

FCC Test Report

FCC ID : 2A7G3XS5G0304
Equipment : 5G DATA CARD
Model No. : XS5G03-GB0
(refer to item 1.1.1 for more details)
Brand Name : XSquare
Applicant : XSquare Communications Corporation
Address : NO.6 INNOVATION ROAD II, SCIENCE PARK,
HSINCHU 30076, TAIWAN, R.O.C
Standard : 47 CFR FCC Part 90 Subpart R
Received Date : Jun. 13, 2022
Tested Date : Jun. 28 ~ Aug. 15, 2022

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:

Approved by:


Along Chen / Assistant Manager


Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
FG261301P90R	Rev. 01	Initial issue	Sep. 23, 2022

Summary of Test Results

FCC Rules	Test Items	Measured	Result
2.1046 90.542(a)(7)	Effective Radiated Power	Power[dBm]: 18.72	Pass
2.1053 90.543(e)(3)	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 90.543(e)(3)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 90.543(e)(2)(3)	Band Edge	Meet the requirement of limit	Pass
2.1049	Occupied Bandwidth	Meet the requirement of limit	Pass
2.1053 90.543(f)	Radiated Spurious Emission in the 1559-1610MHz band	Meet the requirement of limit	Pass
2.1051 90.210(n)	Emission Mask	Meet the requirement of limit	Pass
2.1055 90.539(e)	Frequency Stability	Meet the requirement of limit	Pass
-	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 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
XSquare	XS5G03-GB0	5G DATA CARD	(SA+NSA)+GPS
	XS5G04-GB0		(SA Only)+GPS XS5G03-GB0 base band IC disable NSA by SW
✦ The above models, model XS5G03-GB0 was selected as a representative one for the final test and only its data was recorded in this report.			

1.1.2 Specification of the Equipment under Test (EUT)

Operating Frequency	LTE Band 14 Channel Bandwidth: 5MHz: 790.5 MHz ~ 795.5 MHz Channel Bandwidth: 10MHz: 793 MHz
Modulation Type	QPSK, 16QAM (Uplink) QPSK, 16QAM, 64QAM (Downlink)

1.1.3 Antenna Details

Brand	Model	Type	Connector	Gain (dBi)
Anjie	AELQ2S-B066L	Dipole	UFL	-0.7

1.1.4 Power Supply Type of Equipment under Test (EUT)

Supply Voltage	3.3Vdc from host		
Operational Voltage	<input checked="" type="checkbox"/> Vnom (3.3 V)	<input checked="" type="checkbox"/> Vmax (3.63V)	<input checked="" type="checkbox"/> Vmin (3.135V)
Operational Climatic	<input checked="" type="checkbox"/> Tnom (20°C)	<input checked="" type="checkbox"/> Tmax (70°C)	<input checked="" type="checkbox"/> Tmin (-30°C)

1.1.5 Accessories

N/A

1.1.6 Maximum Conducted Power and Emission Designator

LTE Band 14			
Channel Bandwidth	Modulation	Maximum Conducted Power (W)	Emission Designator
5 MHz	QPSK	0.144	4M47G7D
5 MHz	16QAM	0.120	4M45W7D
5 MHz	64QAM	0.096	4M47W7D
10 MHz	QPSK	0.141	8M96G7D
10 MHz	16QAM	0.118	8M90W7D
10 MHz	64QAM	0.096	8M92W7D

1.1.7 Operating Channel List

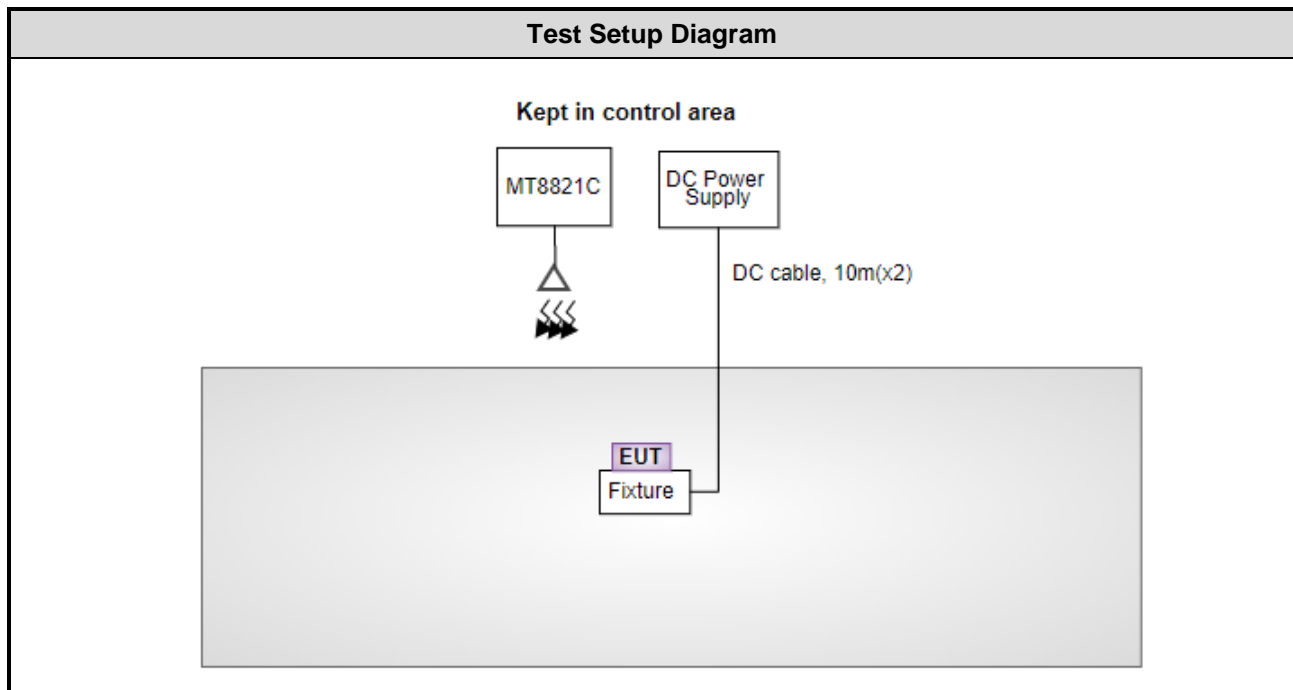
LTE Band 14		
Channel Bandwidth (MHz)	Channel	Frequency (MHz)
5	23305	790.5
5	23330	793
5	23355	795.5
10	23330	793

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	DC Power Supply	GWINSTEK	GPC-60300	---	---
2	Notebook	DELL	Latitude 5400	DoC	---
3	Fixture	---	---	---	Provided by applicant.

Note: The support notebook was disconnected from EUT and was removed from test table after sending command from notebook to control EUT to transmit continuously.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Aug. 08 ~ Aug. 15, 2022				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 15, 2022	Mar. 14, 2023
Spectrum Analyzer	R&S	FSV40	101498	Nov. 29, 2021	Nov. 28, 2022
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 08, 2021	Nov. 07, 2022
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jun. 28, 2022	Jun. 27, 2023
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 03, 2021	Dec. 02, 2022
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2021	Nov. 03, 2022
Preamplifier	EMC	EMC02325	980225	Jun. 28, 2022	Jun. 27, 2023
Preamplifier	EMC	EMC118A45SE	980898	Jul. 16, 2022	Jul. 15, 2023
Preamplifier	EMC	EMC184045B	980192	Jul. 08, 2022	Jul. 07, 2023
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 05, 2021	Oct. 04, 2022
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 05, 2021	Oct. 04, 2022
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 05, 2021	Oct. 04, 2022
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 05, 2021	Oct. 04, 2022
RF Cable	EMC	EMC104-35M-35M- 8000	210920	Oct. 05, 2021	Oct. 04, 2022
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 05, 2021	Oct. 04, 2022
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Radio Communication Analyzer	Anritsu	MT8821C	6262149999	Sep. 16, 2021	Sep. 15, 2022
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Jun. 28 ~ Aug. 12, 2022				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101910	Apr. 18, 2022	Apr. 17, 2023
Spectrum Analyzer	keysight	N9020A	MY53420894	Oct. 19, 2021	Oct. 18, 2022
Power Meter	Anritsu	ML2495A	1241002	Nov. 07, 2021	Nov. 06, 2022
Power Sensor	Anritsu	MA2411B	1207366	Nov. 07, 2021	Nov. 06, 2022
DC POWER SOURCE	GW INSTEK	GPC-6030D	GES855395	Nov. 08, 2021	Nov. 07, 2022
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Jun. 22, 2022	Jun. 21, 2023
Measurement Software	Sporton	SENSE-FCC_2G-4G	V5.10.5	NA	NA
Radio Communication Analyzer	Anritsu	MT8821C	6262149999	Sep. 16, 2021	Sep. 15, 2022
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 90 Subpart R
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
Radiated emission ≤ 1 GHz	± 3.41 dB
Radiated emission > 1 GHz	± 4.59 dB
Temperature	± 0.4 °C

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
Radiated Emissions	03CH01-WS	24-25°C / 61-64%	Roger Lu
RF Conducted	TH01-WS	24-26°C / 63-65%	Aska Huang

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISSED#: 10807A
- CAB identifier: TW2732

2.2 Testing Facility

Test Laboratory	International Certification Corp.
Test Site	03CH01-WS, TH01-WS
Address of Test Site	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

2.3 The Worst Test Modes and Channel Details

Test items	Band	Bandwidth(MHz)						Modulation			RB#			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	14	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
peak-to-Average Ratio	14	-	-		v	-	-	v	v	v			v		v	
26dB and 99% Bandwidth	14	-	-	v	v	-	-	v	v	v			v		v	
Conducted Band Edge	14	-	-	v	v	-	-	v	v	v	v		v	v		v
Emission Mask	14	-	-	v	v	-	-	v	v	v	v		v	v	v	v
Conducted Spurious Emission	14	-	-	v	v	-	-	v			v			v	v	v
Frequency Stability	14	-	-		v	-	-	v	v	v			v		v	
ERP	14	-	-	v	v	-	-	v	v	v	Max. power					
Radiated Spurious Emission	14	Worst Case												v	v	v
Remark	1. "v": this configuration is for testing. 2. “-” :This bandwidth is not supported. 3. Frequency range of radiated measurement is from 30 MHz to 10th harmonic of fundamental frequency. 4. All spurious emissions below 1000 MHz are more than 20 dB below the limit. 5. 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.															

3 Test Results

3.1 Effective Radiated Power

3.1.1 Limit of Effective Radiated Power

Control stations and mobile stations transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 30 watts ERP

Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP

3.1.2 Test Procedures

For E.R.P measurement

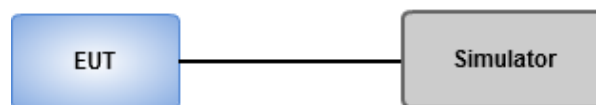
ERP can be calculated by below formula from KDB 412172 D01.

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 Result of Effective Radiated Power and Conducted Power (dBm)

Refer to Appendix A.

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB. equal to -13dBm.

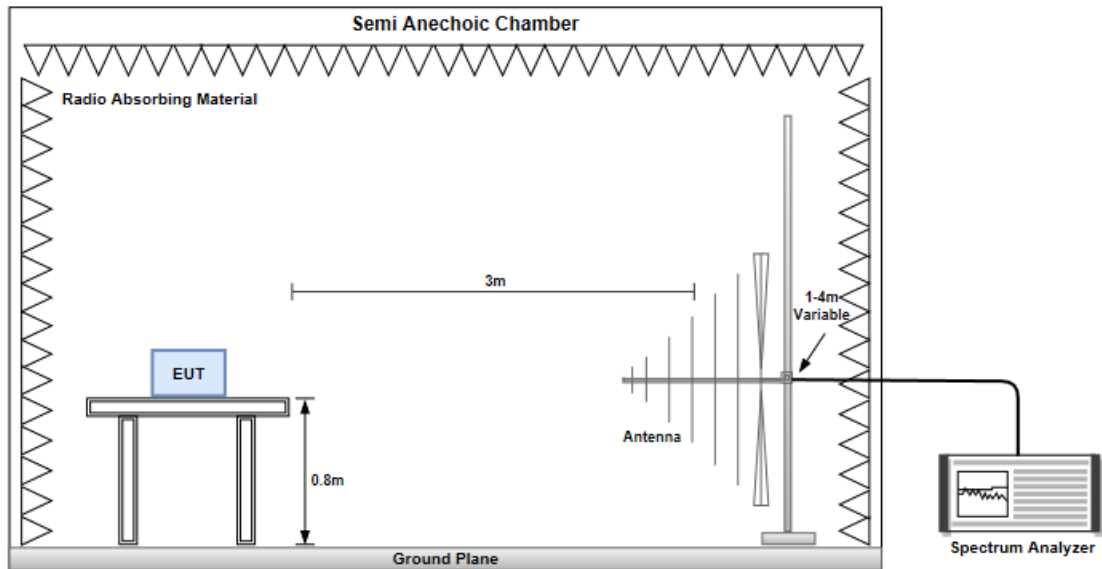
For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth

3.2.2 Test Procedures

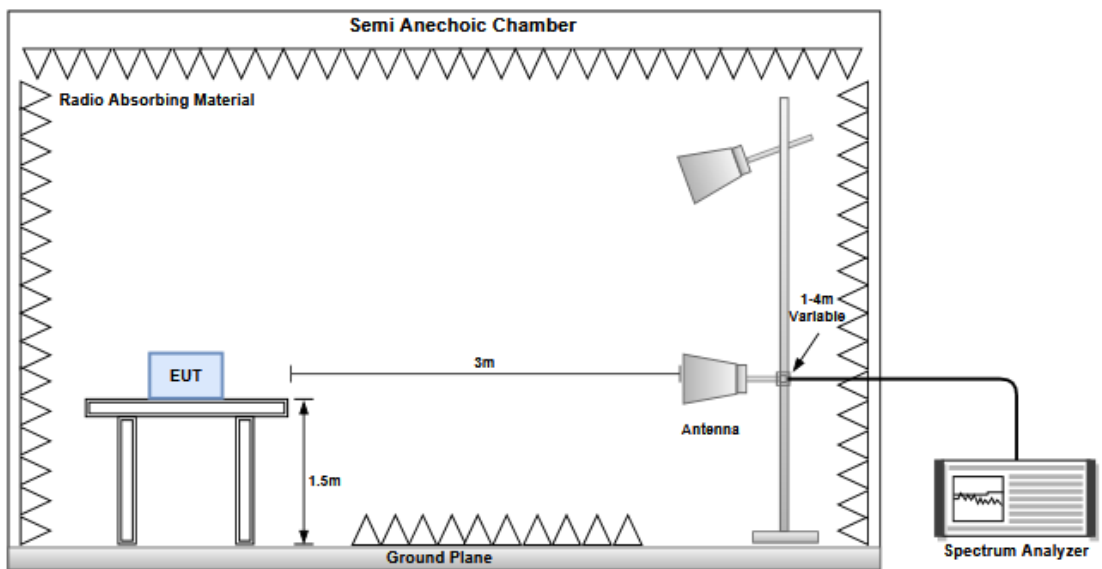
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360° . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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 Result of Radiated Emissions below 1GHz

Refer to Appendix B.

