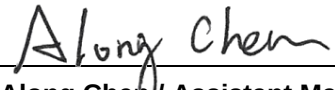


FCC Test Report

FCC ID : P27LORAAAREAV2
Equipment : MachineQ Area 8C V2 LoRaWAN Gateway
Model No. : GII-AD-B
Brand Name : Sercomm, Comcast, MachineQ
(For marketing purpose.)
Applicant : Sercomm Corporation
Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,
Taiwan, R.O.C.
Standard : 47 CFR FCC Part 27
Received Date : May 15, 2024
Tested Date : May 20 ~ May 28, 2024

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:


Along Chen / Assistant Manager

Approved by:

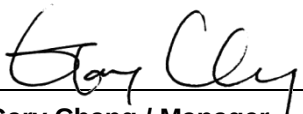

Gary Chang / Manager

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Appendix A. Effective Radiated Power

Appendix B. Radiated Emissions

Appendix C. Out of Band Emissions & Band Edge

Appendix D. Occupied Bandwidth and 26dB Bandwidth

Appendix E. Peak to Average Power Ratio

Appendix F. Frequency Stability

Release Record

Report No.	Version	Description	Issued Date
FG451502P27-1	Rev. 01	Initial issue	Jul. 19, 2024

Summary of Test Results

FCC Rules	Test Items	Measured	Result
2.1046 27.50(b)(10) 27.50(c)(10) 27.50(d)(4)	Effective Radiated Power	Power[dBm]: LTE Band 12: 22.81 LTE Band 13: 22.92	Pass
2.1053 27.53(c) 27.53(g) 27.53(h)	Radiated Emissions	Meet the requirement of limit	Pass
2.1053 / 27.53(f)	Radiated Spurious Emission in the 1559-1610MHz band	Meet the requirement of limit	Pass
2.1051 27.53(c) 27.53(g) 27.53(h)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 27.53(c) 27.53(g) 27.53(h)	Band Edge	Meet the requirement of limit	Pass
2.1049 / 27.53(h)	Occupied Bandwidth	Meet the requirement of limit	Pass
2.1055 / 27.54	Frequency Stability	Meet the requirement of limit	Pass
27.50(d)(5)	Peak to Average Ratio	Meet the requirement of limit	Pass

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.

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

Operating Frequency	LTE Band 12: 699 MHz – 716 MHz LTE Band 13: 777 MHz – 787 MHz
Modulation	QPSK, 16QAM
UE Category	Cat. 1

1.1.2 Antenna Details

Brand	Model	Type	Connector	Gain (dBi)	Remarks
Sercomm	6172000GWA/6 172000HWA	PIFA	UFL	2	LTE B12
Sercomm	6172000GWA/6 172000HWA	PIFA	UFL	2.1	LTE B13

1.1.3 Power Supply Type of Equipment under Test (EUT)

Supply Voltage	48Vdc from adapter 54Vdc from PoE		
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (50°C)	☒ Tmin (-30°C)

Note: The above PoE power supply is not bundled in market.

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	Adapter	Brand: MASS POWER Model: S024-1E480050VU-H I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 48.0Vdc, 0.5A Power Line: 2.95m non-shielded without core
2	RJ45 cable	3m non-shielded without core

1.1.5 Maximum ERP and Emission Designator

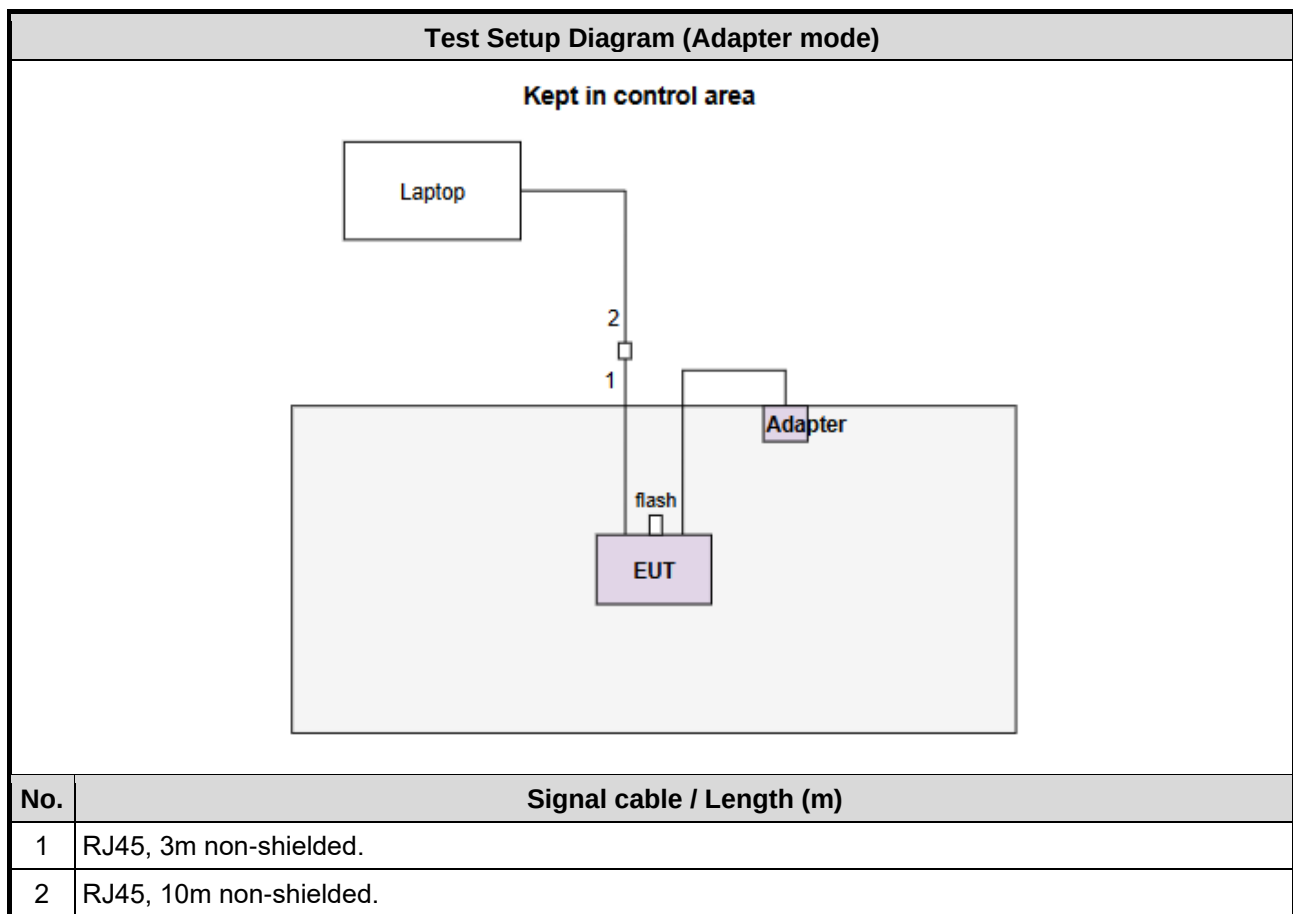
LTE Band 12			
Channel Bandwidth	Modulation	Maximum ERP (W)	Emission Designator
10 MHz	QPSK	0.191	8M93G7D
10 MHz	16QAM	0.156	4M87W7D
5 MHz	QPSK	0.184	4M46G7D
5 MHz	16QAM	0.149	4M45W7D
3 MHz	QPSK	0.190	2M68G7D
3 MHz	16QAM	0.154	2M68W7D
1.4 MHz	QPSK	0.181	1M09G7D
1.4 MHz	16QAM	0.151	1M08W7D

LTE Band 13			
Channel Bandwidth	Modulation	Maximum ERP (W)	Emission Designator
10 MHz	QPSK	0.186	8M95G7D
10 MHz	16QAM	0.151	4M86W7D
5 MHz	QPSK	0.196	4M46G7D
5 MHz	16QAM	0.161	4M47W7D

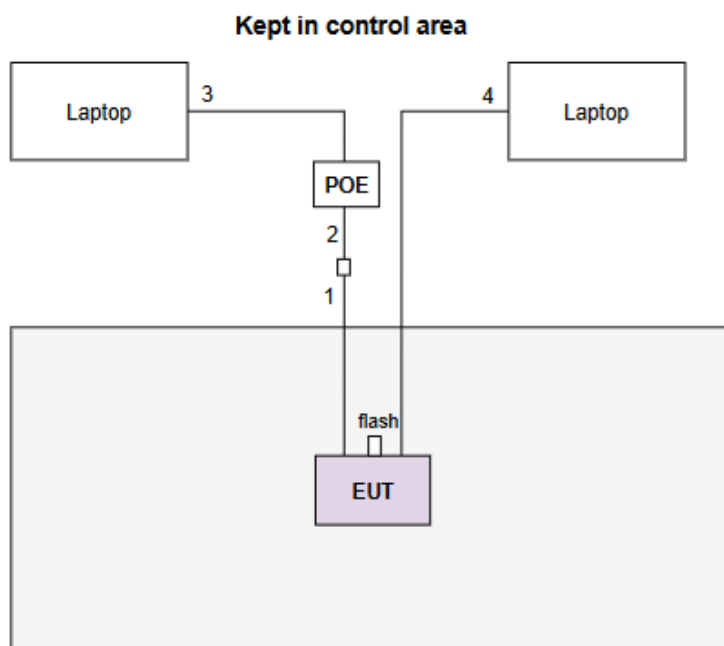
1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Laptop	DELL	Latitude 3440	DoC	---
2	Laptop	DELL	Latitude 5400	DoC	---
3	USB 3.1 Type-C OTG Flash	pqi	Connect 313	---	---
4	PoE	UBIQUITI	POE-54V-80W	---	Provided by applicant.

1.3 Test Setup Chart



Test Setup Diagram (PoE mode)



No.	Signal cable / Length (m)
1	RJ45, 3m non-shielded.
2	RJ45, 10m non-shielded.
3	RJ45, 1.3m non-shielded.
4	RJ45, 10m non-shielded.

1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber3 / (03CH03-WS)				
Tested Date	May 20 ~ May 28, 2024				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Wideband Radio Communication Tester	R&S	CMW500	106070	Mar. 26, 2024	Mar. 25, 2025
Receiver	R&S	ESR3	101657	Mar. 05, 2024	Mar. 04, 2025
Spectrum Analyzer	R&S	FSV40	101499	Apr. 02, 2024	Apr. 01, 2025
Loop Antenna	R&S	HFH2-Z2	100330	Oct. 31, 2023	Oct. 30, 2024
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jul. 04, 2023	Jul. 03, 2024
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 14, 2023	Dec. 13, 2024
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 30, 2023	Oct. 29, 2024
Preamplifier	EMC	EMC02325	980187	Jul. 10, 2023	Jul. 09, 2024
Preamplifier	EMC	EMC118A45SE	980897	Aug. 01, 2023	Jul. 31, 2024
Preamplifier	EMC	EMC184045SE	980903	Jul. 17, 2023	Jul. 16, 2024
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 03, 2023	Oct. 02, 2024
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 22, 2023	Sep. 21, 2024
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 22, 2023	Sep. 21, 2024
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 22, 2023	Sep. 21, 2024
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 22, 2023	Sep. 21, 2024
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 22, 2023	Sep. 21, 2024
LOWPASS FILTER	WI	WLKS1100-12SS	3	Sep. 27, 2023	Sep. 26, 2024
BANDREJECT FILTER	WI	WRCGV 698/716-688/726-50/ 10SS	SN3	Oct. 06, 2023	Oct. 05, 2024
BANDREJECT FILTER	WI	WRCGV 776/788-766/798-50/ 8SS	SN4	Oct. 06, 2023	Oct. 05, 2024
BANDREJECT FILTER	WI	WRCGV 824/849-810/863-60/ 8SS	SN5	Oct. 06, 2023	Oct. 05, 2024
LOWPASS FILTER	WI	WLKS1100-12SS	2	Oct. 05, 2023	Oct. 04, 2024
HIGHPASS FILTER 1.5-15G	WHK	WHK1.5/15G-10ST	21	Oct. 05, 2023	Oct. 04, 2024
HIGHPASS FILTER	WI	WHK3.1-18G-10SS	43	Sep. 27, 2023	Sep. 26, 2024
Measurement Software	AUDIX	e3	6.120210g	NA	NA

Note: Calibration Interval of instruments listed above is one year.

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	May 21 ~ May 27, 2024				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101910	Apr. 18, 2024	Apr. 17, 2025
Power Meter	Anritsu	ML2495A	1241002	Nov. 21, 2023	Nov. 20, 2024
Power Sensor	Anritsu	MA2411B	1207366	Nov. 21, 2023	Nov. 20, 2024
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Jun. 21, 2023	Jun. 20, 2024
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 16, 2023	Dec. 15, 2024
Attenuator	woken	PE7013-20	20-2	Oct. 13, 2023	Oct. 12, 2024
Measurement Software	Sporton	SENSE-FCC_2G-4G	V6.1.6	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 27
ANSI C63.26-2015

1.6 Reference Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
FCC KDB 971168 D02 Misc Rev Approv License Devices v02r01

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	± 34.130 Hz
Conducted power	± 0.808 dB
Frequency error	$\pm 1 \times 10^{-9}$
Conducted emission	± 2.715 dB
Unwanted Emission ≤ 1 GHz	± 3.96 dB
Unwanted Emission > 1 GHz	± 4.51 dB
Temperature	± 0.4 °C

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corp.
Test Site	TH01-WS
Address of Test Site	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 33381, Taiwan, R.O.C.
Test Site	03CH03-WS
Address of Test Site	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 33381, Taiwan, R.O.C.

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISED#: 10807C
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

LTE Band 12			
Test item	Channel Bandwidth	Modulation	Test Frequency (MHz)
E.R.P.	10 MHz 5 MHz 3 MHz 1.4 MHz	QPSK / 16QAM	704.0 / 707.5 / 711.0 701.5 / 707.5 / 713.5 700.5 / 707.5 / 714.5 699.7 / 707.5 / 715.3
Radiated Emission	10 MHz	QPSK	704.0 / 707.5 / 711.0
Out of Band Emissions	10 MHz 5 MHz 3 MHz 1.4 MHz	QPSK	704.0 / 707.5 / 711.0 701.5 / 707.5 / 713.5 700.5 / 707.5 / 714.5 699.7 / 707.5 / 715.3
Band Edge	10 MHz 5 MHz 3 MHz 1.4 MHz	QPSK / 16QAM	704.0 / 711.0 701.5 / 713.5 700.5 / 714.5 699.7 / 715.3
Occupied Bandwidth	10 MHz 5 MHz 3 MHz 1.4 MHz	QPSK / 16QAM	707.5 707.5 707.5 707.5
Peak to Average Ratio	10 MHz	QPSK / 16QAM	707.5
Frequency Stability	10 MHz 5 MHz 3 MHz 1.4 MHz	QPSK	704.0 / 711.0 701.5 / 713.5 700.5 / 714.5 699.7 / 715.3
NOTE: - The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report. - The EUT consumes power from adapter or PoE. Both options had been covered during the test and found that PoE was the worst case and was selected for final testing. - Max RB configuration for 16QAM in 10 MHz channel bandwidth is 27 RB.			

LTE Band 13			
Test item	Channel Bandwidth	Modulation	Test Frequency (MHz)
E.R.P.	10 MHz 5 MHz	QPSK / 16QAM	782.0 779.5 / 782.0 / 784.5
Radiated Emission	5 MHz	QPSK	779.5 / 782.0 / 784.5
Out of Band Emissions	10 MHz 5 MHz	QPSK	782.0 779.5 / 782.0 / 784.5
Band Edge	10 MHz 5 MHz	QPSK / 16QAM	782.0 779.5 / 784.5
Occupied Bandwidth	10 MHz 5 MHz	QPSK / 16QAM	782.0 782.0
Peak to Average Ratio	10 MHz	QPSK / 16QAM	782.0
Frequency Stability	10 MHz 5 MHz	QPSK	782.0 779.5 / 784.5
NOTE: - The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report. - The EUT consumes power from adapter or PoE. Both options had been covered during the test and found that PoE was the worst case and was selected for final testing. - Max RB configuration for 16QAM in 10 MHz channel bandwidth is 27 RB.			

3 Test Results

3.1 Effective Radiated Power

3.1.1 Limit of Effective Radiated Power

Portable stations (hand-held devices) are limited to 3 watts ERP.

3.1.2 Test Procedures

For E.R.P measurement

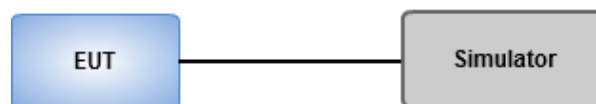
ERP can be calculated by below formula from KDB 412172 D01.

1. $EIRP = P_T + G_T - L_C$
 P_T = transmitter output power, in dBm.
 G_T = gain of the transmitting antenna, in dBi (EIRP).
 L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.
2. $ERP = EIRP - 2.15 \text{ dB}$.

For Conducted power measurement

1. The EUT links up with simulator and is set to maximum output power level at low / middel / high channel.
2. Measure the output power of low / middle / high channel of the EUT

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	22-24°C / 62-65%	Tested By	Roger Lu
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Refer to Appendix A.

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

LTE Band 12 /13

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

LTE Band 13

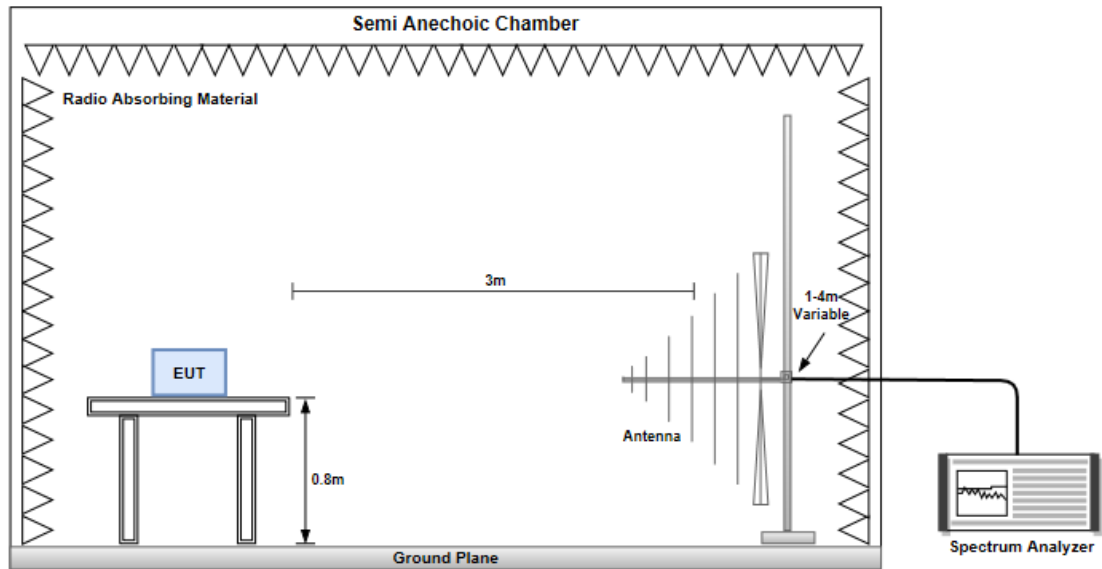
For operations in the 775-788 MHz emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

3.2.2 Test Procedures

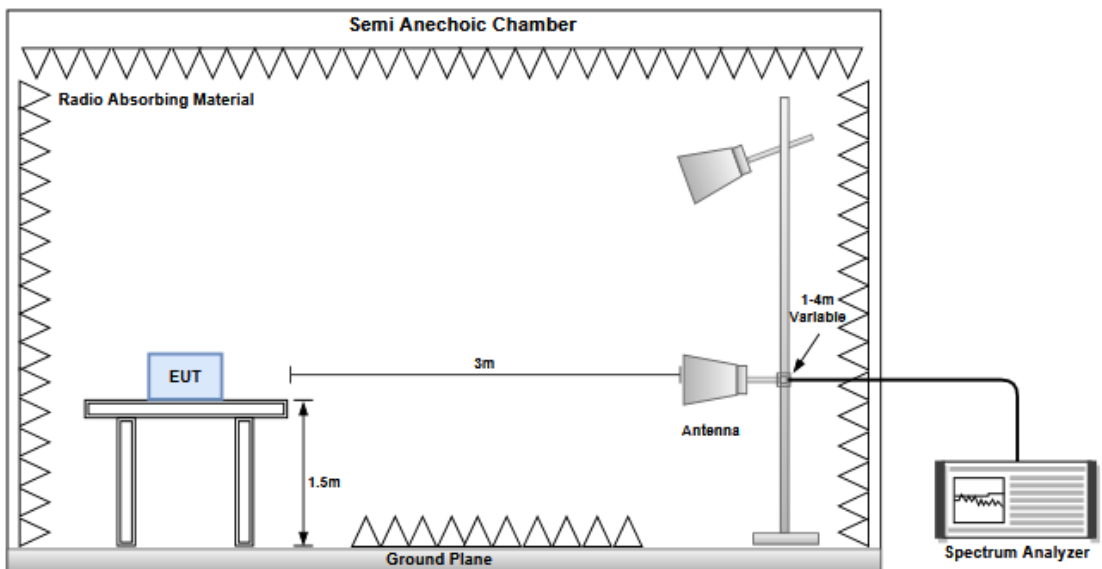
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m.
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.
4. After finding the max radiated emission, substitution method will be used for getting effective radiated power. EUT will be removed and substitution antenna will be placed at same position. Signal generator will output CW signal to substitution antenna through a RF cable. Rotate turntable and move antenna to find maximum radiated emission. Adjust output power of signal generator to let the maximum radiated emission is same as step 3. Record the output power level.
5. E.I.R.P = output power of step 4 + gain of substitution antenna – cable loss of RF cable. ERP can be calculated by below formula:
$$E.R.P = E.I.R.P - 2.15dB.$$

3.2.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.2.4 Test Results

Ambient Condition	22~24°C / 63~65%	Tested By	Brad Wu
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Refer to Appendix B.

3.3 Out of Band Emissions& Band Edge

3.3.1 Limit of Out of Band Emissions& Band Edge

LTE Band 12 / 13

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

LTE Band 13

On all frequencies between 763 ~ 775 MHz and 793 ~ 805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

3.3.2 Test Procedures

Out of band emission

1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 30 MHz ~ 10 GHz.
3. Set RBW = 100 kHz, VBW = 300kHz, detector = RMS, sweep time = auto.
4. Record the max trace value and capture the test plot of each sub frequency band.

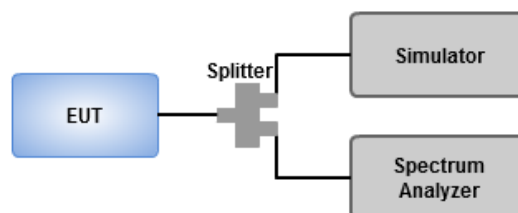
Band edge

1. Lowest and highest operating channels are tested for this item.
2. Set RBW = 1% of EBW, VBW = 3 x RBW, detector = RMS, sweep time = auto.
3. Record the max trace value and capture the test plot of each sub frequency band.

763 ~ 775 MHz / 793 ~ 805 MHz

1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 763 MHz ~ 806 MHz.
3. Set RBW = 10 kHz, VBW = 30 kHz, detector = rms, sweep time = auto.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	22-24°C / 62-65%	Tested By	Roger Lu
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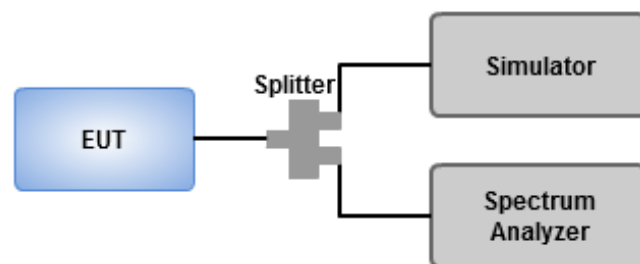
Refer to Appendix C.

3.4 Occupied Bandwidth and 26dB Bandwidth

3.4.1 Test Procedures

1. Set resolution bandwidth (RBW) = 1% ~ 5 % of OBW, Video bandwidth = 3 x RBW
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Using occupied bandwidth measurement function of spectrum analyzer to measure occupied bandwidth
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26dB relative to the maximum level measured in the fundamental emission.

3.4.2 Test Setup



3.4.3 Test Results

Ambient Condition	22-24°C / 62-65%	Tested By	Roger Lu
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Refer to Appendix D.

3.5 Peak to Average Power Ratio

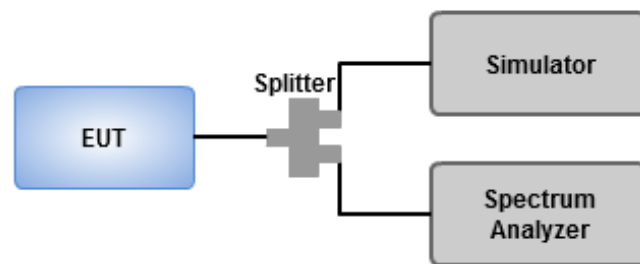
3.5.1 Limit of Peak to Average Power Ratio

The Peak-to-average power ratio of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Set the measurement interval to 1 ms.
4. Record the maximum PAPR level associated with a probability of 0.1%.

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	22-24°C / 62-65%	Tested By	Roger Lu
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Refer to Appendix E.

3.6 Frequency Stability

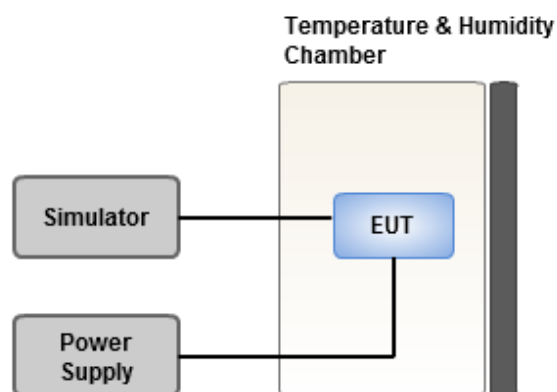
3.6.1 Limit of Frequency Stability

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation

3.6.2 Test Procedures

1. EUT was placed at temperature chamber and connected to an external power supply.
2. Temperature and voltage condition shall be tested to confirm frequency stability.
3. The test shall be performed under normal and extreme condition for temperature and voltage.
4. Link up EUT and simulator. Confirm frequency drift value of simulator and record it.

3.6.3 Test Setup



3.6.4 Test Results

Ambient Condition	22-24°C / 62-65%	Tested By	Roger Lu
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Refer to Appendix F.

