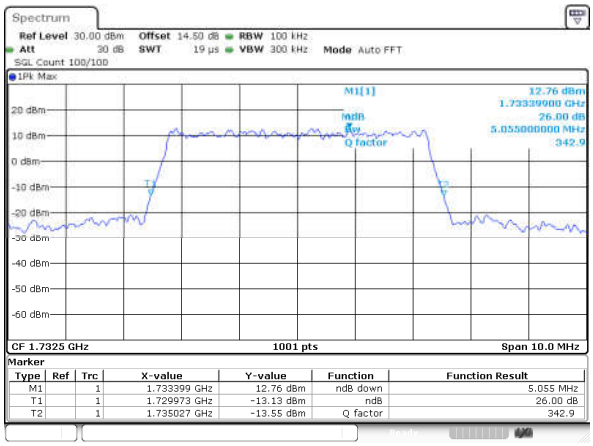
### Lowest Channel / 5MHz / QPSK



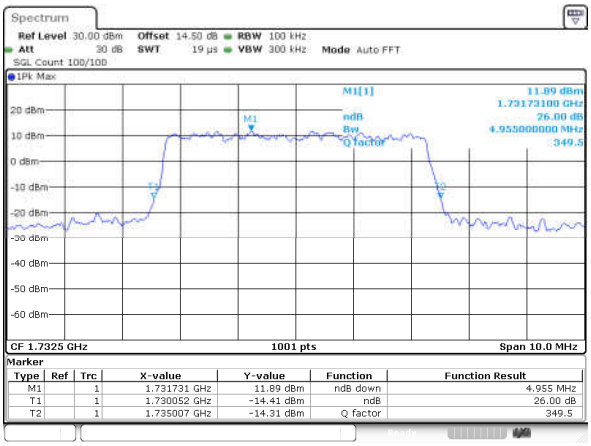

### Lowest Channel / 5MHz / 16QAM



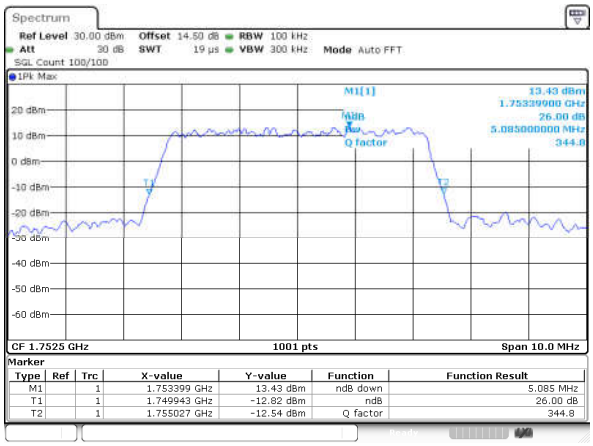

### Middle Channel / 5MHz / QPSK



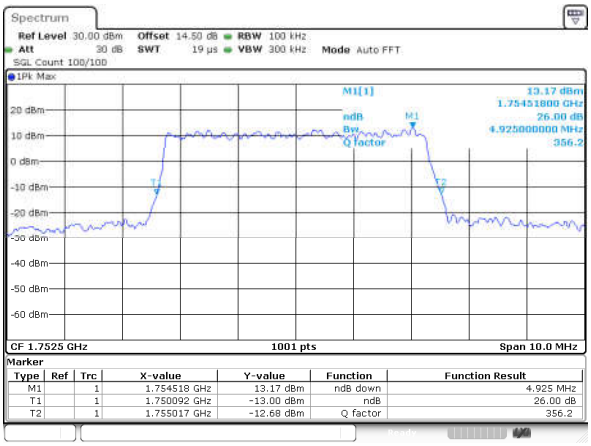

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

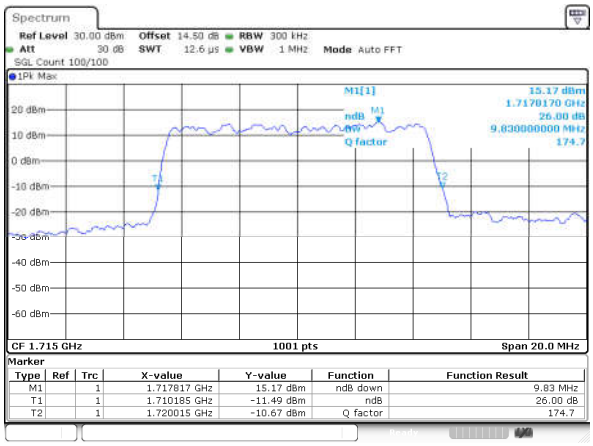



### Highest Channel / 5MHz / 16QAM



## LTE Band 4

### Lowest Channel / 10MHz / QPSK

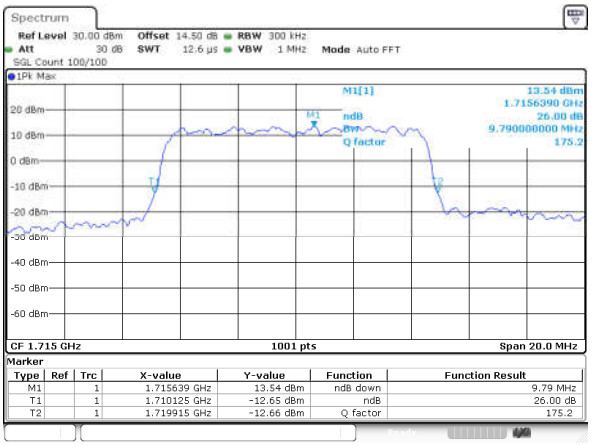



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.717817 GHz | 15.17 dBm | ndB down | 9.83 MHz |
| T1 | | 1 | 1.710185 GHz | -11.49 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.720015 GHz | -10.67 dBm | Q factor | 174.7 |

Date: 8.DEC.2017 19:09:27

### Lowest Channel / 10MHz / 16QAM

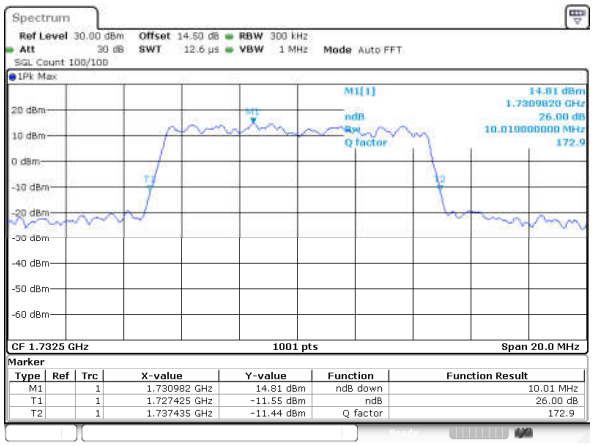



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.715639 GHz | 13.54 dBm | ndB down | 9.79 MHz |
| T1 | | 1 | 1.710125 GHz | -12.65 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.719915 GHz | -12.66 dBm | Q factor | 175.2 |

Date: 8.DEC.2017 19:09:37

### Middle Channel / 10MHz / QPSK

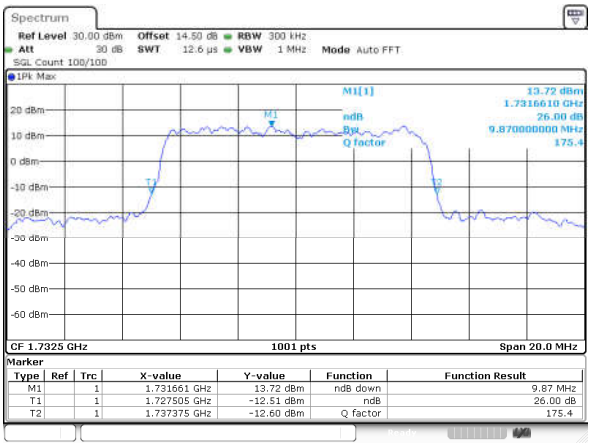



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.730982 GHz | 14.81 dBm | ndB down | 10.01 MHz |
| T1 | | 1 | 1.727425 GHz | -11.55 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.737435 GHz | -11.44 dBm | Q factor | 172.9 |

Date: 8.DEC.2017 19:16:37

### Middle Channel / 10MHz / 16QAM

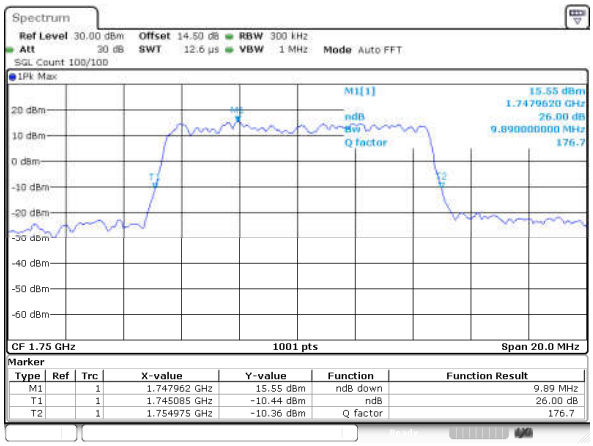



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.731661 GHz | 13.72 dBm | ndB down | 9.87 MHz |
| T1 | | 1 | 1.727505 GHz | -12.51 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.737375 GHz | -12.60 dBm | Q factor | 175.4 |

Date: 8.DEC.2017 19:16:48

### Highest Channel / 10MHz / QPSK

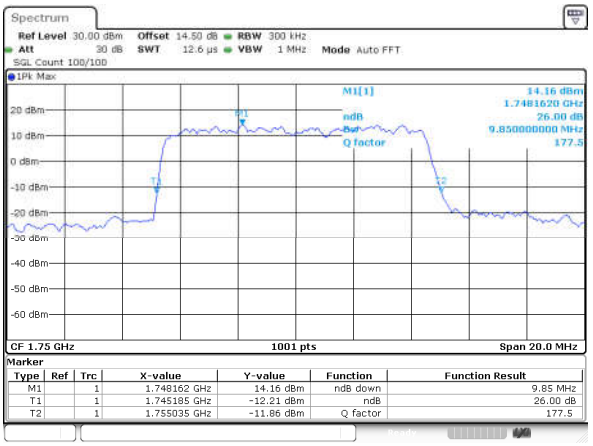



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.747962 GHz | 15.55 dBm | ndB down | 9.89 MHz |
| T1 | | 1 | 1.745085 GHz | -10.44 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.754975 GHz | -10.36 dBm | Q factor | 176.7 |

Date: 8.DEC.2017 19:19:11

### Highest Channel / 10MHz / 16QAM



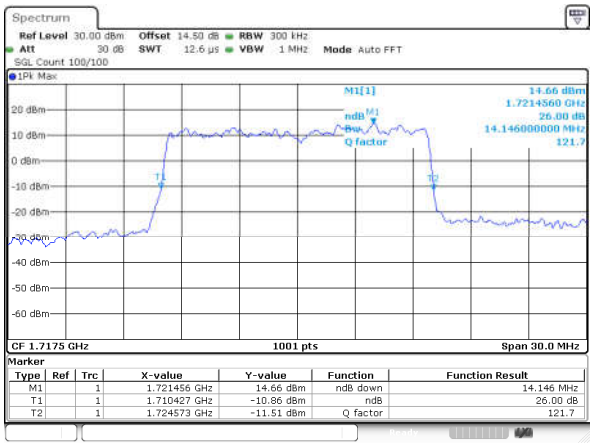

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.748162 GHz | 14.16 dBm | ndB down | 9.85 MHz |
| T1 | | 1 | 1.745185 GHz | -12.21 dBm | ndB | 26.00 dB |
| T2 | | 1 | 1.755035 GHz | -11.86 dBm | Q factor | 177.5 |

