FCC RF Test Report

APPLICANT	:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT	:	Portable Tablet Computer
BRAND NAME	:	Lenovo
MODEL NAME	:	701LV, 702LV
FCC ID	:	O57TAB4LV
STANDARD	:	47 CFR Part 2, 27(M)
CLASSIFICATION	:	Licensed Non-Broadcast Station Transmitter(TNB)

The product was received on Aug. 22, 2017 and completely tested on Oct. 16, 2017. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

James Huang

Approved by: James Huang / Manager

NVLAP®
TESTING
NVLAP LAB CODE 600155-0

Sporton International (Kunshan) Inc.
No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China

TABLE OF CONTENTS

1 GENERAL DESCRIPTION 5

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Product Feature of Equipment Under Test 5
1.4 Product Specification of Equipment Under Test 6
1.5 Modification of EUT 6
1.6 Specification of Accessory 6
1.7 Component List 6
1.8 Maximum EIRP Power, Frequency Tolerance, and Emission Designator 7
1.9 Testing Location 8
1.10 Applicable Standards 8

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 9

2.1 Test Mode 9
2.2 Connection Diagram of Test System 10
2.3 Support Unit used in test configuration and system 10
2.4 Measurement Results Explanation Example 11
2.5 Frequency List of Low/Middle/High Channels 12

3 CONDUCTED TEST ITEMS 13

3.1 Measuring Instruments 13
3.2 Test Setup 13
3.3 Test Result of Conducted Test 13
3.4 Conducted Output Power and EIRP 14
3.5 Peak-to-Average Ratio 15
3.6 Occupied Bandwidth 16
3.7 Conducted Band Edge 17
3.8 Conducted Spurious Emission 18
3.9 Frequency Stability 19

4 RADIATED TEST ITEMS 20

4.1 Measuring Instruments 20
4.2 Test Setup 20
4.3 Test Result of Radiated Test 20
4.4 Radiated Spurious Emission 21

5 LIST OF MEASURING EQUIPMENT 22

6 UNCERTAINTY OF EVALUATION 23

APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG782206	Rev. 01	Initial issue of report	Nov. 07, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 41)	EIRP < 2Watt	PASS	-
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§27.53(m)(4)	Conducted Band Edge Measurement (Band 41)	§27.53(m)(4)	PASS	-
3.8	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 41)	< $55+10\log_{10}$(P[Watts])	PASS	-
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 41)	< $55+10\log_{10}$(P[Watts])	PASS	Under limit 18.50 dB at 7766.000 MHz

1 General Description

1.1 Applicant

Lenovo(Shanghai) Electronics Technology Co., Ltd.
NO.68 BUILDING, 199 FENJU RD., China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

1.2 Manufacturer

Lenovo PC HK Limited
23/F, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	701LV, 702LV
FCC ID	O57TAB4LV
EUT supports Radios application	LTE WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0 + EDR/ Bluetooth v4.0 LE/ Bluetooth v4.1 LE/ Bluetooth v4.2 LE
IMEI Code	Conducted: 866423030007279 Radiation: 866423030007717
HW Version	LenovoPad 701LV
SW Version	TB-701LV_RF02_20170831
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Rx Frequency	LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz
Bandwidth	LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 41 : 23.71 dBm
Antenna Gain	LTE Band 41 : -0.50 dBi
Type of Modulation	QPSK / 16QAM / 64QAM(Downlink only)

1.5 Modification of EUT

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

1.6 Specification of Accessory

Specification of Accessory				
Battery 1	**Brand Name**	Lenovo(SCUD)	**Model Name**	L16D2P31
	Power Rating	3.85 Vdc, 7000 mAh	**Type**	Li-ion
Battery 2	**Brand Name**	Lenovo (Celxpert)	**Model Name**	L16D2P31
	Power Rating	3.85 Vdc, 7000 mAh	**Type**	Li-ion

1.7 Component List

Note: There are two types of EUT, the details refer the following table. According to the difference, we choose the sample 1 to full test.

Component	Sample 1		Sample 2	
CPU	MSM-8953-2-857NSP-TR-01-1-AB	Qualcomm	MSM-8953-2-857NSP-TR-01-1-AB	Qualcomm
Flash	KMQE10013M-B318013	Samsung	H9TQ17ABJTBCUR-KUM(A05)	Hynix
LCD	P101KDA-AF0	INX	TV101WUM-NL1	BOE
TP	MTF-101-2856IKA	O-flim	TC101GFL16V.A	GIS
Front Camera	V10835V0	C&T	B02SF0105	Broad
Rear Camera	FX219BH	QTECH	L8856A10	O-film
Battery	L16D2P31	SCUD	L16D2P31	celxpert
motor	HZF-Z04BE-RL67B25-90	HONGZHIFA	CY0408L-021HB-064	Kunwang
Speaker 1	XHB171220B08-01-B1F-RH	HAOSHENG	XHB171220B08-01-B1F-RH	HAOSHENG
Speaker 2	XHB171220B08-02-B1F-RH	HAOSHENG	XHB171220B08-02-B1F-RH	HAOSHENG

1.8 Maximum EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 41		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)
5	2498.5 ~ 2687.5	4M50G7D	-	0.2009	4M51W7D	-	0.1626
10	2501.0 ~ 2685.0	9M03G7D	0.0024	0.2094	9M03W7D	-	0.1531
15	2503.5 ~ 2682.5	13M4G7D	-	0.2042	13M5W7D	-	0.1542
20	2506.0 ~ 2680.0	18M3G7D	-	0.1963	18M5W7D	-	0.1486

1.9 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**		**FCC Test Firm Registration No.**
	TH01-KS	03CH03-KS	630927

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

1.10 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(M)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- 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

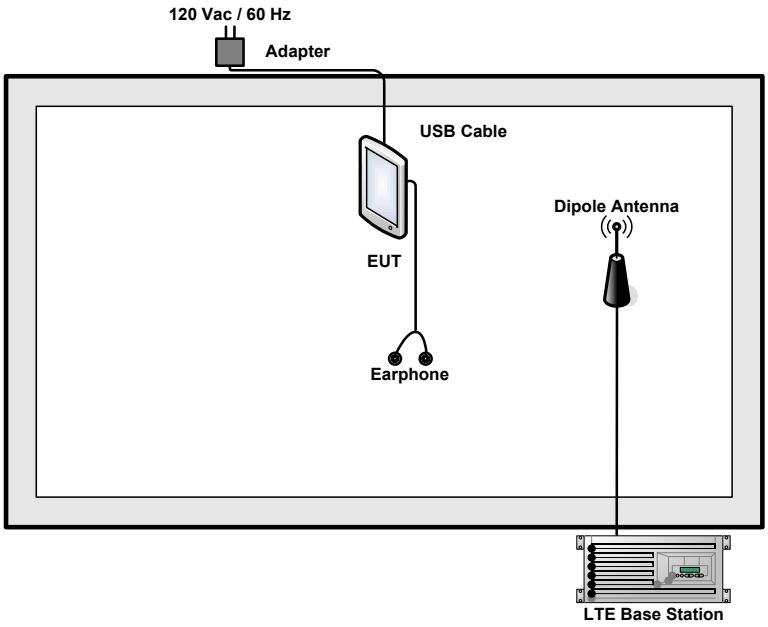
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 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	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	41	-	-				v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	41	-	-	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	41	-	-	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	41	-	-	v	v	v	v	v	v	v			v	v	v
Frequency Stability	41	-	-		v			v				v		v	
E.I.R.P.	41	-	-	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	41	-	-	v	v	v	v	v		v				v	
Note	1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 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.	Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Lenovo	SH100	N/A	Unshielded,1.2m	N/A
4.	Adaptor	Lenovo	C-P35	N/A	N/A	N/A
5.	USB Cable	LI QI	N/A	N/A	shielded, 1.0 m	N/A

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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.7 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 5.7 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 41 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5

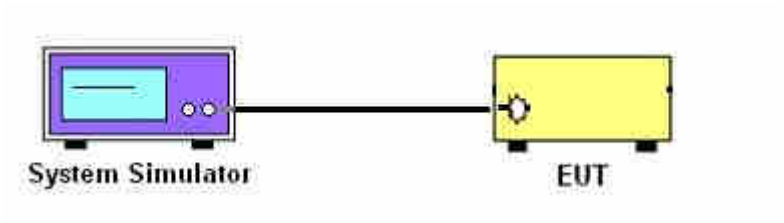
3 Conducted Test Items

3.1 Measuring Instruments

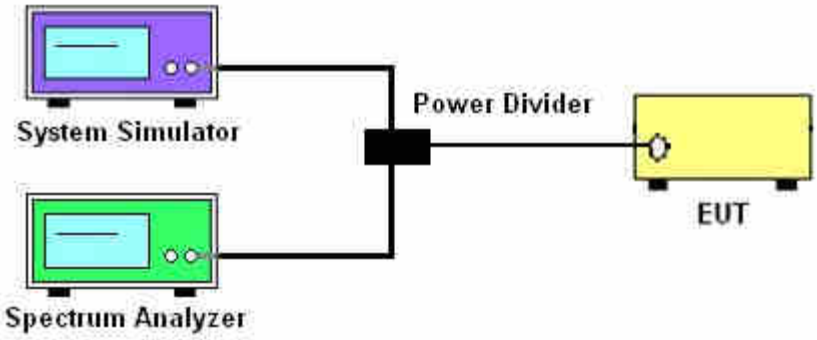
See list of measuring instruments of this test report.

3.2 Test Setup

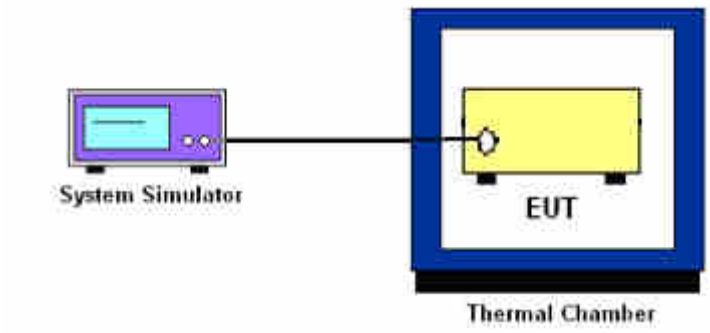
3.2.1 Conducted Output Power



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 2 Watts for LTE Band 41.

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 v02r02 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 v02r02 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(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 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. Offset has included the duty factor for LTE Band 41. Duty factor =10 log (1/x), where x is the measured duty cycle
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. 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.
10. For LTE Band 41, the other 40 dB, and 55 dB have additionally applied same calculation above.

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.

For Band 41:

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 55 + 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 10th harmonic.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 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. Offset has included the duty factor for LTE Band 41. Duty factor =10 log (1/x), where x is the measured duty cycle.
8. Set spectrum analyzer with RMS detector.
9. Taking the record of maximum spurious emission.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. 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.
12. For Band 41
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [55+ 10log(P)] (dB)
    = [30+ 10log(P)] (dBm) - [55+ 10log(P)] (dB)
    = -25dBm.

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 v02r02 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 v02r02 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.

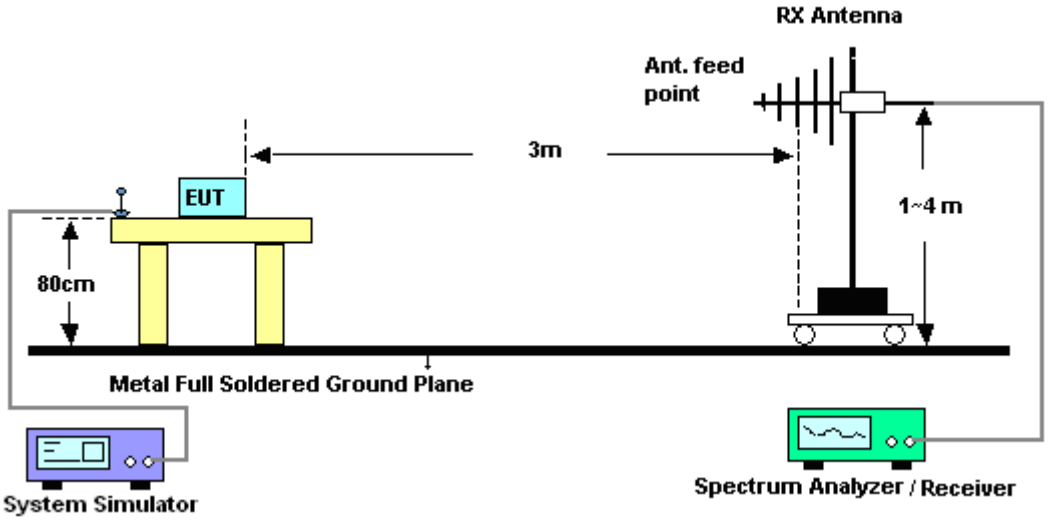
4 Radiated Test Items

4.1 Measuring Instruments

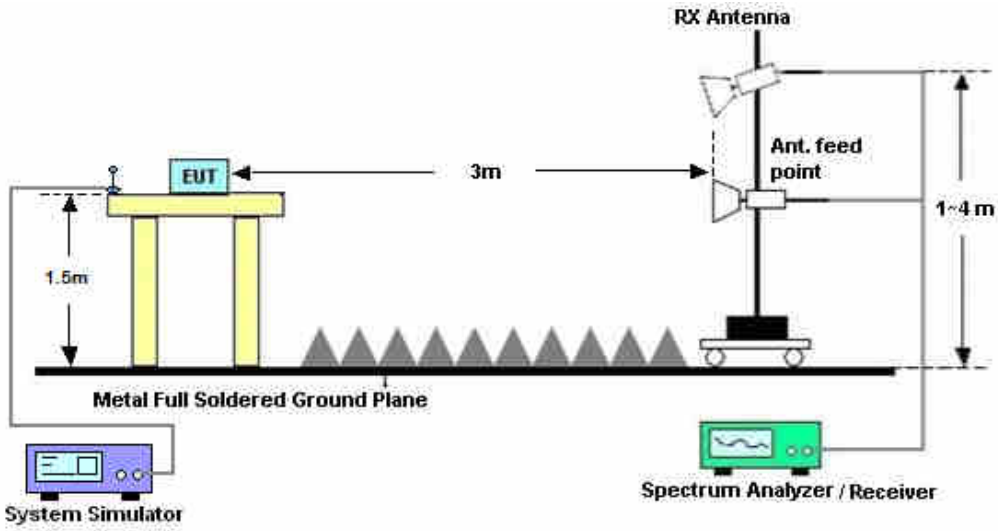
See list of measuring instruments of this test report.

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 / EIA-603-D-2010. 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 41

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 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 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.
13. For Band 41:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
    EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
    ERP (dBm) = EIRP - 2.15

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 08, 2017	Oct. 10, 2017	Aug. 07, 2018	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 12, 2016	Oct. 10, 2017	Oct. 11, 2017	Conducted (TH01-KS)
Radio communication analyzer	Anritsu	MT8820C	6201432830	2G/3G/LTE Band	Jan. 19, 2017	Oct. 10, 2017	Jan. 18, 2018	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Oct. 16, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Oct. 16, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Oct. 16, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 15, 2017	Oct. 16, 2017	Feb. 14, 2018	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1000MHz / 32 dB	Apr. 18, 2017	Oct. 16, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35 -HG	1887435	18GHz~40GHz	Oct. 12, 2017	Oct. 16, 2017	Oct. 11, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P	2025788	1GHz~18GHz	Apr. 18, 2017	Oct. 16, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 12, 2017	Oct. 16, 2017	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 16, 2017	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 16, 2017	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 16, 2017	NCR	Radiation (03CH03-KS)

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))	2.8dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.3dB

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.22	23.43	23.39
20	1	49		23.07	23.4	23.24
20	1	99		23.11	23.36	23.08
20	50	0		22.19	22.35	22.5
20	50	24		22.12	22.35	22.46
20	50	50		22.06	22.34	22.48
20	100	0		22.02	22.4	22.47
20	1	0	16-QAM	21.72	21.92	22.2
20	1	49		21.9	22.02	22.22
20	1	99		21.8	22.04	21.89
20	50	0		21.26	21.36	21.57
20	50	24		21.13	21.54	21.52
20	50	50		21.16	21.42	21.54
20	100	0		21.07	21.48	21.44
15	1	0	QPSK	23.26	23.29	23.21
15	1	37		23.42	23.6	23.56
15	1	74		23.02	23.27	23.12
15	36	0		22.19	22.31	22.5
15	36	20		22.41	22.32	22.48
15	36	39		22.36	22.36	22.38
15	75	0		22.46	22.34	22.5
15	1	0	16-QAM	21.78	21.91	22.08
15	1	37		22.38	21.98	22.34
15	1	74		21.89	21.85	22.17
15	36	0		21.4	21.5	21.49
15	36	20		21.25	21.52	21.79
15	36	39		21.33	21.58	21.4
15	75	0		21.56	21.45	21.44

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.25	23.41	23.46
10	1	25		23.5	23.71	23.6
10	1	49		23.27	23.38	23.14
10	25	0		22.28	22.37	22.49
10	25	12		22.34	22.36	22.54
10	25	25		22.31	22.36	22.38
10	50	0		22.29	22.37	22.51
10	1	0	16-QAM	21.72	22.11	22.35
10	1	25		22.08	22.08	22.16
10	1	49		21.63	21.88	21.74
10	25	0		21.54	21.72	21.79
10	25	12		21.6	21.71	21.78
10	25	25		21.55	21.79	21.62
10	50	0		21.38	21.39	21.57
5	1	0	QPSK	23.23	23.2	23.09
5	1	12		23.31	23.53	23.36
5	1	24		23.18	23.18	23.02
5	12	0		22.27	22.3	22.34
5	12	7		22.28	22.3	22.37
5	12	13		22.26	22.33	22.37
5	25	0		22.27	22.31	22.34
5	1	0	16-QAM	22.04	22.1	22.22
5	1	12		22.1	21.92	22.61
5	1	24		21.77	22.07	22.16
5	12	0		21.28	21.35	21.44
5	12	7		21.31	21.54	21.47
5	12	13		21.27	21.56	21.46
5	25	0		21.53	21.72	21.69

LTE Band 41 (G_T - L_C = -0.5 dBi) QPSK									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	23.31	23.53	23.36	23.50	23.71	23.60	23.42	23.60	23.56
Conducted Power (Watts)	0.2143	0.2254	0.2168	0.2239	0.2350	0.2291	0.2198	0.2291	0.2270
EIRP(dBm)	22.81	23.03	22.86	23.00	23.21	23.10	22.92	23.10	23.06
EIRP(Watts)	0.1910	0.2009	0.1932	0.1995	0.2094	0.2042	0.1959	0.2042	0.2023

LTE Band 41 (G_T - L_C = -0.5 dBi) QPSK			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	23.22	23.43	23.39
Conducted Power (Watts)	0.2099	0.2203	0.2183
EIRP(dBm)	22.72	22.93	22.89
EIRP(Watts)	0.1871	0.1963	0.1945

LTE Band 41 (G_T - L_C = -0.5 dBi) 16QAM									
Bandwidth	5M			10M			15M		
Channel	39675	40620	41565	39700	40620	41540	39725	40620	41515
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2498.5	2593	2687.5	2501	2593	2685	2503.5	2593	2682.5
Conducted Power (dBm)	22.10	21.92	22.61	21.72	22.11	22.35	22.38	21.98	22.34
Conducted Power (Watts)	0.1622	0.1556	0.1824	0.1486	0.1626	0.1718	0.1730	0.1578	0.1714
EIRP(dBm)	21.60	21.42	22.11	21.22	21.61	21.85	21.88	21.48	21.84
EIRP(Watts)	0.1445	0.1387	0.1626	0.1324	0.1449	0.1531	0.1542	0.1406	0.1528

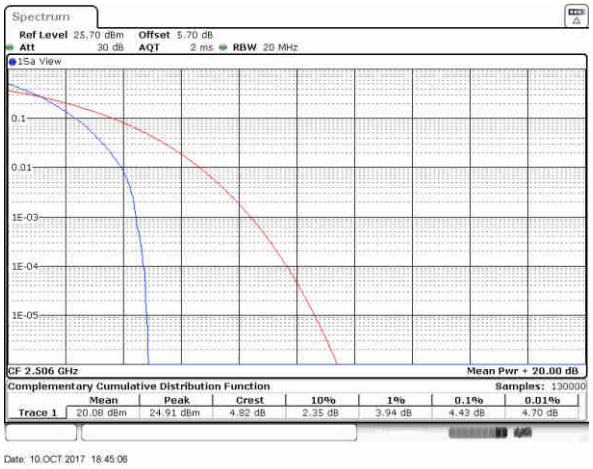
LTE Band 41 (G_T - L_C = -0.5 dBi) 16QAM			
Bandwidth	20M		
Channel	39750	40620	41490
	(Low)	(Mid)	(High)
Frequency (MHz)	2506	2593	2680
Conducted Power (dBm)	21.90	22.02	22.22
Conducted Power (Watts)	0.1549	0.1592	0.1667
EIRP(dBm)	21.40	21.52	21.72
EIRP(Watts)	0.1380	0.1419	0.1486

Peak-to-Average Ratio

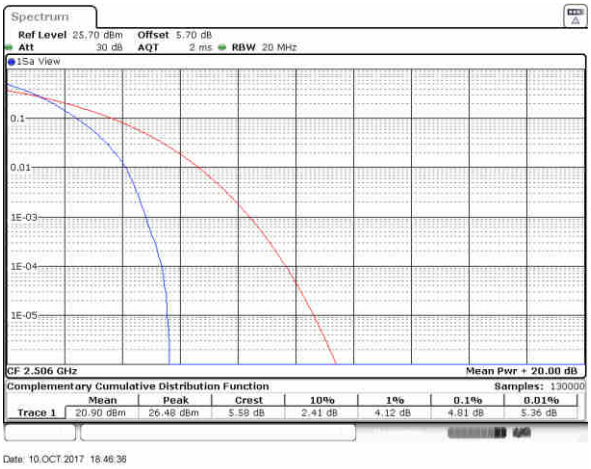
Mode	LTE Band 41 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.43	4.81	5.48	5.86	PASS
Middle CH	4.9	5.16	5.91	6.12	
Highest CH	4.49	5.1	5.74	6.32	

