FCC RF Test Report

APPLICANT	:	Telit Wireless Solutions Co., Ltd.
EQUIPMENT	:	LM940
BRAND NAME	:	Telit
MODEL NAME	:	LM940
FCC ID	:	RI7LM940
STANDARD	:	FCC 47 CFR Part 2, 27
CLASSIFICATION	:	PCS Licensed Transmitter (PCB)

The product was received on May 02, 2017 and completely tested on Jul. 04, 2017. 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-D-2010 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG750208C	Rev. 01	Initial issue of report	Jul. 14, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	-	Peak-to-Average Ratio	<13 dB	N/A	Reporting only
3.6	§27.50 (a)(3)	EIRP Power Density	EIRP < 250mW/5MHz	PASS	-
3.7	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.8	§2.1051 §27.53 (a)(4)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.9	§2.1051 §27.53 (a)(4)	Conducted Spurious Emission	< $70+10\log_{10}$(P[Watts])	PASS	-
3.10	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within the band	PASS	-
4.4	§2.1053 §27.53 (a)(4)	Radiated Spurious Emission	< $70+10\log_{10}$(P[Watts])	PASS	Under limit 1.63 dB at 9216.000 MHz

1 General Description

1.1 Applicant

Telit Wireless Solutions Co., Ltd.
13th Fl. Shinyoung Securities Bldg., 6, Gukjegeumyung-ro 8-gil,Seoul, 07330, South Korea

1.2 Manufacturer

Telit Wireless Solutions Co., Ltd.
13th Fl. Shinyoung Securities Bldg., 6, Gukjegeumyung-ro 8-gil, Seoul, 07330, South Korea

1.3 Product Feature of Equipment Under Test

WCDMA/LTE, and GPS.

Product Specification subjective to this standard	
Antenna Type	WWAN: Fixed External Antenna GPS / Glonass : Passive or Active Patch Antenna

1.4 Modification of EUT

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

1.5 Testing Site

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW0007 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 District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH05-HY

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH13-HY

1.6 Applied Standards

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

- 47 CFR Part 2, Part 27(D)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

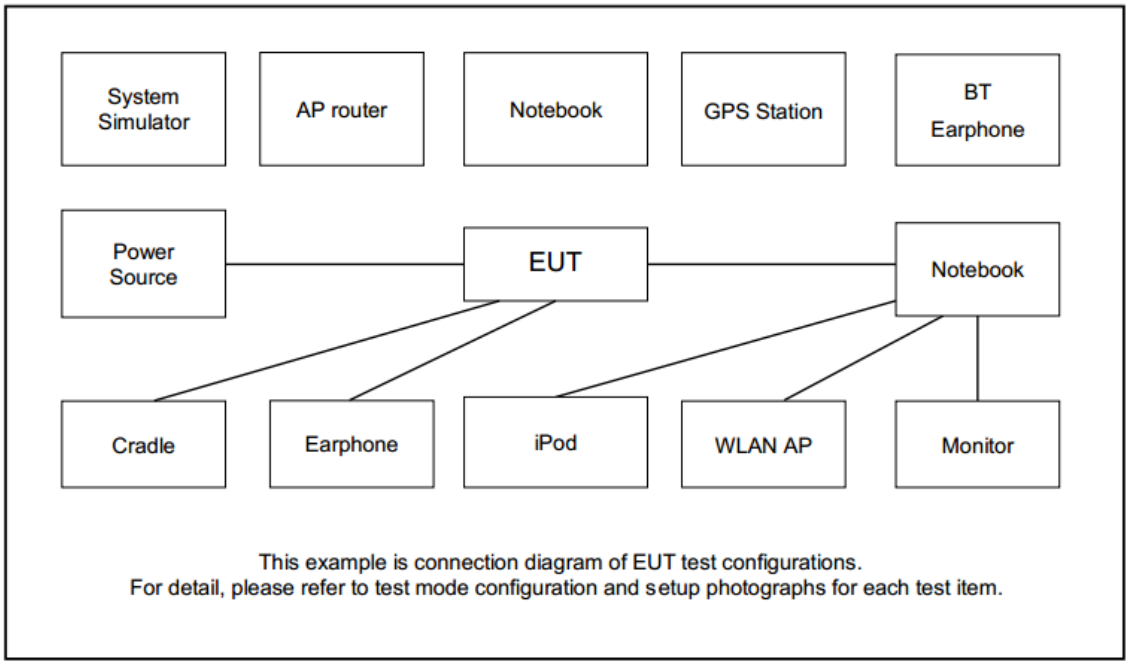
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	30	-	-	V	V	-	-	V	V	V	V	V	V	V	V	V
Peak-to-Average Ratio	30	-	-		V	-	-	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	V
Conducted Band Edge	30	-	-	V	V	-	-	V	V	V	V		V	V		V
Conducted Spurious Emission	30	-	-	V	V	-	-	V	V	V	V			V	V	V
Frequency Stability	30	-	-		V	-	-	V					V		V	
Radiated Spurious Emission	30	-	-	V	V	-	-	V	V	V	V			V	V	V
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.	WWAN Antenna	N/A	WE14-LF-07	N/A	N/A	N/A
3.	Programmable Power Supply	TOPWARD	3303D	N/A	N/A	N/A
4.	Fixture	N/A	N/A	N/A	N/A	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss 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)

2.5 Frequency List of Low/Middle/High Channels

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

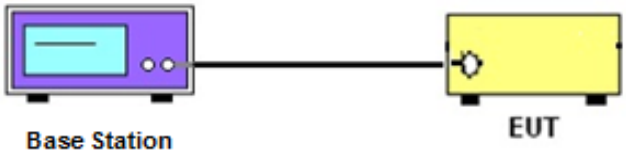
3 Conducted Test Items

3.1 Measuring Instruments

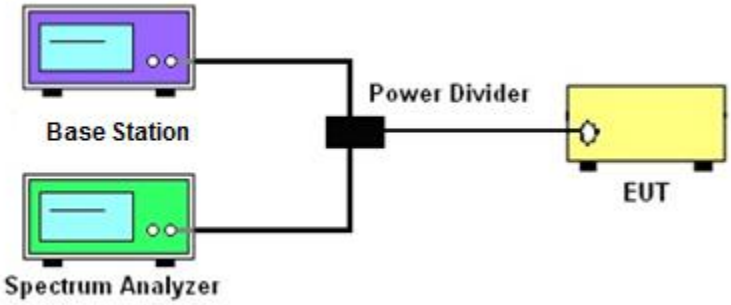
See list of measuring instruments of this test report.

3.2 Test Setup

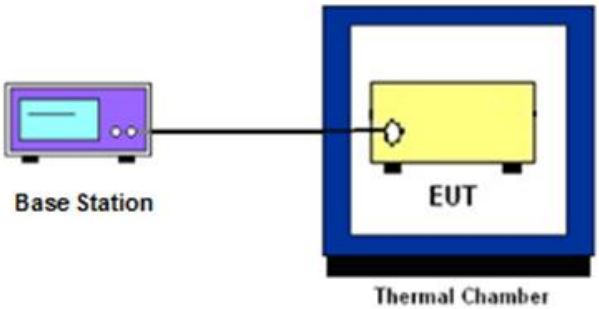
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied / 26dB Bandwidth ,Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power Measurement

3.4.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 EIRP Power Density

3.6.1 Description of EIRP Power Density

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

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. Set instrument center frequency to OBW center frequency.
3. Set span to at least 1.5 times the OBW.
4. Set the RBW to the specified reference bandwidth (5MHz).
5. Set VBW ≥ 3 × RBW.
6. Detector = RMS (power averaging).
7. Ensure that the number of measurement points in the sweep ≥ 2 × span/RBW.
8. Sweep time = auto couple.
9. Employ trace averaging (RMS) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level within the reference bandwidth (PSD).

3.7 Occupied Bandwidth

3.7.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.1 and 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
   (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.8 Conducted Band Edge Measurement

3.8.1 Description of Conducted Band Edge Measurement

27.53 (a)(4)

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

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

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

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

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

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

3.9 Conducted Spurious Emission Measurement

3.9.1 Description of Conducted Spurious Emission Measurement

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

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

3.9.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 70 + 10log(P)dB below the transmitter power P(Watts)

3.10 Frequency Stability Measurement

3.10.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.10.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.10.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

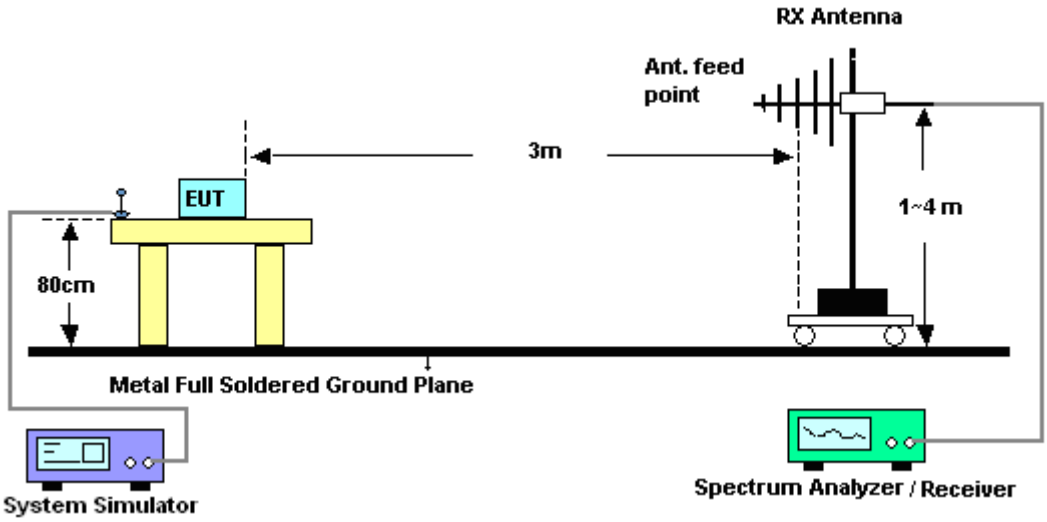
4 Radiated Test Items

4.1 Measuring Instruments

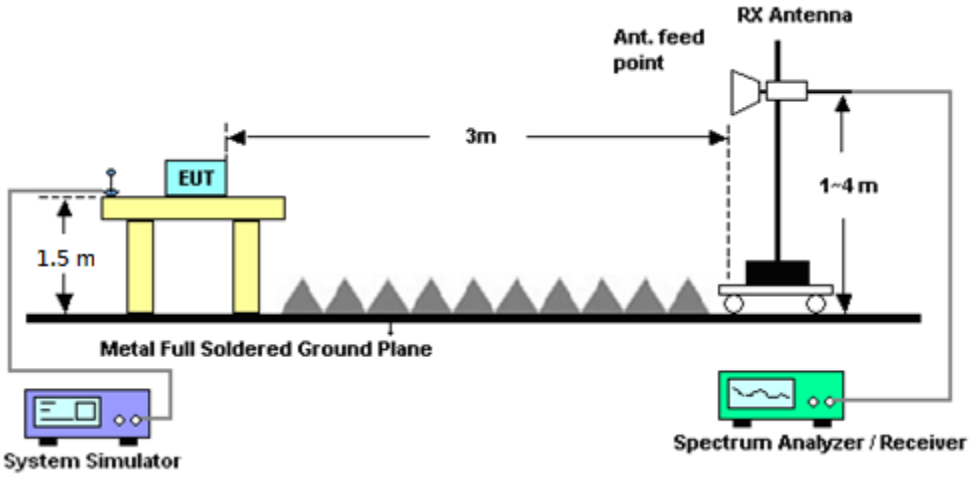
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-D-2010. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB.

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

4.4.2 Test Procedures

5. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
6. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
7. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
8. The table was rotated 360 degrees to determine the position of the highest spurious emission.
9. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
10. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
11. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
12. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
13. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
14. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
15. ERP (dBm) = EIRP - 2.15
16. 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)

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201432821	GSM/GPRS /WCDMA/LTE	Oct. 11, 2016	May 02, 2017~ Jul. 02, 2017	Oct. 10, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 04, 2016	May 02, 2017~ Jul. 02, 2017	Nov. 03, 2017	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-30℃~70℃	Sep. 01, 2016	May 02, 2017~ Jul. 02, 2017	Aug. 31, 2017	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890001	1V~20V 0.5A~5A	Oct. 03, 2016	May 02, 2017~ Jul. 02, 2017	Oct. 02, 2017	Conducted (TH05-HY)
Coupler	Warison	1-18GHz 20d B 25WSMA	#B	1G~18GHz	Feb. 20, 2017	May 02, 2017~ Jul. 02, 2017	Feb. 19, 2018	Conducted (TH05-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800	40103&04	30MHz to 1GHz	Jan. 07, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Jan. 06, 2018	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1522	1G~18GHz	Mar. 17, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Mar. 16, 2018	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1620	1G~18GHz	Sep. 30, 2016	Jun. 23, 2017 ~ Jul. 04, 2017	Sep. 29, 2017	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 08, 2016	Jun. 23, 2017 ~ Jul. 04, 2017	Nov. 07, 2017	Radiation (03CH13-HY)
Signal Generator	Anritsu	MG3694C	163401	0.1Hz~40GHz	Jan. 04, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Jan. 03, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrum ent	310 N	187282	9KHz~1GHz	Dec. 21, 2016	Jun. 23, 2017 ~ Jul. 04, 2017	Dec. 20, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 22, 2017	Jun. 23, 2017~ Jul. 04, 2017	May 21, 2018	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Jan. 09, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Jan. 08, 2018	Radiation (03CH13-HY)
Preamplifier	MITEQ	TTA 1840-35-HG	1887435	18GHz ~ 40GHz	Oct. 13, 2016	Jun. 23, 2017 ~ Jul. 04, 2017	Oct. 12, 2017	Radiation (03CH13-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	N/A	Mar. 03, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Mar. 02, 2018	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	N/A	Mar. 15, 2017	Jun. 23, 2017 ~ Jul. 04, 2017	Mar. 14, 2018	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 23, 2017 ~ Jul. 04, 2017	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 23, 2017 ~ Jul. 04, 2017	N/A	Radiation (03CH13-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))	3.07

