FCC RADIO TEST REPORT

FCC ID	:	**J9CQSIP7180**
Equipment	:	**7c Modular Platform**
Brand Name	:	**Qualcomm**
Model Name	:	**QSIP7180**
Applicant	:	**Qualcomm Technologies, Inc. 5775 Morehouse Dr.San Diego, CA 92121-1714 (USA)**
Manufacturer	:	**Qualcomm Technologies, Inc. 5775 Morehouse Dr.San Diego, CA 92121-1714 (USA)**
Standard	:	**FCC 47 CFR Part 2, Part 27(D)**

The product was received on Apr. 20, 2020 and testing was started from May 23, 2020 and completed on Aug. 25, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FG042002C	01	Initial issue of report	Sep. 17, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power and Effective Isotropic Radiated Power	Reporting only	-
3.3	-	Peak-to-Average Ratio	Reporting only	-
3.4	§27.50 (a)(3)	EIRP Power Density	Pass	-
3.5	§2.1049	Occupied Bandwidth	Reporting only	-
3.6	§2.1051 §27.53 (a)(4)	Conducted Band Edge Measurement	Pass	-
3.7	§2.1051 §27.53 (a)(4)	Conducted Spurious Emission	Pass	-
3.8	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §27.53 (a)(4)	Radiated Spurious Emission	Pass	Under limit 1.61 dB at 9243.000 MHz

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Amy Chen

1 General Description

1.1 Product Feature of Equipment Under Test

WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ac, Wi-Fi 5GHz 802.11a/n/ac and GNSS

Product Feature	
Antenna Type	**WWAN:** WCDMA Band 1: 5.0 dBi WCDMA Band 8: 0.8 dBi LTE Band 1: 5.0 dBi LTE Band 3: 5.8 dBi LTE Band 7: 5.4 dBi LTE Band 8: 0.8 dBi LTE Band 20: 1.7 dBi LTE Band 28 : 0.9 dBi LTE Band 34 : 3.8 dBi LTE Band 38 : 5.2 dBi LTE Band 40 : 5.5 dBi

1.2 Modification of EUT

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

1.3 Testing Site

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH05-HY
Test Engineer	Bryant Liu
Temperature	22~24℃
Relative Humidity	51~55%

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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.**
	03CH12-HY
Test Engineer	Jack Cheng, Lance Chiang, and Chuan Chu

Temperature	22.6~26.2℃
Relative Humidity	55.7~67.8%

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No. TW1190 and TW0007

1.4 Applied Standards

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

- ANSI C63.26-2015
- FCC 47 CFR Part 2, Part 27(D)
- ANSI / TIA-603-E
- FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site 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.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

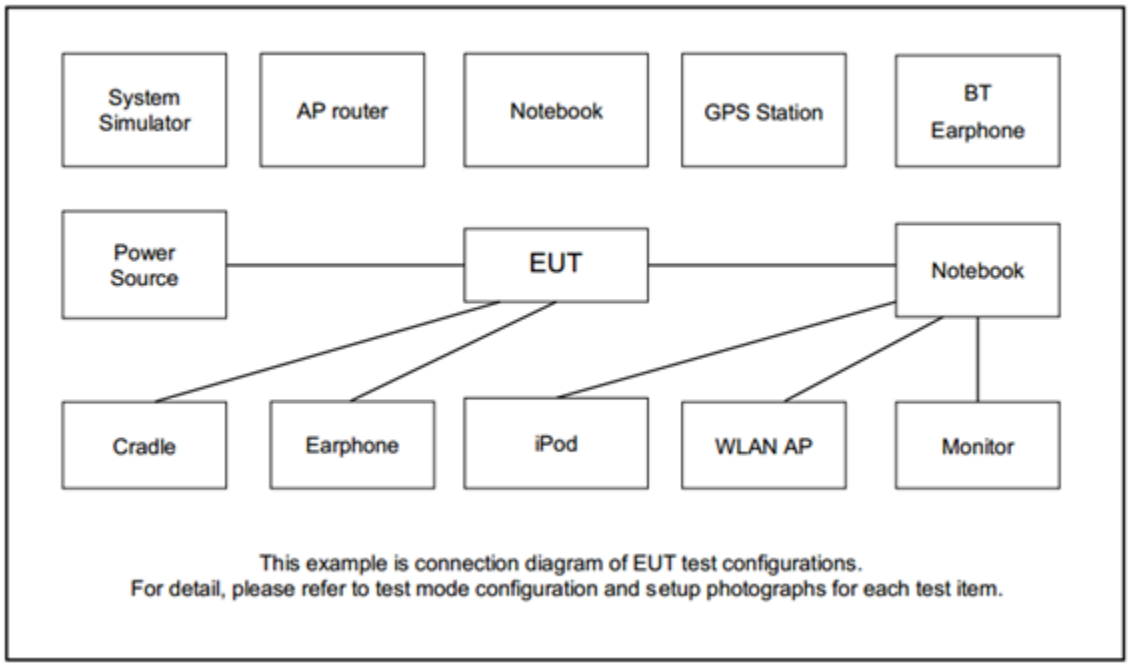
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in two degrees (0° or 90°). The worst cases (degree 0) were recorded in this report.

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	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	Worst Case												v	v	v
Remark	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	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	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)

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

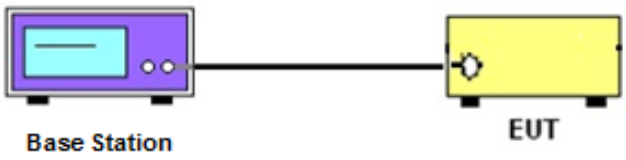
3 Conducted Test Items

3.1 Measuring Instruments

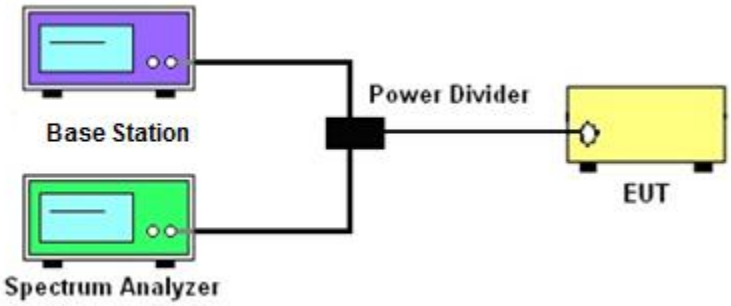
See list of measuring instruments of this test report.

3.1.1 Test Setup

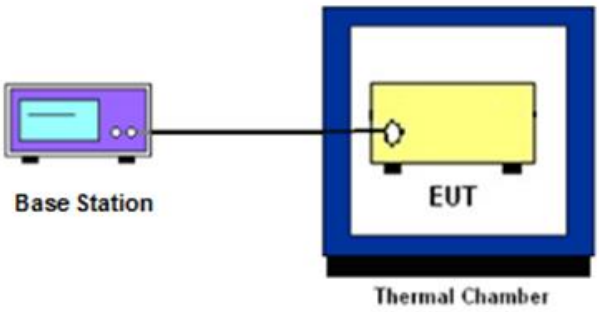
3.1.2 Conducted Output Power



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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power Measurement and EIRP Measurement

3.2.1 Description of the Conducted Output Power Measurement and EIRP 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.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 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.

3.3 Peak-to-Average Ratio

3.3.1 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.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

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

3.4 EIRP Power Density

3.4.1 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.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.4.5

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 (5MHz).
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).
10. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.5 Occupied Bandwidth

3.5.1 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.

3.5.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. 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)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. 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.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.6 Conducted Band Edge

3.6.1 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.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. 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)

3.7 Conducted Spurious Emission

3.7.1 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 10^{th} harmonic.

3.7.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a 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.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is derived from 70 + 10log(P)dB below the transmitter power P(Watts)

3.8 Frequency Stability

3.8.1 Description of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.8.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
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.

3.8.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
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.

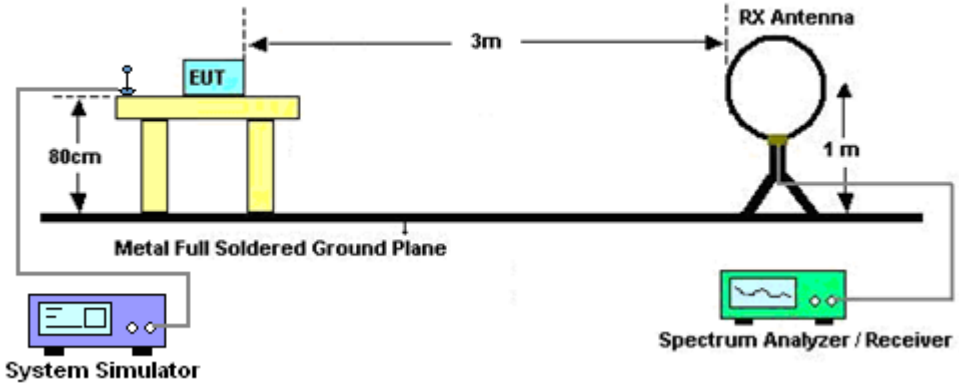
4 Radiated Test Items

4.1 Measuring Instruments

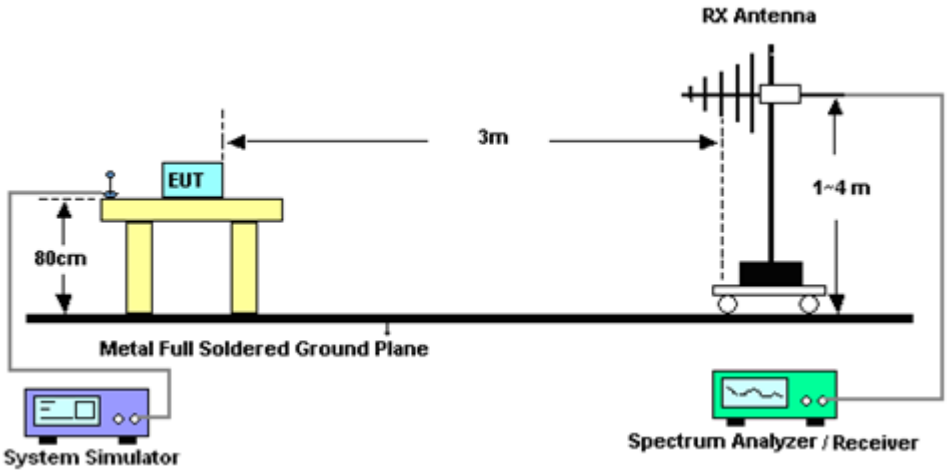
See list of measuring instruments of this test report.

4.1.1 Test Setup

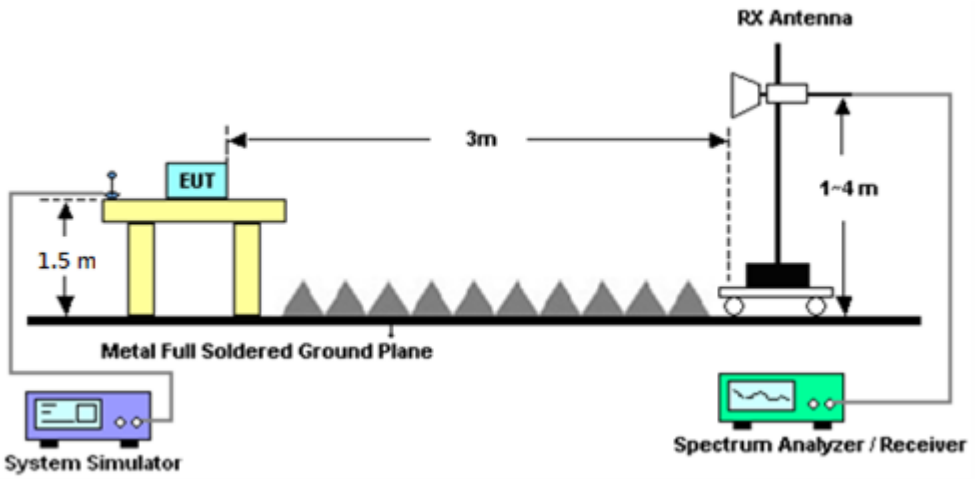
For radiated emissions below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E

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.

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

1. 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.
2. The EUT was set 3 meters from the receiving antenna 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 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = EIRP - 2.15
4. 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.

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Dec. 26, 2019	May 28, 2020~ Aug. 14, 2020	Dec. 25, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Oct. 12, 2019	May 28, 2020~ Aug. 14, 2020	Oct. 11, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Nov. 14, 2019	May 28, 2020~ Aug. 14, 2020	Nov. 13, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz~40GHz	Dec. 10, 2019	May 28, 2020~ Aug. 14, 2020	Dec. 09, 2020	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2020	May 28, 2020~ Aug. 14, 2020	Mar. 24, 2021	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	Mar. 26, 2020	May 28, 2020~ Aug. 14, 2020	Mar. 25, 2021	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA0118-55-303K	1710001800054002	1GHz~18GHz	Feb. 07, 2020	May 28, 2020~ Aug. 14, 2020	Feb. 06, 2021	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 13, 2019	May 28, 2020~ Aug. 14, 2020	Dec. 12, 2020	Radiation (03CH12-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	103738	10Hz~30GHz	May 14, 2020	May 28, 2020~ Aug. 14, 2020	May 13, 2021	Radiation (03CH12-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101756	10Hz~40GHz	Dec. 24, 2019	May 28, 2020~ Aug. 14, 2020	Dec. 23, 2020	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMB100A	101107	100kHz~40GHz	Aug. 27, 2019	May 28, 2020~ Aug. 14, 2020	Aug. 26, 2020	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12SS	SN2	1.2GHz Low Pass Filter	Mar. 21, 2020	May 28, 2020~ Aug. 14, 2020	Mar. 20, 2021	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Jul. 15, 2019	May 28, 2020~ Jul. 13, 2020	Jul. 14, 2020	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Jul. 14, 2020	Jul. 14, 2020~ Aug. 14, 2020	Jul. 13, 2021	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 18, 2020	May 28, 2020~ Aug. 14, 2020	Mar. 17, 2021	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT/800/960-0.2/40-8SSK	SN11	GSM 850	Aug. 22, 2019	May 28, 2020~ Aug. 14, 2020	Aug. 21, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCD1700/2000-0.2/40-10SSK	SN37	DCS 1900	Aug. 22, 2019	May 28, 2020~ Aug. 14, 2020	Aug. 21, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT700/915-20/40-8SSK	SN1	700-915	Mar. 06, 2020	May 28, 2020~ Aug. 14, 2020	Mar. 05, 2021	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCG1710/1755-1690/1775-45/7SS	SN2	AWS Band	Nov. 05, 2019	May 28, 2020~ Aug. 14, 2020	Nov. 04, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WTRCT10-2200-2700-100-170-40SSK	SN2	N/A	May 26, 2020	May 28, 2020~ Aug. 14, 2020	May 25, 2021	Radiation (03CH12-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 12, 2019	May 28, 2020~ Aug. 14, 2020	Dec. 11, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 25, 2020	May 28, 2020~ Aug. 14, 2020	Feb. 24, 2021	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz~40GHz	Feb. 25, 2020	May 28, 2020~ Aug. 14, 2020	Feb. 24, 2021	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 28, 2020~ Aug. 14, 2020	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500 -B	N/A	1m~4m	N/A	May 28, 2020~ Aug. 14, 2020	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 28, 2020~ Aug. 14, 2020	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	May 28, 2020~ Aug. 14, 2020	N/A	Radiation (03CH12-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	May 23, 2020~ Aug. 24, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃~90℃	Sep. 02, 2019	May 23, 2020~ Aug. 24, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 09, 2019	May 23, 2020~ Aug. 24, 2020	Oct. 08, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 13, 2020	May 23, 2020~ Aug. 24, 2020	Jan. 12, 2021	Conducted (TH05-HY)
Base Station	Anritsu	MT8820C	6201026480	-	Dec. 27, 2019	Jul. 19, 2020~ Aug. 25, 2020	Dec. 26, 2020	Conducted (TH05-HY)
Base Station	Anritsu	MT8821C	6201664755	-	Jul. 16, 2020	Jul. 19, 2020~ Aug. 25, 2020	Jul. 15, 2021	Conducted (TH05-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))	**3.24**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.62**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.06**