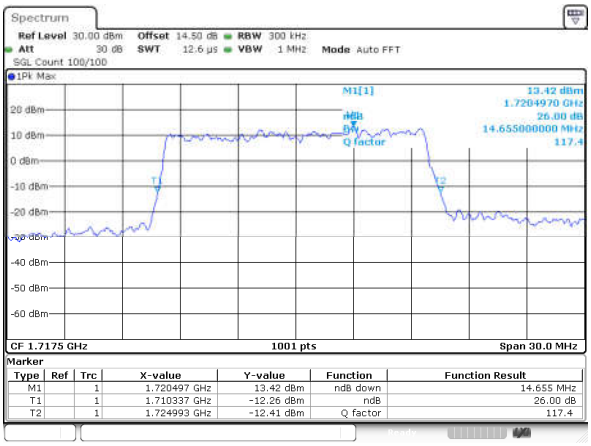
Date: 8.DEC.2017 19:19:21

## LTE Band 4

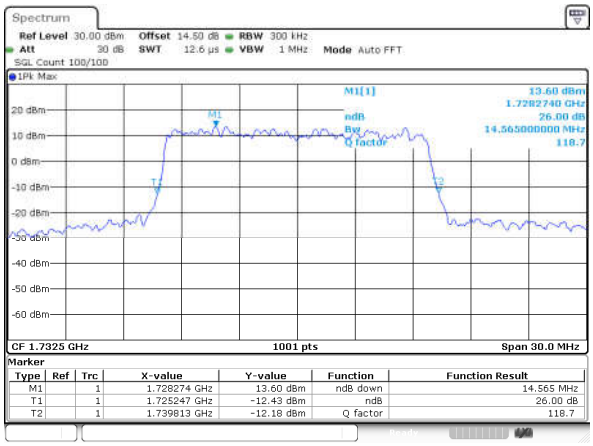
### Lowest Channel / 15MHz / QPSK



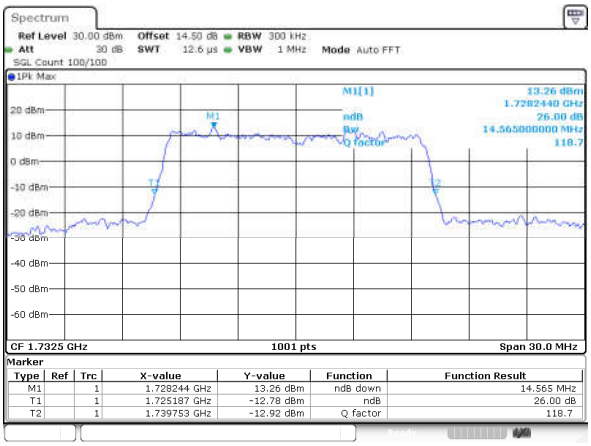

### Lowest Channel / 15MHz / 16QAM



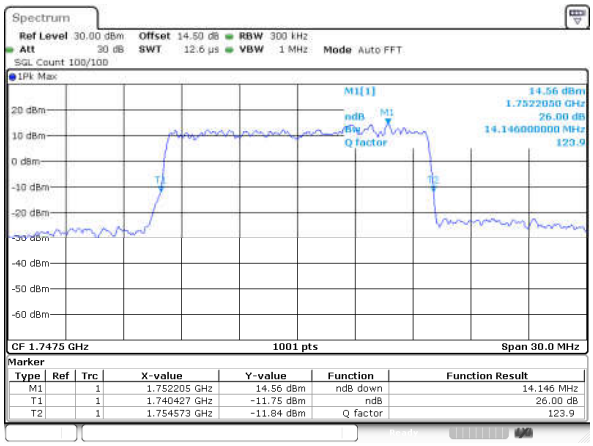

### Middle Channel / 15MHz / QPSK



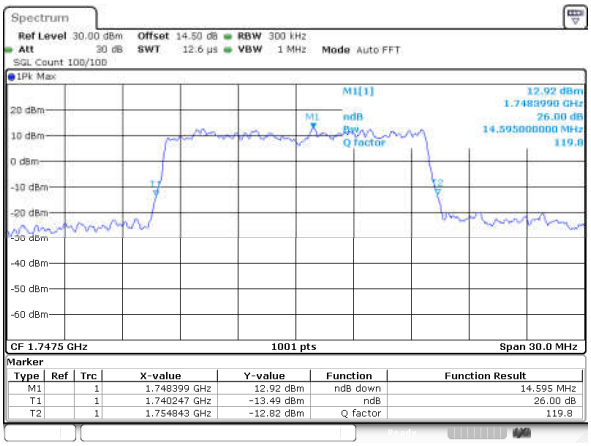

### Middle Channel / 15MHz / 16QAM




### Highest Channel / 15MHz / QPSK

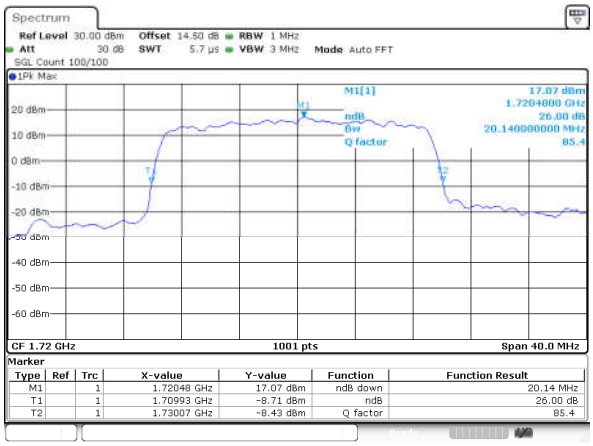



### Highest Channel / 15MHz / 16QAM

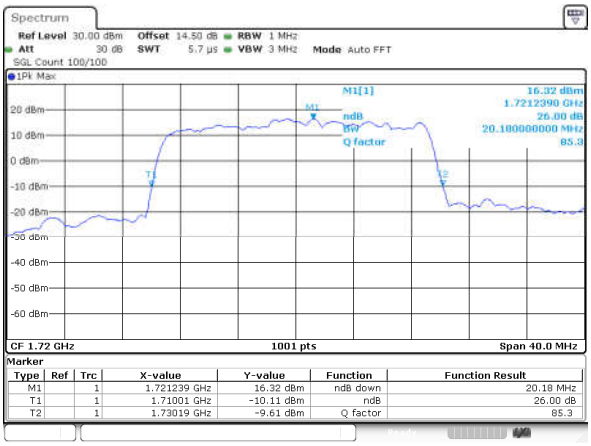


## LTE Band 4

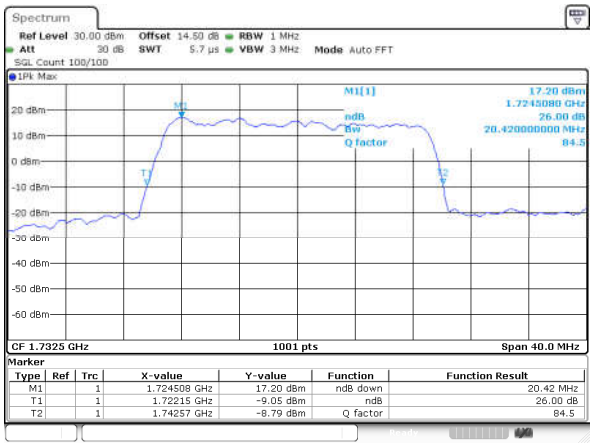
### Lowest Channel / 20MHz / QPSK



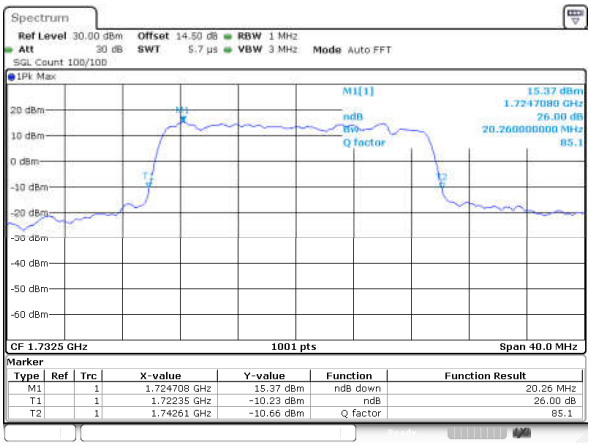

### Lowest Channel / 20MHz / 16QAM



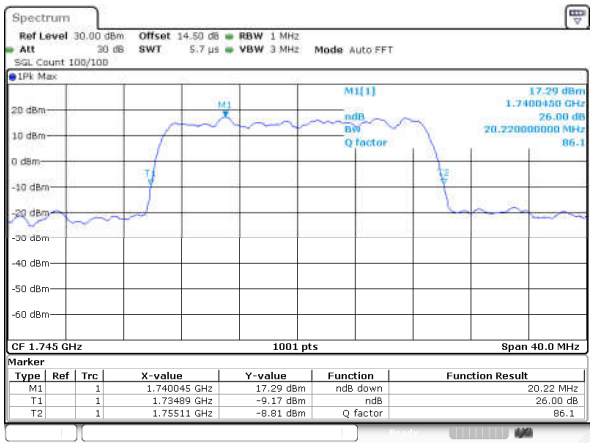

### Middle Channel / 20MHz / QPSK



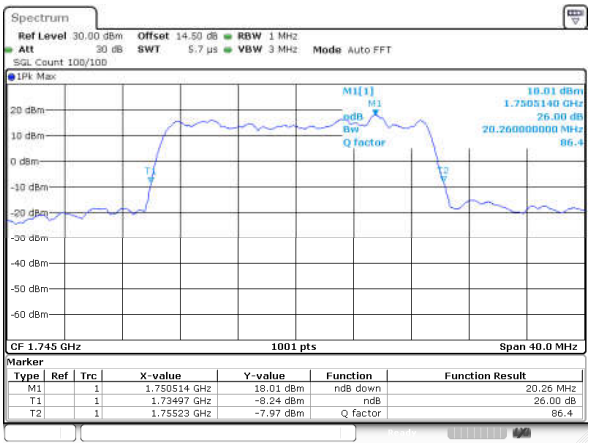

### Middle Channel / 20MHz / 16QAM




### Highest Channel / 20MHz / QPSK




### Highest Channel / 20MHz / 16QAM

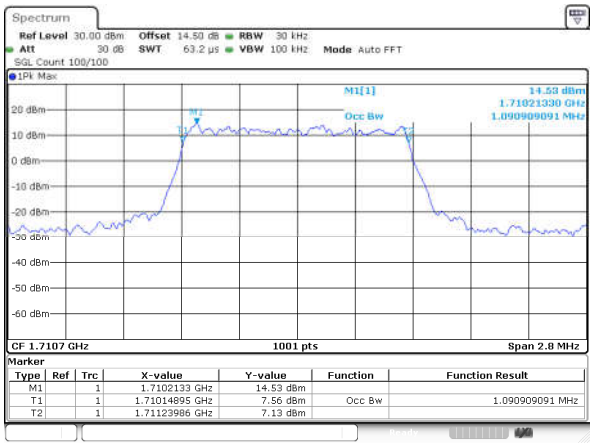


# Occupied Bandwidth

| Mode | LTE Band 4 : 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 | 1.09 | 1.10 | 2.72 | 2.72 | 4.51 | 4.50 | 9.01 | 9.03 | 13.40 | 13.43 | 18.22 | 18.18 |
| Middle CH | 1.09 | 1.10 | 2.72 | 2.71 | 4.50 | 4.52 | 9.03 | 9.01 | 13.46 | 13.49 | 18.34 | 18.38 |
| Highest CH | 1.09 | 1.09 | 2.73 | 2.70 | 4.49 | 4.51 | 9.07 | 9.01 | 13.46 | 13.46 | 18.46 | 18.50 |