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.48

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.92

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
10	1	0	QPSK	-	**21.49**	-
10	1	25			21.38	
10	1	49			21.34	
10	25	0			20.55	
10	25	12			20.50	
10	25	25			20.44	
10	50	0			20.47	
10	1	0	16-QAM		20.80	
10	1	25			20.70	
10	1	49			20.62	
10	25	0			19.55	
10	25	12			19.46	
10	25	25			19.41	
10	50	0			19.49	
10	1	0	64-QAM		19.58	
10	1	25			19.41	
10	1	49			19.39	
10	25	0			18.37	
10	25	12			18.28	
10	25	25			18.23	
10	50	0			18.32	
5	1	0	QPSK	21.41	**21.49**	21.43
5	1	12		21.29	21.35	21.37
5	1	24		21.35	21.34	21.35
5	12	0		20.40	20.37	20.43
5	12	7		20.32	20.44	20.46
5	12	13		20.35	20.37	20.32
5	25	0		20.32	20.41	20.43
5	1	0	16-QAM	20.67	20.70	20.67
5	1	12		20.60	20.71	20.70
5	1	24		20.67	20.61	20.63
5	12	0		19.49	19.45	19.50
5	12	7		19.42	19.47	19.54
5	12	13		19.38	19.45	19.38
5	25	0		19.36	19.42	19.45
5	1	0	64-QAM	19.45	19.50	19.45
5	1	12		19.27	19.34	19.38
5	1	24		19.37	19.36	19.36
5	12	0		18.31	18.27	18.33
5	12	7		18.24	18.29	18.32
5	12	13		18.22	18.25	18.18
5	25	0		18.19	18.23	18.26

<For AT&T>

LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	-	20.56	-
10	1	25			20.40	
10	1	49			20.41	
10	25	0			19.59	
10	25	12			19.48	
10	25	25			19.45	
10	50	0			19.54	
10	1	0	16-QAM		19.89	
10	1	25			19.66	
10	1	49			19.67	
10	25	0			18.58	
10	25	12			18.50	
10	25	25			18.44	
10	50	0			18.55	
10	1	0	64-QAM		18.77	
10	1	25			18.59	
10	1	49			18.60	
10	25	0			17.60	
10	25	12			17.49	
10	25	25			17.46	
10	50	0			17.56	
5	1	0	QPSK	20.50	20.53	20.52
5	1	12		20.33	20.36	20.41
5	1	24		20.40	20.41	20.42
5	12	0		19.48	19.42	19.47
5	12	7		19.40	19.42	19.36
5	12	13		19.39	19.39	19.44
5	25	0		19.37	19.38	19.42
5	1	0	16-QAM	19.71	19.78	19.75
5	1	12		19.67	19.68	19.76
5	1	24		19.62	19.63	19.65
5	12	0		18.53	18.46	18.50
5	12	7		18.41	18.49	18.41
5	12	13		18.40	18.45	18.50
5	25	0		18.42	18.44	18.46
5	1	0	64-QAM	18.68	18.70	18.71
5	1	12		18.54	18.60	18.61
5	1	24		18.61	18.60	18.61
5	12	0		17.54	17.47	17.52
5	12	7		17.45	17.49	17.41
5	12	13		17.45	17.47	17.50
5	25	0		17.41	17.43	17.45

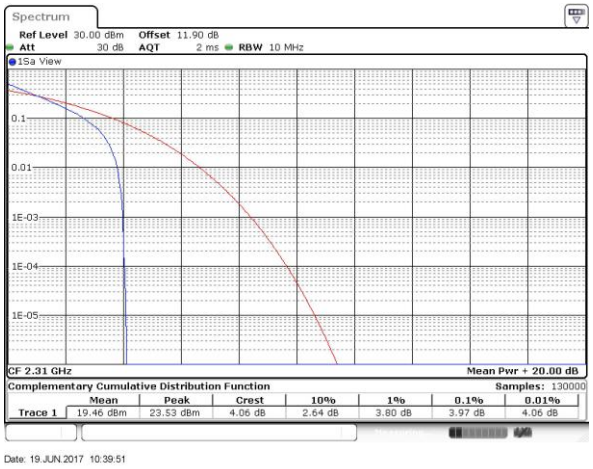
LTE Band 30

Peak-to-Average Ratio

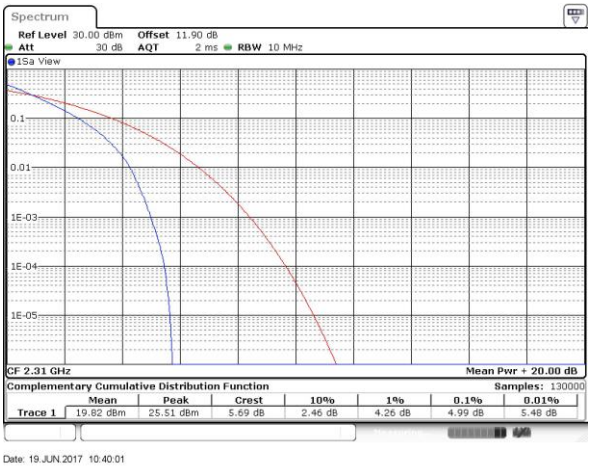
Mode	LTE Band 30 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	-	-	-	-	PASS
Middle CH	3.97	4.99	4.87	5.94	
Highest CH	-	-	-	-	
Mode	LTE Band 30 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	5.83	6.49	-	-	
Highest CH	-	-	-	-	

LTE Band 30 / 10MHz / QPSK

Middle Channel / 1RB

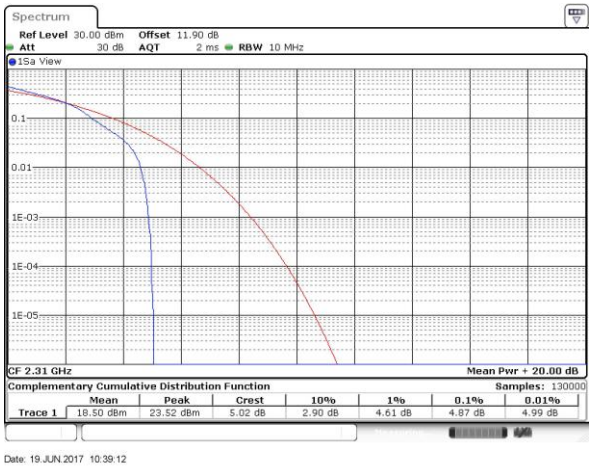


Middle Channel / Full RB

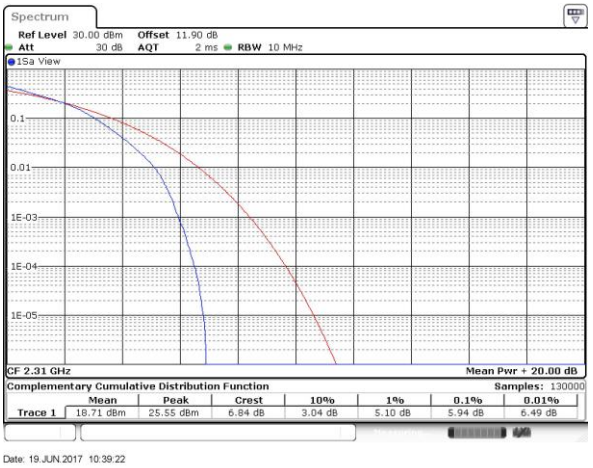


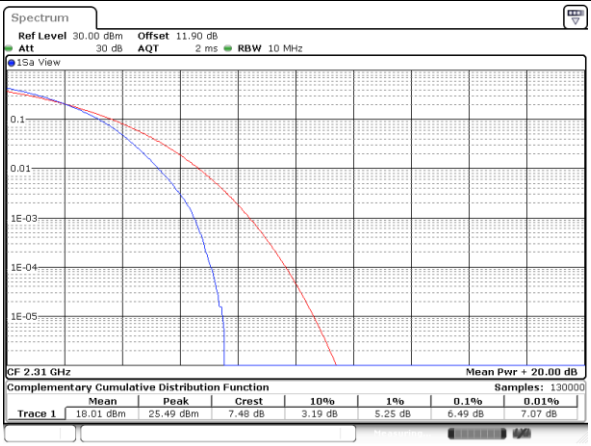
LTE Band 30 / 10MHz / 16QAM

Middle Channel / 1RB



Middle Channel / Full RB



LTE Band 30 / 10MHz / 64QAM	
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					22.29	21.47						
Middle CH					21.57	21.39	21.89	21.17				
Highest CH					22.35	21.39						

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					23.79	22.97						
Middle CH					23.07	22.89	23.39	22.67				
Highest CH					23.85	22.89						
Antenna Gain	1.5 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

Mode	LTE Band 30 : Conducted Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH					20.19							
Middle CH					20.31		20.33					
Highest CH					20							

Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH					21.69							
Middle CH					21.81		21.83					
Highest CH					21.5							
Antenna Gain	1.5 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

LTE Band 30 / 5MHz

Lowest Channel / 5MHz / 1RB0 / QPSK

Date: 1.JUN.2017 05:48:43

Lowest Channel / 5MHz / 1RB0 / 16QAM

Date: 1.JUN.2017 05:48:54

Middle Channel / 5MHz / 1RB0 / QPSK

Date: 1.JUN.2017 05:46:46

Middle Channel / 5MHz / 1RB0 / 16QAM

Date: 1.JUN.2017 05:47:02

Highest Channel / 5MHz / 1RB0 / QPSK

Date: 1.JUN.2017 05:49:26

Highest Channel / 5MHz / 1RB0 / 16QAM

Date: 1.JUN.2017 05:49:17

LTE Band 30 / 5MHz	
Lowest Channel / 5MHz / 1RB0 / 64QAM	**Middle Channel / 5MHz / 1RB0 / 64QAM**
 Date: 22.JUN.2017 18:29:44	 Date: 22.JUN.2017 18:30:06
Highest Channel / 5MHz / 1RB0 / 64QAM	
 Date: 22.JUN.2017 18:34:44	

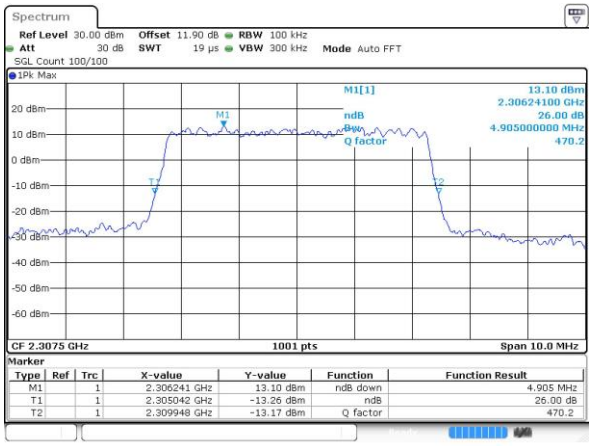
LTE Band 30 / 10MHz	
Middle Channel / 10MHz / 1RB0 / QPSK	**Middle Channel / 10MHz / 1RB0 / 16QAM**
 Date: 22.JUN.2017 18:36:13	 Date: 22.JUN.2017 18:36:19
Middle Channel / 10MHz / 1RB0 / 64QAM	
 Date: 22.JUN.2017 18:35:18	

26dB Bandwidth

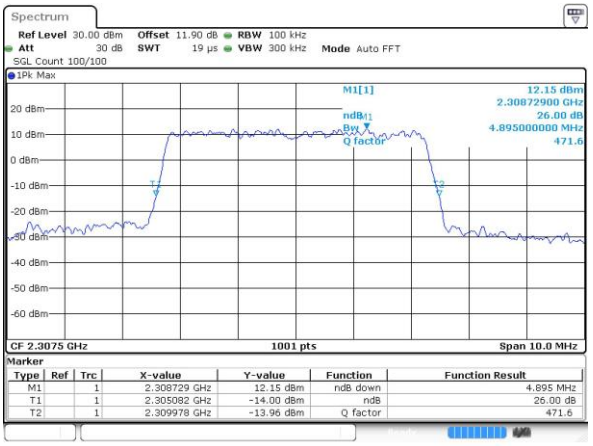
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.91	4.90	-	-	-	-	-	-
Middle CH	-	-	-	-	4.96	4.87	9.81	9.85	-	-	-	-
Highest CH	-	-	-	-	4.92	4.89	-	-	-	-	-	-
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.86	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.95	-	9.91	-	-	-	-	-
Highest CH	-	-	-	-	4.94	-	-	-	-	-	-	-

