FCC RF Test Report

APPLICANT	:	**Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd**
EQUIPMENT	:	**Smartphone**
BRAND NAME	:	**Coolpad**
MODEL NAME	:	**cp3636a**
MARKETING NAME	:	**Coolpad Canvas**
FCC ID	:	**R38YL3636A**
STANDARD	:	**FCC 47 CFR Part 2, 27**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on Sep. 30, 2016 and completely tested on Jan. 21, 2017. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-D-2010 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Prepared by: Eric Shih / Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
2353

SPORTON INTERNATIONAL (SHENZHEN) INC.

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TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG693006C	Rev. 01	Initial issue of report	Feb. 23, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	-	Peak-to-Average Ratio	<13dB	N/A	Reporting only
3.6	§27.50 (a)(3)	EIRP Power Density	EIRP < 250mW/5MHz	PASS	-
3.7	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.8	§2.1051 §27.53 (a)(4)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.9	§2.1051 §27.53 (a)(4)	Conducted Spurious Emission	< $70+10\log_{10}$(P[Watts])	PASS	-
3.10	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within the band	PASS	-
4.4	§2.1053 §27.53 (a)(4)	Radiated Spurious Emission	< $70+10\log_{10}$(P[Watts])	PASS	Under limit 8.12 dB at 4611.000 MHz

1 General Description

1.1 Applicant

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Coolpad Information Harbor, High-tech Industrial Park (North), Nanshan District, Shenzhen, P.R.C.

1.2 Manufacturer

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd
Coolpad Information Harbor, High-tech Industrial Park (North), Nanshan District, Shenzhen, P.R.C.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Brand Name	Coolpad
Model Name	cp3636a
Marketing Name	Coolpad Canvas
FCC ID	R38YL3636A
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/ HSPA+(16QAM uplink is not supported)/LTE WLAN2.4GHz 802.11b/g/n HT20 Bluetooth v2.1+EDR Bluetooth v4.0/4.1 LE
IMEI Code	Conducted: 863515030004926 Radiation: 863515030003548
HW Version	P1
SW Version	091.11.170119
EUT Stage	Production Unit

Note: Manufacturer's declaration LTE band 40 disabled by software.

1.4 Product Specification of Equipment Under Test

Product Feature	
Tx Frequency	LTE Band 30 : 2307.5 MHz ~ 2312.5 MHz
Rx Frequency	LTE Band 30 : 2352.5 MHz ~ 2357.5 MHz
Bandwidth	5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 30 : 22.73 dBm
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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

1.6 Maximum Frequency Tolerance and Emission Designator

LTE Band 30		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum Conducted power(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum Conducted power(W)
5	2307.5 ~ 2312.5	4M50G7D	-	0.1866	4M48W7D	-	0.1556
10	2310.0	8M99G7D	0.0121	0.1875	9M03W7D	-	0.1349

1.7 Testing Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	**Sporton Site No.**	
	TH01-SZ	

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	03CH03-SZ	565805

1.8 Applied Standards

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

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

2 Test Configuration of Equipment Under Test

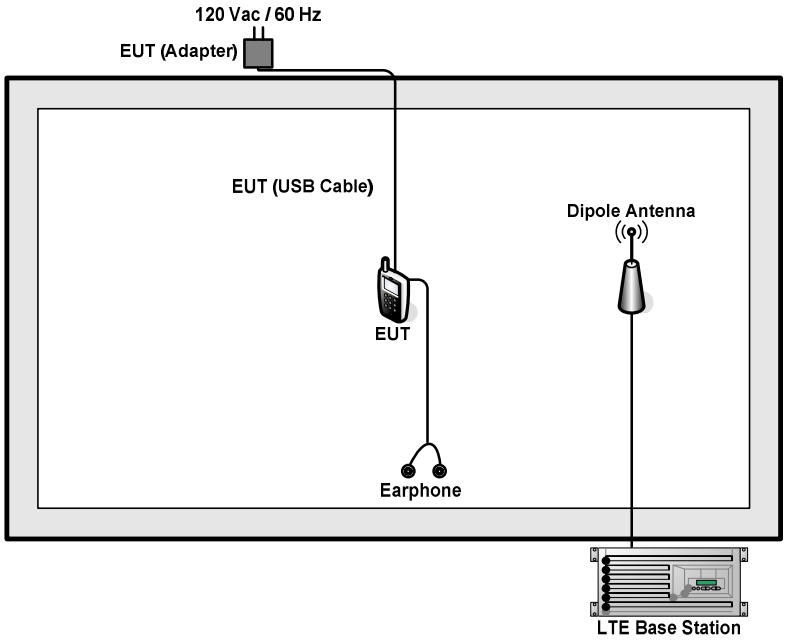
2.1 Test Mode

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.

Conducted Test Cases	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	30	-	-	V		-	-	V	V	V	V	V	V	V	V
		-	-		V	-	-	V	V	V	V	V		V	
Peak-to-Average Ratio	30	-	-		V	-	-	V	V	V		V		V	
E.I.R.P PSD	30	-	-	V		-	-	V	V	V			V	V	V
		-	-		V	-	-	V	V	V				V	
26dB and 99% Bandwidth	30	-	-	V		-	-	V	V			V	V	V	V
		-	-		V	-	-	V	V			V		V	
Conducted Band Edge	30	-	-	V		-	-	V	V	V		V	V		V
		-	-		V	-	-	V	V	V		V		V	
Conducted Spurious Emission	30	-	-	V		-	-	V	V	V			V	V	V
		-	-		V	-	-	V	V	V				V	
Frequency Stability	30	-	-		V	-	-	V				V		V	
Radiated Spurious Emission	30	-	-	V		-	-	V		V			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 INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	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 5.0 dB.

Example :
Offset(dB) = RF cable loss(dB).
= 5.0 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 30 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	27710	-
	Frequency	-	2310	-
5	Channel	27685	27710	27735
	Frequency	2307.5	2310	2312.5

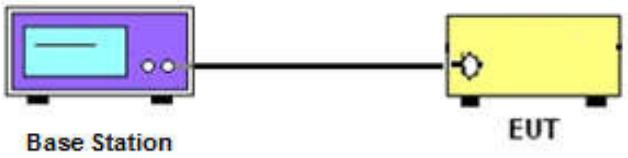
3 Conducted Test Items

3.1 Measuring Instruments

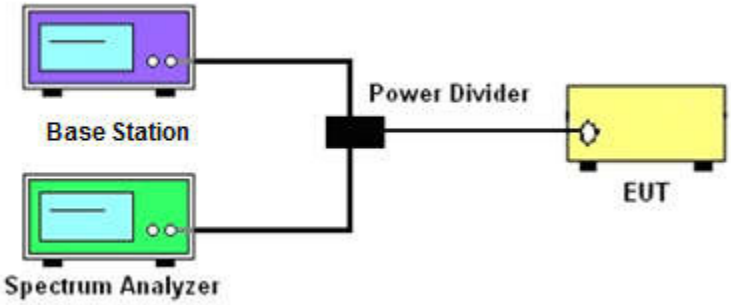
See list of measuring instruments of this test report.

3.2 Test Setup

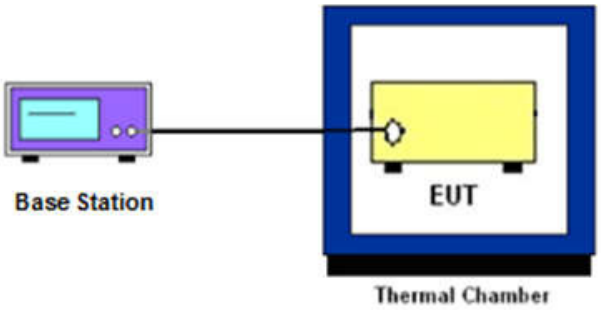
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied / 26dB Bandwidth ,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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. 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 base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.

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 EIRP Power Density

3.6.1 Description of EIRP Power Density

For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, *except that* for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

3.6.2 Test Procedures

1. Set instrument center frequency to OBW center frequency.
2. Set span to at least 1.5 times the OBW.
3. Set the RBW to the specified reference bandwidth (often 1 MHz).
4. Set VBW ≥ 3 × RBW.
5. Detector = RMS (power averaging).
6. Ensure that the number of measurement points in the sweep ≥ 2 × span/RBW.
7. Sweep time = auto couple.
8. Employ trace averaging (RMS) mode over a minimum of 100 traces.
9. Use the peak marker function to determine the maximum amplitude level within the reference bandwidth (PSD).

3.7 Occupied Bandwidth

3.7.1 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 26dB 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 26 dB.
The 26 dB emission bandwidth(EBW) 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.

3.7.2 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF powers with full RB sizes were measured.

3.8 Conducted Band Edge Measurement

3.8.1 Description of Conducted Band Edge Measurement

27.53 (a)(4)

For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

3.8.2 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels were measured with RBW ≥ 1% EBW set in Spectrum Analyzer, while the EUT was transmitting under maximum power.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
4. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB) = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

3.9 Conducted Spurious Emission Measurement

3.9.1 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 70 + 10 log (P) dB.

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

3.9.2 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 70 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [70 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [70 + 10log(P)] (dB)
   = -40dBm.

3.10 Frequency Stability Measurement

3.10.1 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.

3.10.2 Test Procedures for Temperature Variation

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

3.10.3 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

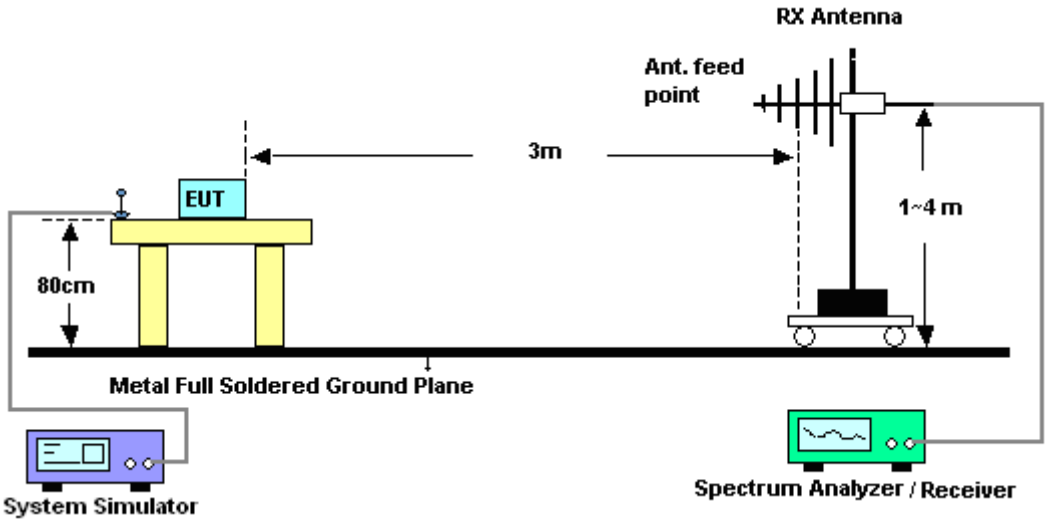
4 Radiated Test Items

4.1 Measuring Instruments

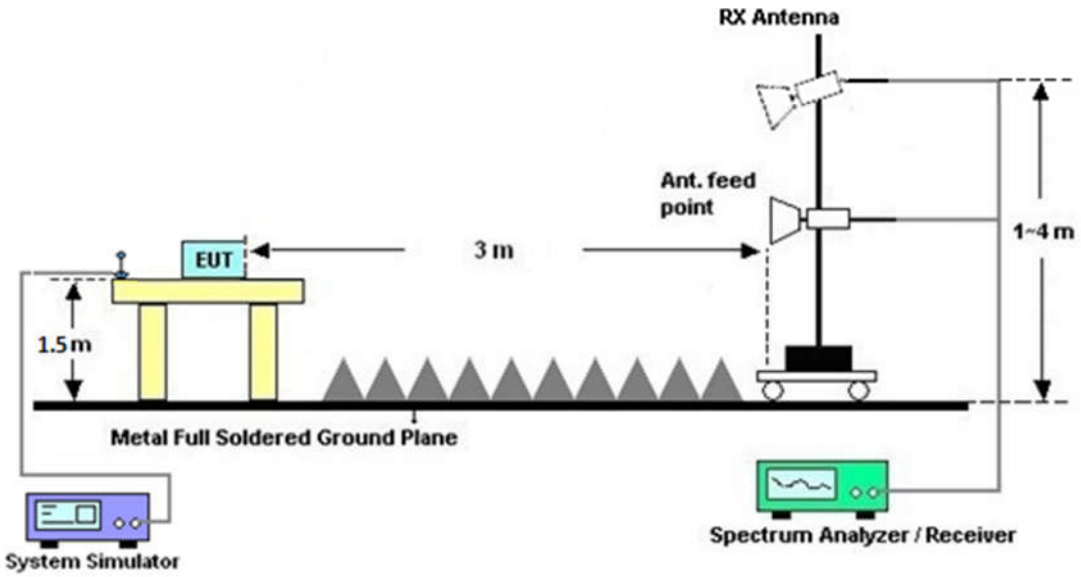
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-D-2010.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB.