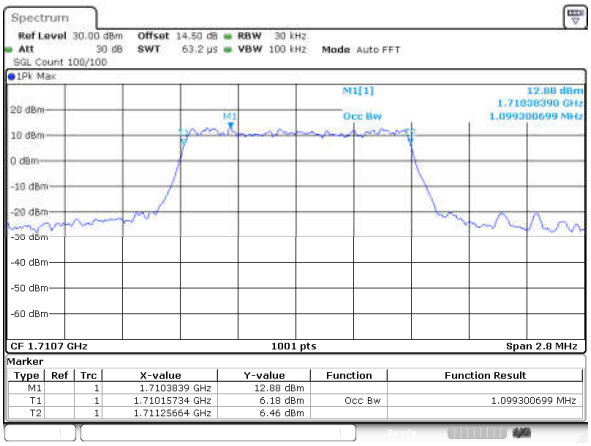
## LTE Band 4

### Lowest Channel / 1.4MHz / QPSK



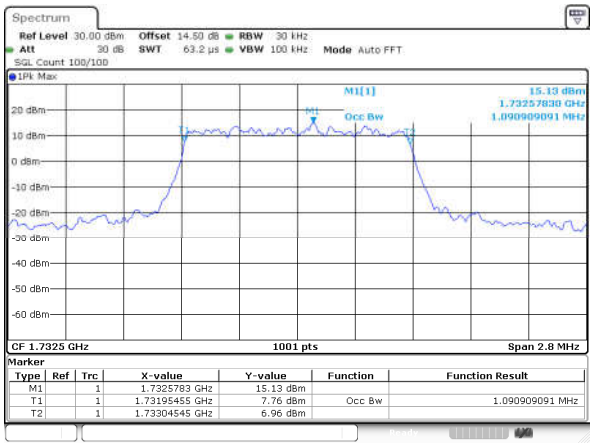

Date: 8.DEC.2017 18:18:28

### Lowest Channel / 1.4MHz / 16QAM



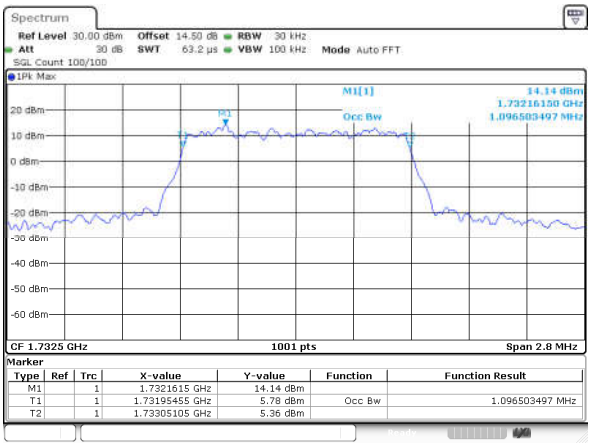

Date: 8.DEC.2017 18:18:39

### Middle Channel / 1.4MHz / QPSK



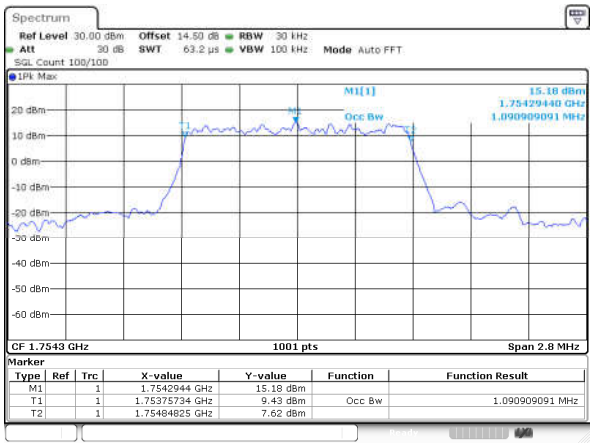

Date: 8.DEC.2017 18:25:38

### Middle Channel / 1.4MHz / 16QAM



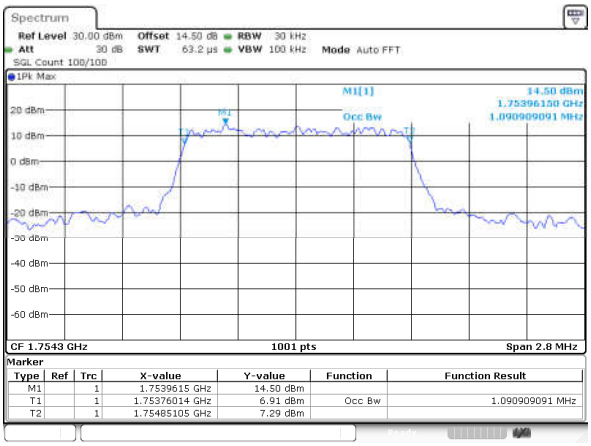

Date: 8.DEC.2017 18:25:48

### Highest Channel / 1.4MHz / QPSK




Date: 8.DEC.2017 18:28:10

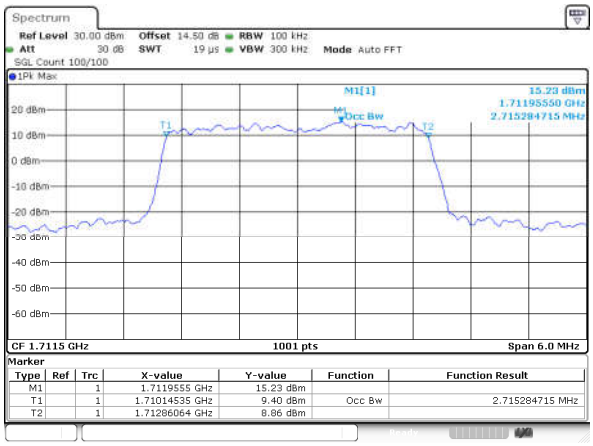
### Highest Channel / 1.4MHz / 16QAM




Date: 8.DEC.2017 18:28:20

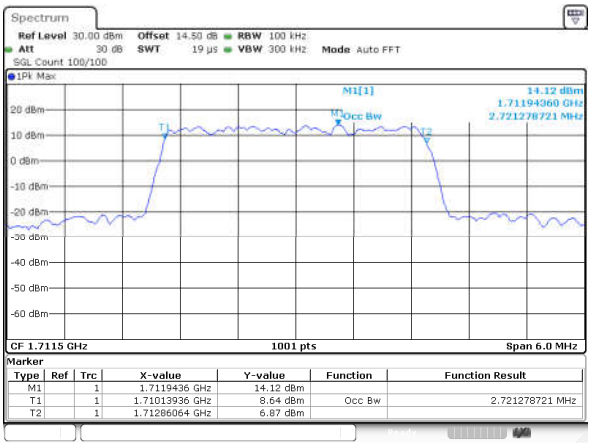
## LTE Band 4

### Lowest Channel / 3MHz / QPSK



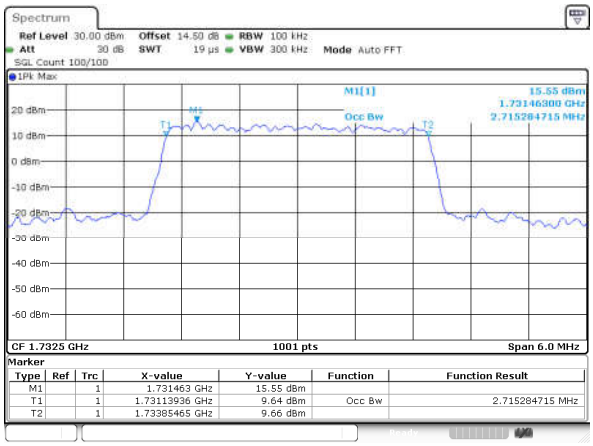

Date: 8.DEC.2017 18:35:20

### Lowest Channel / 3MHz / 16QAM



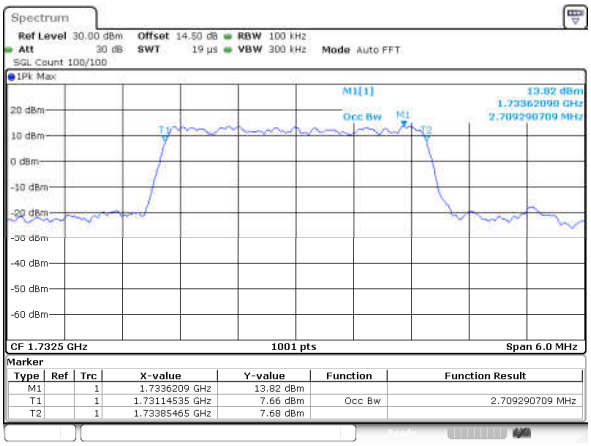

Date: 8.DEC.2017 18:35:30

### Middle Channel / 3MHz / QPSK



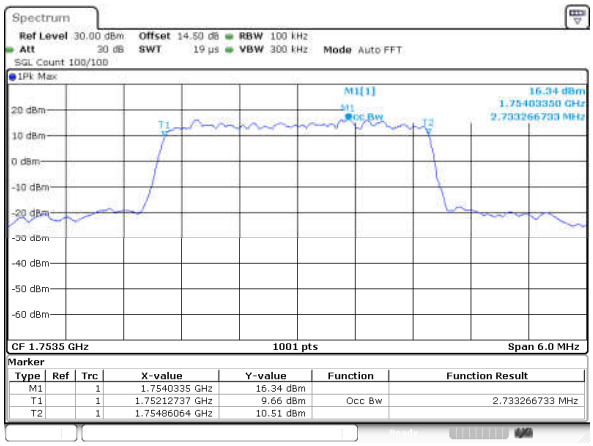

Date: 8.DEC.2017 18:42:30

### Middle Channel / 3MHz / 16QAM



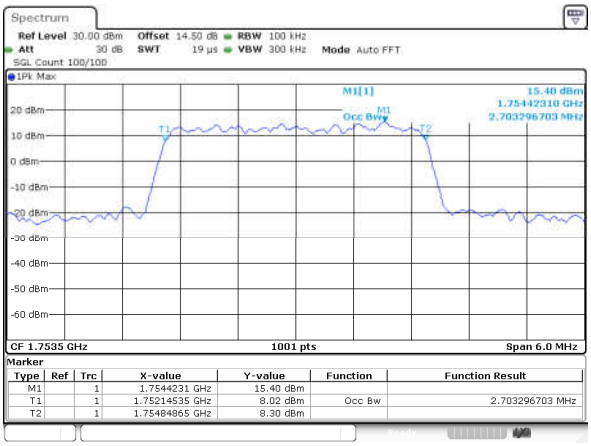

Date: 8.DEC.2017 18:42:41

### Highest Channel / 3MHz / QPSK




Date: 8.DEC.2017 18:45:03

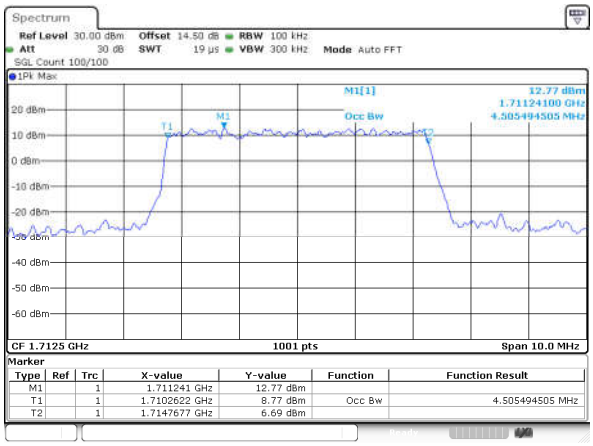
### Highest Channel / 3MHz / 16QAM



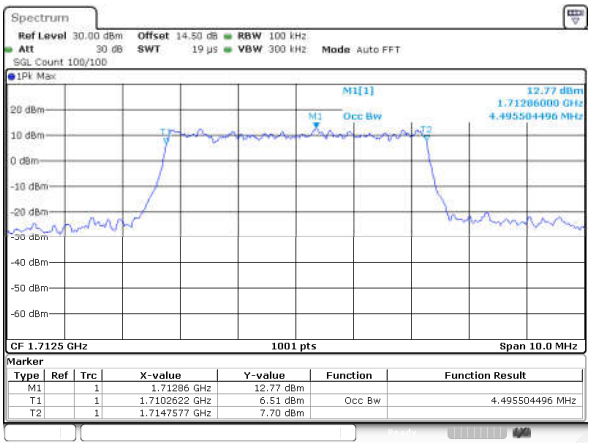

Date: 8.DEC.2017 18:45:13

## LTE Band 4

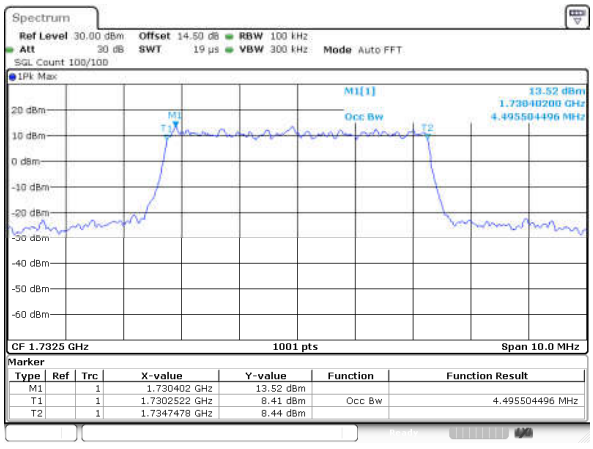
### Lowest Channel / 5MHz / QPSK



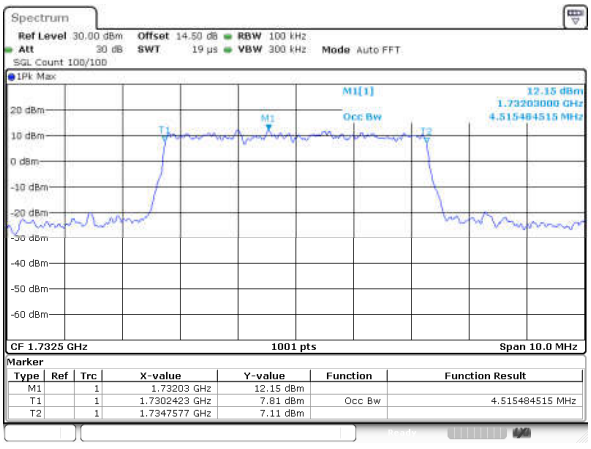

### Lowest Channel / 5MHz / 16QAM



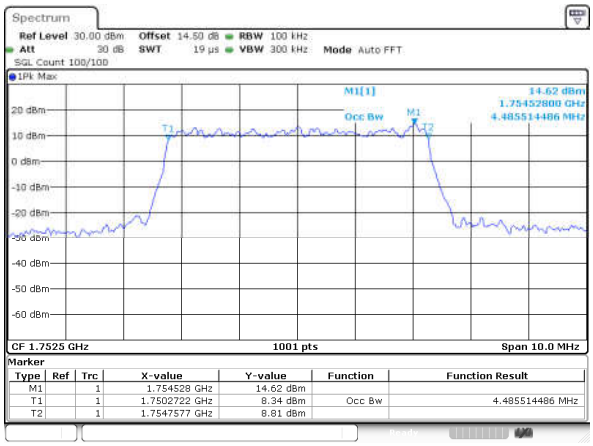

### Middle Channel / 5MHz / QPSK



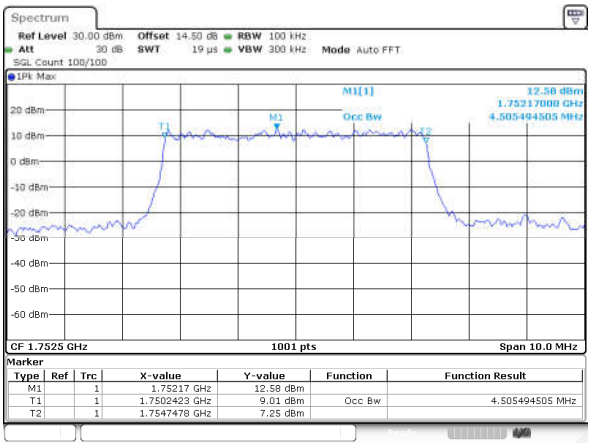

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

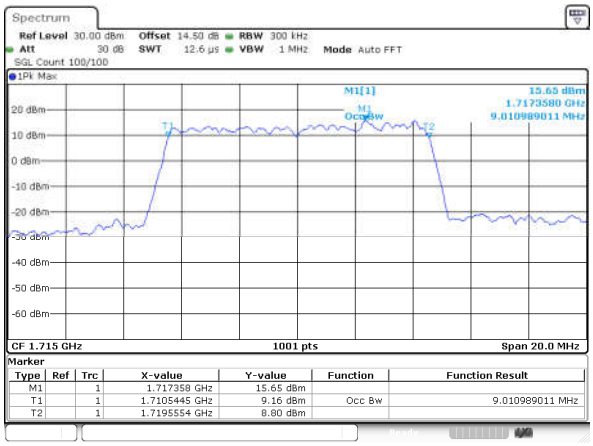



### Highest Channel / 5MHz / 16QAM

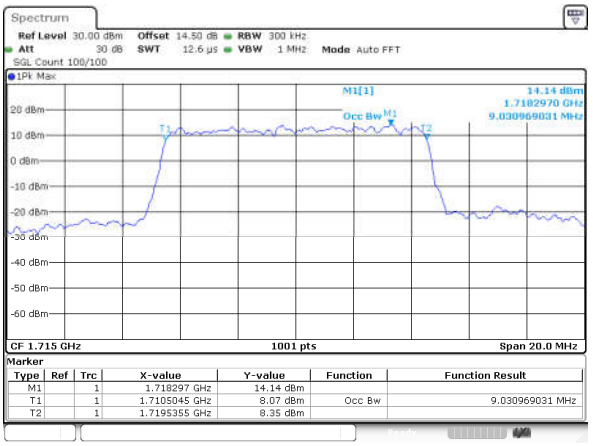


## LTE Band 4

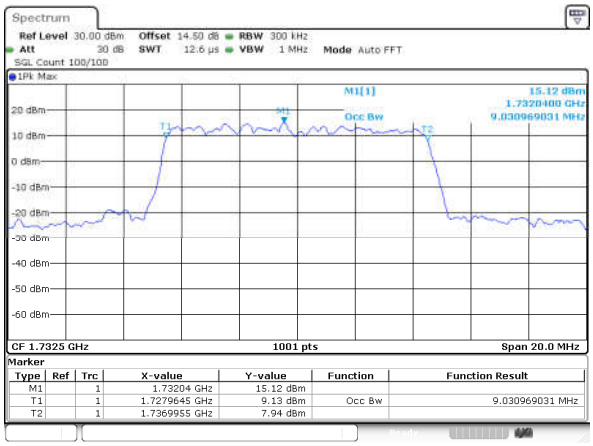
### Lowest Channel / 10MHz / QPSK



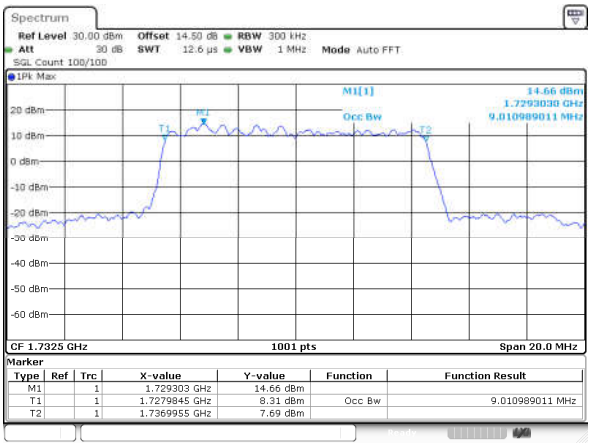

### Lowest Channel / 10MHz / 16QAM



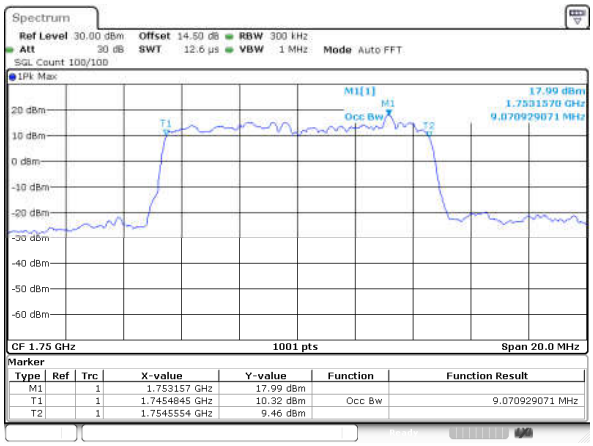

### Middle Channel / 10MHz / QPSK



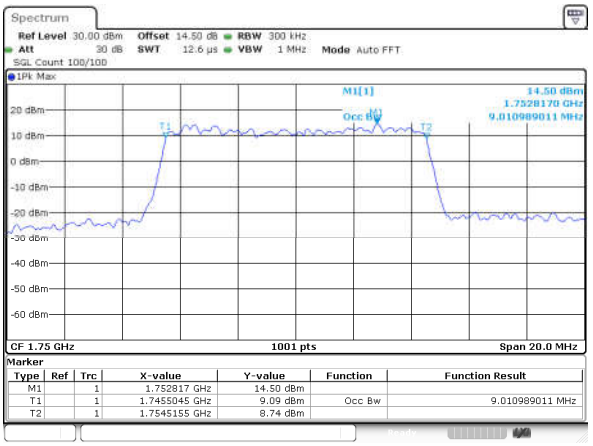

### Middle Channel / 10MHz / 16QAM




### Highest Channel / 10MHz / QPSK

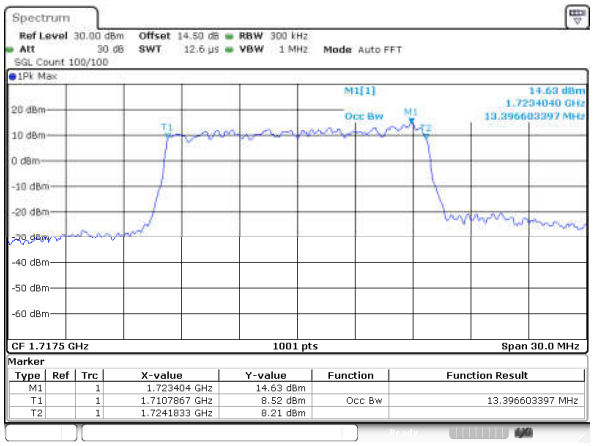



### Highest Channel / 10MHz / 16QAM



## LTE Band 4

### Lowest Channel / 15MHz / QPSK

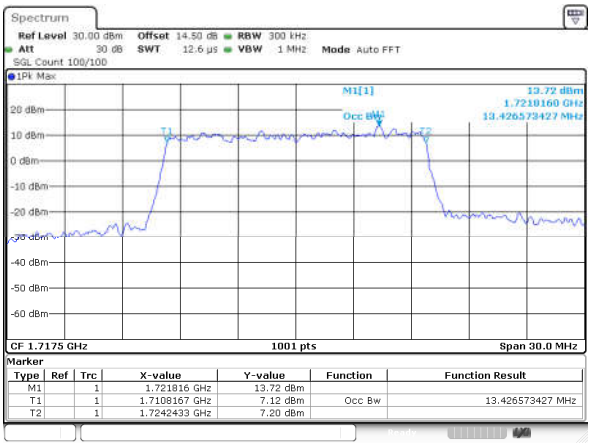



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.723404 GHz | 14.63 dBm | | |
| T1 | | 1 | 1.7107867 GHz | 8.52 dBm | Occ Bw | 13.396603397 MHz |
| T2 | | 1 | 1.7241833 GHz | 8.21 dBm | | |

Date: 8.DEC.2017 19:26:01

### Lowest Channel / 15MHz / 16QAM

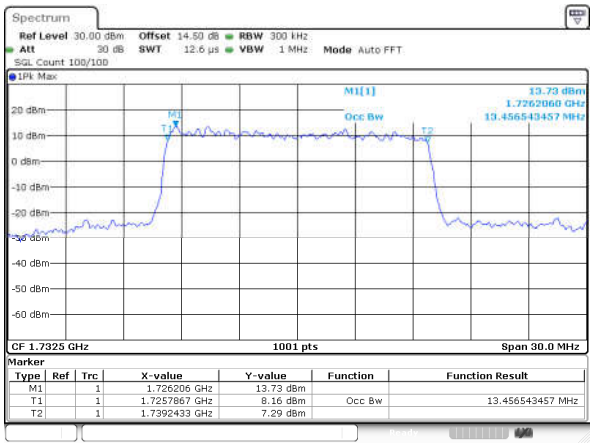



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.721816 GHz | 13.72 dBm | | |
| T1 | | 1 | 1.7108167 GHz | 7.12 dBm | Occ Bw | 13.426573427 MHz |
| T2 | | 1 | 1.7242433 GHz | 7.20 dBm | | |

Date: 8.DEC.2017 19:26:12

### Middle Channel / 15MHz / QPSK

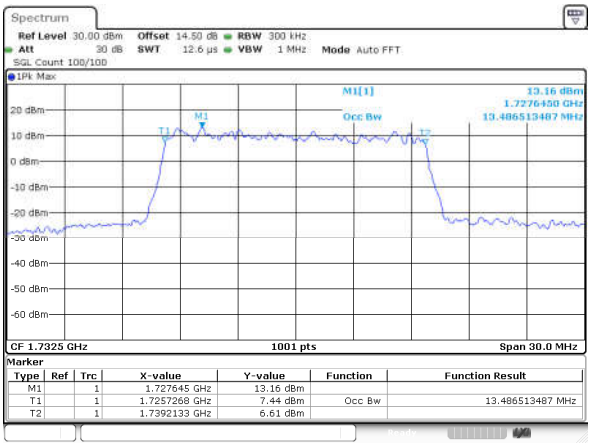



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.726206 GHz | 13.73 dBm | | |
| T1 | | 1 | 1.7257867 GHz | 8.16 dBm | Occ Bw | 13.456543457 MHz |
| T2 | | 1 | 1.7392433 GHz | 7.29 dBm | | |

Date: 8.DEC.2017 19:33:12

### Middle Channel / 15MHz / 16QAM

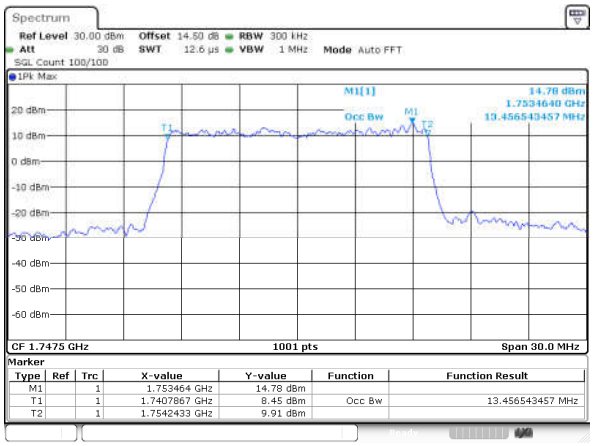



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.727645 GHz | 13.16 dBm | | |
| T1 | | 1 | 1.7257268 GHz | 7.44 dBm | Occ Bw | 13.486513487 MHz |
| T2 | | 1 | 1.7392133 GHz | 6.61 dBm | | |

Date: 8.DEC.2017 19:33:22

### Highest Channel / 15MHz / QPSK

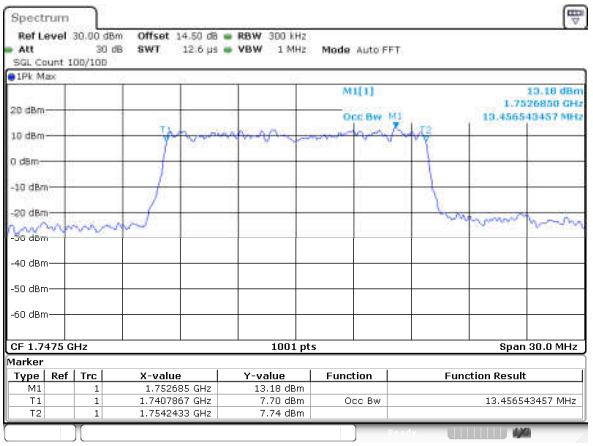



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.753464 GHz | 14.78 dBm | | |
| T1 | | 1 | 1.7407867 GHz | 8.45 dBm | Occ Bw | 13.456543457 MHz |
| T2 | | 1 | 1.7542433 GHz | 9.91 dBm | | |

Date: 8.DEC.2017 19:35:45

### Highest Channel / 15MHz / 16QAM



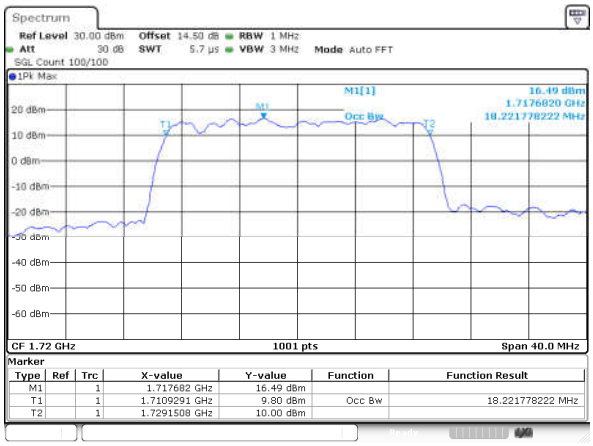

Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 1.752685 GHz | 13.18 dBm | | |
| T1 | | 1 | 1.7407867 GHz | 7.70 dBm | Occ Bw | 13.456543457 MHz |
| T2 | | 1 | 1.7542433 GHz | 7.74 dBm | | |

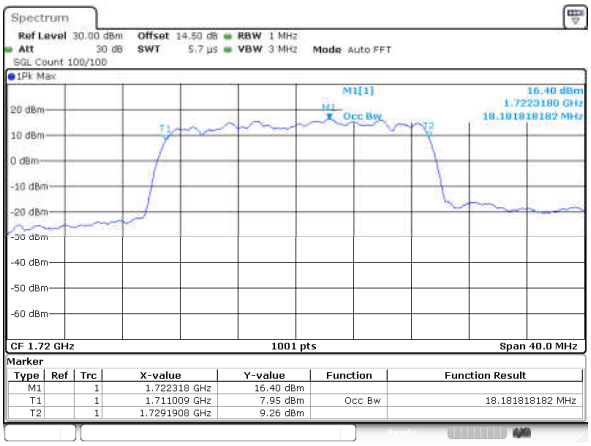
Date: 8.DEC.2017 19:35:55

## LTE Band 4

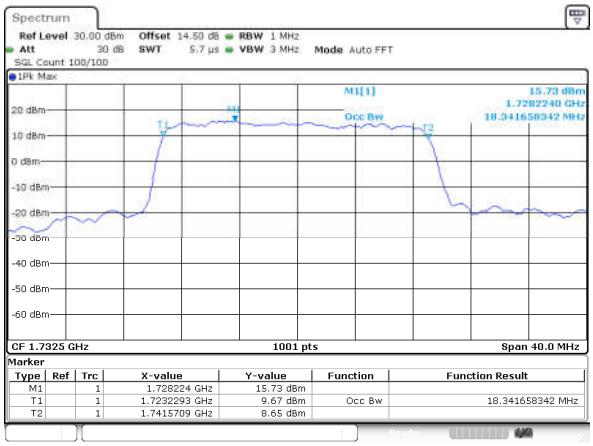
### Lowest Channel / 20MHz / QPSK



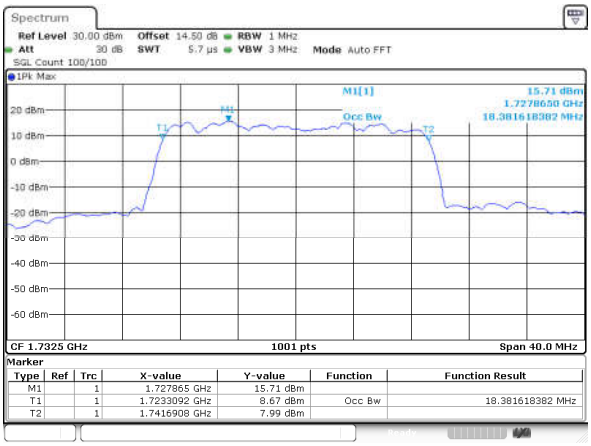

### Lowest Channel / 20MHz / 16QAM



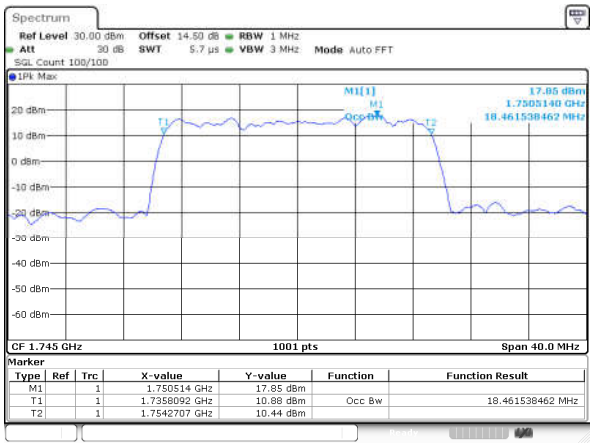

### Middle Channel / 20MHz / QPSK



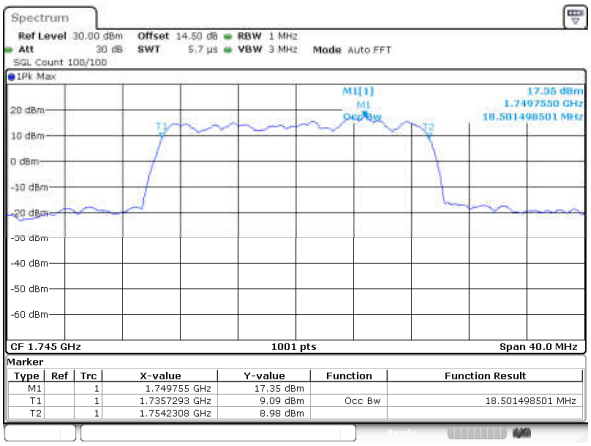

### Middle Channel / 20MHz / 16QAM




### Highest Channel / 20MHz / QPSK



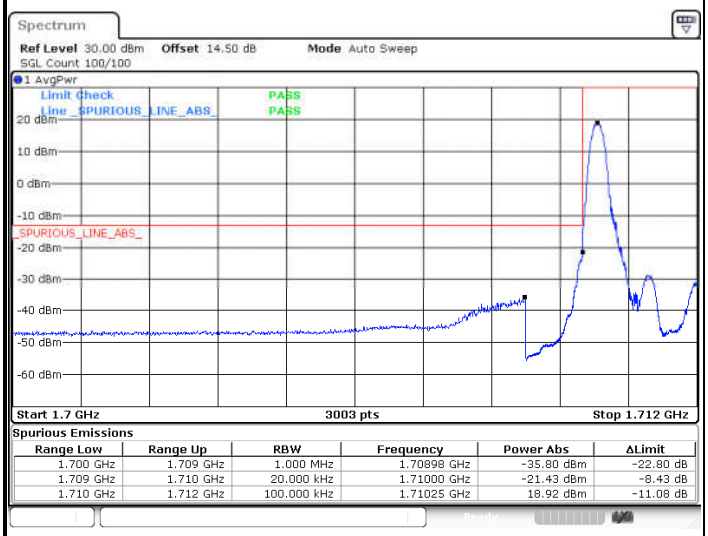

### Highest Channel / 20MHz / 16QAM



# Conducted Band Edge

## LTE Band 4 / 1.4MHz / QPSK

### Lowest Band Edge / 1RB

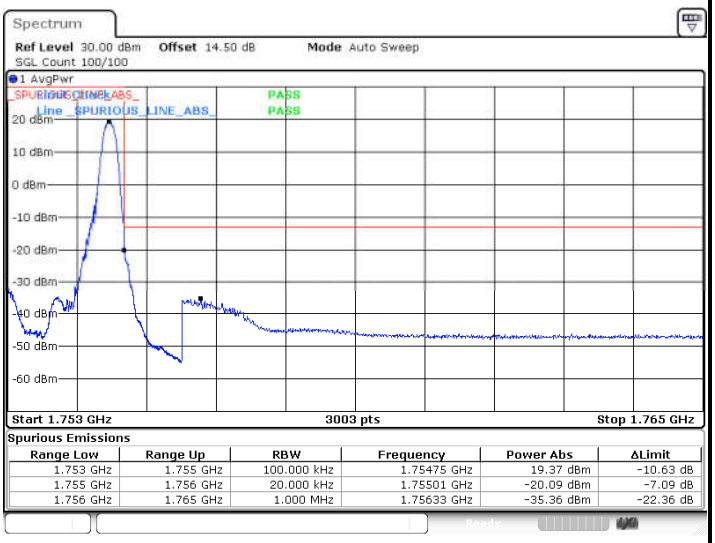



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70898 GHz | -35.80 dBm | -22.80 dB |
| 1.709 GHz | 1.710 GHz | 20.000 kHz | 1.71000 GHz | -21.43 dBm | -8.43 dB |
| 1.710 GHz | 1.712 GHz | 100.000 kHz | 1.71025 GHz | 18.92 dBm | -11.08 dB |

