FCC RADIO TEST REPORT

FCC ID	:	**XIA-227**
Equipment	:	**4G LTE Cat 1 Industrial IoT Router** **Vodafone MachineLink 4G Lite**
Brand Name	:	**NetComm;** **Casa; Casa Systems**
Model Name	:	**NWL-22X & NTC-22X (X=7)**
Applicant	:	**NetComm Wireless Pty Ltd** **Level 5, 18-20 Orion Road Lane Cove, NSW 2066 Australia**
Manufacturer	:	**NetComm Wireless Pty Ltd** **Level 5, 18-20 Orion Road Lane Cove, NSW 2066 Australia**
Standard	:	**FCC 47 CFR Part 2, and 90(S)**

The product was received on Sep. 09, 2021 and testing was performed from Oct. 22, 2021 to Dec. 04, 2021. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FG171916C	01	Initial issue of report	Dec. 15, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046 §90.635	Conducted Output Power and Effective Radiated Power	Pass	-
3.3	-	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049 §90.209	Occupied Bandwidth and 26dB Bandwidth	Reporting only	-
3.5	§2.1051 §90.691	Emission masks – In-band emissions	Pass	-
3.6	§2.1051 §90.691	Emission masks – Out of band emissions	Pass	-
3.7	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	Pass	-
3.8	§2.1053 §90.691	Field Strength of Spurious Radiation	Pass	Under limit 38.32 dB at 8192.000 MHz

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

Reviewed by: Yun Huang

Report Producer: Amy Chen

1 General Description

1.1 Feature of Equipment Under Test

GSM/WCDMA/LTE and GNSS

Product Feature	
Antenna Type	WWAN: Dipole Antenna GPS / Glonass / Galileo / BDS : GPS Active Patch Antenna

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

<Sample List>

Sample	Model Name	LED Quantity	PCBA
1	NTC-227	8	A (No Embedded SIM)
2	NWL-227	7	A (No Embedded SIM)
3			B (Embedded SIM)

Note:
1. Same PCB, antenna and antenna locations and the only differences are in housing, number of LEDs, and with or without embedded SIM.
2. From the above models, Sample 3 was selected as representative models for the test and their data were recorded in this report.

Accessories Information				
AC Adapter	**Brand Name**	NA	**Model Name**	S018BAM1200150
	Power Rating	I/P: 100-240Vac, 0.5 A, O/P: 12Vdc, 1.5A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
RJ45 Cable	**Signal Line**	1.5 meter, non-shielded cable		
Antenna 1	**Brand Name**	NA	**Model Name**	NANT-00001
Antenna 2	**Brand Name**	NA	**Model Name**	NANT-00006
DIN rail mounting bracket	**Brand Name**	NA	**Model Name**	NA

1.2 Modification of EUT

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

1.3 Testing Site

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory	
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH03-HY	03CH07-HY
Test Engineer	George Chen	Jesse Wang, Stan Hsieh and Ken Wu
Temperature (℃)	23.1~24.2	19.5~24.1
Relative Humidity (%)	53.3~54.8	48.3~65.4

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

FCC Designation No.: TW1190

1.4 Applied Standards

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

- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

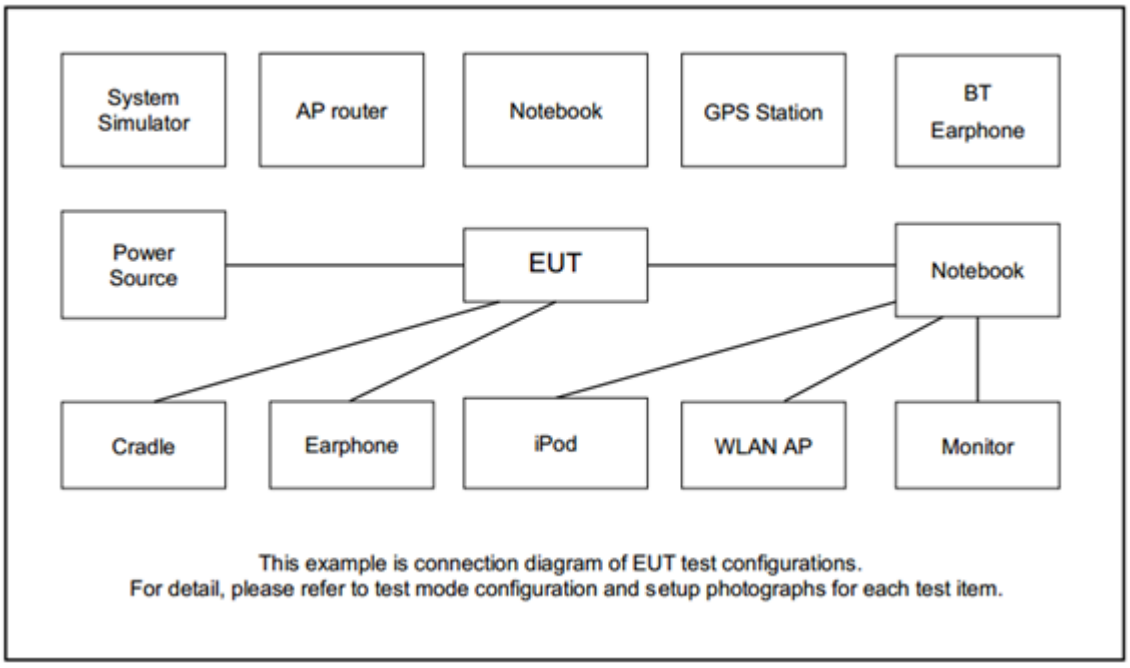
During all testing, EUT is in link mode with base station emulator at maximum power level.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two antenna polarization (Horizontal and Vertical), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and find Ant. Vertical as worst plane.

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

Conducted Test Cases	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	26				v	v	-	v				v		v	
26dB and 99% Bandwidth	26	v	v	v	v	v	-	v	v			v	v	v	
Emission masks In-band emissions	26	v	v	v	v	v	-	v	v	v		v	v		v
Emission masks – Out of band emissions	26	v	v	v	v	v	-	v		v			v	v	v
Frequency Stability	26	-	-		v	v	-	v				v	v	v	
E.R.P.	26	v	v	v	v	v	-	v	v	Max. Power					
Radiated Spurious Emission	26	Worst Case											v	v	v
Remark	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz. ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies. 4. All the radiated test cases were performed with NWL-227 (NANT-00001 Antenna)..														

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example :

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

= 4.2 + 10 = 14.2 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 26 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
15	Channel	26765	-	-
	Frequency	821.5	-	-
10	Channel	-	26740	-
	Frequency	-	819	-
5	Channel	26715	26740	26765
	Frequency	816.5	819	821.5
3	Channel	26705	26740	26775
	Frequency	815.5	819	822.5
1.4	Channel	26697	26740	26783
	Frequency	814.7	819	823.3

LTE Band 26 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**-**	**cross-rule channels**	**-**
15	Channel	-	26790	-
	Frequency	-	824	-
10	Channel	-	26790	-
	Frequency	-	824	-
5	Channel	-	26790	-
	Frequency	-	824	-
3	Channel	-	26790	-
	Frequency	-	824	-
1.4	Channel	-	26790	-
	Frequency	-	824	-

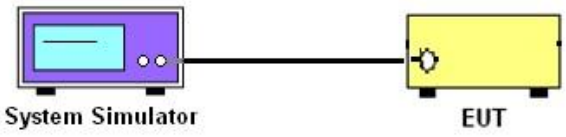
3 Conducted Test Items

3.1 Measuring Instruments

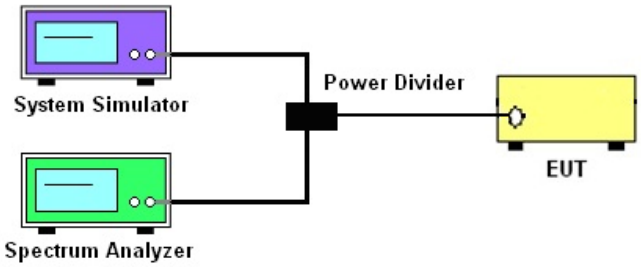
See list of measuring instruments of this test report.

3.1.1 Test Setup

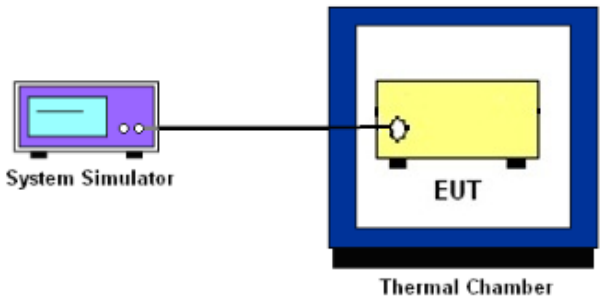
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge, Emission Mask, Emissions Mask – Out Of Band Emissions, and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power Measurement and ERP Measurement

3.2.1 Description of the Conducted Output Power Measurement and ERP Measurement

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

The conducted power of mobile transmitters must not exceed 100 Watts for LTE Band 26.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through 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

Reporting only

3.3.2 Test Procedures

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 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% 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 emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

3.4.2 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

3.5 Emissions Mask Measurement

3.5.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a)

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log_{10}(f/6.1) decibels or 50 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

3.5.2 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The emissions mask of low and high channels for the highest RF powers were measured.
3. Set RBW and VBW 3 times of RBW to make the measurement with the spectrum analyzer's, and according to KDB 971168 D02 Misc Rev Approve License Devices v02r01 standards, set RBW = 300 Hz to make offsets less than 37.5 kHz from a channel edge , RBW = 100 kHz to make offsets greater than 37.5 kHz, that is allowed.
4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

3.6 Emissions Mask – Out Of Band Emissions Measurement

3.6.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 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 10th harmonic.

3.6.2 Test Procedures

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. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

3.7 Frequency Stability Measurement

3.7.1 Description of Frequency Stability Measurement

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

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. 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.

3.7.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.8 Field Strength of Spurious Radiation Measurement

3.8.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

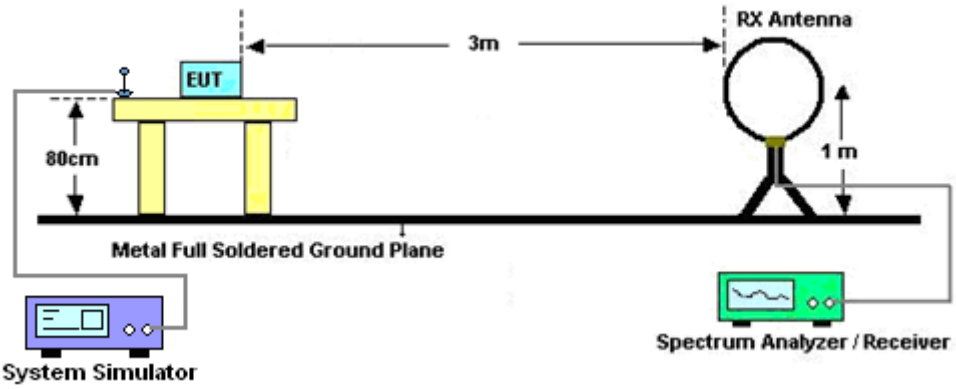
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43+10\log_{10}(P[Watts])$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.8.2 Test Procedures

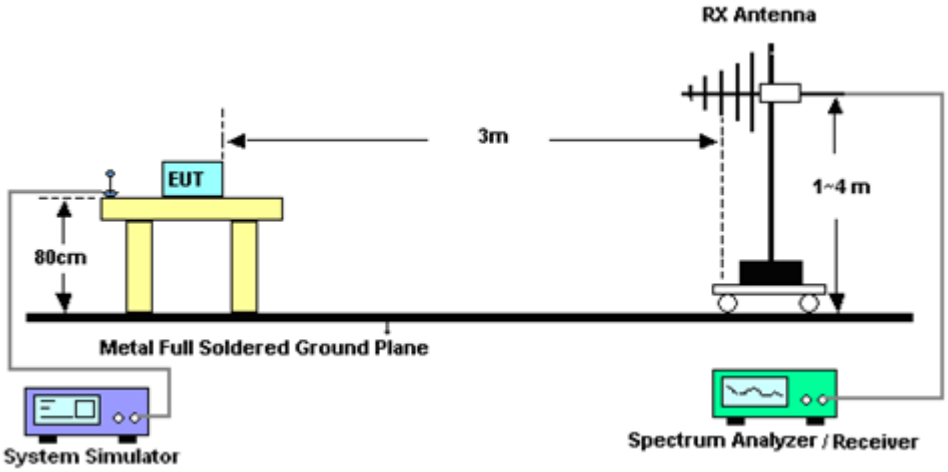
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position 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. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

3.8.3 Test Setup

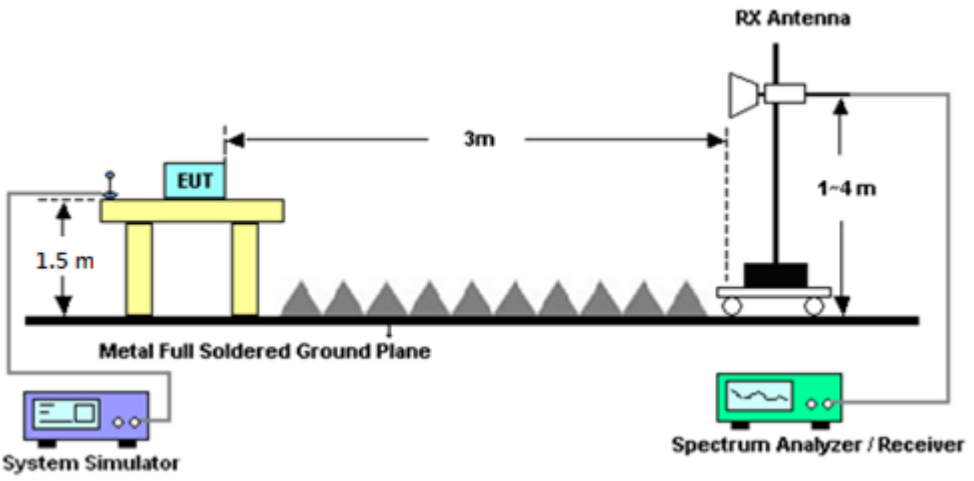
For radiated test below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



3.8.4 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.

Note:

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

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

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 28, 2021	Nov. 04, 2021~ Dec. 04, 2021	Apr. 27, 2022	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 01, 2020	Nov. 04, 2021~ Nov. 29, 2021	Nov. 30, 2021	Radiation (03CH07-HY)
Horn Antenna	ESCO	3117	00066584	1GHz~18GHz	Oct. 25, 2021	Nov. 30, 2021~ Dec. 04, 2021	Oct. 24, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Nov. 04, 2021~ Dec. 04, 2021	Jan. 03, 2022	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 22, 2021	Nov. 04, 2021~ Dec. 04, 2021	Apr. 21, 2022	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 04, 2021	Nov. 04, 2021~ Dec. 04, 2021	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 04, 2021	Nov. 04, 2021~ Dec. 04, 2021	Oct. 03, 2022	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2021	Nov. 04, 2021~ Dec. 04, 2021	Jul. 21, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682-4	30MHz to 18GHz	Feb. 24, 2021	Nov. 04, 2021~ Dec. 04, 2021	Feb. 23, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971-4	9kHz to 18GHz	Feb. 24, 2021	Nov. 04, 2021~ Dec. 04, 2021	Feb. 23, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655-4	9kHz to 18GHz	Feb. 24, 2021	Nov. 04, 2021~ Dec. 04, 2021	Feb. 23, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 17, 2021	Nov. 04, 2021~ Dec. 04, 2021	Sep. 16, 2022	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Nov. 04, 2021~ Dec. 04, 2021	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Nov. 04, 2021~ Dec. 04, 2021	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Nov. 04, 2021~ Dec. 04, 2021	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Nov. 04, 2021~ Dec. 04, 2021	N/A	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Nov. 04, 2021~ Dec. 04, 2021	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	Mar. 09, 2021	Nov. 04, 2021~ Dec. 04, 2021	Mar. 08, 2022	Radiation (03CH07-HY)
Radio Communicatio n Analyzer	Anritsu	MT8821C	6262025341	LTE FDD/TDD LTE-2CC ULCA/DLCA	Oct. 15, 2021	Oct. 22, 2021~ Nov. 12, 2021	Oct. 04, 2022	Conducted (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 27, 2020	Oct. 22, 2021~ Nov. 12, 2021	Nov. 26, 2021	Conducted (TH03-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Oct. 20, 2021	Oct. 22, 2021~ Nov. 12, 2021	Oct. 19, 2022	Conducted (TH03-HY)
DC Power Supply	GW Instek	PSS-2005GPP -2323	GES906037	0V~64V ; 0A~6A	Dec. 15, 2020	Oct. 22, 2021~ Nov. 12, 2021	Dec. 14, 2021	Conducted (TH03-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 07, 2021	Oct. 22, 2021~ Nov. 12, 2021	Jan. 06, 2022	Conducted (TH03-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.16 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.71 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power (Average power & ERP)

LTE Band 26 Maximum Average Power [dBm] (GT - LC = 3.13 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
15	1	0	QPSK	22.58	-	-	23.60	0.2291
15	1	37		22.62	-	-		
15	1	74		22.40	-	-		
15	36	0		21.62	-	-		
15	36	20		21.62	-	-		
15	36	39		21.33	-	-		
15	75	0		21.50	-	-		
15	1	0	16-QAM	21.88	-	-	22.86	0.1932
15	1	37		21.43	-	-		
15	1	74		21.36	-	-		
Limit	Power < 100W			Result			Pass	

LTE Band 26 Maximum Average Power [dBm] (GT - LC = 3.13 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	-	23.05	-	24.03	0.2529
10	1	25		-	23.04	-		
10	1	49		-	22.77	-		
10	25	0		-	22.12	-		
10	25	12		-	22.12	-		
10	25	25		-	21.88	-		
10	50	0		-	21.94	-		
10	1	0	16-QAM	-	22.30	-	23.28	0.2128
10	1	25		-	21.88	-		
10	1	49		-	21.74	-		
10	25	0		-	21.26	-		
10	25	12		-	21.25	-		
10	25	25		-	21.02	-		
Limit	Power < 100W			Result			Pass	

