FCC RF Test Report

APPLICANT	:	TCL Communication Ltd.
EQUIPMENT	:	GSM Quad-band / UMTS Quad-band / LTE hexa-band mobile phone
BRAND NAME	:	alcatel
MODEL NAME	:	6055P
FCC ID	:	2ACCJA019
STANDARD	:	47 CFR Part 2, 27(M)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Mar. 31, 2016 and completely tested on May 10, 2016. 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.

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG611504-04B	Rev. 01	Initial issue of report	May 26, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	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 7)	§27.53(m)(4)	PASS	-
3.8	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	< $55+10\log_{10}$(P[Watts])	PASS	-
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7)	EIRP < 2Watt	PASS	-
4.5	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	< $55+10\log_{10}$(P[Watts])	PASS	Under limit 17.98 dB at 7586.000 MHz

1 General Description

1.1 Applicant

TCL Communication Ltd.
5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P. R. China. 201203

1.2 Manufacturer

TCL Communication Ltd.
5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P. R. China. 201203

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	GSM Quad-band / UMTS Quad-band / LTE hexa-band mobile phone
Brand Name	alcatel
Model Name	6055P
FCC ID	2ACCJA019
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/ HSPA+(16QAM uplink is not supported)/DC-HSDPA/LTE/NFC WLAN2.4GHz 802.11b/g/n HT20/HT40 WLAN5GHz 802.11a/n HT20/HT40 Bluetooth v3.0+EDR Bluetooth v4.0/4.2 LE
IMEI Code	Conducted: 358476070060990/ 358476070061006 Radiation: 358476070016265/358476070016273 for Battery 1 358476070017446/358476070017461 for Battery 2 EIRP: 358476070058770/358476070058788 for Battery 1 358476070060735/358476070060743 for Battery 2
HW Version	PIO
SW Version	A2E
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz
Rx Frequency	LTE Band 7 : 2622.5MHz ~ 2687.5 MHz
Bandwidth	LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 7 : 21.31 dBm
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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

1.6 Maximum EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 7	QPSK			16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M49G7D	-	0.1888	4M49W7D	-	0.1479
10	9M11G7D	0.0031	0.1854	9M07W7D	-	0.1452
15	13M5G7D	-	0.2104	13M5W7D	-	0.1503
20	18M3G7D	-	0.1941	18M3W7D	-	0.1507

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		FCC Registration No.
	TH01-KS	03CH02-KS	418269

1.8 Applicable Standards

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

- 47 CFR Part 2, 27(M)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

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.

1.9 Specification of Accessory

Specification of Accessory				
AC Adapter 1	Brand Name	ALCATEL onetouch	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 400mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AG0C2		
AC Adapter 2	Brand Name	ALCATEL onetouch	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 350mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AG0C4		
AC Adapter 3	Brand Name	N/A	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AG4C1		
AC Adapter 4	Brand Name	alcatel	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 350mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AGAC4		
AC Adapter 5	Brand Name	alcatel	Model Name	UC13US
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA		
	P/N	CBA0059AGAC1		
Battery 1	Brand Name	ALCATEL onetouch	Model Name	TLp026EJ
	Power Rating	3.85Vdc, 2610mAh		
Battery 2	Brand Name	ALCATEL onetouch	Model Name	TLp026E2
	Power Rating	3.84Vdc, 2610mAh		
Battery 3	Brand Name	alcatel	Model Name	TLp026EJ
	Power Rating	3.85Vdc, 2610mAh		
Battery 4	Brand Name	alcatel	Model Name	TLp026E2
	Power Rating	3.84Vdc, 2610mAh		
USB Cable 1	Brand Name	N/A	Model Name	CDA0000043C8
	Signal Line Type	1.0m shielded without core		
USB Cable 2	Brand Name	N/A	Model Name	CDA0000043C2
	Signal Line Type	1.0m shielded without core		
Earphone 1	Brand Name	alcatel	Model Name	J22C
	Signal Line Type	1.4m non-shielded without core		
	P/N	CCB0029A10CC		
Earphone 2	Brand Name	alcatel	Model Name	J22H
	Signal Line Type	1.0m non-shielded without core		
	P/N	CCB0047A10CC		

Note: The adapter 4, 5 and battery 3, 4 are just with different logo, all the designs are identical with adapter 2, 3 and battery 1, 2.

2 Test Configuration of Equipment Under Test

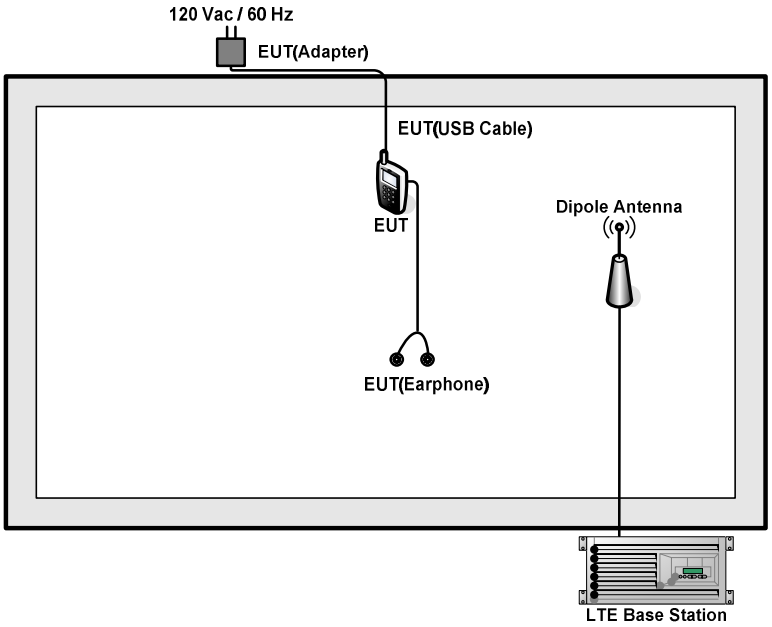
2.1 Test Mode

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	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	7	-	-				v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	7	-	-	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	7	-	-	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	7	-	-	v	v	v	v	v	v	v			v	v	v
Frequency Stability	7	-	-		v			v				v		v	
E.I.R.P.	7	-	-	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	7	-	-	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.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss 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 5.5 dB.

Example :

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

= 5.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 7 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

3 Conducted Test Items

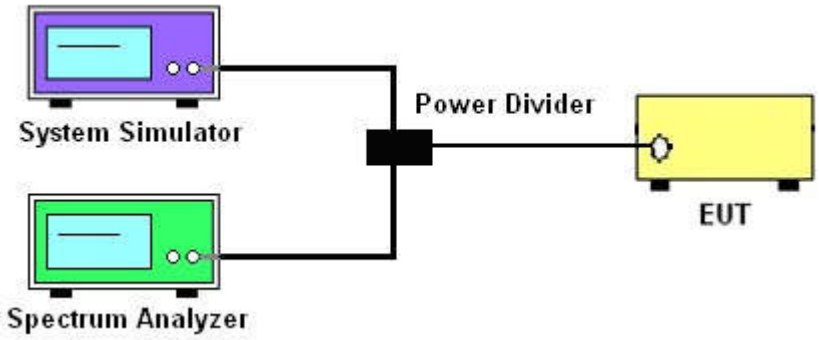
3.1 Measuring Instruments

See list of measuring instruments of this test report.

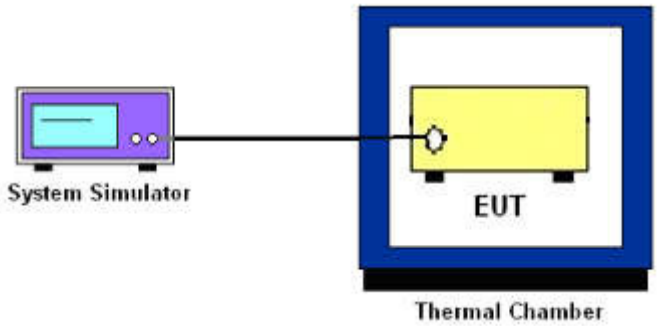
3.2 Test Setup

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

3.4.1 Description of the Conducted Output Power 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.

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 4.2.
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 FCC Band 7:

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. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

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

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

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

   = -13dBm.
9. For LTE Band 7, the other 40 dB, and 55 dB have additionally applied same calculation above.

   The limit line is derived from 40+ 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [40 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [40 + 10log(P)] (dB)

   = -10dBm

   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.

   The limit line is derived from 55+ 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [55 + 10log(P)] (dB)

   = [55 + 10log(P)] (dBm) - [55 + 10log(P)] (dB)

   = -25dBm

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 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. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. For Band 7

    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 25±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.

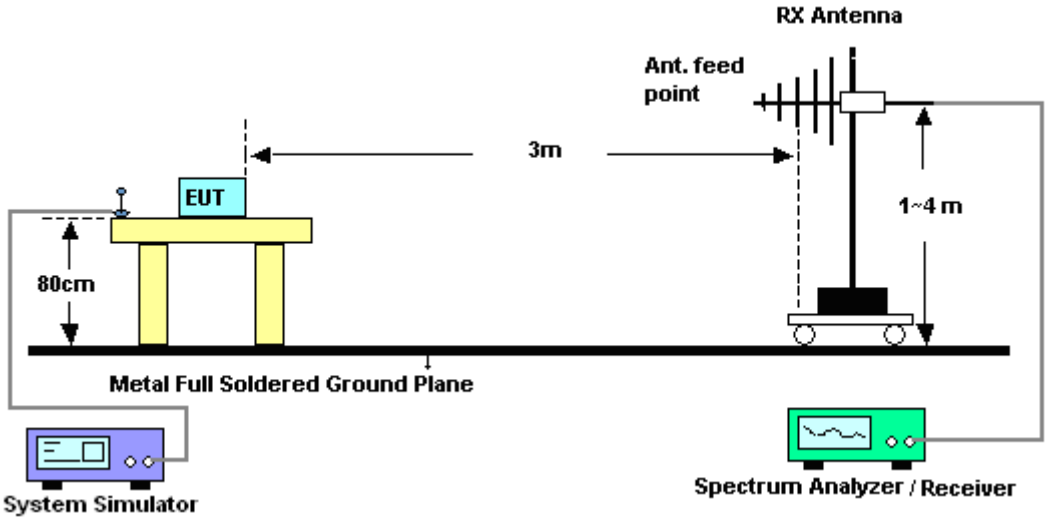
4 Radiated Test Items

4.1 Measuring Instruments

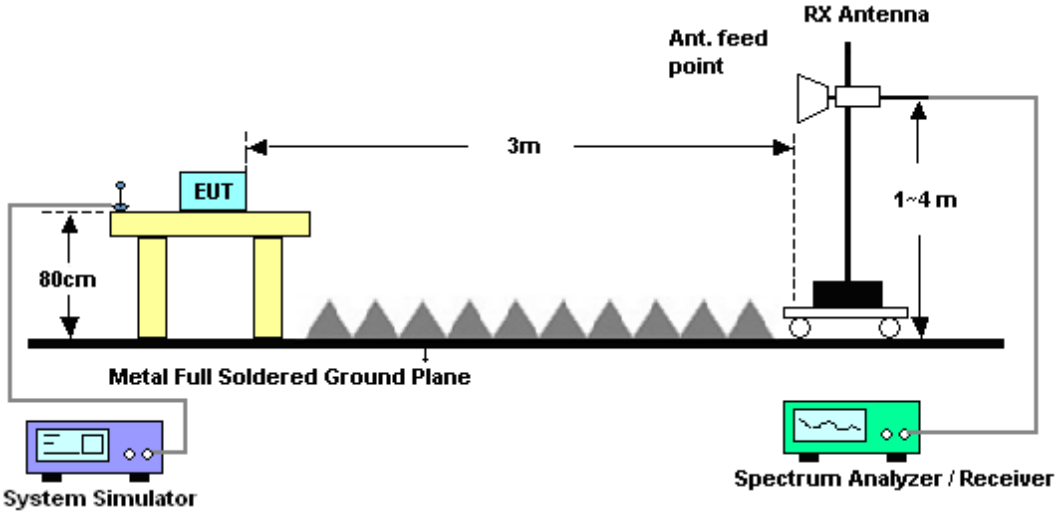
See list of measuring instruments of this test report.

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 Effective Isotropic Radiated Power

4.4.1 Description of the EIRP Measurement

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-D-2010, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band7.

4.4.2 Test Procedures

1. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
2. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP = LVL + Correction factor and ERP = EIRP - 2.15. Take the record of the output power at substitution antenna.

	LTE Average					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Average	Average	Average	Average	Average	Average
Average Type	Power	Power	Power	Power	Power	Power
Sweep Count	100	100	100	100	100	100

4.5 Radiated Spurious Emission

4.5.1 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 55 + 10 log (P) dB.

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

4.5.2 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 rotatable wooden table with 0.8 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was 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 one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. 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.
    For Band 7:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
12. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
13. 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	Sep. 10, 2015	Apr. 25, 2016	Sep. 09, 2016	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 24, 2015	Apr. 25, 2016	Oct. 23, 2016	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44G,MAX 30dB	Apr. 22, 2016	May 10, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	25MHz-2GHz	Mar. 12, 2016	May 10, 2016	Mar. 11, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 07, 2015	May 10, 2016	Nov. 06, 2016	Radiation (03CH02-KS)
SHF-EHF Horn	com-power	AH-840	101070	18Ghz-40Ghz	Oct. 10, 2015	May 10, 2016	Oct. 09, 2016	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz ~1000MHz / 32 dB	Apr. 22, 2016	May 10, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1-26.5GHz Gain 30dB	Oct. 24, 2015	May 10, 2016	Oct. 23, 2016	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	May 10, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	May 10, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	May 10, 2016	NCR	Radiation (03CH02-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))	**5.1 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	20.47	20.45	20.34
20	1	49		21.31	20.87	20.74
20	1	99		20.44	20.43	20.17
20	50	0		19.88	19.84	19.61
20	50	24		19.84	19.72	19.45
20	50	50		19.75	19.76	19.46
20	100	0		19.76	19.70	19.57
20	1	0	16-QAM	19.61	19.16	19.21
20	1	49		19.42	19.17	19.11
20	1	99		19.50	19.11	19.06
20	50	0		18.94	18.91	18.74
20	50	24		18.80	18.89	18.54
20	50	50		18.81	18.84	18.55
20	100	0		18.82	18.76	18.63
15	1	0	QPSK	20.76	20.78	20.68
15	1	37		20.98	21.02	20.73
15	1	74		20.78	20.70	20.55
15	36	0		19.83	19.67	19.53
15	36	20		19.76	19.75	19.64
15	36	39		19.83	19.73	19.53
15	75	0		19.81	19.74	19.57
15	1	0	16-QAM	19.64	19.39	19.24
15	1	37		19.70	19.36	19.29
15	1	74		19.32	19.10	19.05
15	36	0		18.79	18.73	18.59
15	36	20		18.71	18.67	18.54
15	36	39		18.80	18.80	18.52
15	75	0		18.86	18.75	18.67

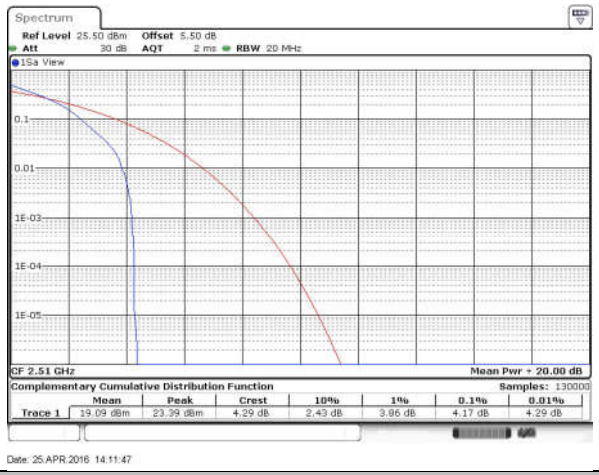
LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	20.55	20.52	20.36
10	1	25		21.06	21.01	20.71
10	1	49		20.53	20.41	20.18
10	25	0		19.99	19.66	19.49
10	25	12		19.94	19.77	19.56
10	25	25		19.87	19.72	19.44
10	50	0		19.86	19.73	19.55
10	1	0	16-QAM	19.63	19.23	18.99
10	1	25		19.59	19.72	18.97
10	1	49		19.56	19.07	18.91
10	25	0		19.16	18.93	18.67
10	25	12		18.87	18.84	18.38
10	25	25		18.71	18.75	18.54
10	50	0		18.84	18.81	18.58
5	1	0	QPSK	20.52	20.28	20.21
5	1	12		20.97	20.88	20.56
5	1	24		20.39	20.38	20.14
5	12	0		19.87	19.69	19.47
5	12	7		20.04	19.69	19.54
5	12	13		19.79	19.66	19.39
5	25	0		19.81	19.67	19.48
5	1	0	16-QAM	19.52	19.18	19.15
5	1	12		19.38	19.01	19.00
5	1	24		19.40	18.92	19.16
5	12	0		18.74	18.41	18.65
5	12	7		18.80	18.78	18.61
5	12	13		18.83	18.47	18.58
5	25	0		18.87	18.66	18.50

Peak-to-Average Ratio

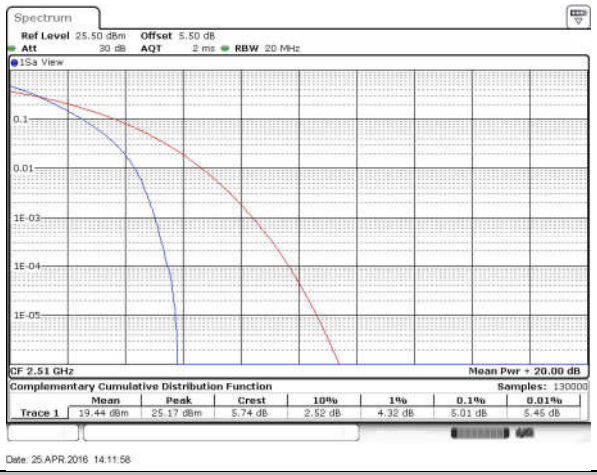
Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.17	5.01	5.30	6.03	PASS
Middle CH	4.52	5.07	5.71	6.14	
Highest CH	4.52	5.01	5.39	6.00	