Appendix A. Test Results of Conducted Test

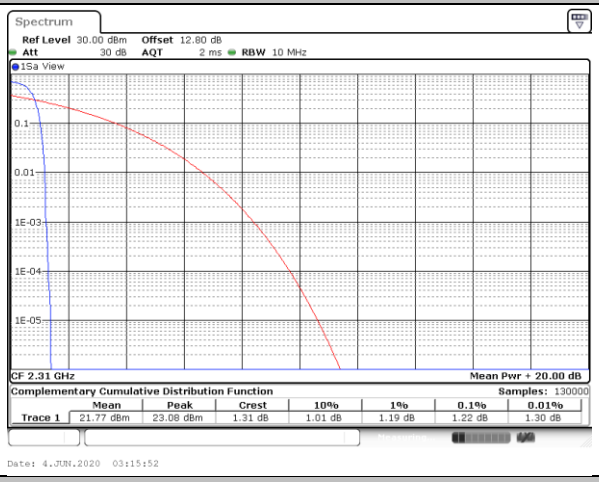
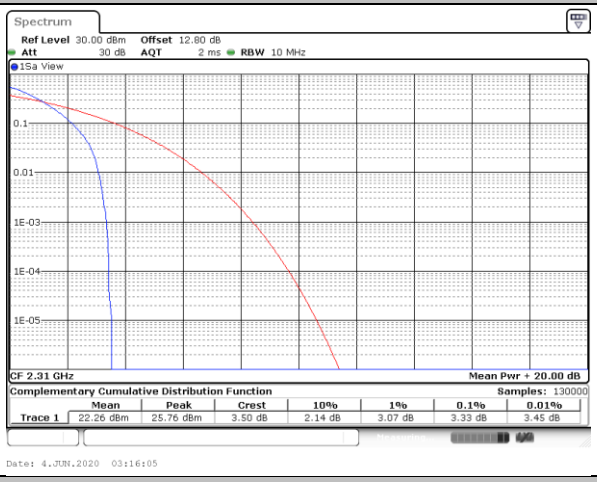
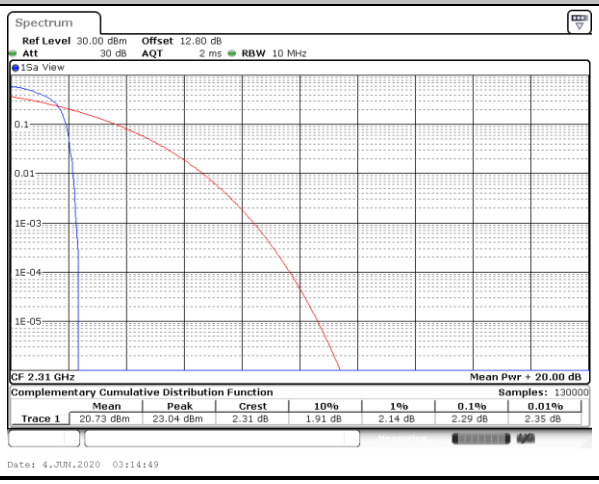
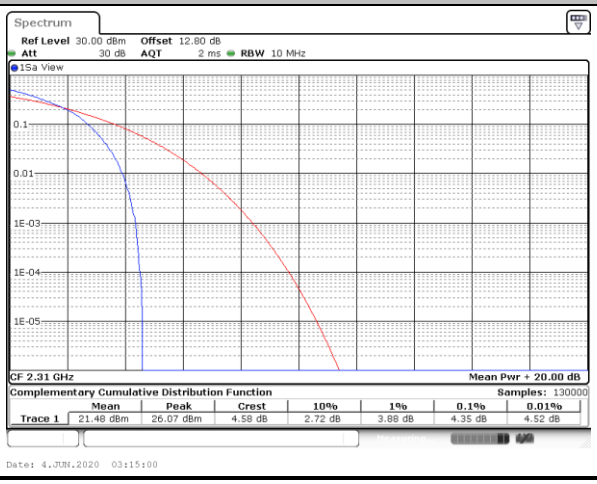
Conducted Output Power(Average power)

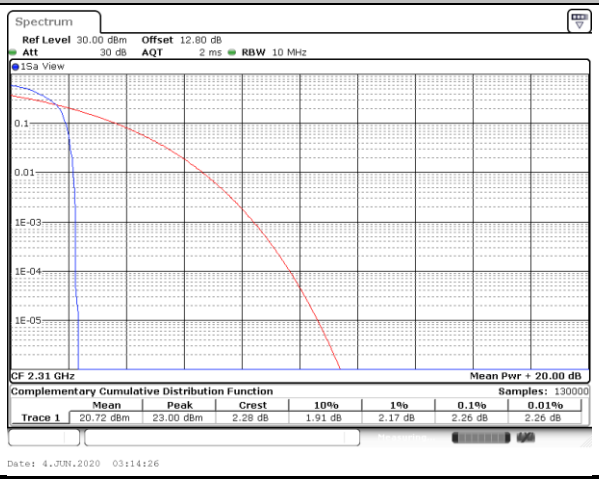
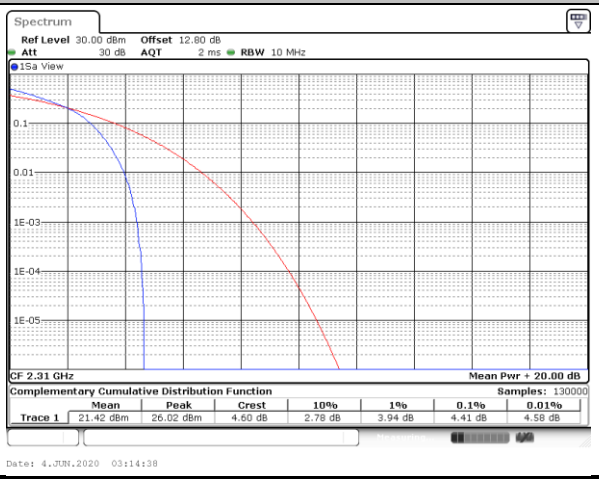
LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	-	**22.72**	-
10	1	25			22.69	
10	1	49			22.60	
10	25	0			21.77	
10	25	12			21.81	
10	25	25			21.69	
10	50	0			21.77	
10	1	0	16-QAM		21.72	
10	1	25			21.85	
10	1	49			21.92	
10	25	0			20.73	
10	25	12			20.87	
10	25	25			20.77	
10	50	0			20.83	
10	1	0	64-QAM		21.54	
10	1	25			21.84	
10	1	49			21.74	
10	25	0			20.76	
10	25	12			20.82	
10	25	25			20.80	
10	50	0			20.83	
5	1	0	QPSK	22.54	22.63	22.63
5	1	12		22.61	22.61	22.62
5	1	24		22.59	22.52	22.58
5	12	0		21.69	21.75	21.70
5	12	7		21.74	21.77	21.78
5	12	13		21.61	21.65	21.62
5	25	0		21.71	21.75	21.68
5	1	0	16-QAM	21.67	21.69	21.64
5	1	12		21.82	21.78	21.77
5	1	24		21.88	21.91	21.90
5	12	0		20.68	20.68	20.63
5	12	7		20.78	20.84	20.81
5	12	13		20.70	20.73	20.70
5	25	0		20.73	20.75	20.74
5	1	0	64-QAM	21.45	21.53	21.54
5	1	12		21.74	21.76	21.75
5	1	24		21.64	21.74	21.66
5	12	0		20.75	20.68	20.67
5	12	7		20.78	20.73	20.80
5	12	13		20.77	20.71	20.74
5	25	0		20.74	20.74	20.83

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	1.22	3.33	2.29	4.35	
Highest CH	-	-	-	-	
Mode	LTE Band 30 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	-	-	-	-	PASS
Middle CH	2.26	4.41	-	-	
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**
	

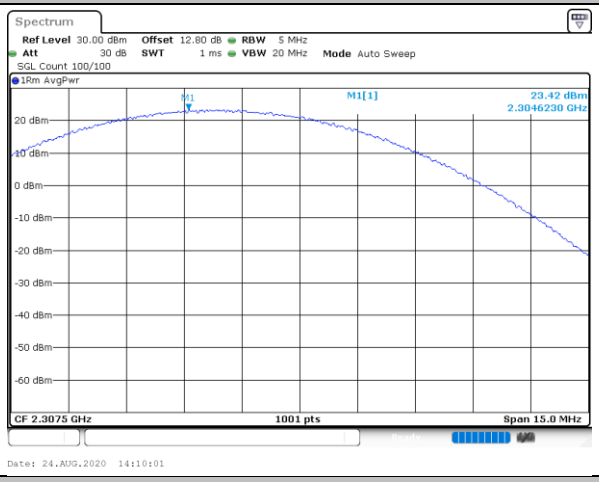
EIRP Power Density

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	-	-	-	-	23.42	22.69	-	-	-	-	-	-
Middle CH	-	-	-	-	23.44	22.68	23.38	22.51	-	-	-	-
Highest CH	-	-	-	-	23.59	22.96	-	-	-	-	-	-
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	-	-	-	-	21.83	-	-	-	-	-	-	-
Middle CH	-	-	-	-	21.90	-	21.76	-	-	-	-	-
Highest CH	-	-	-	-	22.14	-	-	-	-	-	-	-

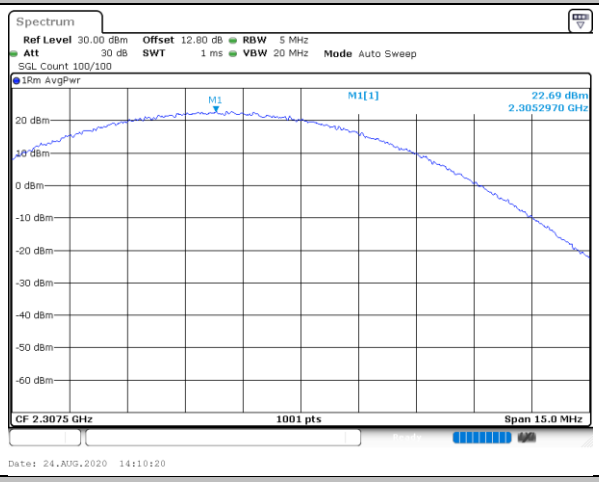
Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	23.42	22.69	-	-	-	-	-	-
Middle CH	-	-	-	-	23.44	22.68	23.38	22.51	-	-	-	-
Highest CH	-	-	-	-	23.59	22.96	-	-	-	-	-	-
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	-	-	-	-	21.83	-	-	-	-	-	-	-
Middle CH	-	-	-	-	21.90	-	21.76	-	-	-	-	-
Highest CH	-	-	-	-	22.14	-	-	-	-	-	-	-
Antenna Gain	0 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											

LTE Band 30 / 5MHz

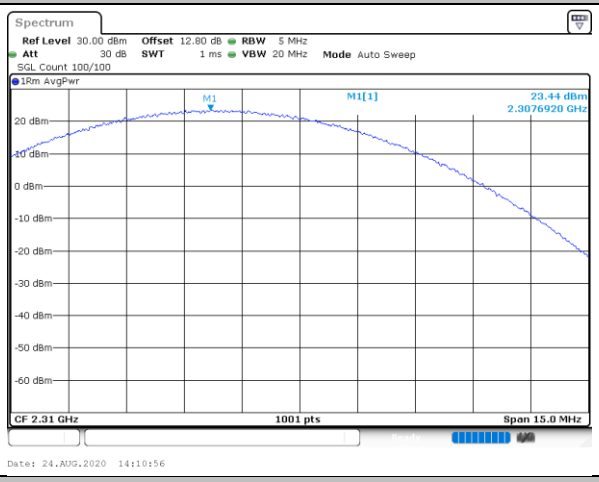
Lowest Channel / 5MHz / 1RB0 / QPSK



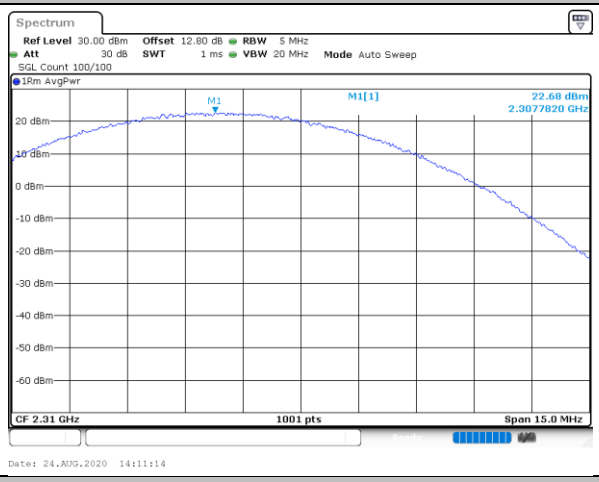
Lowest Channel / 5MHz / 1RB0 / 16QAM



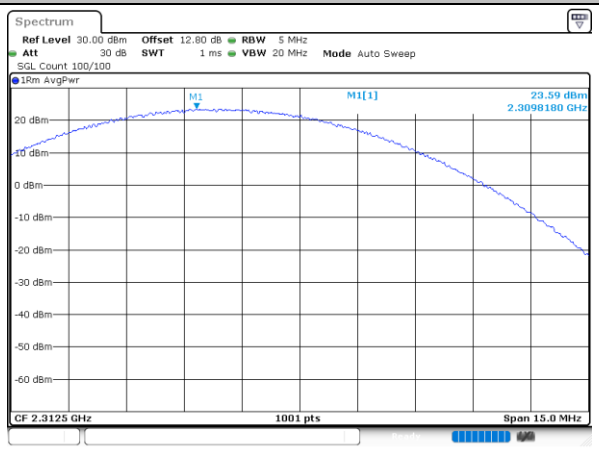
Middle Channel / 5MHz / 1RB0 / QPSK



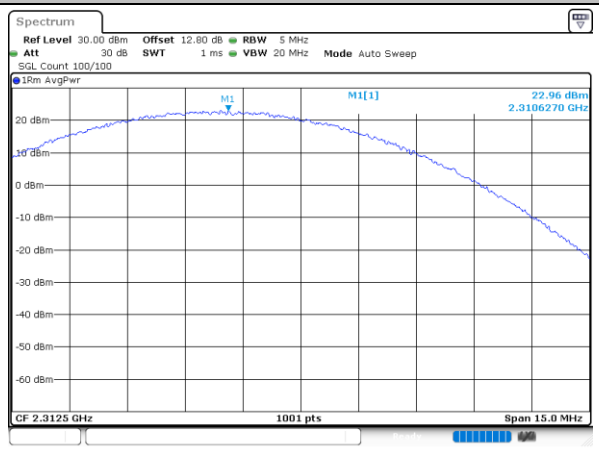
Middle Channel / 5MHz / 1RB0 / 16QAM

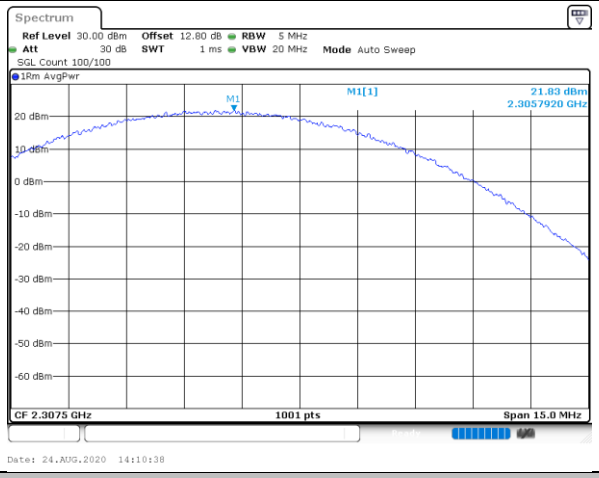
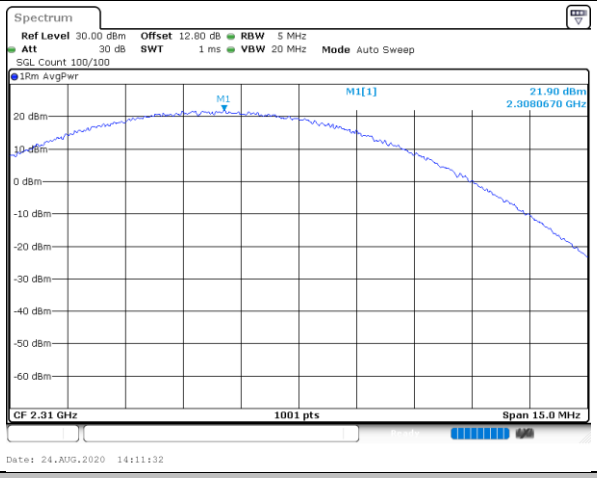
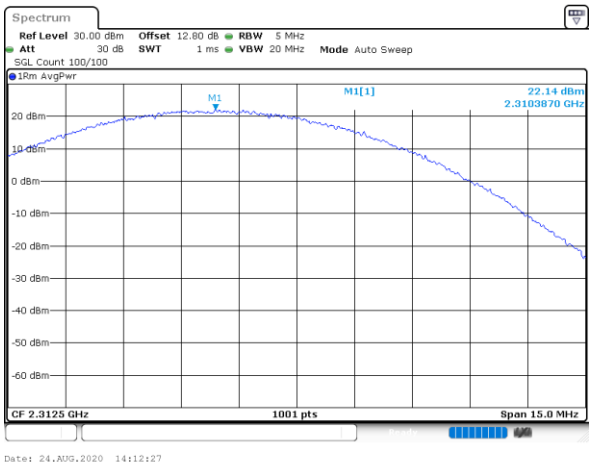