LTE Band 41 / 20MHz / QPSK

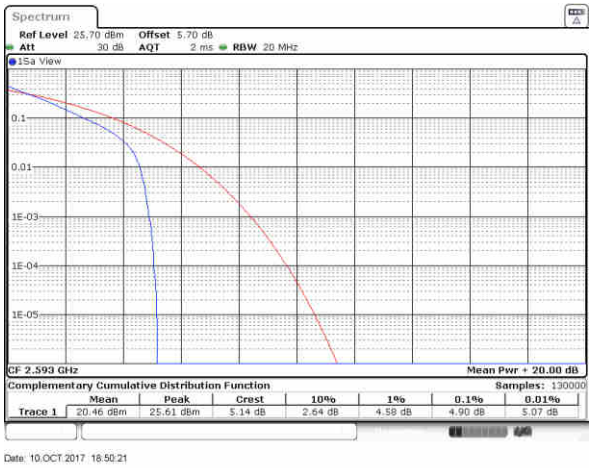
Lowest Channel / 1RB



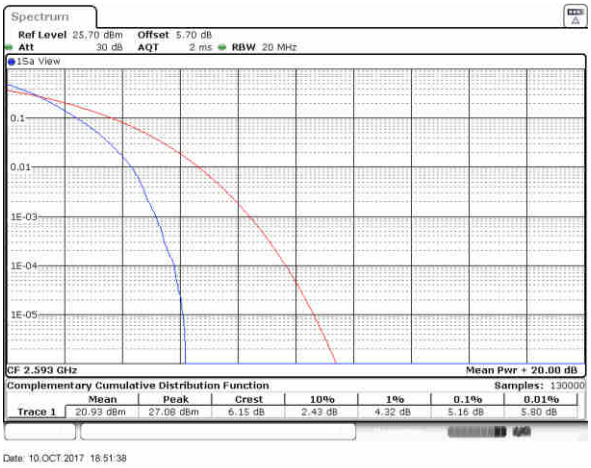
Lowest Channel / Full RB



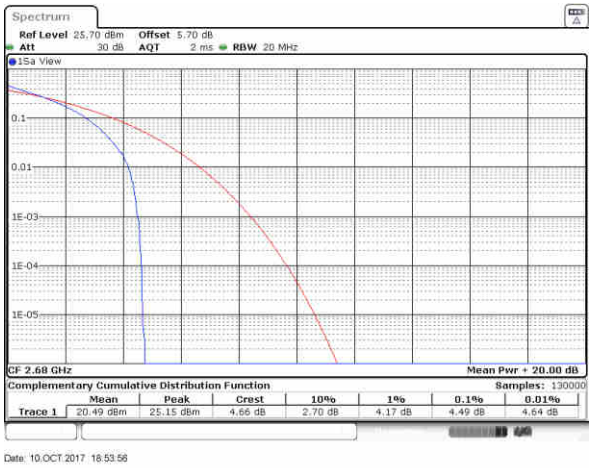
Middle Channel / 1RB



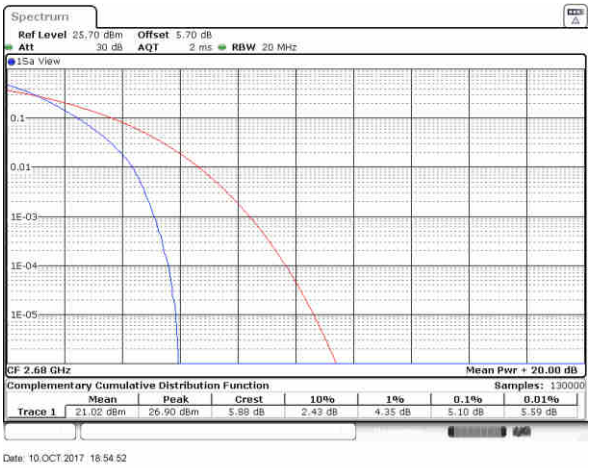
Middle Channel / Full RB



Highest Channel / 1RB

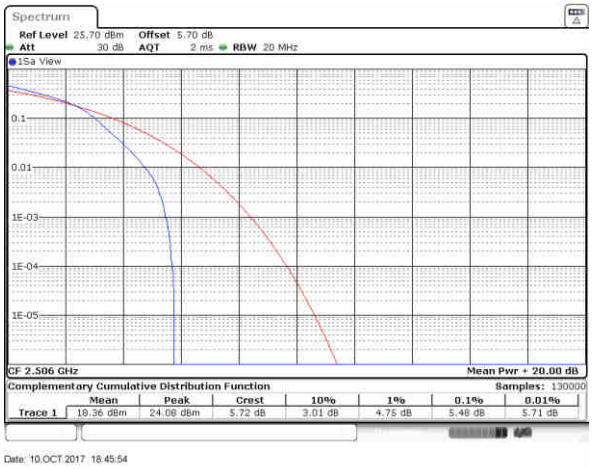


Highest Channel / Full RB

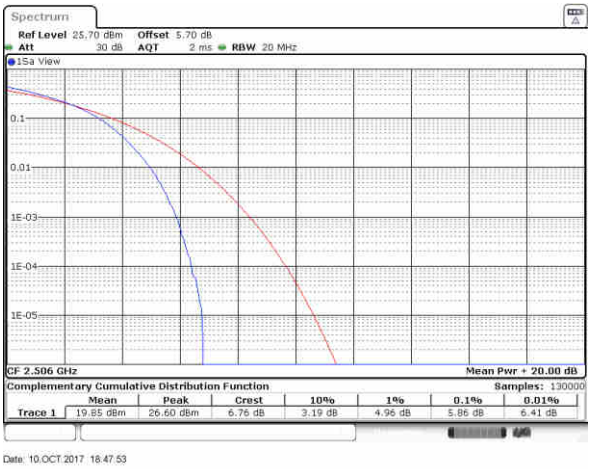


LTE Band 41 / 20MHz / 16QAM

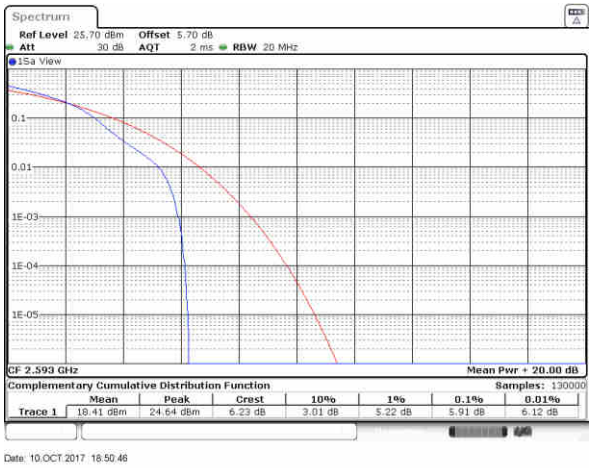
Lowest Channel / 1RB



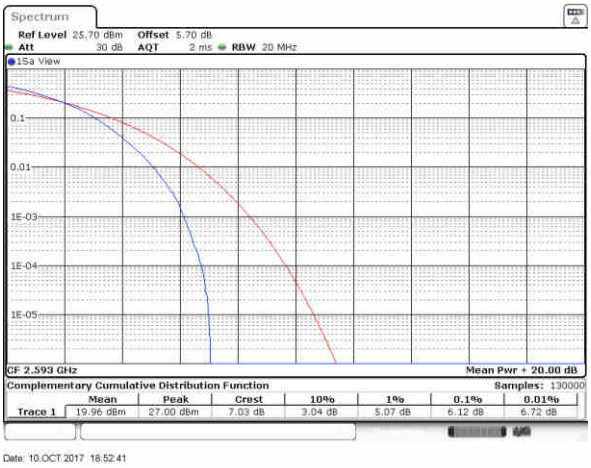
Lowest Channel / Full RB



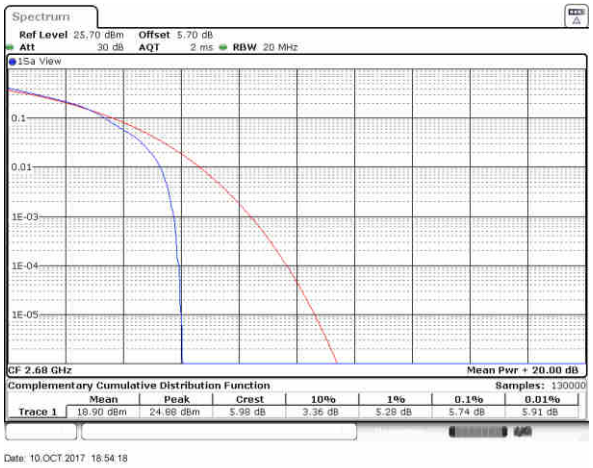
Middle Channel / 1RB



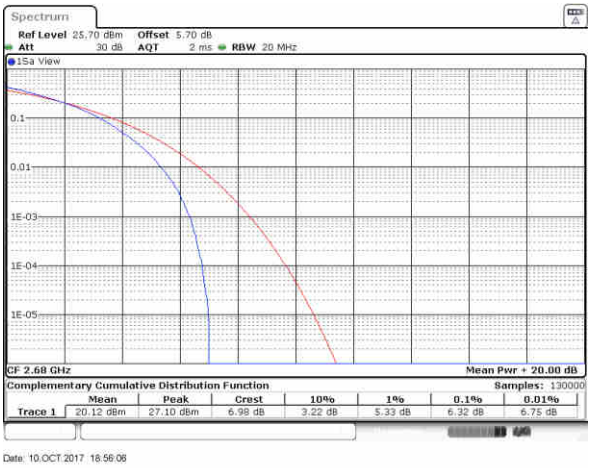
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB

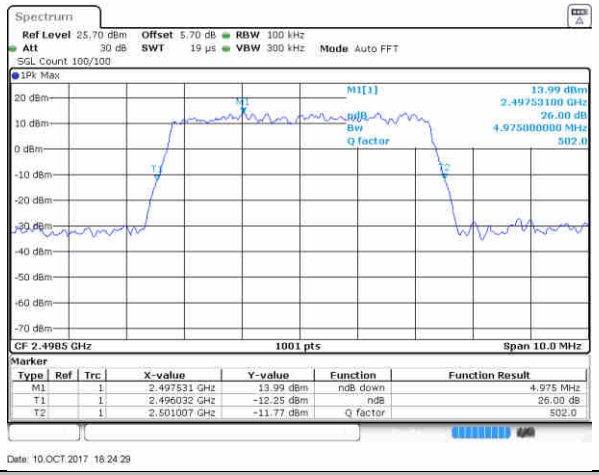


26dB Bandwidth

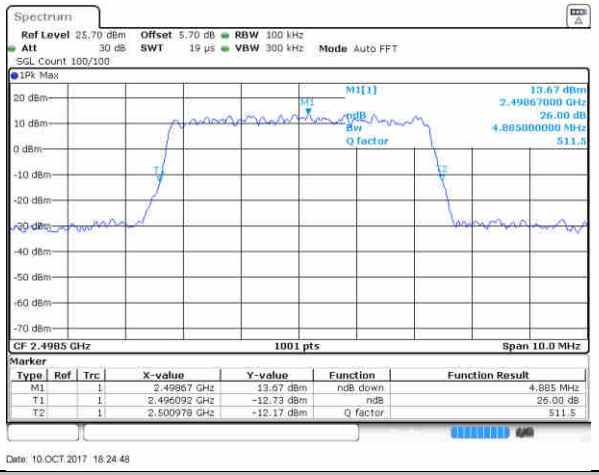
Mode	LTE Band 41 : 26dB BW(MHz)											
BW	5MHz		10MHz		15MHz		20MHz					
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM				
Lowest CH	4.975	4.885	9.75	9.79	14.266	14.146	20.18	20.26				
Middle CH	4.895	4.975	9.75	9.63	14.446	14.236	20.18	20.18				
Highest CH	4.905	4.875	9.75	9.91	14.116	14.146	20.26	20.14				

LTE Band 41

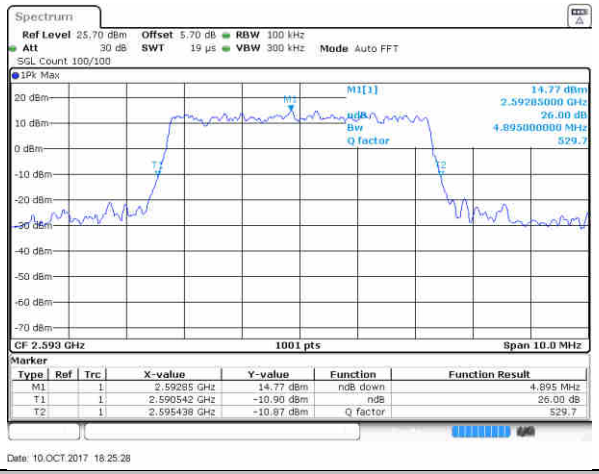
Lowest Channel / 5MHz / QPSK



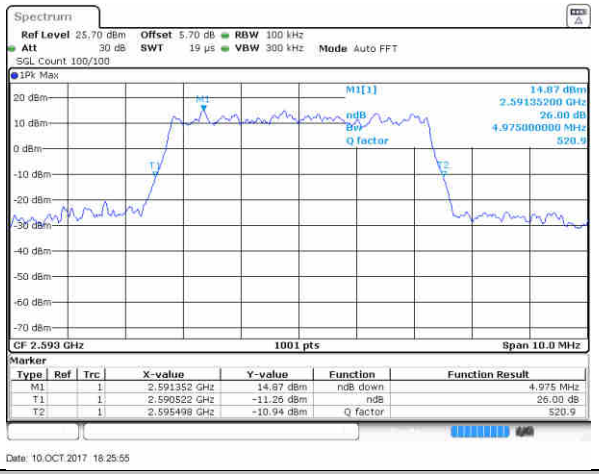
Lowest Channel / 5MHz / 16QAM



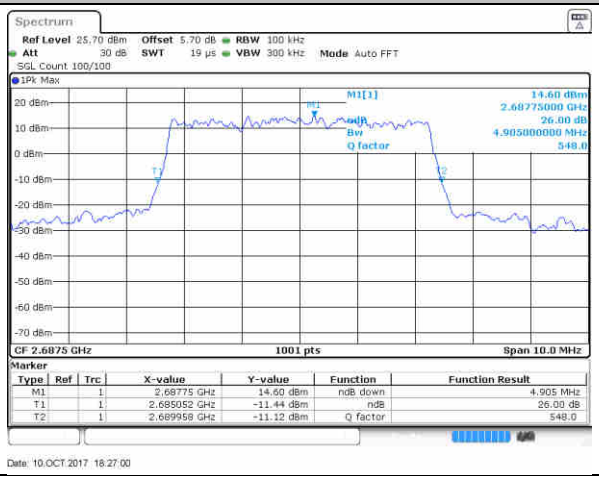
Middle Channel / 5MHz / QPSK



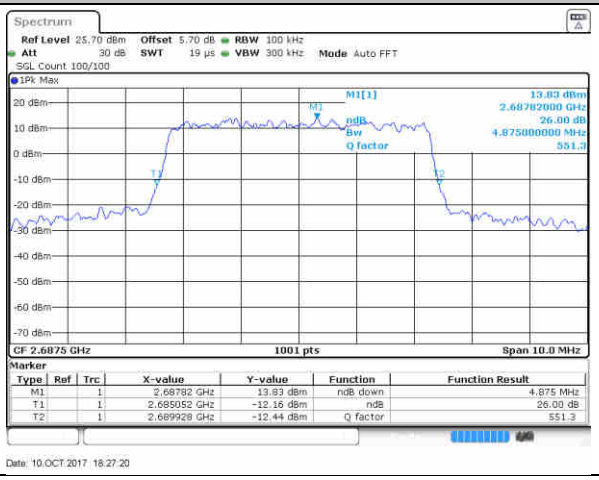
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

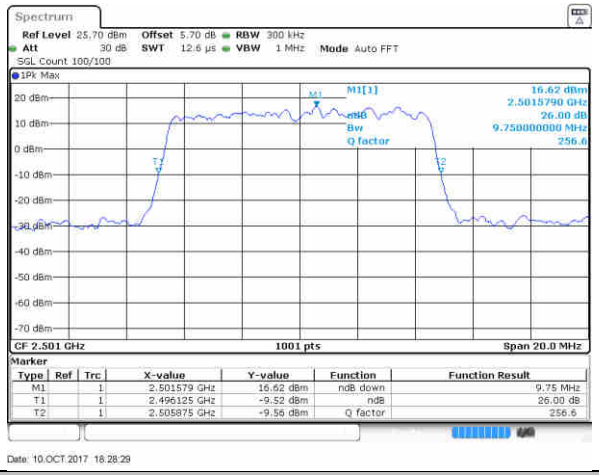


Highest Channel / 5MHz / 16QAM

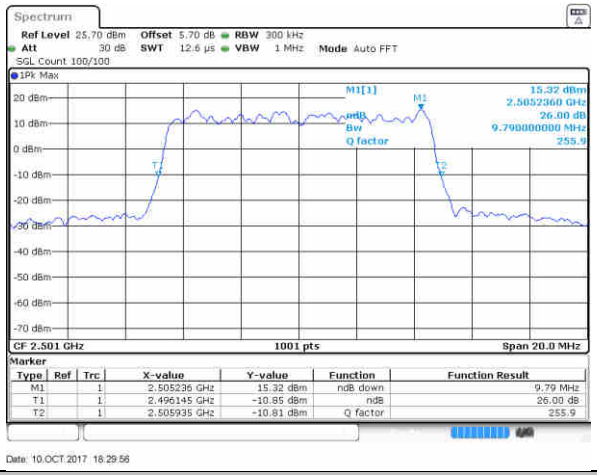


LTE Band 41

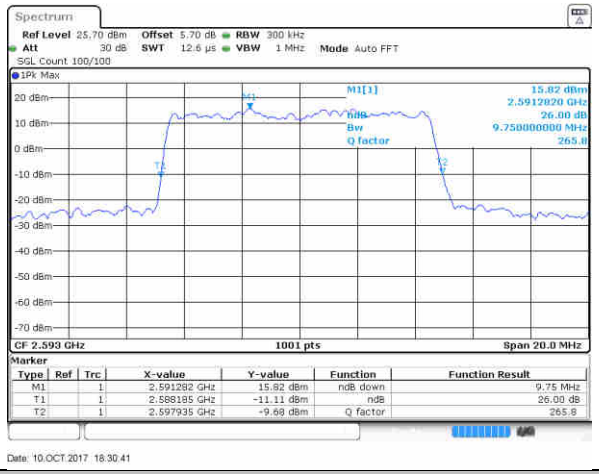
Lowest Channel / 10MHz / QPSK



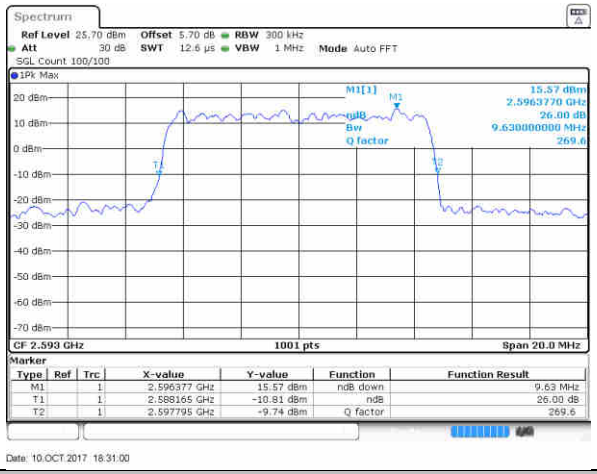
Lowest Channel / 10MHz / 16QAM



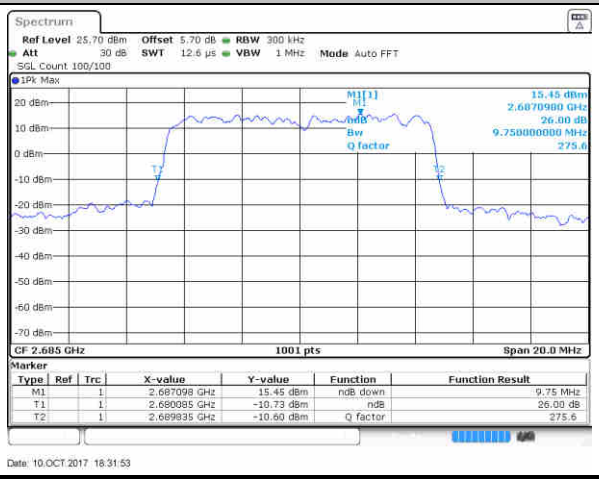
Middle Channel / 10MHz / QPSK



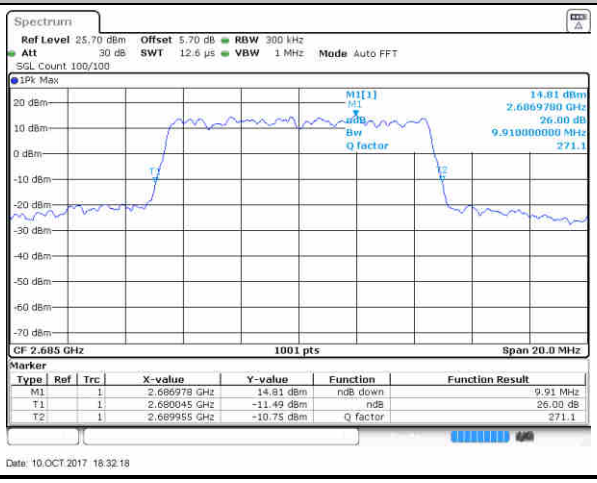
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