3.3 Out of Band Emissions& Band Edge

3.3.1 Limit of Out of Band Emissions& Band Edge

For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769-775 MHz and 799-805 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) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

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 = 1 MHz, VBW = 3MHz, detector = RMS, sweep time = auto.
4. Record the max trace value and capture the test plot of each sub frequency band.

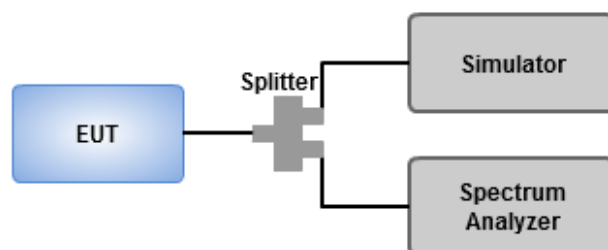
Band edge

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.

769 ~ 775 MHz / 799 ~ 805 MHz

1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 750 MHz ~ 850 MHz.
3. Set RBW = 10 kHz, VBW = 30 kHz, detector = rms, sweep time = auto.

3.3.3 Test Setup



3.3.4 Test Result of Out of Band Emissions & Band Edge

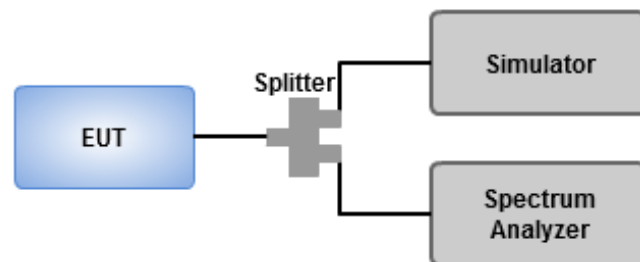
Refer to Appendix C.1, C.2.

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 Result of Occupied and 26 dB Bandwidth

Refer to Appendix D.

3.5 Peak to Average Power Ratio

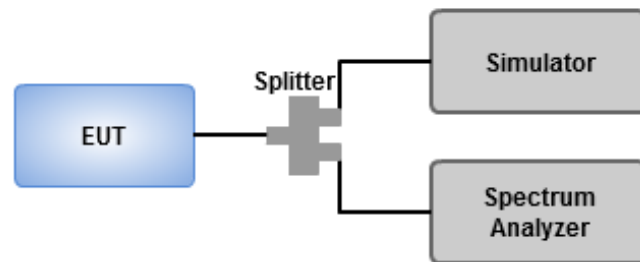
3.5.1 Limit of Peak to Average Power Ratio

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 Result of Peak to Average Power Ratio

Refer to Appendix E.

3.6 Frequency Stability

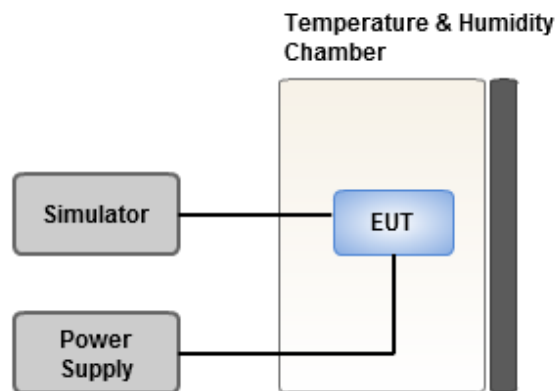
3.6.1 Limit of Frequency Stability

The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million.

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 Result of Frequency Stability

Refer to Appendix F.

3.7 Emission Mask

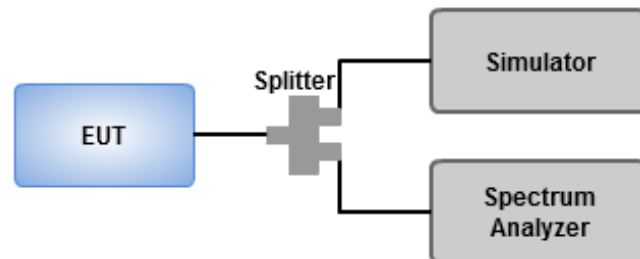
3.7.1 Limit of Emission Mask

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB

3.7.2 Test Procedures

1. Set RBW=100 kHz, VBW=300kHz, detector=RMS, Sweep time = Auto.
2. Set EUT to transmit modulation signal to spectrum analyzer and confirm that the signal complies the limit or not.
3. Record the max trace value and capture the test plot.

3.7.3 Test Setup



3.7.4 Test Result of Emission Mask

Refer to Appendix G.

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 Corp (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 District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan District, Tao Yuan
City 333, Taiwan, R.O.C..

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==



Summary

Part90R LTE Band 14 Maximum Average Power [dBm](GT-LC= -0.7 dB)								
BW (MHz)	Modulation	RB Size	RB Offset	Lowest	Middle	Highest		
Channel					23330		ERP (dBm)	ERP (W)
Frequency					793			
10	QPSK	1	0		21.5		18.65	0.0733
10	QPSK	1	49		21.46			
10	QPSK	50	0		20.91			
10	16QAM	1	0		20.73		17.88	0.0614
10	64QAM	1	0		19.81		16.96	0.0497
Channel				23305	23330	23355	ERP	ERP
Frequency				790.5	793	795.5	(dBm)	(W)
5	QPSK	1	0	21.57	21.5	21.52	18.72	0.0745
5	QPSK	1	24	21.53	21.47	21.46		
5	QPSK	25	0	20.96	20.96	20.97		
5	16QAM	1	0	20.75	20.79	20.73	17.94	0.0622
5	64QAM	1	0	19.71	19.62	19.82	16.97	0.0498
Limit	ERP < 3 W			Result			Pass	

Mode	LTE Band 14, QPSK, CB:5 MHz, 1 RB, Channel: 23305						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2364.9	H	-68.36	-13	-55.36	-73.23	-71.41	5.2
3153.2	H	-66.49	-13	-53.49	-73.12	-70.25	5.91
3941.5	H	-65.8	-13	-52.8	-73.28	-69.91	6.26
2364.9	V	-68.87	-13	-55.87	-73.53	-71.92	5.2
3153.2	V	-66.57	-13	-53.57	-73.19	-70.33	5.91
3941.5	V	-65.96	-13	-52.96	-73.44	-70.07	6.26

Mode	LTE Band 14, QPSK, CB:5 MHz, 1 RB, Channel: 23330						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2372.4	H	-68.55	-13	-55.55	-73.44	-71.64	5.24
3163.2	H	-66.55	-13	-53.55	-73.22	-70.32	5.92
3954	H	-65.78	-13	-52.78	-73.26	-69.88	6.25
2372.4	V	-68.95	-13	-55.95	-73.6	-72.04	5.24
3163.2	V	-66.6	-13	-53.6	-73.26	-70.37	5.92
3954	V	-65.9	-13	-52.9	-73.38	-70	6.25

Mode	LTE Band 14, QPSK, CB:5 MHz, 1 RB, Channel: 23355						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2379.9	H	-68.58	-13	-55.58	-73.47	-71.71	5.28
3173.2	H	-66.52	-13	-53.52	-73.22	-70.3	5.93
3966.5	H	-66.1	-13	-53.1	-73.58	-70.19	6.24
2379.9	V	-68.97	-13	-55.97	-73.6	-72.1	5.28
3173.2	V	-66.54	-13	-53.54	-73.23	-70.32	5.93
3966.5	V	-66	-13	-53	-73.47	-70.09	6.24

NOTE: ERP = S.G power value + correction factor – 2.15 dBi

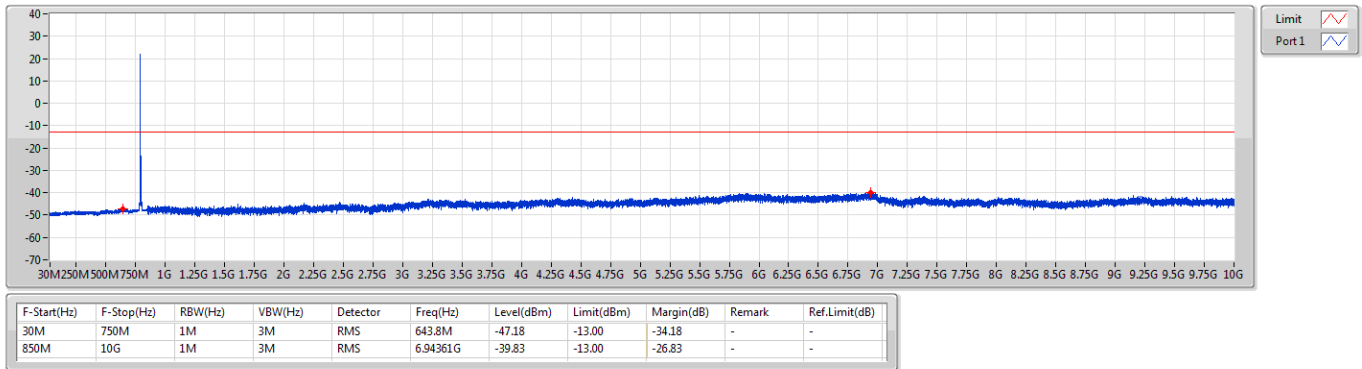
**Summary**

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Remark	Ref.Limit (dB)
Band 14	-	-	-	-	-	-	-	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	Pass	850M	10G	1M	3M	RMS	6.94361G	-39.83	-13.00	-26.83	-	-
LTE_5MHz_Nss1,QPSK_1TX	Pass	850M	10G	1M	3M	RMS	6.97593G	-39.64	-13.00	-26.64	-	-