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0345

Email: ICC_Service@icertifi.com.tw

==END==

Part 27H LTE Band 12 Maximum Average Power [dBm](GT-LC= 2 dB)								
BW (MHz)	Modulation	RB size	RB Offset	Lowest	Middle	Highest	-	
Channel				23060	23095	23130	ERP (dBm)	ERP (W)
Frequency				704.0	707.5	711.0		
10	QPSK	1	0	22.75	22.96	22.62	22.81	0.1910
10	QPSK	1	49	22.74	22.91	22.5		
10	QPSK	50	0	22.06	22.15	22.07		
10	16QAM	1	0	21.84	22.07	21.64	21.92	0.1556
10	16QAM	27	0	20.85	21.07	20.96		
Channel				23035	23095	23155	ERP (dBm)	ERP (W)
Frequency				701.5	707.5	713.5		
5	QPSK	1	0	22.73	22.79	22.66	22.64	0.1837
5	QPSK	1	24	22.72	22.68	22.61		
5	QPSK	25	0	22.15	22.1	22.08		
5	16QAM	1	0	21.66	21.72	21.89	21.74	0.1493
Channel				23025	23095	23165	ERP (dBm)	ERP (W)
Frequency				700.5	707.5	714.5		
3	QPSK	1	0	22.76	22.93	22.6	22.78	0.1897
3	QPSK	1	14	22.73	22.89	22.48		
3	QPSK	15	0	22.03	22.08	22.09		
3	16QAM	1	0	21.79	22.02	21.62	21.87	0.1538
Channel				23017	23095	23173	ERP (dBm)	ERP (W)
Frequency				699.7	707.5	715.3		
1.4	QPSK	1	0	22.66	22.69	22.72	22.57	0.1807
1.4	QPSK	1	5	22.65	22.59	22.53		
1.4	QPSK	6	0	22.13	22.12	22.03		
1.4	16QAM	1	0	21.63	21.74	21.95	21.80	0.1514
Limit	ERP < 3 W			Result			Pass	



Part 27F LTE Band 13 Maximum Average Power [dBm](GT-LC= 2.1 dB)								
BW (MHz)	Modulation	RB size	RB Offset	Lowest	Middle	Highest	-	
Channel				-	23230	-	ERP (dBm)	ERP (W)
Frequency				-	782.0	-		
10	QPSK	1	0	-	22.96	-	22.70	0.1862
10	QPSK	1	49	-	22.91	-		
10	QPSK	50	0	-	22.15	-		
10	16QAM	1	0	-	22.07	-	21.79	0.1510
10	16QAM	27	0	-	21.07	-		
Channel				23205	23230	23255	ERP (dBm)	ERP (W)
Frequency				779.5	782.0	784.5		
5	QPSK	1	0	22.8	22.97	22.88	22.92	0.1959
5	QPSK	1	24	22.72	22.93	22.76		
5	QPSK	25	0	22.09	22.16	21.96		
5	16QAM	1	0	21.77	22.12	22.11	22.07	0.1611
Limit	ERP < 3 W			Result			Pass	

Mode	LTE Band 12, QPSK, CB: 10 MHz, Channel: 23060						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1408.00	H	-53.32	-13.00	-40.32	-55.97	-54.43	3.26
2112.00	H	-64.63	-13.00	-51.63	-69.34	-67.40	4.92
2816.00	H	-66.07	-13.00	-53.07	-71.47	-69.51	5.59
1408.00	V	-62.67	-13.00	-49.67	-65.54	-63.78	3.26
2112.00	V	-64.80	-13.00	-51.80	-69.72	-67.57	4.92
2816.00	V	-65.96	-13.00	-52.96	-72.13	-69.40	5.59

Mode	LTE Band 12, QPSK, CB: 10 MHz, Channel: 23095						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1415.00	H	-51.76	-13.00	-38.76	-54.41	-52.95	3.34
2122.50	H	-64.16	-13.00	-51.16	-68.97	-66.86	4.85
2830.00	H	-65.82	-13.00	-52.82	-71.29	-69.27	5.60
1415.00	V	-61.64	-13.00	-48.64	-64.53	-62.83	3.34
2122.50	V	-64.45	-13.00	-51.45	-69.46	-67.15	4.85
2830.00	V	-65.82	-13.00	-52.82	-72.04	-69.27	5.60

Mode	LTE Band 12, QPSK, CB: 10 MHz, Channel: 23130						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1422.00	H	-49.51	-13.00	-36.51	-52.15	-50.77	3.41
2133.00	H	-63.69	-13.00	-50.69	-68.59	-66.31	4.77
2844.00	H	-65.30	-13.00	-52.30	-70.83	-68.75	5.60
1422.00	V	-60.36	-13.00	-47.36	-63.26	-61.62	3.41
2133.00	V	-63.99	-13.00	-50.99	-69.07	-66.61	4.77
2844.00	V	-65.59	-13.00	-52.59	-71.85	-69.04	5.60

NOTE:

1. ERP = S.G Power value + Correction factor - 2.15 dB
2. Spurious Emissions within 30-1000MHz were found more than 20dB below limit line.

Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23205						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2338.50	H	-59.36	-13.00	-46.36	-64.25	-62.32	5.11
3118.00	H	-65.77	-13.00	-52.77	-72.05	-69.26	5.64
3897.50	H	-61.97	-13.00	-48.97	-69.19	-65.85	6.03
2338.50	V	-59.99	-13.00	-46.99	-65.49	-62.95	5.11
3118.00	V	-61.49	-13.00	-48.49	-68.50	-64.98	5.64
3897.50	V	-62.59	-13.00	-49.59	-70.40	-66.47	6.03

Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23230						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2346.00	H	-59.00	-13.00	-46.00	-63.86	-62.00	5.15
3128.00	H	-65.44	-13.00	-52.44	-71.71	-68.92	5.63
3910.00	H	-61.80	-13.00	-48.80	-69.04	-65.69	6.04
2346.00	V	-59.74	-13.00	-46.74	-65.25	-62.74	5.15
3128.00	V	-61.69	-13.00	-48.69	-68.72	-65.17	5.63
3910.00	V	-62.41	-13.00	-49.41	-70.23	-66.30	6.04

Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23255						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2353.50	H	-59.37	-13.00	-46.37	-64.19	-62.42	5.20
3138.00	H	-65.71	-13.00	-52.71	-71.99	-69.19	5.63
3922.50	H	-61.89	-13.00	-48.89	-69.15	-65.80	6.06
2353.50	V	-59.97	-13.00	-46.97	-65.47	-63.02	5.20
3138.00	V	-61.84	-13.00	-48.84	-68.90	-65.32	5.63
3922.50	V	-62.54	-13.00	-49.54	-70.38	-66.45	6.06

NOTE:

1. ERP = S.G Power value + Correction factor - 2.15 dB
2. Spurious Emissions within 30-1000MHz were found more than 20dB below limit line.

Radiated Emissions in the 1559-1610MHz band

Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23205						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1559.00	H	-42.94	-40.00	-2.94	-47.62	-47.77	4.83
1559.00	V	-48.62	-40.00	-8.62	-53.99	-53.45	4.83

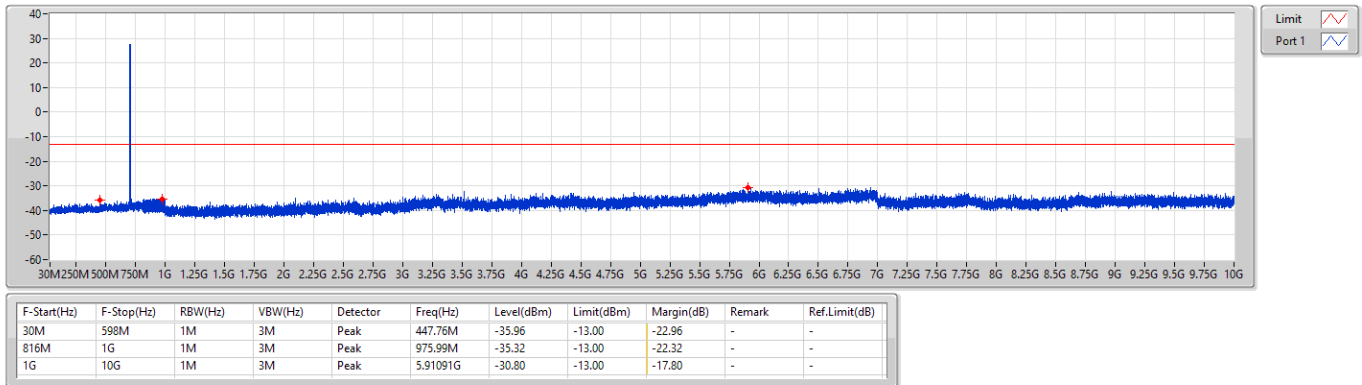
Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23230						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1564.00	H	-44.53	-40.00	-4.53	-49.21	-49.41	4.88
1564.00	V	-49.60	-40.00	-9.60	-54.99	-54.48	4.88

Mode	LTE Band 13, QPSK, CB: 5 MHz, Channel: 23255						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1569.00	H	-46.02	-40.00	-6.02	-50.69	-50.95	4.93
1569.00	V	-50.81	-40.00	-10.81	-56.20	-55.74	4.93

NOTE: EIRP = S.G power value + correction factor.

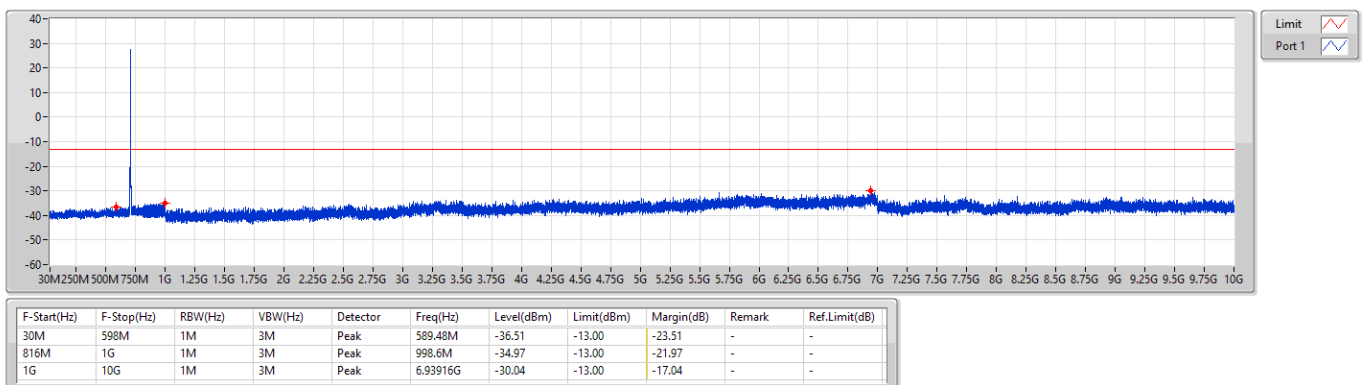
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704MHz_QPSK_RB 1

CSE-TX-Sum



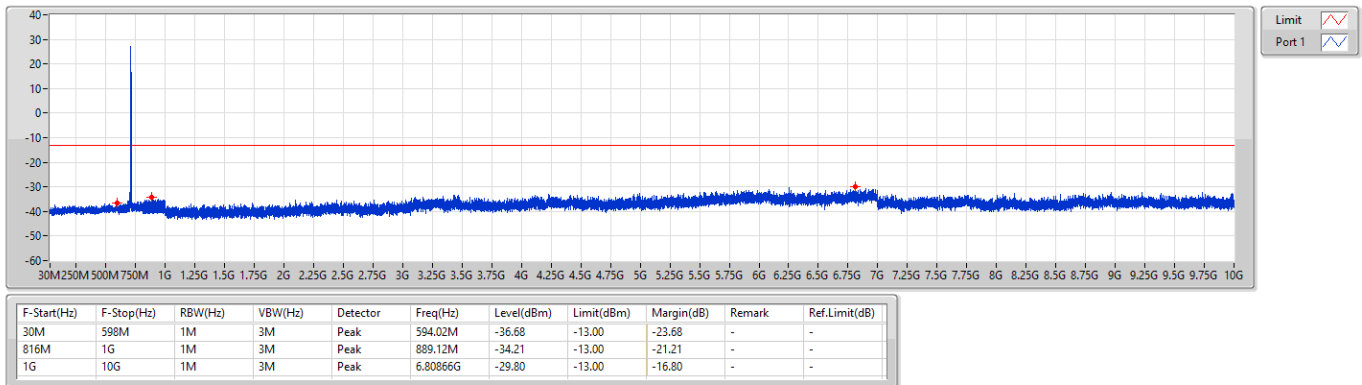
Band 12_LTE_10MHz_Nss1,QPSK_1TX
707.5MHz_QPSK_RB 1

CSE-TX-Sum



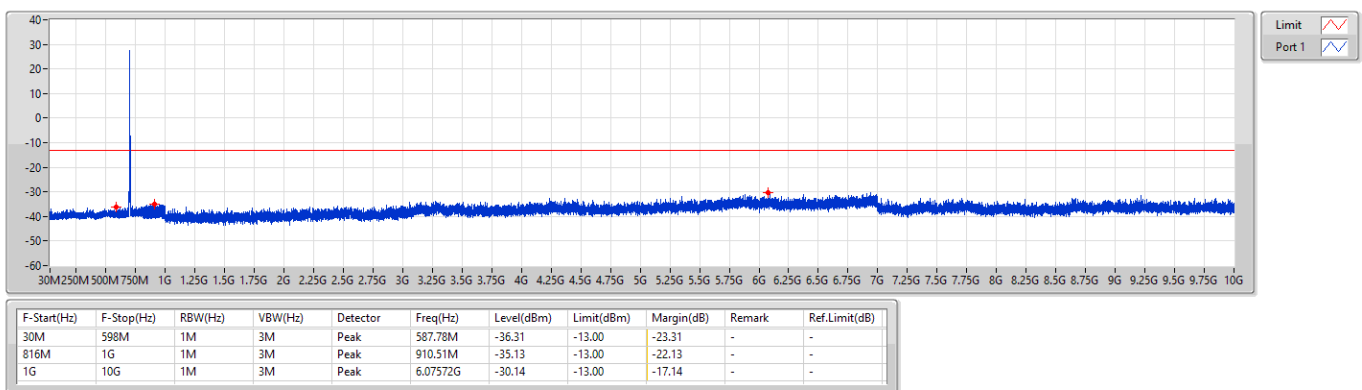
Band 12_LTE_10MHz_Nss1,QPSK_1TX 711MHz_QPSK_RB 1

CSE-TX-Sum



Band 12_LTE_5MHz_Nss1,QPSK_1TX 701.5MHz_QPSK_RB 1

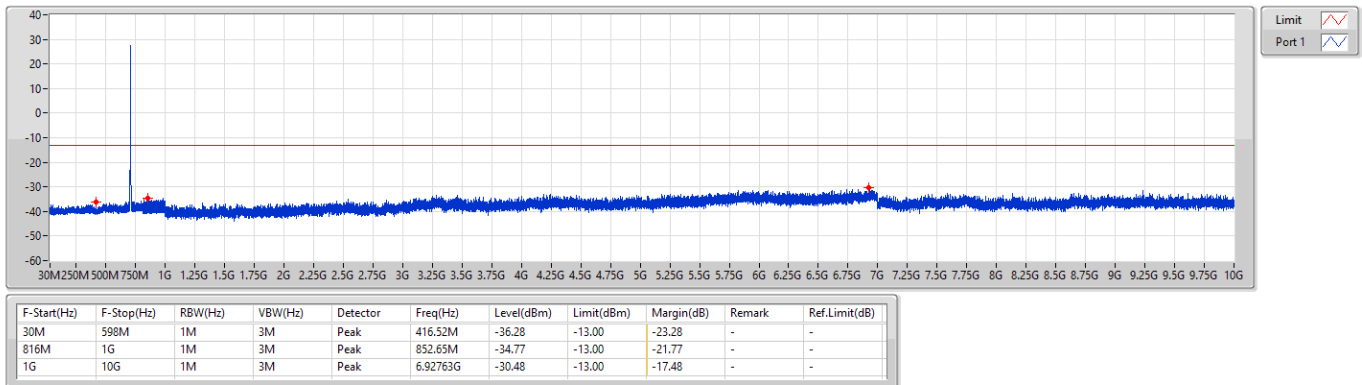
CSE-TX-Sum



Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

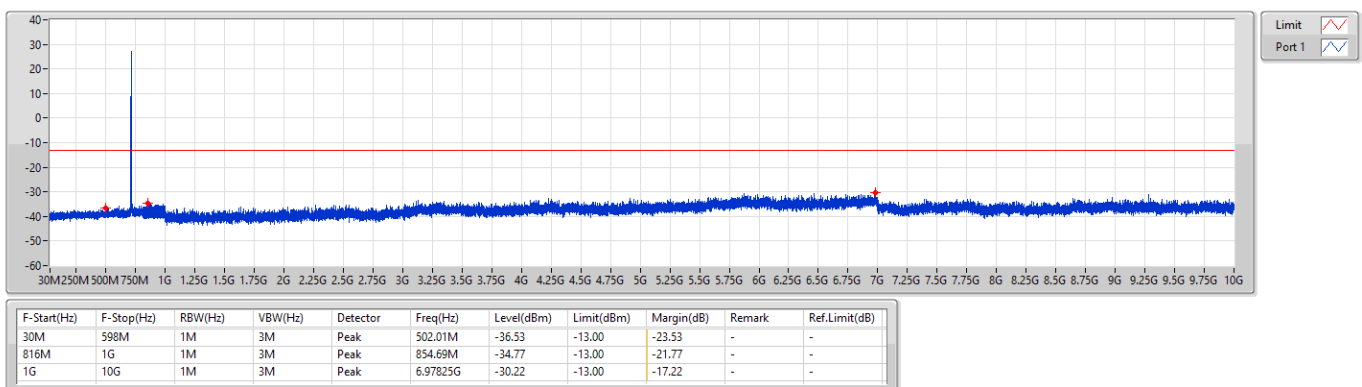
707.5MHz_QPSK_RB 1



Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

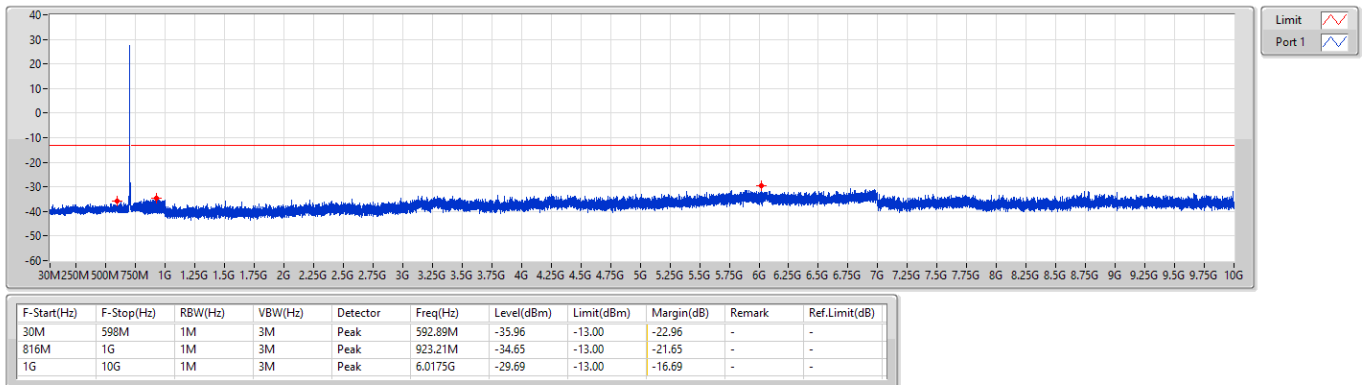
713.5MHz_QPSK_RB 1



Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

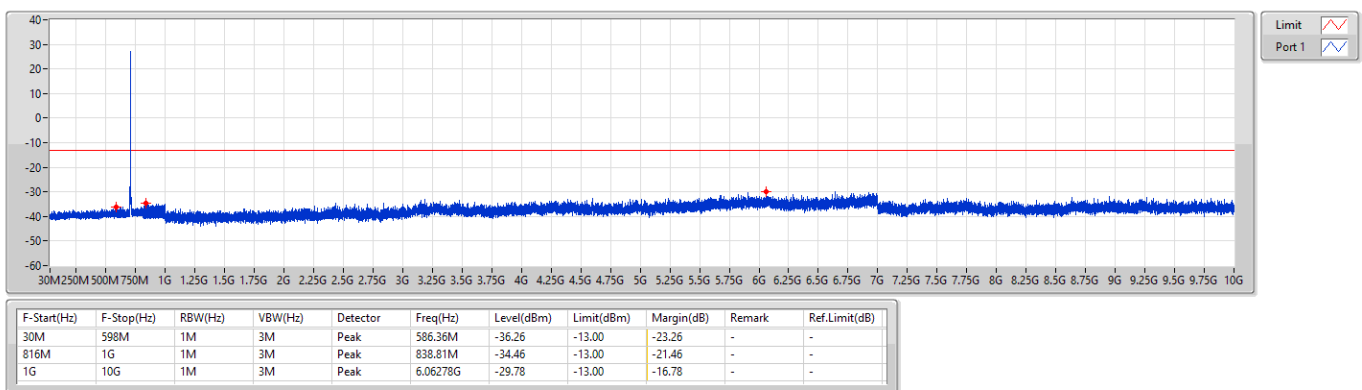
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Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

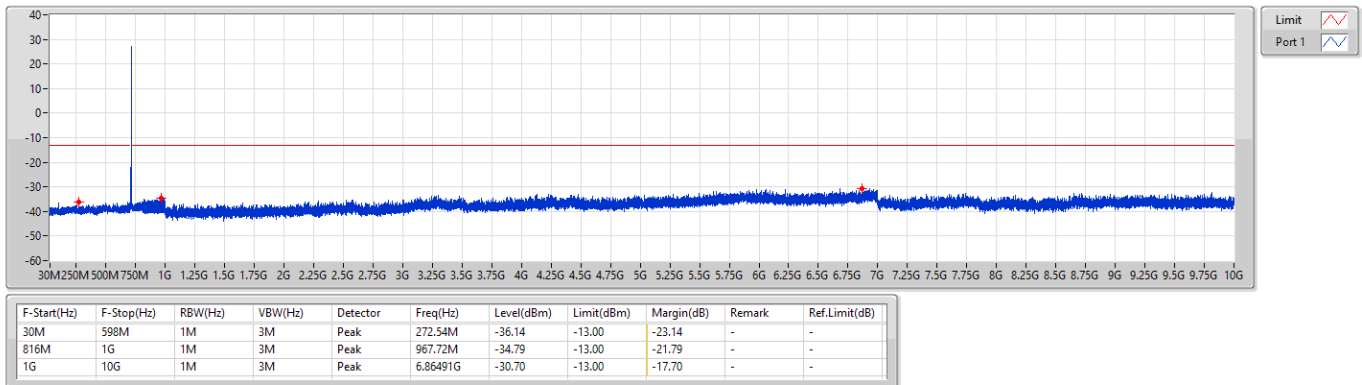
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Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

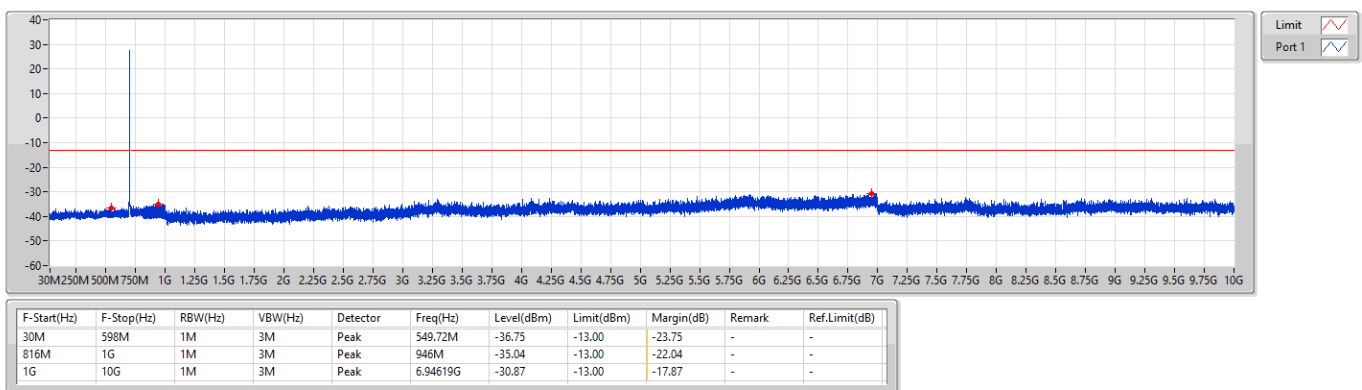
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Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Sum

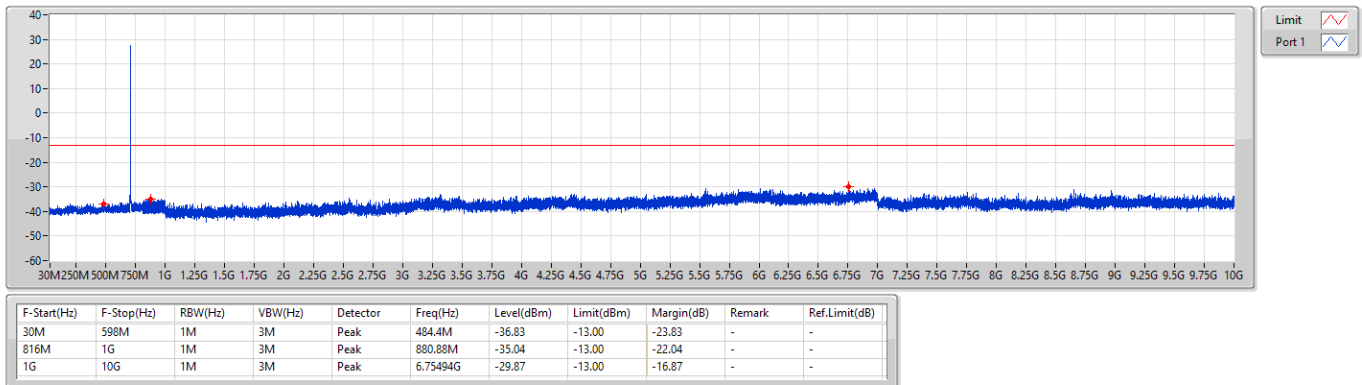
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Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Sum

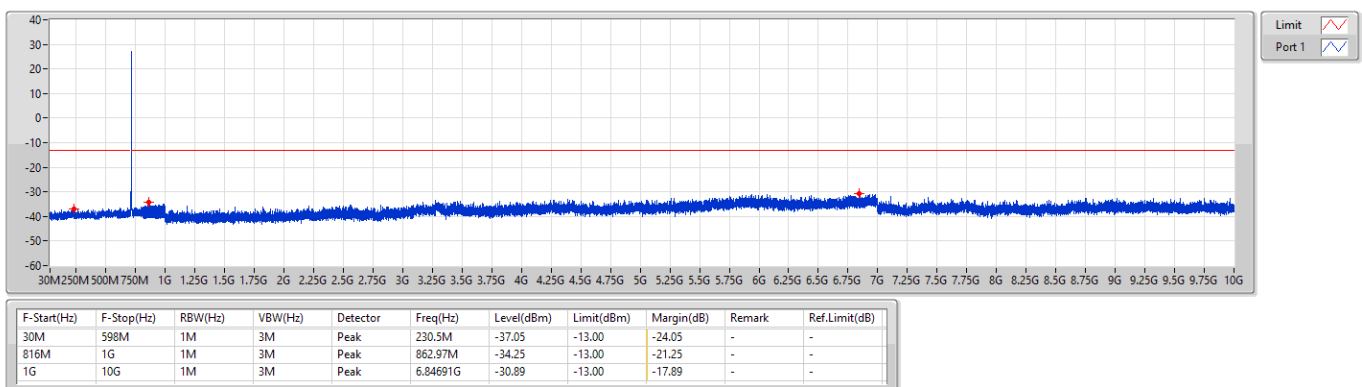
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Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Sum