LTE Band 26 Maximum Average Power [dBm] (GT - LC = 3.13 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	22.68	23.10	22.59	24.09	0.2564
5	1	12		22.65	23.11	22.58		
5	1	24		22.42	22.83	22.28		
5	12	0		21.72	22.22	21.60		
5	12	7		21.69	22.19	21.71		
5	12	13		21.38	21.90	21.34		
5	25	0		21.51	21.98	21.35		
5	1	0	16-QAM	21.92	22.39	21.82	23.37	0.2173
5	1	12		21.48	21.94	21.38		
5	1	24		21.37	21.83	21.19		
5	12	0		20.83	21.30	20.70		
5	12	7		20.84	21.27	20.66		
5	12	13		20.61	21.02	20.54		
5	25	0		20.64	21.05	20.47		
Limit	Power < 100W			Result			Pass	

LTE Band 26 Maximum Average Power [dBm] (GT - LC = 3.13 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
3	1	0	QPSK	22.63	23.07	22.54	24.05	0.2541
3	1	8		22.63	23.07	22.57		
3	1	14		22.37	22.82	22.23		
3	8	0		21.62	22.12	21.51		
3	8	4		21.65	22.16	21.68		
3	8	7		21.33	21.82	21.25		
3	15	0		21.51	21.91	21.34		
3	1	0	16-QAM	21.84	22.37	21.72	23.35	0.2163
3	1	8		21.40	21.88	21.31		
3	1	14		21.34	21.76	21.15		
3	8	0		20.73	21.26	20.67		
3	8	4		20.83	21.18	20.59		
3	8	7		20.51	20.92	20.51		
3	15	0		20.58	21.01	20.37		
Limit	Power < 100W			Result			Pass	

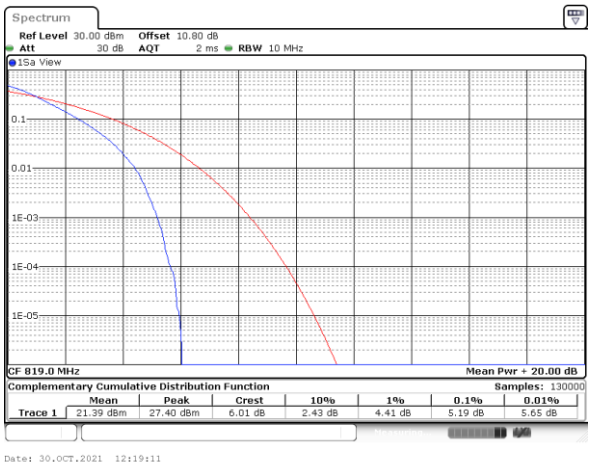
LTE Band 26 Maximum Average Power [dBm] (GT - LC = 3.13 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
1.4	1	0	QPSK	22.62	23.09	22.49	24.07	0.2553
1.4	1	3		22.55	23.06	22.58		
1.4	1	5		22.35	22.80	22.22		
1.4	3	0		22.59	23.03	22.49		
1.4	3	1		22.62	23.01	22.56		
1.4	3	3		22.35	22.73	22.26		
1.4	6	0		21.49	21.96	21.31		
1.4	1	0	16-QAM	21.92	22.29	21.77	23.33	0.2153
1.4	1	3		21.41	21.94	21.38		
1.4	1	5		21.30	21.75	21.16		
1.4	3	0		21.89	22.35	21.80		
1.4	3	1		21.41	21.92	21.32		
1.4	3	3		21.37	21.73	21.13		
1.4	6	0		20.55	21.00	20.46		
Limit	Power < 100W			Result			Pass	

LTE Band 26

Peak-to-Average Ratio

Mode	LTE Band 26 / 10MHz	
Mod.	QPSK	Limit: 13dB
RB Size	Full RB	Result
Middle CH	5.19	PASS

LTE Band 26 / 10MHz / QPSK
Middle Channel / Full RB

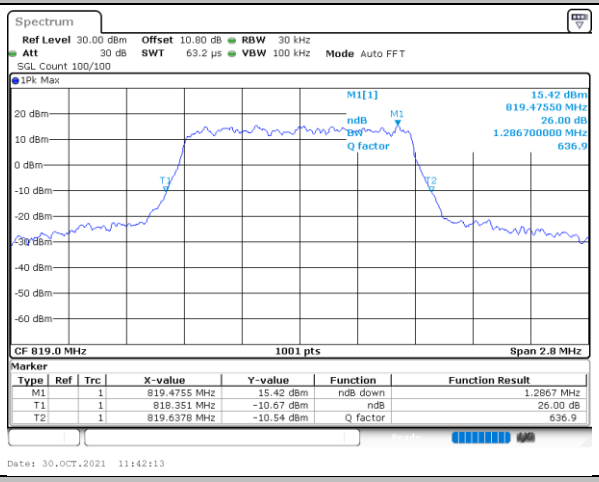


26dB Bandwidth

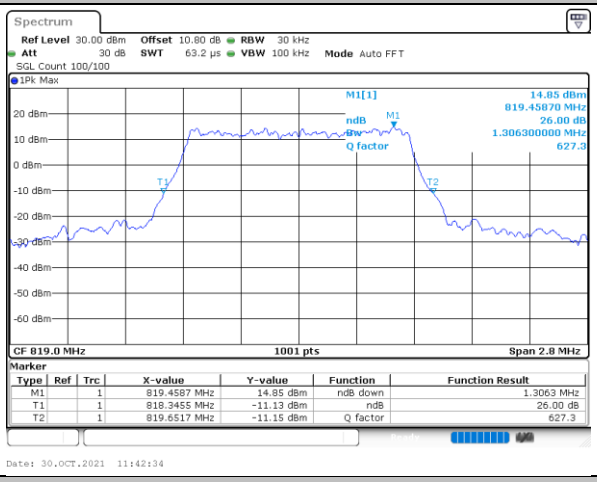
Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Low CH	-	-	-	-	-	-	-	-	14.39	-	-	-
Middle CH	1.29	1.31	2.97	3.00	4.93	4.90	9.95	-	-	-	-	-

LTE Band 26

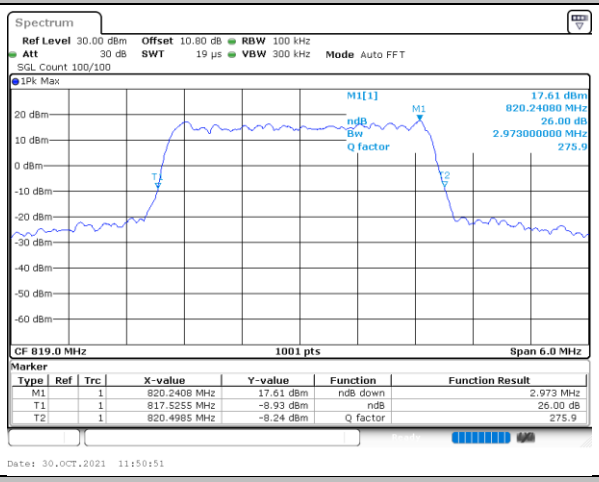
Middle Channel / 1.4MHz / QPSK



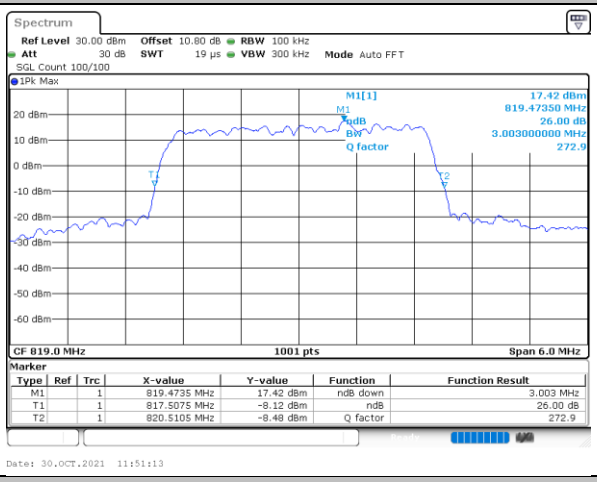
Middle Channel / 1.4MHz / 16QAM



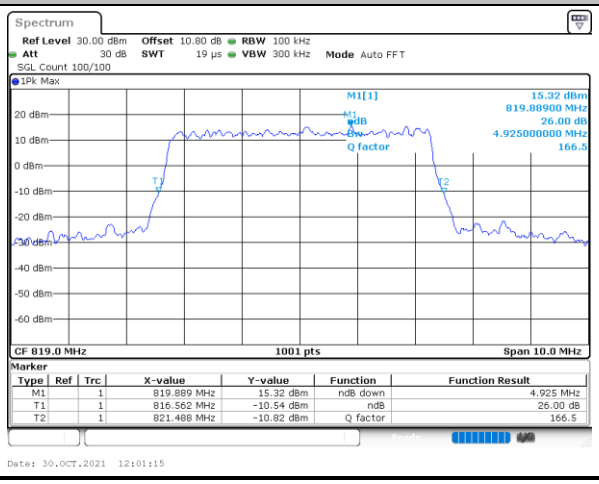
Middle Channel / 3MHz / QPSK



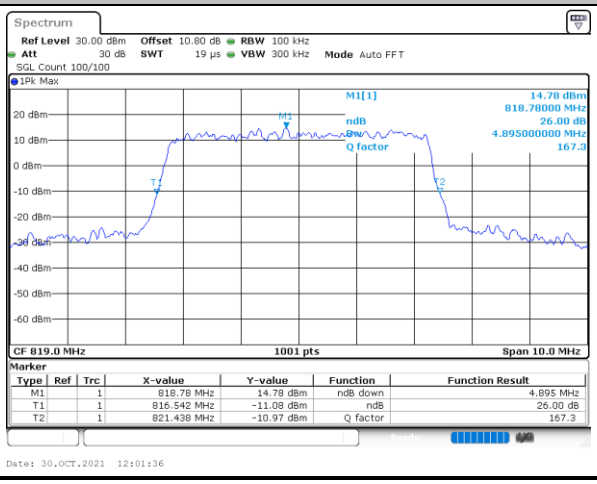
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

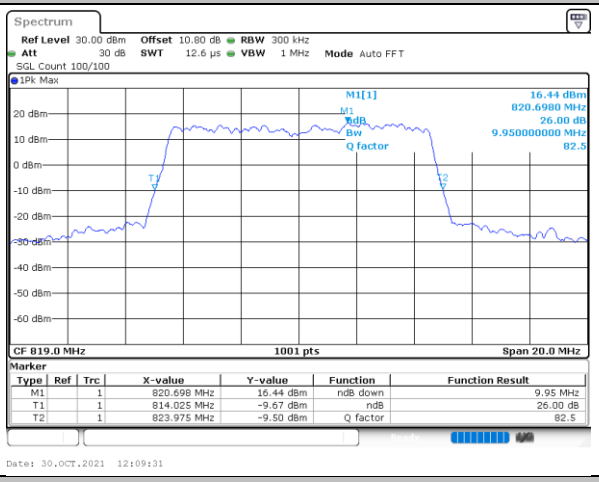


Middle Channel / 5MHz / 16QAM

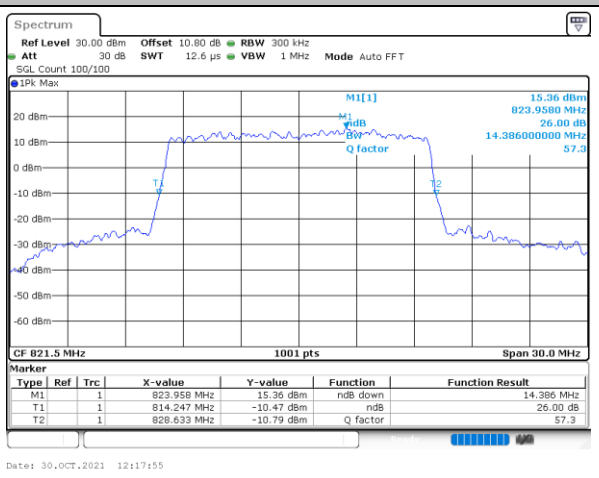


LTE Band 26

Middle Channel / 10MHz / QPSK



Low Channel / 15MHz / QPSK

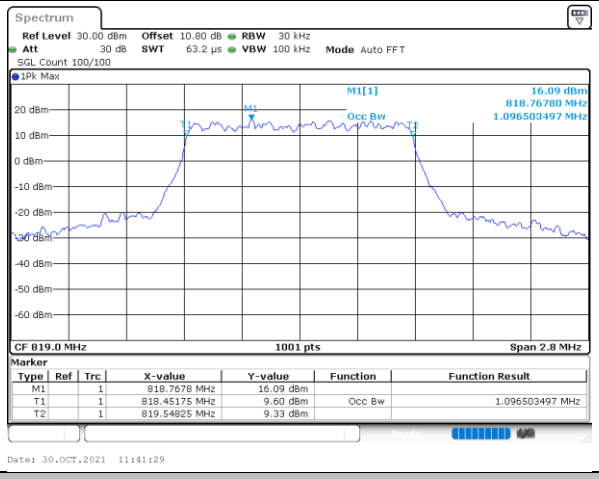


Occupied Bandwidth

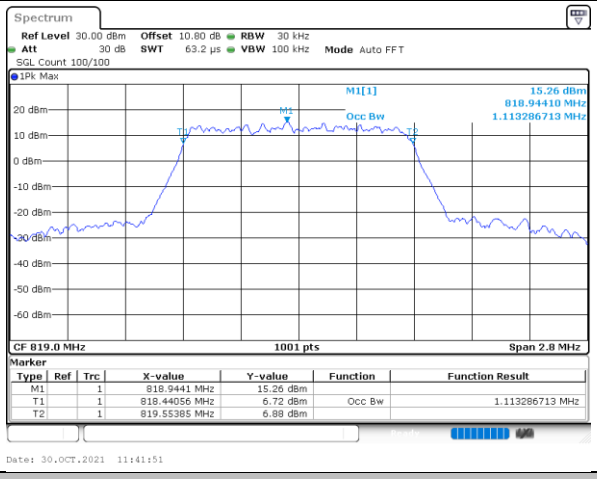
Mode	LTE Band 26 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Low CH	-	-	-	-	-	-	-	-	13.46	-	-	-
Middle CH	1.10	1.11	2.72	2.71	4.49	4.50	9.03	-	-	-	-	-

LTE Band 26

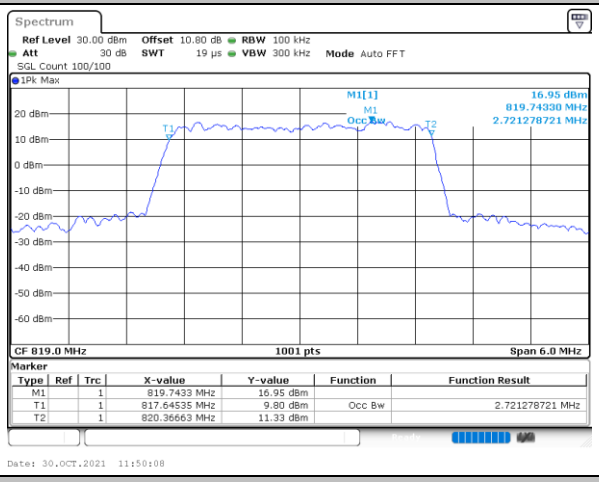
Middle Channel / 1.4MHz / QPSK



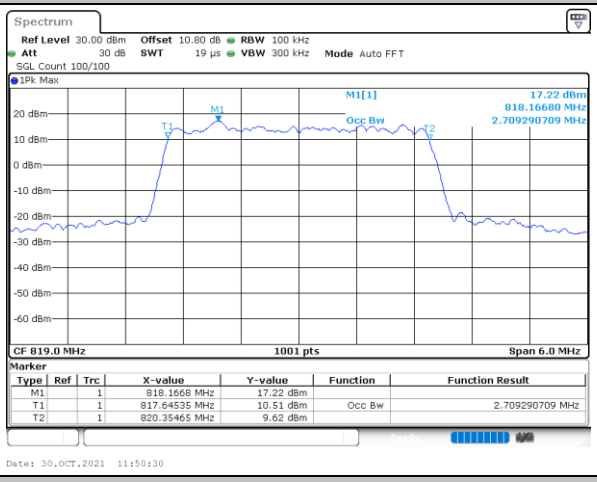
Middle Channel / 1.4MHz / 16QAM



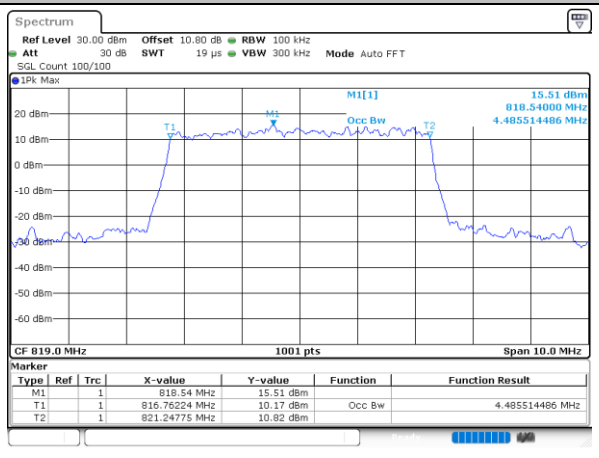
Middle Channel / 3MHz / QPSK



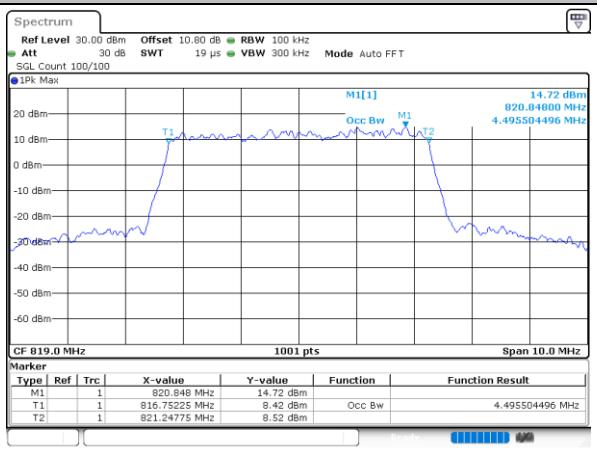
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

