FCC RF Test Report

APPLICANT	:	ZTE CORPORATION
EQUIPMENT	:	WCDMA/LTE Multi-Mode Digital Mobile Phone
BRAND NAME	:	ZTE
MODEL NAME	:	A1
FCC ID	:	SRQ-ZTEA1
STANDARD	:	FCC 47 CFR Part 2, 27
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jul. 21, 2015 and completely tested on Aug. 24, 2015. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

SPORTON INTERNATIONAL (KUNSHAN) INC.

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TABLE OF CONTENTS

REVISION HISTORY **3**

SUMMARY OF TEST RESULT **4**

1 GENERAL DESCRIPTION **5**

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Product Feature of Equipment Under Test 5
1.4 Modification of EUT 5
1.5 Emission Designator 6
1.6 Testing Site 6
1.7 Applied Standards 7

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST **8**

2.1 Test Mode 8
2.2 Connection Diagram of Test System 9
2.3 Support Unit used in test configuration and system 9
2.4 Measurement Results Explanation Example 9

3 CONDUCTED TEST ITEMS **10**

3.1 Measuring Instruments 10
3.2 Test Setup 10
3.3 Test Result of Conducted Test 10
3.4 Conducted Output Power Measurement 11
3.5 EIRP Power Density 12
3.6 Occupied Bandwidth 13
3.7 Conducted Band Edge Measurement 14
3.8 Conducted Spurious Emission Measurement 15
3.9 Frequency Stability Measurement 16

4 RADIATED TEST ITEMS **17**

4.1 Measuring Instruments 17
4.2 Test Setup 17
4.3 Test Result of Radiated Test 17
4.4 Radiated Spurious Emission Measurement 18

5 LIST OF MEASURING EQUIPMENT **19**

6 UNCERTAINTY OF EVALUATION **20**

APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG572101C	Rev. 01	Initial issue of report	Aug. 25, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
-	-	Peak-to-Average Ratio	<13dB	N/A	Reporting only
3.5	§27.50 (a)(3)	EIRP Power Density	EIRP < 250mW/5MHz	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53 (a)(4)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.8	§2.1051 §27.53 (a)(4)	Conducted Spurious Emission	< $70+10\log_{10}$(P[Watts])	PASS	-
3.9	§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 2.56 dB at 6930.750 MHz

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	WCDMA/LTE Multi-Mode Digital Mobile Phone
Brand Name	ZTE
Model Name	A1
FCC ID	SRQ-ZTEA1
Tx Frequency	LTE Band 30 : 2305 MHz ~ 2315 MHz
RX Frequency	LTE Band 30 : 2350 MHz ~ 2360 MHz
Bandwidth	5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 30 : 24.49 dBm
Type of Modulation	QPSK / 16QAM
HW Version	wsjB
SW Version	P897A10V1.0.0B01
EUT Stage	Production Unit

1.4 Modification of EUT

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

1.5 Emission Designator

LTE Band 30	QPSK		16QAM	
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)
5	4M52G7D	-	4M49W7D	-
10	9M03G7D	0.0273	9M01W7D	-

1.6 Testing Site

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.**	
	TH01-KS	

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/IC Registration No.**
	03CH01-SZ	831040/4086F

1.7 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
- 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

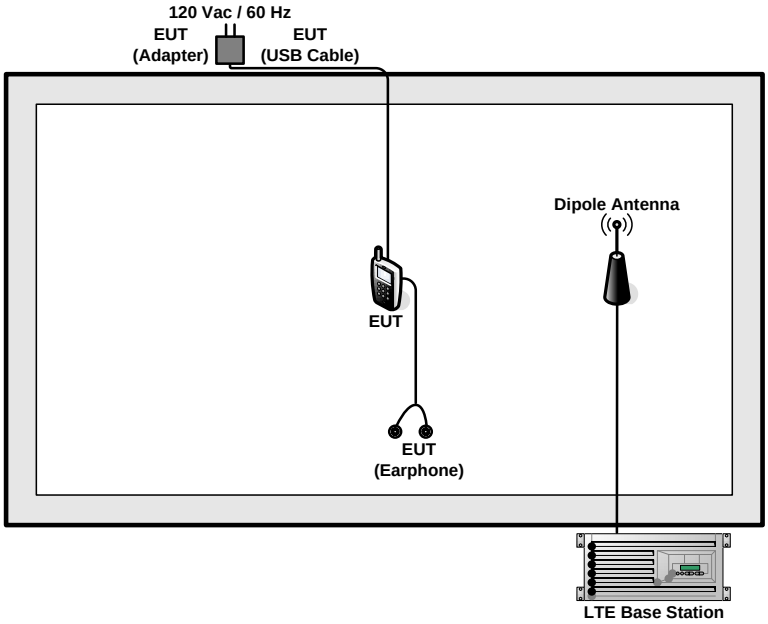
2.1 Test Mode

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
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
26dB and 99% Bandwidth	30	-	-	v	v	-	-	v	v			v	v	v	v
Conducted Band Edge	30	-	-	v	v	-	-	v	v	v		v	v		v
Conducted Spurious Emission	30	-	-	v	v	-	-	v	v	v			v	v	v
Frequency Stability	30	-	-	v	v	-	-	v				v		v	
Radiated Spurious Emission	30	-	-	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	GPD-2303S		N/A	hielded, 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)

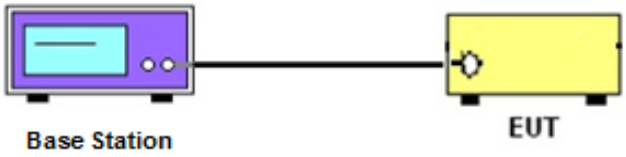
3 Conducted Test Items

3.1 Measuring Instruments

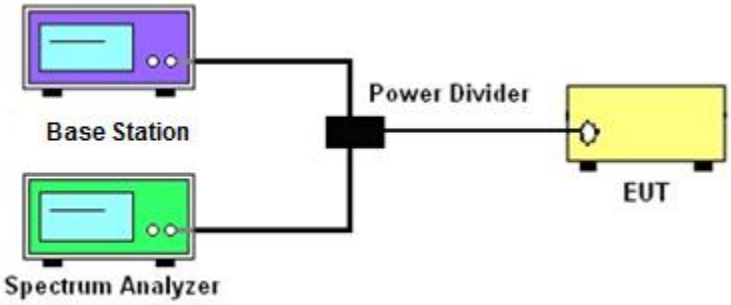
See list of measuring instruments of this test report.

3.2 Test Setup

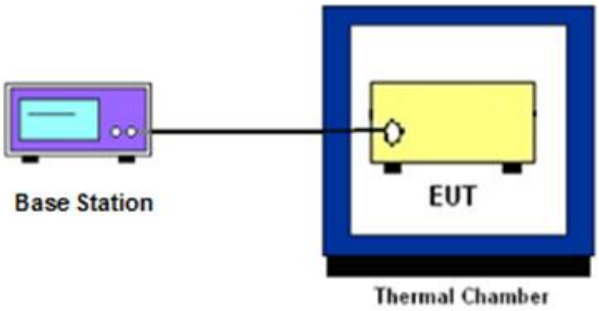
3.2.1 Conducted Output Power



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 EIRP Power Density

3.5.1 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.

3.5.2 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).

3.6 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 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.

3.6.2 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.

3.7 Conducted Band Edge Measurement

3.7.1 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.

3.7.2 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.

3.8 Conducted Spurious Emission Measurement

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 70 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 kHz up to a frequency including its 10th harmonic.

3.8.2 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.

3.9 Frequency Stability Measurement

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 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.

3.9.3 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.

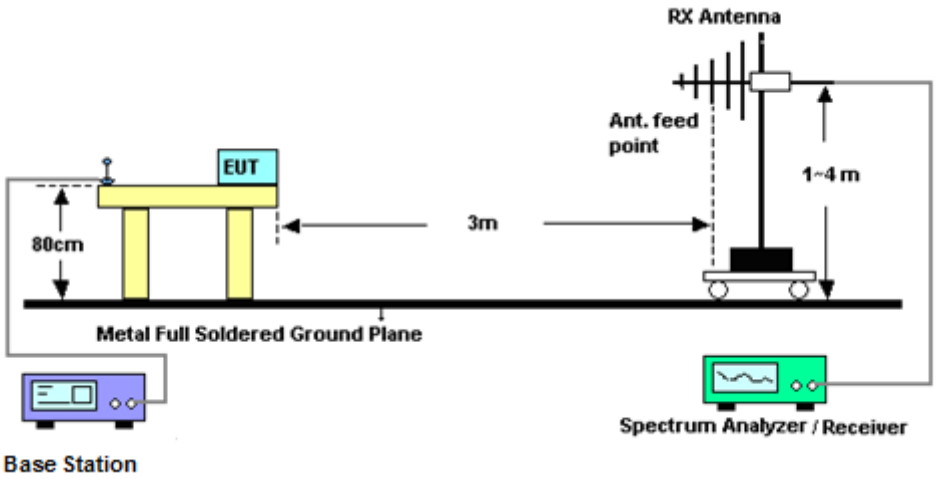
4 Radiated Test Items

4.1 Measuring Instruments

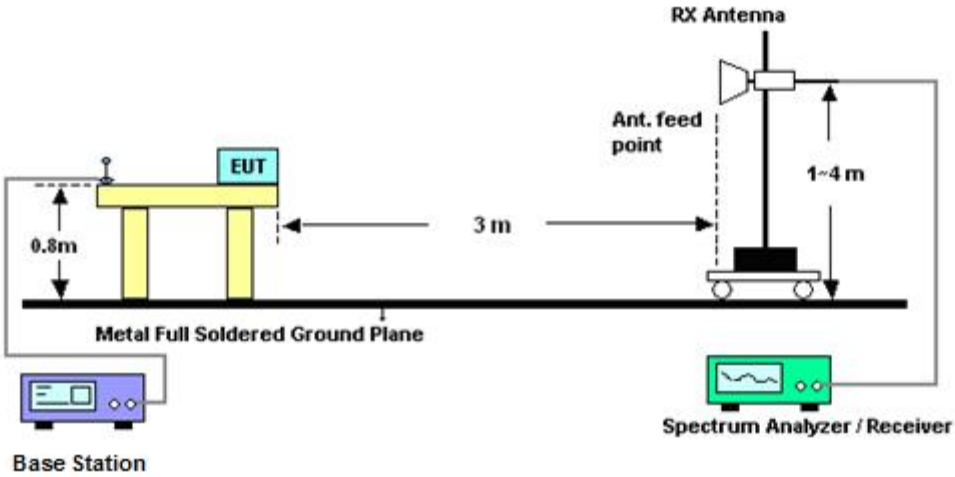
See list of measuring instruments of this test report.