4.4.2 Test Procedures

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 70 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [70 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [70 + 10log(P)] (dB)
    = -40dBm.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	May 07, 2016	Dec. 14, 2016~ Dec. 20, 2016	May 06, 2017	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 16, 2016	Dec. 14, 2016~ Dec. 20, 2016	Jul. 15, 2017	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Jan. 21, 2017	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz	May 07, 2016	Jan. 21, 2017	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	Jan. 21, 2017	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Jan. 21, 2017	May 06, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug. 10, 2016	Jan. 21, 2017	Aug. 09, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 11, 2016	Jan. 21, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 06, 2017	Jan. 21, 2017	Jan. 05, 2018	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 16, 2016	Jan. 21, 2017	Jul. 15, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jan. 21, 2017	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jan. 21, 2017	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jan. 21, 2017	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB

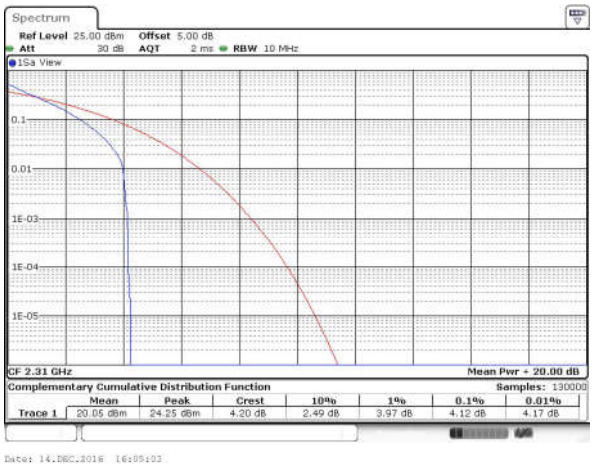
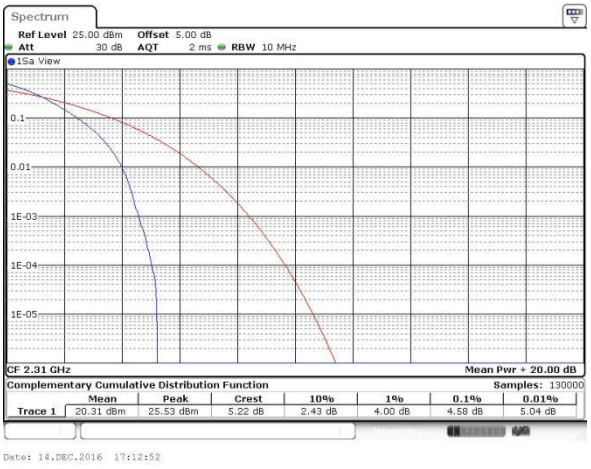
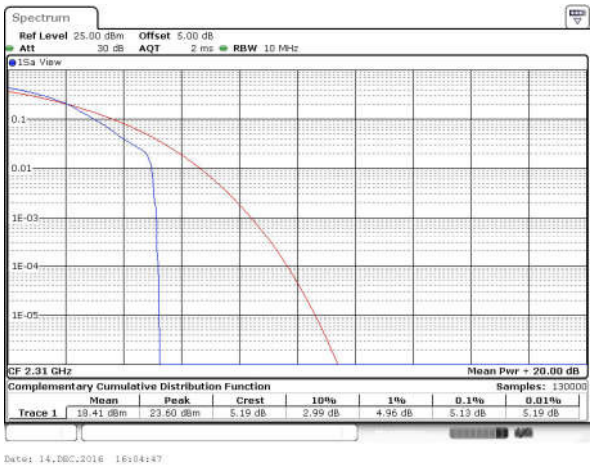
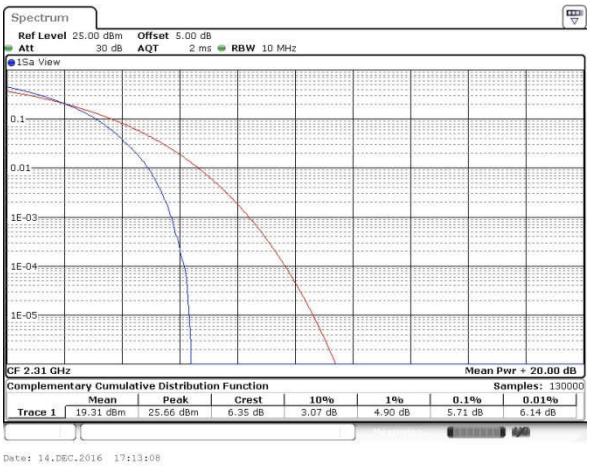
Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.66	22.45	22.56
5	1	12		22.52	22.71	22.69
5	1	24		22.19	22.36	22.35
5	12	0		21.82	21.63	21.71
5	12	7		21.74	21.51	21.58
5	12	13		21.59	21.55	21.65
5	25	0		21.73	21.56	21.64
5	1	0	16-QAM	21.70	21.46	21.03
5	1	12		21.92	21.75	21.38
5	1	24		21.42	21.00	20.97
5	12	0		20.69	20.74	20.63
5	12	7		20.82	20.72	20.52
5	12	13		20.65	20.35	20.36
5	25	0		20.76	20.59	20.65
10	1	0	QPSK		22.73	
10	1	25			22.58	
10	1	49			22.42	
10	25	0			21.70	
10	25	12			21.60	
10	25	25			21.44	
10	50	0			21.62	
10	1	0	16-QAM		21.30	
10	1	25			21.06	
10	1	49			20.83	
10	25	0			20.75	
10	25	12			20.74	
10	25	25			20.60	
10	50	0			20.62	

Peak-to-Average Ratio

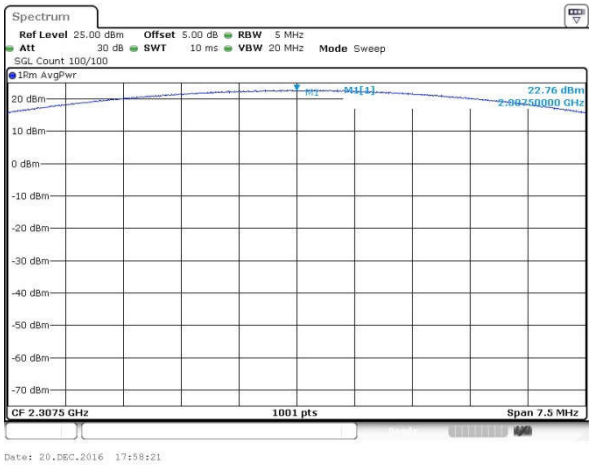
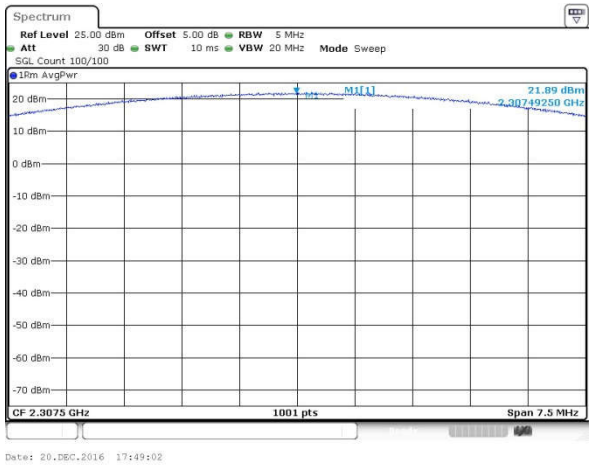
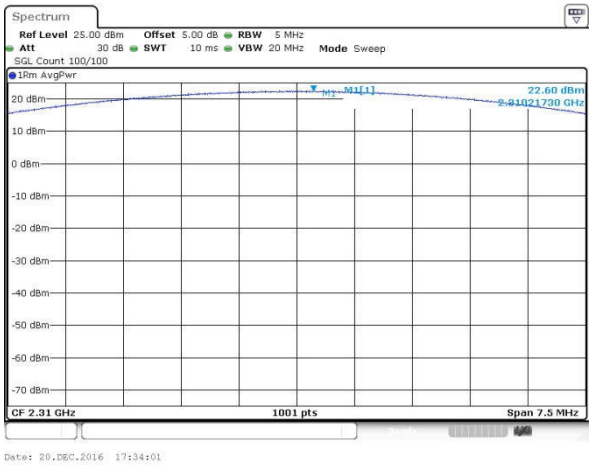
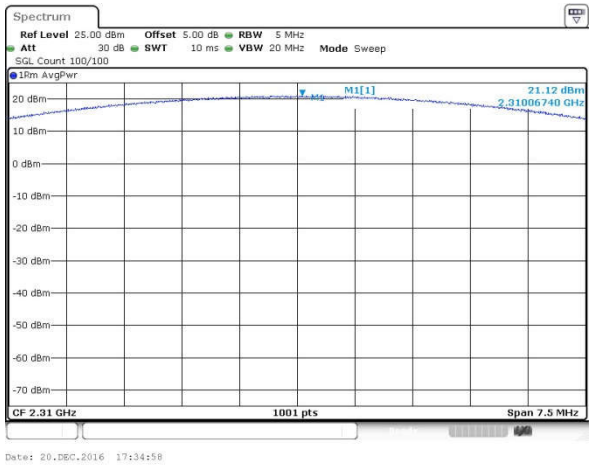
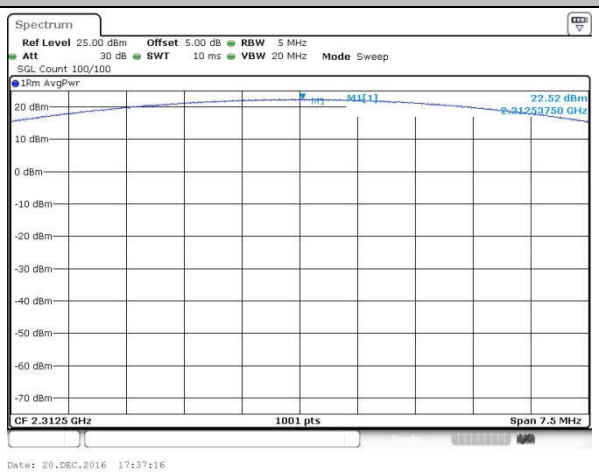
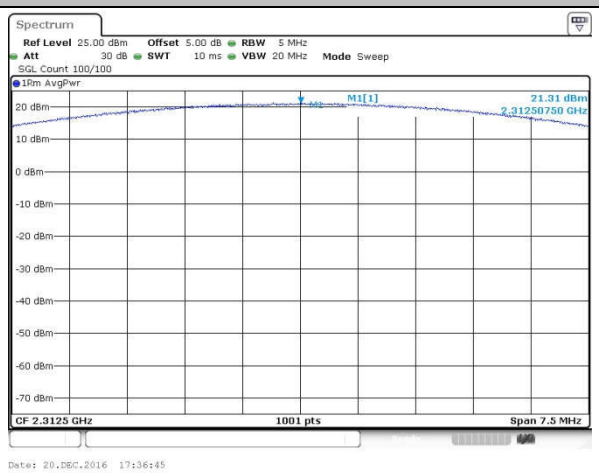
Mode	LTE Band 30 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Middle CH	4.12	4.58	5.13	5.71	PASS