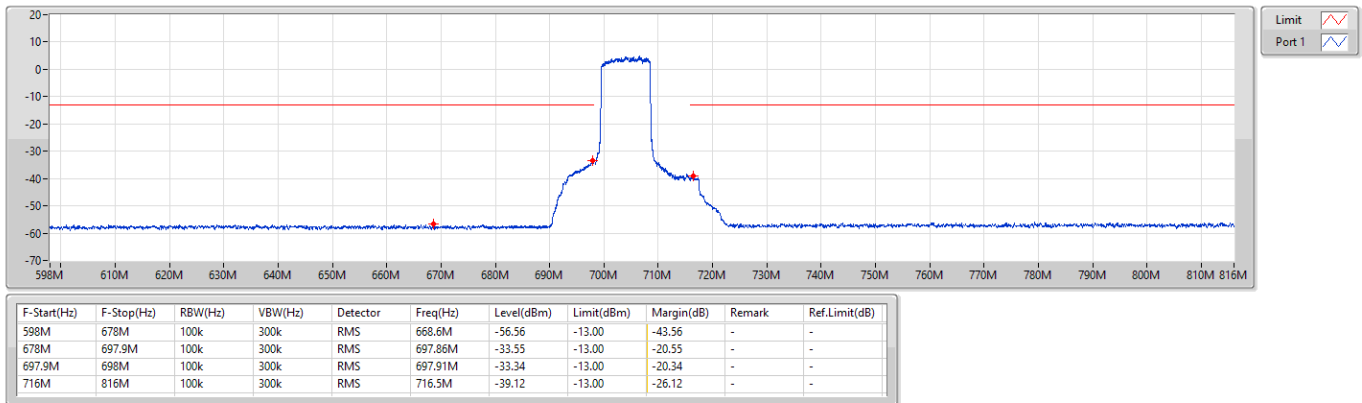
715.3MHz_QPSK_RB 1



Band 12_LTE_10MHz_Nss1,QPSK_1TX

CSE-TX-Sum

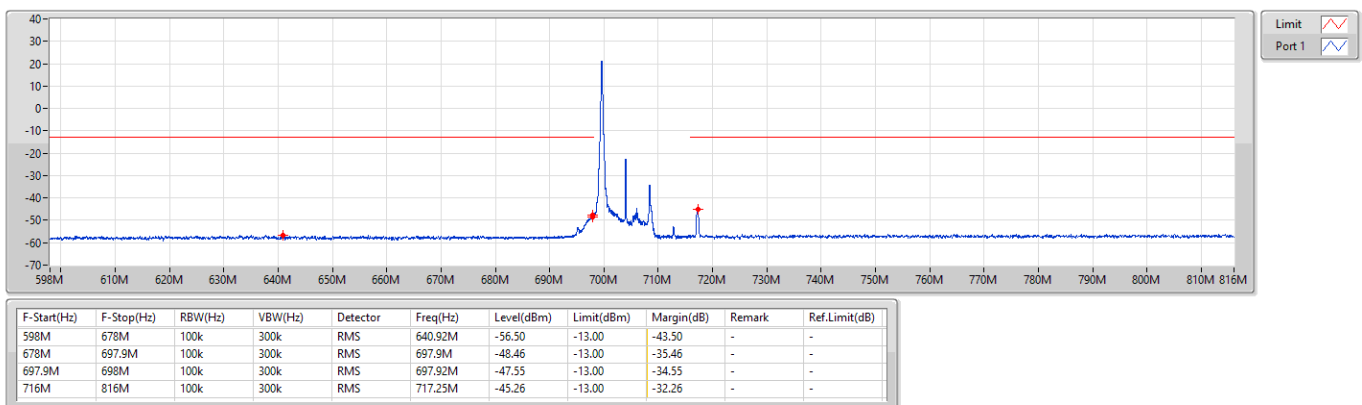
704MHz_QPSK_RB 50



Band 12_LTE_10MHz_Nss1,QPSK_1TX

CSE-TX-Sum

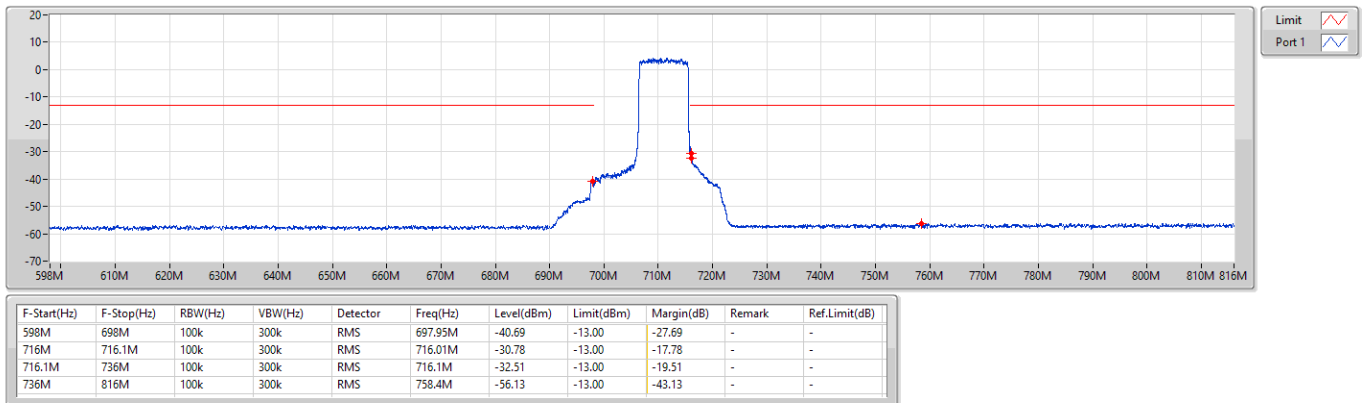
704MHz_QPSK_RB 1,#RB L





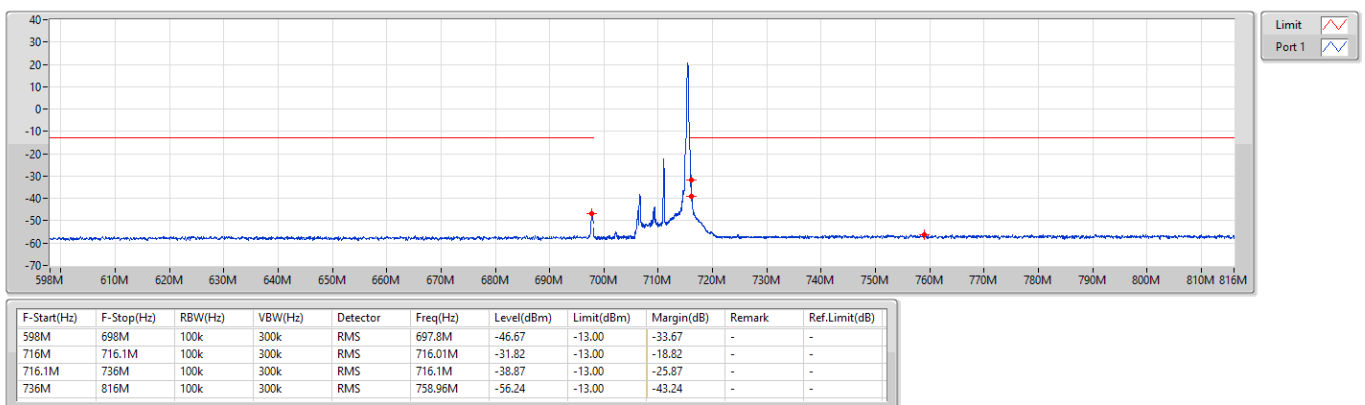
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711MHz_QPSK_RB 50

CSE-TX-Sum



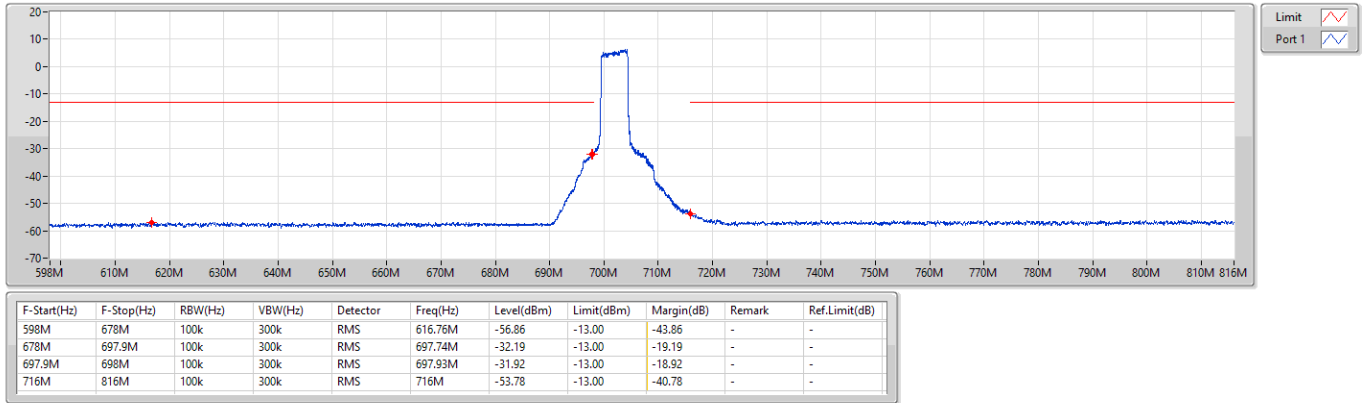
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711MHz_QPSK_RB 1,#RB R

CSE-TX-Sum



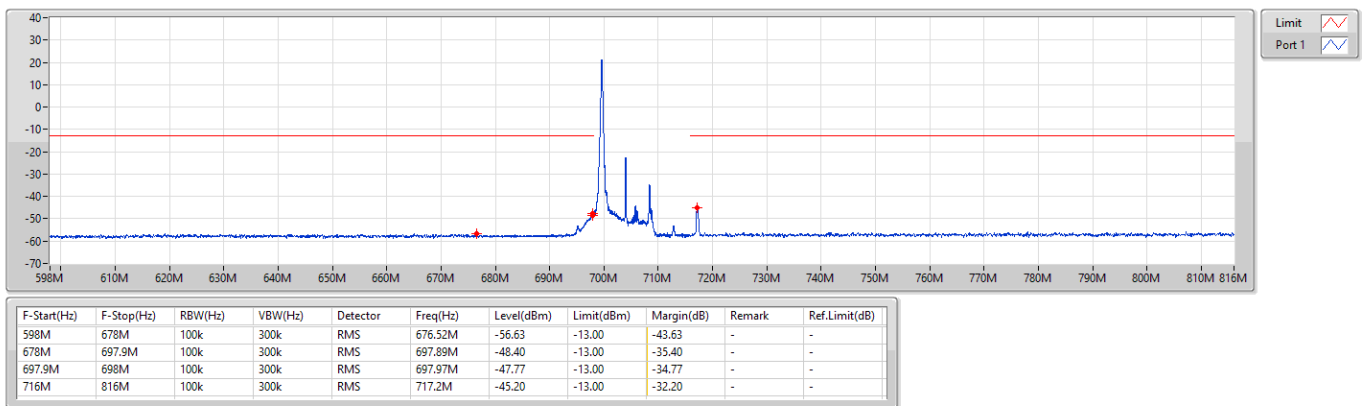
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704MHz_16QAM_RB 27,#RB L

CSE-TX-Sum



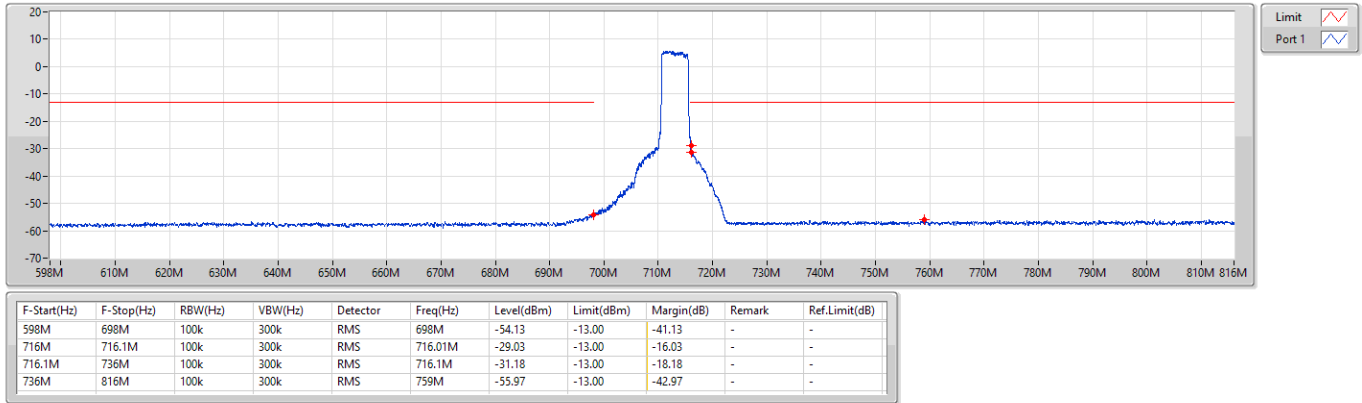
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704MHz_16QAM_RB 1,#RB L

CSE-TX-Sum



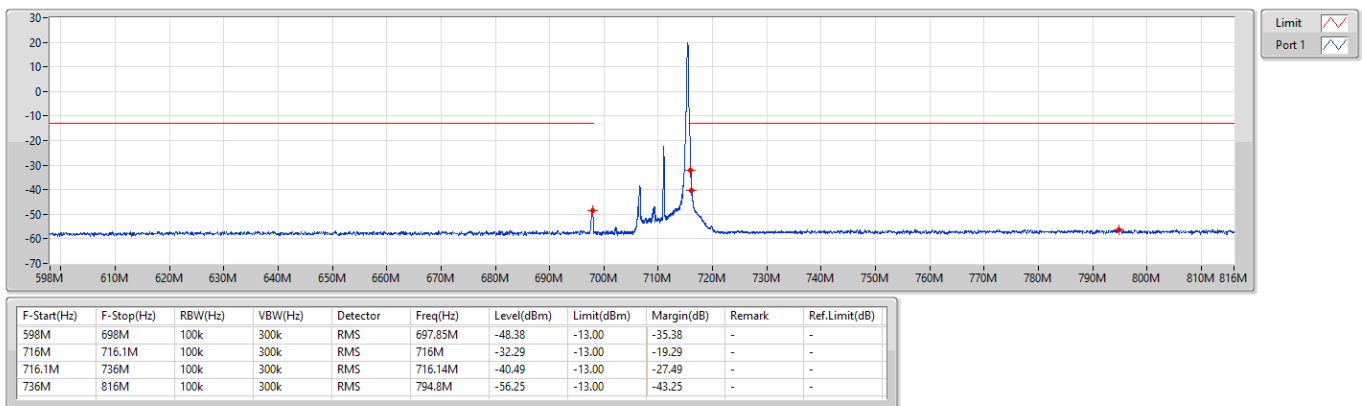
Band 12_LTE_10MHz_Nss1,16QAM_1TX
711MHz_16QAM_RB 27,#RB R

CSE-TX-Sum



Band 12_LTE_10MHz_Nss1,16QAM_1TX
711MHz_16QAM_RB 1,#RB R

CSE-TX-Sum

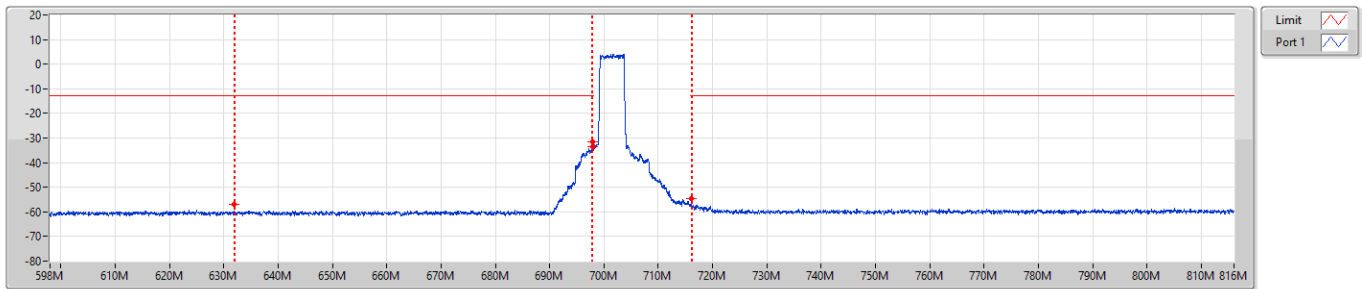




Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

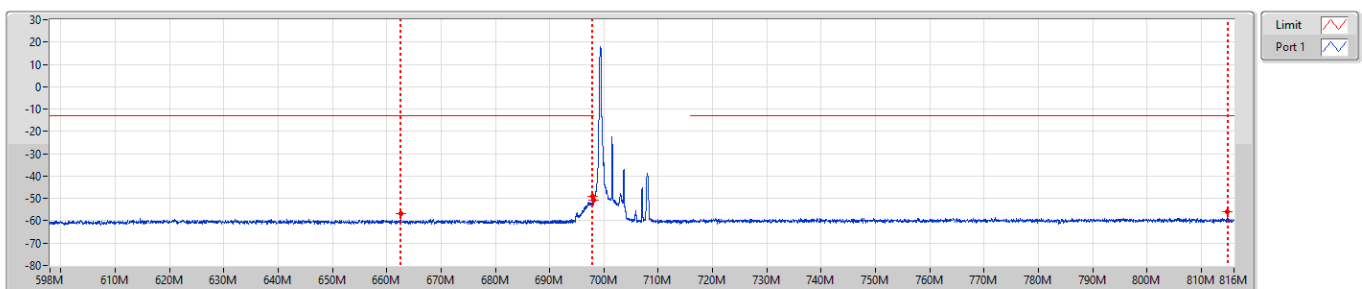
701.5MHz_QPSK_RB 25



Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

701.5MHz_QPSK_RB 1,#RB L

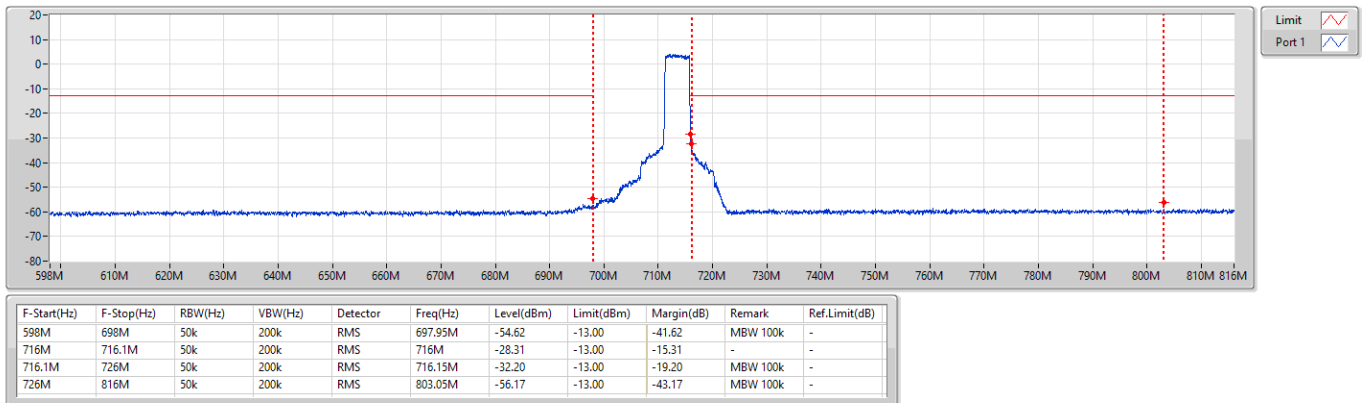




Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

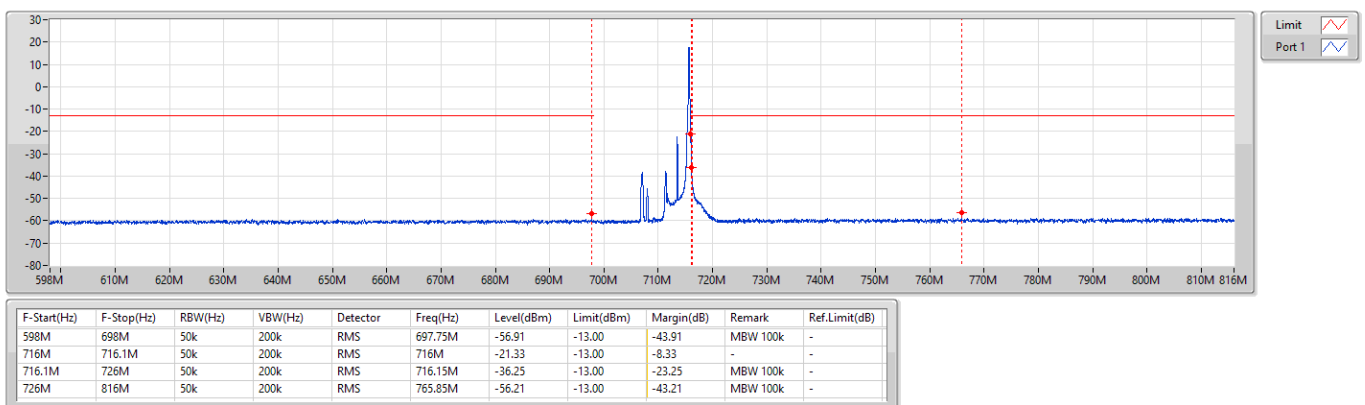
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Band 12_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

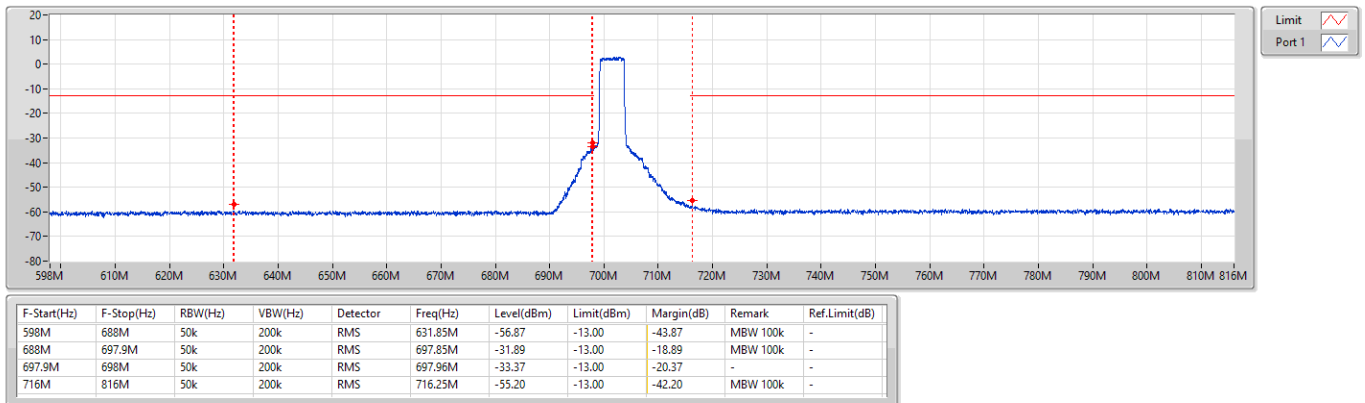
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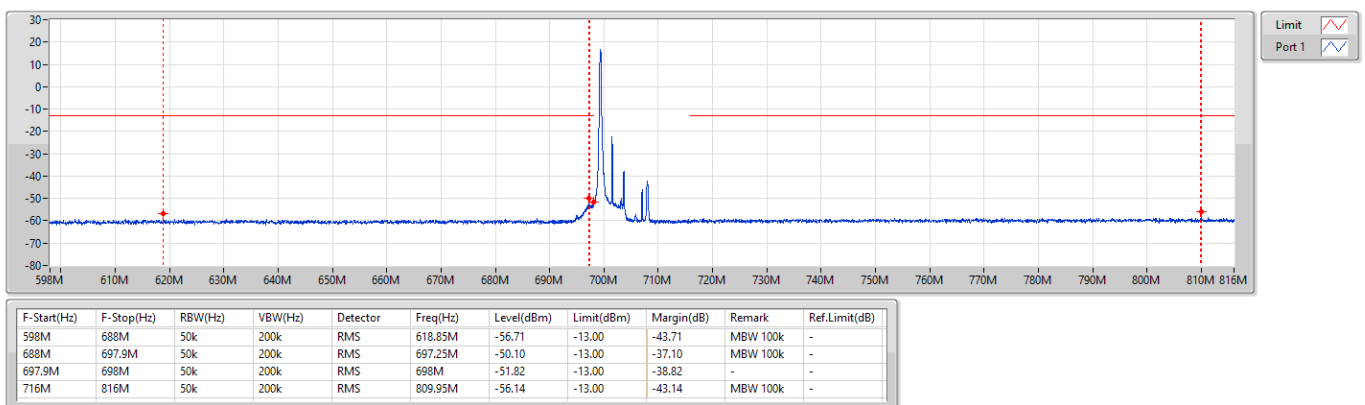
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CSE-TX-Sum



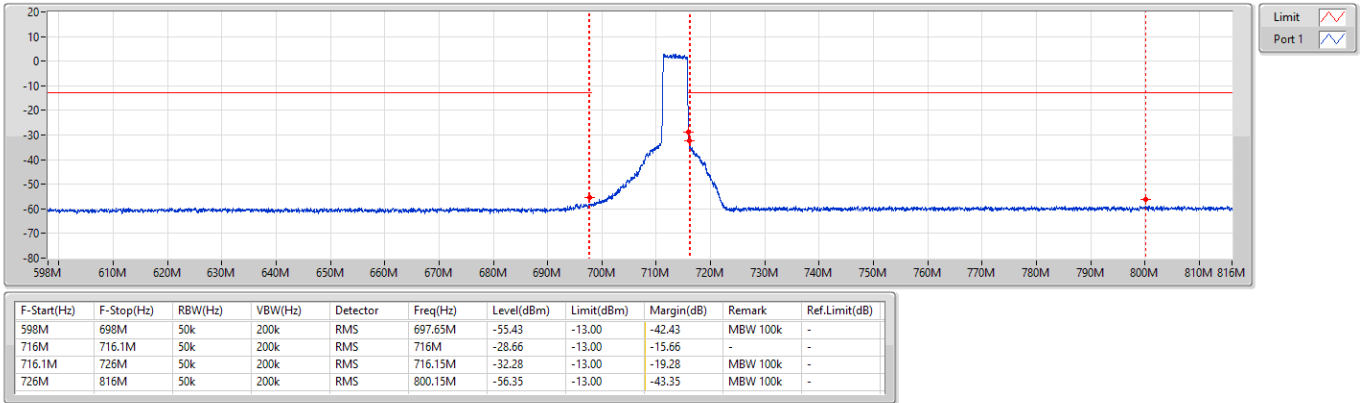
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CSE-TX-Sum