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-C-2004.

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 rotatable wooden table with 0.8 meter 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	FSP40	100319	9kHz~40GHz	Oct. 28, 2014	Aug. 20, 2015~ Aug. 24, 2015	Oct. 27, 2015	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2015	Aug. 20, 2015~ Aug. 24, 2015	May 03, 2016	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 25, 2014	Aug. 20, 2015~ Aug. 24, 2015	Oct. 24, 2015	Conducted (TH01-KS)
EMI Test Receiver&SA	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2015	Aug. 13, 2015	May 25, 2016	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSV40	101041	10kHz~40GHz;Max 30dBm	Sep. 25, 2014	Aug. 13, 2015	Sep. 24, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz~2GHz	Nov. 07, 2014	Aug. 13, 2015	Nov. 06, 2015	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Oct. 15, 2014	Aug. 13, 2015	Oct. 14, 2015	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Sep. 04, 2014	Aug. 13, 2015	Sep. 03, 2015	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz / 30 dB	Jan. 28, 2015	Aug. 13, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 05, 2015	Aug. 13, 2015	May 04, 2016	Radiation (03CH01-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 28, 2015	Aug. 13, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Aug. 13, 2015	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Aug. 13, 2015	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Aug. 13, 2015	NCR	Radiation (03CH01-SZ)

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.9**

Appendix A. Test Results of Conducted Test

LTE Band 30

Conducted Output Power(Average power)

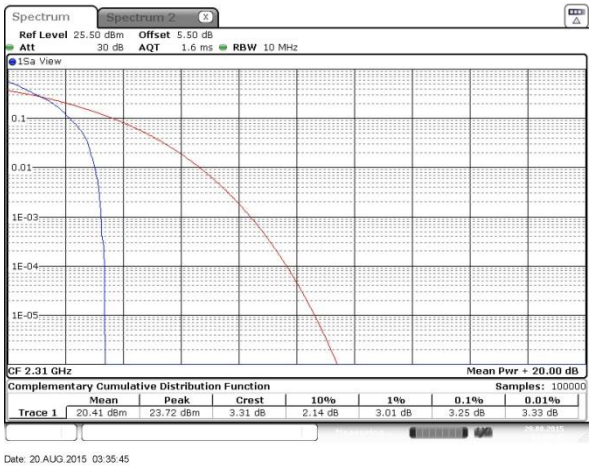
LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	24.31	24.35	24.36
5	1	12		24.30	24.44	24.33
5	1	24		24.36	24.29	24.36
5	12	0		23.32	23.35	23.39
5	12	6		23.29	23.38	23.29
5	12	11		23.29	23.40	23.37
5	25	0		23.27	23.43	23.34
5	1	0	16-QAM	23.22	23.25	23.23
5	1	12		23.21	23.28	23.21
5	1	24		23.21	23.19	23.32
5	12	0		22.37	22.39	22.41
5	12	6		22.27	22.41	22.29
5	12	11		22.34	22.44	22.27
5	25	0		22.33	22.44	22.29
10	1	0	QPSK		24.41	
10	1	24			**24.49**	
10	1	49			24.38	
10	25	0			23.35	
10	25	12			23.39	
10	25	24			23.38	
10	50	0			23.44	
10	1	0	16-QAM		23.32	
10	1	24			23.31	
10	1	49			23.23	
10	25	0			22.34	
10	25	12			22.44	
10	25	24			22.42	
10	50	0			22.40	

Peak-to-Average Ratio

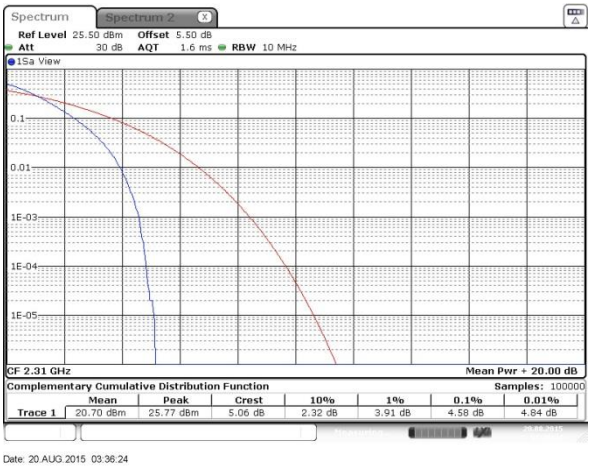
Mode	LTE Band 30 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Middle CH	3.25	4.58	4.64	5.30	PASS

LTE Band 30 / 10MHz / QPSK

Middle Channel / 1RB

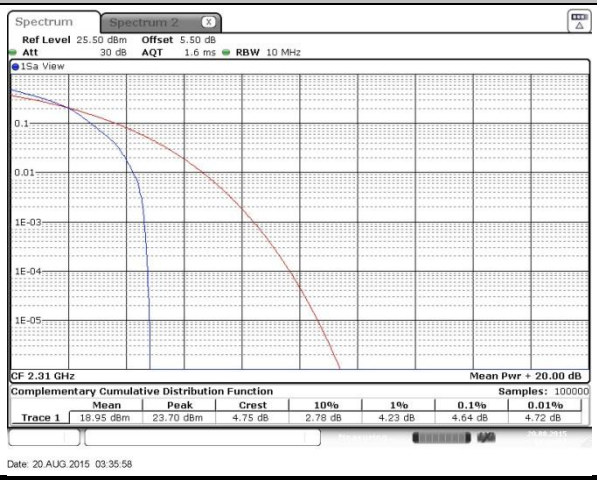


Middle Channel / Full RB

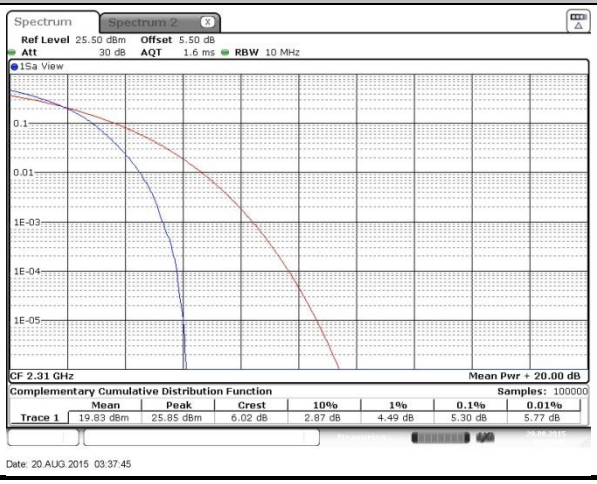


LTE Band 30 / 10MHz / 16QAM

Middle Channel / 1RB



Middle Channel / Full RB



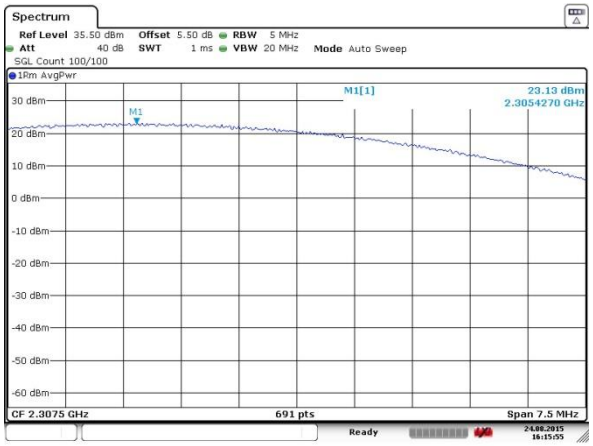
EIRP Power Density

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					23.13	21.98						
Middle CH					23.45	22.40	23.24	22.36				
Highest CH					23.36	22.50						

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					23.21	22.06						
Middle CH					23.53	22.48	23.32	22.44				
Highest CH					23.44	22.58						
Antenna Gain	0.08 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

