

FCC Test Report

FCC ID : SQG-PINNACLE1
Equipment : LTE Modem
Model No. : Pinnacle 100
Brand Name : Laird Connectivity
Applicant : Laird Connectivity, Inc.
Address : W66N220 Commerce Court, Cedarburg,
Wisconsin 53012, USA
Standard : 47 CFR FCC Part 24 Subpart E
Received Date : Apr. 16, 2019
Tested Date : Apr. 28 ~ May 29, 2020

We, International Certification Corp., 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 may be duplicated completely for legal use with the approval of the applicant. 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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Release Record

Report No.	Version	Description	Issued Date
FG950303P24	Rev. 01	Initial issue	Jun. 11, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
2.1046 / 22.913(a)(5)	Equivalent Isotropically Radiated Power	Power[dBm] : 27.87	Pass
2.1053 / 22.917(a)	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 / 22.917(a)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 / 22.917(a)	Band Edge	Meet the requirement of limit	Pass
2.1049	Occupied Bandwidth	Note	Pass
-	Peak to Average Ratio	Note	Pass
2.1055 / 22.355	Frequency Stability	Note	Pass

Note: Refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

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	1850 MHz ~ 1910 MHz
Modulation	QPSK / 16QAM
UE category	M1

1.1.2 Antenna Details

Ant. No.	Brand / Model	Type	Connector	Gain (dBi)	Operating Band
External					
1	Laird / DBA6927C1	Dipole	U.FL	2.2	LTE Band 2
2	Laird / EFF6925A3S	Flex	U.FL	3.7	LTE Band 2
3	ASC / RFDPA131000SMTB803	Dipole	U.FL	1.5	LTE Band 2
Integrated					
4	Laird/110-00665	Stamped Metal	N/A	2.6	LTE Band 2

1.1.3 EUT Operational Condition

Power Supply Type	3.7 Vdc
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1.1.4 Accessories

N/A

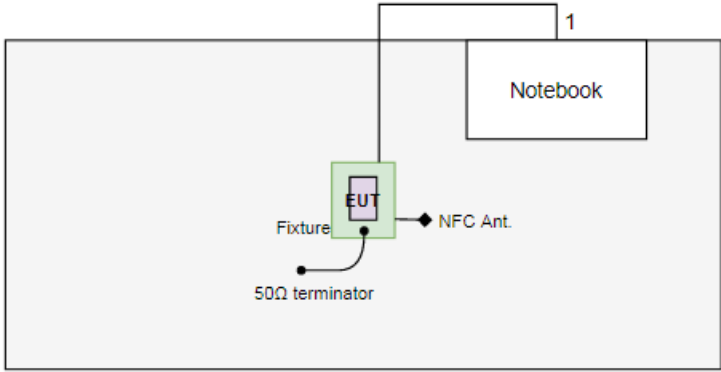
1.1.5 Operating Channel List

LTE Band 2		
Channel Bandwidth (MHz)	Channel	Frequency (MHz)
1.4	18607	1850.7
1.4	18900	1880.0
1.4	19193	1909.3
3	18615	1851.5
3	18900	1880.0
3	19185	1908.5
5	18625	1852.5
5	18900	1880.0
5	19175	1907.5
10	18650	1855.0
10	18900	1880.0
10	19150	1905.0
15	18675	1857.5
15	18900	1880.0
15	19125	1902.5
20	18700	1860.0
20	18900	1880.0
20	19100	1900.0

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E6440	DoC	---
2	USB Cable	I-Gota	micro to A	---	---
3	50Ω terminator	---	---	---	---
4	Fixture	---	---	---	Provided by applicant.

1.3 Test Setup Chart

Test Setup Diagram	
	
No.	Signal cable / Length (m)
1	USB, 1m shielded.

1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Apr. 28 ~ May 29, 2020				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 16, 2020
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 12, 2019	Jul. 11, 2020
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 09, 2019	Jul. 08, 2020
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF Cable	EMC	EMC104-SM-SM-80 00	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 07, 2019	Oct. 06, 2020
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 11 ~ May 15, 2020				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Apr. 30, 2020	Apr. 29, 2021
Spectrum Analyzer	R&S	FSV40	101499	Jan. 09, 2020	Jan. 08, 2021
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
DC POWER SOURCE	GW INSTRON	GPC-6030D	GES855395	Oct. 29, 2019	Oct. 28, 2020
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards.