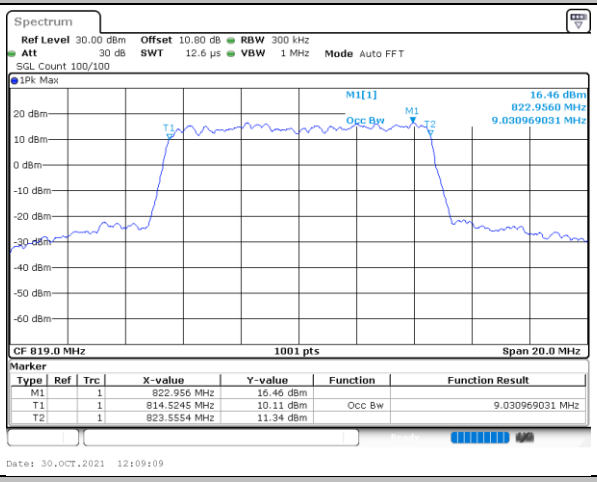


Middle Channel / 5MHz / 16QAM

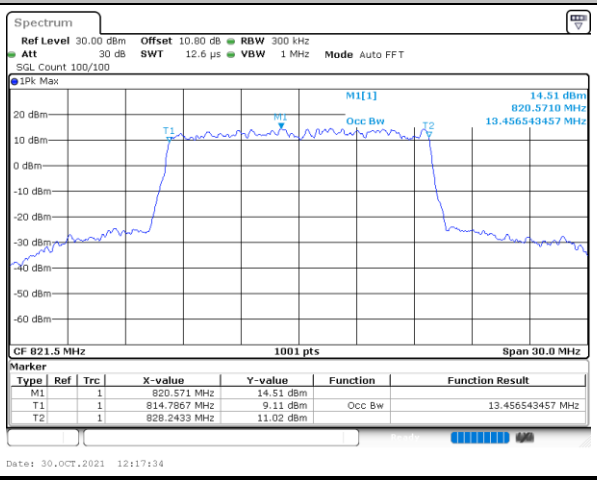


LTE Band 26

Middle Channel / 10MHz / QPSK



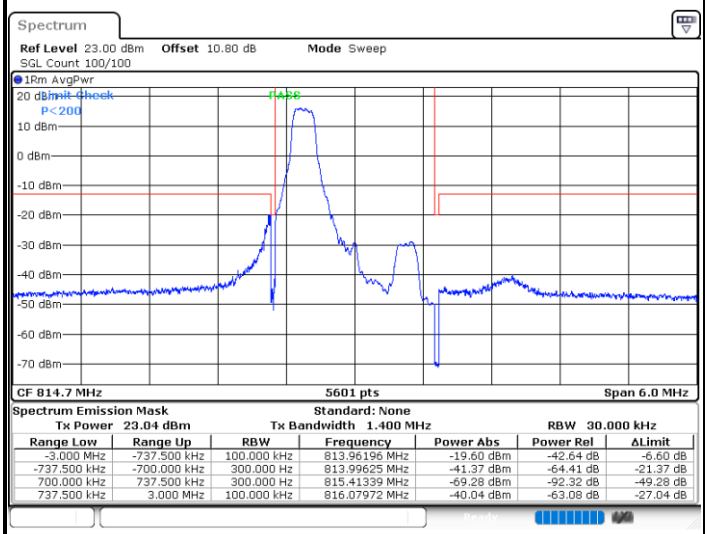
Low Channel / 15MHz / QPSK



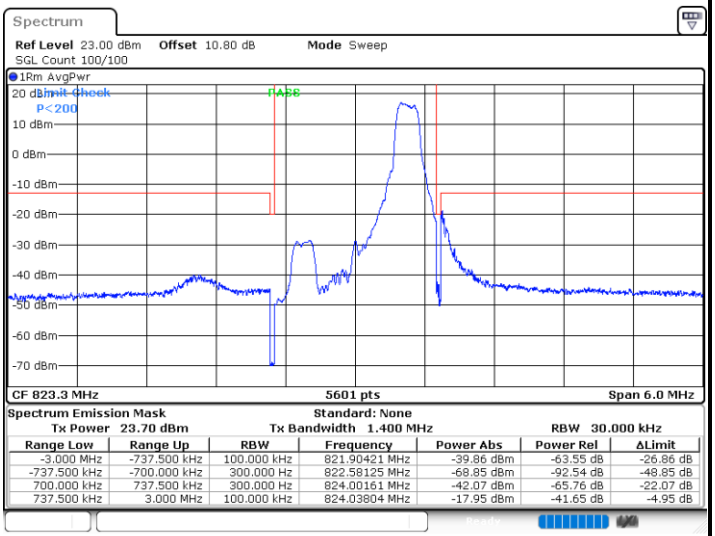
Emission masks – In-band emissions

LTE Band 26 / 1.4MHz / QPSK

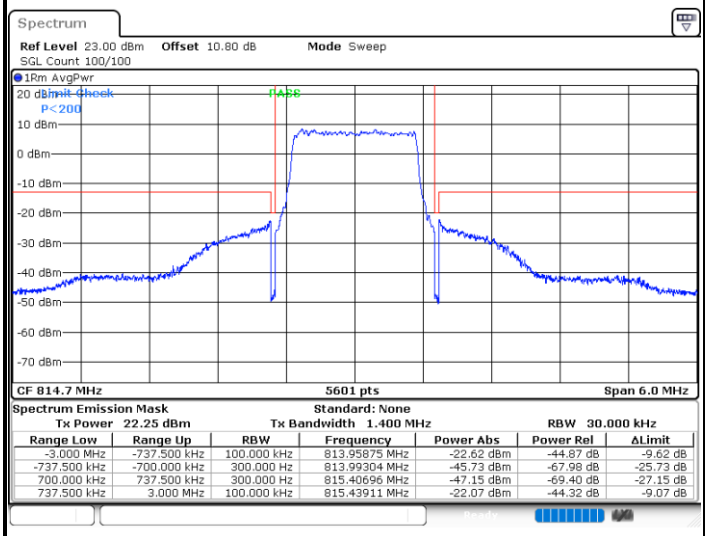
Lowest Band Edge / 1RB



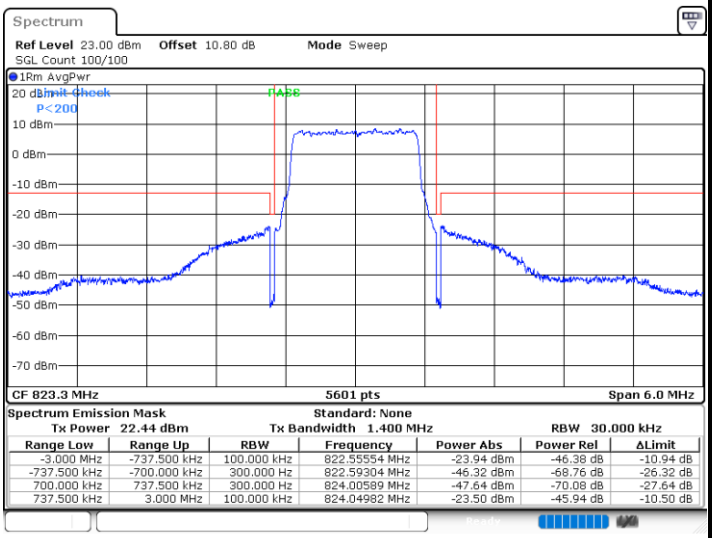
Highest Band Edge / 1RB



Lowest Band Edge / Full RB

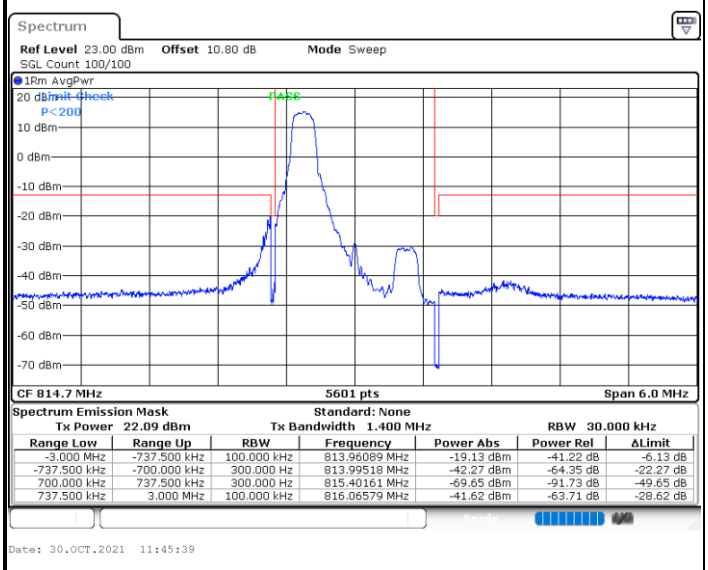


Highest Band Edge / Full RB

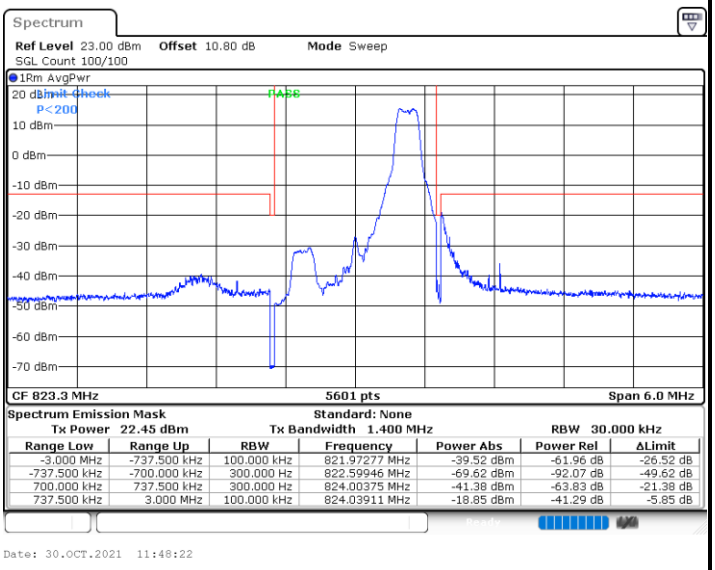


LTE Band 26 / 1.4MHz / 16QAM

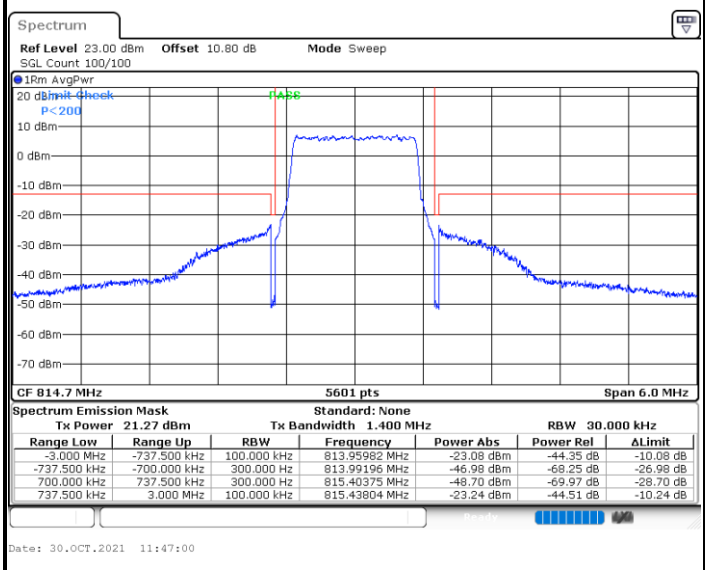
Lowest Band Edge / 1 RB



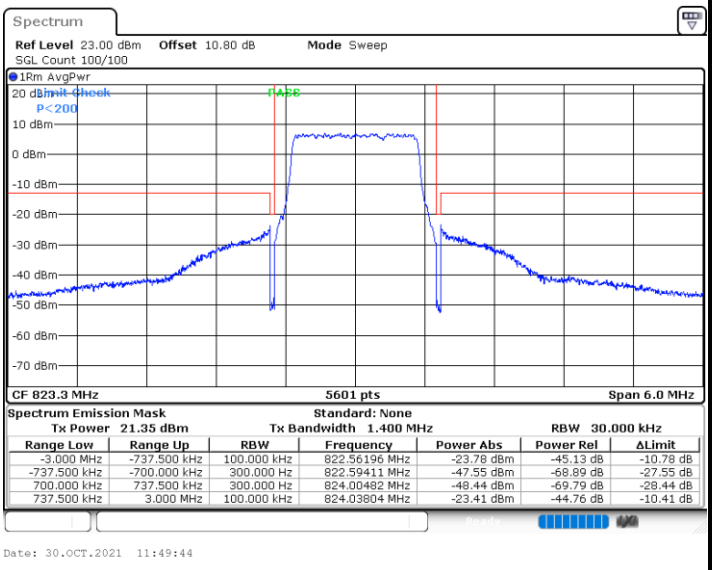
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

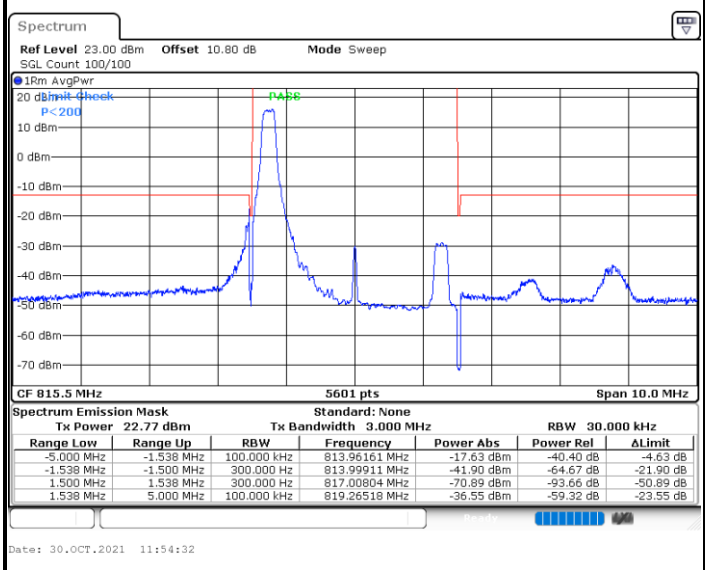


Highest Band Edge / Full RB



LTE Band 26 / 3MHz / QPSK

Lowest Band Edge / 1RB

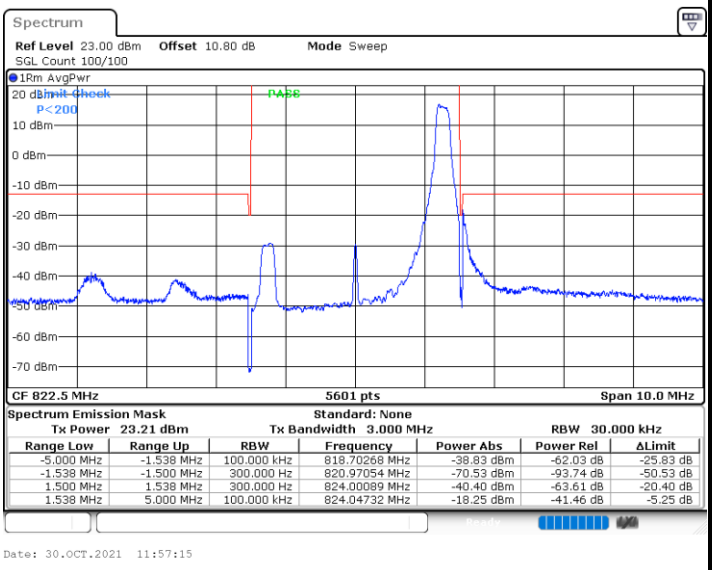


Spectrum Emission Mask Standard: None
Tx Power 22.77 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-17.63 dBm	-40.40 dB	-4.63 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99911 MHz	-41.90 dBm	-64.67 dB	-21.90 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00804 MHz	-70.89 dBm	-93.66 dB	-50.89 dB
1.538 MHz	5.000 MHz	100.000 kHz	819.26518 MHz	-36.55 dBm	-59.32 dB	-23.55 dB

Date: 30.OCT.2021 11:54:32

Highest Band Edge / 1 RB

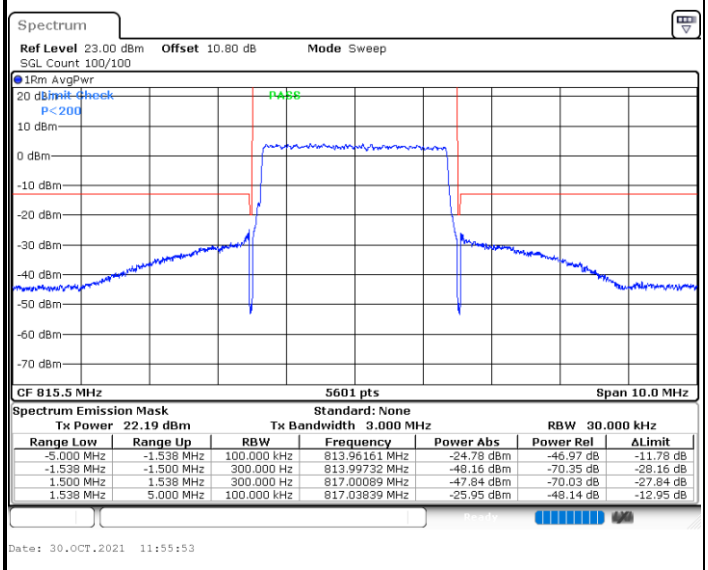


Spectrum Emission Mask Standard: None
Tx Power 23.21 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	818.70268 MHz	-38.83 dBm	-62.03 dB	-25.83 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.97054 MHz	-70.53 dBm	-93.74 dB	-50.53 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00089 MHz	-40.40 dBm	-63.61 dB	-20.40 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.04732 MHz	-18.25 dBm	-41.46 dB	-5.25 dB

