FCC RF Test Report

APPLICANT	:	**ZTE CORPORATION**
EQUIPMENT	:	**WCDMA/ LTE Multi-Mode Digital Mobile Phone**
BRAND NAME	:	**ZTE**
MODEL NAME	:	**A1P**
FCC ID	:	**SRQ-ZTEA1P**
STANDARD	:	**FCC 47 CFR Part 2, 27**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**

The product was received on May 04, 2015 and completely tested on Jun. 09, 2015. We, SPORTON INTERNATIONAL 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 INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG550405C	Rev. 01	Initial issue of report	Jun. 24, 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 6.06 dB at 4608.000 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	A1P
FCC ID	SRQ-ZTEA1P
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 : 20.92 dBm
Type of Modulation	QPSK / 16QAM
HW Version	wtqD
SW Version	A1PV1.0.0B08
EUT Stage	Identical Prototype

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	4M50G7D	-	4M50W7D	-
10	9M03G7D	0.0010	9M01W7D	-

1.6 Testing Site

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 ; FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH02-HY

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH11-HY

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

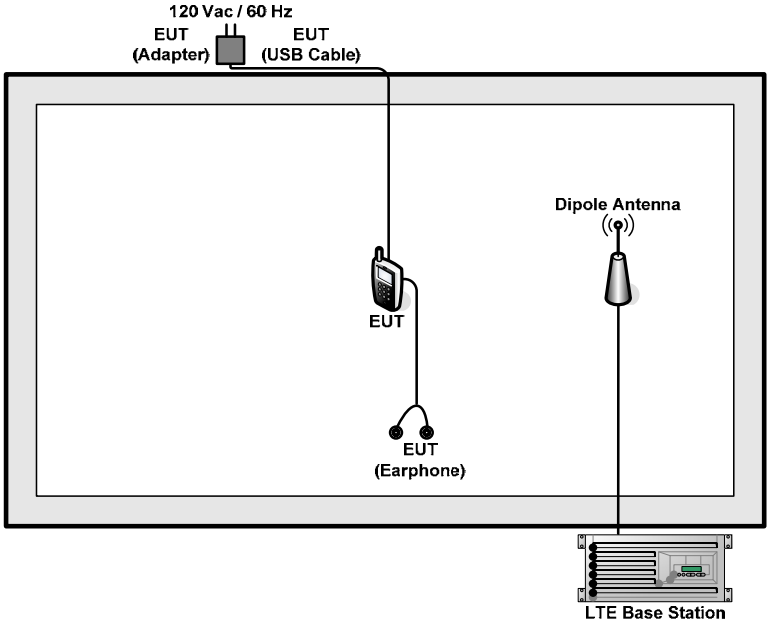
2.1 Test Mode

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

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

= 4.2 + 10 = 14.2 (dB)

3 Conducted Test Items

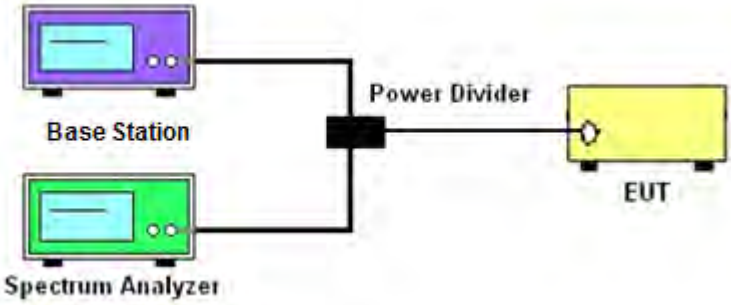
3.1 Measuring Instruments

See list of measuring instruments of this test report.

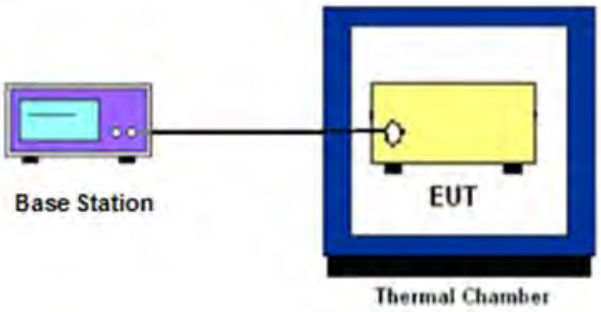
3.2 Test Setup

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.

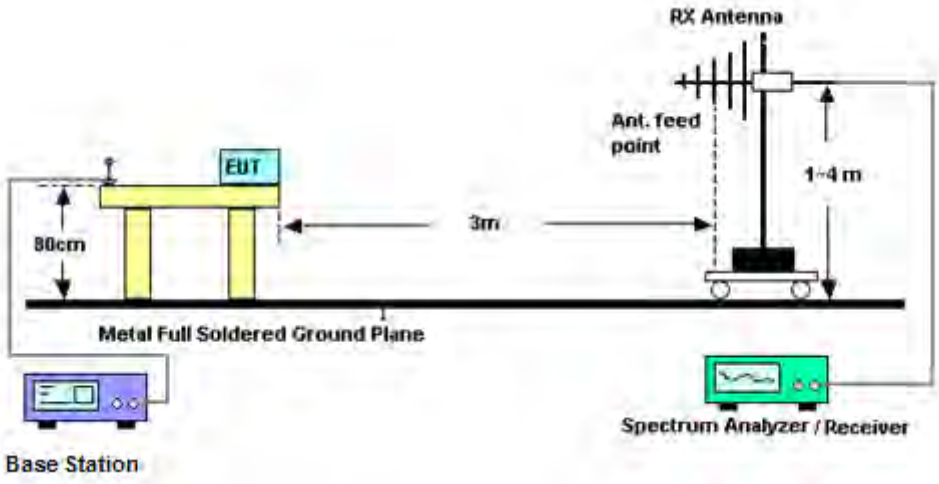
4 Radiated Test Items

4.1 Measuring Instruments

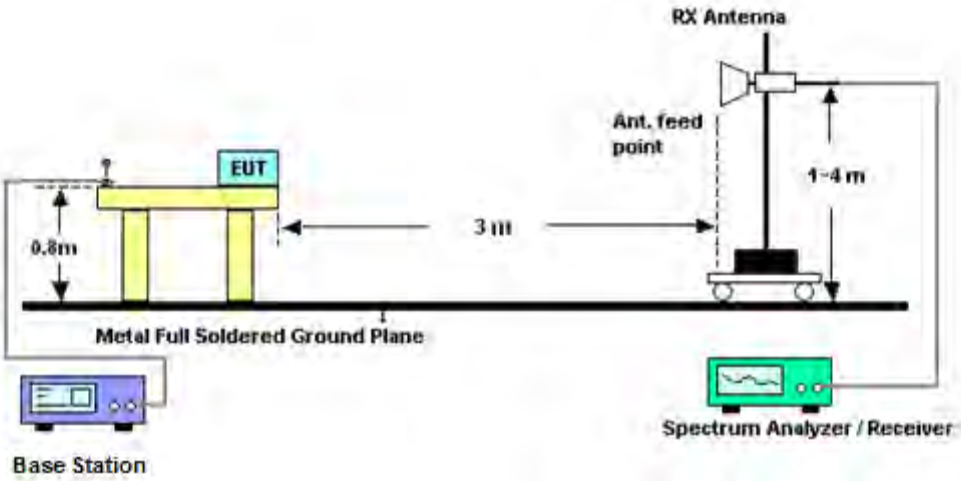
See list of measuring instruments of this test report.

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	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Sep. 17, 2014	Jun. 02, 2015 ~ Jun. 08, 2015	Sep. 16 2015	Conducted (TH02-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-30℃~70℃	Dec. 04, 2014	Jun. 02, 2015 ~ Jun. 08, 2015	Dec. 03, 2015	Conducted (TH02-HY)
Base Station	Anritsu	MT8820C	6201432821	GSM/GPRS /WCDMA/LTE	Oct. 27, 2014	Jun. 02, 2015 ~ Jun. 08, 2015	Oct. 26, 2015	Conducted (TH02-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 22, 2015	Jun. 09, 2015	May 21, 2016	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Oct. 03, 2014	Jun. 09, 2015	Oct. 02, 2015	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 03, 2014	Jun. 09, 2015	Nov. 02, 2015	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Nov. 24, 2014	Jun. 09, 2015	Nov. 23, 2015	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Nov. 20, 2014	Jun. 09, 2015	Nov. 19, 2015	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A	MY54130085	20Hz ~ 8.4GHz	Nov. 05, 2014	Jun. 09, 2015	Nov. 04, 2015	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz ~ 44GHZ	Sep. 24, 2014	Jun. 09, 2015	Sep. 23, 2015	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Oct. 24, 2014	Jun. 09, 2015	Oct. 23, 2015	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-450 0-B	N/A	1~4m	NA	Jun. 09, 2015	NA	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0-360 degree	NA	Jun. 09, 2015	NA	Radiation (03CH11-HY)

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))	4.8

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.2

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

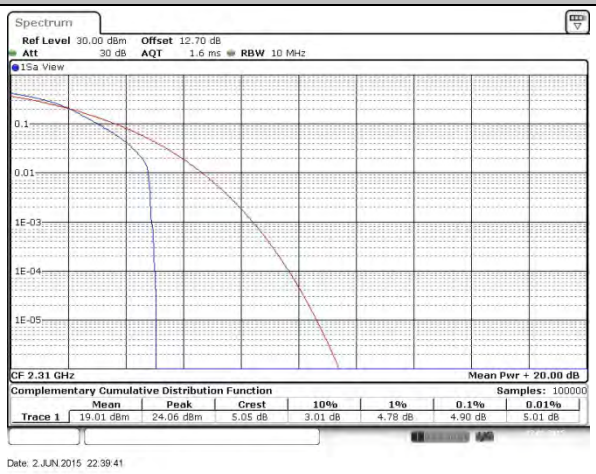
LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	20.87	20.79	20.81
5	1	12		20.75	20.66	20.80
5	1	24		20.68	20.71	20.80
5	12	0		19.76	19.82	19.74
5	12	6		19.78	19.77	19.82
5	12	11		19.76	19.75	19.75
5	25	0		19.75	19.78	19.76
5	1	0	16-QAM	20.10	20.01	20.07
5	1	12		20.18	20.15	20.20
5	1	24		19.91	19.95	20.03
5	12	0		18.81	18.85	18.81
5	12	6		18.79	18.76	18.87
5	12	11		18.74	18.76	18.80
5	25	0		18.78	18.81	18.79
10	1	0	QPSK		**20.92**	
10	1	24			20.76	
10	1	49			20.70	
10	25	0			19.82	
10	25	12			19.79	
10	25	24			19.67	
10	50	0			19.76	
10	1	0	16-QAM		20.19	
10	1	24			20.08	
10	1	49			19.92	
10	25	0			18.87	
10	25	12			18.82	
10	25	24			18.70	
10	50	0			18.76	