47 CFR FCC Part 24 Subpart E

ANSI C63.4-2014

ANSI C63.26-2015

FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

FCC KDB 971168 D02 Misc Rev Approv License Devices v02r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 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
Conducted emission	± 2.715 dB
Radiated emission ≤ 1 GHz	± 3.41 dB
Radiated emission > 1 GHz	± 4.59 dB

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
Radiated Emissions	03CH01-WS	24-26°C / 62-67%	Akun Chung

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

2.2 The Worst Test Modes and Channel Details

LTE Band 2			
Test item	Channel Bandwidth	Modulation	Test channel
E.I.R.P Conducted Emissions	1.4 MHz	QPSK / 16QAM	18607 / 18900 / 19193
	3 MHz	QPSK / 16QAM	18615 / 18900 / 19185
	5 MHz	QPSK / 16QAM	18625 / 18900 / 19175
	10 MHz	QPSK / 16QAM	18650 / 18900 / 19150
	15 MHz	QPSK / 16QAM	18675 / 18900 / 19125
	20 MHz	QPSK / 16QAM	18700 / 18900 / 19100
Radiated Emission $\leq$ 1GHz	1.4 MHz	QPSK	18900
	3 MHz	QPSK	18900
	5 MHz	QPSK	19175
	10 MHz	16QAM	19150
	15 MHz	16QAM	19125
	20 MHz	QPSK	19100
Radiated Emission $>$ 1GHz	1.4 MHz	QPSK	18607
		QPSK	18900
		QPSK	19193
	3 MHz	QPSK	18615
		QPSK	18900
		QPSK	19185
	5 MHz	QPSK	18625
		QPSK	18900
		QPSK	19175
	10 MHz	16QAM	18650
		16QAM	18900
		16QAM	19150
	15 MHz	16QAM	18675
		16QAM	18900
		16QAM	19125
	20 MHz	QPSK	18700
		QPSK	18900
		16QAM	19100
Band Edge	1.4 MHz	QPSK / 16QAM	18607 / 19193
	3 MHz	QPSK / 16QAM	18615 / 19185
	5 MHz	QPSK / 16QAM	18625 / 19175
	10 MHz	QPSK / 16QAM	18650 / 19150
	15 MHz	QPSK / 16QAM	18675 / 19125
	20 MHz	QPSK / 16QAM	18700 / 19100
Note: 1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The Y-plane results were found as the worst case and were shown in this report. 2. 50Ω terminators is connected to antenna port of EUT for radiated emission measurement.			

3 Test Results

3.1 Equivalent Isotropically Radiated Power

3.1.1 Limit of Equivalent Isotropically Radiated Power

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 Test Procedures

For E.I.R.P measurement

EIRP 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).

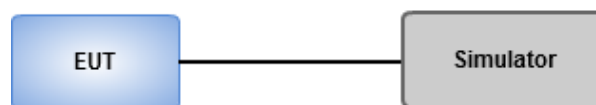
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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