Date: 30.OCT.2021 11:57:15

Lowest Band Edge / Full RB

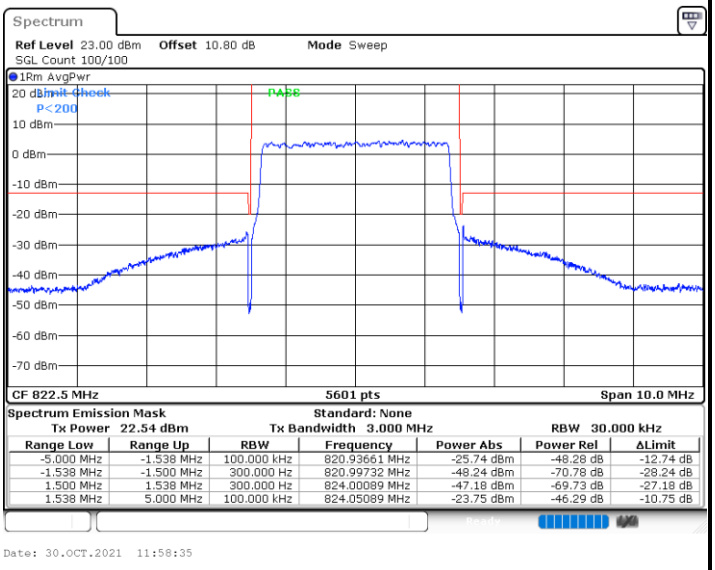


Spectrum Emission Mask Standard: None
Tx Power 22.19 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-24.78 dBm	-46.97 dB	-11.78 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99732 MHz	-48.16 dBm	-70.35 dB	-28.16 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00089 MHz	-47.84 dBm	-70.03 dB	-27.84 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.03839 MHz	-25.95 dBm	-48.14 dB	-12.95 dB

Date: 30.OCT.2021 11:55:53

Highest Band Edge / Full RB



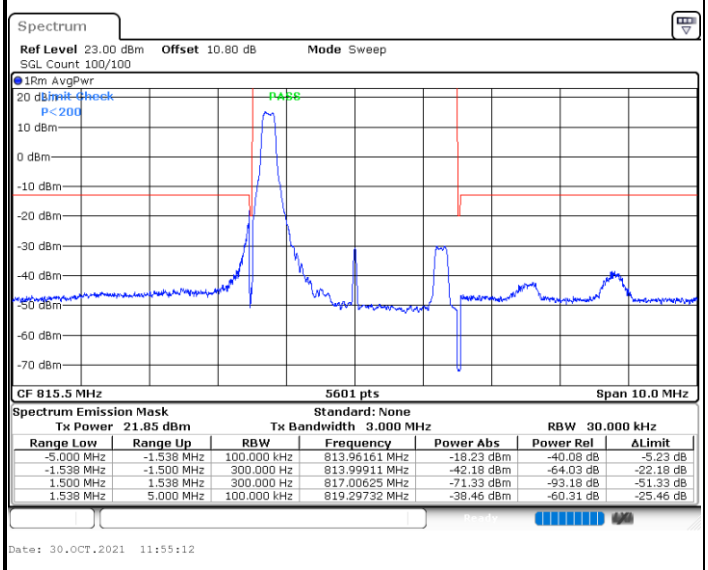
Spectrum Emission Mask Standard: None
Tx Power 22.54 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.93661 MHz	-25.74 dBm	-48.28 dB	-12.74 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99732 MHz	-48.24 dBm	-70.78 dB	-28.24 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00089 MHz	-47.18 dBm	-69.73 dB	-27.18 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.05089 MHz	-23.75 dBm	-46.29 dB	-10.75 dB

Date: 30.OCT.2021 11:58:35

LTE Band 26 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

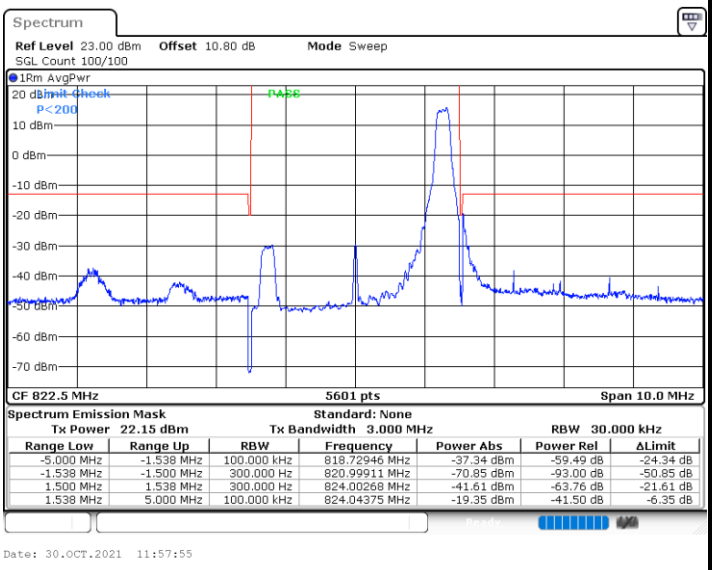


Spectrum Emission Mask Standard: None
Tx Power 21.85 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-18.23 dBm	-40.08 dB	-5.23 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99911 MHz	-42.18 dBm	-64.03 dB	-22.18 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00625 MHz	-71.33 dBm	-93.18 dB	-51.33 dB
1.538 MHz	5.000 MHz	100.000 kHz	819.29732 MHz	-38.46 dBm	-60.31 dB	-25.46 dB

Date: 30.OCT.2021 11:55:12

Highest Band Edge /1 RB

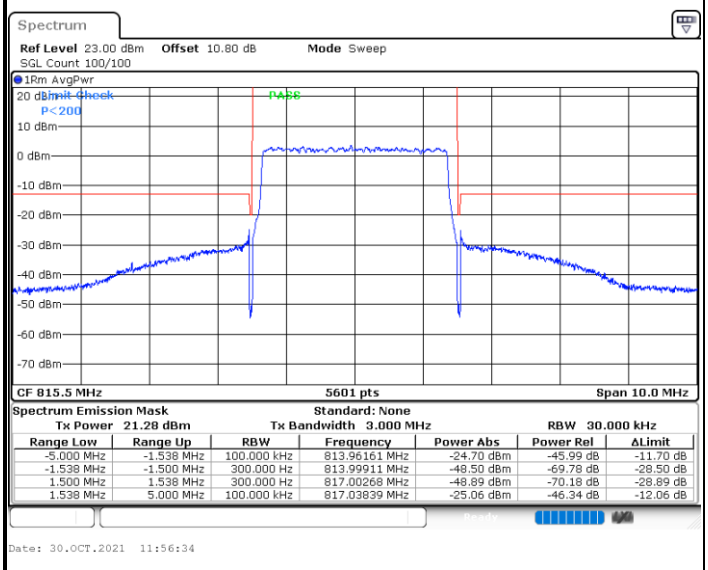


Spectrum Emission Mask Standard: None
Tx Power 22.15 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	818.72946 MHz	-37.34 dBm	-59.49 dB	-24.34 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99911 MHz	-70.85 dBm	-93.00 dB	-50.85 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00268 MHz	-41.61 dBm	-63.76 dB	-21.61 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.04375 MHz	-19.35 dBm	-41.50 dB	-6.35 dB

Date: 30.OCT.2021 11:57:55

Lowest Band Edge / Full RB

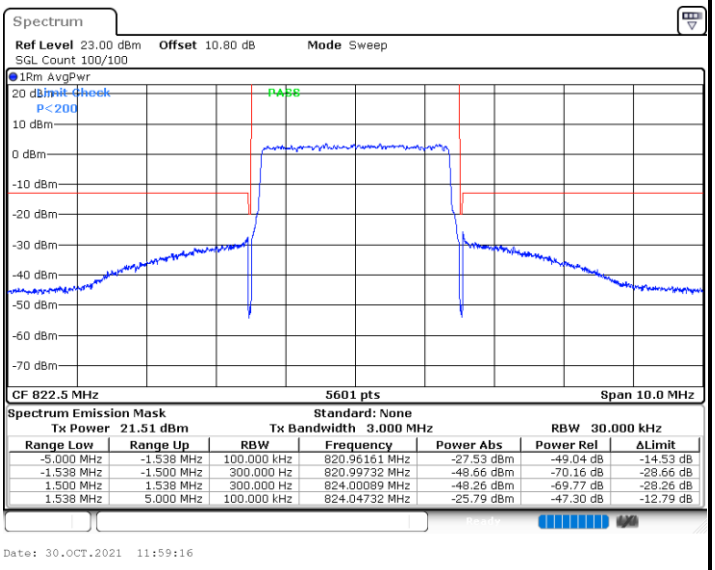


Spectrum Emission Mask Standard: None
Tx Power 21.28 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-24.70 dBm	-45.99 dB	-11.70 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99911 MHz	-48.50 dBm	-69.78 dB	-28.50 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00268 MHz	-48.89 dBm	-70.18 dB	-28.89 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.03839 MHz	-25.06 dBm	-46.34 dB	-12.06 dB

Date: 30.OCT.2021 11:56:34

Highest Band Edge / Full RB



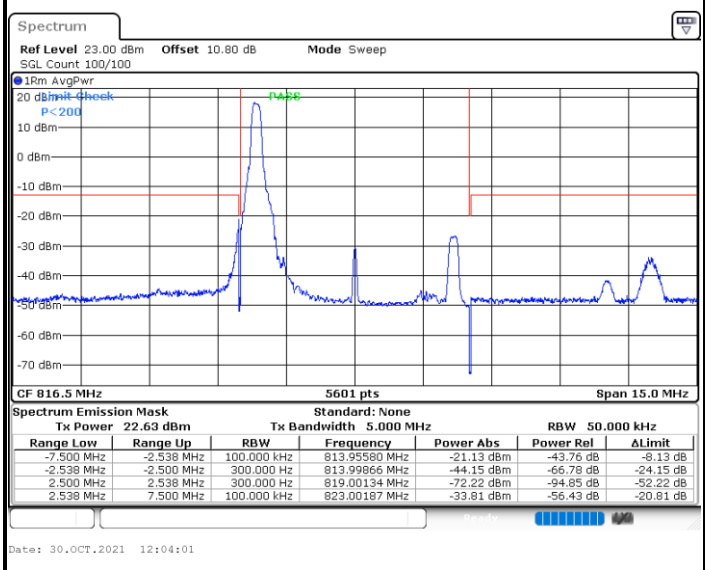
Spectrum Emission Mask Standard: None
Tx Power 21.51 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.96161 MHz	-27.53 dBm	-49.04 dB	-14.53 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99732 MHz	-48.66 dBm	-70.16 dB	-28.66 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00089 MHz	-48.26 dBm	-69.77 dB	-28.26 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.04732 MHz	-25.79 dBm	-47.30 dB	-12.79 dB

Date: 30.OCT.2021 11:59:16

LTE Band 26 / 5MHz / QPSK

Lowest Band Edge / 1 RB

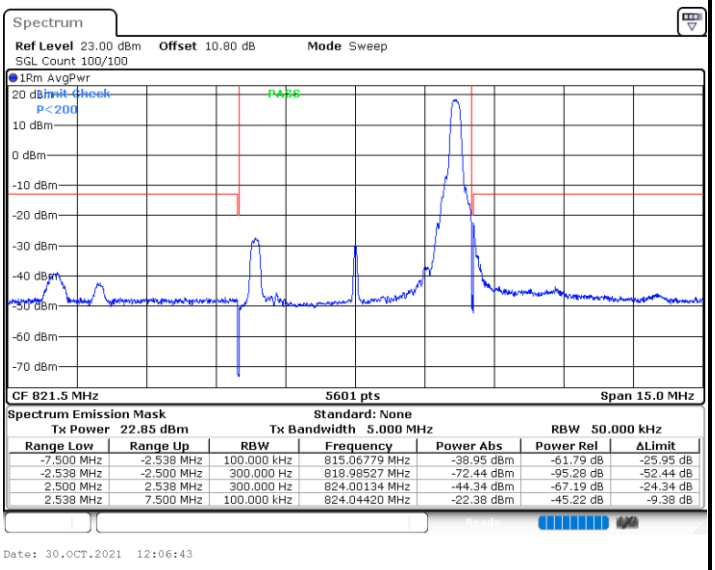


Spectrum Emission Mask Standard: None
Tx Power 22.63 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.95580 MHz	-21.13 dBm	-43.76 dB	-8.13 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99866 MHz	-44.15 dBm	-66.78 dB	-24.15 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.00134 MHz	-72.22 dBm	-94.85 dB	-52.22 dB
2.538 MHz	7.500 MHz	100.000 kHz	823.00187 MHz	-33.81 dBm	-56.43 dB	-20.81 dB

Date: 30.OCT.2021 12:04:01

Highest Band Edge / 1 RB

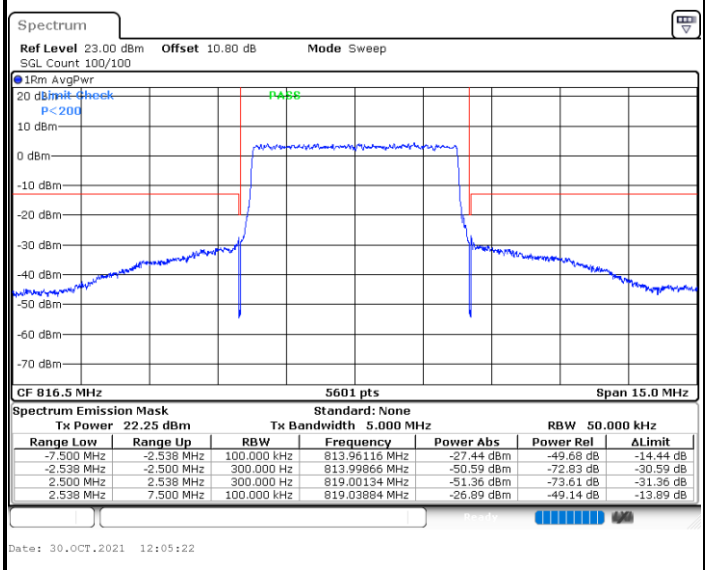


Spectrum Emission Mask Standard: None
Tx Power 22.85 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	815.06779 MHz	-38.95 dBm	-61.79 dB	-25.95 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.98527 MHz	-72.44 dBm	-95.28 dB	-52.44 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00134 MHz	-44.34 dBm	-67.19 dB	-24.34 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.04420 MHz	-22.38 dBm	-45.22 dB	-9.38 dB

Date: 30.OCT.2021 12:06:43

Lowest Band Edge / Full RB

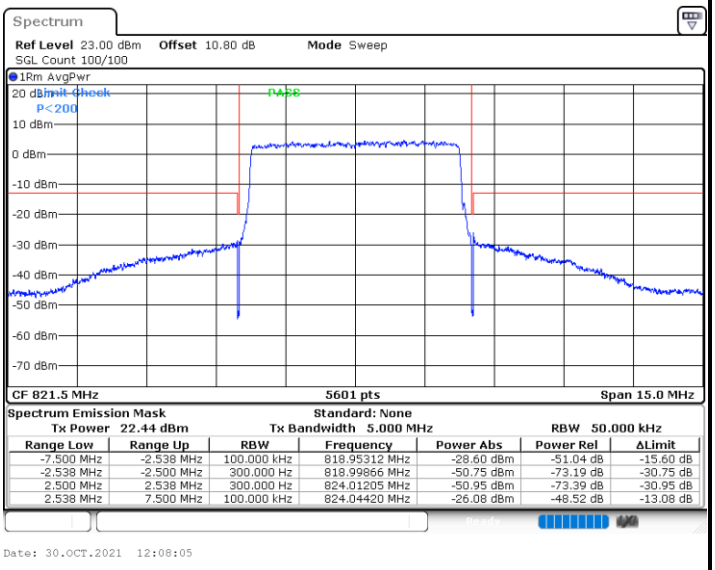


Spectrum Emission Mask Standard: None
Tx Power 22.25 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.96116 MHz	-27.44 dBm	-49.68 dB	-14.44 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99866 MHz	-50.59 dBm	-72.83 dB	-30.59 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.00134 MHz	-51.36 dBm	-73.61 dB	-31.36 dB
2.538 MHz	7.500 MHz	100.000 kHz	819.03884 MHz	-26.89 dBm	-49.14 dB	-13.89 dB

Date: 30.OCT.2021 12:05:22

Highest Band Edge / Full RB



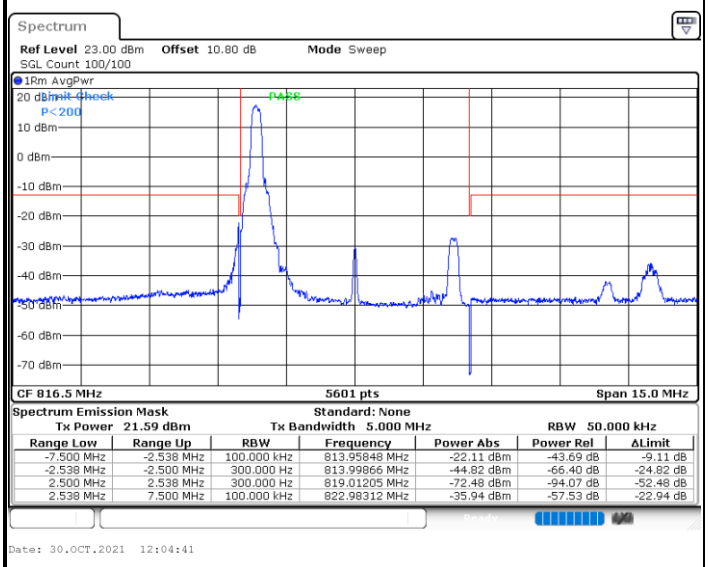
Spectrum Emission Mask Standard: None
Tx Power 22.44 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	818.95312 MHz	-28.60 dBm	-51.04 dB	-15.60 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99866 MHz	-50.75 dBm	-73.19 dB	-30.75 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.01205 MHz	-50.95 dBm	-73.39 dB	-30.95 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.04420 MHz	-26.08 dBm	-48.52 dB	-13.08 dB