Date: 8.DEC.2017 18:20:08

### Highest Band Edge / 1RB

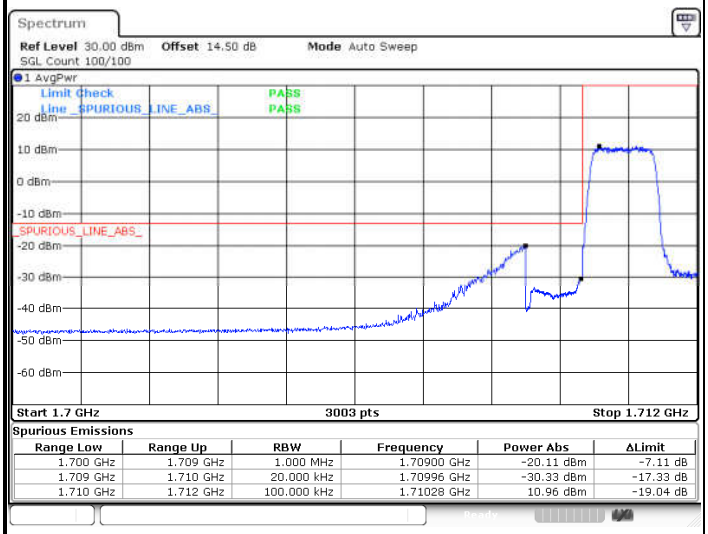



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.753 GHz | 1.755 GHz | 100.000 kHz | 1.75475 GHz | 19.37 dBm | -10.63 dB |
| 1.755 GHz | 1.756 GHz | 20.000 kHz | 1.75501 GHz | -20.09 dBm | -7.09 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75633 GHz | -35.36 dBm | -22.36 dB |

Date: 8.DEC.2017 18:29:49

### Lowest Band Edge / Full RB

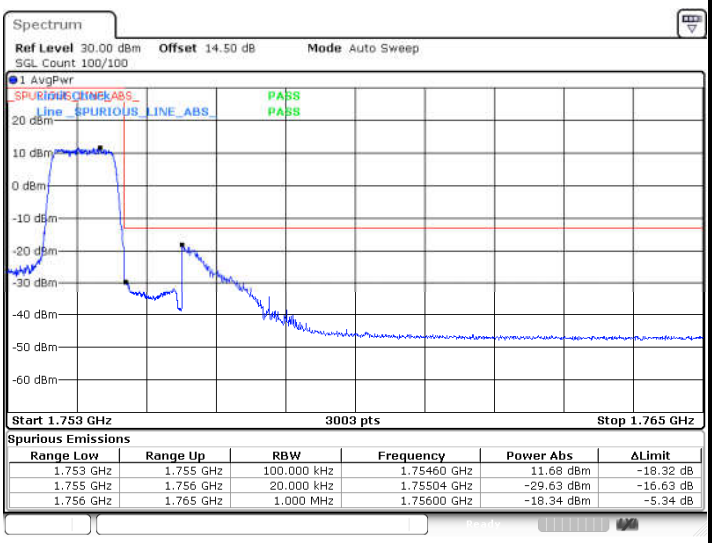



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70900 GHz | -20.11 dBm | -7.11 dB |
| 1.709 GHz | 1.710 GHz | 20.000 kHz | 1.70996 GHz | -30.33 dBm | -17.33 dB |
| 1.710 GHz | 1.712 GHz | 100.000 kHz | 1.71028 GHz | 10.96 dBm | -19.04 dB |

Date: 8.DEC.2017 18:22:28

### Highest Band Edge / Full RB



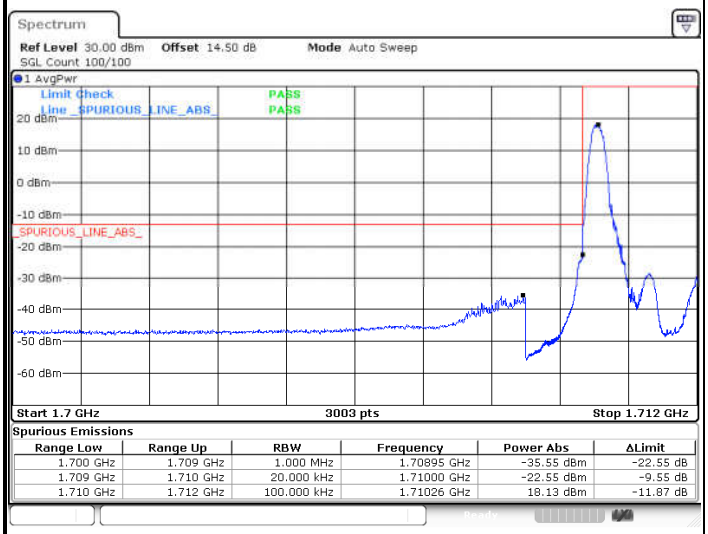

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.753 GHz | 1.755 GHz | 100.000 kHz | 1.75460 GHz | 11.68 dBm | -18.32 dB |
| 1.755 GHz | 1.756 GHz | 20.000 kHz | 1.75504 GHz | -29.63 dBm | -16.63 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75600 GHz | -18.34 dBm | -5.34 dB |

Date: 8.DEC.2017 18:32:09

## LTE Band 4 / 1.4MHz / 16QAM

### Lowest Band Edge / 1 RB

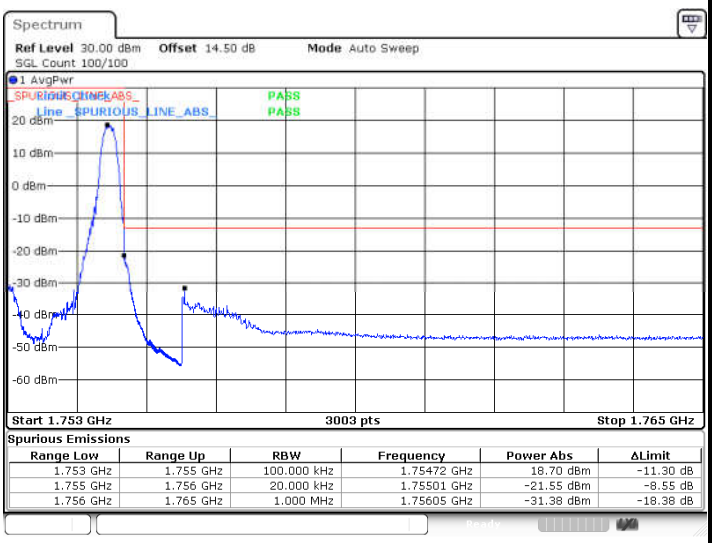



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70895 GHz | -35.55 dBm | -22.55 dB |
| 1.709 GHz | 1.710 GHz | 20.000 kHz | 1.71000 GHz | -22.55 dBm | -9.55 dB |
| 1.710 GHz | 1.712 GHz | 100.000 kHz | 1.71026 GHz | 18.13 dBm | -11.87 dB |

Date: 8.DEC.2017 18:21:18

### Highest Band Edge / 1 RB

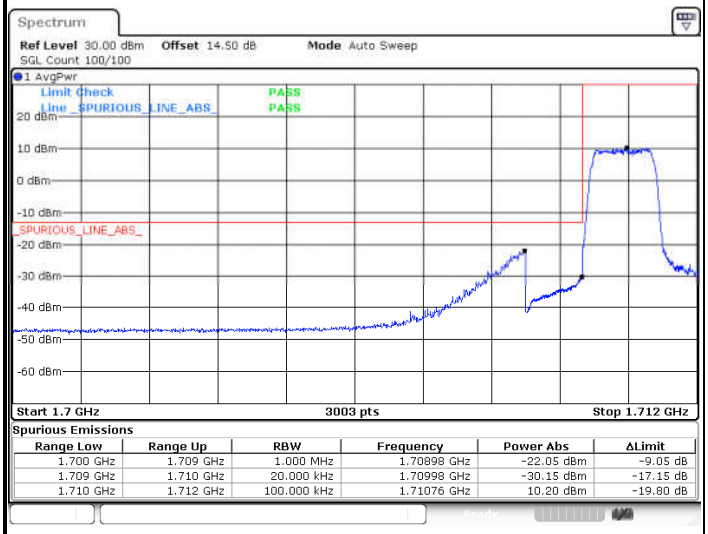



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.753 GHz | 1.755 GHz | 100.000 kHz | 1.75472 GHz | 18.70 dBm | -11.30 dB |
| 1.755 GHz | 1.756 GHz | 20.000 kHz | 1.75501 GHz | -21.55 dBm | -8.55 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75605 GHz | -31.38 dBm | -18.38 dB |

Date: 8.DEC.2017 18:30:59

### Lowest Band Edge / Full RB

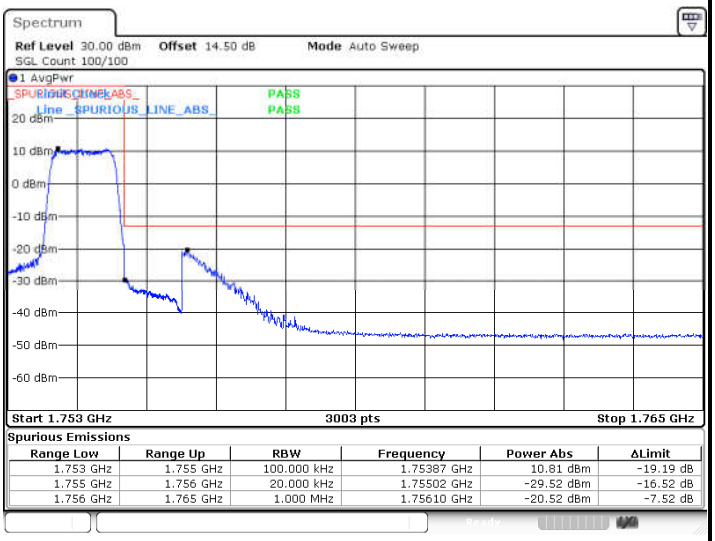



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70898 GHz | -22.05 dBm | -9.05 dB |
| 1.709 GHz | 1.710 GHz | 20.000 kHz | 1.70998 GHz | -30.15 dBm | -17.15 dB |
| 1.710 GHz | 1.712 GHz | 100.000 kHz | 1.71076 GHz | 10.20 dBm | -19.80 dB |

Date: 8.DEC.2017 18:23:37

### Highest Band Edge / Full RB



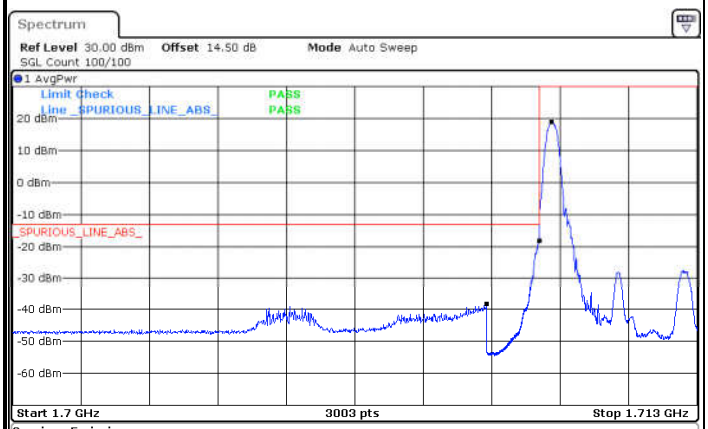

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.753 GHz | 1.755 GHz | 100.000 kHz | 1.75387 GHz | 10.81 dBm | -19.19 dB |
| 1.755 GHz | 1.756 GHz | 20.000 kHz | 1.75502 GHz | -29.52 dBm | -16.52 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75610 GHz | -20.52 dBm | -7.52 dB |

Date: 8.DEC.2017 18:33:18

## LTE Band 4 / 3MHz / QPSK

### Lowest Band Edge / 1RB

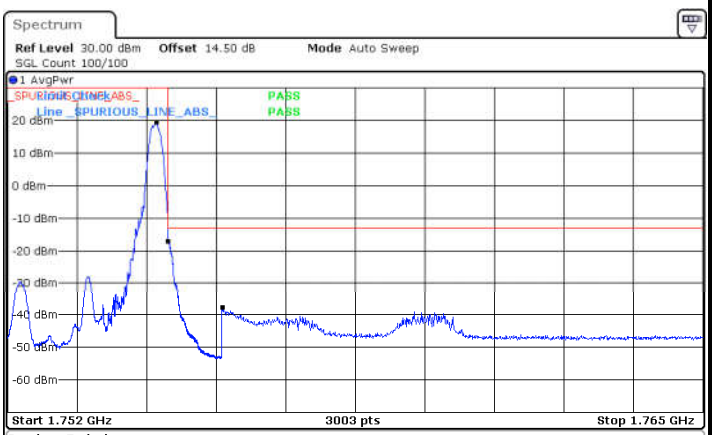



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70900 GHz | -38.39 dBm | -25.39 dB |
| 1.709 GHz | 1.710 GHz | 30.000 kHz | 1.71000 GHz | -18.18 dBm | -5.18 dB |
| 1.710 GHz | 1.713 GHz | 100.000 kHz | 1.71023 GHz | 18.81 dBm | -11.19 dB |

Date: 8.DEC.2017 18:37:00

### Highest Band Edge / 1 RB

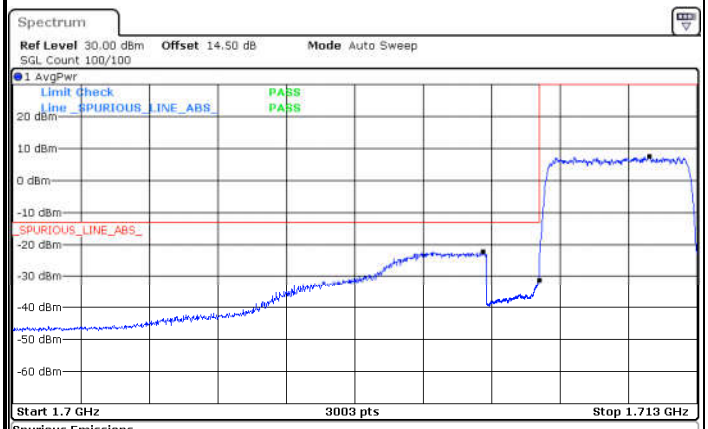



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.752 GHz | 1.755 GHz | 100.000 kHz | 1.75478 GHz | 19.46 dBm | -10.54 dB |
| 1.755 GHz | 1.756 GHz | 30.000 kHz | 1.75500 GHz | -17.26 dBm | -4.26 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75601 GHz | -37.80 dBm | -24.80 dB |

Date: 8.DEC.2017 18:46:42

### Lowest Band Edge / Full RB

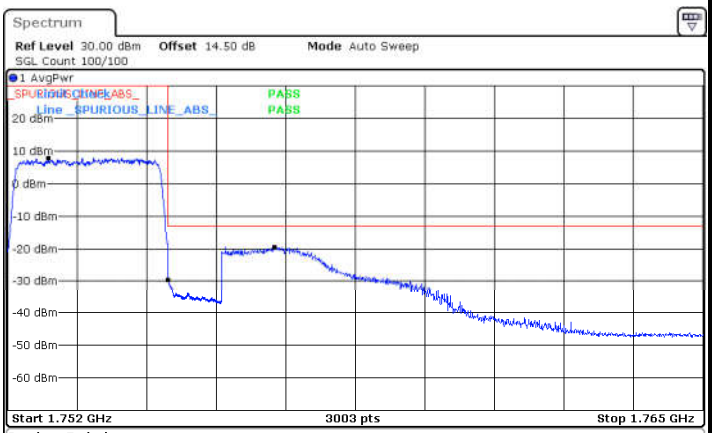



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70894 GHz | -22.36 dBm | -9.36 dB |
| 1.709 GHz | 1.710 GHz | 30.000 kHz | 1.71000 GHz | -31.31 dBm | -18.31 dB |
| 1.710 GHz | 1.713 GHz | 100.000 kHz | 1.71209 GHz | 7.54 dBm | -22.46 dB |

Date: 8.DEC.2017 18:39:19

### Highest Band Edge / Full RB



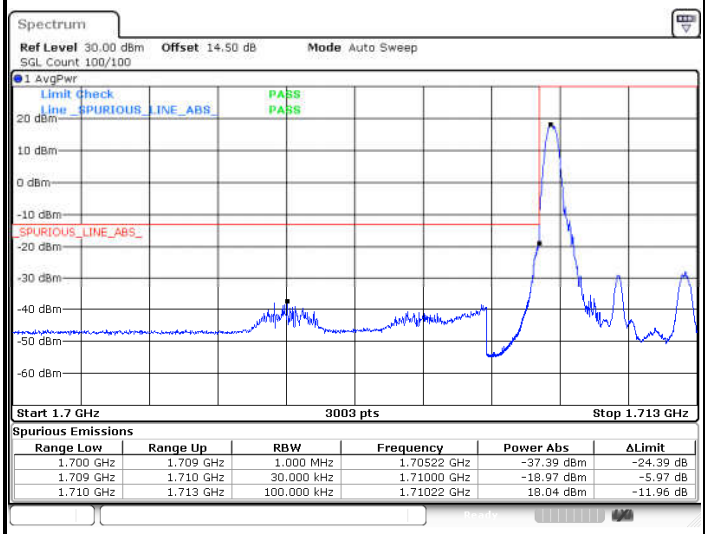

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.752 GHz | 1.755 GHz | 100.000 kHz | 1.75276 GHz | 7.85 dBm | -22.15 dB |
| 1.755 GHz | 1.756 GHz | 30.000 kHz | 1.75500 GHz | -29.62 dBm | -16.62 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75699 GHz | -19.51 dBm | -6.51 dB |

Date: 8.DEC.2017 18:49:01

## LTE Band 4 / 3MHz / 16QAM

### Lowest Band Edge / 1 RB

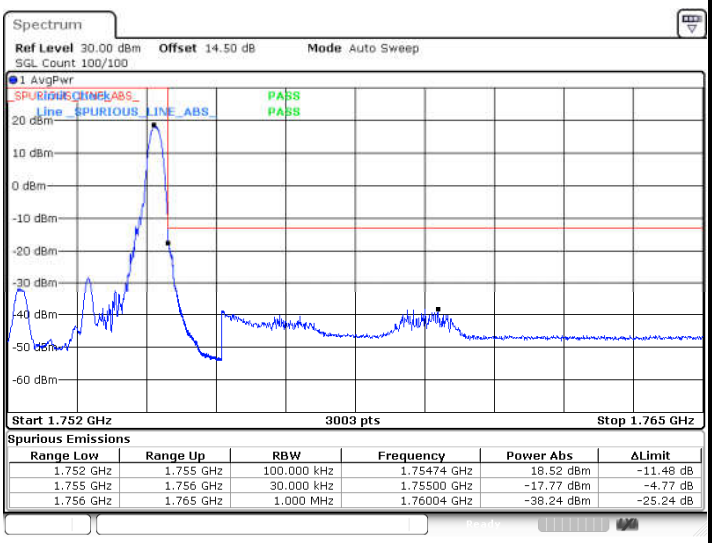



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70522 GHz | -37.39 dBm | -24.39 dB |
| 1.709 GHz | 1.710 GHz | 30.000 kHz | 1.71000 GHz | -18.97 dBm | -5.97 dB |
| 1.710 GHz | 1.713 GHz | 100.000 kHz | 1.71022 GHz | 18.04 dBm | -11.96 dB |