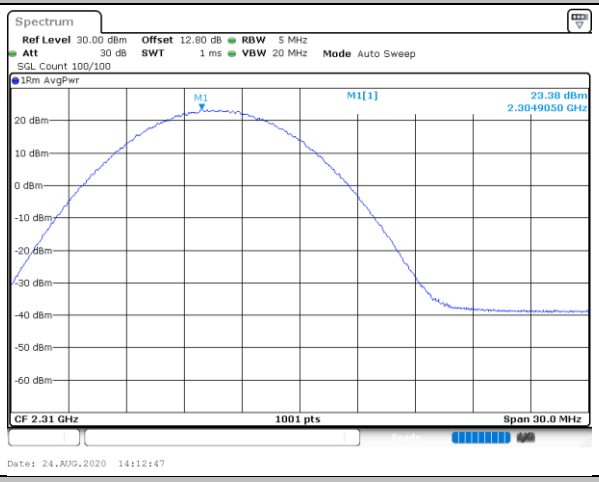
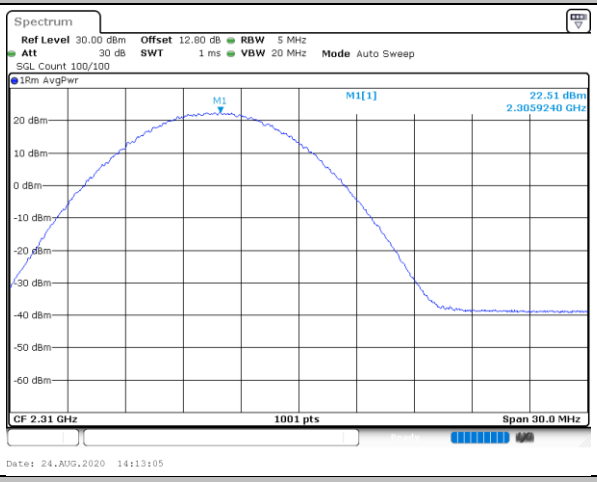
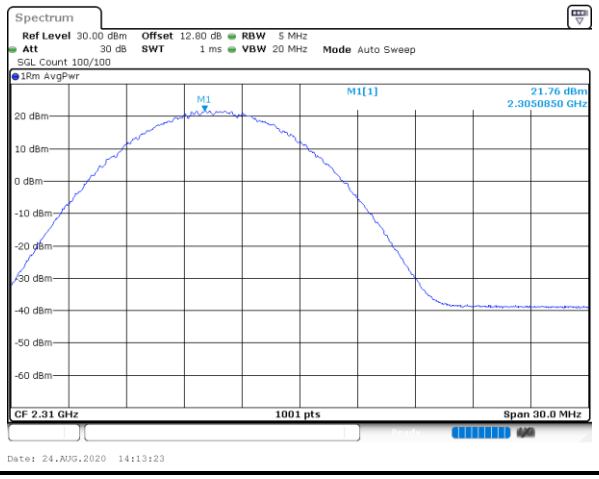
Highest Channel / 5MHz / 1RB0 / QPSK



Highest Channel / 5MHz / 1RB0 / 16QAM



LTE Band 30 / 5MHz	
Lowest Channel / 5MHz / 1RB0 / 64QAM	**Middle Channel / 5MHz / 1RB0 / 64QAM**
	
Highest Channel / 5MHz / 1RB0 / 64QAM	
	

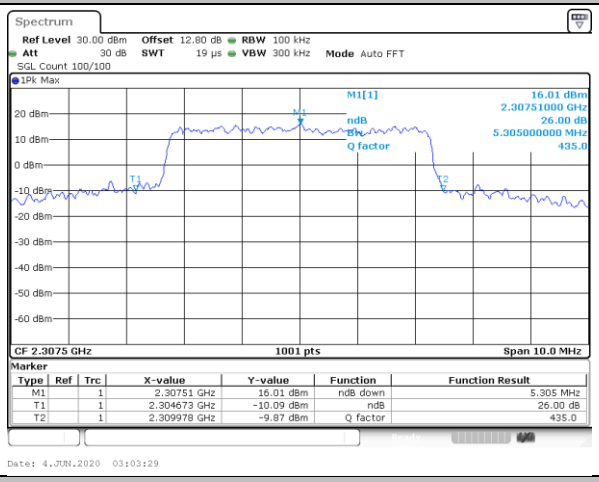
LTE Band 30 / 10MHz	
Lowest Channel / 10MHz / 1RB0 / QPSK	**Lowest Channel / 10MHz / 1RB0 / 16QAM**
	
Lowest Channel / 10MHz / 1RB0 / 64QAM	
	

26dB Bandwidth

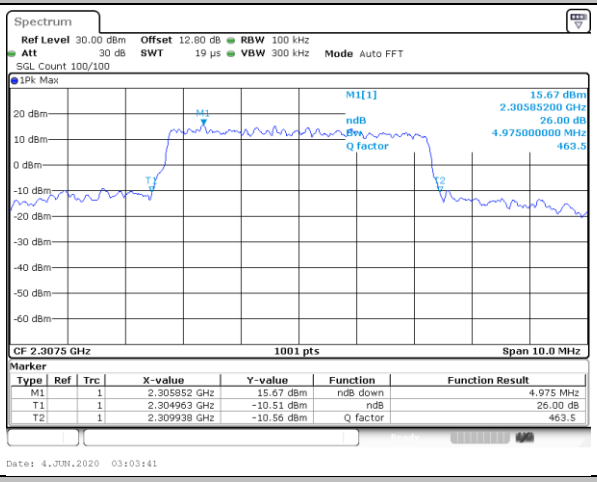
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	5.31	4.98	-	-	-	-	-	-
Middle CH	-	-	-	-	5.01	4.94	9.83	9.95	-	-	-	-
Highest CH	-	-	-	-	4.97	4.96	-	-	-	-	-	-
Mode	LTE Band 30 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.91	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.87	-	10.09	-	-	-	-	-
Highest CH	-	-	-	-	4.96	-	-	-	-	-	-	-

LTE Band 30

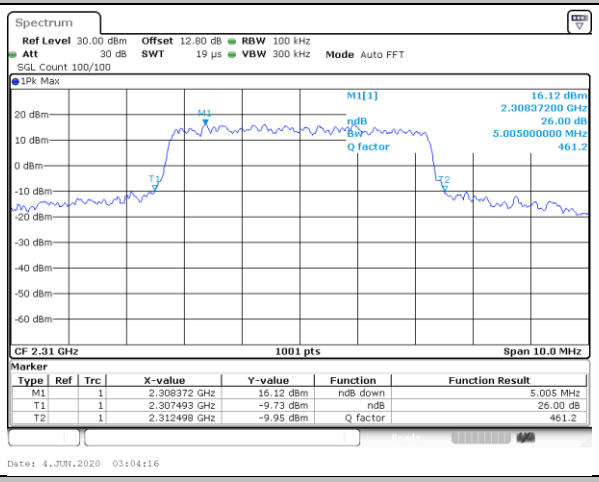
Lowest Channel / 5MHz / QPSK



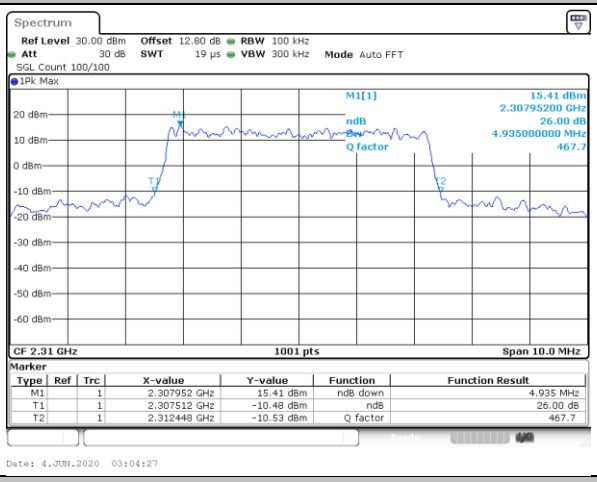
Lowest Channel / 5MHz / 16QAM



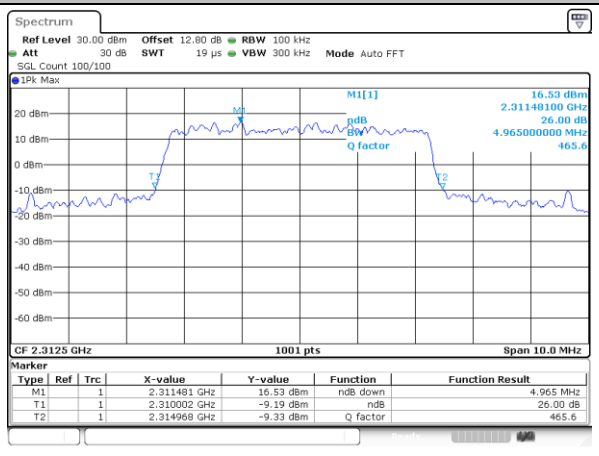
Middle Channel / 5MHz / QPSK



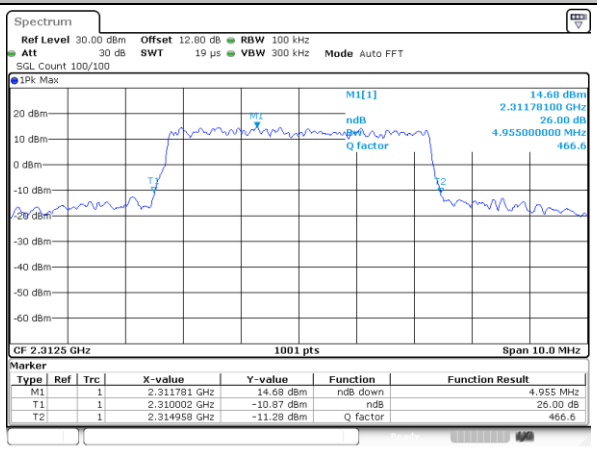
Middle Channel / 5MHz / 16QAM



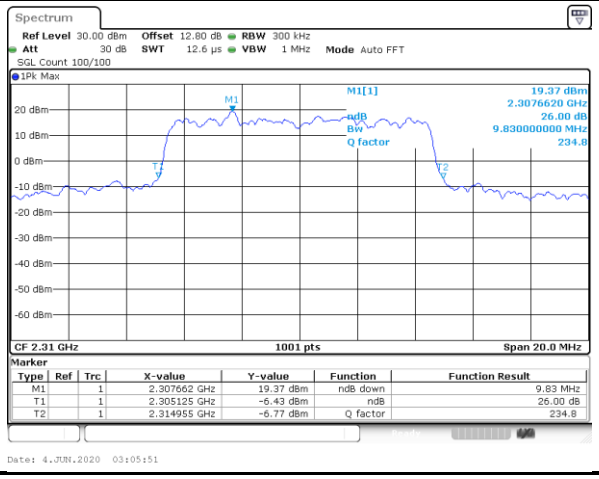
Highest Channel / 5MHz / QPSK

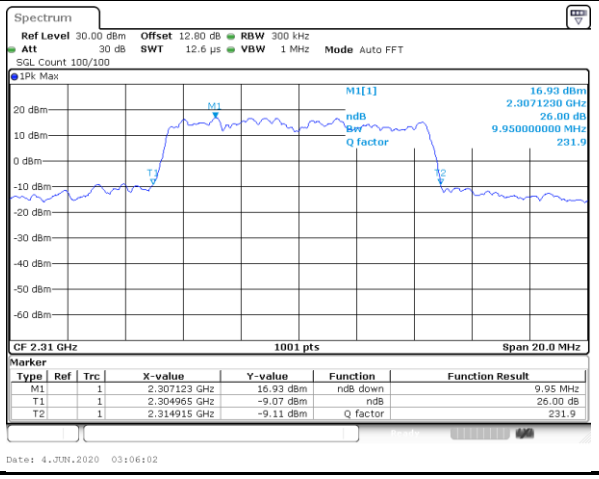


Highest Channel / 5MHz / 16QAM



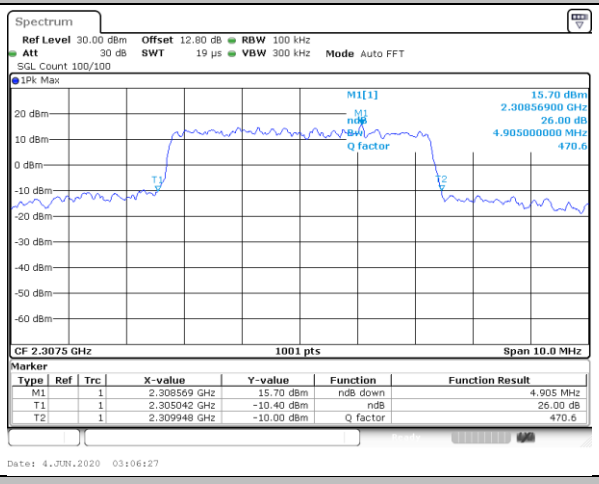
LTE Band 30	
Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM



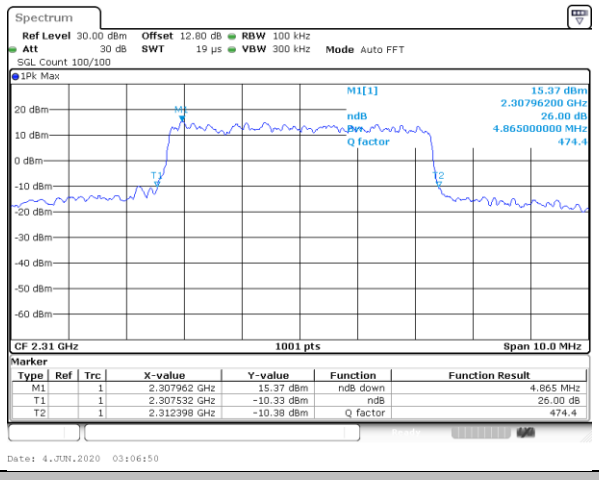


LTE Band 30

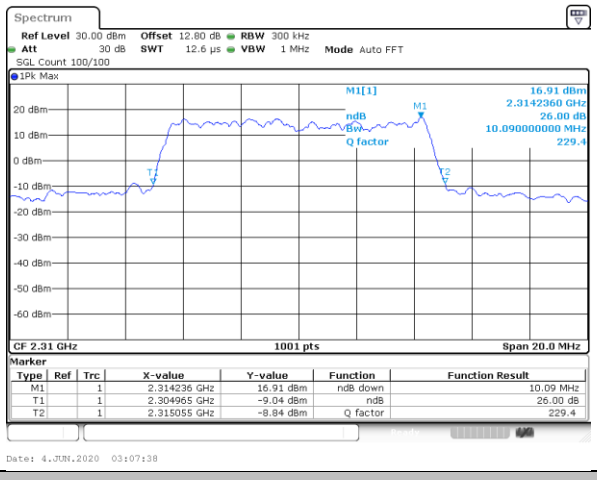
Lowest Channel / 5MHz / 64QAM



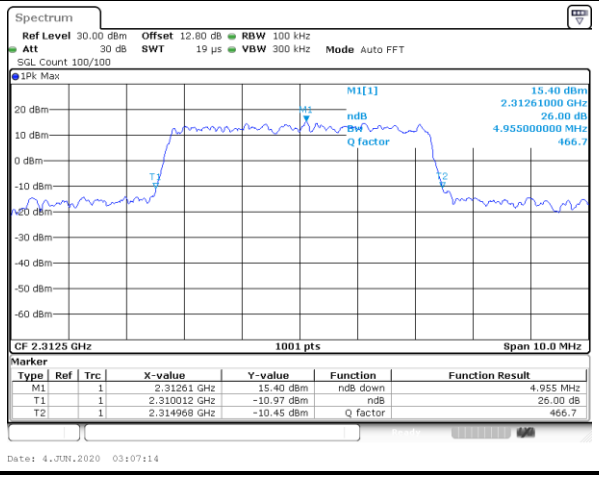
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

