FCC RADIO TEST REPORT

FCC ID	:	**PY7-87607S**
Equipment	:	**GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPC and NFC**
Brand Name	:	**Sony**
Applicant	:	**Sony Mobile Communications Inc. 4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan**
Manufacturer	:	**Sony Mobile Communications Inc. 4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan**
Standard	:	**47 CFR Part 2, 22(H), 27**

The product was received on Dec. 04, 2019 and testing was started from Jan. 25, 2020 and completed on Jan. 24, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this spot check data 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
FG9O1543-01B	01	Initial issue of report	Feb. 20, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(2)	Effective Radiated Power (Band 5)	Pass	
	§27.50 (b)(10) §27.50 (c)(10)	Effective Radiated Power (Band 13) (Band 17)		
	§27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 7) (Band 41)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)		
3.3	§27.50 (d)(5)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 4) (Band 5) (Band 13) (Band 17)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 7) (Band 41)		
3.6	§2.1051 §22.917 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (Band 4) (Band 5) (Band 13) (Band 17)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 7) (Band 41)		
3.7	§2.1055 §22.355 §27.54	Frequency Stability Temperature & Voltage	Pass	-

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4.2	§2.1053 §22.917 (a) §27.53 (c)(2) §27.53 (f) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (Band 4) (Band 5) (Band 13) (Band 17)	Pass	Under limit 15.86 dB at 10737.000 MHz
	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (Band 7) (Band 41)		

Remark: Except LTE band 17 test data are carrying out, this is a spot check data report and data performed in appendix of this report are chosen from the worst case of the original FCC ID report. All the test cases were performed on original report which can be referred to Sporton Report Number FG9O1542-02B.

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: Ann Lee

1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac/ax, NFC, GNSS and WPC.

Product Specification subjective to this standard	
Antenna Type	Loop Antenna

EUT Information List			
HW Version	SW Version	S/N	Performed Test Item
A	0.198	BH950070J7	Conducted Measurement
	0.360	QV7100132C	Radiated Spurious Emission
			ERP/EIRP Test

Accessory List	
AC Adapter	Model Name : UCH32
	S/N: 6218W30200140
Earphone	Model Name : STH40D
	S/N : N/A
USB Cable	Model Name : UCB24
	S/N : N/A
Audio Cable	Model Name : EC234
	S/N : N/A

Note:

1. Above EUT list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report. .
3. For other wireless features of this EUT, test report will be issued separately.

1.2 Modification of EUT

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

1.3 Emission Designator

LTE Band 4		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1710.7~1754.3	-	-	0.0323	-	-	0.0308	-	-	0.0301
3	1711.5~1753.5	-	-	0.0330	-	-	0.0314	-	-	0.0306
5	1712.5~1752.5	-	-	0.0331	-	-	0.0313	-	-	0.0308
10	1715.0~1750.0	-	-	0.0336	-	-	0.0317	-	-	0.0310
15	1717.5~1747.5	-	-	0.0349	-	-	0.0332	-	-	0.0324
20	1720.0~1745.0	-	-	0.0351	-	-	0.0335	-	-	0.0325
LTE Band 5		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	824.7~848.3	-	-	0.0333	-	-	0.0254	-	-	0.0199
3	825.5~847.5	-	-	0.0336	-	-	0.0256	-	-	0.0201
5	826.5~846.5	-	-	0.0337	-	-	0.0260	-	-	0.0201
10	829.0~844.0	-	-	0.0337	-	-	0.0259	-	-	0.0201
LTE Band 7		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2502.5~2567.5	-	-	0.0444	-	-	0.0415	-	-	0.0408
10	2505.0~2565.0	-	-	0.0444	-	-	0.0418	-	-	0.0410
15	2507.5~2562.5	-	-	0.0471	-	-	0.0443	-	-	0.0436
20	2510.0~2560.0	-	-	0.0474	-	-	0.0444	-	-	0.0436

LTE Band 13		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	779.5 ~ 784.5	-	-	0.0404	-	-	0.0307	-	-	0.0239
10	782.0	-	-	0.0405	-	-	0.0306	-	-	0.0238
LTE Band 17		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	706.5 ~ 713.5	4M49G7D	-	0.0332	4M50W7D	-	0.0254	4M50W7D	-	0.0200
10	709.0~711.0	9M01G7D	0.0090	0.0333	9M03W7D	-	0.0254	9M03W7D	-	0.0196
LTE Band 41		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2498.5 ~ 2687.5	-	-	0.0431	-	-	0.0399	-	-	0.0390
10	2501.0 ~ 2685.0	-	-	0.0431	-	-	0.0398	-	-	0.0393
15	2503.5 ~ 2682.5	-	-	0.0445	-	-	0.0418	-	-	0.0401
20	2506.0 ~ 2680.0	-	-	0.0446	-	-	0.0409	-	-	0.0399

1.4 Testing Location

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	George Chen
Temperature	24~26 ℃
Relative Humidity	54~56 %

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

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 and Lance Chiang
Temperature	22~26 ℃
Relative Humidity	52~62 %

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

FCC Designation No.: TW1190 and TW0007

1.5 Applicable Standards

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

- ANSI C63.26-2015
- ANSI / TIA-603-E
- 47 CFR Part 2, 22(H), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- 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

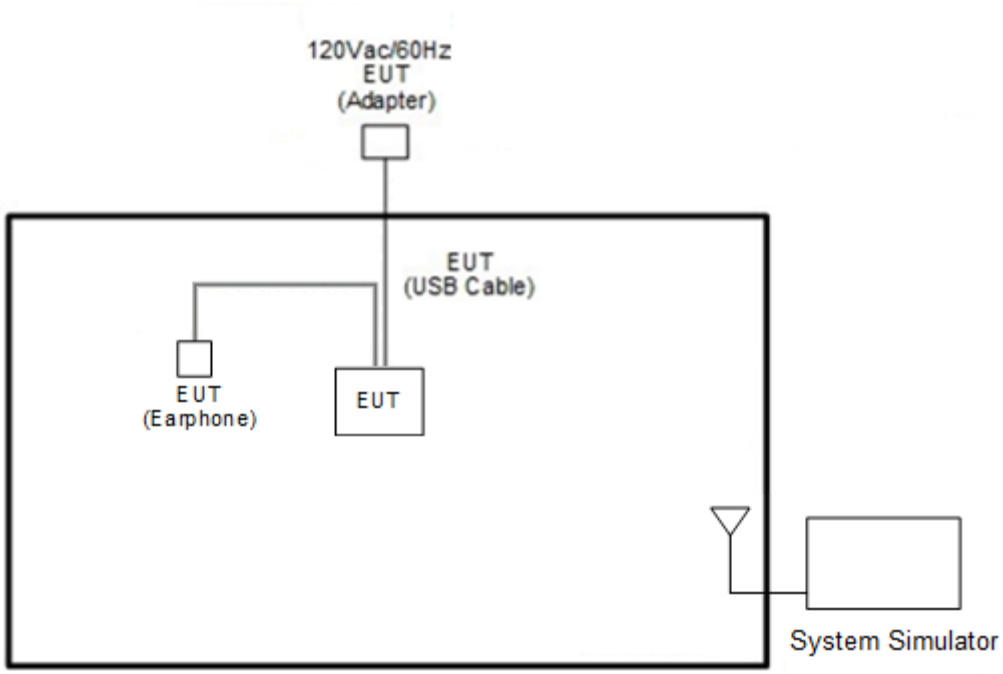
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for Band 4,7,17,41; Y plane for Band 5 and 13) 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	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	17	-	-		v	-	-	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	17	-	-	v	v	-	-	v	v	v			v	v	v	v
Conducted Band Edge	17	-	-	v	v	-	-	v	v	v			v	v	v	v
Conducted Spurious Emission	17	-	-	v	v	-	-	v	v	v	v			v	v	v
Frequency Stability	17	-	-		v	-	-	v					v		v	
E.R.P / E.I.R.P	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v

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
Radiated Spurious Emission	4	Worst Case														v
	5	Worst Case													v	
	7	Worst Case													v	
	13	Worst Case														v
	17	Worst Case												v	v	v
	41	Worst Case														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. 4. Wider operating range bandwidth covers narrower one when the power is higher or the same.															

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

2.4 Frequency List of Low/Middle/High Channels

LTE Band 4 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

LTE Band 5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 7 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

LTE Band 13 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

LTE Band 17 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

LTE Band 41 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	39750	40620	41490
	Frequency	2506.0	2593.0	2680.0
15	Channel	39725	40620	41515
	Frequency	2503.5	2593.0	2682.5
10	Channel	39700	40620	41540
	Frequency	2501.0	2593.0	2685.0
5	Channel	39675	40620	41565
	Frequency	2498.5	2593.0	2687.5

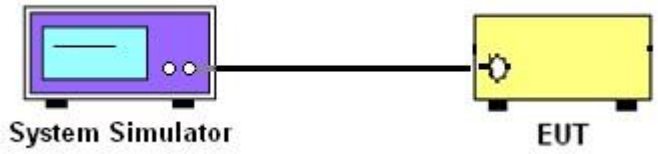
3 Conducted Test Items

3.1 Measuring Instruments

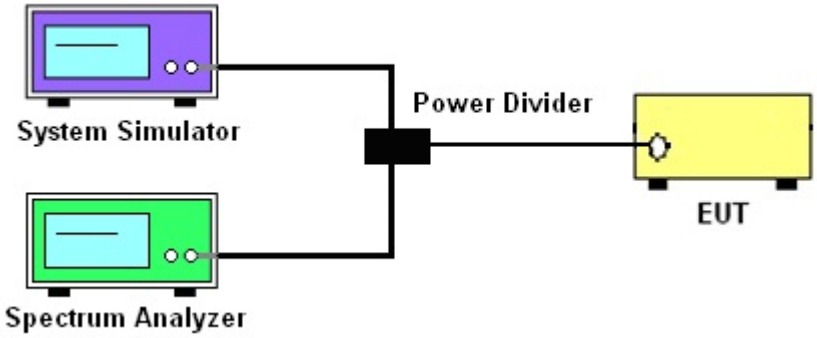
See list of measuring instruments of this test report.

3.1.1 Test Setup

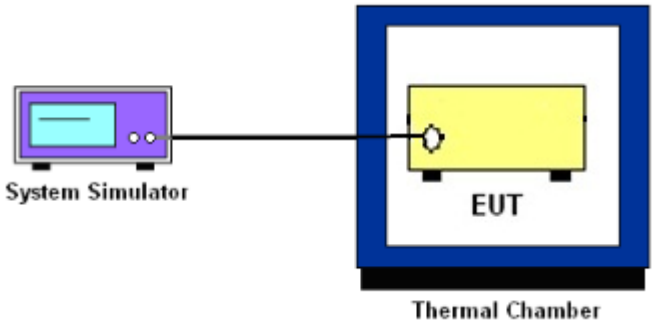
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted 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 and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP 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.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 13 and Band 17

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 7 and Band 41

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, 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 Occupied Bandwidth

3.4.1 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.

3.4.2 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.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least 65 + 10 log10 p(watts), dB, for mobile and portable equipment.

27.53 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.5.2 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)
   For LTE Band 7, 41
   The other 40 dB, and 55 dB have additionally applied same calculation above.

3.6 Conducted Spurious Emission

3.6.1 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 43 + 10 log (P) dB.

For LTE Band 7, 41

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 55 + 10 log (P) dB.

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

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 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 43 + 10log(P)dB below the transmitter power P(Watts)
   For LTE Band 7, 41
   The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

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.

27.54

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

3.7.2 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.

3.7.3 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.

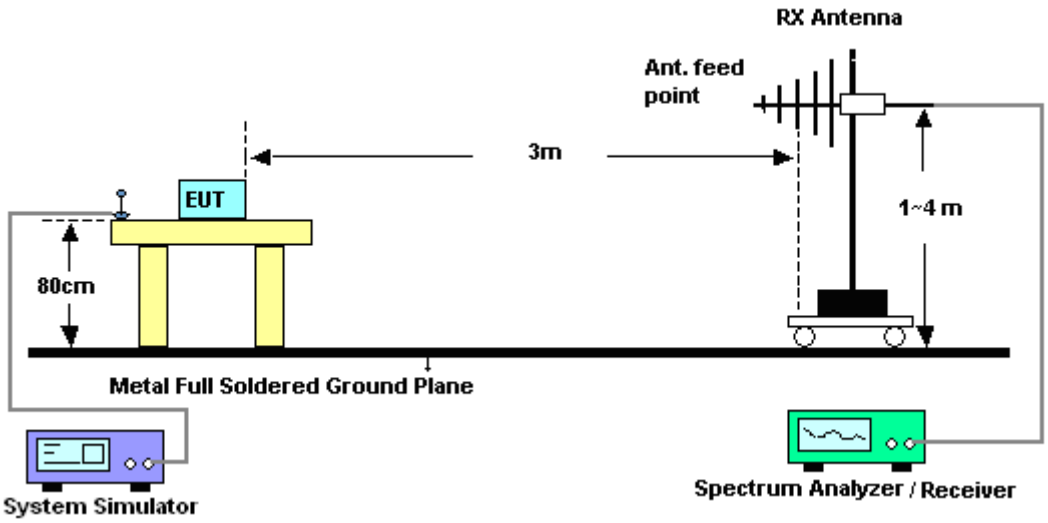
4 Radiated Test Items

4.1 Measuring Instruments

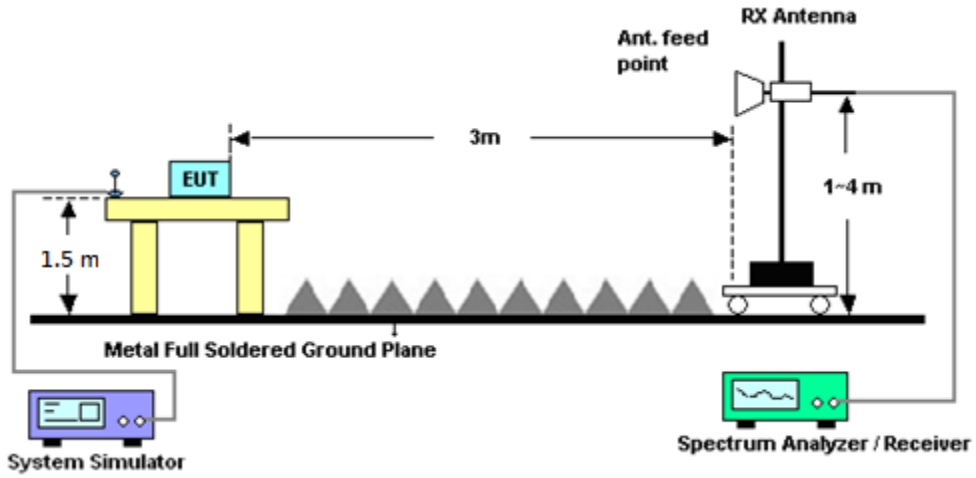
See list of measuring instruments of this test report.

4.1.1 Test Setup

For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

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 43 + 10 log (P) dB.

For LTE Band 7, 41

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 55 + 10 log (P) dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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 for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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

    For LTE Band 7, 41

    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

    EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

    ERP (dBm) = EIRP - 2.15

5 List of Measuring Equipment

Instrument	Manufacturer	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	Jan. 25, 2020~ Jan. 28, 2020	Dec. 25, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	41912 & 05	30MHz~1GHz	Feb. 12, 2019	Jan. 25, 2020~ Jan. 28, 2020	Feb. 11, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 14, 2019	Jan. 25, 2020~ Jan. 28, 2020	Nov. 13, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1522	1GHz ~ 18GHz	Sep. 19, 2019	Jan. 25, 2020~ Jan. 28, 2020	Sep. 18, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz ~ 40GHz	Dec. 10, 2019	Jan. 25, 2020~ Jan. 28, 2020	Dec. 09, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz- 40GHz	Nov. 26, 2019	Jan. 25, 2020~ Jan. 28, 2020	Nov. 25, 2020	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2019	Jan. 25, 2020~ Jan. 28, 2020	Mar. 24, 2020	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA00101800-30-10P	1601180002	1GHz~18GHz	Aug. 01, 2019	Jan. 25, 2020~ Jan. 28, 2020	Jul. 01, 2020	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Jan. 25, 2020~ Jan. 28, 2020	Dec. 12, 2020	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 27, 2019	Jan. 25, 2020~ Jan. 28, 2020	May 26, 2020	Radiation (03CH12-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290045	20MHz~8.4GHz	Jan. 18, 2020	Jan. 25, 2020~ Jan. 28, 2020	Jan. 17, 2021	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 19, 2019	Jan. 25, 2020~ Jan. 28, 2020	Mar. 18, 2020	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMB100A	101107	100kHz~40GHz	Aug. 27, 2019	Jan. 25, 2020~ Jan. 28, 2020	Aug. 26, 2020	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP161243	N/A	May 11, 2019	Jan. 25, 2020~ Jan. 28, 2020	May 10, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCG1710/1755-1690/1775-45/7SS	SN2	AWS Band	Nov. 05, 2019	Jan. 25, 2020~ Jan. 28, 2020	Nov. 04, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT2500/2570-10/40-10SSK	SN1 R	LTE Band 7	Aug. 22, 2019	Jan. 25, 2020~ Jan. 28, 2020	Aug. 21, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 13, 2019	Jan. 25, 2020~ Jan. 28, 2020	Mar. 12, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 26, 2019	Jan. 25, 2020~ Jan. 28, 2020	Feb. 25, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Feb. 26, 2019	Jan. 25, 2020~ Jan. 28, 2020	Feb. 25, 2020	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jan. 25, 2020~ Jan. 28, 2020	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jan. 25, 2020~ Jan. 28, 2020	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jan. 25, 2020~ Jan. 28, 2020	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jan. 25, 2020~ Jan. 28, 2020	N/A	Radiation (03CH12-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station (Measure)	Anritsu	MT8821C	6201664755	GSM / GPRS /WCDMA / LTE FDD/TDD with 44) /LTE-3CC DLCA,2CC ULCA	Mar. 03, 2019	Dec. 28, 2019~ Jan. 06, 2020	Mar. 02, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Dec. 28, 2019~ Jan. 06, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃~90℃	Sep. 02, 2019	Dec. 28, 2019~ Jan. 06, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890089	1V~20V 0.5A~5A	Feb. 21, 2019	Dec. 28, 2019~ Jan. 06, 2020	Feb. 20, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 14, 2019	Dec. 28, 2019~ Jan. 06, 2020	Jan. 13, 2020	Conducted (TH05-HY)
Hygrometer	TECPEL	HTC-1	2	N/A	Mar. 05, 2019	Dec. 28, 2019~ Jan. 06, 2020	Mar. 04, 2020	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 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	18.00	17.97	17.99
20	1	49		17.81	17.81	17.78
20	1	99		17.79	17.76	17.73
20	50	0		**18.05**	18.02	17.99
20	50	24		18.03	17.96	17.91
20	50	50		17.95	17.92	17.92
20	100	0		17.99	17.98	17.89
20	1	0	16-QAM	17.85	17.83	17.82
20	1	49		17.65	17.72	17.63
20	1	99		17.66	17.73	17.58
20	50	0		17.53	17.56	17.52
20	50	24		17.55	17.46	17.45
20	50	50		17.46	17.47	17.41
20	100	0		17.51	17.44	17.40
20	1	0	64-QAM	17.70	17.70	17.72
20	1	49		17.54	17.58	17.52
20	1	99		17.58	17.54	17.52
20	50	0		17.55	17.60	17.55
20	50	24		17.58	17.50	17.47
20	50	50		17.48	17.49	17.44
20	100	0		17.56	17.50	17.45
15	1	0	QPSK	18.00	18.01	17.98
15	1	37		17.81	17.82	17.76
15	1	74		17.82	17.81	17.76
15	36	0		18.03	18.02	17.97
15	36	20		18.01	17.95	17.99
15	36	39		17.96	17.94	17.90
15	75	0		18.02	17.95	17.90
15	1	0	16-QAM	17.80	17.81	17.79
15	1	37		17.61	17.72	17.62
15	1	74		17.60	17.67	17.57
15	36	0		17.49	17.54	17.49
15	36	20		17.50	17.43	17.49
15	36	39		17.45	17.46	17.41
15	75	0		17.51	17.47	17.41
15	1	0	64-QAM	17.70	17.69	17.63
15	1	37		17.57	17.57	17.57
15	1	74		17.52	17.52	17.47
15	36	0		17.56	17.58	17.53
15	36	20		17.53	17.50	17.51
15	36	39		17.50	17.53	17.45
15	75	0		17.52	17.49	17.42

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	17.70	17.70	17.64
10	1	25		17.64	17.69	17.62
10	1	49		17.68	17.66	17.62
10	25	0		17.79	17.75	17.68
10	25	12		17.80	17.78	17.70
10	25	25		17.80	17.86	17.76
10	50	0		17.81	17.77	17.70
10	1	0	16-QAM	17.57	17.61	17.53
10	1	25		17.53	17.55	17.51
10	1	49		17.54	17.51	17.49
10	25	0		17.29	17.28	17.20
10	25	12		17.34	17.27	17.22
10	25	25		17.31	17.36	17.31
10	50	0		17.32	17.26	17.21
10	1	0	64-QAM	17.45	17.40	17.36
10	1	25		17.48	17.52	17.45
10	1	49		17.46	17.50	17.38
10	25	0		17.34	17.30	17.24
10	25	12		17.36	17.35	17.24
10	25	25		17.35	17.40	17.31
10	50	0		17.35	17.27	17.25
5	1	0	QPSK	17.63	17.59	17.61
5	1	12		17.65	17.71	17.65
5	1	24		17.67	17.70	17.63
5	12	0		17.75	17.70	17.70
5	12	7		17.80	17.75	17.74
5	12	13		17.76	17.75	17.70
5	25	0		17.76	17.70	17.67
5	1	0	16-QAM	17.52	17.47	17.40
5	1	12		17.46	17.43	17.40
5	1	24		17.48	17.55	17.43
5	12	0		17.27	17.23	17.24
5	12	7		17.28	17.25	17.25
5	12	13		17.28	17.30	17.25
5	25	0		17.25	17.24	17.22
5	1	0	64-QAM	17.49	17.40	17.36
5	1	12		17.37	17.36	17.31
5	1	24		17.41	17.39	17.35
5	12	0		17.32	17.31	17.28
5	12	7		17.37	17.33	17.32
5	12	13		17.31	17.35	17.30
5	25	0		17.30	17.28	17.23