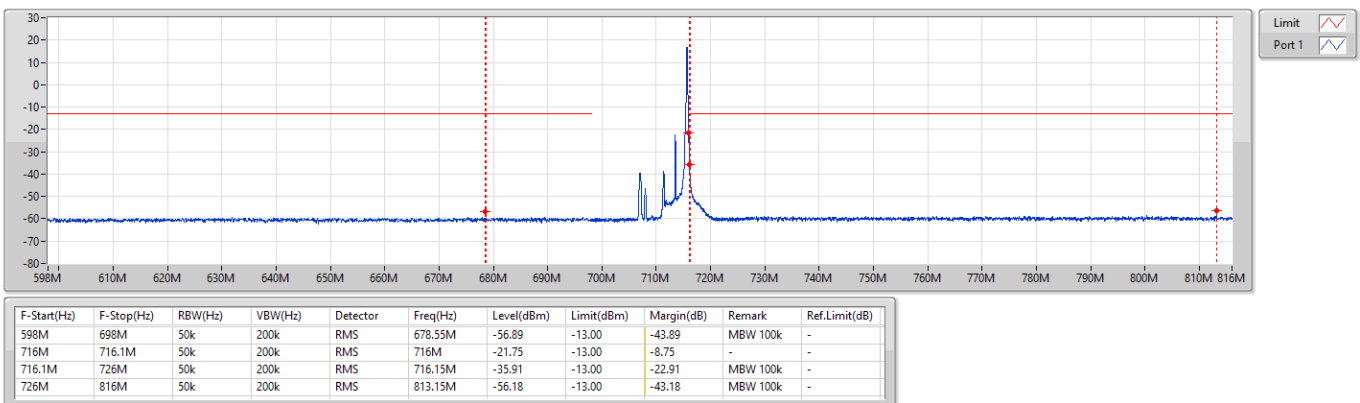
Band 12_LTE_5MHz_Nss1,16QAM_1TX
713.5MHz_16QAM_RB 25

CSE-TX-Sum



Band 12_LTE_5MHz_Nss1,16QAM_1TX
713.5MHz_16QAM_RB 1,#RB R

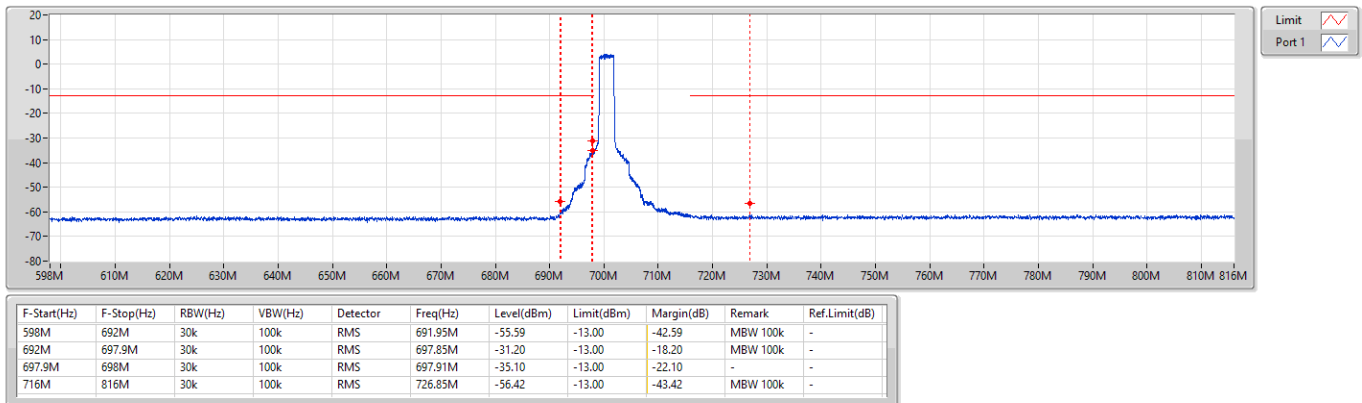
CSE-TX-Sum



Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

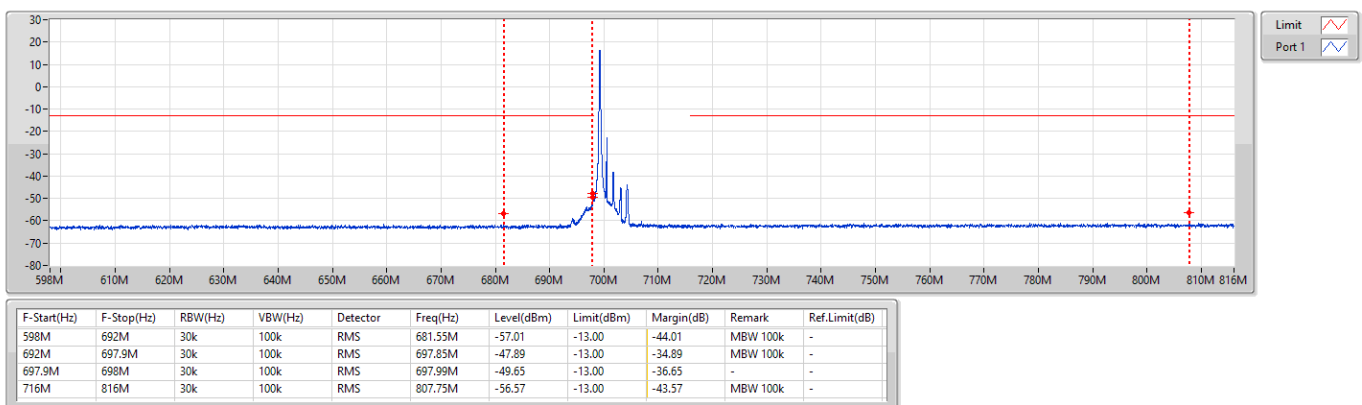
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Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

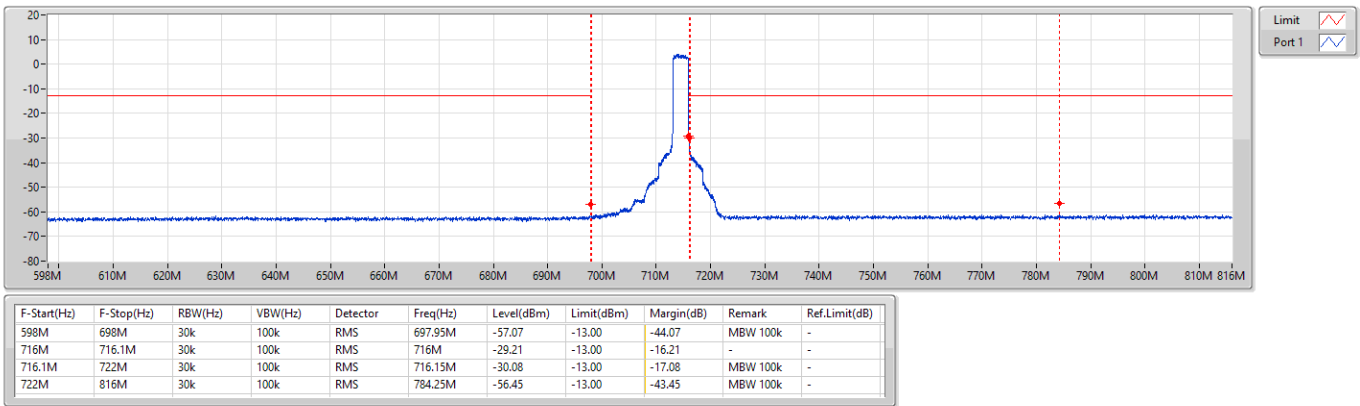
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Band 12_LTE_3MHz_Nss1,QPSK_1TX

CSE-TX-Sum

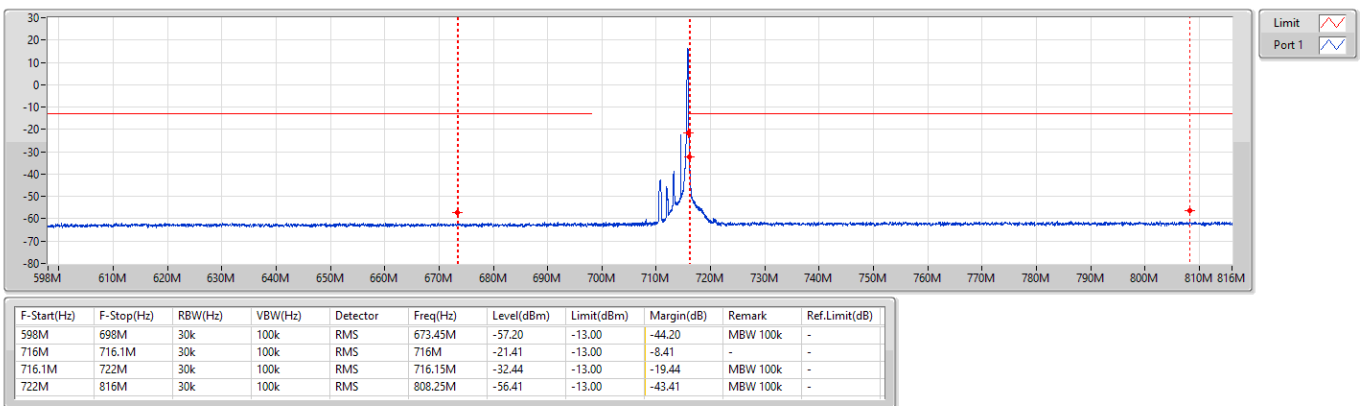
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Band 12_LTE_3MHz_Nss1,QPSK_1TX

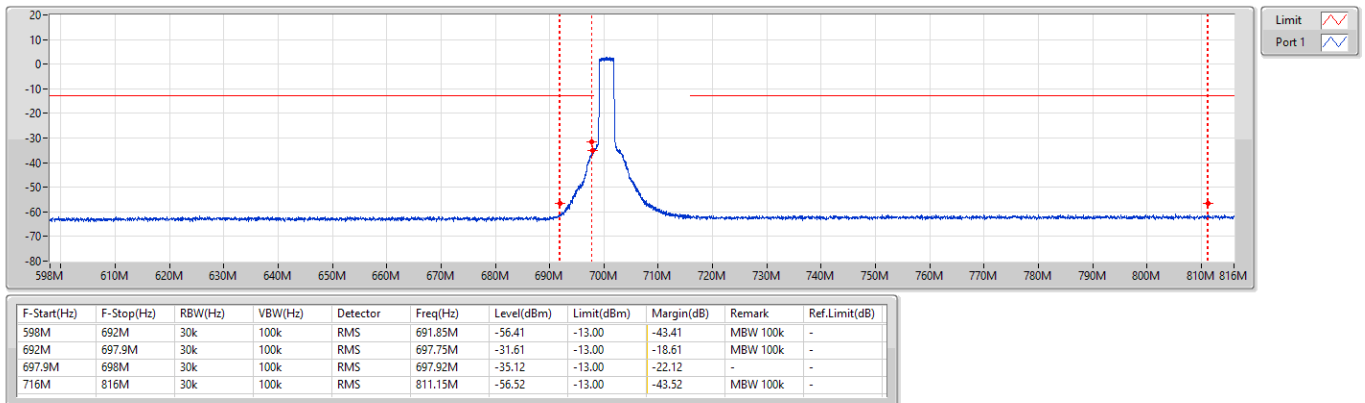
CSE-TX-Sum

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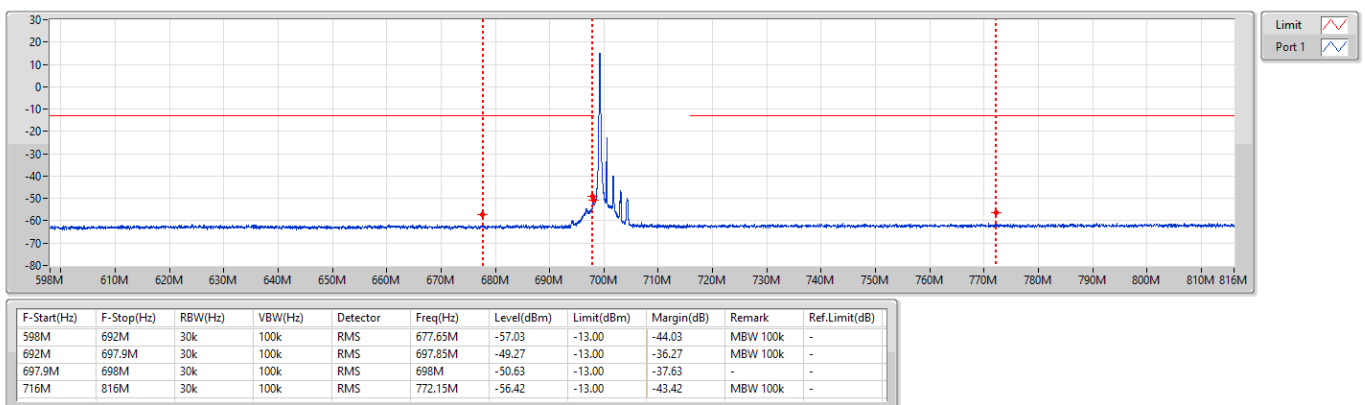
Band 12_LTE_3MHz_Nss1,16QAM_1TX
700.5MHz_16QAM_RB 15

CSE-TX-Sum



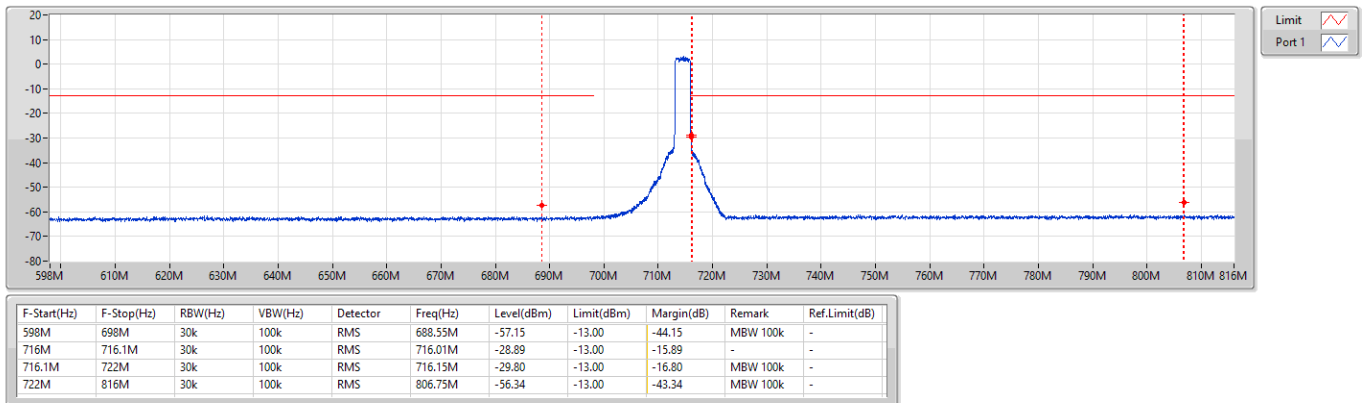
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CSE-TX-Sum



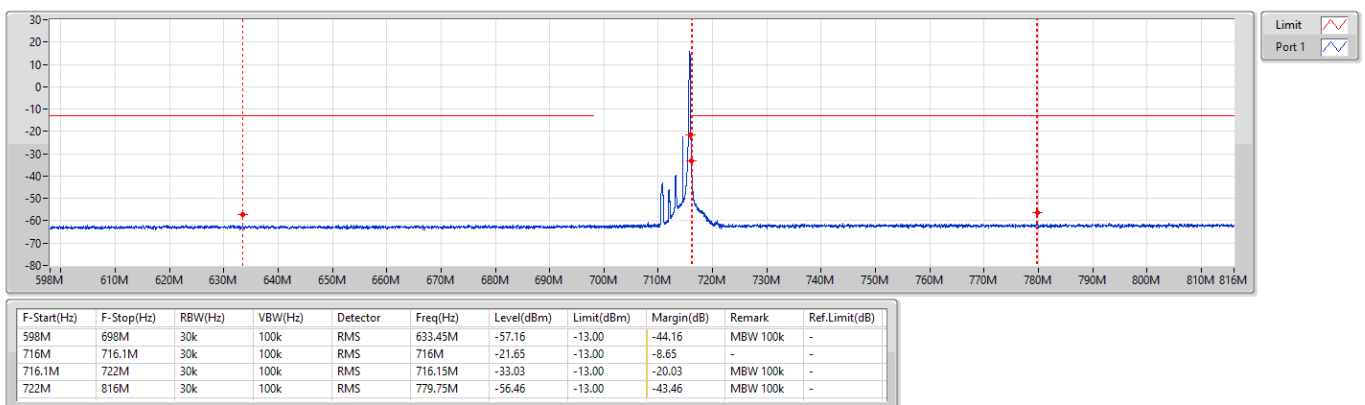
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CSE-TX-Sum



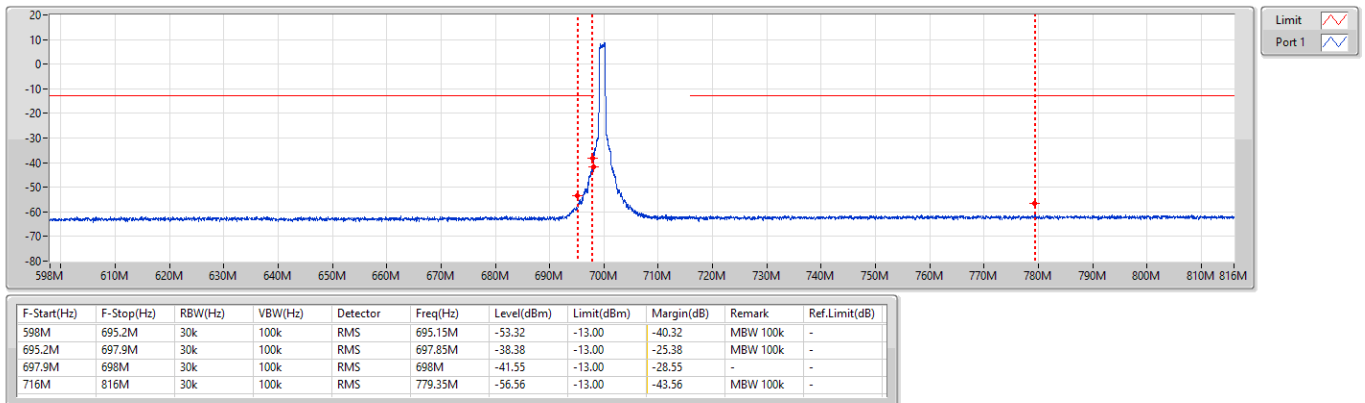
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CSE-TX-Sum



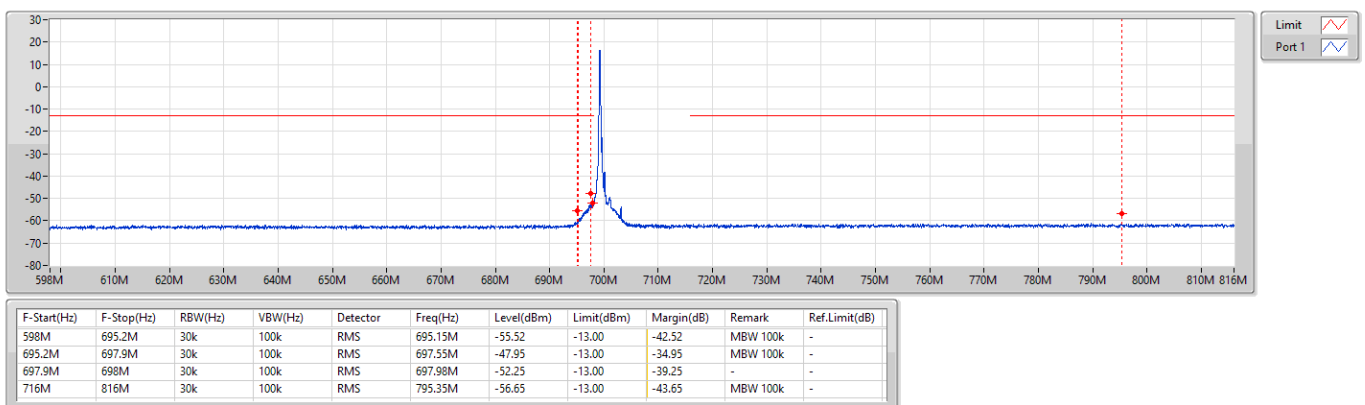
Band 12_LTE_1.4MHz_Nss1,QPSK_1TX 699.7MHz_QPSK_RB 6

CSE-TX-Sum



Band 12_LTE_1.4MHz_Nss1,QPSK_1TX 699.7MHz_QPSK_RB 1,#RB L

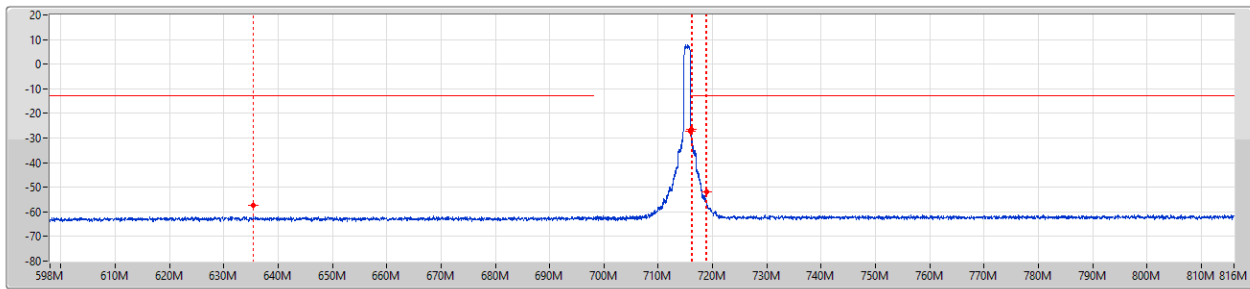
CSE-TX-Sum



Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Sum

715.3MHz_QPSK_RB 6

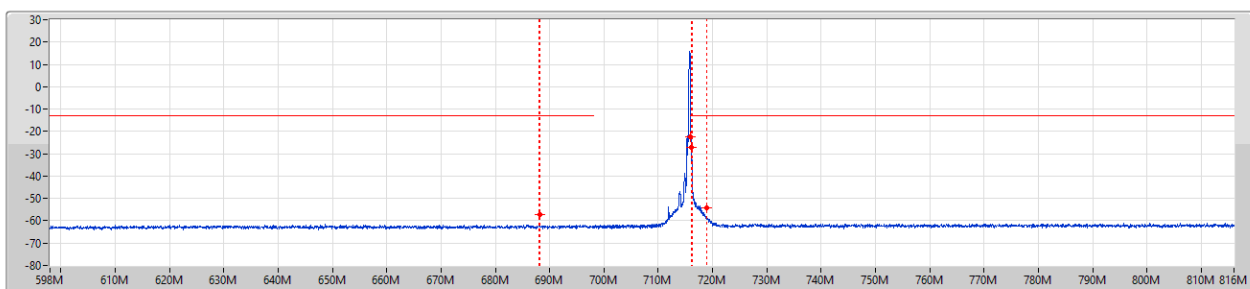


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Remark	Ref.Limit(dB)
598M	698M	30k	100k	RMS	635.45M	-57.17	-13.00	-44.17	MBW 100k	-
716M	716.1M	30k	100k	RMS	716M	-27.30	-13.00	-14.30	-	-
716.1M	718.8M	30k	100k	RMS	716.15M	-26.56	-13.00	-13.56	MBW 100k	-
718.8M	816M	30k	100k	RMS	718.85M	-51.70	-13.00	-38.70	MBW 100k	-

Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Sum

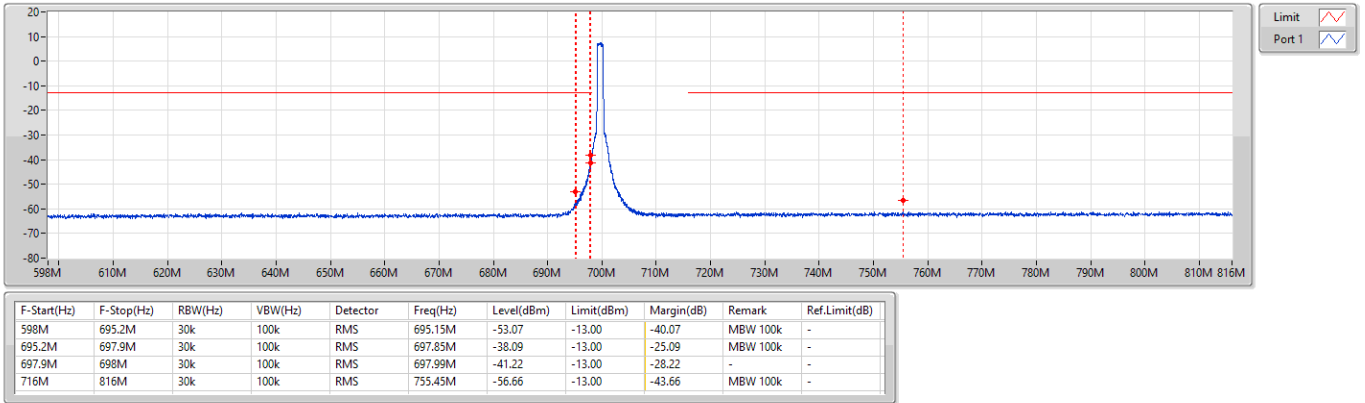
715.3MHz_QPSK_RB 1,#RB R



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Remark	Ref.Limit(dB)
598M	698M	30k	100k	RMS	688.15M	-57.15	-13.00	-44.15	MBW 100k	-
716M	716.1M	30k	100k	RMS	716M	-22.21	-13.00	-9.21	-	-
716.1M	718.8M	30k	100k	RMS	716.15M	-27.35	-13.00	-14.35	MBW 100k	-
718.8M	816M	30k	100k	RMS	718.95M	-54.10	-13.00	-41.10	MBW 100k	-

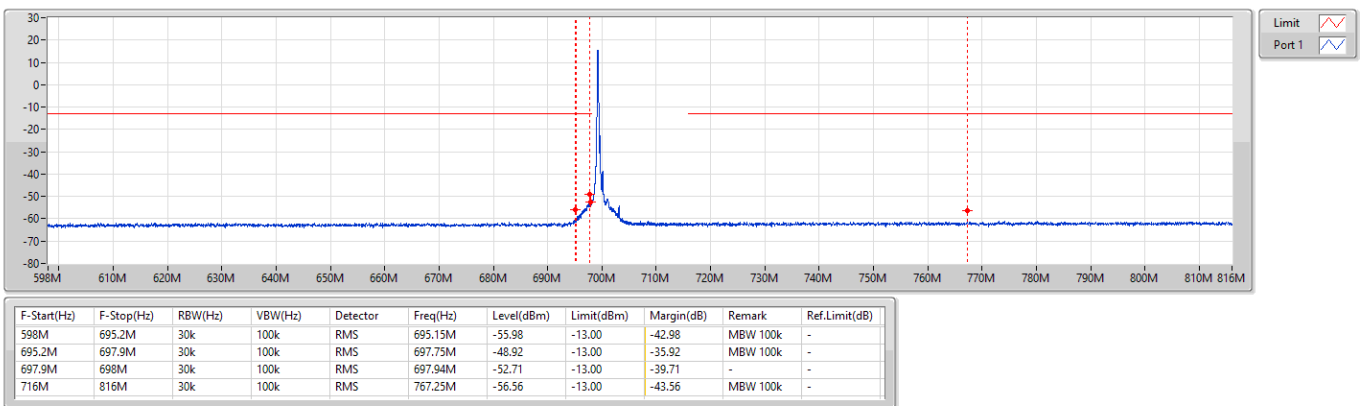
Band 12_LTE_1.4MHz_Nss1,16QAM_1TX
699.7MHz_16QAM_RB 6