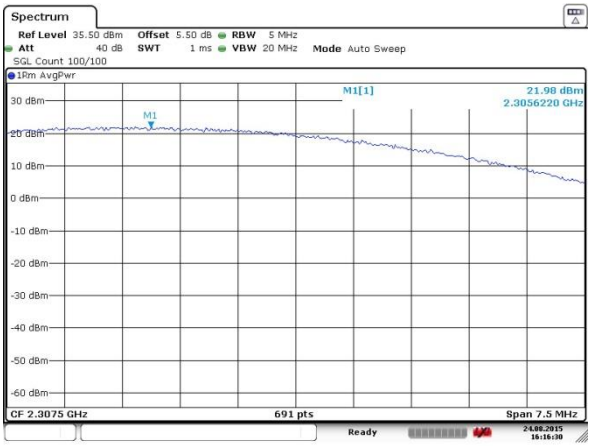
LTE Band 30 / 5MHz

Lowest Channel / 5MHz / 1RB0 / QPSK



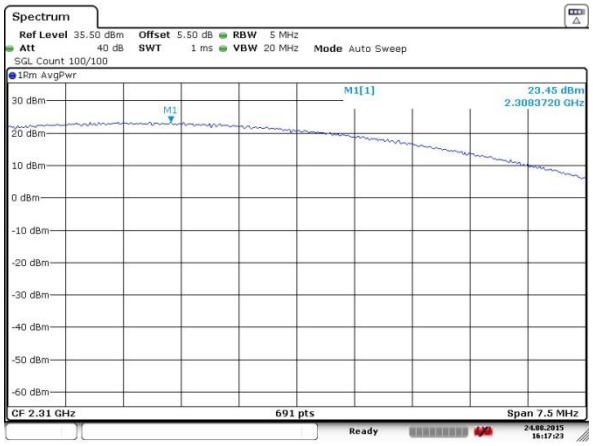
Date: 24.AUG.2015 16:15:55

Lowest Channel / 5MHz / 1RB0 / 16QAM



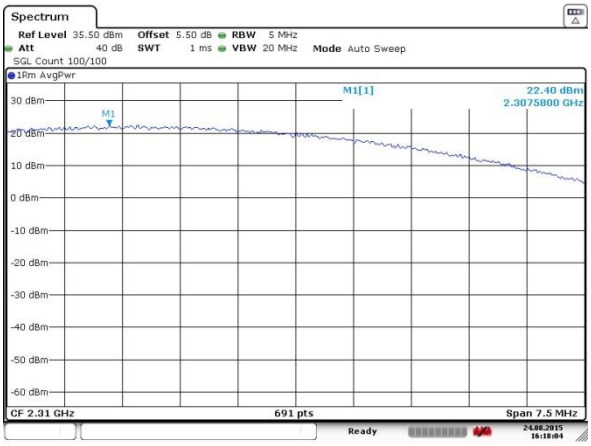
Date: 24.AUG.2015 16:16:30

Middle Channel / 5MHz / 1RB0 / QPSK



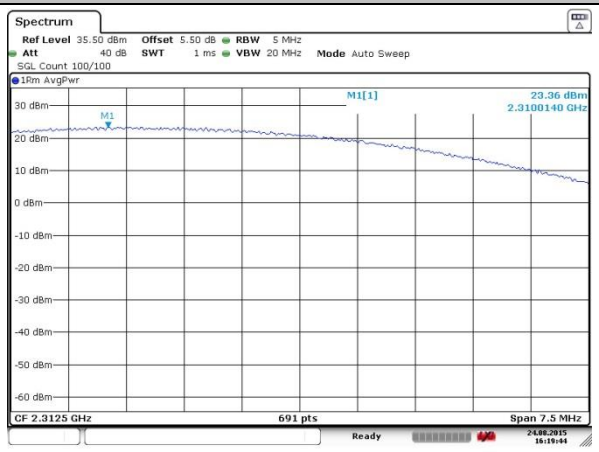
Date: 24.AUG.2015 16:17:23

Middle Channel / 5MHz / 1RB0 / 16QAM



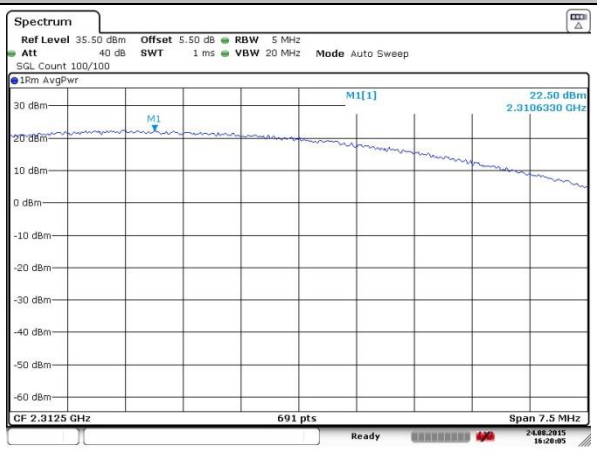
Date: 24.AUG.2015 16:18:04

Highest Channel / 5MHz / 1 RB0 / QPSK

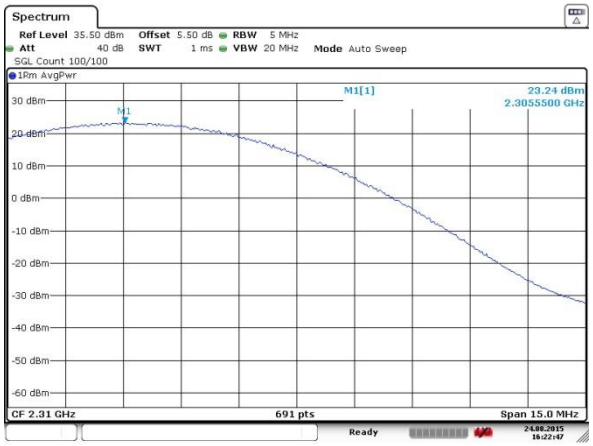


Date: 24.AUG.2015 16:19:44

Highest Channel / 5MHz / 1RB0 / 16QAM



Date: 24.AUG.2015 16:20:05

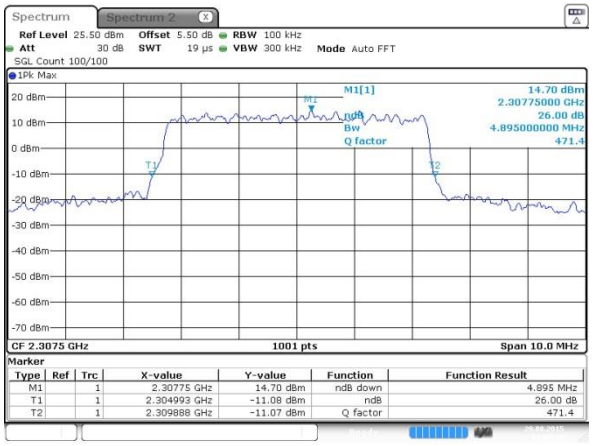
LTE Band 30 / 10MHz	
Middle Channel / 10MHz / 1RB0 / QPSK	**Middle Channel / 10MHz / 1RB0 / 16QAM**
	

26dB Bandwidth

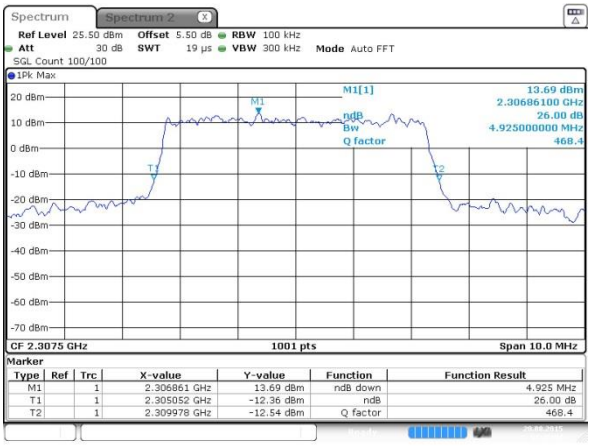
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.90	4.93						
Middle CH					5.04	4.90	9.73	9.65				
Highest CH					5.00	4.99						

LTE Band 30

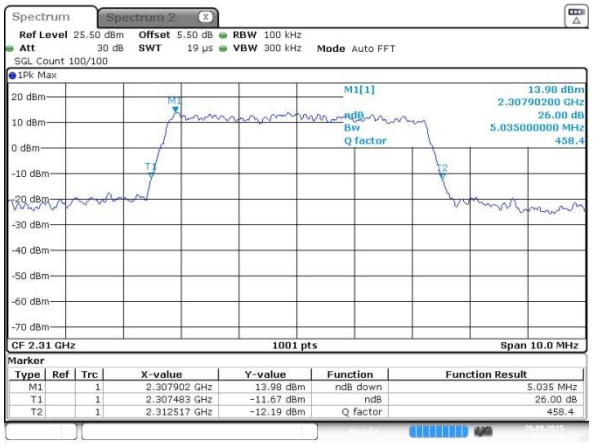
Lowest Channel / 5MHz / QPSK



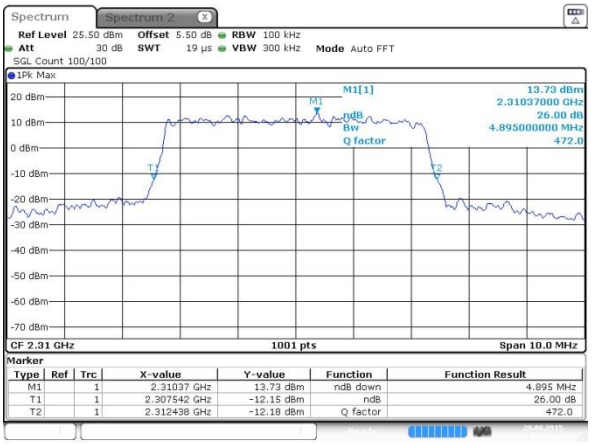
Lowest Channel / 5MHz / 16QAM



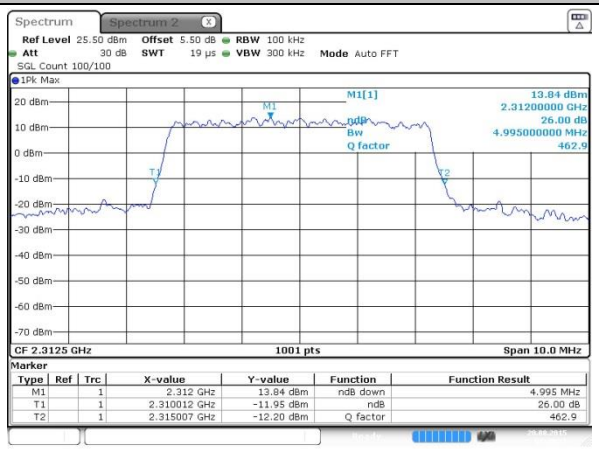
Middle Channel / 5MHz / QPSK



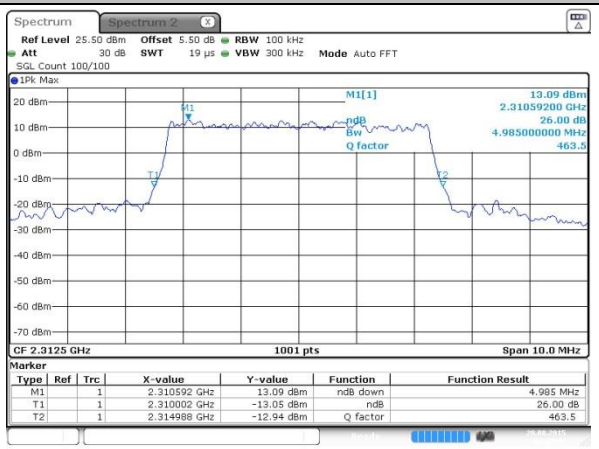
Middle Channel / 5MHz / 16QAM

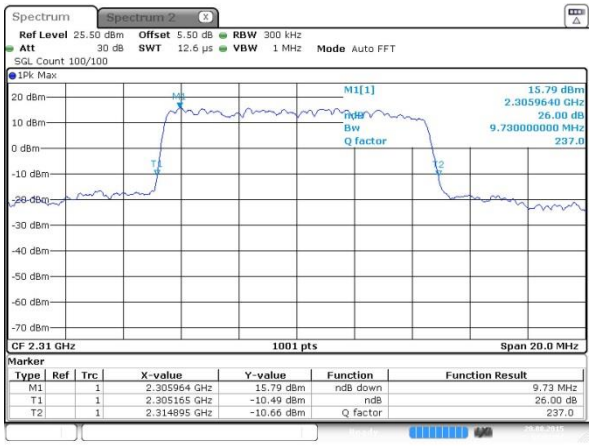
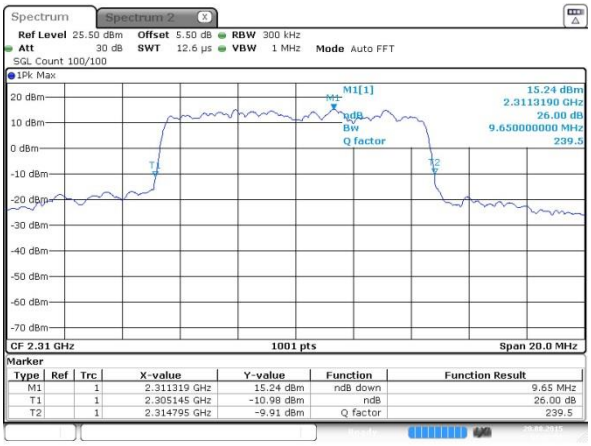


Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM



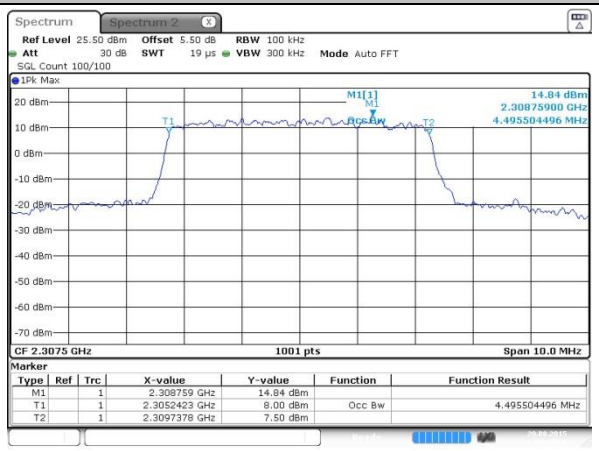
LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

Occupied Bandwidth

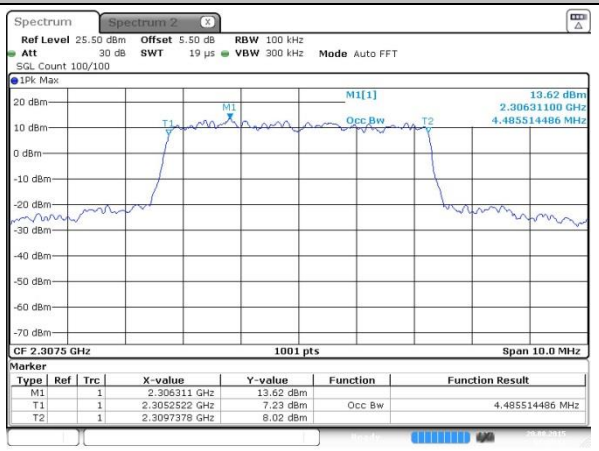
Mode	LTE Band 30 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.50	4.49						
Middle CH					4.52	4.47	9.03	9.01				
Highest CH					4.49	4.49						

LTE Band 30

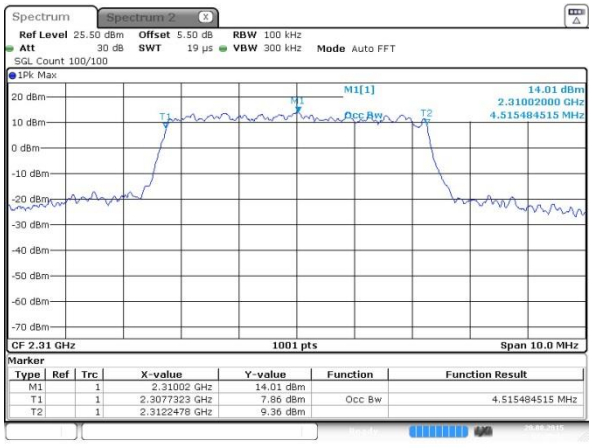
Lowest Channel / 5MHz / QPSK



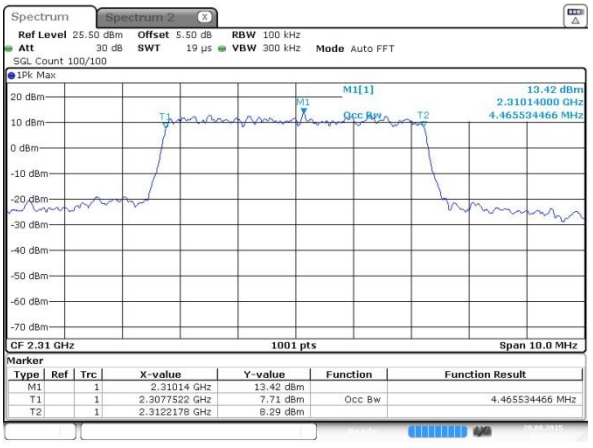
Lowest Channel / 5MHz / 16QAM



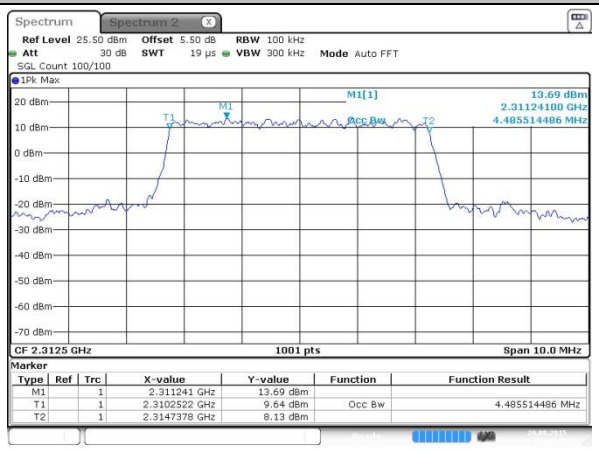
Middle Channel / 5MHz / QPSK



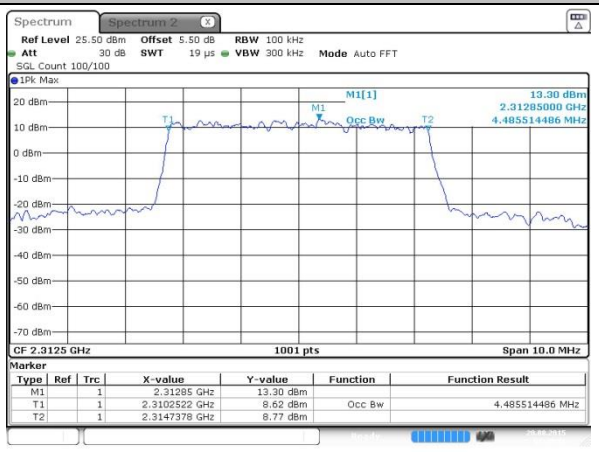
Middle Channel / 5MHz / 16QAM

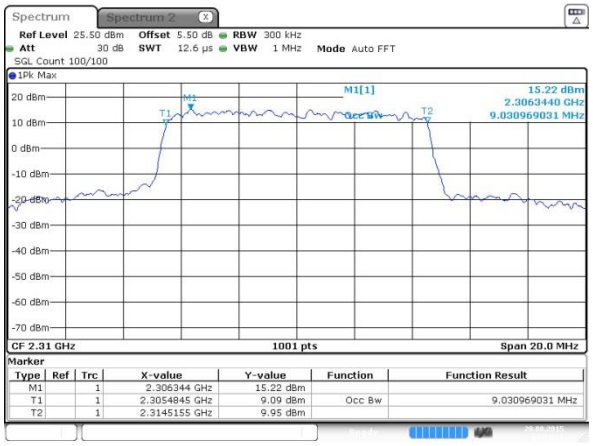
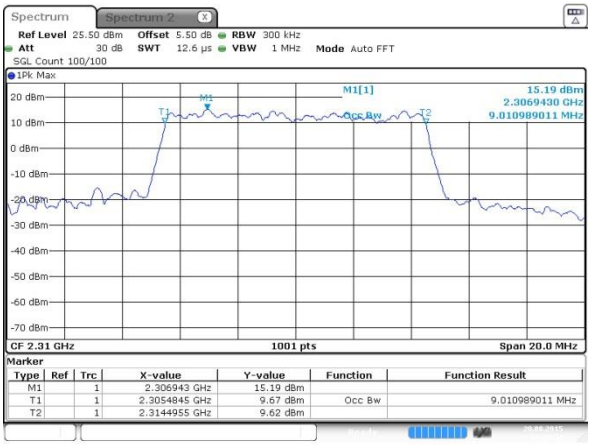


Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM

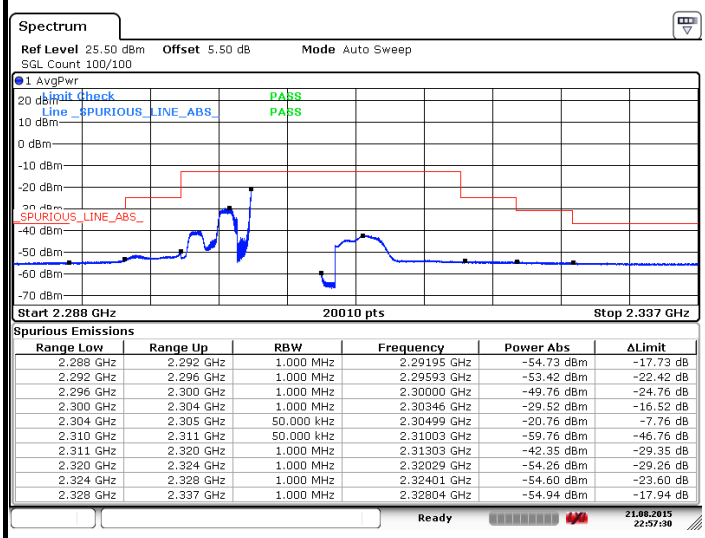


LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

Conducted Band Edge

LTE Band 30 / 5MHz / QPSK

Lowest Band Edge / 1 RB

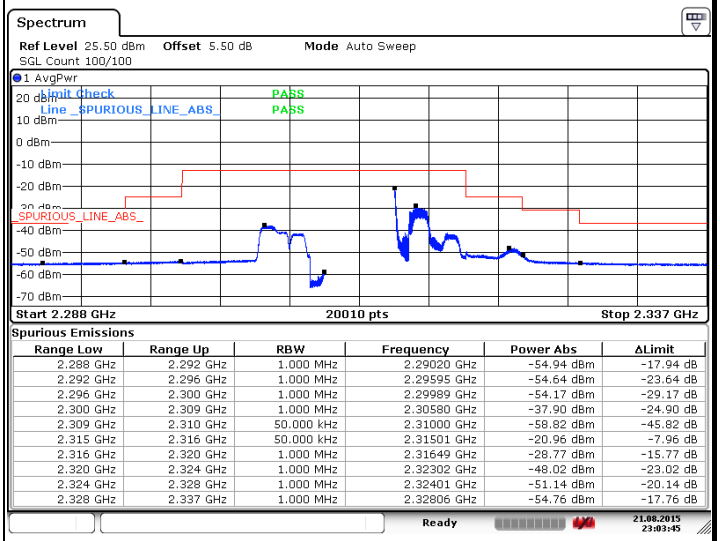


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29195 GHz	-54.73 dBm	-17.73 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-53.42 dBm	-22.42 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.30000 GHz	-49.76 dBm	-24.76 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30346 GHz	-29.52 dBm	-16.52 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-20.76 dBm	-7.76 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31003 GHz	-59.76 dBm	-46.76 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31303 GHz	-42.35 dBm	-29.35 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32029 GHz	-54.26 dBm	-29.26 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-54.60 dBm	-23.60 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32804 GHz	-54.94 dBm	-17.94 dB