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	17.63	17.60	17.59
3	1	8		17.75	17.72	17.67
3	1	14		17.68	17.71	17.61
3	8	0		17.74	17.68	17.67
3	8	4		17.77	17.79	17.71
3	8	7		17.75	17.76	17.67
3	15	0		17.75	17.69	17.71
3	1	0	16-QAM	17.46	17.43	17.40
3	1	8		17.57	17.48	17.48
3	1	14		17.47	17.53	17.42
3	8	0		17.31	17.26	17.24
3	8	4		17.35	17.32	17.26
3	8	7		17.34	17.31	17.23
3	15	0		17.28	17.23	17.23
3	1	0	64-QAM	17.46	17.37	17.32
3	1	8		17.46	17.46	17.39
3	1	14		17.41	17.39	17.36
3	8	0		17.32	17.27	17.25
3	8	4		17.37	17.36	17.28
3	8	7		17.31	17.35	17.26
3	15	0		17.31	17.26	17.22
1.4	1	0	QPSK	17.56	17.57	17.50
1.4	1	3		17.63	17.66	17.58
1.4	1	5		17.58	17.59	17.49
1.4	3	0		17.61	17.60	17.52
1.4	3	1		17.63	17.61	17.53
1.4	3	3		17.63	17.60	17.54
1.4	6	0		17.69	17.66	17.60
1.4	1	0	16-QAM	17.38	17.42	17.33
1.4	1	3		17.46	17.48	17.41
1.4	1	5		17.43	17.39	17.34
1.4	3	0		17.19	17.16	17.10
1.4	3	1		17.23	17.21	17.15
1.4	3	3		17.19	17.16	17.08
1.4	6	0		17.26	17.27	17.17
1.4	1	0	64-QAM	17.33	17.32	17.24
1.4	1	3		17.39	17.38	17.31
1.4	1	5		17.34	17.33	17.23
1.4	3	0		17.31	17.32	17.24
1.4	3	1		17.35	17.36	17.30
1.4	3	3		17.30	17.34	17.25
1.4	6	0		17.20	17.21	17.12

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	**23.74**	23.70	23.59
10	1	25		23.59	23.53	23.49
10	1	49		23.56	23.49	23.39
10	25	0		22.78	22.66	22.58
10	25	12		22.77	22.64	22.58
10	25	25		22.71	22.66	22.58
10	50	0		22.76	22.65	22.57
10	1	0	16-QAM	22.59	22.49	22.44
10	1	25		22.46	22.45	22.37
10	1	49		22.45	22.38	22.28
10	25	0		21.25	21.18	21.10
10	25	12		21.27	21.15	21.08
10	25	25		21.18	21.16	21.05
10	50	0		21.26	21.14	21.06
10	1	0	64-QAM	21.49	21.36	21.29
10	1	25		21.40	21.37	21.28
10	1	49		21.35	21.29	21.14
10	25	0		20.29	20.20	20.14
10	25	12		20.31	20.20	20.13
10	25	25		20.25	20.21	20.11
10	50	0		20.30	20.18	20.12
5	1	0	QPSK	23.73	23.64	23.59
5	1	12		23.68	23.60	23.45
5	1	24		23.60	23.55	23.36
5	12	0		22.82	22.70	22.60
5	12	7		22.75	22.69	22.54
5	12	13		22.68	22.65	22.47
5	25	0		22.75	22.60	22.55
5	1	0	16-QAM	22.61	22.46	22.41
5	1	12		22.47	22.40	22.27
5	1	24		22.42	22.41	22.21
5	12	0		21.35	21.21	21.13
5	12	7		21.29	21.25	21.10
5	12	13		21.19	21.16	21.00
5	25	0		21.30	21.13	21.06
5	1	0	64-QAM	21.50	21.39	21.36
5	1	12		21.38	21.30	21.17
5	1	24		21.36	21.33	21.15
5	12	0		20.39	20.26	20.11
5	12	7		20.36	20.27	20.00
5	12	13		20.30	20.20	20.00
5	25	0		20.30	20.15	20.05

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.72	23.57	23.44
3	1	8		23.69	23.61	23.46
3	1	14		23.57	23.52	23.34
3	8	0		22.77	22.64	22.48
3	8	4		22.76	22.70	22.49
3	8	7		22.69	22.60	22.45
3	15	0		22.71	22.58	22.48
3	1	0	16-QAM	22.54	22.40	22.31
3	1	8		22.55	22.48	22.32
3	1	14		22.41	22.33	22.16
3	8	0		21.36	21.21	21.10
3	8	4		21.33	21.27	21.09
3	8	7		21.27	21.21	21.02
3	15	0		21.32	21.14	21.05
3	1	0	64-QAM	21.50	21.35	21.01
3	1	8		21.49	21.41	21.05
3	1	14		21.37	21.29	21.03
3	8	0		20.39	20.21	20.50
3	8	4		20.35	20.30	20.02
3	8	7		20.26	20.17	20.06
3	15	0		20.29	20.14	20.07
1.4	1	0	QPSK	23.62	23.45	23.36
1.4	1	3		23.64	23.56	23.38
1.4	1	5		23.58	23.45	23.19
1.4	3	0		23.66	23.49	23.37
1.4	3	1		23.68	23.59	23.39
1.4	3	3		23.63	23.51	23.33
1.4	6	0		22.68	22.59	22.41
1.4	1	0	16-QAM	22.45	22.30	22.19
1.4	1	3		22.50	22.40	22.22
1.4	1	5		22.38	22.32	22.13
1.4	3	0		22.22	22.08	22.06
1.4	3	1		22.28	22.19	22.02
1.4	3	3		22.21	22.12	22.04
1.4	6	0		21.27	21.18	21.08
1.4	1	0	64-QAM	21.41	21.24	21.06
1.4	1	3		21.44	21.34	21.10
1.4	1	5		21.34	21.22	21.01
1.4	3	0		21.33	21.17	21.02
1.4	3	1		21.39	21.29	21.09
1.4	3	3		21.35	21.22	21.05
1.4	6	0		20.24	20.13	20.06

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	18.75	18.83	19.00
20	1	49		18.80	18.97	18.99
20	1	99		18.88	19.02	19.03
20	50	0		18.84	19.02	19.05
20	50	24		18.96	19.06	**19.16**
20	50	50		18.96	19.14	19.14
20	100	0		18.95	19.04	19.06
20	1	0	16-QAM	18.61	18.71	18.84
20	1	49		18.64	18.84	18.83
20	1	99		18.76	18.87	18.87
20	50	0		18.37	18.55	18.60
20	50	24		18.47	18.58	18.69
20	50	50		18.49	18.66	18.66
20	100	0		18.47	18.55	18.60
20	1	0	64-QAM	18.47	18.59	18.69
20	1	49		18.54	18.72	18.74
20	1	99		18.68	18.79	18.76
20	50	0		18.39	18.56	18.61
20	50	24		18.52	18.63	18.73
20	50	50		18.52	18.67	18.68
20	100	0		18.49	18.58	18.62
15	1	0	QPSK	18.73	18.89	18.98
15	1	37		18.77	18.96	18.98
15	1	74		18.87	19.03	19.03
15	36	0		18.80	19.02	19.06
15	36	20		18.93	19.03	19.08
15	36	39		18.94	19.11	19.13
15	75	0		18.90	19.03	19.04
15	1	0	16-QAM	18.57	18.72	18.83
15	1	37		18.59	18.81	18.85
15	1	74		18.70	18.85	18.86
15	36	0		18.32	18.52	18.57
15	36	20		18.43	18.55	18.60
15	36	39		18.43	18.61	18.64
15	75	0		18.42	18.52	18.58
15	1	0	64-QAM	18.42	18.65	18.71
15	1	37		18.56	18.75	18.79
15	1	74		18.62	18.73	18.75
15	36	0		18.38	18.57	18.60
15	36	20		18.49	18.58	18.63
15	36	39		18.49	18.67	18.68
15	75	0		18.43	18.54	18.59

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	18.46	18.67	18.70
10	1	25		18.43	18.65	18.67
10	1	49		18.52	18.74	18.72
10	25	0		18.62	18.75	18.77
10	25	12		18.63	18.79	18.81
10	25	25		18.64	18.86	18.87
10	50	0		18.65	18.80	18.80
10	1	0	16-QAM	18.34	18.52	18.55
10	1	25		18.33	18.58	18.57
10	1	49		18.39	18.61	18.60
10	25	0		18.12	18.27	18.29
10	25	12		18.18	18.32	18.33
10	25	25		18.16	18.39	18.38
10	50	0		18.15	18.31	18.32
10	1	0	64-QAM	18.27	18.38	18.43
10	1	25		18.23	18.48	18.50
10	1	49		18.29	18.53	18.52
10	25	0		18.17	18.33	18.34
10	25	12		18.21	18.36	18.40
10	25	25		18.20	18.40	18.42
10	50	0		18.18	18.35	18.33
5	1	0	QPSK	18.49	18.65	18.68
5	1	12		18.52	18.74	18.75
5	1	24		18.50	18.72	18.73
5	12	0		18.63	18.79	18.86
5	12	7		18.63	18.85	18.84
5	12	13		18.63	18.87	18.86
5	25	0		18.63	18.78	18.83
5	1	0	16-QAM	18.38	18.46	18.57
5	1	12		18.28	18.49	18.53
5	1	24		18.34	18.58	18.56
5	12	0		18.17	18.34	18.36
5	12	7		18.15	18.38	18.38
5	12	13		18.15	18.41	18.37
5	25	0		18.17	18.30	18.35
5	1	0	64-QAM	18.29	18.43	18.51
5	1	12		18.20	18.47	18.45
5	1	24		18.24	18.51	18.44
5	12	0		18.18	18.40	18.44
5	12	7		18.23	18.46	18.40
5	12	13		18.20	18.42	18.42
5	25	0		18.17	18.35	18.41

LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	-	**23.99**	-
10	1	25			23.92	
10	1	49			23.95	
10	25	0			23.00	
10	25	12			23.02	
10	25	25			23.06	
10	50	0			23.02	
10	1	0	16-QAM		22.75	
10	1	25			22.78	
10	1	49			22.77	
10	25	0			21.54	
10	25	12			21.56	
10	25	25			21.58	
10	50	0			21.54	
10	1	0	64-QAM		21.58	
10	1	25			21.68	
10	1	49			21.68	
10	25	0			20.51	
10	25	12			20.60	
10	25	25			20.63	
10	50	0			20.57	
5	1	0	QPSK	23.89	23.89	23.89
5	1	12		23.81	23.98	23.96
5	1	24		23.95	23.96	23.94
5	12	0		23.02	23.02	23.01
5	12	7		22.98	23.04	23.01
5	12	13		23.07	23.07	23.04
5	25	0		23.01	23.00	22.99
5	1	0	16-QAM	22.73	22.73	22.70
5	1	12		22.72	22.74	22.71
5	1	24		22.79	22.74	22.77
5	12	0		21.59	21.58	21.57
5	12	7		21.61	21.56	21.50
5	12	13		21.61	21.60	21.55
5	25	0		21.62	21.55	21.54
5	1	0	64-QAM	21.39	21.58	21.63
5	1	12		21.36	21.70	21.60
5	1	24		21.63	21.68	21.62
5	12	0		20.37	20.65	20.63
5	12	7		20.46	20.61	20.59
5	12	13		20.58	20.67	20.62
5	25	0		20.38	20.55	20.56

LTE Band 17 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	**23.79**	23.70	23.69
10	1	25		23.66	23.64	23.62
10	1	49		23.65	23.61	23.59
10	25	0		22.77	22.69	22.66
10	25	12		22.84	22.74	22.73
10	25	25		22.85	22.80	22.81
10	50	0		22.83	22.80	22.71
10	1	0	16-QAM	22.62	22.53	22.50
10	1	25		22.54	22.51	22.53
10	1	49		22.54	22.50	22.48
10	25	0		21.29	21.22	21.17
10	25	12		21.33	21.24	21.22
10	25	25		21.26	21.30	21.23
10	50	0		21.31	21.29	21.20
10	1	0	64-QAM	21.50	21.43	21.41
10	1	25		21.48	21.48	21.44
10	1	49		21.43	21.41	21.41
10	25	0		20.33	20.25	20.21
10	25	12		20.39	20.26	20.29
10	25	25		20.35	20.34	20.33
10	50	0		20.34	20.31	20.24
5	1	0	QPSK	23.78	23.67	23.65
5	1	12		23.76	23.70	23.64
5	1	24		23.77	23.70	23.62
5	12	0		22.84	22.70	22.71
5	12	7		22.87	22.79	22.72
5	12	13		22.83	22.77	22.70
5	25	0		22.83	22.78	22.70
5	1	0	16-QAM	22.62	22.45	22.49
5	1	12		22.57	22.50	22.45
5	1	24		22.62	22.56	22.45
5	12	0		21.40	21.28	21.25
5	12	7		21.41	21.31	21.26
5	12	13		21.34	21.28	21.22
5	25	0		21.38	21.27	21.23
5	1	0	64-QAM	21.57	21.37	21.39
5	1	12		21.50	21.40	21.35
5	1	24		21.56	21.44	21.38
5	12	0		20.47	20.32	20.31
5	12	7		20.45	20.33	20.30
5	12	13		20.40	20.34	20.28
5	25	0		20.38	20.32	20.26

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	18.50	18.86	19.07
20	1	49		18.49	18.76	19.03
20	1	99		18.57	18.76	19.11
20	50	0		18.71	18.98	19.28
20	50	24		18.77	18.97	19.27
20	50	50		18.76	19.00	**19.36**
20	100	0		18.77	18.96	19.25
20	1	0	16-QAM	18.37	18.72	18.95
20	1	49		18.40	18.59	18.96
20	1	99		18.43	18.62	18.99
20	50	0		18.24	18.53	18.80
20	50	24		18.33	18.49	18.79
20	50	50		18.32	18.55	18.87
20	100	0		18.30	18.49	18.79
20	1	0	64-QAM	18.24	18.47	18.69
20	1	49		18.24	18.49	18.76
20	1	99		18.34	18.51	18.87
20	50	0		18.25	18.52	18.81
20	50	24		18.34	18.50	18.80
20	50	50		18.33	18.55	18.88
20	100	0		18.33	18.48	18.79
15	1	0	QPSK	18.57	18.90	19.21
15	1	37		18.56	18.91	19.23
15	1	74		18.57	18.92	19.22
15	36	0		18.67	18.97	19.30
15	36	20		18.77	18.96	19.29
15	36	39		18.73	19.02	19.35
15	75	0		18.78	18.98	19.28
15	1	0	16-QAM	18.37	18.66	19.00
15	1	37		18.32	18.59	18.95
15	1	74		18.35	18.71	19.08
15	36	0		18.19	18.45	18.78
15	36	20		18.26	18.44	18.75
15	36	39		18.25	18.52	18.83
15	75	0		18.31	18.48	18.80
15	1	0	64-QAM	18.23	18.44	18.75
15	1	37		18.26	18.42	18.80
15	1	74		18.27	18.57	18.90
15	36	0		18.22	18.50	18.83
15	36	20		18.30	18.48	18.80
15	36	39		18.28	18.56	18.88
15	75	0		18.31	18.48	18.80

LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	18.48	18.62	18.93
10	1	25		18.34	18.63	18.98
10	1	49		18.44	18.70	18.96
10	25	0		18.55	18.78	19.12
10	25	12		18.57	18.81	19.15
10	25	25		18.55	18.85	19.21
10	50	0		18.57	18.81	19.12
10	1	0	16-QAM	18.27	18.54	18.85
10	1	25		18.21	18.51	18.87
10	1	49		18.28	18.49	18.84
10	25	0		18.11	18.33	18.64
10	25	12		18.14	18.37	18.67
10	25	25		18.10	18.38	18.71
10	50	0		18.15	18.34	18.68
10	1	0	64-QAM	18.23	18.31	18.70
10	1	25		18.21	18.49	18.81
10	1	49		18.19	18.40	18.76
10	25	0		18.18	18.41	18.70
10	25	12		18.21	18.41	18.77
10	25	25		18.17	18.43	18.75
10	50	0		18.13	18.34	18.66
5	1	0	QPSK	18.44	18.63	19.03
5	1	12		18.34	18.70	19.04
5	1	24		18.37	18.69	18.97
5	12	0		18.58	18.81	19.20
5	12	7		18.59	18.90	19.21
5	12	13		18.56	18.85	19.20
5	25	0		18.53	18.80	19.17
5	1	0	16-QAM	18.26	18.47	18.88
5	1	12		18.16	18.50	18.88
5	1	24		18.20	18.50	18.85
5	12	0		18.12	18.35	18.73
5	12	7		18.13	18.40	18.76
5	12	13		18.11	18.40	18.70
5	25	0		18.11	18.37	18.74
5	1	0	64-QAM	18.17	18.33	18.75
5	1	12		18.10	18.40	18.75
5	1	24		18.13	18.41	18.73
5	12	0		18.14	18.37	18.76
5	12	7		18.17	18.45	18.76
5	12	13		18.14	18.41	18.75
5	25	0		18.13	18.37	18.78

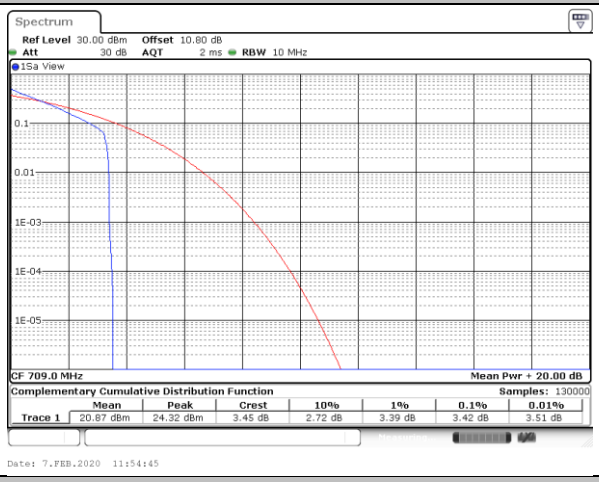
LTE Band 17

Peak-to-Average Ratio

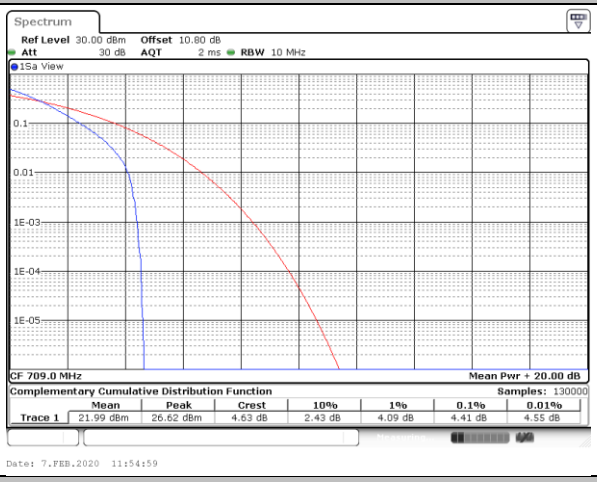
Mode	LTE Band 17 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.42	4.41	5.01	5.48	PASS
Middle CH	3.48	4.43	4.99	5.45	
Highest CH	3.51	4.52	5.33	5.48	
Mode	LTE Band 17 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.71	6.32	-	-	PASS
Middle CH	5.71	6.35	-	-	
Highest CH	5.59	6.43	-	-	