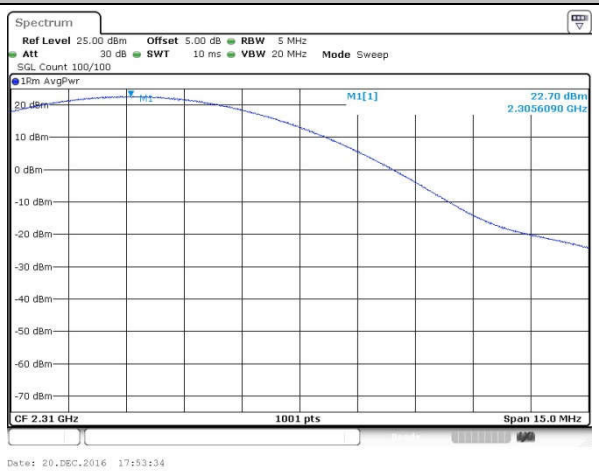
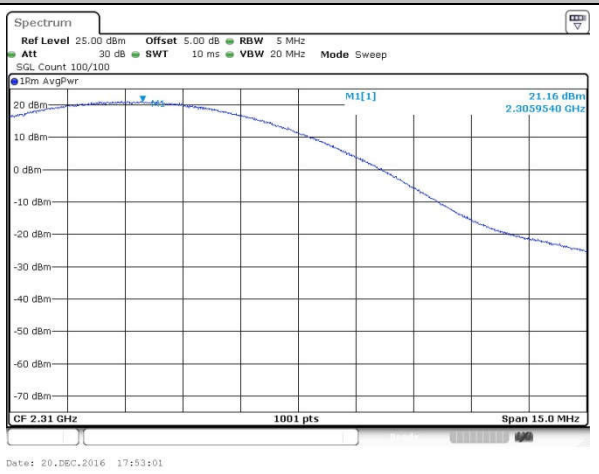
LTE Band 30 / 10MHz / QPSK	
Middle Channel / 1RB	Middle Channel / Full RB
	
LTE Band 30 / 10MHz / 16QAM	
Middle Channel / 1RB	Middle Channel / Full RB
	

EIRP Power Density

Mode	LTE Band 30 : Conducted Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					22.76	21.89						
Middle CH					22.60	21.12	22.70	21.16				
Highest CH					22.52	21.31						

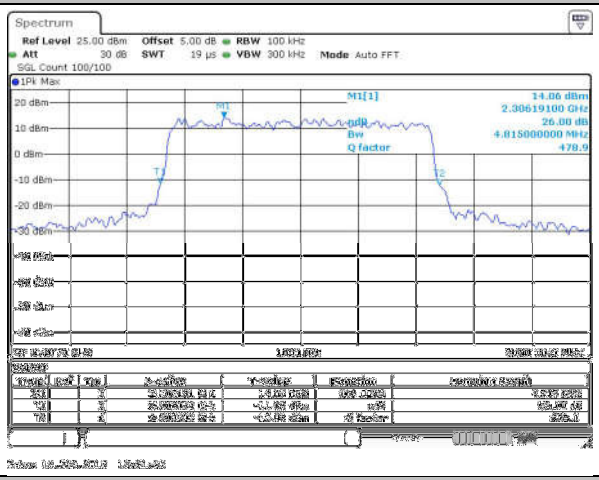
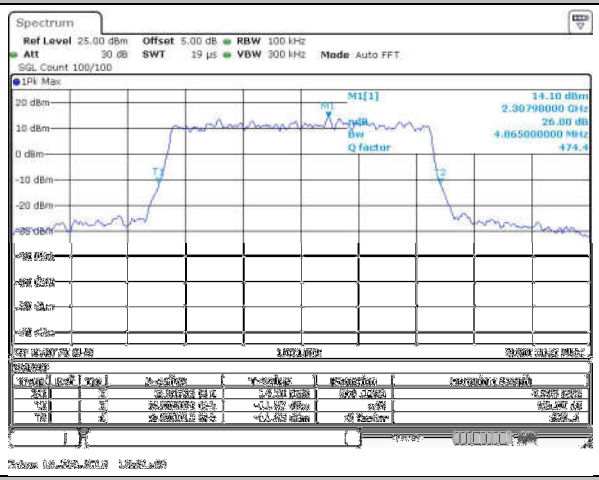
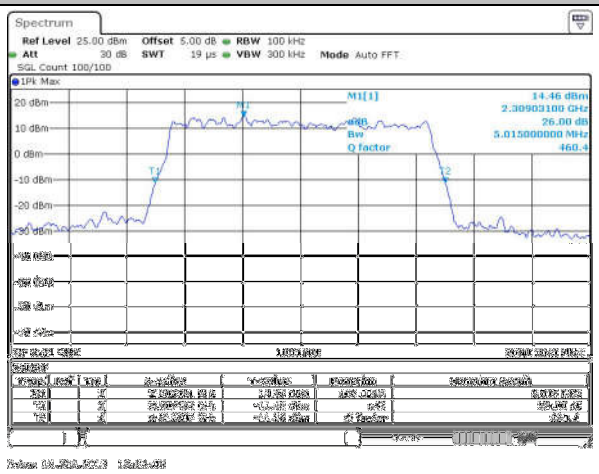
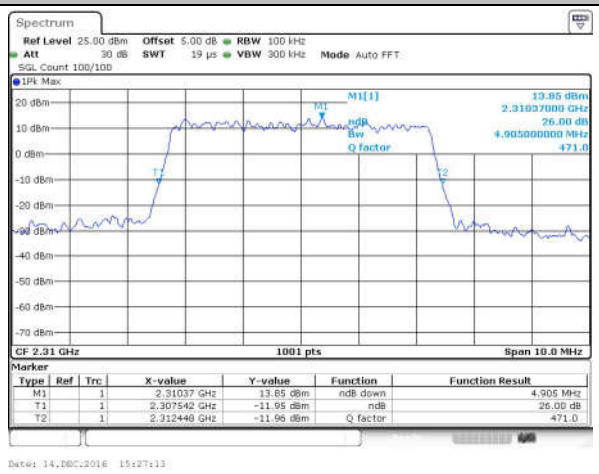
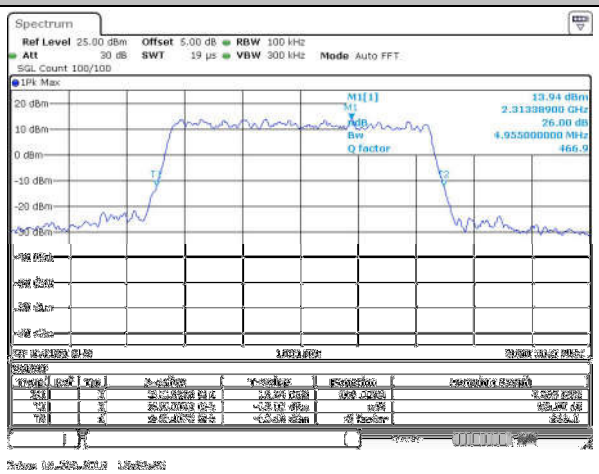
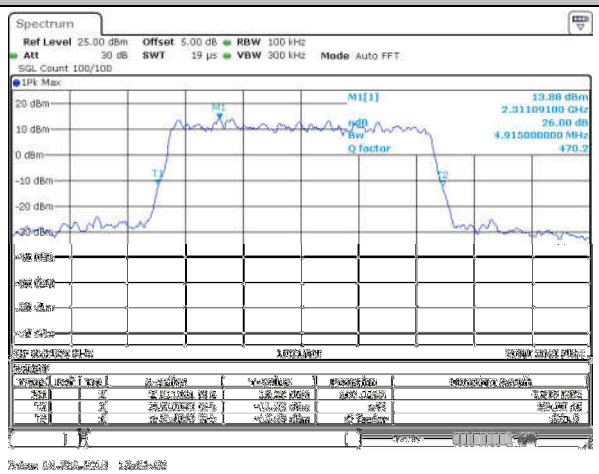
Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					23.26	22.39						
Middle CH					23.10	21.62	23.20	21.66				
Highest CH					23.02	21.81						
Antenna Gain	0.5dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

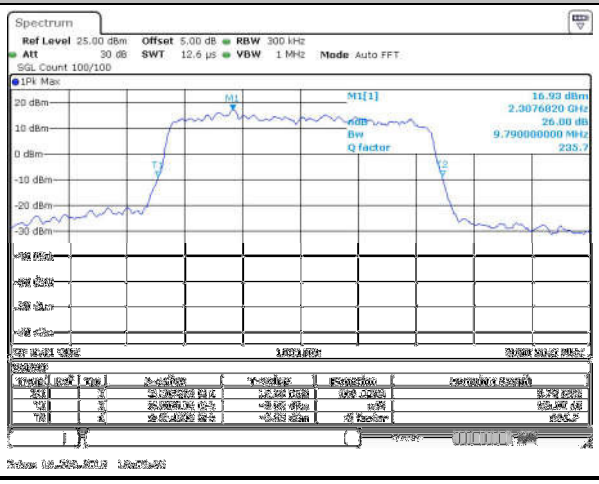
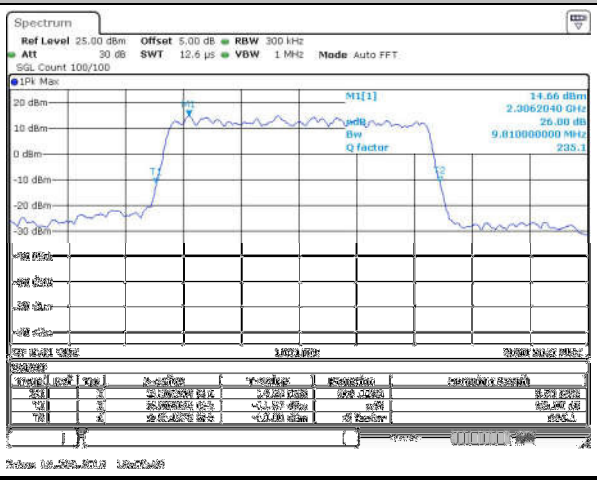
LTE Band 30 / 5MHz	
Lowest Channel / 5MHz / 1RB0 / QPSK	**Lowest Channel / 5MHz / 1RB12 / 16QAM**
	
Middle Channel / 5MHz / 1RB12 / QPSK	**Middle Channel / 5MHz / 1RB12 / 16QAM**
	
Highest Channel / 5MHz / 1RB12 / QPSK	**Highest Channel / 5MHz / 1RB12 / 16QAM**
	

LTE Band 30 / 10MHz	
Lowest Channel / 10MHz / 1RB0 / QPSK	**Lowest Channel / 10MHz / 1RB0 / 16QAM**
	