CSE-TX-Sum



Band 12_LTE_1.4MHz_Nss1,16QAM_1TX
699.7MHz_16QAM_RB 1,#RB L

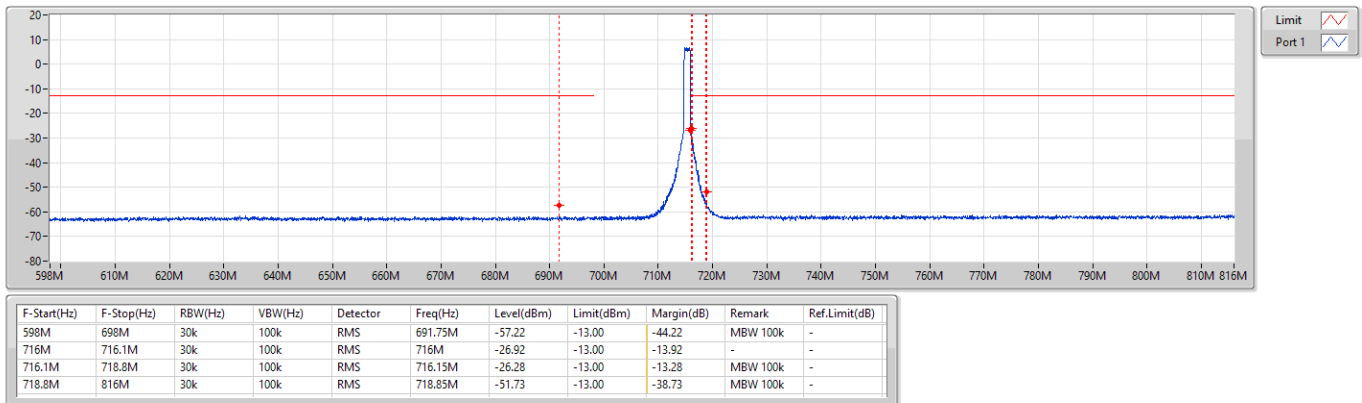
CSE-TX-Sum





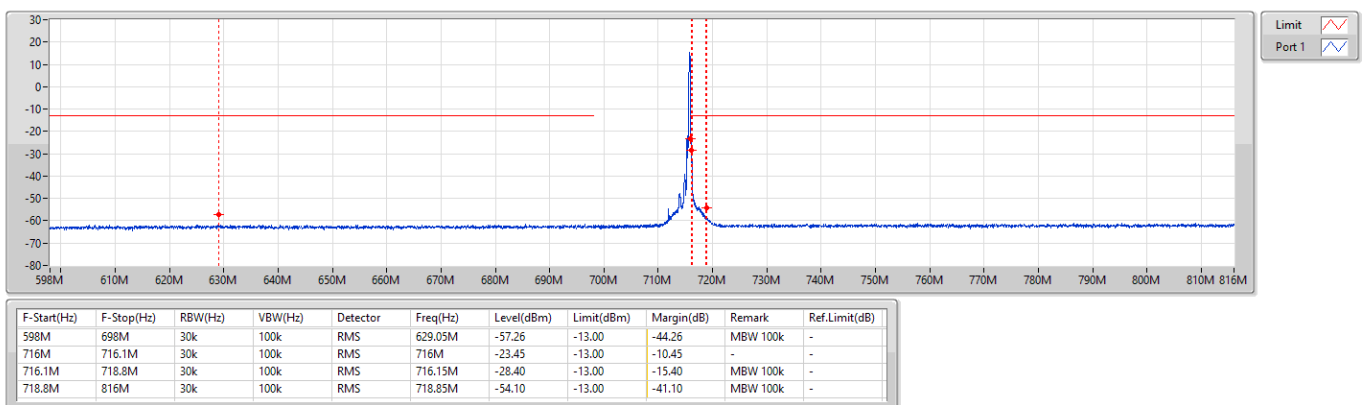
Band 12_LTE_1.4MHz_Nss1,16QAM_1TX
715.3MHz_16QAM_RB 6

CSE-TX-Sum



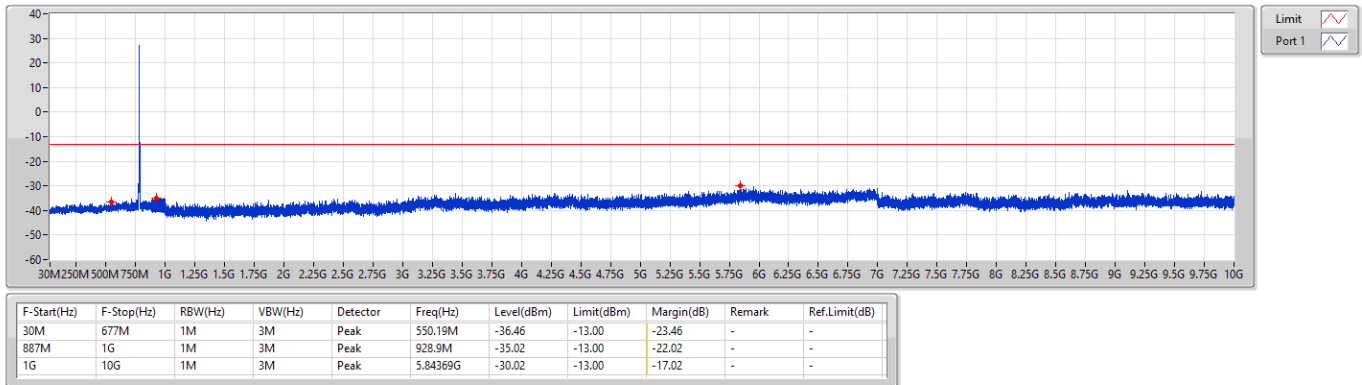
Band 12_LTE_1.4MHz_Nss1,16QAM_1TX
715.3MHz_16QAM_RB 1,#RB R

CSE-TX-Sum



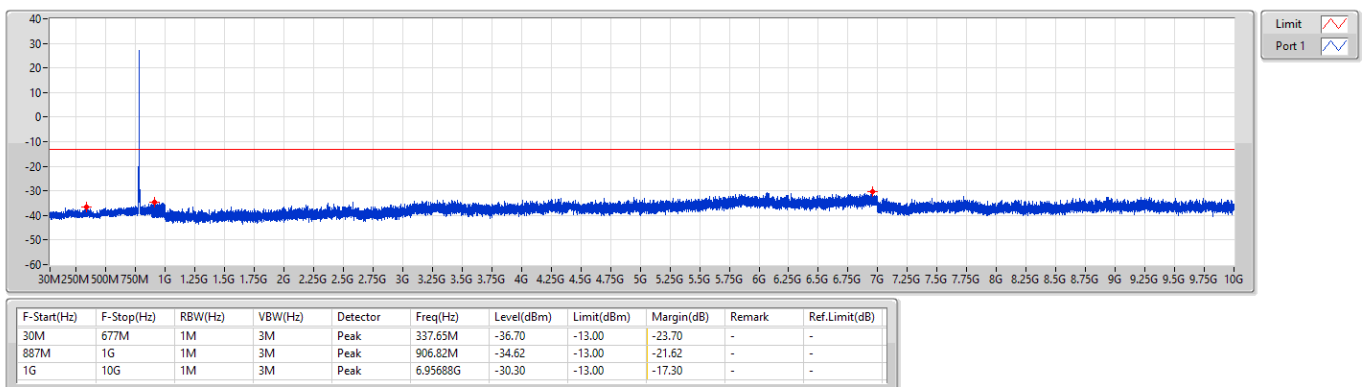
Band 13_LTE_10MHz_Nss1,QPSK_1TX 782MHz_QPSK_RB 1

CSE-TX-Sum



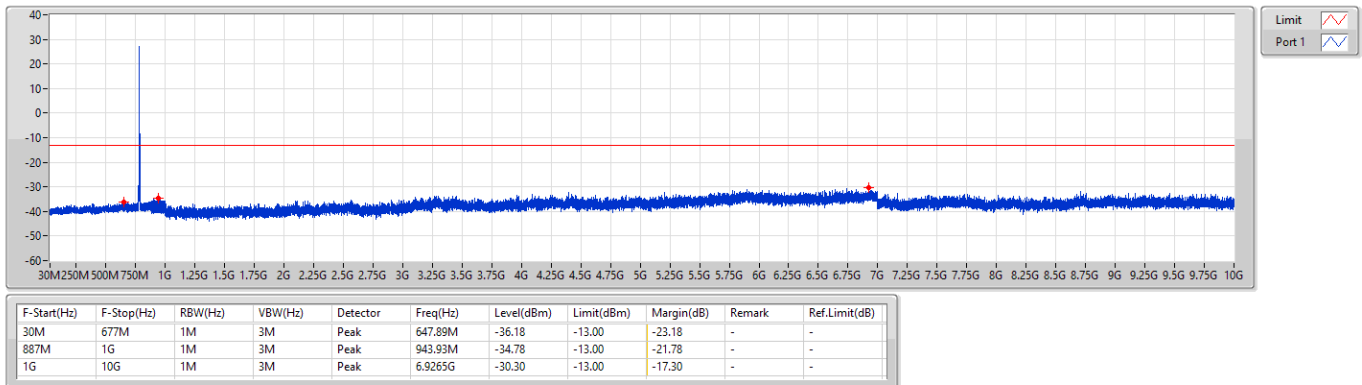
Band 13_LTE_5MHz_Nss1,QPSK_1TX 779.5MHz_QPSK_RB 1

CSE-TX-Sum



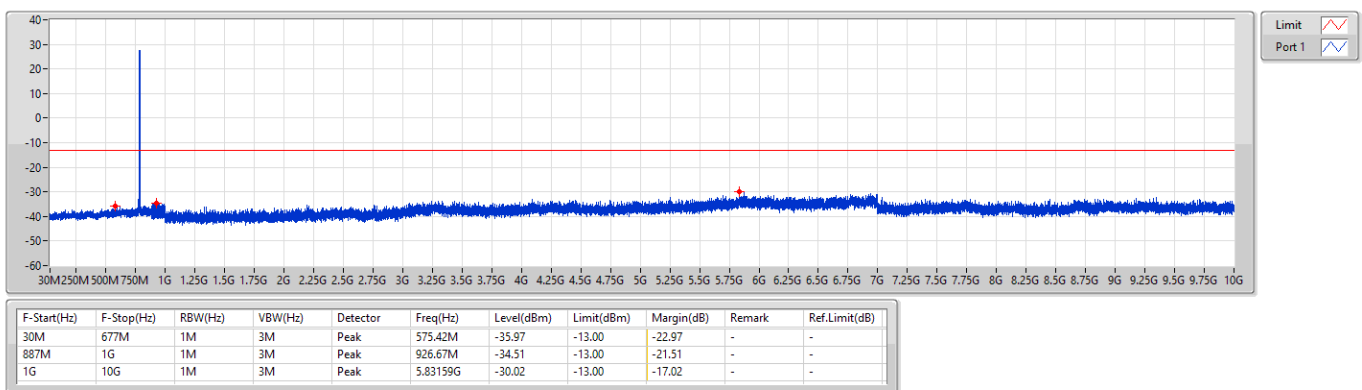
Band 13_LTE_5MHz_Nss1,QPSK_1TX 782MHz_QPSK_RB 1

CSE-TX-Sum



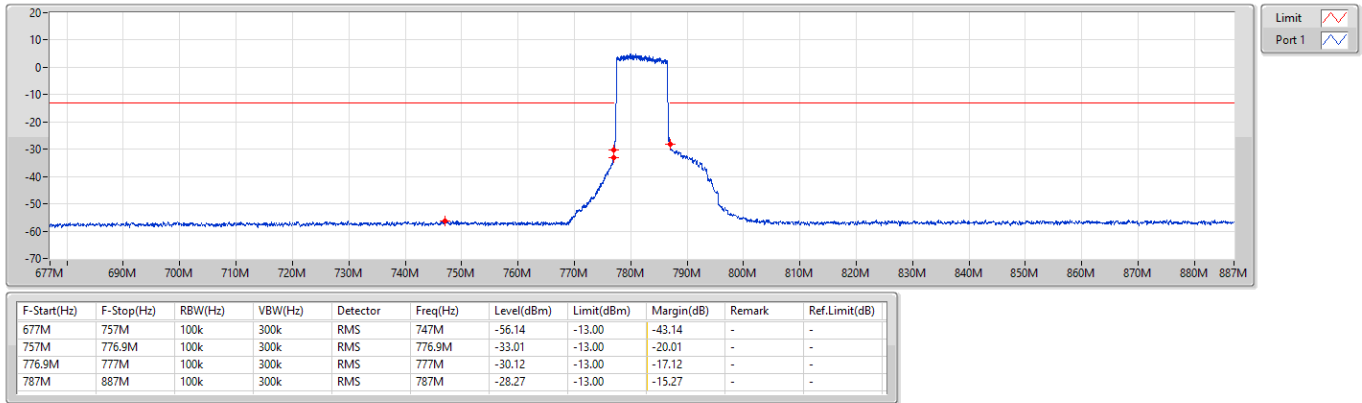
Band 13_LTE_5MHz_Nss1,QPSK_1TX 784.5MHz_QPSK_RB 1

CSE-TX-Sum



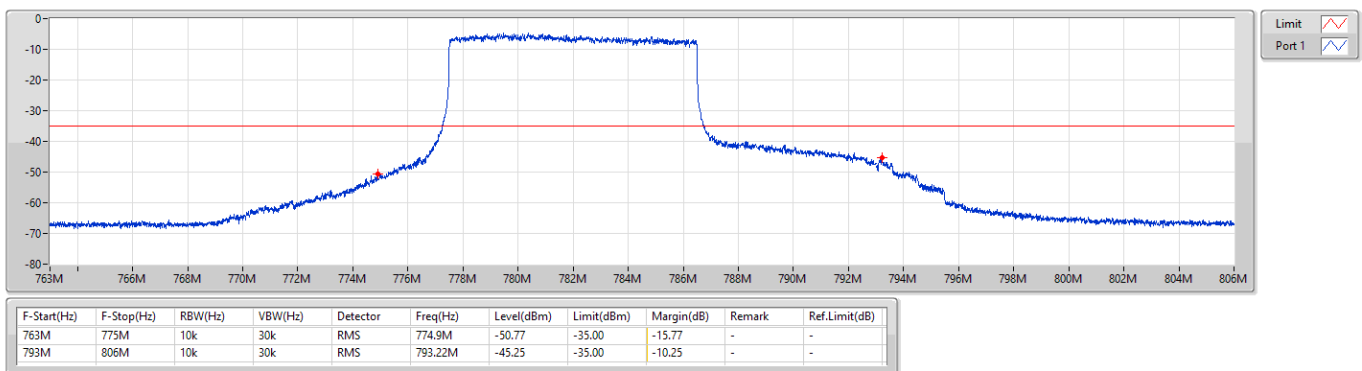
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 50

CSE-TX-Sum



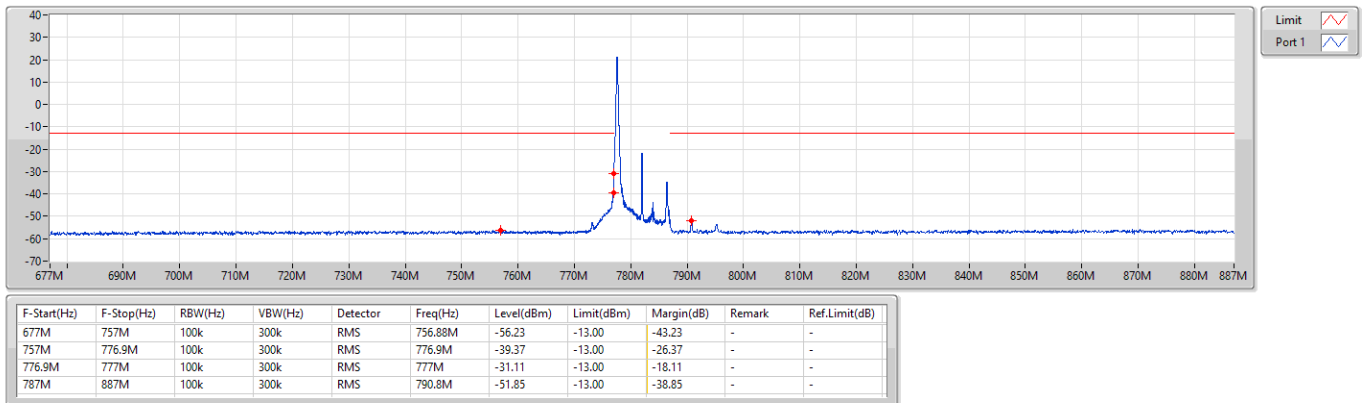
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 50

CSE-TX-Sum



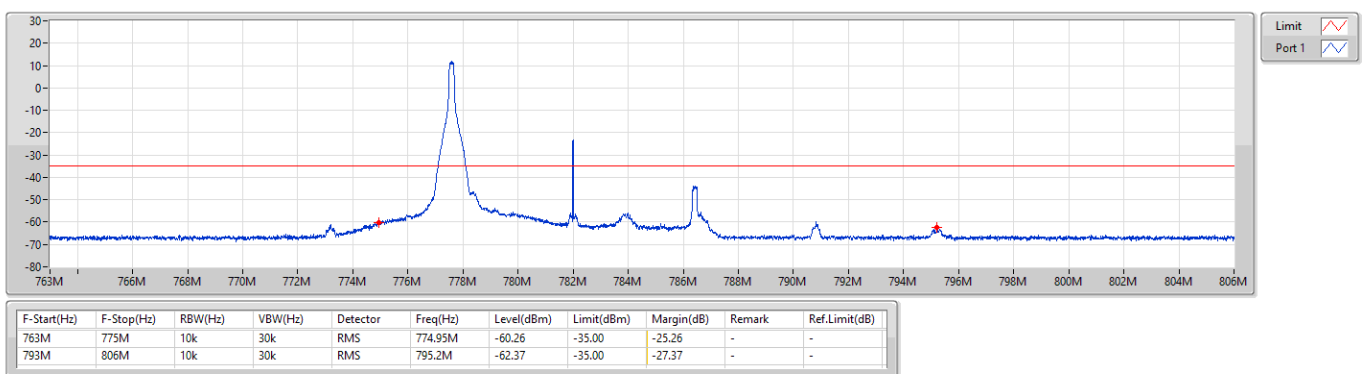
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 1,#RB L

CSE-TX-Sum



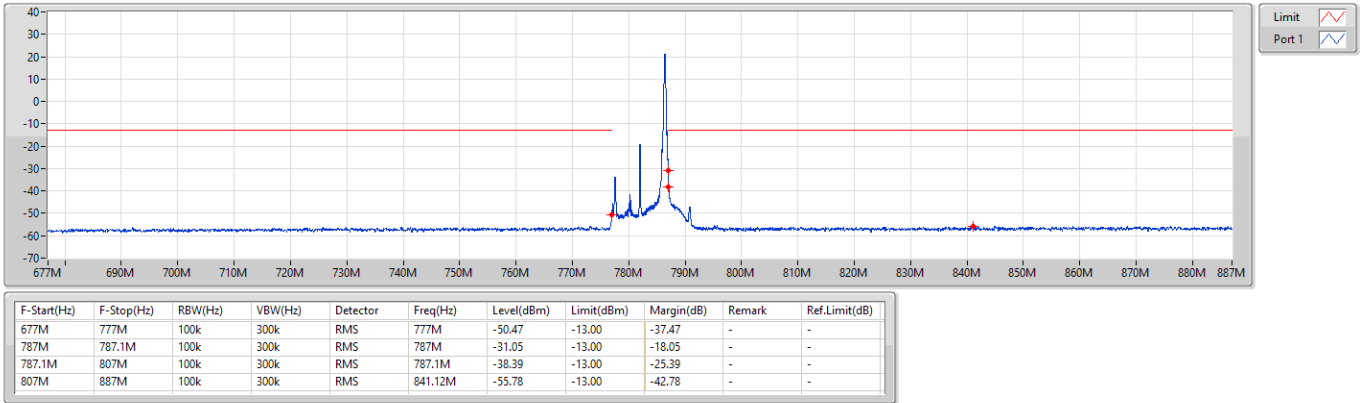
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 1,#RB L

CSE-TX-Sum



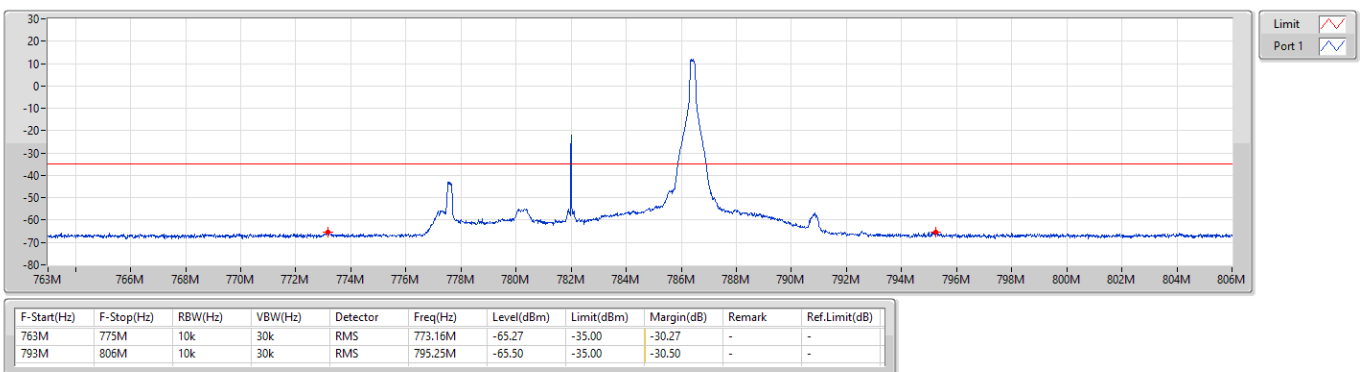
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 1,#RB R

CSE-TX-Sum



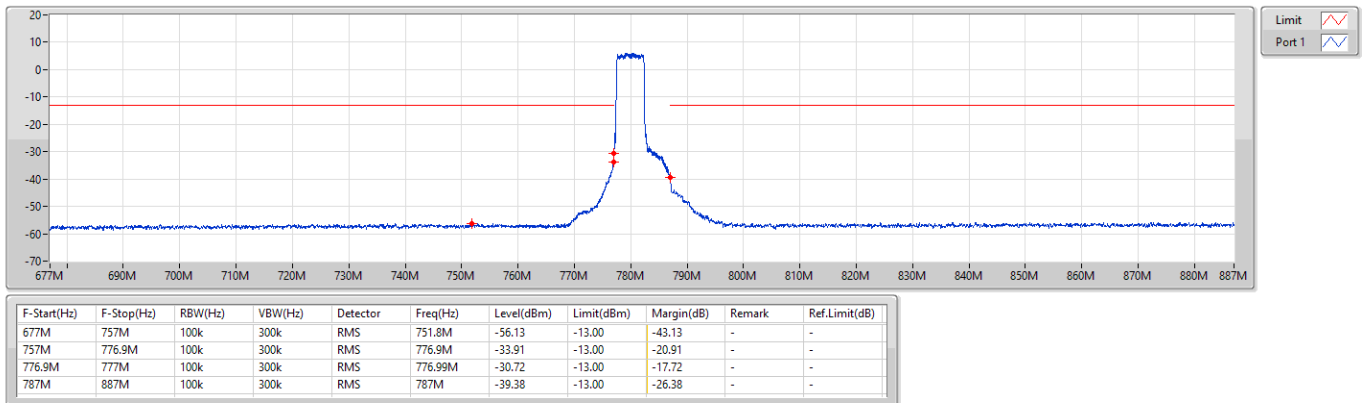
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 1,#RB R

CSE-TX-Sum



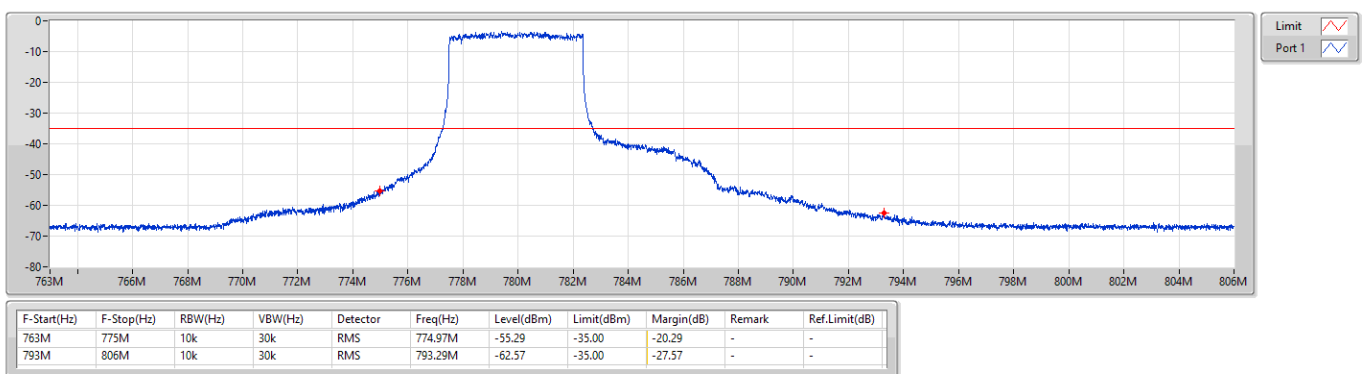
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 27,#RB L

CSE-TX-Sum



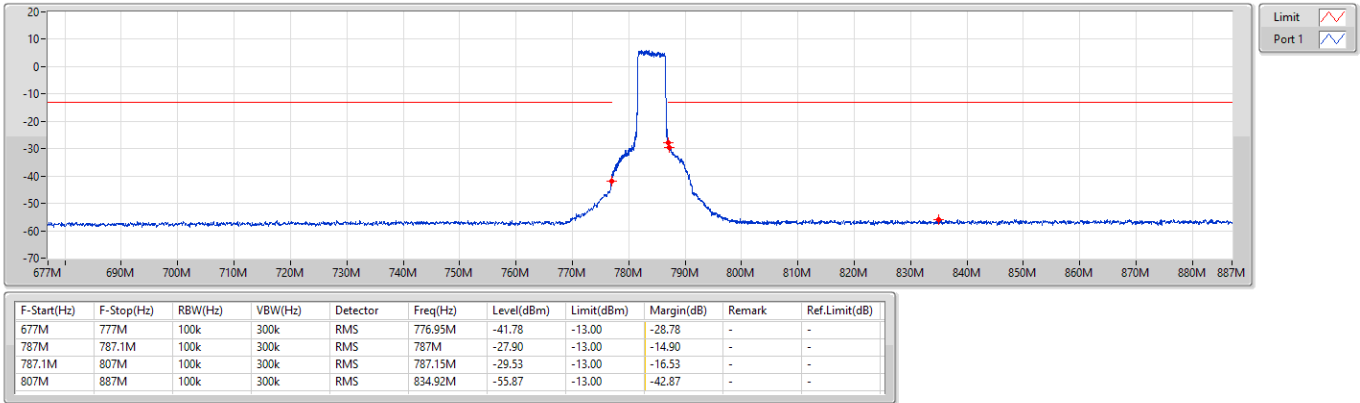
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 27,#RB L