LTE Band 7 / 20MHz / QPSK

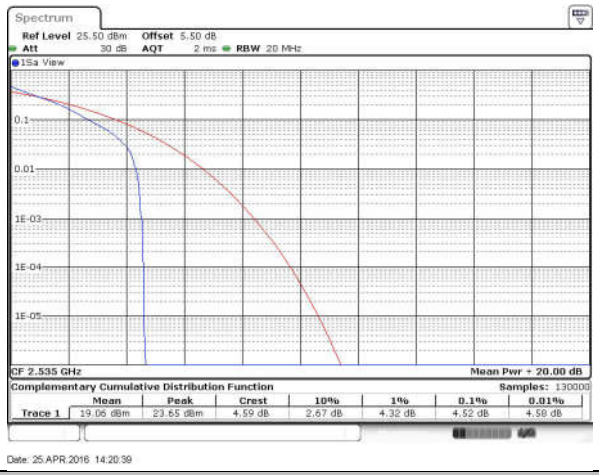
Lowest Channel / 1RB



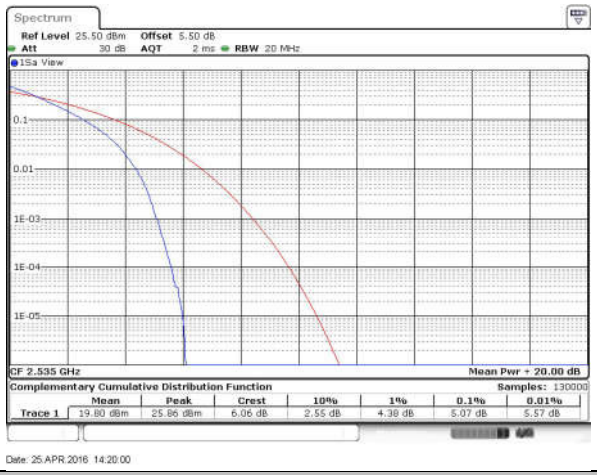
Lowest Channel / Full RB



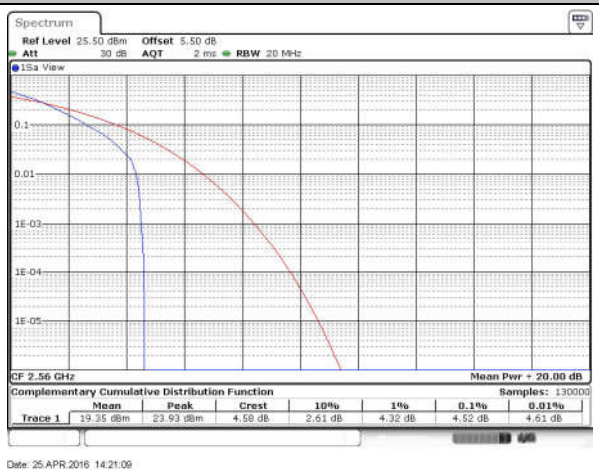
Middle Channel / 1RB



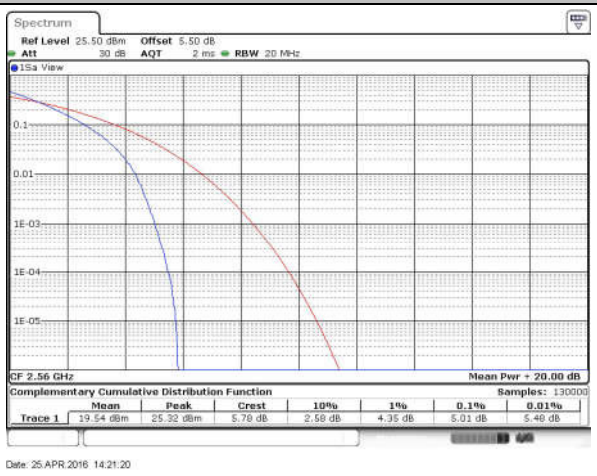
Middle Channel / Full RB



Highest Channel / 1RB

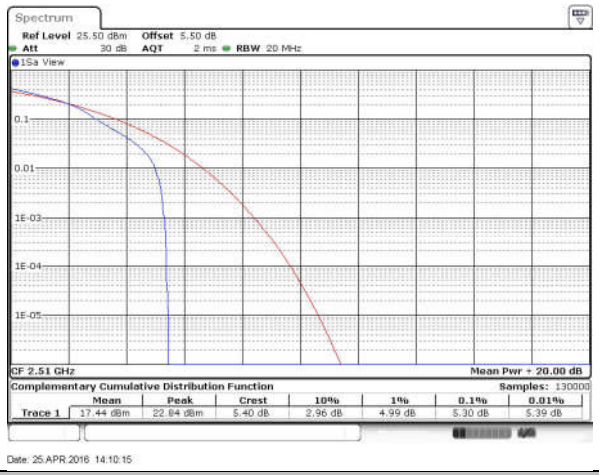


Highest Channel / Full RB

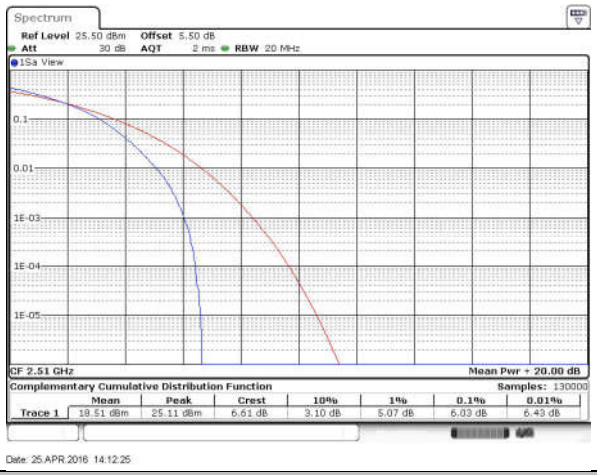


LTE Band 7 / 20MHz / 16QAM

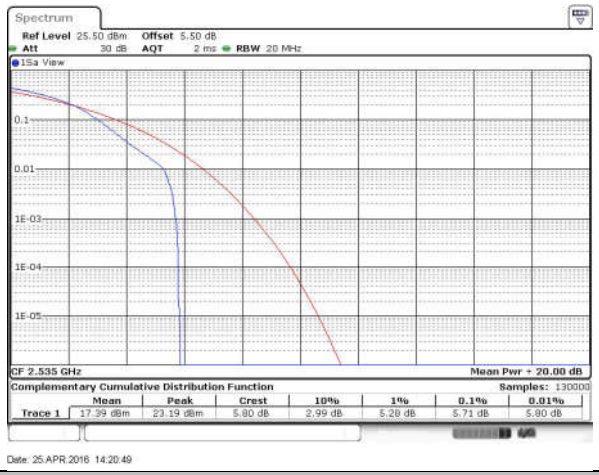
Lowest Channel / 1RB



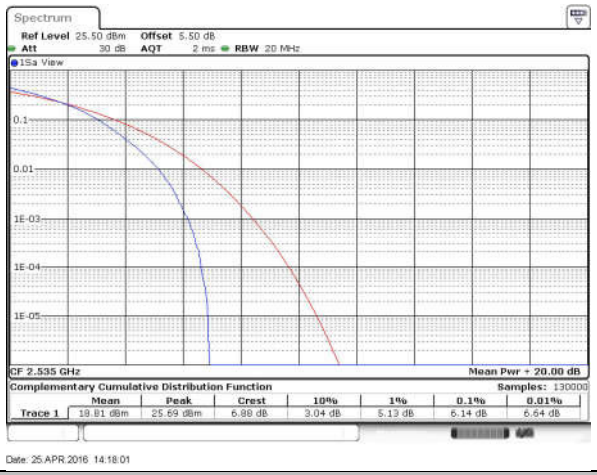
Lowest Channel / Full RB



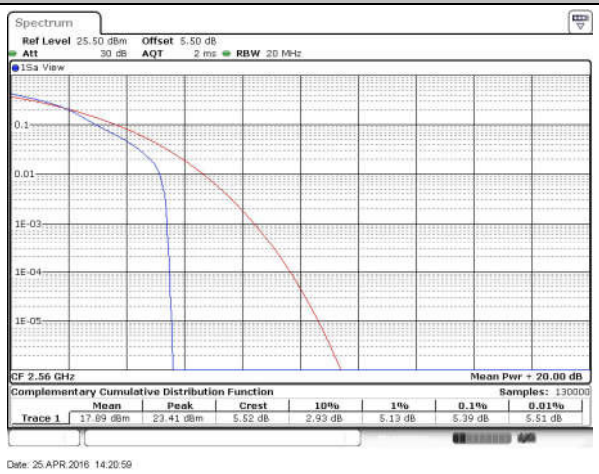
Middle Channel / 1RB



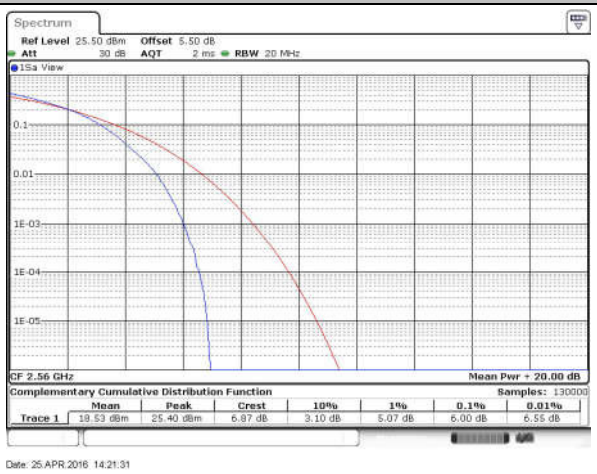
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB

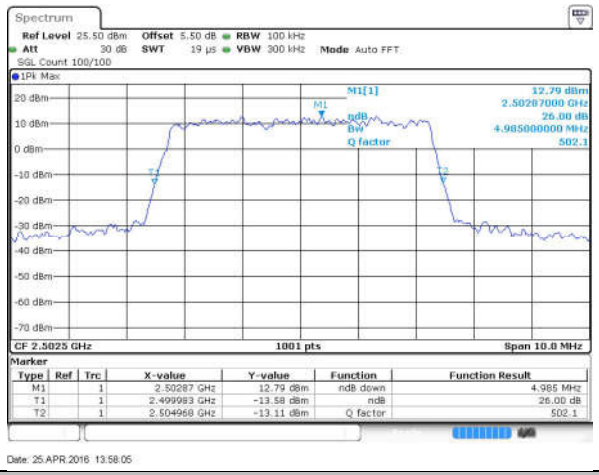


26dB Bandwidth

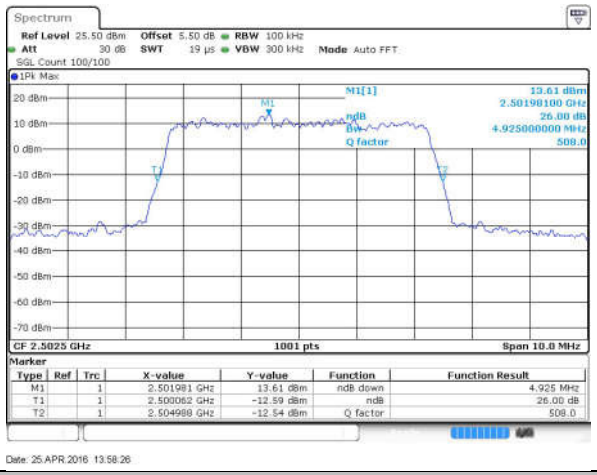
Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.99	4.93	9.73	9.65	14.51	14.51	19.98	20.06
Middle CH	-	-	-	-	4.86	4.91	9.67	9.75	14.48	14.54	20.14	20.22
Highest CH	-	-	-	-	4.91	4.90	9.77	9.71	14.60	14.24	20.14	20.02

LTE Band 7

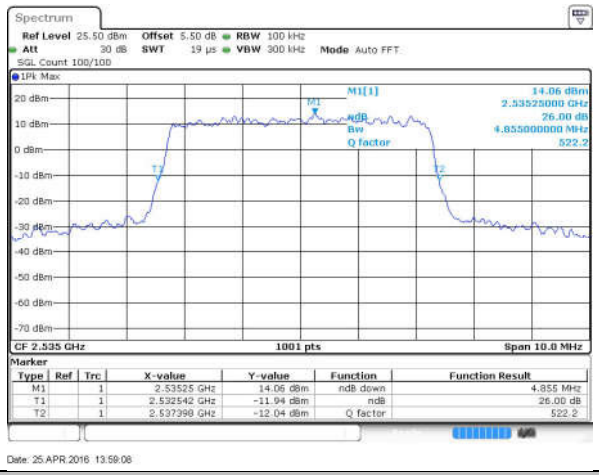
Lowest Channel / 5MHz / QPSK



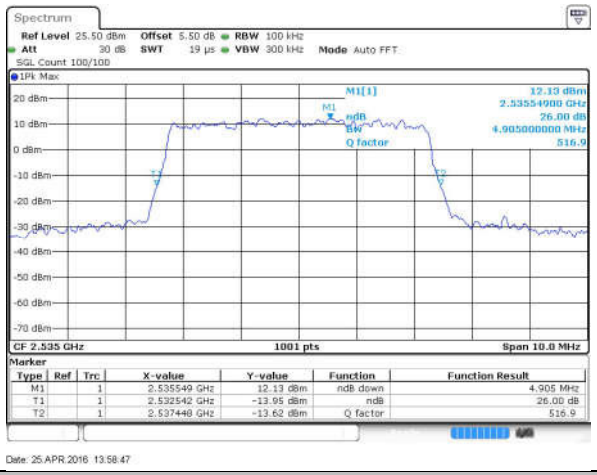
Lowest Channel / 5MHz / 16QAM



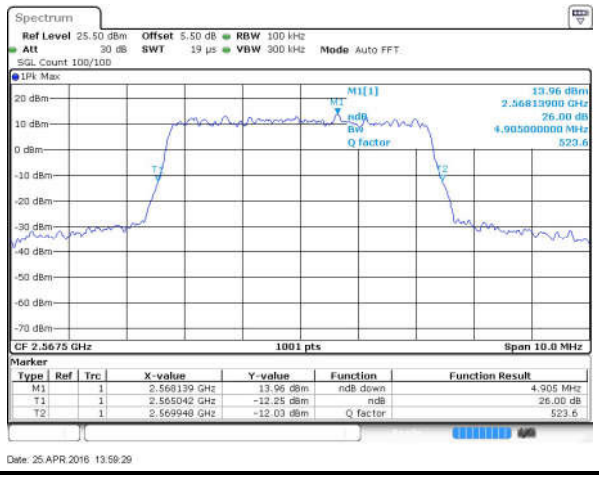
Middle Channel / 5MHz / QPSK



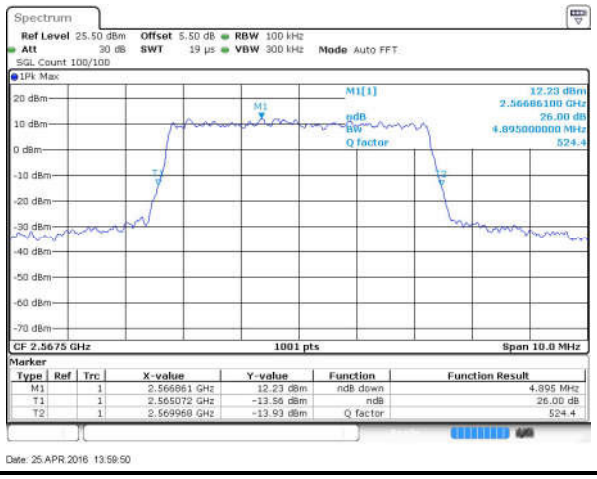
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

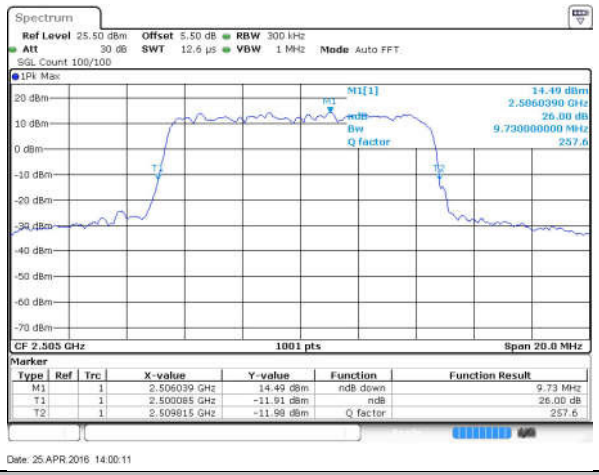


Highest Channel / 5MHz / 16QAM

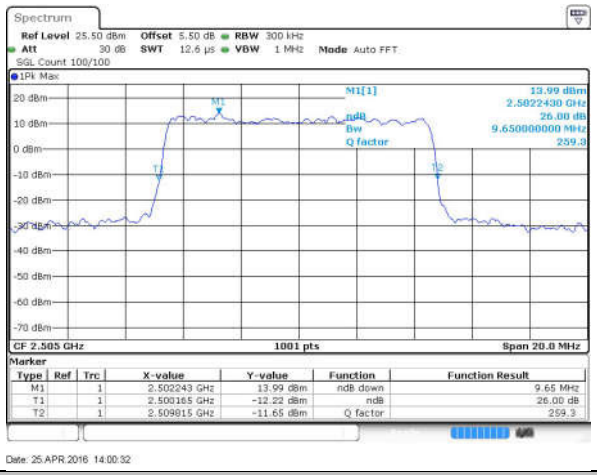


LTE Band 7

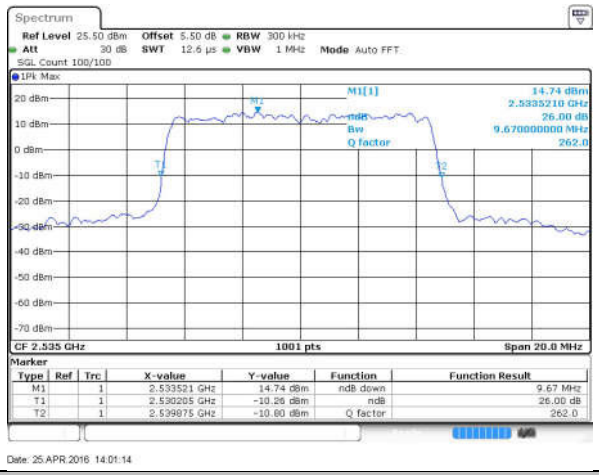
Lowest Channel / 10MHz / QPSK



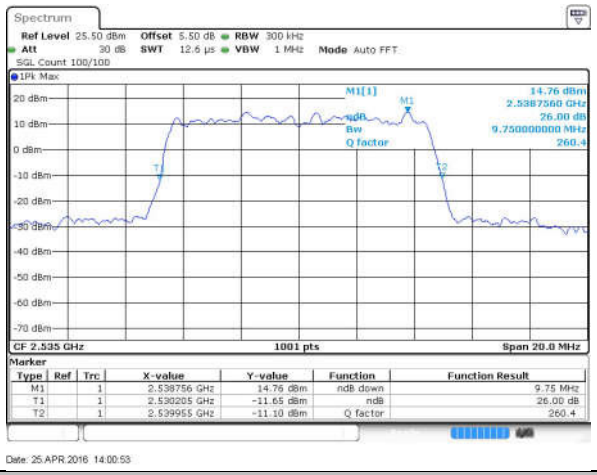
Lowest Channel / 10MHz / 16QAM



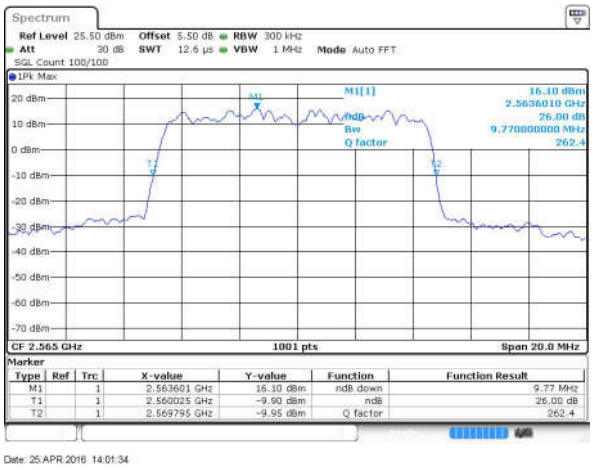
Middle Channel / 10MHz / QPSK



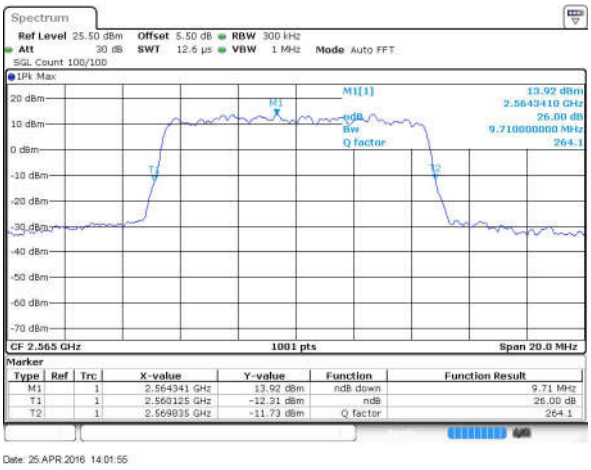
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

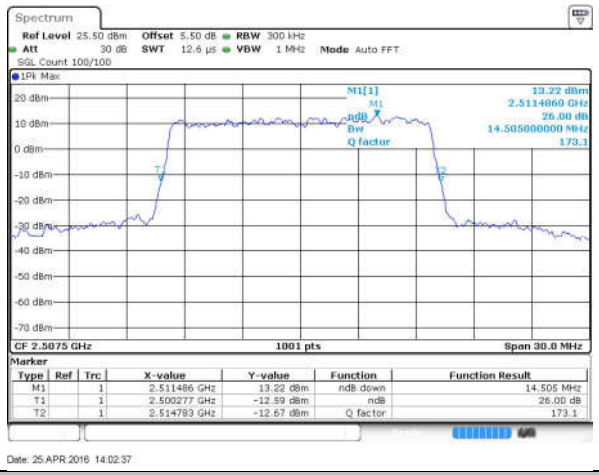


Highest Channel / 10MHz / 16QAM

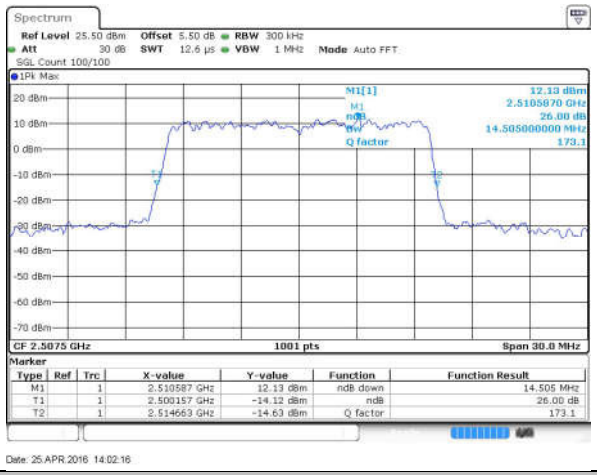


LTE Band 7

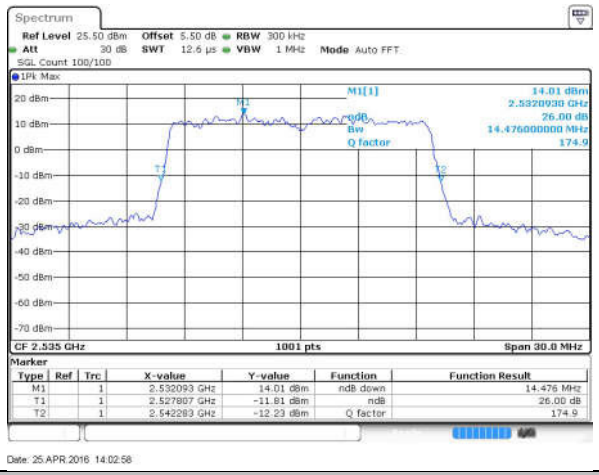
Lowest Channel / 15MHz / QPSK



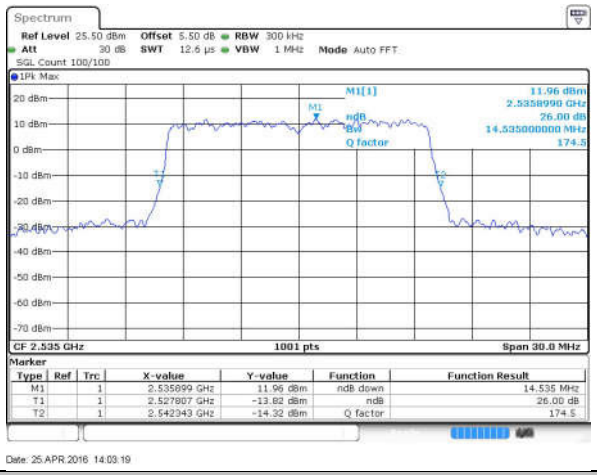
Lowest Channel / 15MHz / 16QAM



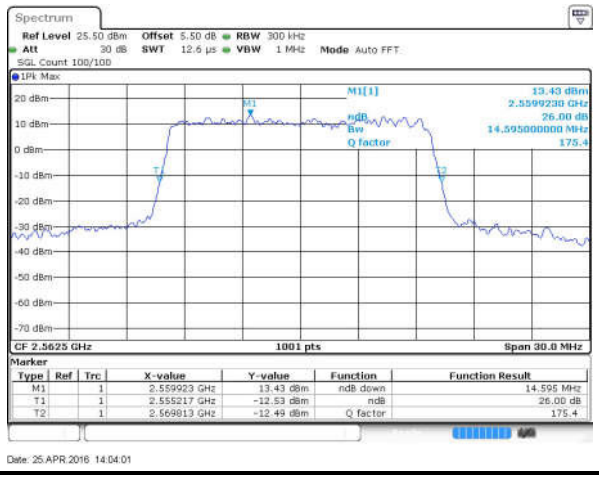
Middle Channel / 15MHz / QPSK



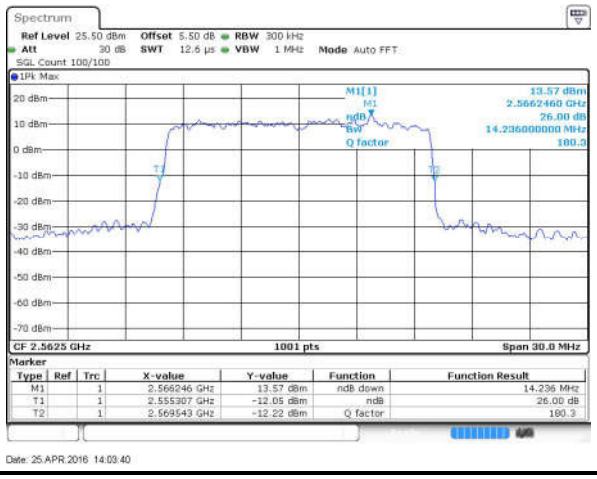
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