Date:21.AUG.2015 22:57:29

Highest Band Edge / 1 RB

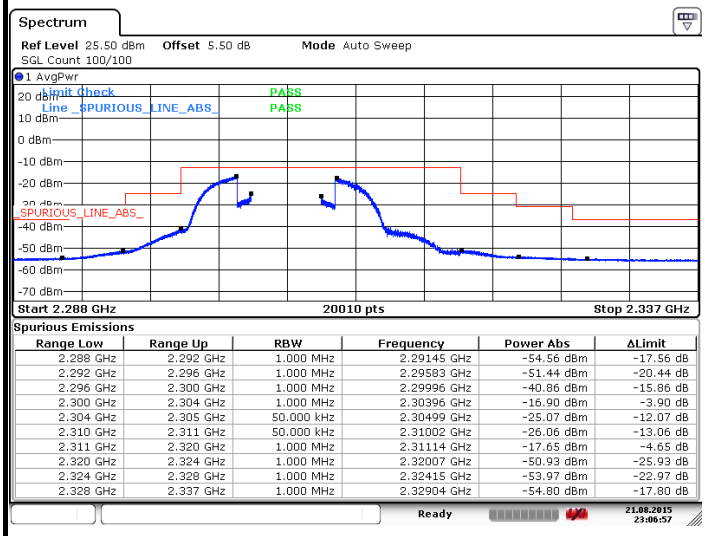


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29020 GHz	-54.94 dBm	-17.94 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29595 GHz	-54.64 dBm	-23.64 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29989 GHz	-54.17 dBm	-29.17 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30580 GHz	-37.90 dBm	-24.90 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-58.82 dBm	-45.82 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-20.96 dBm	-7.96 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31649 GHz	-28.77 dBm	-15.77 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32302 GHz	-48.02 dBm	-23.02 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-51.14 dBm	-20.14 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32806 GHz	-54.76 dBm	-17.76 dB

Date:21.AUG.2015 23:03:45

Lowest Band Edge / Full RB

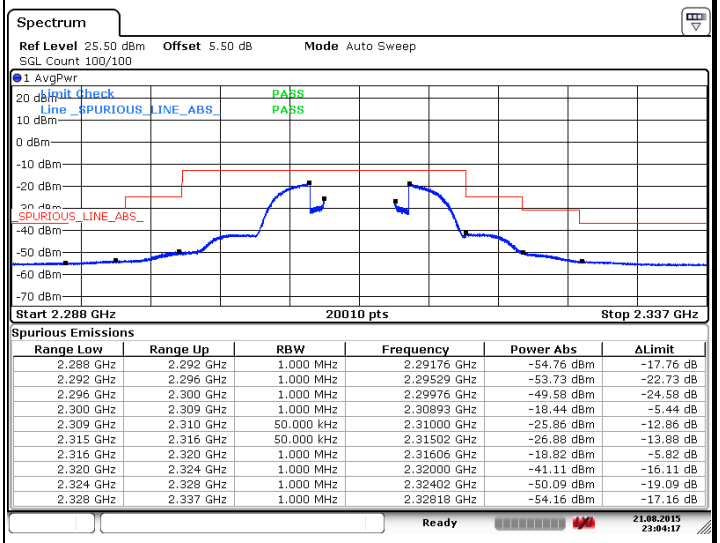


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29145 GHz	-54.56 dBm	-17.56 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29583 GHz	-51.44 dBm	-20.44 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29996 GHz	-40.86 dBm	-15.86 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30396 GHz	-16.90 dBm	-3.90 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-25.07 dBm	-12.07 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31002 GHz	-26.06 dBm	-13.06 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31114 GHz	-17.65 dBm	-4.65 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32007 GHz	-50.93 dBm	-25.93 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32415 GHz	-53.97 dBm	-22.97 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32904 GHz	-54.80 dBm	-17.80 dB

Date:21.AUG.2015 23:06:56

Highest Band Edge / Full RB



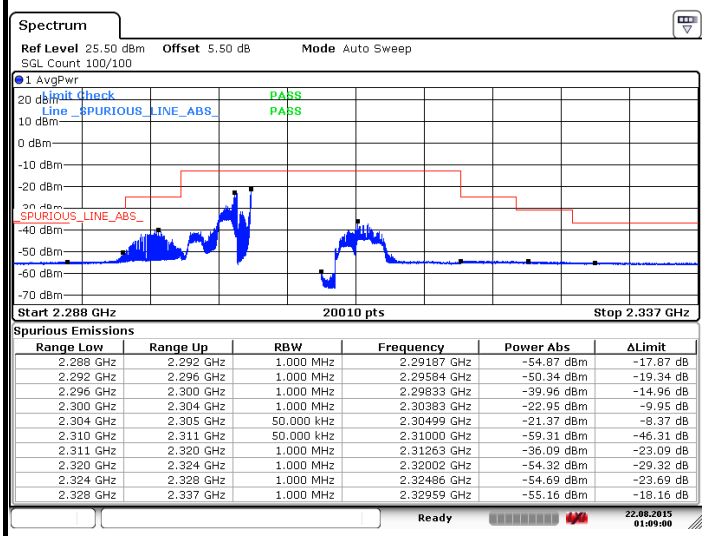
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29176 GHz	-54.76 dBm	-17.76 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29529 GHz	-53.73 dBm	-22.73 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29976 GHz	-49.58 dBm	-24.58 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30893 GHz	-18.44 dBm	-5.44 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-25.86 dBm	-12.86 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31502 GHz	-26.88 dBm	-13.88 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31606 GHz	-18.82 dBm	-5.82 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32000 GHz	-41.11 dBm	-16.11 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32402 GHz	-50.09 dBm	-19.09 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32818 GHz	-54.16 dBm	-17.16 dB

Date:21.AUG.2015 23:04:18

LTE Band 30 / 5MHz / 16QAM

Lowest Band Edge / 1RB

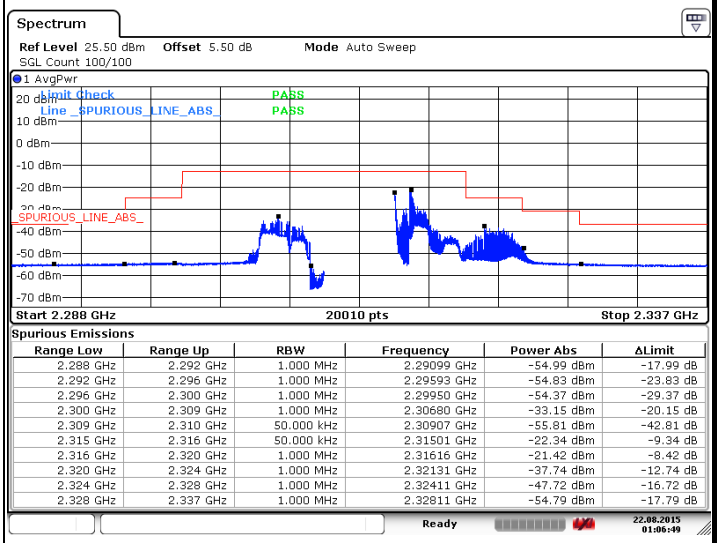


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29187 GHz	-54.87 dBm	-17.87 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29584 GHz	-50.34 dBm	-19.34 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29833 GHz	-39.96 dBm	-14.96 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30383 GHz	-22.95 dBm	-9.95 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-21.37 dBm	-8.37 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-59.31 dBm	-46.31 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31263 GHz	-36.09 dBm	-23.09 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32002 GHz	-54.32 dBm	-29.32 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32486 GHz	-54.69 dBm	-23.69 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32959 GHz	-55.16 dBm	-18.16 dB

Date: 22.AUG.2015 01:09:00

Highest Band Edge / 1 RB

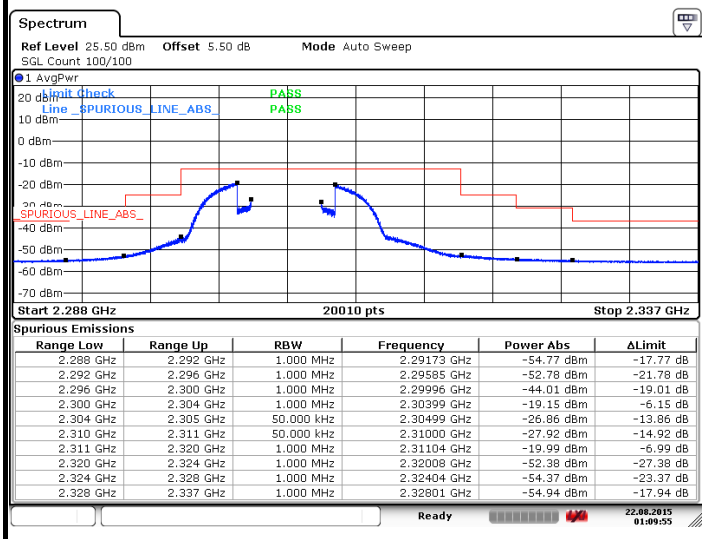


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29099 GHz	-54.99 dBm	-17.99 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-54.83 dBm	-23.83 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29950 GHz	-54.37 dBm	-29.37 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30680 GHz	-33.15 dBm	-20.15 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30907 GHz	-55.81 dBm	-42.81 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-22.34 dBm	-9.34 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31616 GHz	-21.42 dBm	-8.42 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32131 GHz	-37.74 dBm	-12.74 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32411 GHz	-47.72 dBm	-16.72 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32811 GHz	-54.79 dBm	-17.79 dB