LTE Band 30

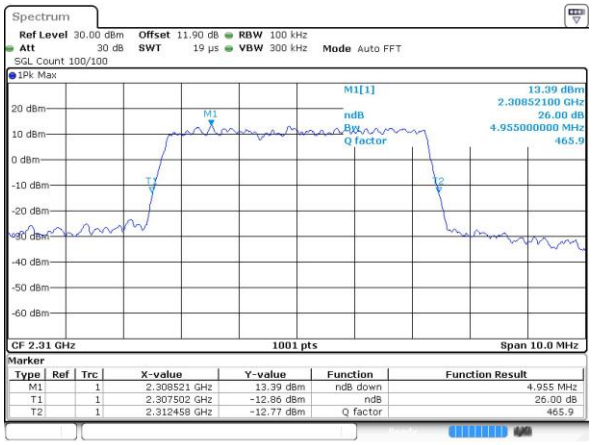
Lowest Channel / 5MHz / QPSK



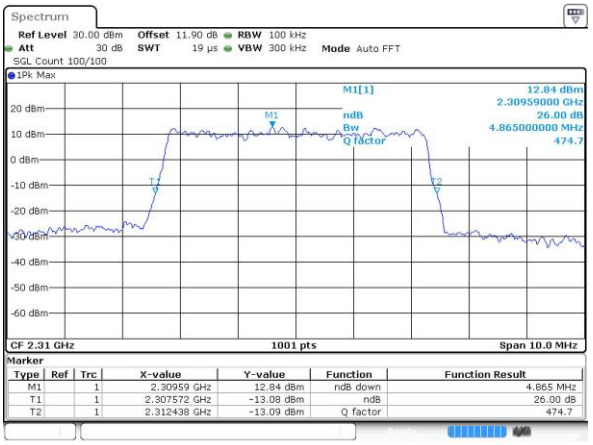
Lowest Channel / 5MHz / 16QAM



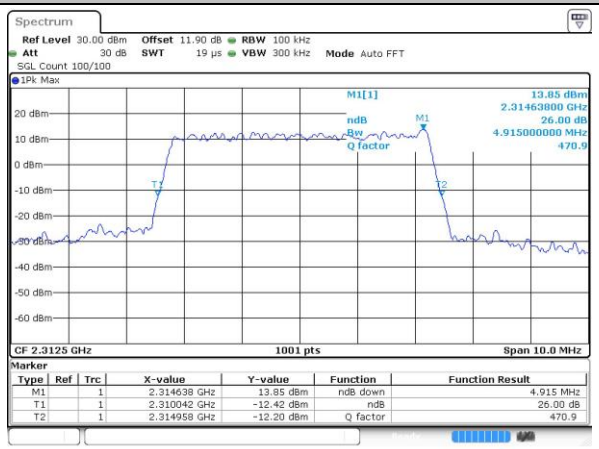
Middle Channel / 5MHz / QPSK



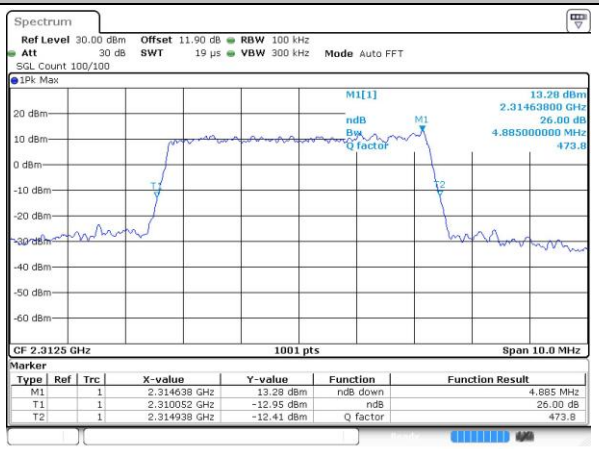
Middle Channel / 5MHz / 16QAM

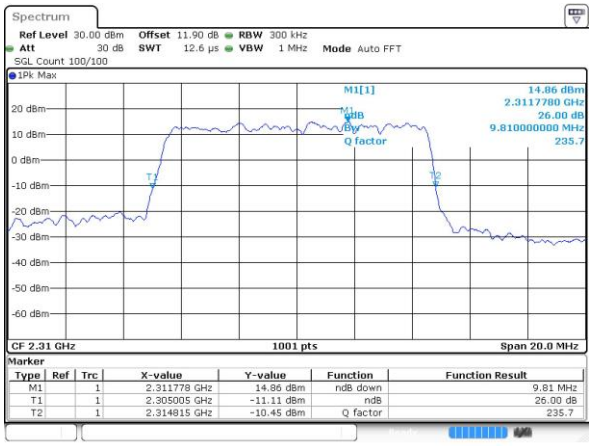
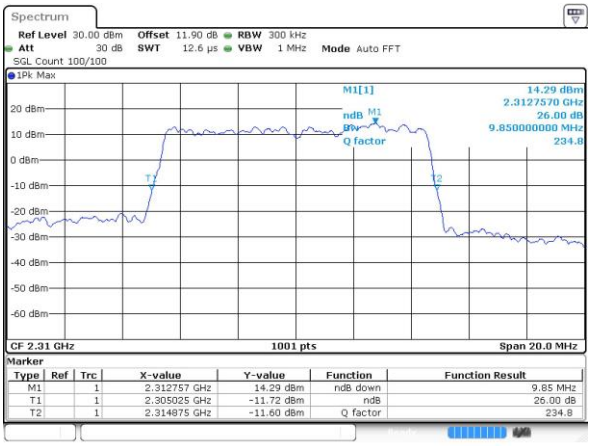


Highest Channel / 5MHz / QPSK



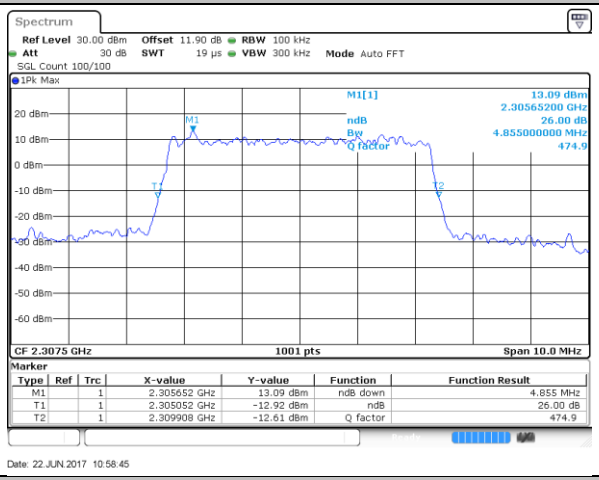
Highest Channel / 5MHz / 16QAM



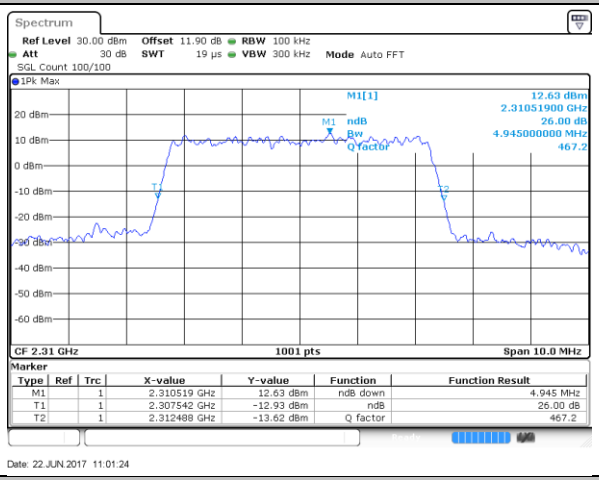
LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

LTE Band 30

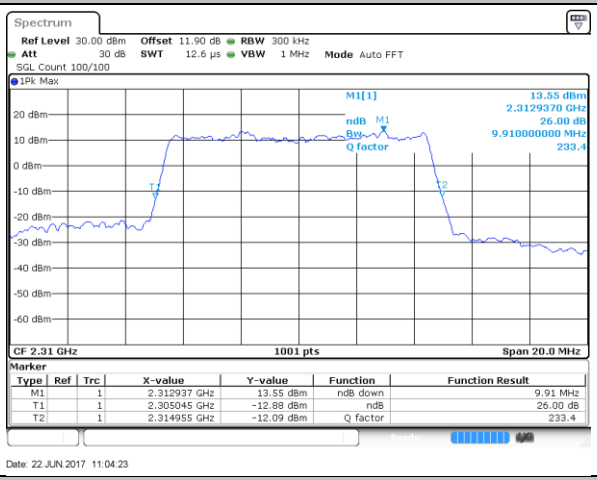
Lowest Channel / 5MHz / 64QAM



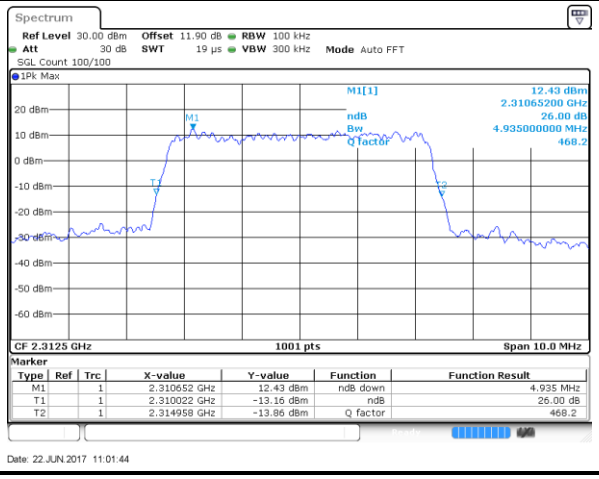
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

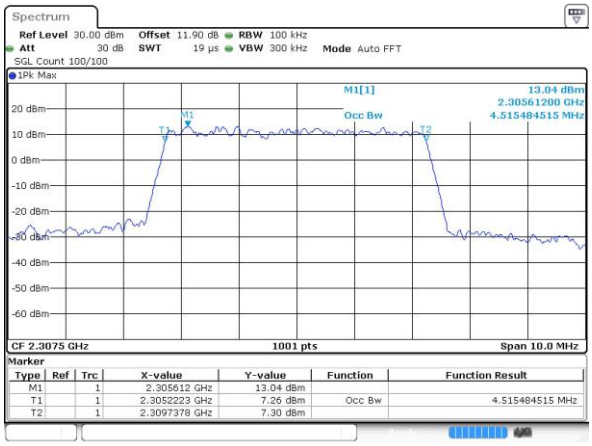


Occupied Bandwidth

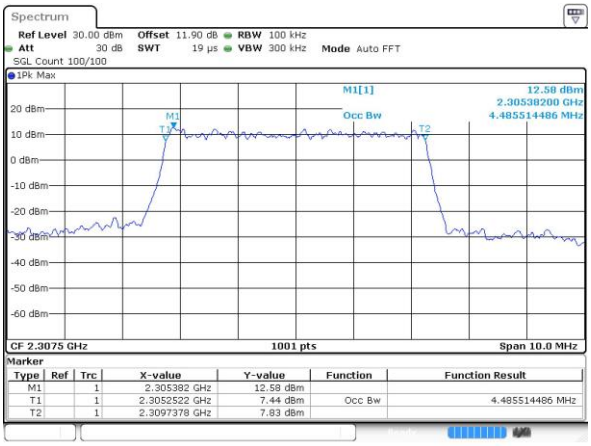
Mode	LTE Band 30 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.52	4.49	-	-	-	-	-	-
Middle CH	-	-	-	-	4.51	4.5	9.01	9.07	-	-	-	-
Highest CH	-	-	-	-	4.49	4.5	-	-	-	-	-	-
Mode	LTE Band 30 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.48	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	-	9.03	-	-	-	-	-
Highest CH	-	-	-	-	4.49	-	-	-	-	-	-	-

LTE Band 30

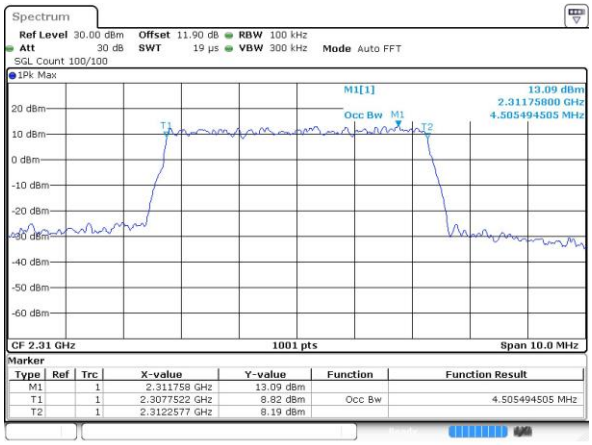
Lowest Channel / 5MHz / QPSK



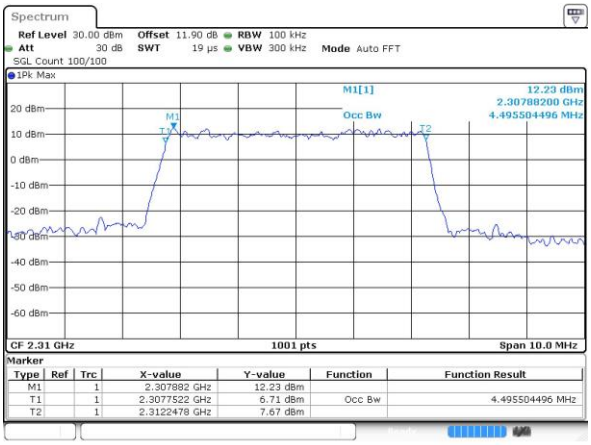
Lowest Channel / 5MHz / 16QAM



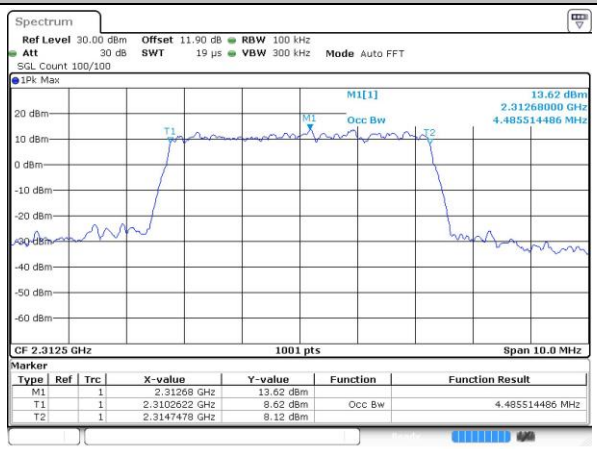
Middle Channel / 5MHz / QPSK



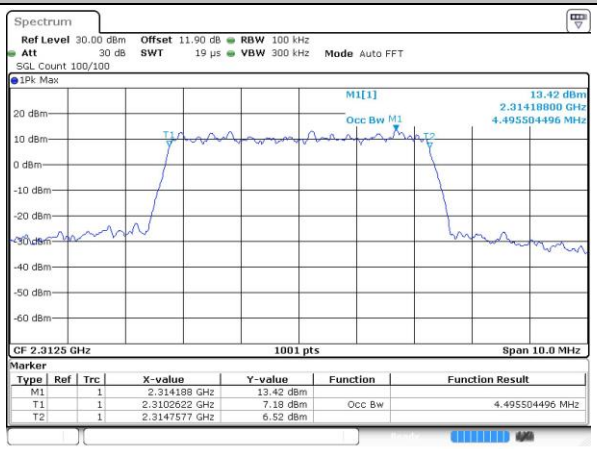
Middle Channel / 5MHz / 16QAM

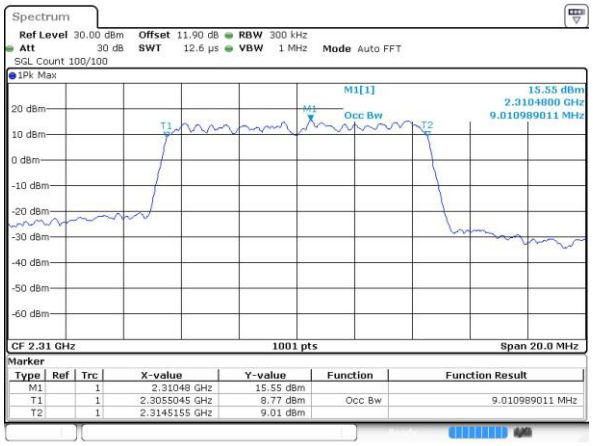
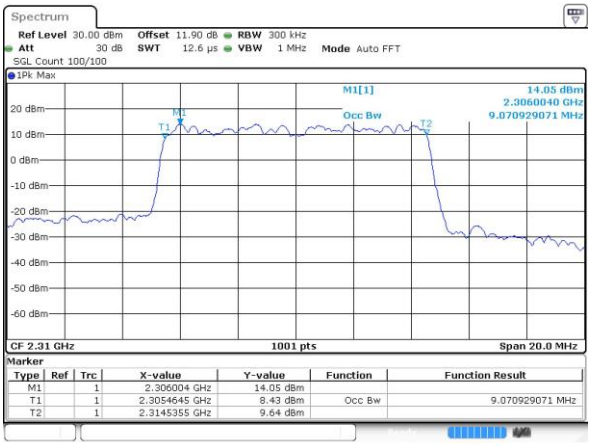