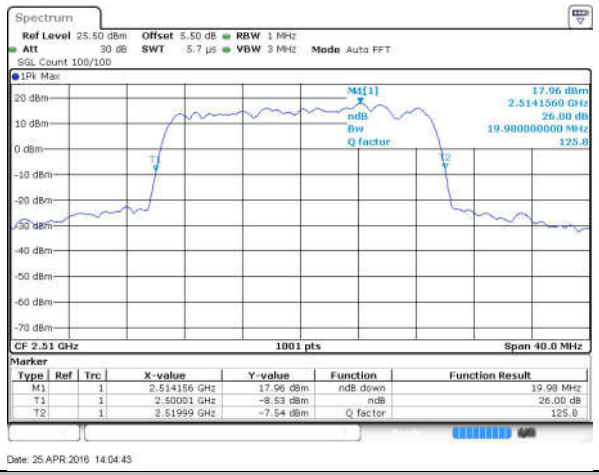


Highest Channel / 15MHz / 16QAM

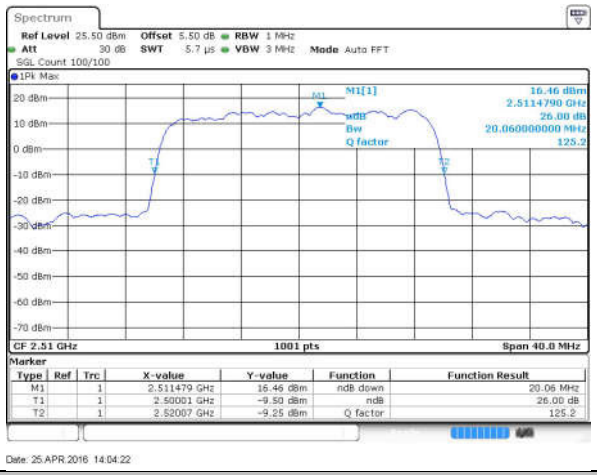


LTE Band 7

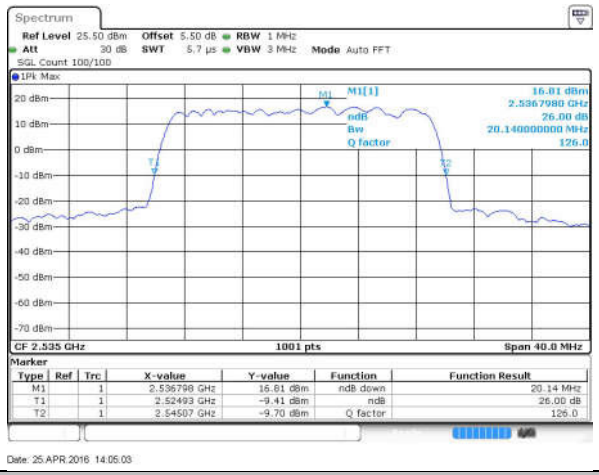
Lowest Channel / 20MHz / QPSK



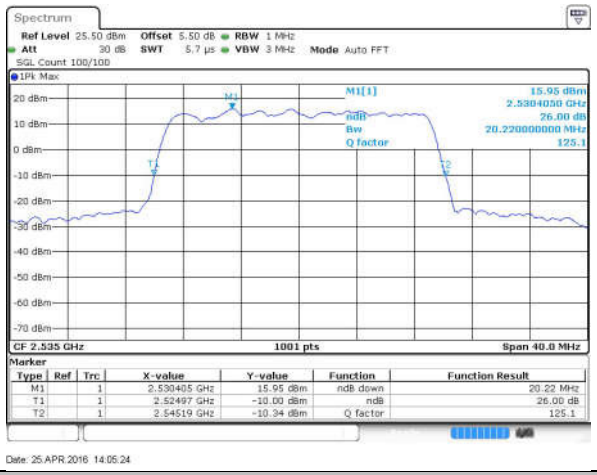
Lowest Channel / 20MHz / 16QAM



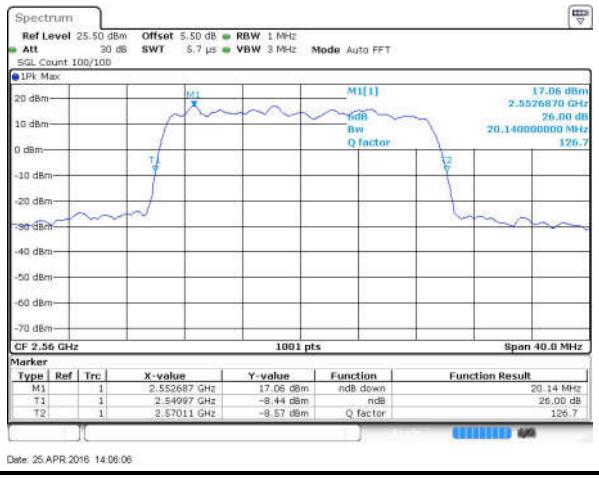
Middle Channel / 20MHz / QPSK



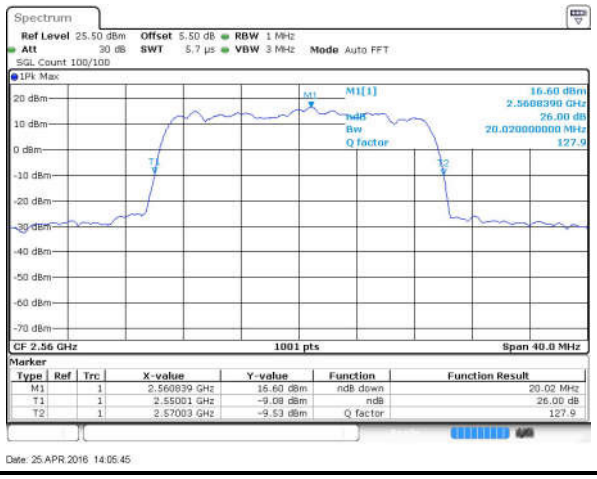
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



Highest Channel / 20MHz / 16QAM

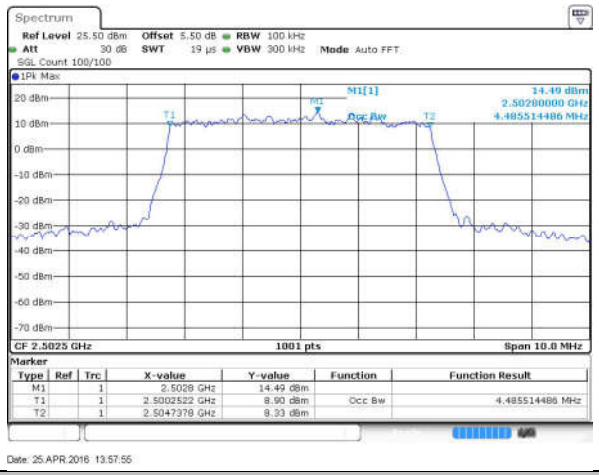


Occupied Bandwidth

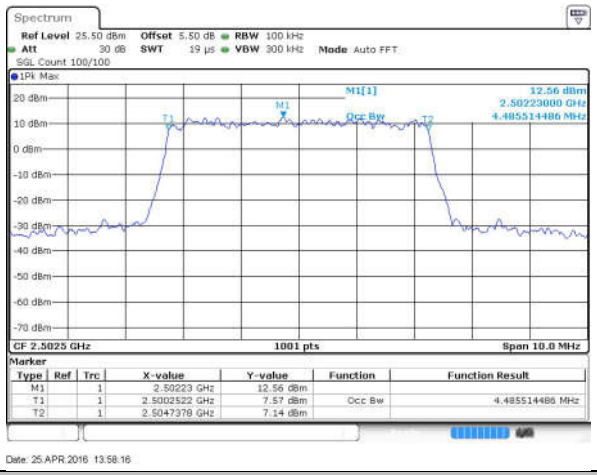
Mode	LTE Band 7 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.49	4.49	9.03	9.07	13.43	13.40	18.26	18.34
Middle CH	-	-	-	-	4.49	4.47	8.97	9.01	13.49	13.46	18.26	18.34
Highest CH	-	-	-	-	4.48	4.48	9.11	8.97	13.46	13.40	18.18	18.18

LTE Band 7

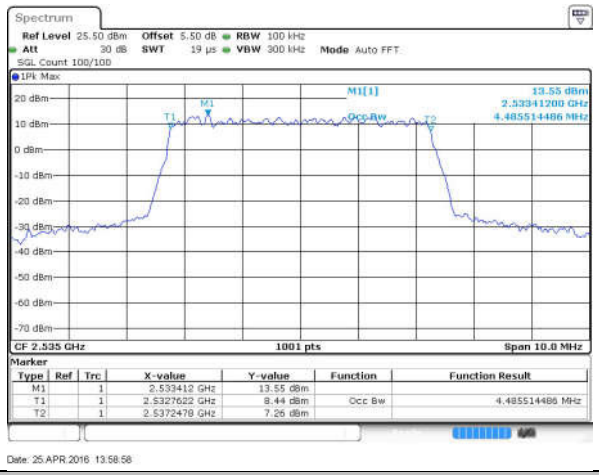
Lowest Channel / 5MHz / QPSK



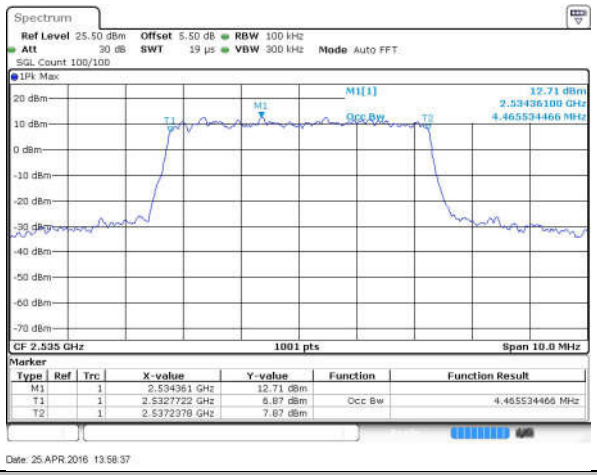
Lowest Channel / 5MHz / 16QAM



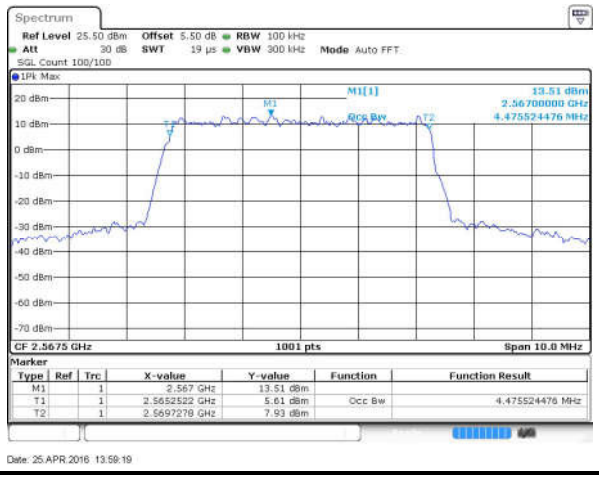
Middle Channel / 5MHz / QPSK



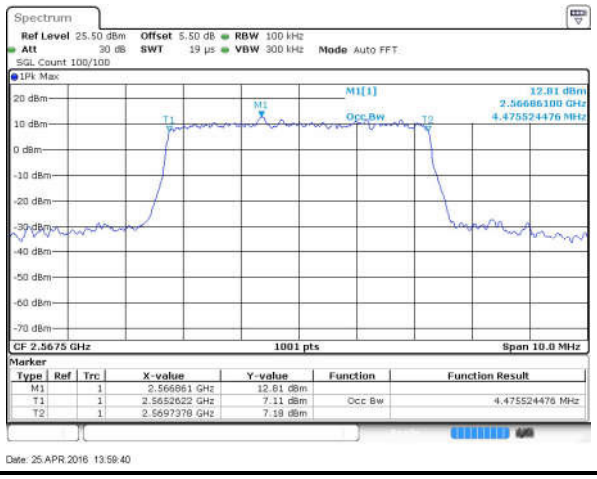
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

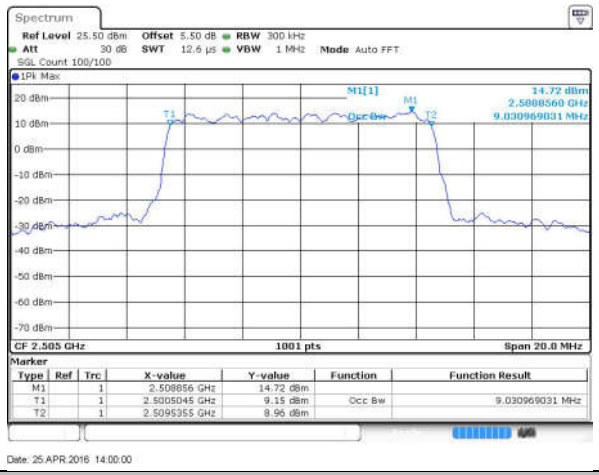


Highest Channel / 5MHz / 16QAM

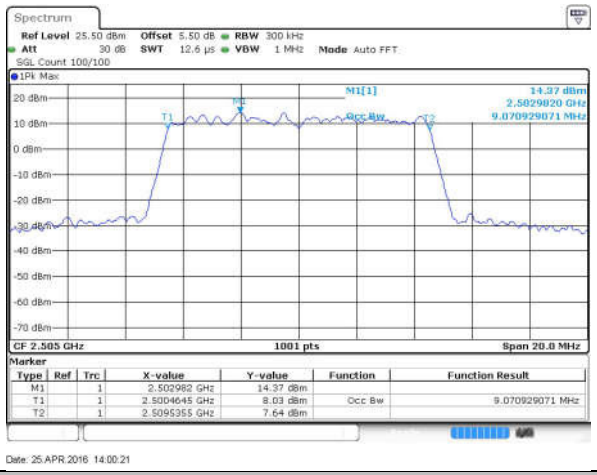


LTE Band 7

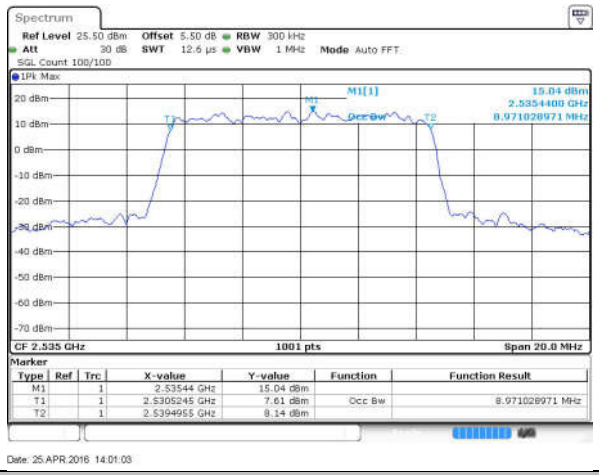
Lowest Channel / 10MHz / QPSK



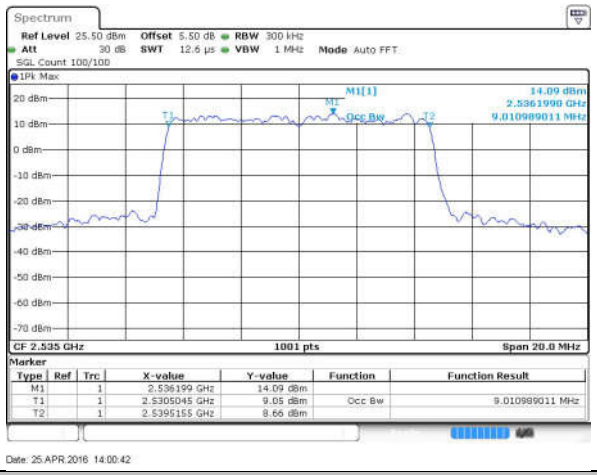
Lowest Channel / 10MHz / 16QAM



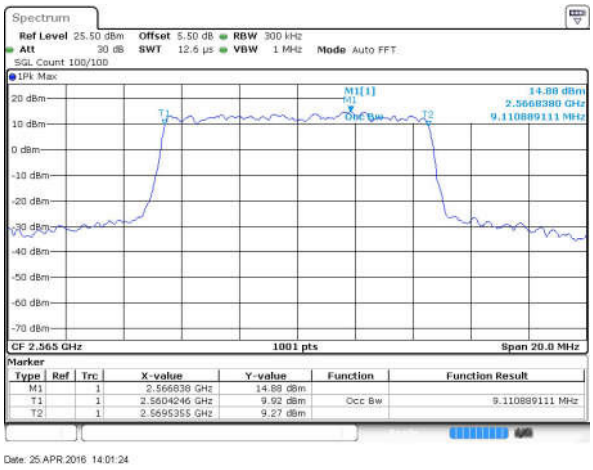
Middle Channel / 10MHz / QPSK



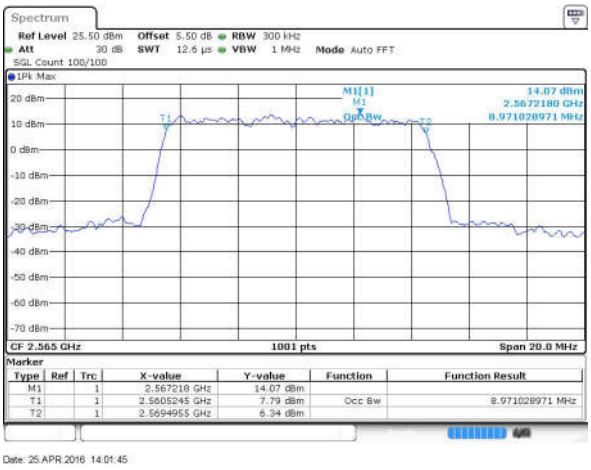
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

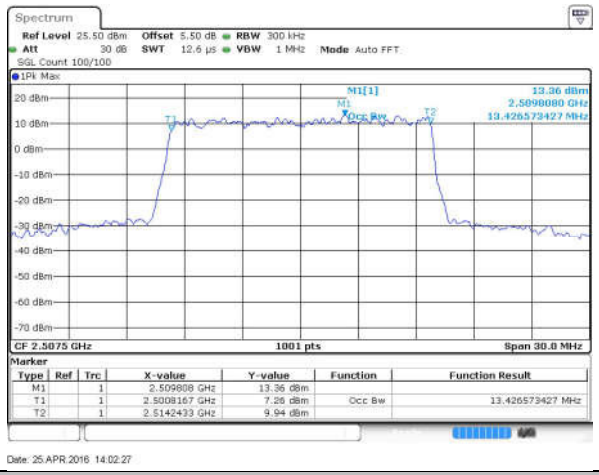


Highest Channel / 10MHz / 16QAM

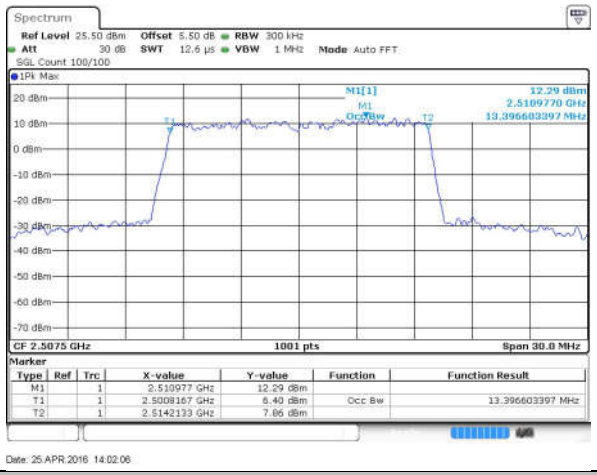


LTE Band 7

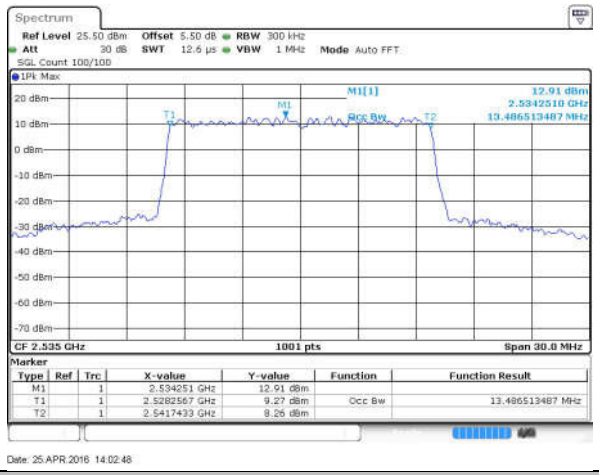
Lowest Channel / 15MHz / QPSK



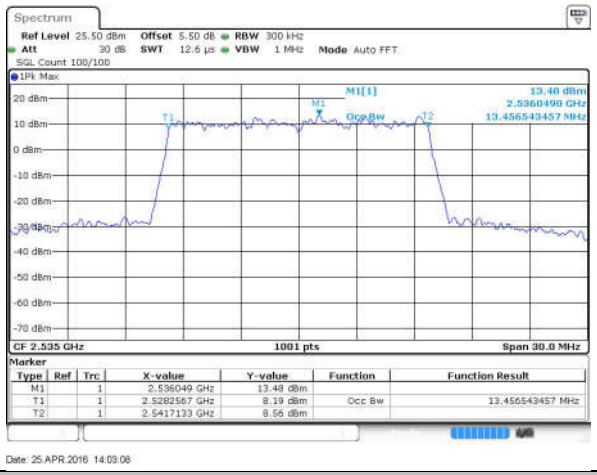
Lowest Channel / 15MHz / 16QAM



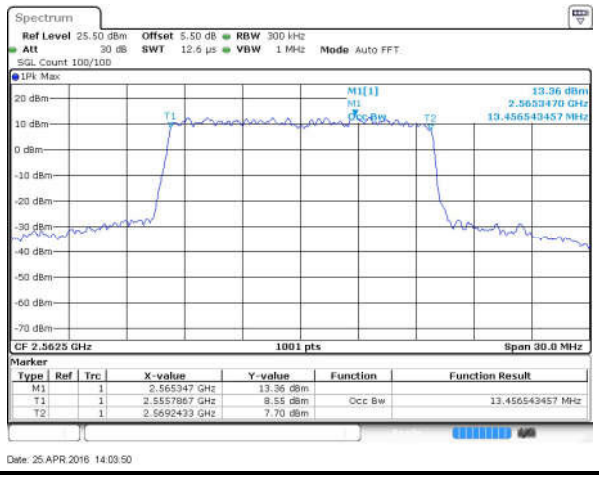
Middle Channel / 15MHz / QPSK



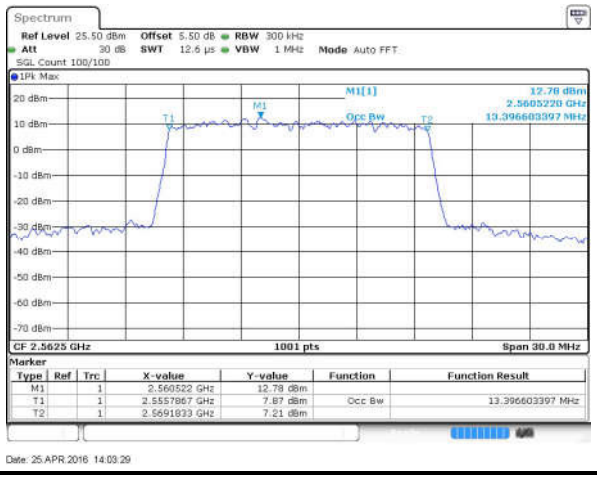
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK

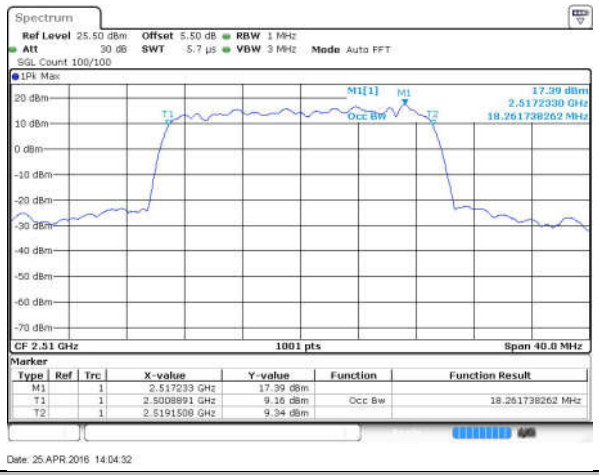


Highest Channel / 15MHz / 16QAM

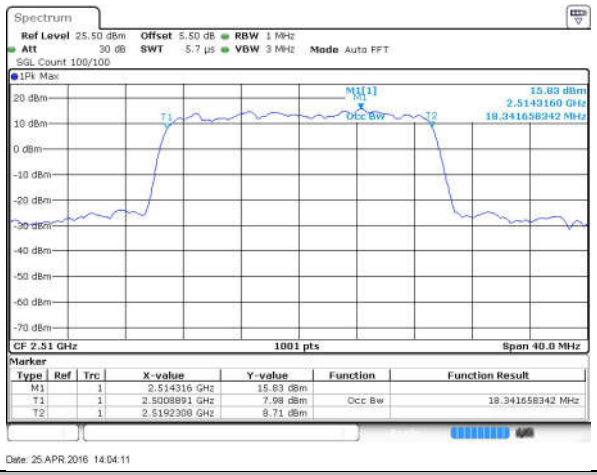


LTE Band 7

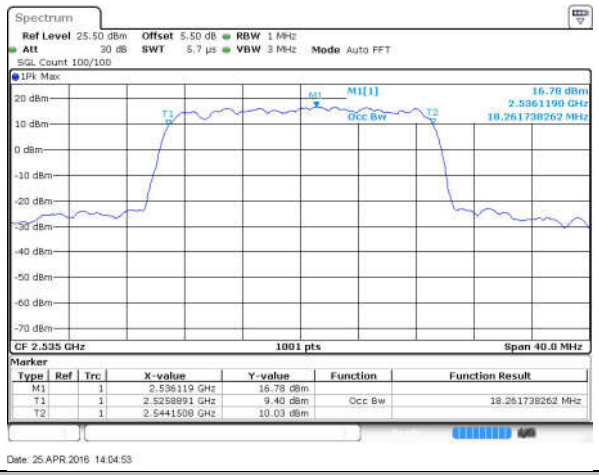
Lowest Channel / 20MHz / QPSK



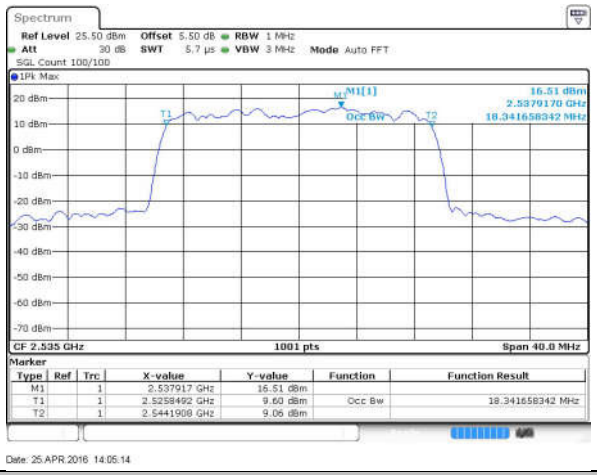
Lowest Channel / 20MHz / 16QAM



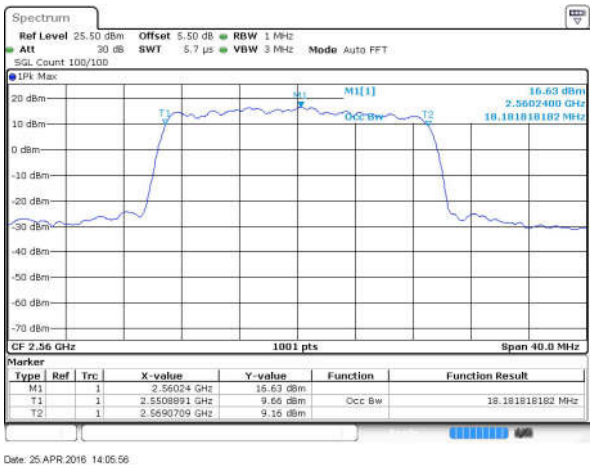
Middle Channel / 20MHz / QPSK



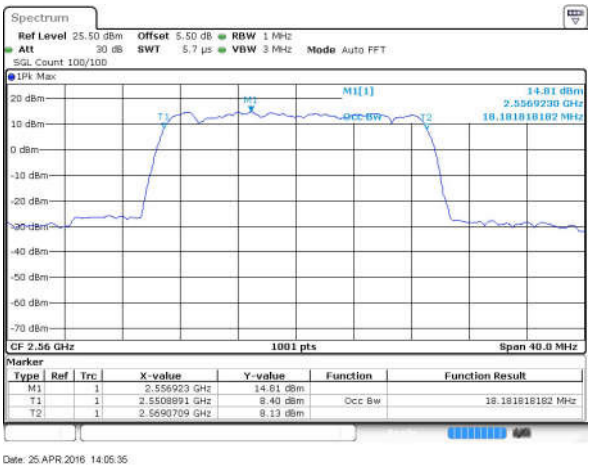
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



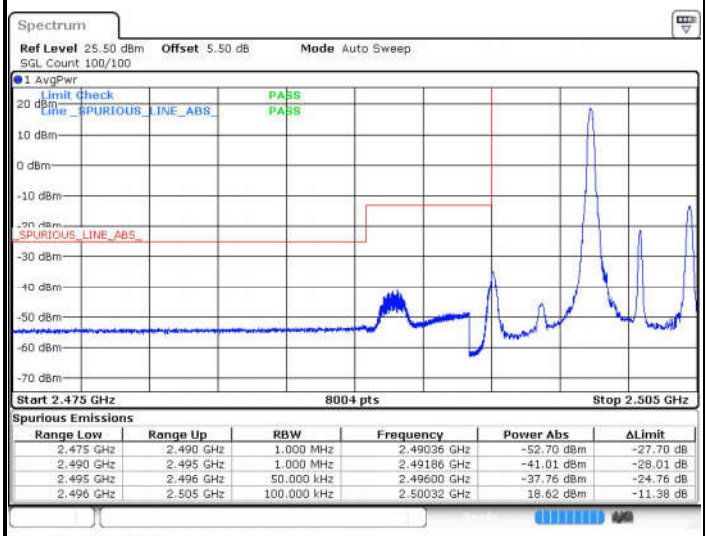
Highest Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 7 / 5MHz / QPSK

Lowest Band Edge / 1 RB

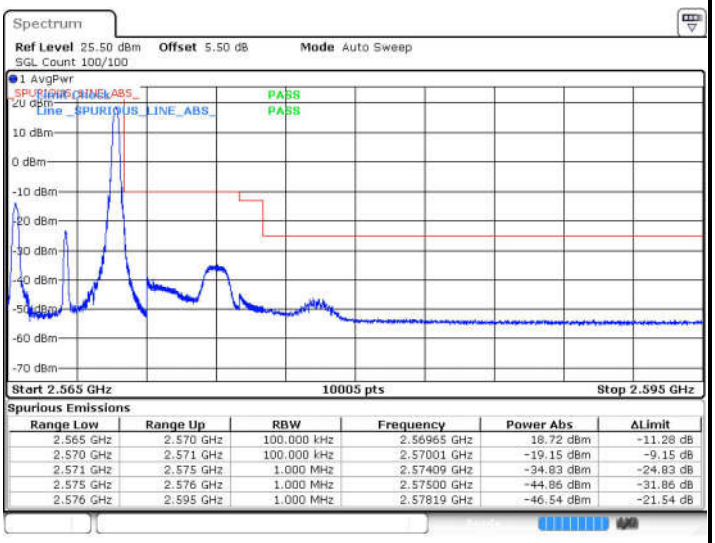


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49036 GHz	-52.70 dBm	-27.70 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49186 GHz	-41.01 dBm	-28.01 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49600 GHz	-37.76 dBm	-24.76 dB
2.496 GHz	2.505 GHz	100.000 kHz	2.50032 GHz	18.62 dBm	-11.38 dB

Date: 25.APR.2016 11:34:12

Highest Band Edge / 1 RB

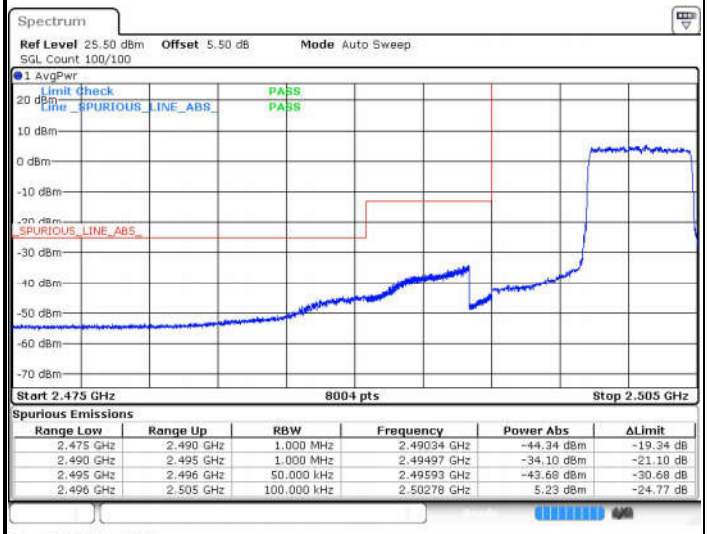


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.565 GHz	2.570 GHz	100.000 kHz	2.56965 GHz	18.72 dBm	-11.28 dB
2.570 GHz	2.571 GHz	100.000 kHz	2.57001 GHz	-19.15 dBm	-9.15 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57409 GHz	-34.83 dBm	-24.83 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57500 GHz	-44.86 dBm	-31.86 dB
2.576 GHz	2.595 GHz	1.000 MHz	2.57819 GHz	-46.54 dBm	-21.54 dB

Date: 25.APR.2016 11:42:12

Lowest Band Edge / Full RB

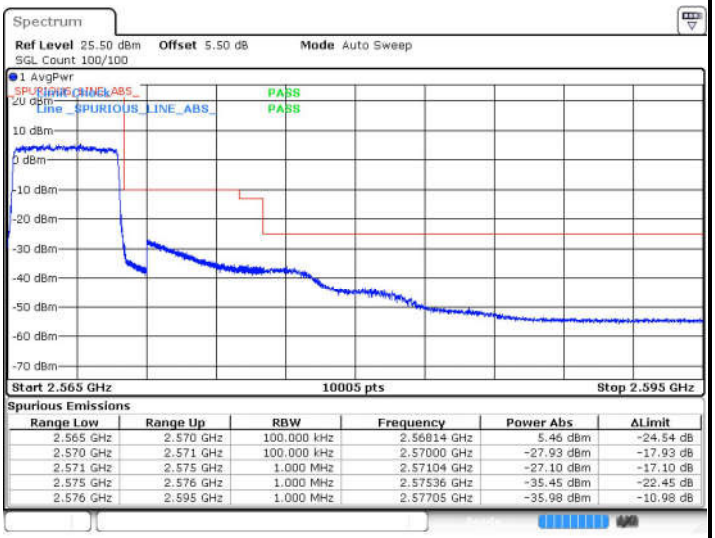


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49034 GHz	-44.34 dBm	-19.34 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-34.10 dBm	-21.10 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49593 GHz	-43.68 dBm	-30.68 dB
2.496 GHz	2.505 GHz	100.000 kHz	2.50278 GHz	5.23 dBm	-24.77 dB

Date: 25.APR.2016 11:37:38

Highest Band Edge / Full RB



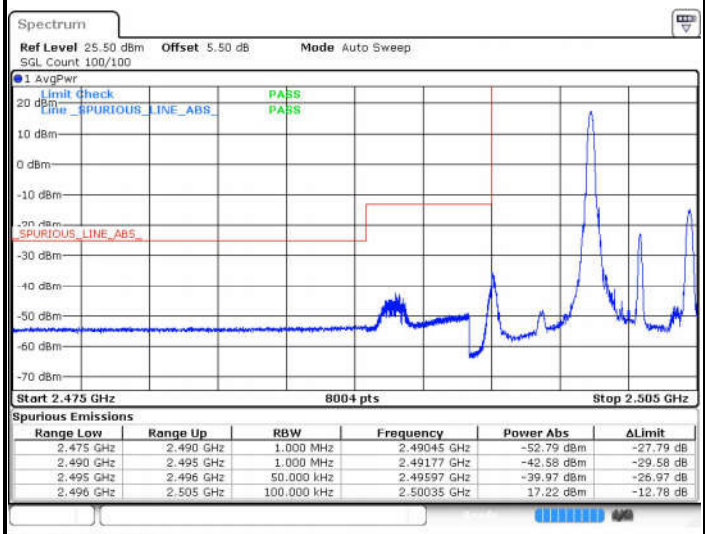
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.565 GHz	2.570 GHz	100.000 kHz	2.56814 GHz	5.46 dBm	-24.54 dB
2.570 GHz	2.571 GHz	100.000 kHz	2.57000 GHz	-27.93 dBm	-17.93 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57104 GHz	-27.10 dBm	-17.10 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57536 GHz	-35.45 dBm	-22.45 dB
2.576 GHz	2.595 GHz	1.000 MHz	2.57705 GHz	-35.98 dBm	-10.98 dB

Date: 25.APR.2016 11:38:46

LTE Band 7 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

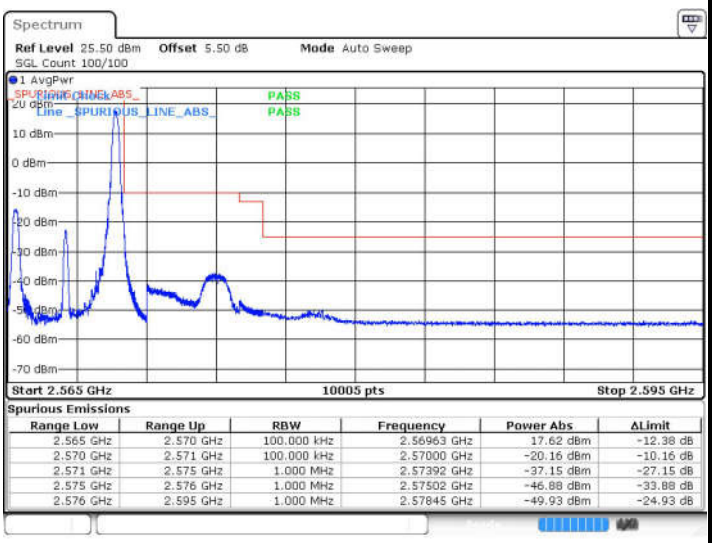


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49045 GHz	-52.79 dBm	-27.79 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49177 GHz	-42.58 dBm	-29.58 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49597 GHz	-39.97 dBm	-26.97 dB
2.496 GHz	2.505 GHz	100.000 kHz	2.50035 GHz	17.22 dBm	-12.78 dB

Date: 25.APR.2016 11:35:21

Highest Band Edge / 1 RB

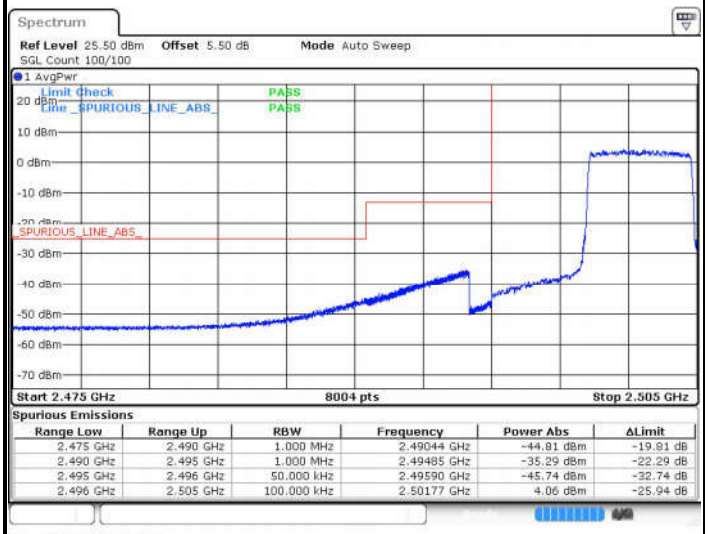


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.565 GHz	2.570 GHz	100.000 kHz	2.56963 GHz	17.62 dBm	-12.38 dB
2.570 GHz	2.571 GHz	100.000 kHz	2.57000 GHz	-20.16 dBm	-10.16 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57392 GHz	-37.15 dBm	-27.15 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57502 GHz	-46.88 dBm	-33.88 dB
2.576 GHz	2.595 GHz	1.000 MHz	2.57845 GHz	-49.93 dBm	-24.93 dB

Date: 25.APR.2016 11:41:03

Lowest Band Edge / Full RB

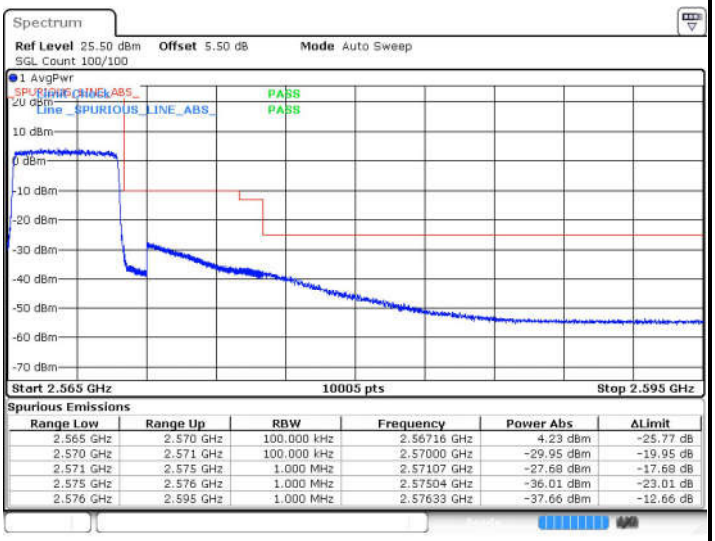


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49044 GHz	-44.81 dBm	-19.81 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49485 GHz	-35.29 dBm	-22.29 dB
2.495 GHz	2.496 GHz	50.000 kHz	2.49590 GHz	-45.74 dBm	-32.74 dB
2.496 GHz	2.505 GHz	100.000 kHz	2.50177 GHz	4.06 dBm	-25.94 dB

Date: 25.APR.2016 11:36:29

Highest Band Edge / Full RB



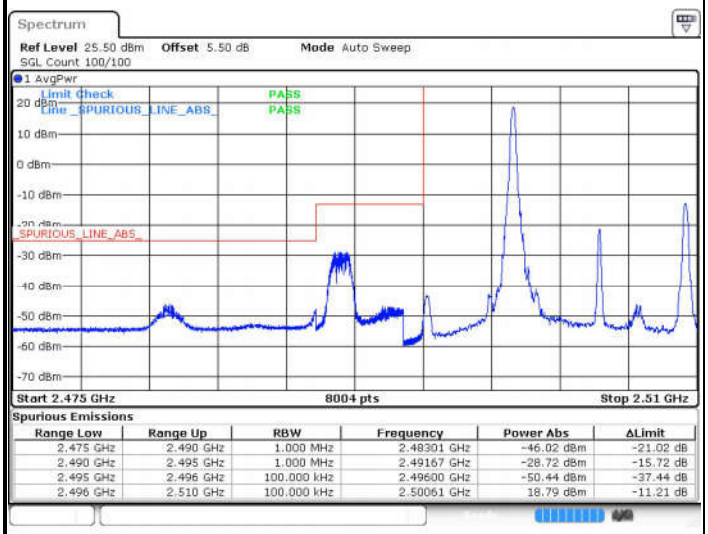
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.565 GHz	2.570 GHz	100.000 kHz	2.56716 GHz	4.23 dBm	-25.77 dB
2.570 GHz	2.571 GHz	100.000 kHz	2.57000 GHz	-29.95 dBm	-19.95 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57107 GHz	-27.68 dBm	-17.68 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57504 GHz	-36.01 dBm	-23.01 dB
2.576 GHz	2.595 GHz	1.000 MHz	2.57633 GHz	-37.66 dBm	-12.66 dB