Date: 30.OCT.2021 12:08:05

LTE Band 26 / 5MHz / 16QAM

Lowest Band Edge / 1RB

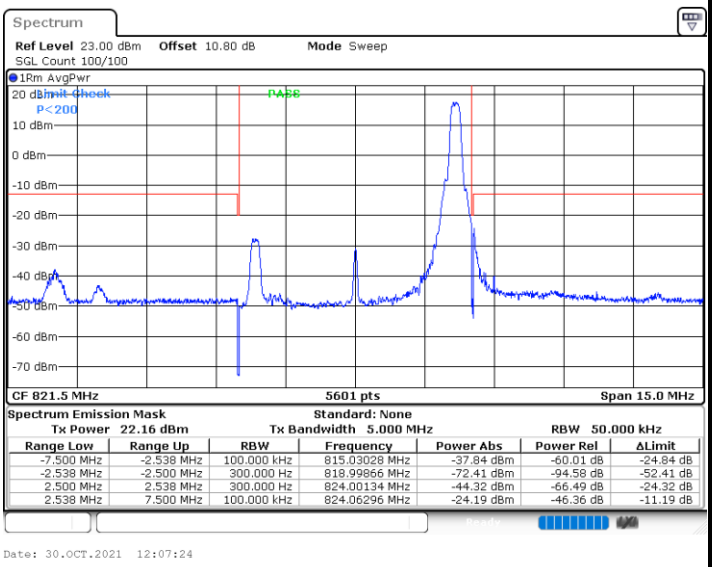


Spectrum Emission Mask Standard: None
Tx Power 21.59 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.95848 MHz	-22.11 dBm	-43.69 dB	-9.11 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99866 MHz	-44.82 dBm	-66.40 dB	-24.82 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.01205 MHz	-72.48 dBm	-94.07 dB	-52.48 dB
2.538 MHz	7.500 MHz	100.000 kHz	822.98312 MHz	-35.94 dBm	-57.53 dB	-22.94 dB

Date: 30.OCT.2021 12:04:41

Highest Band Edge / 1 RB

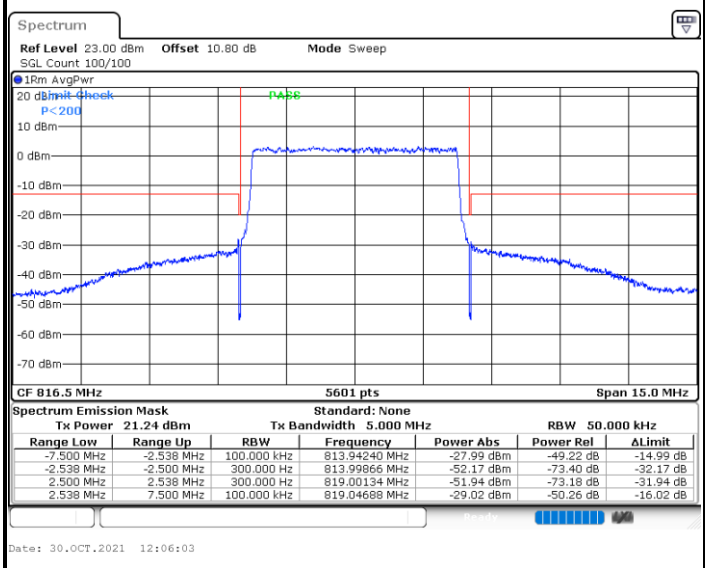


Spectrum Emission Mask Standard: None
Tx Power 22.16 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	815.03028 MHz	-37.84 dBm	-60.01 dB	-24.84 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99866 MHz	-72.41 dBm	-94.58 dB	-52.41 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00134 MHz	-44.32 dBm	-66.49 dB	-24.32 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.06296 MHz	-24.19 dBm	-46.36 dB	-11.19 dB

Date: 30.OCT.2021 12:07:24

Lowest Band Edge / Full RB

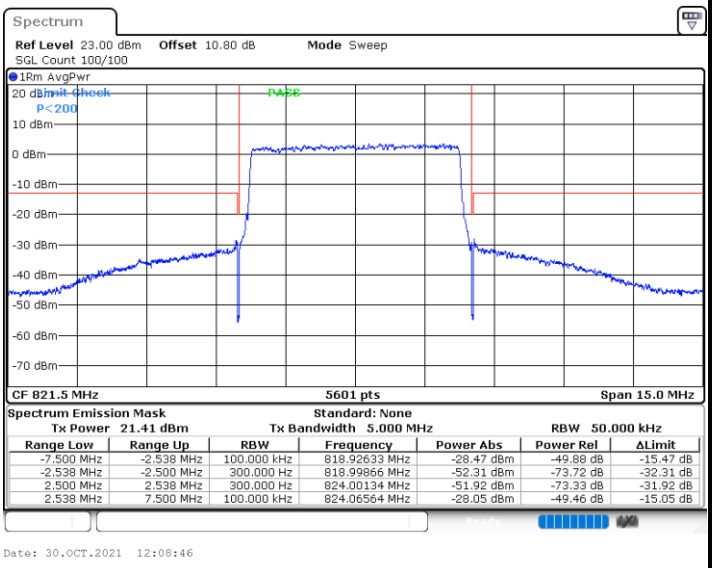


Spectrum Emission Mask Standard: None
Tx Power 21.24 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.94240 MHz	-27.99 dBm	-49.22 dB	-14.99 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99866 MHz	-52.17 dBm	-73.40 dB	-32.17 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.00134 MHz	-51.94 dBm	-73.18 dB	-31.94 dB
2.538 MHz	7.500 MHz	100.000 kHz	819.04688 MHz	-29.02 dBm	-50.26 dB	-16.02 dB

Date: 30.OCT.2021 12:06:03

Highest Band Edge / Full RB



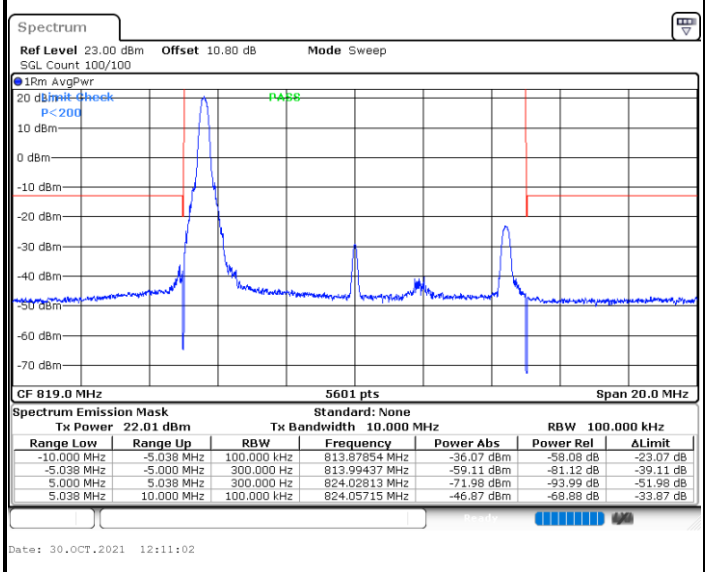
Spectrum Emission Mask Standard: None
Tx Power 21.41 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	818.92633 MHz	-28.47 dBm	-49.88 dB	-15.47 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99866 MHz	-52.31 dBm	-73.72 dB	-32.31 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00134 MHz	-51.92 dBm	-73.33 dB	-31.92 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.06564 MHz	-28.05 dBm	-49.46 dB	-15.05 dB

Date: 30.OCT.2021 12:08:46

LTE Band 26 / 10MHz / QPSK

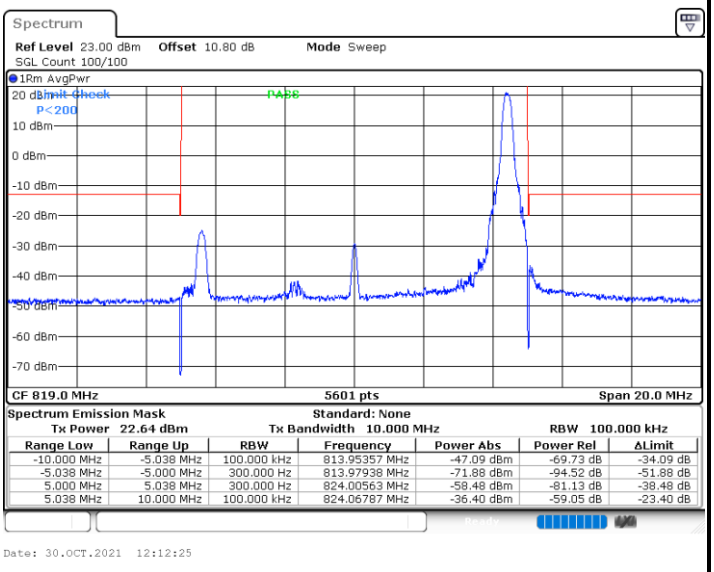
Lowest Band Edge / 1 RB



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.87854 MHz	-36.07 dBm	-58.08 dB	-23.07 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99437 MHz	-59.11 dBm	-81.12 dB	-39.11 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.02813 MHz	-71.98 dBm	-93.99 dB	-51.98 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.05715 MHz	-46.87 dBm	-68.88 dB	-33.87 dB

Date: 30.OCT.2021 12:11:02

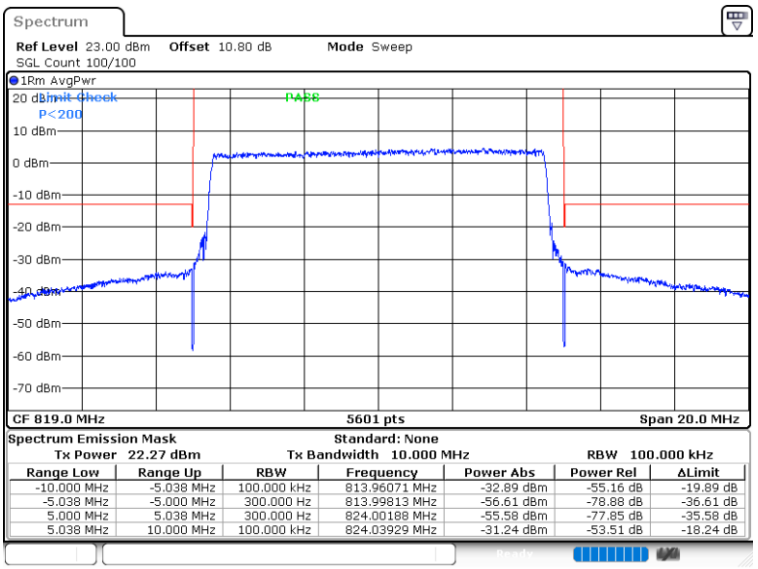
Highest Band Edge / 1 RB



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.95357 MHz	-47.09 dBm	-69.73 dB	-34.09 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.97938 MHz	-71.88 dBm	-94.52 dB	-51.88 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00563 MHz	-58.48 dBm	-81.13 dB	-38.48 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.06787 MHz	-36.40 dBm	-59.05 dB	-23.40 dB

Date: 30.OCT.2021 12:12:25

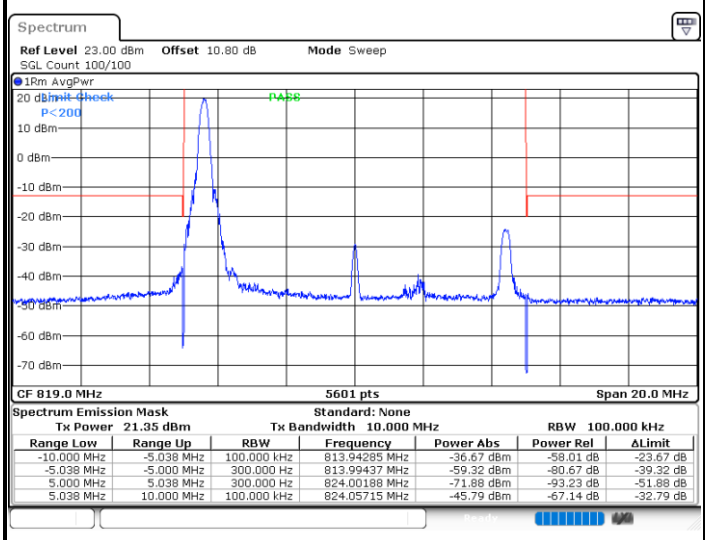
Lowest Band Edge / Full RB

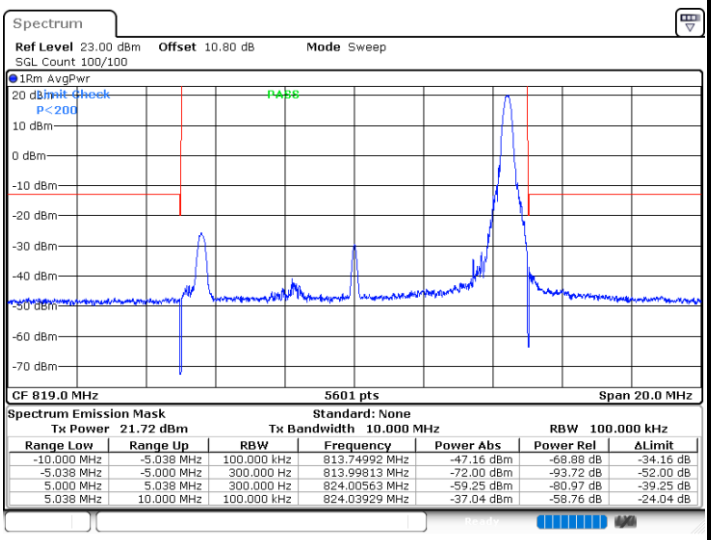


Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.96071 MHz	-32.89 dBm	-55.16 dB	-19.89 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99813 MHz	-56.61 dBm	-78.88 dB	-36.61 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-55.58 dBm	-77.85 dB	-35.58 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.03929 MHz	-31.24 dBm	-53.51 dB	-18.24 dB

Date: 30.OCT.2021 12:13:46

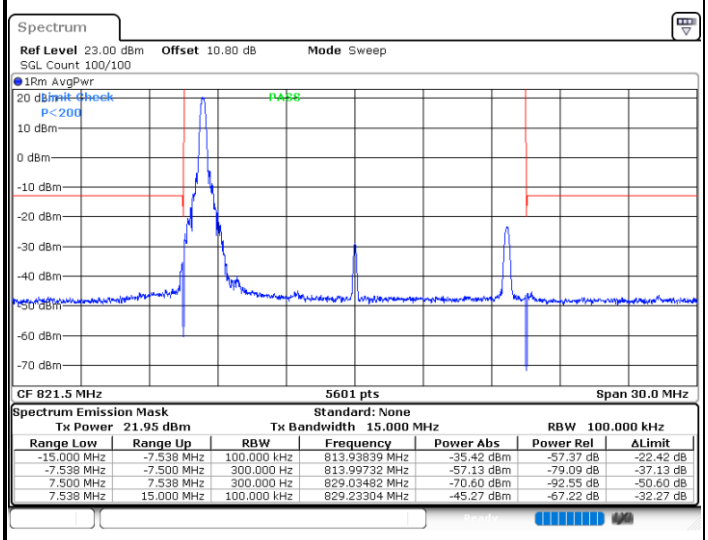
LTE Band 26 / 10MHz / 16QAM	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**