Conducted Power Measurement



3.1.4 Test Result of Equivalent Isotropically Radiated Power (dBm)

LTE Cat-M1 Band 2, BW (MHz): 1.4												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18607	1850.7	QPSK	1	0	0	-85	23.88	3.7	27.58	0.573	2
			QPSK	1	5	0	-85	23.45	3.7	27.15	0.519	2
			QPSK	3	3	0	-85	21.99	3.7	25.69	0.371	2
			QPSK	6	0	0	-85	21.04	3.7	24.74	0.298	2
			16QAM	1	0	0	-85	21.51	3.7	25.21	0.332	2
			16QAM	1	5	0	-85	21.59	3.7	25.29	0.338	2
			16QAM	3	0	0	-85	20.73	3.7	24.43	0.277	2
			16QAM	5	0	0	-85	20.47	3.7	24.17	0.261	2
Mid. Range	18900	1880	QPSK	1	0	0	-85	24.17	3.7	27.87	0.612	2
			QPSK	1	5	0	-85	23.89	3.7	27.59	0.574	2
			QPSK	3	3	0	-85	22.25	3.7	25.95	0.394	2
			QPSK	6	0	0	-85	21.42	3.7	25.12	0.325	2
			16QAM	1	0	0	-85	21.72	3.7	25.42	0.348	2
			16QAM	1	5	0	-85	21.91	3.7	25.61	0.364	2
			16QAM	3	0	0	-85	21.1	3.7	24.8	0.302	2
			16QAM	5	0	0	-85	20.71	3.7	24.41	0.276	2
High Range	19193	1909.3	QPSK	1	0	0	-85	24.15	3.7	27.85	0.610	2
			QPSK	1	5	0	-85	23.82	3.7	27.52	0.565	2
			QPSK	3	3	0	-85	22.18	3.7	25.88	0.387	2
			QPSK	6	0	0	-85	21.27	3.7	24.97	0.314	2
			16QAM	1	0	0	-85	21.75	3.7	25.45	0.351	2
			16QAM	1	5	0	-85	21.84	3.7	25.54	0.358	2
			16QAM	3	0	0	-85	20.98	3.7	24.68	0.294	2
			16QAM	5	0	0	-85	20.64	3.7	24.34	0.272	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 3												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18615	1851.5	QPSK	1	0	0	-85	22.67	3.7	26.37	0.434	2
			QPSK	1	5	0	-85	22.71	3.7	26.41	0.438	2
			QPSK	1	0	1	-85	22.74	3.7	26.44	0.441	2
			QPSK	1	5	1	-85	22.78	3.7	26.48	0.445	2
			QPSK	3	3	0	-85	21.82	3.7	25.52	0.356	2
			QPSK	3	3	1	-85	21.85	3.7	25.55	0.359	2
			QPSK	6	0	0	-85	20.93	3.7	24.63	0.290	2
			QPSK	6	0	1	-85	20.94	3.7	24.64	0.291	2
			16QAM	1	0	0	-85	21.02	3.7	24.72	0.296	2
			16QAM	1	5	0	-85	20.98	3.7	24.68	0.294	2
			16QAM	1	0	1	-85	20.99	3.7	24.69	0.294	2
			16QAM	1	5	1	-85	21.03	3.7	24.73	0.297	2
			16QAM	3	0	0	-85	20.54	3.7	24.24	0.265	2
			16QAM	3	3	1	-85	20.8	3.7	24.5	0.282	2
			16QAM	5	0	0	-85	20.32	3.7	24.02	0.252	2
			16QAM	5	0	1	-85	20.46	3.7	24.16	0.261	2
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.93	3.7	26.63	0.460	2
			QPSK	1	5	0	-85	22.87	3.7	26.57	0.454	2
			QPSK	1	0	1	-85	22.82	3.7	26.52	0.449	2
			QPSK	1	5	1	-85	23.04	3.7	26.74	0.472	2
			QPSK	3	3	0	-85	21.95	3.7	25.65	0.367	2
			QPSK	3	3	1	-85	21.97	3.7	25.67	0.369	2
			QPSK	6	0	0	-85	21.1	3.7	24.8	0.302	2
			QPSK	6	0	1	-85	20.97	3.7	24.67	0.293	2
			16QAM	1	0	0	-85	21.13	3.7	24.83	0.304	2
			16QAM	1	5	0	-85	21.17	3.7	24.87	0.307	2