LTE Band 17 / 10MHz / QPSK

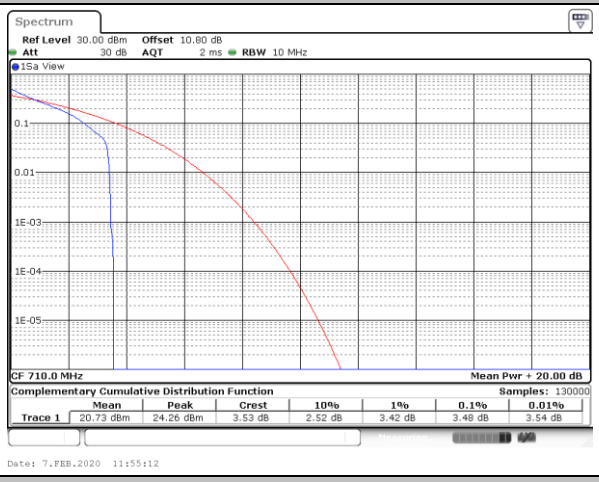
Lowest Channel / 1RB



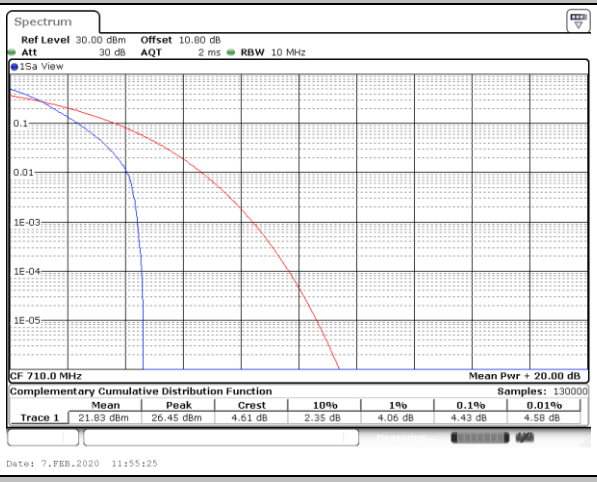
Lowest Channel / Full RB



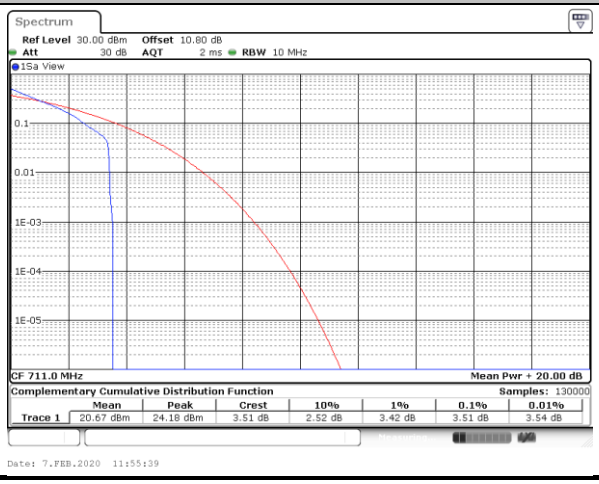
Middle Channel / 1RB



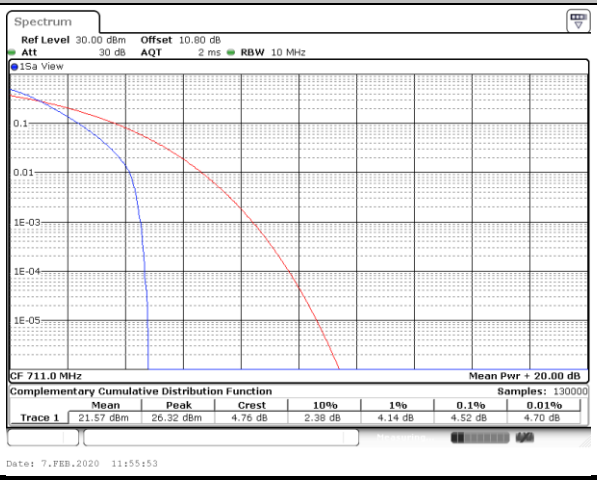
Middle Channel / Full RB



Highest Channel / 1RB

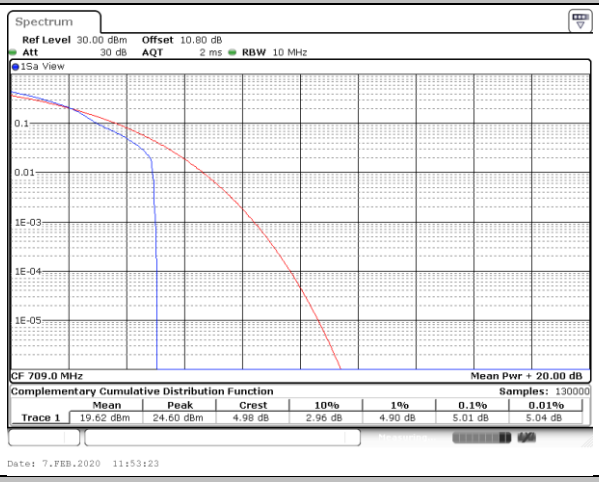


Highest Channel / Full RB

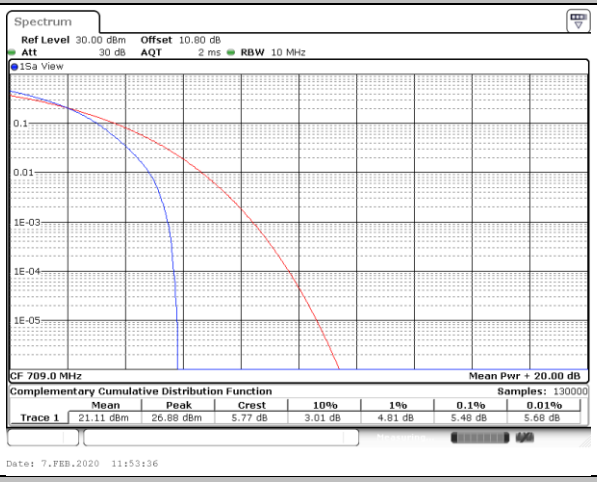


LTE Band 17 / 10MHz / 16QAM

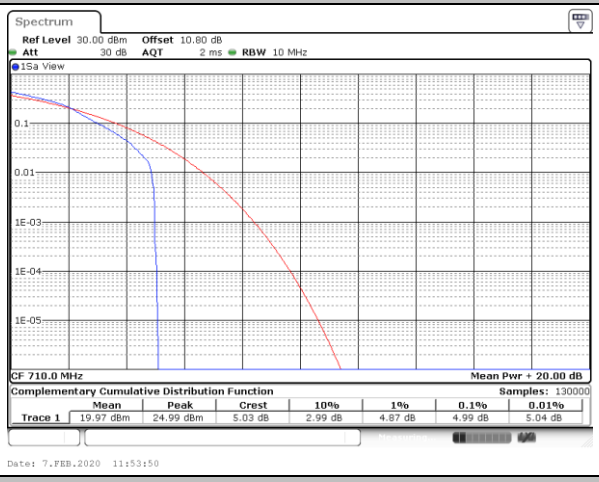
Lowest Channel / 1RB



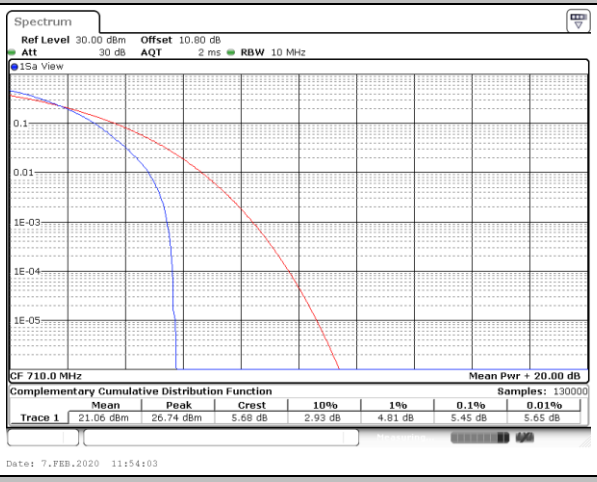
Lowest Channel / Full RB



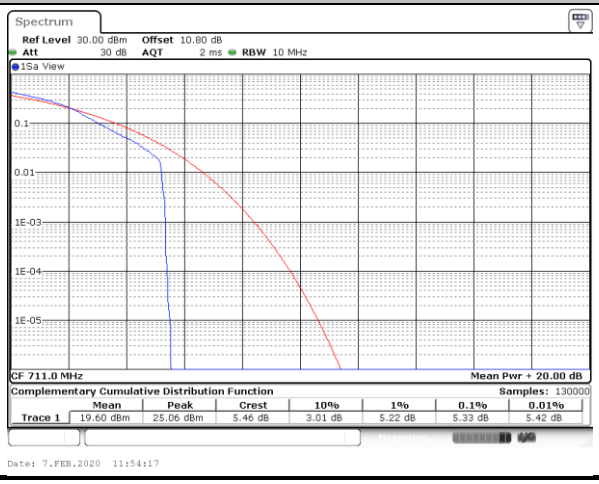
Middle Channel / 1RB



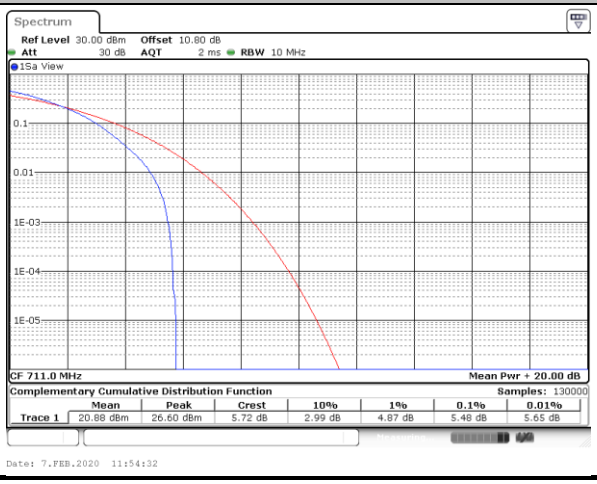
Middle Channel / Full RB



Highest Channel / 1RB

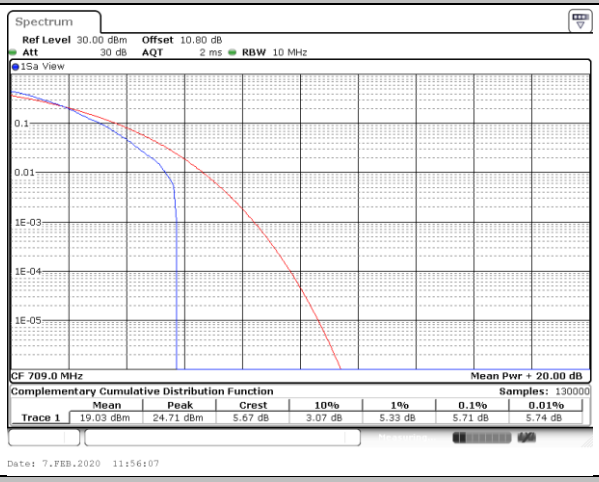


Highest Channel / Full RB

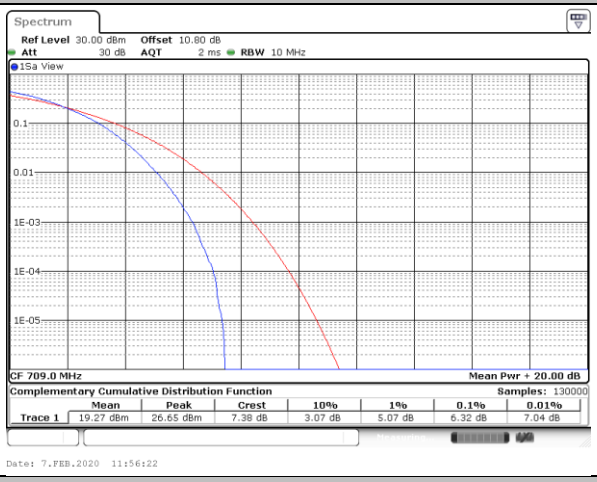


LTE Band 17 / 10MHz / 64QAM

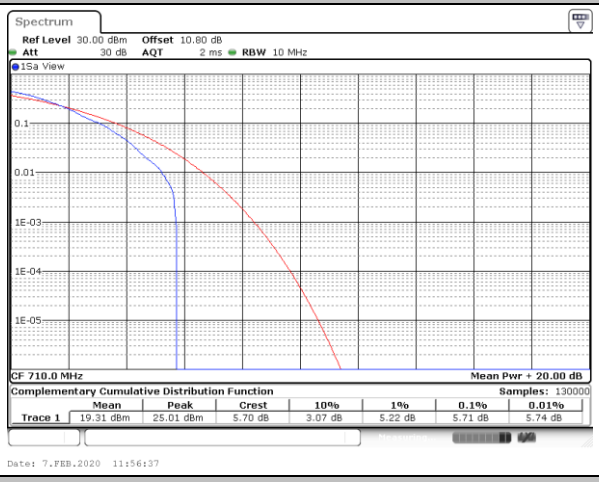
Lowest Channel / 1RB



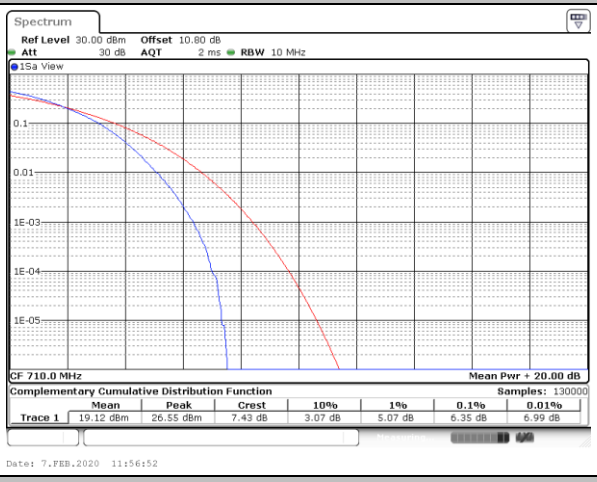
Lowest Channel / Full RB



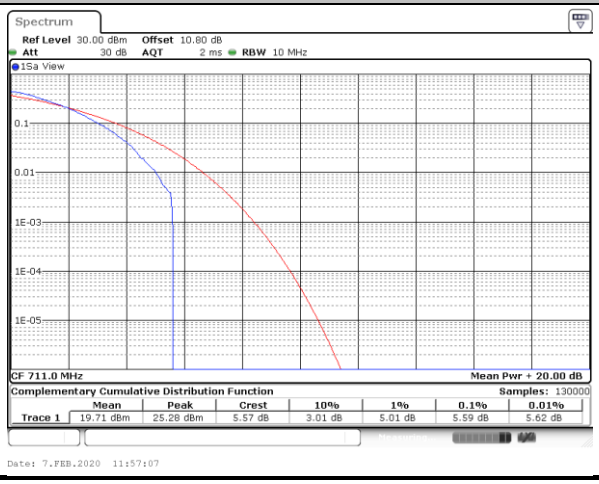
Middle Channel / 1RB



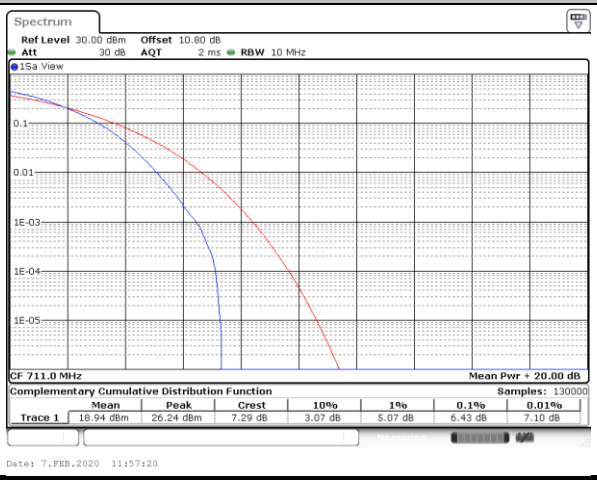
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB

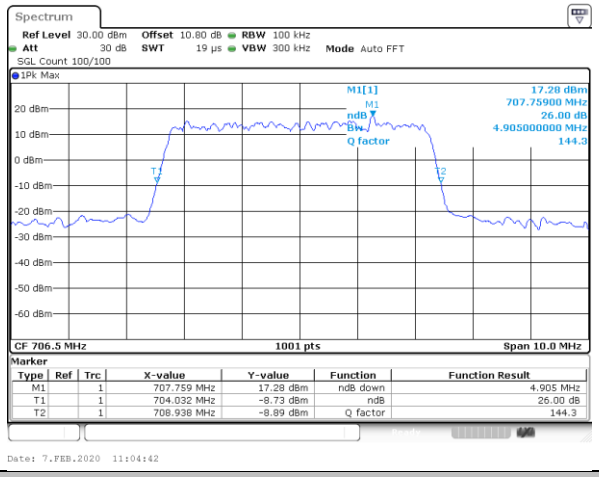


26dB Bandwidth

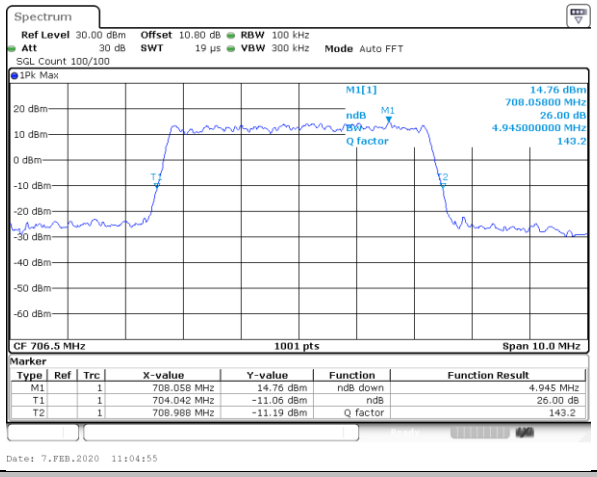
Mode	LTE Band 17 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.91	4.95	9.81	9.69	-	-	-	-
Middle CH	-	-	-	-	4.82	4.92	9.75	9.75	-	-	-	-
Highest CH	-	-	-	-	4.86	4.87	9.73	9.85	-	-	-	-
Mode	LTE Band 17 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.97	-	9.73	-	-	-	-	-
Middle CH	-	-	-	-	4.91	-	9.85	-	-	-	-	-
Highest CH	-	-	-	-	4.94	-	9.75	-	-	-	-	-

LTE Band 17

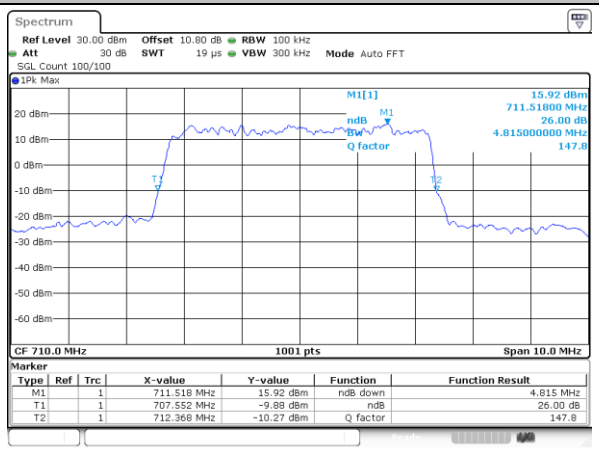
Lowest Channel / 5MHz / QPSK



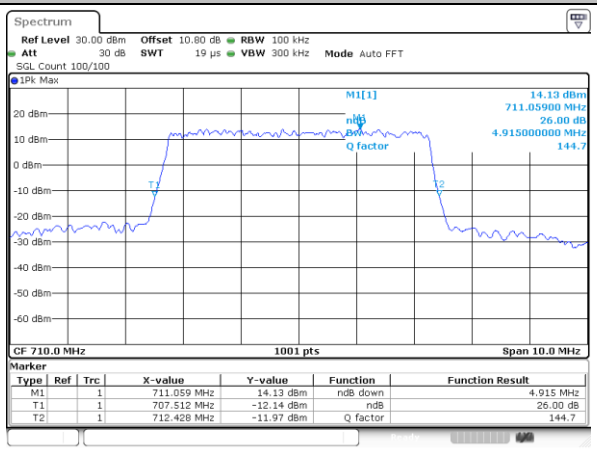
Lowest Channel / 5MHz / 16QAM



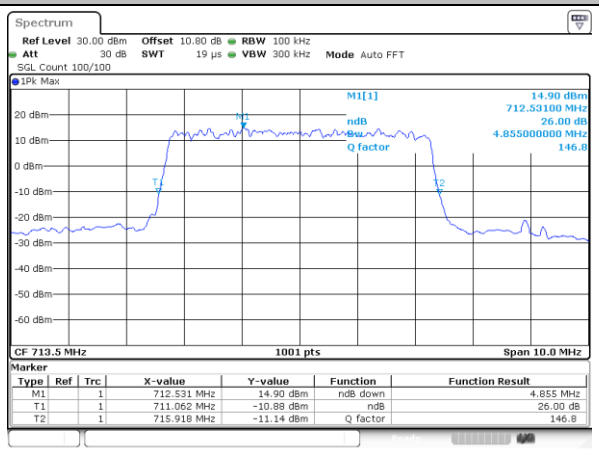
Middle Channel / 5MHz / QPSK



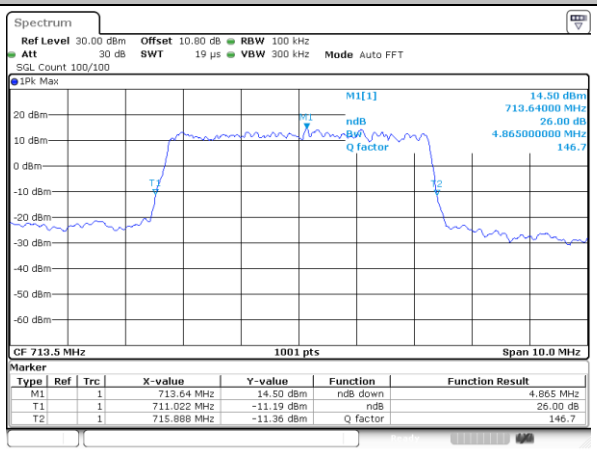
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

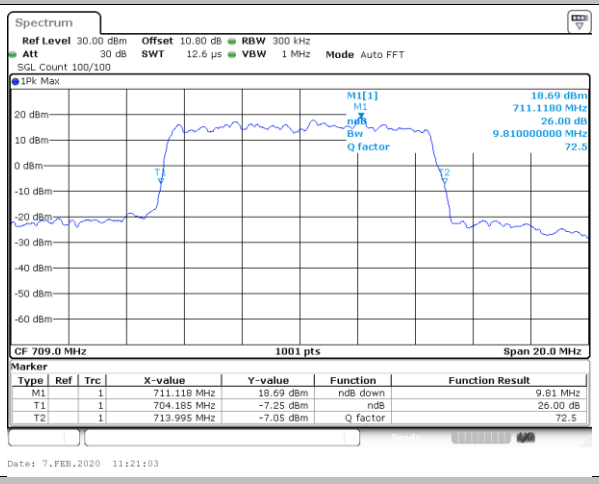


Highest Channel / 5MHz / 16QAM

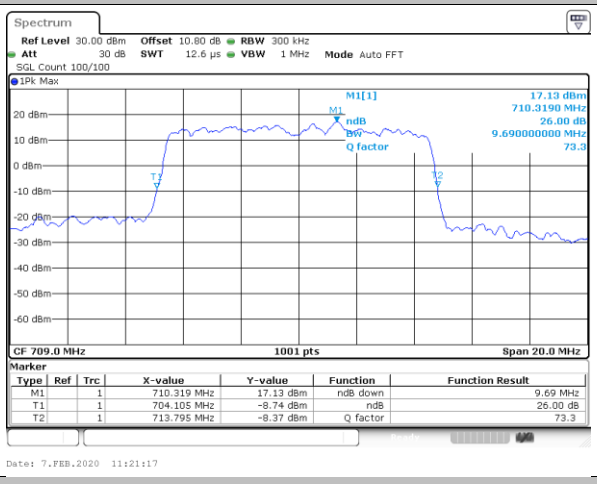


LTE Band 17

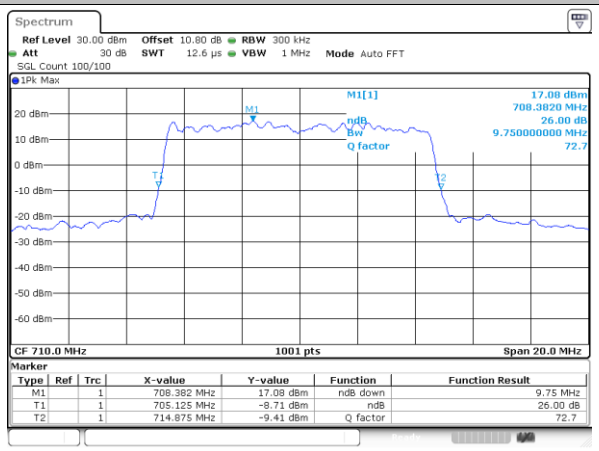
Lowest Channel / 10MHz / QPSK



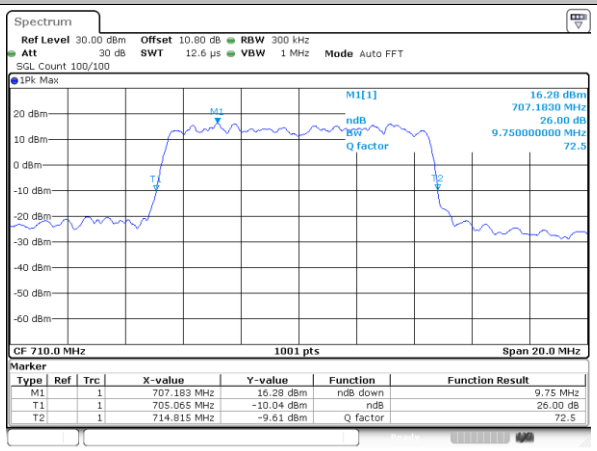
Lowest Channel / 10MHz / 16QAM



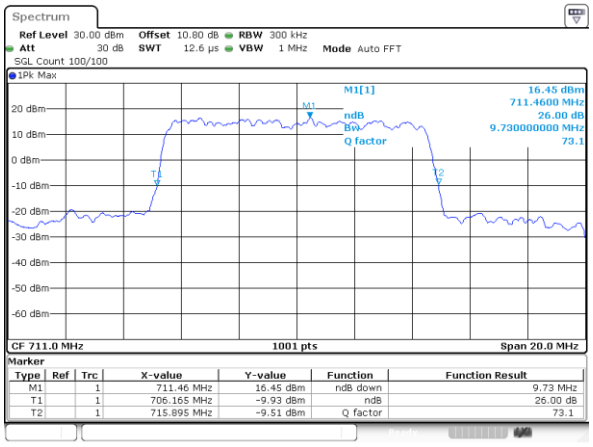
Middle Channel / 10MHz / QPSK



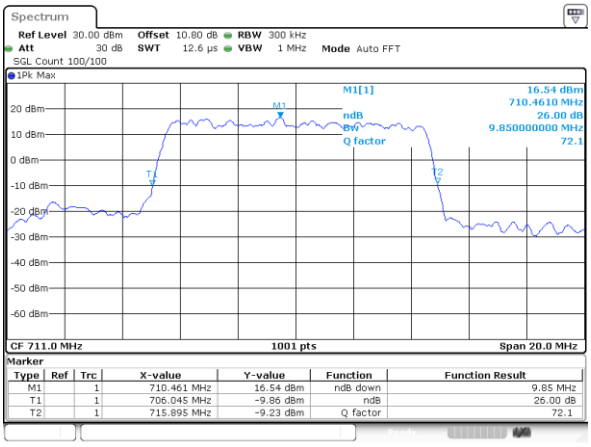
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