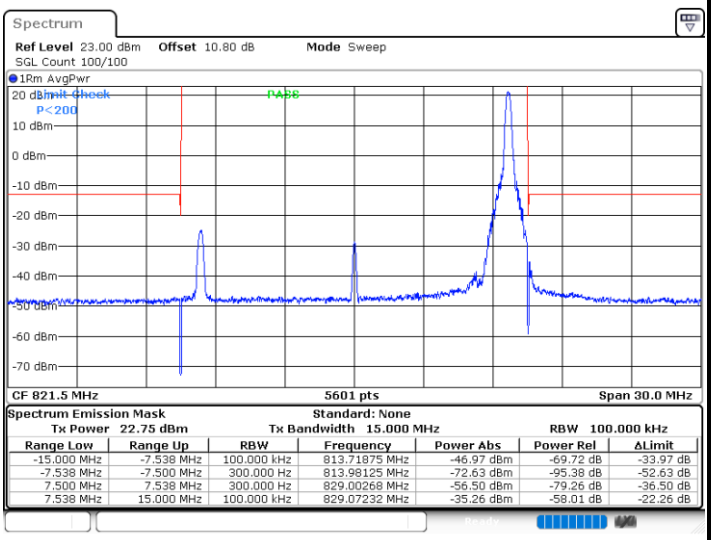


LTE Band 26 / 15MHz / QPSK

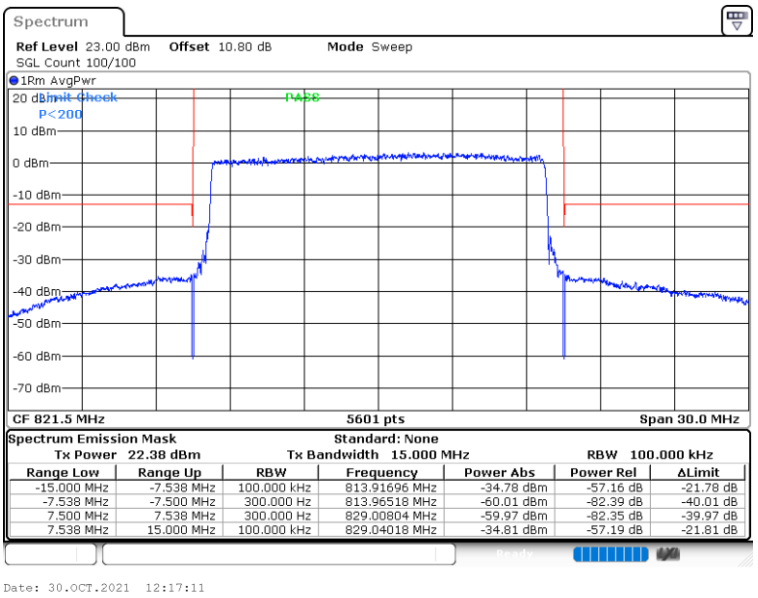
Lowest Band Edge / 1 RB



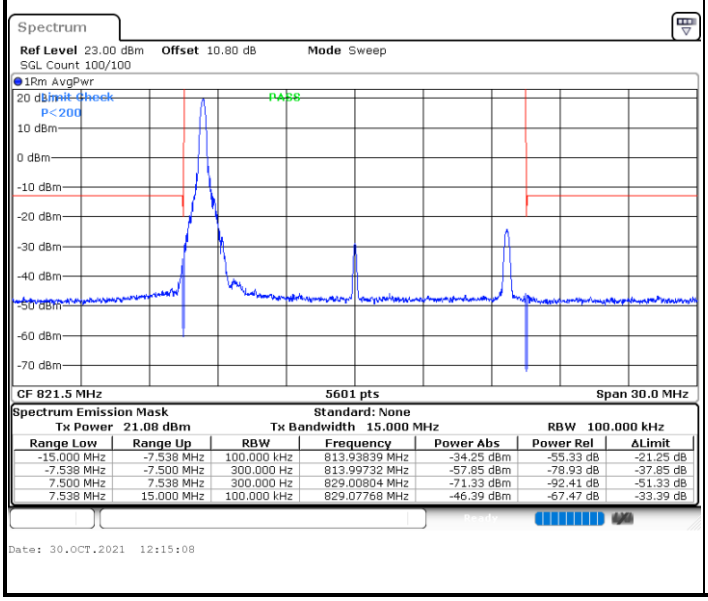
Highest Band Edge / 1 RB

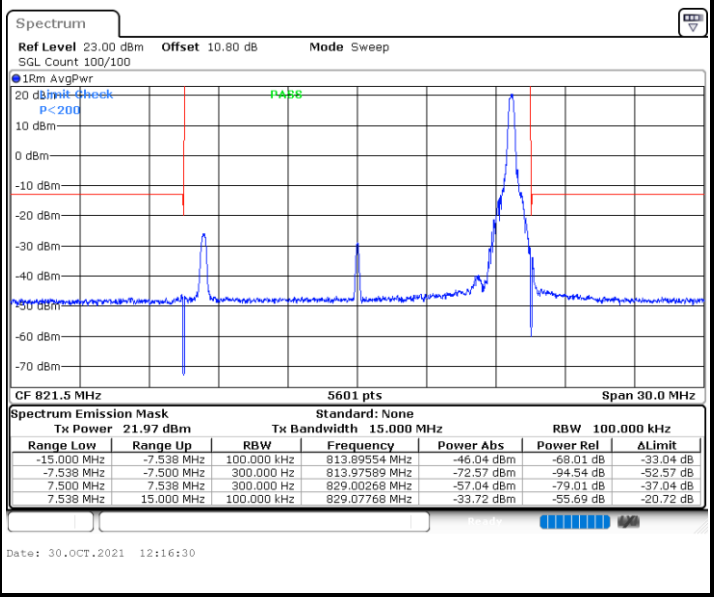


Lowest Band Edge / Full RB



LTE Band 26 / 15MHz / 16QAM	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**

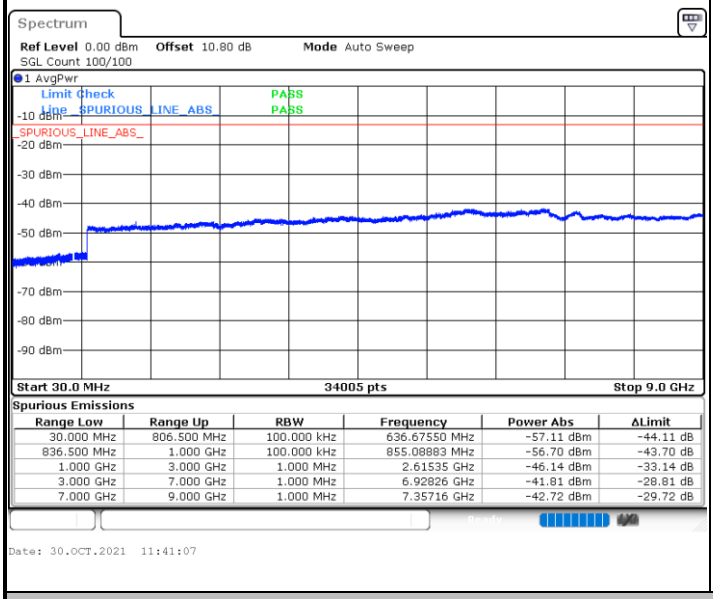




Emission masks – Out of band emissions

LTE Band 26 / 1.4MHz

Lowest Channel / QPSK

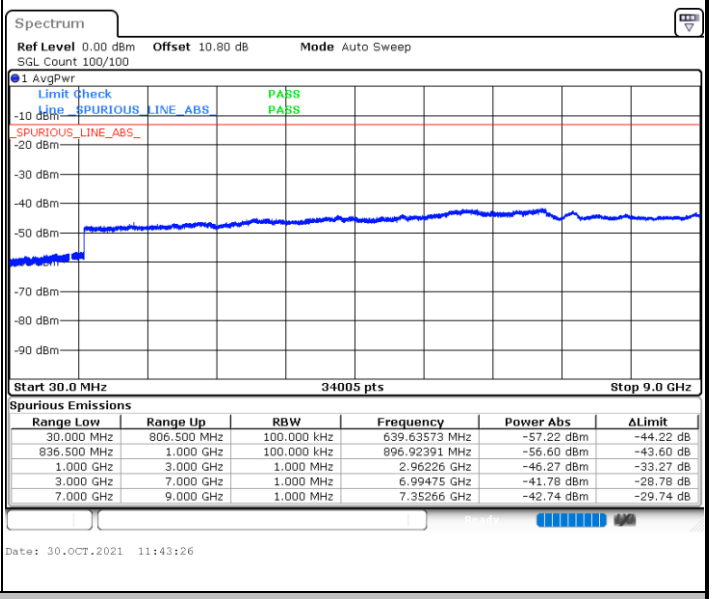


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	636.67550 MHz	-57.11 dBm	-44.11 dB
836.500 MHz	1.000 GHz	100.000 kHz	855.08883 MHz	-56.70 dBm	-43.70 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.61535 GHz	-46.14 dBm	-33.14 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92826 GHz	-41.81 dBm	-28.81 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35716 GHz	-42.72 dBm	-29.72 dB

Date: 30.OCT.2021 11:41:07

Middle Channel / QPSK

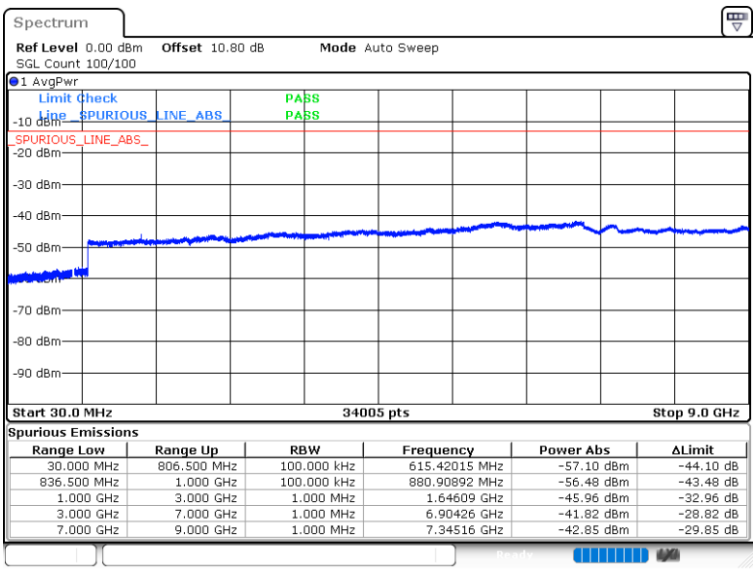


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	639.63573 MHz	-57.22 dBm	-44.22 dB
836.500 MHz	1.000 GHz	100.000 kHz	896.92391 MHz	-56.60 dBm	-43.60 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96226 GHz	-46.27 dBm	-33.27 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99475 GHz	-41.78 dBm	-28.78 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35266 GHz	-42.74 dBm	-29.74 dB

Date: 30.OCT.2021 11:43:26

Highest Channel / QPSK



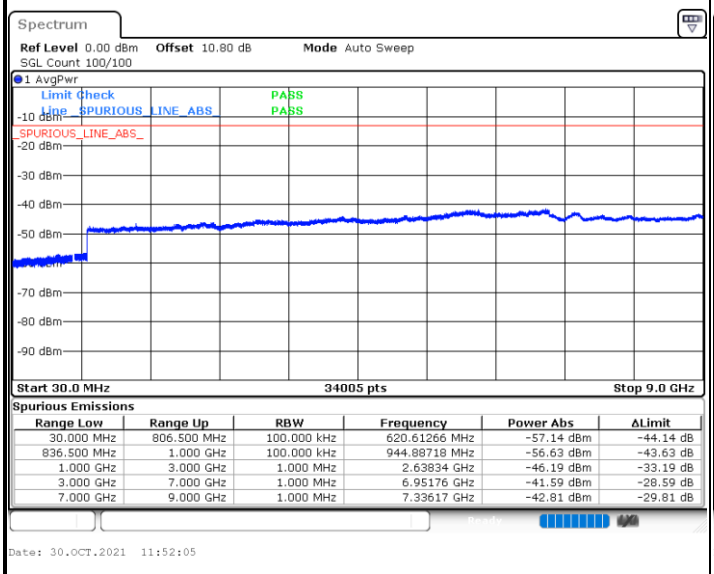
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	615.42015 MHz	-57.10 dBm	-44.10 dB
836.500 MHz	1.000 GHz	100.000 kHz	880.90892 MHz	-56.48 dBm	-43.48 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64609 GHz	-45.96 dBm	-32.96 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90426 GHz	-41.82 dBm	-28.82 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.34516 GHz	-42.85 dBm	-29.85 dB

Date: 30.OCT.2021 11:44:19

LTE Band 26 / 3MHz

Lowest Channel / QPSK

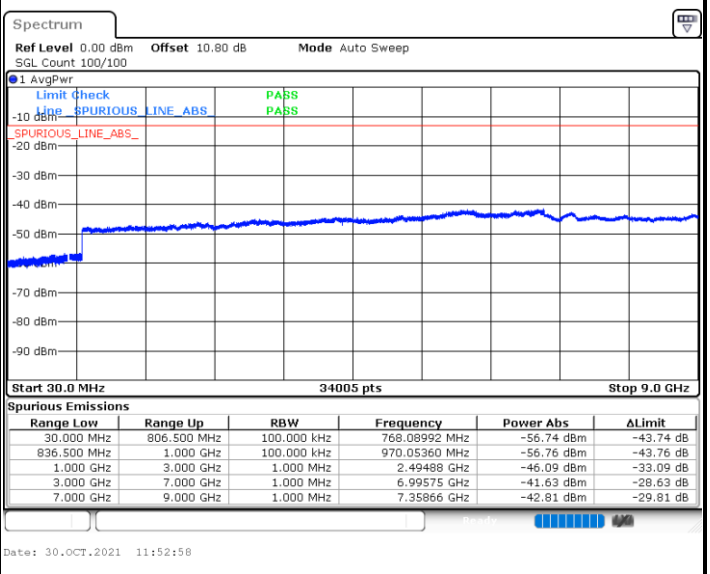


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	620.61266 MHz	-57.14 dBm	-44.14 dB
836.500 MHz	1.000 GHz	100.000 kHz	944.88718 MHz	-56.63 dBm	-43.63 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63834 GHz	-46.19 dBm	-33.19 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95176 GHz	-41.59 dBm	-28.59 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.33617 GHz	-42.81 dBm	-29.81 dB

Date: 30.OCT.2021 11:52:05

Middle Channel / QPSK

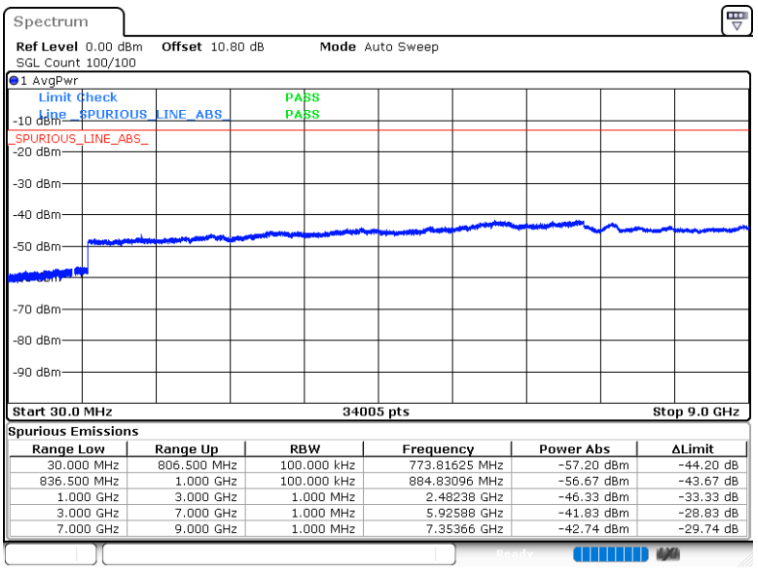


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	768.08992 MHz	-56.74 dBm	-43.74 dB
836.500 MHz	1.000 GHz	100.000 kHz	970.05360 MHz	-56.76 dBm	-43.76 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49488 GHz	-46.09 dBm	-33.09 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99575 GHz	-41.63 dBm	-28.63 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35866 GHz	-42.81 dBm	-29.81 dB

Date: 30.OCT.2021 11:52:58

Highest Channel / QPSK



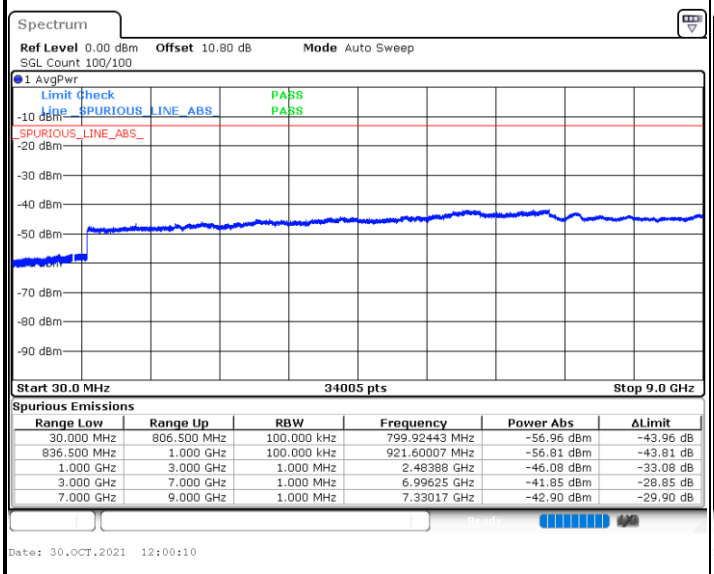
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	773.81625 MHz	-57.20 dBm	-44.20 dB
836.500 MHz	1.000 GHz	100.000 kHz	884.83096 MHz	-56.67 dBm	-43.67 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.48238 GHz	-46.33 dBm	-33.33 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.92588 GHz	-41.83 dBm	-28.83 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35366 GHz	-42.74 dBm	-29.74 dB

Date: 30.OCT.2021 11:53:51

LTE Band 26 / 5MHz

Lowest Channel / QPSK

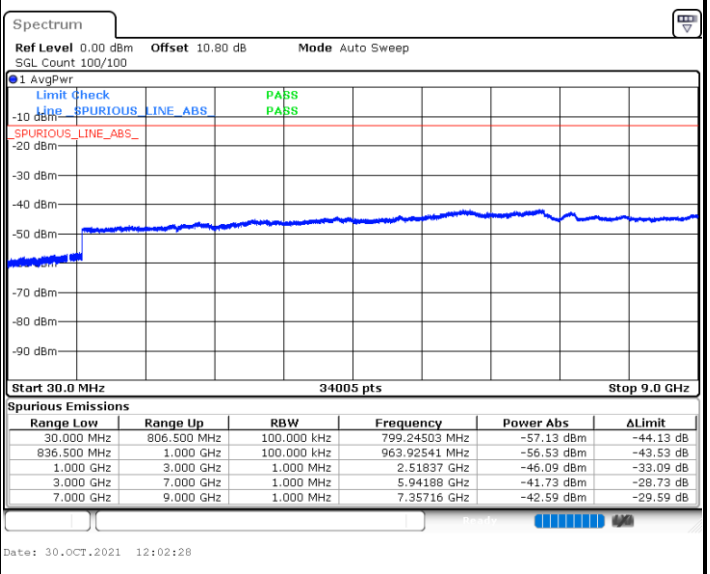


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	799.92443 MHz	-56.96 dBm	-43.96 dB
836.500 MHz	1.000 GHz	100.000 kHz	921.60007 MHz	-56.81 dBm	-43.81 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.48388 GHz	-46.08 dBm	-33.08 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99625 GHz	-41.85 dBm	-28.85 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.33017 GHz	-42.90 dBm	-29.90 dB