			16QAM	1	0	1	-85	21.52	3.7	25.22	0.333	2
			16QAM	1	5	1	-85	21.37	3.7	25.07	0.321	2
			16QAM	3	0	0	-85	20.72	3.7	24.42	0.277	2
			16QAM	3	3	1	-85	21.11	3.7	24.81	0.303	2
			16QAM	5	0	0	-85	20.45	3.7	24.15	0.260	2
			16QAM	5	0	1	-85	20.97	3.7	24.67	0.293	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 3												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
High Range	19185	1908.5	QPSK	1	0	0	-85	22.77	3.7	26.47	0.444	2
			QPSK	1	5	0	-85	22.73	3.7	26.43	0.440	2
			QPSK	1	0	1	-85	22.63	3.7	26.33	0.430	2
			QPSK	1	5	1	-85	22.75	3.7	26.45	0.442	2
			QPSK	3	3	0	-85	21.87	3.7	25.57	0.361	2
			QPSK	3	3	1	-85	21.97	3.7	25.67	0.369	2
			QPSK	6	0	0	-85	21.03	3.7	24.73	0.297	2
			QPSK	6	0	1	-85	20.81	3.7	24.51	0.282	2
			16QAM	1	0	0	-85	21.78	3.7	25.48	0.353	2
			16QAM	1	5	0	-85	21.39	3.7	25.09	0.323	2
			16QAM	1	0	1	-85	21.82	3.7	25.52	0.356	2
			16QAM	1	5	1	-85	21.34	3.7	25.04	0.319	2
			16QAM	3	0	0	-85	20.97	3.7	24.67	0.293	2
			16QAM	3	3	1	-85	20.87	3.7	24.57	0.286	2
			16QAM	5	0	0	-85	20.88	3.7	24.58	0.287	2
			16QAM	5	0	1	-85	20.85	3.7	24.55	0.285	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 5												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18625	1852.5	QPSK	1	0	0	-85	22.51	3.7	26.21	0.418	2
			QPSK	1	5	0	-85	22.56	3.7	26.26	0.423	2
			QPSK	1	0	1	-85	22.59	3.7	26.29	0.426	2
			QPSK	1	5	1	-85	22.65	3.7	26.35	0.432	2
			QPSK	1	0	3	-85	22.62	3.7	26.32	0.429	2
			QPSK	1	5	3	-85	22.68	3.7	26.38	0.435	2
			QPSK	3	0	0	-85	21.81	3.7	25.51	0.356	2
			QPSK	3	3	3	-85	21.76	3.7	25.46	0.352	2
			QPSK	6	0	0	-85	21.84	3.7	25.54	0.358	2
			QPSK	6	0	1	-85	21.89	3.7	25.59	0.362	2
			QPSK	6	0	3	-85	21.92	3.7	25.62	0.365	2
			16QAM	1	0	0	-85	21.95	3.7	25.65	0.367	2
			16QAM	1	5	0	-85	21.97	3.7	25.67	0.369	2
			16QAM	1	0	1	-85	21.98	3.7	25.68	0.370	2
			16QAM	1	5	1	-85	21.99	3.7	25.69	0.371	2
			16QAM	1	0	3	-85	21.97	3.7	25.67	0.369	2
			16QAM	1	5	3	-85	21.99	3.7	25.69	0.371	2
			16QAM	3	0	0	-85	21.49	3.7	25.19	0.330	2
			16QAM	3	3	3	-85	21.74	3.7	25.44	0.350	2
			16QAM	5	0	0	-85	20.32	3.7	24.02	0.252	2
			16QAM	5	0	1	-85	20.3	3.7	24	0.251	2
			16QAM	5	0	3	-85	20.41	3.7	24.11	0.258	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 5												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.78	3.7	26.48	0.445	2
			QPSK	1	5	0	-85	22.78	3.7	26.48	0.445	2
			QPSK	1	0	1	-85	22.73	3.7	26.43	0.440	2
			QPSK	1	5	1	-85	22.79	3.7	26.49	0.446	2
			QPSK	1	0	3	-85	22.83	3.7	26.53	0.450	2
			QPSK	1	5	3	-85	22.86	3.7	26.56	0.453	2
			QPSK	3	0	0	-85	21.99	3.7	25.69	0.371	2