Peak-to-Average Ratio

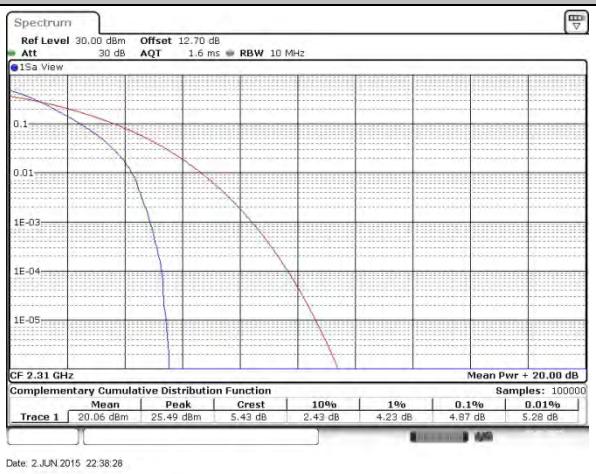
Mode	LTE Band 30 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Middle CH	4.9	4.87	5.33	5.91	PASS

LTE Band 30 / 10MHz / QPSK

Middle Channel / 1RB



Middle Channel / Full RB



LTE Band 30 / 10MHz / 16QAM

Middle Channel / 1RB

Middle Channel / Full RB

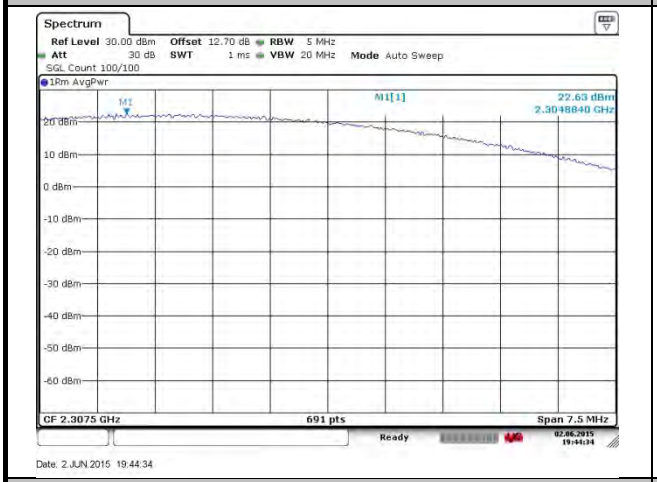
EIRP Power Density

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					22.63	21.94						
Middle CH					22.31	21.81	22.48	21.67				
Highest CH					22.49	22.08						

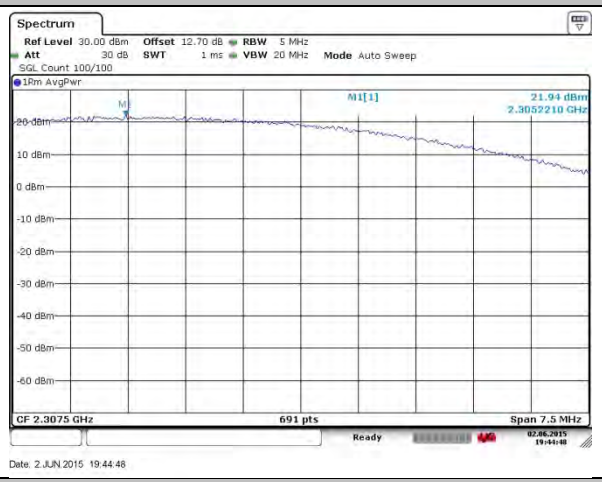
Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					22.71	22.02						
Middle CH					22.39	21.89	22.56	21.75				
Highest CH					22.57	22.16						
Antenna Gain	0.08 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

LTE Band 30 / 5MHz

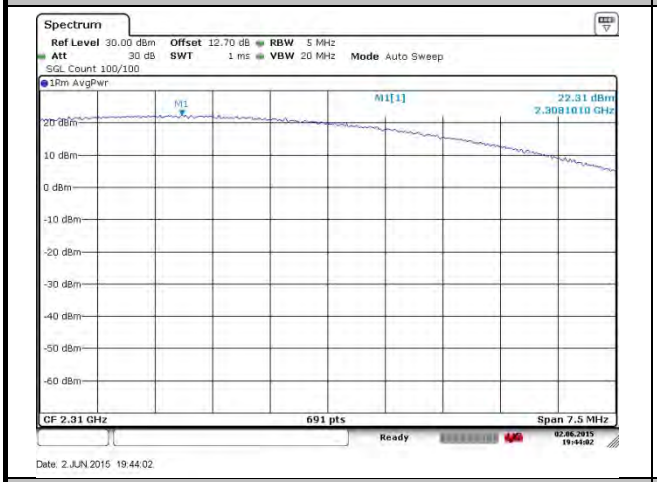
Lowest Channel / 5MHz / 1RB0 / QPSK



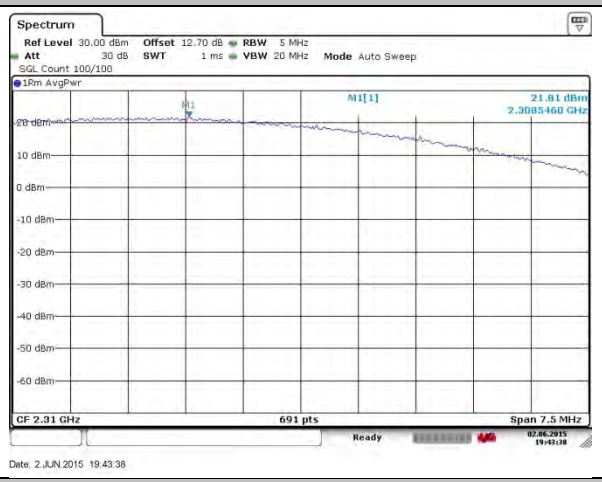
Lowest Channel / 5MHz / 1RB0 / 16QAM



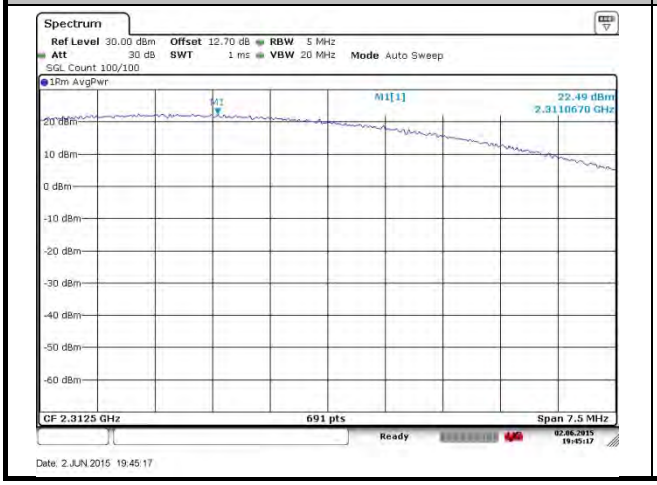
Middle Channel / 5MHz / 1RB0 / QPSK



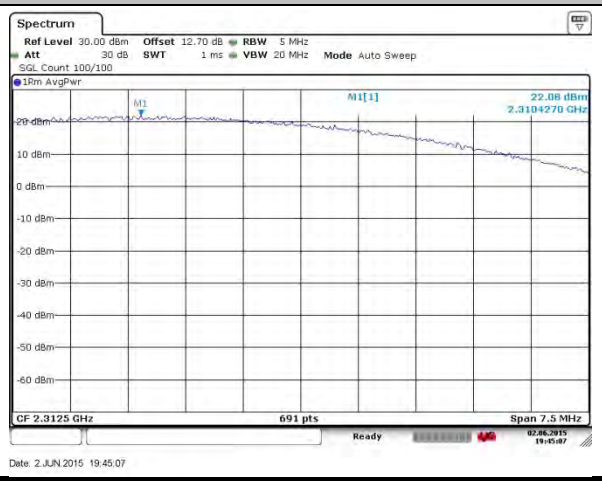
Middle Channel / 5MHz / 1RBmax / 16QAM

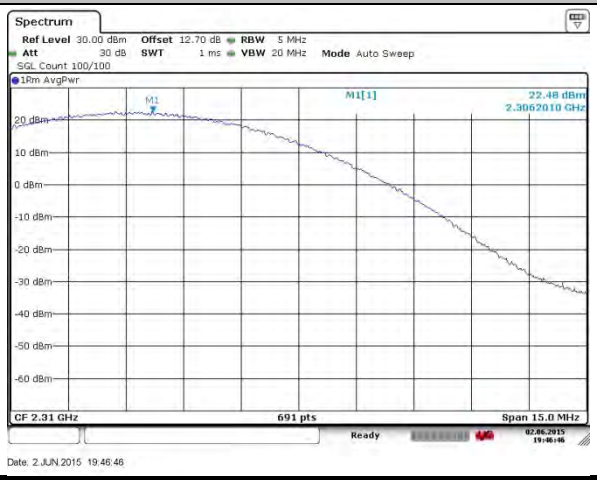
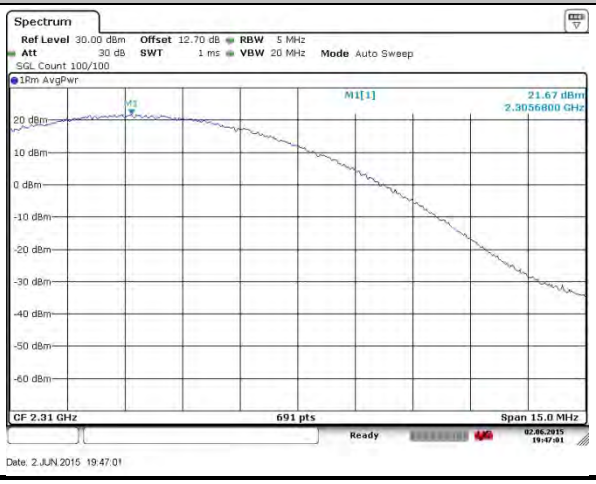