CSE-TX-Sum



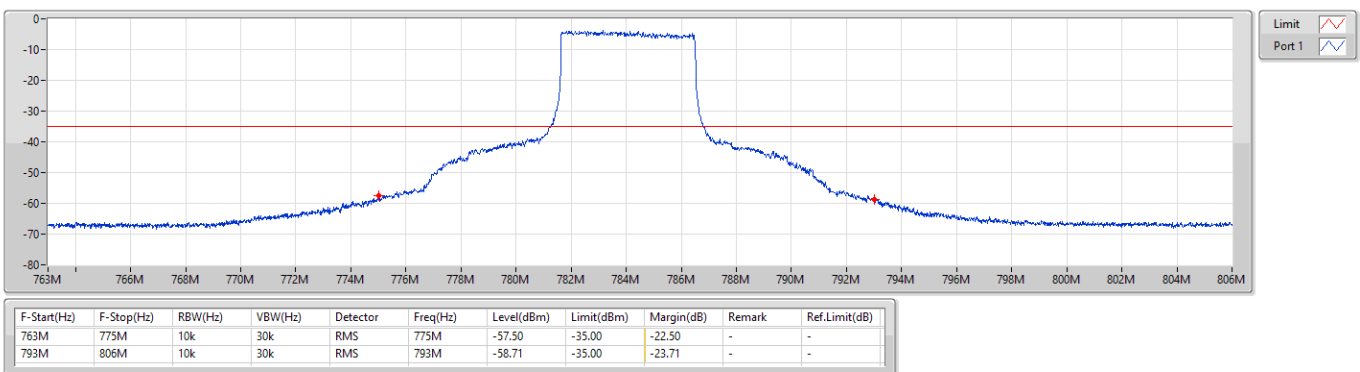
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 27,#RB R

CSE-TX-Sum



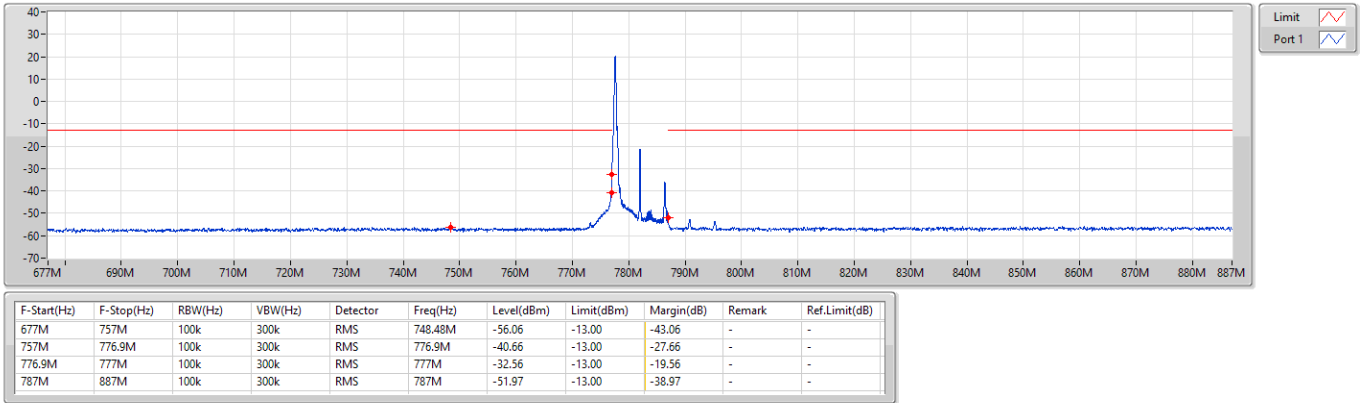
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 27,#RB R

CSE-TX-Sum



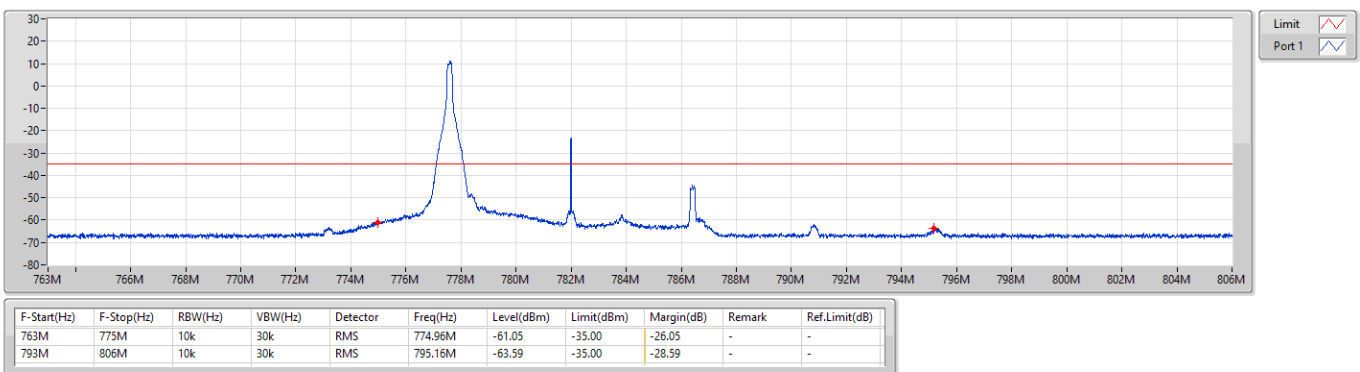
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 1,#RB L

CSE-TX-Sum



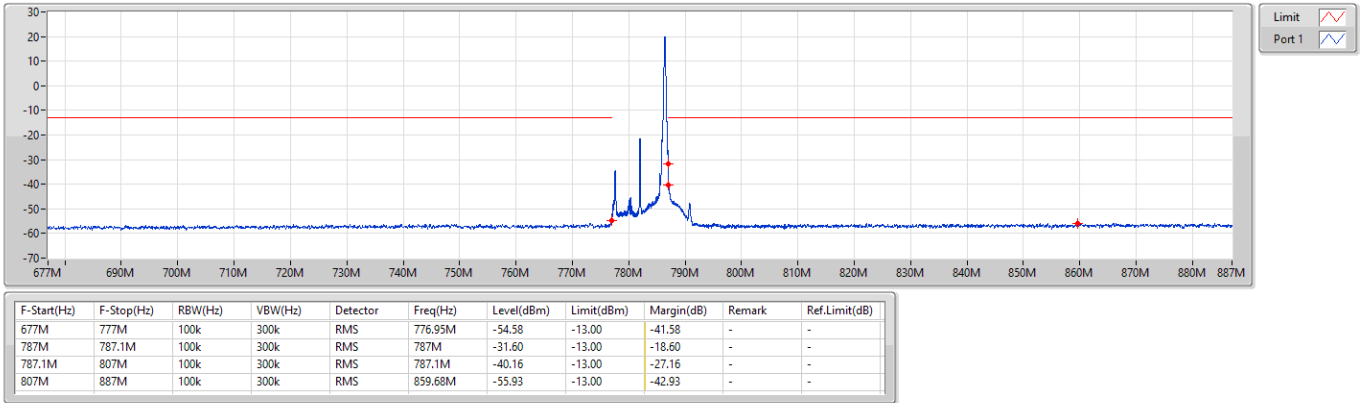
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 1,#RB L

CSE-TX-Sum



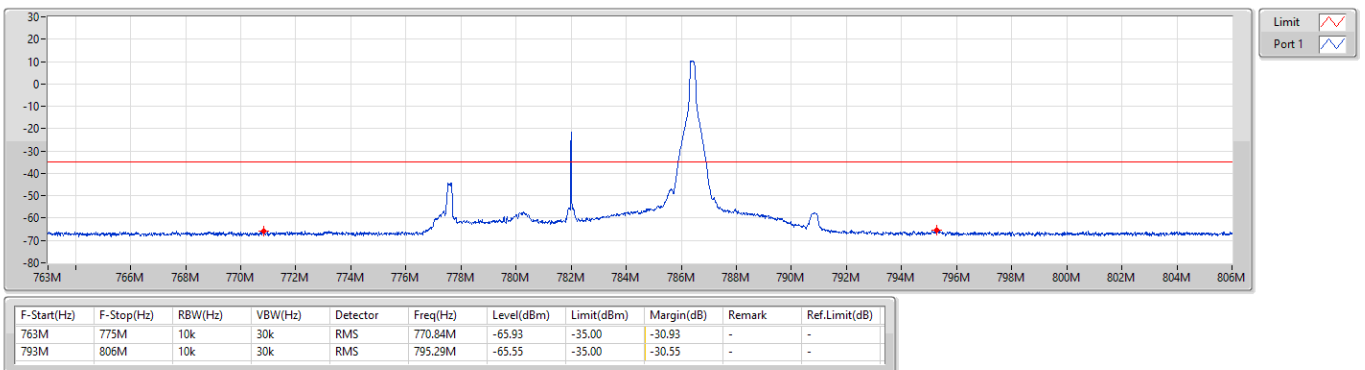
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 1,#RB R

CSE-TX-Sum



Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 1,#RB R

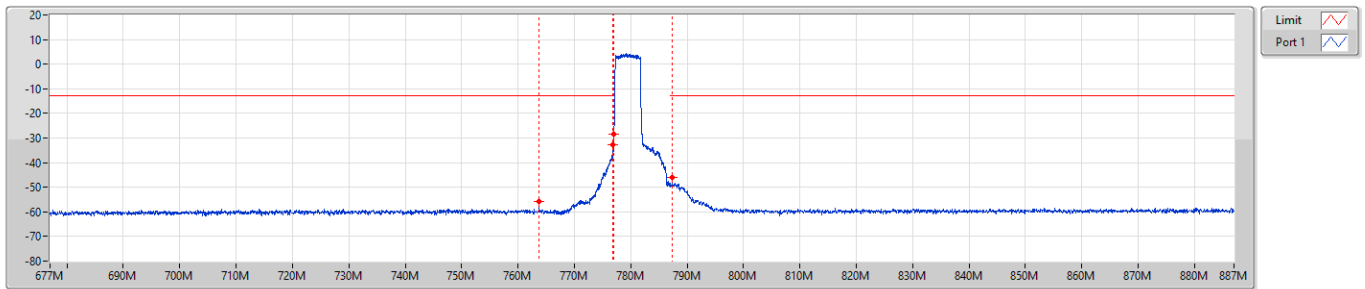
CSE-TX-Sum



Band 13_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

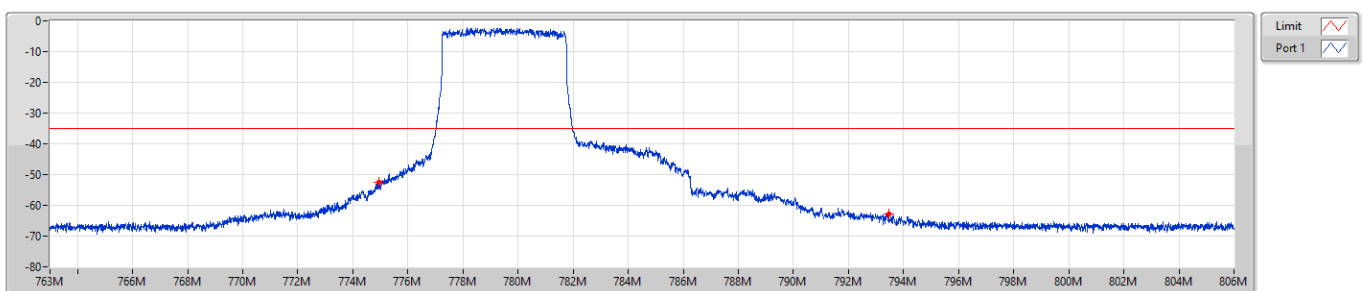
779.5MHz_QPSK_RB 25



Band 13_LTE_5MHz_Nss1,QPSK_1TX

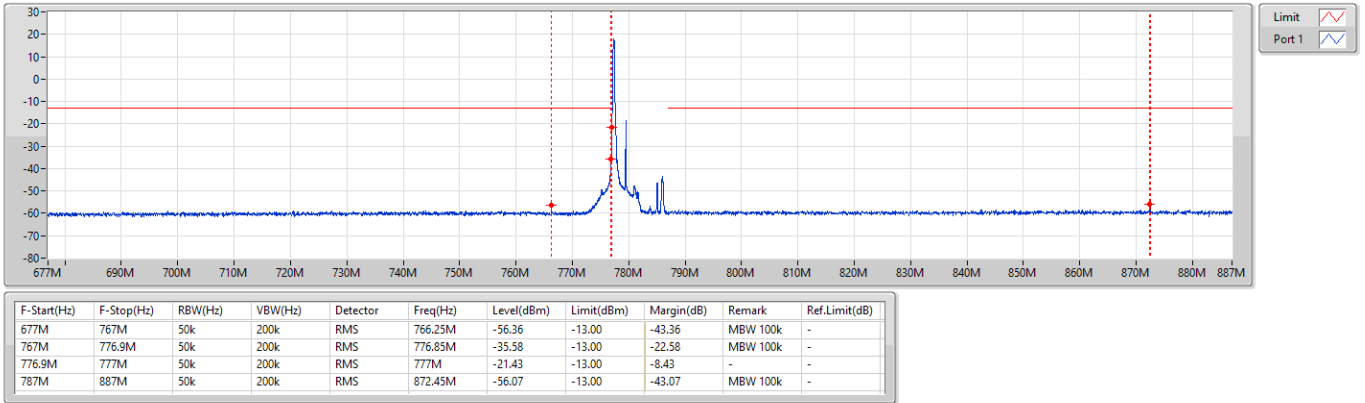
CSE-TX-Sum

779.5MHz_QPSK_RB 25



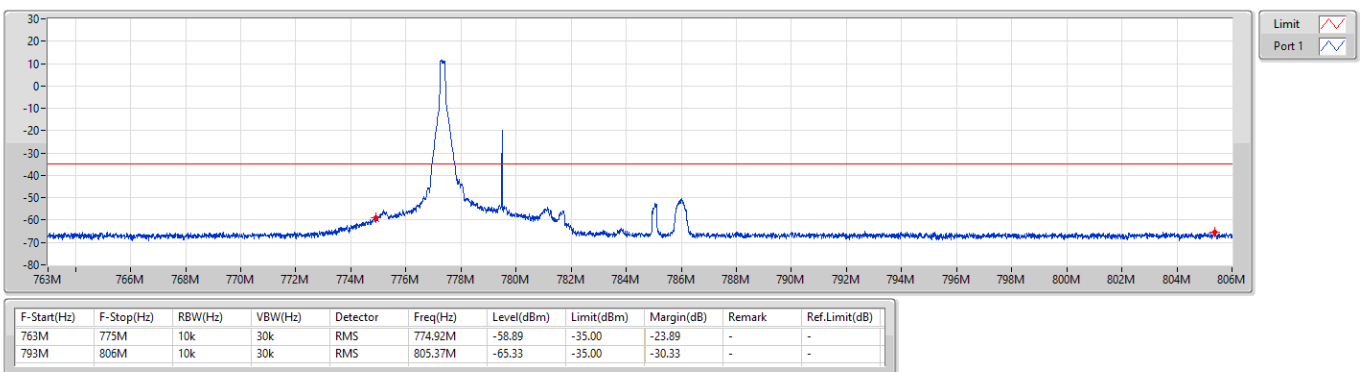
Band 13_LTE_5MHz_Nss1,QPSK_1TX
779.5MHz_QPSK_RB 1,#RB L

CSE-TX-Sum



Band 13_LTE_5MHz_Nss1,QPSK_1TX
779.5MHz_QPSK_RB 1,#RB L

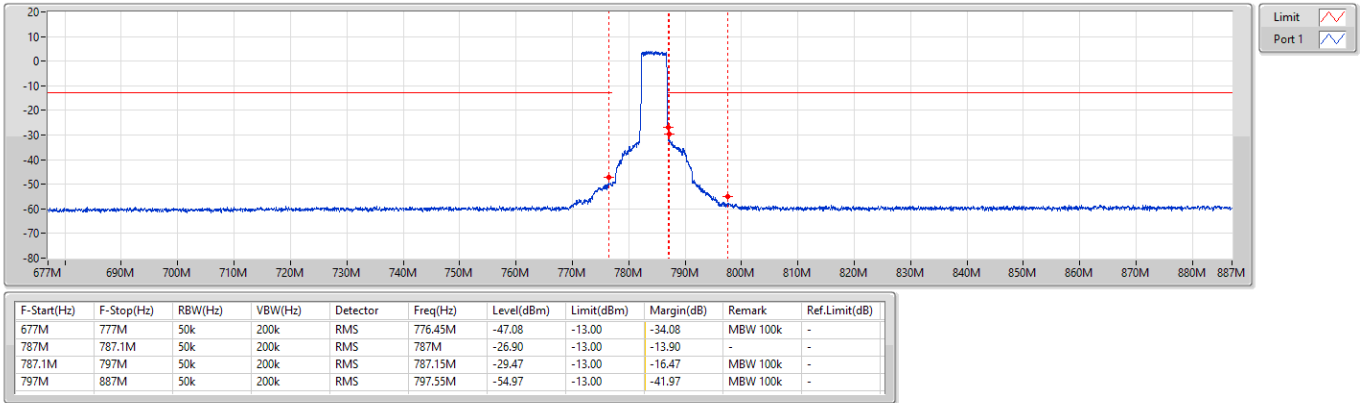
CSE-TX-Sum



Band 13_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

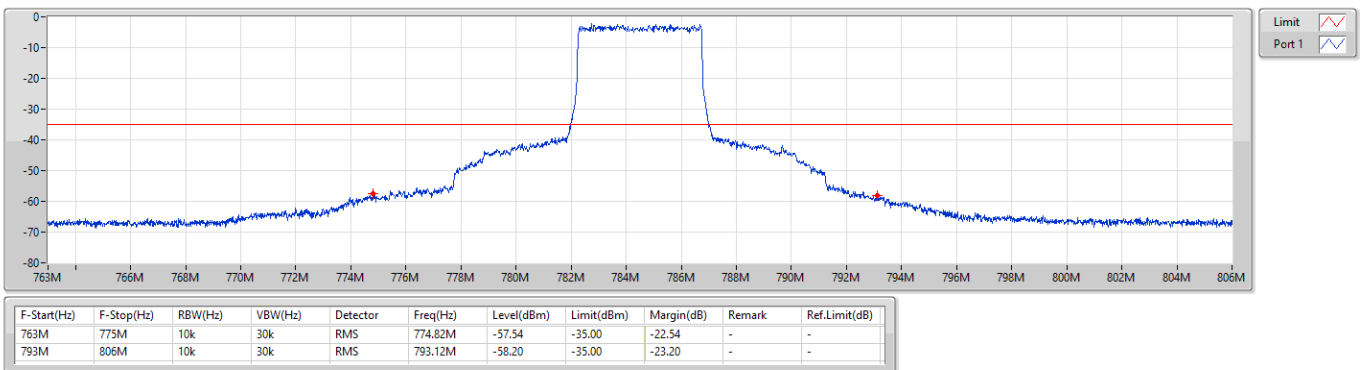
784.5MHz_QPSK_RB 25



Band 13_LTE_5MHz_Nss1,QPSK_1TX

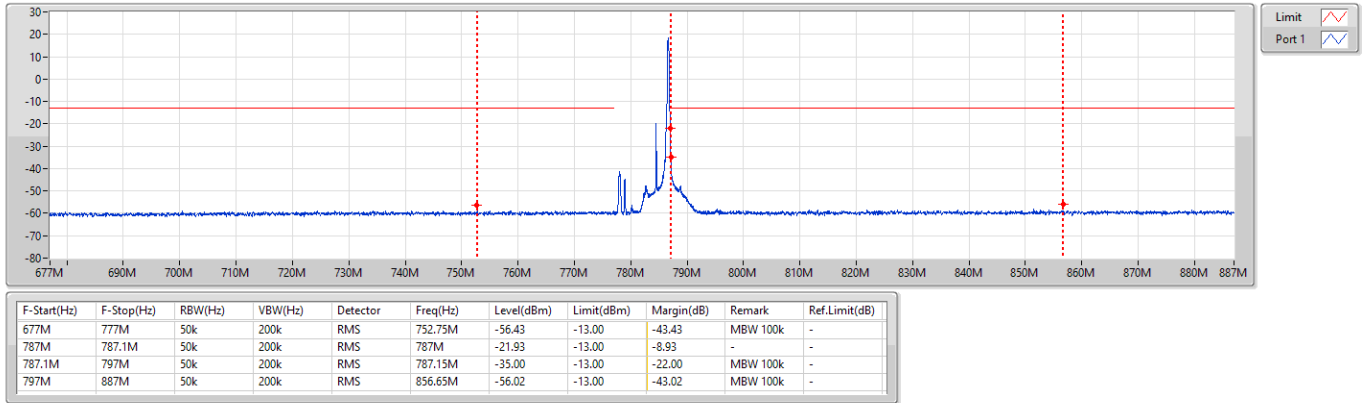
CSE-TX-Sum

784.5MHz_QPSK_RB 25



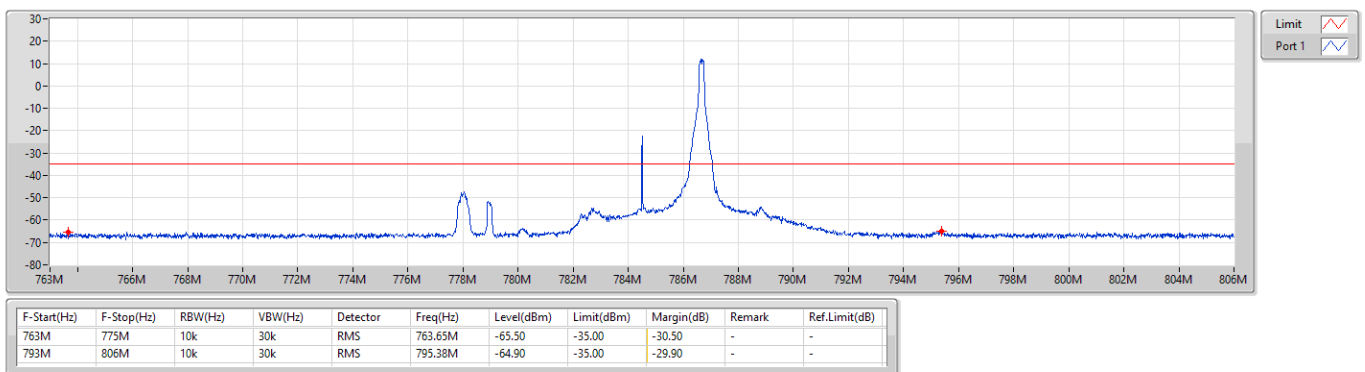
Band 13_LTE_5MHz_Nss1,QPSK_1TX
784.5MHz_QPSK_RB 1,#RB R

CSE-TX-Sum



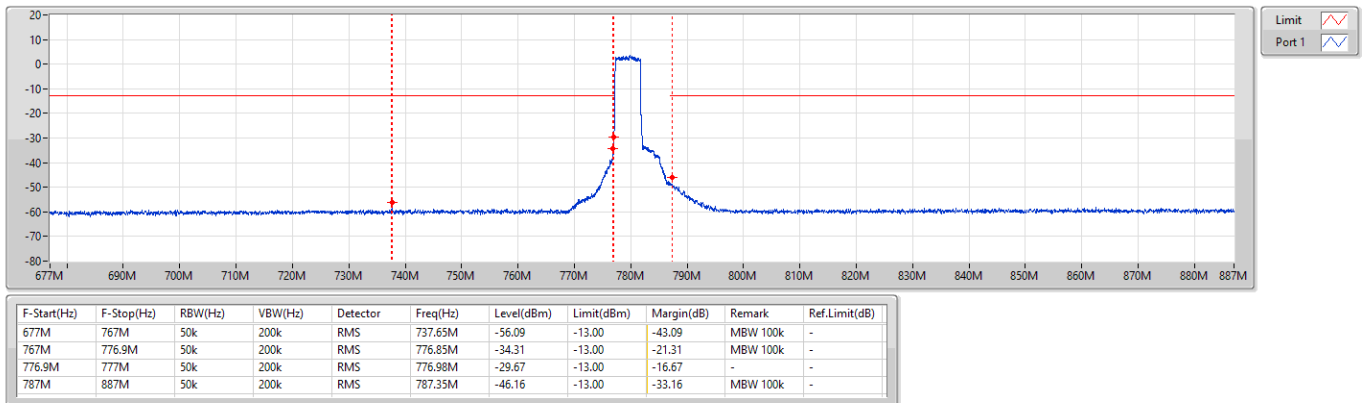
Band 13_LTE_5MHz_Nss1,QPSK_1TX
784.5MHz_QPSK_RB 1,#RB R

CSE-TX-Sum



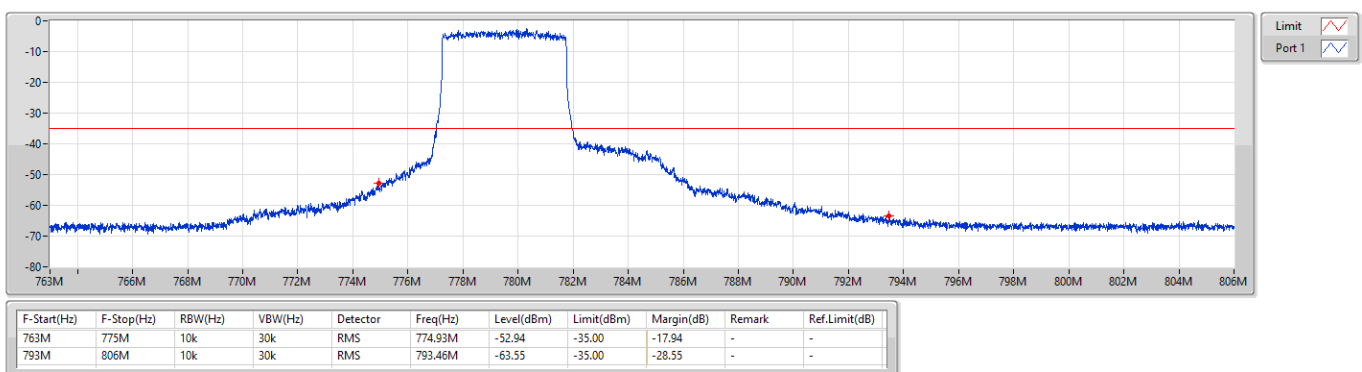
Band 13_LTE_5MHz_Nss1,16QAM_1TX
779.5MHz_16QAM_RB 25

CSE-TX-Sum



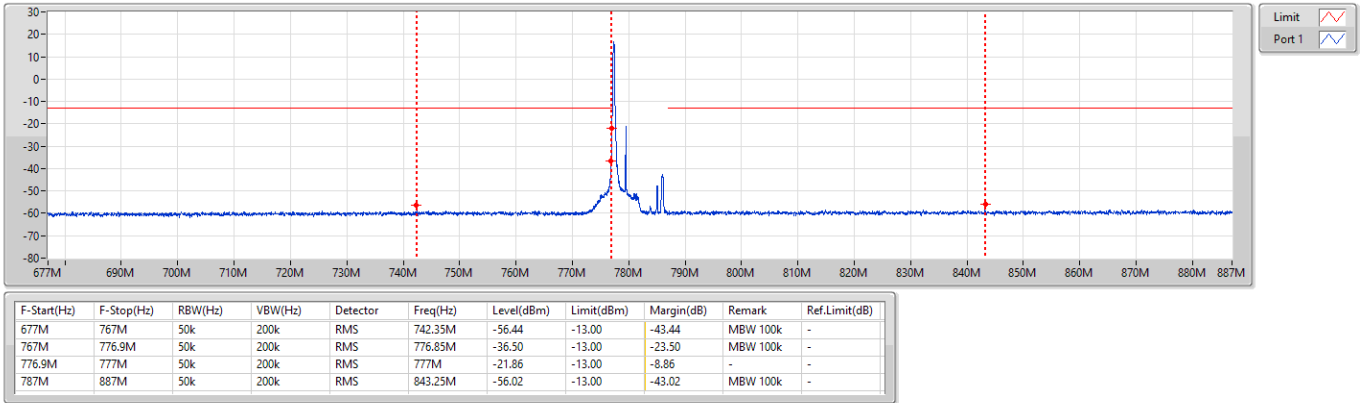
Band 13_LTE_5MHz_Nss1,16QAM_1TX
779.5MHz_16QAM_RB 25