			QPSK	3	3	3	-85	21.93	3.7	25.63	0.366	2
			QPSK	6	0	0	-85	21.99	3.7	25.69	0.371	2
			QPSK	6	0	1	-85	21.98	3.7	25.68	0.370	2
			QPSK	6	0	3	-85	22.14	3.7	25.84	0.384	2
			16QAM	1	0	0	-85	22.17	3.7	25.87	0.386	2
			16QAM	1	5	0	-85	22.13	3.7	25.83	0.383	2
			16QAM	1	0	1	-85	22.21	3.7	25.91	0.390	2
			16QAM	1	5	1	-85	22.13	3.7	25.83	0.383	2
			16QAM	1	0	3	-85	22.17	3.7	25.87	0.386	2
			16QAM	1	5	3	-85	22.22	3.7	25.92	0.391	2
			16QAM	3	0	0	-85	21.61	3.7	25.31	0.340	2
			16QAM	3	3	3	-85	21.81	3.7	25.51	0.356	2
			16QAM	5	0	0	-85	20.47	3.7	24.17	0.261	2
			16QAM	5	0	1	-85	20.36	3.7	24.06	0.255	2
			16QAM	5	0	3	-85	20.64	3.7	24.34	0.272	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 5												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
High Range	19175	1907.5	QPSK	1	0	0	-85	22.69	3.7	26.39	0.436	2
			QPSK	1	5	0	-85	22.72	3.7	26.42	0.439	2
			QPSK	1	0	1	-85	22.83	3.7	26.53	0.450	2
			QPSK	1	5	1	-85	22.91	3.7	26.61	0.458	2
			QPSK	1	0	3	-85	22.71	3.7	26.41	0.438	2
			QPSK	1	5	3	-85	22.74	3.7	26.44	0.441	2
			QPSK	3	0	0	-85	22	3.7	25.7	0.372	2
			QPSK	3	3	3	-85	22.79	3.7	26.49	0.446	2
			QPSK	6	0	0	-85	21.94	3.7	25.64	0.366	2
			QPSK	6	0	1	-85	22.02	3.7	25.72	0.373	2
			QPSK	6	0	3	-85	21.99	3.7	25.69	0.371	2
			16QAM	1	0	0	-85	22.02	3.7	25.72	0.373	2
			16QAM	1	5	0	-85	22.03	3.7	25.73	0.374	2
			16QAM	1	0	1	-85	22.07	3.7	25.77	0.378	2
			16QAM	1	5	1	-85	22.04	3.7	25.74	0.375	2
			16QAM	1	0	3	-85	22.07	3.7	25.77	0.378	2
			16QAM	1	5	3	-85	22.04	3.7	25.74	0.375	2
			16QAM	3	0	0	-85	21.54	3.7	25.24	0.334	2
			16QAM	3	3	3	-85	21.59	3.7	25.29	0.338	2
			16QAM	5	0	0	-85	20.41	3.7	24.11	0.258	2
			16QAM	5	0	1	-85	20.58	3.7	24.28	0.268	2
			16QAM	5	0	3	-85	20.42	3.7	24.12	0.258	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 10												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18650	1855	QPSK	1	0	0	-85	22.66	3.7	26.36	0.433	2
			QPSK	1	5	0	-85	22.55	3.7	26.25	0.422	2
			QPSK	1	0	3	-85	22.87	3.7	26.57	0.454	2
			QPSK	1	5	3	-85	22.76	3.7	26.46	0.443	2
			QPSK	1	0	7	-85	22.78	3.7	26.48	0.445	2
			QPSK	1	5	7	-85	22.81	3.7	26.51	0.448	2
			QPSK	4	0	0	-85	22.67	3.7	26.37	0.434	2
			QPSK	4	2	7	-85	22.89	3.7	26.59	0.456	2
			QPSK	6	0	0	-85	21.77	3.7	25.47	0.352	2
			QPSK	6	0	7	-85	21.91	3.7	25.61	0.364	2
			16QAM	1	0	0	-85	22.04	3.7	25.74	0.375	2
			16QAM	1	5	0	-85	22.57	3.7	26.27	0.424	2
			16QAM	1	0	3	-85	22.67	3.7	26.37	0.434	2
			16QAM	1	5	3	-85	22.73	3.7	26.43	0.440	2
			16QAM	1	0	7	-85	22.95	3.7	26.65	0.462	2
			16QAM	1	5	7	-85	22.14	3.7	25.84	0.384	2