Band 14_LTE_10MHz_Nss1,QPSK_1TX

CSE-TX-Sum

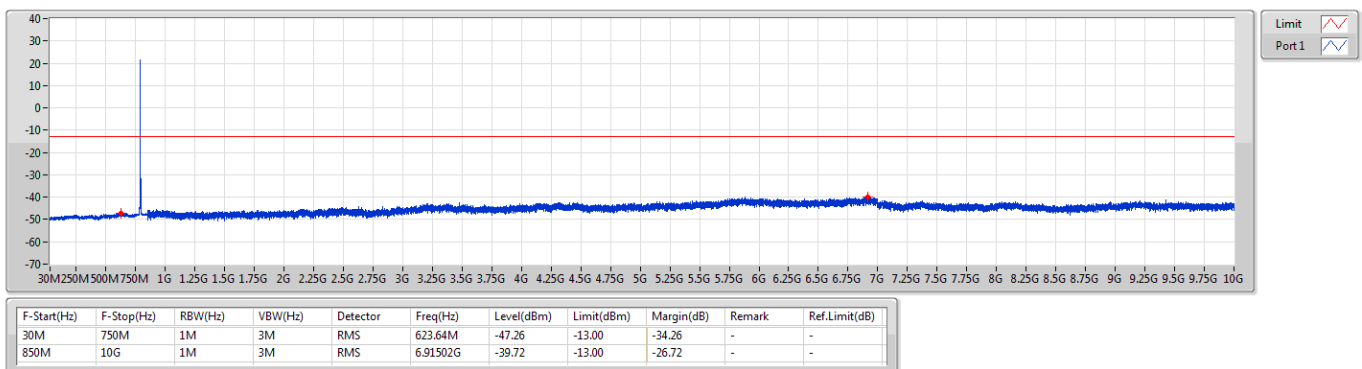
793MHz_QPSK_RB 1



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

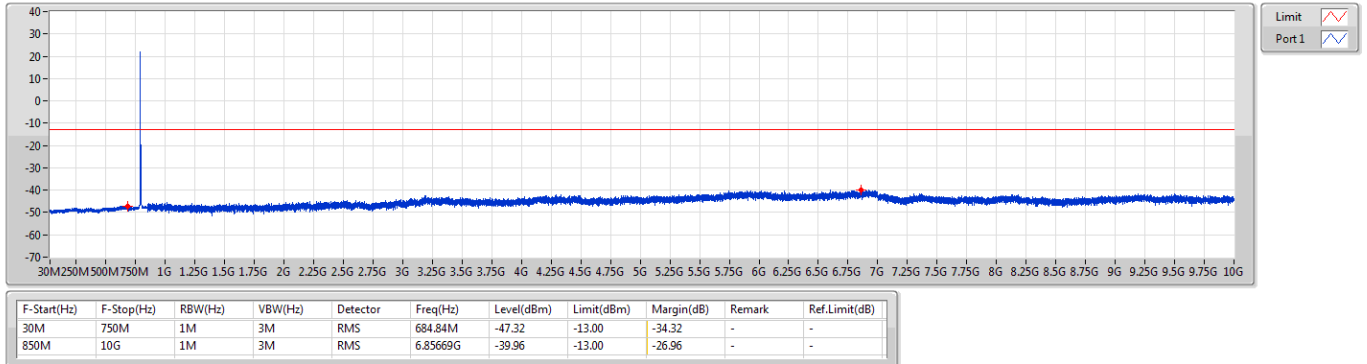
790.5MHz_QPSK_RB 1



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

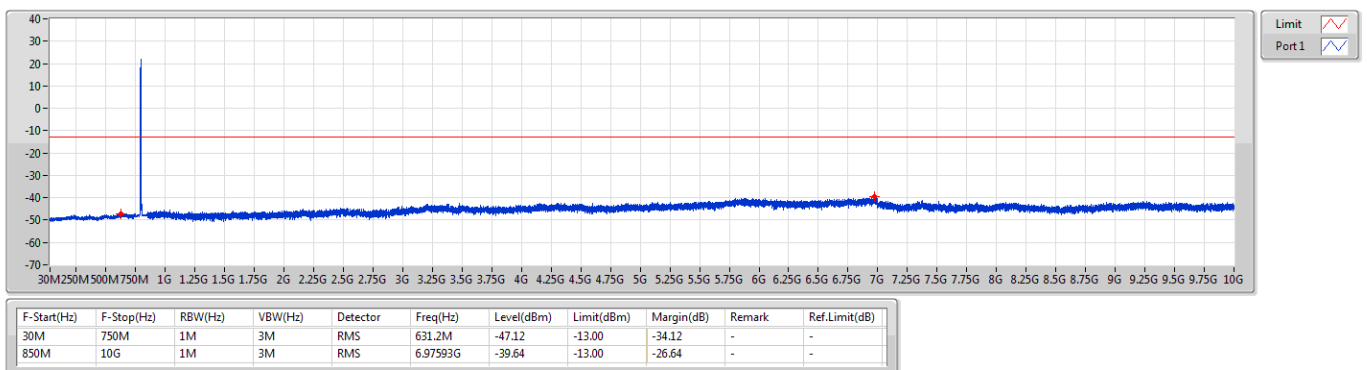
793MHz_QPSK_RB 1



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

795.5MHz_QPSK_RB 1



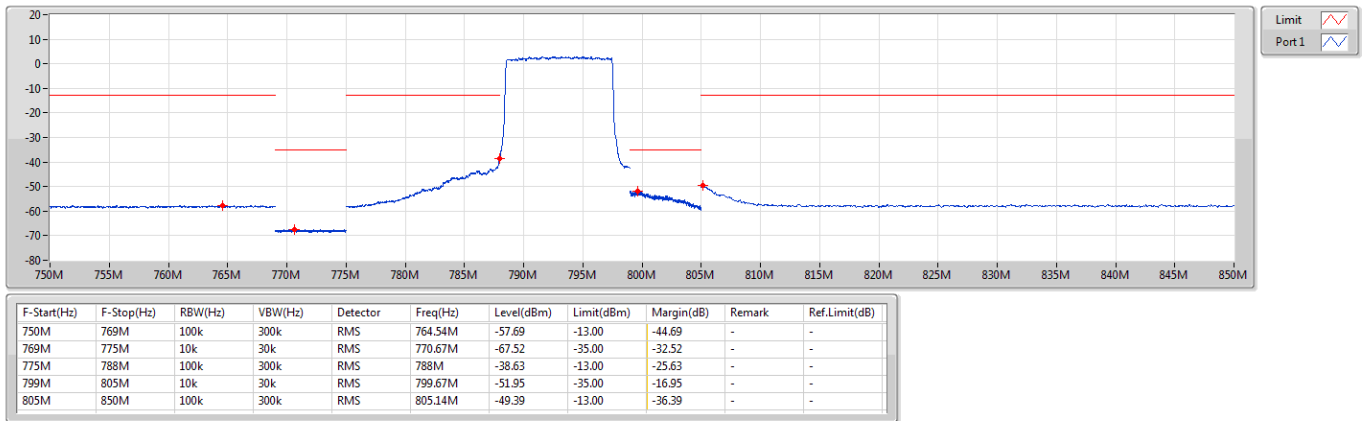
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Remark	Ref.Limit (dB)
Band 14	-	-	-	-	-	-	-	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	Pass	775M	788M	100k	300k	RMS	788M	-23.59	-13.00	-10.59	-	-
LTE_10MHz_Nss1,16QAM_1TX	Pass	775M	788M	100k	300k	RMS	788M	-23.26	-13.00	-10.26	-	-
LTE_10MHz_Nss1,64QAM_1TX	Pass	775M	788M	100k	300k	RMS	788M	-23.93	-13.00	-10.93	-	-
LTE_5MHz_Nss1,QPSK_1TX	Pass	775M	788M	100k	300k	RMS	788M	-18.66	-13.00	-5.66	-	-
LTE_5MHz_Nss1,16QAM_1TX	Pass	775M	788M	100k	300k	RMS	788M	-16.96	-13.00	-3.96	-	-
LTE_5MHz_Nss1,64QAM_1TX	Pass	775M	788M	100k	300k	RMS	788M	-18.09	-13.00	-5.09	-	-



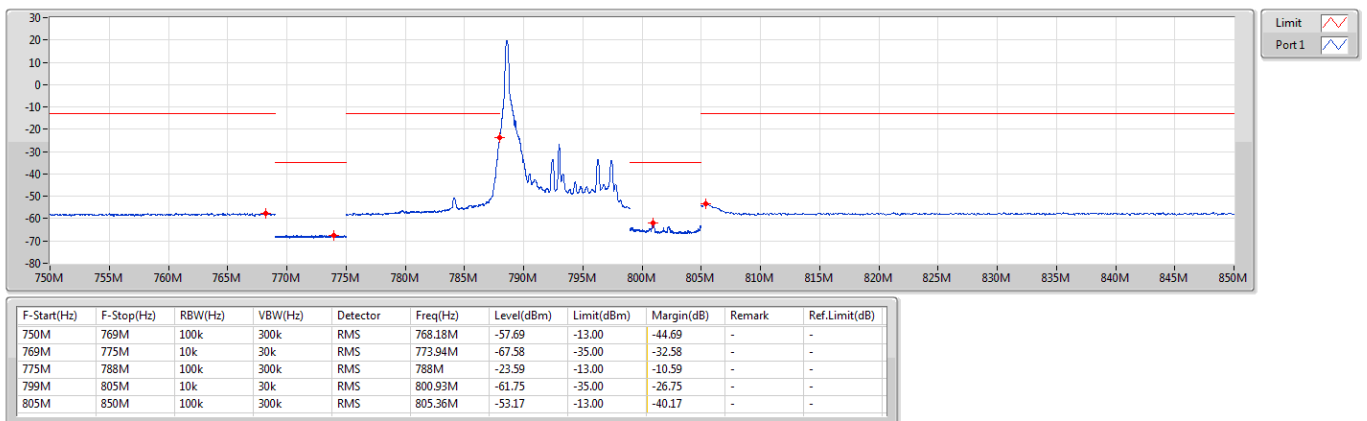
Band 14_LTE_10MHz_Nss1,QPSK_1TX
793MHz_QPSK_RB 50,#RB 0

CSE-TX-Sum



Band 14_LTE_10MHz_Nss1,QPSK_1TX
793MHz_QPSK_RB 1,#RB 0

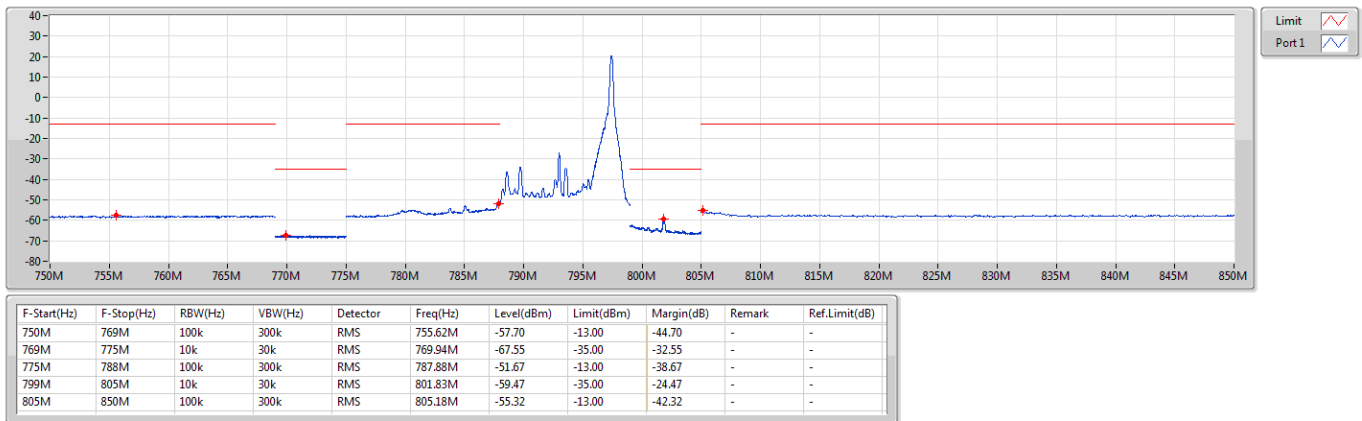
CSE-TX-Sum



Band 14_LTE_10MHz_Nss1,QPSK_1TX

CSE-TX-Sum

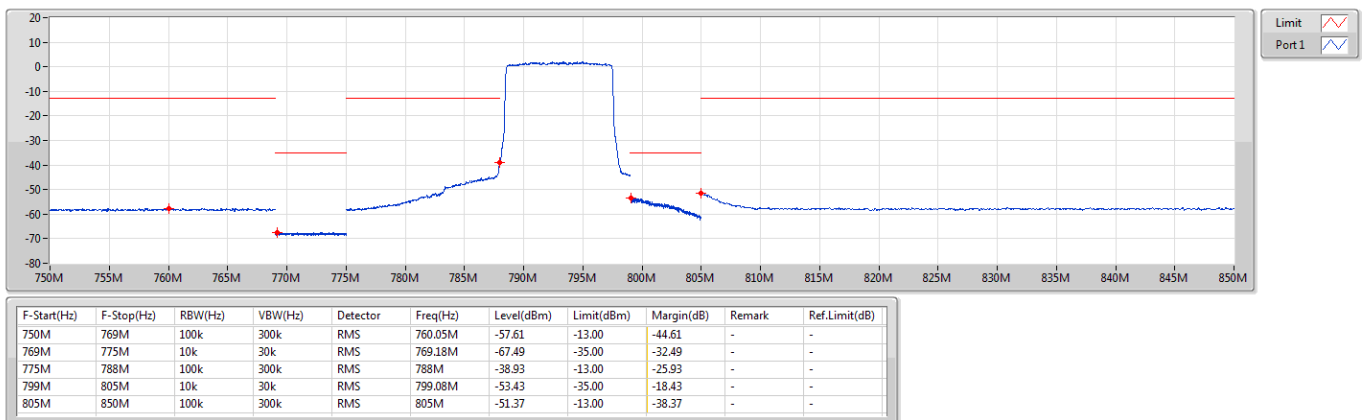
793MHz_QPSK_RB 1,#RB 49



Band 14_LTE_10MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

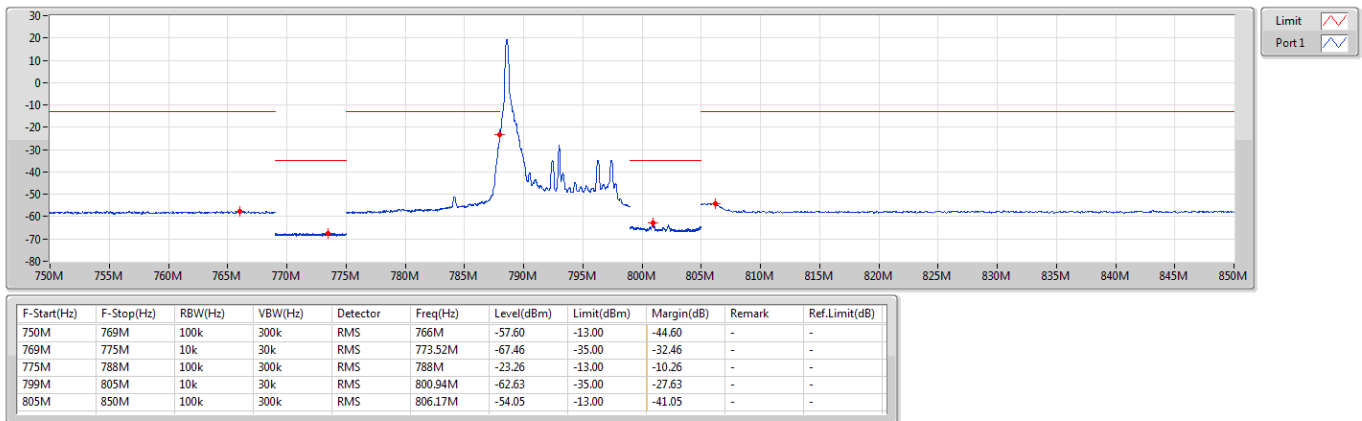
793MHz_16QAM_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