Date: 8.DEC.2017 18:38:09

### Highest Band Edge /1 RB

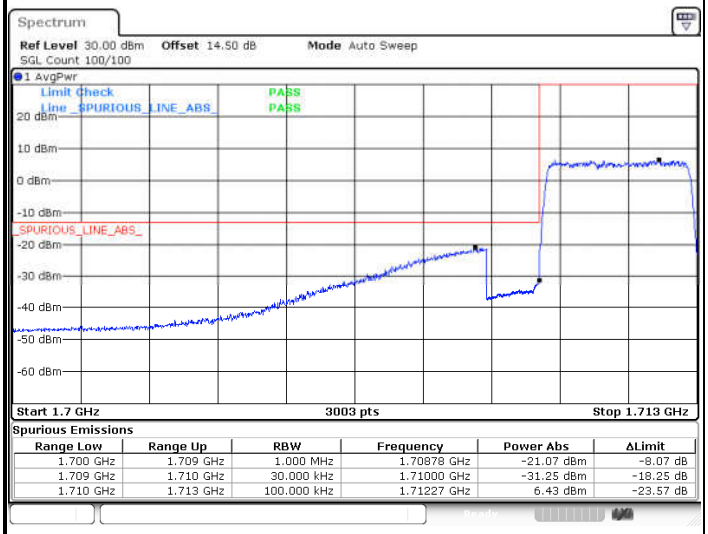



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.752 GHz | 1.755 GHz | 100.000 kHz | 1.75474 GHz | 18.52 dBm | -11.48 dB |
| 1.755 GHz | 1.756 GHz | 30.000 kHz | 1.75500 GHz | -17.77 dBm | -4.77 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.76004 GHz | -38.24 dBm | -25.24 dB |

Date: 8.DEC.2017 18:47:51

### Lowest Band Edge / Full RB

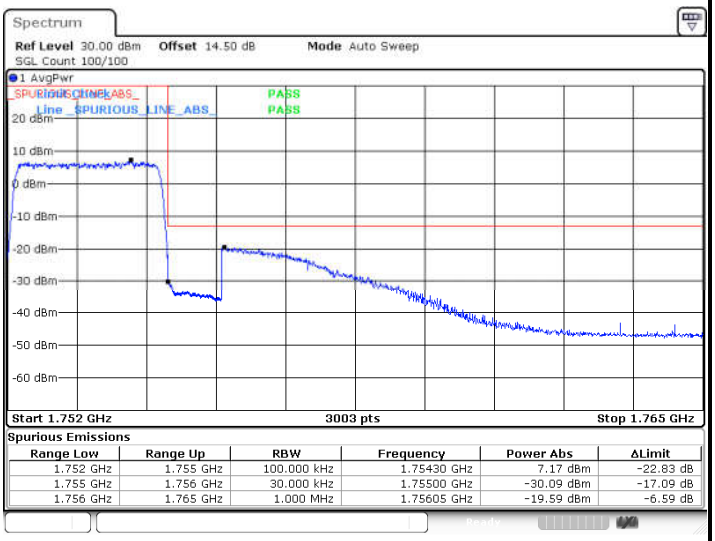



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70878 GHz | -21.07 dBm | -8.07 dB |
| 1.709 GHz | 1.710 GHz | 30.000 kHz | 1.71000 GHz | -31.25 dBm | -18.25 dB |
| 1.710 GHz | 1.713 GHz | 100.000 kHz | 1.71227 GHz | 6.43 dBm | -23.57 dB |

Date: 8.DEC.2017 18:40:28

### Highest Band Edge / Full RB



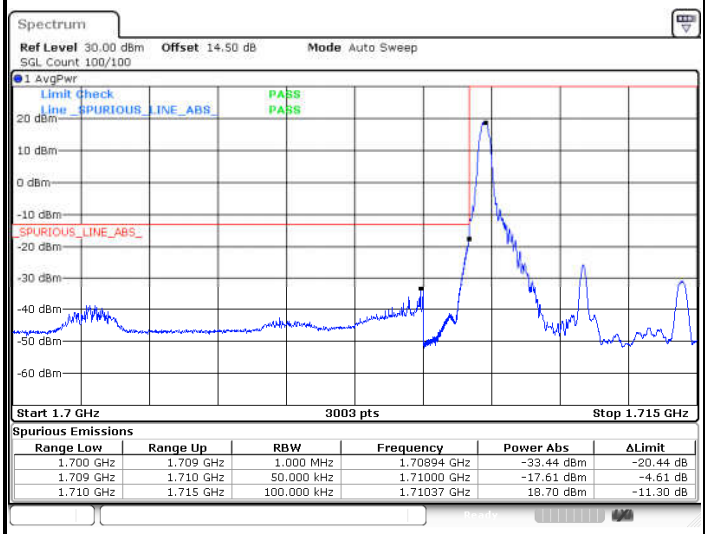

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.752 GHz | 1.755 GHz | 100.000 kHz | 1.75430 GHz | 7.17 dBm | -22.83 dB |
| 1.755 GHz | 1.756 GHz | 30.000 kHz | 1.75500 GHz | -30.09 dBm | -17.09 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75605 GHz | -19.59 dBm | -6.59 dB |

Date: 8.DEC.2017 18:50:11

## LTE Band 4 / 5MHz / QPSK

### Lowest Band Edge / 1 RB

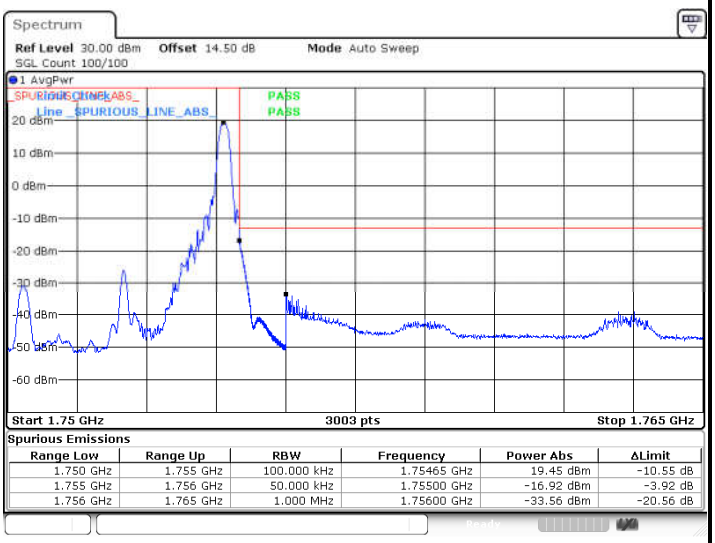



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70894 GHz | -33.44 dBm | -20.44 dB |
| 1.709 GHz | 1.710 GHz | 50.000 kHz | 1.71000 GHz | -17.61 dBm | -4.61 dB |
| 1.710 GHz | 1.715 GHz | 100.000 kHz | 1.71037 GHz | 18.70 dBm | -11.30 dB |

Date: 8.DEC.2017 18:53:53

### Highest Band Edge / 1 RB

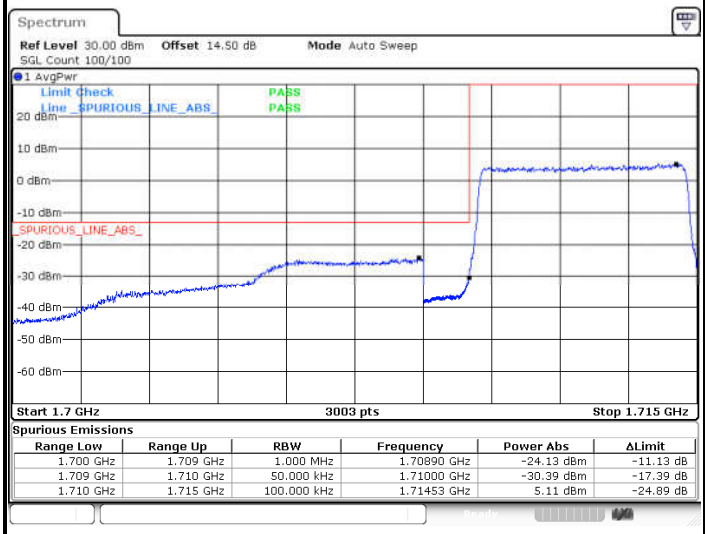



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.750 GHz | 1.755 GHz | 100.000 kHz | 1.75465 GHz | 19.45 dBm | -10.55 dB |
| 1.755 GHz | 1.756 GHz | 50.000 kHz | 1.75500 GHz | -16.92 dBm | -3.92 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75600 GHz | -33.56 dBm | -20.56 dB |

Date: 8.DEC.2017 19:03:35

### Lowest Band Edge / Full RB

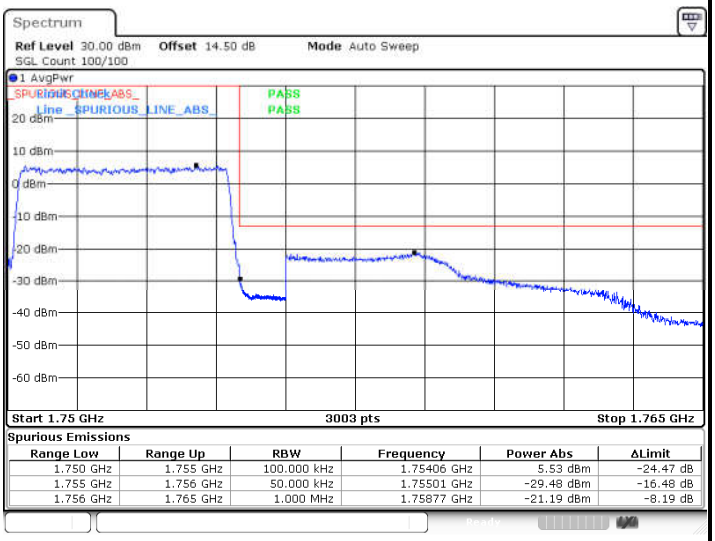



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70890 GHz | -24.13 dBm | -11.13 dB |
| 1.709 GHz | 1.710 GHz | 50.000 kHz | 1.71000 GHz | -30.39 dBm | -17.39 dB |
| 1.710 GHz | 1.715 GHz | 100.000 kHz | 1.71453 GHz | 5.11 dBm | -24.89 dB |

Date: 8.DEC.2017 18:56:11

### Highest Band Edge / Full RB



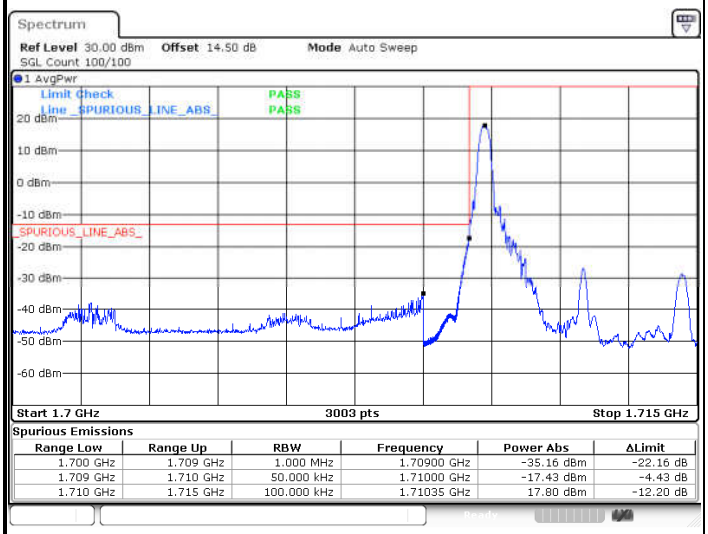

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.750 GHz | 1.755 GHz | 100.000 kHz | 1.75406 GHz | 5.53 dBm | -24.47 dB |
| 1.755 GHz | 1.756 GHz | 50.000 kHz | 1.75501 GHz | -29.48 dBm | -16.48 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75877 GHz | -21.19 dBm | -8.19 dB |

Date: 8.DEC.2017 19:05:55

## LTE Band 4 / 5MHz / 16QAM

### Lowest Band Edge / 1RB

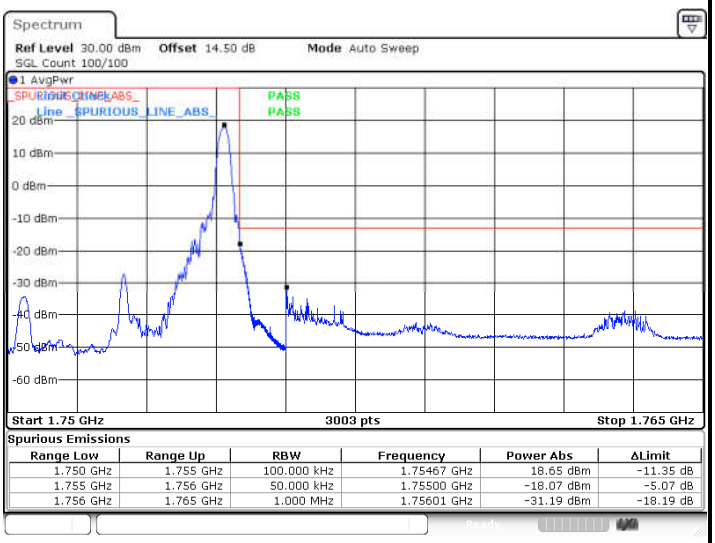



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70900 GHz | -35.16 dBm | -22.16 dB |
| 1.709 GHz | 1.710 GHz | 50.000 kHz | 1.71000 GHz | -17.43 dBm | -4.43 dB |
| 1.710 GHz | 1.715 GHz | 100.000 kHz | 1.71035 GHz | 17.80 dBm | -12.20 dB |

Date: 8.DEC.2017 18:55:02

### Highest Band Edge / 1 RB

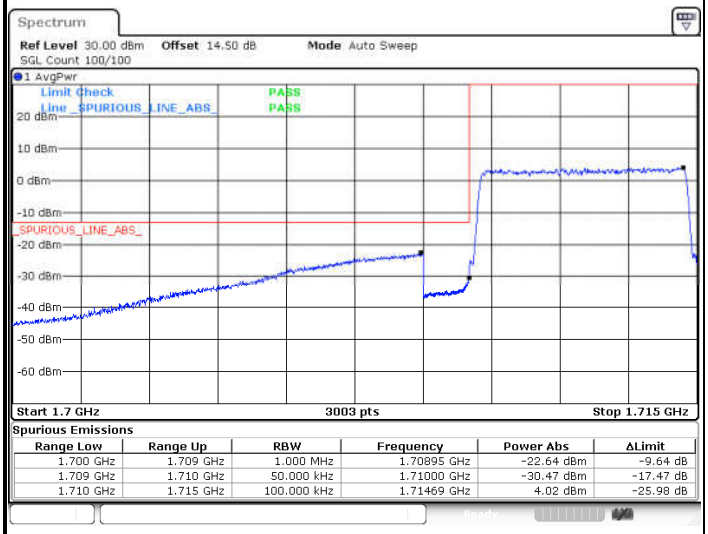



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.750 GHz | 1.755 GHz | 100.000 kHz | 1.75467 GHz | 18.65 dBm | -11.35 dB |
| 1.755 GHz | 1.756 GHz | 50.000 kHz | 1.75500 GHz | -18.07 dBm | -5.07 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75601 GHz | -31.19 dBm | -18.19 dB |

Date: 8.DEC.2017 19:04:45

### Lowest Band Edge / Full RB

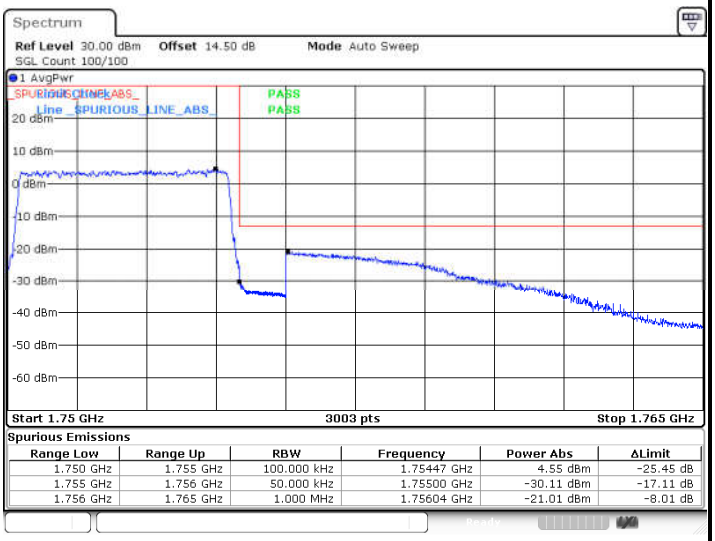



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70895 GHz | -22.64 dBm | -9.64 dB |
| 1.709 GHz | 1.710 GHz | 50.000 kHz | 1.71000 GHz | -30.47 dBm | -17.47 dB |
| 1.710 GHz | 1.715 GHz | 100.000 kHz | 1.71469 GHz | 4.02 dBm | -25.98 dB |

Date: 8.DEC.2017 18:57:21

### Highest Band Edge / Full RB



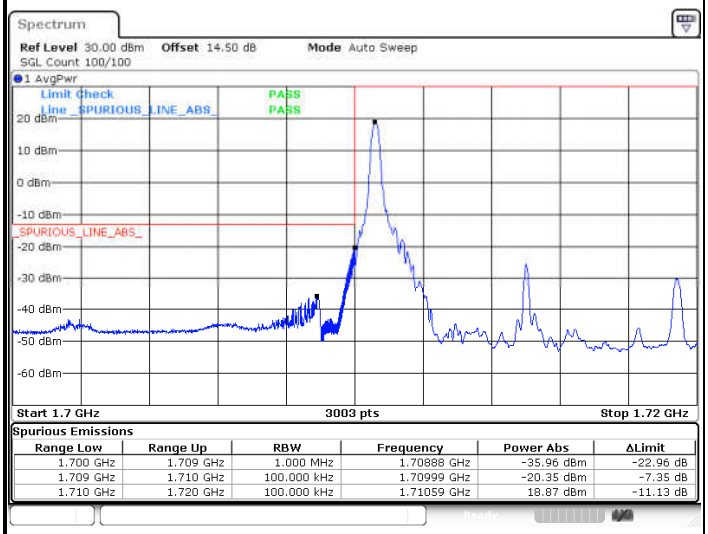

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.750 GHz | 1.755 GHz | 100.000 kHz | 1.75447 GHz | 4.55 dBm | -25.45 dB |
| 1.755 GHz | 1.756 GHz | 50.000 kHz | 1.75500 GHz | -30.11 dBm | -17.11 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75604 GHz | -21.01 dBm | -8.01 dB |