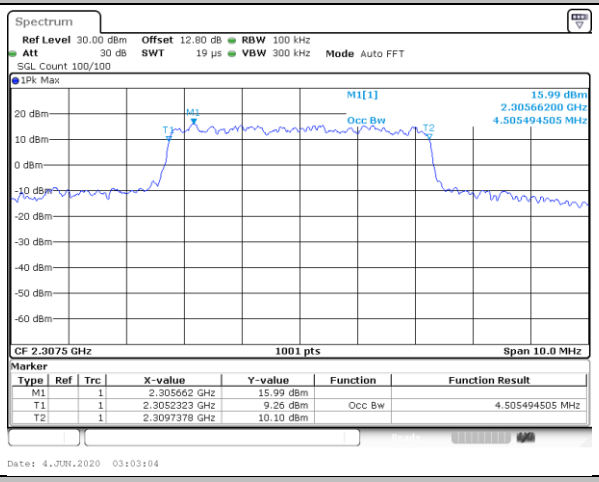


Occupied Bandwidth

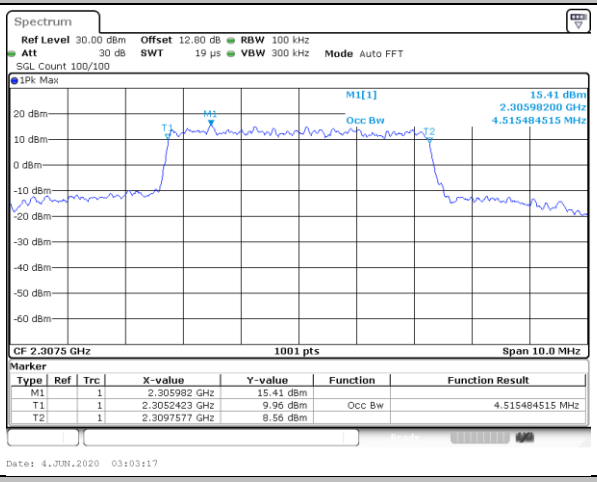
Mode	LTE Band 30 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.51	4.52	-	-	-	-	-	-
Middle CH	-	-	-	-	4.52	4.51	9.17	9.11	-	-	-	-
Highest CH	-	-	-	-	4.52	4.49	-	-	-	-	-	-
Mode	LTE Band 26 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.51	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.51	-	9.05	-	-	-	-	-
Highest CH	-	-	-	-	4.52	-	-	-	-	-	-	-

LTE Band 30

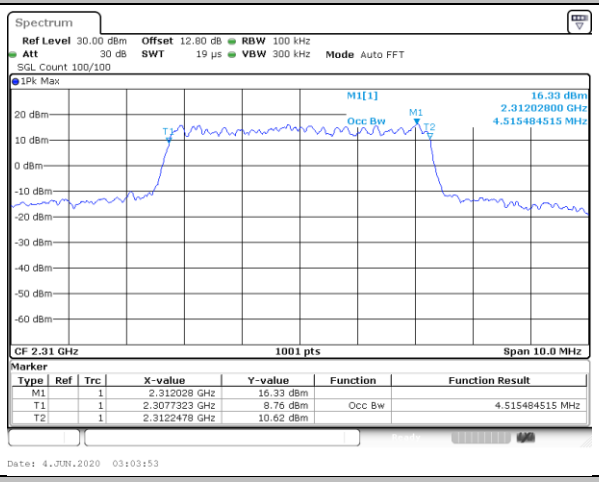
Lowest Channel / 5MHz / QPSK



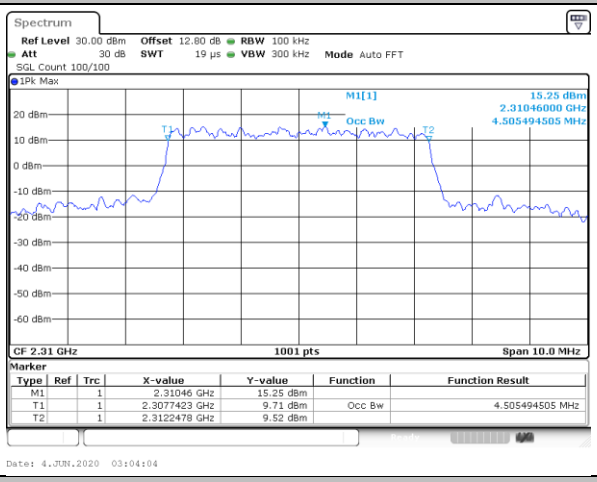
Lowest Channel / 5MHz / 16QAM



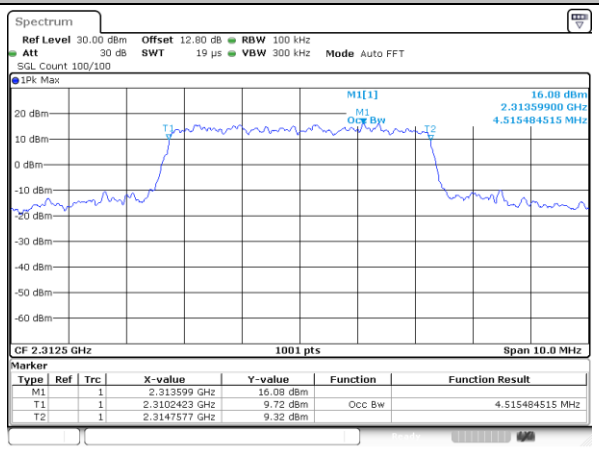
Middle Channel / 5MHz / QPSK



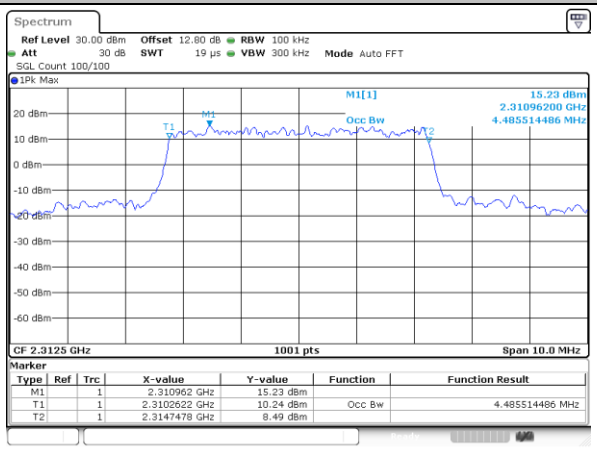
Middle Channel / 5MHz / 16QAM



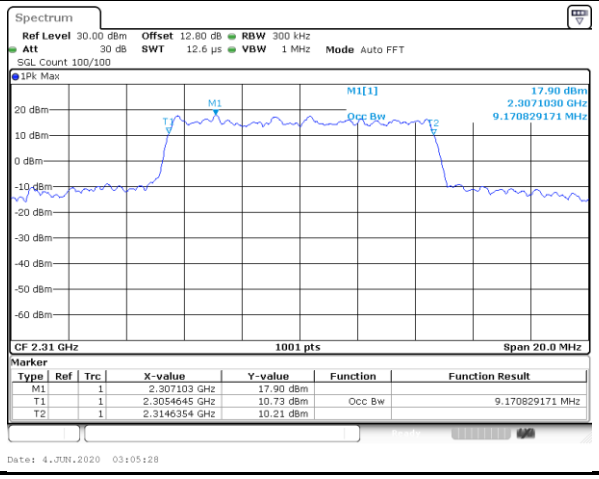
Highest Channel / 5MHz / QPSK

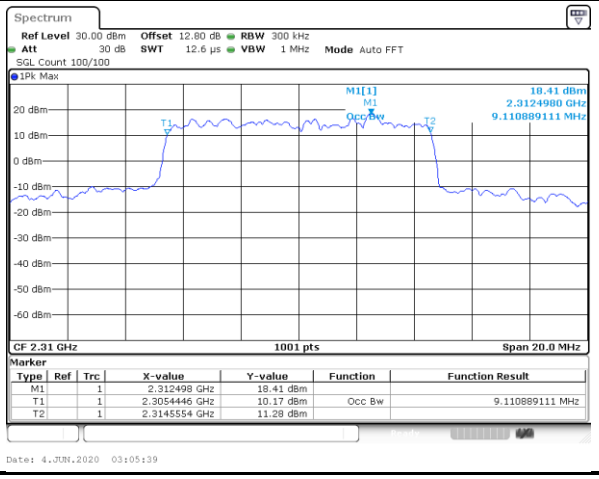


Highest Channel / 5MHz / 16QAM



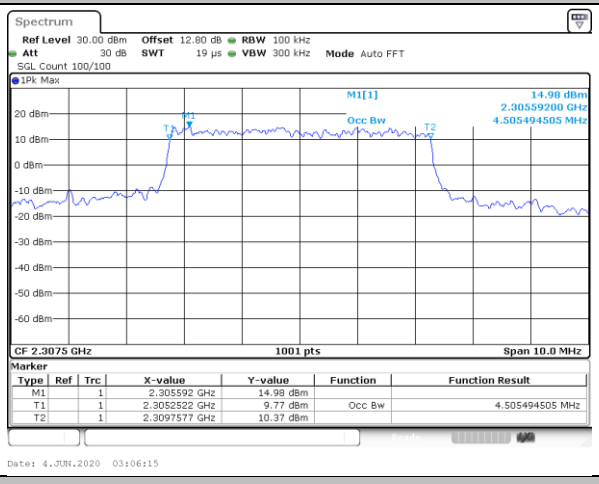
LTE Band 30	
Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM



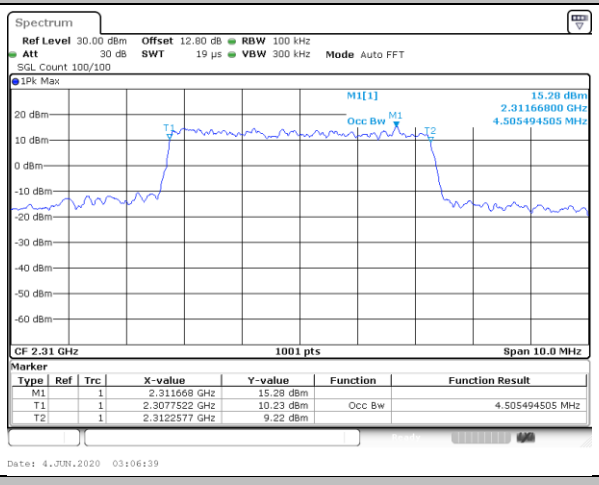


LTE Band 30

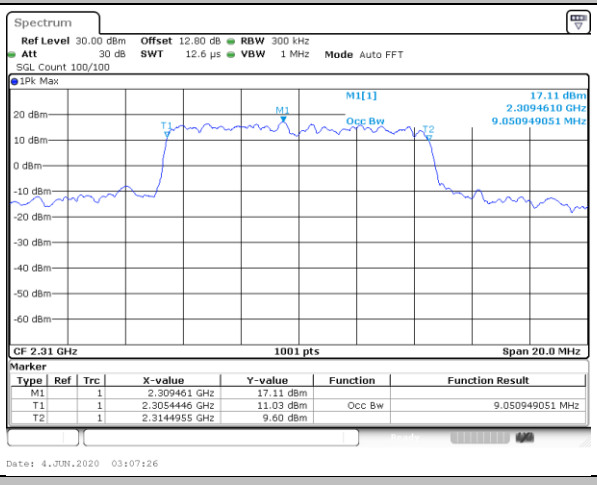
Lowest Channel / 5MHz / 64QAM



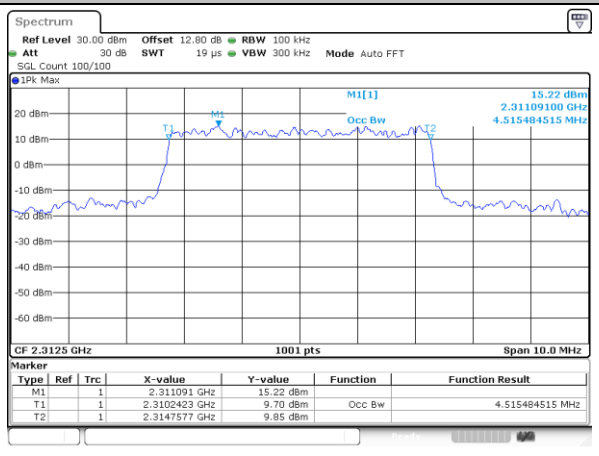
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



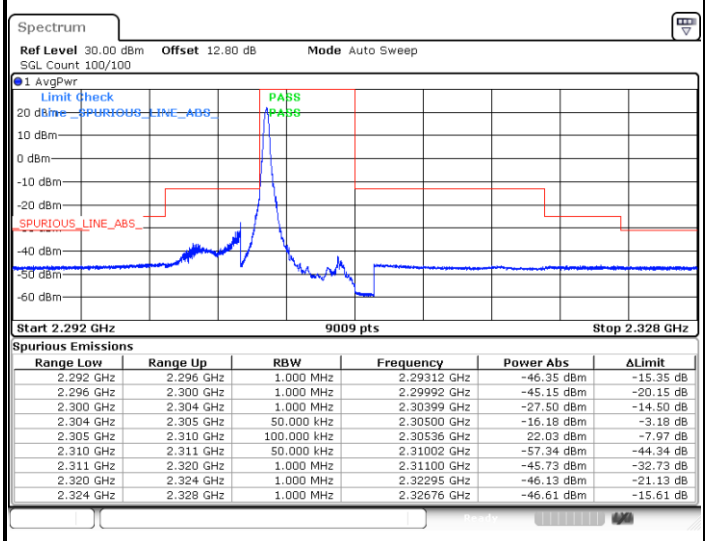
Highest Channel / 5MHz / 64QAM



Conducted Band Edge

LTE Band 30 / 5MHz / QPSK

Lowest Band Edge / 1 RB

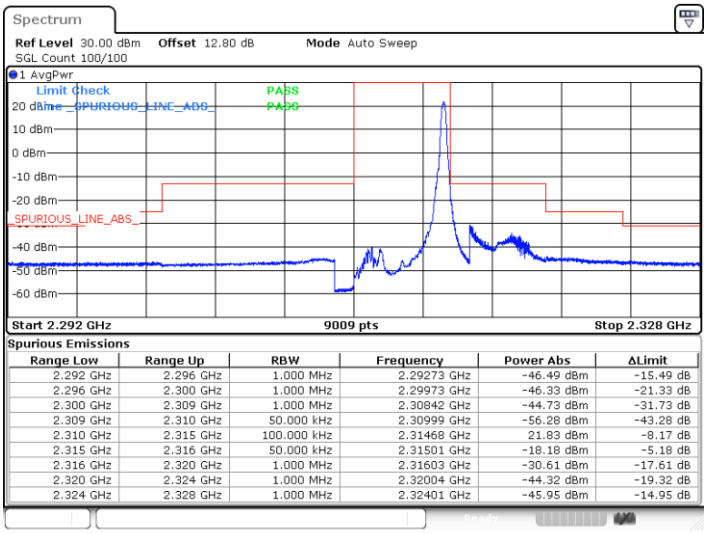


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29312 GHz	-46.35 dBm	-15.35 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29992 GHz	-45.15 dBm	-20.15 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30399 GHz	-27.50 dBm	-14.50 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-16.18 dBm	-3.18 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30536 GHz	22.03 dBm	-7.97 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31002 GHz	-57.34 dBm	-44.34 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31100 GHz	-45.73 dBm	-32.73 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32295 GHz	-46.13 dBm	-21.13 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32676 GHz	-46.61 dBm	-15.61 dB