26dB Bandwidth

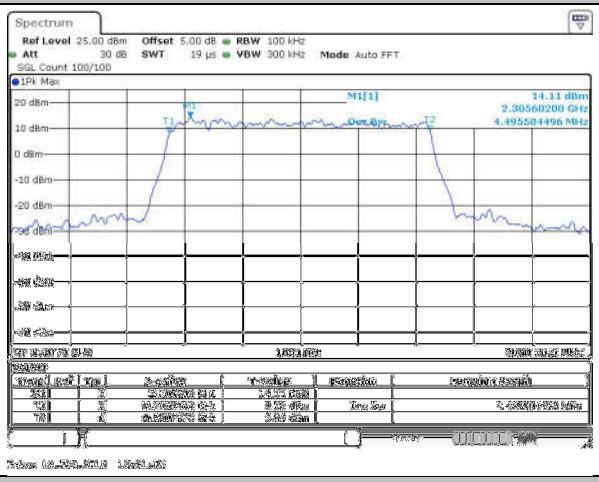
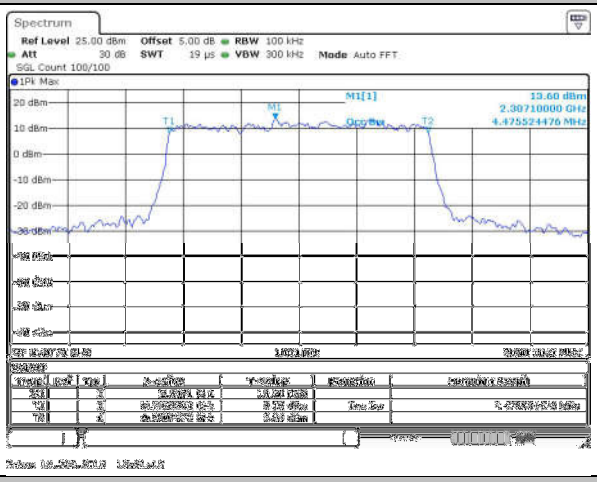
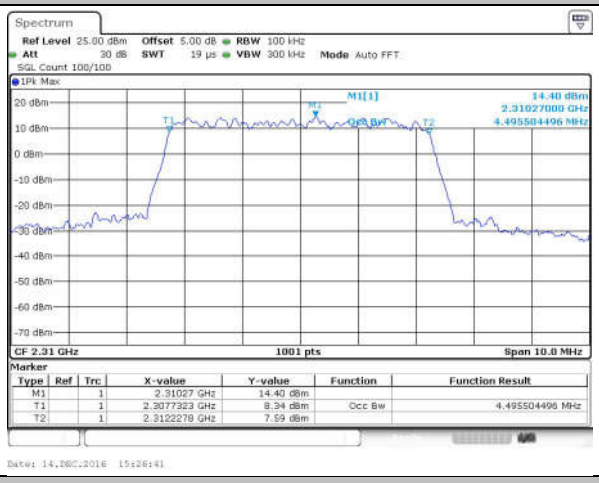
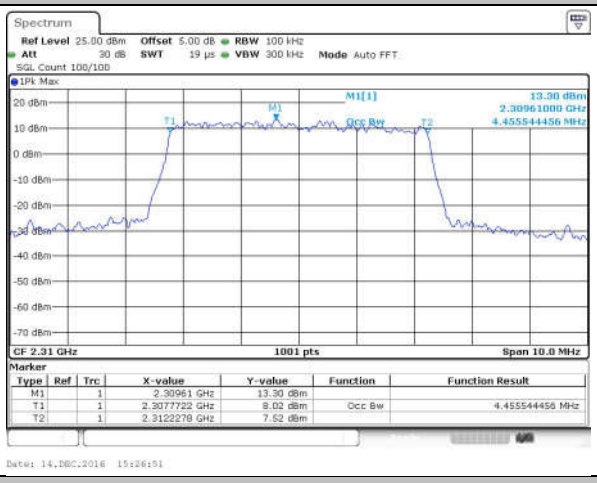
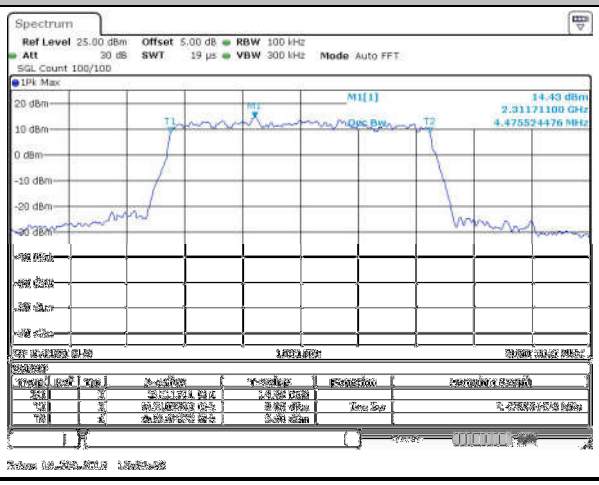
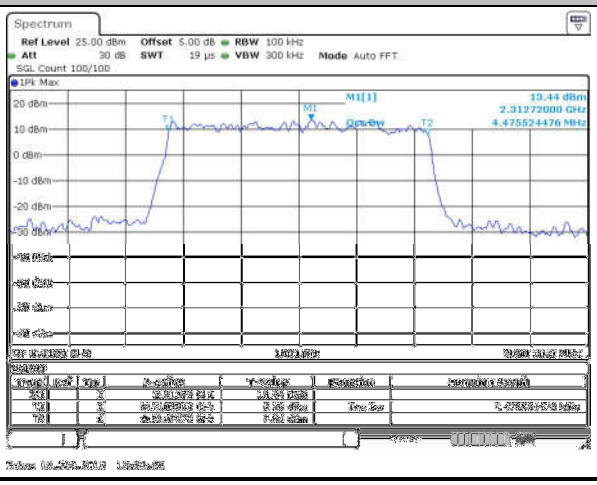
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.815	4.865	-	-				
Middle CH					5.015	4.905	9.79	9.81				
Highest CH					4.955	4.915	-	-				

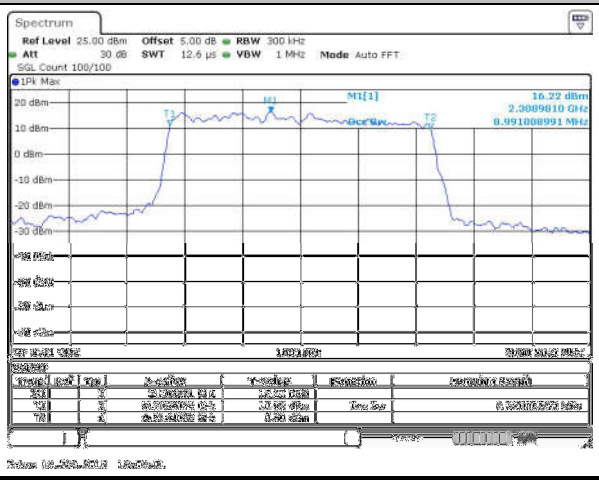
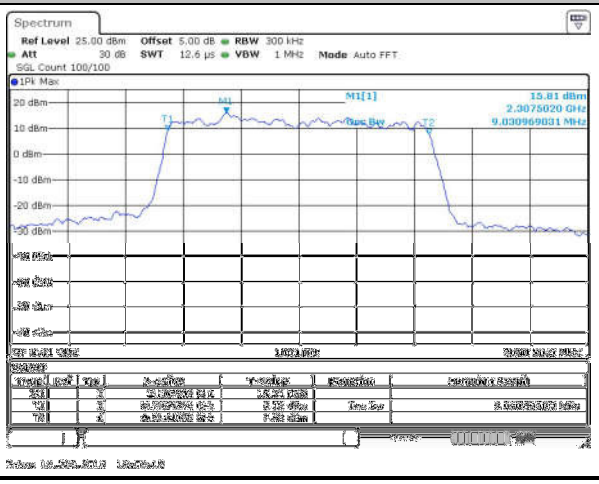
LTE Band 30	
Lowest Channel / 5MHz / QPSK	Lowest Channel / 5MHz / 16QAM
	
Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	
Highest Channel / 5MHz / QPSK	Highest Channel / 5MHz / 16QAM
	

LTE Band 30	
Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM
	

Occupied Bandwidth

Mode	LTE Band 30 : 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					4.50	4.48						
Middle CH					4.50	4.46	8.99	9.03				
Highest CH					4.48	4.48						

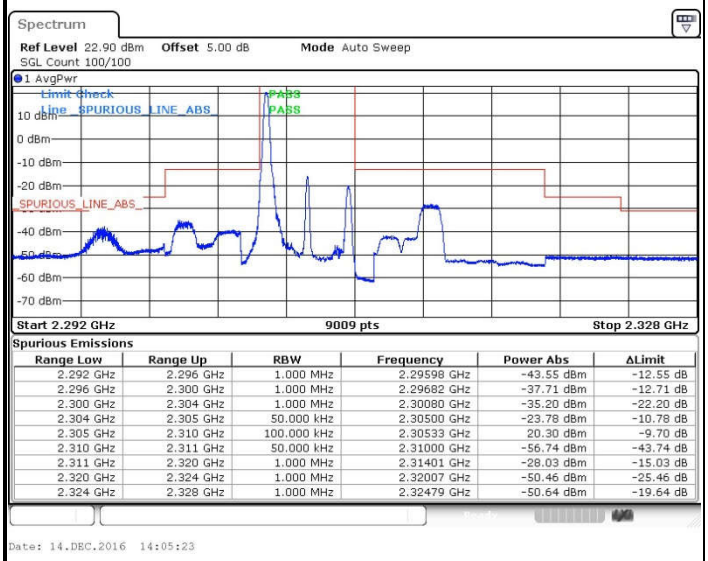
LTE Band 30	
Lowest Channel / 5MHz / QPSK	Lowest Channel / 5MHz / 16QAM
	
Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	
Highest Channel / 5MHz / QPSK	Highest Channel / 5MHz / 16QAM
	

LTE Band 30	
Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM
	

Conducted Band Edge

LTE Band 30 / 5MHz / QPSK

Lowest Band Edge / 1 RB0

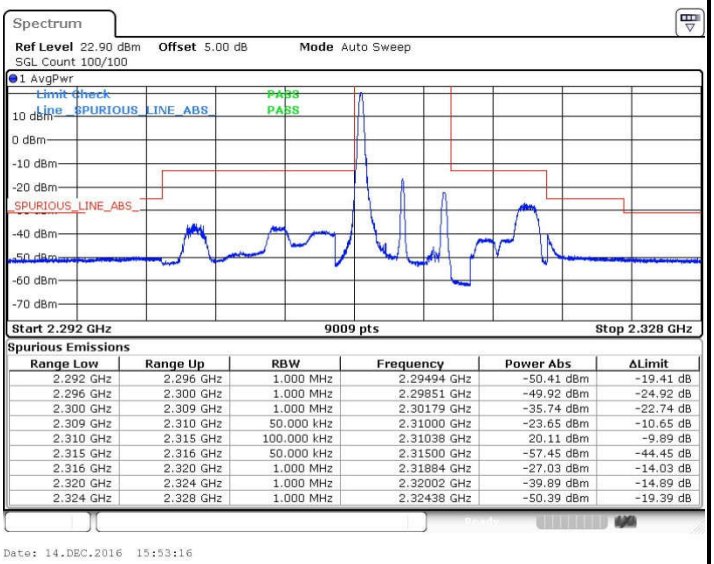


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29598 GHz	-43.55 dBm	-12.55 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29682 GHz	-37.71 dBm	-12.71 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30080 GHz	-35.20 dBm	-22.20 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-23.78 dBm	-10.78 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30533 GHz	20.30 dBm	-9.70 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-56.74 dBm	-43.74 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31401 GHz	-28.03 dBm	-15.03 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32007 GHz	-50.46 dBm	-25.46 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32479 GHz	-50.64 dBm	-19.64 dB