Date: 25.APR.2016 11:39:55

LTE Band 7 / 10MHz / QPSK

Lowest Band Edge / 1 RB

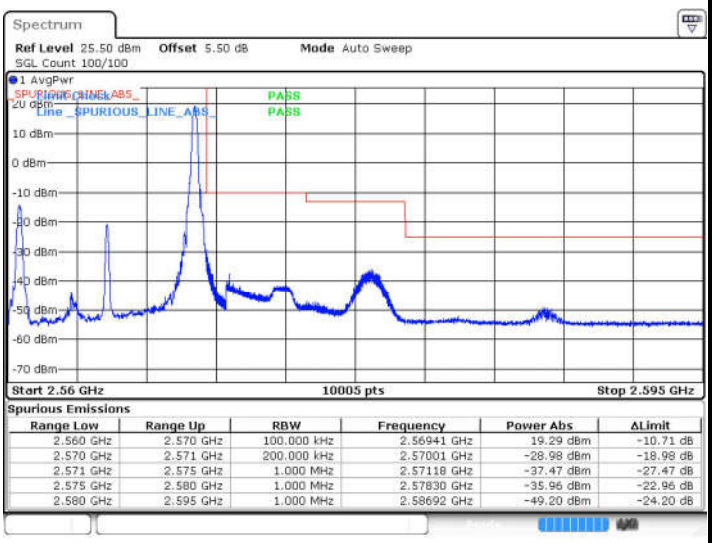


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48301 GHz	-46.02 dBm	-21.02 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49167 GHz	-28.72 dBm	-15.72 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49600 GHz	-50.44 dBm	-37.44 dB
2.496 GHz	2.510 GHz	100.000 kHz	2.50061 GHz	18.79 dBm	-11.21 dB

Date: 25.APR.2016 11:48:48

Highest Band Edge / 1 RB

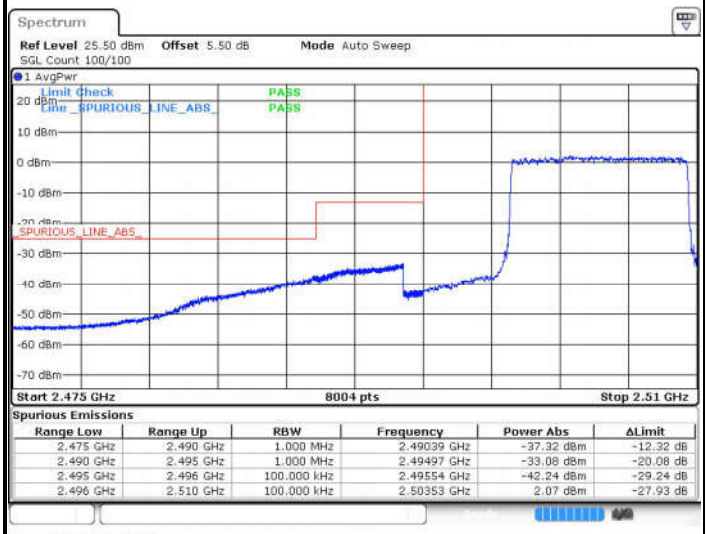


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	100.000 kHz	2.56941 GHz	19.29 dBm	-10.71 dB
2.570 GHz	2.571 GHz	200.000 kHz	2.57001 GHz	-28.98 dBm	-18.98 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57118 GHz	-37.47 dBm	-27.47 dB
2.575 GHz	2.580 GHz	1.000 MHz	2.57830 GHz	-35.96 dBm	-22.96 dB
2.580 GHz	2.595 GHz	1.000 MHz	2.58692 GHz	-49.20 dBm	-24.20 dB

Date: 25.APR.2016 11:56:48

Lowest Band Edge / Full RB

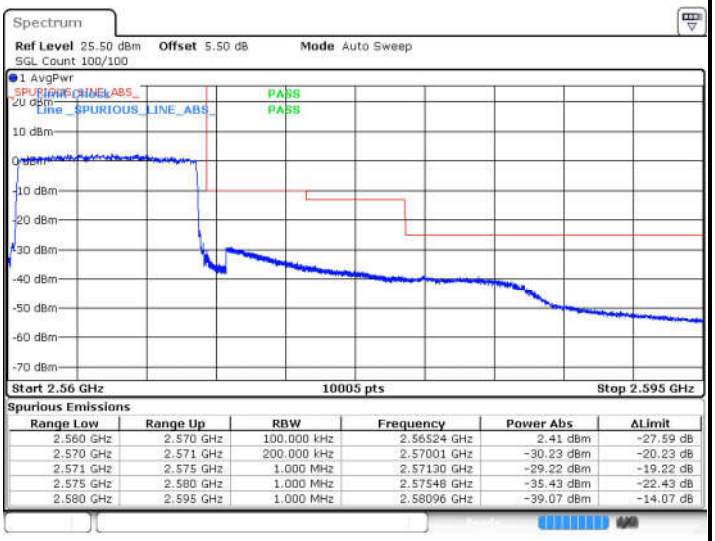


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49039 GHz	-37.32 dBm	-12.32 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-33.08 dBm	-20.08 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49554 GHz	-42.24 dBm	-29.24 dB
2.496 GHz	2.510 GHz	100.000 kHz	2.50353 GHz	2.07 dBm	-27.93 dB

Date: 25.APR.2016 11:52:13

Highest Band Edge / Full RB



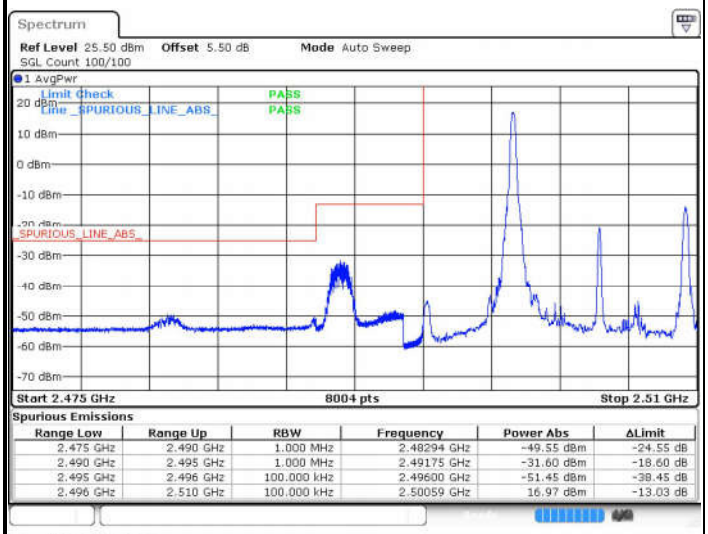
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	100.000 kHz	2.56524 GHz	2.41 dBm	-27.59 dB
2.570 GHz	2.571 GHz	200.000 kHz	2.57001 GHz	-30.23 dBm	-20.23 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57130 GHz	-29.22 dBm	-19.22 dB
2.575 GHz	2.580 GHz	1.000 MHz	2.57548 GHz	-35.43 dBm	-22.43 dB
2.580 GHz	2.595 GHz	1.000 MHz	2.58096 GHz	-39.07 dBm	-14.07 dB

Date: 25.APR.2016 11:53:22

LTE Band 7 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

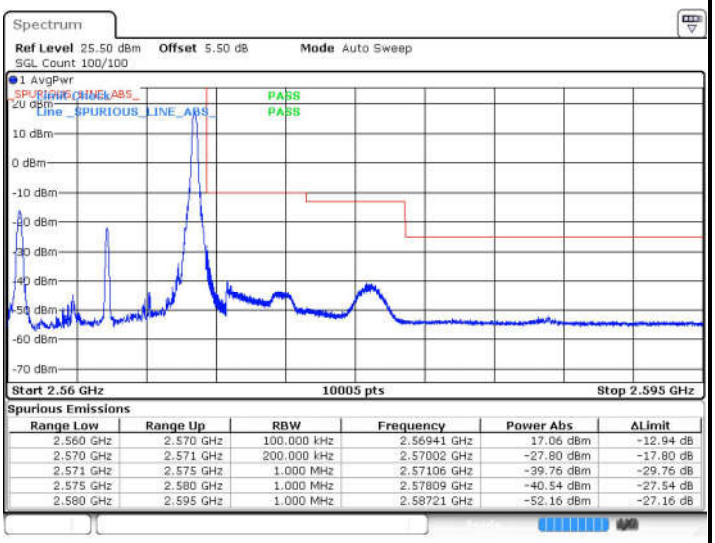


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48294 GHz	-49.55 dBm	-24.55 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49175 GHz	-31.60 dBm	-18.60 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49600 GHz	-51.45 dBm	-38.45 dB
2.496 GHz	2.510 GHz	100.000 kHz	2.50059 GHz	16.97 dBm	-13.03 dB

Date: 25.APR.2016 11:49:56

Highest Band Edge / 1 RB

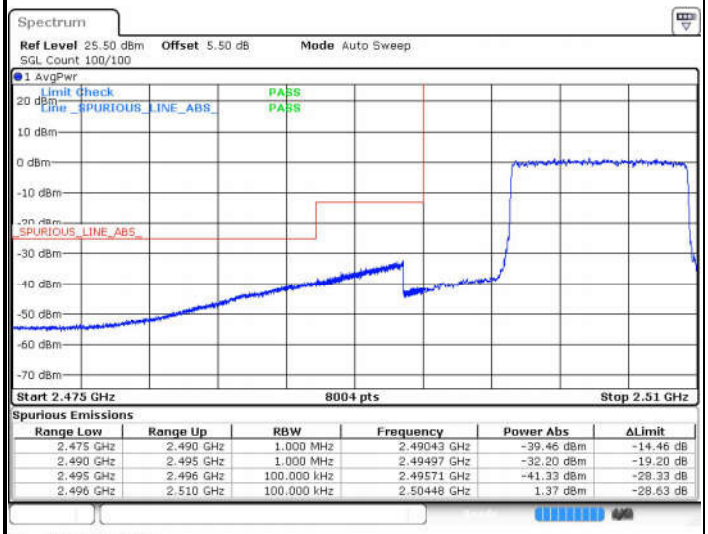


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	100.000 kHz	2.56941 GHz	17.06 dBm	-12.94 dB
2.570 GHz	2.571 GHz	200.000 kHz	2.57002 GHz	-27.80 dBm	-17.80 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57106 GHz	-39.76 dBm	-29.76 dB
2.575 GHz	2.580 GHz	1.000 MHz	2.57809 GHz	-40.54 dBm	-27.54 dB
2.580 GHz	2.595 GHz	1.000 MHz	2.58721 GHz	-52.16 dBm	-27.16 dB

Date: 25.APR.2016 11:55:39

Lowest Band Edge / Full RB

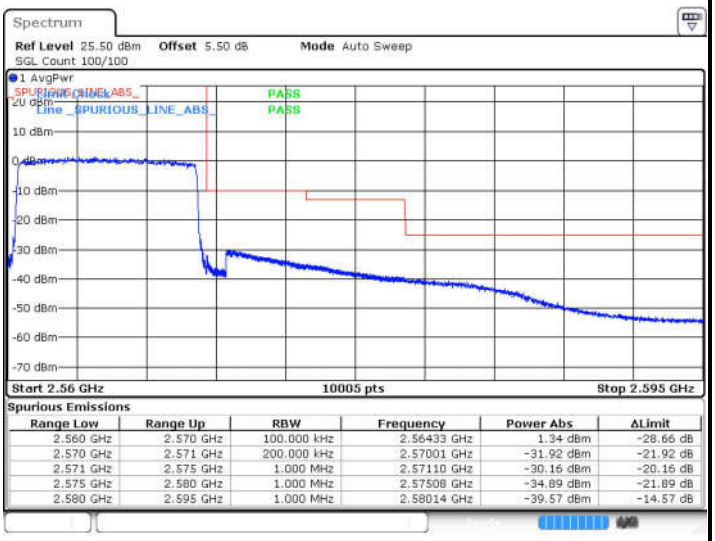


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49043 GHz	-39.46 dBm	-14.46 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-32.20 dBm	-19.20 dB
2.495 GHz	2.496 GHz	100.000 kHz	2.49571 GHz	-41.33 dBm	-28.33 dB
2.496 GHz	2.510 GHz	100.000 kHz	2.50448 GHz	1.37 dBm	-28.63 dB

Date: 25.APR.2016 11:51:05

Highest Band Edge / Full RB



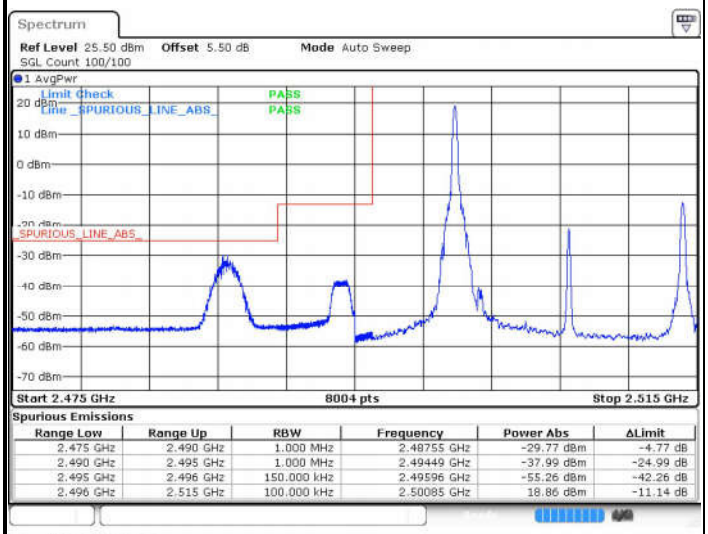
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	100.000 kHz	2.56433 GHz	1.34 dBm	-28.66 dB
2.570 GHz	2.571 GHz	200.000 kHz	2.57001 GHz	-31.92 dBm	-21.92 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57110 GHz	-30.16 dBm	-20.16 dB
2.575 GHz	2.580 GHz	1.000 MHz	2.57508 GHz	-34.89 dBm	-21.89 dB
2.580 GHz	2.595 GHz	1.000 MHz	2.58014 GHz	-39.57 dBm	-14.57 dB

Date: 25.APR.2016 11:54:31

LTE Band 7 / 15MHz / QPSK

Lowest Band Edge / 1 RB

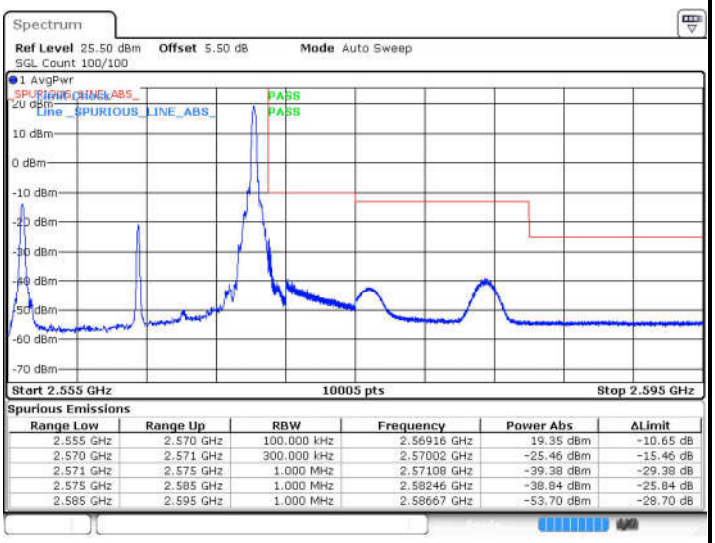


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48755 GHz	-29.77 dBm	-4.77 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49449 GHz	-37.99 dBm	-24.99 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49596 GHz	-55.26 dBm	-42.26 dB
2.496 GHz	2.515 GHz	100.000 kHz	2.50085 GHz	18.86 dBm	-11.14 dB

Date: 25.APR.2016 12:03:23

Highest Band Edge / 1 RB

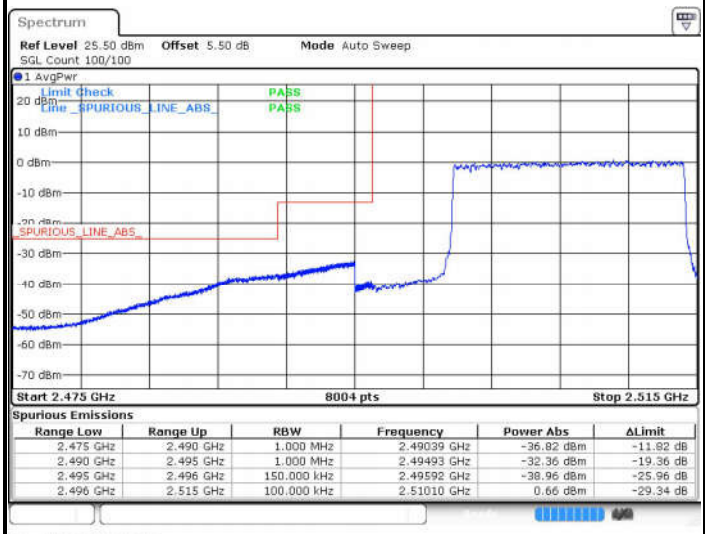


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.555 GHz	2.570 GHz	100.000 kHz	2.56916 GHz	19.35 dBm	-10.65 dB
2.570 GHz	2.571 GHz	300.000 kHz	2.57002 GHz	-25.46 dBm	-15.46 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57108 GHz	-39.38 dBm	-29.38 dB
2.575 GHz	2.585 GHz	1.000 MHz	2.58246 GHz	-38.84 dBm	-25.84 dB
2.585 GHz	2.595 GHz	1.000 MHz	2.58667 GHz	-53.70 dBm	-28.70 dB

Date: 25.APR.2016 12:11:23

Lowest Band Edge / Full RB

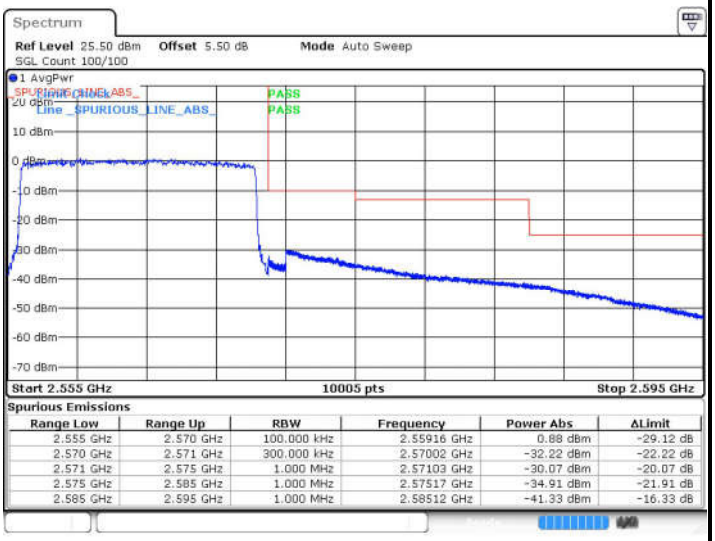


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49039 GHz	-36.82 dBm	-11.82 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49493 GHz	-32.36 dBm	-19.36 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49592 GHz	-38.96 dBm	-25.96 dB
2.496 GHz	2.515 GHz	100.000 kHz	2.51010 GHz	0.66 dBm	-29.34 dB

Date: 25.APR.2016 12:06:49

Highest Band Edge / Full RB



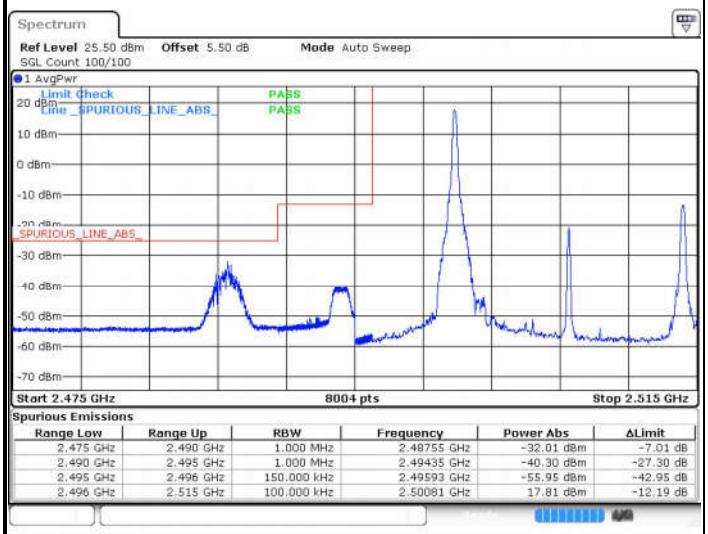
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.555 GHz	2.570 GHz	100.000 kHz	2.55916 GHz	0.88 dBm	-29.12 dB
2.570 GHz	2.571 GHz	300.000 kHz	2.57002 GHz	-32.22 dBm	-22.22 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57103 GHz	-30.07 dBm	-20.07 dB
2.575 GHz	2.585 GHz	1.000 MHz	2.57517 GHz	-34.91 dBm	-21.91 dB
2.585 GHz	2.595 GHz	1.000 MHz	2.58512 GHz	-41.33 dBm	-16.33 dB