Date: 30.OCT.2021 12:00:10

Middle Channel / QPSK

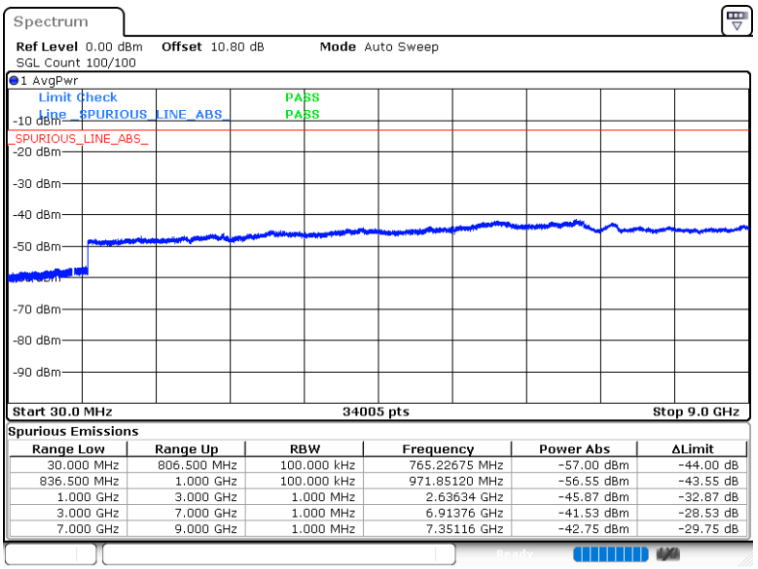


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	799.24503 MHz	-57.13 dBm	-44.13 dB
836.500 MHz	1.000 GHz	100.000 kHz	963.92541 MHz	-56.53 dBm	-43.53 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.51837 GHz	-46.09 dBm	-33.09 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.94188 GHz	-41.73 dBm	-28.73 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35716 GHz	-42.59 dBm	-29.59 dB

Date: 30.OCT.2021 12:02:28

Highest Channel / QPSK

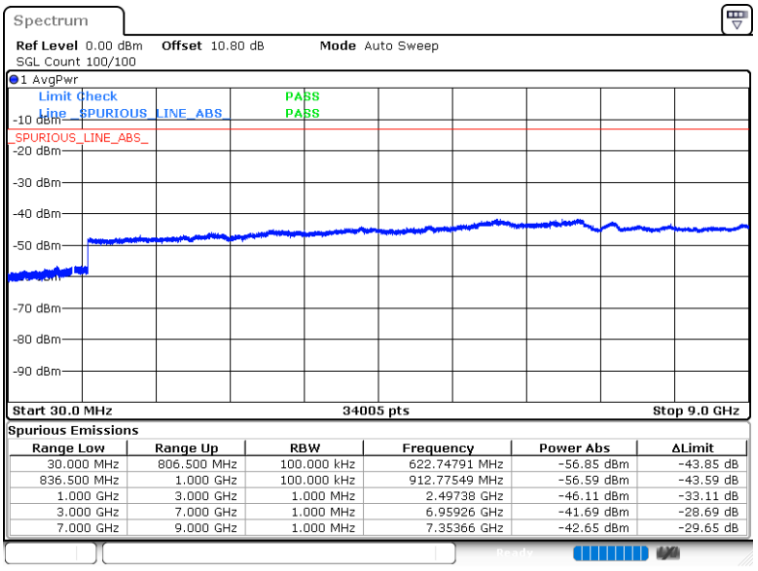


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	765.22675 MHz	-57.00 dBm	-44.00 dB
836.500 MHz	1.000 GHz	100.000 kHz	971.85120 MHz	-56.55 dBm	-43.55 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63634 GHz	-45.87 dBm	-32.87 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.91376 GHz	-41.53 dBm	-28.53 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35116 GHz	-42.75 dBm	-29.75 dB

Date: 30.OCT.2021 12:03:20

LTE Band 26 / 10MHz
Middle Channel / QPSK

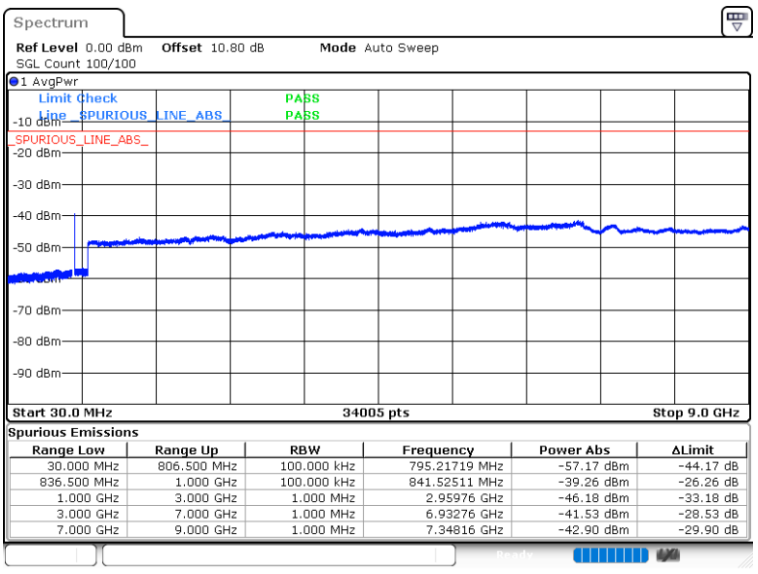


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	622.74791 MHz	-56.85 dBm	-43.85 dB
836.500 MHz	1.000 GHz	100.000 kHz	912.77549 MHz	-56.59 dBm	-43.59 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49738 GHz	-46.11 dBm	-33.11 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95926 GHz	-41.69 dBm	-28.69 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35366 GHz	-42.65 dBm	-29.65 dB

Date: 30.OCT.2021 12:10:22

LTE Band 26 / 15MHz
Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	795.21719 MHz	-57.17 dBm	-44.17 dB
836.500 MHz	1.000 GHz	100.000 kHz	841.52511 MHz	-39.26 dBm	-26.26 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95976 GHz	-46.18 dBm	-33.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93276 GHz	-41.53 dBm	-28.53 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.34816 GHz	-42.90 dBm	-29.90 dB

Date: 30.OCT.2021 12:18:47

Frequency Stability

Test Conditions		LTE Band 26 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0048	PASS
40	Normal Voltage	0.0104	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0053	
0	Normal Voltage	0.0054	
-10	Normal Voltage	0.0116	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0111	
20	Maximum Voltage	0.0070	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0072	

Note:

1. Normal Voltage =12.00 V.；Battery End Point (BEP) =8.00 V.；Maximum Voltage =40.00 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

Test Conditions		LTE Band 26 (QPSK) / Low Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 15MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0041	PASS
40	Normal Voltage	0.0149	
30	Normal Voltage	0.0180	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0112	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0134	
-20	Normal Voltage	0.0016	
-30	Normal Voltage	0.0043	
20	Maximum Voltage	0.0101	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0058	

Note:

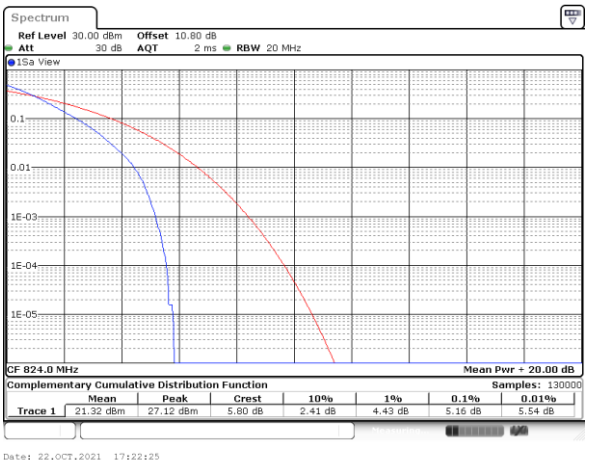
1. Normal Voltage =12.00 V.；Battery End Point (BEP) =8.00 V.；Maximum Voltage =40.00 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

LTE Band 26_824MHz

Peak-to-Average Ratio

Mode	LTE Band 26 / 15MHz	
Mod.	QPSK	Limit: 13dB
RB Size	Full RB	Result
Middle CH	5.16	PASS

LTE Band 26 / 15MHz / QPSK
Middle Channel / Full RB

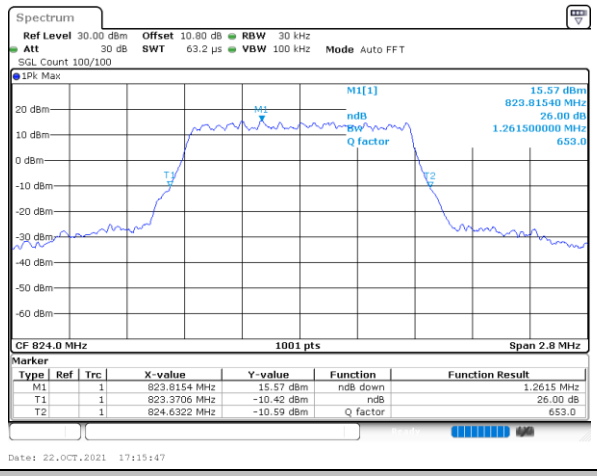


26dB Bandwidth

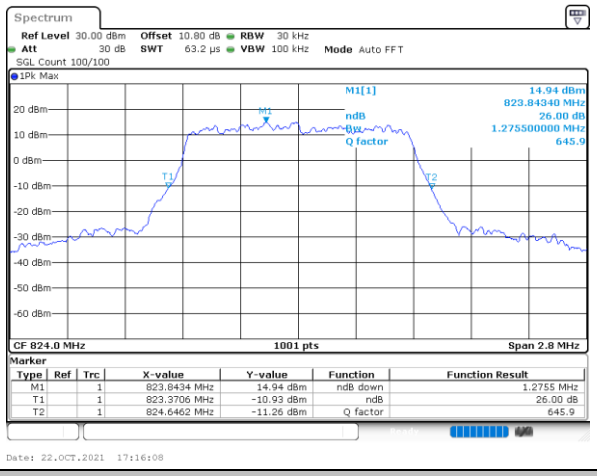
Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.26	1.28	3.05	3.03	4.98	4.99	9.93	-	14.27	-	-	-

LTE Band 26

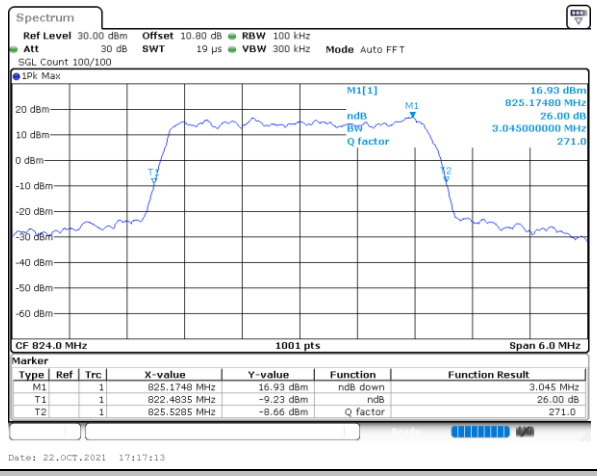
Middle Channel / 1.4MHz / QPSK



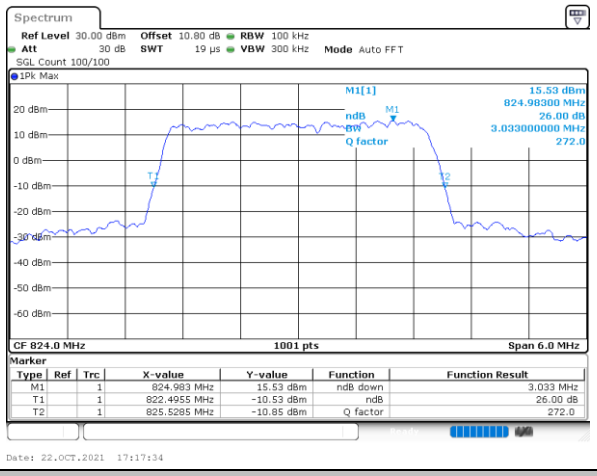
Middle Channel / 1.4MHz / 16QAM



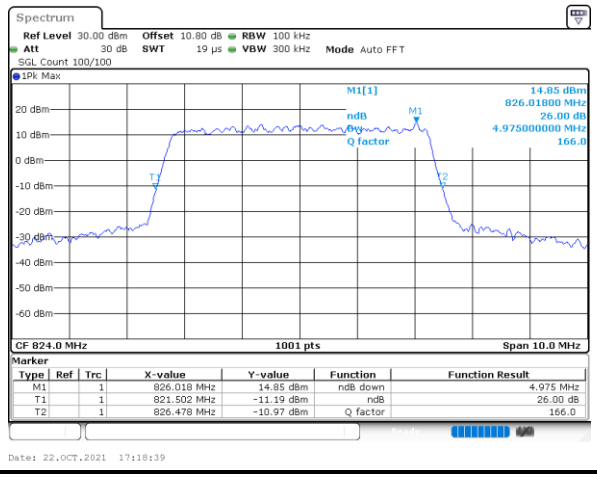
Middle Channel / 3MHz / QPSK



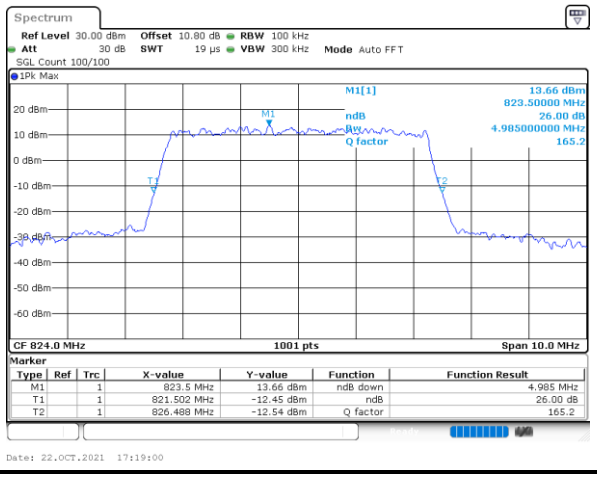
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

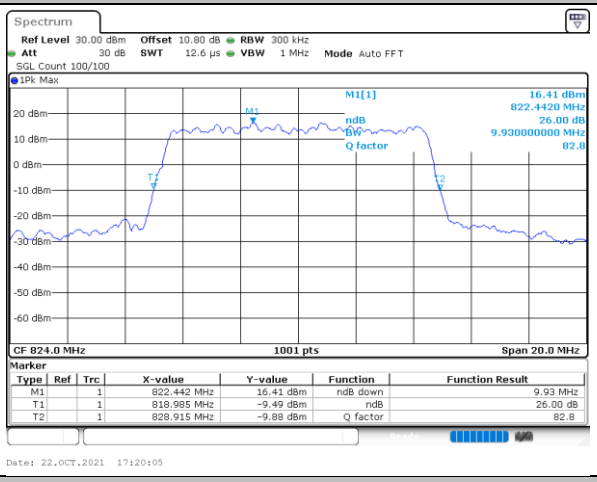


Middle Channel / 5MHz / 16QAM

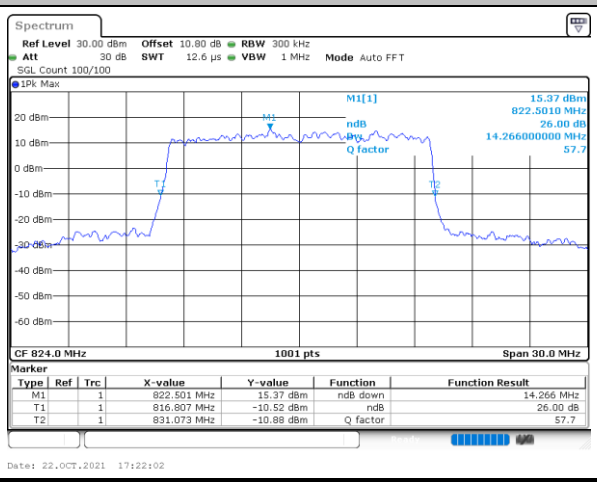


LTE Band 26

Middle Channel / 10MHz / QPSK



Middle Channel / 15MHz / QPSK

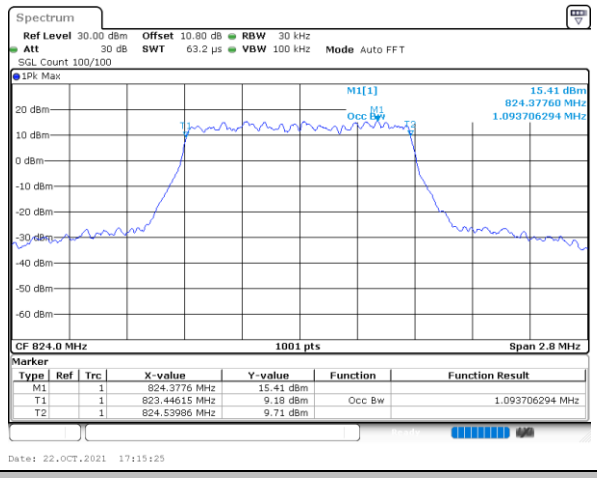


Occupied Bandwidth

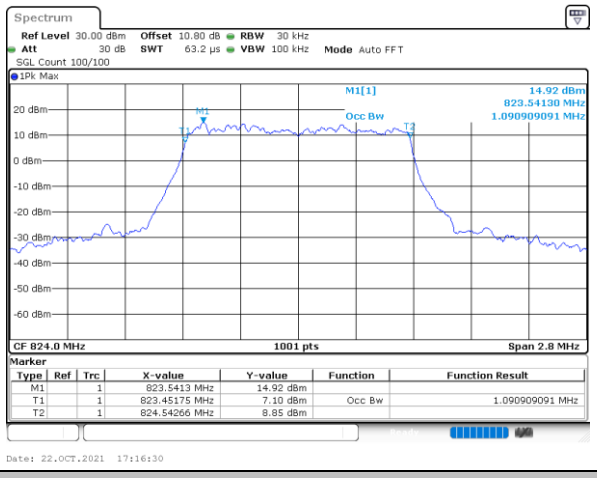
Mode	LTE Band 26 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.72	2.71	4.47	4.47	9.03	-	13.37	-	-	-