Date: 14.DEC.2016 14:05:23

Highest Band Edge / 1 RB0

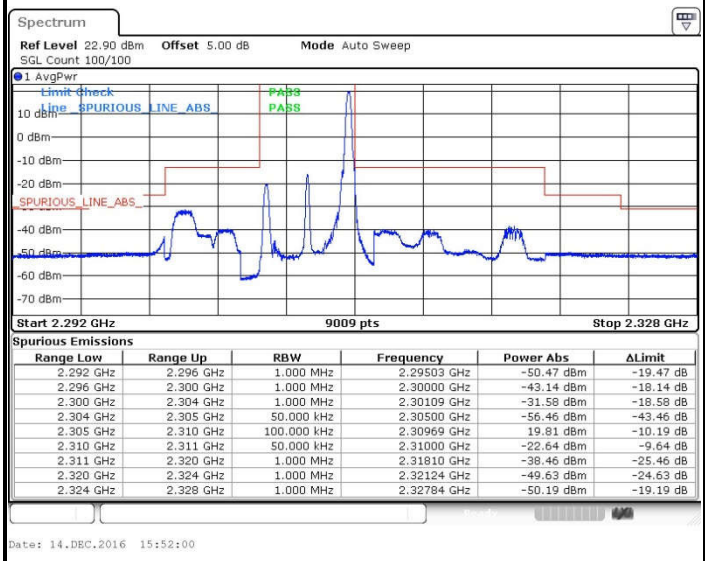


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29494 GHz	-50.41 dBm	-19.41 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29851 GHz	-49.92 dBm	-24.92 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30179 GHz	-35.74 dBm	-22.74 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-23.65 dBm	-10.65 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31038 GHz	20.11 dBm	-9.89 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-57.45 dBm	-44.45 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31884 GHz	-27.03 dBm	-14.03 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32002 GHz	-39.89 dBm	-14.89 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32438 GHz	-50.39 dBm	-19.39 dB

Date: 14.DEC.2016 15:53:16

Lowest Band Edge / 1 RBmax

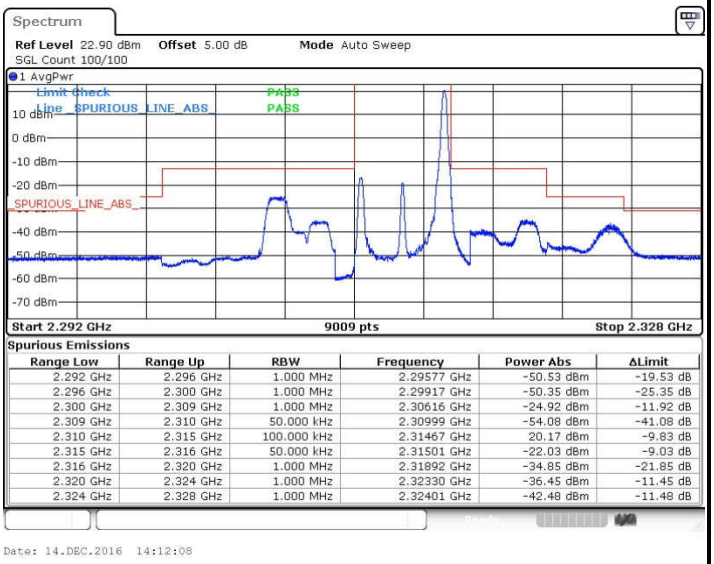


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29503 GHz	-50.47 dBm	-19.47 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.30000 GHz	-43.14 dBm	-18.14 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30109 GHz	-31.58 dBm	-18.58 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-56.46 dBm	-43.46 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30969 GHz	19.81 dBm	-10.19 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-22.64 dBm	-9.64 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31810 GHz	-38.46 dBm	-25.46 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32124 GHz	-49.63 dBm	-24.63 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32784 GHz	-50.19 dBm	-19.19 dB

Date: 14.DEC.2016 15:52:00

Highest Band Edge / 1 RBmax

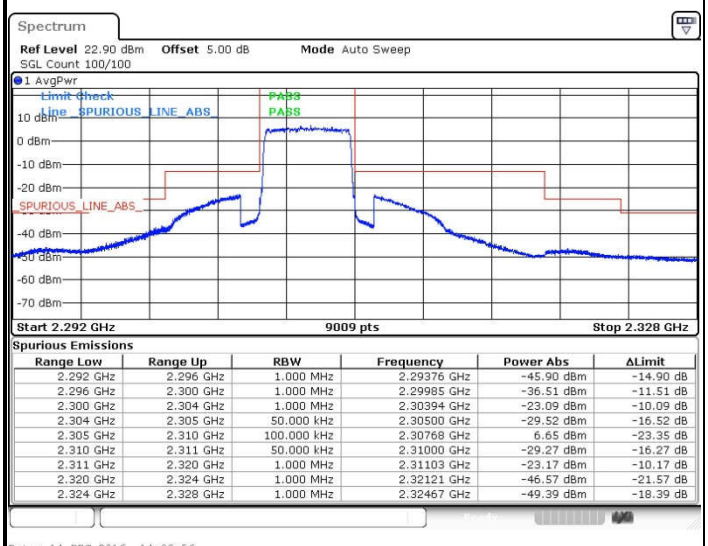


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29577 GHz	-50.53 dBm	-19.53 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29917 GHz	-50.35 dBm	-25.35 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30616 GHz	-24.92 dBm	-11.92 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-54.08 dBm	-41.08 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31467 GHz	20.17 dBm	-9.83 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-22.03 dBm	-9.03 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31892 GHz	-34.85 dBm	-21.85 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32330 GHz	-36.45 dBm	-11.45 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-42.48 dBm	-11.48 dB

Date: 14.DEC.2016 14:12:08

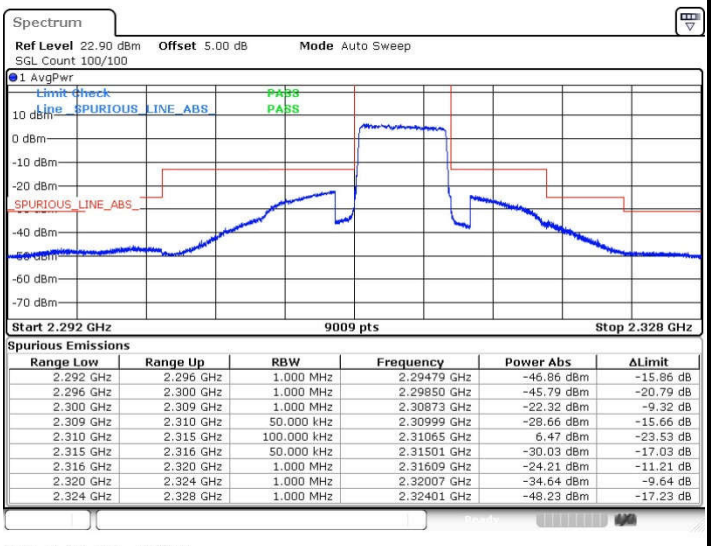
Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29376 GHz	-45.90 dBm	-14.90 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29985 GHz	-36.51 dBm	-11.51 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30394 GHz	-23.09 dBm	-10.09 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-29.52 dBm	-16.52 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30768 GHz	6.65 dBm	-23.35 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-29.27 dBm	-16.27 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31103 GHz	-23.17 dBm	-10.17 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32121 GHz	-46.57 dBm	-21.57 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32467 GHz	-49.39 dBm	-18.39 dB

Date: 14.DEC.2016 14:08:56



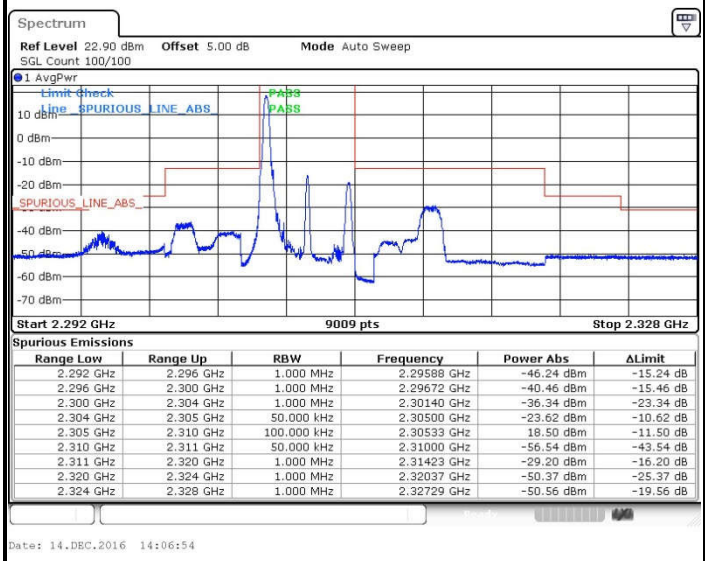
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29479 GHz	-46.86 dBm	-15.86 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29850 GHz	-45.79 dBm	-20.79 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30873 GHz	-22.32 dBm	-9.32 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-28.66 dBm	-15.66 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31065 GHz	6.47 dBm	-23.53 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-30.03 dBm	-17.03 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31609 GHz	-24.21 dBm	-11.21 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32007 GHz	-34.64 dBm	-9.64 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-48.23 dBm	-17.23 dB

Date: 14.DEC.2016 14:09:51

LTE Band 30 / 5MHz / 16QAM

Lowest Band Edge / 1RB0

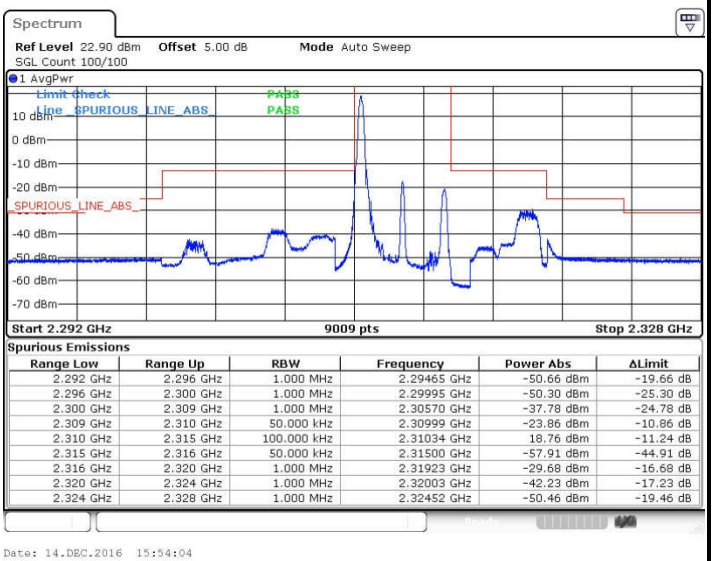


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29588 GHz	-46.24 dBm	-15.24 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29672 GHz	-40.46 dBm	-15.46 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30140 GHz	-36.34 dBm	-23.34 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-23.62 dBm	-10.62 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30533 GHz	18.50 dBm	-11.50 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-56.54 dBm	-43.54 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31423 GHz	-29.20 dBm	-16.20 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32037 GHz	-50.37 dBm	-25.37 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32729 GHz	-50.56 dBm	-19.56 dB

Date: 14.DEC.2016 14:06:54

Highest Band Edge / 1 RB0

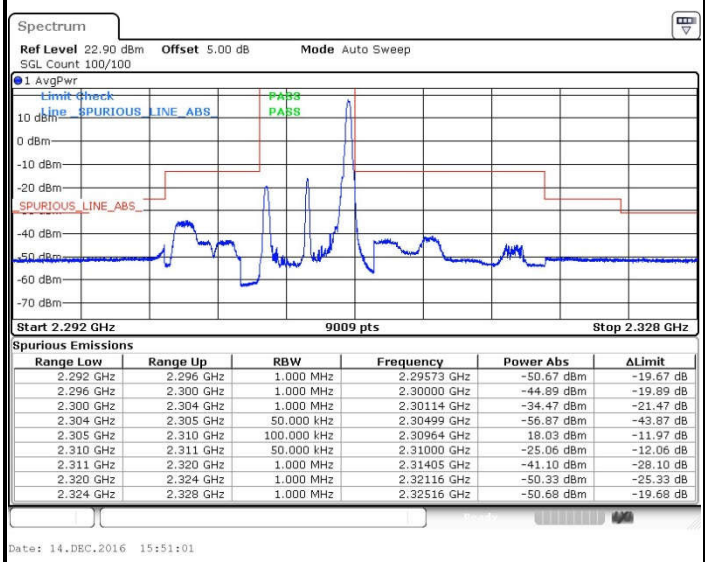


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29465 GHz	-50.66 dBm	-19.66 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29995 GHz	-50.30 dBm	-25.30 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30570 GHz	-37.78 dBm	-24.78 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-23.86 dBm	-10.86 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31034 GHz	18.76 dBm	-11.24 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-57.91 dBm	-44.91 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31923 GHz	-29.68 dBm	-16.68 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32003 GHz	-42.23 dBm	-17.23 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32452 GHz	-50.46 dBm	-19.46 dB