Date: 25.APR.2016 12:07:57

LTE Band 7 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

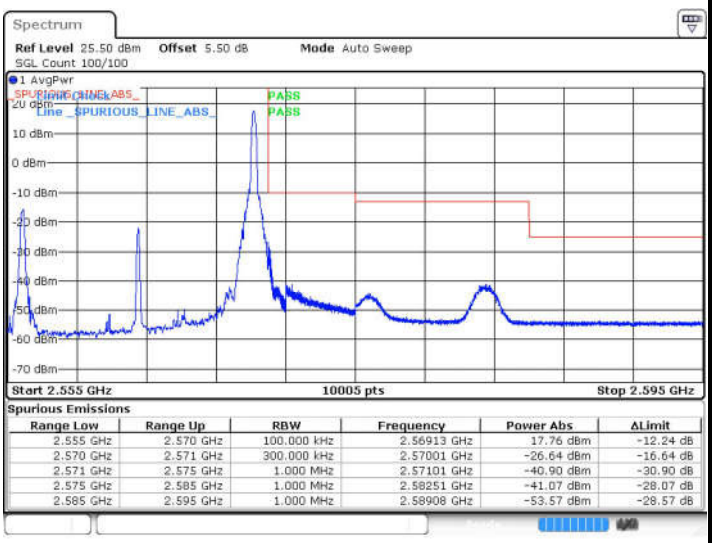


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48755 GHz	-32.01 dBm	-7.01 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49435 GHz	-40.30 dBm	-27.30 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49593 GHz	-55.95 dBm	-42.95 dB
2.496 GHz	2.515 GHz	100.000 kHz	2.50081 GHz	17.81 dBm	-12.19 dB

Date: 25.APR.2016 12:04:32

Highest Band Edge / 1 RB

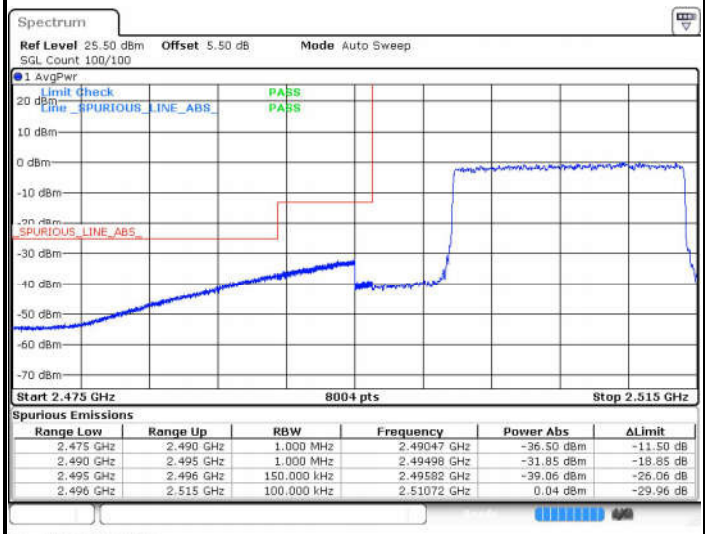


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.555 GHz	2.570 GHz	100.000 kHz	2.56913 GHz	17.76 dBm	-12.24 dB
2.570 GHz	2.571 GHz	300.000 kHz	2.57001 GHz	-26.64 dBm	-16.64 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57101 GHz	-40.90 dBm	-30.90 dB
2.575 GHz	2.585 GHz	1.000 MHz	2.58251 GHz	-41.07 dBm	-28.07 dB
2.585 GHz	2.595 GHz	1.000 MHz	2.58908 GHz	-53.57 dBm	-28.57 dB

Date: 25.APR.2016 12:10:14

Lowest Band Edge / Full RB

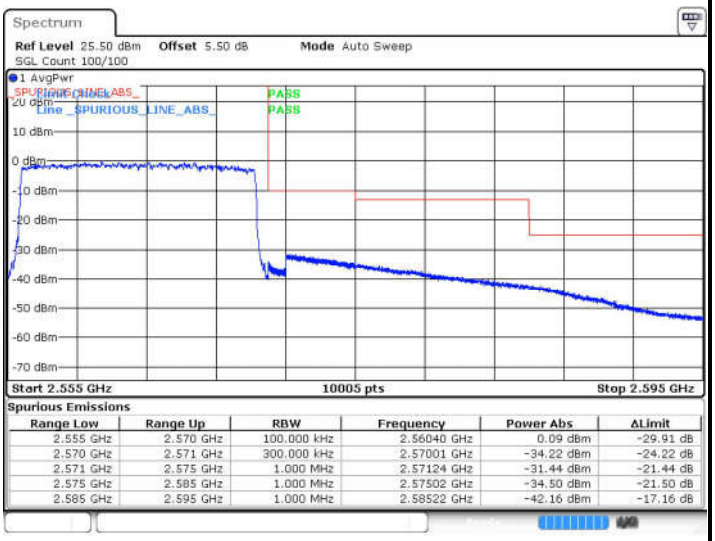


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49047 GHz	-36.50 dBm	-11.50 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49498 GHz	-31.85 dBm	-18.85 dB
2.495 GHz	2.496 GHz	150.000 kHz	2.49582 GHz	-39.06 dBm	-26.06 dB
2.496 GHz	2.515 GHz	100.000 kHz	2.51072 GHz	0.04 dBm	-29.96 dB

Date: 25.APR.2016 12:05:40

Highest Band Edge / Full RB



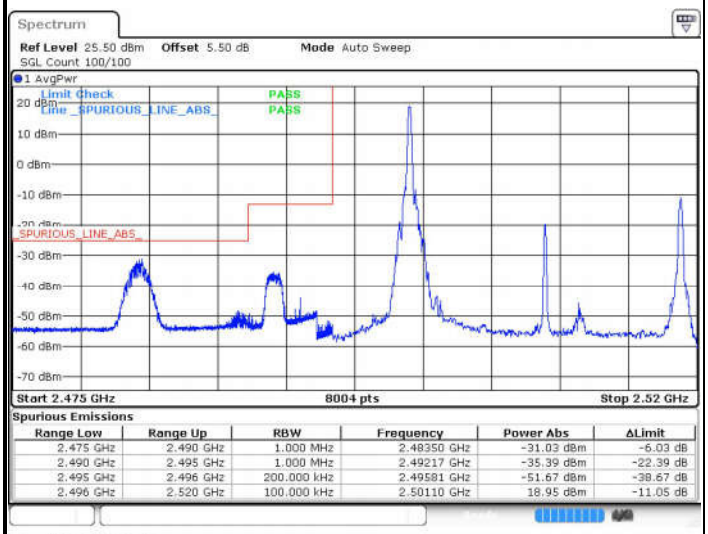
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.555 GHz	2.570 GHz	100.000 kHz	2.56040 GHz	0.09 dBm	-29.91 dB
2.570 GHz	2.571 GHz	300.000 kHz	2.57001 GHz	-34.22 dBm	-24.22 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57124 GHz	-31.44 dBm	-21.44 dB
2.575 GHz	2.585 GHz	1.000 MHz	2.57502 GHz	-34.50 dBm	-21.50 dB
2.585 GHz	2.595 GHz	1.000 MHz	2.58522 GHz	-42.16 dBm	-17.16 dB

Date: 25.APR.2016 12:09:06

LTE Band 7 / 20MHz / QPSK

Lowest Band Edge / 1 RB

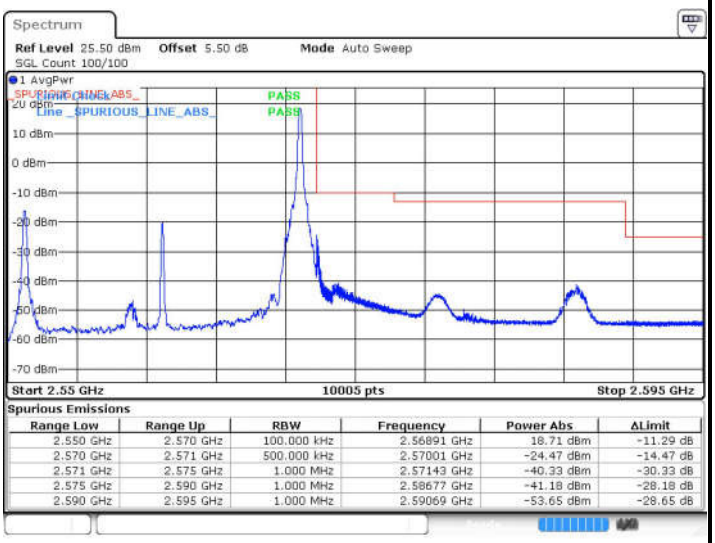


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48350 GHz	-31.03 dBm	-6.03 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49217 GHz	-35.39 dBm	-22.39 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49581 GHz	-51.67 dBm	-38.67 dB
2.496 GHz	2.520 GHz	100.000 kHz	2.50110 GHz	18.95 dBm	-11.05 dB

Date: 25.APR.2016 12:17:59

Highest Band Edge / 1 RB

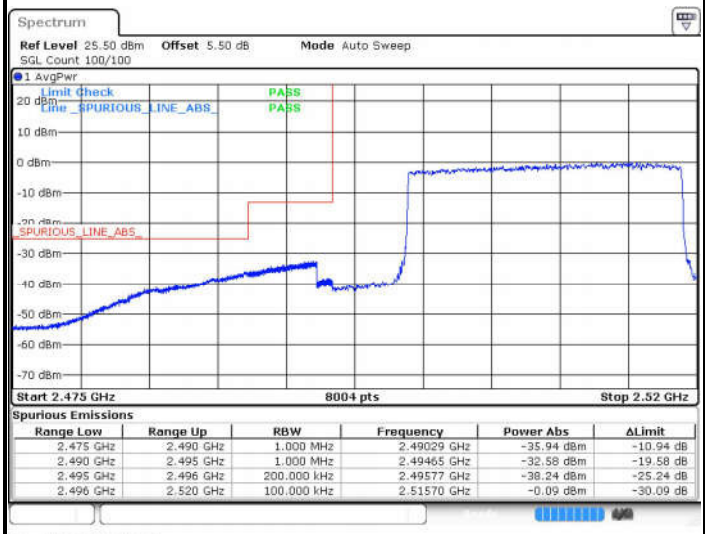


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.550 GHz	2.570 GHz	100.000 kHz	2.56891 GHz	18.71 dBm	-11.29 dB
2.570 GHz	2.571 GHz	500.000 kHz	2.57001 GHz	-24.47 dBm	-14.47 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57143 GHz	-40.33 dBm	-30.33 dB
2.575 GHz	2.590 GHz	1.000 MHz	2.58677 GHz	-41.18 dBm	-28.18 dB
2.590 GHz	2.595 GHz	1.000 MHz	2.59069 GHz	-53.65 dBm	-28.65 dB

Date: 25.APR.2016 12:25:58

Lowest Band Edge / Full RB

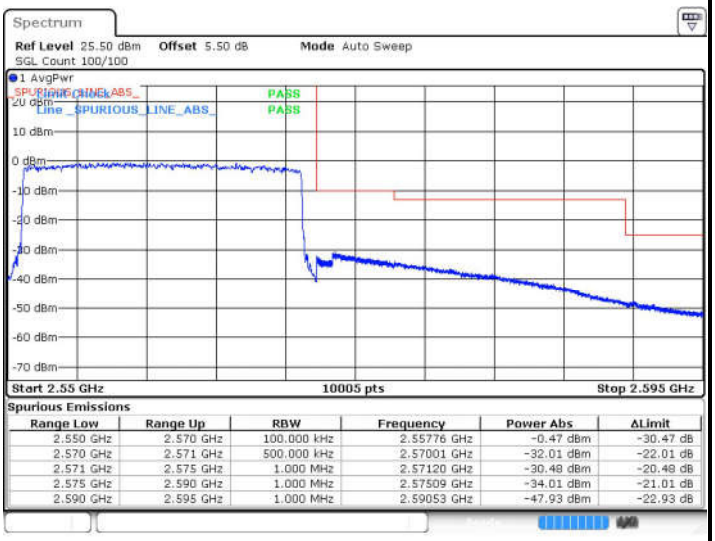


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49029 GHz	-35.94 dBm	-10.94 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49465 GHz	-32.58 dBm	-19.58 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49577 GHz	-38.24 dBm	-25.24 dB
2.496 GHz	2.520 GHz	100.000 kHz	2.51570 GHz	-0.09 dBm	-30.09 dB

Date: 25.APR.2016 12:21:24

Highest Band Edge / Full RB



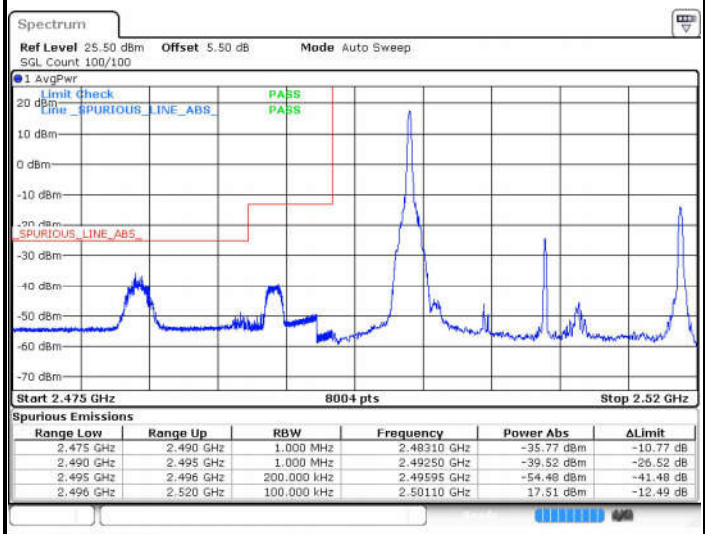
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.550 GHz	2.570 GHz	100.000 kHz	2.55776 GHz	-0.47 dBm	-30.47 dB
2.570 GHz	2.571 GHz	500.000 kHz	2.57001 GHz	-32.01 dBm	-22.01 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57120 GHz	-30.48 dBm	-20.48 dB
2.575 GHz	2.590 GHz	1.000 MHz	2.57509 GHz	-34.01 dBm	-21.01 dB
2.590 GHz	2.595 GHz	1.000 MHz	2.59053 GHz	-47.93 dBm	-22.93 dB

Date: 25.APR.2016 12:22:32

LTE Band 7 / 20MHz / 16QAM

Lowest Band Edge /1 RB

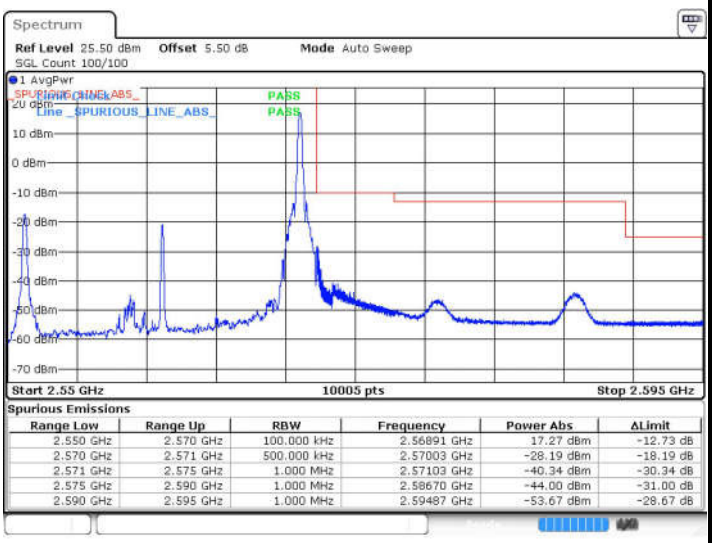


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.48310 GHz	-35.77 dBm	-10.77 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49250 GHz	-39.52 dBm	-26.52 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49595 GHz	-54.48 dBm	-41.48 dB
2.496 GHz	2.520 GHz	100.000 kHz	2.50110 GHz	17.51 dBm	-12.49 dB

Date: 25.APR.2016 12:19:07

Highest Band Edge / 1RB

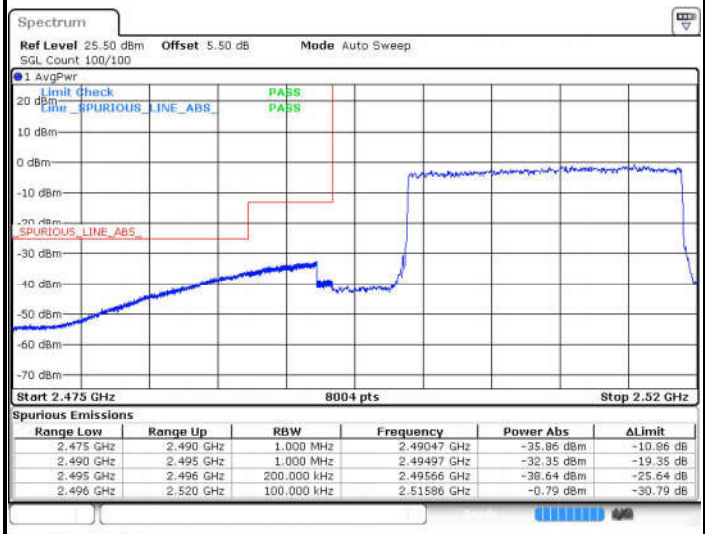


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.550 GHz	2.570 GHz	100.000 kHz	2.56891 GHz	17.27 dBm	-12.73 dB
2.570 GHz	2.571 GHz	500.000 kHz	2.57003 GHz	-28.19 dBm	-18.19 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57103 GHz	-40.34 dBm	-30.34 dB
2.575 GHz	2.590 GHz	1.000 MHz	2.58670 GHz	-44.00 dBm	-31.00 dB
2.590 GHz	2.595 GHz	1.000 MHz	2.59487 GHz	-53.67 dBm	-28.67 dB

Date: 25.APR.2016 12:24:49

Lowest Band Edge / Full RB

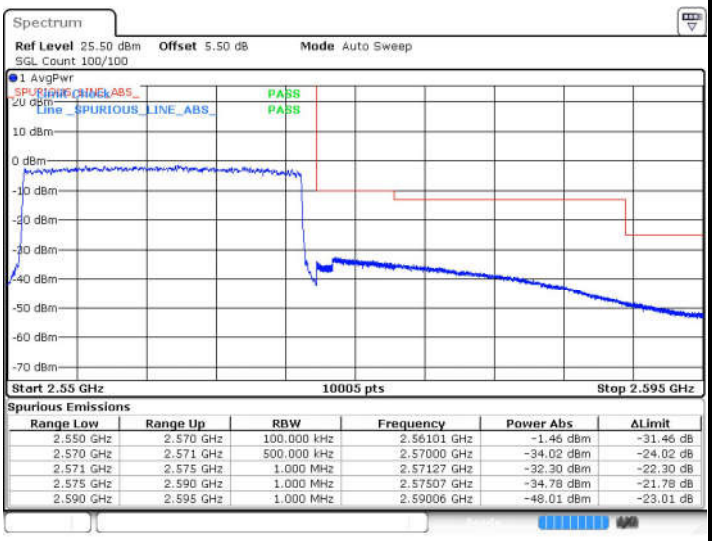


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.490 GHz	1.000 MHz	2.49047 GHz	-35.86 dBm	-10.86 dB
2.490 GHz	2.495 GHz	1.000 MHz	2.49497 GHz	-32.35 dBm	-19.35 dB
2.495 GHz	2.496 GHz	200.000 kHz	2.49566 GHz	-38.64 dBm	-25.64 dB
2.496 GHz	2.520 GHz	100.000 kHz	2.51586 GHz	-0.79 dBm	-30.79 dB

Date: 25.APR.2016 12:20:15

Highest Band Edge / Full RB



Spurious Emissions

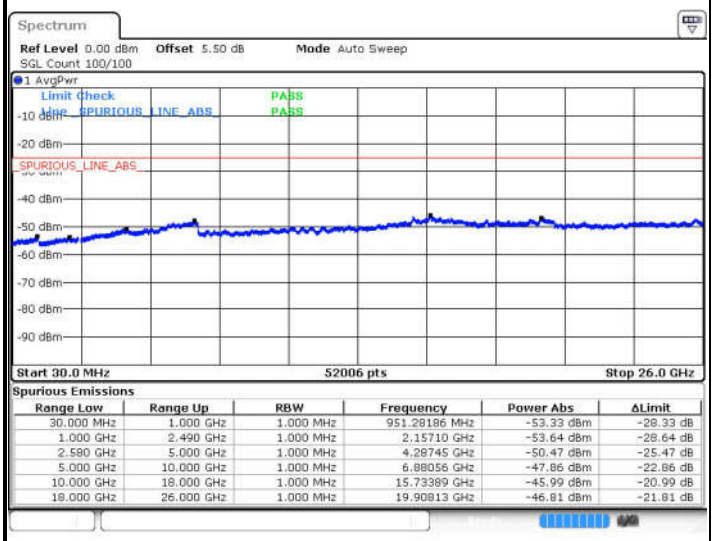
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.550 GHz	2.570 GHz	100.000 kHz	2.56101 GHz	-1.46 dBm	-31.46 dB
2.570 GHz	2.571 GHz	500.000 kHz	2.57000 GHz	-34.02 dBm	-24.02 dB
2.571 GHz	2.575 GHz	1.000 MHz	2.57127 GHz	-32.30 dBm	-22.30 dB
2.575 GHz	2.590 GHz	1.000 MHz	2.57507 GHz	-34.78 dBm	-21.78 dB
2.590 GHz	2.595 GHz	1.000 MHz	2.59006 GHz	-48.01 dBm	-23.01 dB

Date: 25.APR.2016 12:23:41

Conducted Spurious Emission

LTE Band 7 / 5MHz

Lowest Channel / QPSK

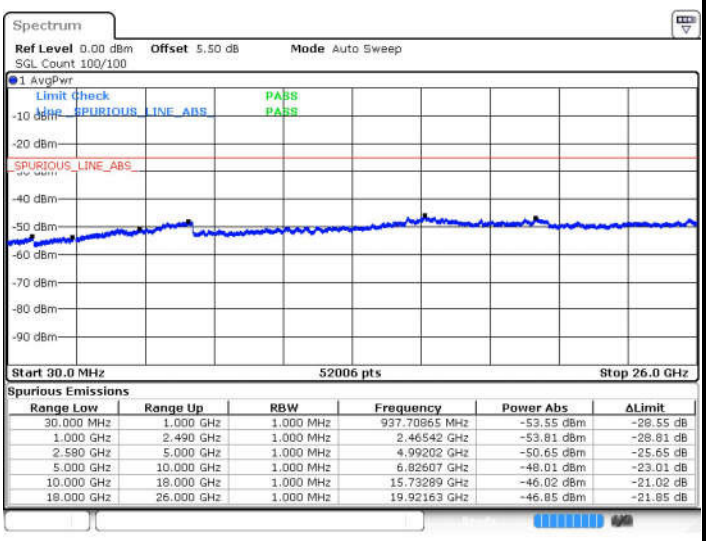


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-53.33 dBm	-28.33 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.15710 GHz	-53.64 dBm	-28.64 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.28745 GHz	-50.47 dBm	-25.47 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.88056 GHz	-47.86 dBm	-22.86 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.73389 GHz	-45.99 dBm	-20.99 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.90813 GHz	-46.81 dBm	-21.81 dB