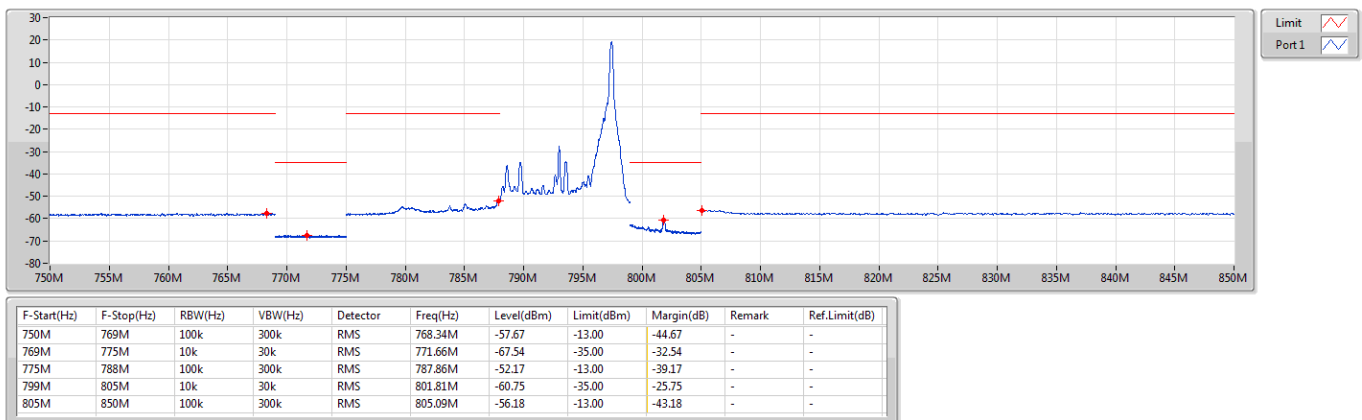
793MHz_16QAM_RB 1,#RB 0



Band 14_LTE_10MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

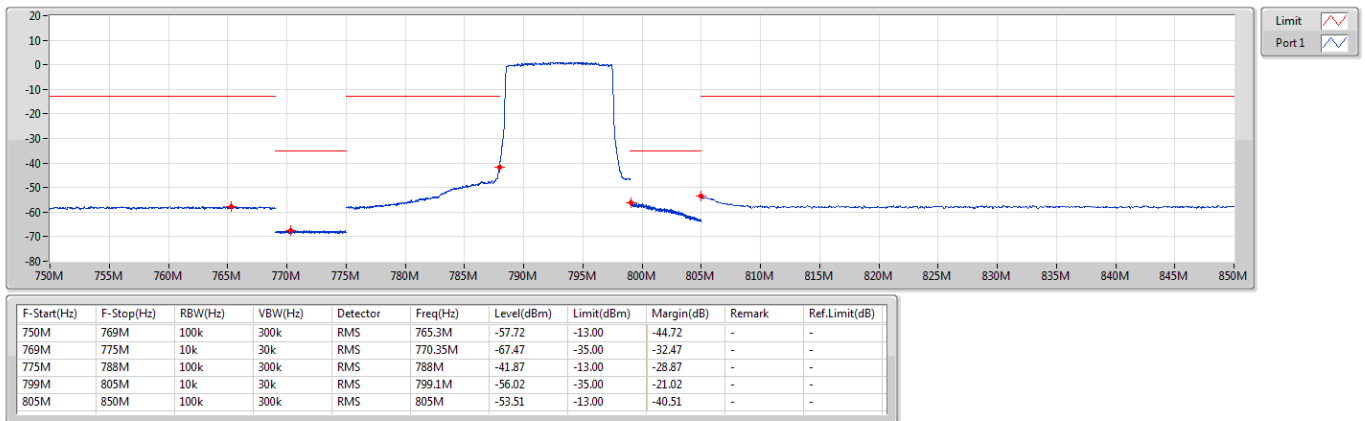
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Band 14_LTE_10MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

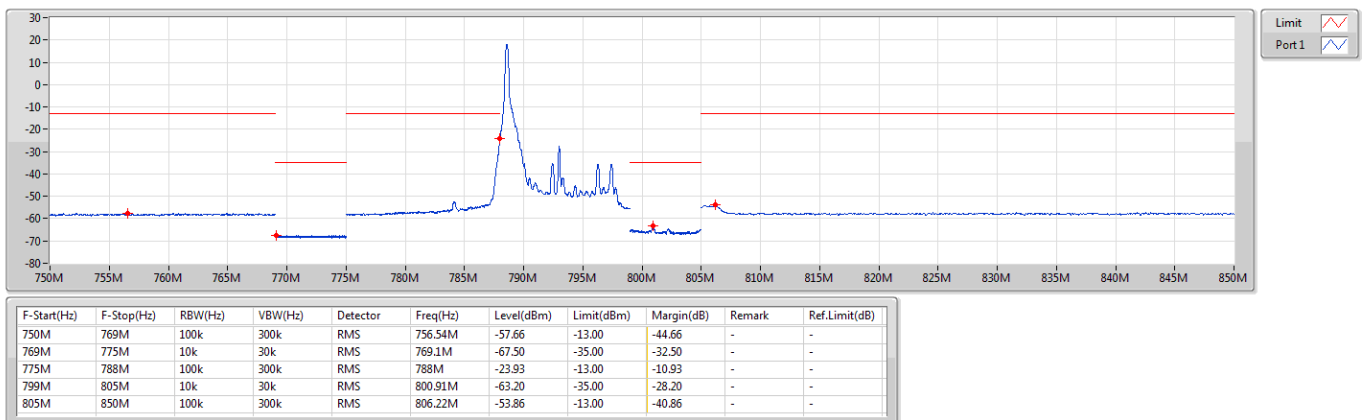
793MHz_64QAM_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

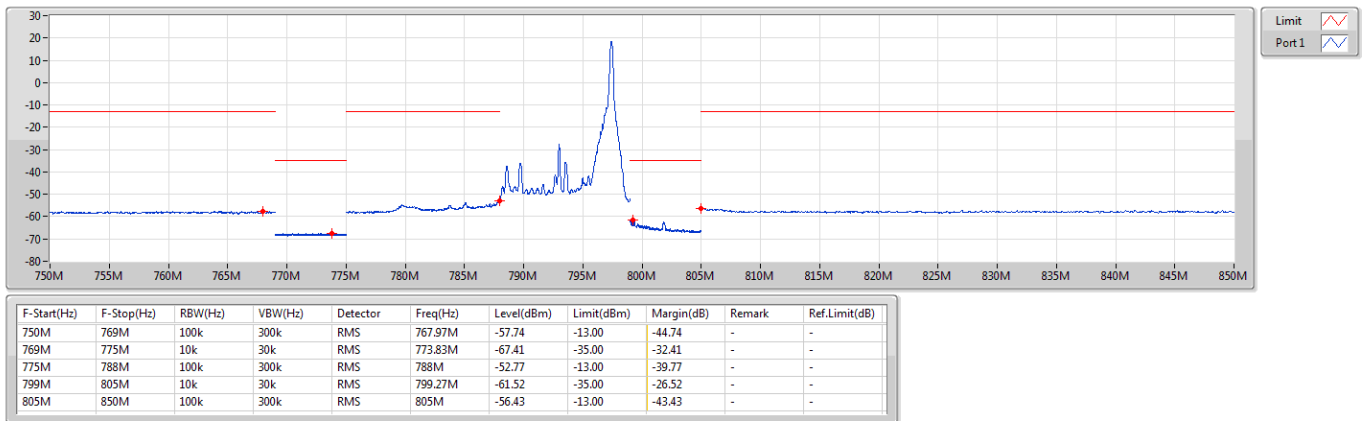
793MHz_64QAM_RB 1,#RB 0



Band 14_LTE_10MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

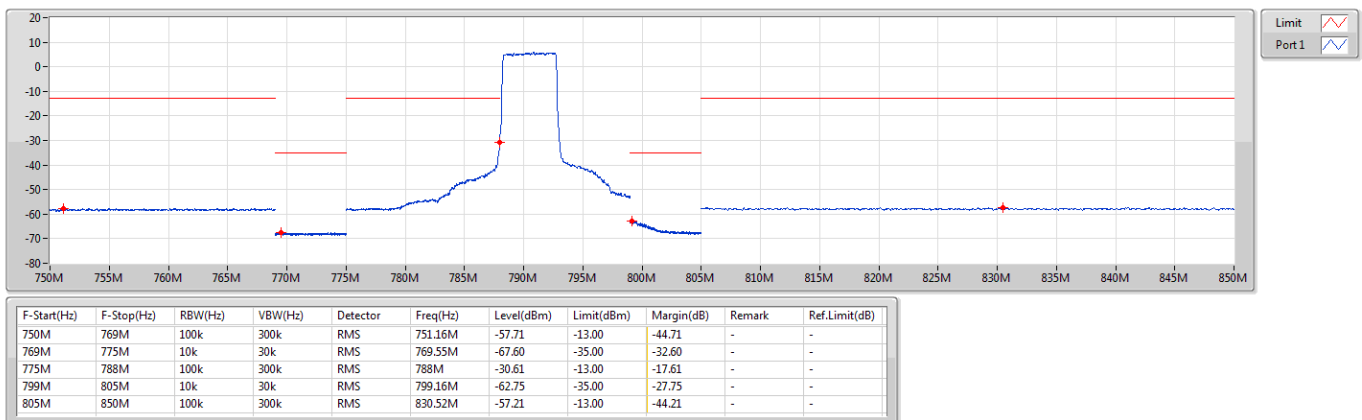
793MHz_64QAM_RB 1,#RB 49



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

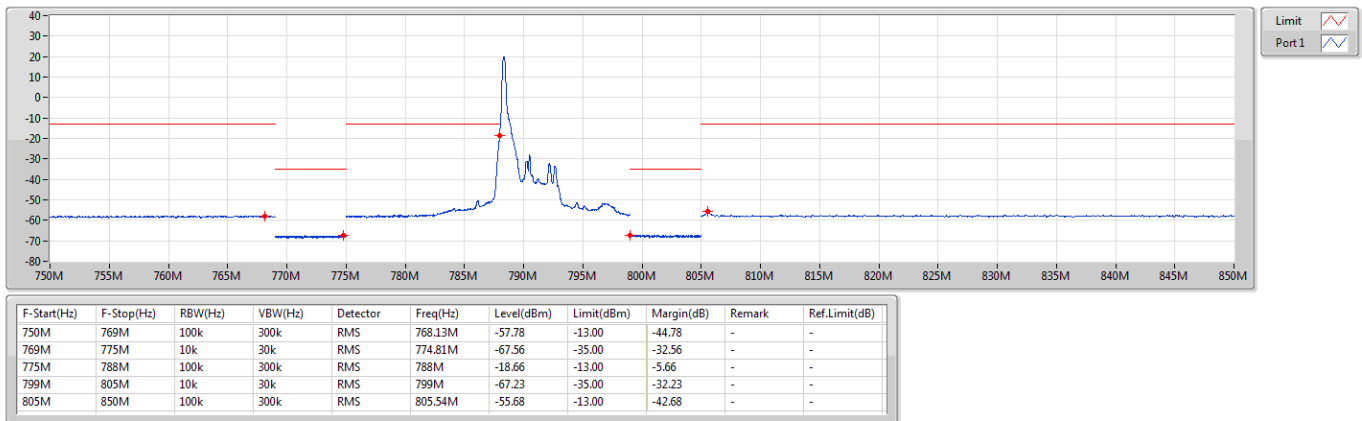
790.5MHz_QPSK_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

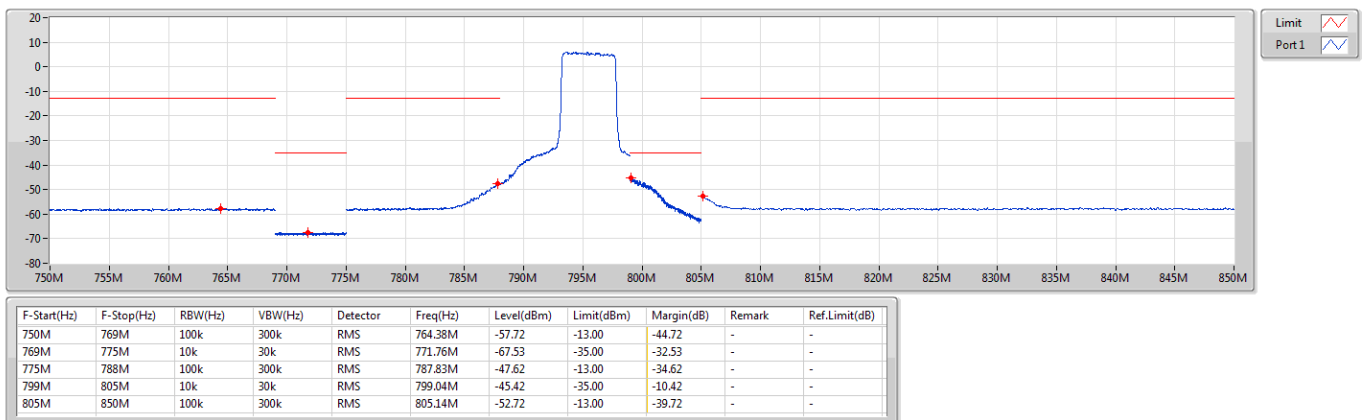
790.5MHz_QPSK_RB 1,#RB 0



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

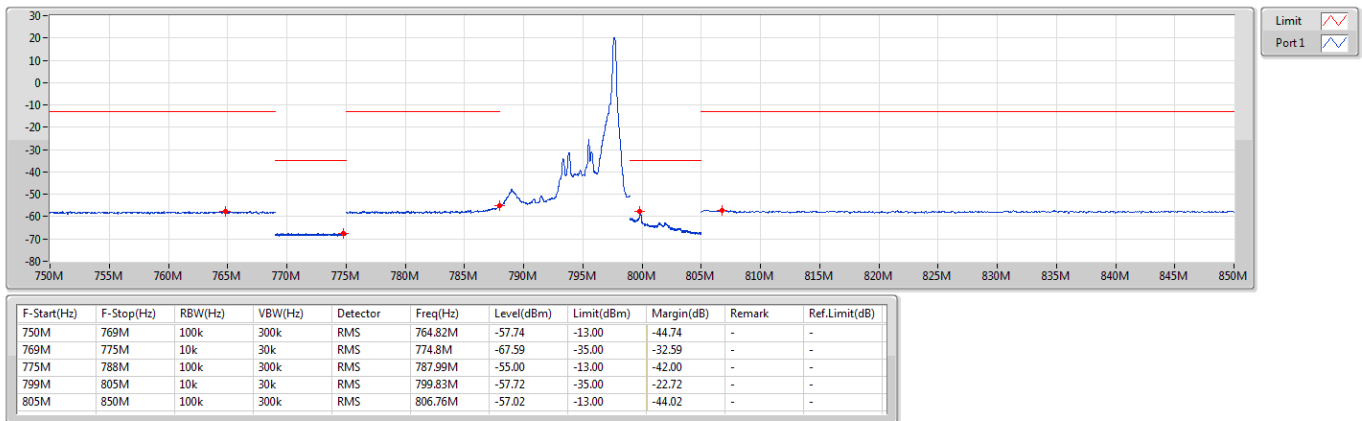
795.5MHz_QPSK_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,QPSK_1TX