Date: 8.DEC.2017 19:07:04

## LTE Band 4 / 10MHz / QPSK

### Lowest Band Edge / 1 RB

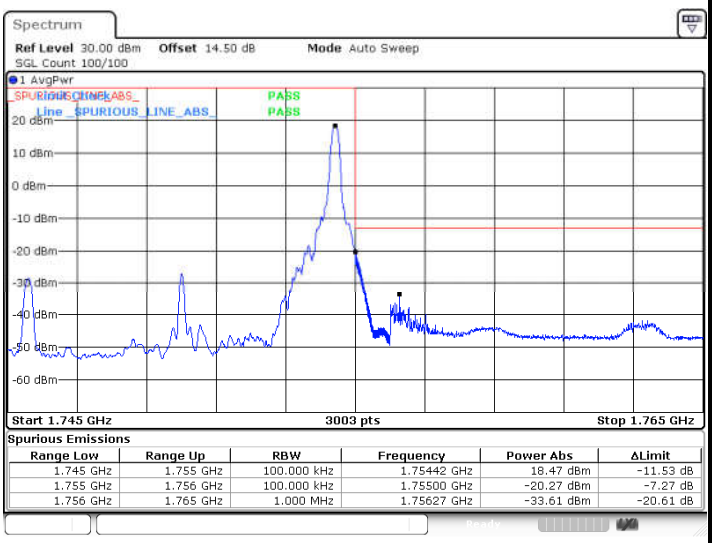



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70888 GHz | -35.96 dBm | -22.96 dB |
| 1.709 GHz | 1.710 GHz | 100.000 kHz | 1.70999 GHz | -20.35 dBm | -7.35 dB |
| 1.710 GHz | 1.720 GHz | 100.000 kHz | 1.71059 GHz | 18.87 dBm | -11.13 dB |

Date: 8.DEC.2017 19:10:46

### Highest Band Edge / 1 RB

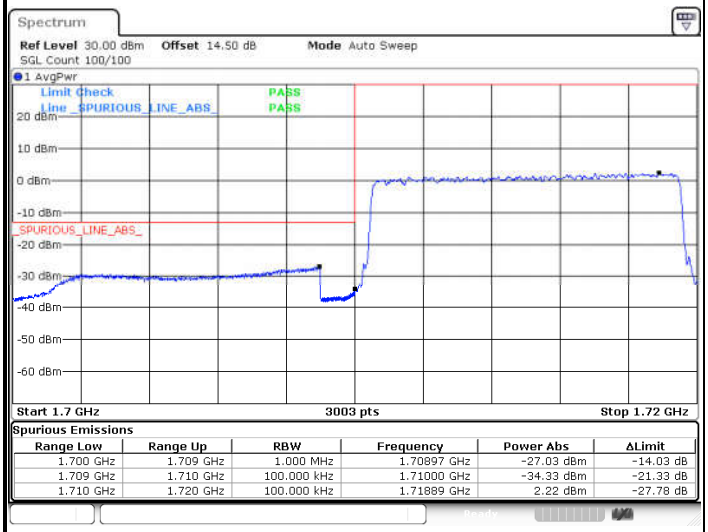



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.745 GHz | 1.755 GHz | 100.000 kHz | 1.75442 GHz | 18.47 dBm | -11.53 dB |
| 1.755 GHz | 1.756 GHz | 100.000 kHz | 1.75500 GHz | -20.27 dBm | -7.27 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75627 GHz | -33.61 dBm | -20.61 dB |

Date: 8.DEC.2017 19:20:30

### Lowest Band Edge / Full RB

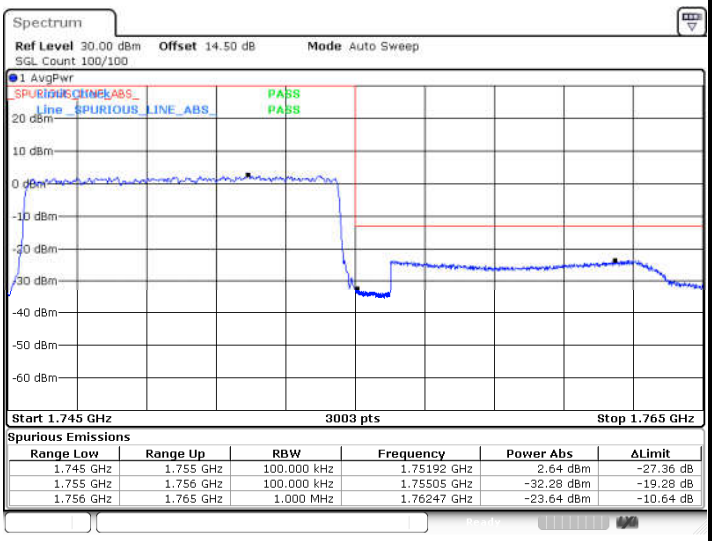



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70897 GHz | -27.03 dBm | -14.03 dB |
| 1.709 GHz | 1.710 GHz | 100.000 kHz | 1.71000 GHz | -34.33 dBm | -21.33 dB |
| 1.710 GHz | 1.720 GHz | 100.000 kHz | 1.71889 GHz | 2.22 dBm | -27.78 dB |

Date: 8.DEC.2017 19:13:06

### Highest Band Edge / Full RB



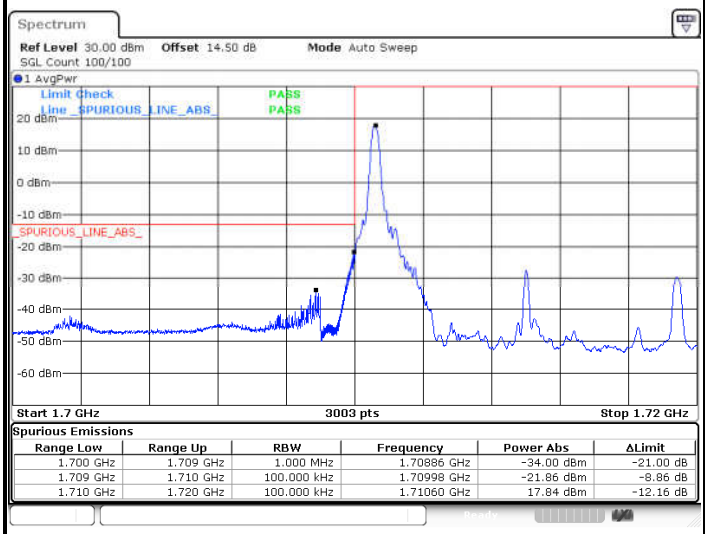

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.745 GHz | 1.755 GHz | 100.000 kHz | 1.75192 GHz | 2.64 dBm | -27.36 dB |
| 1.755 GHz | 1.756 GHz | 100.000 kHz | 1.75505 GHz | -32.28 dBm | -19.28 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.76247 GHz | -23.64 dBm | -10.64 dB |

Date: 8.DEC.2017 19:22:49

## LTE Band 4 / 10MHz / 16QAM

### Lowest Band Edge / 1 RB

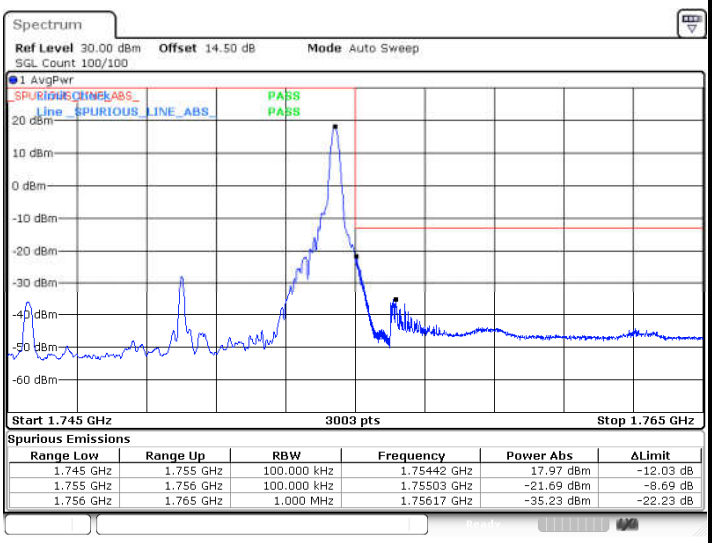



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70886 GHz | -34.00 dBm | -21.00 dB |
| 1.709 GHz | 1.710 GHz | 100.000 kHz | 1.70998 GHz | -21.86 dBm | -8.86 dB |
| 1.710 GHz | 1.720 GHz | 100.000 kHz | 1.71060 GHz | 17.84 dBm | -12.16 dB |

Date: 8.DEC.2017 19:11:56

### Highest Band Edge / 1 RB

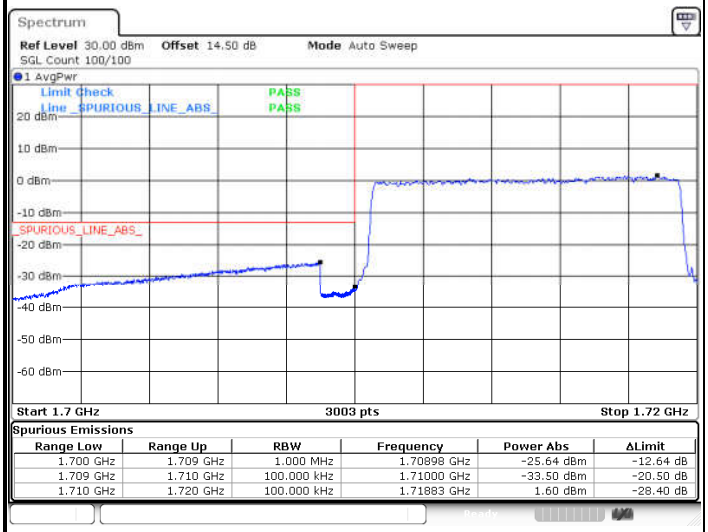



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.745 GHz | 1.755 GHz | 100.000 kHz | 1.75442 GHz | 17.97 dBm | -12.03 dB |
| 1.755 GHz | 1.756 GHz | 100.000 kHz | 1.75503 GHz | -21.69 dBm | -8.69 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75617 GHz | -35.23 dBm | -22.23 dB |

Date: 8.DEC.2017 19:21:39

### Lowest Band Edge / Full RB

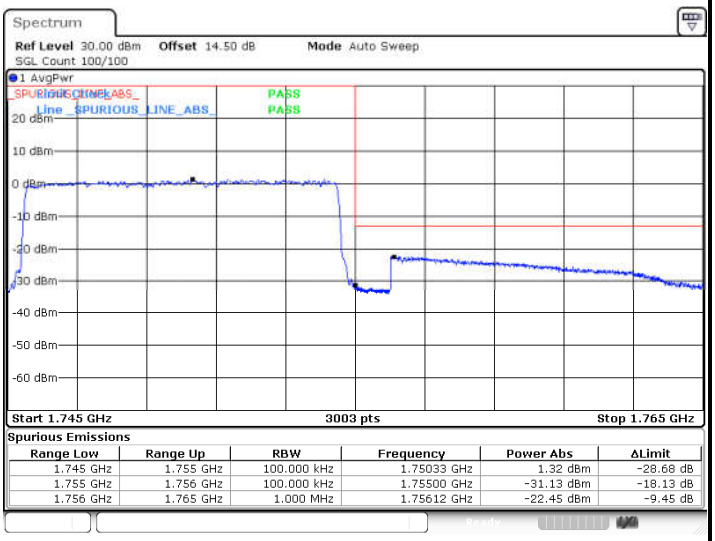



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70898 GHz | -25.64 dBm | -12.64 dB |
| 1.709 GHz | 1.710 GHz | 100.000 kHz | 1.71000 GHz | -33.50 dBm | -20.50 dB |
| 1.710 GHz | 1.720 GHz | 100.000 kHz | 1.71883 GHz | 1.60 dBm | -28.40 dB |

Date: 8.DEC.2017 19:14:15

### Highest Band Edge / Full RB



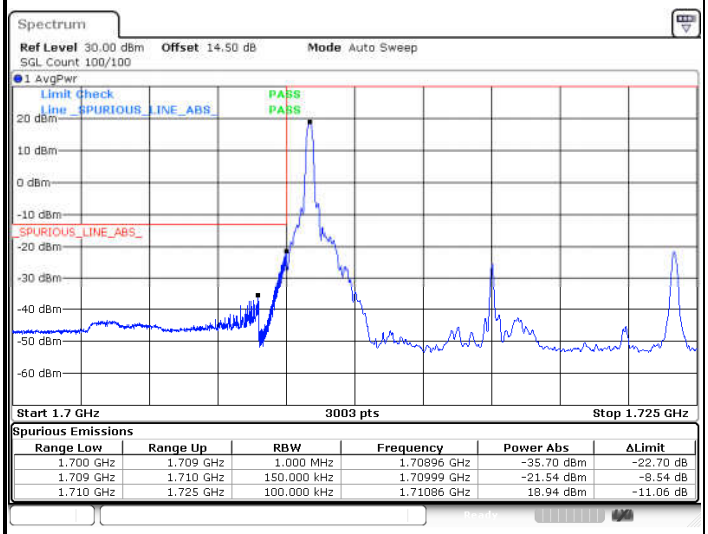

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.745 GHz | 1.755 GHz | 100.000 kHz | 1.75033 GHz | 1.32 dBm | -28.68 dB |
| 1.755 GHz | 1.756 GHz | 100.000 kHz | 1.75500 GHz | -31.13 dBm | -18.13 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75612 GHz | -22.45 dBm | -9.45 dB |

Date: 8.DEC.2017 19:23:59

## LTE Band 4 / 15MHz / QPSK

### Lowest Band Edge / 1 RB

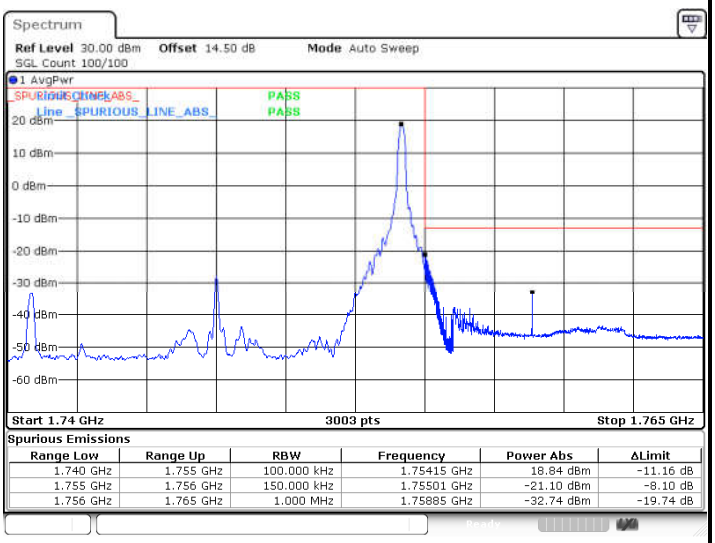



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70896 GHz | -35.70 dBm | -22.70 dB |
| 1.709 GHz | 1.710 GHz | 150.000 kHz | 1.70999 GHz | -21.54 dBm | -8.54 dB |
| 1.710 GHz | 1.725 GHz | 100.000 kHz | 1.71086 GHz | 18.94 dBm | -11.06 dB |

Date: 8.DEC.2017 19:27:41

### Highest Band Edge / 1 RB

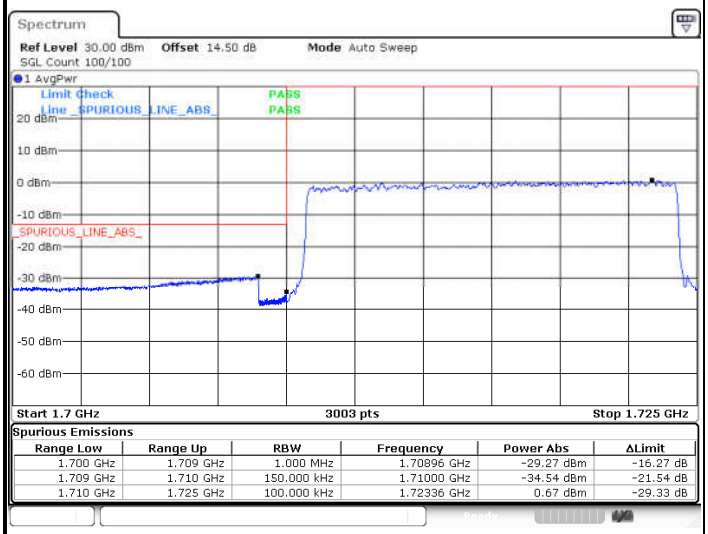



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.740 GHz | 1.755 GHz | 100.000 kHz | 1.75415 GHz | 18.84 dBm | -11.16 dB |
| 1.755 GHz | 1.756 GHz | 150.000 kHz | 1.75501 GHz | -21.10 dBm | -8.10 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75885 GHz | -32.74 dBm | -19.74 dB |

Date: 8.DEC.2017 19:37:24

### Lowest Band Edge / Full RB

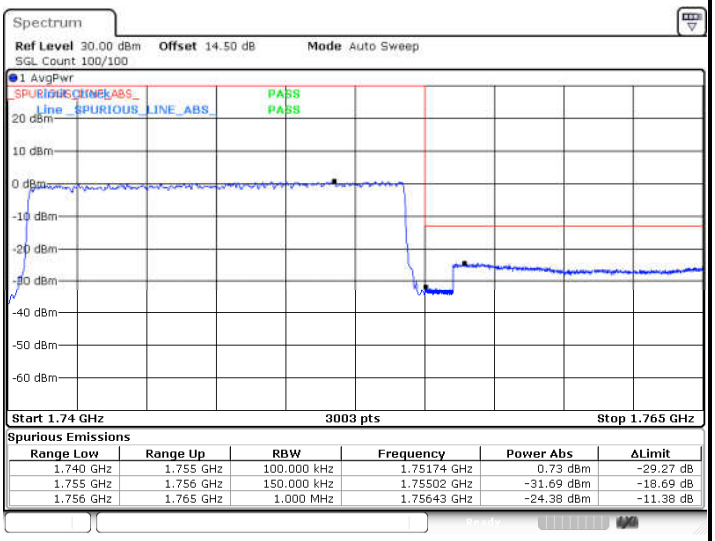



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70896 GHz | -29.27 dBm | -16.27 dB |
| 1.709 GHz | 1.710 GHz | 150.000 kHz | 1.71000 GHz | -34.54 dBm | -21.54 dB |
| 1.710 GHz | 1.725 GHz | 100.000 kHz | 1.72336 GHz | 0.67 dBm | -29.33 dB |

Date: 8.DEC.2017 19:30:00

### Highest Band Edge / Full RB



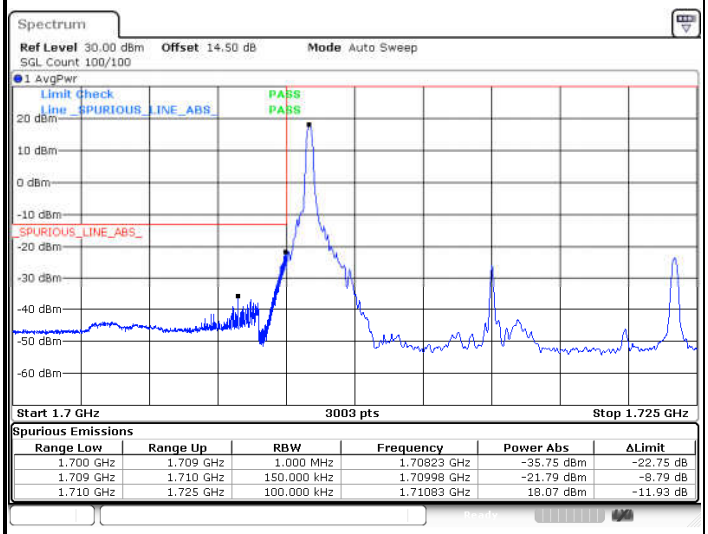

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.740 GHz | 1.755 GHz | 100.000 kHz | 1.75174 GHz | 0.73 dBm | -29.27 dB |
| 1.755 GHz | 1.756 GHz | 150.000 kHz | 1.75502 GHz | -31.69 dBm | -18.69 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75643 GHz | -24.38 dBm | -11.38 dB |