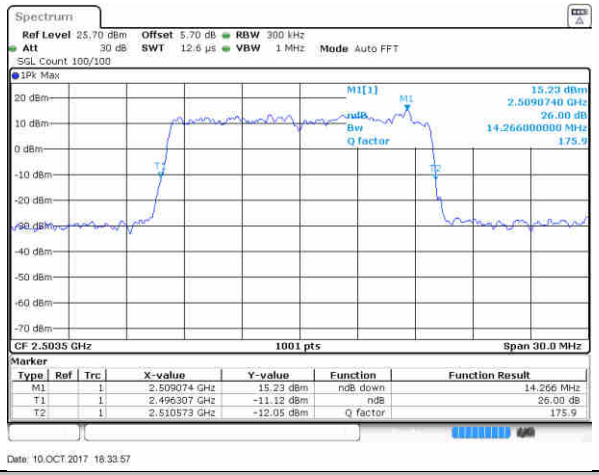


Highest Channel / 10MHz / 16QAM

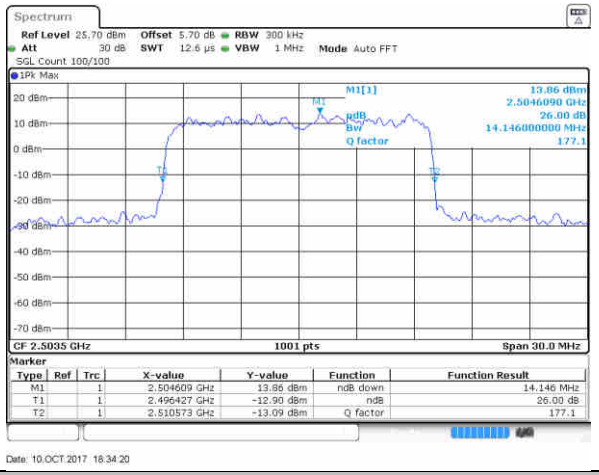


LTE Band 41

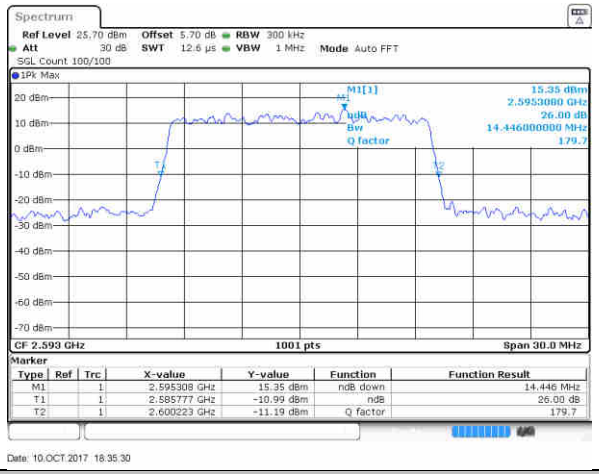
Lowest Channel / 15MHz / QPSK



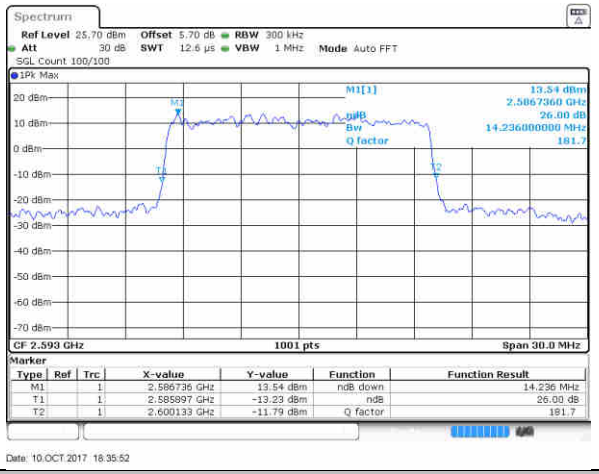
Lowest Channel / 15MHz / 16QAM



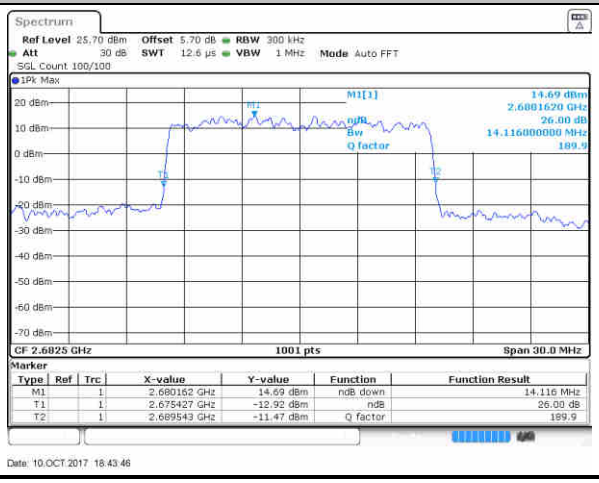
Middle Channel / 15MHz / QPSK



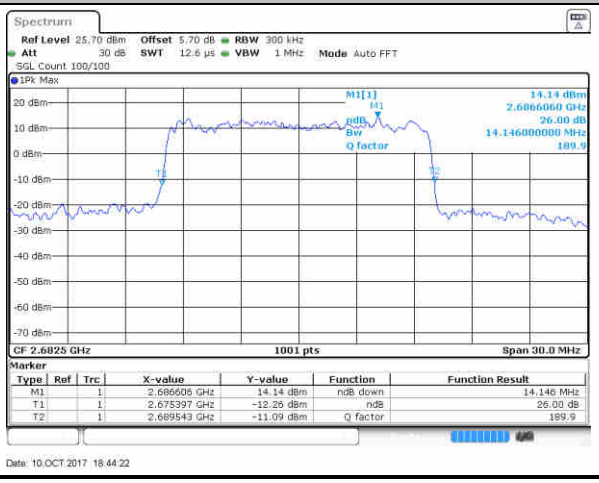
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

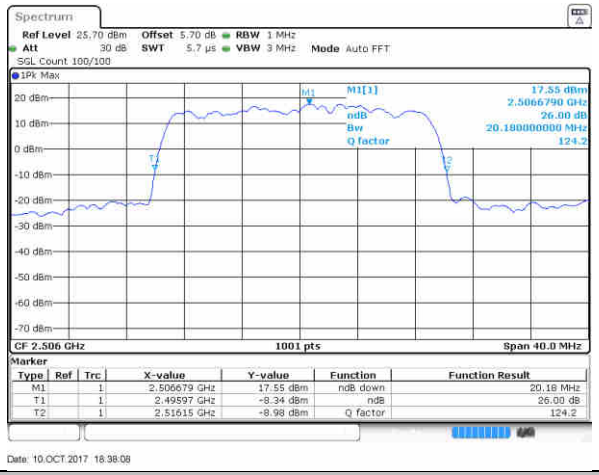


Highest Channel / 15MHz / 16QAM

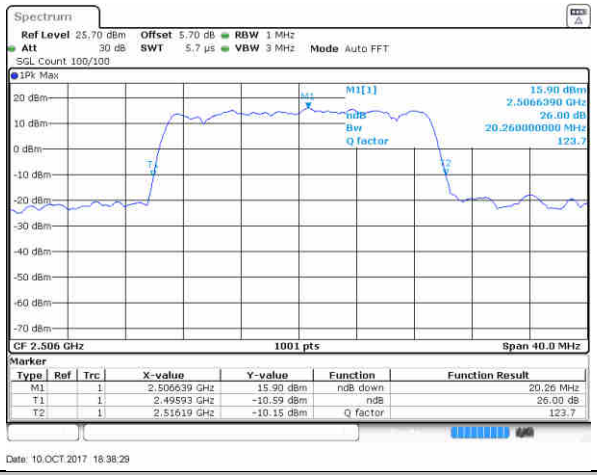


LTE Band 41

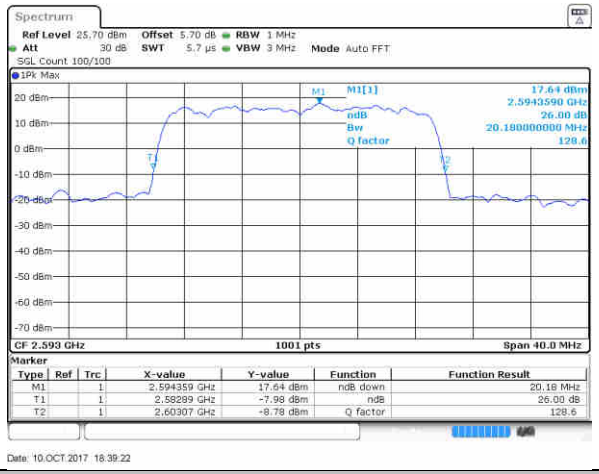
Lowest Channel / 20MHz / QPSK



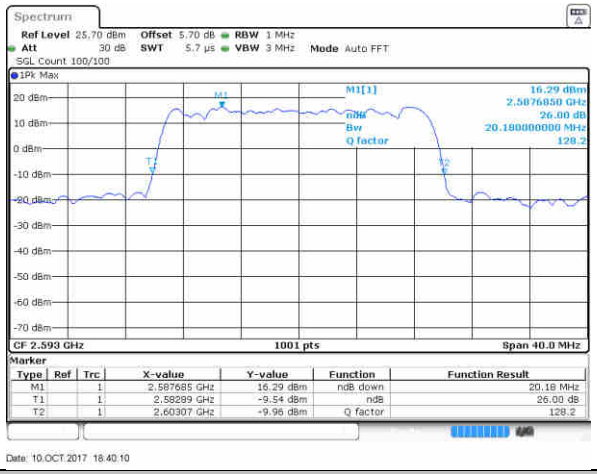
Lowest Channel / 20MHz / 16QAM



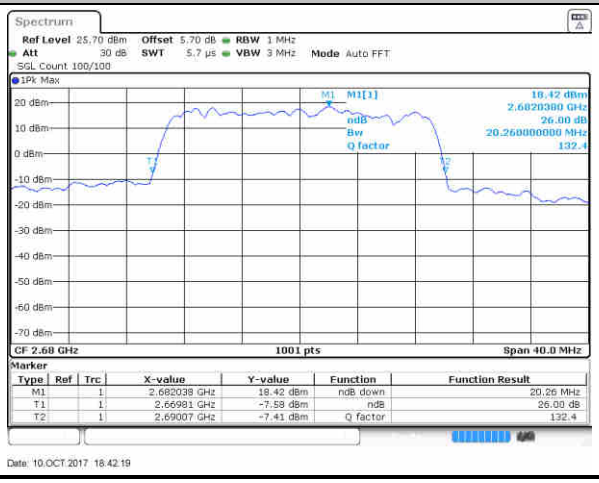
Middle Channel / 20MHz / QPSK



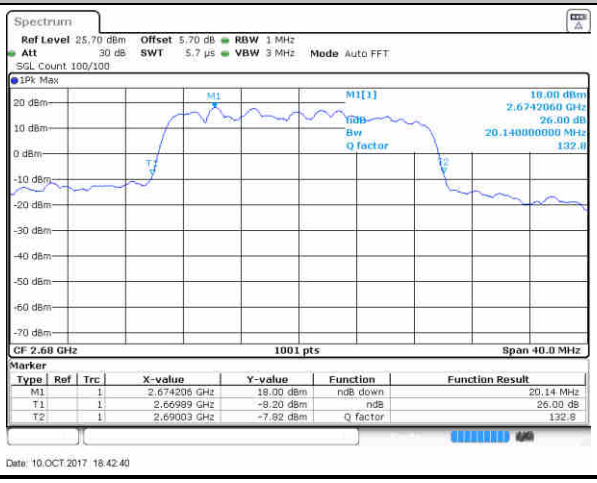
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



Highest Channel / 20MHz / 16QAM

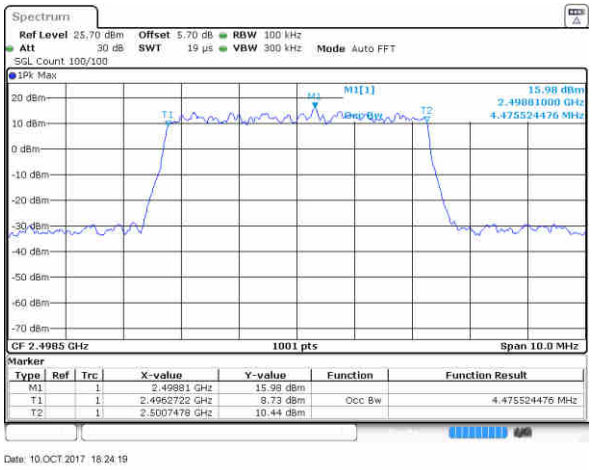


Occupied Bandwidth

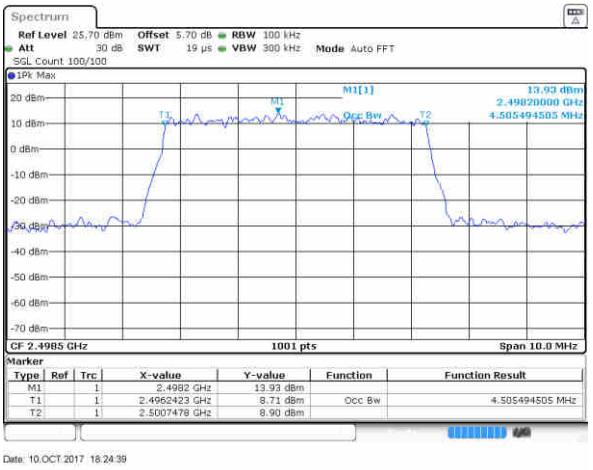
Mode	LTE Band 41 : 99%OBW(MHz)											
BW	5MHz		10MHz		15MHz		20MHz					
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM				
Lowest CH	4.48	4.51	9.01	8.93	13.43	13.4	18.26	18.1				
Middle CH	4.5	4.51	9.03	9.03	13.37	13.4	18.3	18.3				
Highest CH	4.47	4.5	9.03	9.01	13.43	13.46	18.3	18.46				

LTE Band 41

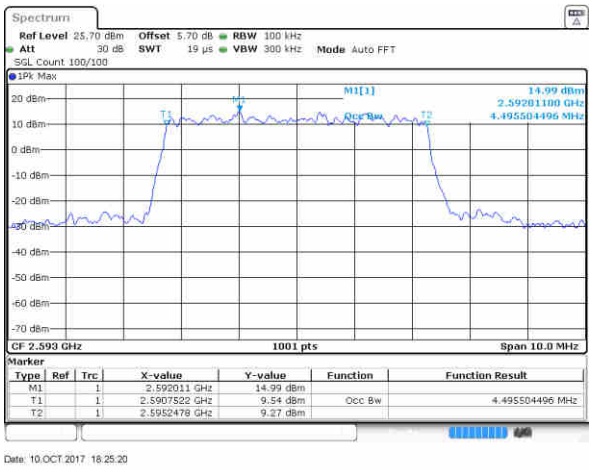
Lowest Channel / 5MHz / QPSK



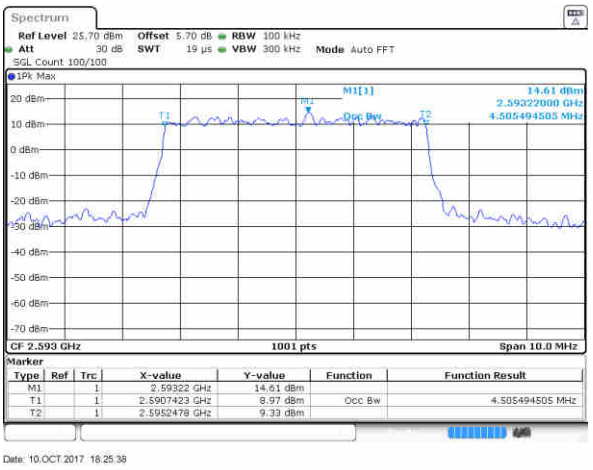
Lowest Channel / 5MHz / 16QAM



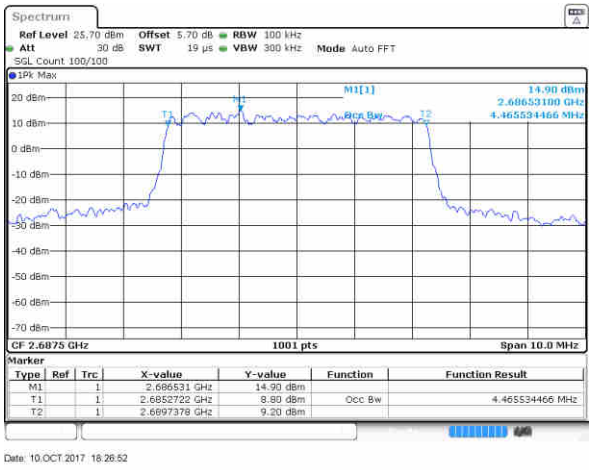
Middle Channel / 5MHz / QPSK



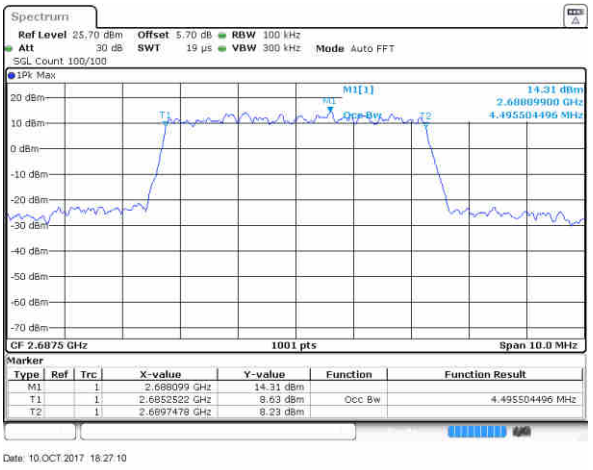
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

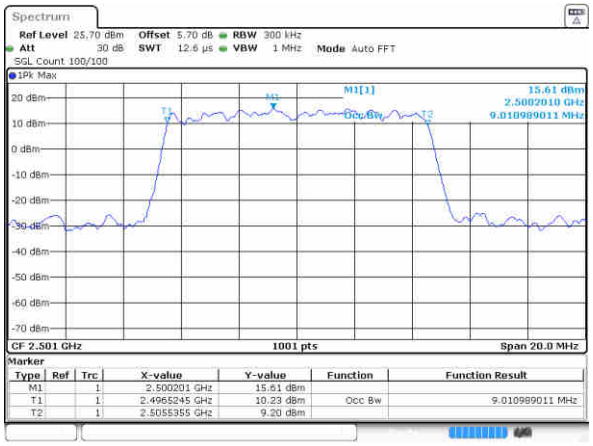


Highest Channel / 5MHz / 16QAM

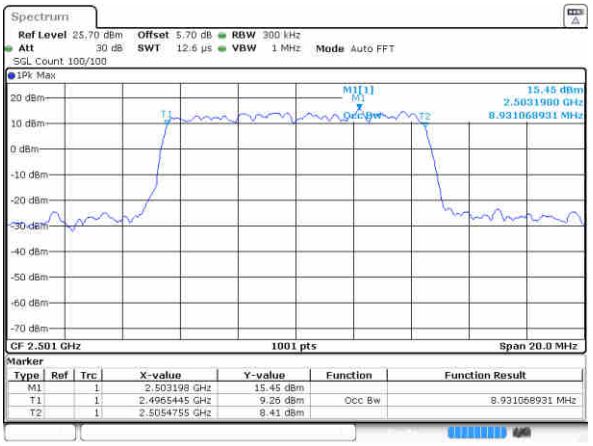


LTE Band 41

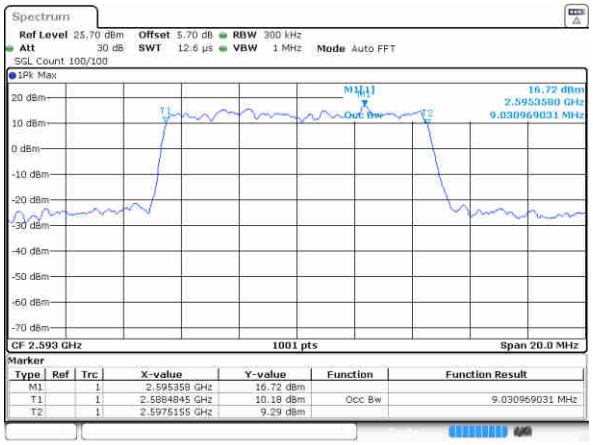
Lowest Channel / 10MHz / QPSK



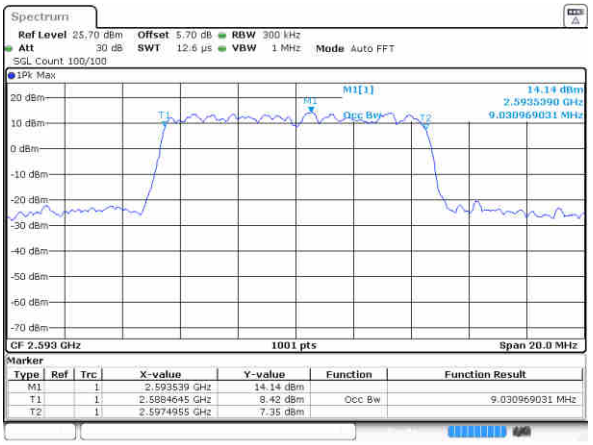
Lowest Channel / 10MHz / 16QAM



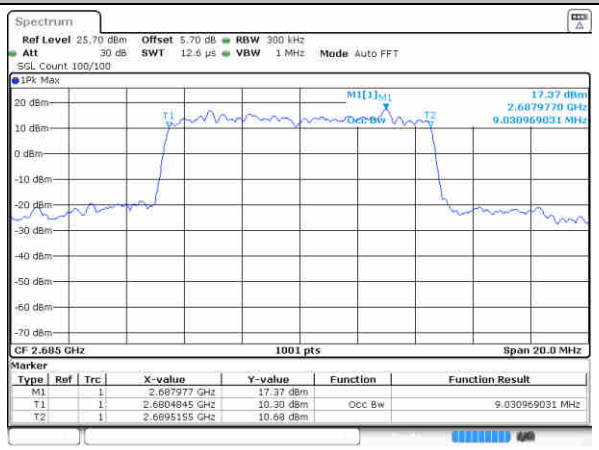
Middle Channel / 10MHz / QPSK



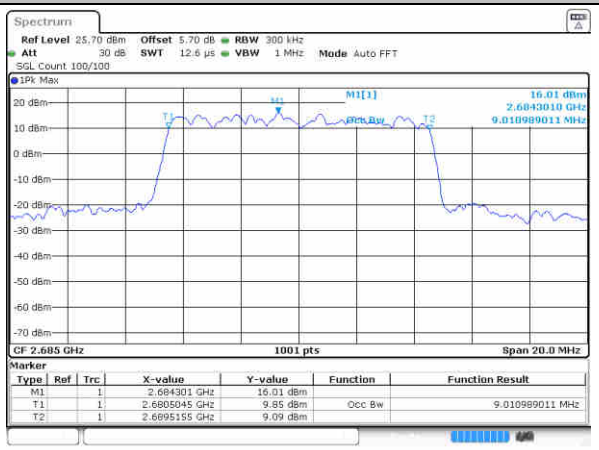
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