Highest Channel / 5MHz / QPSK



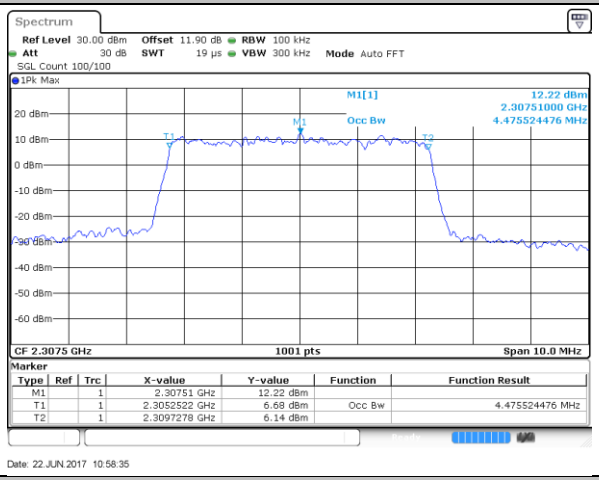
Highest Channel / 5MHz / 16QAM



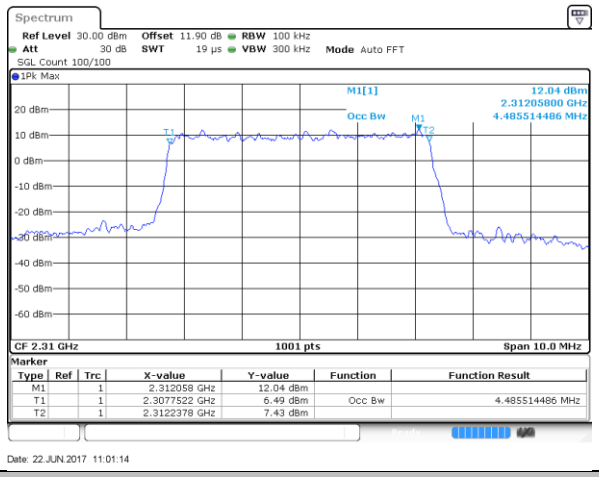
LTE Band 30	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

LTE Band 30

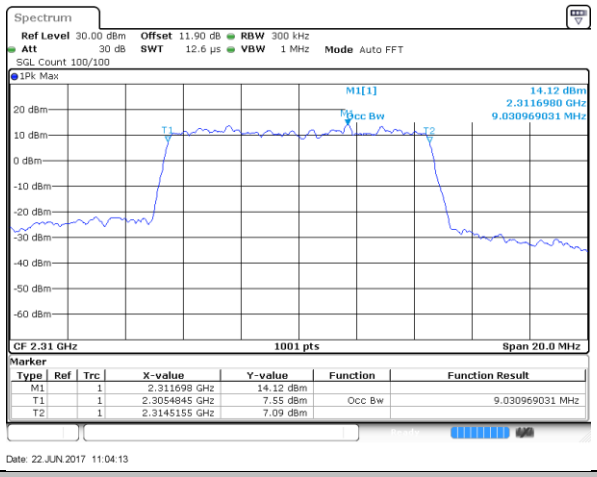
Lowest Channel / 5MHz / 64QAM



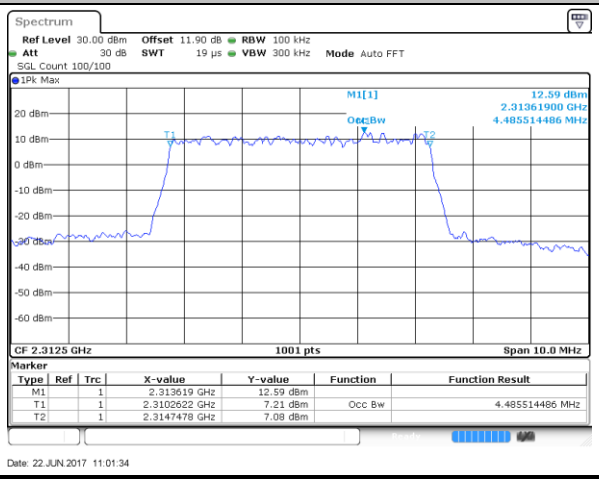
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



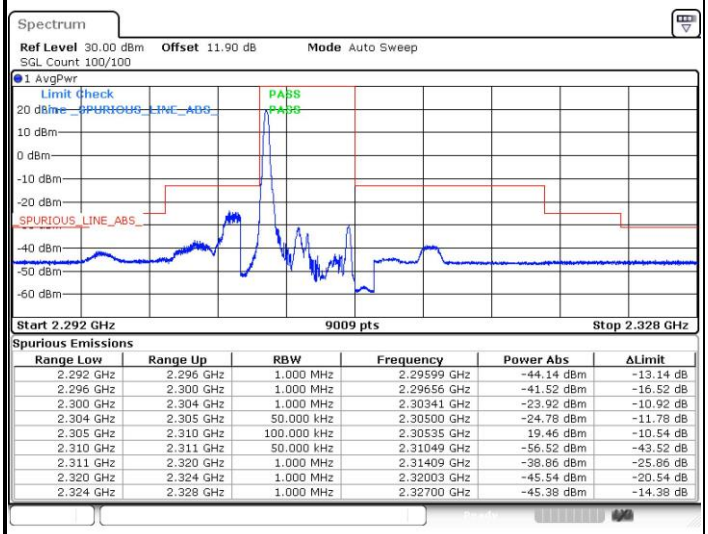
Highest Channel / 5MHz / 64QAM



Conducted Band Edge

LTE Band 30 / 5MHz / QPSK

Lowest Band Edge / 1 RB

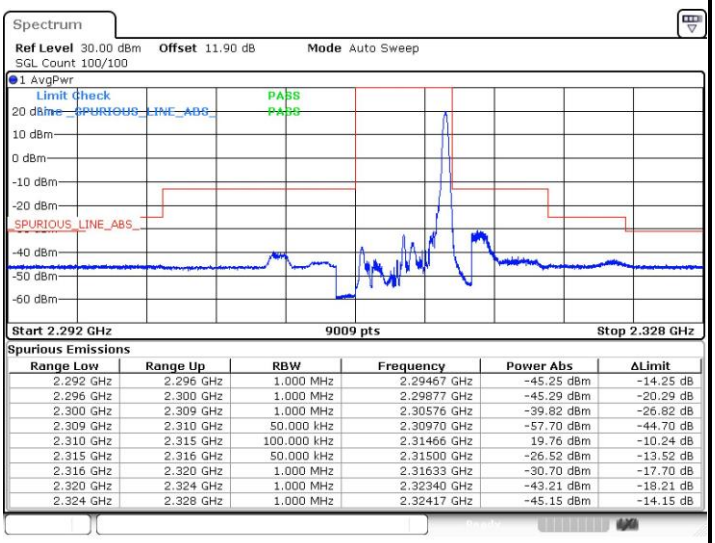


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-44.14 dBm	-13.14 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29656 GHz	-41.52 dBm	-16.52 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30341 GHz	-23.92 dBm	-10.92 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-24.78 dBm	-11.78 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30535 GHz	19.46 dBm	-10.54 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31049 GHz	-56.52 dBm	-43.52 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31409 GHz	-38.86 dBm	-25.86 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32003 GHz	-45.54 dBm	-20.54 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32700 GHz	-45.38 dBm	-14.38 dB

Date: 1.JUN.2017 03:20:20

Highest Band Edge / 1 RB

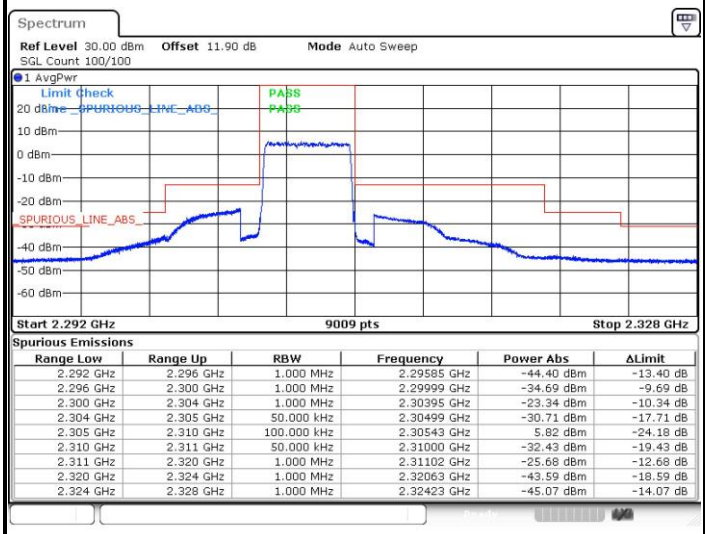


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29467 GHz	-45.25 dBm	-14.25 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29877 GHz	-45.29 dBm	-20.29 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30576 GHz	-39.82 dBm	-26.82 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30970 GHz	-57.70 dBm	-44.70 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31466 GHz	19.76 dBm	-10.24 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-26.52 dBm	-13.52 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31633 GHz	-30.70 dBm	-17.70 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32340 GHz	-43.21 dBm	-18.21 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32417 GHz	-45.15 dBm	-14.15 dB

Date: 1.JUN.2017 03:25:12

Lowest Band Edge / Full RB

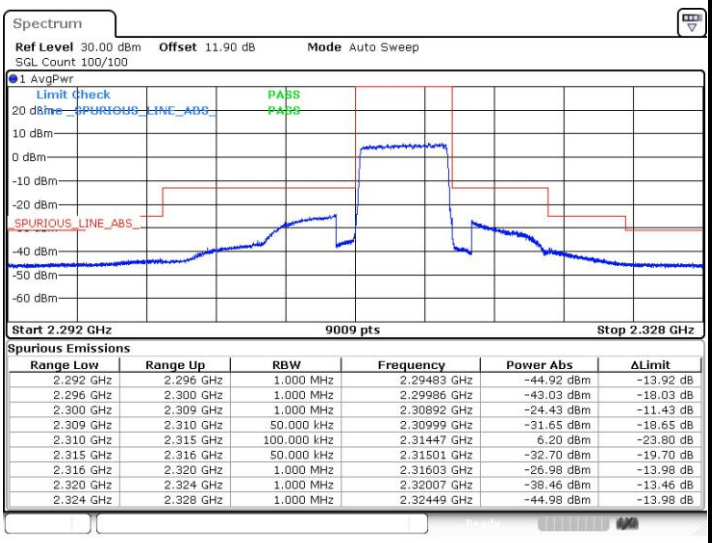


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29585 GHz	-44.40 dBm	-13.40 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29999 GHz	-34.69 dBm	-9.69 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30395 GHz	-23.34 dBm	-10.34 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-30.71 dBm	-17.71 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30543 GHz	5.82 dBm	-24.18 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-32.43 dBm	-19.43 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31102 GHz	-25.68 dBm	-12.68 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32063 GHz	-43.59 dBm	-18.59 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32423 GHz	-45.07 dBm	-14.07 dB

Date: 1.JUN.2017 03:22:46

Highest Band Edge / Full RB



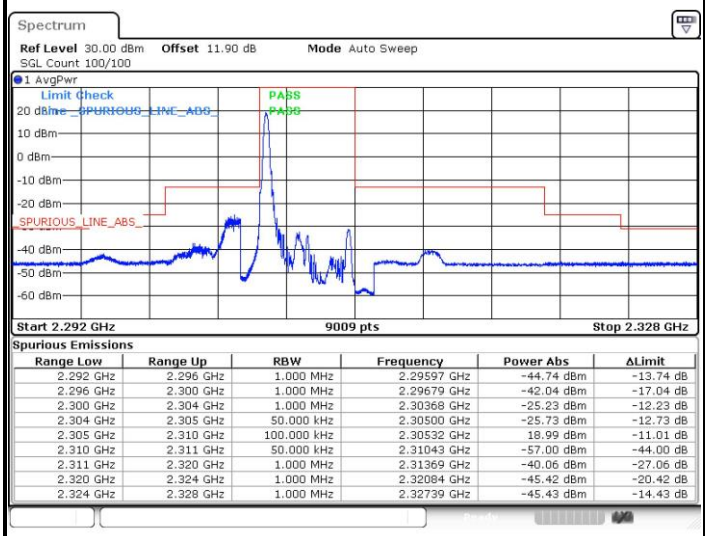
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29483 GHz	-44.92 dBm	-13.92 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29986 GHz	-43.03 dBm	-18.03 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30892 GHz	-24.43 dBm	-11.43 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-31.65 dBm	-18.65 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31447 GHz	6.20 dBm	-23.80 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-32.70 dBm	-19.70 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31603 GHz	-26.98 dBm	-13.98 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32007 GHz	-38.46 dBm	-13.46 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32449 GHz	-44.98 dBm	-13.98 dB