Date: 8.DEC.2017 19:39:42

## LTE Band 4 / 15MHz / 16QAM

### Lowest Band Edge / 1 RB

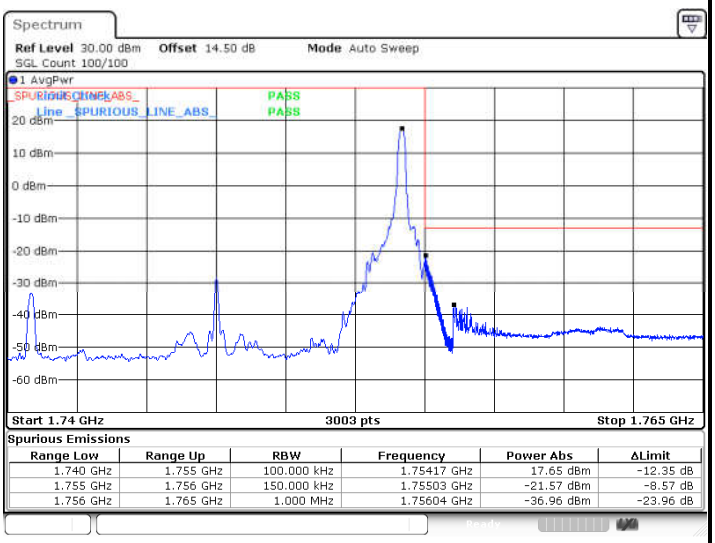



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70823 GHz | -35.75 dBm | -22.75 dB |
| 1.709 GHz | 1.710 GHz | 150.000 kHz | 1.70998 GHz | -21.79 dBm | -8.79 dB |
| 1.710 GHz | 1.725 GHz | 100.000 kHz | 1.71083 GHz | 18.07 dBm | -11.93 dB |

Date: 8.DEC.2017 19:28:50

### Highest Band Edge / 1 RB

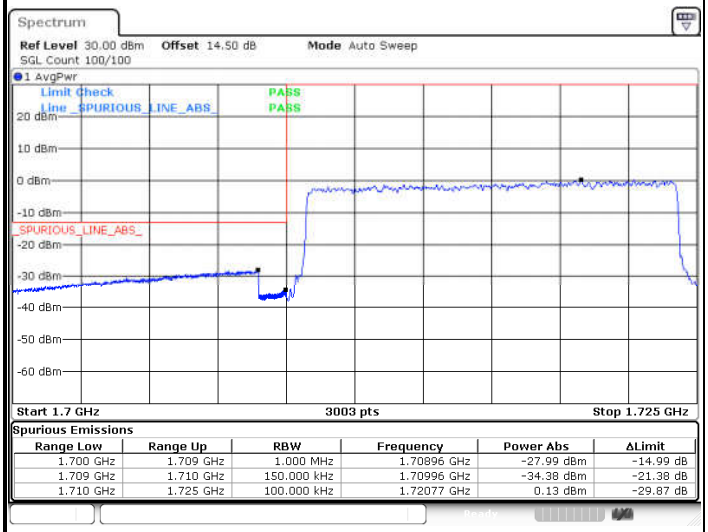



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.740 GHz | 1.755 GHz | 100.000 kHz | 1.75417 GHz | 17.65 dBm | -12.35 dB |
| 1.755 GHz | 1.756 GHz | 150.000 kHz | 1.75503 GHz | -21.57 dBm | -8.57 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75604 GHz | -36.96 dBm | -23.96 dB |

Date: 8.DEC.2017 19:38:33

### Lowest Band Edge / Full RB

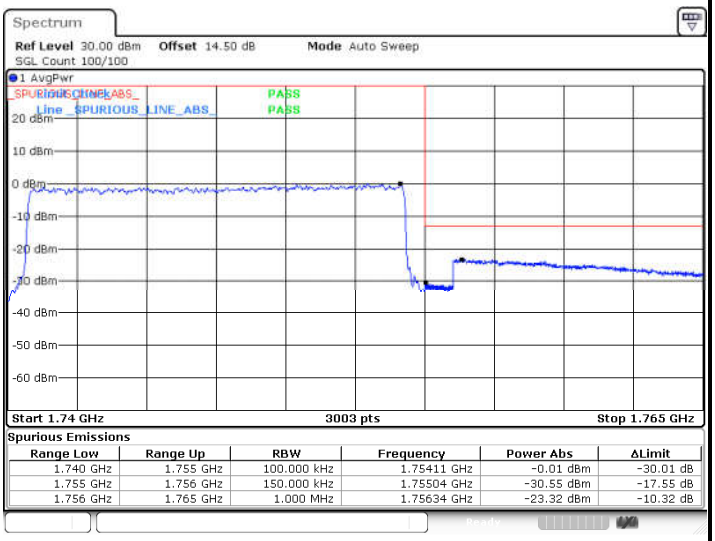



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70896 GHz | -27.99 dBm | -14.99 dB |
| 1.709 GHz | 1.710 GHz | 150.000 kHz | 1.70996 GHz | -34.38 dBm | -21.38 dB |
| 1.710 GHz | 1.725 GHz | 100.000 kHz | 1.72077 GHz | 0.13 dBm | -29.87 dB |

Date: 8.DEC.2017 19:31:09

### Highest Band Edge / Full RB



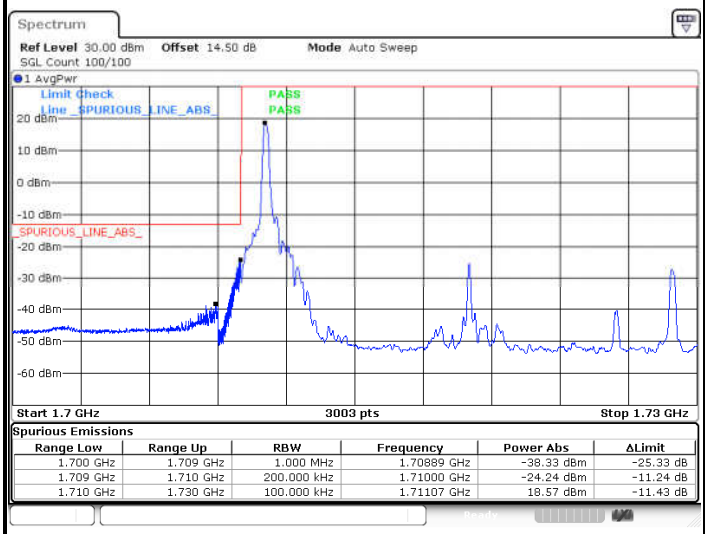

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.740 GHz | 1.755 GHz | 100.000 kHz | 1.75411 GHz | -0.01 dBm | -30.01 dB |
| 1.755 GHz | 1.756 GHz | 150.000 kHz | 1.75504 GHz | -30.55 dBm | -17.55 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75634 GHz | -23.32 dBm | -10.32 dB |

Date: 8.DEC.2017 19:40:52

## LTE Band 4 / 20MHz / QPSK

### Lowest Band Edge / 1 RB

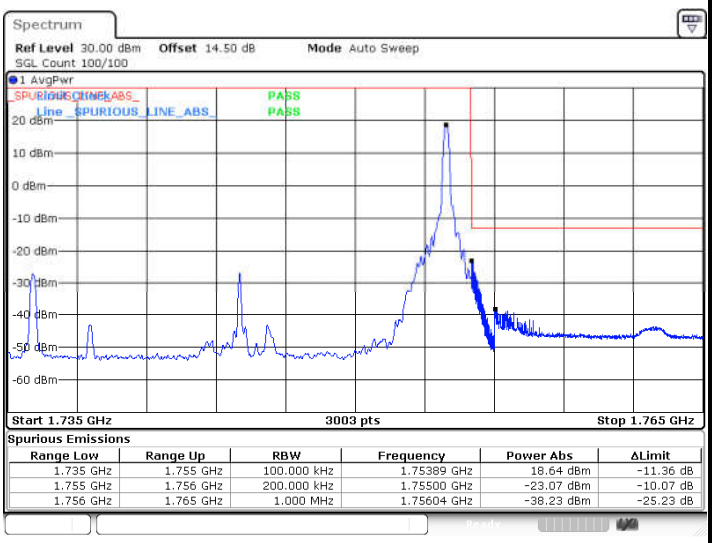



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70889 GHz | -38.33 dBm | -25.33 dB |
| 1.709 GHz | 1.710 GHz | 200.000 kHz | 1.71000 GHz | -24.24 dBm | -11.24 dB |
| 1.710 GHz | 1.730 GHz | 100.000 kHz | 1.71107 GHz | 18.57 dBm | -11.43 dB |

Date: 8.DEC.2017 19:44:34

### Highest Band Edge / 1 RB

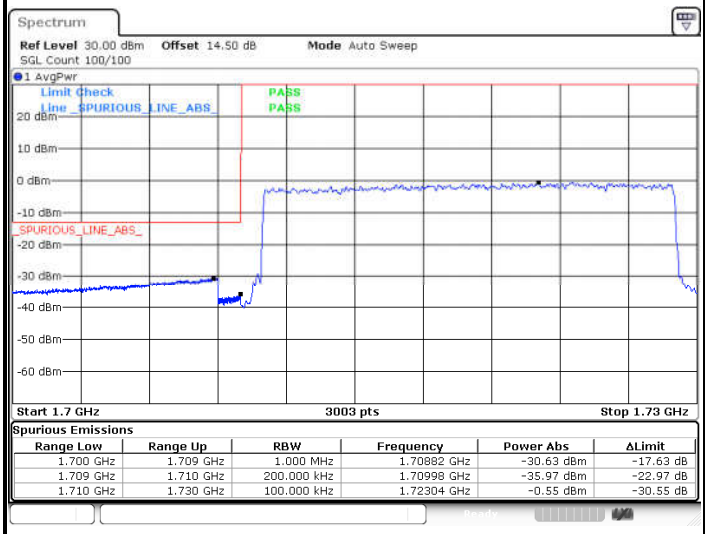



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.735 GHz | 1.755 GHz | 100.000 kHz | 1.75389 GHz | 18.64 dBm | -11.36 dB |
| 1.755 GHz | 1.756 GHz | 200.000 kHz | 1.75500 GHz | -23.07 dBm | -10.07 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75604 GHz | -38.23 dBm | -25.23 dB |

Date: 8.DEC.2017 19:54:16

### Lowest Band Edge / Full RB

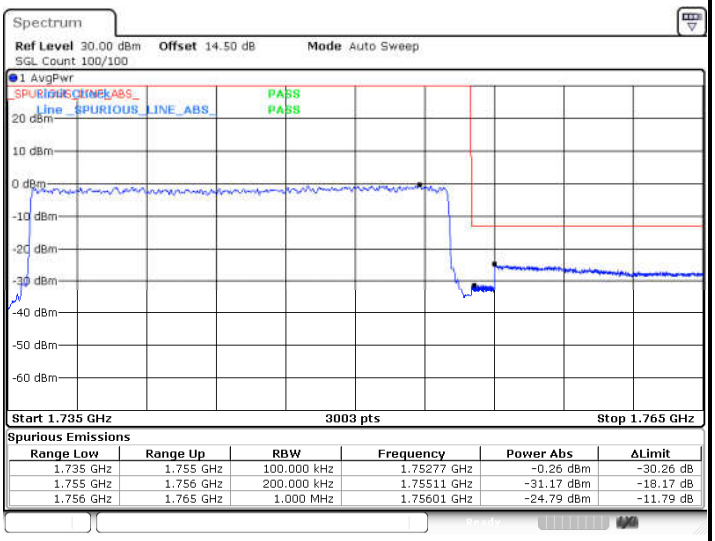



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70882 GHz | -30.63 dBm | -17.63 dB |
| 1.709 GHz | 1.710 GHz | 200.000 kHz | 1.70998 GHz | -35.97 dBm | -22.97 dB |
| 1.710 GHz | 1.730 GHz | 100.000 kHz | 1.72304 GHz | -0.55 dBm | -30.55 dB |

Date: 8.DEC.2017 19:46:53

### Highest Band Edge / Full RB



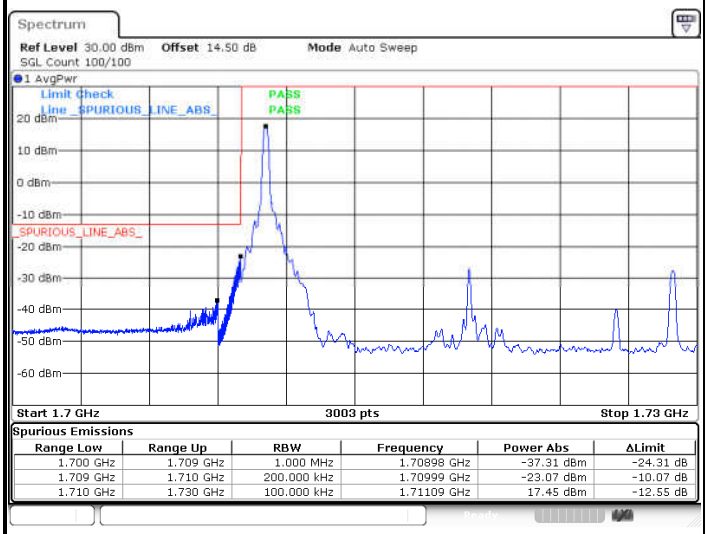

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.735 GHz | 1.755 GHz | 100.000 kHz | 1.75277 GHz | -0.26 dBm | -30.26 dB |
| 1.755 GHz | 1.756 GHz | 200.000 kHz | 1.75511 GHz | -31.17 dBm | -18.17 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75601 GHz | -24.79 dBm | -11.79 dB |

Date: 8.DEC.2017 19:56:34

## LTE Band 4 / 20MHz / 16QAM

### Lowest Band Edge / 1 RB

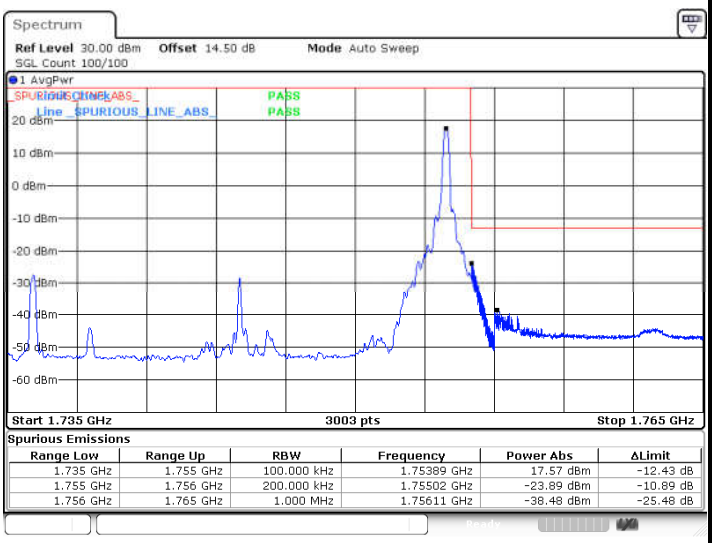



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70898 GHz | -37.31 dBm | -24.31 dB |
| 1.709 GHz | 1.710 GHz | 200.000 kHz | 1.70999 GHz | -23.07 dBm | -10.07 dB |
| 1.710 GHz | 1.730 GHz | 100.000 kHz | 1.71109 GHz | 17.45 dBm | -12.55 dB |

Date: 8.DEC.2017 19:45:43

### Highest Band Edge / 1 RB

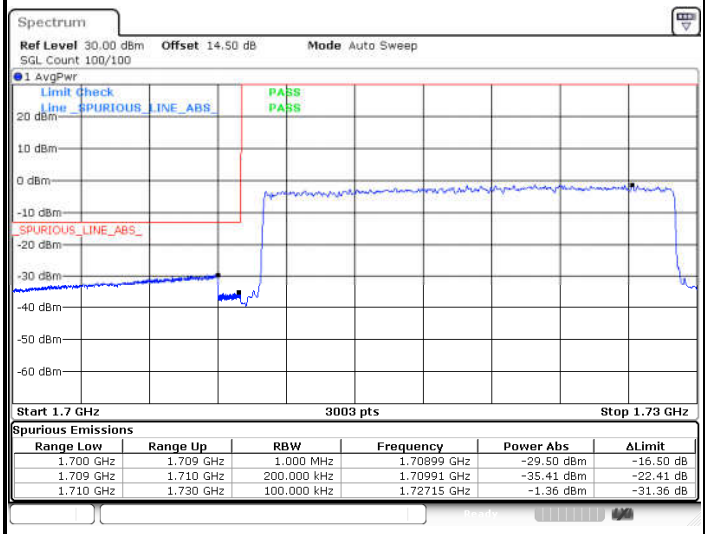



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.735 GHz | 1.755 GHz | 100.000 kHz | 1.75389 GHz | 17.57 dBm | -12.43 dB |
| 1.755 GHz | 1.756 GHz | 200.000 kHz | 1.75502 GHz | -23.89 dBm | -10.89 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75611 GHz | -38.48 dBm | -25.48 dB |

Date: 8.DEC.2017 19:55:25

### Lowest Band Edge / Full RB

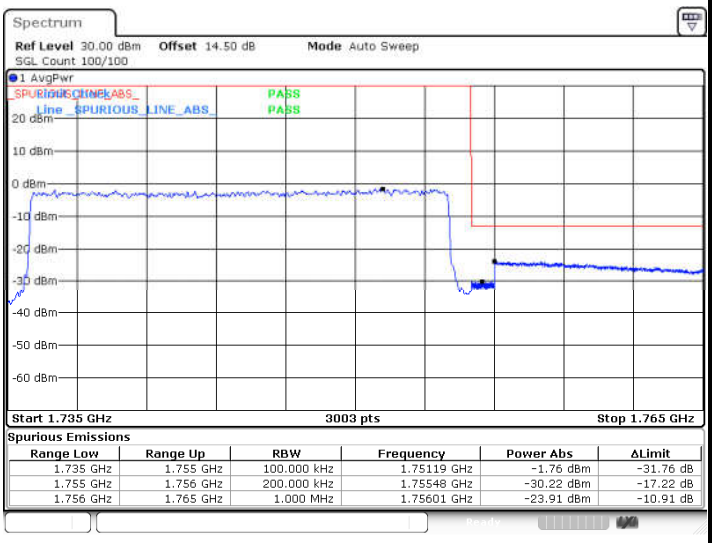



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.700 GHz | 1.709 GHz | 1.000 MHz | 1.70899 GHz | -29.50 dBm | -16.50 dB |
| 1.709 GHz | 1.710 GHz | 200.000 kHz | 1.70991 GHz | -35.41 dBm | -22.41 dB |
| 1.710 GHz | 1.730 GHz | 100.000 kHz | 1.72715 GHz | -1.36 dBm | -31.36 dB |

Date: 8.DEC.2017 19:48:02

### Highest Band Edge / Full RB




Spurious Emissions

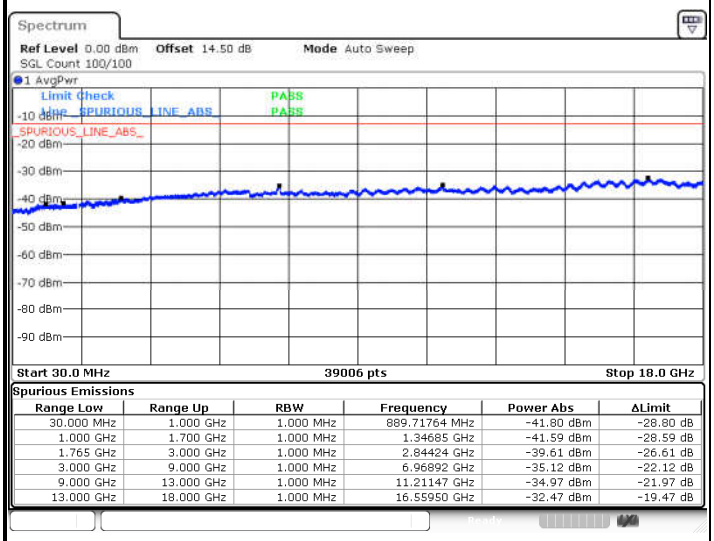
| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 1.735 GHz | 1.755 GHz | 100.000 kHz | 1.75119 GHz | -1.76 dBm | -31.76 dB |
| 1.755 GHz | 1.756 GHz | 200.000 kHz | 1.75548 GHz | -30.22 dBm | -17.22 dB |
| 1.756 GHz | 1.765 GHz | 1.000 MHz | 1.75601 GHz | -23.91 dBm | -10.91 dB |