CSE-TX-Sum

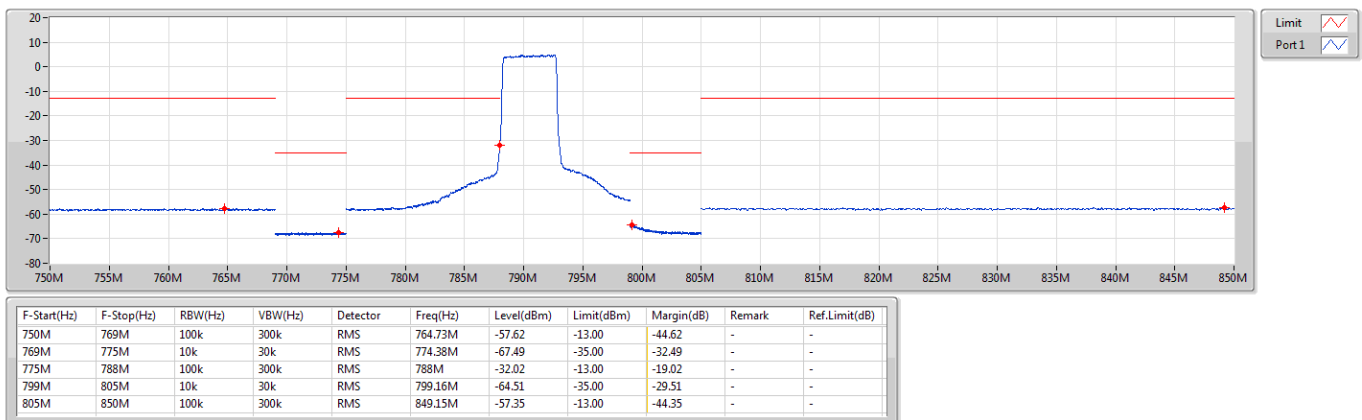
795.5MHz_QPSK_RB 1,#RB 24



Band 14_LTE_5MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

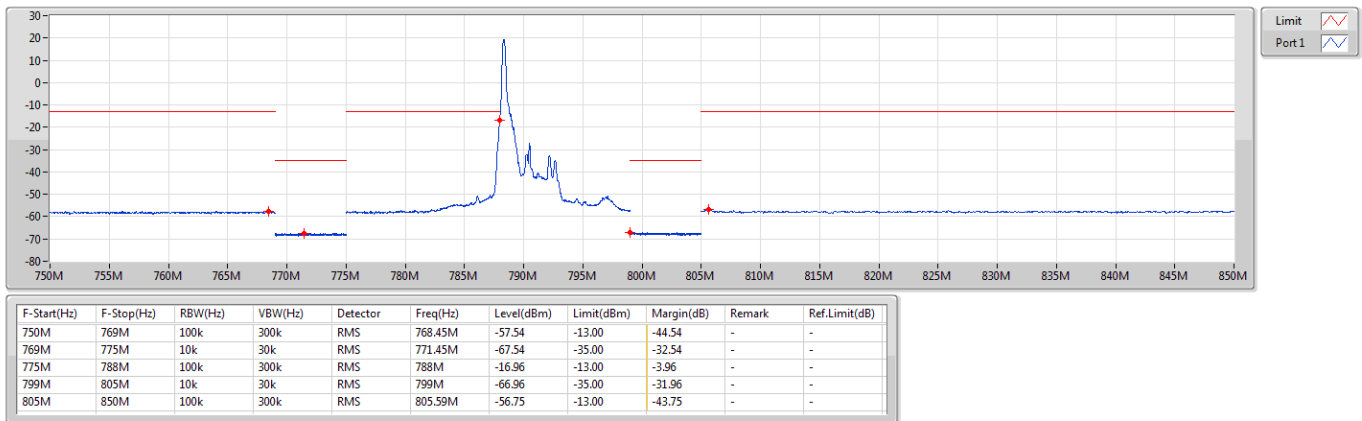
790.5MHz_16QAM_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

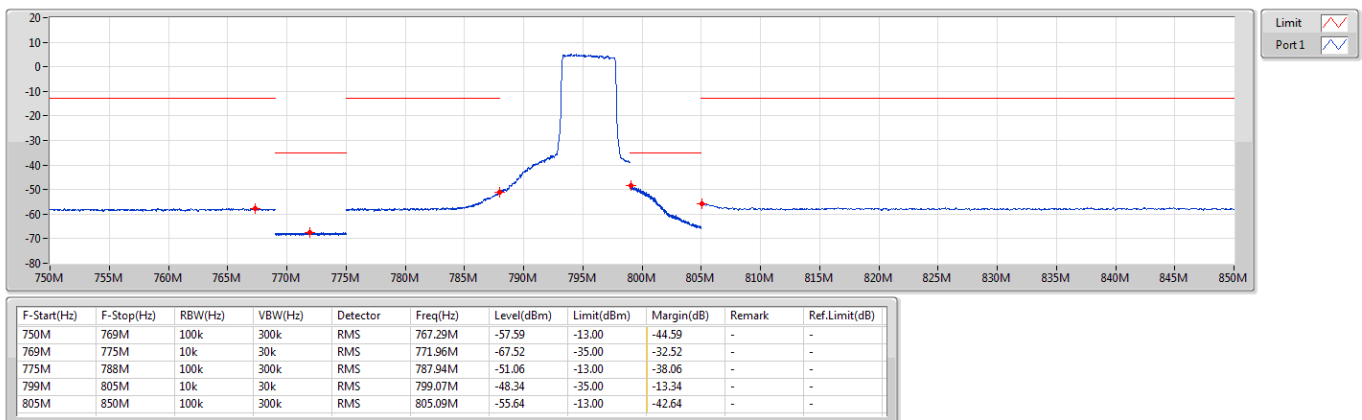
790.5MHz_16QAM_RB 1,#RB 0



Band 14_LTE_5MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

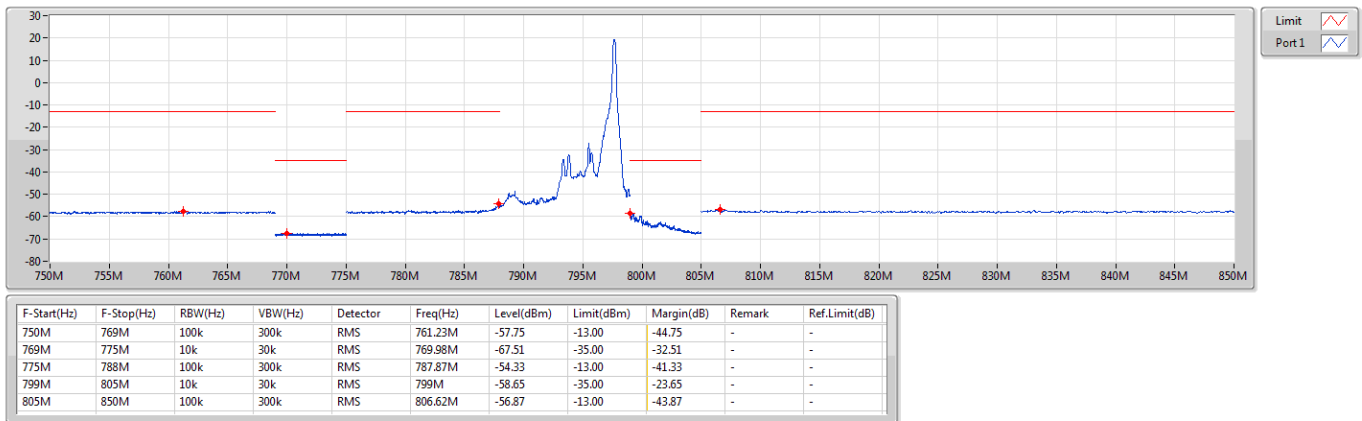
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Band 14_LTE_5MHz_Nss1,16QAMCS_1TX

CSE-TX-Sum

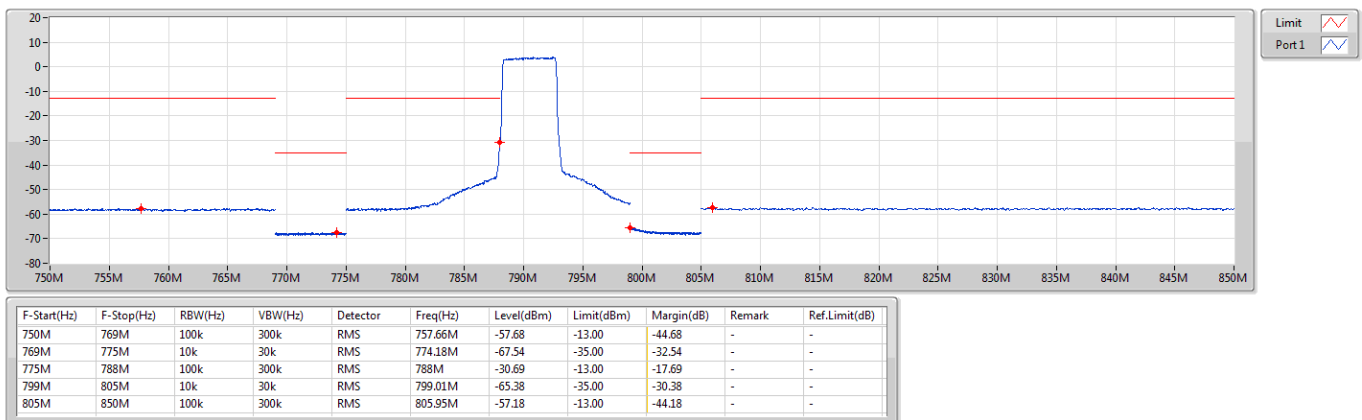
795.5MHz_16QAM_RB 1,#RB 24



Band 14_LTE_5MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

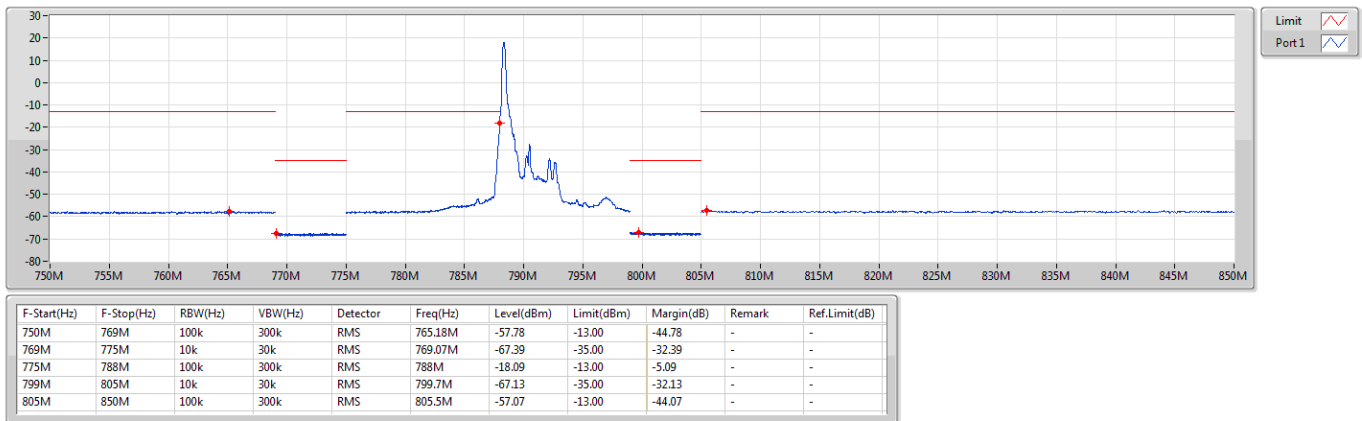
790.5MHz_64QAM_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