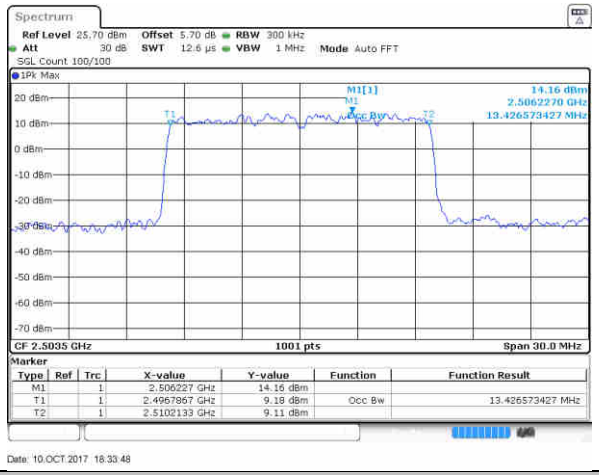


Highest Channel / 10MHz / 16QAM

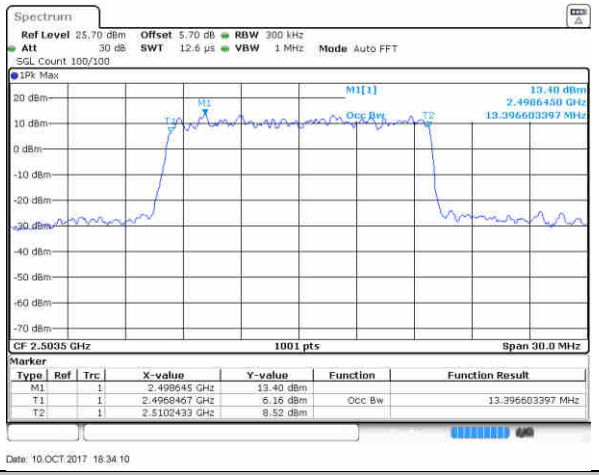


LTE Band 41

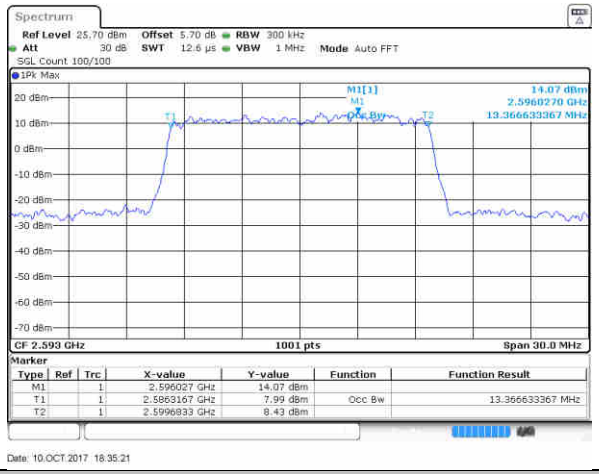
Lowest Channel / 15MHz / QPSK



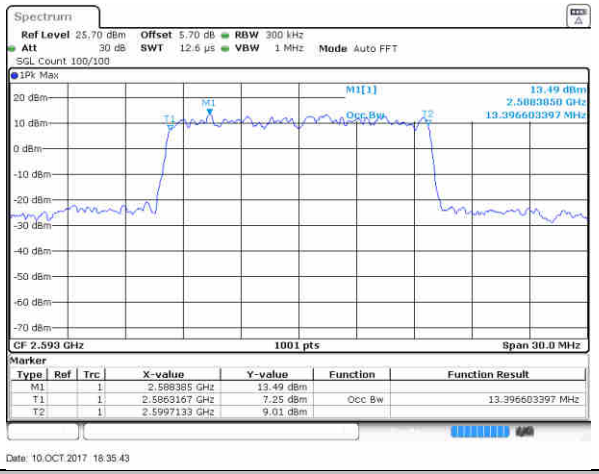
Lowest Channel / 15MHz / 16QAM



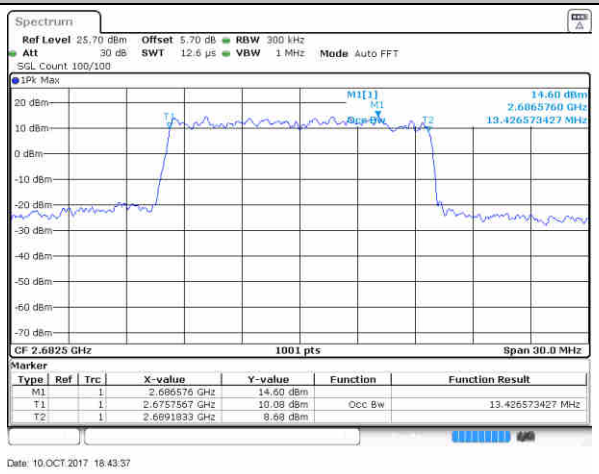
Middle Channel / 15MHz / QPSK



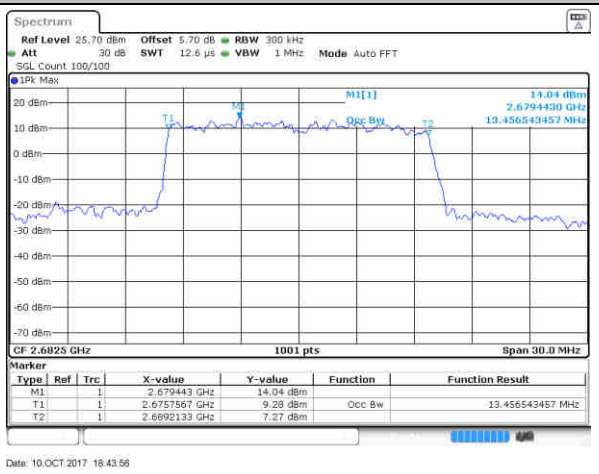
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

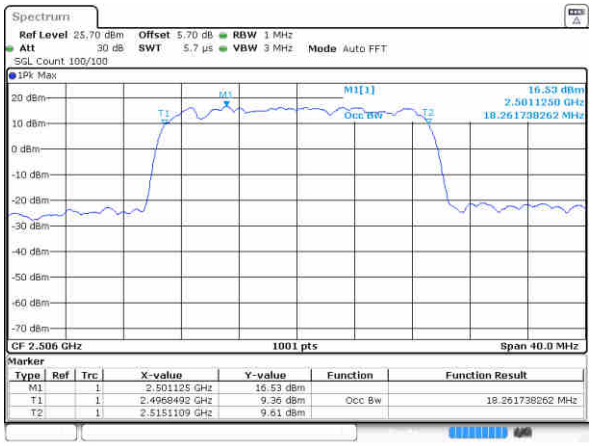


Highest Channel / 15MHz / 16QAM

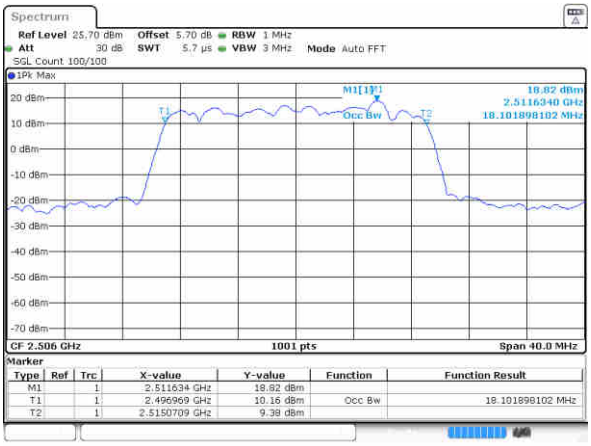


LTE Band 41

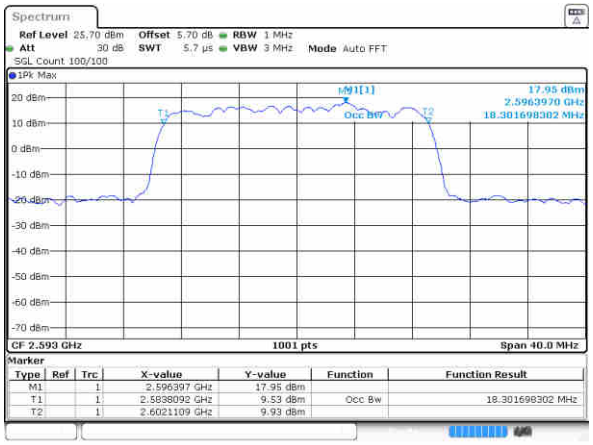
Lowest Channel / 20MHz / QPSK



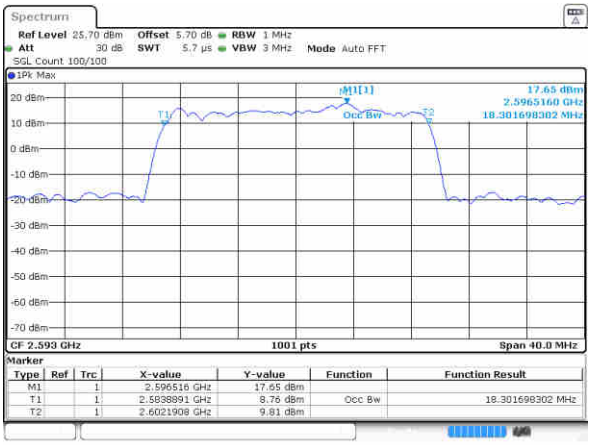
Lowest Channel / 20MHz / 16QAM



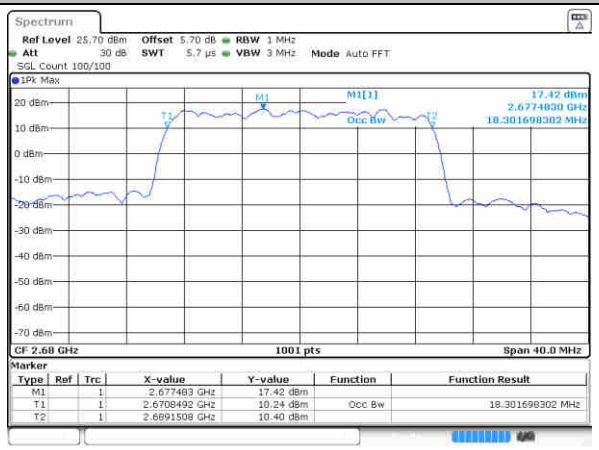
Middle Channel / 20MHz / QPSK



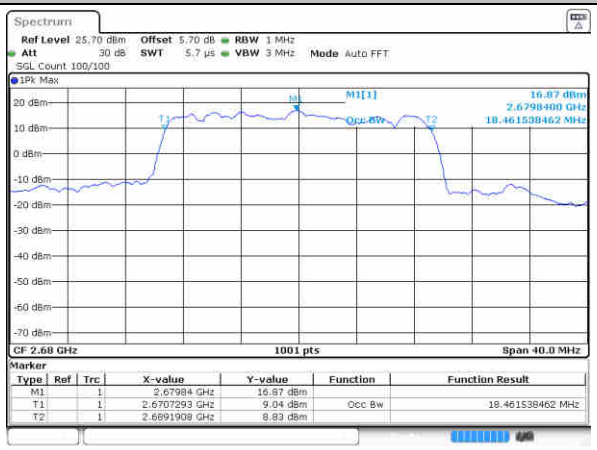
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



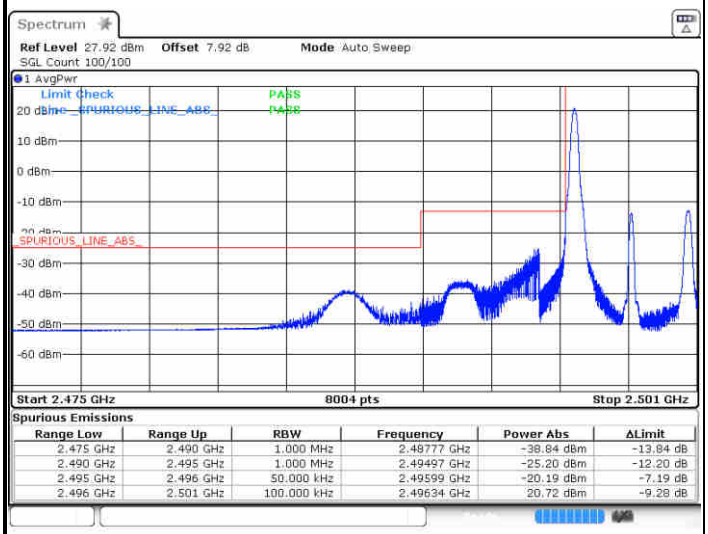
Highest Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 41 / 5MHz / QPSK

Lowest Band Edge / 1 RB

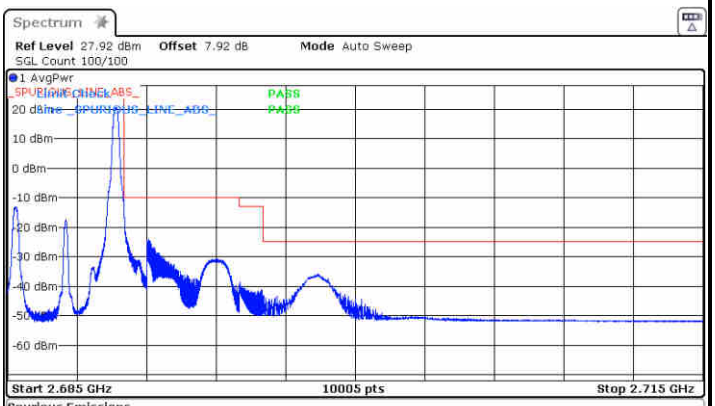


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48777 GHz	-38.84 dBm	-13.84 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-25.20 dBm	-12.20 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49599 GHz	-20.19 dBm	-7.19 dB
2.496 GHz	2.501 GHz	100.000 kHz	2.49634 GHz	20.72 dBm	-9.28 dB

Date: 10.OCT.2017 18:59:44

Highest Band Edge / 1 RB

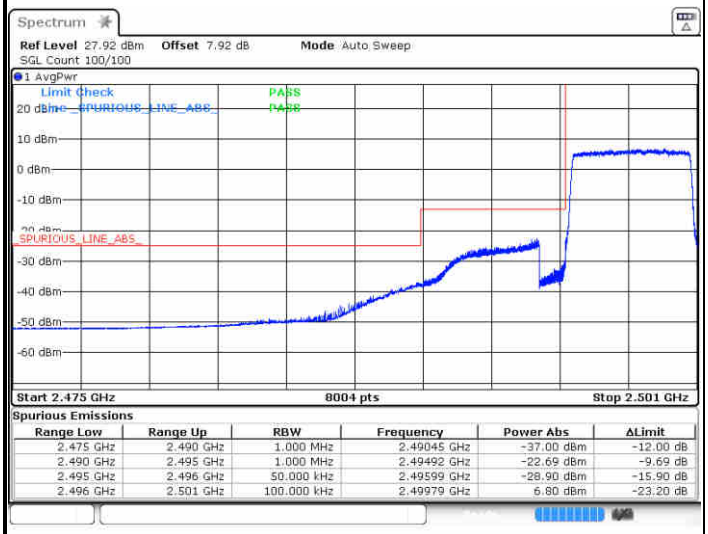


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.685 GHz	2.690 GHz	100.000 kHz	2.68968 GHz	20.45 dBm	-9.55 dB
2.690 GHz	2.691 GHz	100.000 kHz	2.69000 GHz	-11.48 dBm	-1.48 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69106 GHz	-23.88 dBm	-13.88 dB
2.695 GHz	2.696 GHz	1.000 MHz	2.69504 GHz	-38.74 dBm	-25.74 dB
2.696 GHz	2.715 GHz	1.000 MHz	2.69838 GHz	-35.93 dBm	-10.93 dB

Date: 10.OCT.2017 19:19:51

Lowest Band Edge / Full RB

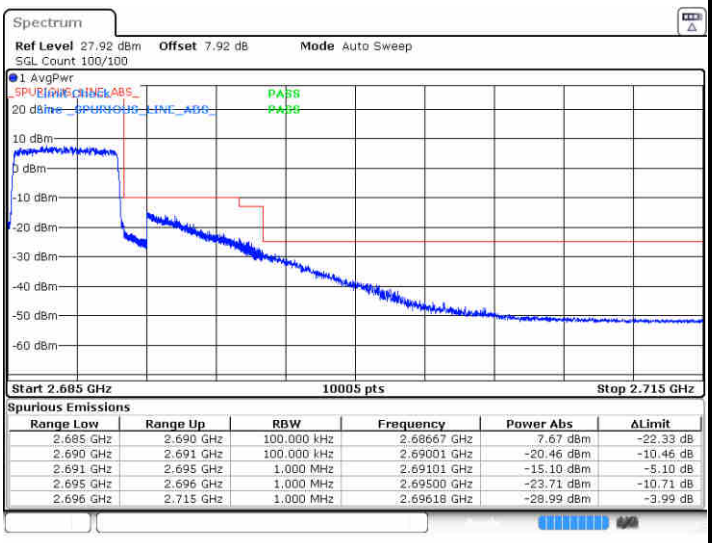


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49045 GHz	-37.00 dBm	-12.00 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49492 GHz	-22.69 dBm	-9.69 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49599 GHz	-28.90 dBm	-15.90 dB
2.496 GHz	2.501 GHz	100.000 kHz	2.49979 GHz	6.80 dBm	-23.20 dB

Date: 10.OCT.2017 19:10:47

Highest Band Edge / Full RB



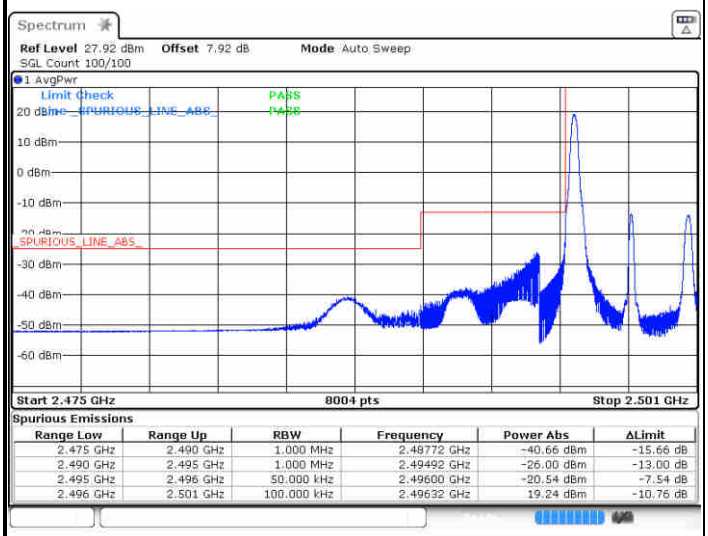
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.685 GHz	2.690 GHz	100.000 kHz	2.68667 GHz	7.67 dBm	-22.33 dB
2.690 GHz	2.691 GHz	100.000 kHz	2.69001 GHz	-20.46 dBm	-10.46 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69101 GHz	-15.10 dBm	-5.10 dB
2.695 GHz	2.696 GHz	1.000 MHz	2.69500 GHz	-23.71 dBm	-10.71 dB
2.696 GHz	2.715 GHz	1.000 MHz	2.69618 GHz	-28.99 dBm	-3.99 dB

Date: 10.OCT.2017 19:24:25

LTE Band 41 / 5MHz / 16QAM

Lowest Band Edge / 1RB

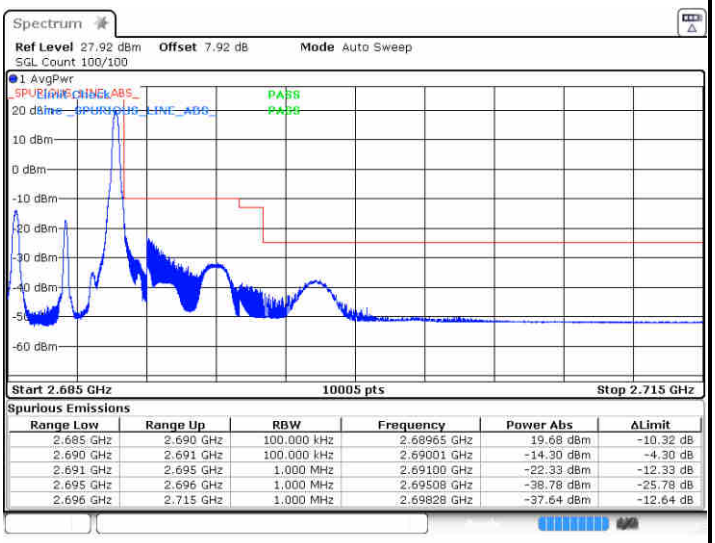


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48772 GHz	-40.66 dBm	-15.66 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49492 GHz	-26.00 dBm	-13.00 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49600 GHz	-20.54 dBm	-7.54 dB
2.496 GHz	2.501 GHz	100.000 kHz	2.49632 GHz	19.24 dBm	-10.76 dB

Date: 10.OCT.2017 19:07:23

Highest Band Edge / 1 RB

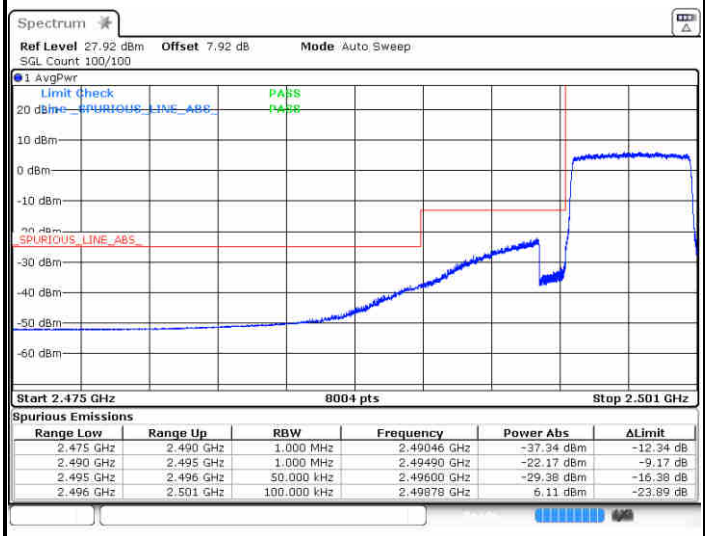


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.685 GHz	2.690 GHz	100.000 kHz	2.68965 GHz	19.68 dBm	-10.32 dB
2.690 GHz	2.691 GHz	100.000 kHz	2.69001 GHz	-14.30 dBm	-4.30 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69100 GHz	-22.33 dBm	-12.33 dB
2.695 GHz	2.696 GHz	1.000 MHz	2.69508 GHz	-38.78 dBm	-25.78 dB
2.696 GHz	2.715 GHz	1.000 MHz	2.69828 GHz	-37.64 dBm	-12.64 dB