Date: 1.JUN.2017 03:27:38

LTE Band 30 / 5MHz / 16QAM

Lowest Band Edge / 1RB

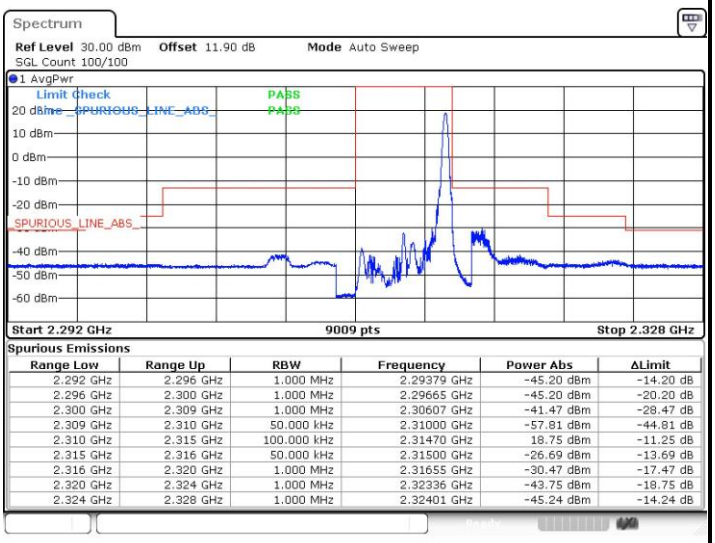


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29597 GHz	-44.74 dBm	-13.74 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29679 GHz	-42.04 dBm	-17.04 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30368 GHz	-25.23 dBm	-12.23 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-25.73 dBm	-12.73 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30532 GHz	18.99 dBm	-11.01 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31043 GHz	-57.00 dBm	-44.00 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31369 GHz	-40.06 dBm	-27.06 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32084 GHz	-45.42 dBm	-20.42 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32739 GHz	-45.43 dBm	-14.43 dB

Date: 1.JUN.2017 03:21:33

Highest Band Edge / 1 RB

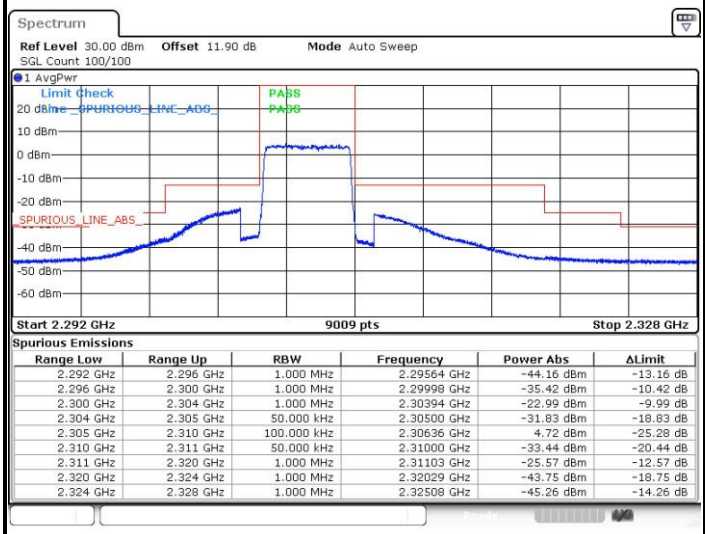


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29379 GHz	-45.20 dBm	-14.20 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29665 GHz	-45.20 dBm	-20.20 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30607 GHz	-41.47 dBm	-28.47 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-57.81 dBm	-44.81 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31470 GHz	18.75 dBm	-11.25 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-26.69 dBm	-13.69 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31655 GHz	-30.47 dBm	-17.47 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32336 GHz	-43.75 dBm	-18.75 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-45.24 dBm	-14.24 dB

Date: 1.JUN.2017 03:26:25

Lowest Band Edge / Full RB

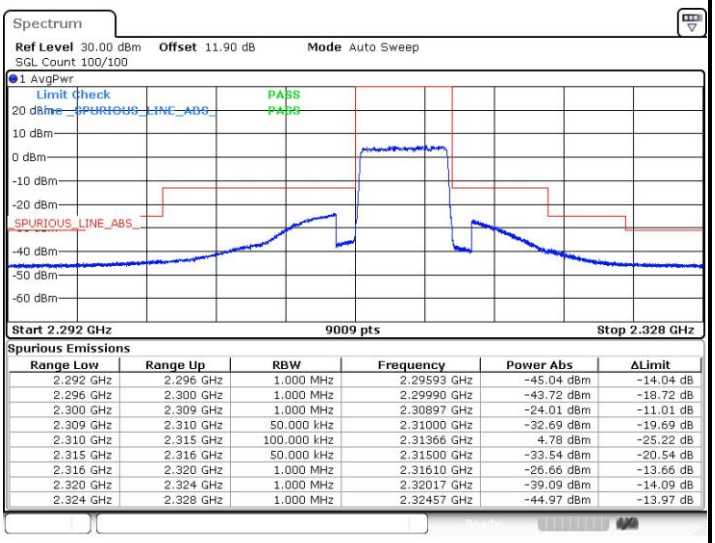


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29564 GHz	-44.16 dBm	-13.16 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29998 GHz	-35.42 dBm	-10.42 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30394 GHz	-22.99 dBm	-9.99 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-31.83 dBm	-18.83 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30636 GHz	4.72 dBm	-25.28 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-33.44 dBm	-20.44 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31103 GHz	-25.57 dBm	-12.57 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32029 GHz	-43.75 dBm	-18.75 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32508 GHz	-45.26 dBm	-14.26 dB

Date: 1.JUN.2017 03:23:59

Highest Band Edge / Full RB



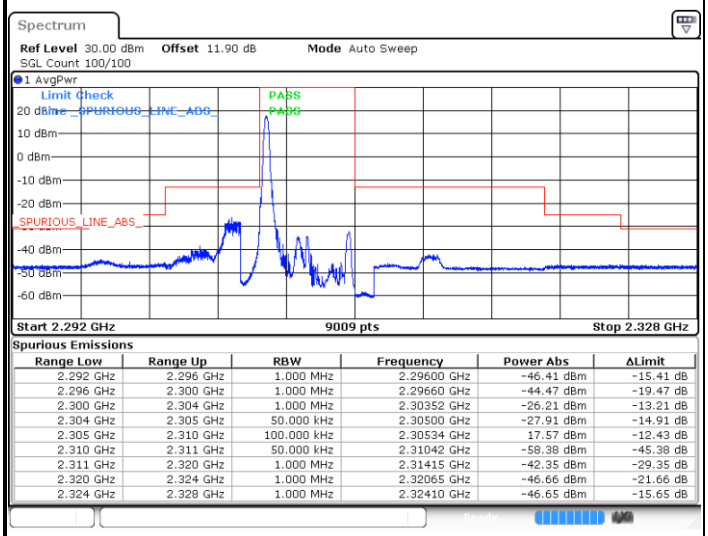
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-45.04 dBm	-14.04 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29990 GHz	-43.72 dBm	-18.72 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30897 GHz	-24.01 dBm	-11.01 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-32.69 dBm	-19.69 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31366 GHz	4.78 dBm	-25.22 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-33.54 dBm	-20.54 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31610 GHz	-26.66 dBm	-13.66 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32017 GHz	-39.09 dBm	-14.09 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32457 GHz	-44.97 dBm	-13.97 dB

Date: 1.JUN.2017 03:28:51

LTE Band 30 / 5MHz / 64QAM

Lowest Band Edge / 1RB

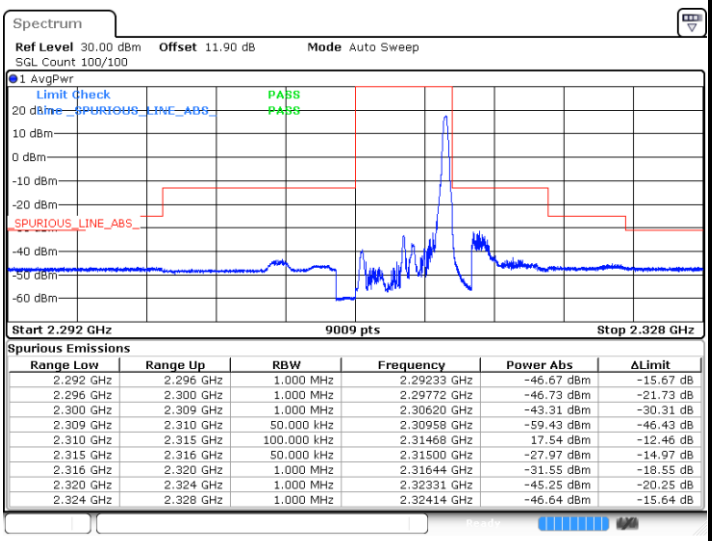


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29600 GHz	-46.41 dBm	-15.41 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29660 GHz	-44.47 dBm	-19.47 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30352 GHz	-26.21 dBm	-13.21 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-27.91 dBm	-14.91 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30534 GHz	17.57 dBm	-12.43 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31042 GHz	-58.38 dBm	-45.38 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31415 GHz	-42.35 dBm	-29.35 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32065 GHz	-46.66 dBm	-21.66 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32410 GHz	-46.65 dBm	-15.65 dB

Date: 22.JUN.2017 10:59:54

Highest Band Edge / 1 RB

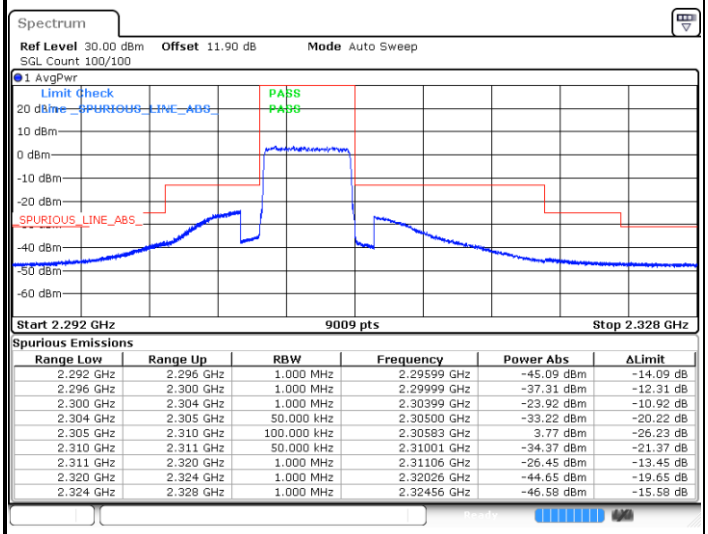


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29233 GHz	-46.67 dBm	-15.67 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29772 GHz	-46.73 dBm	-21.73 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30620 GHz	-43.31 dBm	-30.31 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30958 GHz	-59.43 dBm	-46.43 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31468 GHz	17.54 dBm	-12.46 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-27.97 dBm	-14.97 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31644 GHz	-31.55 dBm	-18.55 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32331 GHz	-45.25 dBm	-20.25 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32414 GHz	-46.64 dBm	-15.64 dB

Date: 22.JUN.2017 11:02:53

Lowest Band Edge / Full RB

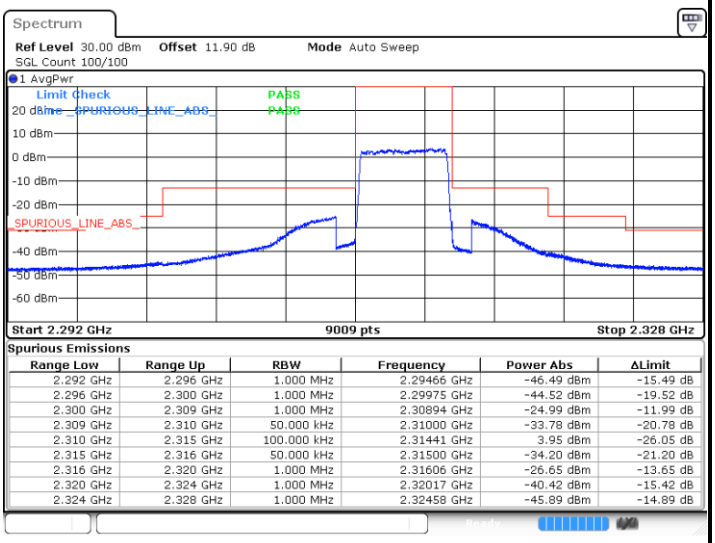


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-45.09 dBm	-14.09 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29999 GHz	-37.31 dBm	-12.31 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-23.92 dBm	-10.92 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-33.22 dBm	-20.22 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30583 GHz	3.77 dBm	-26.23 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31001 GHz	-34.37 dBm	-21.37 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31106 GHz	-26.45 dBm	-13.45 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32026 GHz	-44.65 dBm	-19.65 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32456 GHz	-46.58 dBm	-15.58 dB