Date: 22.AUG.2015 01:06:49

Lowest Band Edge / Full RB

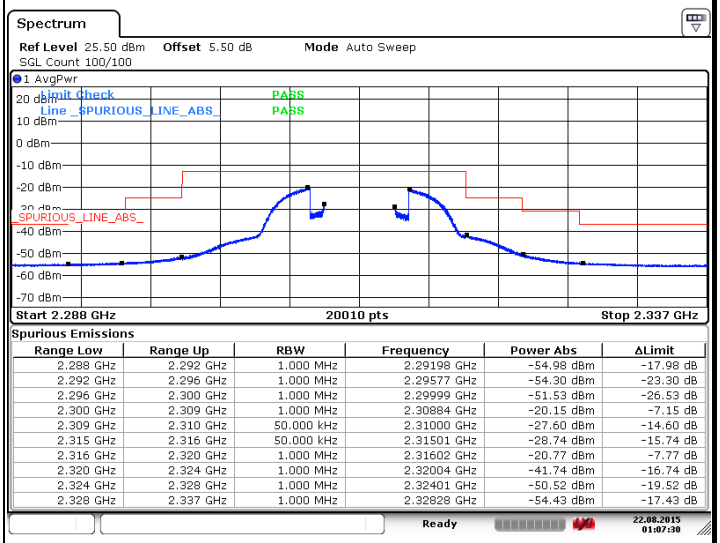


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29173 GHz	-54.77 dBm	-17.77 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29585 GHz	-52.78 dBm	-21.78 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29996 GHz	-44.01 dBm	-19.01 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-19.15 dBm	-6.15 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-26.86 dBm	-13.86 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-27.92 dBm	-14.92 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31104 GHz	-19.99 dBm	-6.99 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32008 GHz	-52.38 dBm	-27.38 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32404 GHz	-54.37 dBm	-23.37 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32801 GHz	-54.94 dBm	-17.94 dB

Date: 22.AUG.2015 01:09:54

Highest Band Edge / Full RB



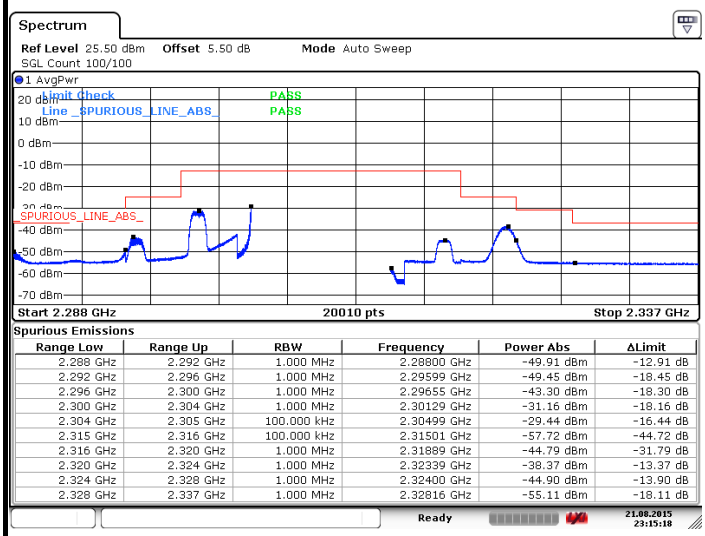
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29198 GHz	-54.98 dBm	-17.98 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29577 GHz	-54.30 dBm	-23.30 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29999 GHz	-51.53 dBm	-26.53 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30884 GHz	-20.15 dBm	-7.15 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-27.60 dBm	-14.60 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-28.74 dBm	-15.74 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31602 GHz	-20.77 dBm	-7.77 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32004 GHz	-41.74 dBm	-16.74 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-50.52 dBm	-19.52 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32828 GHz	-54.43 dBm	-17.43 dB

Date: 22.AUG.2015 01:07:30

LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB

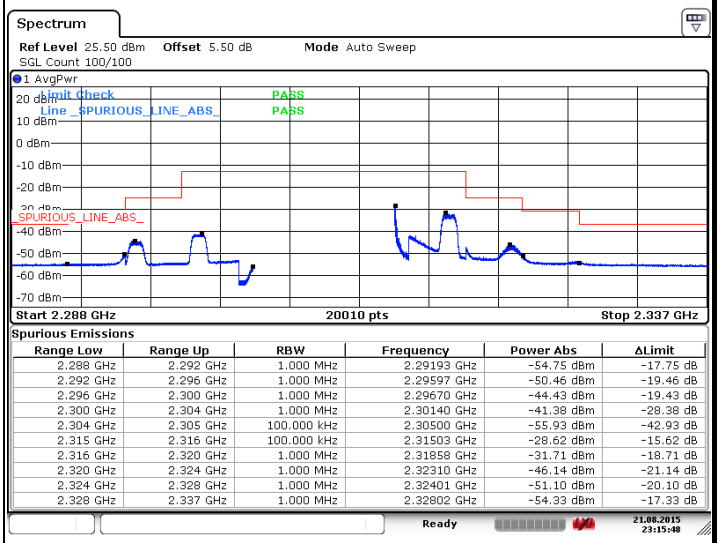


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.28800 GHz	-49.91 dBm	-12.91 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-49.45 dBm	-18.45 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29655 GHz	-43.30 dBm	-18.30 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30129 GHz	-31.16 dBm	-18.16 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-29.44 dBm	-16.44 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-57.72 dBm	-44.72 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31889 GHz	-44.79 dBm	-31.79 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32339 GHz	-38.37 dBm	-13.37 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32400 GHz	-44.90 dBm	-13.90 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32816 GHz	-55.11 dBm	-18.11 dB

Date:21.AUG.2015 23:15:17

Highest Band Edge / 1 RB

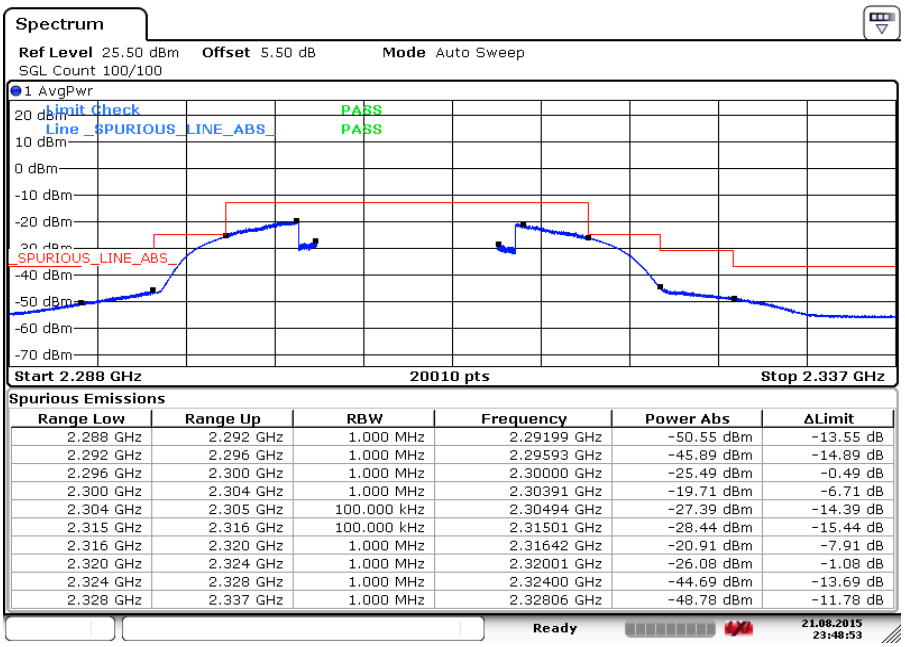


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29193 GHz	-54.75 dBm	-17.75 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29597 GHz	-50.46 dBm	-19.46 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29670 GHz	-44.43 dBm	-19.43 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30140 GHz	-41.38 dBm	-28.38 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-55.93 dBm	-42.93 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31503 GHz	-28.62 dBm	-15.62 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31858 GHz	-31.71 dBm	-18.71 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32310 GHz	-46.14 dBm	-21.14 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-51.10 dBm	-20.10 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32802 GHz	-54.33 dBm	-17.33 dB

Date:21.AUG.2015 23:15:48

Band Edge / Full RB



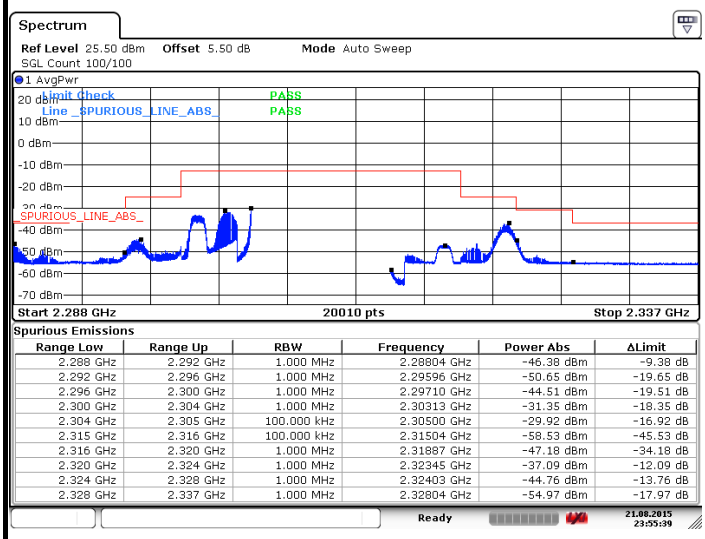
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29199 GHz	-50.55 dBm	-13.55 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-45.89 dBm	-14.89 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.30000 GHz	-25.49 dBm	-0.49 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30391 GHz	-19.71 dBm	-6.71 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30494 GHz	-27.39 dBm	-14.39 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-28.44 dBm	-15.44 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31642 GHz	-20.91 dBm	-7.91 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-26.08 dBm	-1.08 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32400 GHz	-44.69 dBm	-13.69 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32806 GHz	-48.78 dBm	-11.78 dB

Date:21.AUG.2015 23:48:53

LTE Band 30 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

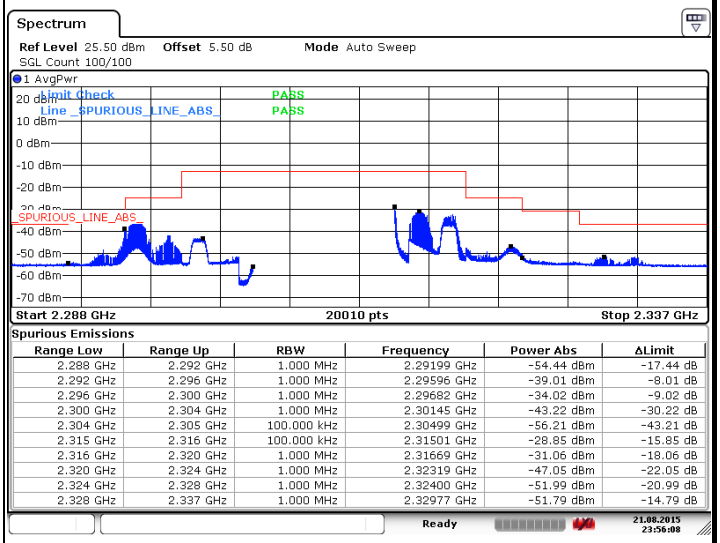


Date: 21.AUG.2015 23:55:39

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.28804 GHz	-46.38 dBm	-9.38 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29596 GHz	-50.65 dBm	-19.65 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29710 GHz	-44.51 dBm	-19.51 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30313 GHz	-31.35 dBm	-18.35 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-29.92 dBm	-16.92 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31504 GHz	-58.53 dBm	-45.53 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31887 GHz	-47.18 dBm	-34.18 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32345 GHz	-37.09 dBm	-12.09 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-44.76 dBm	-13.76 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32804 GHz	-54.97 dBm	-17.97 dB