Date: 10.OCT.2017 19:21:46

Lowest Band Edge / Full RB

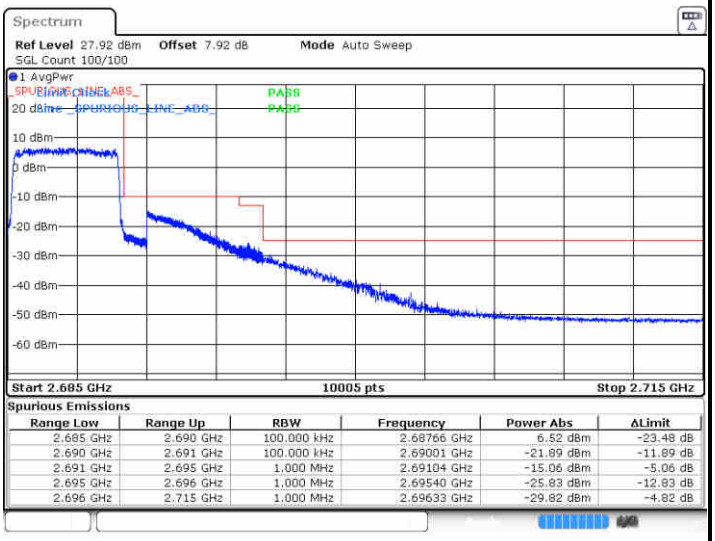


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49046 GHz	-37.34 dBm	-12.34 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49490 GHz	-22.17 dBm	-9.17 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49600 GHz	-29.38 dBm	-16.38 dB
2.496 GHz	2.501 GHz	100.000 kHz	2.49878 GHz	6.11 dBm	-23.89 dB

Date: 10.OCT.2017 19:11:35

Highest Band Edge / Full RB



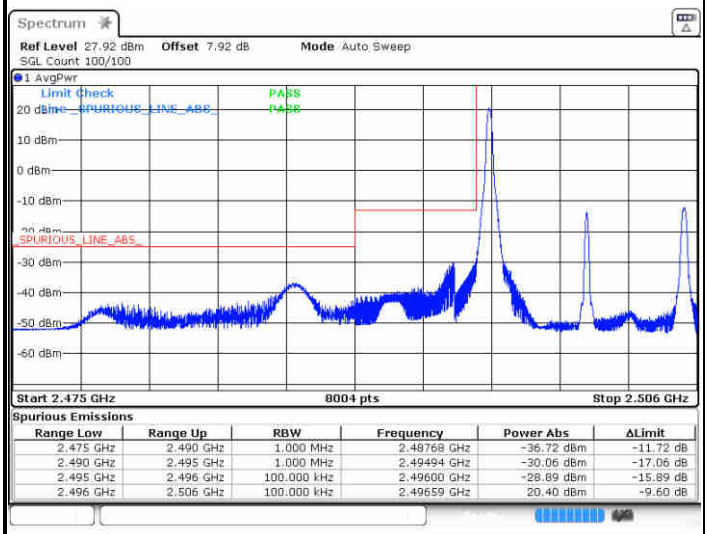
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.685 GHz	2.690 GHz	100.000 kHz	2.68766 GHz	6.52 dBm	-23.48 dB
2.690 GHz	2.691 GHz	100.000 kHz	2.69001 GHz	-21.89 dBm	-11.89 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69104 GHz	-15.06 dBm	-5.06 dB
2.695 GHz	2.696 GHz	1.000 MHz	2.69540 GHz	-25.83 dBm	-12.83 dB
2.696 GHz	2.715 GHz	1.000 MHz	2.69633 GHz	-29.82 dBm	-4.82 dB

Date: 10.OCT.2017 19:24:44

LTE Band 41 / 10MHz / QPSK

Lowest Band Edge / 1 RB

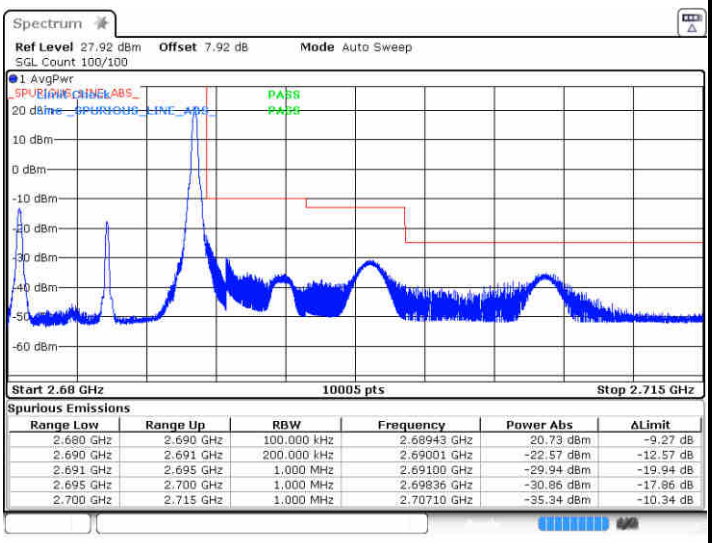


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48768 GHz	-36.72 dBm	-11.72 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49494 GHz	-30.06 dBm	-17.06 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49600 GHz	-28.89 dBm	-15.89 dB
2.496 GHz	2.506 GHz	100.000 kHz	2.49659 GHz	20.40 dBm	-9.60 dB

Date: 10.OCT.2017 19:27:44

Highest Band Edge / 1 RB

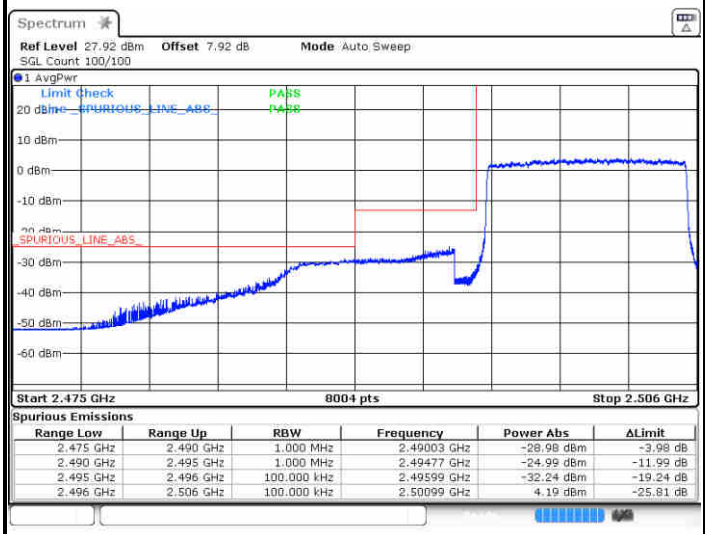


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.680 GHz	2.690 GHz	100.000 kHz	2.68943 GHz	20.73 dBm	-9.27 dB
2.690 GHz	2.691 GHz	200.000 kHz	2.69001 GHz	-22.57 dBm	-12.57 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69100 GHz	-29.94 dBm	-19.94 dB
2.695 GHz	2.700 GHz	1.000 MHz	2.69836 GHz	-30.86 dBm	-17.86 dB
2.700 GHz	2.715 GHz	1.000 MHz	2.70710 GHz	-35.34 dBm	-10.34 dB

Date: 10.OCT.2017 19:53:06

Lowest Band Edge / Full RB

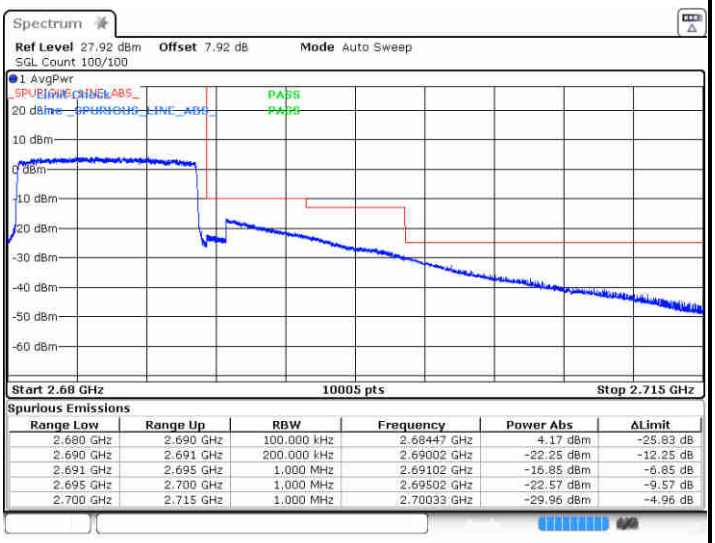


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49003 GHz	-28.98 dBm	-3.98 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49477 GHz	-24.99 dBm	-11.99 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49599 GHz	-32.24 dBm	-19.24 dB
2.496 GHz	2.506 GHz	100.000 kHz	2.50099 GHz	4.19 dBm	-25.81 dB

Date: 10.OCT.2017 19:43:57

Highest Band Edge / Full RB



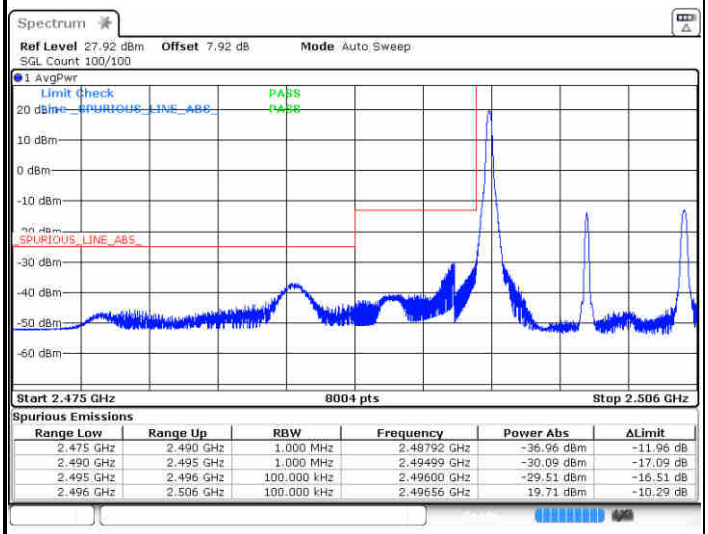
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.680 GHz	2.690 GHz	100.000 kHz	2.68447 GHz	4.17 dBm	-25.83 dB
2.690 GHz	2.691 GHz	200.000 kHz	2.69002 GHz	-22.25 dBm	-12.25 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69102 GHz	-16.85 dBm	-6.85 dB
2.695 GHz	2.700 GHz	1.000 MHz	2.69502 GHz	-22.57 dBm	-9.57 dB
2.700 GHz	2.715 GHz	1.000 MHz	2.70033 GHz	-29.96 dBm	-4.96 dB

Date: 10.OCT.2017 20:00:19

LTE Band 41 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

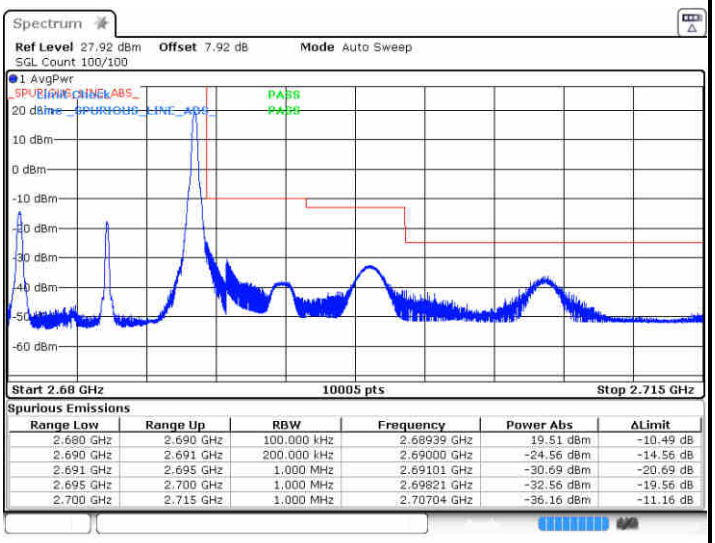


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48792 GHz	-36.96 dBm	-11.96 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49499 GHz	-30.09 dBm	-17.09 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49600 GHz	-29.51 dBm	-16.51 dB
2.496 GHz	2.506 GHz	100.000 kHz	2.49656 GHz	19.71 dBm	-10.29 dB

Date: 10.OCT.2017 19:39:27

Highest Band Edge / 1 RB

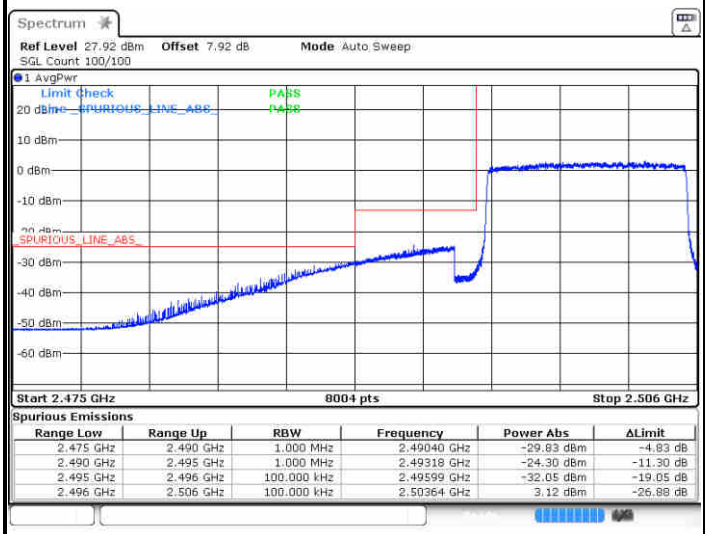


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.680 GHz	2.690 GHz	100.000 kHz	2.68939 GHz	19.51 dBm	-10.49 dB
2.690 GHz	2.691 GHz	200.000 kHz	2.69000 GHz	-24.56 dBm	-14.56 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69101 GHz	-30.69 dBm	-20.69 dB
2.695 GHz	2.700 GHz	1.000 MHz	2.69821 GHz	-32.56 dBm	-19.56 dB
2.700 GHz	2.715 GHz	1.000 MHz	2.70704 GHz	-36.16 dBm	-11.16 dB

Date: 10.OCT.2017 19:55:32

Lowest Band Edge / Full RB

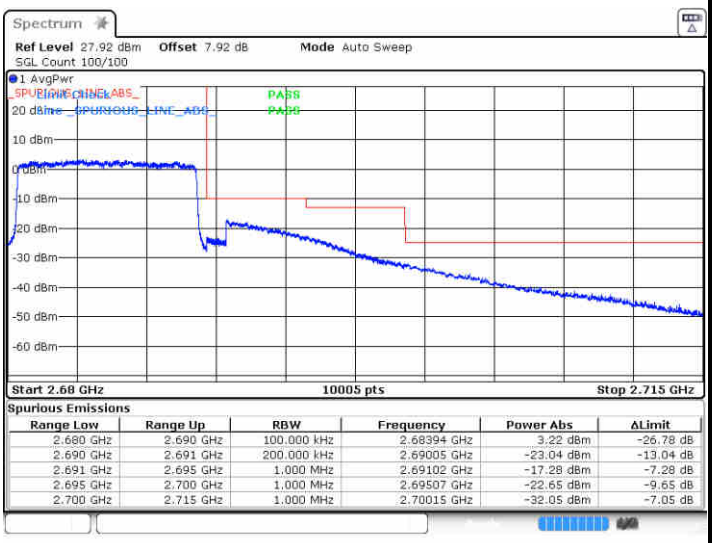


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49040 GHz	-29.83 dBm	-4.83 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49318 GHz	-24.30 dBm	-11.30 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49599 GHz	-32.05 dBm	-19.05 dB
2.496 GHz	2.506 GHz	100.000 kHz	2.50364 GHz	3.12 dBm	-26.88 dB

Date: 10.OCT.2017 19:44:38

Highest Band Edge / Full RB



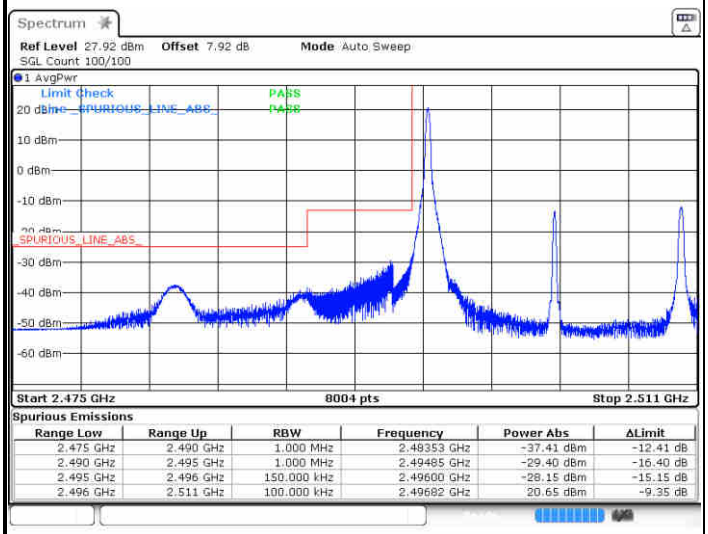
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.680 GHz	2.690 GHz	100.000 kHz	2.68394 GHz	3.22 dBm	-26.78 dB
2.690 GHz	2.691 GHz	200.000 kHz	2.69005 GHz	-23.04 dBm	-13.04 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69102 GHz	-17.28 dBm	-7.28 dB
2.695 GHz	2.700 GHz	1.000 MHz	2.69507 GHz	-22.65 dBm	-9.65 dB
2.700 GHz	2.715 GHz	1.000 MHz	2.70015 GHz	-32.05 dBm	-7.05 dB

Date: 10.OCT.2017 20:01:05

LTE Band 41 / 15MHz / QPSK

Lowest Band Edge / 1 RB

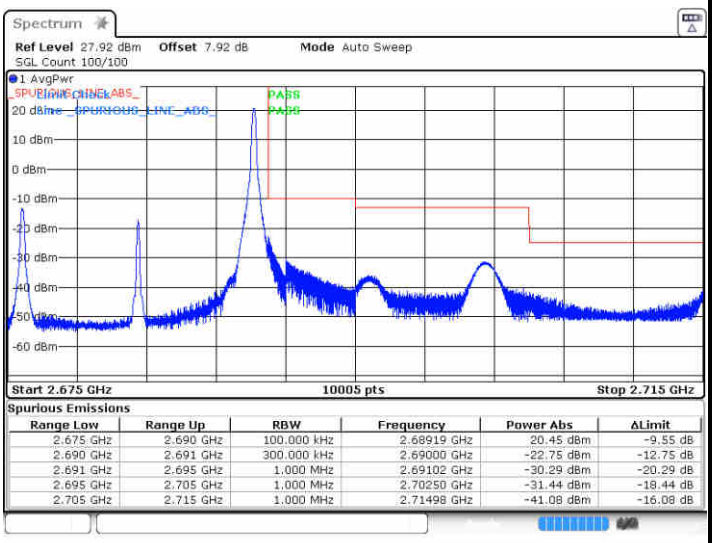


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48353 GHz	-37.41 dBm	-12.41 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49485 GHz	-29.40 dBm	-16.40 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49600 GHz	-28.15 dBm	-15.15 dB
2.496 GHz	2.511 GHz	100.000 kHz	2.49682 GHz	20.65 dBm	-9.35 dB

Date: 10.OCT.2017 20:04:25

Highest Band Edge / 1 RB

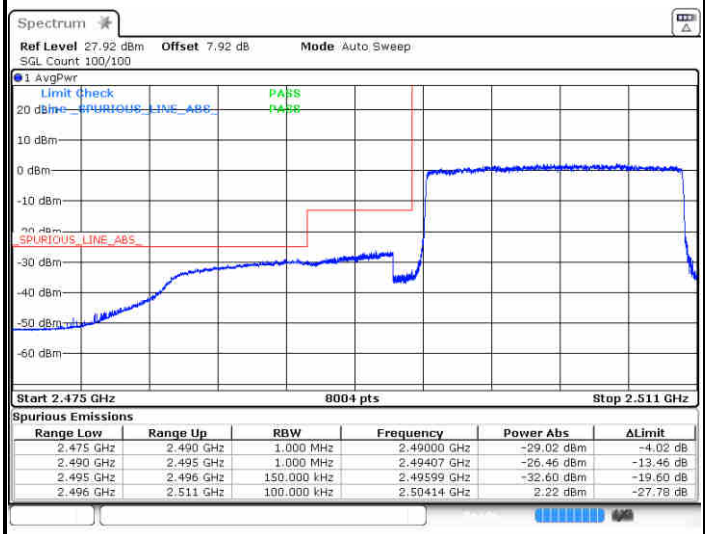


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.675 GHz	2.690 GHz	100.000 kHz	2.68919 GHz	20.45 dBm	-9.55 dB
2.690 GHz	2.691 GHz	300.000 kHz	2.69000 GHz	-22.75 dBm	-12.75 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69102 GHz	-30.29 dBm	-20.29 dB
2.695 GHz	2.705 GHz	1.000 MHz	2.70250 GHz	-31.44 dBm	-18.44 dB
2.705 GHz	2.715 GHz	1.000 MHz	2.71498 GHz	-41.08 dBm	-16.08 dB

Date: 10.OCT.2017 20:16:34

Lowest Band Edge / Full RB

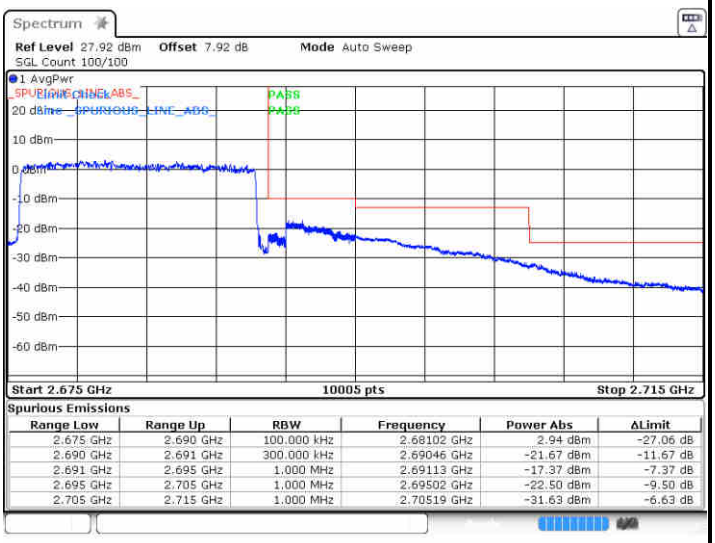


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49000 GHz	-29.02 dBm	-4.02 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49407 GHz	-26.46 dBm	-13.46 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49599 GHz	-32.60 dBm	-19.60 dB
2.496 GHz	2.511 GHz	100.000 kHz	2.50414 GHz	2.22 dBm	-27.78 dB