			16QAM	4	2	0	-85	21.97	3.7	25.67	0.369	2
			16QAM	4	2	7	-85	21.97	3.7	25.67	0.369	2
			16QAM	5	0	0	-85	21.61	3.7	25.31	0.340	2
			16QAM	5	0	7	-85	21.66	3.7	25.36	0.344	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 10												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.72	3.7	26.42	0.439	2
			QPSK	1	5	0	-85	22.71	3.7	26.41	0.438	2
			QPSK	1	0	3	-85	22.74	3.7	26.44	0.441	2
			QPSK	1	5	3	-85	22.67	3.7	26.37	0.434	2
			QPSK	1	0	7	-85	22.74	3.7	26.44	0.441	2
			QPSK	1	5	7	-85	22.72	3.7	26.42	0.439	2
			QPSK	4	0	0	-85	22.82	3.7	26.52	0.449	2
			QPSK	4	2	7	-85	22.93	3.7	26.63	0.460	2
			QPSK	6	0	0	-85	21.87	3.7	25.57	0.361	2
			QPSK	6	0	7	-85	21.89	3.7	25.59	0.362	2
			16QAM	1	0	0	-85	22.99	3.7	26.69	0.467	2
			16QAM	1	5	0	-85	22.15	3.7	25.85	0.385	2
			16QAM	1	0	3	-85	22.01	3.7	25.71	0.372	2
			16QAM	1	5	3	-85	21.85	3.7	25.55	0.359	2
			16QAM	1	0	7	-85	22.45	3.7	26.15	0.412	2
			16QAM	1	5	7	-85	22.64	3.7	26.34	0.431	2
			16QAM	4	2	0	-85	21.97	3.7	25.67	0.369	2
			16QAM	4	2	7	-85	21.99	3.7	25.69	0.371	2
			16QAM	5	0	0	-85	21.64	3.7	25.34	0.342	2
			16QAM	5	0	7	-85	21.87	3.7	25.57	0.361	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 10												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
High Range	19150	1905	QPSK	1	0	0	-85	23.02	3.7	26.72	0.470	2
			QPSK	1	5	0	-85	22.95	3.7	26.65	0.462	2
			QPSK	1	5	7	-85	22.64	3.7	26.34	0.431	2
			QPSK	1	0	3	-85	22.98	3.7	26.68	0.466	2
			QPSK	1	5	3	-85	22.95	3.7	26.65	0.462	2
			QPSK	1	0	7	-85	22.87	3.7	26.57	0.454	2
			QPSK	4	0	0	-85	23.01	3.7	26.71	0.469	2
			QPSK	4	2	7	-85	22.96	3.7	26.66	0.463	2
			QPSK	6	0	0	-85	22.02	3.7	25.72	0.373	2
			QPSK	6	0	7	-85	21.89	3.7	25.59	0.362	2
			16QAM	1	0	0	-85	23.11	3.7	26.81	0.480	2
			16QAM	1	5	0	-85	22.97	3.7	26.67	0.465	2
			16QAM	1	0	3	-85	22.91	3.7	26.61	0.458	2
			16QAM	1	5	3	-85	22.99	3.7	26.69	0.467	2
			16QAM	1	0	7	-85	22.77	3.7	26.47	0.444	2
			16QAM	1	5	7	-85	22.56	3.7	26.26	0.423	2
			16QAM	4	2	0	-85	22.03	3.7	25.73	0.374	2
			16QAM	4	2	7	-85	22.21	3.7	25.91	0.390	2
			16QAM	5	0	0	-85	21.77	3.7	25.47	0.352	2
			16QAM	5	0	7	-85	21.79	3.7	25.49	0.354	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 15												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18675	1857.5	QPSK	1	0	0	-85	22.67	3.7	26.37	0.434	2
			QPSK	1	5	0	-85	22.71	3.7	26.41	0.438	2
			QPSK	1	0	5	-85	22.66	3.7	26.36	0.433	2
			QPSK	1	5	5	-85	22.75	3.7	26.45	0.442	2
			QPSK	1	0	11	-85	22.81	3.7	26.51	0.448	2
			QPSK	1	5	11	-85	22.85	3.7	26.55	0.452	2
			QPSK	3	0	0	-85	22.91	3.7	26.61	0.458	2