Date: 22.JUN.2017 11:01:03

Highest Band Edge / Full RB



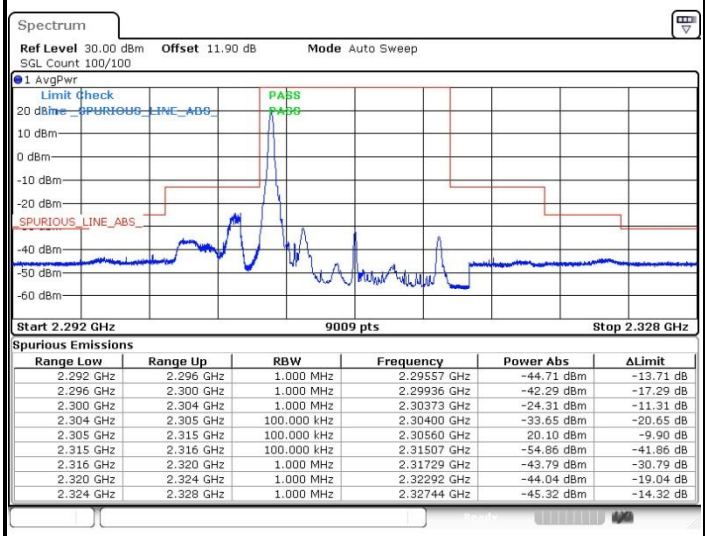
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29466 GHz	-46.49 dBm	-15.49 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29975 GHz	-44.52 dBm	-19.52 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30894 GHz	-24.99 dBm	-11.99 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-33.78 dBm	-20.78 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	3.95 dBm	-26.05 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-34.20 dBm	-21.20 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31606 GHz	-26.65 dBm	-13.65 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32017 GHz	-40.42 dBm	-15.42 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32458 GHz	-45.89 dBm	-14.89 dB

Date: 22.JUN.2017 11:04:02

LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB

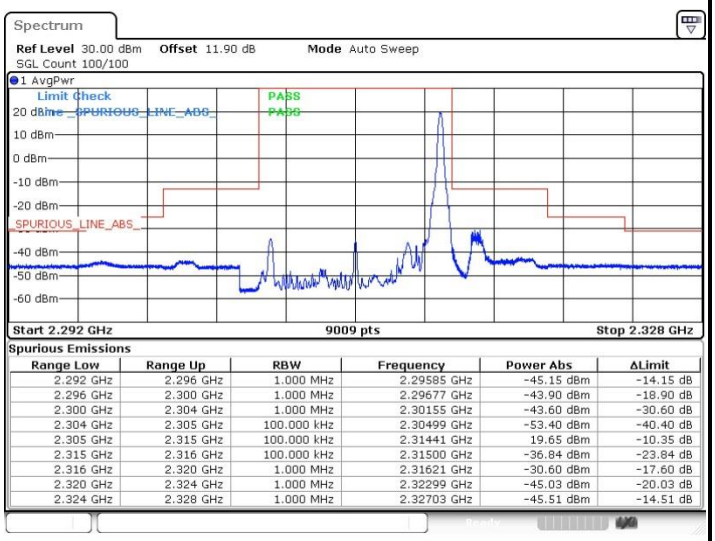


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29557 GHz	-44.71 dBm	-13.71 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29936 GHz	-42.29 dBm	-17.29 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30373 GHz	-24.31 dBm	-11.31 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30400 GHz	-33.65 dBm	-20.65 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30560 GHz	20.10 dBm	-9.90 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31507 GHz	-54.86 dBm	-41.86 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31729 GHz	-43.79 dBm	-30.79 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32292 GHz	-44.04 dBm	-19.04 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32744 GHz	-45.32 dBm	-14.32 dB

Date: 1.JUN.2017 03:30:05

Highest Band Edge / 1 RB

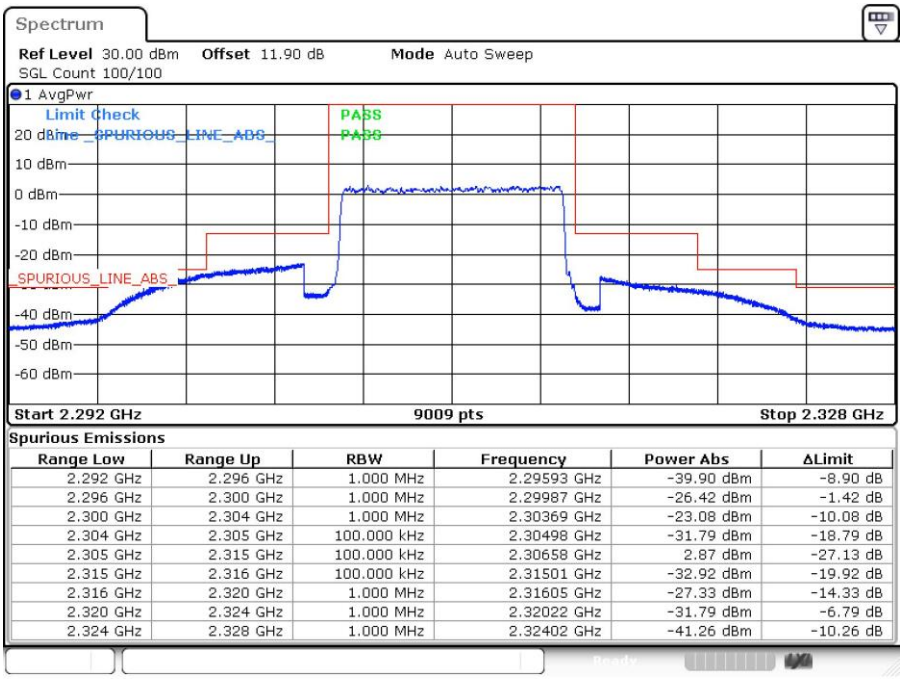


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29585 GHz	-45.15 dBm	-14.15 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29677 GHz	-43.90 dBm	-18.90 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30155 GHz	-43.60 dBm	-30.60 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-53.40 dBm	-40.40 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	19.65 dBm	-10.35 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-36.84 dBm	-23.84 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31621 GHz	-30.60 dBm	-17.60 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32299 GHz	-45.03 dBm	-20.03 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32703 GHz	-45.51 dBm	-14.51 dB

Date: 1.JUN.2017 03:32:30

Band Edge / Full RB



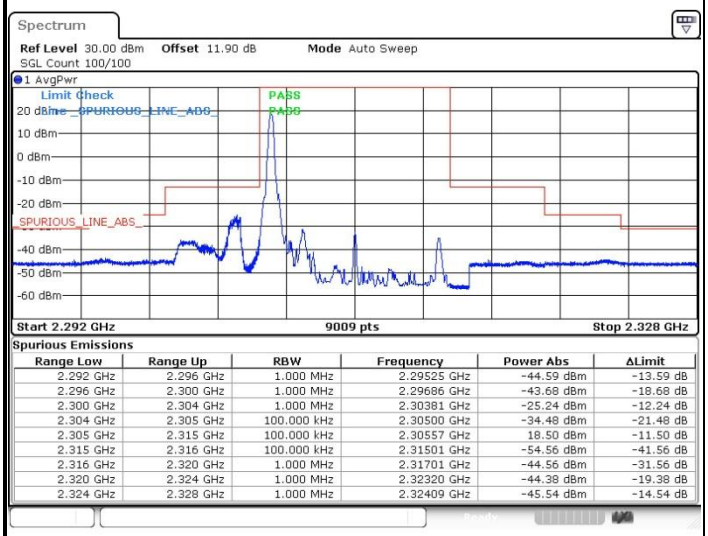
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-39.90 dBm	-8.90 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29987 GHz	-26.42 dBm	-1.42 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30369 GHz	-23.08 dBm	-10.08 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30498 GHz	-31.79 dBm	-18.79 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30658 GHz	2.87 dBm	-27.13 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-32.92 dBm	-19.92 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31605 GHz	-27.33 dBm	-14.33 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32022 GHz	-31.79 dBm	-6.79 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32402 GHz	-41.26 dBm	-10.26 dB

Date: 1.JUN.2017 03:34:56

LTE Band 30 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

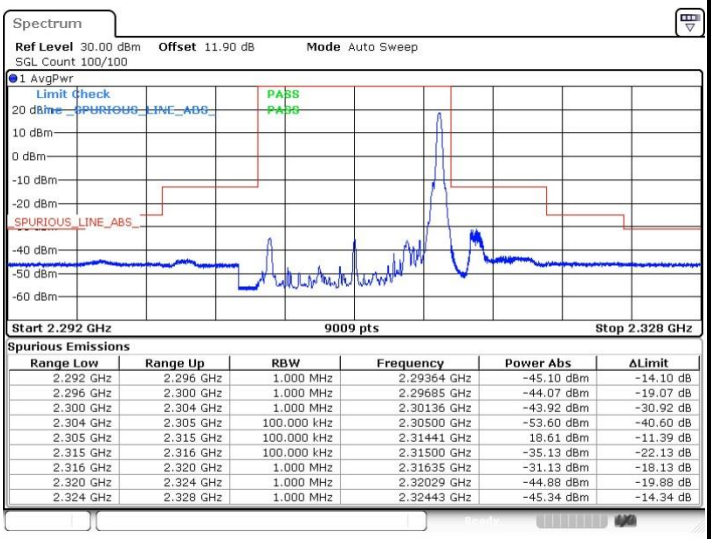


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29525 GHz	-44.59 dBm	-13.59 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29686 GHz	-43.68 dBm	-18.68 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30381 GHz	-25.24 dBm	-12.24 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-34.48 dBm	-21.48 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30557 GHz	18.50 dBm	-11.50 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-54.56 dBm	-41.56 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31701 GHz	-44.56 dBm	-31.56 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32320 GHz	-44.38 dBm	-19.38 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32409 GHz	-45.54 dBm	-14.54 dB

Date: 1.JUN.2017 03:31:18

Highest Band Edge / 1 RB

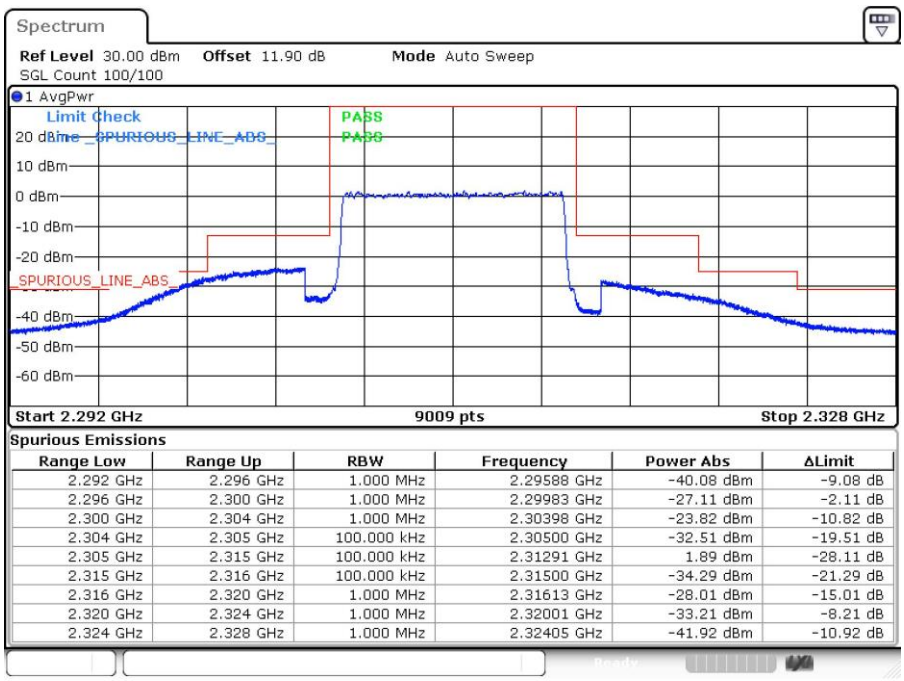


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29364 GHz	-45.10 dBm	-14.10 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29685 GHz	-44.07 dBm	-19.07 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30136 GHz	-43.92 dBm	-30.92 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-53.60 dBm	-40.60 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	18.61 dBm	-11.39 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-35.13 dBm	-22.13 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31635 GHz	-31.13 dBm	-18.13 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32029 GHz	-44.88 dBm	-19.88 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32443 GHz	-45.34 dBm	-14.34 dB

Date: 1.JUN.2017 03:33:43

Band Edge / Full RB



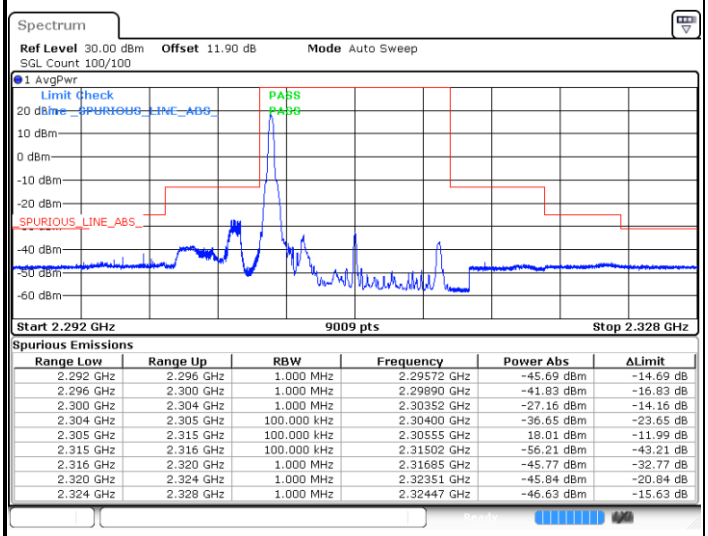
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29588 GHz	-40.08 dBm	-9.08 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29983 GHz	-27.11 dBm	-2.11 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30398 GHz	-23.82 dBm	-10.82 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-32.51 dBm	-19.51 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31291 GHz	1.89 dBm	-28.11 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-34.29 dBm	-21.29 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31613 GHz	-28.01 dBm	-15.01 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-33.21 dBm	-8.21 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32405 GHz	-41.92 dBm	-10.92 dB