Date: 4.JUN.2020 03:35:14

Highest Band Edge / 1 RB

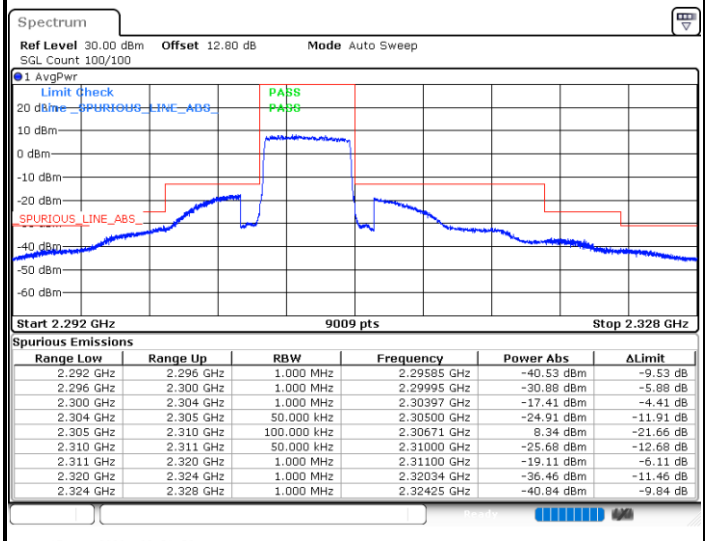


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29273 GHz	-46.49 dBm	-15.49 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29973 GHz	-46.33 dBm	-21.33 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30842 GHz	-44.73 dBm	-31.73 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-56.28 dBm	-43.28 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31468 GHz	21.83 dBm	-8.17 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31501 GHz	-18.18 dBm	-5.18 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31603 GHz	-30.61 dBm	-17.61 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32004 GHz	-44.32 dBm	-19.32 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-45.95 dBm	-14.95 dB

Date: 4.JUN.2020 03:41:31

Lowest Band Edge / Full RB

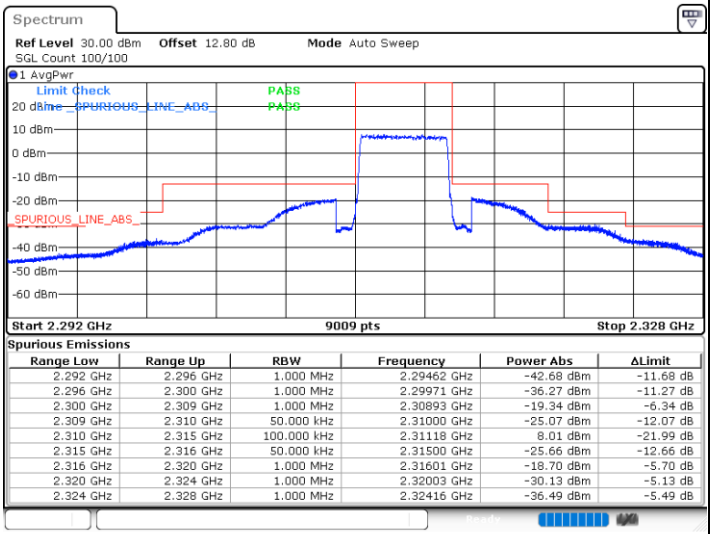


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29585 GHz	-40.53 dBm	-9.53 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29995 GHz	-30.88 dBm	-5.88 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30397 GHz	-17.41 dBm	-4.41 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-24.91 dBm	-11.91 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30671 GHz	8.34 dBm	-21.66 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-25.68 dBm	-12.68 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31100 GHz	-19.11 dBm	-6.11 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32034 GHz	-36.46 dBm	-11.46 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32425 GHz	-40.84 dBm	-9.84 dB

Date: 17.JUN.2020 23:51:59

Highest Band Edge / Full RB



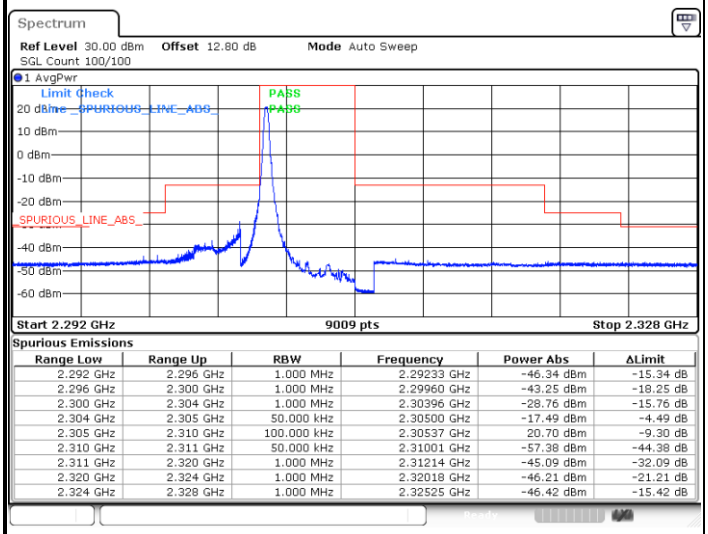
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29462 GHz	-42.68 dBm	-11.68 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29971 GHz	-36.27 dBm	-11.27 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30893 GHz	-19.34 dBm	-6.34 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-25.07 dBm	-12.07 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31118 GHz	8.01 dBm	-21.99 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-25.66 dBm	-12.66 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31601 GHz	-18.70 dBm	-5.70 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32003 GHz	-30.13 dBm	-5.13 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32416 GHz	-36.49 dBm	-5.49 dB

Date: 17.JUN.2020 23:51:23

LTE Band 30 / 5MHz / 16QAM

Lowest Band Edge / 1RB

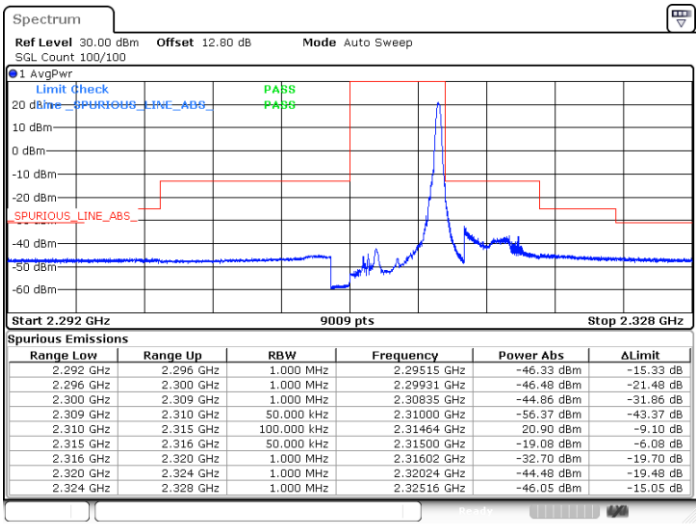


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29233 GHz	-46.34 dBm	-15.34 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29960 GHz	-43.25 dBm	-18.25 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30396 GHz	-28.76 dBm	-15.76 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-17.49 dBm	-4.49 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30537 GHz	20.70 dBm	-9.30 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31001 GHz	-57.38 dBm	-44.38 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31214 GHz	-45.09 dBm	-32.09 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32018 GHz	-46.21 dBm	-21.21 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32525 GHz	-46.42 dBm	-15.42 dB

Date: 4.JUN.2020 03:36:17

Highest Band Edge / 1 RB

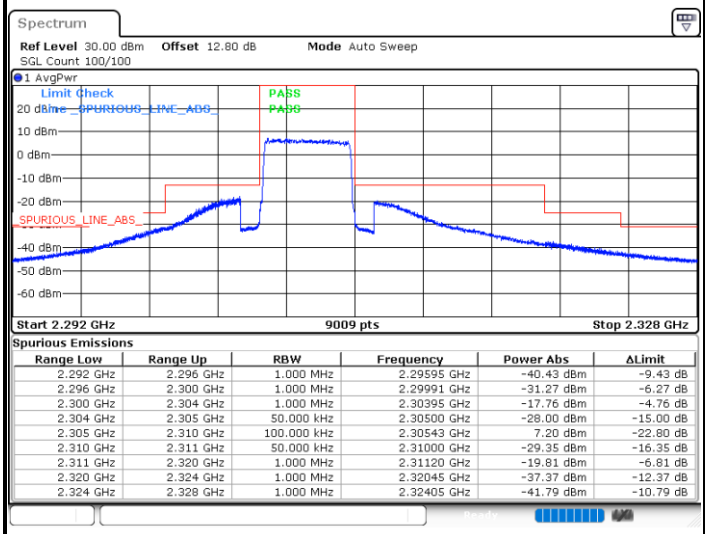


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29515 GHz	-46.33 dBm	-15.33 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29931 GHz	-46.48 dBm	-21.48 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30835 GHz	-44.86 dBm	-31.86 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-56.37 dBm	-43.37 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31464 GHz	20.90 dBm	-9.10 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-19.08 dBm	-6.08 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31602 GHz	-32.70 dBm	-19.70 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32024 GHz	-44.48 dBm	-19.48 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32516 GHz	-46.05 dBm	-15.05 dB

Date: 4.JUN.2020 03:42:34

Lowest Band Edge / Full RB

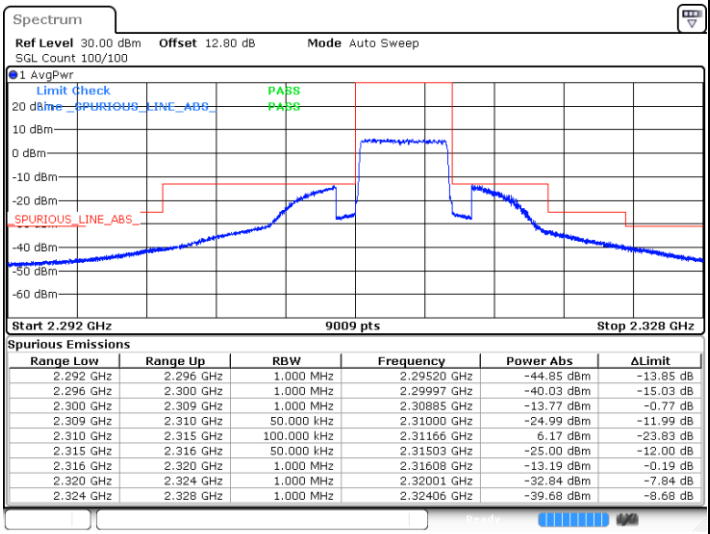


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29595 GHz	-40.43 dBm	-9.43 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29991 GHz	-31.27 dBm	-6.27 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30395 GHz	-17.76 dBm	-4.76 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-28.00 dBm	-15.00 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30543 GHz	7.20 dBm	-22.80 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31000 GHz	-29.35 dBm	-16.35 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31120 GHz	-19.81 dBm	-6.81 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32045 GHz	-37.37 dBm	-12.37 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32405 GHz	-41.79 dBm	-10.79 dB

Date: 17.JUN.2020 23:52:34

Highest Band Edge / Full RB



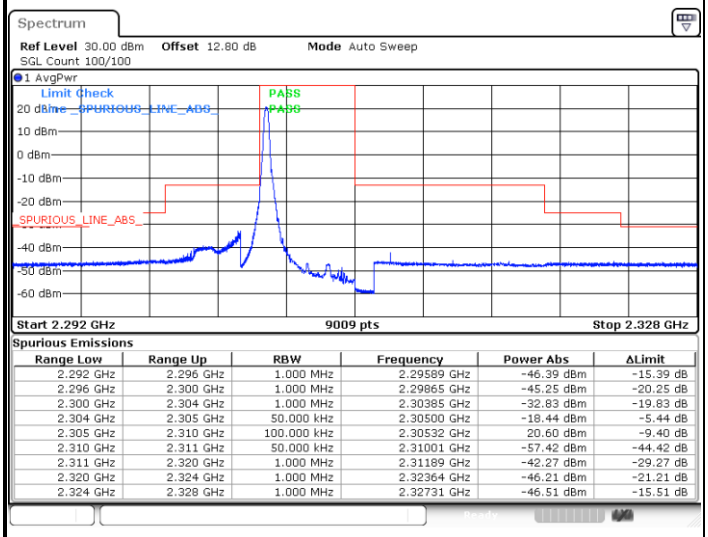
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29520 GHz	-44.85 dBm	-13.85 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29997 GHz	-40.03 dBm	-15.03 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30885 GHz	-13.77 dBm	-0.77 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.31000 GHz	-24.99 dBm	-11.99 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31166 GHz	6.17 dBm	-23.83 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31503 GHz	-25.00 dBm	-12.00 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31608 GHz	-13.19 dBm	-0.19 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-32.84 dBm	-7.84 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32406 GHz	-39.68 dBm	-8.68 dB

Date: 10.JUN.2020 05:13:31

LTE Band 30 / 5MHz / 64QAM

Lowest Band Edge / 1RB

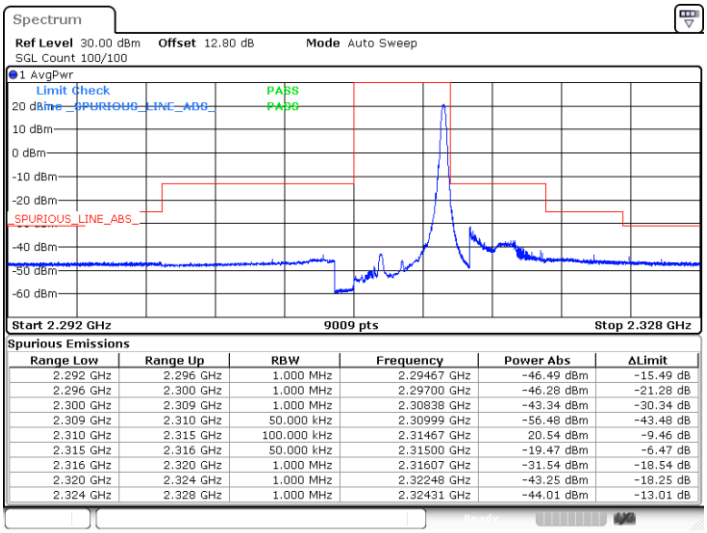


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29589 GHz	-46.39 dBm	-15.39 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29865 GHz	-45.25 dBm	-20.25 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30385 GHz	-32.83 dBm	-19.83 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30500 GHz	-18.44 dBm	-5.44 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30532 GHz	20.60 dBm	-9.40 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31001 GHz	-57.42 dBm	-44.42 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31189 GHz	-42.27 dBm	-29.27 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32364 GHz	-46.21 dBm	-21.21 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32731 GHz	-46.51 dBm	-15.51 dB

Date: 4.JUN.2020 03:37:20

Highest Band Edge / 1 RB

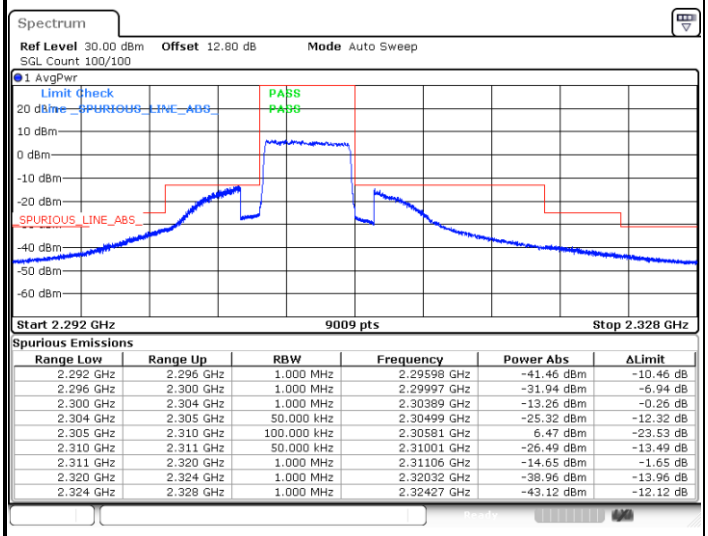


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29467 GHz	-46.49 dBm	-15.49 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29700 GHz	-46.28 dBm	-21.28 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30838 GHz	-43.34 dBm	-30.34 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-56.48 dBm	-43.48 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31467 GHz	20.54 dBm	-9.46 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-19.47 dBm	-6.47 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31607 GHz	-31.54 dBm	-18.54 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32248 GHz	-43.25 dBm	-18.25 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32431 GHz	-44.01 dBm	-13.01 dB