Date: 25.APR.2016 11:43:05

Lowest Channel / 16QAM

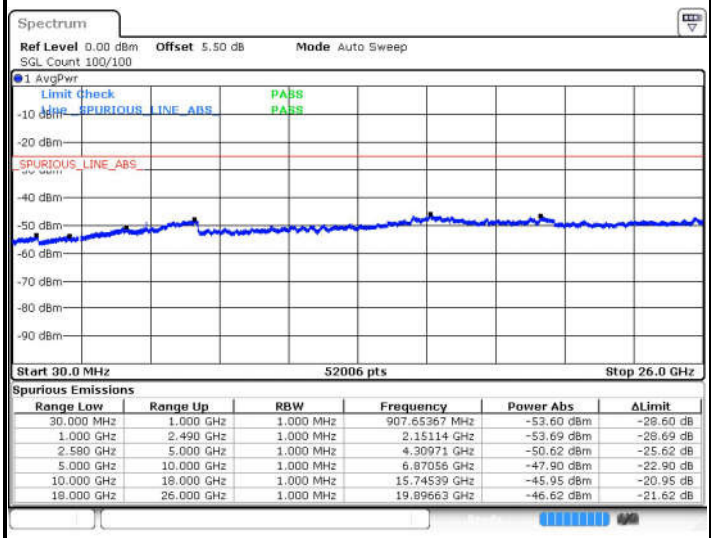


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	937.70865 MHz	-53.55 dBm	-28.55 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.46542 GHz	-53.81 dBm	-28.81 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99202 GHz	-50.65 dBm	-25.65 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.82607 GHz	-48.01 dBm	-23.01 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.73289 GHz	-46.02 dBm	-21.02 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92163 GHz	-46.85 dBm	-21.85 dB

Date: 25.APR.2016 11:44:00

Middle Channel / QPSK

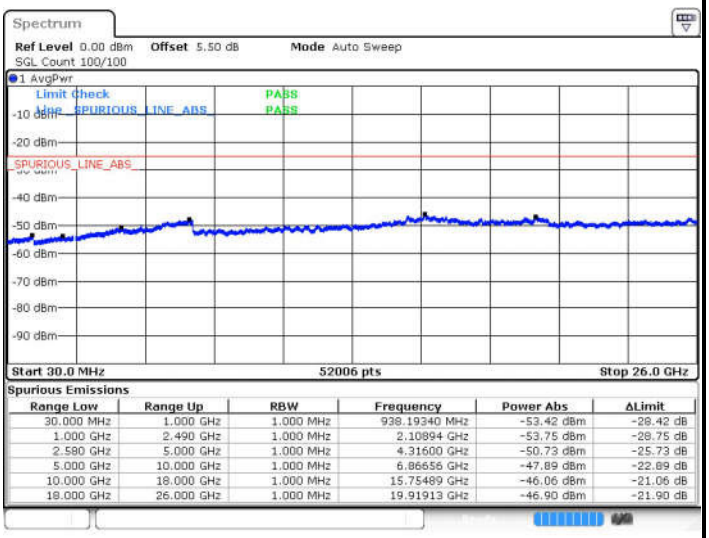


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	907.65367 MHz	-53.60 dBm	-28.60 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.15114 GHz	-53.69 dBm	-28.69 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.30971 GHz	-50.62 dBm	-25.62 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87056 GHz	-47.90 dBm	-22.90 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74539 GHz	-45.95 dBm	-20.95 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.89663 GHz	-46.62 dBm	-21.62 dB

Date: 25.APR.2016 11:45:49

Middle Channel / 16QAM



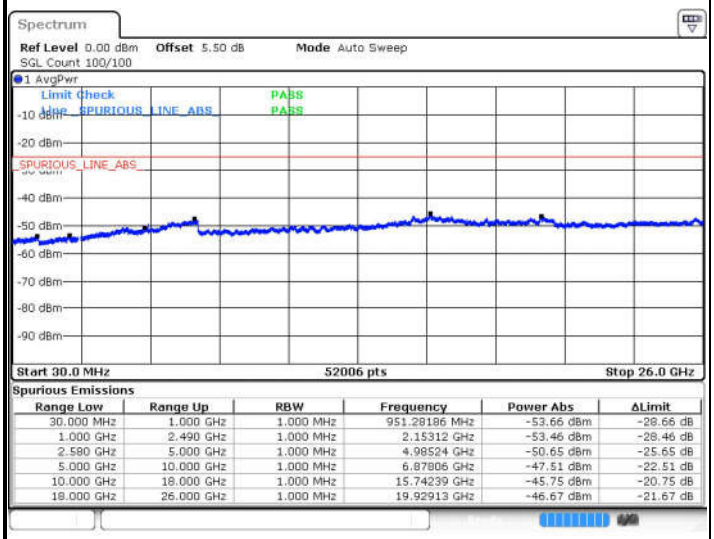
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	938.19340 MHz	-53.42 dBm	-28.42 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.10894 GHz	-53.75 dBm	-28.75 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.31600 GHz	-50.73 dBm	-25.73 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86656 GHz	-47.89 dBm	-22.89 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75489 GHz	-46.06 dBm	-21.06 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91913 GHz	-46.90 dBm	-21.90 dB

Date: 25.APR.2016 11:44:54

LTE Band 7 / 5MHz

Highest Channel / QPSK

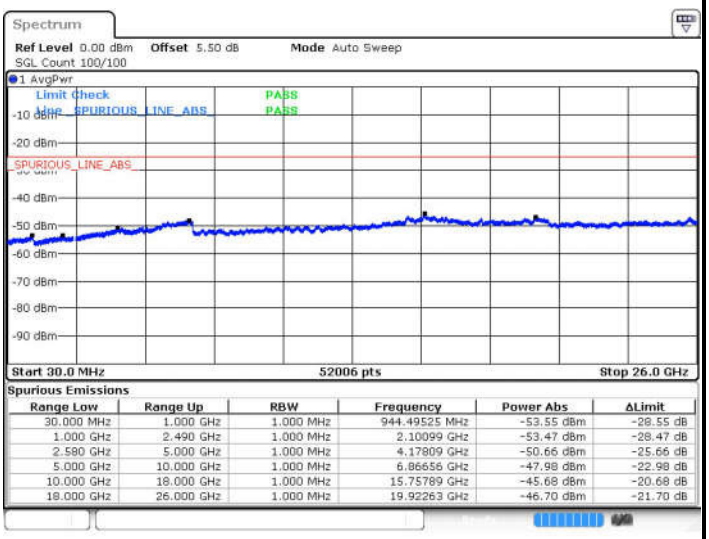


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-53.66 dBm	-28.66 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.15312 GHz	-53.46 dBm	-28.46 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98524 GHz	-50.65 dBm	-25.65 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87806 GHz	-47.51 dBm	-22.51 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74239 GHz	-45.75 dBm	-20.75 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92913 GHz	-46.67 dBm	-21.67 dB

Date: 25.APR.2016 11:46:43

Highest Channel / 16QAM



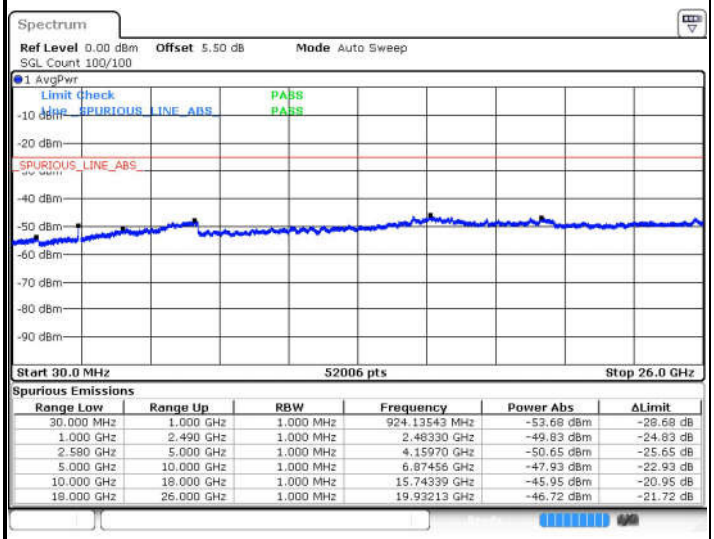
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	944.49525 MHz	-53.55 dBm	-28.55 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.10099 GHz	-53.47 dBm	-28.47 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.17809 GHz	-50.66 dBm	-25.66 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86656 GHz	-47.98 dBm	-22.98 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75789 GHz	-45.68 dBm	-20.68 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92263 GHz	-46.70 dBm	-21.70 dB

Date: 25.APR.2016 11:47:38

LTE Band 7 / 10MHz

Lowest Channel / QPSK

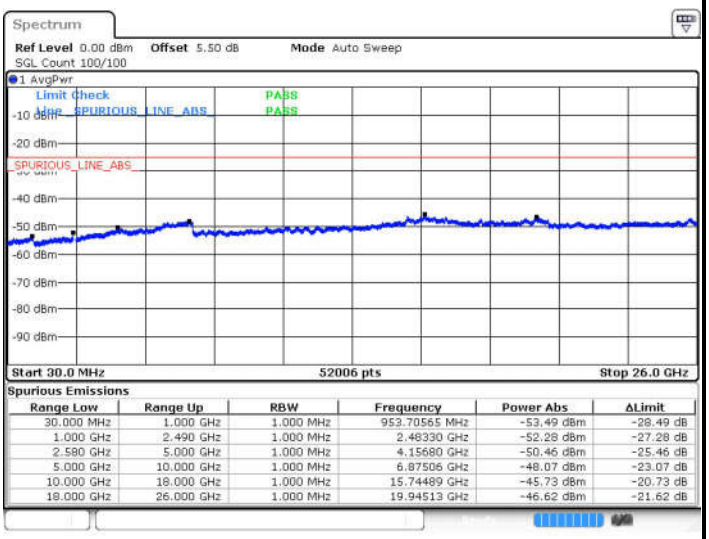


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	924.13543 MHz	-53.68 dBm	-28.68 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48330 GHz	-49.83 dBm	-24.83 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.15970 GHz	-50.65 dBm	-25.65 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87456 GHz	-47.93 dBm	-22.93 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74339 GHz	-45.95 dBm	-20.95 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.93213 GHz	-46.72 dBm	-21.72 dB

Date: 25.APR.2016 11:57:41

Lowest Channel / 16QAM



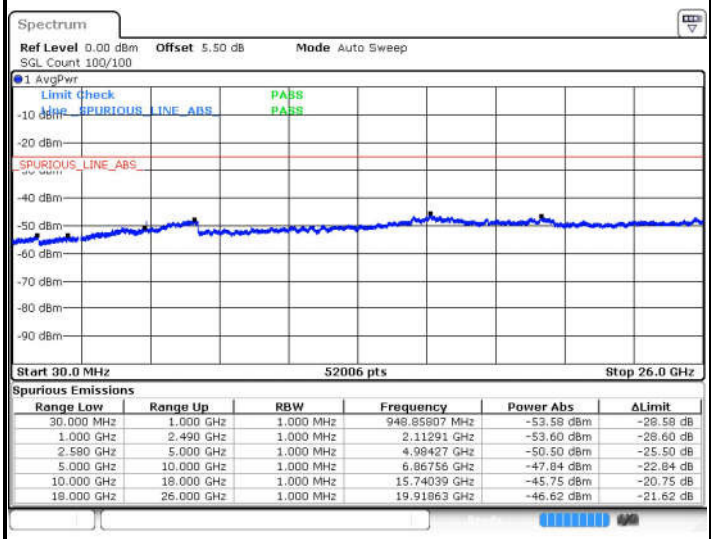
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	953.70565 MHz	-53.49 dBm	-28.49 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48330 GHz	-52.28 dBm	-27.28 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.15680 GHz	-50.46 dBm	-25.46 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87506 GHz	-48.07 dBm	-23.07 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74489 GHz	-45.73 dBm	-20.73 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.94513 GHz	-46.62 dBm	-21.62 dB

Date: 25.APR.2016 11:58:36

LTE Band 7 / 10MHz

Middle Channel / QPSK

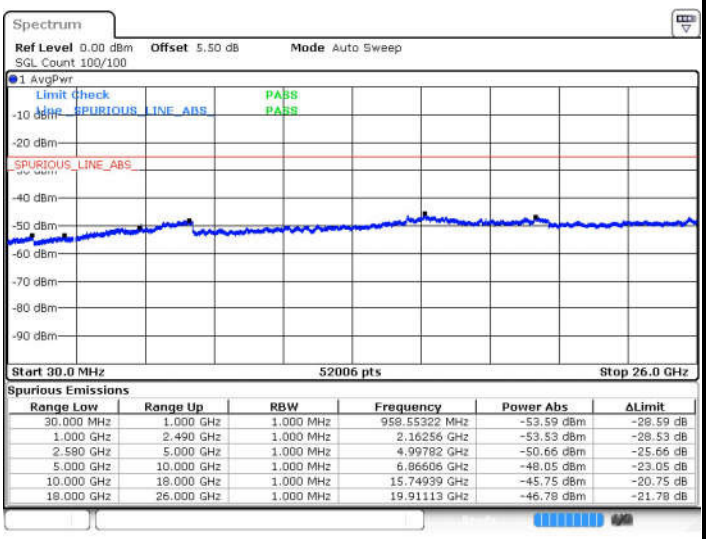


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	948.85807 MHz	-53.58 dBm	-28.58 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.11291 GHz	-53.60 dBm	-28.60 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.98427 GHz	-50.50 dBm	-25.50 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86756 GHz	-47.84 dBm	-22.84 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74039 GHz	-45.75 dBm	-20.75 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91863 GHz	-46.62 dBm	-21.62 dB

Date: 25.APR.2016 12:00:25

Middle Channel / 16QAM

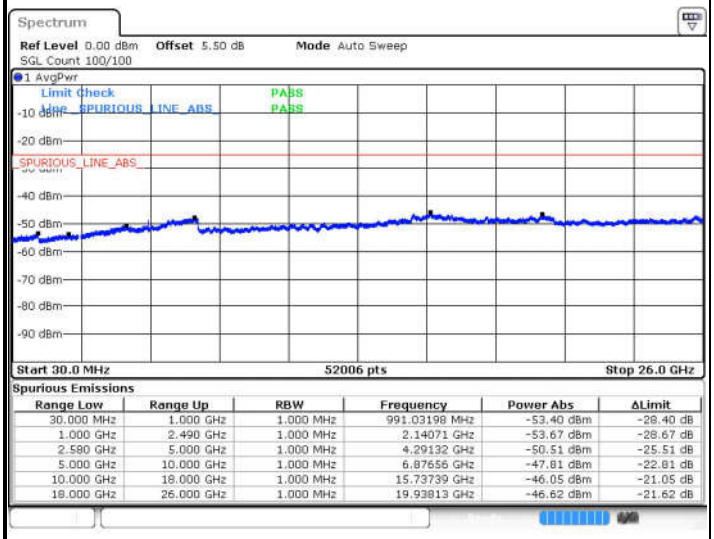


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	958.55322 MHz	-53.59 dBm	-28.59 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.16256 GHz	-53.53 dBm	-28.53 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99782 GHz	-50.66 dBm	-25.66 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86606 GHz	-48.05 dBm	-23.05 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74939 GHz	-45.75 dBm	-20.75 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91113 GHz	-46.78 dBm	-21.78 dB

Date: 25.APR.2016 11:59:30

Highest Channel / QPSK

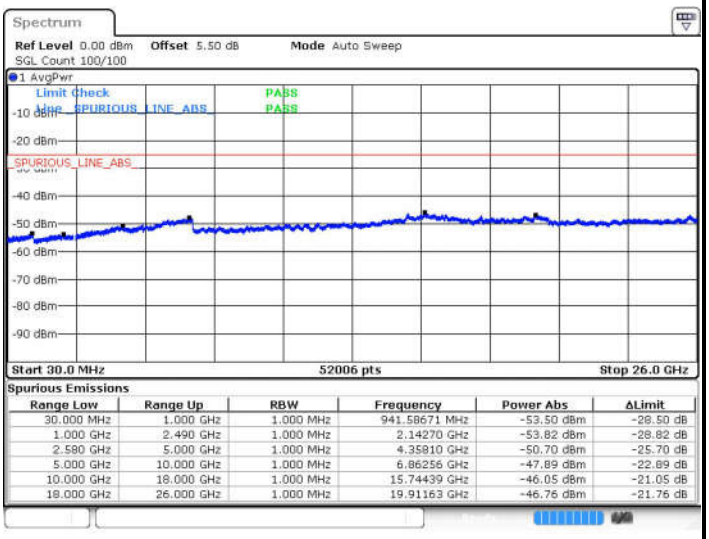


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.03198 MHz	-53.40 dBm	-28.40 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.14071 GHz	-53.67 dBm	-28.67 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.29132 GHz	-50.51 dBm	-25.51 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87656 GHz	-47.81 dBm	-22.81 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.73739 GHz	-46.05 dBm	-21.05 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.93813 GHz	-46.62 dBm	-21.62 dB

Date: 25.APR.2016 12:01:19

Highest Channel / 16QAM



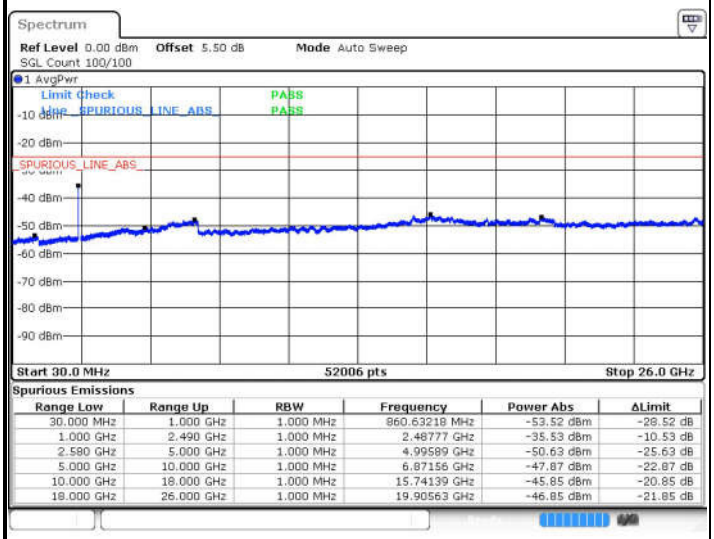
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	941.58671 MHz	-53.50 dBm	-28.50 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.14270 GHz	-53.82 dBm	-28.82 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.35810 GHz	-50.70 dBm	-25.70 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86256 GHz	-47.89 dBm	-22.89 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74439 GHz	-46.05 dBm	-21.05 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91163 GHz	-46.76 dBm	-21.76 dB

Date: 25.APR.2016 12:02:14

LTE Band 7 / 15MHz

Lowest Channel / QPSK

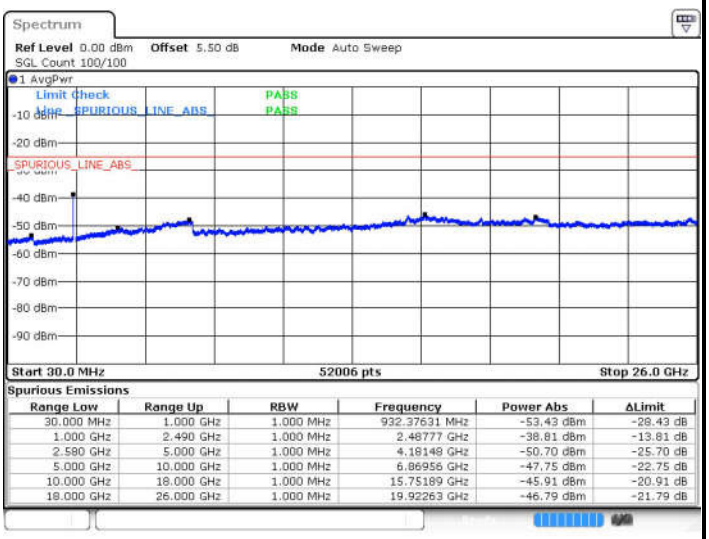


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	860.63218 MHz	-53.52 dBm	-28.52 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48777 GHz	-35.53 dBm	-10.53 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.99589 GHz	-50.63 dBm	-25.63 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87156 GHz	-47.87 dBm	-22.87 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74139 GHz	-45.85 dBm	-20.85 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.90563 GHz	-46.85 dBm	-21.85 dB

Date: 25.APR.2016 12:12:16

Lowest Channel / 16QAM

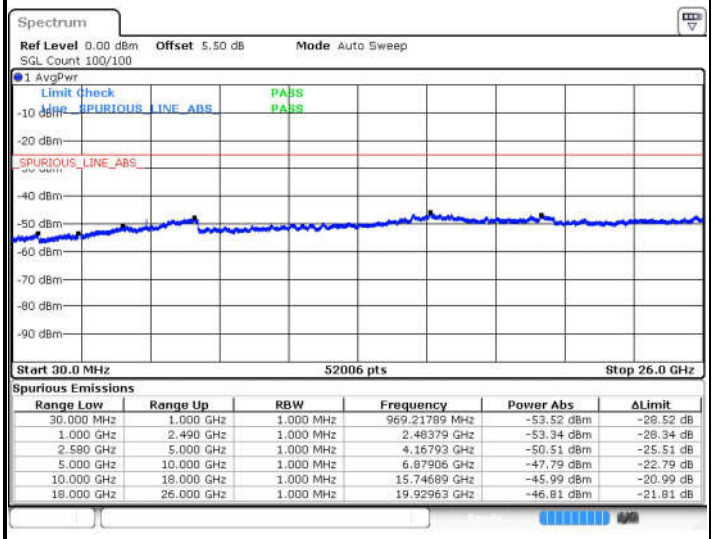


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	932.37631 MHz	-53.43 dBm	-28.43 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48777 GHz	-38.81 dBm	-13.81 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.18148 GHz	-50.70 dBm	-25.70 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86956 GHz	-47.75 dBm	-22.75 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75189 GHz	-45.91 dBm	-20.91 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92263 GHz	-46.79 dBm	-21.79 dB