Date: 10.OCT.2017 20:10:19

Highest Band Edge / Full RB



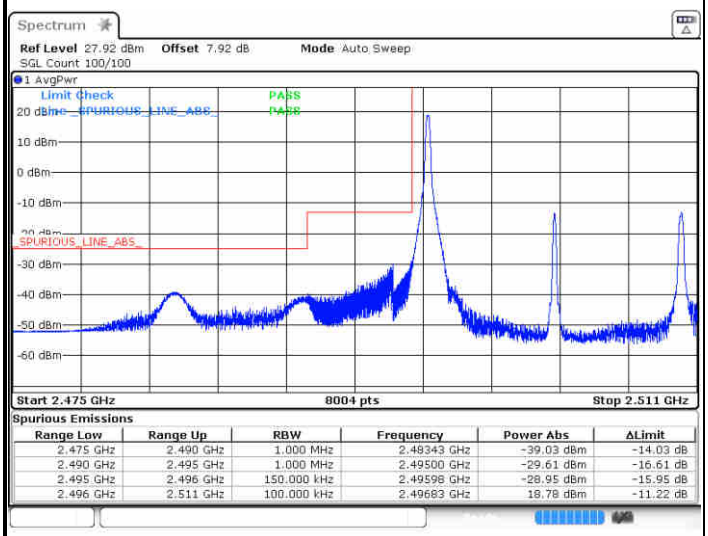
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.675 GHz	2.690 GHz	100.000 kHz	2.68102 GHz	2.94 dBm	-27.06 dB
2.690 GHz	2.691 GHz	300.000 kHz	2.69046 GHz	-21.67 dBm	-11.67 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69113 GHz	-17.37 dBm	-7.37 dB
2.695 GHz	2.705 GHz	1.000 MHz	2.69502 GHz	-22.50 dBm	-9.50 dB
2.705 GHz	2.715 GHz	1.000 MHz	2.70519 GHz	-31.63 dBm	-6.63 dB

Date: 10.OCT.2017 20:38:58

LTE Band 41 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

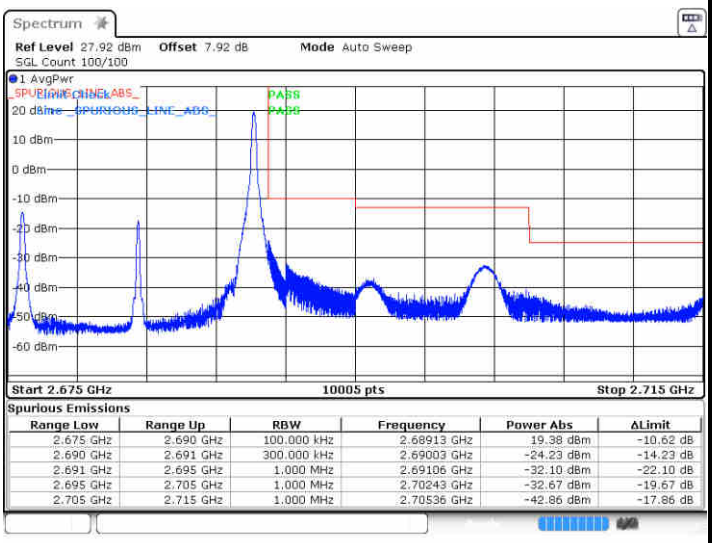


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48343 GHz	-39.03 dBm	-14.03 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49500 GHz	-29.61 dBm	-16.61 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49598 GHz	-28.95 dBm	-15.95 dB
2.496 GHz	2.511 GHz	100.000 kHz	2.49683 GHz	18.78 dBm	-11.22 dB

Date: 10.OCT.2017 20:06:33

Highest Band Edge / 1 RB

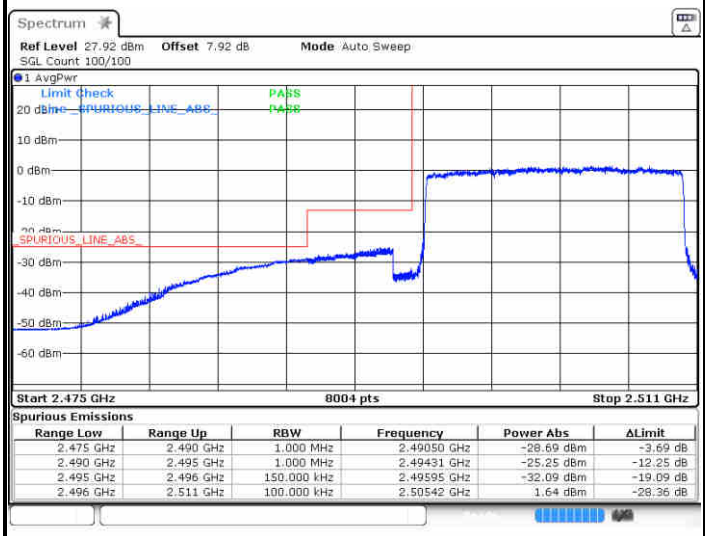


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.675 GHz	2.690 GHz	100.000 kHz	2.68913 GHz	19.38 dBm	-10.62 dB
2.690 GHz	2.691 GHz	300.000 kHz	2.69003 GHz	-24.23 dBm	-14.23 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69106 GHz	-32.10 dBm	-22.10 dB
2.695 GHz	2.705 GHz	1.000 MHz	2.70243 GHz	-32.67 dBm	-19.67 dB
2.705 GHz	2.715 GHz	1.000 MHz	2.70536 GHz	-42.86 dBm	-17.86 dB

Date: 10.OCT.2017 20:18:46

Lowest Band Edge / Full RB

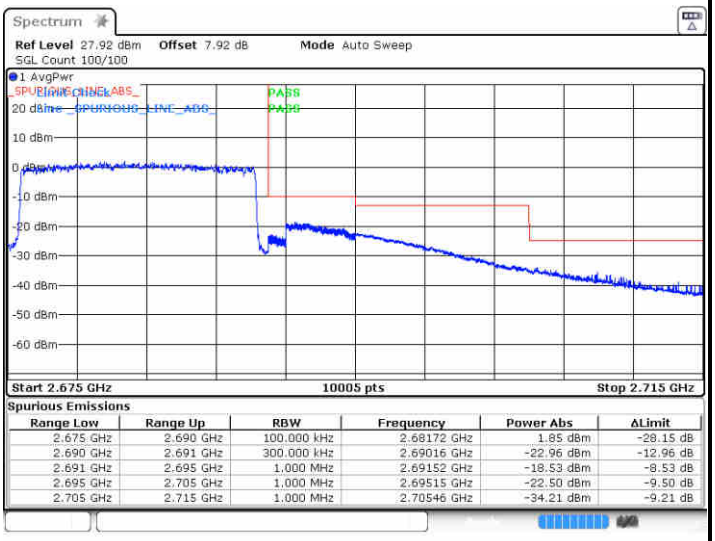


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49050 GHz	-28.69 dBm	-3.69 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49431 GHz	-25.25 dBm	-12.25 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49595 GHz	-32.09 dBm	-19.09 dB
2.496 GHz	2.511 GHz	100.000 kHz	2.50542 GHz	1.64 dBm	-28.36 dB

Date: 10.OCT.2017 20:11:16

Highest Band Edge / Full RB



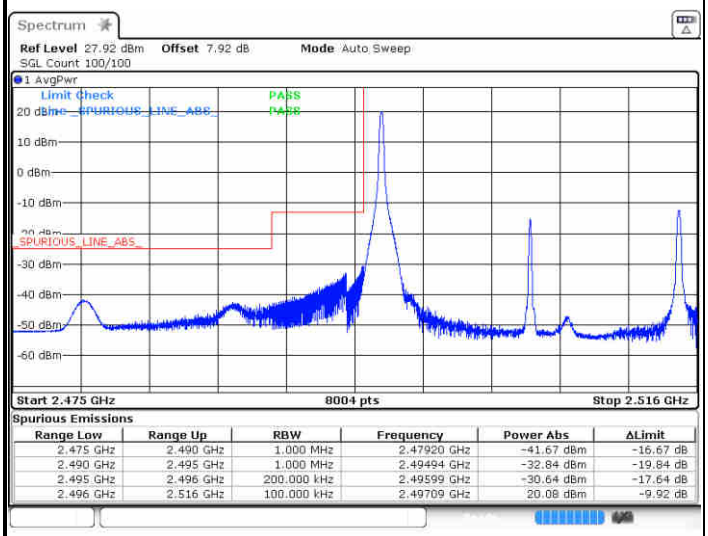
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.675 GHz	2.690 GHz	100.000 kHz	2.68172 GHz	1.85 dBm	-28.15 dB
2.690 GHz	2.691 GHz	300.000 kHz	2.69016 GHz	-22.96 dBm	-12.96 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69152 GHz	-18.53 dBm	-8.53 dB
2.695 GHz	2.705 GHz	1.000 MHz	2.69515 GHz	-22.50 dBm	-9.50 dB
2.705 GHz	2.715 GHz	1.000 MHz	2.70546 GHz	-34.21 dBm	-9.21 dB

Date: 10.OCT.2017 20:39:49

LTE Band 41 / 20MHz / QPSK

Lowest Band Edge / 1 RB

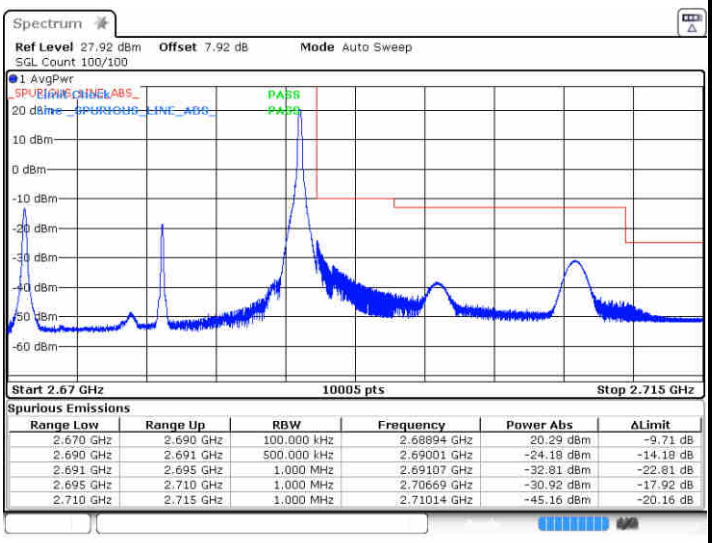


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.47920 GHz	-41.67 dBm	-16.67 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49494 GHz	-32.84 dBm	-19.84 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49599 GHz	-30.64 dBm	-17.64 dB
2.496 GHz	2.516 GHz	100.000 kHz	2.49709 GHz	20.08 dBm	-9.92 dB

Date: 10.OCT.2017 20:42:20

Highest Band Edge / 1 RB

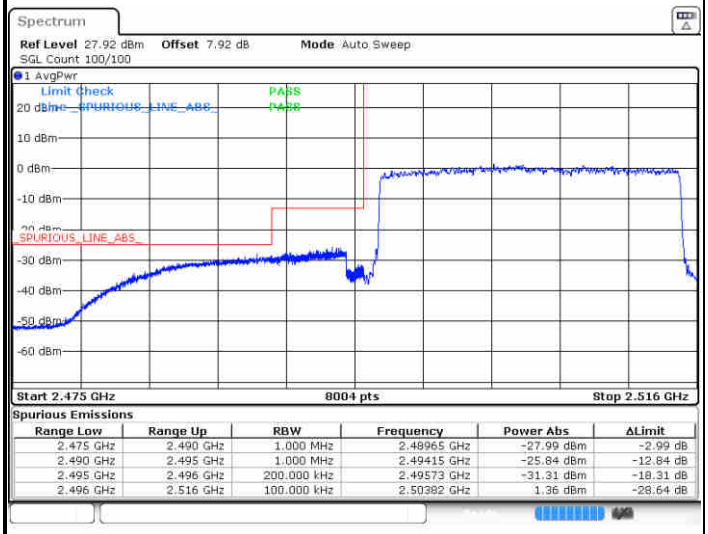


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.670 GHz	2.690 GHz	100.000 kHz	2.68894 GHz	20.29 dBm	-9.71 dB
2.690 GHz	2.691 GHz	500.000 kHz	2.69001 GHz	-24.18 dBm	-14.18 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69107 GHz	-32.81 dBm	-22.81 dB
2.695 GHz	2.710 GHz	1.000 MHz	2.70669 GHz	-30.92 dBm	-17.92 dB
2.710 GHz	2.715 GHz	1.000 MHz	2.71014 GHz	-45.16 dBm	-20.16 dB

Date: 10.OCT.2017 20:49:32

Lowest Band Edge / Full RB

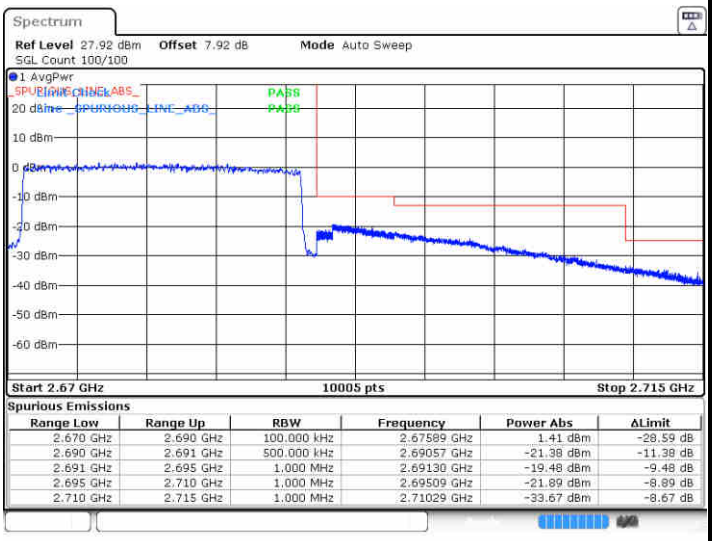


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48965 GHz	-27.99 dBm	-2.99 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49415 GHz	-25.84 dBm	-12.84 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49573 GHz	-31.31 dBm	-18.31 dB
2.496 GHz	2.516 GHz	100.000 kHz	2.50382 GHz	1.36 dBm	-28.64 dB

Date: 10.OCT.2017 20:46:19

Highest Band Edge / Full RB



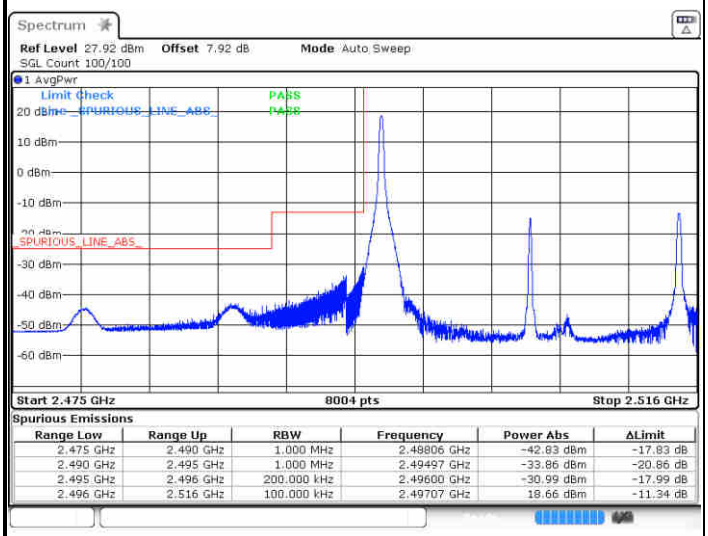
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.670 GHz	2.690 GHz	100.000 kHz	2.67589 GHz	1.41 dBm	-28.59 dB
2.690 GHz	2.691 GHz	500.000 kHz	2.69057 GHz	-21.38 dBm	-11.38 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69130 GHz	-19.48 dBm	-9.48 dB
2.695 GHz	2.710 GHz	1.000 MHz	2.69509 GHz	-21.89 dBm	-8.89 dB
2.710 GHz	2.715 GHz	1.000 MHz	2.71029 GHz	-33.67 dBm	-8.67 dB

Date: 10.OCT.2017 20:54:21

LTE Band 41 / 20MHz / 16QAM

Lowest Band Edge / 1 RB

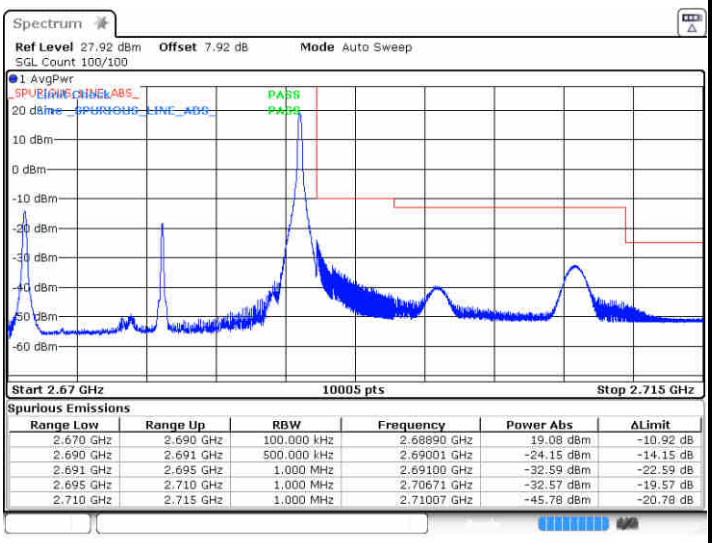


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48806 GHz	-42.83 dBm	-17.83 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-33.86 dBm	-20.86 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49600 GHz	-30.99 dBm	-17.99 dB
2.496 GHz	2.516 GHz	100.000 kHz	2.49707 GHz	18.66 dBm	-11.34 dB

Date: 10.OCT.2017 20:44:09

Highest Band Edge / 1 RB

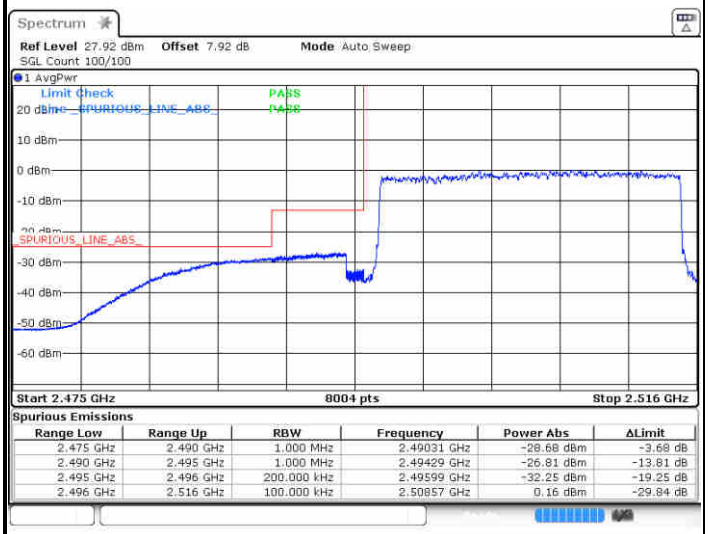


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.670 GHz	2.690 GHz	100.000 kHz	2.68890 GHz	19.08 dBm	-10.92 dB
2.690 GHz	2.691 GHz	500.000 kHz	2.69001 GHz	-24.15 dBm	-14.15 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69100 GHz	-32.59 dBm	-22.59 dB
2.695 GHz	2.710 GHz	1.000 MHz	2.70671 GHz	-32.57 dBm	-19.57 dB
2.710 GHz	2.715 GHz	1.000 MHz	2.71007 GHz	-45.78 dBm	-20.78 dB

Date: 10.OCT.2017 20:51:50

Lowest Band Edge / Full RB

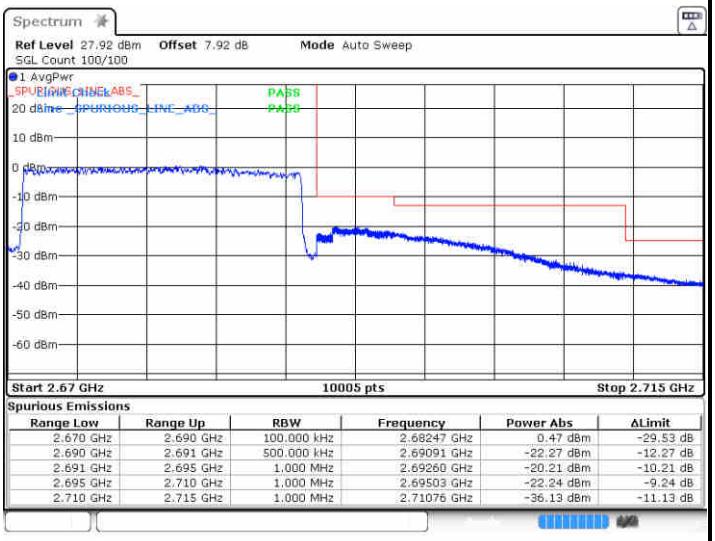


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49031 GHz	-28.68 dBm	-3.68 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49429 GHz	-26.81 dBm	-13.81 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49599 GHz	-32.25 dBm	-19.25 dB
2.496 GHz	2.516 GHz	100.000 kHz	2.50857 GHz	0.16 dBm	-29.84 dB

Date: 10.OCT.2017 20:46:54

Highest Band Edge / Full RB



Spurious Emissions

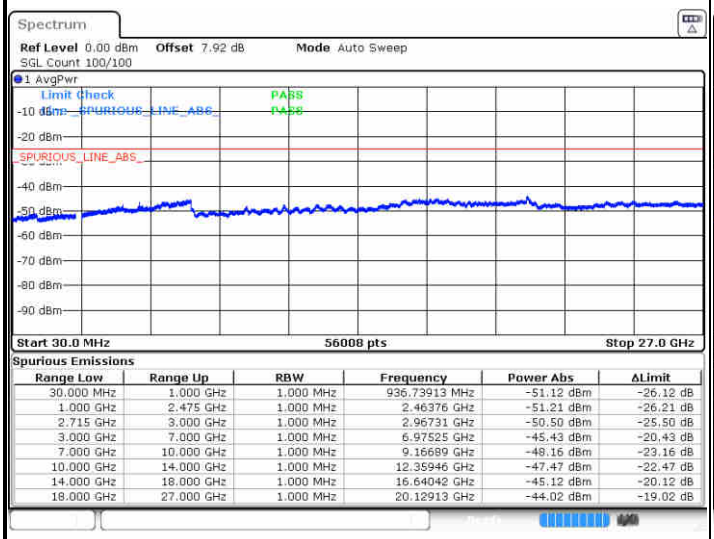
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.670 GHz	2.690 GHz	100.000 kHz	2.68247 GHz	0.47 dBm	-29.53 dB
2.690 GHz	2.691 GHz	500.000 kHz	2.69091 GHz	-22.27 dBm	-12.27 dB
2.691 GHz	2.695 GHz	1.000 MHz	2.69260 GHz	-20.21 dBm	-10.21 dB
2.695 GHz	2.710 GHz	1.000 MHz	2.69503 GHz	-22.24 dBm	-9.24 dB
2.710 GHz	2.715 GHz	1.000 MHz	2.71076 GHz	-36.13 dBm	-11.13 dB