Date: 4.JUN.2020 03:43:37

Lowest Band Edge / Full RB

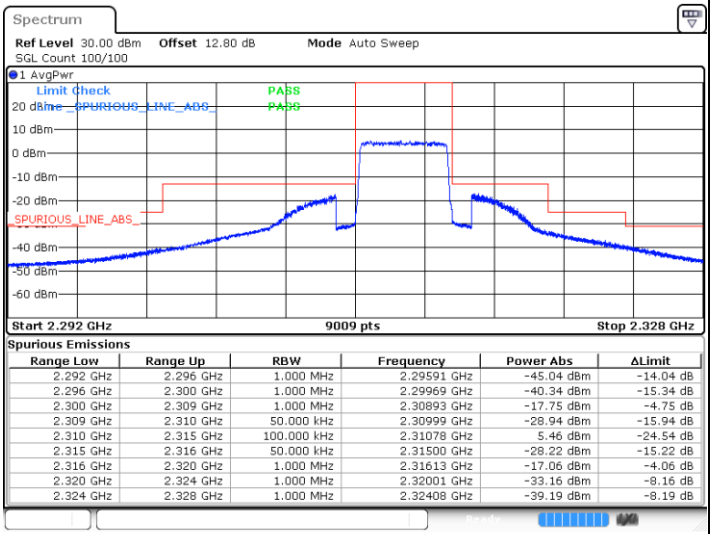


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29598 GHz	-41.46 dBm	-10.46 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29997 GHz	-31.94 dBm	-6.94 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30389 GHz	-13.26 dBm	-0.26 dB
2.304 GHz	2.305 GHz	50.000 kHz	2.30499 GHz	-25.32 dBm	-12.32 dB
2.305 GHz	2.310 GHz	100.000 kHz	2.30581 GHz	6.47 dBm	-23.53 dB
2.310 GHz	2.311 GHz	50.000 kHz	2.31001 GHz	-26.49 dBm	-13.49 dB
2.311 GHz	2.320 GHz	1.000 MHz	2.31106 GHz	-14.65 dBm	-1.65 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32032 GHz	-38.96 dBm	-13.96 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32427 GHz	-43.12 dBm	-12.12 dB

Date: 6.JUN.2020 07:10:19

Highest Band Edge / Full RB



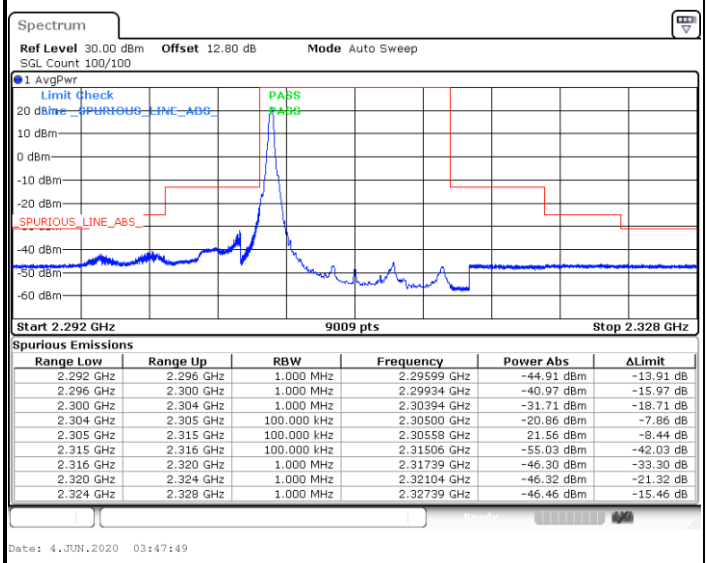
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29591 GHz	-45.04 dBm	-14.04 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29969 GHz	-40.34 dBm	-15.34 dB
2.300 GHz	2.309 GHz	1.000 MHz	2.30893 GHz	-17.75 dBm	-4.75 dB
2.309 GHz	2.310 GHz	50.000 kHz	2.30999 GHz	-28.94 dBm	-15.94 dB
2.310 GHz	2.315 GHz	100.000 kHz	2.31078 GHz	5.46 dBm	-24.54 dB
2.315 GHz	2.316 GHz	50.000 kHz	2.31500 GHz	-28.22 dBm	-15.22 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31613 GHz	-17.06 dBm	-4.06 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-33.16 dBm	-8.16 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32408 GHz	-39.19 dBm	-8.19 dB

Date: 10.JUN.2020 05:14:48

LTE Band 30 / 10MHz / QPSK

Lowest Band Edge / 1 RB

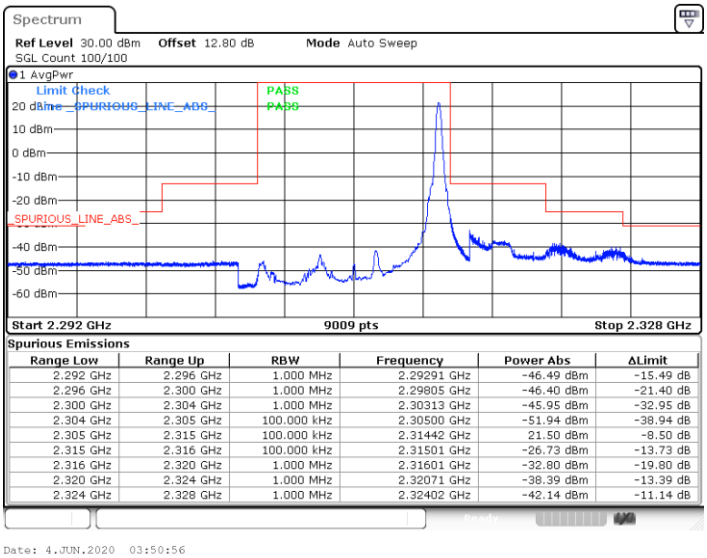


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-44.91 dBm	-13.91 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29934 GHz	-40.97 dBm	-15.97 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30394 GHz	-31.71 dBm	-18.71 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-20.86 dBm	-7.86 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30558 GHz	21.56 dBm	-8.44 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31506 GHz	-55.03 dBm	-42.03 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31739 GHz	-46.30 dBm	-33.30 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32104 GHz	-46.32 dBm	-21.32 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32739 GHz	-46.46 dBm	-15.46 dB

Date: 4.JUN.2020 03:47:49

Highest Band Edge / 1 RB

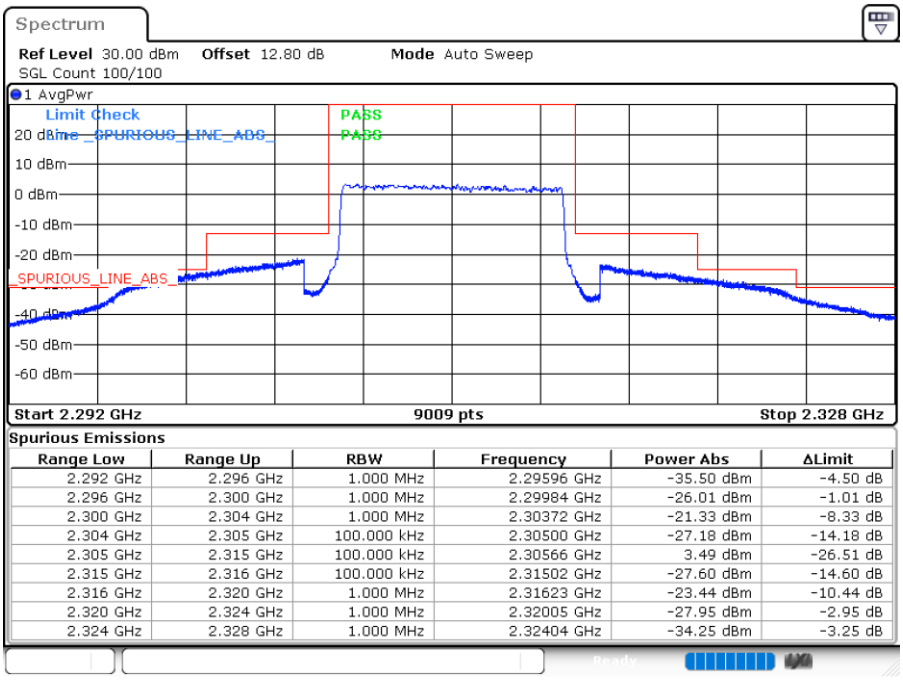


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29291 GHz	-46.49 dBm	-15.49 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29805 GHz	-46.40 dBm	-21.40 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30313 GHz	-45.95 dBm	-32.95 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-51.94 dBm	-38.94 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31442 GHz	21.50 dBm	-8.50 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-26.73 dBm	-13.73 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31601 GHz	-32.80 dBm	-19.80 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32071 GHz	-38.39 dBm	-13.39 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32402 GHz	-42.14 dBm	-11.14 dB

Date: 4.JUN.2020 03:50:56

Band Edge / Full RB



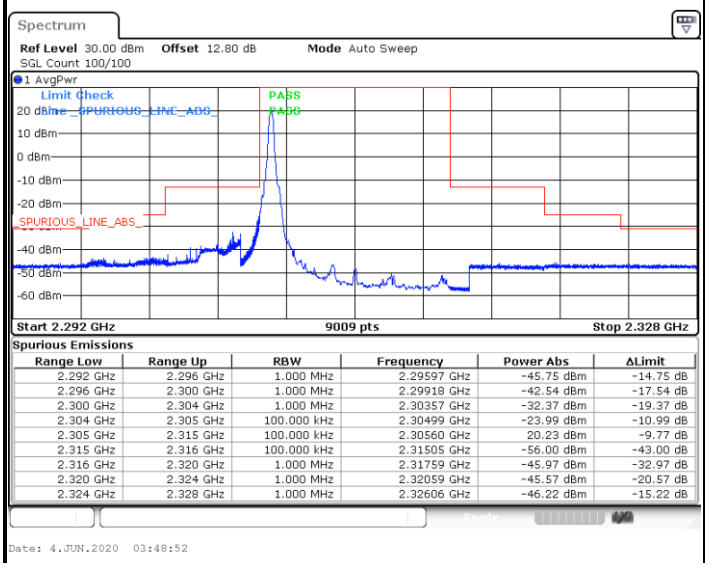
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29596 GHz	-35.50 dBm	-4.50 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29984 GHz	-26.01 dBm	-1.01 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30372 GHz	-21.33 dBm	-8.33 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-27.18 dBm	-14.18 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30566 GHz	3.49 dBm	-26.51 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-27.60 dBm	-14.60 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31623 GHz	-23.44 dBm	-10.44 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32005 GHz	-27.95 dBm	-2.95 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32404 GHz	-34.25 dBm	-3.25 dB

Date: 17.JUL.2020 21:21:28

LTE Band 30 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

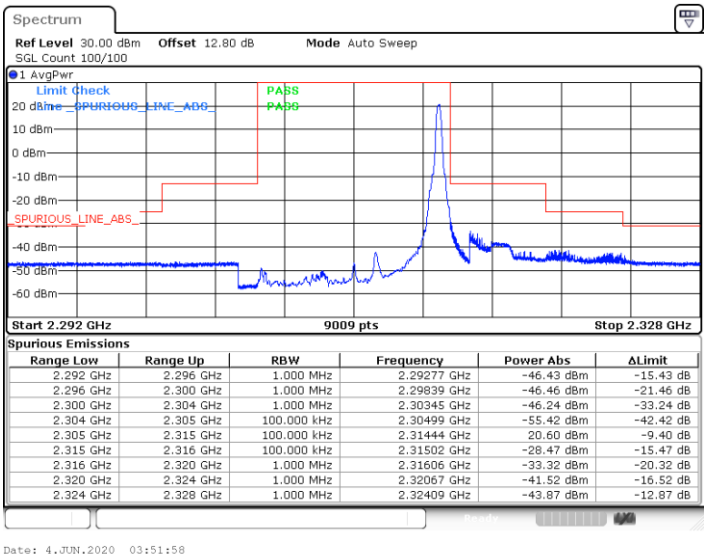


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29597 GHz	-45.75 dBm	-14.75 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29918 GHz	-42.54 dBm	-17.54 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30357 GHz	-32.37 dBm	-19.37 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-23.99 dBm	-10.99 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30560 GHz	20.23 dBm	-9.77 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31505 GHz	-56.00 dBm	-43.00 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31759 GHz	-45.97 dBm	-32.97 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32059 GHz	-45.57 dBm	-20.57 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32606 GHz	-46.22 dBm	-15.22 dB

Date: 4.JUN.2020 03:48:52

Highest Band Edge / 1 RB

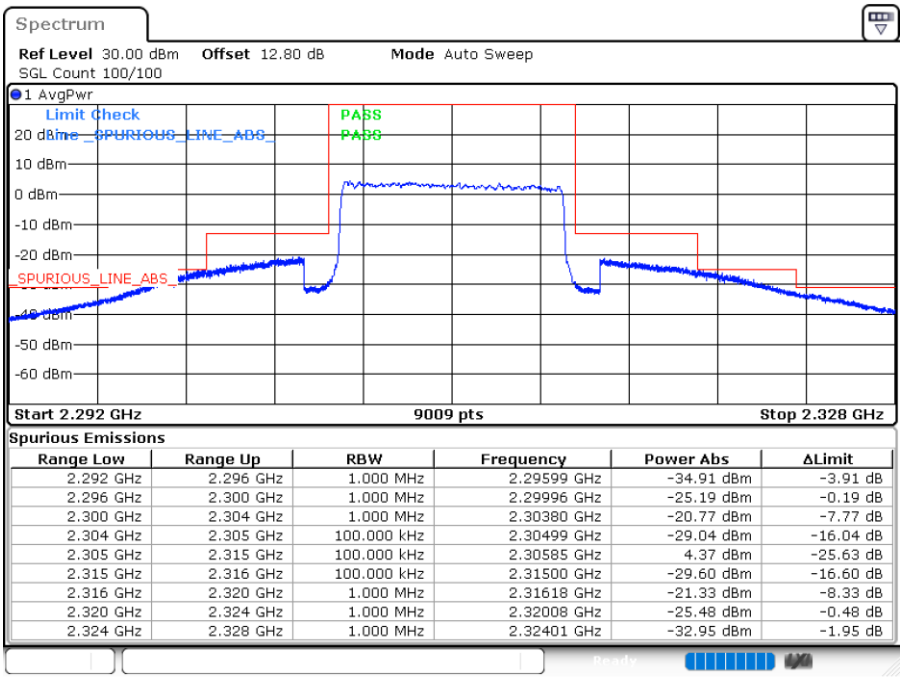


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29277 GHz	-46.43 dBm	-15.43 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29839 GHz	-46.46 dBm	-21.46 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30345 GHz	-46.24 dBm	-33.24 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-55.42 dBm	-42.42 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31444 GHz	20.60 dBm	-9.40 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31502 GHz	-28.47 dBm	-15.47 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31606 GHz	-33.32 dBm	-20.32 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32067 GHz	-41.52 dBm	-16.52 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32409 GHz	-43.87 dBm	-12.87 dB

Date: 4.JUN.2020 03:51:58

Band Edge / Full RB



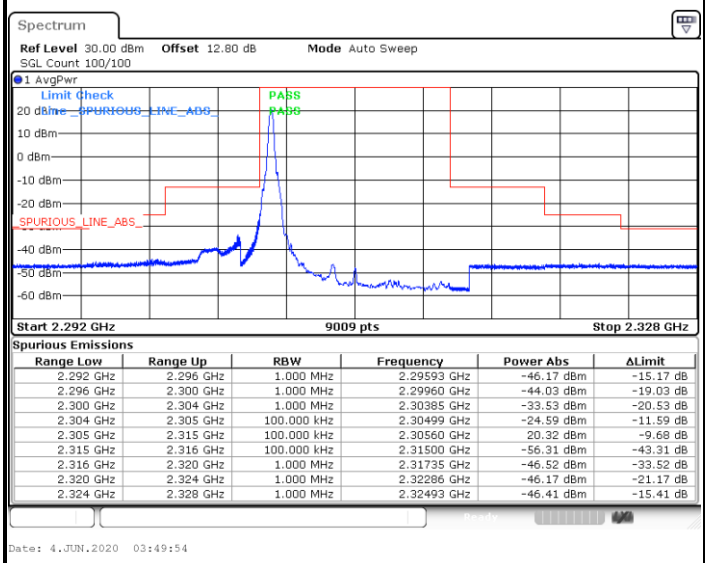
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29599 GHz	-34.91 dBm	-3.91 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29996 GHz	-25.19 dBm	-0.19 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30380 GHz	-20.77 dBm	-7.77 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-29.04 dBm	-16.04 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30585 GHz	4.37 dBm	-25.63 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-29.60 dBm	-16.60 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31618 GHz	-21.33 dBm	-8.33 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32008 GHz	-25.48 dBm	-0.48 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32401 GHz	-32.95 dBm	-1.95 dB