Date: 1.JUN.2017 03:36:09

LTE Band 30 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

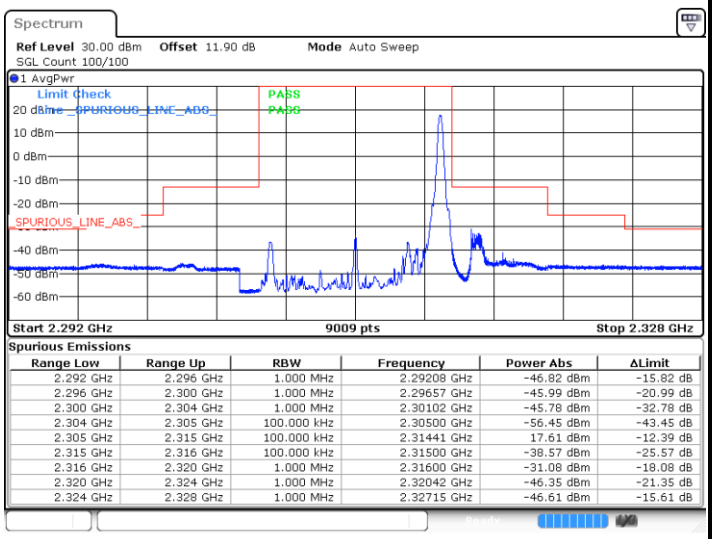


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29572 GHz	-45.69 dBm	-14.69 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29890 GHz	-41.83 dBm	-16.83 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30352 GHz	-27.16 dBm	-14.16 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30400 GHz	-36.65 dBm	-23.65 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30555 GHz	18.01 dBm	-11.99 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-56.21 dBm	-43.21 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31685 GHz	-45.77 dBm	-32.77 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32351 GHz	-45.84 dBm	-20.84 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32447 GHz	-46.63 dBm	-15.63 dB

Date: 22.JUN.2017 11:05:32

Highest Band Edge / 1 RB

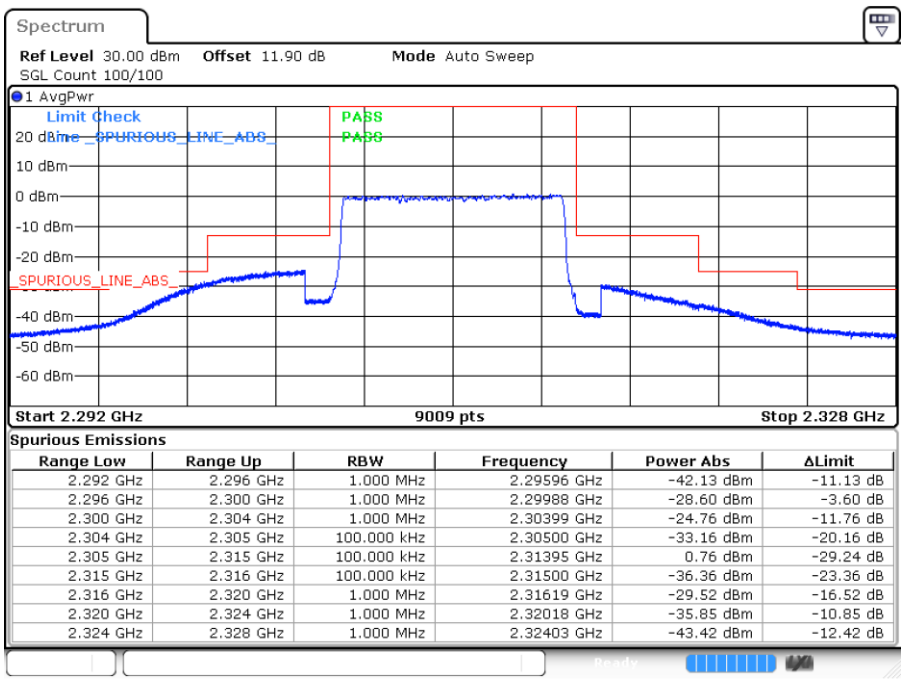


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29208 GHz	-46.82 dBm	-15.82 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29657 GHz	-45.99 dBm	-20.99 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30102 GHz	-45.78 dBm	-32.78 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-56.45 dBm	-43.45 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31441 GHz	17.61 dBm	-12.39 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-38.57 dBm	-25.57 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31600 GHz	-31.08 dBm	-18.08 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32042 GHz	-46.35 dBm	-21.35 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32715 GHz	-46.61 dBm	-15.61 dB

Date: 22.JUN.2017 11:06:41

Band Edge / Full RB



Spurious Emissions

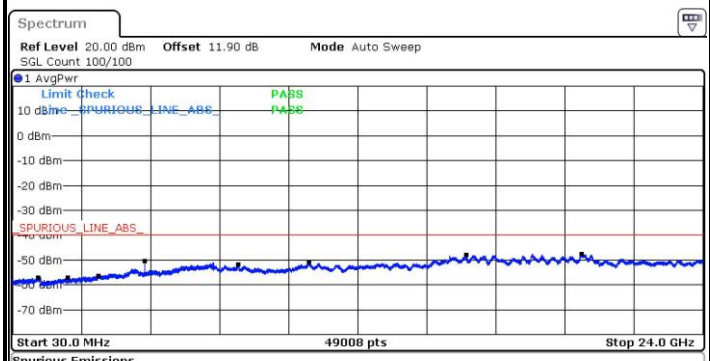
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29596 GHz	-42.13 dBm	-11.13 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29988 GHz	-28.60 dBm	-3.60 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-24.76 dBm	-11.76 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-33.16 dBm	-20.16 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31395 GHz	0.76 dBm	-29.24 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-36.36 dBm	-23.36 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31619 GHz	-29.52 dBm	-16.52 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32018 GHz	-35.85 dBm	-10.85 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32403 GHz	-43.42 dBm	-12.42 dB

Date: 22.JUN.2017 11:07:51

Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

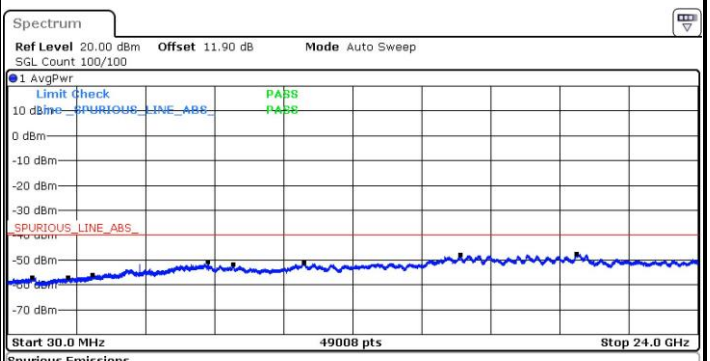


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	922.19640 MHz	-57.15 dBm	-17.15 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.92799 GHz	-57.27 dBm	-17.27 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99681 GHz	-56.28 dBm	-16.28 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61105 GHz	-50.27 dBm	-10.27 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85661 GHz	-51.98 dBm	-11.98 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.31071 GHz	-50.88 dBm	-10.88 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76403 GHz	-48.08 dBm	-8.08 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.78760 GHz	-47.72 dBm	-7.72 dB

Date: 19.JUN.2017 10:42:19

Lowest Channel / 16QAM

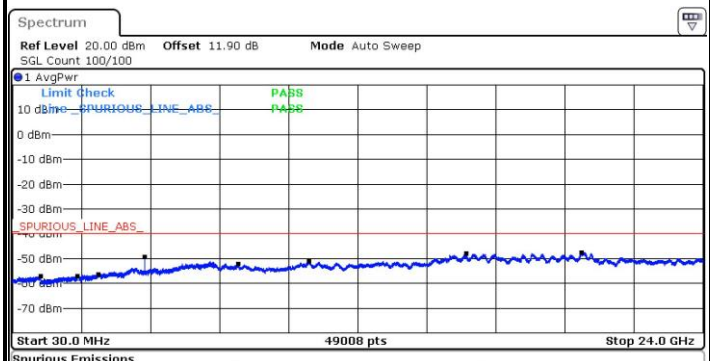


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	866.44928 MHz	-57.01 dBm	-17.01 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.13680 GHz	-56.96 dBm	-16.96 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98405 GHz	-56.21 dBm	-16.21 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99125 GHz	-50.89 dBm	-10.89 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85511 GHz	-51.94 dBm	-11.94 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.30921 GHz	-51.24 dBm	-11.24 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.75703 GHz	-47.96 dBm	-7.96 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.78460 GHz	-47.58 dBm	-7.58 dB

Date: 19.JUN.2017 10:43:13

Middle Channel / QPSK

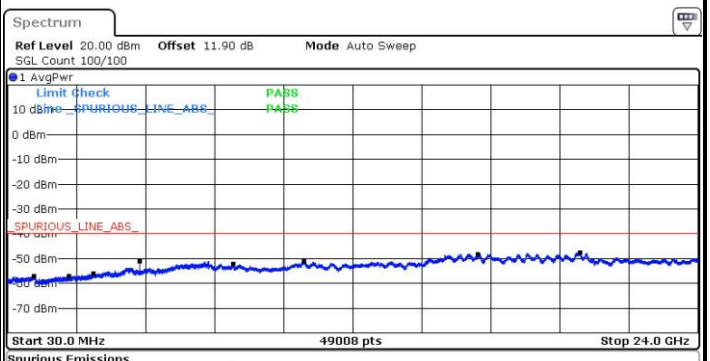


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	987.63868 MHz	-56.98 dBm	-16.98 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28705 GHz	-57.20 dBm	-17.20 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99782 GHz	-56.32 dBm	-16.32 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61605 GHz	-49.26 dBm	-9.26 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85961 GHz	-52.07 dBm	-12.07 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.32671 GHz	-51.12 dBm	-11.12 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76403 GHz	-48.03 dBm	-8.03 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79410 GHz	-47.48 dBm	-7.48 dB

Date: 19.JUN.2017 10:44:07

Middle Channel / 16QAM



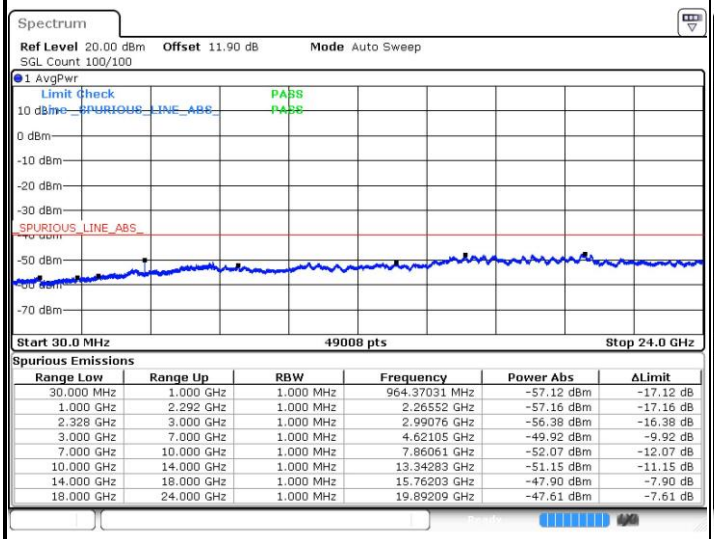
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	927.52874 MHz	-57.18 dBm	-17.18 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.14239 GHz	-57.25 dBm	-17.25 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99446 GHz	-56.12 dBm	-16.12 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61605 GHz	-51.03 dBm	-11.03 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86011 GHz	-52.20 dBm	-12.20 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.30421 GHz	-51.05 dBm	-11.05 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.36145 GHz	-48.14 dBm	-8.14 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.89909 GHz	-47.50 dBm	-7.50 dB

Date: 19.JUN.2017 10:45:00

LTE Band 30 / 5MHz

Highest Channel / QPSK

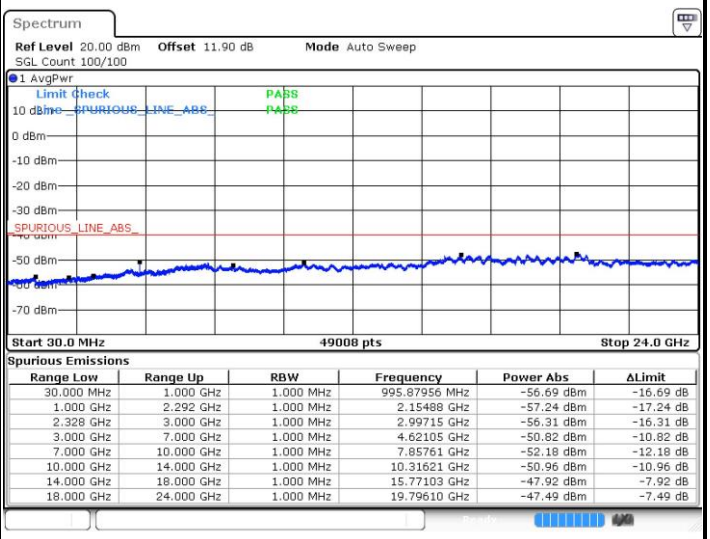


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-57.12 dBm	-17.12 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.26552 GHz	-57.16 dBm	-17.16 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99076 GHz	-56.38 dBm	-16.38 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62105 GHz	-49.92 dBm	-9.92 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86061 GHz	-52.07 dBm	-12.07 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.34283 GHz	-51.15 dBm	-11.15 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76203 GHz	-47.90 dBm	-7.90 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.89209 GHz	-47.61 dBm	-7.61 dB