Highest Band Edge / 1 RB

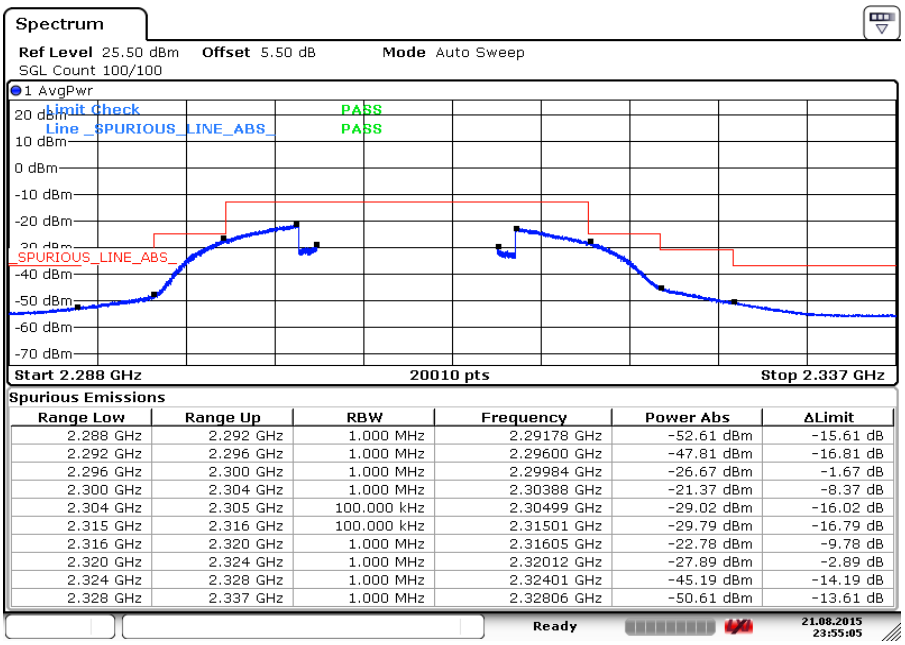


Date: 21.AUG.2015 23:56:08

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29199 GHz	-54.44 dBm	-17.44 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29596 GHz	-39.01 dBm	-8.01 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29682 GHz	-34.02 dBm	-9.02 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30145 GHz	-43.22 dBm	-30.22 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-56.21 dBm	-43.21 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-28.85 dBm	-15.85 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31669 GHz	-31.06 dBm	-18.06 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32319 GHz	-47.05 dBm	-22.05 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32400 GHz	-51.99 dBm	-20.99 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32977 GHz	-51.79 dBm	-14.79 dB

Band Edge / Full RB



Date: 21.AUG.2015 23:55:04

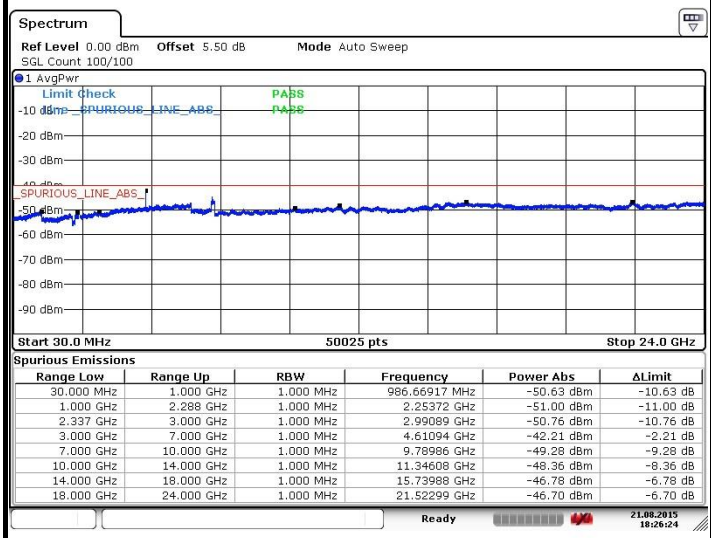
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29178 GHz	-52.61 dBm	-15.61 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29600 GHz	-47.81 dBm	-16.81 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29984 GHz	-26.67 dBm	-1.67 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30388 GHz	-21.37 dBm	-8.37 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-29.02 dBm	-16.02 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-29.79 dBm	-16.79 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31605 GHz	-22.78 dBm	-9.78 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32012 GHz	-27.89 dBm	-2.89 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-45.19 dBm	-14.19 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32806 GHz	-50.61 dBm	-13.61 dB

Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

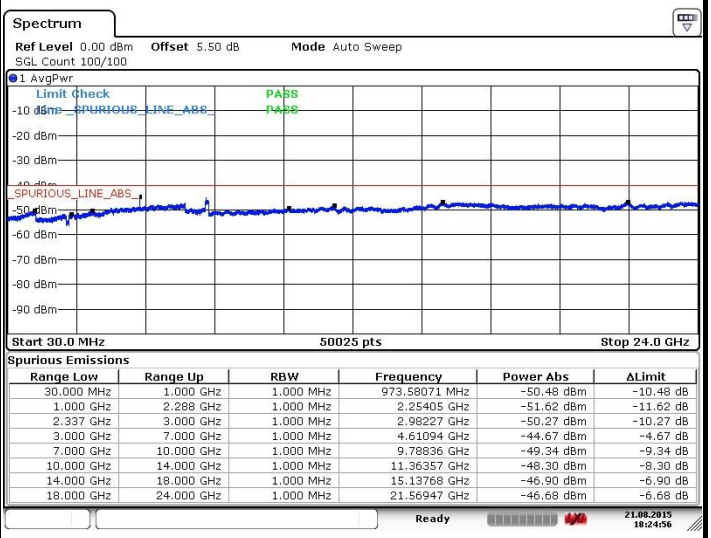


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.66917 MHz	-50.63 dBm	-10.63 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25372 GHz	-51.00 dBm	-11.00 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.99089 GHz	-50.76 dBm	-10.76 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61094 GHz	-42.21 dBm	-2.21 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.78986 GHz	-49.28 dBm	-9.28 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.34608 GHz	-48.36 dBm	-8.36 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.73988 GHz	-46.78 dBm	-6.78 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.52299 GHz	-46.70 dBm	-6.70 dB

Date: 21.AUG.2015 18:26:23

Lowest Channel / 16QAM

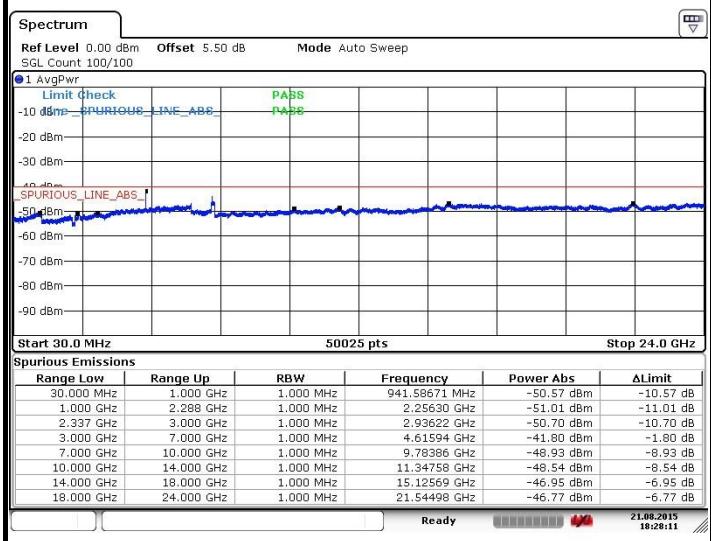


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	973.58071 MHz	-50.48 dBm	-10.48 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25405 GHz	-51.62 dBm	-11.62 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.98227 GHz	-50.27 dBm	-10.27 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61094 GHz	-44.67 dBm	-4.67 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.78836 GHz	-49.34 dBm	-9.34 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.36357 GHz	-48.30 dBm	-8.30 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.13768 GHz	-46.90 dBm	-6.90 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.56947 GHz	-46.68 dBm	-6.68 dB

Date: 21.AUG.2015 18:24:56

Middle Channel / QPSK

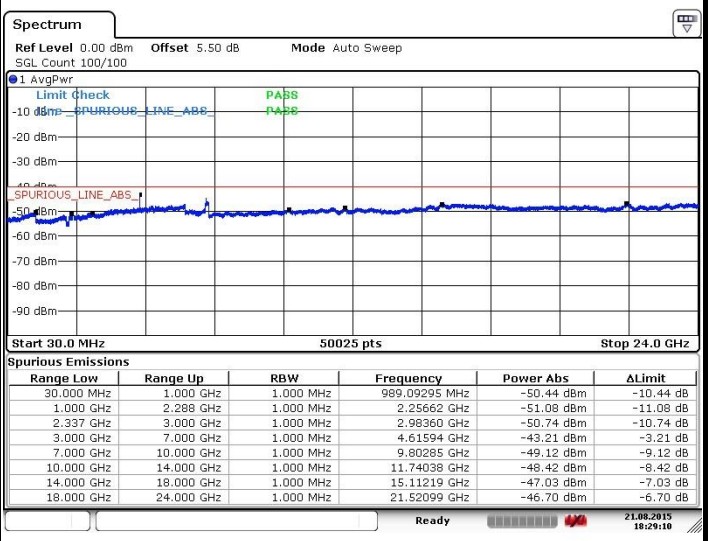


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	941.58671 MHz	-50.57 dBm	-10.57 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25630 GHz	-51.01 dBm	-11.01 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.93622 GHz	-50.70 dBm	-10.70 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61594 GHz	-41.80 dBm	-1.80 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.78386 GHz	-48.93 dBm	-8.93 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.34758 GHz	-48.54 dBm	-8.54 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.12569 GHz	-46.95 dBm	-6.95 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.54498 GHz	-46.77 dBm	-6.77 dB