Highest Channel / 5MHz / Full RB / QPSK



Highest Channel / 5MHz / Full RB / 16QAM



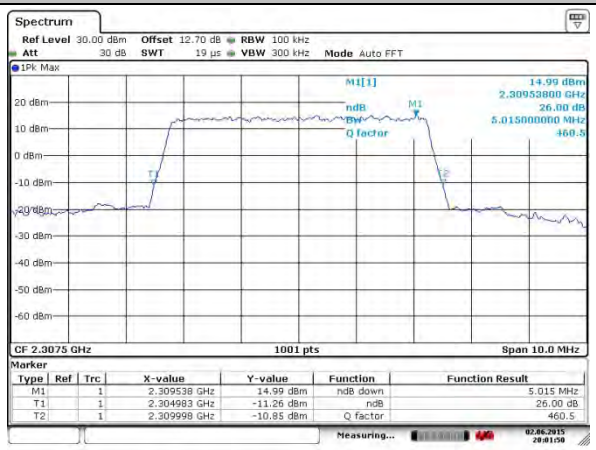
LTE Band 30 / 10MHz	
Lowest Channel / 10MHz / 1RB0 / QPSK	**Lowest Channel / 10MHz / 1RB0 / 16QAM**
	

26dB Bandwidth

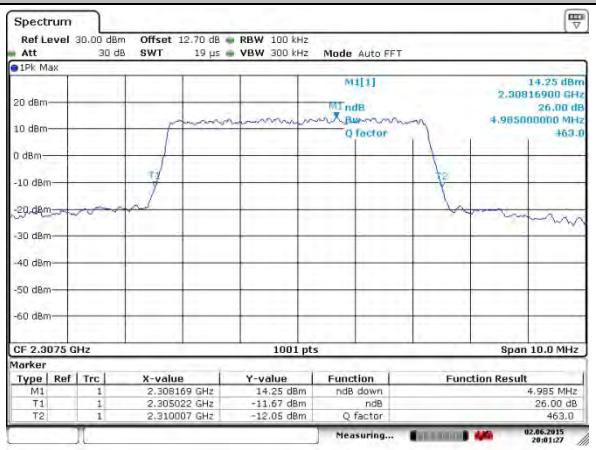
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					5.02	4.99						
Middle CH					5.01	4.98	9.91	9.89				
Highest CH					5.02	4.99						

LTE Band 30

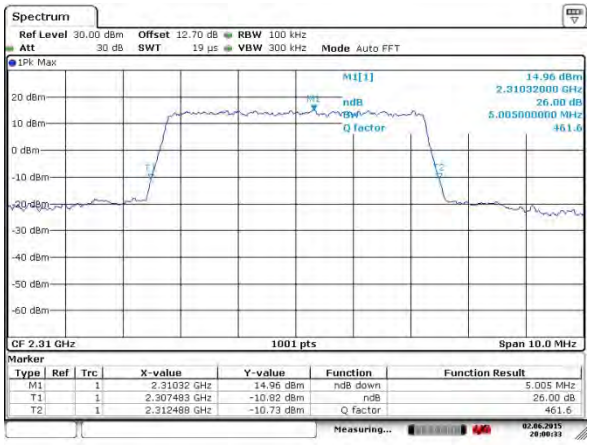
Lowest Channel / 5MHz / QPSK



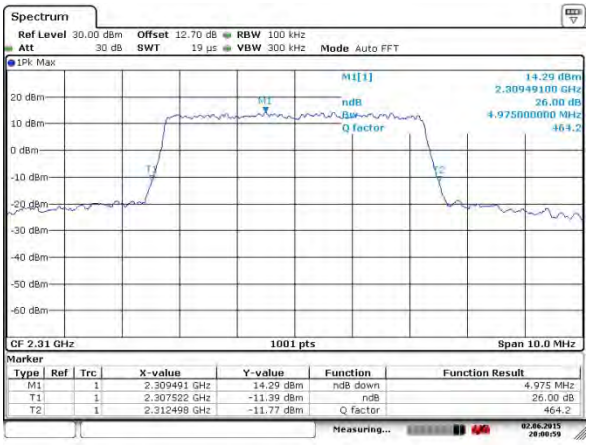
Lowest Channel / 5MHz / 16QAM



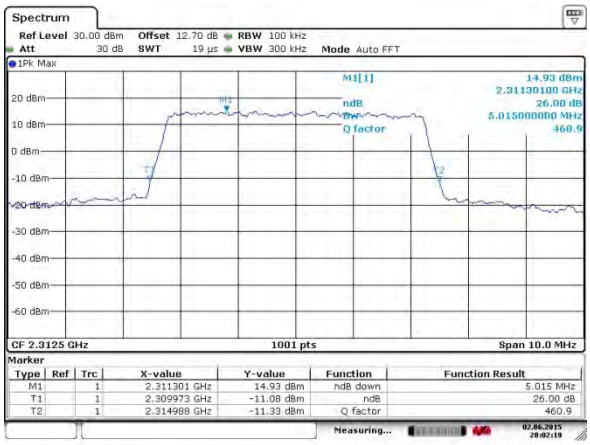
Middle Channel / 5MHz / QPSK



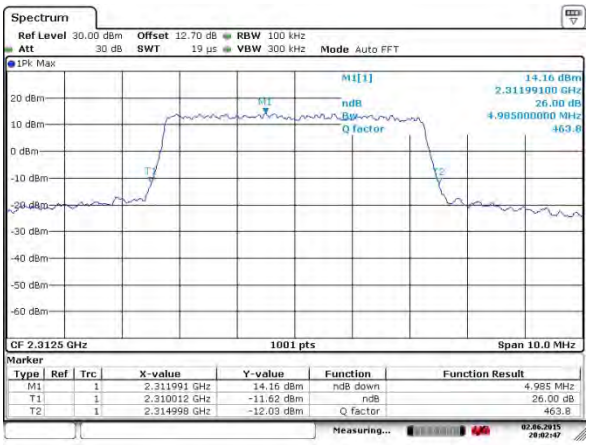
Middle Channel / 5MHz / 16QAM

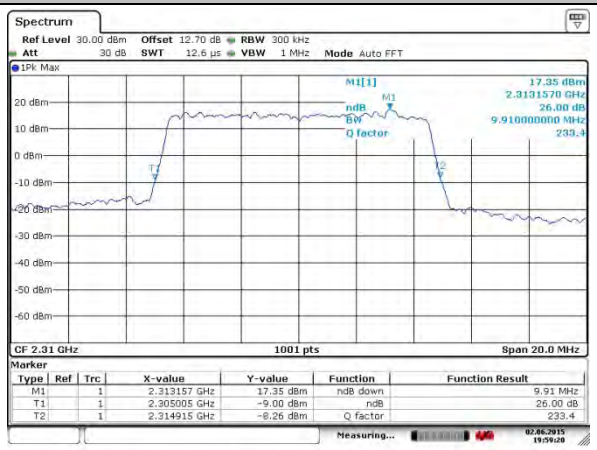
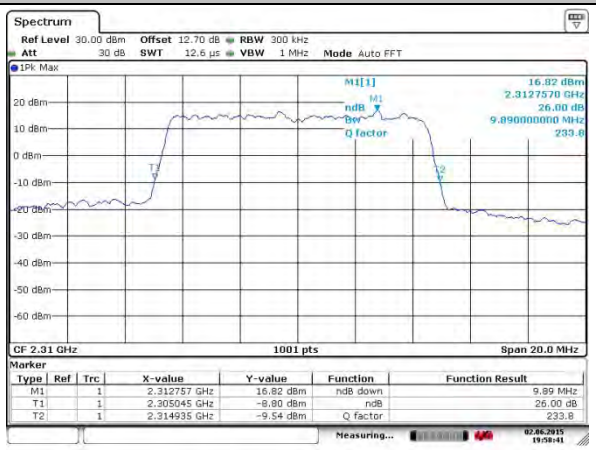


Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM



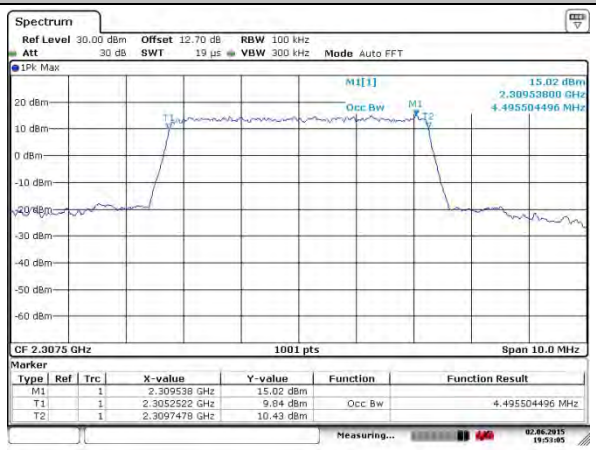
LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

Occupied Bandwidth

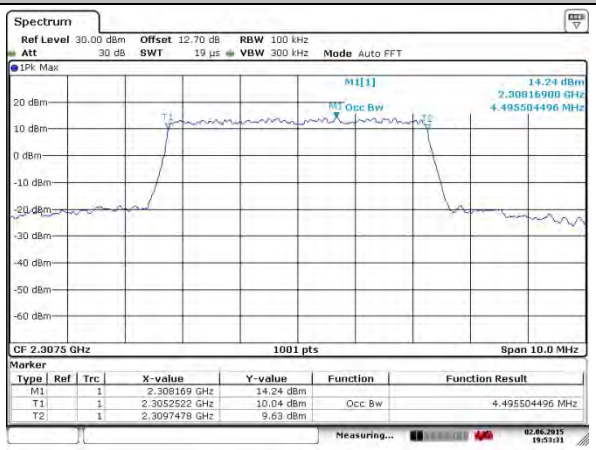
Mode	LTE Band 30 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.50	4.50						
Middle CH					4.49	4.50	9.03	9.01				
Highest CH					4.49	4.49						