Date: 14.DEC.2016 15:54:04

Lowest Band Edge / 1RBmax

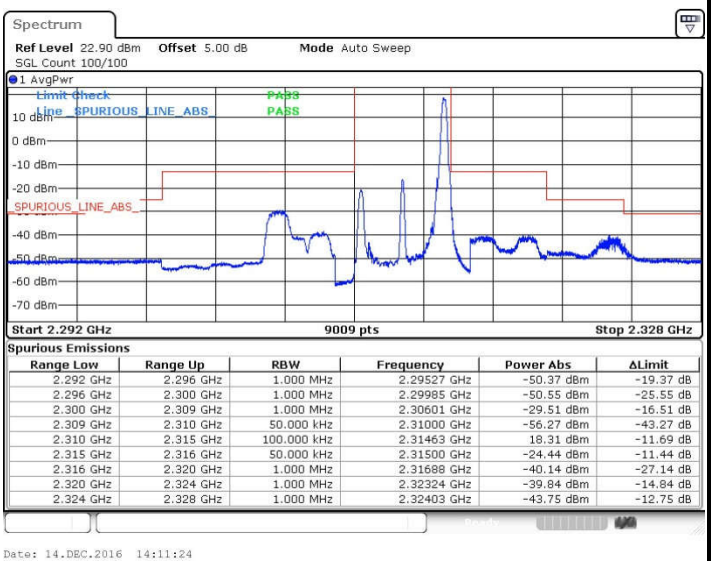


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29573 GHz	-50.67 dBm	-19.67 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.30000 GHz	-44.89 dBm	-19.89 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30114 GHz	-34.47 dBm	-21.47 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-56.87 dBm	-43.87 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30964 GHz	18.03 dBm	-11.97 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-25.06 dBm	-12.06 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31405 GHz	-41.10 dBm	-28.10 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32116 GHz	-50.33 dBm	-25.33 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32516 GHz	-50.68 dBm	-19.68 dB

Date: 14.DEC.2016 15:51:01

Highest Band Edge / 1RBmax

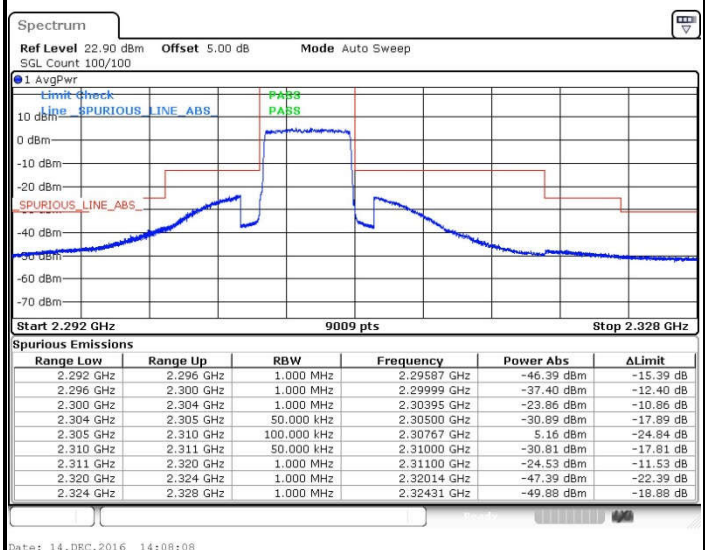


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29527 GHz	-50.37 dBm	-19.37 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29985 GHz	-50.55 dBm	-25.55 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30601 GHz	-29.51 dBm	-16.51 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-56.27 dBm	-43.27 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31463 GHz	18.31 dBm	-11.69 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-24.44 dBm	-11.44 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31688 GHz	-40.14 dBm	-27.14 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32324 GHz	-39.84 dBm	-14.84 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-43.75 dBm	-12.75 dB

Date: 14.DEC.2016 14:11:24

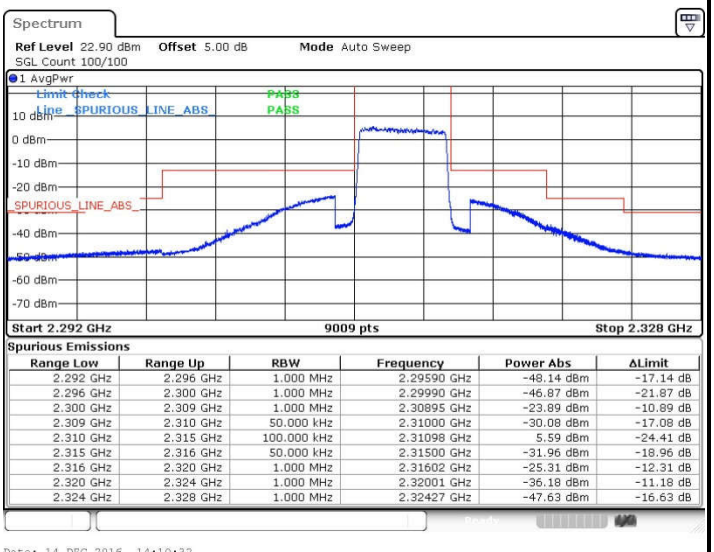
Lowest Band Edge / Full RB	Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29587 GHz	-46.39 dBm	-15.39 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29999 GHz	-37.40 dBm	-12.40 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30395 GHz	-23.86 dBm	-10.86 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-30.89 dBm	-17.89 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30767 GHz	5.16 dBm	-24.84 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-30.81 dBm	-17.81 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31100 GHz	-24.53 dBm	-11.53 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32014 GHz	-47.39 dBm	-22.39 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32431 GHz	-49.88 dBm	-18.88 dB

Date: 14.DEC.2016 14:08:08



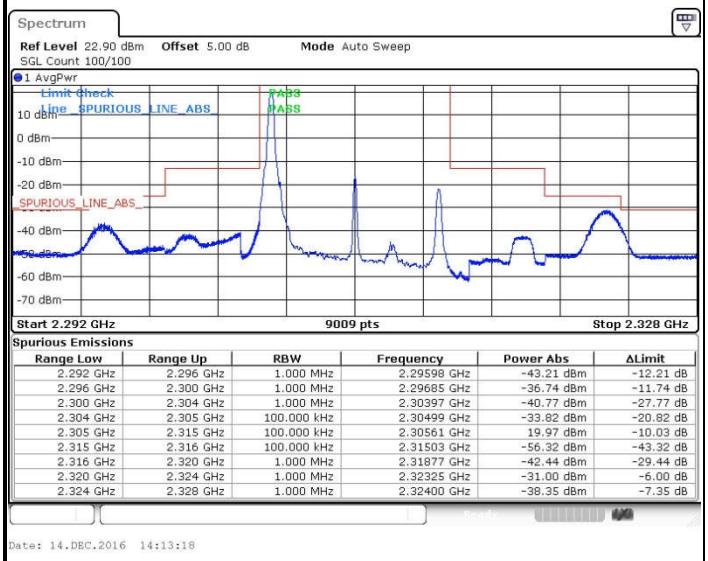
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29590 GHz	-48.14 dBm	-17.14 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29990 GHz	-46.87 dBm	-21.87 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30895 GHz	-23.89 dBm	-10.89 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-30.08 dBm	-17.08 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31098 GHz	5.59 dBm	-24.41 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-31.96 dBm	-18.96 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31602 GHz	-25.31 dBm	-12.31 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-36.18 dBm	-11.18 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32427 GHz	-47.63 dBm	-16.63 dB

Date: 14.DEC.2016 14:10:32

LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB

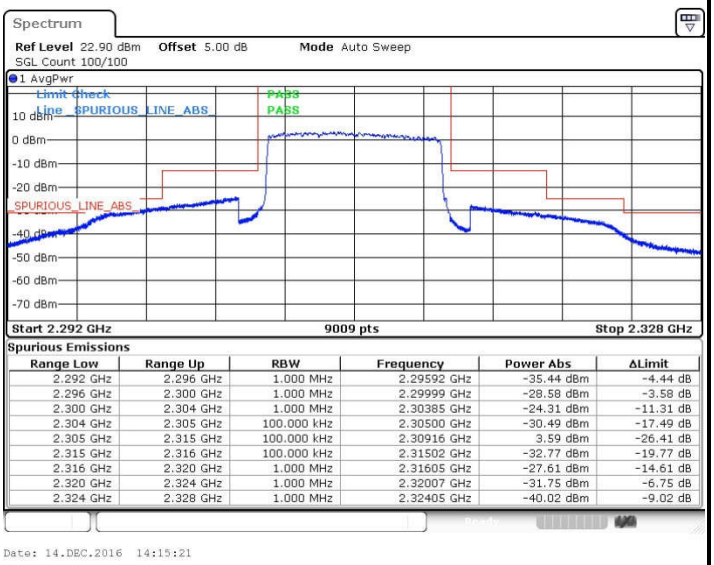


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29598 GHz	-43.21 dBm	-12.21 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29685 GHz	-36.74 dBm	-11.74 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30397 GHz	-40.77 dBm	-27.77 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-33.82 dBm	-20.82 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30561 GHz	19.97 dBm	-10.03 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31503 GHz	-56.32 dBm	-43.32 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31877 GHz	-42.44 dBm	-29.44 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32325 GHz	-31.00 dBm	-6.00 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32400 GHz	-38.35 dBm	-7.35 dB

Date: 14.DEC.2016 14:13:18

Band Edge / Full RB

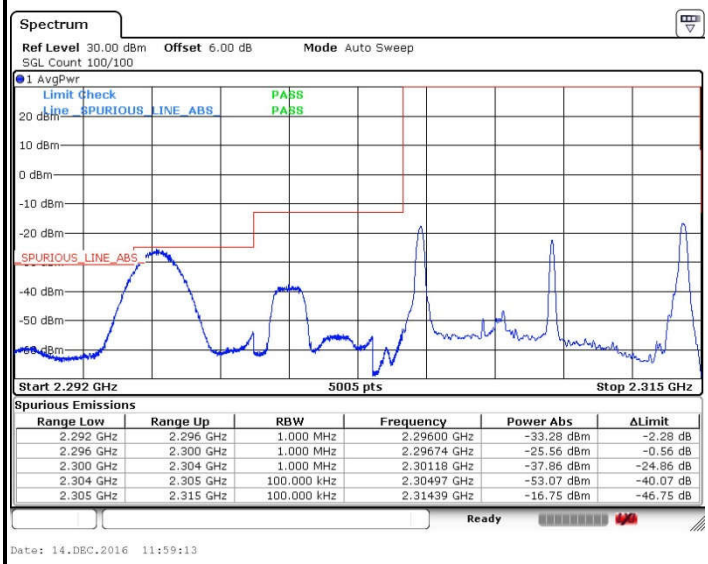


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29592 GHz	-35.44 dBm	-4.44 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29999 GHz	-28.58 dBm	-3.58 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30385 GHz	-24.31 dBm	-11.31 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-30.49 dBm	-17.49 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30916 GHz	3.59 dBm	-26.41 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-32.77 dBm	-19.77 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31605 GHz	-27.61 dBm	-14.61 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32007 GHz	-31.75 dBm	-6.75 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32405 GHz	-40.02 dBm	-9.02 dB