			QPSK	3	3	11	-85	22.92	3.7	26.62	0.459	2
			QPSK	6	0	0	-85	22.74	3.7	26.44	0.441	2
			QPSK	6	0	11	-85	22.89	3.7	26.59	0.456	2
			16QAM	1	0	0	-85	22.97	3.7	26.67	0.465	2
			16QAM	1	5	0	-85	22.74	3.7	26.44	0.441	2
			16QAM	1	0	5	-85	22.87	3.7	26.57	0.454	2
			16QAM	1	5	5	-85	22.41	3.7	26.11	0.408	2
			16QAM	1	0	11	-85	22.81	3.7	26.51	0.448	2
			16QAM	1	5	11	-85	22.71	3.7	26.41	0.438	2
			16QAM	3	0	0	-85	22.69	3.7	26.39	0.436	2
			16QAM	3	3	11	-85	23.01	3.7	26.71	0.469	2
			16QAM	5	0	0	-85	22.68	3.7	26.38	0.435	2
			16QAM	5	0	11	-85	22.76	3.7	26.46	0.443	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 15												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.91	3.7	26.61	0.458	2
			QPSK	1	5	0	-85	22.88	3.7	26.58	0.455	2
			QPSK	1	0	5	-85	22.77	3.7	26.47	0.444	2
			QPSK	1	5	5	-85	22.89	3.7	26.59	0.456	2
			QPSK	1	0	11	-85	22.78	3.7	26.48	0.445	2
			QPSK	1	5	11	-85	22.84	3.7	26.54	0.451	2
			QPSK	3	0	0	-85	22.91	3.7	26.61	0.458	2
			QPSK	3	3	11	-85	23.02	3.7	26.72	0.470	2
			QPSK	6	0	0	-85	22.95	3.7	26.65	0.462	2
			QPSK	6	0	11	-85	22.93	3.7	26.63	0.460	2
			16QAM	1	0	0	-85	23.08	3.7	26.78	0.476	2
			16QAM	1	5	0	-85	23.04	3.7	26.74	0.472	2
			16QAM	1	0	5	-85	22.64	3.7	26.34	0.431	2
			16QAM	1	5	5	-85	22.75	3.7	26.45	0.442	2
			16QAM	1	0	11	-85	22.87	3.7	26.57	0.454	2
			16QAM	1	5	11	-85	22.67	3.7	26.37	0.434	2
			16QAM	3	0	0	-85	22.84	3.7	26.54	0.451	2
			16QAM	3	3	11	-85	22.78	3.7	26.48	0.445	2
			16QAM	5	0	0	-85	22.68	3.7	26.38	0.435	2
			16QAM	5	0	11	-85	22.92	3.7	26.62	0.459	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 15												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
High Range	19125	1902.5	QPSK	1	0	0	-85	23.01	3.7	26.71	0.469	2
			QPSK	1	5	11	-85	22.88	3.7	26.58	0.455	2
			QPSK	1	0	5	-85	23.02	3.7	26.72	0.470	2
			QPSK	1	5	5	-85	22.87	3.7	26.57	0.454	2
			QPSK	1	0	11	-85	22.91	3.7	26.61	0.458	2
			QPSK	1	5	11	-85	22.87	3.7	26.57	0.454	2
			QPSK	3	0	0	-85	22.87	3.7	26.57	0.454	2
			QPSK	3	3	11	-85	23.01	3.7	26.71	0.469	2
			QPSK	6	0	0	-85	23.03	3.7	26.73	0.471	2
			QPSK	6	0	11	-85	23.02	3.7	26.72	0.470	2
			16QAM	1	0	0	-85	23.18	3.7	26.88	0.488	2
			16QAM	1	5	0	-85	22.64	3.7	26.34	0.431	2
			16QAM	1	0	5	-85	23.04	3.7	26.74	0.472	2
			16QAM	1	5	5	-85	22.88	3.7	26.58	0.455	2
			16QAM	1	0	11	-85	22.08	3.7	25.78	0.378	2
			16QAM	1	5	11	-85	22.59	3.7	26.29	0.426	2
			16QAM	3	0	0	-85	22.98	3.7	26.68	0.466	2
			16QAM	3	3	11	-85	22.61	3.7	26.31	0.428	2
			16QAM	5	0	0	-85	22.94	3.7	26.64	0.461	2