LTE Band 30

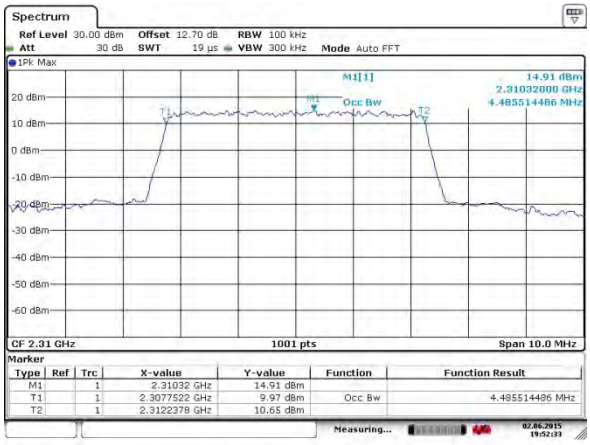
Lowest Channel / 5MHz / QPSK



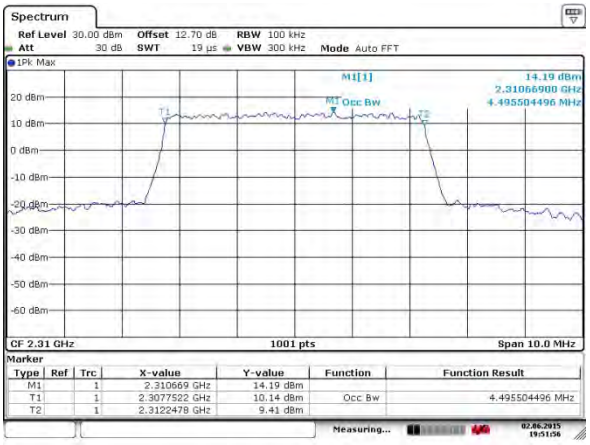
Lowest Channel / 5MHz / 16QAM



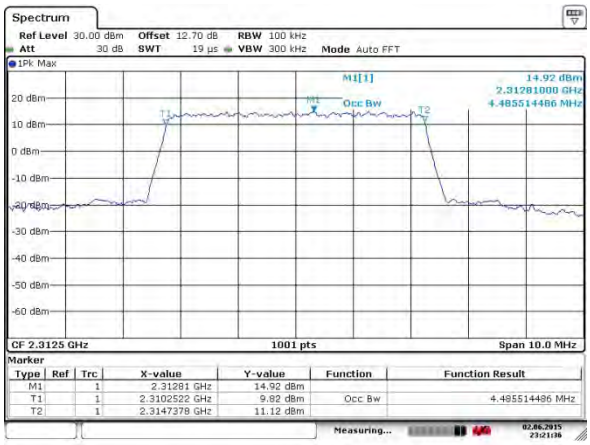
Middle Channel / 5MHz / QPSK



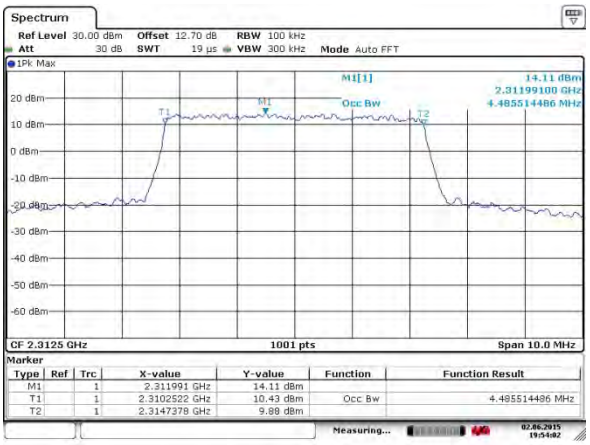
Middle Channel / 5MHz / 16QAM

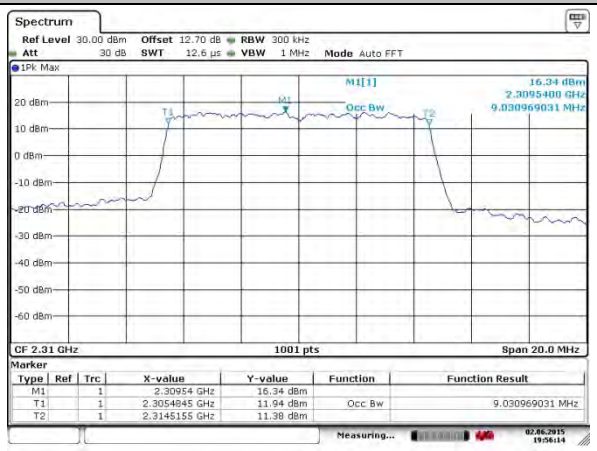
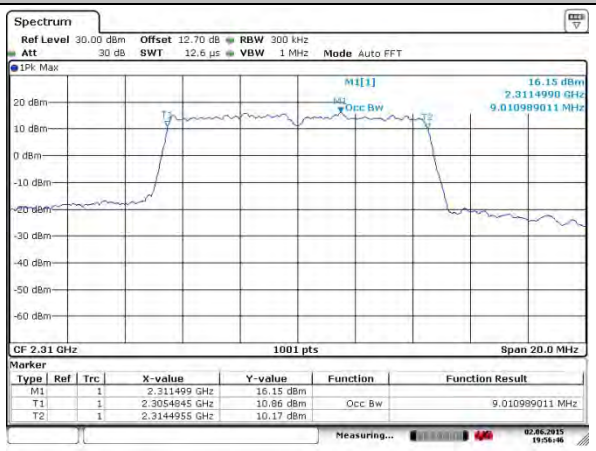


Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM

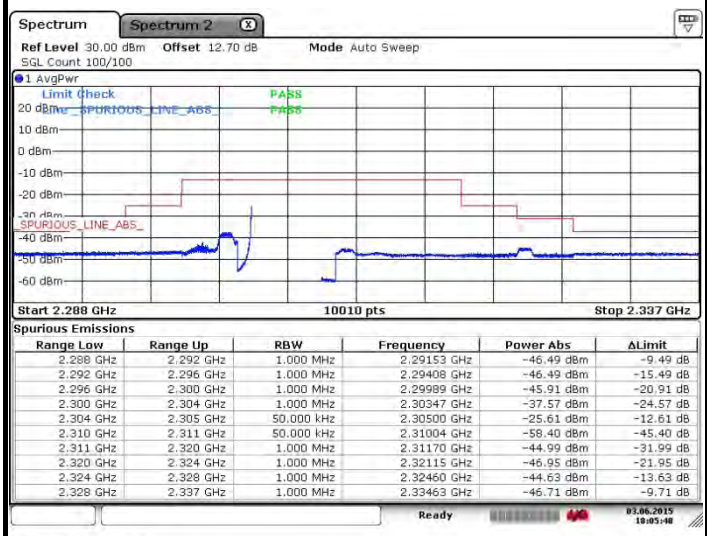


LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

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	2.29153 GHz	-46.49 dBm	-9.49 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29408 GHz	-46.49 dBm	-15.49 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29989 GHz	-45.91 dBm	-20.91 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30347 GHz	-37.57 dBm	-24.57 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-25.61 dBm	-12.61 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31004 GHz	-58.40 dBm	-45.40 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31170 GHz	-44.99 dBm	-31.99 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32115 GHz	-46.95 dBm	-21.95 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32460 GHz	-44.63 dBm	-13.63 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33463 GHz	-46.71 dBm	-9.71 dB

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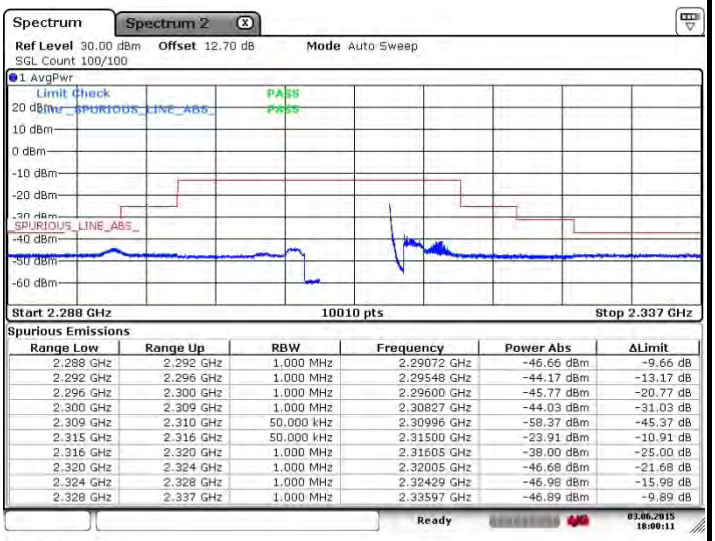
Highest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29072 GHz	-46.66 dBm	-9.66 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29548 GHz	-44.17 dBm	-13.17 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29600 GHz	-45.77 dBm	-20.77 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30827 GHz	-44.03 dBm	-31.03 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30996 GHz	-58.37 dBm	-45.37 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-23.91 dBm	-10.91 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31605 GHz	-38.00 dBm	-25.00 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32005 GHz	-46.68 dBm	-21.68 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32429 GHz	-46.98 dBm	-15.98 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33597 GHz	-46.89 dBm	-9.89 dB