Date: 14.DEC.2016 14:15:21

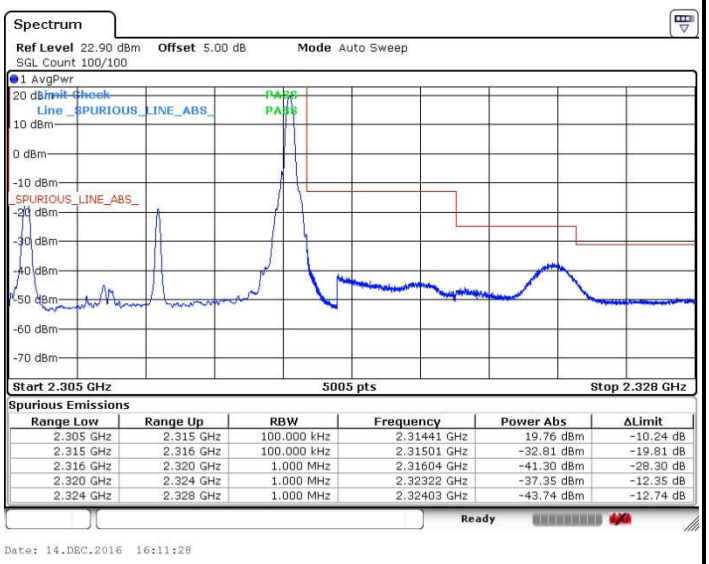
Highest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29600 GHz	-33.28 dBm	-2.28 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29674 GHz	-25.56 dBm	-0.56 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30118 GHz	-37.86 dBm	-24.86 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30497 GHz	-53.07 dBm	-40.07 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31439 GHz	-16.75 dBm	-46.75 dB

Date: 14.DEC.2016 11:59:13



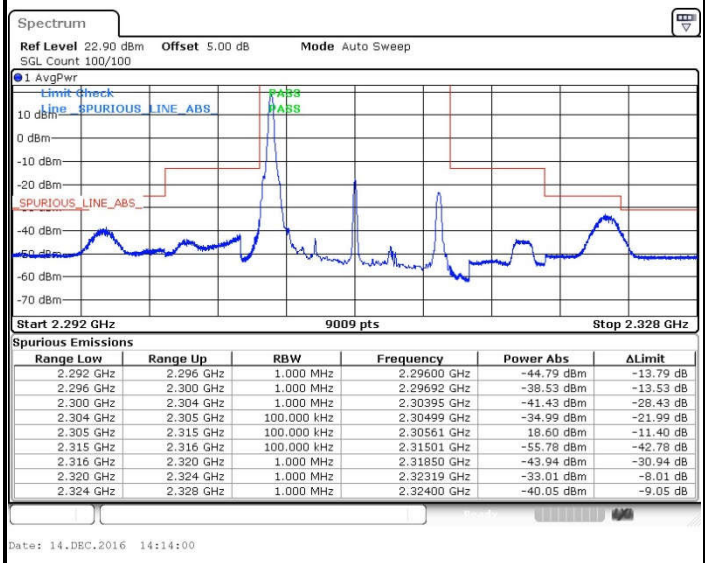
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	19.76 dBm	-10.24 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-32.81 dBm	-19.81 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31604 GHz	-41.30 dBm	-28.30 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32322 GHz	-37.35 dBm	-12.35 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-43.74 dBm	-12.74 dB

Date: 14.DEC.2016 16:11:28

LTE Band 30 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

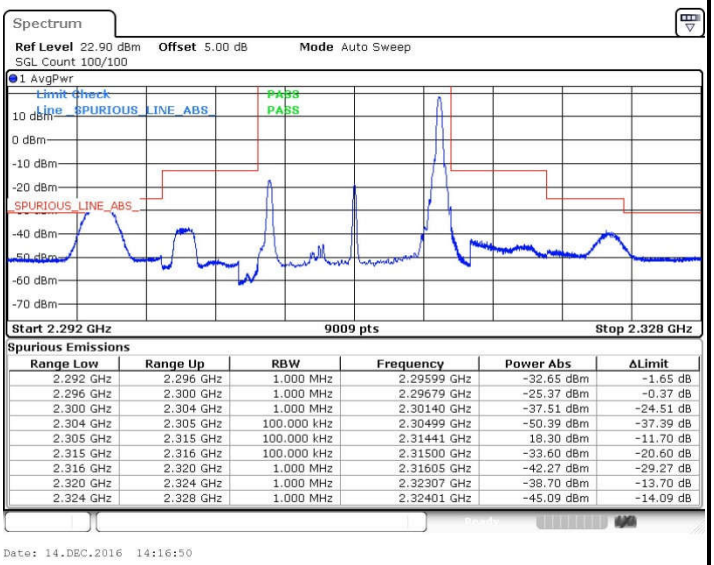


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29600 GHz	-44.79 dBm	-13.79 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29692 GHz	-38.53 dBm	-13.53 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30395 GHz	-41.43 dBm	-28.43 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-34.99 dBm	-21.99 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30561 GHz	18.60 dBm	-11.40 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-55.78 dBm	-42.78 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31850 GHz	-43.94 dBm	-30.94 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32319 GHz	-33.01 dBm	-8.01 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32400 GHz	-40.05 dBm	-9.05 dB

Date: 14.DEC.2016 14:14:00

Highest Band Edge / 1 RB

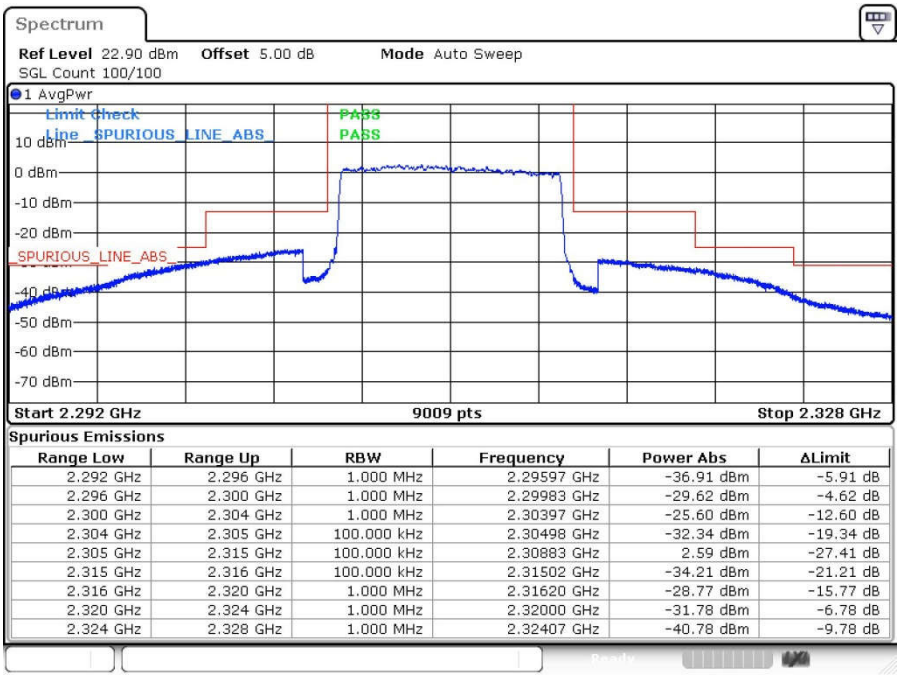


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-32.65 dBm	-1.65 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29679 GHz	-25.37 dBm	-0.37 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30140 GHz	-37.51 dBm	-24.51 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-50.39 dBm	-37.39 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	18.30 dBm	-11.70 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-33.60 dBm	-20.60 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31605 GHz	-42.27 dBm	-29.27 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32307 GHz	-38.70 dBm	-13.70 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-45.09 dBm	-14.09 dB

Date: 14.DEC.2016 14:16:50

Band Edge / Full RB



Spurious Emissions

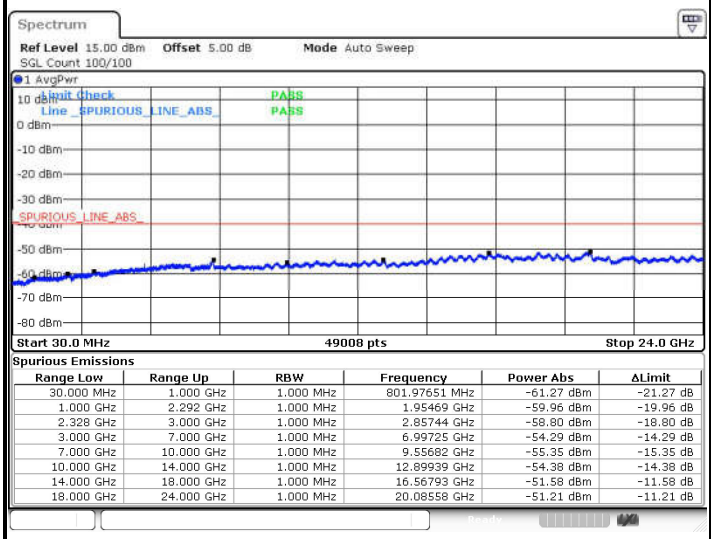
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29597 GHz	-36.91 dBm	-5.91 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29983 GHz	-29.62 dBm	-4.62 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30397 GHz	-25.60 dBm	-12.60 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30498 GHz	-32.34 dBm	-19.34 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30883 GHz	2.59 dBm	-27.41 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-34.21 dBm	-21.21 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31620 GHz	-28.77 dBm	-15.77 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32000 GHz	-31.78 dBm	-6.78 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32407 GHz	-40.78 dBm	-9.78 dB

Date: 14.DEC.2016 14:14:41

Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

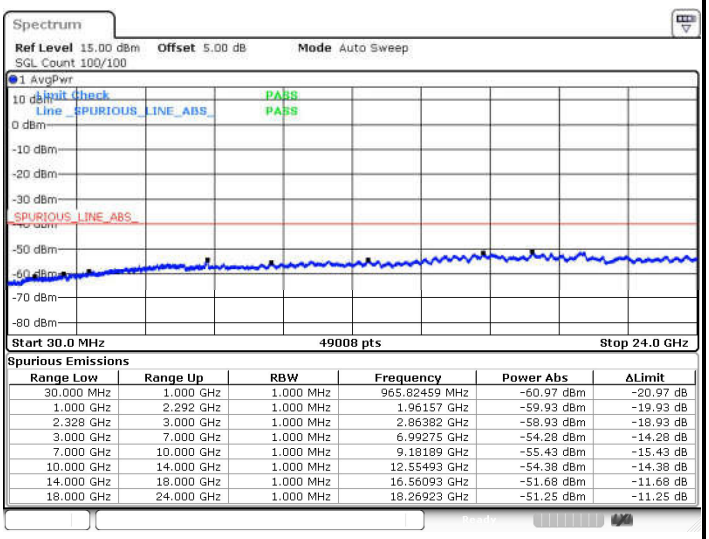


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	801.97651 MHz	-61.27 dBm	-21.27 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.95469 GHz	-59.96 dBm	-19.96 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.85744 GHz	-58.80 dBm	-18.80 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99725 GHz	-54.29 dBm	-14.29 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.55682 GHz	-55.35 dBm	-15.35 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.89939 GHz	-54.38 dBm	-14.38 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.56793 GHz	-51.58 dBm	-11.58 dB
18.000 GHz	24.000 GHz	1.000 MHz	20.08558 GHz	-51.21 dBm	-11.21 dB

Date: 14.DEC.2016 16:30:51

Lowest Channel / 16QAM

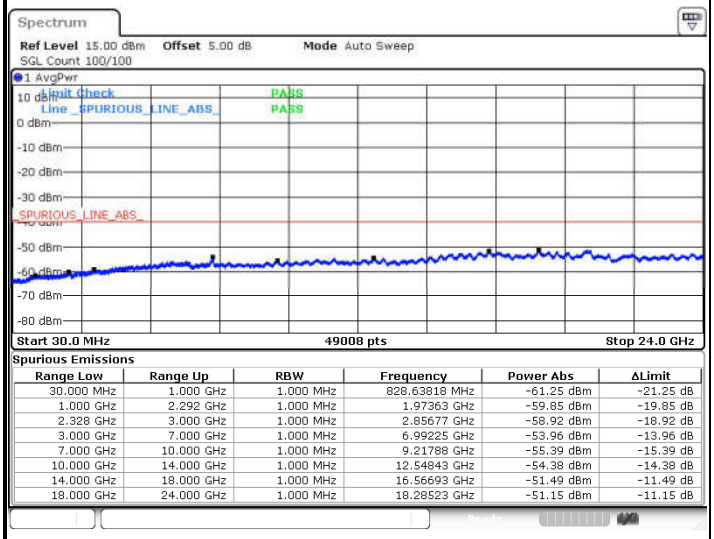


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	965.82459 MHz	-60.97 dBm	-20.97 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.96157 GHz	-59.93 dBm	-19.93 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.86382 GHz	-58.93 dBm	-18.93 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99275 GHz	-54.28 dBm	-14.28 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.18189 GHz	-55.43 dBm	-15.43 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.55493 GHz	-54.38 dBm	-14.38 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.56093 GHz	-51.68 dBm	-11.68 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.26923 GHz	-51.25 dBm	-11.25 dB