Date: 19.JUN.2017 10:45:54

Highest Channel / 16QAM



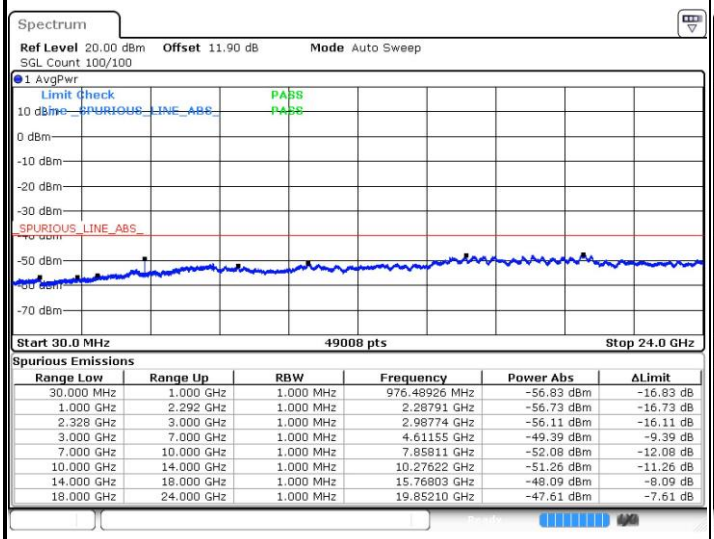
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	995.87956 MHz	-56.69 dBm	-16.69 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15488 GHz	-57.24 dBm	-17.24 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99715 GHz	-56.31 dBm	-16.31 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62105 GHz	-50.82 dBm	-10.82 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85761 GHz	-52.18 dBm	-12.18 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.31621 GHz	-50.96 dBm	-10.96 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.77103 GHz	-47.92 dBm	-7.92 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.79610 GHz	-47.49 dBm	-7.49 dB

Date: 19.JUN.2017 10:46:47

LTE Band 30 / 10MHz

Middle Channel / QPSK

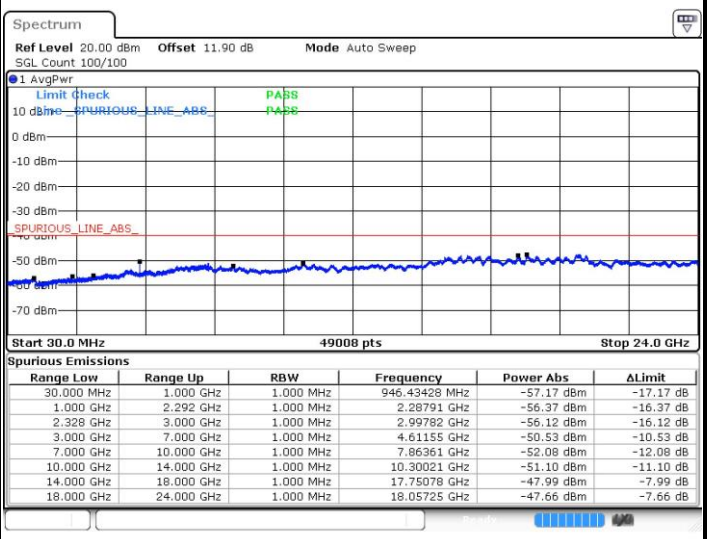


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	976.48926 MHz	-56.83 dBm	-16.83 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28791 GHz	-56.73 dBm	-16.73 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98774 GHz	-56.11 dBm	-16.11 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61155 GHz	-49.39 dBm	-9.39 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85811 GHz	-52.08 dBm	-12.08 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.27622 GHz	-51.26 dBm	-11.26 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76803 GHz	-48.09 dBm	-8.09 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.85210 GHz	-47.61 dBm	-7.61 dB

Date: 19.JUN.2017 10:47:42

Middle Channel / 16QAM



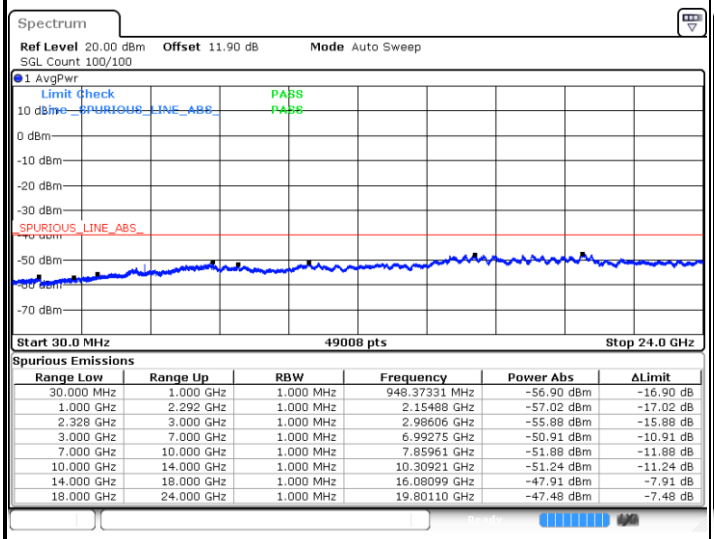
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	946.43428 MHz	-57.17 dBm	-17.17 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28791 GHz	-56.37 dBm	-16.37 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99782 GHz	-56.12 dBm	-16.12 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61155 GHz	-50.53 dBm	-10.53 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.86361 GHz	-52.08 dBm	-12.08 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.30021 GHz	-51.10 dBm	-11.10 dB
14.000 GHz	18.000 GHz	1.000 MHz	17.75078 GHz	-47.99 dBm	-7.99 dB
18.000 GHz	24.000 GHz	1.000 MHz	18.05725 GHz	-47.66 dBm	-7.66 dB

Date: 19.JUN.2017 10:48:35

LTE Band 30 / 5MHz

Lowest Channel / 64QAM

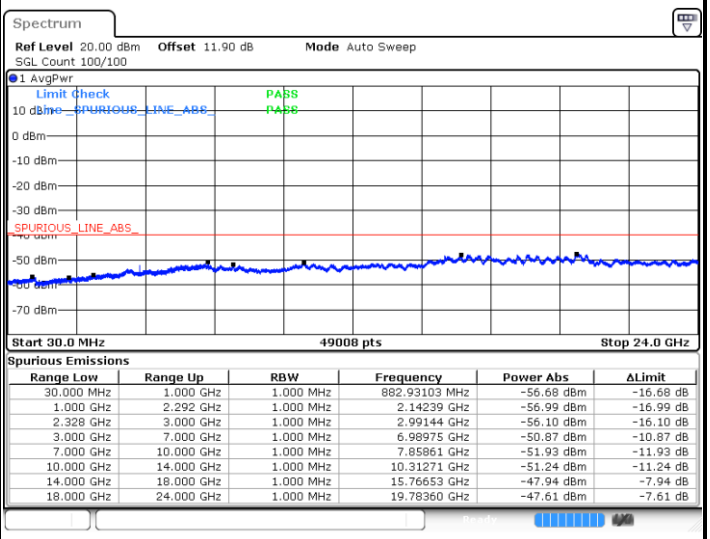


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	948.37331 MHz	-56.90 dBm	-16.90 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15488 GHz	-57.02 dBm	-17.02 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98606 GHz	-55.88 dBm	-15.88 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99275 GHz	-50.91 dBm	-10.91 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85961 GHz	-51.88 dBm	-11.88 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.30921 GHz	-51.24 dBm	-11.24 dB
14.000 GHz	18.000 GHz	1.000 MHz	16.08099 GHz	-47.91 dBm	-7.91 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.80110 GHz	-47.48 dBm	-7.48 dB

Date: 22.JUN.2017 11:09:46

Middle Channel / 64QAM

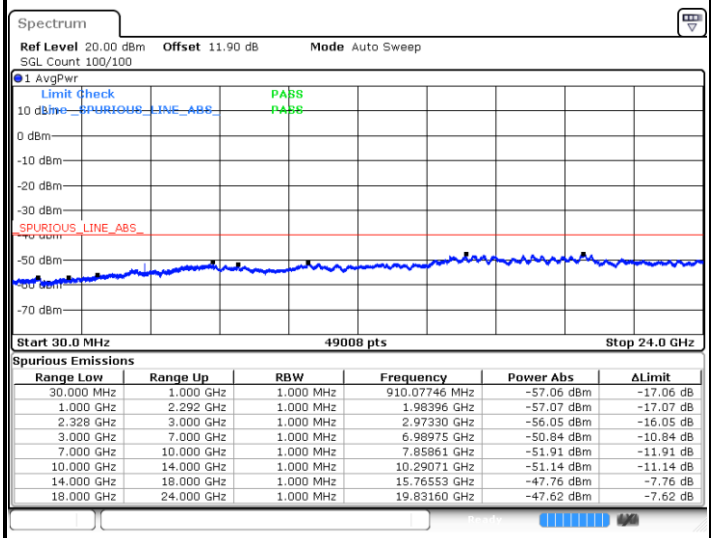


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	882.93103 MHz	-56.68 dBm	-16.68 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.14239 GHz	-56.99 dBm	-16.99 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99144 GHz	-56.10 dBm	-16.10 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98975 GHz	-50.87 dBm	-10.87 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85861 GHz	-51.93 dBm	-11.93 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.31271 GHz	-51.24 dBm	-11.24 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76653 GHz	-47.94 dBm	-7.94 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.78360 GHz	-47.61 dBm	-7.61 dB

Date: 22.JUN.2017 11:10:39

Highest Channel / 64QAM

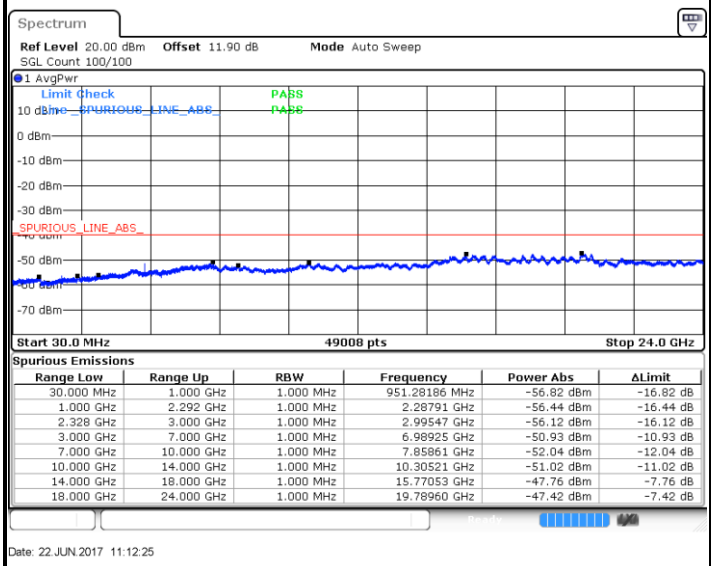


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	910.07746 MHz	-57.06 dBm	-17.06 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.98396 GHz	-57.07 dBm	-17.07 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.97330 GHz	-56.05 dBm	-16.05 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98975 GHz	-50.84 dBm	-10.84 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85861 GHz	-51.91 dBm	-11.91 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.29071 GHz	-51.14 dBm	-11.14 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.76553 GHz	-47.76 dBm	-7.76 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.83160 GHz	-47.62 dBm	-7.62 dB

Date: 22.JUN.2017 11:11:32

LTE Band 30 / 10MHz	
Middle Channel / 64QAM	



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-56.82 dBm	-16.82 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.28791 GHz	-56.44 dBm	-16.44 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99547 GHz	-56.12 dBm	-16.12 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98925 GHz	-50.93 dBm	-10.93 dB
7.000 GHz	10.000 GHz	1.000 MHz	7.85861 GHz	-52.04 dBm	-12.04 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.30521 GHz	-51.02 dBm	-11.02 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.77053 GHz	-47.76 dBm	-7.76 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.78960 GHz	-47.42 dBm	-7.42 dB

Date: 22.JUN.2017 11:12:25

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	0.0006	PASS
40	Normal Voltage	0.0006	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0000	
-10	Normal Voltage	0.0010	
-20	Normal Voltage	0.0016	
-30	Normal Voltage	0.0007	
20	Maximum Voltage	0.0002	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0002	

Note:

1. Normal Voltage =3.3 V.；Battery End Point (BEP) =3.1 V.；Maximum Voltage =3.6 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 30

LTE Band 30 / 5MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	4608	-56.22	-40	-16.22	-79.96	-63.02	2.11	8.92	H
	6922	-48.09	-40	-8.09	-80.61	-56.18	2.62	10.71	H
	9216	-42.59	-40	-2.59	-80.17	-52.67	2.53	12.61	H
									H
									H
	4615	-55.88	-40	-15.88	-79.63	-62.69	2.12	8.93	V
	6922	-47.72	-40	-7.72	-80.24	-55.81	2.62	10.71	V
	9216	-41.63	-40	-1.63	-79.21	-51.71	2.53	12.61	V
									V
									V
Middle	4614	-55.88	-40	-15.88	-79.71	-62.69	2.11	8.93	H
	6923	-47.90	-40	-7.90	-80.42	-55.99	2.62	10.71	H
	9234	-42.56	-40	-2.56	-80.23	-52.63	2.53	12.61	H
									H
									H
	4614	-55.80	-40	-15.80	-79.63	-62.61	2.11	8.93	V
	6923	-47.94	-40	-7.94	-80.46	-56.03	2.62	10.71	V
	9234	-41.98	-40	-1.98	-79.65	-52.05	2.53	12.61	V
									V
									V

Highest	4620	-55.77	-40	-15.77	-79.6	-62.59	2.12	8.94	H
	6930	-47.94	-40	-7.94	-80.52	-56.04	2.61	10.72	H
	9234	-43.14	-40	-3.14	-80.81	-53.21	2.53	12.61	H
									H
									H
	4620	-55.68	-40	-15.68	-79.51	-62.50	2.12	8.94	V
	6930	-47.79	-40	-7.79	-80.37	-55.89	2.61	10.72	V
	9234	-41.69	-40	-1.69	-79.36	-51.76	2.53	12.61	V
									V
									V

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

LTE Band 30 / 10MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4614	-55.88	-40	-15.88	-79.71	-62.69	2.11	8.93	H
	6918	-47.90	-40	-7.90	-80.42	-55.98	2.62	10.70	H
	9216	-42.56	-40	-2.56	-80.23	-52.64	2.53	12.61	H
									H
									H
									H
									H
	4614	-55.80	-40	-15.80	-80.46	-62.61	2.11	8.93	V
	6918	-47.94	-40	-7.94	-79.63	-56.02	2.62	10.70	V
	9216	-41.98	-40	-1.98	-79.65	-52.06	2.53	12.61	V
									V
									V
									V
									V

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