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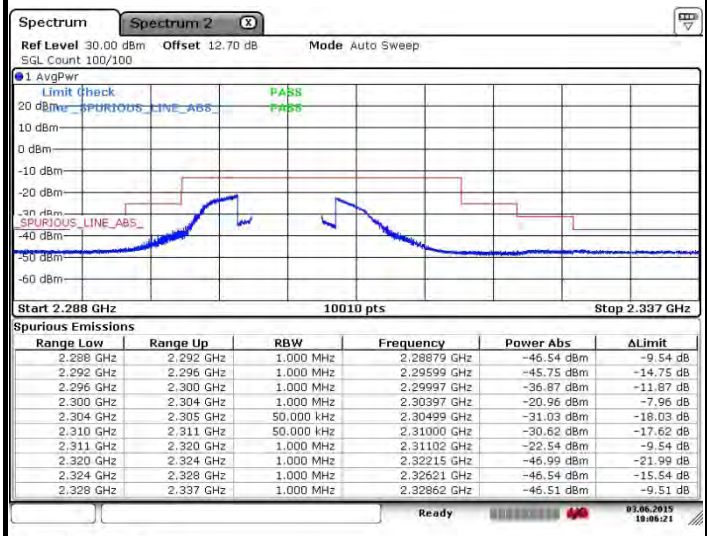
Lowest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.28879 GHz	-46.54 dBm	-9.54 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-45.75 dBm	-14.75 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29997 GHz	-36.87 dBm	-11.87 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30397 GHz	-20.96 dBm	-7.96 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-31.03 dBm	-18.03 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-30.62 dBm	-17.62 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31102 GHz	-22.54 dBm	-9.54 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32215 GHz	-46.99 dBm	-21.99 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32621 GHz	-46.54 dBm	-15.54 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32862 GHz	-46.51 dBm	-9.51 dB

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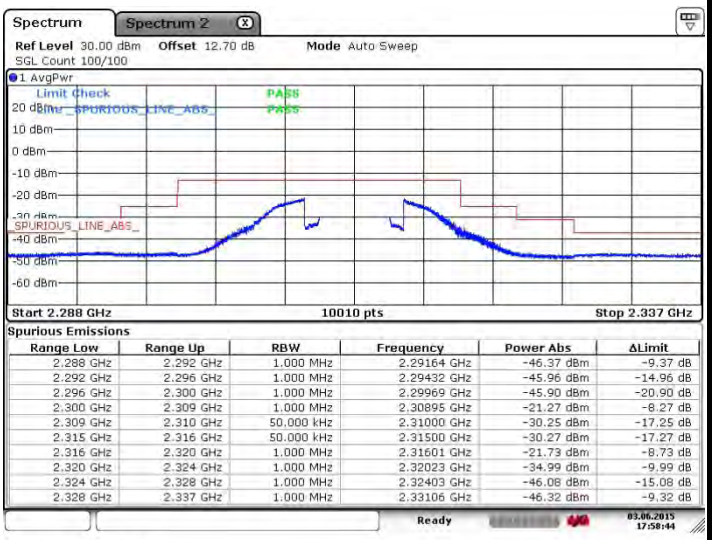
Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29164 GHz	-46.37 dBm	-9.37 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29432 GHz	-45.96 dBm	-14.96 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29969 GHz	-45.90 dBm	-20.90 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30895 GHz	-21.27 dBm	-8.27 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-30.25 dBm	-17.25 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-30.27 dBm	-17.27 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31601 GHz	-21.73 dBm	-8.73 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32023 GHz	-34.99 dBm	-9.99 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-46.08 dBm	-15.08 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33106 GHz	-46.32 dBm	-9.32 dB

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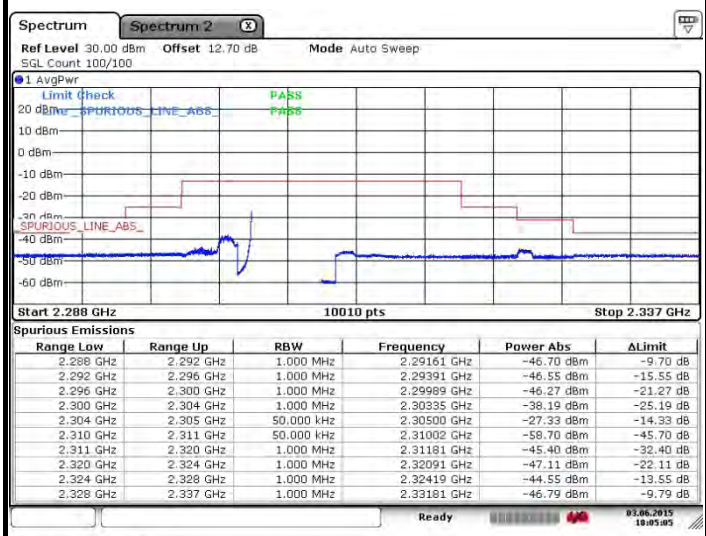
LTE Band 30 / 5MHz / 16QAM

Lowest Band Edge / 1RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29161 GHz	-46.70 dBm	-9.70 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29391 GHz	-46.55 dBm	-15.55 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29989 GHz	-46.27 dBm	-21.27 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30335 GHz	-38.19 dBm	-25.19 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-27.33 dBm	-14.33 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31002 GHz	-58.70 dBm	-45.70 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31181 GHz	-45.40 dBm	-32.40 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32091 GHz	-47.11 dBm	-22.11 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32419 GHz	-44.55 dBm	-13.55 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33181 GHz	-46.79 dBm	-9.79 dB

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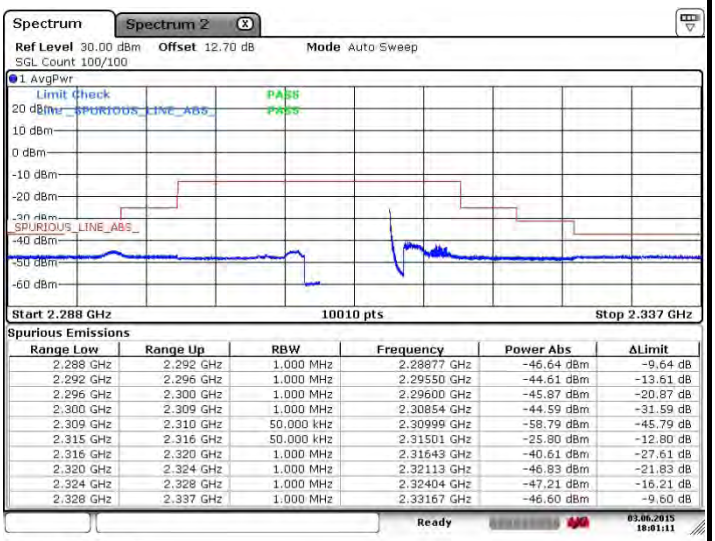
Highest Band Edge / 1 RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.28877 GHz	-46.64 dBm	-9.64 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29550 GHz	-44.61 dBm	-13.61 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29600 GHz	-45.87 dBm	-20.87 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30854 GHz	-44.59 dBm	-31.59 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-58.79 dBm	-45.79 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-25.80 dBm	-12.80 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31643 GHz	-40.61 dBm	-27.61 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32113 GHz	-46.83 dBm	-21.83 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32404 GHz	-47.21 dBm	-16.21 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33167 GHz	-46.60 dBm	-9.60 dB

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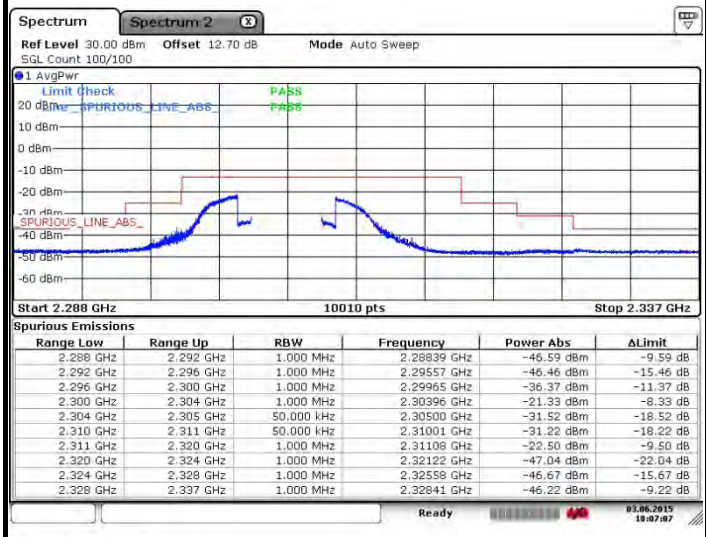
Lowest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.28839 GHz	-46.59 dBm	-9.59 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29557 GHz	-46.46 dBm	-15.46 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29965 GHz	-36.37 dBm	-11.37 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30396 GHz	-21.33 dBm	-8.33 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-31.52 dBm	-18.52 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31001 GHz	-31.22 dBm	-18.22 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31108 GHz	-22.50 dBm	-9.50 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32122 GHz	-47.04 dBm	-22.04 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32558 GHz	-46.67 dBm	-15.67 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32841 GHz	-46.22 dBm	-9.22 dB

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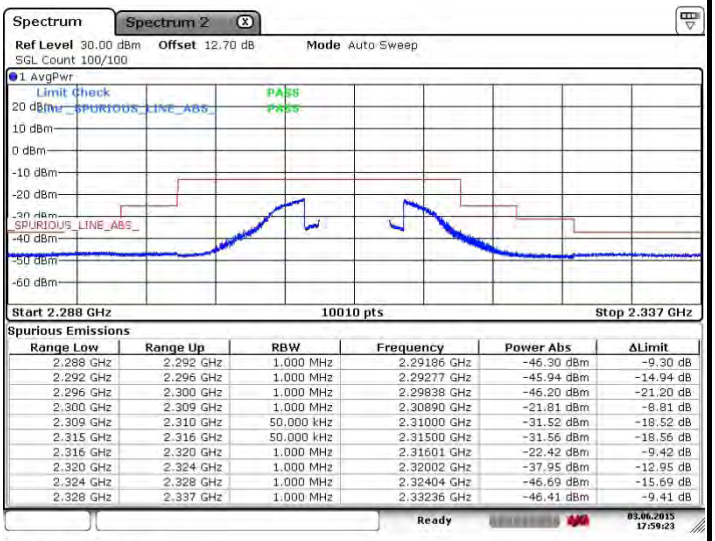
Highest Band Edge / Full RB