LTE Band 26

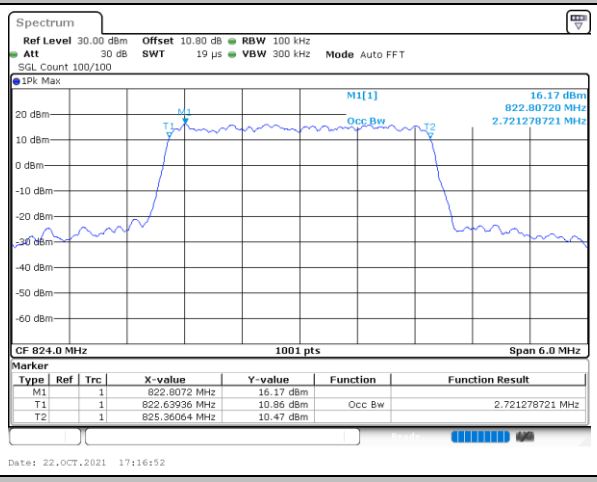
Middle Channel / 1.4MHz / QPSK



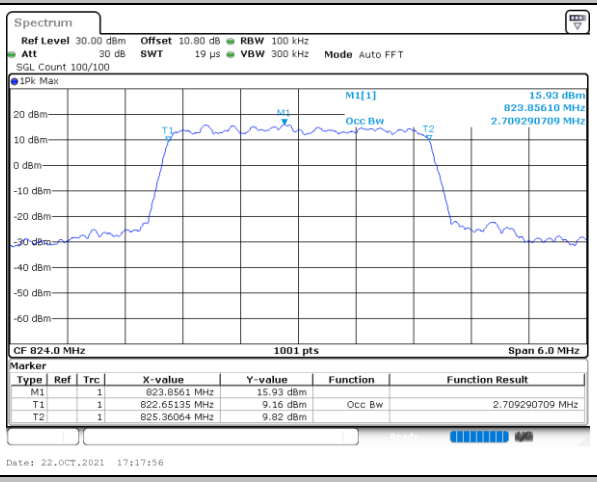
Middle Channel / 1.4MHz / 16QAM



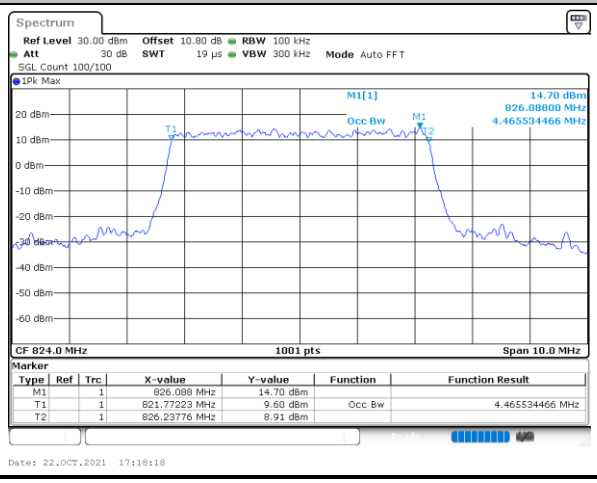
Middle Channel / 3MHz / QPSK



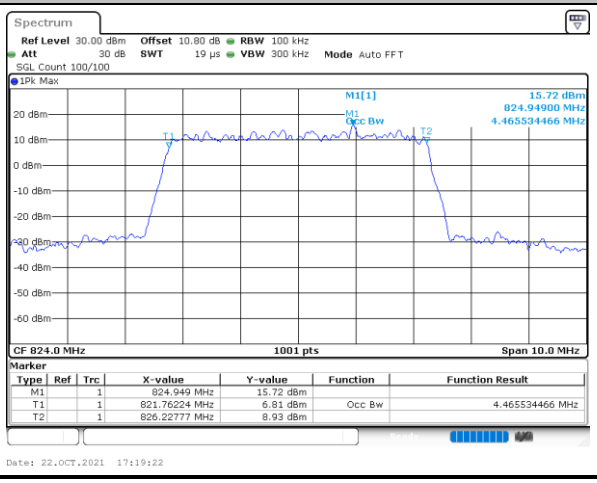
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

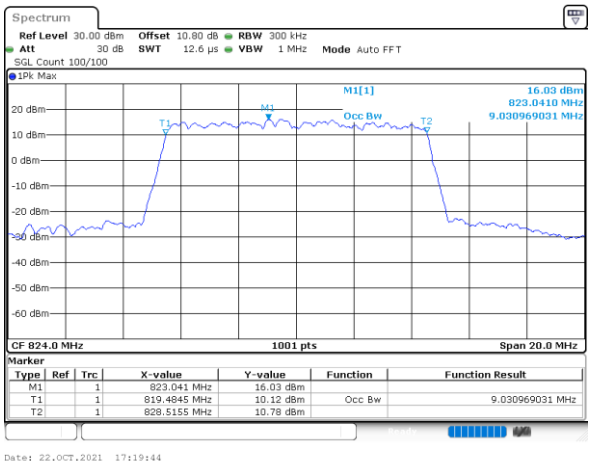


Middle Channel / 5MHz / 16QAM

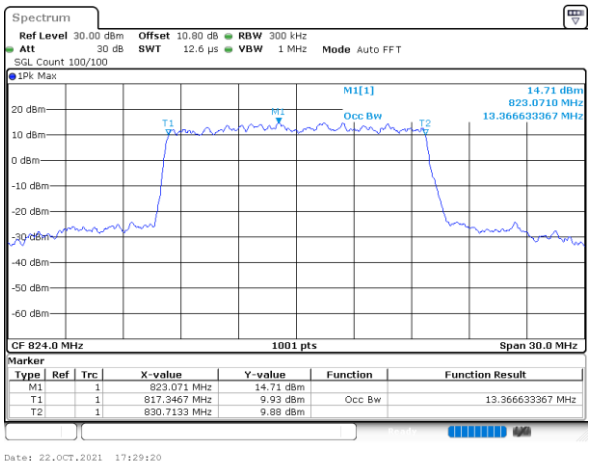


LTE Band 26

Middle Channel / 10MHz / QPSK



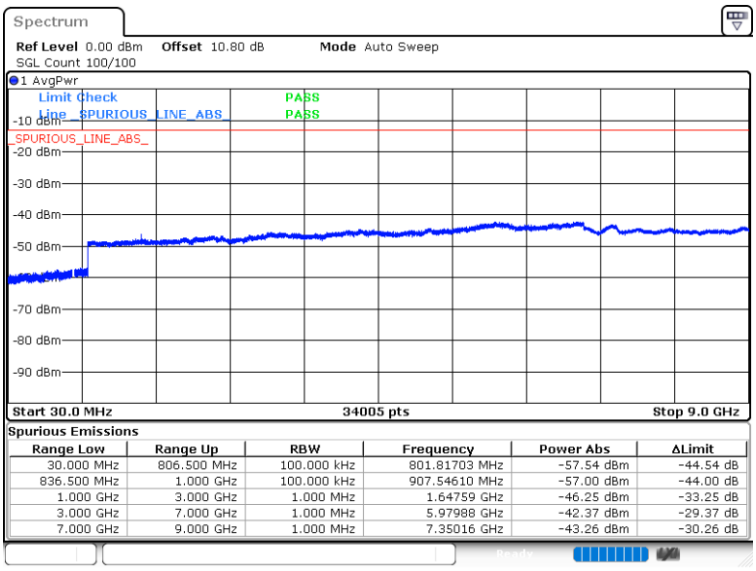
Middle Channel / 15MHz / QPSK



Emission masks – In-band emissions

LTE Band 26 / 1.4MHz

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	801.81703 MHz	-57.54 dBm	-44.54 dB
836.500 MHz	1.000 GHz	100.000 kHz	907.54610 MHz	-57.00 dBm	-44.00 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64759 GHz	-46.25 dBm	-33.25 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.97988 GHz	-42.37 dBm	-29.37 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35016 GHz	-43.26 dBm	-30.26 dB

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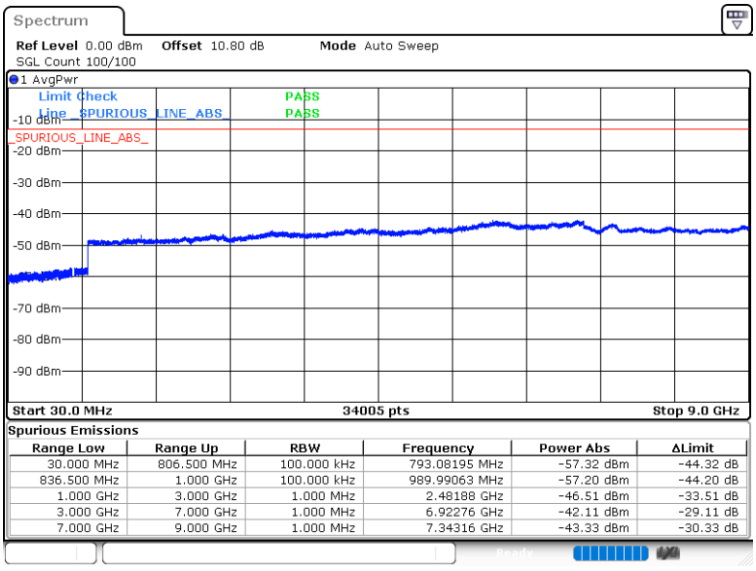
LTE Band 26 / 3MHz

Middle Channel / QPSK



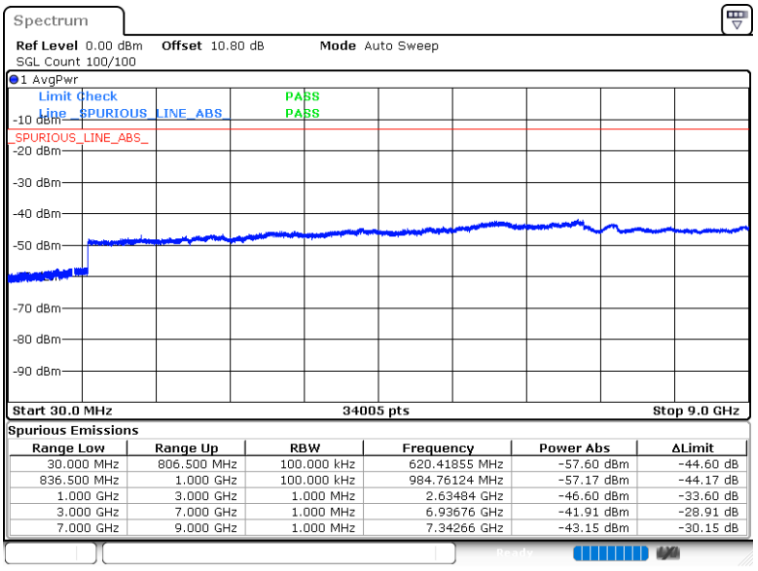
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	793.08195 MHz	-57.32 dBm	-44.32 dB
836.500 MHz	1.000 GHz	100.000 kHz	989.99063 MHz	-57.20 dBm	-44.20 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.48188 GHz	-46.51 dBm	-33.51 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92276 GHz	-42.11 dBm	-29.11 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.34316 GHz	-43.33 dBm	-30.33 dB

Date: 22.OCT.2021 17:25:22

LTE Band 26 / 5MHz

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	620.41855 MHz	-57.60 dBm	-44.60 dB
836.500 MHz	1.000 GHz	100.000 kHz	984.76124 MHz	-57.17 dBm	-44.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63484 GHz	-46.60 dBm	-33.60 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93676 GHz	-41.91 dBm	-28.91 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.34266 GHz	-43.15 dBm	-30.15 dB

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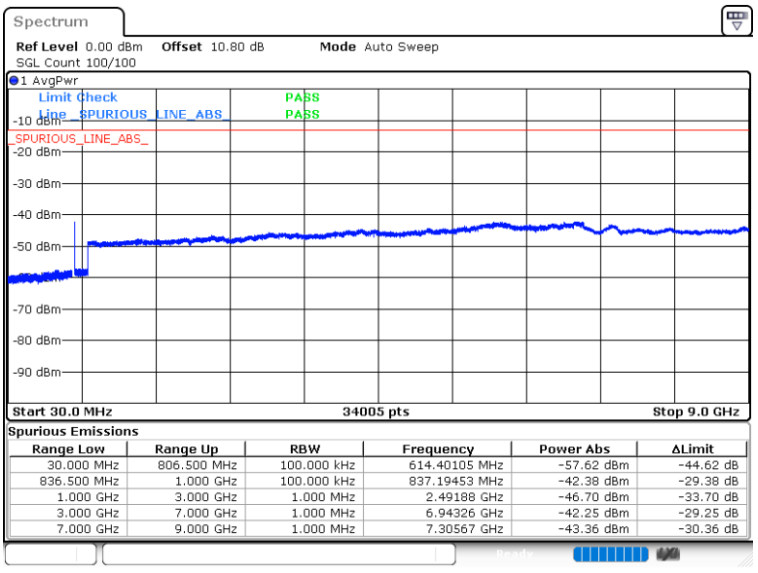
LTE Band 26 / 10MHz

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	614.40105 MHz	-57.62 dBm	-44.62 dB
836.500 MHz	1.000 GHz	100.000 kHz	837.19453 MHz	-42.38 dBm	-29.38 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49188 GHz	-46.70 dBm	-33.70 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94326 GHz	-42.25 dBm	-29.25 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.30567 GHz	-43.36 dBm	-30.36 dB

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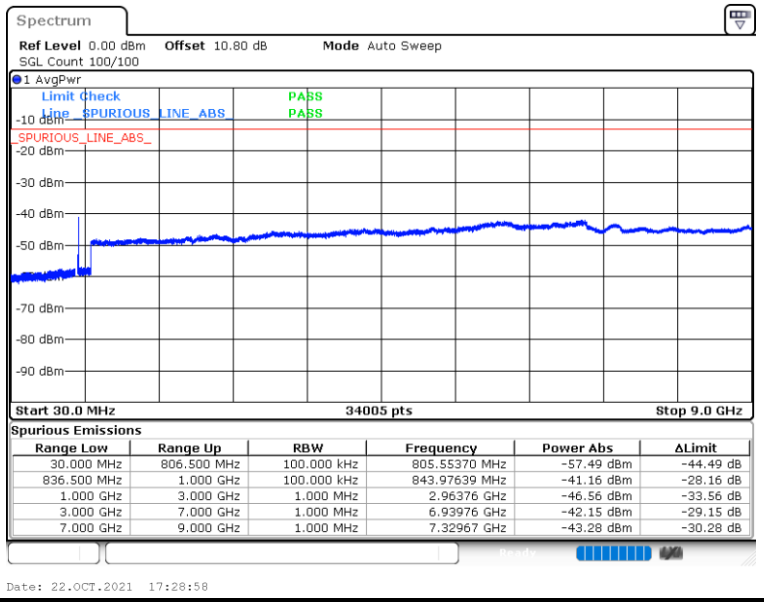
LTE Band 26 / 15MHz
Middle Channel / QPSK



Appendix B. Test Results of Radiated Test

LTE Band 26

LTE Band 26 / 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)
	1632	-57.29	-13	-44.29	-69.03	-59.1	0.97	4.93	H
	3264	-52.73	-13	-39.73	-71.9	-56.01	1.53	6.96	H
	4080	-54.03	-13	-41.03	-74.59	-58.69	1.81	8.62	H
	4896	-54.27	-13	-41.27	-77.74	-59.33	2.28	9.49	H
									H
									H
									H
Lowest	1632	-54.54	-13	-41.54	-66.76	-56.35	0.97	4.93	V
	3264	-52.94	-13	-39.94	-72.51	-56.22	1.53	6.96	V
	4080	-53.29	-13	-40.29	-74.01	-57.95	1.81	8.62	V
	4896	-53.06	-13	-40.06	-76.39	-58.12	2.28	9.49	V
	5712	-53.42	-13	-40.42	-79.02	-58.31	2.75	9.78	V
	7348	-52.98	-13	-39.98	-80.33	-59.85	2.48	11.50	V
									V
									V

LTE Band 26 / 5MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1640	-59.10	-13	-46.10	-70.98	-60.88	0.97	4.91	H
	3280	-52.62	-13	-39.62	-71.86	-55.97	1.54	7.03	H
	4096	-53.27	-13	-40.27	-73.86	-57.92	1.82	8.62	H
	4912	-54.01	-13	-41.01	-77.51	-59.1	2.29	9.52	H
									H
									H
									H
	1640	-54.38	-13	-41.38	-66.74	-56.16	0.97	4.91	V
	2456	-58.19	-13	-45.19	-75.81	-60.03	1.28	5.27	V
	3280	-52.50	-13	-39.50	-72.12	-55.85	1.54	7.03	V
	4096	-53.09	-13	-40.09	-73.84	-57.74	1.82	8.62	V
	4912	-53.23	-13	-40.23	-76.57	-58.32	2.29	9.52	V
	5736	-53.88	-13	-40.88	-79.56	-58.76	2.76	9.79	V
	7368	-52.87	-13	-39.87	-80.23	-59.78	2.47	11.54	V
	8192	-51.32	-13	-38.32	-80.05	-59.11	2.31	12.25	V

LTE Band 26 / 5MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	1640	-59.55	-13	-46.55	-71.43	-61.33	0.97	4.91	H
	2464	-57.83	-13	-44.83	-74.99	-59.69	1.28	5.29	H
	3288	-52.46	-13	-39.46	-71.8	-55.84	1.54	7.07	H
	4104	-53.08	-13	-40.08	-73.74	-57.73	1.82	8.62	H
	4928	-54.23	-13	-41.23	-77.75	-59.34	2.30	9.56	H
									H
									H
	1640	-54.73	-13	-41.73	-67.08	-56.51	0.97	4.91	V
	2464	-55.56	-13	-42.56	-73.16	-57.42	1.28	5.29	V
	3288	-51.54	-13	-38.54	-71.21	-54.92	1.54	7.07	V
	4104	-51.78	-13	-38.78	-72.59	-56.43	1.82	8.62	V
	4928	-52.50	-13	-39.50	-75.86	-57.61	2.30	9.56	V
	5752	-53.63	-13	-40.63	-79.36	-58.51	2.77	9.80	V
	7392	-52.50	-13	-39.50	-79.85	-59.47	2.46	11.58	V

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