Date: 10.OCT.2017 20:54:50

Conducted Spurious Emission

LTE Band 41 / 5MHz

Lowest Channel / QPSK

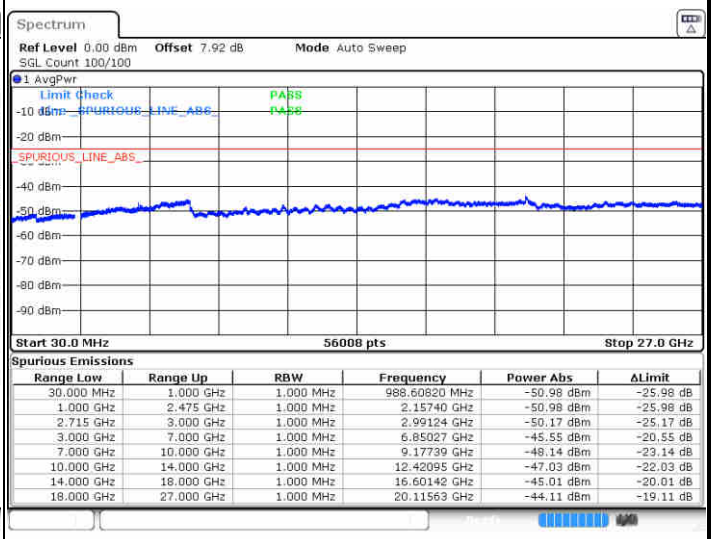


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	936.73913 MHz	-51.12 dBm	-26.12 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.46376 GHz	-51.21 dBm	-26.21 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.96731 GHz	-50.50 dBm	-25.50 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97525 GHz	-45.43 dBm	-20.43 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16689 GHz	-48.16 dBm	-23.16 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.35946 GHz	-47.47 dBm	-22.47 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.64042 GHz	-45.12 dBm	-20.12 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12913 GHz	-44.02 dBm	-19.02 dB

Date: 10.OCT.2017 20:57:33

Lowest Channel / 16QAM

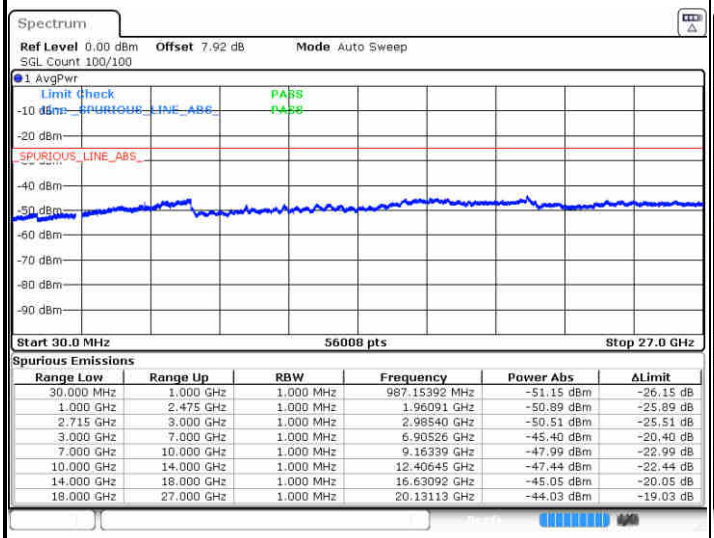


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	988.60820 MHz	-50.98 dBm	-25.98 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.15740 GHz	-50.98 dBm	-25.98 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99124 GHz	-50.17 dBm	-25.17 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85027 GHz	-45.55 dBm	-20.55 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17739 GHz	-48.14 dBm	-23.14 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.42095 GHz	-47.03 dBm	-22.03 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.60142 GHz	-45.01 dBm	-20.01 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.11563 GHz	-44.11 dBm	-19.11 dB

Date: 10.OCT.2017 20:58:21

Middle Channel / QPSK

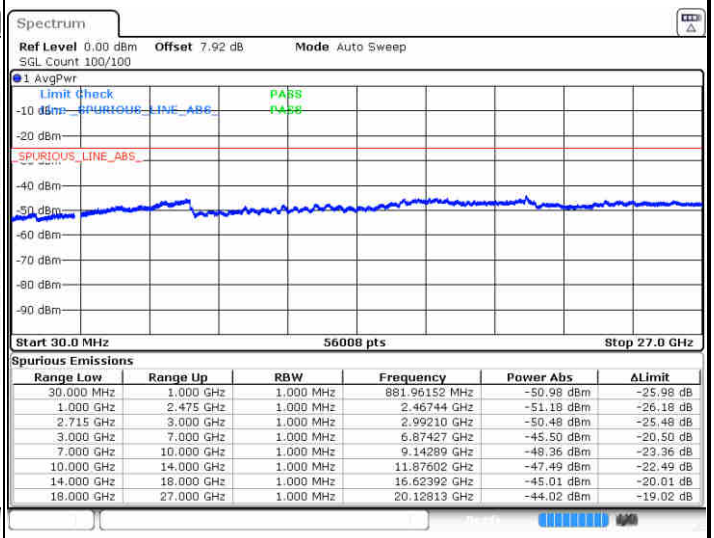


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	987.15392 MHz	-51.15 dBm	-26.15 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.96091 GHz	-50.89 dBm	-25.89 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.98540 GHz	-50.51 dBm	-25.51 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90526 GHz	-45.40 dBm	-20.40 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16339 GHz	-47.99 dBm	-22.99 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.40645 GHz	-47.44 dBm	-22.44 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63092 GHz	-45.05 dBm	-20.05 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13113 GHz	-44.03 dBm	-19.03 dB

Date: 10.OCT.2017 21:00:02

Middle Channel / 16QAM



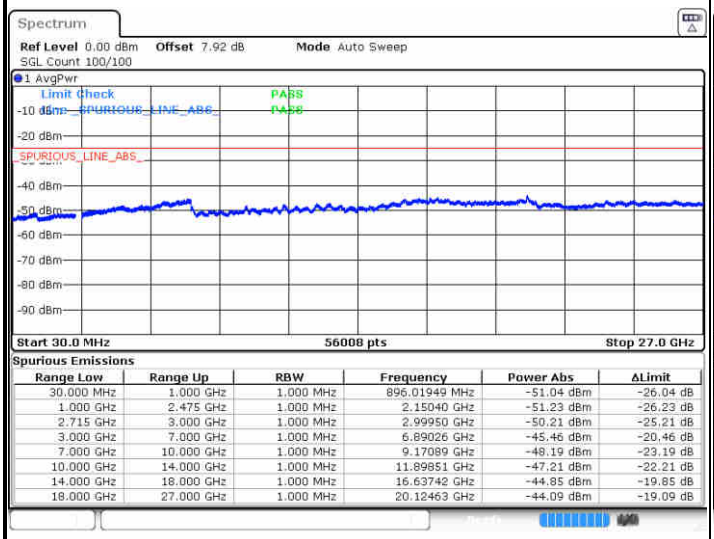
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	881.96152 MHz	-50.98 dBm	-25.98 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.46744 GHz	-51.18 dBm	-26.18 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99210 GHz	-50.48 dBm	-25.48 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.87427 GHz	-45.50 dBm	-20.50 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.14289 GHz	-48.36 dBm	-23.36 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.87602 GHz	-47.49 dBm	-22.49 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62392 GHz	-45.01 dBm	-20.01 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12813 GHz	-44.02 dBm	-19.02 dB

Date: 10.OCT.2017 21:00:49

LTE Band 41 / 5MHz

Highest Channel / QPSK

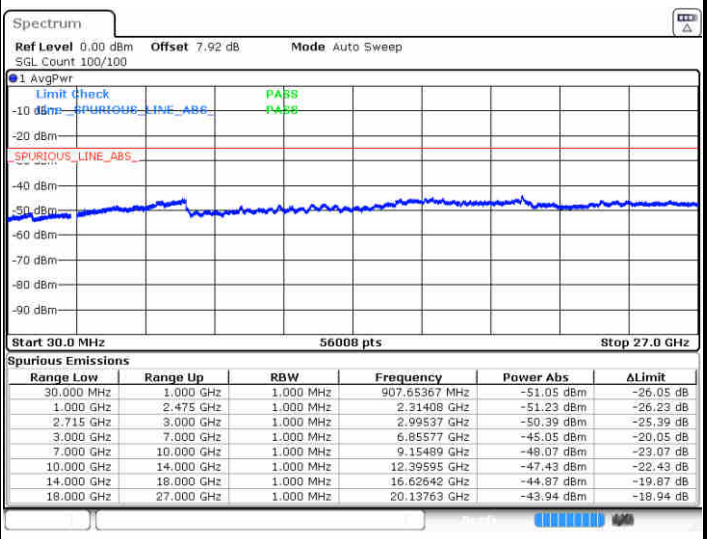


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	896.01949 MHz	-51.04 dBm	-26.04 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.15040 GHz	-51.23 dBm	-26.23 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99950 GHz	-50.21 dBm	-25.21 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.89026 GHz	-45.46 dBm	-20.46 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17089 GHz	-48.19 dBm	-23.19 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.89851 GHz	-47.21 dBm	-22.21 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63742 GHz	-44.85 dBm	-19.85 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12463 GHz	-44.09 dBm	-19.09 dB

Date: 10.OCT.2017 21:02:27

Highest Channel / 16QAM



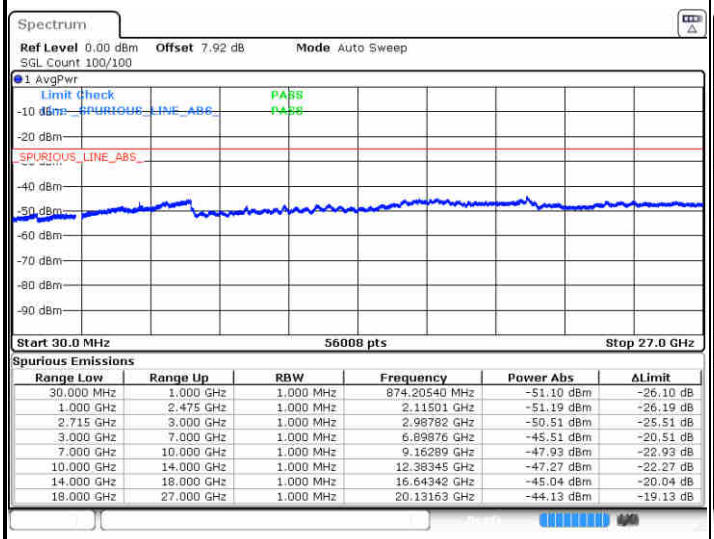
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	907.65367 MHz	-51.05 dBm	-26.05 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.31408 GHz	-51.23 dBm	-26.23 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99537 GHz	-50.39 dBm	-25.39 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85577 GHz	-45.05 dBm	-20.05 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.15489 GHz	-48.07 dBm	-23.07 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.39595 GHz	-47.43 dBm	-22.43 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62642 GHz	-44.87 dBm	-19.87 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13763 GHz	-43.94 dBm	-18.94 dB

Date: 10.OCT.2017 21:04:21

LTE Band 41 / 10MHz

Lowest Channel / QPSK

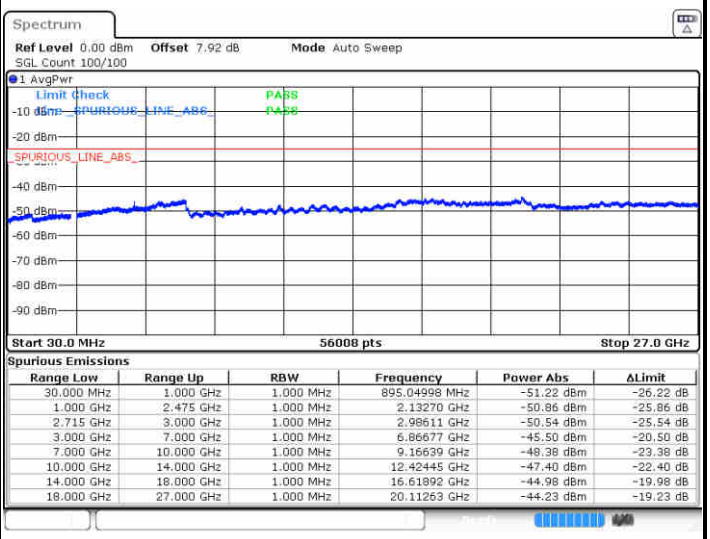


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	874.20540 MHz	-51.10 dBm	-26.10 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.11501 GHz	-51.19 dBm	-26.19 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.98782 GHz	-50.51 dBm	-25.51 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.89876 GHz	-45.51 dBm	-20.51 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16289 GHz	-47.93 dBm	-22.93 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.38345 GHz	-47.27 dBm	-22.27 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.64342 GHz	-45.04 dBm	-20.04 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13163 GHz	-44.13 dBm	-19.13 dB

Date: 10.OCT.2017 21:08:22

Lowest Channel / 16QAM



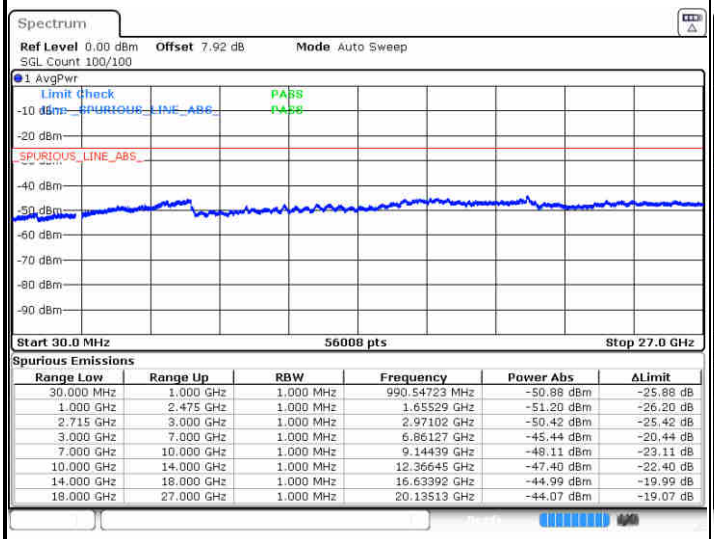
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	895.04998 MHz	-51.22 dBm	-26.22 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.13270 GHz	-50.86 dBm	-25.86 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.98611 GHz	-50.54 dBm	-25.54 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86677 GHz	-45.50 dBm	-20.50 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16639 GHz	-48.38 dBm	-23.38 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.42445 GHz	-47.40 dBm	-22.40 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.61892 GHz	-44.98 dBm	-19.98 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.11263 GHz	-44.23 dBm	-19.23 dB

Date: 10.OCT.2017 21:09:09

LTE Band 41 / 10MHz

Middle Channel / QPSK

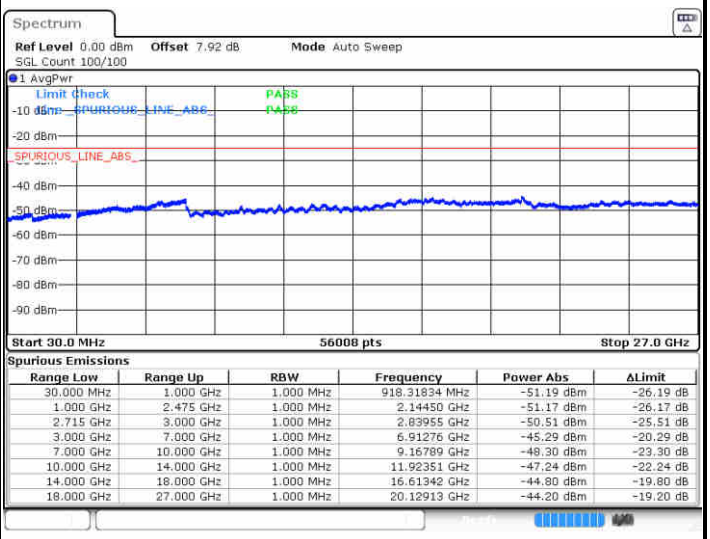


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.54723 MHz	-50.88 dBm	-25.88 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.65529 GHz	-51.20 dBm	-26.20 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.97102 GHz	-50.42 dBm	-25.42 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86127 GHz	-45.44 dBm	-20.44 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.14439 GHz	-48.11 dBm	-23.11 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.36645 GHz	-47.40 dBm	-22.40 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63392 GHz	-44.99 dBm	-19.99 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13513 GHz	-44.07 dBm	-19.07 dB

Date: 10.OCT.2017 21:11:06

Middle Channel / 16QAM

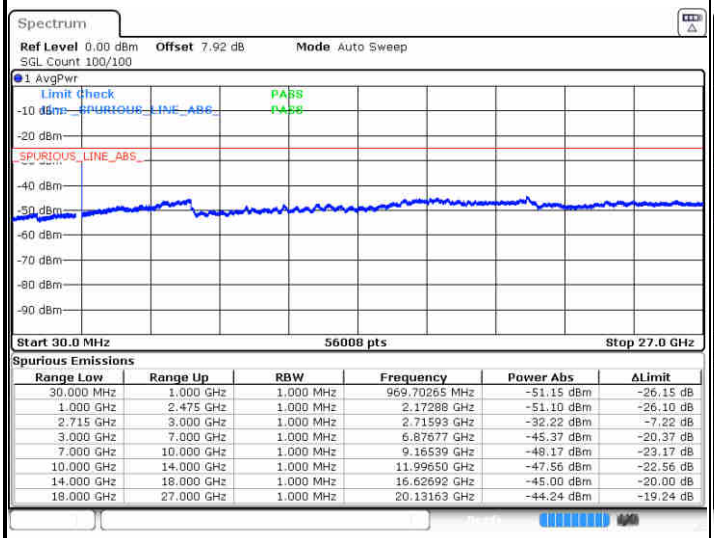


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	918.31834 MHz	-51.19 dBm	-26.19 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.14450 GHz	-51.17 dBm	-26.17 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.83955 GHz	-50.51 dBm	-25.51 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.91276 GHz	-45.29 dBm	-20.29 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16789 GHz	-48.30 dBm	-23.30 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.92351 GHz	-47.24 dBm	-22.24 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.61342 GHz	-44.80 dBm	-19.80 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12913 GHz	-44.20 dBm	-19.20 dB

Date: 10.OCT.2017 21:11:57

Highest Channel / QPSK

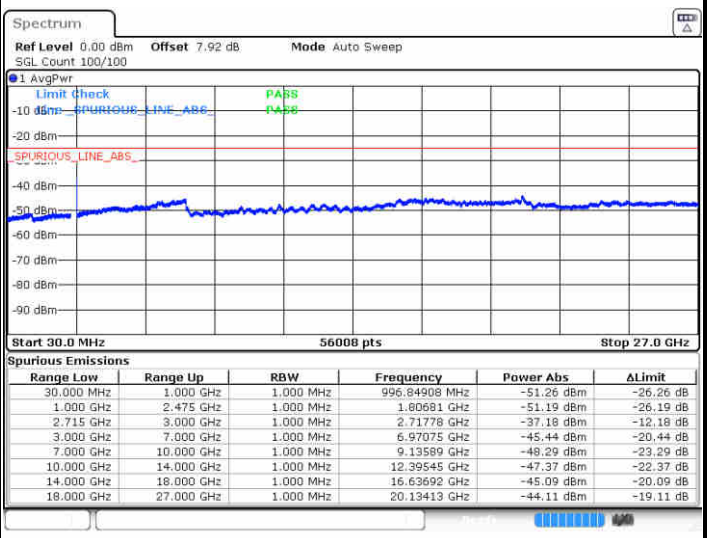


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.70265 MHz	-51.15 dBm	-26.15 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.17288 GHz	-51.10 dBm	-26.10 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.71593 GHz	-32.22 dBm	-7.22 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.87677 GHz	-45.37 dBm	-20.37 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16539 GHz	-48.17 dBm	-23.17 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.99650 GHz	-47.56 dBm	-22.56 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62692 GHz	-45.00 dBm	-20.00 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13163 GHz	-44.24 dBm	-19.24 dB

Date: 10.OCT.2017 21:13:45

Highest Channel / 16QAM



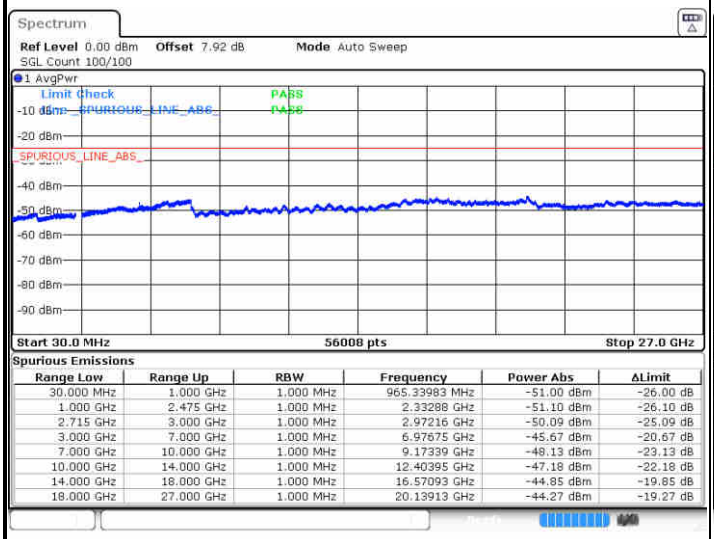
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.84908 MHz	-51.26 dBm	-26.26 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.80681 GHz	-51.19 dBm	-26.19 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.71778 GHz	-37.18 dBm	-12.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97075 GHz	-45.44 dBm	-20.44 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.13589 GHz	-48.29 dBm	-23.29 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.39545 GHz	-47.37 dBm	-22.37 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63692 GHz	-45.09 dBm	-20.09 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13413 GHz	-44.11 dBm	-19.11 dB