Date: 17.JUN.2020 23:55:24

LTE Band 30 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

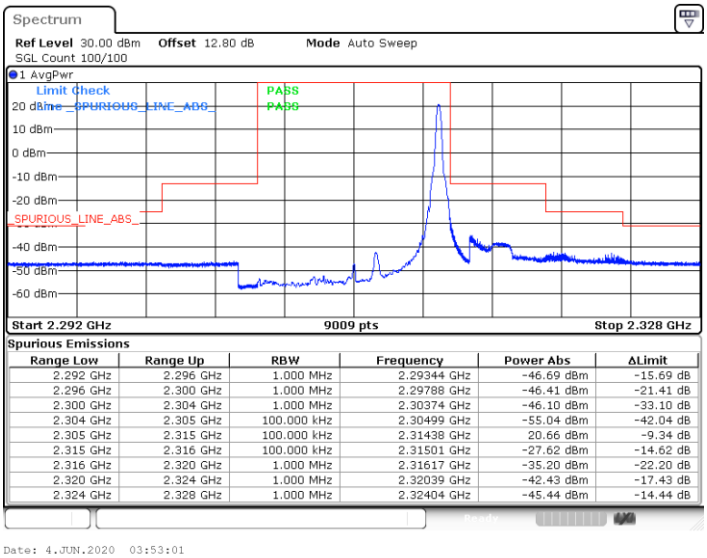


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29593 GHz	-46.17 dBm	-15.17 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29960 GHz	-44.03 dBm	-19.03 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30385 GHz	-33.53 dBm	-20.53 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-24.59 dBm	-11.59 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30560 GHz	20.32 dBm	-9.68 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-56.31 dBm	-43.31 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31735 GHz	-46.52 dBm	-33.52 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32286 GHz	-46.17 dBm	-21.17 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32493 GHz	-46.41 dBm	-15.41 dB

Date: 4.JUN.2020 03:49:54

Highest Band Edge / 1 RB

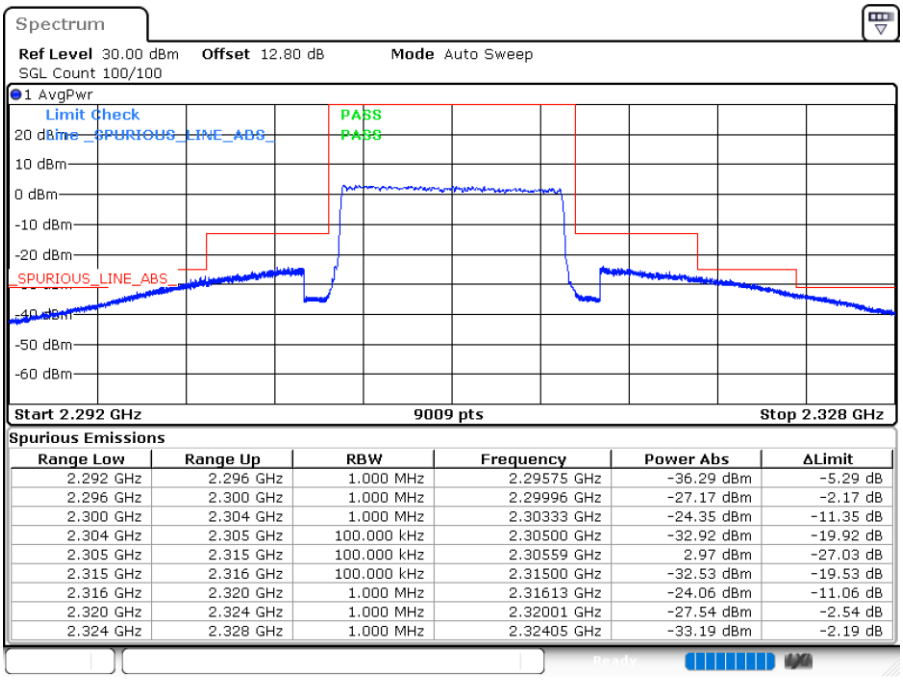


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29344 GHz	-46.69 dBm	-15.69 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29788 GHz	-46.41 dBm	-21.41 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30374 GHz	-46.10 dBm	-33.10 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30499 GHz	-55.04 dBm	-42.04 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.31438 GHz	20.66 dBm	-9.34 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31501 GHz	-27.62 dBm	-14.62 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31617 GHz	-35.20 dBm	-22.20 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32039 GHz	-42.43 dBm	-17.43 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32404 GHz	-45.44 dBm	-14.44 dB

Date: 4.JUN.2020 03:53:01

Band Edge / Full RB



Spurious Emissions

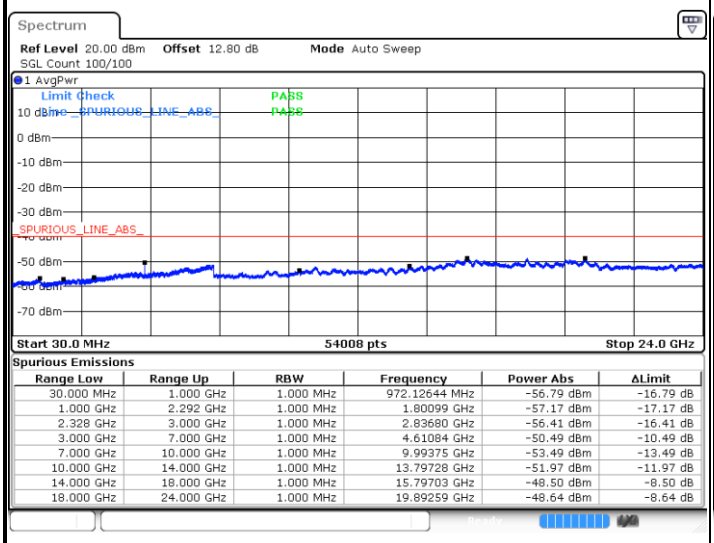
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.292 GHz	2.296 GHz	1.000 MHz	2.29575 GHz	-36.29 dBm	-5.29 dB
2.296 GHz	2.300 GHz	1.000 MHz	2.29996 GHz	-27.17 dBm	-2.17 dB
2.300 GHz	2.304 GHz	1.000 MHz	2.30333 GHz	-24.35 dBm	-11.35 dB
2.304 GHz	2.305 GHz	100.000 kHz	2.30500 GHz	-32.92 dBm	-19.92 dB
2.305 GHz	2.315 GHz	100.000 kHz	2.30559 GHz	2.97 dBm	-27.03 dB
2.315 GHz	2.316 GHz	100.000 kHz	2.31500 GHz	-32.53 dBm	-19.53 dB
2.316 GHz	2.320 GHz	1.000 MHz	2.31613 GHz	-24.06 dBm	-11.06 dB
2.320 GHz	2.324 GHz	1.000 MHz	2.32001 GHz	-27.54 dBm	-2.54 dB
2.324 GHz	2.328 GHz	1.000 MHz	2.32405 GHz	-33.19 dBm	-2.19 dB

Date: 17.JUN.2020 23:55:54

Conducted Spurious Emission

LTE Band 30 / 5MHz

Lowest Channel / QPSK

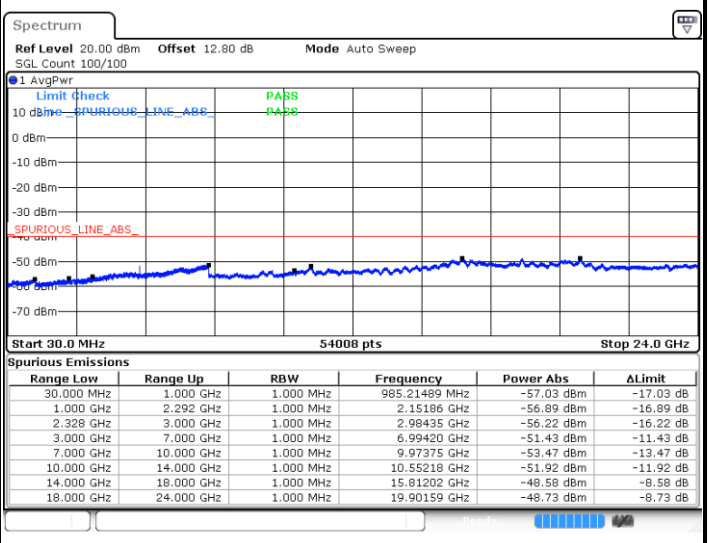


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	972.12644 MHz	-56.79 dBm	-16.79 dB
1.000 GHz	2.292 GHz	1.000 MHz	1.80099 GHz	-57.17 dBm	-17.17 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.83680 GHz	-56.41 dBm	-16.41 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61084 GHz	-50.49 dBm	-10.49 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.99375 GHz	-53.49 dBm	-13.49 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.79728 GHz	-51.97 dBm	-11.97 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.79703 GHz	-48.50 dBm	-8.50 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.89259 GHz	-48.64 dBm	-8.64 dB

Date: 10.JUN.2020 06:42:12

Lowest Channel / 16QAM

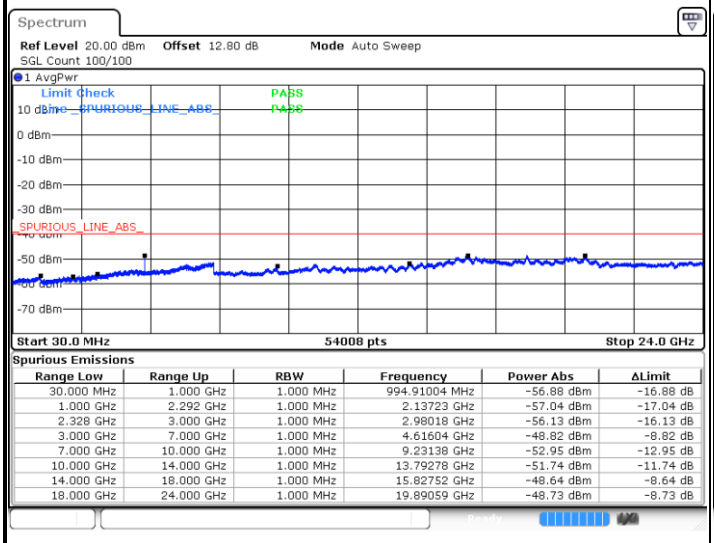


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	985.21489 MHz	-57.03 dBm	-17.03 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15186 GHz	-56.89 dBm	-16.89 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98435 GHz	-56.22 dBm	-16.22 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99420 GHz	-51.43 dBm	-11.43 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.97375 GHz	-53.47 dBm	-13.47 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.55218 GHz	-51.92 dBm	-11.92 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.81202 GHz	-48.58 dBm	-8.58 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90159 GHz	-48.73 dBm	-8.73 dB

Date: 10.JUN.2020 06:43:02

Middle Channel / QPSK

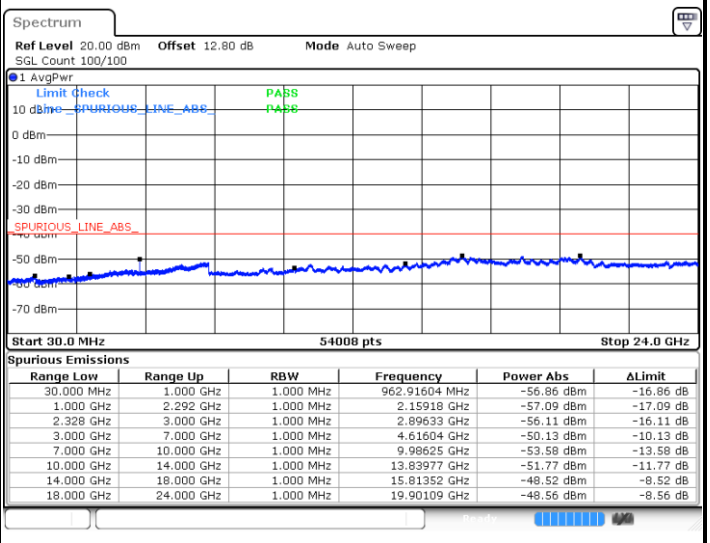


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	994.91004 MHz	-56.88 dBm	-16.88 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.13723 GHz	-57.04 dBm	-17.04 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98018 GHz	-56.13 dBm	-16.13 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61604 GHz	-48.82 dBm	-8.82 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.23138 GHz	-52.95 dBm	-12.95 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.79278 GHz	-51.74 dBm	-11.74 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.82752 GHz	-48.64 dBm	-8.64 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.89059 GHz	-48.73 dBm	-8.73 dB

Date: 10.JUN.2020 06:43:52

Middle Channel / 16QAM



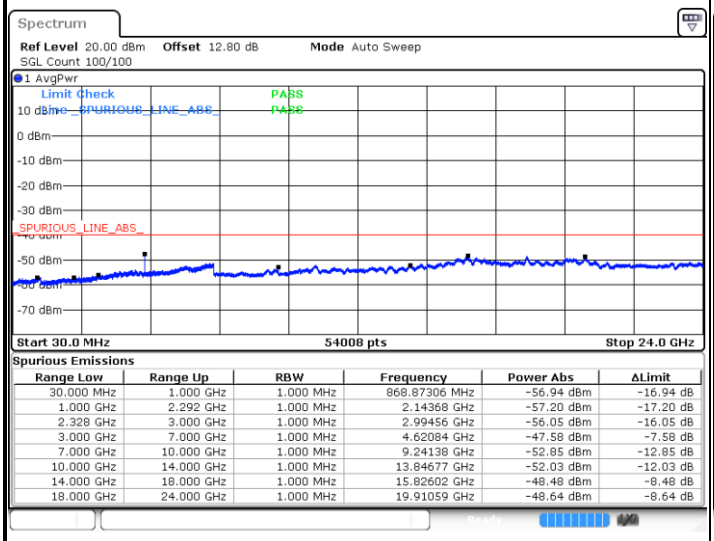
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	962.91604 MHz	-56.86 dBm	-16.86 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15918 GHz	-57.09 dBm	-17.09 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.89633 GHz	-56.11 dBm	-16.11 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61604 GHz	-50.13 dBm	-10.13 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.98625 GHz	-53.58 dBm	-13.58 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.83977 GHz	-51.77 dBm	-11.77 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.81352 GHz	-48.52 dBm	-8.52 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90109 GHz	-48.56 dBm	-8.56 dB

Date: 10.JUN.2020 06:44:42

LTE Band 30 / 5MHz

Highest Channel / QPSK

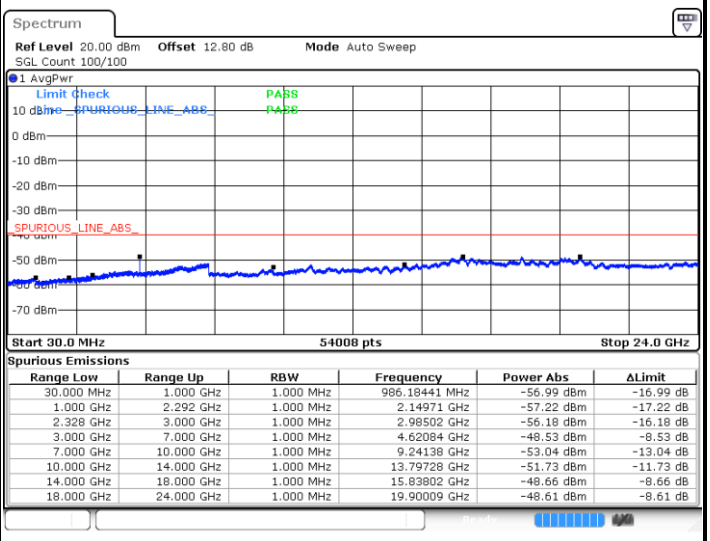


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	868.87306 MHz	-56.94 dBm	-16.94 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.14368 GHz	-57.20 dBm	-17.20 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99456 GHz	-56.05 dBm	-16.05 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62084 GHz	-47.58 dBm	-7.58 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.24138 GHz	-52.85 dBm	-12.85 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.84677 GHz	-52.03 dBm	-12.03 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.82602 GHz	-48.48 dBm	-8.48 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.91059 GHz	-48.64 dBm	-8.64 dB