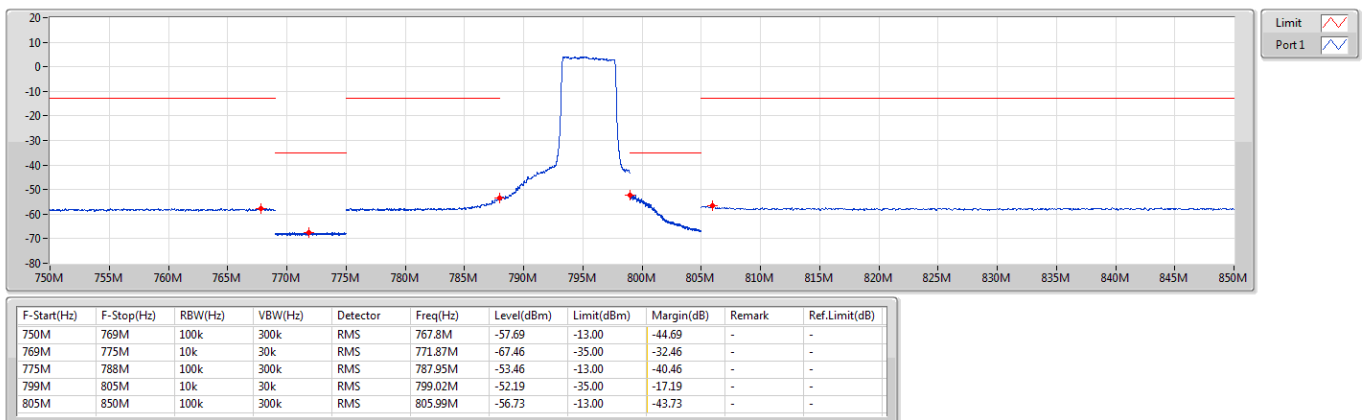
790.5MHz_64QAM_RB 1,#RB 0



Band 14_LTE_5MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

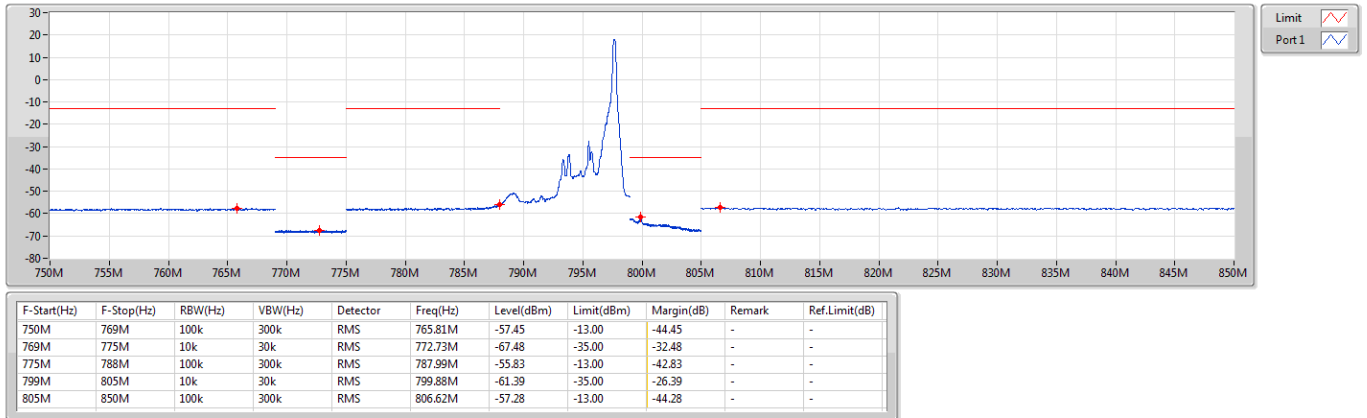
795.5MHz_64QAM_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,64QAMCS_1TX

CSE-TX-Sum

795.5MHz_64QAM_RB 1,#RB 24



Summary

Mode	Max-NdB (Hz)	Max-OBW (Hz)	ITU-Code	Min-NdB (Hz)	Min-OBW (Hz)
Band 14	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	9.725M	8.958M	8M96G7D	9.725M	8.958M
LTE_10MHz_Nss1,16QAM_1TX	9.463M	8.896M	8M90W7D	9.463M	8.896M
LTE_10MHz_Nss1,64QAM_1TX	9.563M	8.921M	8M92W7D	9.563M	8.921M
LTE_5MHz_Nss1,QPSK_1TX	4.781M	4.467M	4M47G7D	4.781M	4.467M
LTE_5MHz_Nss1,16QAM_1TX	4.8M	4.454M	4M45W7D	4.8M	4.454M
LTE_5MHz_Nss1,64QAM_1TX	4.794M	4.473M	4M47W7D	4.794M	4.473M

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

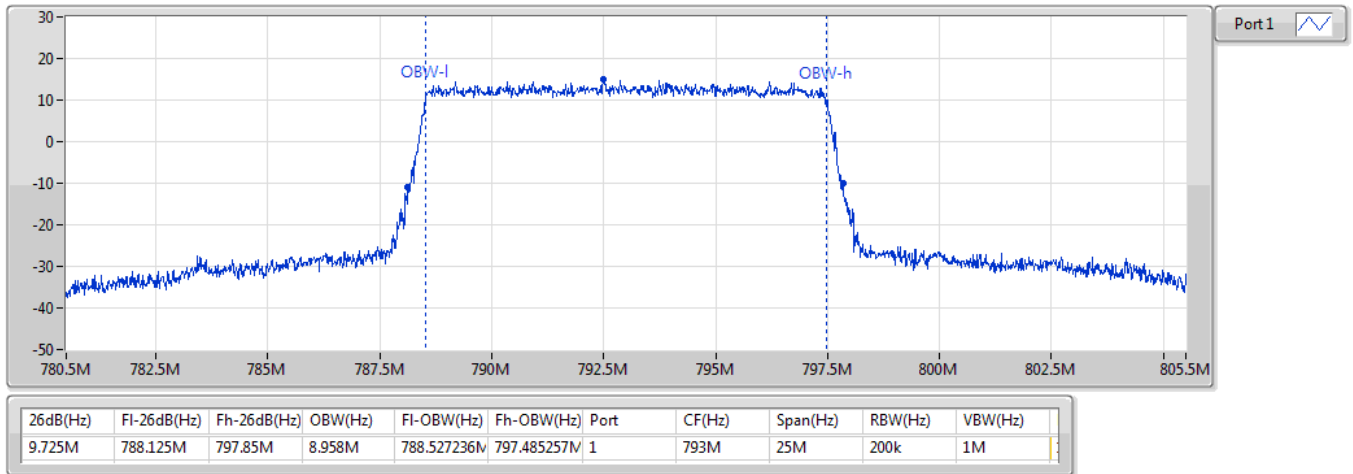
Mode	Result	Port 1-NdB (Hz)	Port 1-OBW (Hz)	Limit (Hz)
Band 14_LTE_10MHz_Nss1_1TX	-	-	-	-
793MHz_QPSK_RB 50,#RB 0	Pass	9.725M	8.958M	Inf
793MHz_16QAM_RB 50,#RB 0	Pass	9.463M	8.896M	Inf
793MHz_64QAM_RB 50,#RB 0	Pass	9.563M	8.921M	Inf
Band 14_LTE_5MHz_Nss1_1TX	-	-	-	-
793MHz_QPSK_RB 25,#RB 0	Pass	4.781M	4.467M	Inf
793MHz_16QAM_RB 25,#RB 0	Pass	4.8M	4.454M	Inf
793MHz_64QAM_RB 25,#RB 0	Pass	4.794M	4.473M	Inf

Port X-N dB = Port X 26dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

Band 14_LTE_10MHz_Nss1,QPSK_1TX

EBW

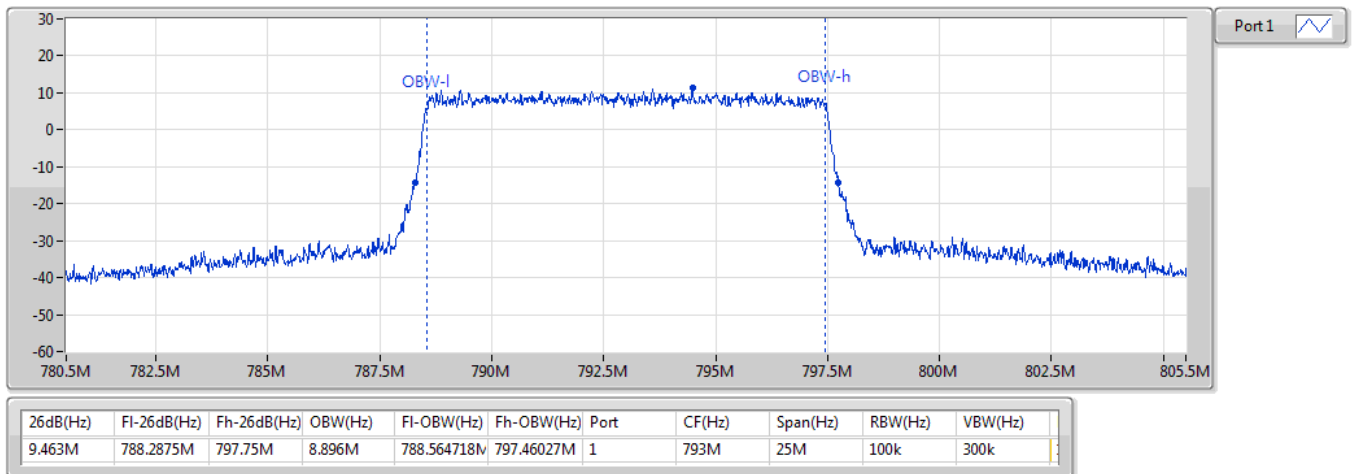
793MHz_QPSK_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,16QAMCS_1TX

EBW

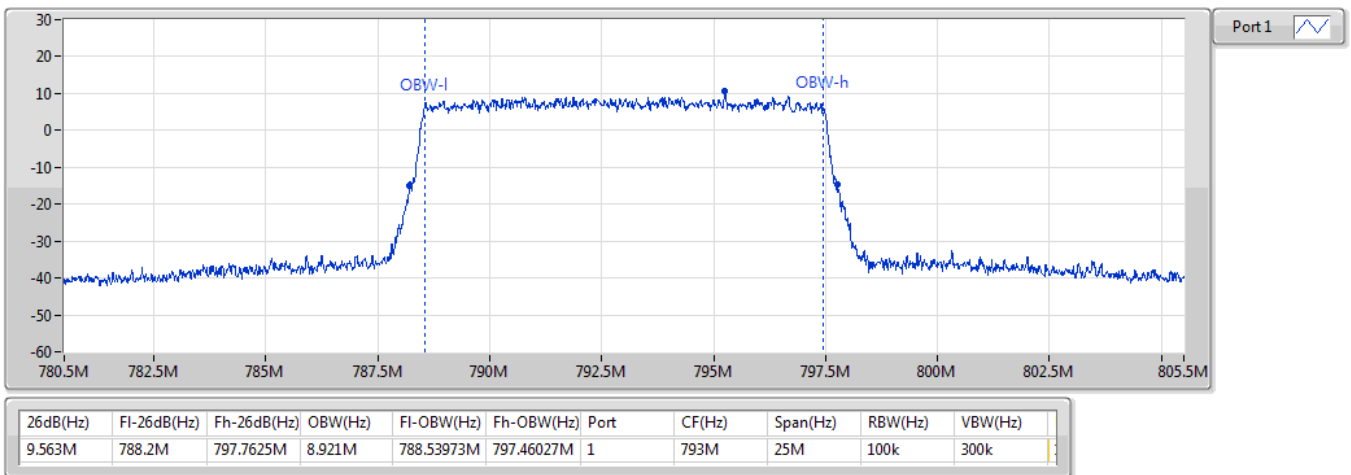
793MHz_16QAM_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,64QAMCS_1TX

EBW

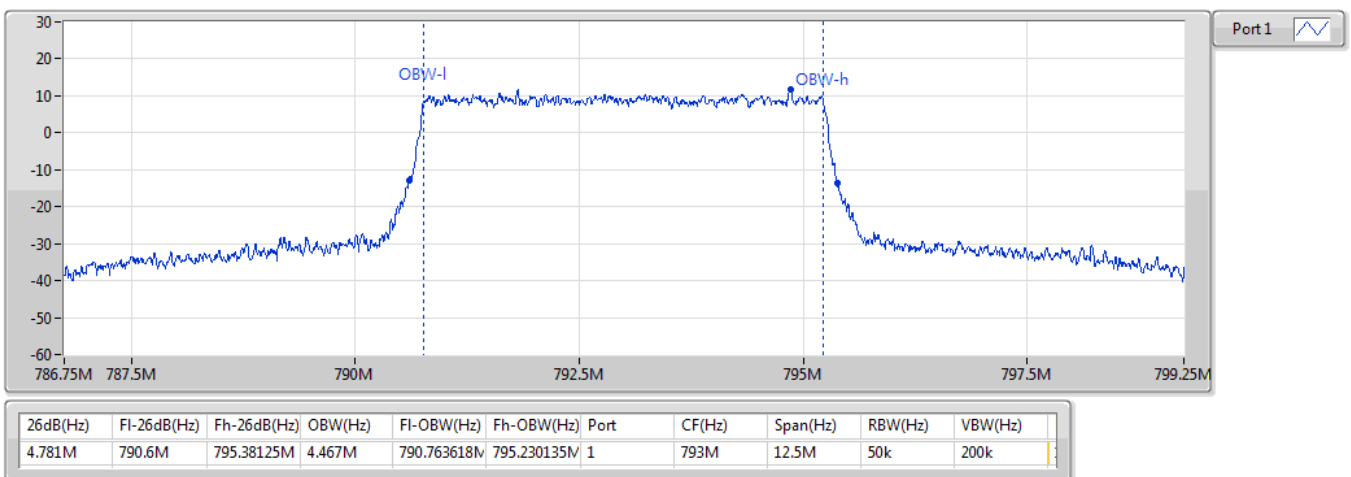
793MHz_64QAM_RB 50,#RB 0



Band 14_LTE_5MHz_Nss1,QPSK_1TX

EBW

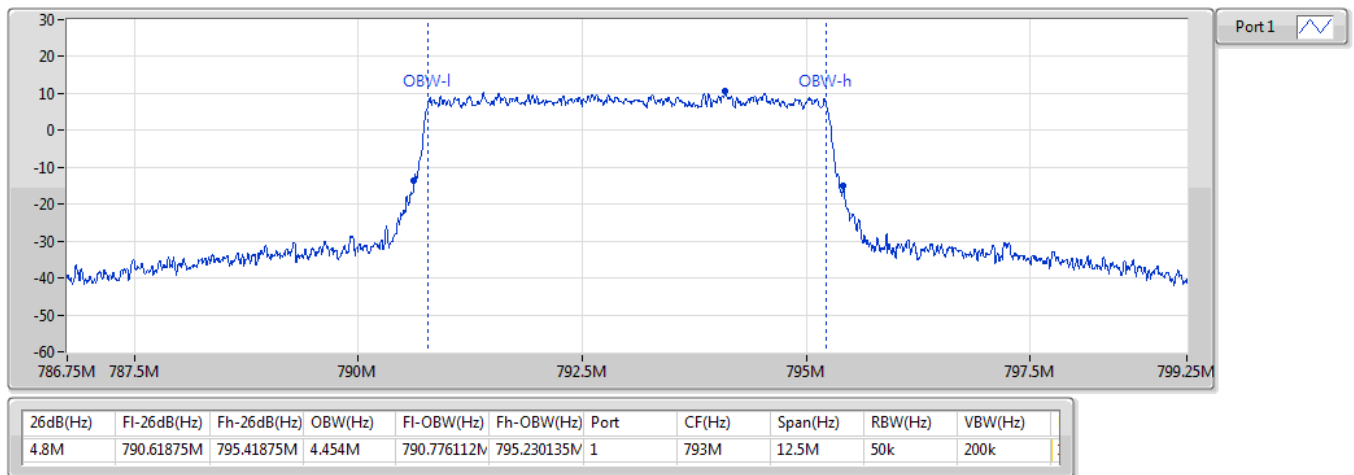
793MHz_QPSK_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,16QAMCS_1TX