CSE-TX-Sum



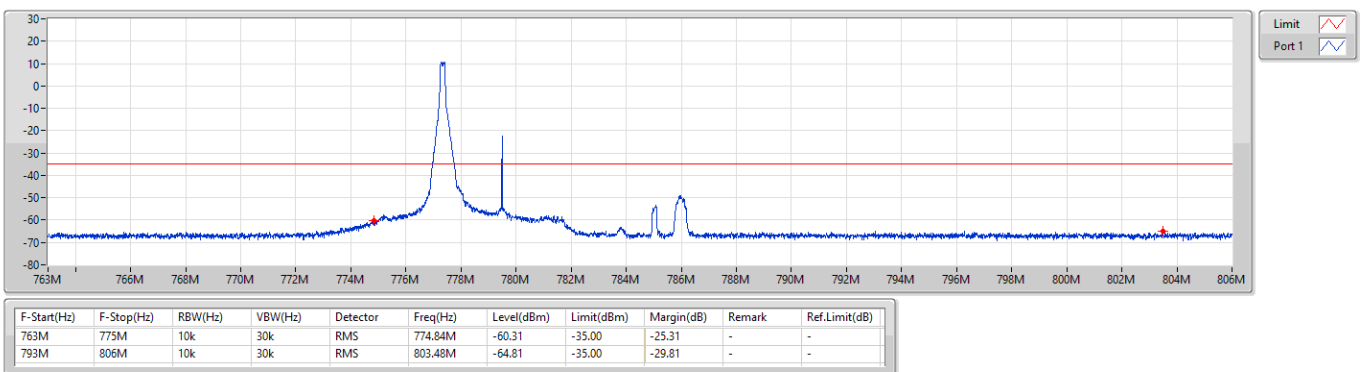
Band 13_LTE_5MHz_Nss1,16QAM_1TX
779.5MHz_16QAM_RB 1,#RB L

CSE-TX-Sum



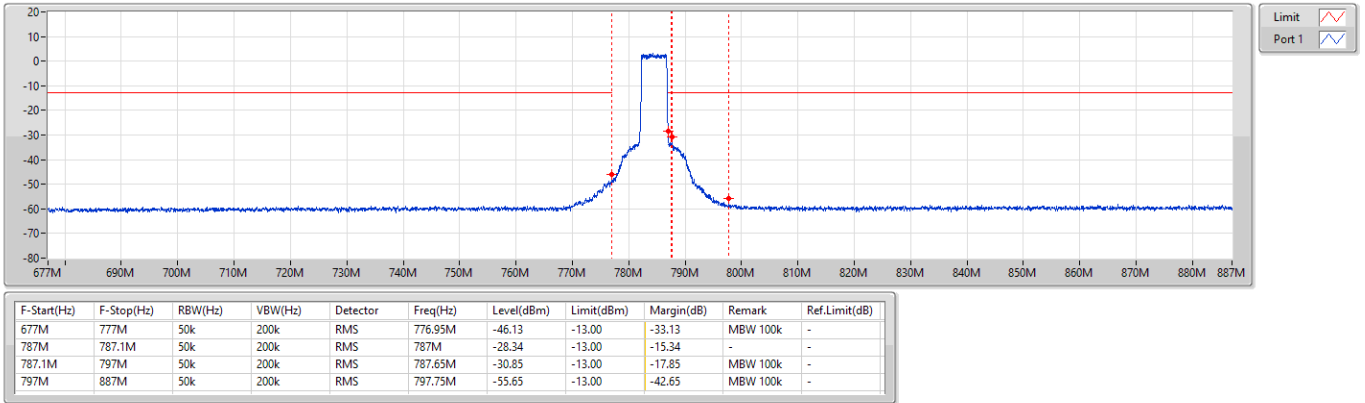
Band 13_LTE_5MHz_Nss1,16QAM_1TX
779.5MHz_16QAM_RB 1,#RB L

CSE-TX-Sum



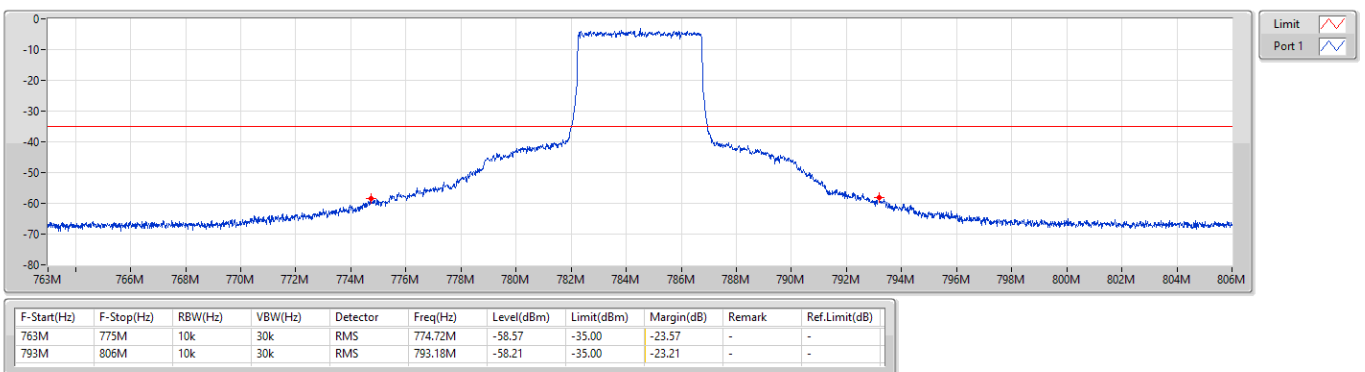
Band 13_LTE_5MHz_Nss1,16QAM_1TX 784.5MHz_16QAM_RB 25

CSE-TX-Sum



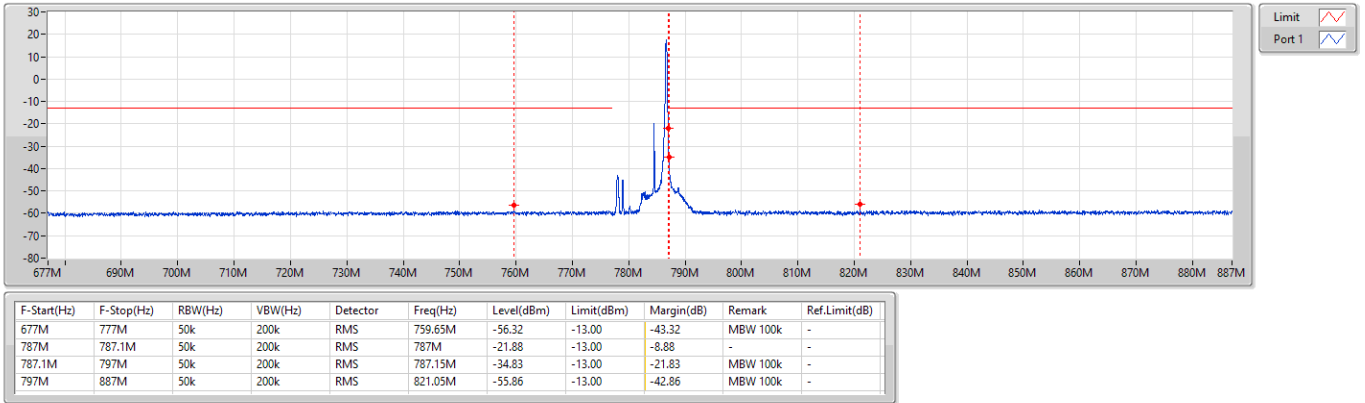
Band 13_LTE_5MHz_Nss1,16QAM_1TX 784.5MHz_16QAM_RB 25

CSE-TX-Sum



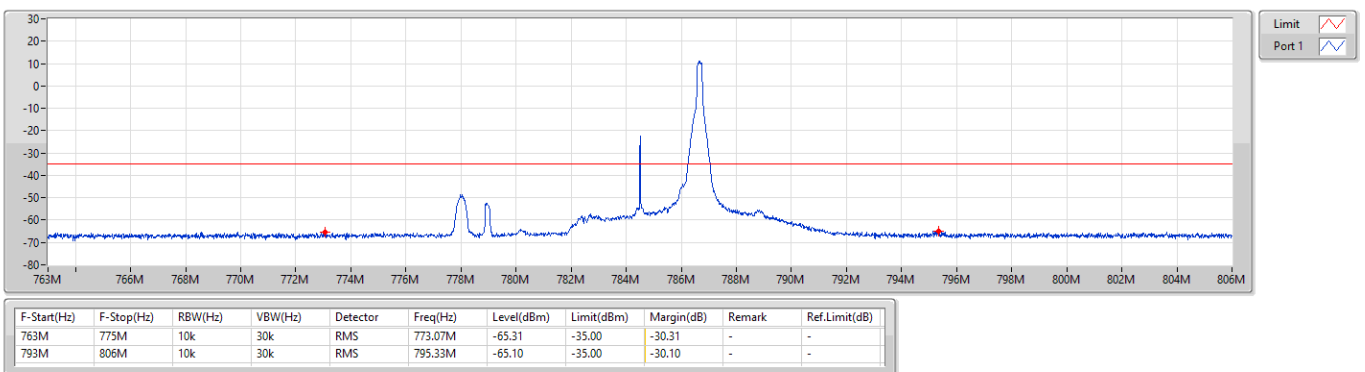
Band 13_LTE_5MHz_Nss1,16QAM_1TX
784.5MHz_16QAM_RB 1,#RB R

CSE-TX-Sum



Band 13_LTE_5MHz_Nss1,16QAM_1TX
784.5MHz_16QAM_RB 1,#RB R

CSE-TX-Sum



Summary

Mode	Max-NdB (Hz)	Max-OBW (Hz)	ITU-Code	Min-NdB (Hz)	Min-OBW (Hz)
Band 12	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	9.638M	8.933M	8M93G7D	9.638M	8.933M
LTE_10MHz_Nss1,16QAM_1TX	5.513M	4.873M	4M87W7D	5.513M	4.873M
LTE_5MHz_Nss1,QPSK_1TX	4.856M	4.46M	4M46G7D	4.856M	4.46M
LTE_5MHz_Nss1,16QAM_1TX	4.9M	4.454M	4M45W7D	4.9M	4.454M
LTE_3MHz_Nss1,QPSK_1TX	2.899M	2.68M	2M68G7D	2.899M	2.68M
LTE_3MHz_Nss1,16QAM_1TX	2.918M	2.684M	2M68W7D	2.918M	2.684M
LTE_1.4MHz_Nss1,QPSK_1TX	1.248M	1.09M	1M09G7D	1.248M	1.09M
LTE_1.4MHz_Nss1,16QAM_1TX	1.248M	1.083M	1M08W7D	1.248M	1.083M

Max-N dB = Maximum 26dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 26dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Port 1-NdB (Hz)	Port 1-OBW (Hz)	Limit (Hz)
Band 12_LTE_10MHz_Nss1_1TX	-	-	-	-
707.5MHz_QPSK_RB 50	Pass	9.638M	8.933M	Inf
707.5MHz_16QAM_RB 27	Pass	5.513M	4.873M	Inf
Band 12_LTE_5MHz_Nss1_1TX	-	-	-	-
707.5MHz_QPSK_RB 25	Pass	4.856M	4.46M	Inf
707.5MHz_16QAM_RB 25	Pass	4.9M	4.454M	Inf
Band 12_LTE_3MHz_Nss1_1TX	-	-	-	-
707.5MHz_QPSK_RB 15	Pass	2.899M	2.68M	Inf
707.5MHz_16QAM_RB 15	Pass	2.918M	2.684M	Inf
Band 12_LTE_1.4MHz_Nss1_1TX	-	-	-	-
707.5MHz_QPSK_RB 6	Pass	1.248M	1.09M	Inf
707.5MHz_16QAM_RB 6	Pass	1.248M	1.083M	Inf

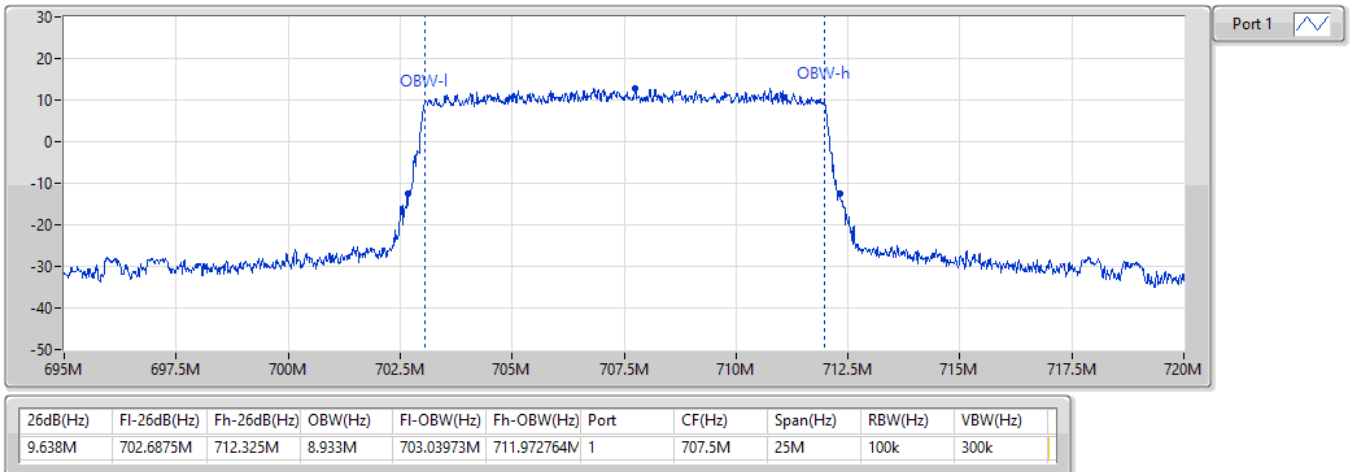
Port X-N dB = Port X 26dB down bandwidth;

Port X-OBW = Port X 99% occupied bandwidth

Band 12_LTE_10MHz_Nss1,QPSK_1TX

EBW

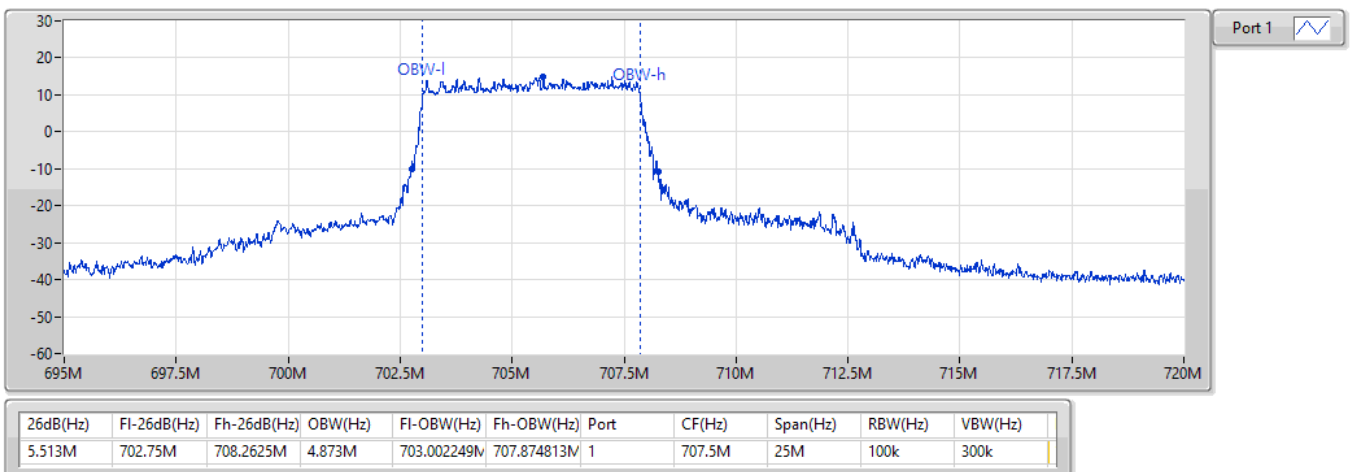
707.5MHz_QPSK_RB 50



Band 12_LTE_10MHz_Nss1,16QAM_1TX

EBW

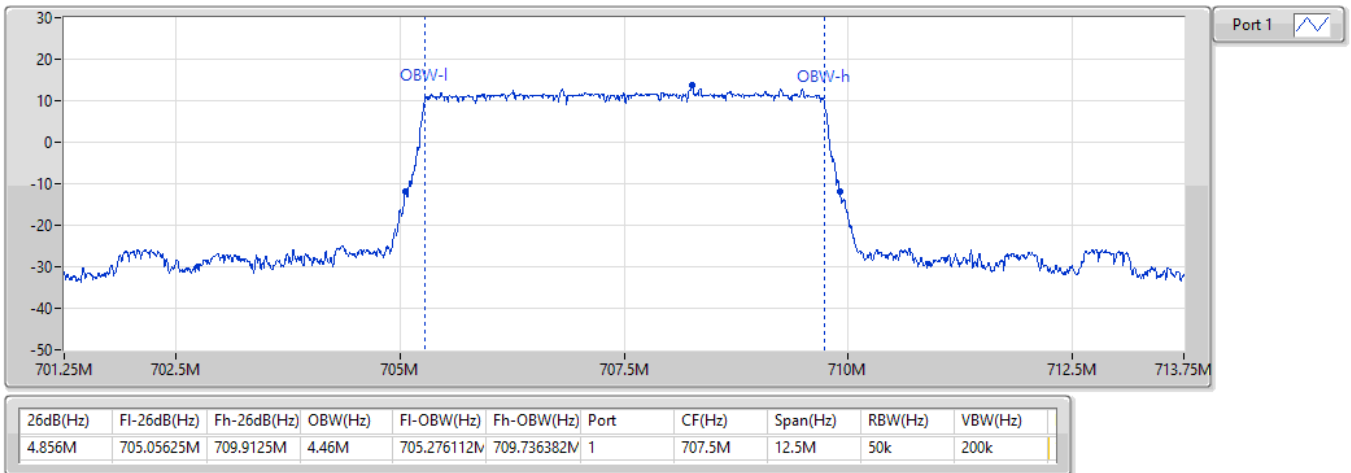
707.5MHz_16QAM_RB 27



Band 12_LTE_5MHz_Nss1,QPSK_1TX

EBW

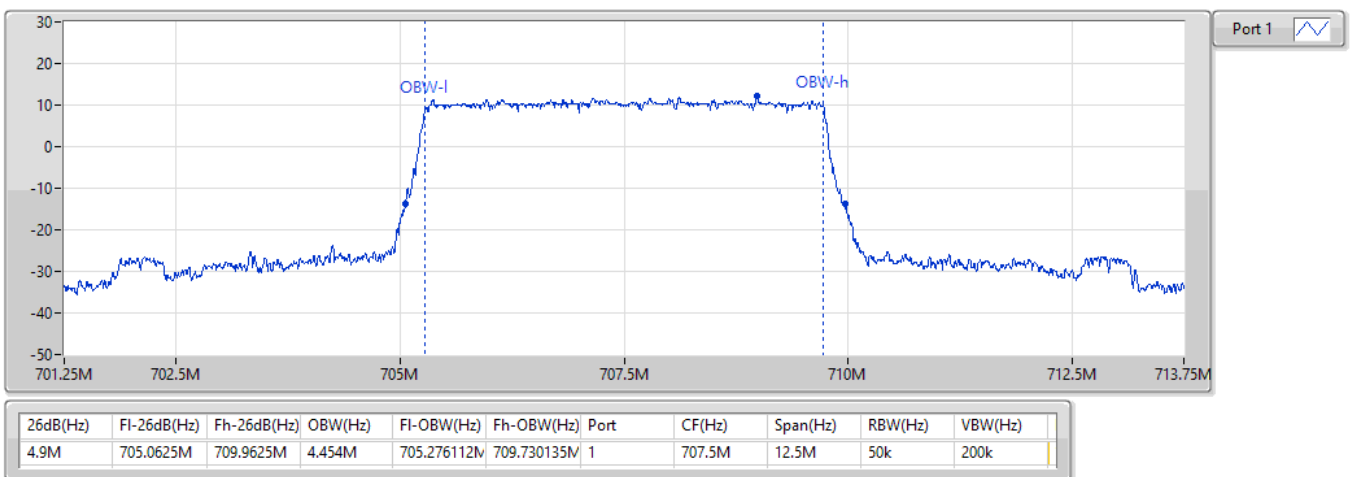
707.5MHz_QPSK_RB 25



Band 12_LTE_5MHz_Nss1,16QAM_1TX

EBW

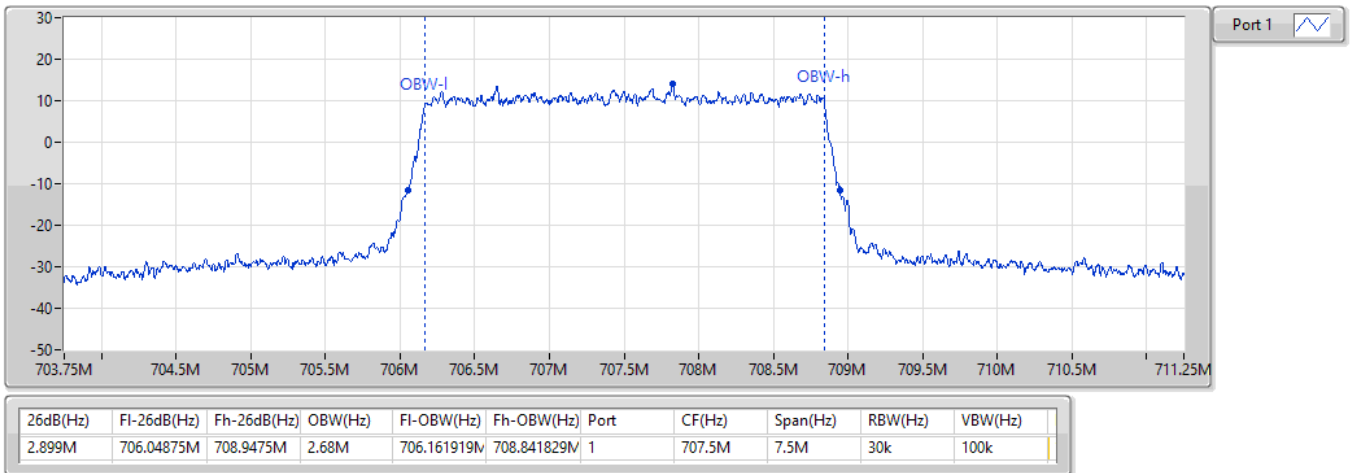
707.5MHz_16QAM_RB 25



Band 12_LTE_3MHz_Nss1,QPSK_1TX

EBW

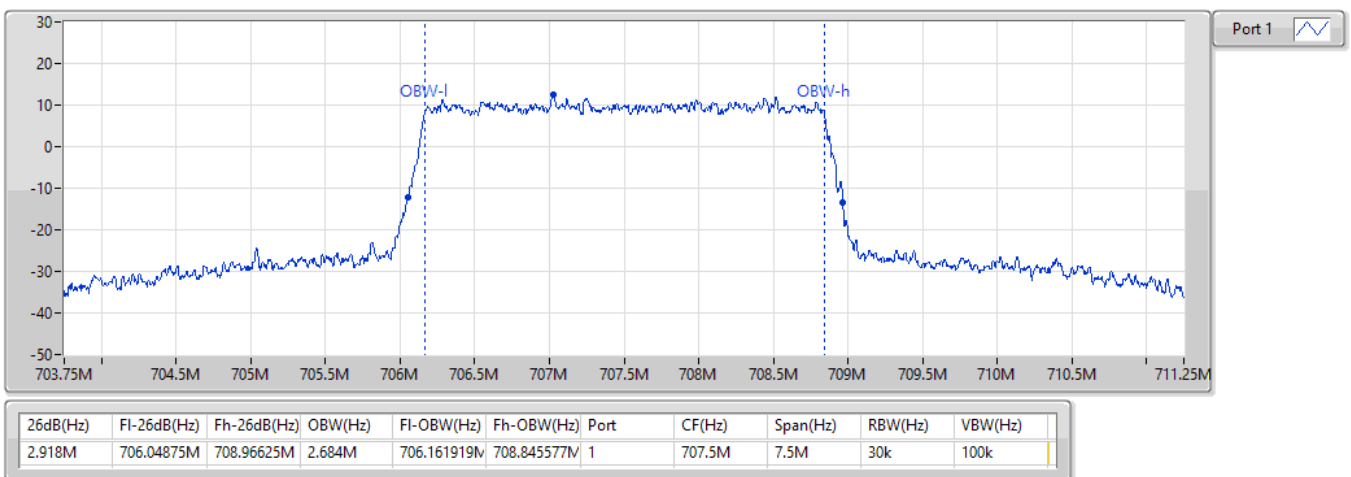
707.5MHz_QPSK_RB 15



Band 12_LTE_3MHz_Nss1,16QAM_1TX

EBW

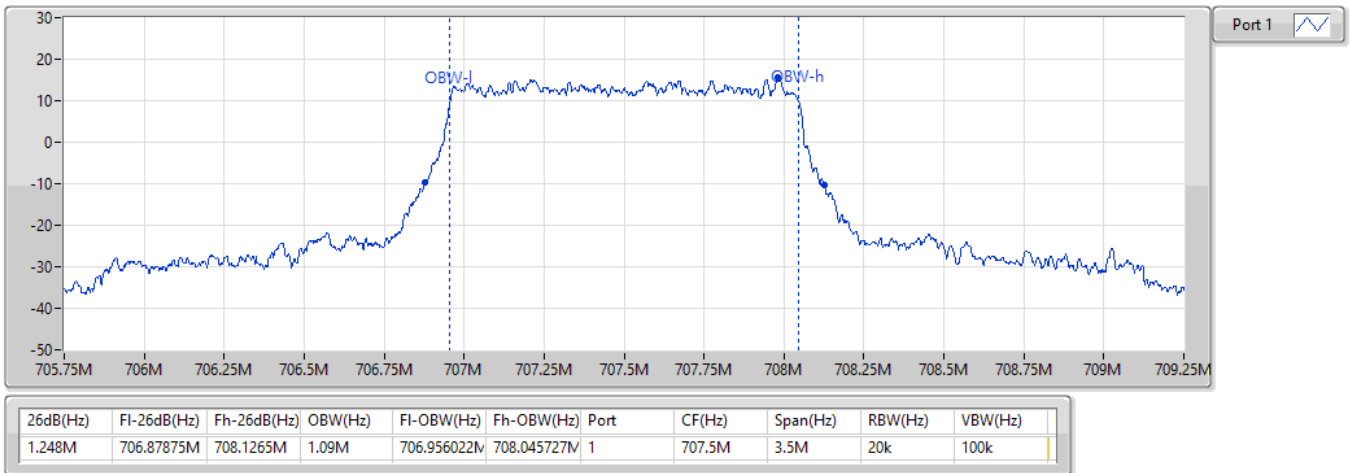
707.5MHz_16QAM_RB 15



Band 12_LTE_1.4MHz_Nss1,QPSK_1TX

EBW

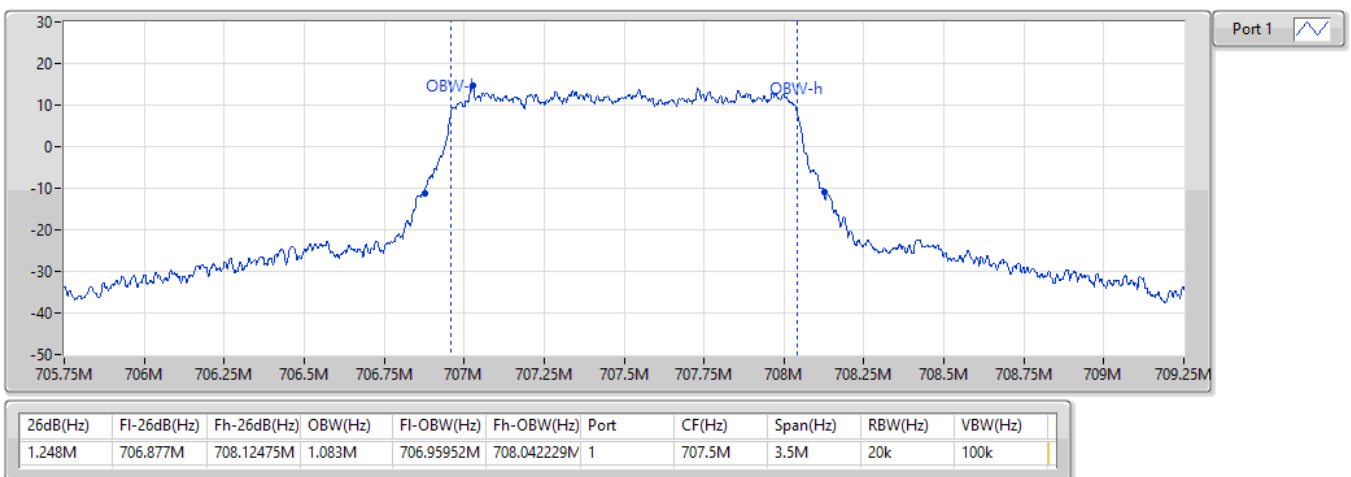
707.5MHz_QPSK_RB 6



Band 12_LTE_1.4MHz_Nss1,16QAM_1TX

EBW

707.5MHz_16QAM_RB 6



Summary

Mode	Max-NdB (Hz)	Max-OBW (Hz)	ITU-Code	Min-NdB (Hz)	Min-OBW (Hz)
Band 13	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	9.588M	8.946M	8M95G7D	9.588M	8.946M
LTE_10MHz_Nss1,16QAM_1TX	5.625M	4.86M	4M86W7D	5.625M	4.86M
LTE_5MHz_Nss1,QPSK_1TX	4.931M	4.46M	4M46G7D	4.931M	4.46M
LTE_5MHz_Nss1,16QAM_1TX	4.881M	4.467M	4M47W7D	4.881M	4.467M