Date: 10.JUN.2020 06:45:32

Highest Channel / 16QAM



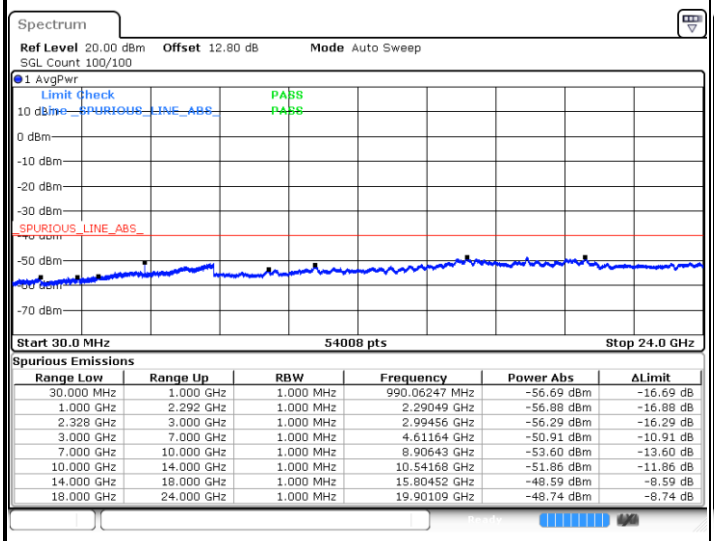
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.18441 MHz	-56.99 dBm	-16.99 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.14971 GHz	-57.22 dBm	-17.22 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98502 GHz	-56.18 dBm	-16.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62084 GHz	-48.53 dBm	-8.53 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.24138 GHz	-53.04 dBm	-13.04 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.79728 GHz	-51.73 dBm	-11.73 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.83802 GHz	-48.66 dBm	-8.66 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90009 GHz	-48.61 dBm	-8.61 dB

Date: 10.JUN.2020 06:46:22

LTE Band 30 / 10MHz

Middle Channel / QPSK

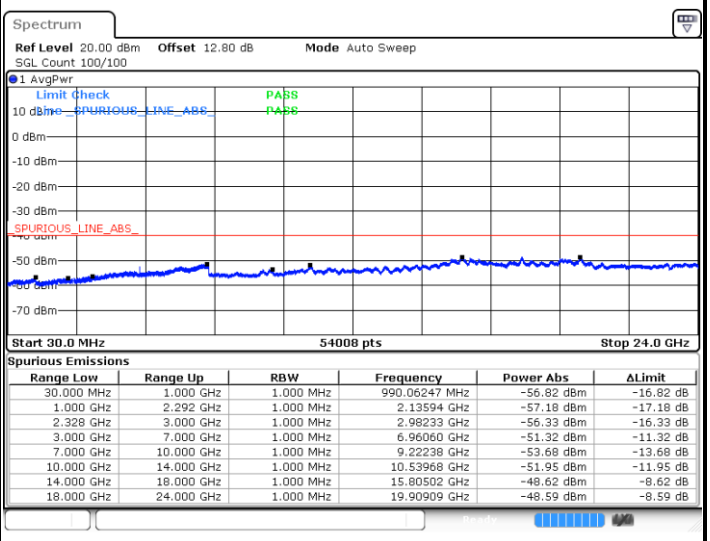


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.06247 MHz	-56.69 dBm	-16.69 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.29049 GHz	-56.88 dBm	-16.88 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99456 GHz	-56.29 dBm	-16.29 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.61164 GHz	-50.91 dBm	-10.91 dB
7.000 GHz	10.000 GHz	1.000 MHz	8.90643 GHz	-53.60 dBm	-13.60 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.54168 GHz	-51.86 dBm	-11.86 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.80452 GHz	-48.59 dBm	-8.59 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90109 GHz	-48.74 dBm	-8.74 dB

Date: 10.JUN.2020 06:50:31

Middle Channel / 16QAM



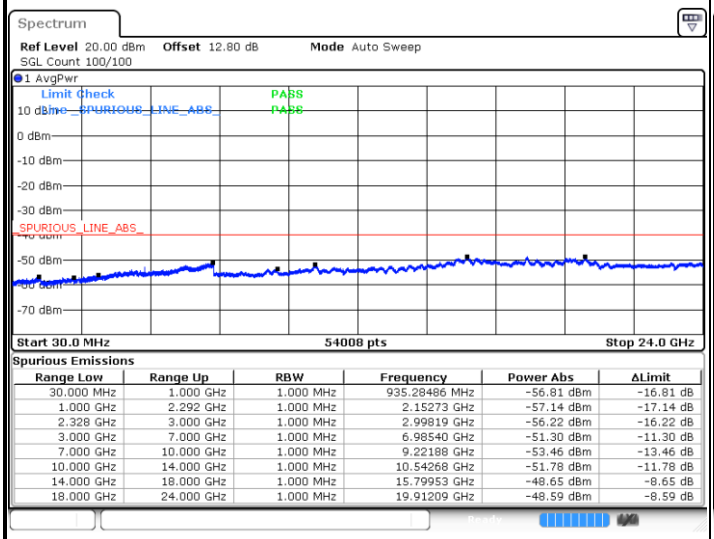
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.06247 MHz	-56.82 dBm	-16.82 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.13594 GHz	-57.18 dBm	-17.18 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98233 GHz	-56.33 dBm	-16.33 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96060 GHz	-51.32 dBm	-11.32 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.22238 GHz	-53.68 dBm	-13.68 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.53968 GHz	-51.95 dBm	-11.95 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.80502 GHz	-48.62 dBm	-8.62 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90909 GHz	-48.59 dBm	-8.59 dB

Date: 10.JUN.2020 06:51:20

LTE Band 30 / 5MHz

Lowest Channel / 64QAM

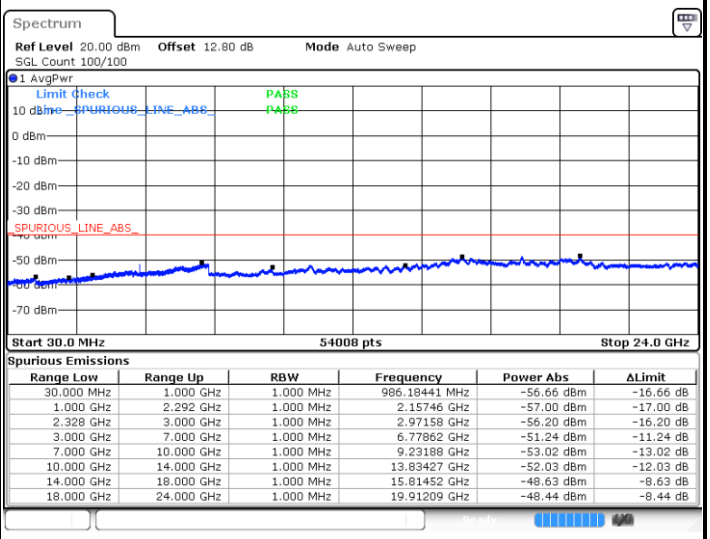


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	935.28486 MHz	-56.81 dBm	-16.81 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15273 GHz	-57.14 dBm	-17.14 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99819 GHz	-56.22 dBm	-16.22 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98540 GHz	-51.30 dBm	-11.30 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.22188 GHz	-53.46 dBm	-13.46 dB
10.000 GHz	14.000 GHz	1.000 MHz	10.54268 GHz	-51.78 dBm	-11.78 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.79953 GHz	-48.65 dBm	-8.65 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.91209 GHz	-48.59 dBm	-8.59 dB

Date: 10.JUN.2020 06:47:12

Middle Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.18441 MHz	-56.66 dBm	-16.66 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15746 GHz	-57.00 dBm	-17.00 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.97158 GHz	-56.20 dBm	-16.20 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.77862 GHz	-51.24 dBm	-11.24 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.23188 GHz	-53.02 dBm	-13.02 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.83427 GHz	-52.03 dBm	-12.03 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.81452 GHz	-48.63 dBm	-8.63 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.91209 GHz	-48.44 dBm	-8.44 dB

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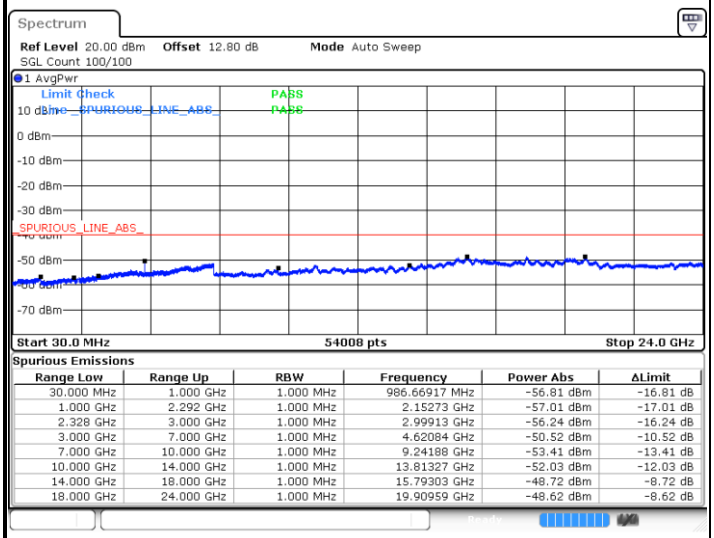
Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.66917 MHz	-56.81 dBm	-16.81 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.15273 GHz	-57.01 dBm	-17.01 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.99913 GHz	-56.24 dBm	-16.24 dB
3.000 GHz	7.000 GHz	1.000 MHz	4.62084 GHz	-50.52 dBm	-10.52 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.24188 GHz	-53.41 dBm	-13.41 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.81327 GHz	-52.03 dBm	-12.03 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.79303 GHz	-48.72 dBm	-8.72 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90959 GHz	-48.62 dBm	-8.62 dB

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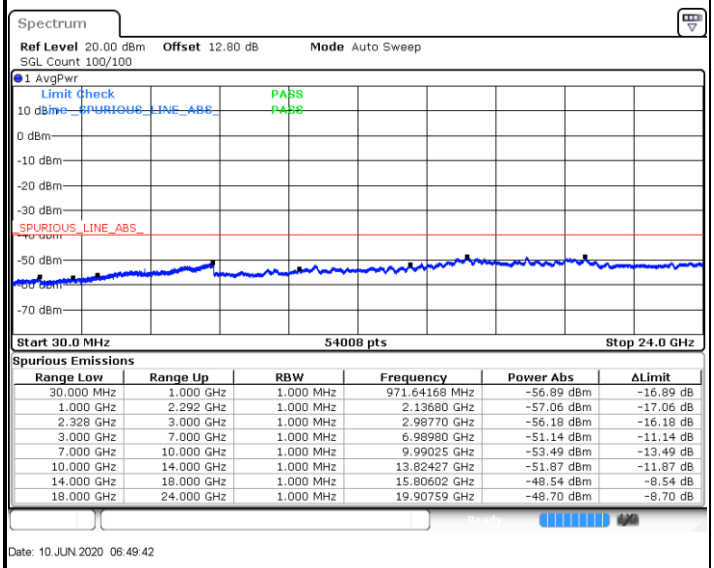
LTE Band 30 / 10MHz	
Middle Channel / 64QAM	



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	971.64168 MHz	-56.89 dBm	-16.89 dB
1.000 GHz	2.292 GHz	1.000 MHz	2.13680 GHz	-57.06 dBm	-17.06 dB
2.328 GHz	3.000 GHz	1.000 MHz	2.98770 GHz	-56.18 dBm	-16.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98980 GHz	-51.14 dBm	-11.14 dB
7.000 GHz	10.000 GHz	1.000 MHz	9.99025 GHz	-53.49 dBm	-13.49 dB
10.000 GHz	14.000 GHz	1.000 MHz	13.82427 GHz	-51.87 dBm	-11.87 dB
14.000 GHz	18.000 GHz	1.000 MHz	15.80602 GHz	-48.54 dBm	-8.54 dB
18.000 GHz	24.000 GHz	1.000 MHz	19.90759 GHz	-48.70 dBm	-8.70 dB

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Frequency Stability

Test Conditions		LTE Band 30 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0006	PASS
40	Normal Voltage	0.0036	
30	Normal Voltage	0.0073	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0040	
-10	Normal Voltage	0.0018	
-20	Normal Voltage	0.0057	
-30	Normal Voltage	0.0071	
20	Maximum Voltage	0.0004	
20	Normal Voltage	0.0006	
20	Battery End Point	0.0045	

Note:

1. Normal Voltage =3.80 V.；Battery End Point (BEP) =3.40 V.；Maximum Voltage =4.80 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of EIRP and Radiated Test

EIRP

<Reporting Only>

LTE Band 30 / 5MHz (Average) (GT - LC = 0 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.54	0.1795	22.54	0.1795
Middle		1	0	22.63	0.1832	22.63	0.1832
Highest		1	0	22.63	0.1832	22.63	0.1832
Lowest	16QAM	1	24	21.88	0.1542	21.88	0.1542
Middle		1	24	21.91	0.1552	21.91	0.1552
Highest		1	24	21.90	0.1549	21.90	0.1549
Lowest	64QAM	1	12	21.74	0.1493	21.74	0.1493
Middle		1	12	21.76	0.1500	21.76	0.1500
Highest		1	12	21.75	0.1496	21.75	0.1496
Limit	EIRP < 0.25W			Result		PASS	

LTE Band 30 / 10MHz (Average) (GT - LC = 0 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	-	-	-	-	-	-
Middle		1	0	22.72	0.1871	22.72	0.1871
Highest		-	-	-	-	-	-
Lowest	16QAM	-	-	-	-	-	-
Middle		1	49	21.92	0.1556	21.92	0.1556
Highest		-	-	-	-	-	-
Lowest	64QAM	-	-	-	-	-	-
Middle		1	25	21.84	0.1528	21.84	0.1528
Highest		-	-	-	-	-	-
Limit	EIRP < 0.25W			Result		PASS	

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	-44.90	-40	-4.90	-38.42	-56.13	1.45	12.68	H
	6918	-49.50	-40	-9.50	-49.72	-59.78	1.73	12.01	H
	9225	-50.35	-40	-10.35	-53.17	-59.97	2.16	11.78	H
									H
	4608	-43.95	-40	-3.95	-36.68	-55.18	1.45	12.68	V
	6918	-45.39	-40	-5.39	-45.17	-55.67	1.73	12.01	V
	9225	-45.20	-40	-5.20	-49.02	-54.82	2.16	11.78	V
	11529	-54.59	-40	-14.59	-57.91	-63.72	2.45	11.58	V
	13833	-52.00	-40	-12.00	-59.22	-61.51	2.86	12.37	V
	16137	-49.92	-40	-9.92	-63.32	-63.99	3.06	17.12	V
									V
Middle	4614	-44.05	-40	-4.05	-37.58	-55.27	1.46	12.68	H
	6924	-49.40	-40	-9.40	-49.67	-59.68	1.73	12.01	H
	9234	-49.45	-40	-9.45	-52.25	-59.06	2.16	11.77	H
									H
	4614	-43.19	-40	-3.19	-35.95	-54.41	1.46	12.68	V
	6924	-45.48	-40	-5.48	-45.3	-55.76	1.73	12.01	V
	9234	-43.37	-40	-3.37	-47.18	-52.98	2.16	11.77	V
	11538	-54.85	-40	-14.85	-58.19	-64.00	2.45	11.61	V
	13851	-51.13	-40	-11.13	-58.31	-60.62	2.86	12.35	V
	16155	-50.28	-40	-10.28	-63.72	-64.27	3.06	17.05	V
									V

	4620	-43.51	-40	-3.51	-37.06	-54.73	1.46	12.68	H
	6930	-48.85	-40	-8.85	-49.16	-59.12	1.73	12.00	H
	9243	-48.28	-40	-8.28	-51.06	-57.87	2.16	11.76	H
	11547	-58.16	-40	-18.16	-61.6	-67.34	2.46	11.63	H
	13860	-54.35	-40	-14.35	-61.21	-63.83	2.86	12.34	H
									H
Highest	4620	-42.82	-40	-2.82	-35.6	-54.04	1.46	12.68	V
	6930	-44.19	-40	-4.19	-44.05	-54.46	1.73	12.00	V
	9243	-41.61	-40	-1.61	-45.42	-51.20	2.16	11.76	V
	11547	-53.90	-40	-13.90	-57.27	-63.08	2.46	11.63	V
	13860	-50.71	-40	-10.71	-57.87	-60.19	2.86	12.34	V
	16173	-50.38	-40	-10.38	-63.84	-64.29	3.06	16.97	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	4608	-43.09	-40	-3.09	-36.61	-54.32	1.45	12.68	H
	6918	-49.19	-40	-9.19	-49.41	-59.47	1.73	12.01	H
	9225	-50.26	-40	-10.26	-53.08	-59.88	2.16	11.78	H
									H
	4608	-41.89	-40	-1.89	-34.62	-53.12	1.45	12.68	V
	6918	-45.73	-40	-5.73	-45.51	-56.01	1.73	12.01	V
	9225	-44.34	-40	-4.34	-48.16	-53.96	2.16	11.78	V
	11529	-54.09	-40	-14.09	-57.41	-63.22	2.45	11.58	V
	13833	-51.69	-40	-11.69	-58.91	-61.20	2.86	12.37	V
	16137	-49.47	-40	-9.47	-62.87	-63.54	3.06	17.12	V
									V

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