Date: 25.APR.2016 12:13:11

Middle Channel / QPSK

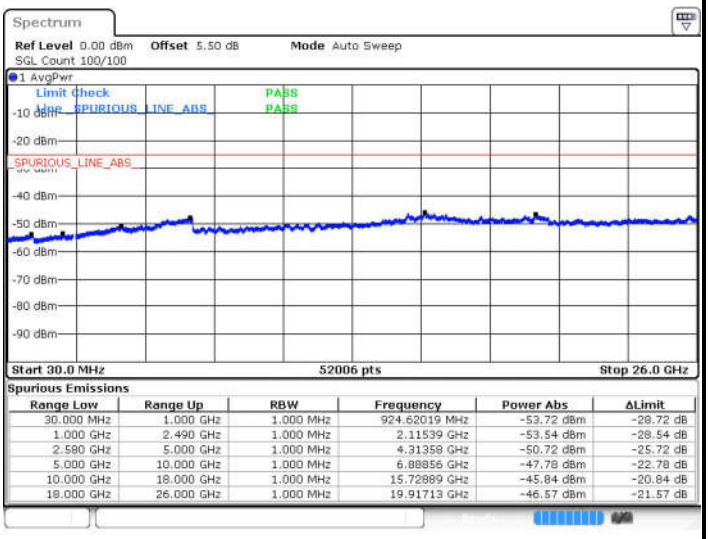


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.21789 MHz	-53.52 dBm	-28.52 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48379 GHz	-53.34 dBm	-28.34 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.16793 GHz	-50.51 dBm	-25.51 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87906 GHz	-47.79 dBm	-22.79 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74689 GHz	-45.99 dBm	-20.99 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92963 GHz	-46.81 dBm	-21.81 dB

Date: 25.APR.2016 12:15:00

Middle Channel / 16QAM



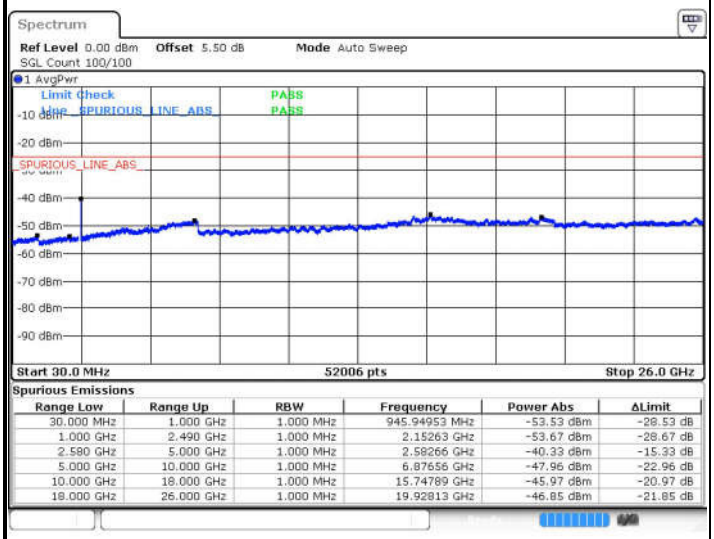
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	924.62019 MHz	-53.72 dBm	-28.72 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.11539 GHz	-53.54 dBm	-28.54 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.31358 GHz	-50.72 dBm	-25.72 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.88856 GHz	-47.78 dBm	-22.78 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.72889 GHz	-45.84 dBm	-20.84 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91713 GHz	-46.57 dBm	-21.57 dB

Date: 25.APR.2016 12:14:05

LTE Band7 / 15MHz

Highest Channel / QPSK

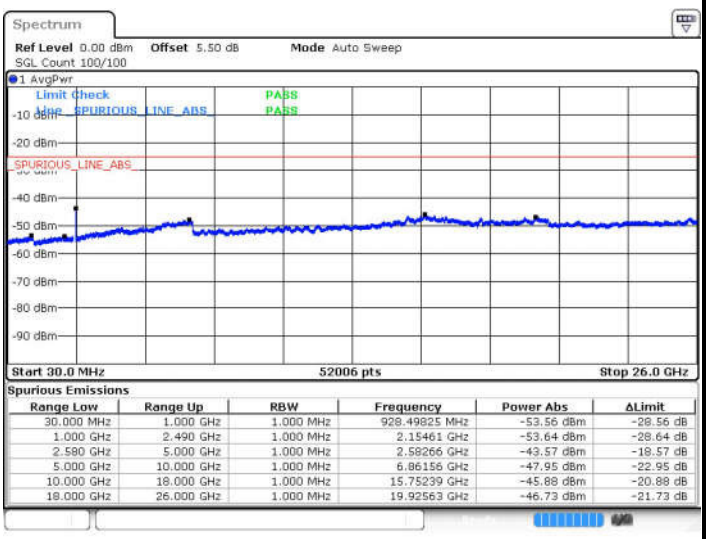


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	945.94953 MHz	-53.53 dBm	-28.53 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.15263 GHz	-53.67 dBm	-28.67 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58266 GHz	-40.33 dBm	-15.33 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87656 GHz	-47.96 dBm	-22.96 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.74789 GHz	-45.97 dBm	-20.97 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92813 GHz	-46.85 dBm	-21.85 dB

Date: 25.APR.2016 12:15:54

Highest Channel / 16QAM



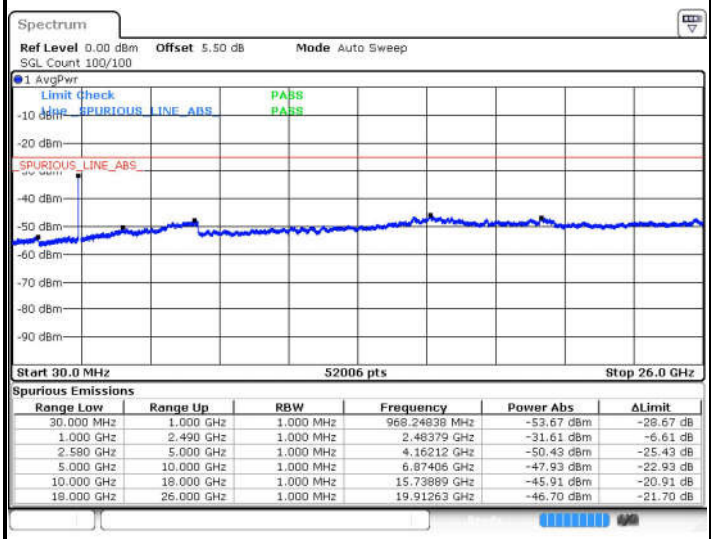
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	928.49825 MHz	-53.56 dBm	-28.56 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.15461 GHz	-53.64 dBm	-28.64 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58266 GHz	-43.57 dBm	-18.57 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86156 GHz	-47.95 dBm	-22.95 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75239 GHz	-45.88 dBm	-20.88 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92563 GHz	-46.73 dBm	-21.73 dB

Date: 25.APR.2016 12:16:49

LTE Band 7 / 20MHz

Lowest Channel / QPSK

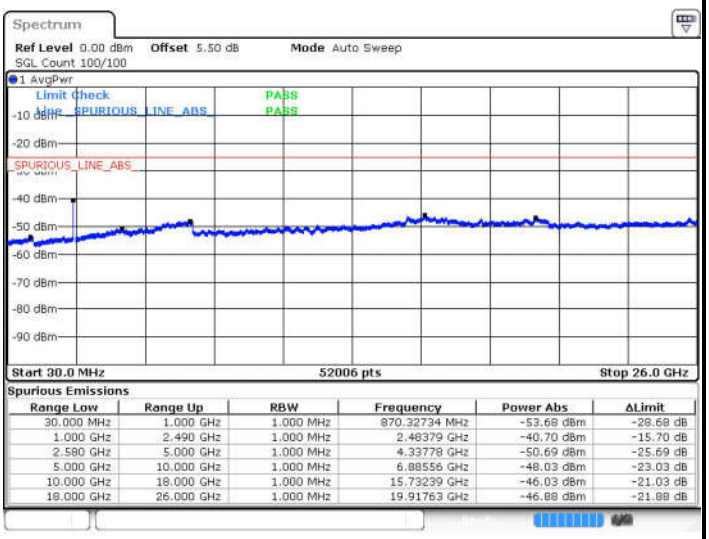


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	968.24838 MHz	-53.67 dBm	-28.67 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48379 GHz	-31.61 dBm	-6.61 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.16212 GHz	-50.43 dBm	-25.43 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87406 GHz	-47.93 dBm	-22.93 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.73889 GHz	-45.91 dBm	-20.91 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91263 GHz	-46.70 dBm	-21.70 dB

Date: 25.APR.2016 12:26:51

Lowest Channel / 16QAM



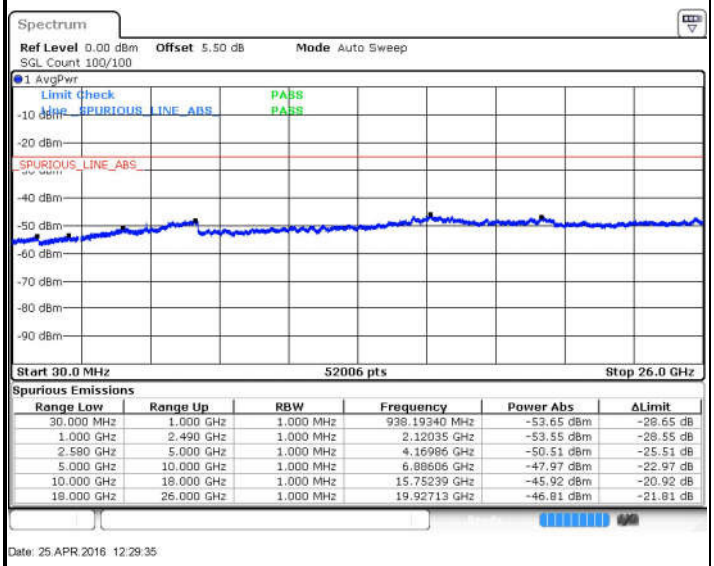
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	870.32734 MHz	-53.68 dBm	-28.68 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.48379 GHz	-40.70 dBm	-15.70 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.33778 GHz	-50.69 dBm	-25.69 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.88556 GHz	-48.03 dBm	-23.03 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.73239 GHz	-46.03 dBm	-21.03 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.91763 GHz	-46.88 dBm	-21.88 dB

Date: 25.APR.2016 12:27:46

LTE Band 7 / 20MHz

Middle Channel / QPSK

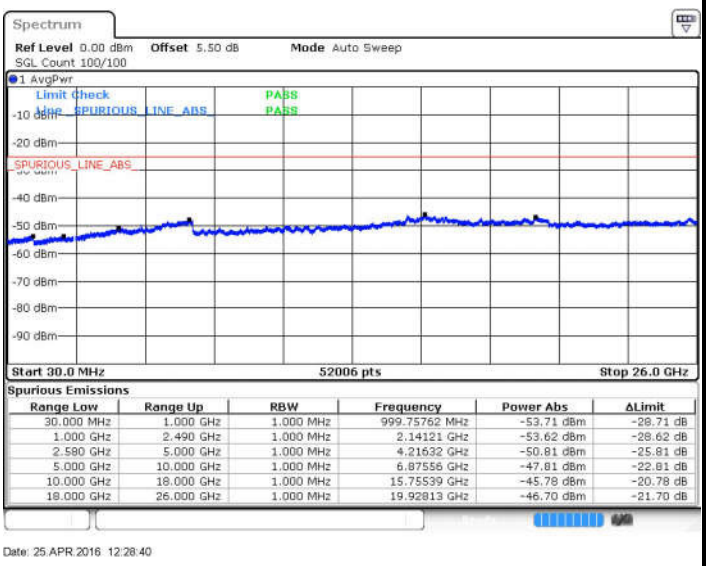


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	938.19340 MHz	-53.65 dBm	-28.65 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.12035 GHz	-53.55 dBm	-28.55 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.16986 GHz	-50.51 dBm	-25.51 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.88606 GHz	-47.97 dBm	-22.97 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75239 GHz	-45.92 dBm	-20.92 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92713 GHz	-46.81 dBm	-21.81 dB

Date: 25.APR.2016 12:29:35

Middle Channel / 16QAM

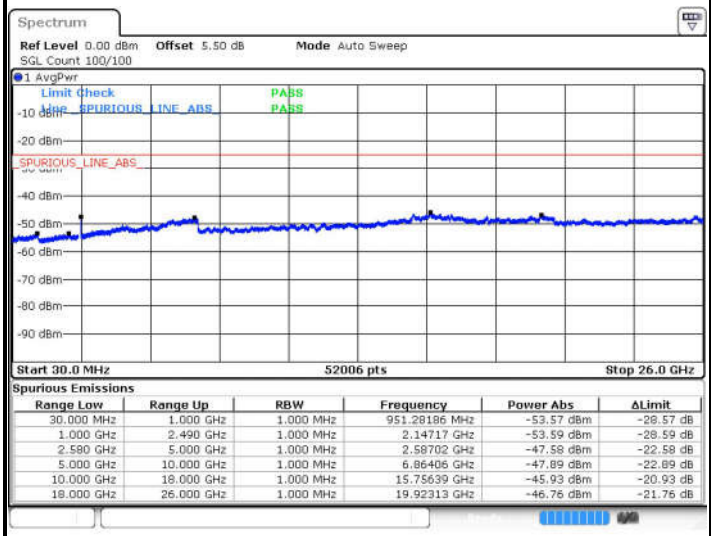


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	999.75762 MHz	-53.71 dBm	-28.71 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.14121 GHz	-53.62 dBm	-28.62 dB
2.580 GHz	5.000 GHz	1.000 MHz	4.21632 GHz	-50.81 dBm	-25.81 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.87556 GHz	-47.81 dBm	-22.81 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75539 GHz	-45.78 dBm	-20.78 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92813 GHz	-46.70 dBm	-21.70 dB

Date: 25.APR.2016 12:28:40

Highest Channel / QPSK

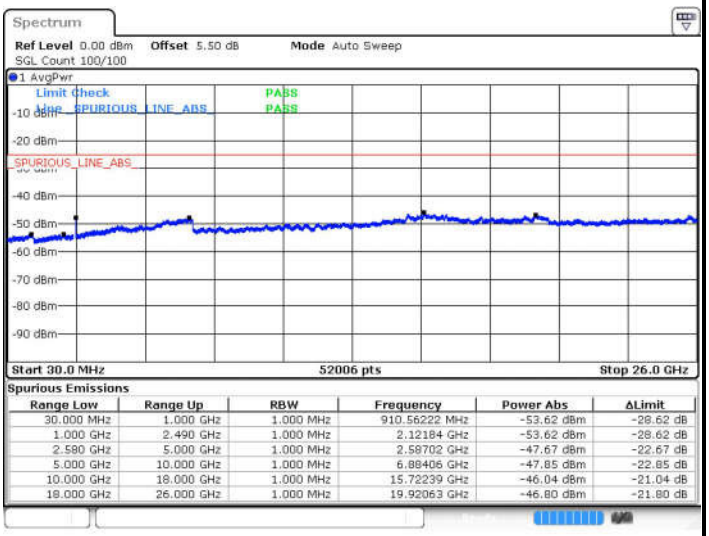


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-53.57 dBm	-28.57 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.14717 GHz	-53.59 dBm	-28.59 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58702 GHz	-47.58 dBm	-22.58 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.86406 GHz	-47.89 dBm	-22.89 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.75639 GHz	-45.93 dBm	-20.93 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92313 GHz	-46.76 dBm	-21.76 dB

Date: 25.APR.2016 12:30:30

Highest Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	910.56222 MHz	-53.62 dBm	-28.62 dB
1.000 GHz	2.490 GHz	1.000 MHz	2.12184 GHz	-53.62 dBm	-28.62 dB
2.580 GHz	5.000 GHz	1.000 MHz	2.58702 GHz	-47.67 dBm	-22.67 dB
5.000 GHz	10.000 GHz	1.000 MHz	6.88406 GHz	-47.85 dBm	-22.85 dB
10.000 GHz	18.000 GHz	1.000 MHz	15.72239 GHz	-46.04 dBm	-21.04 dB
18.000 GHz	26.000 GHz	1.000 MHz	19.92063 GHz	-46.80 dBm	-21.80 dB

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Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0020	PASS
40	Normal Voltage	0.0028	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0023	
-10	Normal Voltage	0.0010	
-20	Normal Voltage	0.0031	
-30	Normal Voltage	0.0015	
20	Maximum Voltage	0.0019	
20	Normal Voltage	0.0025	
20	Battery End Point	0.0023	

Note:

1. Normal Voltage = 3.9V. ；Battery End Point (BEP) = 3.55 V.；Maximum Voltage =4.35 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Appendix B. Test Results of Radiated Test

EIRP

LTE Band 7 / 5MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	12	22.76	0.1888	22.44	0.1754
Middle		1	12	22.33	0.1710	21.32	0.1355
Highest		1	12	22.27	0.1687	21.30	0.1349
Lowest	16QAM	1	0	21.70	0.1479	20.71	0.1178
Middle		1	0	20.90	0.1230	20.27	0.1064
Highest		1	24	20.65	0.1161	19.81	0.0957
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	25	22.65	0.1841	21.83	0.1524
Middle		1	25	22.68	0.1854	21.85	0.1531
Highest		1	25	21.96	0.1570	20.73	0.1183
Lowest	16QAM	1	0	21.37	0.1371	20.45	0.1109
Middle		1	25	21.62	0.1452	20.99	0.1256
Highest		1	0	20.71	0.1178	19.60	0.0912
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 15MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	37	23.23	0.2104	22.70	0.1862
Middle		1	37	22.97	0.1982	22.20	0.1660
Highest		1	37	22.70	0.1862	21.95	0.1567
Lowest	16QAM	1	37	21.70	0.1479	21.34	0.1361
Middle		1	0	21.50	0.1413	20.78	0.1197
Highest		1	37	21.77	0.1503	20.99	0.1256
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 20MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	49	22.88	0.1941	22.25	0.1679
Middle		1	49	22.69	0.1858	21.82	0.1521
Highest		1	49	22.60	0.1820	21.64	0.1459
Lowest	16QAM	1	0	21.78	0.1507	21.17	0.1309
Middle		1	49	21.21	0.1321	20.36	0.1086
Highest		1	0	21.09	0.1285	19.87	0.0971
Limit	EIRP < 2W			Result		PASS	

Radiated Spurious Emission

For Battery 1

LTE Band 7 / 5MHz / QPSK / RB Size 1 Offset 0									
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	5066	-48.70	-25	-23.70	-62.68	-54.48	3.49	9.27	H
	7598	-44.00	-25	-19.00	-60.54	-51.79	4.28	12.07	H
	10130	-44.57	-25	-19.57	-65.96	-51.87	5.10	12.40	H
	5066	-48.76	-25	-23.76	-62.92	-54.54	3.49	9.27	V
	7598	-46.65	-25	-21.65	-63.67	-54.44	4.28	12.07	V
	10130	-45.13	-25	-20.13	-66.23	-52.43	5.10	12.40	V

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

LTE Band 7 / 10MHz / QPSK / RB Size 1 Offset 0									
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	5060	-48.80	-25	-23.80	-62.78	-54.58	3.49	9.27	H
	7592	-46.09	-25	-21.09	-62.63	-53.88	4.28	12.07	H
	10121	-44.55	-25	-19.55	-65.94	-51.85	5.10	12.40	H
	5060	-48.49	-25	-23.49	-62.65	-54.27	3.49	9.27	V
	7592	-45.85	-25	-20.85	-62.87	-53.64	4.28	12.07	V
	10121	-45.01	-25	-20.01	-66.11	-52.31	5.10	12.40	V

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

LTE Band 7 / 15MHz / QPSK / RB Size 1 Offset 0									
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	5057	-48.88	-25	-23.88	-62.86	-54.66	3.49	9.27	H
	7586	-42.98	-25	-17.98	-59.52	-50.77	4.28	12.07	H
	10112	-45.02	-25	-20.02	-66.41	-52.32	5.10	12.40	H
	5057	-48.82	-25	-23.82	-62.98	-54.60	3.49	9.27	V
	7586	-45.32	-25	-20.32	-62.34	-53.11	4.28	12.07	V
	10112	-45.23	-25	-20.23	-66.33	-52.53	5.10	12.40	V

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

LTE Band 7 / 20MHz / QPSK / RB Size 1 Offset 0									
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	5051	-49.29	-25	-24.29	-63.27	-55.07	3.49	9.27	H
	7580	-43.14	-25	-18.14	-59.68	-50.93	4.28	12.07	H
	10103	-45.30	-25	-20.30	-66.69	-52.60	5.10	12.40	H
	5051	-48.87	-25	-23.87	-63.03	-54.65	3.49	9.27	V
	7577	-45.92	-25	-20.92	-62.94	-53.71	4.28	12.07	V
	10103	-45.51	-25	-20.51	-66.61	-52.81	5.10	12.40	V

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

For Battery 2

LTE Band 7 / 15MHz / QPSK / RB Size 1 Offset 0									
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	5057	-47.83	-25	-22.83	-61.81	-53.61	3.49	9.27	H
	7586	-46.25	-25	-21.25	-62.79	-54.04	4.28	12.07	H
	10112	-45.57	-25	-20.57	-66.96	-52.87	5.10	12.40	H
	5057	-49.42	-25	-24.42	-63.58	-55.20	3.49	9.27	V
	7586	-47.12	-25	-22.12	-64.14	-54.91	4.28	12.07	V
	10112	-45.55	-25	-20.55	-66.65	-52.85	5.10	12.40	V

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