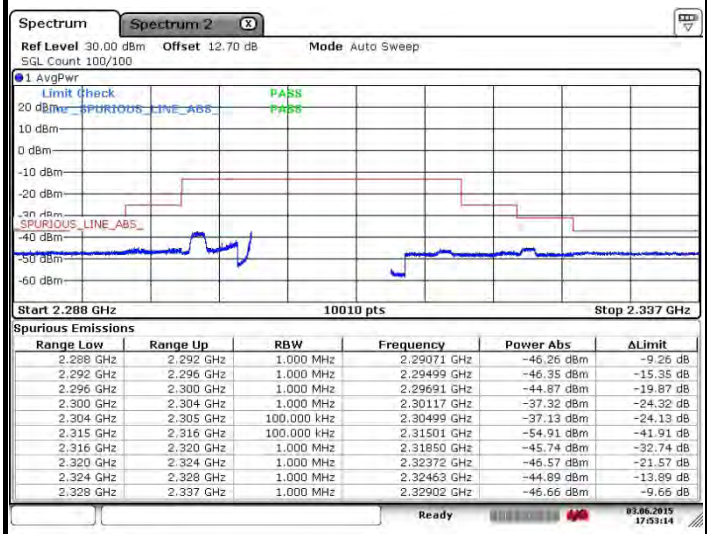
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29186 GHz	-46.30 dBm	-9.30 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29277 GHz	-45.94 dBm	-14.94 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29838 GHz	-46.20 dBm	-21.20 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30890 GHz	-21.81 dBm	-8.81 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-31.52 dBm	-18.52 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-31.56 dBm	-18.56 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31601 GHz	-22.42 dBm	-9.42 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32002 GHz	-37.95 dBm	-12.95 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32404 GHz	-46.69 dBm	-15.69 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.33236 GHz	-46.41 dBm	-9.41 dB

Date: 3.JUN.2015 17:59:23

LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB

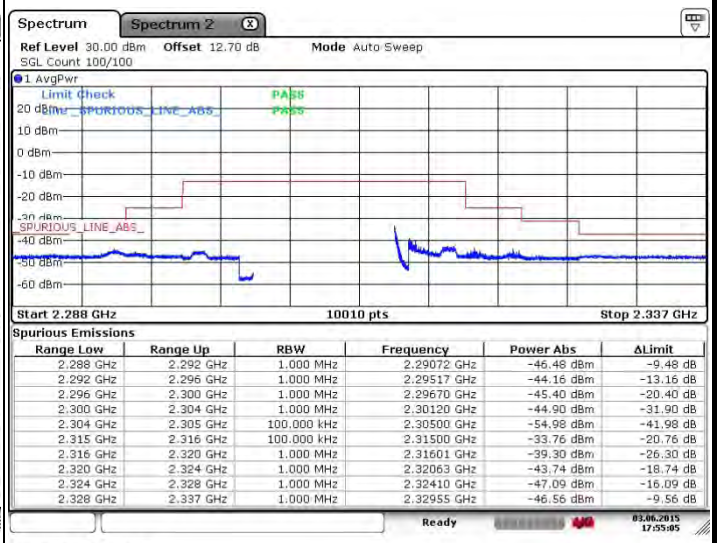


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29071 GHz	-46.26 dBm	-9.26 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29499 GHz	-46.35 dBm	-15.35 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29691 GHz	-44.87 dBm	-19.87 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30117 GHz	-37.32 dBm	-24.32 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-37.13 dBm	-24.13 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-54.91 dBm	-41.91 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31850 GHz	-45.74 dBm	-32.74 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32372 GHz	-46.57 dBm	-21.57 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32463 GHz	-44.89 dBm	-13.89 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32902 GHz	-46.66 dBm	-9.66 dB

Date: 3.JUN.2015 17:53:14

Highest Band Edge / 1 RB

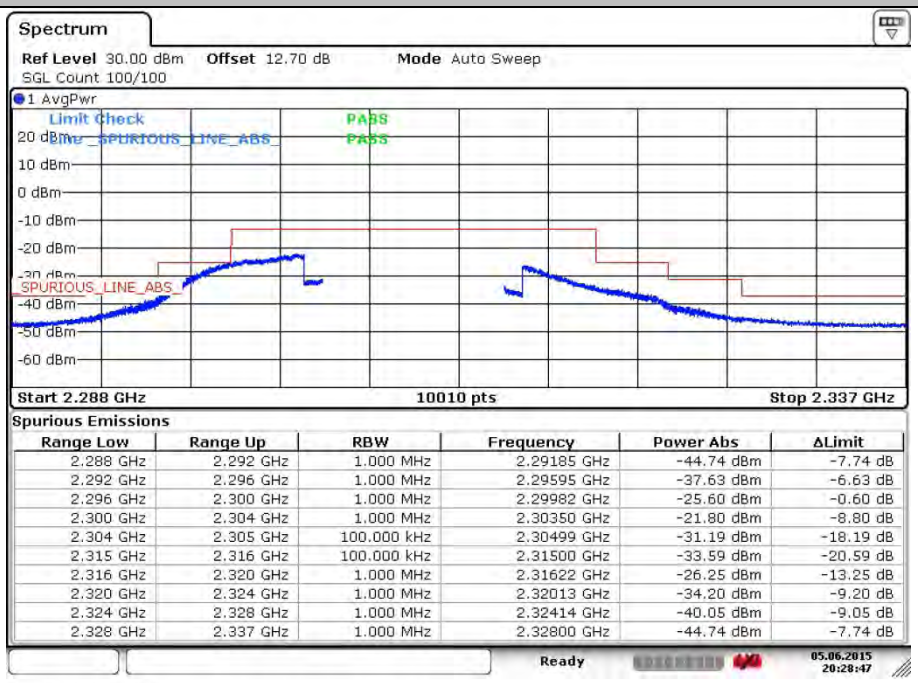


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29072 GHz	-46.48 dBm	-9.48 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29517 GHz	-44.16 dBm	-13.16 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29670 GHz	-45.40 dBm	-20.40 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30120 GHz	-44.90 dBm	-31.90 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-54.98 dBm	-41.98 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-33.76 dBm	-20.76 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31601 GHz	-39.30 dBm	-26.30 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32063 GHz	-43.74 dBm	-18.74 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32410 GHz	-47.09 dBm	-16.09 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32955 GHz	-46.56 dBm	-9.56 dB

Date: 3.JUN.2015 17:55:06

Band Edge / Full RB



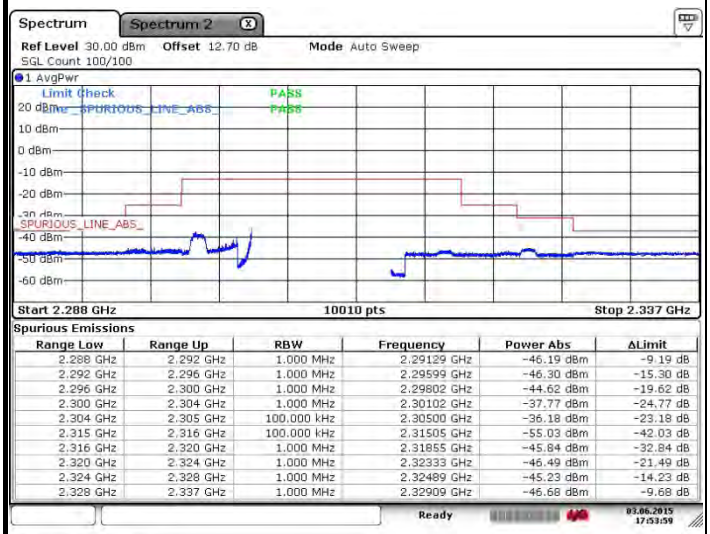
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29185 GHz	-44.74 dBm	-7.74 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29595 GHz	-37.63 dBm	-6.63 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29982 GHz	-25.60 dBm	-0.60 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30350 GHz	-21.80 dBm	-8.80 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-31.19 dBm	-18.19 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-33.59 dBm	-20.59 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31622 GHz	-26.25 dBm	-13.25 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32013 GHz	-34.20 dBm	-9.20 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32414 GHz	-40.05 dBm	-9.05 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32800 GHz	-44.74 dBm	-7.74 dB

Date: 5.JUN.2015 20:28:46

LTE Band 30 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

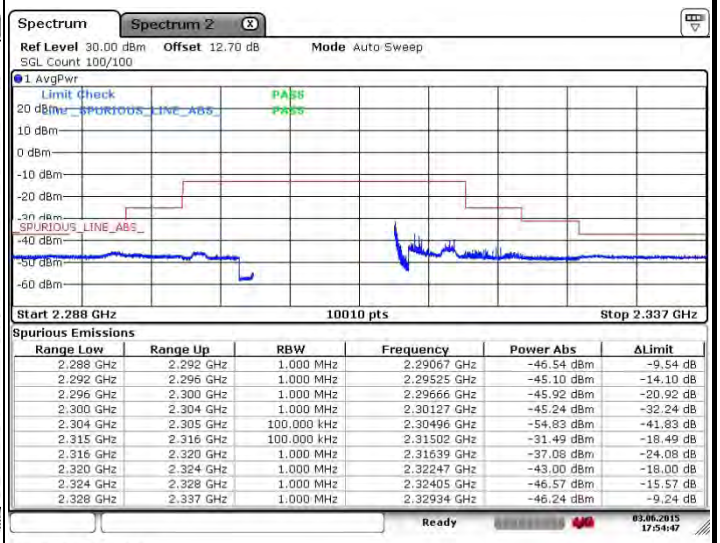


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29129 GHz	-46.19 dBm	-9.19 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-46.30 dBm	-15.30 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29802 GHz	-44.62 dBm	-19.62 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30102 GHz	-37.77 dBm	-24.77 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-36.18 dBm	-23.18 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31505 GHz	-55.03 dBm	-42.03 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31855 GHz	-45.84 dBm	-32.84 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32333 GHz	-46.49 dBm	-21.49 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32489 GHz	-45.23 dBm	-14.23 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32909 GHz	-46.68 dBm	-9.68 dB