Date: 8.DEC.2017 19:57:44

# Conducted Spurious Emission

## LTE Band 4 / 1.4MHz

### Lowest Channel / QPSK

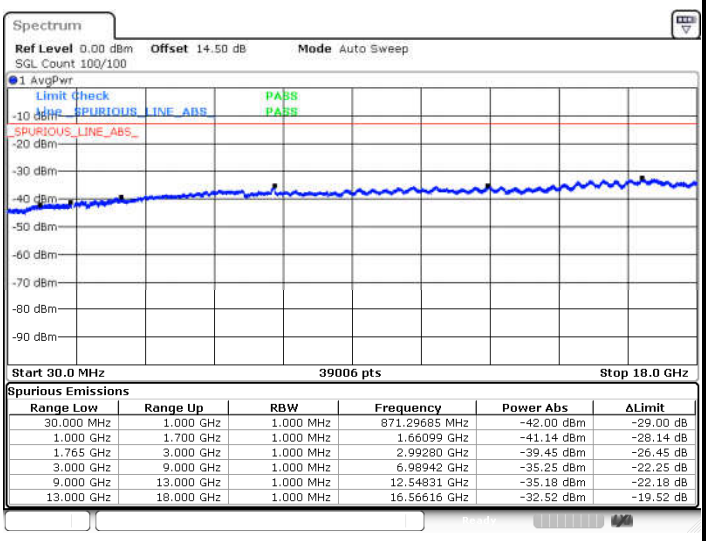



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 889.71764 MHz | -41.80 dBm | -28.80 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.34685 GHz | -41.59 dBm | -28.59 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.84424 GHz | -39.61 dBm | -26.61 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.96892 GHz | -35.12 dBm | -22.12 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 11.21147 GHz | -34.97 dBm | -21.97 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.55950 GHz | -32.47 dBm | -19.47 dB |

Date: 8.DEC.2017 18:24:32

### Lowest Channel / 16QAM

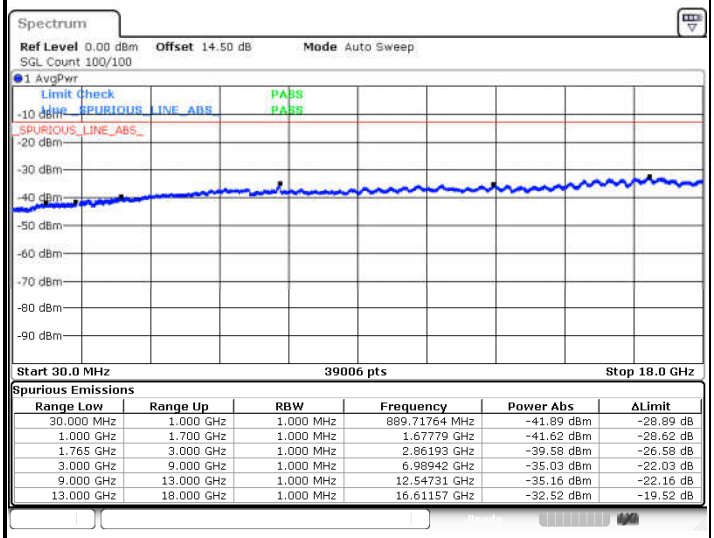



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 871.29685 MHz | -42.00 dBm | -29.00 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.66099 GHz | -41.14 dBm | -28.14 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.99280 GHz | -39.45 dBm | -26.45 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.98942 GHz | -35.25 dBm | -22.25 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.54831 GHz | -35.18 dBm | -22.18 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.56616 GHz | -32.52 dBm | -19.52 dB |

Date: 8.DEC.2017 18:25:28

### Middle Channel / QPSK

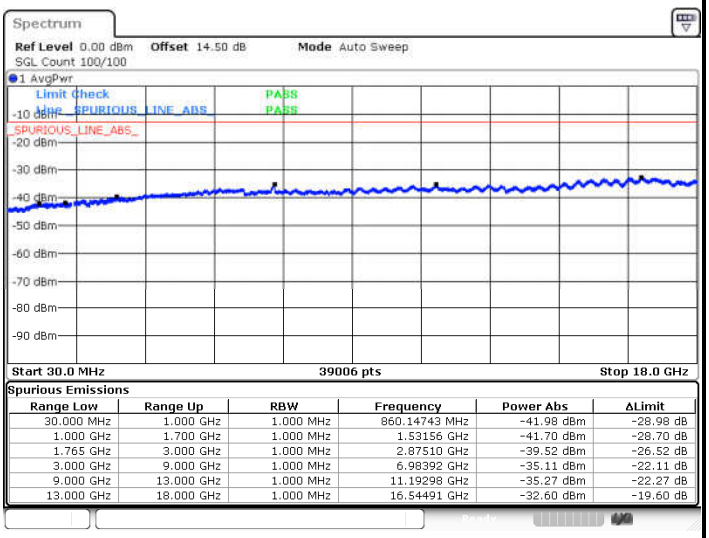



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 889.71764 MHz | -41.89 dBm | -28.89 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.67779 GHz | -41.62 dBm | -28.62 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.86193 GHz | -39.58 dBm | -26.58 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.98942 GHz | -35.03 dBm | -22.03 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.54731 GHz | -35.16 dBm | -22.16 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.61157 GHz | -32.52 dBm | -19.52 dB |

Date: 8.DEC.2017 18:27:04

### Middle Channel / 16QAM



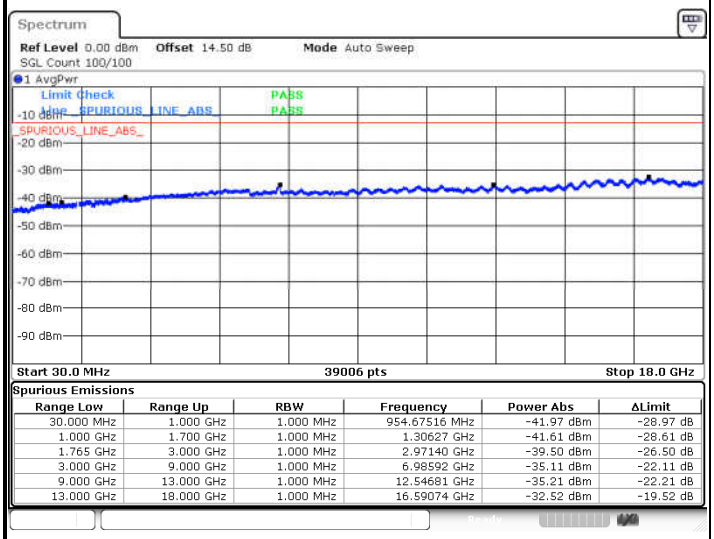

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 860.14743 MHz | -41.98 dBm | -28.98 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.53156 GHz | -41.70 dBm | -28.70 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.87510 GHz | -39.52 dBm | -26.52 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.98392 GHz | -35.11 dBm | -22.11 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 11.19298 GHz | -35.27 dBm | -22.27 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.54491 GHz | -32.60 dBm | -19.60 dB |

Date: 8.DEC.2017 18:27:59

## LTE Band 4 / 1.4MHz

### Highest Channel / QPSK

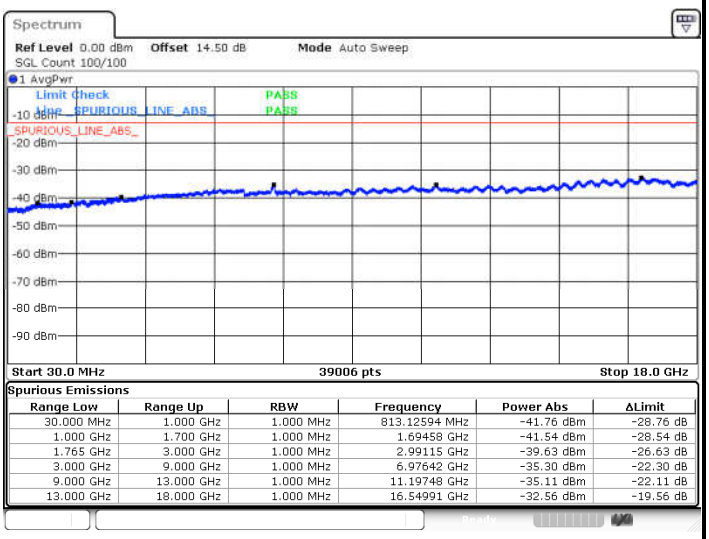



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 954.67516 MHz | -41.97 dBm | -28.97 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.30627 GHz | -41.61 dBm | -28.61 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.97140 GHz | -39.50 dBm | -26.50 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.98592 GHz | -35.11 dBm | -22.11 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.54681 GHz | -35.21 dBm | -22.21 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.59074 GHz | -32.52 dBm | -19.52 dB |

Date: 8.DEC.2017 18:34:14

### Highest Channel / 16QAM



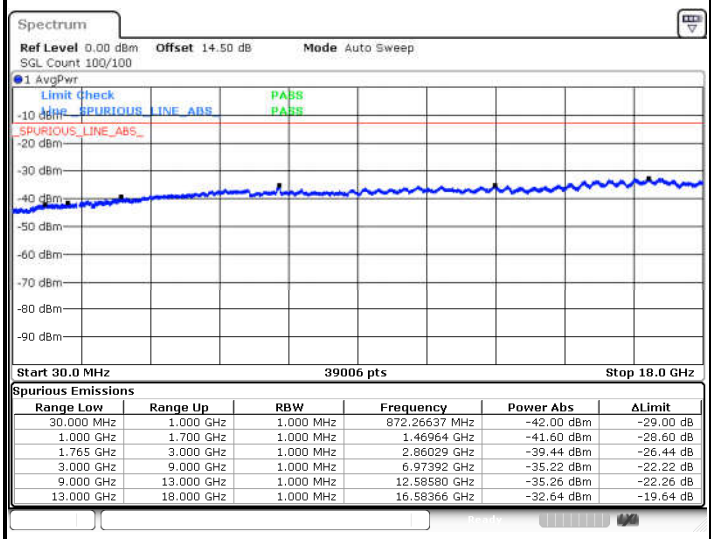

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 813.12594 MHz | -41.76 dBm | -28.76 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.69458 GHz | -41.54 dBm | -28.54 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.99115 GHz | -39.63 dBm | -26.63 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.97642 GHz | -35.30 dBm | -22.30 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 11.19748 GHz | -35.11 dBm | -22.11 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.54991 GHz | -32.56 dBm | -19.56 dB |

Date: 8.DEC.2017 18:35:10

## LTE Band 4 / 3MHz

### Lowest Channel / QPSK

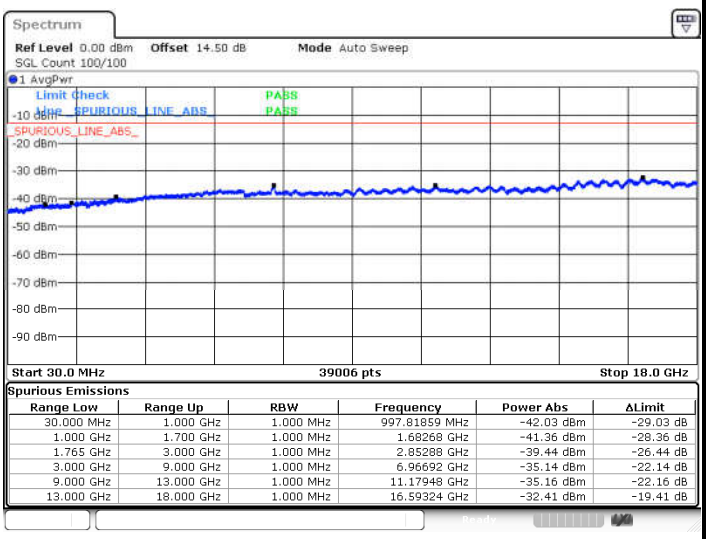



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 872.26637 MHz | -42.00 dBm | -29.00 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.46964 GHz | -41.60 dBm | -28.60 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.86029 GHz | -39.44 dBm | -26.44 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.97392 GHz | -35.22 dBm | -22.22 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.58580 GHz | -35.26 dBm | -22.26 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.58366 GHz | -32.64 dBm | -19.64 dB |

Date: 8.DEC.2017 18:41:24

### Lowest Channel / 16QAM



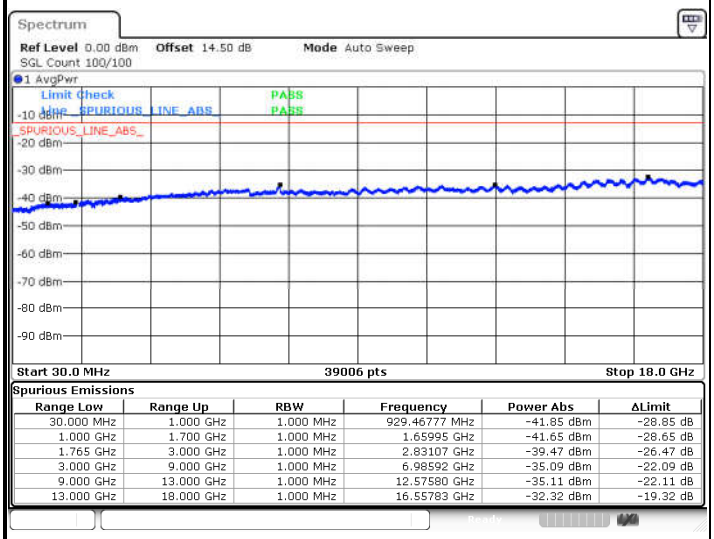

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 997.81859 MHz | -42.03 dBm | -29.03 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.68268 GHz | -41.36 dBm | -28.36 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.85288 GHz | -39.44 dBm | -26.44 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.96692 GHz | -35.14 dBm | -22.14 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 11.17948 GHz | -35.16 dBm | -22.16 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.59324 GHz | -32.41 dBm | -19.41 dB |

Date: 8.DEC.2017 18:42:20

## LTE Band 4 / 3MHz

### Middle Channel / QPSK




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 929.46777 MHz | -41.85 dBm | -28.85 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.65995 GHz | -41.65 dBm | -28.65 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.83107 GHz | -39.47 dBm | -26.47 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.98592 GHz | -35.09 dBm | -22.09 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.57580 GHz | -35.11 dBm | -22.11 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.55783 GHz | -32.32 dBm | -19.32 dB |

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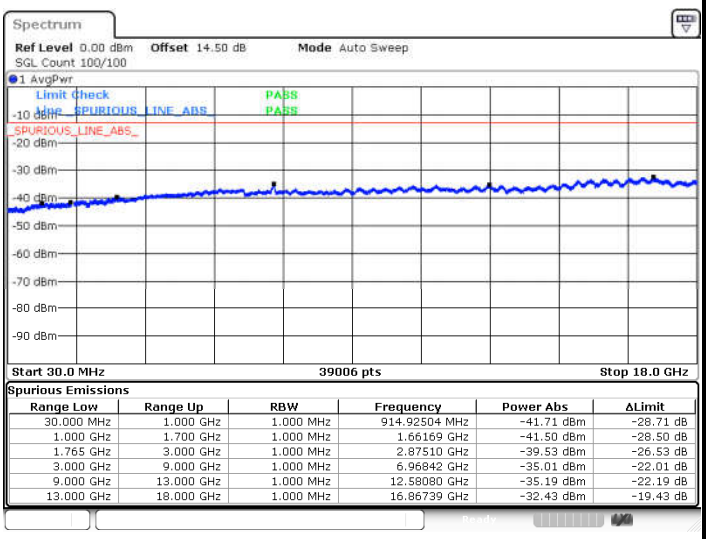
### Middle Channel / 16QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 914.92504 MHz | -41.71 dBm | -28.71 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.66169 GHz | -41.50 dBm | -28.50 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.87510 GHz | -39.53 dBm | -26.53 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.96842 GHz | -35.01 dBm | -22.01 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.58080 GHz | -35.19 dBm | -22.19 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.86739 GHz | -32.43 dBm | -19.43 dB |

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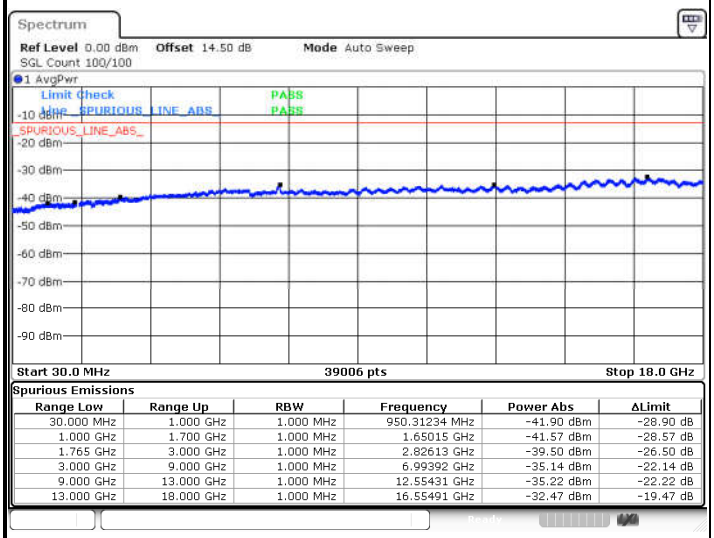
### Highest Channel / QPSK




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 950.31234 MHz | -41.90 dBm | -28.90 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.65015 GHz | -41.57 dBm | -28.57 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.82613 GHz | -39.50 dBm | -26.50 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.99392 GHz | -35.14 dBm | -22.14 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.55431 GHz | -35.22 dBm | -22.22 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.55491 GHz | -32.47 dBm | -19.47 dB |

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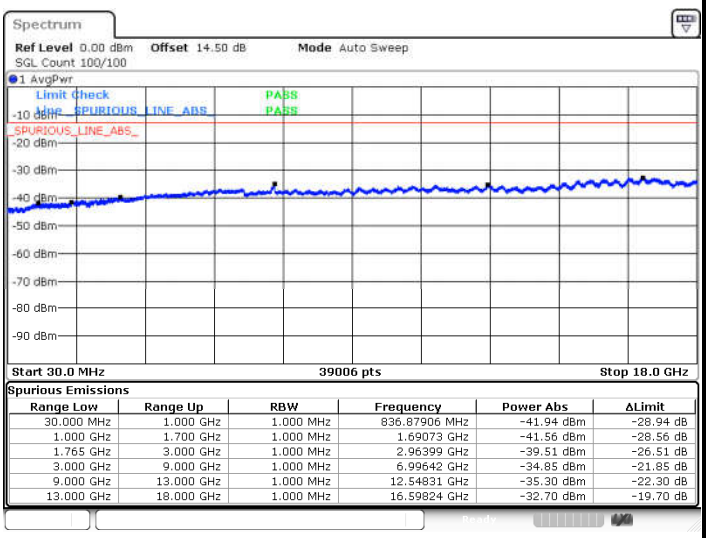
### Highest Channel / 16QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 836.87906 MHz | -41.94 dBm | -28.94 dB |
| 1.000 GHz | 1.700 GHz | 1.000 MHz | 1.69073 GHz | -41.56 dBm | -28.56 dB |
| 1.765 GHz | 3.000 GHz | 1.000 MHz | 2.96399 GHz | -39.51 dBm | -26.51 dB |
| 3.000 GHz | 9.000 GHz | 1.000 MHz | 6.99642 GHz | -34.85 dBm | -21.85 dB |
| 9.000 GHz | 13.000 GHz | 1.000 MHz | 12.54831 GHz | -35.30 dBm | -22.30 dB |
| 13.000 GHz | 18.000 GHz | 1.000 MHz | 16.59824 GHz | -32.70 dBm | -19.70 dB |

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