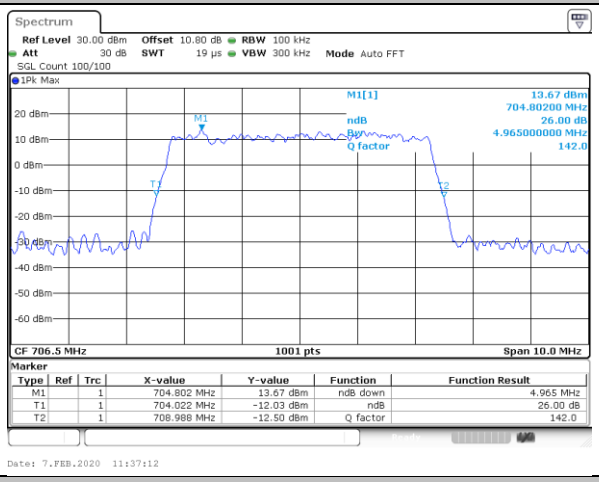


Highest Channel / 10MHz / 16QAM

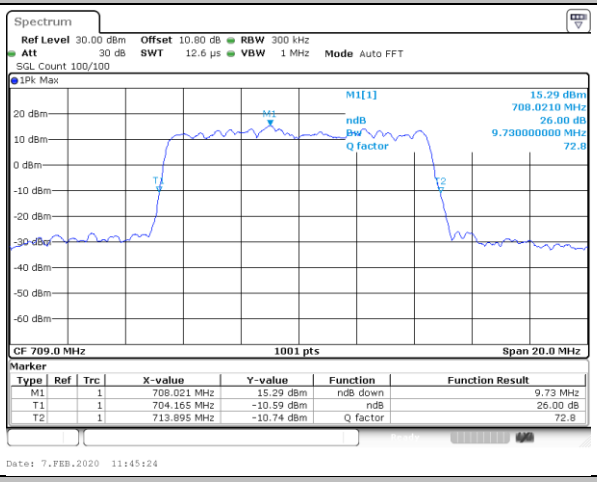


LTE Band 17

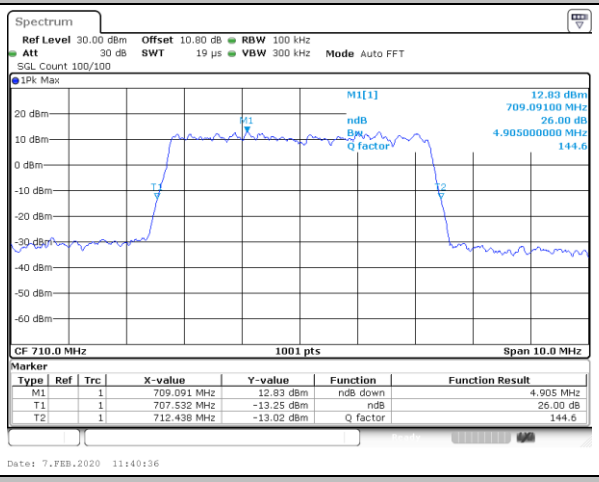
Lowest Channel / 5MHz / 64QAM



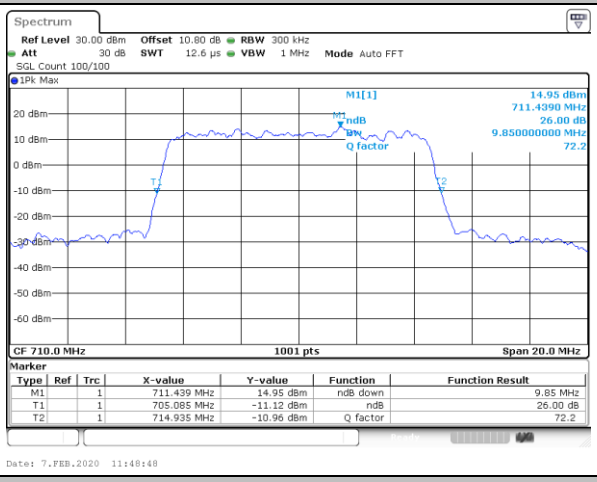
Lowest Channel / 10MHz / 64QAM



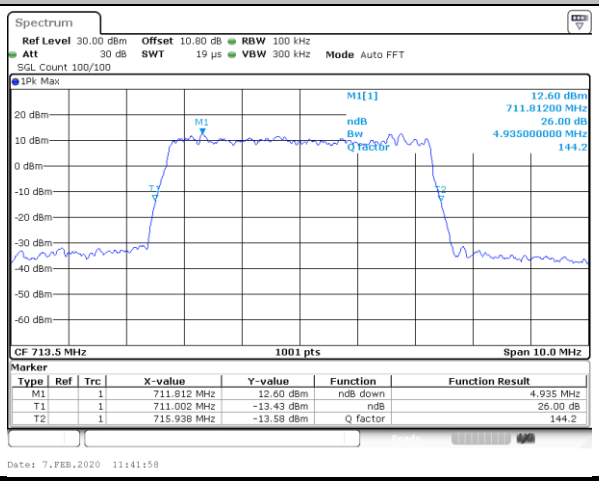
Middle Channel / 5MHz / 64QAM



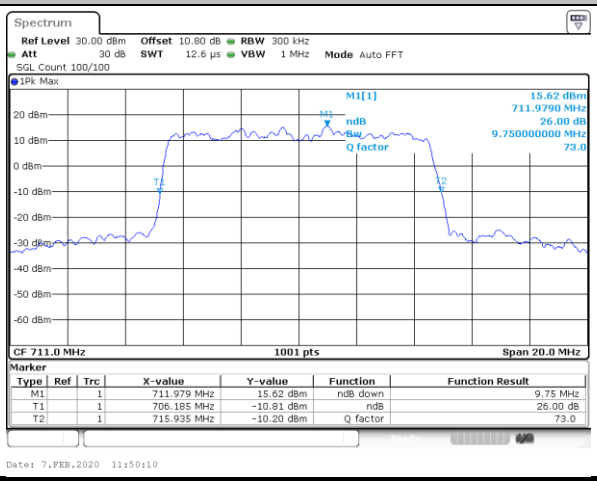
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



Highest Channel / 10MHz / 64QAM

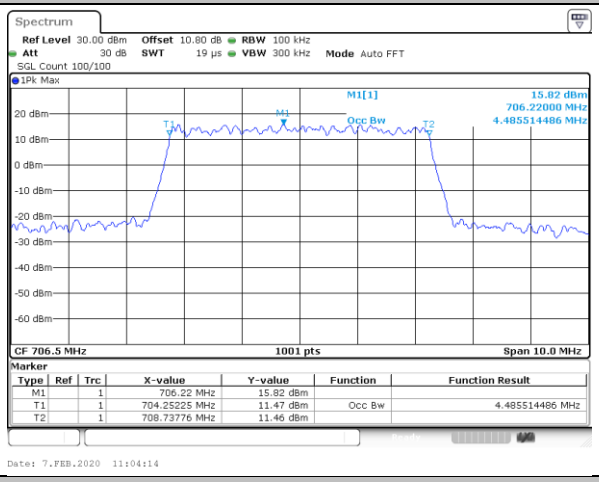


Occupied Bandwidth

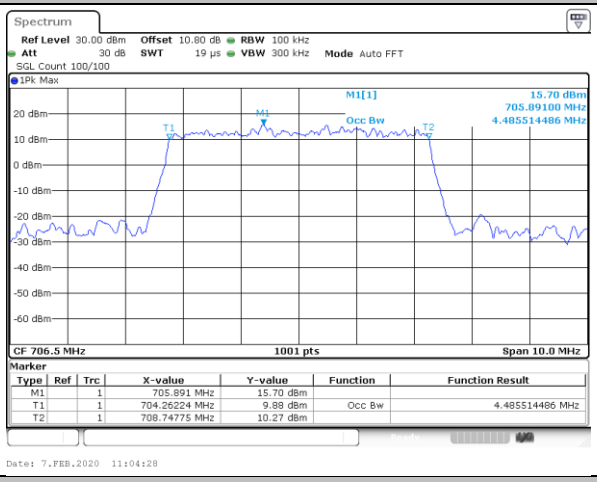
Mode	LTE Band 17 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.49	4.49	9.01	8.95	-	-	-	-
Middle CH	-	-	-	-	4.49	4.50	8.99	8.97	-	-	-	-
Highest CH	-	-	-	-	4.49	4.49	9.01	9.03	-	-	-	-
Mode	LTE Band 17 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.49	-	9.03	-	-	-	-	-
Middle CH	-	-	-	-	4.48	-	9.01	-	-	-	-	-
Highest CH	-	-	-	-	4.50	-	9.03	-	-	-	-	-

LTE Band 17

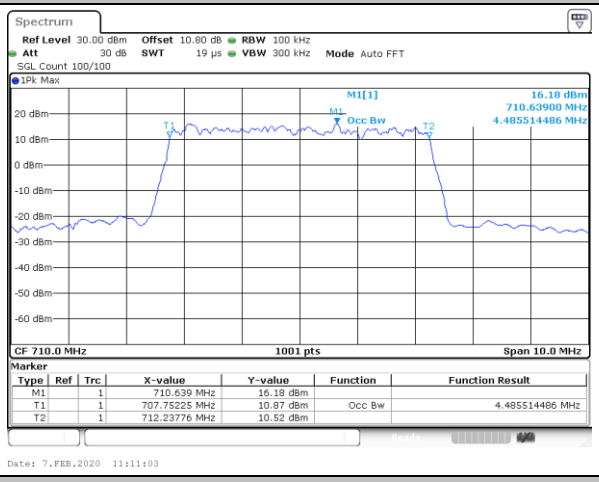
Lowest Channel / 5MHz / QPSK



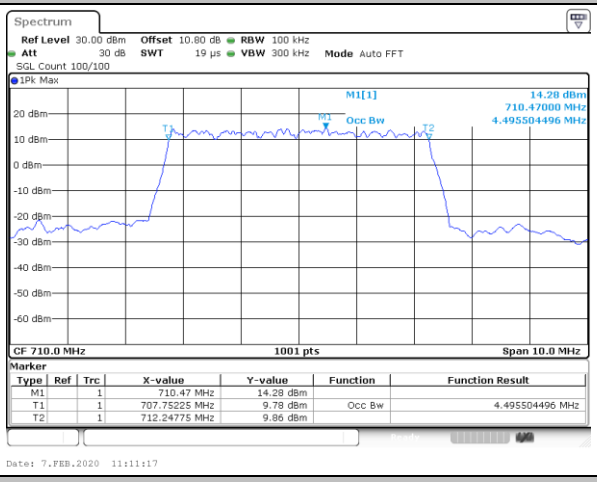
Lowest Channel / 5MHz / 16QAM



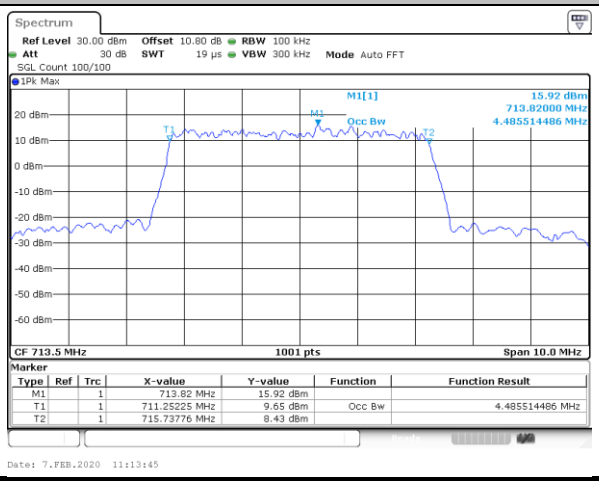
Middle Channel / 5MHz / QPSK



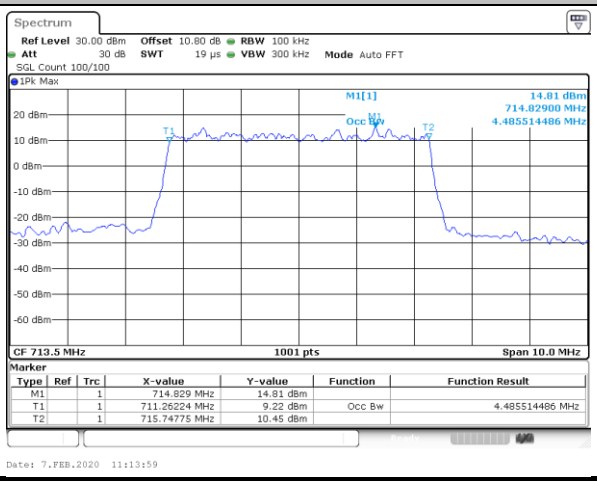
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK

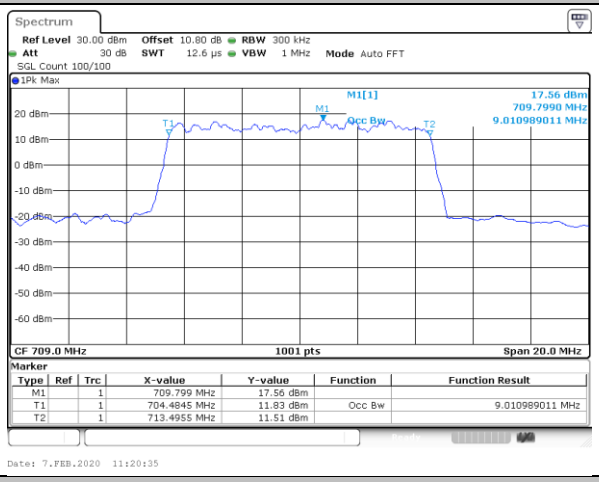


Highest Channel / 5MHz / 16QAM

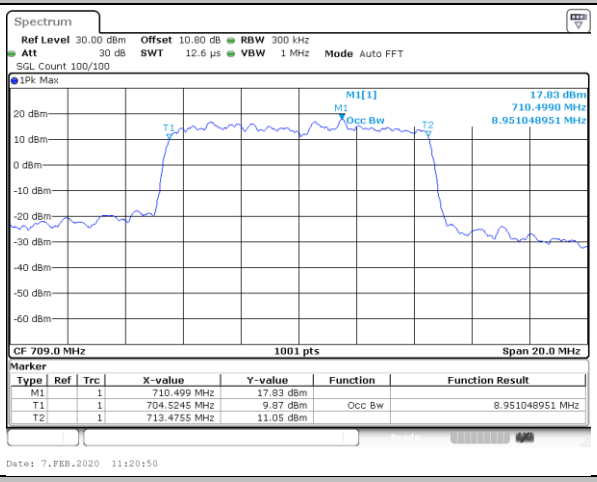


LTE Band 17

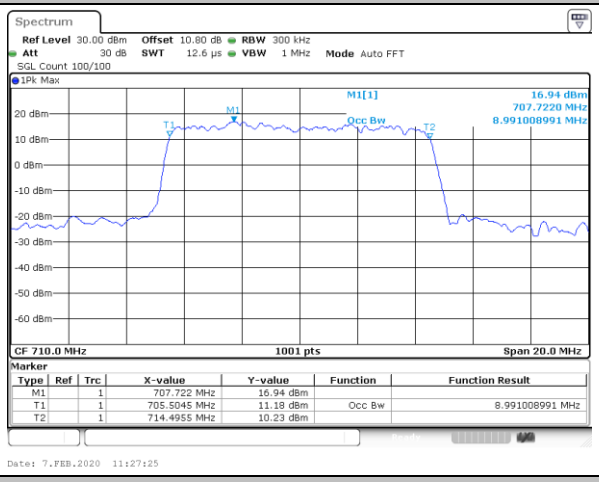
Lowest Channel / 10MHz / QPSK



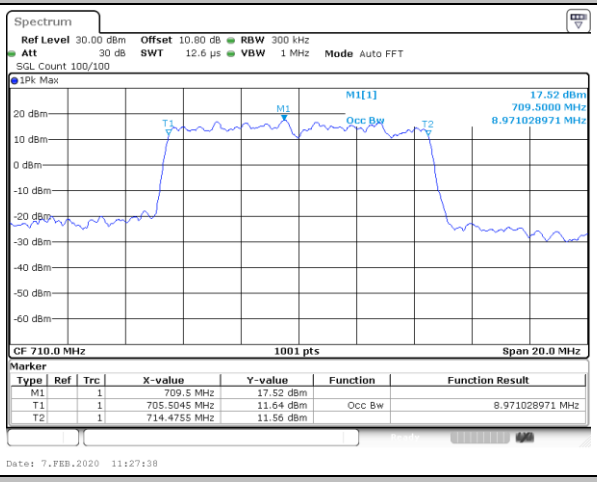
Lowest Channel / 10MHz / 16QAM



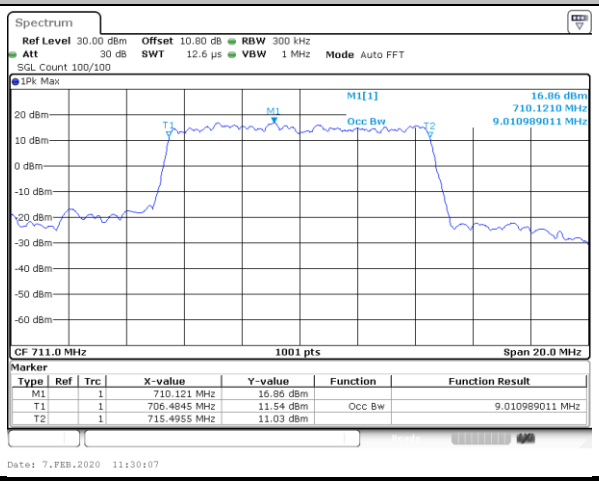
Middle Channel / 10MHz / QPSK



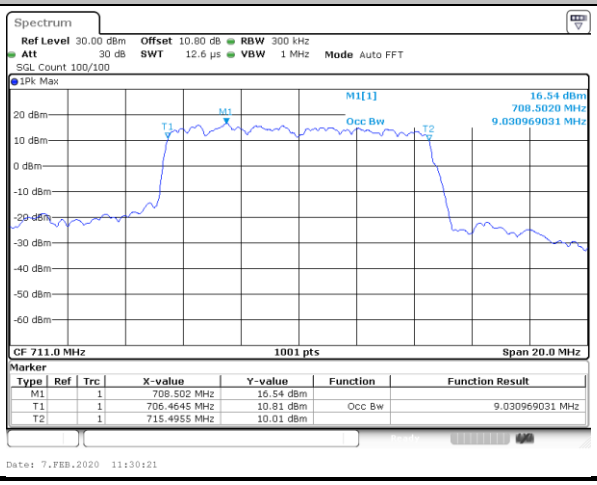
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK

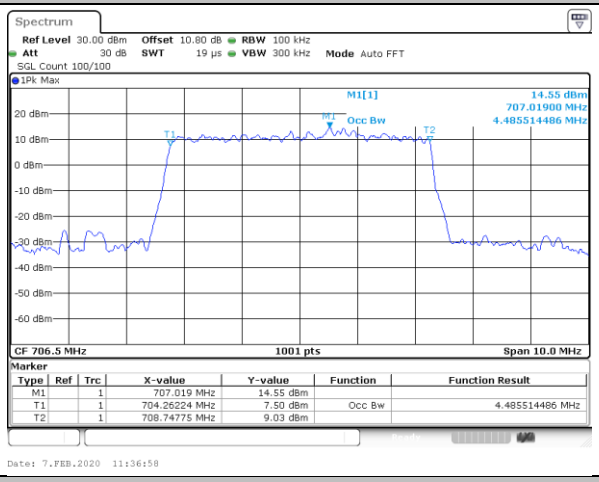


Highest Channel / 10MHz / 16QAM

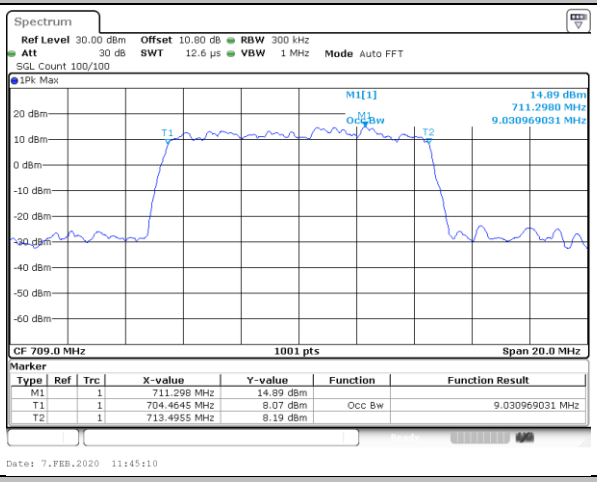


LTE Band 17

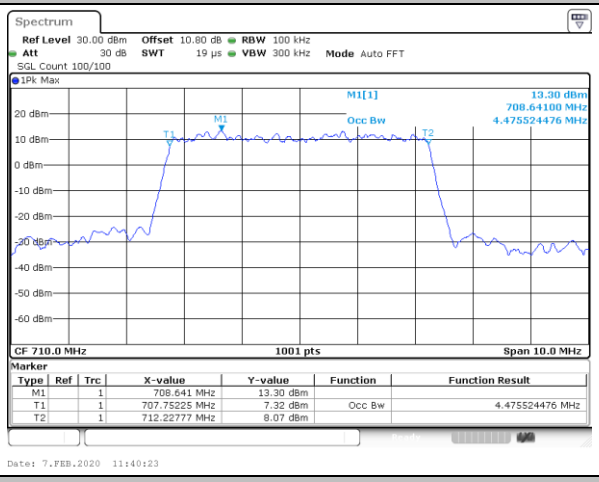
Lowest Channel / 5MHz / 64QAM



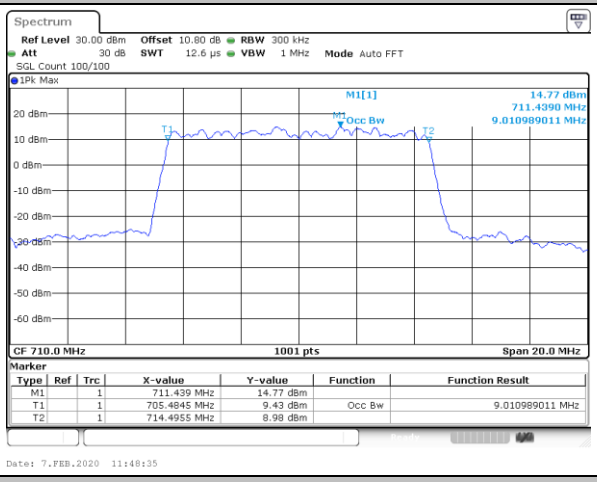
Lowest Channel / 10MHz / 64QAM



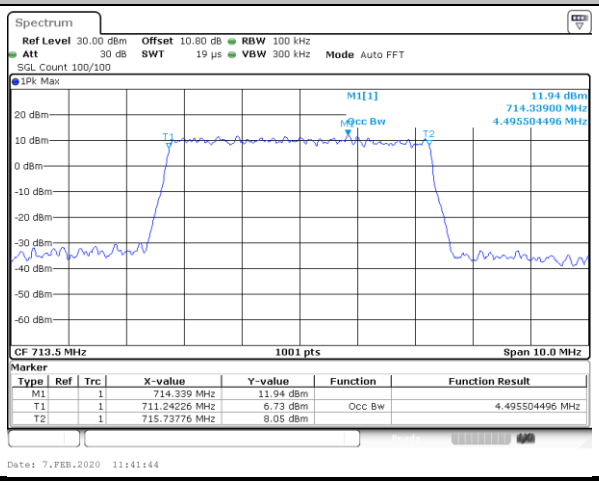
Middle Channel / 5MHz / 64QAM



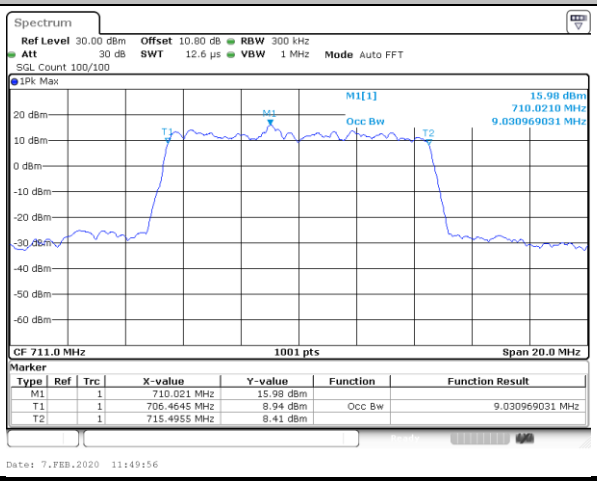
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



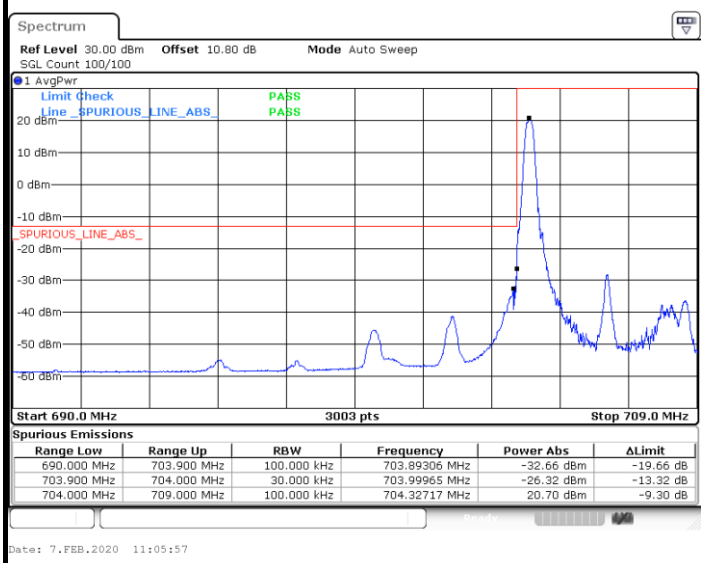
Highest Channel / 10MHz / 64QAM



Conducted Band Edge

LTE Band 17 / 5MHz / QPSK

Lowest Band Edge / 1 RB

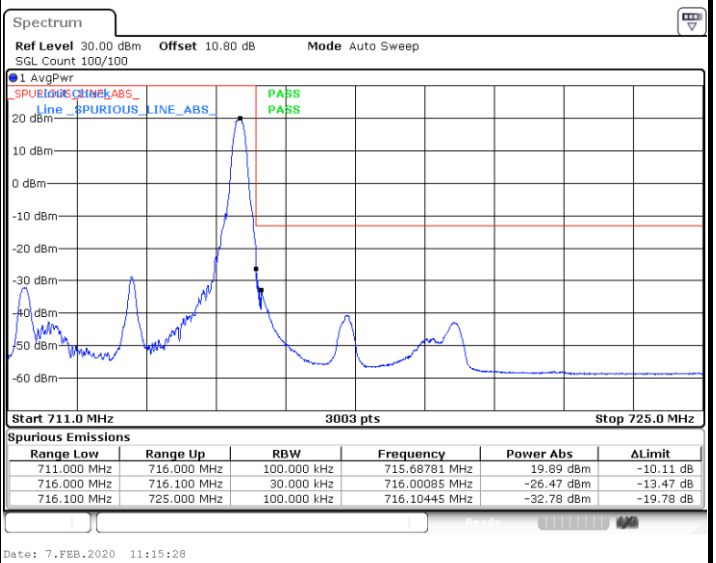


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	703.900 MHz	100.000 kHz	703.89306 MHz	-32.66 dBm	-19.66 dB
703.900 MHz	704.000 MHz	30.000 kHz	703.99965 MHz	-26.32 dBm	-13.32 dB
704.000 MHz	709.000 MHz	100.000 kHz	704.32717 MHz	20.70 dBm	-9.30 dB

Date: 7.FEB.2020 11:05:57

Highest Band Edge / 1 RB

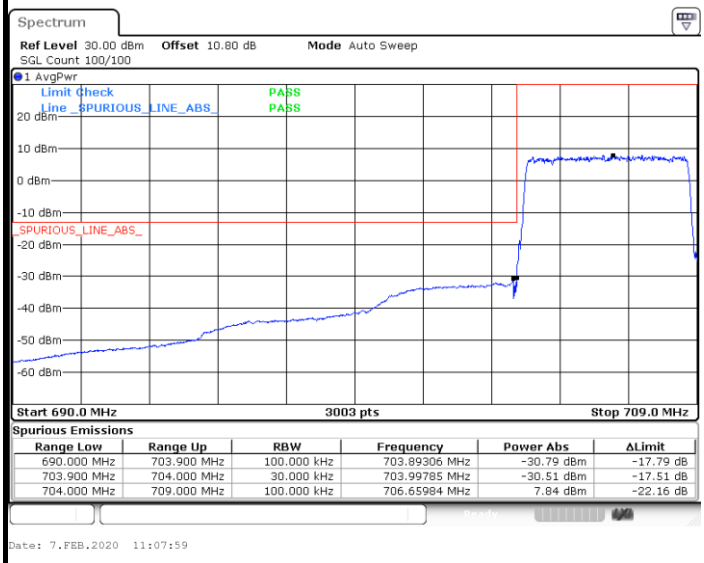


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	715.68781 MHz	19.89 dBm	-10.11 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00085 MHz	-26.47 dBm	-13.47 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-32.78 dBm	-19.78 dB

Date: 7.FEB.2020 11:15:28

Lowest Band Edge / Full RB

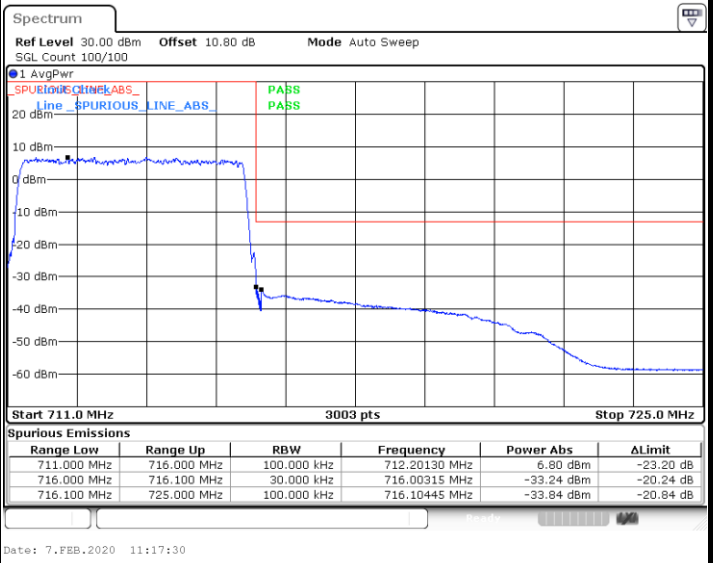


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	703.900 MHz	100.000 kHz	703.89306 MHz	-30.79 dBm	-17.79 dB
703.900 MHz	704.000 MHz	30.000 kHz	703.99785 MHz	-30.51 dBm	-17.51 dB
704.000 MHz	709.000 MHz	100.000 kHz	706.65984 MHz	7.84 dBm	-22.16 dB

Date: 7.FEB.2020 11:07:59

Highest Band Edge / Full RB



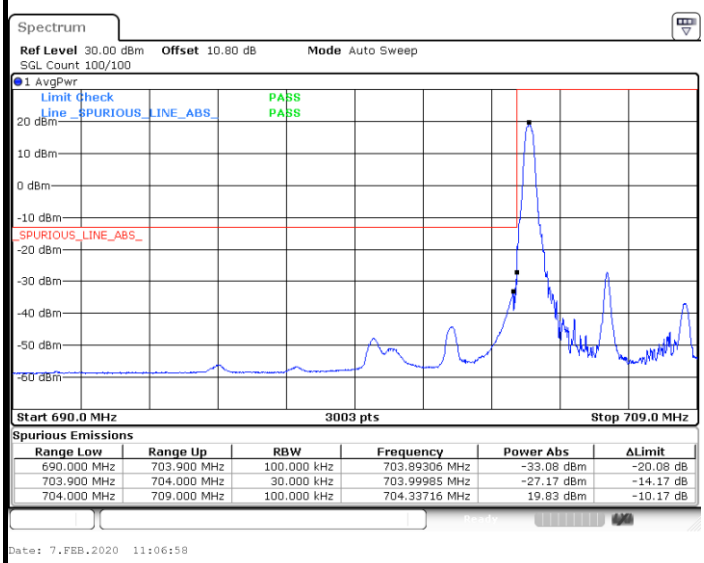
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	712.20130 MHz	6.80 dBm	-23.20 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00315 MHz	-33.24 dBm	-20.24 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-33.84 dBm	-20.84 dB

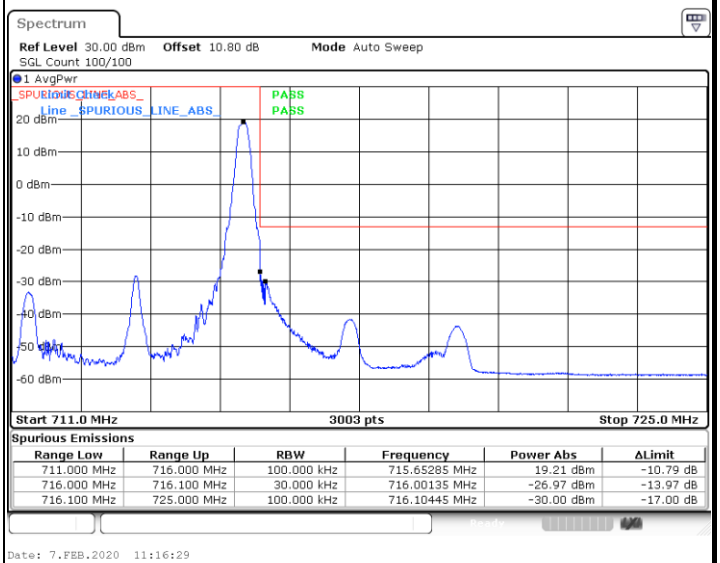
Date: 7.FEB.2020 11:17:30

LTE Band 17 / 5MHz / 16QAM

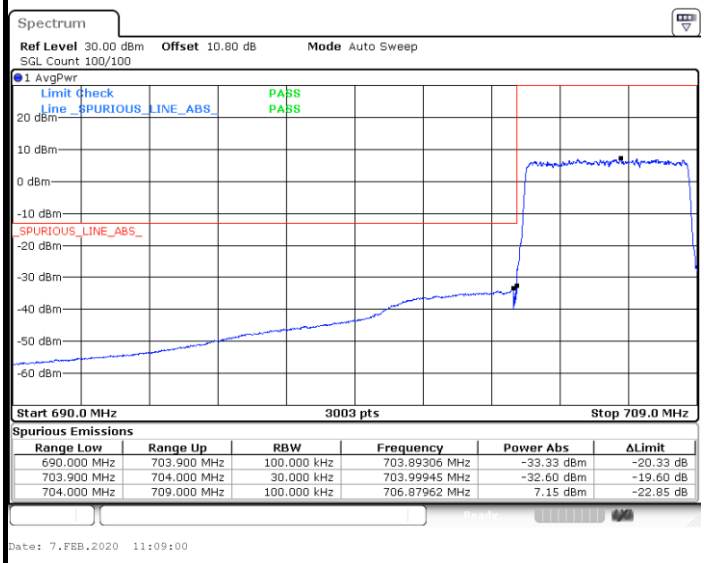
Lowest Band Edge / 1 RB



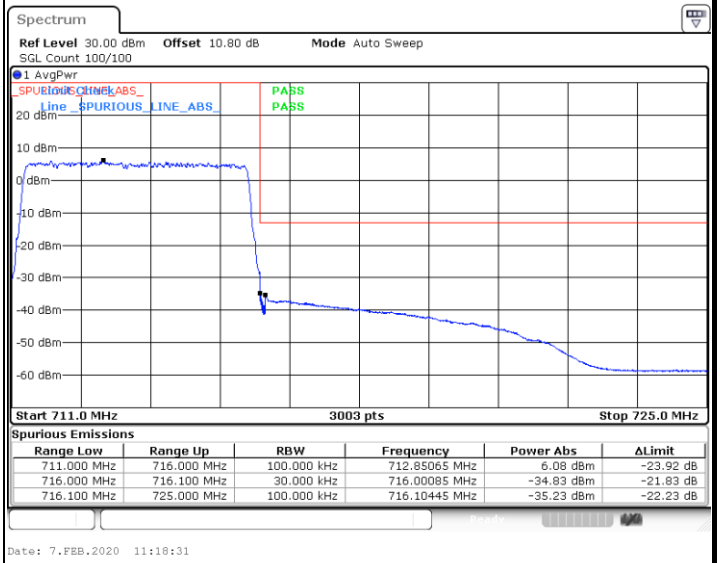
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

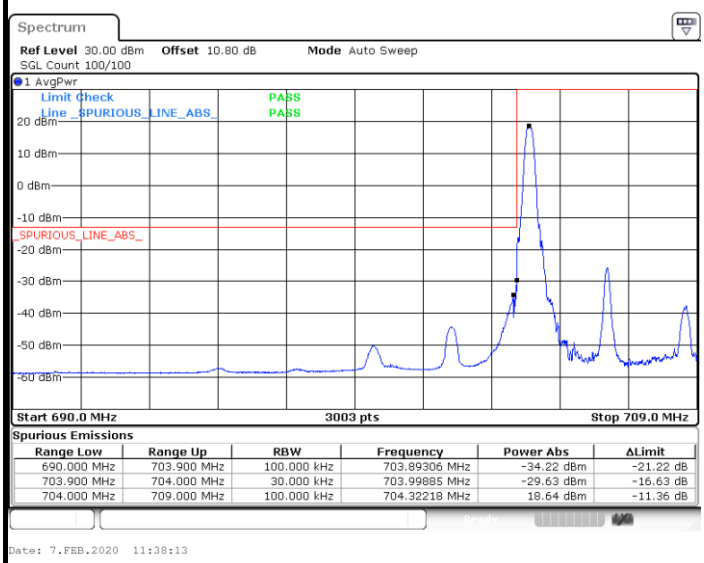


Highest Band Edge / Full RB



LTE Band 17 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

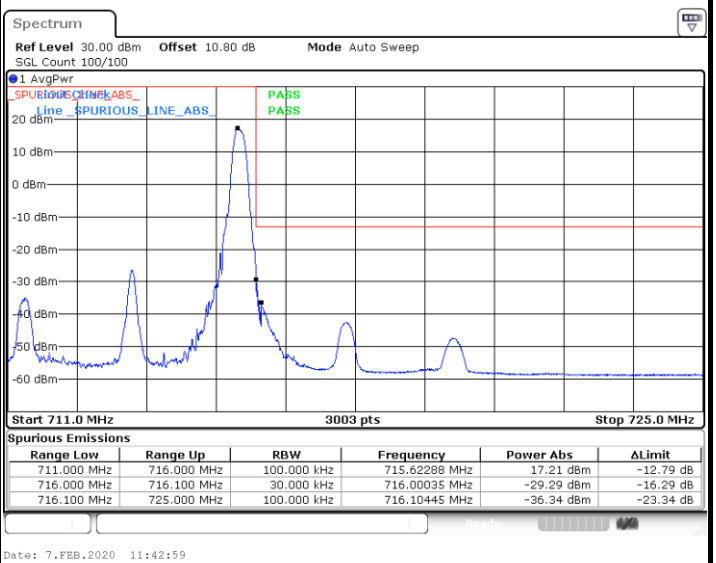


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	703.900 MHz	100.000 kHz	703.89306 MHz	-34.22 dBm	-21.22 dB
703.900 MHz	704.000 MHz	30.000 kHz	703.99885 MHz	-29.63 dBm	-16.63 dB
704.000 MHz	709.000 MHz	100.000 kHz	704.32218 MHz	18.64 dBm	-11.36 dB

Date: 7.FEB.2020 11:38:13

Highest Band Edge / 1 RB

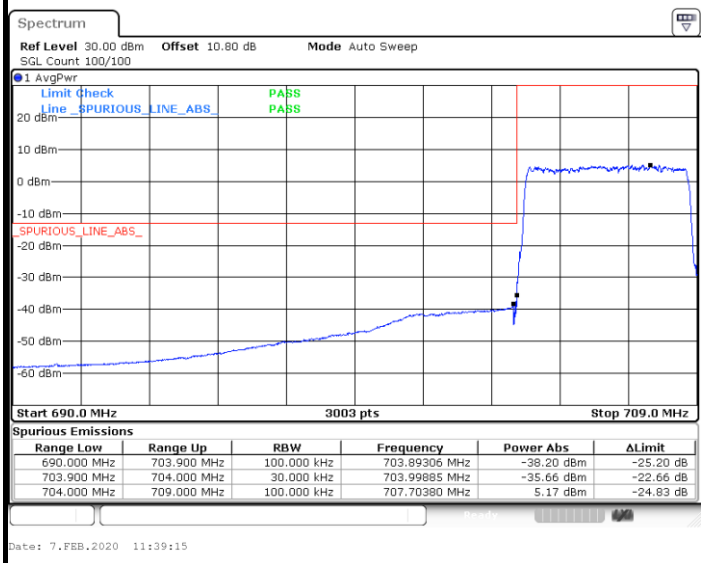


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	715.62288 MHz	17.21 dBm	-12.79 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00035 MHz	-29.29 dBm	-16.29 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-36.34 dBm	-23.34 dB

Date: 7.FEB.2020 11:42:59

Lowest Band Edge / Full RB

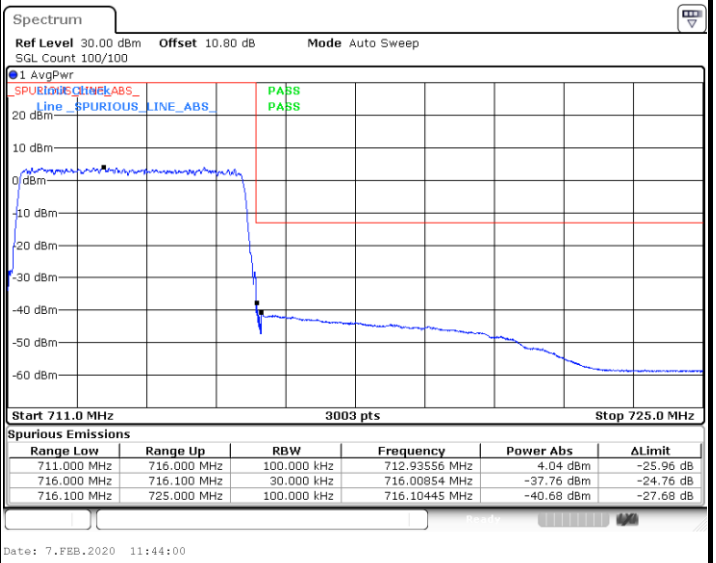


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	703.900 MHz	100.000 kHz	703.89306 MHz	-38.20 dBm	-25.20 dB
703.900 MHz	704.000 MHz	30.000 kHz	703.99885 MHz	-35.66 dBm	-22.66 dB
704.000 MHz	709.000 MHz	100.000 kHz	707.70380 MHz	5.17 dBm	-24.83 dB