EBW

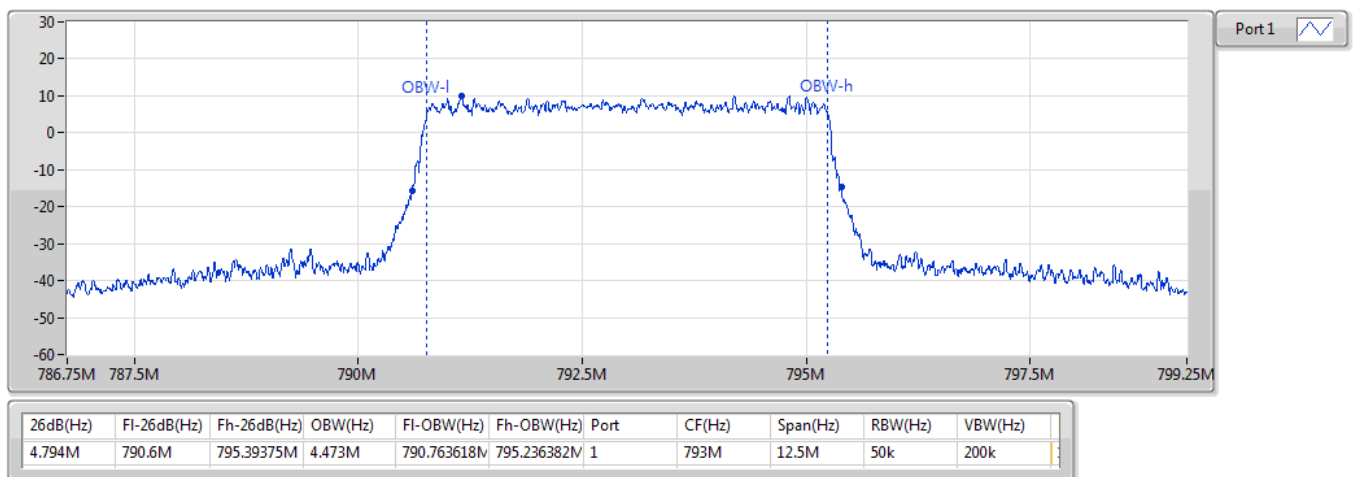
793MHz_16QAM_RB 25,#RB 0



Band 14_LTE_5MHz_Nss1,64QAMCS_1TX

EBW

793MHz_64QAM_RB 25,#RB 0



**Summary**

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 14	-	-	-	-	-
LTE_10MHz_Nss1,QPSK_1TX	Pass	793	13.00	5.16	1
LTE_10MHz_Nss1,16QAM_1TX	Pass	793	13.00	5.91	1
LTE_10MHz_Nss1,64QAM_1TX	Pass	793	13.00	6.06	1

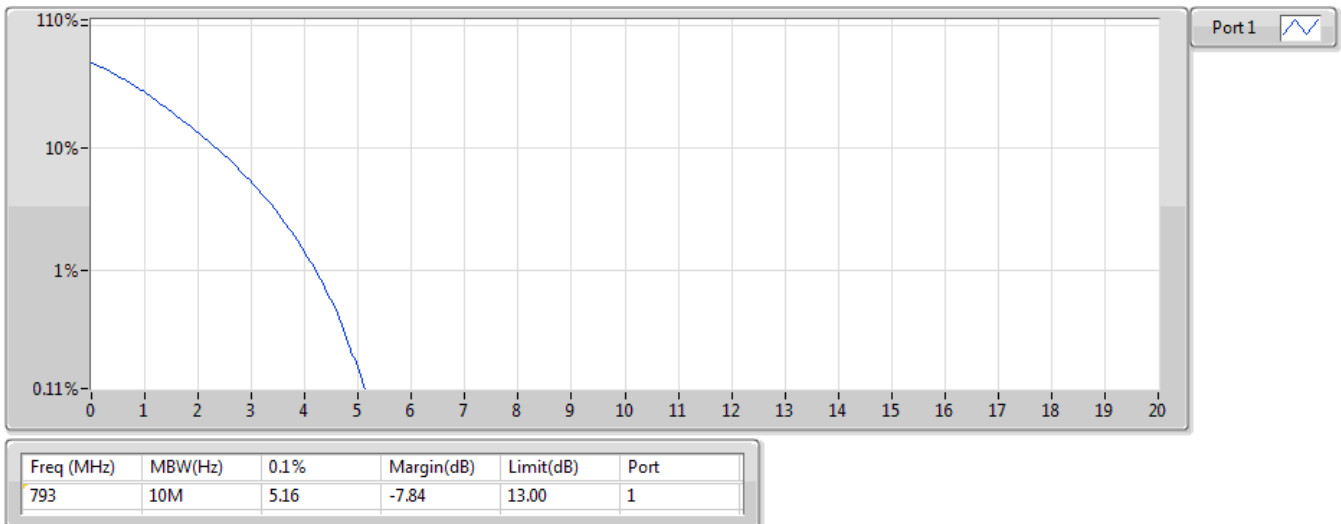
Result

Mode	Result	Freq (MHz)	Limit (dB)	0.1%	Port
Band 14_LTE_10MHz_Nss1_1TX	-	-	-	-	-
793MHz_QPSK_RB 50,#RB 0	Pass	793	13.00	5.16	1
793MHz_16QAM_RB 50,#RB 0	Pass	793	13.00	5.91	1
793MHz_64QAM_RB 50,#RB 0	Pass	793	13.00	6.06	1

Band 14_LTE_10MHz_Nss1,QPSK_1TX

PAPR

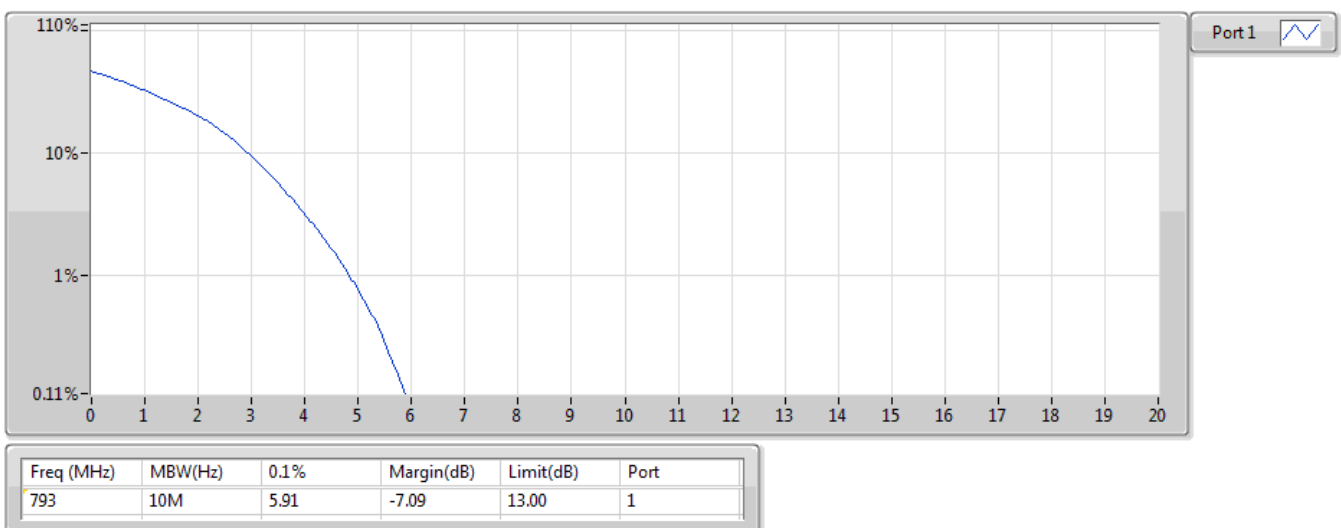
793MHz_QPSK_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,16QAMCS_1TX