Max-N dB = Maximum 26dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 26dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

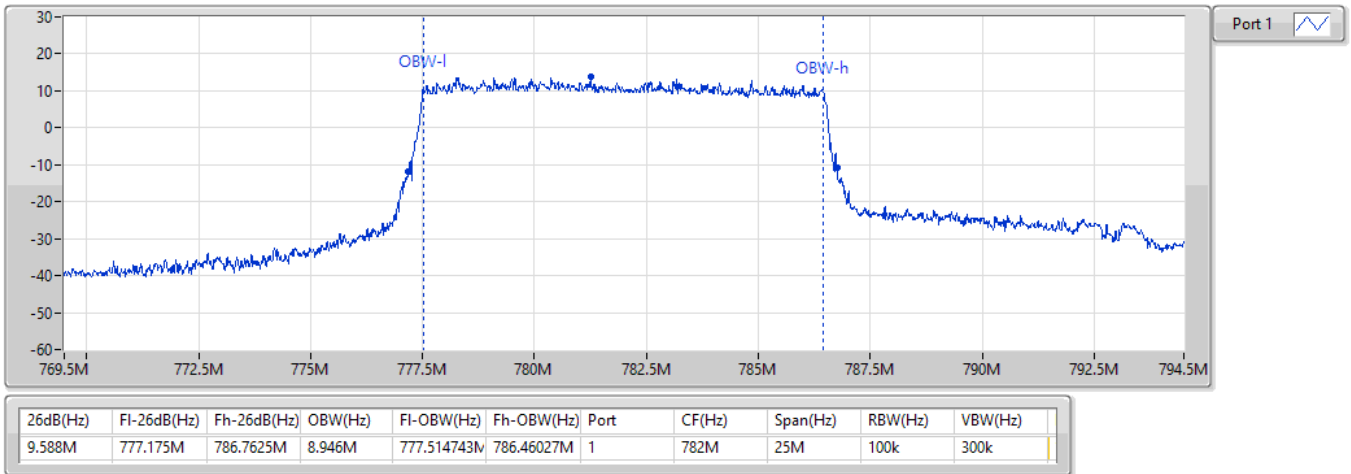
Mode	Result	Port 1-NdB (Hz)	Port 1-OBW (Hz)	Limit (Hz)
Band 13_LTE_10MHz_Nss1_1TX	-	-	-	-
782MHz_QPSK_RB 50	Pass	9.588M	8.946M	Inf
782MHz_16QAM_RB 27	Pass	5.625M	4.86M	Inf
Band 13_LTE_5MHz_Nss1_1TX	-	-	-	-
782MHz_QPSK_RB 25	Pass	4.931M	4.46M	Inf
782MHz_16QAM_RB 25	Pass	4.881M	4.467M	Inf

Port X-N dB = Port X 26dB down bandwidth;

Port X-OBW = Port X 99% occupied bandwidth

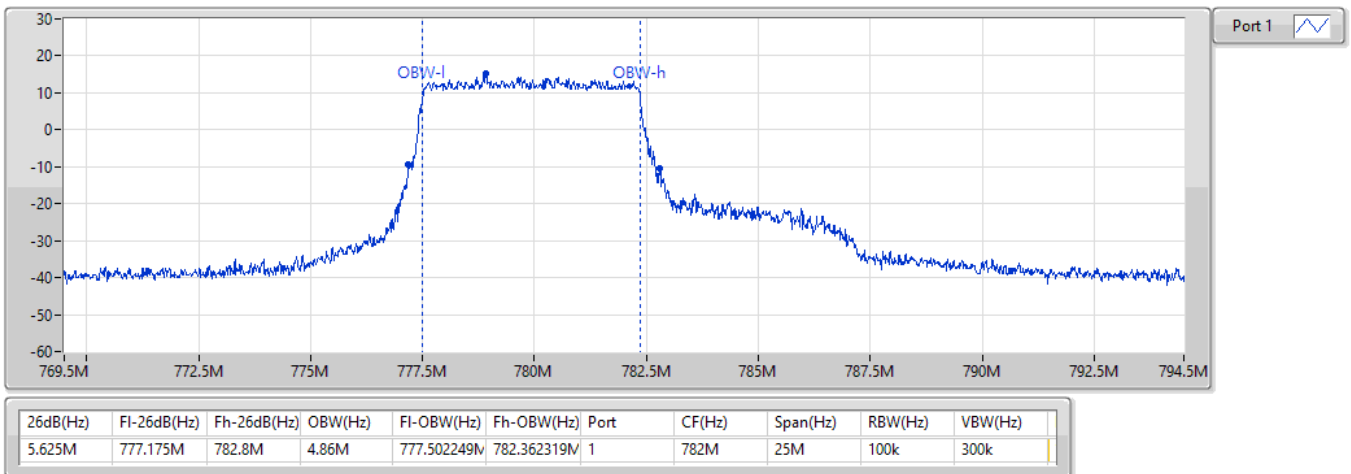
Band 13_LTE_10MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 50

EBW



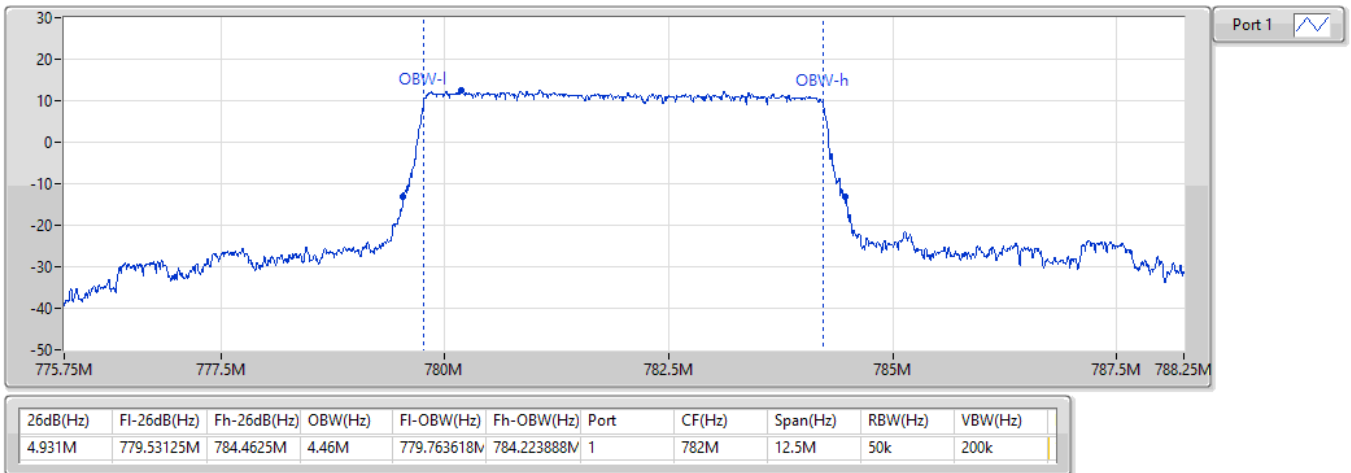
Band 13_LTE_10MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 27

EBW



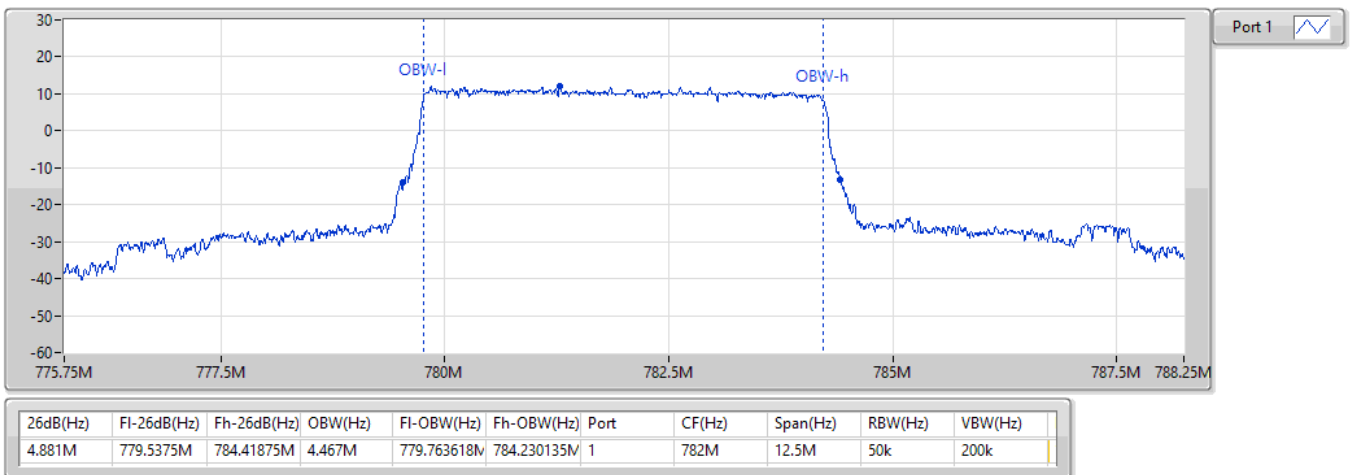
Band 13_LTE_5MHz_Nss1,QPSK_1TX
782MHz_QPSK_RB 25

EBW



Band 13_LTE_5MHz_Nss1,16QAM_1TX
782MHz_16QAM_RB 25

EBW



**Summary**

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 12	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	Pass	707.5	13.00	5.10	1
LTE_10MHz_Nss1,16QAM_1TX	Pass	707.5	13.00	5.83	1

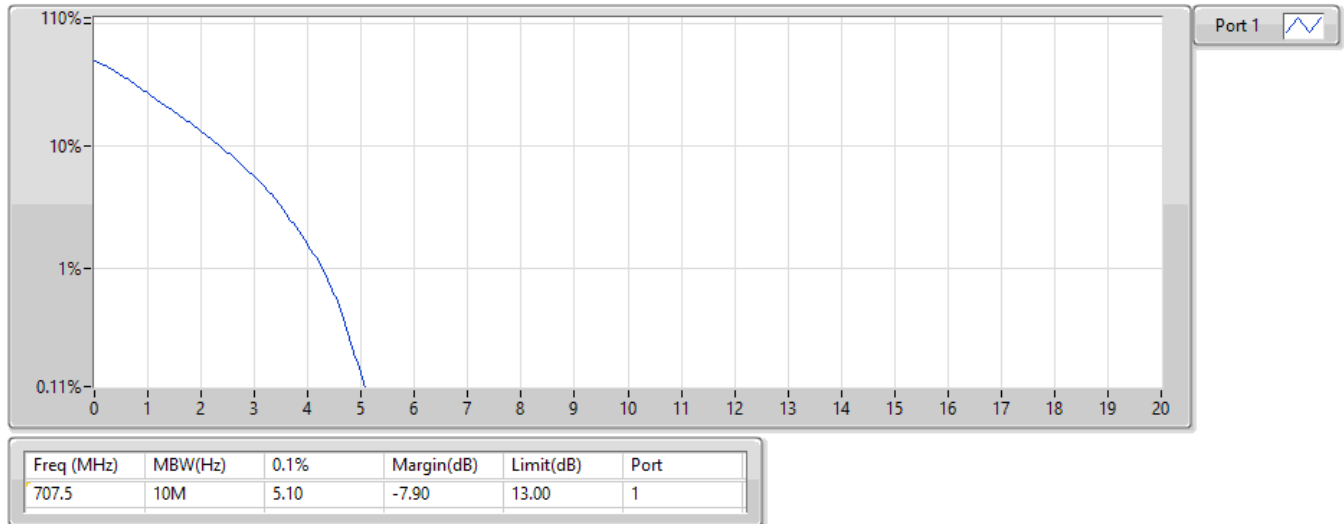
Result

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 12_LTE_10MHz_Nss1_1TX	-	-	-	-	-
707.5MHz_QPSK_RB 50	Pass	707.5	13.00	5.10	1
707.5MHz_16QAM_RB 27	Pass	707.5	13.00	5.83	1

Band 12_LTE_10MHz_Nss1,QPSK_1TX

PAPR

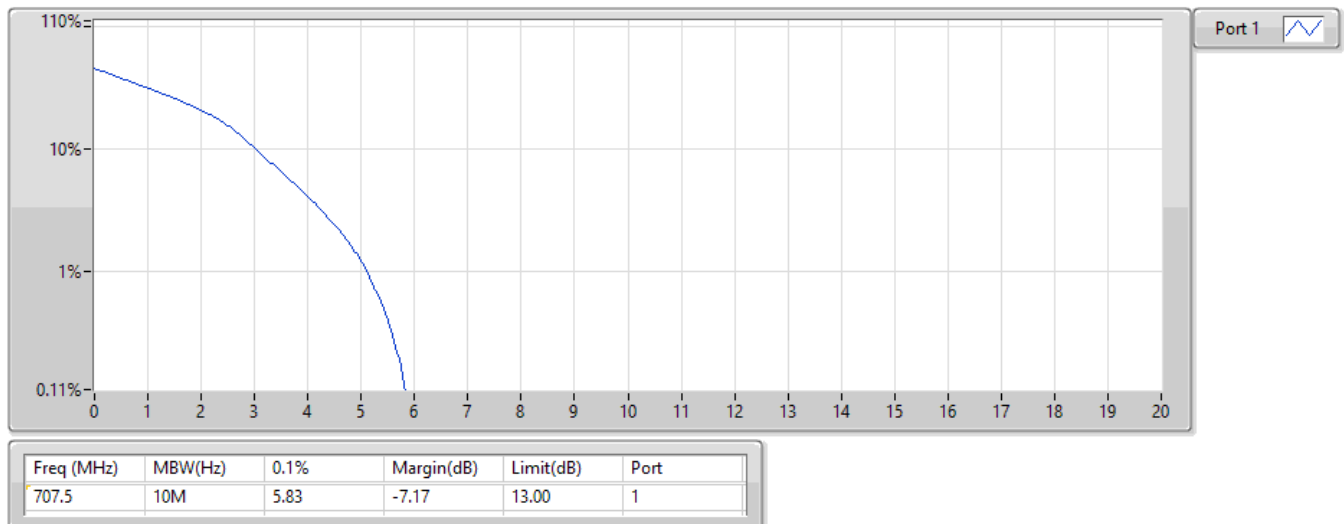
707.5MHz_QPSK_RB 50



Band 12_LTE_10MHz_Nss1,16QAM_1TX

PAPR

707.5MHz_16QAM_RB 27





Summary

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 13	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	Pass	782	13.00	5.07	1
LTE_10MHz_Nss1,16QAM_1TX	Pass	782	13.00	5.62	1

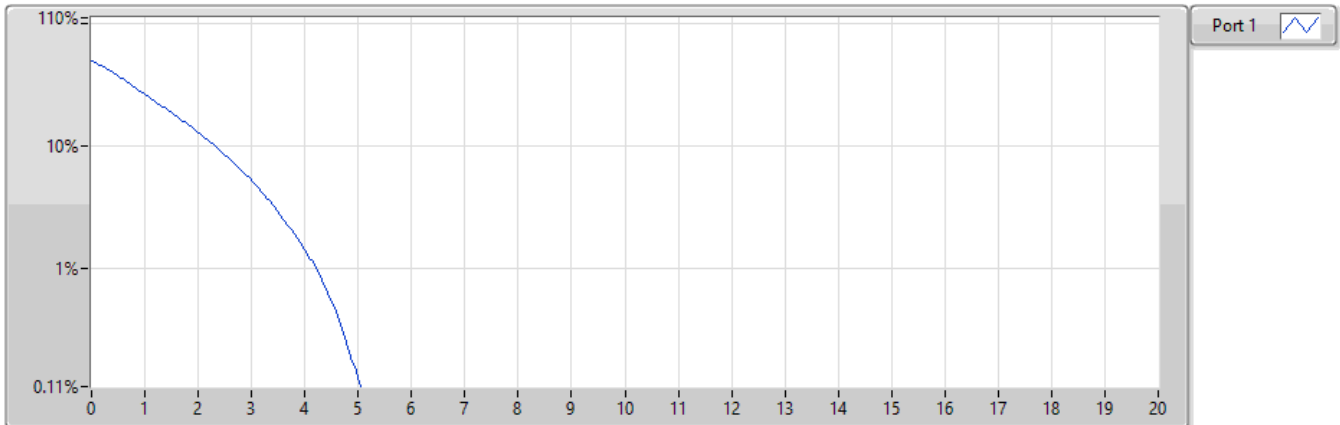
Result

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 13_LTE_10MHz_Nss1_1TX	-	-	-	-	-
782MHz_QPSK_RB 50	Pass	782	13.00	5.07	1
782MHz_16QAM_RB 27	Pass	782	13.00	5.62	1

Band 13_LTE_10MHz_Nss1,QPSK_1TX

PAPR

782MHz_QPSK_RB 50

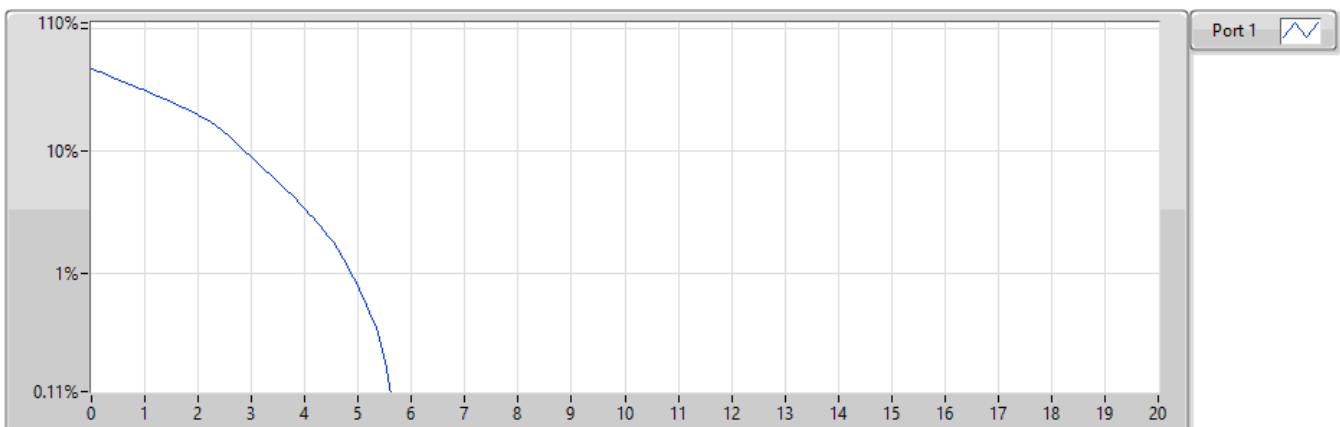


Freq (MHz)	MBW(Hz)	0.1%	Margin(dB)	Limit(dB)	Port
782	10M	5.07	-7.93	13.00	1

Band 13_LTE_10MHz_Nss1,16QAM_1TX

PAPR

782MHz_16QAM_RB 27



Freq (MHz)	MBW(Hz)	0.1%	Margin(dB)	Limit(dB)	Port
782	10M	5.62	-7.38	13.00	1

LTE Band 12, CB: 10MHz				
Temperature (°C)	704MHz		711MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.009	699.502243	-0.007	715.510240
T20°C V _{min}	-0.006	699.502245	-0.010	715.510238
T50°C V _{nom}	-0.020	699.502235	-0.015	715.510234
T40°C V _{nom}	-0.011	699.502241	-0.014	715.510235
T30°C V _{nom}	-0.007	699.502244	-0.008	715.510239
T20°C V _{nom}	-0.007	699.502244	-0.004	715.510242
T10°C V _{nom}	-0.009	699.502243	-0.008	715.510239
T0°C V _{nom}	-0.007	699.502244	-0.010	715.510238
T-10°C V _{nom}	-0.011	699.502241	-0.011	715.510237
T-20°C V _{nom}	-0.010	699.502242	-0.010	715.510238
T-30°C V _{nom}	-0.016	699.502238	-0.015	715.510234
Limit		>699MHz		<716MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	

LTE Band 12, CB: 5MHz				
Temperature (°C)	701.5MHz		713.5MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.007	699.276107	-0.004	715.736379
T20°C V _{min}	-0.004	699.276109	-0.006	715.736378
T50°C V _{nom}	-0.013	699.276103	-0.017	715.736370
T40°C V _{nom}	-0.010	699.276105	-0.010	715.736375
T30°C V _{nom}	-0.006	699.276108	-0.007	715.736377
T20°C V _{nom}	-0.011	699.276104	-0.006	715.736378
T10°C V _{nom}	-0.007	699.276107	-0.004	715.736379
T0°C V _{nom}	-0.010	699.276105	-0.014	715.736372
T-10°C V _{nom}	-0.011	699.276104	-0.017	715.736370
T-20°C V _{nom}	-0.010	699.276105	-0.010	715.736375
T-30°C V _{nom}	-0.016	699.276101	-0.017	715.736370
Limit		>699MHz		<716MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	

LTE Band 12, CB: 3MHz				
Temperature (°C)	700.5MHz		714.5MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.006	699.161915	-0.007	715.845572
T20°C V _{min}	-0.007	699.161914	-0.007	715.845572
T50°C V _{nom}	-0.013	699.161910	-0.018	715.845564
T40°C V _{nom}	-0.013	699.161910	-0.008	715.845571
T30°C V _{nom}	-0.006	699.161915	-0.004	715.845574
T20°C V _{nom}	-0.004	699.161916	-0.006	715.845573
T10°C V _{nom}	-0.006	699.161915	-0.010	715.845570
T0°C V _{nom}	-0.010	699.161912	-0.013	715.845568
T-10°C V _{nom}	-0.013	699.161910	-0.011	715.845569
T-20°C V _{nom}	-0.010	699.161912	-0.011	715.845569
T-30°C V _{nom}	-0.013	699.161910	-0.015	715.845566
Limit		>699MHz		<716MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	

LTE Band 12, CB: 1.4MHz				
Temperature (°C)	699.7MHz		715.3MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.009	699.156016	-0.010	715.845720
T20°C V _{min}	-0.010	699.156015	-0.006	715.845723
T50°C V _{nom}	-0.014	699.156012	-0.017	715.845715
T40°C V _{nom}	-0.009	699.156016	-0.015	715.845716
T30°C V _{nom}	-0.007	699.156017	-0.008	715.845721
T20°C V _{nom}	-0.006	699.156018	-0.008	715.845721
T10°C V _{nom}	-0.004	699.156019	-0.007	715.845722
T0°C V _{nom}	-0.009	699.156016	-0.011	715.845719
T-10°C V _{nom}	-0.017	699.156010	-0.017	715.845715
T-20°C V _{nom}	-0.013	699.156013	-0.014	715.845717
T-30°C V _{nom}	-0.014	699.156012	-0.014	715.845717
Limit		>699MHz		<716MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	

LTE Band 13, CB: 10MHz				
Temperature (°C)	782MHz		782MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.005	777.502245	-0.006	786.497746
T20°C V _{min}	-0.005	777.502245	-0.006	786.497746
T50°C V _{nom}	-0.018	777.502235	-0.013	786.497741
T40°C V _{nom}	-0.013	777.502239	-0.008	786.497745
T30°C V _{nom}	-0.009	777.502242	-0.012	786.497742
T20°C V _{nom}	-0.008	777.502243	-0.006	786.497746
T10°C V _{nom}	-0.009	777.502242	-0.009	786.497744
T0°C V _{nom}	-0.005	777.502245	-0.005	786.497747
T-10°C V _{nom}	-0.009	777.502242	-0.010	786.497743
T-20°C V _{nom}	-0.012	777.502240	-0.015	786.497739
T-30°C V _{nom}	-0.015	777.502237	-0.013	786.497741
Limit		>777MHz		<787MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	

LTE Band 13, CB: 5MHz				
Temperature (°C)	779.5MHz		784.5MHz	
	Frequency Drift (ppm)	F _L (MHz)	Frequency Drift (ppm)	F _H (MHz)
T20°C V _{max}	-0.004	777.263615	-0.008	786.730129
T20°C V _{min}	-0.009	777.263611	-0.005	786.730131
T50°C V _{nom}	-0.015	777.263606	-0.015	786.730123
T40°C V _{nom}	-0.014	777.263607	-0.008	786.730129
T30°C V _{nom}	-0.009	777.263611	-0.011	786.730126
T20°C V _{nom}	-0.010	777.263610	-0.005	786.730131
T10°C V _{nom}	-0.009	777.263611	-0.008	786.730129
T0°C V _{nom}	-0.006	777.263613	-0.008	786.730129
T-10°C V _{nom}	-0.013	777.263608	-0.014	786.730124
T-20°C V _{nom}	-0.009	777.263611	-0.011	786.730126
T-30°C V _{nom}	-0.014	777.263607	-0.014	786.730124
Limit		>777MHz		<787MHz
V _{nom} [V]: 120	V _{max} [V]: 138		V _{min} [V]: 102	
T _{nom} [°C]: 20	T _{max} [°C]: 50		T _{min} [°C]: -30	