Date: 7.FEB.2020 11:39:15

Highest Band Edge / Full RB



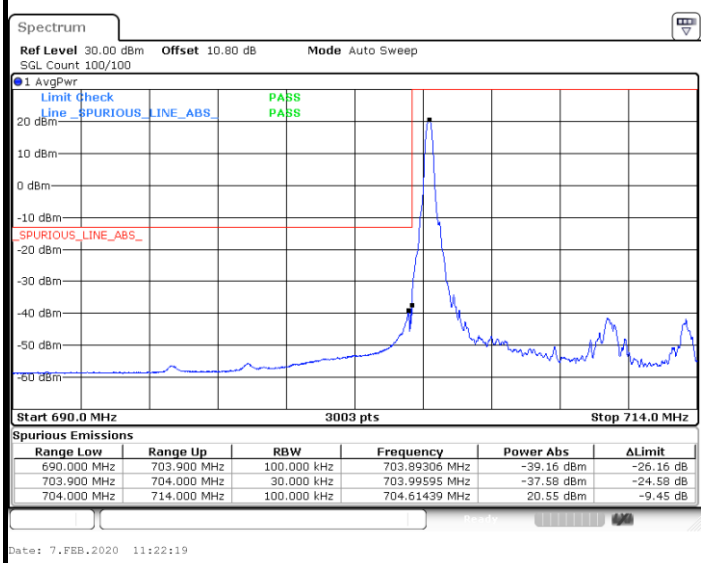
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	712.93556 MHz	4.04 dBm	-25.96 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00854 MHz	-37.76 dBm	-24.76 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-40.68 dBm	-27.68 dB

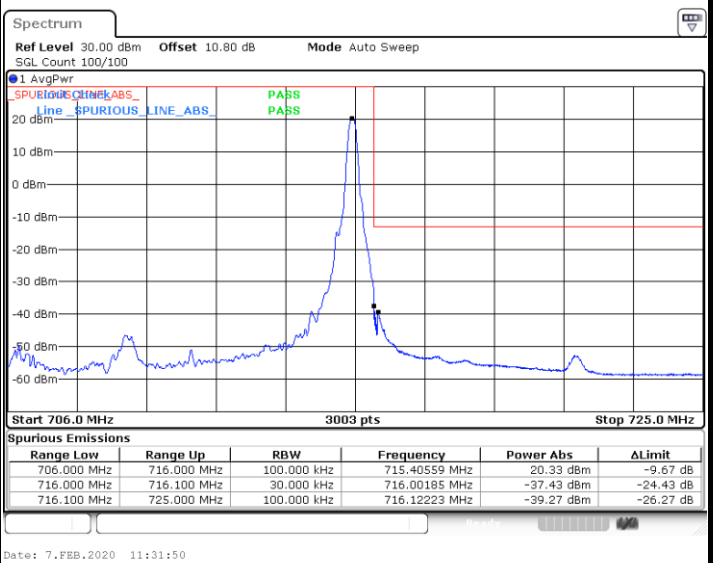
Date: 7.FEB.2020 11:44:00

LTE Band 17 / 10MHz / QPSK

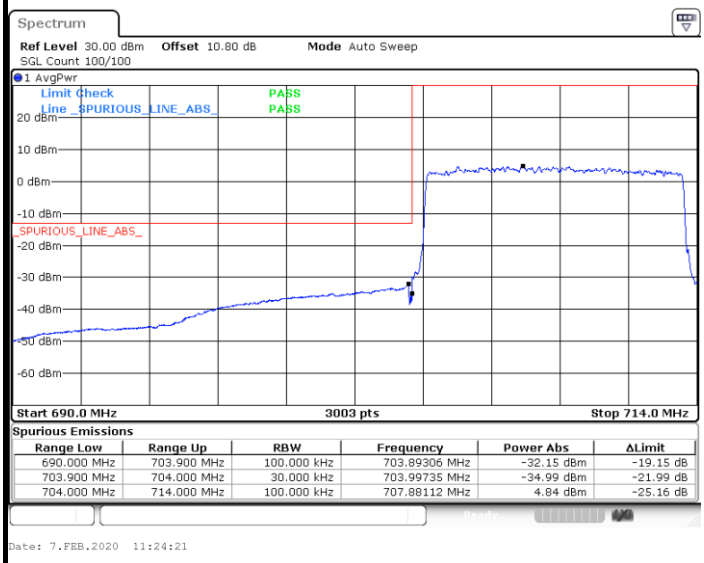
Lowest Band Edge / 1 RB



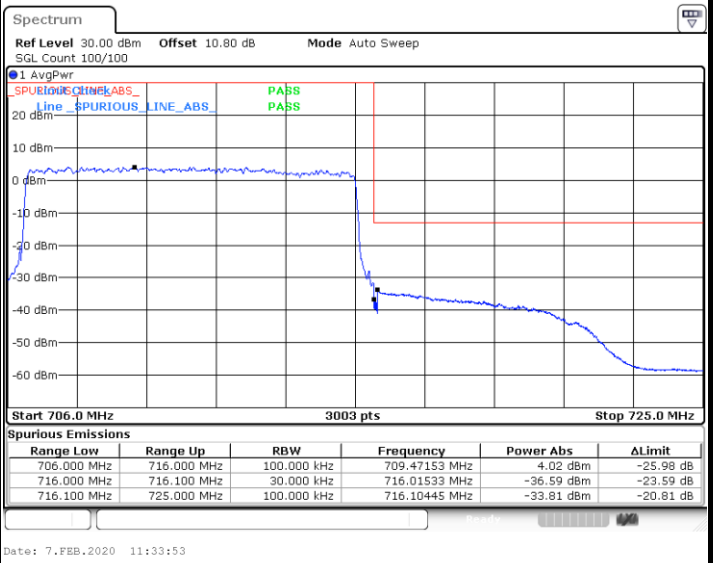
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

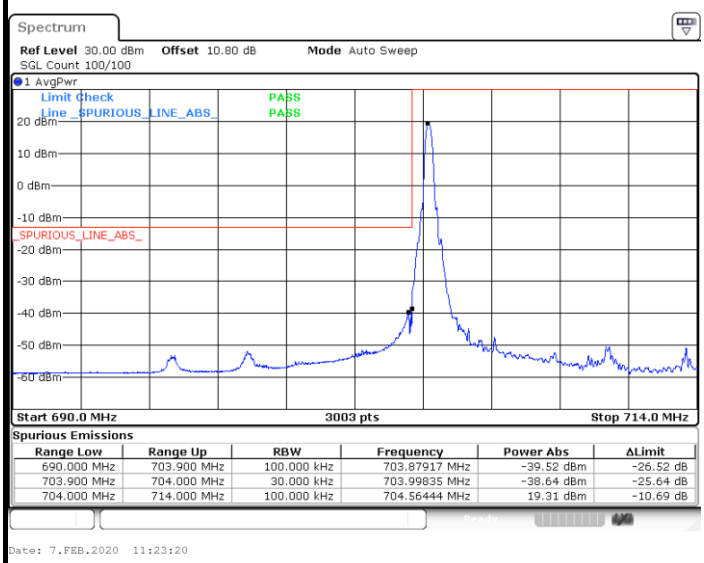


Highest Band Edge / Full RB

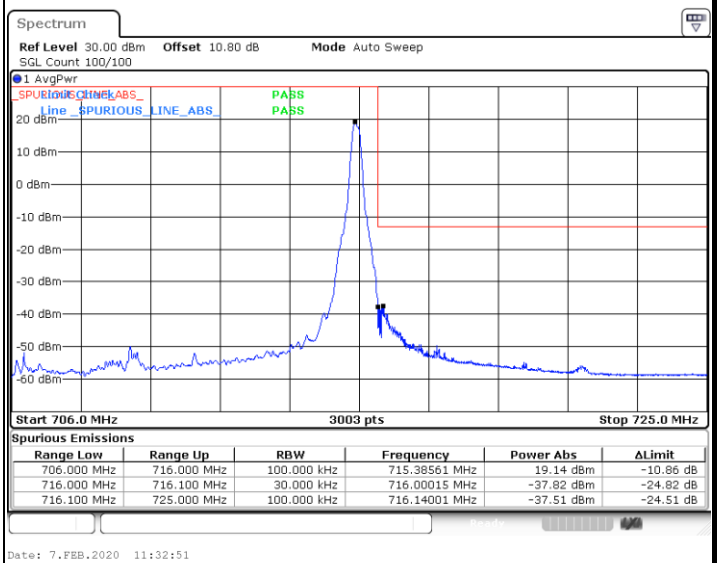


LTE Band 17 / 10MHz / 16QAM

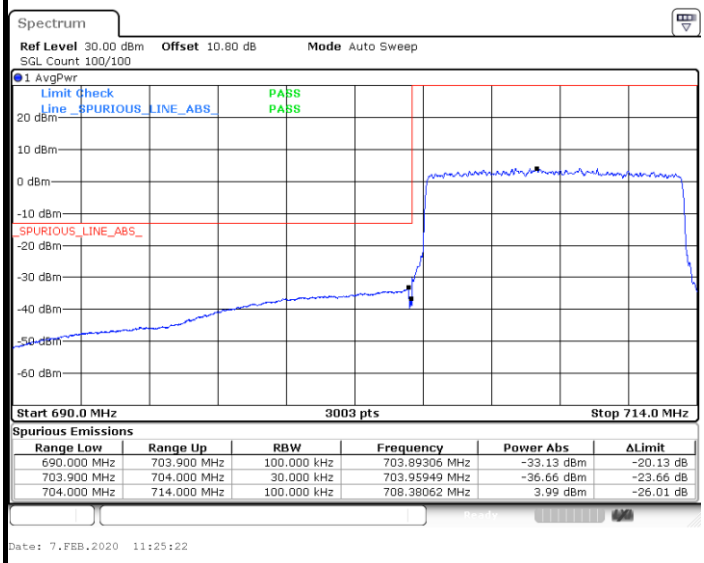
Lowest Band Edge / 1 RB



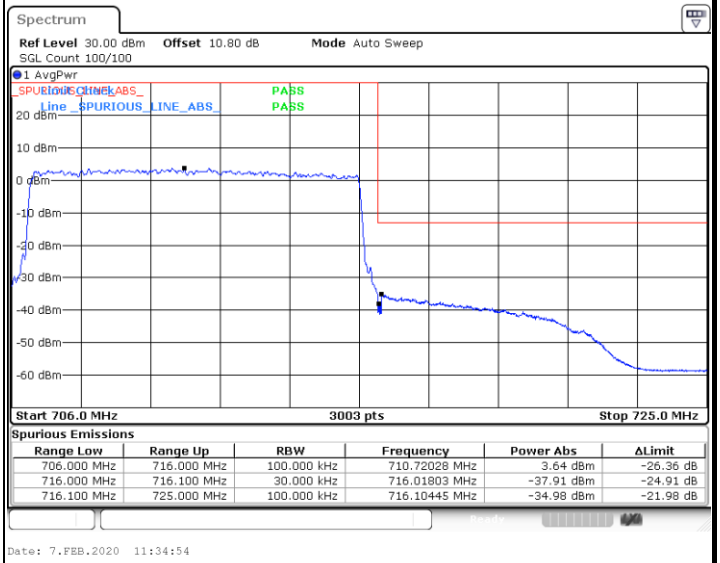
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

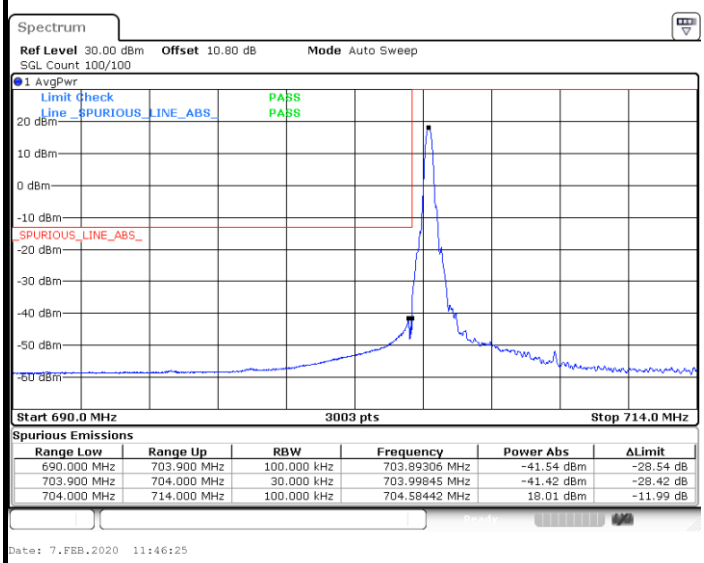


Highest Band Edge / Full RB



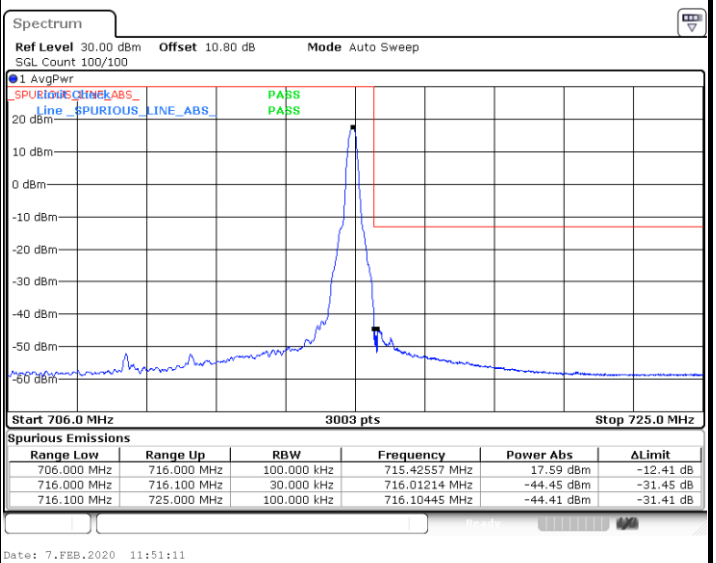
LTE Band 17 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



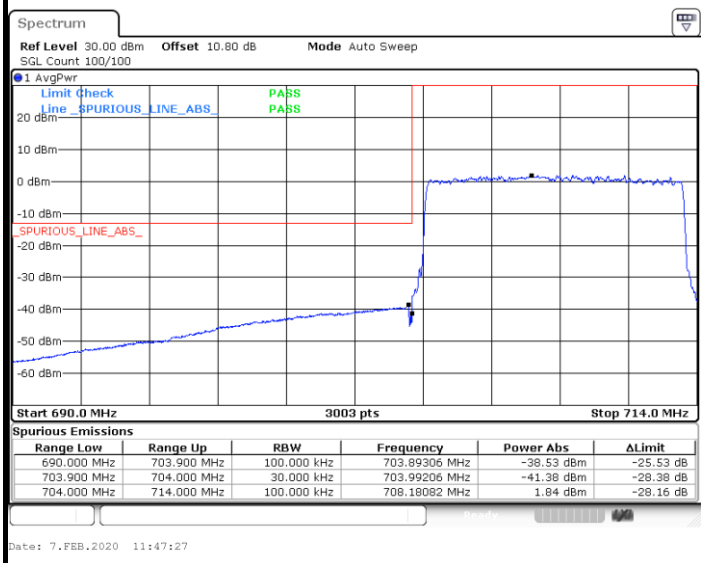
Date: 7.FEB.2020 11:46:25

Highest Band Edge / 1 RB



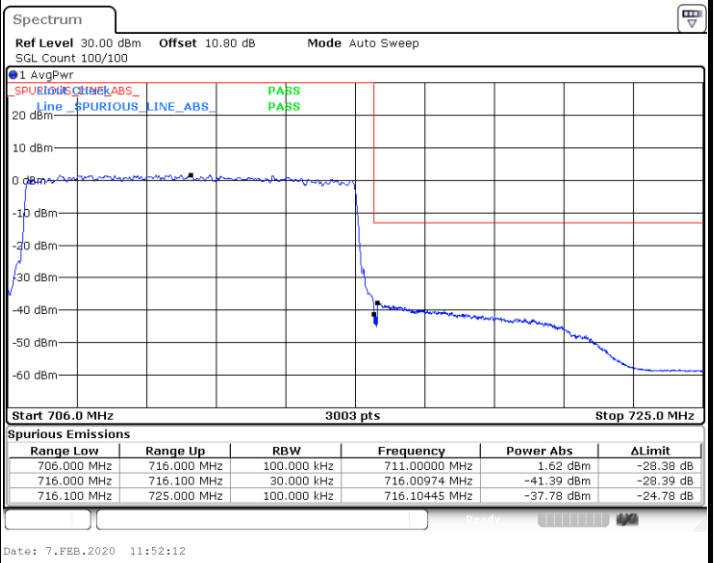
Date: 7.FEB.2020 11:51:11

Lowest Band Edge / Full RB



Date: 7.FEB.2020 11:47:27

Highest Band Edge / Full RB

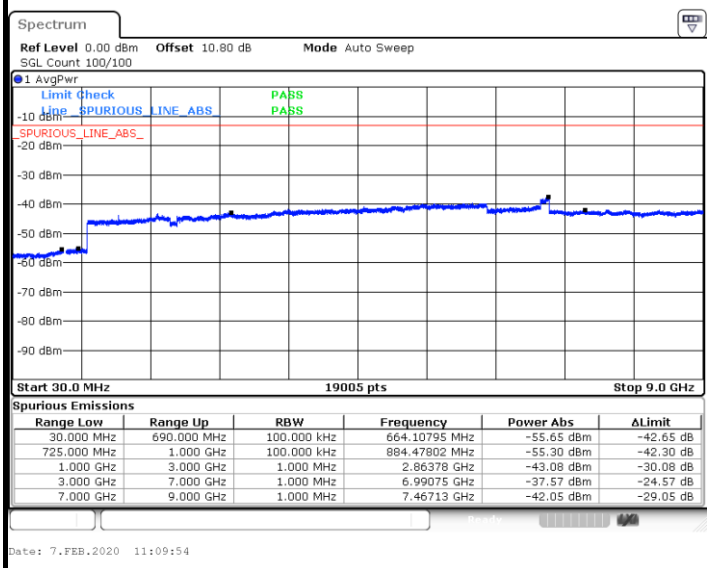


Date: 7.FEB.2020 11:52:12

Conducted Spurious Emission

LTE Band 17 / 5MHz

Lowest Channel / QPSK

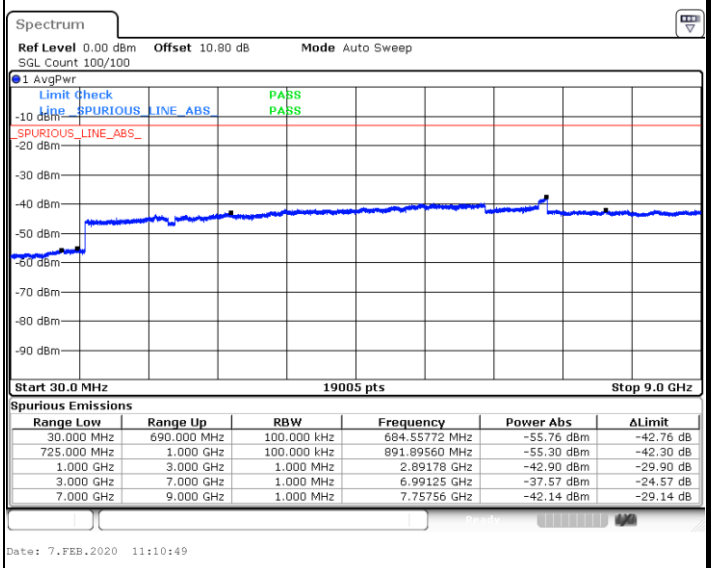


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	664.10795 MHz	-55.65 dBm	-42.65 dB
725.000 MHz	1.000 GHz	100.000 kHz	884.47802 MHz	-55.30 dBm	-42.30 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.86378 GHz	-43.08 dBm	-30.08 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99075 GHz	-37.57 dBm	-24.57 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.46713 GHz	-42.05 dBm	-29.05 dB

Date: 7.FEB.2020 11:09:54

Lowest Channel / 16QAM

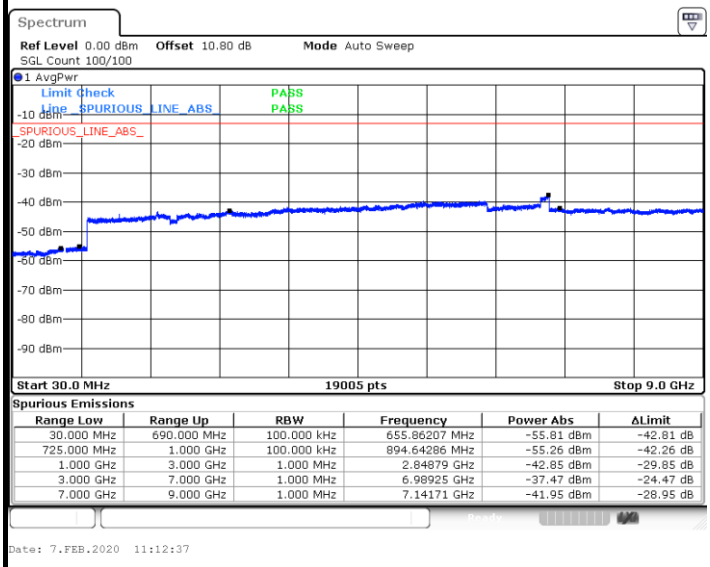


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	684.55772 MHz	-55.76 dBm	-42.76 dB
725.000 MHz	1.000 GHz	100.000 kHz	891.89560 MHz	-55.30 dBm	-42.30 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.89178 GHz	-42.90 dBm	-29.90 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99125 GHz	-37.57 dBm	-24.57 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.75756 GHz	-42.14 dBm	-29.14 dB

Date: 7.FEB.2020 11:10:49

Middle Channel / QPSK

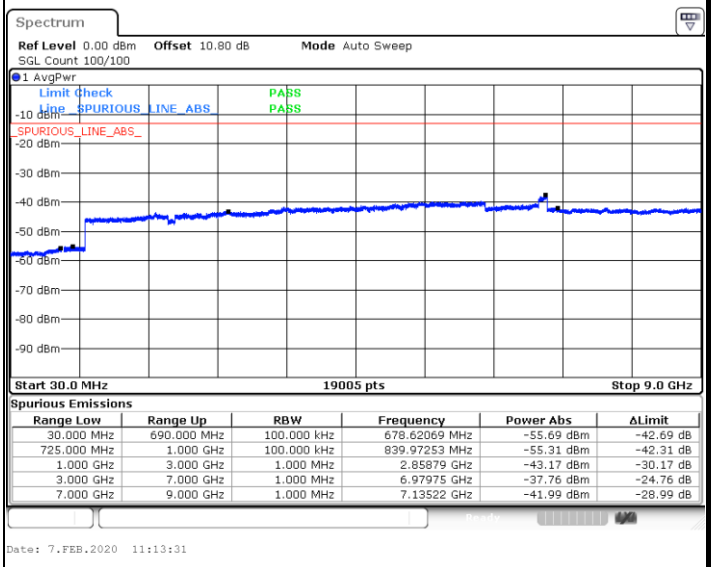


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	655.86207 MHz	-55.81 dBm	-42.81 dB
725.000 MHz	1.000 GHz	100.000 kHz	894.64286 MHz	-55.26 dBm	-42.26 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.84879 GHz	-42.85 dBm	-29.85 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98925 GHz	-37.47 dBm	-24.47 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.14171 GHz	-41.95 dBm	-28.95 dB