Date: 21.AUG.2015 18:28:11

Middle Channel / 16QAM



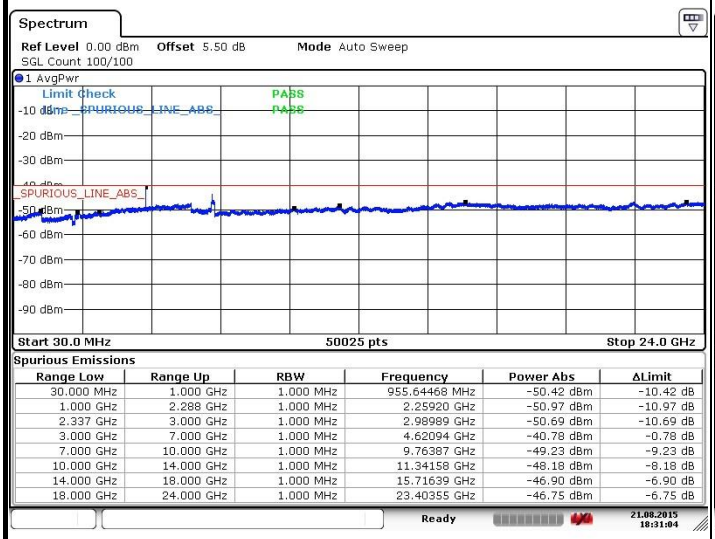
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	989.09295 MHz	-50.44 dBm	-10.44 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25662 GHz	-51.08 dBm	-11.08 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.98360 GHz	-50.74 dBm	-10.74 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61594 GHz	-43.21 dBm	-3.21 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.80285 GHz	-49.12 dBm	-9.12 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.74038 GHz	-48.42 dBm	-8.42 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.11219 GHz	-47.03 dBm	-7.03 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.52099 GHz	-46.70 dBm	-6.70 dB

Date: 21.AUG.2015 18:29:10

LTE Band 30 / 5MHz

Highest Channel / QPSK

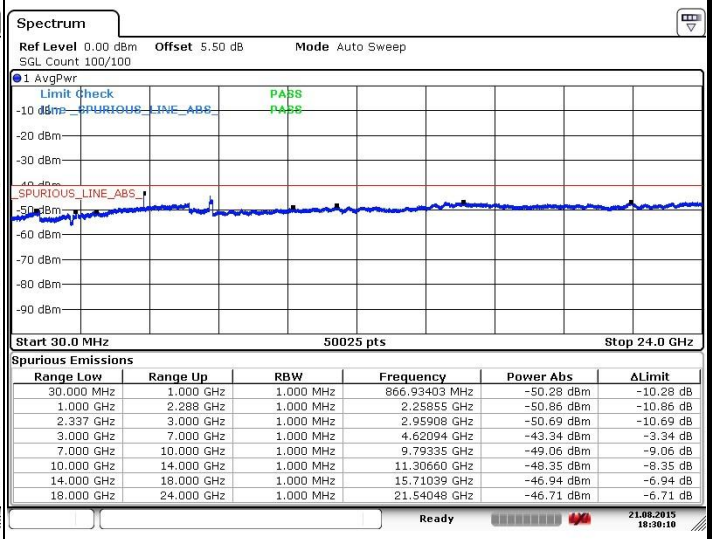


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.64468 MHz	-50.42 dBm	-10.42 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25920 GHz	-50.97 dBm	-10.97 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.98989 GHz	-50.69 dBm	-10.69 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62094 GHz	-40.78 dBm	-0.78 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.76387 GHz	-49.23 dBm	-9.23 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.34158 GHz	-48.18 dBm	-8.18 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.71639 GHz	-46.90 dBm	-6.90 dB
18.000 GHz	24.000 GHz	1.000 MHz	23.40355 GHz	-46.75 dBm	-6.75 dB

Date: 21.AUG.2015 18:31:03

Highest Channel / 16QAM



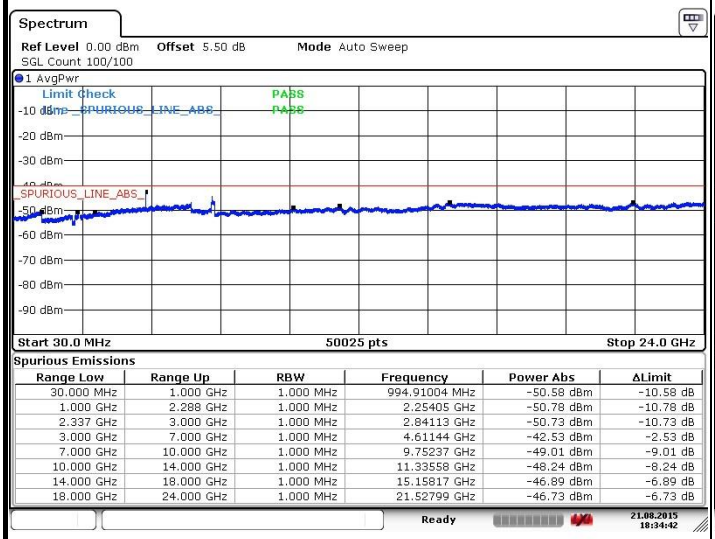
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	866.93403 MHz	-50.28 dBm	-10.28 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25855 GHz	-50.86 dBm	-10.86 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.95908 GHz	-50.69 dBm	-10.69 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62094 GHz	-43.34 dBm	-3.34 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.79335 GHz	-49.06 dBm	-9.06 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.30660 GHz	-48.35 dBm	-8.35 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.71039 GHz	-46.94 dBm	-6.94 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.54048 GHz	-46.71 dBm	-6.71 dB

Date: 21.AUG.2015 18:30:10

LTE Band 30 / 10MHz

Middle Channel / QPSK

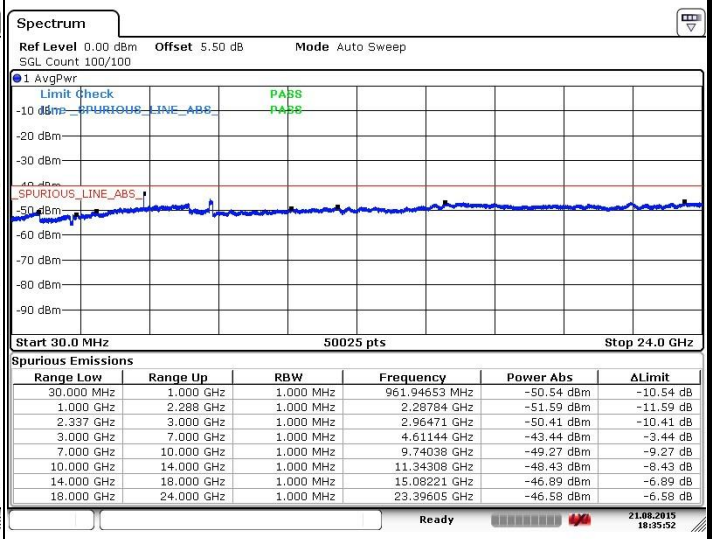


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	994.91004 MHz	-50.58 dBm	-10.58 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.25405 GHz	-50.78 dBm	-10.78 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.84113 GHz	-50.73 dBm	-10.73 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61144 GHz	-42.53 dBm	-2.53 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.75237 GHz	-49.01 dBm	-9.01 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.33558 GHz	-48.24 dBm	-8.24 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.15817 GHz	-46.89 dBm	-6.89 dB
18.000 GHz	24.000 GHz	1.000 MHz	21.52799 GHz	-46.73 dBm	-6.73 dB

Date: 21.AUG.2015 18:34:41

Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	961.94653 MHz	-50.54 dBm	-10.54 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28784 GHz	-51.59 dBm	-11.59 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.96471 GHz	-50.41 dBm	-10.41 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61144 GHz	-43.44 dBm	-3.44 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.74038 GHz	-49.27 dBm	-9.27 dB
10.000 GHz	14.000 GHz	1.000 MHz	11.34308 GHz	-48.43 dBm	-8.43 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.08221 GHz	-46.89 dBm	-6.89 dB
18.000 GHz	24.000 GHz	1.000 MHz	23.39605 GHz	-46.58 dBm	-6.58 dB

Date: 21.AUG.2015 18:35:52

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	0.0242	PASS
40	Normal Voltage	0.0273	
30	Normal Voltage	0.0100	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0052	
0	Normal Voltage	0.0043	
-10	Normal Voltage	0.0173	
-20	Normal Voltage	0.0143	
-30	Normal Voltage	0.0104	
20	Maximum Voltage	0.0039	
20	Normal Voltage	0.0078	
20	Battery End Point	0.0026	

Note:

1. Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.6 V.；Maximum Voltage =4.2 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

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)
Lowest	4610.50	-51.81	-40	-11.81	-66.69	-63.56	0.95	12.70	H
	6915.75	-46.52	-40	-6.52	-67.61	-56.76	1.46	11.70	H
	9221.00	-43.62	-40	-3.62	-68.80	-54.41	1.31	12.10	H
	4610.5	-51.82	-40	-11.82	-66.95	-63.56	0.95	12.70	V
	6915.75	-42.81	-40	-2.81	-63.56	-53.04	1.46	11.70	V
	9221	-46.03	-40	-6.03	-68.89	-56.81	1.31	12.10	V
Middle	4615.50	-52.35	-40	-12.35	-67.23	-64.10	0.95	12.70	H
	6923.25	-43.90	-40	-3.90	-64.99	-54.14	1.46	11.70	H
	9231.00	-44.74	-40	-4.74	-69.92	-55.53	1.31	12.10	H
	4615.5	-51.71	-40	-11.71	-66.84	-63.45	0.95	12.70	V
	6923.25	-42.72	-40	-2.72	-63.47	-52.95	1.46	11.70	V
	9231	-46.13	-40	-6.13	-68.99	-56.91	1.31	12.10	V
Highest	4620.50	-52.64	-40	-12.64	-67.52	-64.39	0.95	12.70	H
	6930.75	-43.44	-40	-3.44	-64.53	-53.68	1.46	11.70	H
	9241.00	-44.84	-40	-4.84	-70.02	-55.63	1.31	12.10	H
	4620.5	-52.96	-40	-12.96	-68.09	-64.70	0.95	12.70	V
	6930.75	-42.56	-40	-2.56	-63.31	-52.79	1.46	11.70	V
	9241	-46.16	-40	-6.16	-69.02	-56.94	1.31	12.10	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	-52.49	-40	-12.49	-67.37	-64.24	0.95	12.70	H
	6916.50	-46.55	-40	-6.55	-67.64	-56.79	1.46	11.70	H
	9222.00	-44.01	-40	-4.01	-69.19	-54.80	1.31	12.10	H
	4611	-51.80	-40	-11.80	-66.93	-63.54	0.95	12.70	V
	6916.5	-43.31	-40	-3.31	-64.06	-53.54	1.46	11.70	V
	9222	-46.44	-40	-6.44	-69.3	-57.22	1.31	12.10	V

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