PAPR

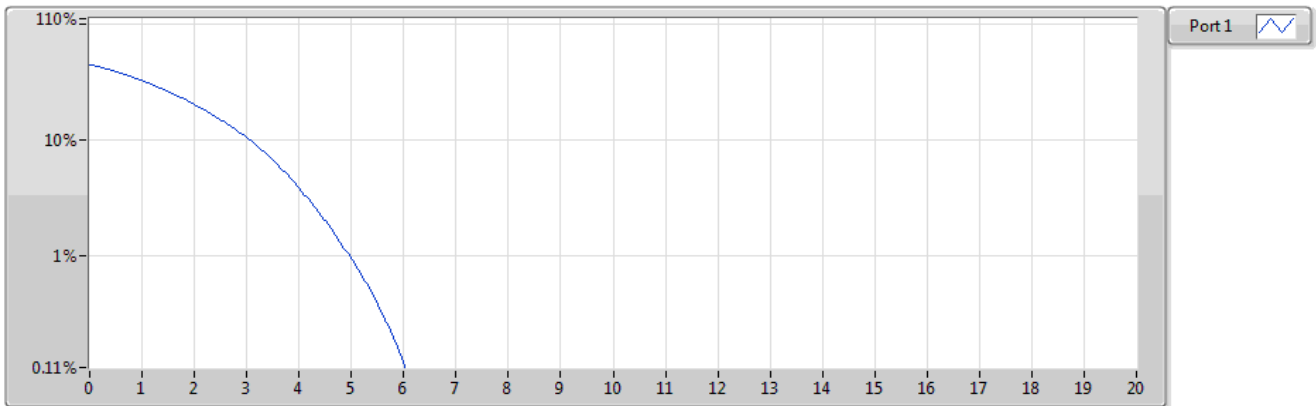
793MHz_16QAM_RB 50,#RB 0



Band 14_LTE_10MHz_Nss1,64QAMCS_1TX

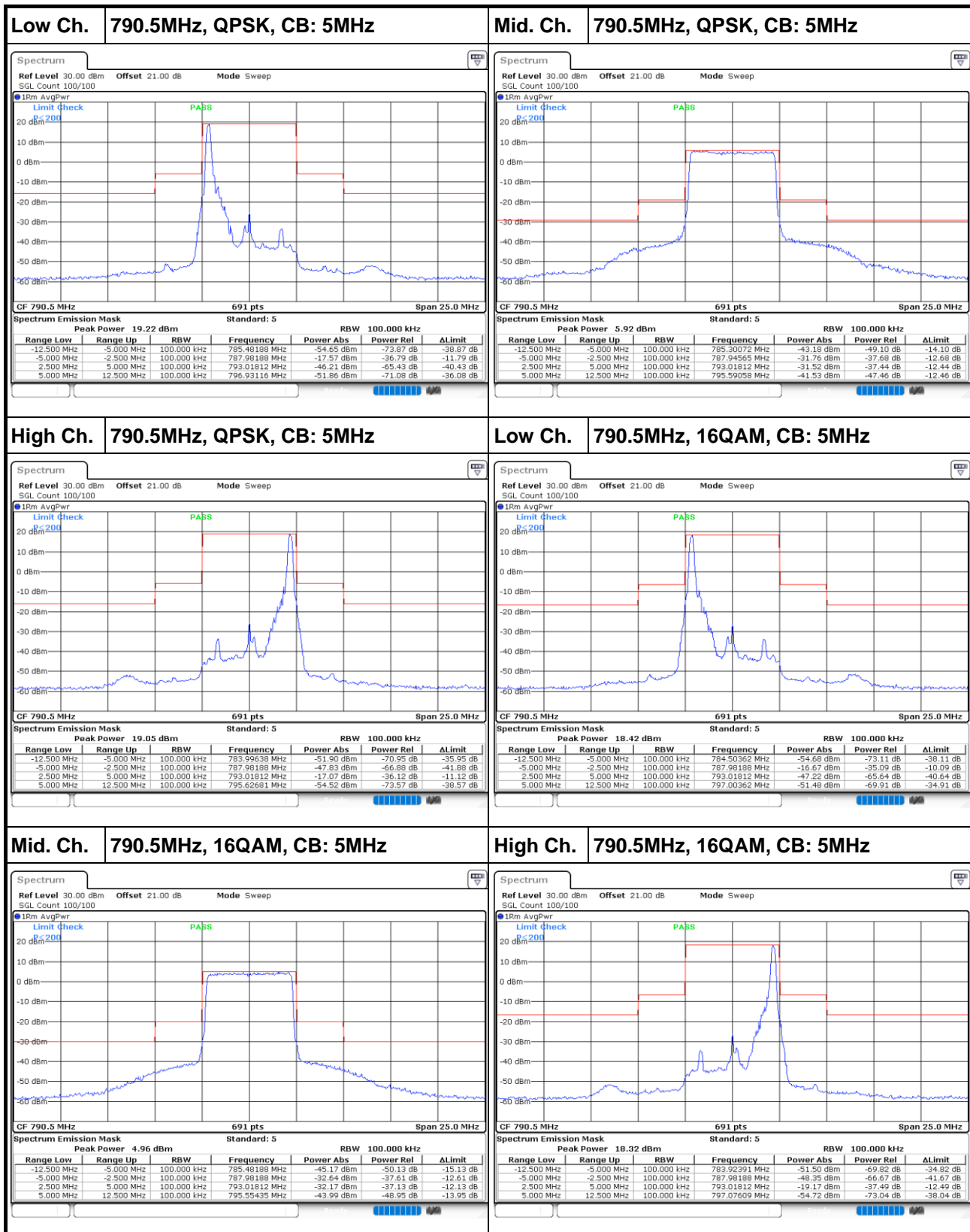
PAPR

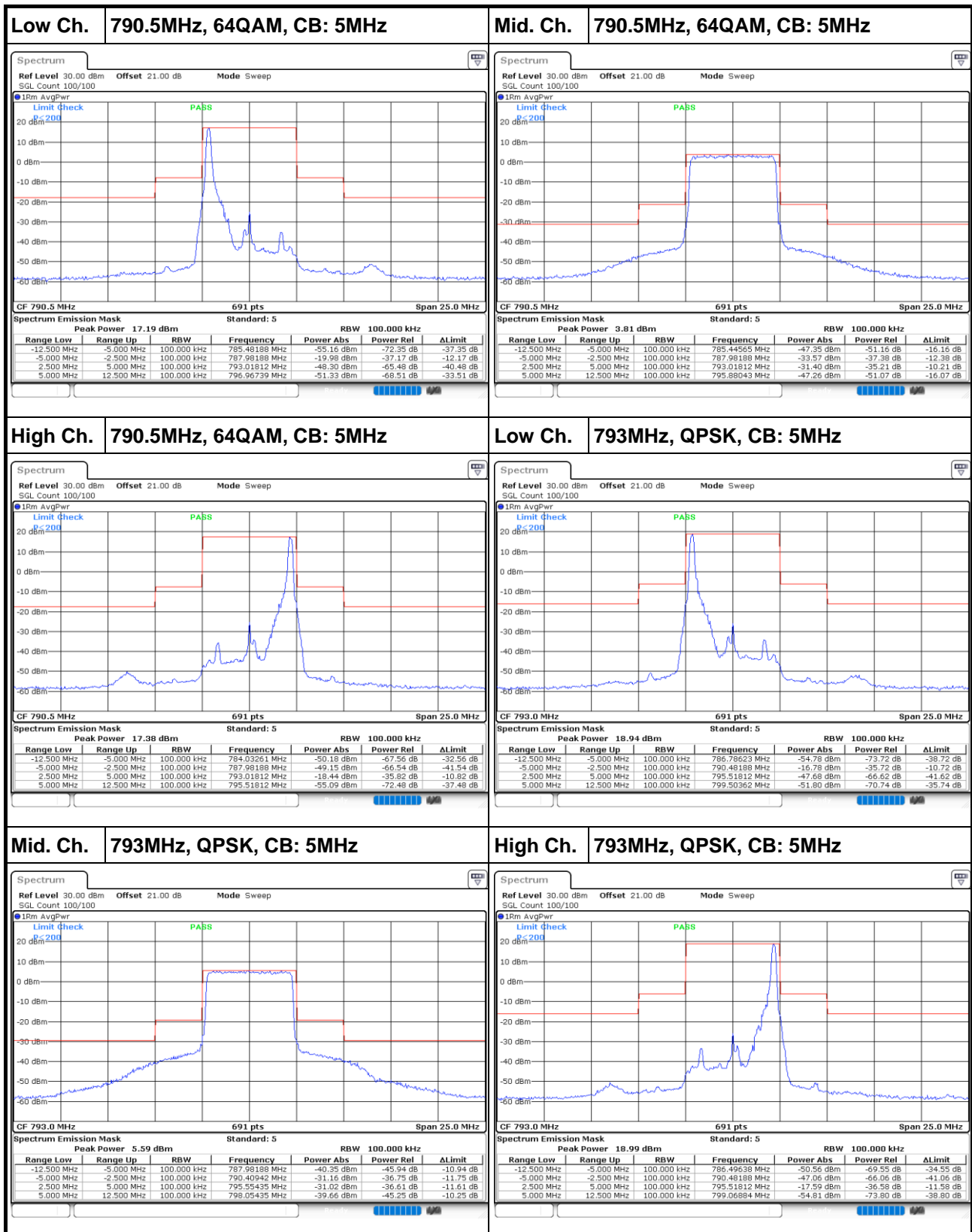
793MHz_64QAM_RB 50,#RB 0

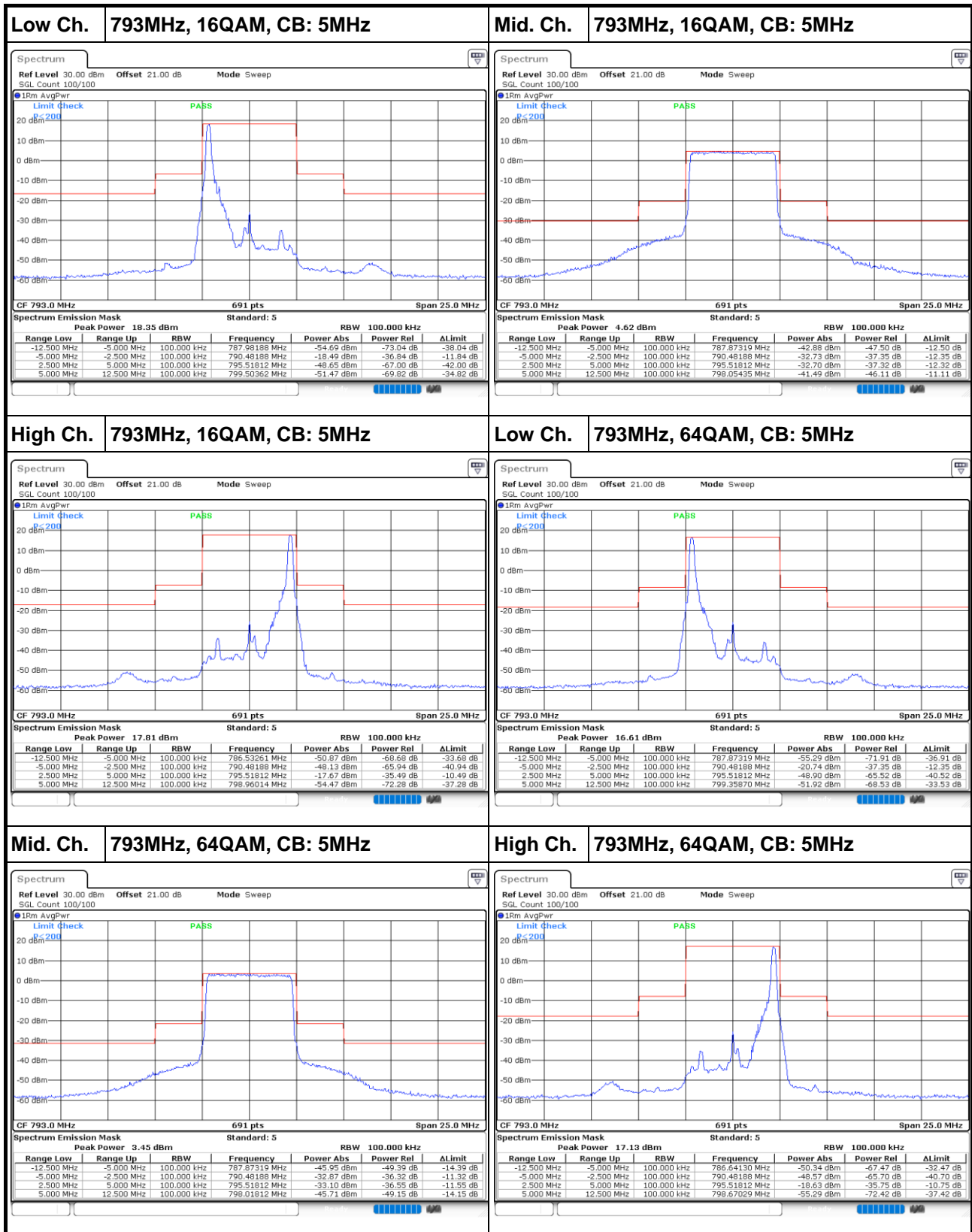


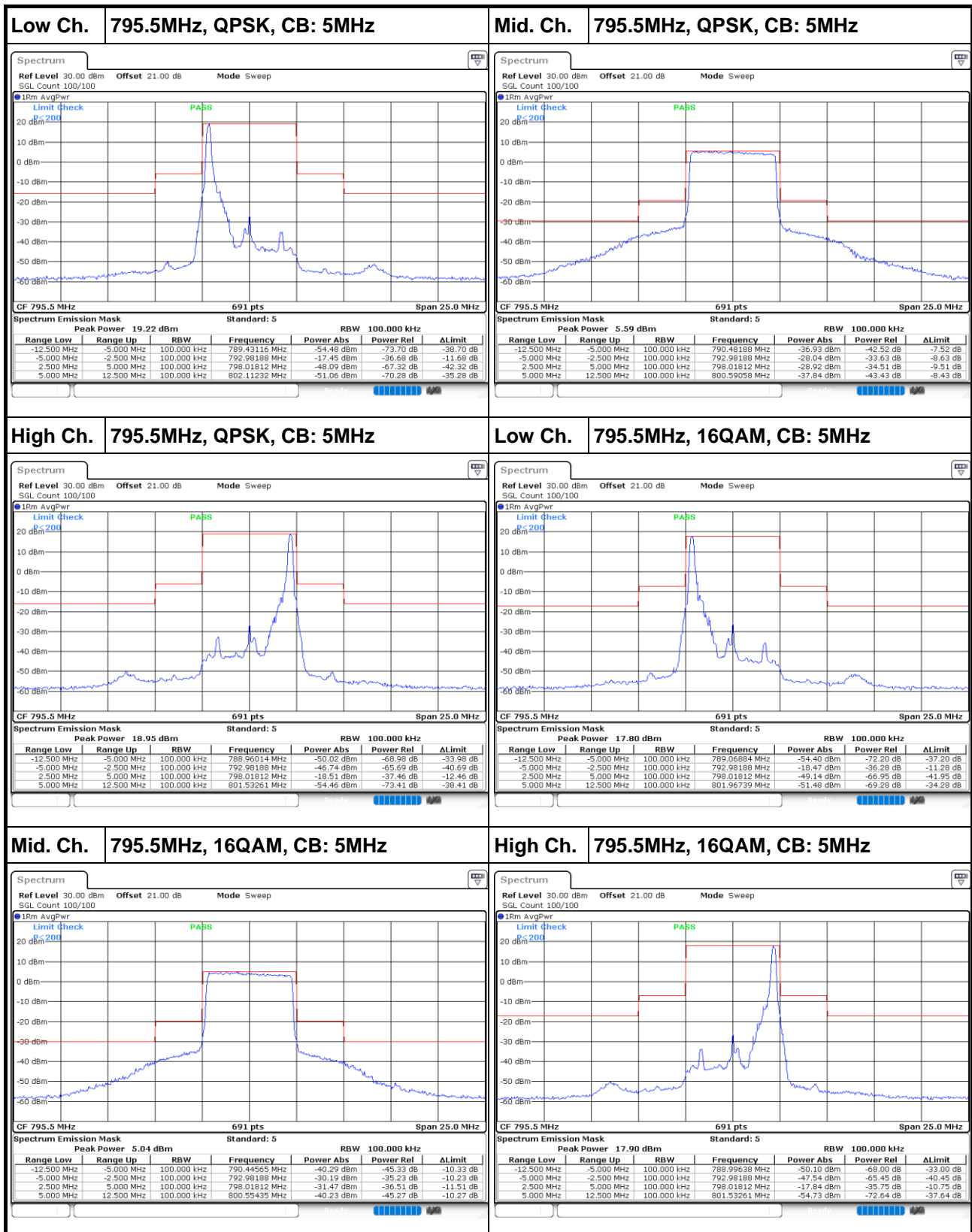
Freq (MHz)	MBW(Hz)	0.1%	Margin(dB)	Limit(dB)	Port
793	10M	6.06	-6.94	13.00	1

Ref. Freq:	793MHz	
Test Conditions	LTE Band 14(QPSK) / Middle channel	
Temperature (°C)	Deviation (ppm)	Limit
		1.25 ppm
T20°C Vmax	0.04	PASS
T20°C Vmin	0.03	
T70°C Vnom	0.03	
T60°C Vnom	0.03	
T50°C Vnom	0.02	
T40°C Vnom	0.03	
T30°C Vnom	0.03	
T20°C Vnom	0.04	
T10°C Vnom	0.05	
T0°C Vnom	0.03	
T-10°C Vnom	0.04	
T-20°C Vnom	0.03	
T-30°C Vnom	0.03	











Emission Mask

Appendix G