Date: 7.FEB.2020 11:12:37

Middle Channel / 16QAM



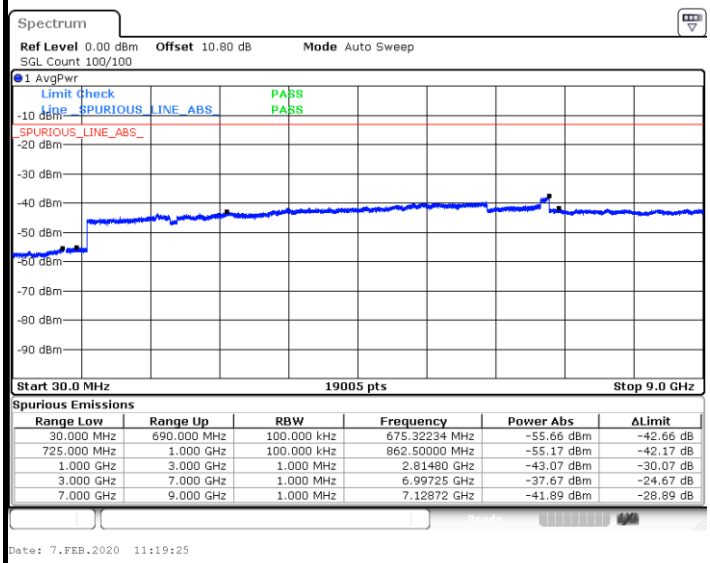
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	678.62069 MHz	-55.69 dBm	-42.69 dB
725.000 MHz	1.000 GHz	100.000 kHz	839.97253 MHz	-55.31 dBm	-42.31 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.85879 GHz	-43.17 dBm	-30.17 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97975 GHz	-37.76 dBm	-24.76 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.13522 GHz	-41.99 dBm	-28.99 dB

Date: 7.FEB.2020 11:13:31

LTE Band 17 / 5MHz

Highest Channel / QPSK

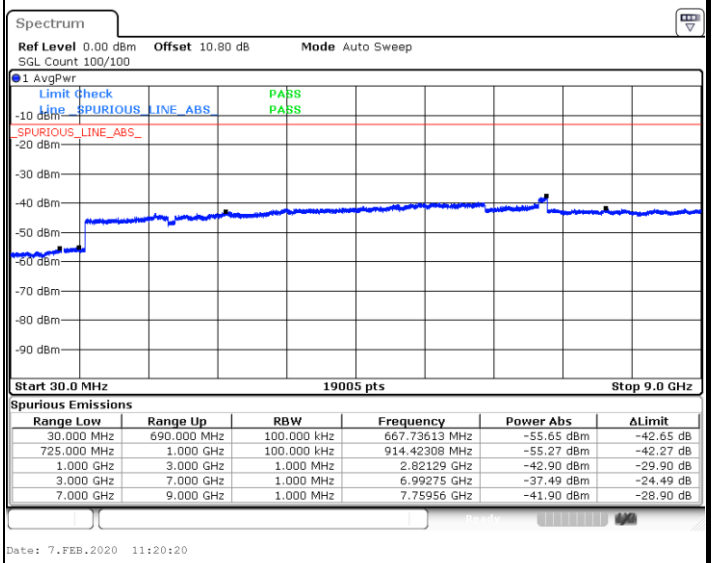


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	675.32234 MHz	-55.66 dBm	-42.66 dB
725.000 MHz	1.000 GHz	100.000 kHz	862.50000 MHz	-55.17 dBm	-42.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.81480 GHz	-43.07 dBm	-30.07 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99725 GHz	-37.67 dBm	-24.67 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.12872 GHz	-41.89 dBm	-28.89 dB

Date: 7.FEB.2020 11:19:25

Highest Channel / 16QAM



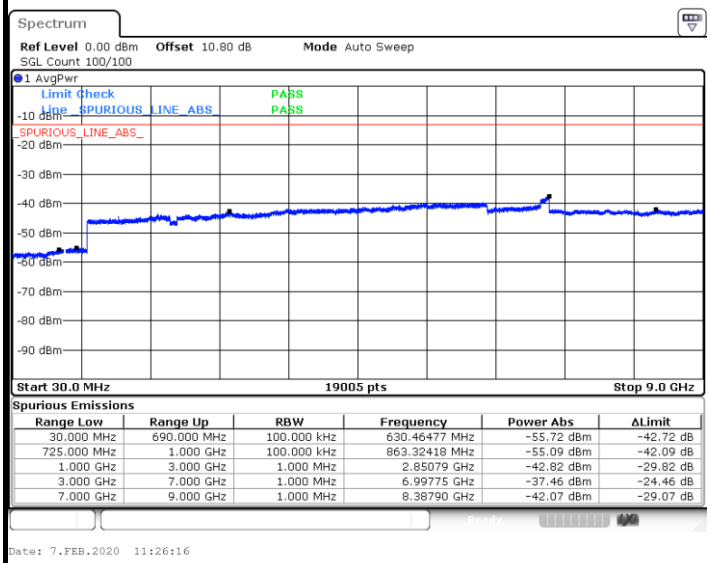
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	667.73613 MHz	-55.65 dBm	-42.65 dB
725.000 MHz	1.000 GHz	100.000 kHz	914.42308 MHz	-55.27 dBm	-42.27 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.82129 GHz	-42.90 dBm	-29.90 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99275 GHz	-37.49 dBm	-24.49 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.75956 GHz	-41.90 dBm	-28.90 dB

Date: 7.FEB.2020 11:20:20

LTE Band 17 / 10MHz

Lowest Channel / QPSK

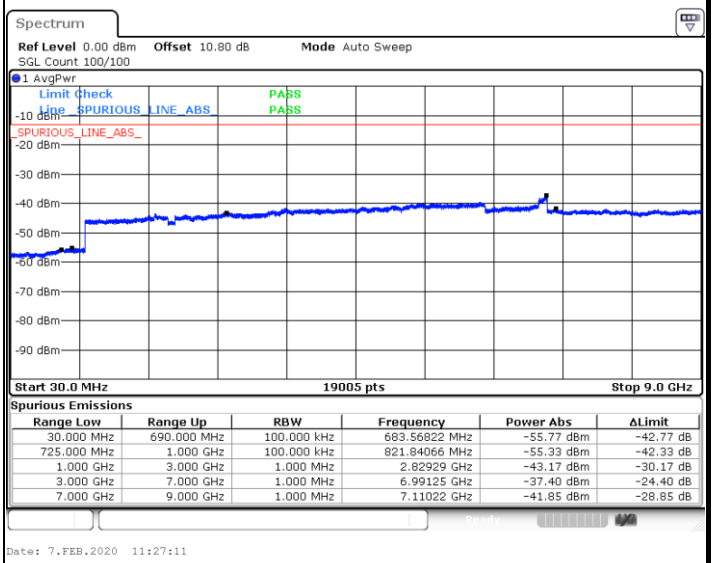


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	630.46477 MHz	-55.72 dBm	-42.72 dB
725.000 MHz	1.000 GHz	100.000 kHz	863.32418 MHz	-55.09 dBm	-42.09 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.85079 GHz	-42.82 dBm	-29.82 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99775 GHz	-37.46 dBm	-24.46 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.38790 GHz	-42.07 dBm	-29.07 dB

Date: 7.FEB.2020 11:26:16

Lowest Channel / 16QAM



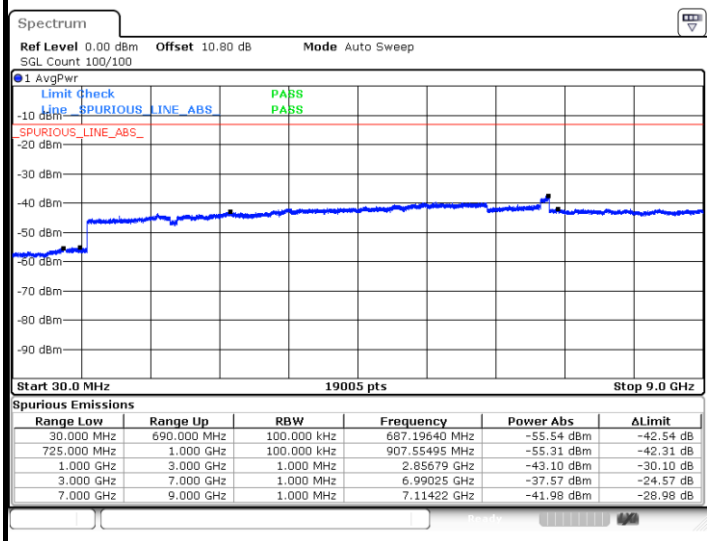
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	683.56822 MHz	-55.77 dBm	-42.77 dB
725.000 MHz	1.000 GHz	100.000 kHz	821.84066 MHz	-55.33 dBm	-42.33 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.82929 GHz	-43.17 dBm	-30.17 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99125 GHz	-37.40 dBm	-24.40 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.11022 GHz	-41.85 dBm	-28.85 dB

Date: 7.FEB.2020 11:27:11

LTE Band 17 / 10MHz

Middle Channel / QPSK

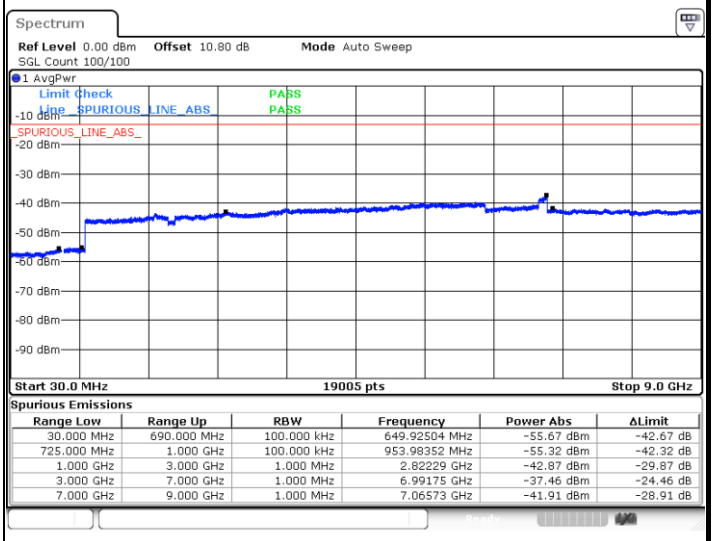


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	687.19640 MHz	-55.54 dBm	-42.54 dB
725.000 MHz	1.000 GHz	100.000 kHz	907.55495 MHz	-55.31 dBm	-42.31 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.85679 GHz	-43.10 dBm	-30.10 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99025 GHz	-37.57 dBm	-24.57 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.11422 GHz	-41.98 dBm	-28.98 dB

Date: 7.FEB.2020 11:28:59

Middle Channel / 16QAM

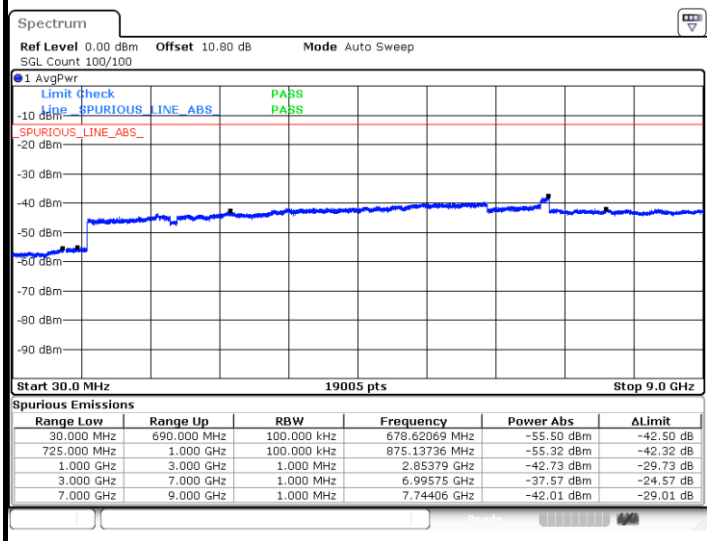


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	649.92504 MHz	-55.67 dBm	-42.67 dB
725.000 MHz	1.000 GHz	100.000 kHz	953.98352 MHz	-55.32 dBm	-42.32 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.82229 GHz	-42.87 dBm	-29.87 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99175 GHz	-37.46 dBm	-24.46 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.06573 GHz	-41.91 dBm	-28.91 dB

Date: 7.FEB.2020 11:29:53

Highest Channel / QPSK

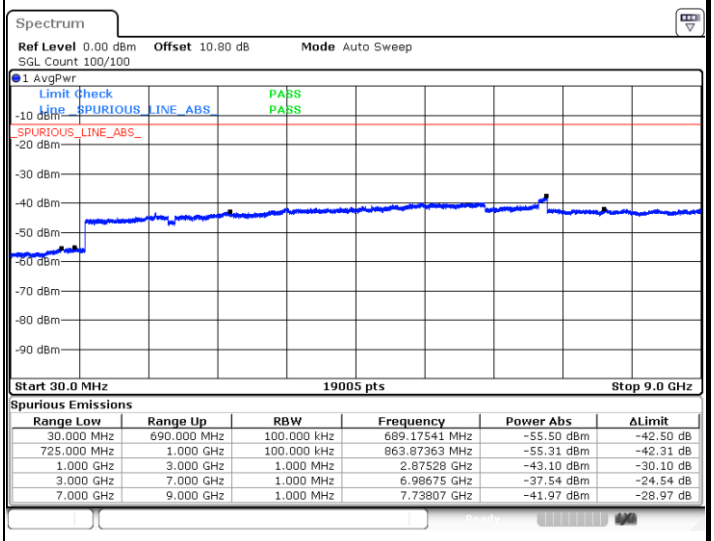


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	678.62069 MHz	-55.50 dBm	-42.50 dB
725.000 MHz	1.000 GHz	100.000 kHz	875.13736 MHz	-55.32 dBm	-42.32 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.85379 GHz	-42.73 dBm	-29.73 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99575 GHz	-37.57 dBm	-24.57 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.74406 GHz	-42.01 dBm	-29.01 dB

Date: 7.FEB.2020 11:35:48

Highest Channel / 16QAM



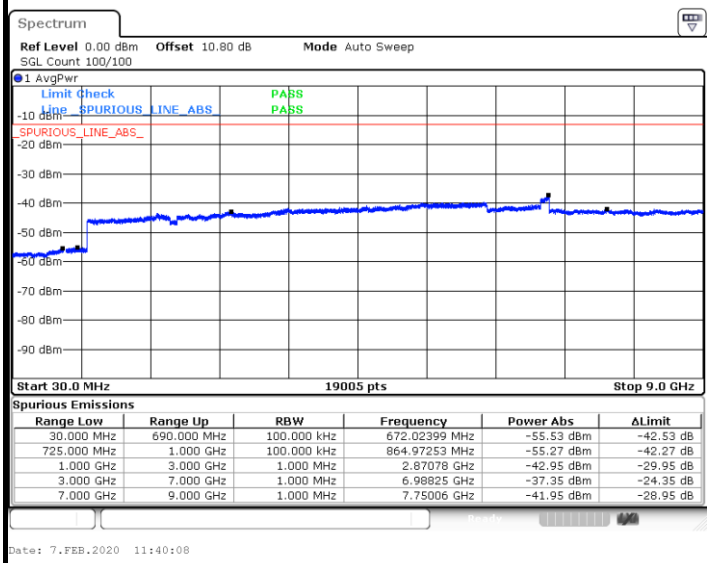
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	689.17541 MHz	-55.50 dBm	-42.50 dB
725.000 MHz	1.000 GHz	100.000 kHz	863.87363 MHz	-55.31 dBm	-42.31 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.87528 GHz	-43.10 dBm	-30.10 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98675 GHz	-37.54 dBm	-24.54 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.73807 GHz	-41.97 dBm	-28.97 dB

Date: 7.FEB.2020 11:36:42

LTE Band 17 / 5MHz

Lowest Channel / 64QAM

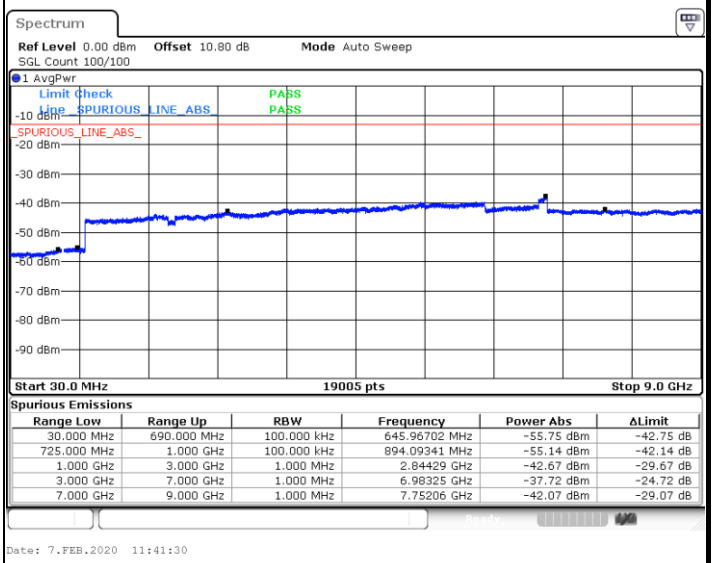


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	672.02399 MHz	-55.53 dBm	-42.53 dB
725.000 MHz	1.000 GHz	100.000 kHz	864.97253 MHz	-55.27 dBm	-42.27 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.87078 GHz	-42.95 dBm	-29.95 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98825 GHz	-37.35 dBm	-24.35 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.75006 GHz	-41.95 dBm	-28.95 dB

Date: 7.FEB.2020 11:40:08

Middle Channel / 64QAM

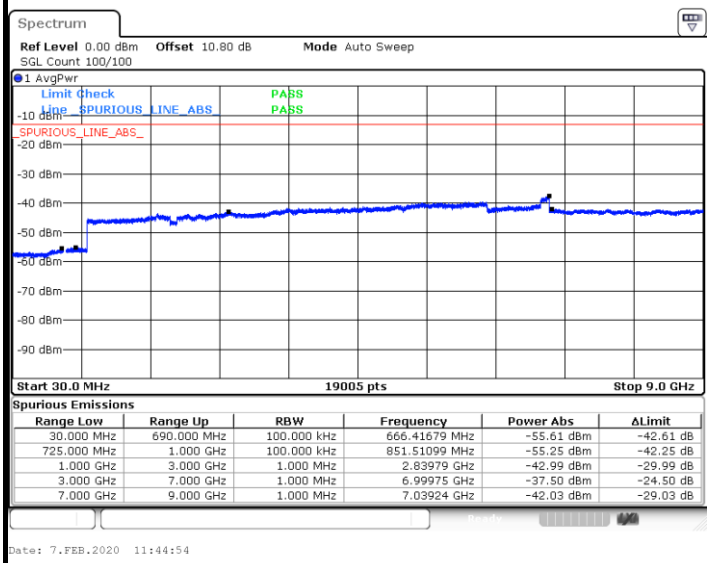


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	645.96702 MHz	-55.75 dBm	-42.75 dB
725.000 MHz	1.000 GHz	100.000 kHz	894.09341 MHz	-55.14 dBm	-42.14 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.84429 GHz	-42.67 dBm	-29.67 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98325 GHz	-37.72 dBm	-24.72 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.75206 GHz	-42.07 dBm	-29.07 dB

Date: 7.FEB.2020 11:41:30

Highest Channel / 64QAM



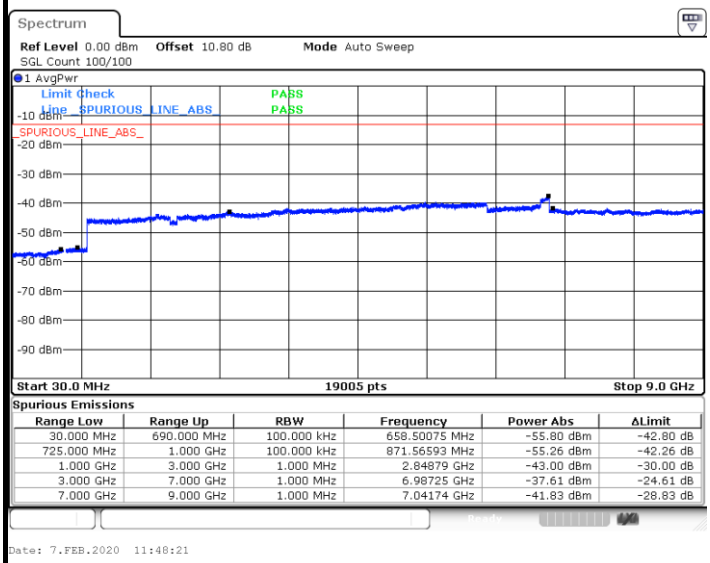
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	666.41679 MHz	-55.61 dBm	-42.61 dB
725.000 MHz	1.000 GHz	100.000 kHz	851.51099 MHz	-55.25 dBm	-42.25 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.83979 GHz	-42.99 dBm	-29.99 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99975 GHz	-37.50 dBm	-24.50 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.03924 GHz	-42.03 dBm	-29.03 dB

Date: 7.FEB.2020 11:44:54

LTE Band 17 / 10MHz

Lowest Channel / 64QAM

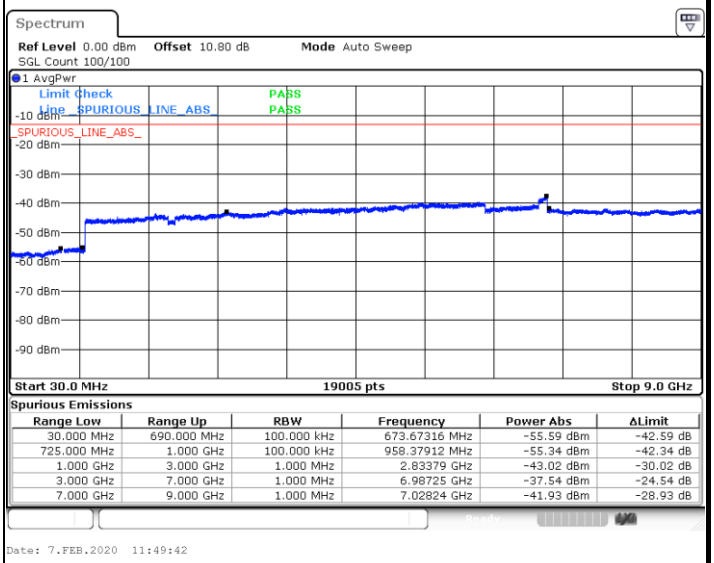


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	658.50075 MHz	-55.80 dBm	-42.80 dB
725.000 MHz	1.000 GHz	100.000 kHz	871.56593 MHz	-55.26 dBm	-42.26 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.84879 GHz	-43.00 dBm	-30.00 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98725 GHz	-37.61 dBm	-24.61 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04174 GHz	-41.83 dBm	-28.83 dB