Date: 3.JUN.2015 17:54:00

Highest Band Edge / 1 RB

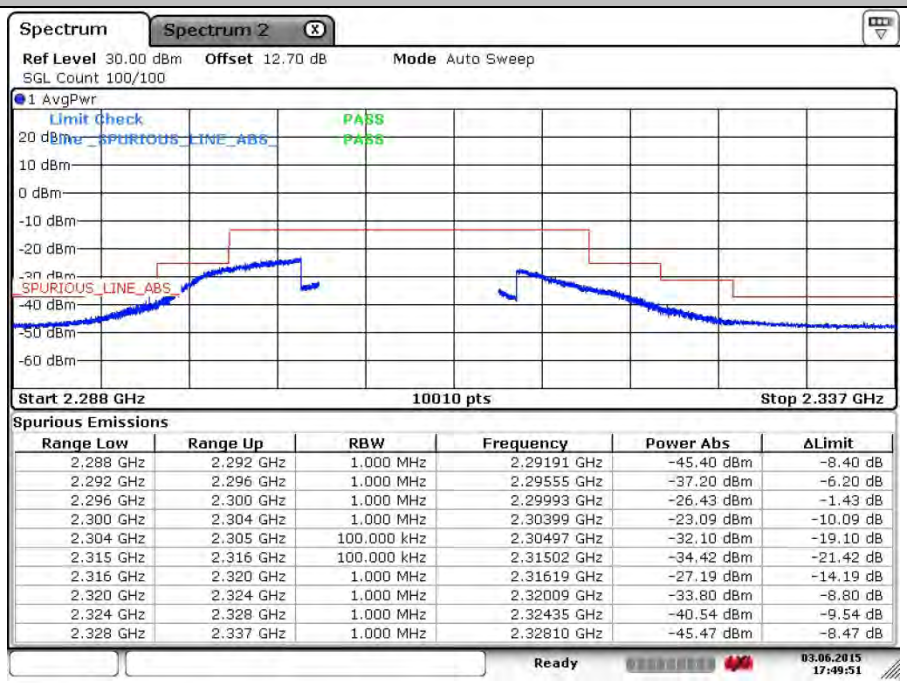


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29067 GHz	-46.54 dBm	-9.54 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29525 GHz	-45.10 dBm	-14.10 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29666 GHz	-45.92 dBm	-20.92 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30127 GHz	-45.24 dBm	-32.24 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30496 GHz	-54.83 dBm	-41.83 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-31.49 dBm	-18.49 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31639 GHz	-37.08 dBm	-24.08 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32247 GHz	-43.00 dBm	-18.00 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32405 GHz	-46.57 dBm	-15.57 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32934 GHz	-46.24 dBm	-9.24 dB

Date: 3.JUN.2015 17:54:47

Band Edge / Full RB



Spurious Emissions

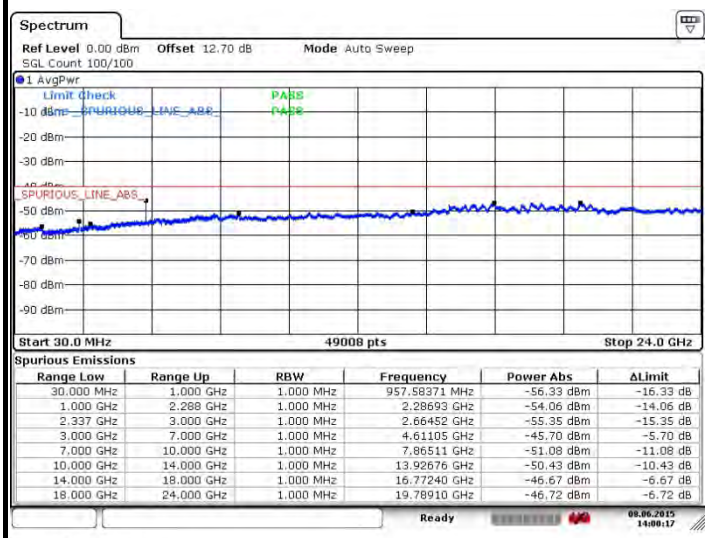
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.288 GHz	2.292 GHz	1.000 MHz	2.29191 GHz	-45.40 dBm	-8.40 dB
2.292 GHz	2.296 GHz	1.000 MHz	2.29555 GHz	-37.20 dBm	-6.20 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29993 GHz	-26.43 dBm	-1.43 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-23.09 dBm	-10.09 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30497 GHz	-32.10 dBm	-19.10 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-34.42 dBm	-21.42 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31619 GHz	-27.19 dBm	-14.19 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32009 GHz	-33.80 dBm	-8.80 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32435 GHz	-40.54 dBm	-9.54 dB
2.328 GHz	2.337 GHz	1.000 MHz	2.32810 GHz	-45.47 dBm	-8.47 dB

Date: 3.JUN.2015 17:49:51

Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

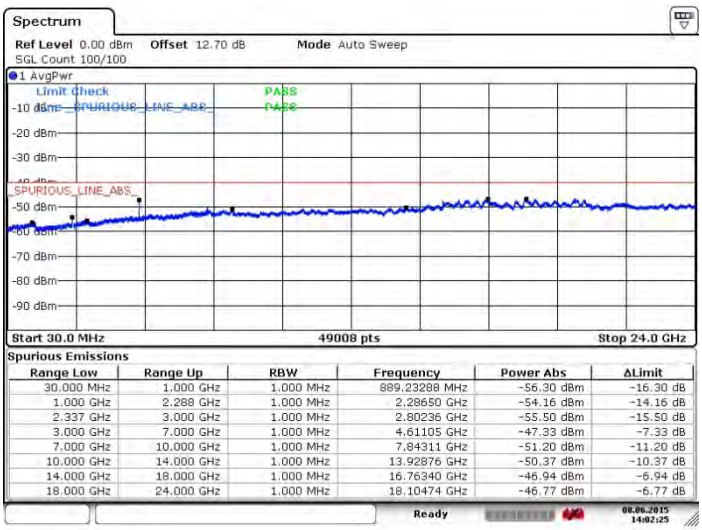


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	957.58371 MHz	-56.33 dBm	-16.33 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28693 GHz	-54.06 dBm	-14.06 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.66452 GHz	-55.35 dBm	-15.35 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61105 GHz	-45.70 dBm	-5.70 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86511 GHz	-51.08 dBm	-11.08 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.92676 GHz	-50.43 dBm	-10.43 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.77240 GHz	-46.67 dBm	-6.67 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.78910 GHz	-46.72 dBm	-6.72 dB

Date: 8.JUN.2015 14:00:17

Lowest Channel / 16QAM

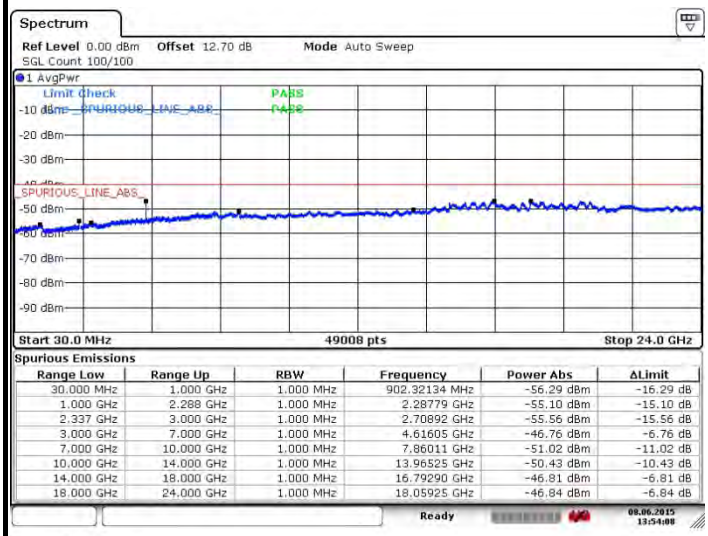


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	889.23288 MHz	-56.30 dBm	-16.30 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28650 GHz	-54.16 dBm	-14.16 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.80236 GHz	-55.50 dBm	-15.50 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61105 GHz	-47.33 dBm	-7.33 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.84311 GHz	-51.20 dBm	-11.20 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.92876 GHz	-50.37 dBm	-10.37 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.76340 GHz	-46.94 dBm	-6.94 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.10474 GHz	-46.77 dBm	-6.77 dB

Date: 8.JUN.2015 14:02:25

Middle Channel / QPSK

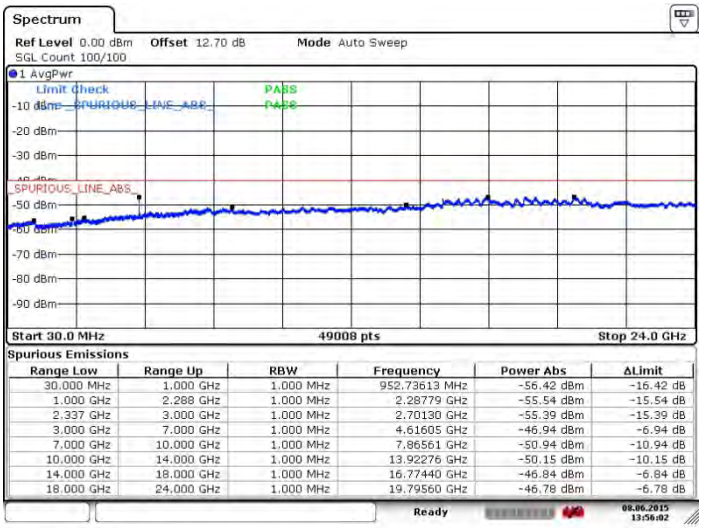


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	902.32134 MHz	-56.29 dBm	-16.29 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28779 GHz	-55.10 dBm	-15.10 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.70892 GHz	-55.56 dBm	-15.56 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61605 GHz	-46.76 dBm	-6.76 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86011 GHz	-51.02 dBm	-11.02 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.96525 GHz	-50.43 dBm	-10.43 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.79290 GHz	-46.81 dBm	-6.81 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.05925 GHz	-46.84 dBm	-6.84 dB