Date: 14.DEC.2016 15:38:59

Middle Channel / QPSK

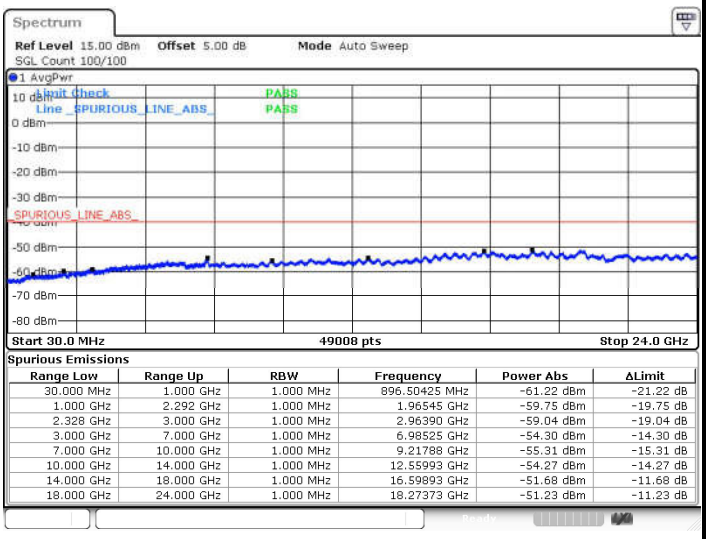


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	828.63818 MHz	-61.25 dBm	-21.25 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.97363 GHz	-59.85 dBm	-19.85 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.85677 GHz	-58.92 dBm	-18.92 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99225 GHz	-53.96 dBm	-13.96 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.21788 GHz	-55.39 dBm	-15.39 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.54843 GHz	-54.38 dBm	-14.38 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.56693 GHz	-51.49 dBm	-11.49 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.28523 GHz	-51.15 dBm	-11.15 dB

Date: 14.DEC.2016 15:39:54

Middle Channel / 16QAM



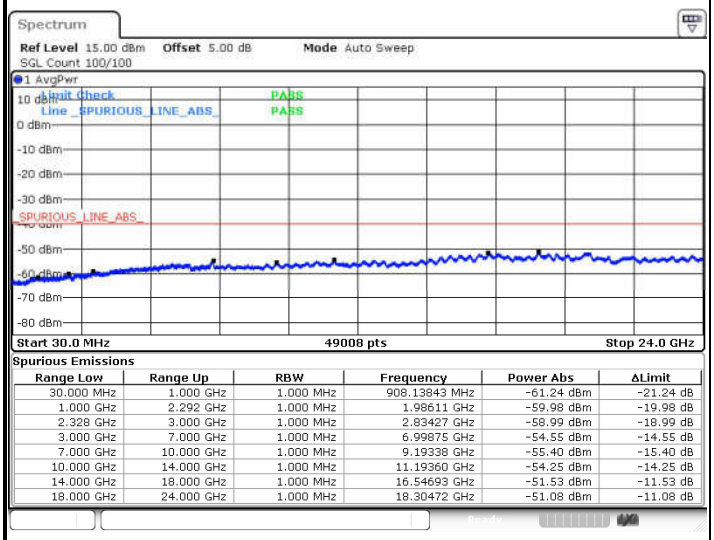
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	896.50425 MHz	-61.22 dBm	-21.22 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.96545 GHz	-59.75 dBm	-19.75 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.96390 GHz	-59.04 dBm	-19.04 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98525 GHz	-54.30 dBm	-14.30 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.21788 GHz	-55.31 dBm	-15.31 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.55993 GHz	-54.27 dBm	-14.27 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.59893 GHz	-51.68 dBm	-11.68 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.27373 GHz	-51.23 dBm	-11.23 dB

Date: 14.DEC.2016 15:40:49

LTE Band 30 / 5MHz

Highest Channel / QPSK

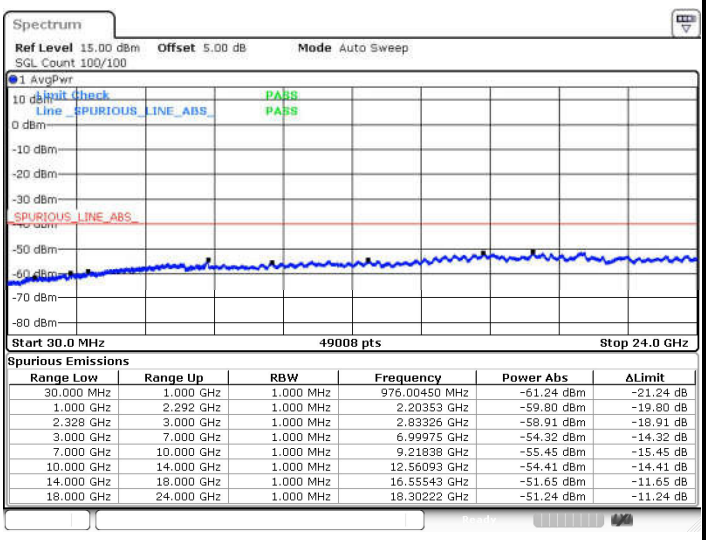


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	908.13843 MHz	-61.24 dBm	-21.24 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.98611 GHz	-59.98 dBm	-19.98 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.83427 GHz	-58.99 dBm	-18.99 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99875 GHz	-54.55 dBm	-14.55 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.19338 GHz	-55.40 dBm	-15.40 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.19360 GHz	-54.25 dBm	-14.25 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.54693 GHz	-51.53 dBm	-11.53 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.30472 GHz	-51.08 dBm	-11.08 dB

Date: 14.DEC.2016 15:41:44

Highest Channel / 16QAM



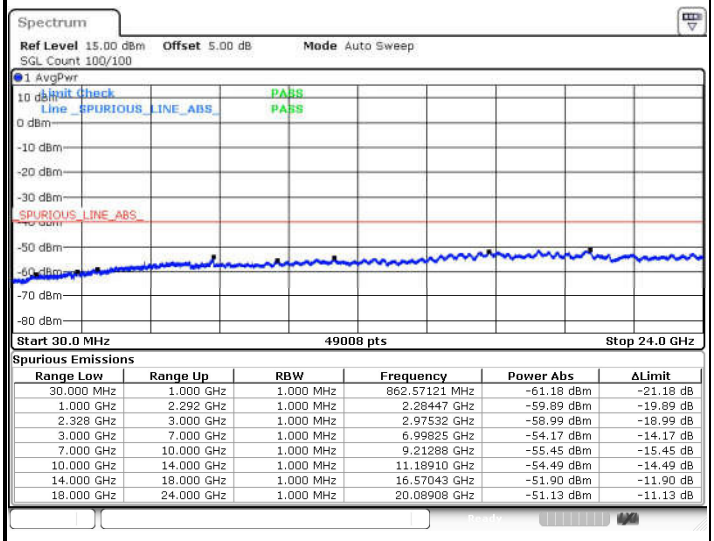
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	976.00450 MHz	-61.24 dBm	-21.24 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.20353 GHz	-59.80 dBm	-19.80 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.83326 GHz	-58.91 dBm	-18.91 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99975 GHz	-54.32 dBm	-14.32 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.21838 GHz	-55.45 dBm	-15.45 dB
10.000 GHz	14.000 GHz	1.000 MHz	12.56093 GHz	-54.41 dBm	-14.41 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.55543 GHz	-51.65 dBm	-11.65 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.30222 GHz	-51.24 dBm	-11.24 dB

Date: 14.DEC.2016 15:42:38

LTE Band 30 / 10MHz

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	862.57121 MHz	-61.18 dBm	-21.18 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28447 GHz	-59.89 dBm	-19.89 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.97532 GHz	-58.99 dBm	-18.99 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99825 GHz	-54.17 dBm	-14.17 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.21288 GHz	-55.45 dBm	-15.45 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.18910 GHz	-54.49 dBm	-14.49 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.57043 GHz	-51.90 dBm	-11.90 dB
18.000 GHz	24.000 GHz	1.000 MHz	20.08908 GHz	-51.13 dBm	-11.13 dB

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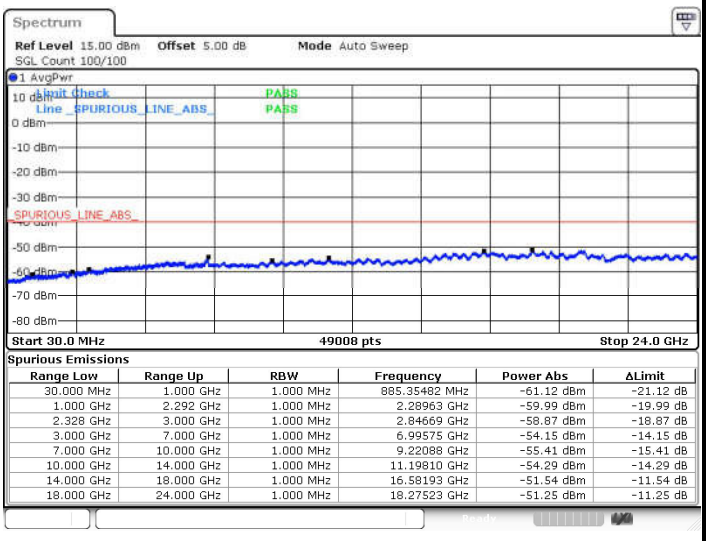
Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	885.35482 MHz	-61.12 dBm	-21.12 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28963 GHz	-59.99 dBm	-19.99 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.84669 GHz	-58.87 dBm	-18.87 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99575 GHz	-54.15 dBm	-14.15 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.22088 GHz	-55.41 dBm	-15.41 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.19810 GHz	-54.29 dBm	-14.29 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.58193 GHz	-51.54 dBm	-11.54 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.27523 GHz	-51.25 dBm	-11.25 dB

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Frequency Stability

Test Conditions		LTE Band 30 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0078	PASS
40	Normal Voltage	0.0048	
30	Normal Voltage	0.0026	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0017	
0	Normal Voltage	0.0030	
-10	Normal Voltage	0.0039	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0043	
20	Maximum Voltage	0.0121	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0039	

Note:

1. Normal Voltage =3.85 V.；Battery End Point (BEP) =3.55 V.；Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 30 / 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	4615.50	-50.88	-40	-10.88	-67.04	-57.94	5.64	12.70	H
	6923.25	-57.70	-40	-17.70	-78.53	-61.17	8.23	11.70	H
	9231.00	-51.43	-40	-11.43	-77.05	-55.21	8.12	11.90	H
	4615.50	-55.12	-40	-15.12	-71.04	-62.18	5.64	12.70	V
	6923.25	-53.07	-40	-13.07	-75.16	-56.54	8.23	11.70	V
	9231.00	-52.25	-40	-12.25	-77.89	-56.03	8.12	11.90	V

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

LTE Band 30 / 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	4611.00	-48.12	-40	-8.12	-64.28	-55.18	5.64	12.70	H
	6916.50	-54.16	-40	-14.16	-74.99	-57.63	8.23	11.70	H
	9222.00	-51.69	-40	-11.69	-77.31	-55.47	8.12	11.90	H
	4611.00	-56.96	-40	-16.96	-72.88	-64.02	5.64	12.70	V
	6916.50	-54.84	-40	-14.84	-76.93	-58.31	8.23	11.70	V
	9222.00	-51.21	-40	-11.21	-76.85	-54.99	8.12	11.90	V

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