Date: 10.OCT.2017 21:14:35

LTE Band 41 / 15MHz

Lowest Channel / QPSK

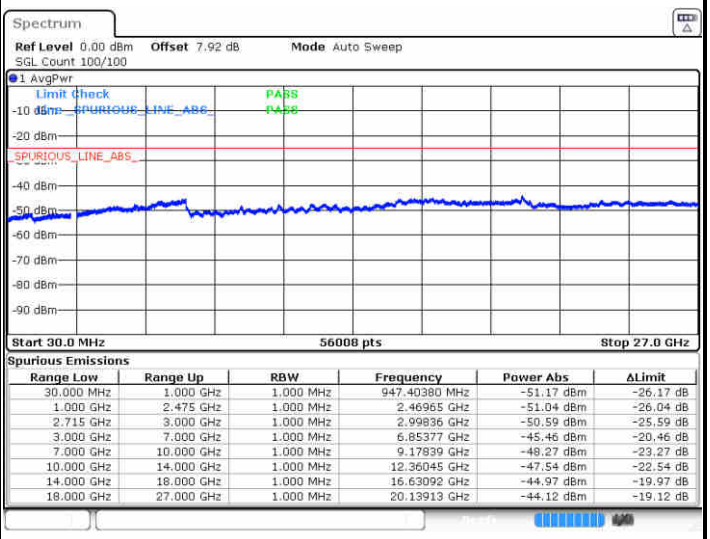


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	965.33983 MHz	-51.00 dBm	-26.00 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.33288 GHz	-51.10 dBm	-26.10 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.97216 GHz	-50.09 dBm	-25.09 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97675 GHz	-45.67 dBm	-20.67 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17339 GHz	-48.13 dBm	-23.13 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.40395 GHz	-47.18 dBm	-22.18 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.57093 GHz	-44.85 dBm	-19.85 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13913 GHz	-44.27 dBm	-19.27 dB

Date: 10.OCT.2017 21:23:35

Lowest Channel / 16QAM

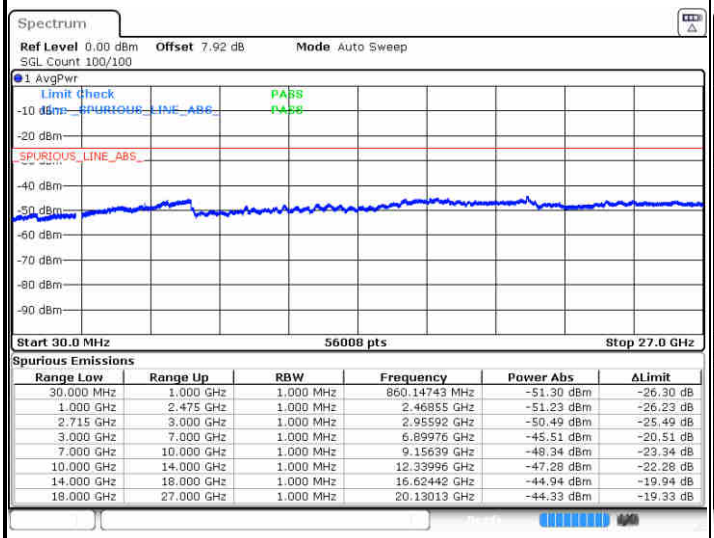


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	947.40380 MHz	-51.17 dBm	-26.17 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.46965 GHz	-51.04 dBm	-26.04 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99836 GHz	-50.59 dBm	-25.59 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85377 GHz	-45.46 dBm	-20.46 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17839 GHz	-48.27 dBm	-23.27 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.36045 GHz	-47.54 dBm	-22.54 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63092 GHz	-44.97 dBm	-19.97 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13913 GHz	-44.12 dBm	-19.12 dB

Date: 10.OCT.2017 21:22:47

Middle Channel / QPSK

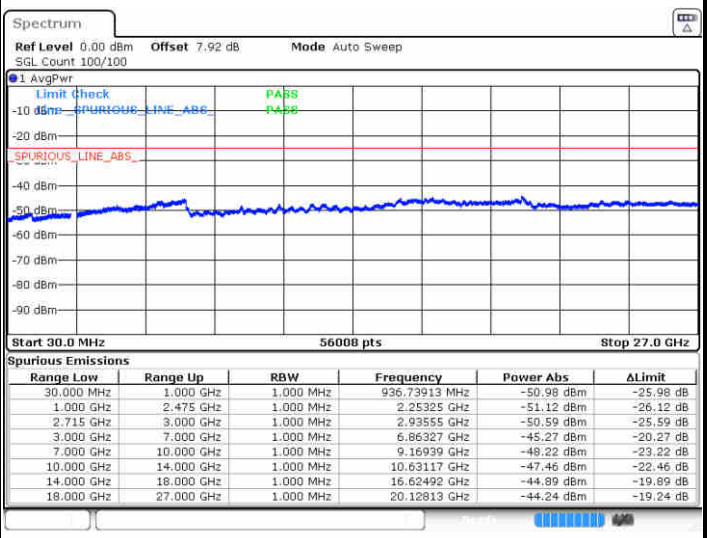


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	860.14743 MHz	-51.30 dBm	-26.30 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.46855 GHz	-51.23 dBm	-26.23 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.95592 GHz	-50.49 dBm	-25.49 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.89976 GHz	-45.51 dBm	-20.51 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.15639 GHz	-48.34 dBm	-23.34 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.33996 GHz	-47.28 dBm	-22.28 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62442 GHz	-44.94 dBm	-19.94 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13013 GHz	-44.33 dBm	-19.33 dB

Date: 10.OCT.2017 21:19:10

Middle Channel / 16QAM



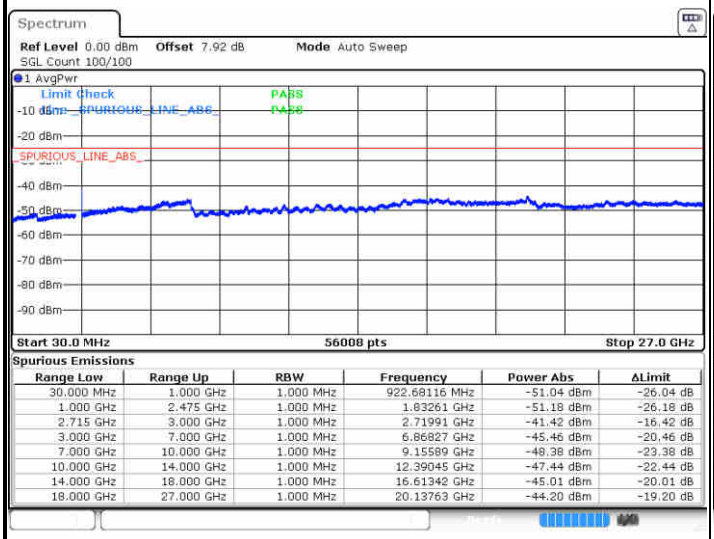
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	936.73913 MHz	-50.98 dBm	-25.98 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.25325 GHz	-51.12 dBm	-26.12 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.93555 GHz	-50.59 dBm	-25.59 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86327 GHz	-45.27 dBm	-20.27 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16939 GHz	-48.22 dBm	-23.22 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.63117 GHz	-47.46 dBm	-22.46 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62492 GHz	-44.89 dBm	-19.89 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12813 GHz	-44.24 dBm	-19.24 dB

Date: 10.OCT.2017 21:19:59

LTE Band 41 / 15MHz

Highest Channel / QPSK

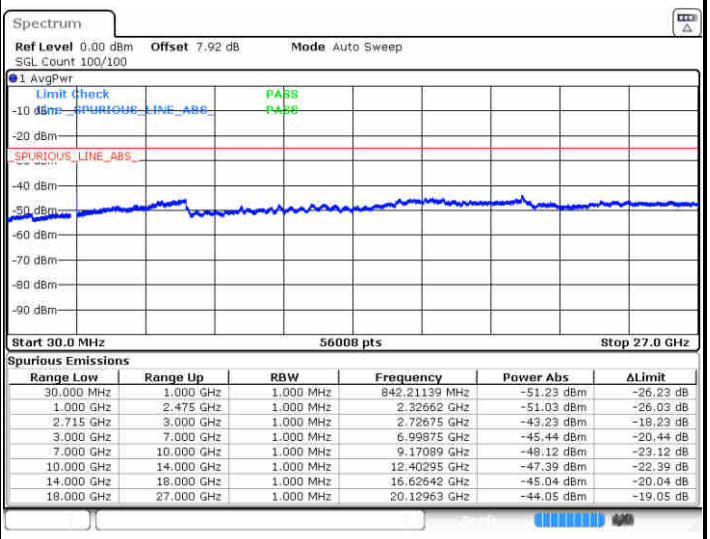


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	922.68116 MHz	-51.04 dBm	-26.04 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.83261 GHz	-51.18 dBm	-26.18 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.71991 GHz	-41.42 dBm	-16.42 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86827 GHz	-45.46 dBm	-20.46 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.15589 GHz	-48.38 dBm	-23.38 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.39045 GHz	-47.44 dBm	-22.44 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.61342 GHz	-45.01 dBm	-20.01 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13763 GHz	-44.20 dBm	-19.20 dB

Date: 10.OCT.2017 21:24:24

Highest Channel / 16QAM



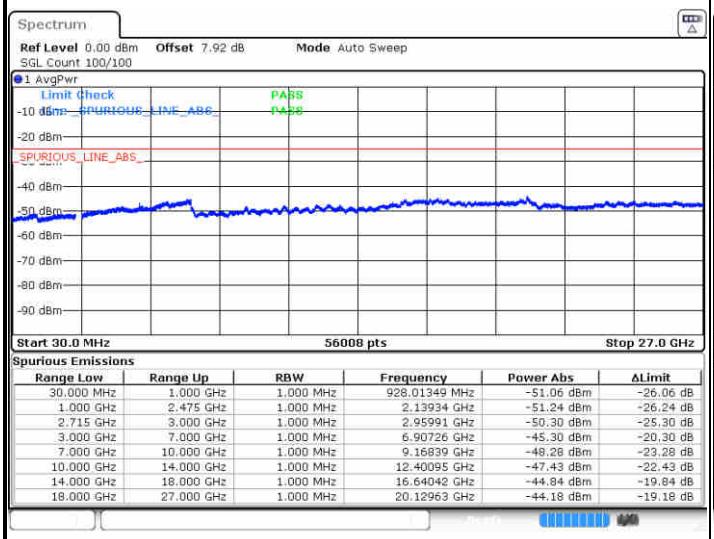
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	842.21139 MHz	-51.23 dBm	-26.23 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.32662 GHz	-51.03 dBm	-26.03 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.72675 GHz	-43.23 dBm	-18.23 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99875 GHz	-45.44 dBm	-20.44 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17089 GHz	-48.12 dBm	-23.12 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.40295 GHz	-47.39 dBm	-22.39 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62642 GHz	-45.04 dBm	-20.04 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12963 GHz	-44.05 dBm	-19.05 dB

Date: 10.OCT.2017 21:25:13

LTE Band 41 / 20MHz

Lowest Channel / QPSK

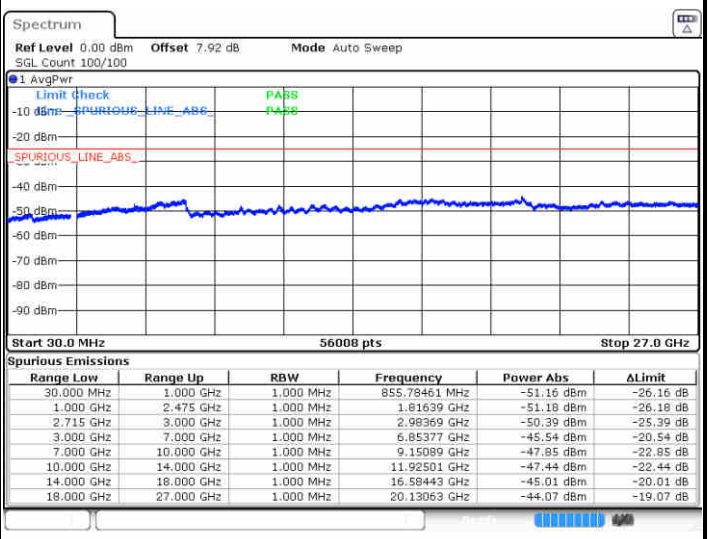


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	928.01349 MHz	-51.06 dBm	-26.06 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.13934 GHz	-51.24 dBm	-26.24 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.95991 GHz	-50.30 dBm	-25.30 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90726 GHz	-45.30 dBm	-20.30 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16839 GHz	-48.28 dBm	-23.28 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.40095 GHz	-47.43 dBm	-22.43 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.64042 GHz	-44.84 dBm	-19.84 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12963 GHz	-44.18 dBm	-19.18 dB

Date: 10.OCT.2017 21:26:56

Lowest Channel / 16QAM



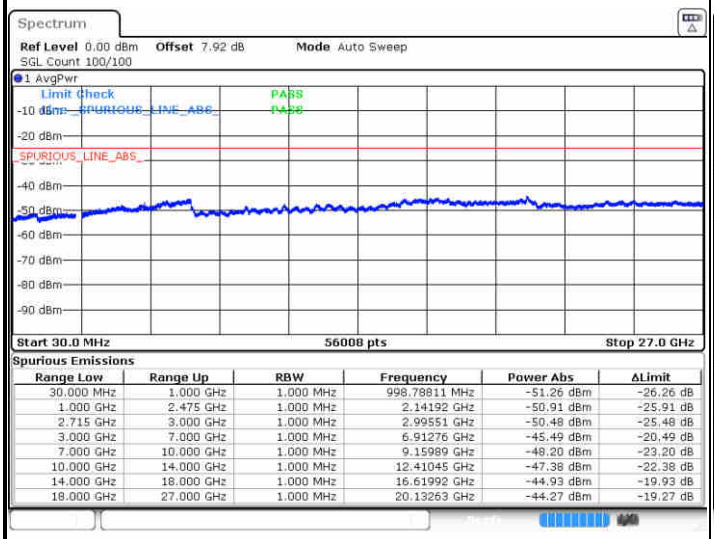
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	855.78461 MHz	-51.16 dBm	-26.16 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.81639 GHz	-51.18 dBm	-26.18 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.98369 GHz	-50.39 dBm	-25.39 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85377 GHz	-45.54 dBm	-20.54 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.15089 GHz	-47.85 dBm	-22.85 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.92501 GHz	-47.44 dBm	-22.44 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.58443 GHz	-45.01 dBm	-20.01 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13063 GHz	-44.07 dBm	-19.07 dB

Date: 10.OCT.2017 21:27:58

LTE Band 41 / 20MHz

Middle Channel / QPSK

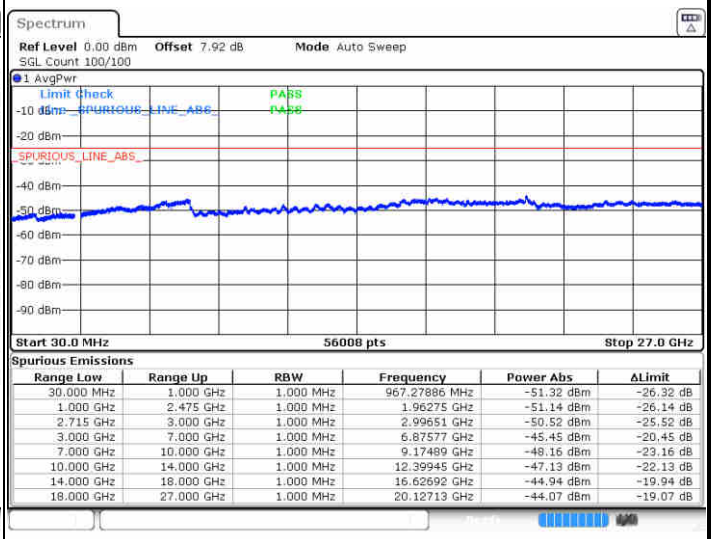


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	998.78811 MHz	-51.26 dBm	-26.26 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.14192 GHz	-50.91 dBm	-25.91 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99551 GHz	-50.48 dBm	-25.48 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.91276 GHz	-45.49 dBm	-20.49 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.15989 GHz	-48.20 dBm	-23.20 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.41045 GHz	-47.38 dBm	-22.38 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.61992 GHz	-44.93 dBm	-19.93 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.13263 GHz	-44.27 dBm	-19.27 dB

Date: 10.OCT.2017 21:29:39

Middle Channel / 16QAM

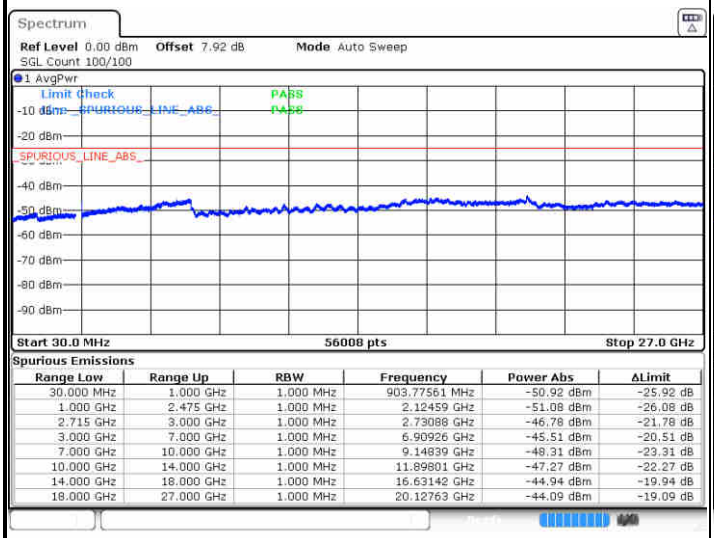


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	967.27886 MHz	-51.32 dBm	-26.32 dB
1.000 GHz	2.475 GHz	1.000 MHz	1.96275 GHz	-51.14 dBm	-26.14 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.99651 GHz	-50.52 dBm	-25.52 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.87577 GHz	-45.45 dBm	-20.45 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.17489 GHz	-48.16 dBm	-23.16 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.39945 GHz	-47.13 dBm	-22.13 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.62692 GHz	-44.94 dBm	-19.94 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12713 GHz	-44.07 dBm	-19.07 dB

Date: 10.OCT.2017 21:30:28

Highest Channel / QPSK

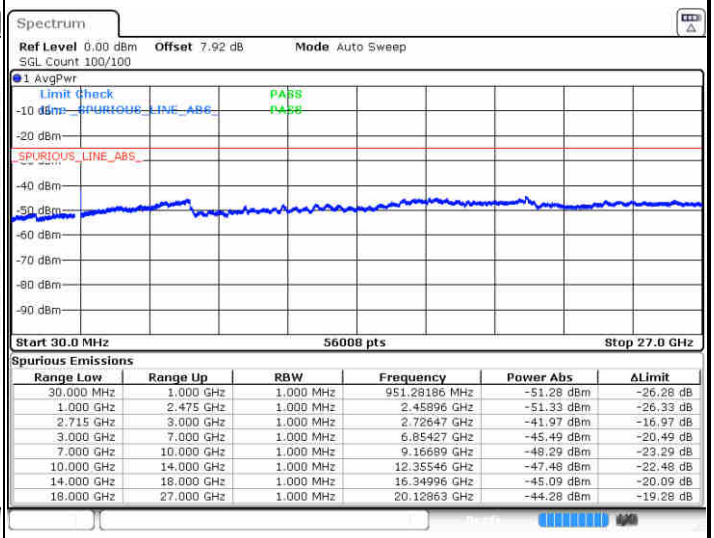


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	903.77561 MHz	-50.92 dBm	-25.92 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.12459 GHz	-51.08 dBm	-26.08 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.73088 GHz	-46.78 dBm	-21.78 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90926 GHz	-45.51 dBm	-20.51 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.14839 GHz	-48.31 dBm	-23.31 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.89801 GHz	-47.27 dBm	-22.27 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.63142 GHz	-44.94 dBm	-19.94 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12763 GHz	-44.09 dBm	-19.09 dB

Date: 10.OCT.2017 21:32:30

Highest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-51.28 dBm	-26.28 dB
1.000 GHz	2.475 GHz	1.000 MHz	2.45896 GHz	-51.33 dBm	-26.33 dB
2.715 GHz	3.000 GHz	1.000 MHz	2.72647 GHz	-41.97 dBm	-16.97 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85427 GHz	-45.49 dBm	-20.49 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.16689 GHz	-48.29 dBm	-23.29 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.35546 GHz	-47.48 dBm	-22.48 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.34996 GHz	-45.09 dBm	-20.09 dB
18.000 GHz	27.000 GHz	1.000 MHz	20.12863 GHz	-44.28 dBm	-19.28 dB

Date: 10.OCT.2017 21:33:26

Frequency Stability

Test Conditions		LTE Band 41 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0005	PASS
40	Normal Voltage	0.0022	
30	Normal Voltage	0.0002	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0014	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0002	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0024	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0019	
20	Battery End Point	0.0004	

Note:

1. Normal Voltage =3.85 V.；Battery End Point (BEP) =3.6 V.；Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 41 / 5MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5180	-51.44	-25	-26.44	-39.90	-57.99	2.56	9.12	H
	7772	-46.62	-25	-21.62	-41.13	-55.13	3.45	11.97	H
	10364	-50.04	-25	-25.04	-49.79	-58.52	3.62	12.10	H
	5180	-53.08	-25	-28.08	-41.37	-59.64	2.56	9.12	V
	7772	-52.89	-25	-27.89	-45.87	-61.40	3.45	11.97	V
	10364	-53.31	-25	-28.31	-53.56	-61.79	3.62	12.10	V

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

LTE Band 41 / 10MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5177	-48.35	-25	-23.35	-37.92	-54.91	2.56	9.12	H
	7766	-43.50	-25	-18.50	-38.89	-52.02	3.45	11.97	H
	10352	-49.27	-25	-24.27	-49.02	-57.75	3.62	12.10	H
	5177	-48.32	-25	-23.32	-38.3	-54.88	2.56	9.12	V
	7766	-50.98	-25	-25.98	-44.47	-59.50	3.45	11.97	V
	10352	-50.24	-25	-25.24	-50.49	-58.72	3.62	12.10	V

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

LTE Band 41 / 15MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5171	-47.50	-25	-22.50	-37.26	-54.06	2.56	9.12	H
	7760	-47.18	-25	-22.18	-41.50	-55.69	3.45	11.97	H
	10344	-47.25	-25	-22.25	-47.00	-55.73	3.62	12.10	H
	5171	-49.56	-25	-24.56	-39.21	-56.12	2.56	9.12	V
	7760	-55.73	-25	-30.73	-48.71	-64.24	3.45	11.97	V
	10344	-51.47	-25	-26.47	-51.72	-59.95	3.62	12.10	V

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

LTE Band 41 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5168	-47.36	-25	-22.36	-37.14	-53.91	2.56	9.12	H
	7751	-46.88	-25	-21.88	-41.26	-55.39	3.45	11.97	H
	10336	-49.00	-25	-24.00	-48.75	-57.48	3.62	12.10	H
	5168	-47.10	-25	-22.10	-37.34	-53.65	2.56	9.12	V
	7751	-52.94	-25	-27.94	-45.92	-61.45	3.45	11.97	V
	10336	-52.18	-25	-27.18	-52.43	-60.66	3.62	12.10	V

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