Date: 8.JUN.2015 13:54:08

Middle Channel / 16QAM



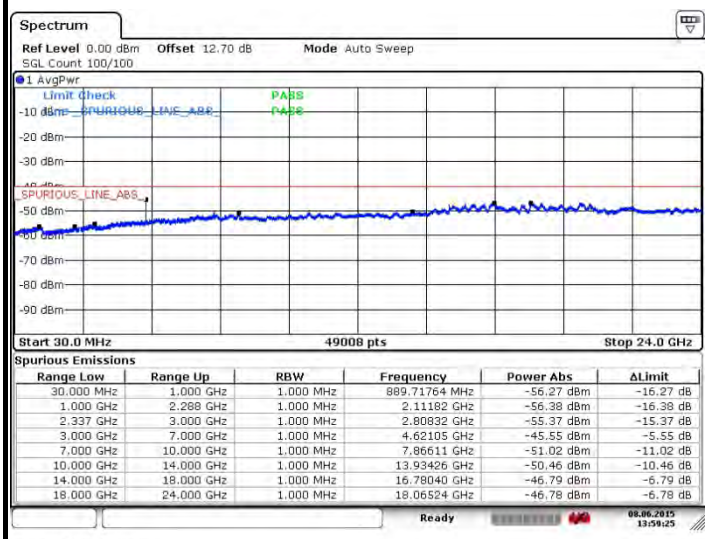
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	952.73613 MHz	-56.42 dBm	-16.42 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28779 GHz	-55.54 dBm	-15.54 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.70130 GHz	-55.39 dBm	-15.39 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61605 GHz	-46.94 dBm	-6.94 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86561 GHz	-50.94 dBm	-10.94 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.92276 GHz	-50.15 dBm	-10.15 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.77440 GHz	-46.84 dBm	-6.84 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79560 GHz	-46.78 dBm	-6.78 dB

Date: 8.JUN.2015 13:56:01

LTE Band 30 / 5MHz

Highest Channel / QPSK

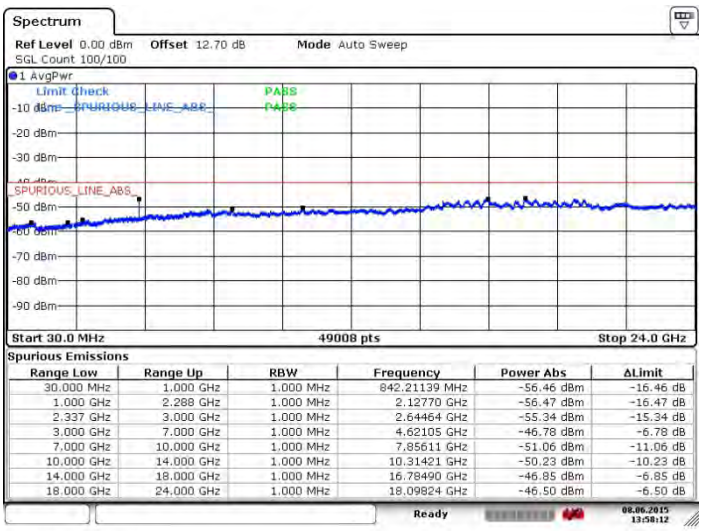


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	889.71764 MHz	-56.27 dBm	-16.27 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.11182 GHz	-56.38 dBm	-16.38 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.80832 GHz	-55.37 dBm	-15.37 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62105 GHz	-45.55 dBm	-5.55 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86611 GHz	-51.02 dBm	-11.02 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.93426 GHz	-50.46 dBm	-10.46 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.78040 GHz	-46.79 dBm	-6.79 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.06524 GHz	-46.78 dBm	-6.78 dB

Date: 8.JUN.2015 13:59:24

Highest Channel / 16QAM



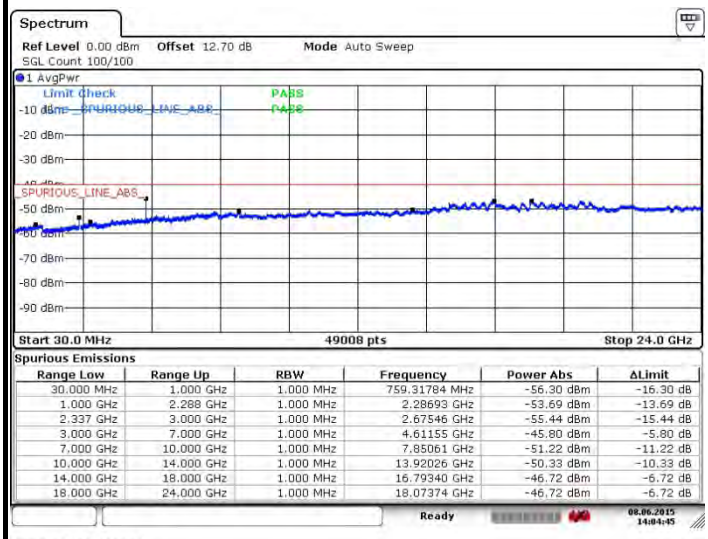
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	842.21139 MHz	-56.46 dBm	-16.46 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.12770 GHz	-56.47 dBm	-16.47 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.64464 GHz	-55.34 dBm	-15.34 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62105 GHz	-46.78 dBm	-6.78 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85611 GHz	-51.06 dBm	-11.06 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.31421 GHz	-50.23 dBm	-10.23 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.78490 GHz	-46.85 dBm	-6.85 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.09824 GHz	-46.50 dBm	-6.50 dB

Date: 8.JUN.2015 13:58:11

LTE Band 30 / 10MHz

Middle Channel / QPSK

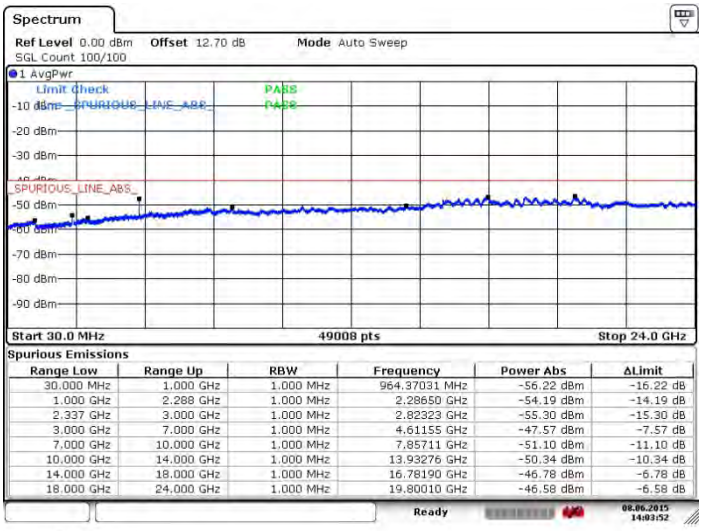


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	759.31784 MHz	-56.30 dBm	-16.30 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28693 GHz	-53.69 dBm	-13.69 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.67546 GHz	-55.44 dBm	-15.44 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61155 GHz	-45.80 dBm	-5.80 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85061 GHz	-51.22 dBm	-11.22 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.92026 GHz	-50.33 dBm	-10.33 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.79340 GHz	-46.72 dBm	-6.72 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.07374 GHz	-46.72 dBm	-6.72 dB

Date: 8.JUN.2015 14:04:45

Middle Channel / 16QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-56.22 dBm	-16.22 dB
1.000 GHz	2.288 GHz	1.000 MHz	2.28650 GHz	-54.19 dBm	-14.19 dB
2.337 GHz	3.000 GHz	1.000 MHz	2.82323 GHz	-55.30 dBm	-15.30 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61155 GHz	-47.57 dBm	-7.57 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85711 GHz	-51.10 dBm	-11.10 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.93276 GHz	-50.34 dBm	-10.34 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.78190 GHz	-46.78 dBm	-6.78 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.80010 GHz	-46.58 dBm	-6.58 dB

Date: 8.JUN.2015 14:03:52

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	0.0004	PASS
40	Normal Voltage	0.0006	
30	Normal Voltage	0.0005	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0003	
0	Normal Voltage	0.0010	
-10	Normal Voltage	0.0004	
-20	Normal Voltage	0.0008	
-30	Normal Voltage	0.0007	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0002	

Note:

1. Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.5 V.；Maximum Voltage =4.35 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Appendix B. Test Results of Radiated Test

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	4608	-46.52	-40	-6.52	-64.06	-53.32	2.11	8.92	H
	6915	-55.77	-40	-15.77	-78.41	-63.85	2.62	10.70	H
	9220	-50.03	-40	-10.03	-78.04	-60.11	2.53	12.61	H
	4608	-48.95	-40	-8.95	-64.75	-55.75	2.11	8.92	V
	6915	-55.56	-40	-15.56	-78.35	-63.64	2.62	10.70	V
	9220	-52.39	-40	-12.39	-78.3	-62.47	2.53	12.61	V
Middle	4620	-48.51	-40	-8.51	-65.47	-55.33	2.12	8.94	H
	6922	-55.38	-40	-15.38	-78.29	-63.47	2.62	10.71	H
	9228	-49.19	-40	-9.19	-77.78	-59.27	2.53	12.61	H
	4620	-49.50	-40	-9.50	-65.08	-56.32	2.12	8.94	V
	6922	-56.27	-40	-16.27	-78.47	-64.36	2.62	10.71	V
	9228	-52.33	-40	-12.33	-77.89	-62.41	2.53	12.61	V
Highest	4620	-50.40	-40	-10.40	-67.79	-57.22	2.12	8.94	H
	6930	-55.03	-40	-15.03	-78.34	-63.13	2.61	10.72	H
	9240	-50.05	-40	-10.05	-78.03	-60.12	2.53	12.60	H
	4620	-52.50	-40	-12.50	-68.47	-59.32	2.12	8.94	V
	6930	-55.48	-40	-15.48	-78.11	-63.58	2.61	10.72	V
	9240	-52.25	-40	-12.25	-78.17	-62.32	2.53	12.60	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	4608	-46.06	-40	-6.06	-63.07	-52.86	2.11	8.92	H
	6915	-55.20	-40	-15.20	-78.2	-63.28	2.62	10.70	H
	9220	-49.34	-40	-9.34	-77.85	-59.42	2.53	12.61	H
	4608	-47.59	-40	-7.59	-63.6	-54.39	2.11	8.92	V
	6915	-55.95	-40	-15.95	-78.29	-64.03	2.62	10.70	V
	9220	-52.39	-40	-12.39	-78.17	-62.47	2.53	12.61	V

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