Date: 7.FEB.2020 11:48:21

Middle Channel / 64QAM

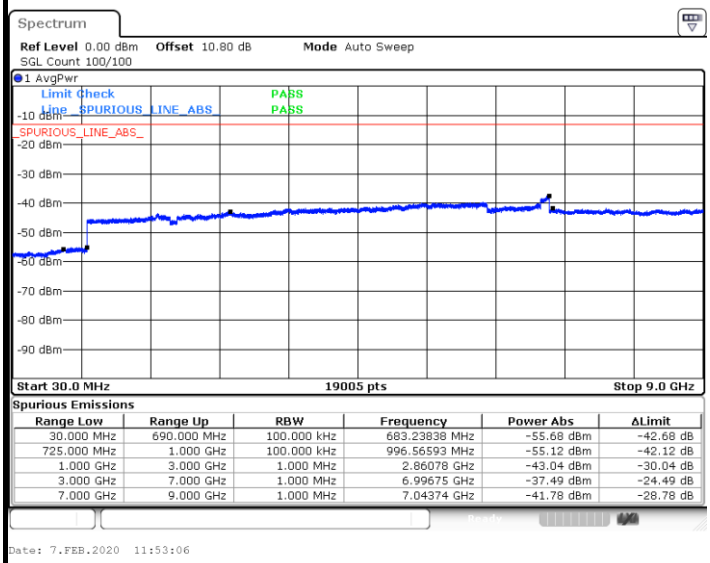


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	673.67316 MHz	-55.59 dBm	-42.59 dB
725.000 MHz	1.000 GHz	100.000 kHz	958.37912 MHz	-55.34 dBm	-42.34 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.83379 GHz	-43.02 dBm	-30.02 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98725 GHz	-37.54 dBm	-24.54 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.02824 GHz	-41.93 dBm	-28.93 dB

Date: 7.FEB.2020 11:49:42

Highest Channel / 64QAM



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	683.23838 MHz	-55.68 dBm	-42.68 dB
725.000 MHz	1.000 GHz	100.000 kHz	996.56593 MHz	-55.12 dBm	-42.12 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.86078 GHz	-43.04 dBm	-30.04 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99675 GHz	-37.49 dBm	-24.49 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04374 GHz	-41.78 dBm	-28.78 dB

Date: 7.FEB.2020 11:53:06

Frequency Stability

Test Conditions		LTE Band 17 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0090	PASS
40	Normal Voltage	0.0068	
30	Normal Voltage	0.0073	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0045	
-10	Normal Voltage	0.0054	
-20	Normal Voltage	0.0068	
-30	Normal Voltage	0.0079	
20	Maximum Voltage	0.0017	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0073	

Note:

1. Normal Voltage =3.85 V.；Battery End Point (BEP) =3.65 V.；Maximum Voltage =4.25 V.

2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of ERP/EIRP and Radiated Test

ERP/EIRP

LTE Band 4 / 1.4MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	6	0	17.69	0.0587	15.09	0.0323
Middle		6	0	17.66	0.0583	15.06	0.0321
Highest		6	0	17.60	0.0575	15.00	0.0316
Lowest	16QAM	1	3	17.46	0.0557	14.86	0.0306
Middle		1	3	17.48	0.0560	14.88	0.0308
Highest		1	3	17.41	0.0551	14.81	0.0303
Lowest	64QAM	1	3	17.39	0.0548	14.79	0.0301
Middle		1	3	17.38	0.0547	14.78	0.0301
Highest		1	3	17.31	0.0538	14.71	0.0296
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 3MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	8	4	17.77	0.0598	15.17	0.0329
Middle		8	4	17.79	0.0601	15.19	0.0330
Highest		8	4	17.71	0.0590	15.11	0.0324
Lowest	16QAM	1	8	17.57	0.0571	14.97	0.0314
Middle		1	8	17.48	0.0560	14.88	0.0308
Highest		1	8	17.48	0.0560	14.88	0.0308
Lowest	64QAM	1	0	17.46	0.0557	14.86	0.0306
Middle		1	0	17.37	0.0546	14.77	0.0300
Highest		1	0	17.32	0.0540	14.72	0.0296
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 5MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	12	7	17.80	0.0603	15.20	0.0331
Middle		12	7	17.75	0.0596	15.15	0.0327
Highest		12	7	17.74	0.0594	15.14	0.0327
Lowest	16QAM	1	24	17.48	0.0560	14.88	0.0308
Middle		1	24	17.55	0.0569	14.95	0.0313
Highest		1	24	17.43	0.0553	14.83	0.0304
Lowest	64QAM	1	0	17.49	0.0561	14.89	0.0308
Middle		1	0	17.40	0.0550	14.80	0.0302
Highest		1	0	17.36	0.0545	14.76	0.0299
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 10MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	25	25	17.80	0.0603	15.20	0.0331
Middle		25	25	17.86	0.0611	15.26	0.0336
Highest		25	25	17.76	0.0597	15.16	0.0328
Lowest	16QAM	1	0	17.57	0.0571	14.97	0.0314
Middle		1	0	17.61	0.0577	15.01	0.0317
Highest		1	0	17.53	0.0566	14.93	0.0311
Lowest	64QAM	1	25	17.48	0.0560	14.88	0.0308
Middle		1	25	17.52	0.0565	14.92	0.0310
Highest		1	25	17.45	0.0556	14.85	0.0305
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 15MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	36	0	18.03	0.0635	15.43	0.0349
Middle		36	0	18.02	0.0634	15.42	0.0348
Highest		36	0	17.97	0.0627	15.37	0.0344
Lowest	16QAM	1	0	17.80	0.0603	15.20	0.0331
Middle		1	0	17.81	0.0604	15.21	0.0332
Highest		1	0	17.79	0.0601	15.19	0.0330
Lowest	64QAM	1	0	17.70	0.0589	15.10	0.0324
Middle		1	0	17.69	0.0587	15.09	0.0323
Highest		1	0	17.63	0.0579	15.03	0.0318
Limit	EIRP < 1W			Result		PASS	

LTE Band 4 / 20MHz (Average) (GT - LC = -2.6 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	50	0	18.05	0.0638	15.45	0.0351
Middle		50	0	18.02	0.0634	15.42	0.0348
Highest		50	0	17.99	0.0630	15.39	0.0346
Lowest	16QAM	1	0	17.85	0.0610	15.25	0.0335
Middle		1	0	17.83	0.0607	15.23	0.0333
Highest		1	0	17.82	0.0605	15.22	0.0333
Lowest	64QAM	1	0	17.70	0.0589	15.10	0.0324
Middle		1	0	17.70	0.0589	15.10	0.0324
Highest		1	0	17.72	0.0592	15.12	0.0325
Limit	EIRP < 1W			Result		PASS	

LTE Band 5 / 1.4MHz (Average) (GT - LC = -6.31 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	3	1	23.68	0.2333	15.22	0.0333
Middle		3	1	23.59	0.2286	15.13	0.0326
Highest		3	1	23.39	0.2183	14.93	0.0311
Lowest	16QAM	1	3	22.50	0.1778	14.04	0.0254
Middle		1	3	22.40	0.1738	13.94	0.0248
Highest		1	3	22.22	0.1667	13.76	0.0238
Lowest	64QAM	1	3	21.44	0.1393	12.98	0.0199
Middle		1	3	21.34	0.1361	12.88	0.0194
Highest		1	3	21.10	0.1288	12.64	0.0184
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 3MHz (Average) (GT - LC = -6.31 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.72	0.2355	15.26	0.0336
Middle		1	0	23.57	0.2275	15.11	0.0324
Highest		1	0	23.44	0.2208	14.98	0.0315
Lowest	16QAM	1	8	22.55	0.1799	14.09	0.0256
Middle		1	8	22.48	0.1770	14.02	0.0252
Highest		1	8	22.32	0.1706	13.86	0.0243
Lowest	64QAM	1	0	21.50	0.1413	13.04	0.0201
Middle		1	0	21.35	0.1365	12.89	0.0195
Highest		1	0	21.01	0.1262	12.55	0.0180
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 5MHz (Average) (GT - LC = -6.31 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.73	0.2360	15.27	0.0337
Middle		1	0	23.64	0.2312	15.18	0.0330
Highest		1	0	23.59	0.2286	15.13	0.0326
Lowest	16QAM	1	0	22.61	0.1824	14.15	0.0260
Middle		1	0	22.46	0.1762	14.00	0.0251
Highest		1	0	22.41	0.1742	13.95	0.0248
Lowest	64QAM	1	0	21.50	0.1413	13.04	0.0201
Middle		1	0	21.39	0.1377	12.93	0.0196
Highest		1	0	21.36	0.1368	12.90	0.0195
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 10MHz (Average) (GT - LC = -6.31 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.74	0.2366	15.28	0.0337
Middle		1	0	23.70	0.2344	15.24	0.0334
Highest		1	0	23.59	0.2286	15.13	0.0326
Lowest	16QAM	1	0	22.59	0.1816	14.13	0.0259
Middle		1	0	22.49	0.1774	14.03	0.0253
Highest		1	0	22.44	0.1754	13.98	0.0250
Lowest	64QAM	1	0	21.49	0.1409	13.03	0.0201
Middle		1	0	21.36	0.1368	12.90	0.0195
Highest		1	0	21.29	0.1346	12.83	0.0192
Limit	ERP < 7W			Result		PASS	

LTE Band 7 / 5MHz (Average) (GT - LC = -2.4 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	12	13	18.63	0.0729	16.23	0.0420
Middle		12	13	18.87	0.0771	16.47	0.0444
Highest		12	13	18.86	0.0769	16.46	0.0443
Lowest	16QAM	1	24	18.34	0.0682	15.94	0.0393
Middle		1	24	18.58	0.0721	16.18	0.0415
Highest		1	24	18.56	0.0718	16.16	0.0413
Lowest	64QAM	1	0	18.29	0.0675	15.89	0.0388
Middle		1	0	18.43	0.0697	16.03	0.0401
Highest		1	0	18.51	0.0710	16.11	0.0408
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 10MHz (Average) (GT - LC = -2.4 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	25	25	18.64	0.0731	16.24	0.0421
Middle		25	25	18.86	0.0769	16.46	0.0443
Highest		25	25	18.87	0.0771	16.47	0.0444
Lowest	16QAM	1	49	18.39	0.0690	15.99	0.0397
Middle		1	49	18.61	0.0726	16.21	0.0418
Highest		1	49	18.60	0.0724	16.20	0.0417
Lowest	64QAM	1	49	18.29	0.0675	15.89	0.0388
Middle		1	49	18.53	0.0713	16.13	0.0410
Highest		1	49	18.52	0.0711	16.12	0.0409
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 15MHz (Average) (GT - LC = -2.4 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	36	39	18.94	0.0783	16.54	0.0451
Middle		36	39	19.11	0.0815	16.71	0.0469
Highest		36	39	19.13	0.0818	16.73	0.0471
Lowest	16QAM	1	74	18.70	0.0741	16.30	0.0427
Middle		1	74	18.85	0.0767	16.45	0.0442
Highest		1	74	18.86	0.0769	16.46	0.0443
Lowest	64QAM	1	37	18.56	0.0718	16.16	0.0413
Middle		1	37	18.75	0.0750	16.35	0.0432
Highest		1	37	18.79	0.0757	16.39	0.0436
Limit	EIRP < 2W			Result		PASS	

LTE Band 7 / 20MHz (Average) (GT - LC = -2.4 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	50	24	18.96	0.0787	16.56	0.0453
Middle		50	24	19.06	0.0805	16.66	0.0463
Highest		50	24	19.16	0.0824	16.76	0.0474
Lowest	16QAM	1	99	18.76	0.0752	16.36	0.0433
Middle		1	99	18.87	0.0771	16.47	0.0444
Highest		1	99	18.87	0.0771	16.47	0.0444
Lowest	64QAM	1	99	18.68	0.0738	16.28	0.0425
Middle		1	99	18.79	0.0757	16.39	0.0436
Highest		1	99	18.76	0.0752	16.36	0.0433
Limit	EIRP < 2W			Result		PASS	

LTE Band 13 / 5MHz (Average) (GT - LC = -5.77 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	23.81	0.2404	15.89	0.0388
Middle		1	12	23.98	0.2500	16.06	0.0404
Highest		1	12	23.96	0.2489	16.04	0.0402
Lowest	16QAM	1	24	22.79	0.1901	14.87	0.0307
Middle		1	24	22.74	0.1879	14.82	0.0303
Highest		1	24	22.77	0.1892	14.85	0.0305
Lowest	64QAM	1	12	21.36	0.1368	13.44	0.0221
Middle		1	12	21.70	0.1479	13.78	0.0239
Highest		1	12	21.60	0.1445	13.68	0.0233
Limit	ERP < 3W			Result		PASS	

LTE Band 13 / 10MHz (Average) (GT - LC = -5.77 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	-	-	-	-	-	-
Middle		1	0	23.99	0.2506	16.07	0.0405
Highest		-	-	-	-	-	-
Lowest	16QAM	-	-	-	-	-	-
Middle		1	25	22.78	0.1897	14.86	0.0306
Highest		-	-	-	-	-	-
Lowest	64QAM	-	-	-	-	-	-
Middle		1	25	21.68	0.1472	13.76	0.0238
Highest		-	-	-	-	-	-
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 5MHz (Average) (GT - LC = -6.42 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.78	0.2388	15.21	0.0332
Middle		1	0	23.67	0.2328	15.10	0.0324
Highest		1	0	23.65	0.2317	15.08	0.0322
Lowest	16QAM	1	0	22.62	0.1828	14.05	0.0254
Middle		1	0	22.45	0.1758	13.88	0.0244
Highest		1	0	22.49	0.1774	13.92	0.0247
Lowest	64QAM	1	0	21.57	0.1435	13.00	0.0200
Middle		1	0	21.37	0.1371	12.80	0.0191
Highest		1	0	21.39	0.1377	12.82	0.0191
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 10MHz (Average) (GT - LC = -6.42 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.79	0.2393	15.22	0.0333
Middle		1	0	23.70	0.2344	15.13	0.0326
Highest		1	0	23.69	0.2339	15.12	0.0325
Lowest	16QAM	1	0	22.62	0.1828	14.05	0.0254
Middle		1	0	22.53	0.1791	13.96	0.0249
Highest		1	0	22.50	0.1778	13.93	0.0247
Lowest	64QAM	1	0	21.50	0.1413	12.93	0.0196
Middle		1	0	21.43	0.1390	12.86	0.0193
Highest		1	0	21.41	0.1384	12.84	0.0192
Limit	ERP < 3W			Result		PASS	

LTE Band 41 / 5MHz (Average) (GT - LC = -2.87 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	12	7	18.59	0.0723	15.72	0.0373
Middle		12	7	18.90	0.0776	16.03	0.0401
Highest		12	7	19.21	0.0834	16.34	0.0431
Lowest	16QAM	1	0	18.26	0.0670	15.39	0.0346
Middle		1	0	18.47	0.0703	15.60	0.0363
Highest		1	0	18.88	0.0773	16.01	0.0399
Lowest	64QAM	25	0	18.13	0.0650	15.26	0.0336
Middle		25	0	18.37	0.0687	15.50	0.0355
Highest		25	0	18.78	0.0755	15.91	0.0390
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 10MHz (Average) (GT - LC = -2.87 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	25	25	18.55	0.0716	15.68	0.0370
Middle		25	25	18.85	0.0767	15.98	0.0396
Highest		25	25	19.21	0.0834	16.34	0.0431
Lowest	16QAM	1	25	18.21	0.0662	15.34	0.0342
Middle		1	25	18.51	0.0710	15.64	0.0366
Highest		1	25	18.87	0.0771	16.00	0.0398
Lowest	64QAM	1	25	18.21	0.0662	15.34	0.0342
Middle		1	25	18.49	0.0706	15.62	0.0365
Highest		1	25	18.81	0.0760	15.94	0.0393
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 15MHz (Average) (GT - LC = -2.87 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	36	39	18.73	0.0746	15.86	0.0385
Middle		36	39	19.02	0.0798	16.15	0.0412
Highest		36	39	19.35	0.0861	16.48	0.0445
Lowest	16QAM	1	74	18.35	0.0684	15.48	0.0353
Middle		1	74	18.71	0.0743	15.84	0.0384
Highest		1	74	19.08	0.0809	16.21	0.0418
Lowest	64QAM	1	74	18.27	0.0671	15.40	0.0347
Middle		1	74	18.57	0.0719	15.70	0.0372
Highest		1	74	18.90	0.0776	16.03	0.0401
Limit	EIRP < 2W			Result		PASS	

LTE Band 41 / 20MHz (Average) (GT - LC = -2.87 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	50	50	18.76	0.0752	15.89	0.0388
Middle		50	50	19.00	0.0794	16.13	0.0410
Highest		50	50	19.36	0.0863	16.49	0.0446
Lowest	16QAM	1	99	18.43	0.0697	15.56	0.0360
Middle		1	99	18.62	0.0728	15.75	0.0376
Highest		1	99	18.99	0.0793	16.12	0.0409
Lowest	64QAM	50	50	18.33	0.0681	15.46	0.0352
Middle		50	50	18.55	0.0716	15.68	0.0370
Highest		50	50	18.88	0.0773	16.01	0.0399
Limit	EIRP < 2W			Result		PASS	

Radiated Spurious Emission

LTE Band 4

LTE Band 4 / 20MHz / 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)
Highest	3483	-53.35	-13	-40.35	-70.27	-64.45	1.36	12.46	H
	5219	-48.84	-13	-35.84	-70.67	-60.08	1.67	12.91	H
	6962	-43.39	-13	-30.39	-69.48	-53.62	1.73	11.95	H
									H
									H
									H
									H
	3483	-53.87	-13	-40.87	-71.16	-64.97	1.36	12.46	V
	5219	-49.27	-13	-36.27	-70.92	-60.51	1.67	12.91	V
	6962	-43.51	-13	-30.51	-69.12	-53.74	1.73	11.95	V
									V
									V
									V
									V

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

LTE Band 5

LTE Band 5 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (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	1664	-61.45	-13	-48.45	-71.58	-67.10	0.93	8.72	H
	2496	-57.51	-13	-44.51	-71.81	-64.91	1.15	10.69	H
	3328	-55.88	-13	-42.88	-71.47	-64.49	1.33	12.09	H
									H
									H
									H
									H
	1664	-61.86	-13	-48.86	-71.4	-67.51	0.93	8.72	V
	2496	-57.33	-13	-44.33	-71.84	-64.73	1.15	10.69	V
	3328	-55.92	-13	-42.92	-71.97	-64.53	1.33	12.09	V
									V
									V
									V
									V

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

LTE Band 7

LTE Band 7 / 20MHz / 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	5070	-50.77	-25	-25.77	-72.47	-61.84	1.63	12.70	H
	7602	-46.36	-25	-21.36	-72.42	-55.48	2.00	11.12	H
	10143	-42.96	-25	-17.96	-72.43	-51.75	2.40	11.19	H
									H
									H
									H
									H
	5070	-51.15	-25	-26.15	-72.5	-62.22	1.63	12.70	V
	7602	-46.51	-25	-21.51	-72.52	-55.63	2.00	11.12	V
	10143	-42.13	-25	-17.13	-72.09	-50.92	2.40	11.19	V
									V
									V
									V
									V

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

LTE Band 13

LTE Band 13 / 5MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	1568	-61.36	-42.15	-19.21	-71.56	-66.68	0.89	8.36	H
	2344	-56.98	-13	-43.98	-71.73	-64.20	1.12	10.48	H
	3128	-56.15	-13	-43.15	-71.95	-64.31	1.29	11.61	H
									H
									H
									H
									H
	1568	-62.00	-42.15	-19.85	-71.61	-67.32	0.89	8.36	V
	2344	-57.65	-13	-44.65	-72.03	-64.87	1.12	10.48	V
	3128	-55.77	-13	-42.77	-71.95	-63.93	1.29	11.61	V
									V
									V
									V
									V

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

LTE Band 17

LTE Band 17 / 20MHz / QPSK									
Channel	Frequency (MHz)	ERP (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	1408	-59.20	-13	-46.20	-70.46	-63.88	0.85	7.68	H
	2112	-56.70	-13	-43.70	-71.10	-63.64	1.06	10.16	H
	2816	-57.14	-13	-44.14	-72.06	-64.84	1.23	11.08	H
									H
									H
									H
									H
	1408	-60.41	-13	-47.41	-70.45	-65.09	0.85	7.68	V
	2112	-58.16	-13	-45.16	-71.45	-65.10	1.06	10.16	V
	2816	-57.17	-13	-44.17	-72.05	-64.87	1.23	11.08	V
									V
									V
									V
									V
Middle	1411	-59.27	-13	-46.27	-70.52	-63.96	0.85	7.69	H
	2117	-56.97	-13	-43.97	-71.44	-63.92	1.07	10.16	H
	2822	-56.44	-13	-43.44	-71.38	-64.15	1.23	11.09	H
									H
									H
									H
									H
	1411	-60.70	-13	-47.70	-70.73	-65.39	0.85	7.69	V
	2117	-58.24	-13	-45.24	-71.58	-65.19	1.07	10.16	V
	2822	-57.10	-13	-44.10	-72.00	-64.81	1.23	11.09	V
									V
									V
									V
									V

Highest	1416	-59.39	-13	-46.39	-70.61	-64.11	0.85	7.71	H
	2120	-57.27	-13	-44.27	-71.79	-64.22	1.07	10.17	H
	2824	-56.75	-13	-43.75	-71.70	-64.46	1.23	11.09	H
									H
									H
									H
									H
	1416	-60.26	-13	-47.26	-70.27	-64.98	0.85	7.71	V
	2120	-58.27	-13	-45.27	-71.66	-65.22	1.07	10.17	V
	2824	-57.12	-13	-44.12	-72.04	-64.83	1.23	11.09	V
									V
									V
									V
									V

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

LTE Band 41

LTE Band 4 / 20MHz / 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)
Highest	5370	-50.41	-25	-25.41	-72.81	-61.82	1.71	13.12	H
	8052	-44.70	-25	-19.70	-71.95	-53.94	2.06	11.30	H
	10737	-40.86	-25	-15.86	-72.47	-49.25	2.51	10.90	H
									H
									H
									H
									H
	5370	-50.68	-25	-25.68	-72.7	-62.09	1.71	13.12	V
	8052	-45.22	-25	-20.22	-72.45	-54.46	2.06	11.30	V
	10737	-40.99	-25	-15.99	-72.37	-49.38	2.51	10.90	V
									V
									V
									V
									V

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