			16QAM	5	0	11	-85	22.86	3.7	26.56	0.453	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 20												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Low Range	18700	1860	QPSK	1	0	0	-85	22.79	3.7	26.49	0.446	2
			QPSK	1	5	0	-85	22.83	3.7	26.53	0.450	2
			QPSK	1	0	7	-85	22.51	3.7	26.21	0.418	2
			QPSK	1	5	7	-85	22.63	3.7	26.33	0.430	2
			QPSK	1	0	15	-85	22.86	3.7	26.56	0.453	2
			QPSK	1	5	15	-85	22.92	3.7	26.62	0.459	2
			QPSK	3	0	0	-85	22.67	3.7	26.37	0.434	2
			QPSK	3	3	15	-85	22.74	3.7	26.44	0.441	2
			QPSK	6	0	0	-85	22.74	3.7	26.44	0.441	2
			QPSK	6	0	15	-85	22.91	3.7	26.61	0.458	2
			16QAM	1	0	0	-85	22.47	3.7	26.17	0.414	2
			16QAM	1	5	0	-85	22.47	3.7	26.17	0.414	2
			16QAM	1	0	7	-85	22.55	3.7	26.25	0.422	2
			16QAM	1	5	7	-85	22.83	3.7	26.53	0.450	2
			16QAM	1	0	15	-85	22.39	3.7	26.09	0.406	2
			16QAM	1	5	15	-85	22.46	3.7	26.16	0.413	2
			16QAM	3	0	0	-85	22.81	3.7	26.51	0.448	2
			16QAM	3	3	15	-85	22.87	3.7	26.57	0.454	2
			16QAM	5	0	0	-85	22.62	3.7	26.32	0.429	2
			16QAM	5	0	15	-85	22.81	3.7	26.51	0.448	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 20												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.88	3.7	26.58	0.455	2
			QPSK	1	5	0	-85	22.86	3.7	26.56	0.453	2
			QPSK	1	0	7	-85	22.89	3.7	26.59	0.456	2
			QPSK	1	5	7	-85	22.87	3.7	26.57	0.454	2
			QPSK	1	0	15	-85	22.73	3.7	26.43	0.440	2
			QPSK	1	5	15	-85	23.02	3.7	26.72	0.470	2
			QPSK	3	0	0	-85	22.93	3.7	26.63	0.460	2
			QPSK	3	3	15	-85	22.96	3.7	26.66	0.463	2
			QPSK	6	0	0	-85	22.87	3.7	26.57	0.454	2
			QPSK	6	0	15	-85	23.02	3.7	26.72	0.470	2
			16QAM	1	0	0	-85	22.97	3.7	26.67	0.465	2
			16QAM	1	5	0	-85	22.77	3.7	26.47	0.444	2
			16QAM	1	0	7	-85	22.57	3.7	26.27	0.424	2
			16QAM	1	5	7	-85	22.86	3.7	26.56	0.453	2
			16QAM	1	0	15	-85	22.76	3.7	26.46	0.443	2
			16QAM	1	5	15	-85	22.85	3.7	26.55	0.452	2
			16QAM	3	0	0	-85	22.86	3.7	26.56	0.453	2
			16QAM	3	3	15	-85	22.74	3.7	26.44	0.441	2
			16QAM	5	0	0	-85	22.76	3.7	26.46	0.443	2
			16QAM	5	0	15	-85	22.93	3.7	26.63	0.460	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

LTE Cat-M1 Band 2, BW (MHz): 20												
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT		Antenna Gain (dBi)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)				
High Range	19100	1900	QPSK	1	0	0	-85	22.88	3.7	26.58	0.455	2
			QPSK	1	5	0	-85	22.97	3.7	26.67	0.465	2
			QPSK	1	0	7	-85	23.02	3.7	26.72	0.470	2
			QPSK	1	5	7	-85	22.99	3.7	26.69	0.467	2
			QPSK	1	0	15	-85	22.96	3.7	26.66	0.463	2
			QPSK	1	5	15	-85	22.96	3.7	26.66	0.463	2
			QPSK	3	0	0	-85	22.88	3.7	26.58	0.455	2
			QPSK	3	3	15	-85	22.98	3.7	26.68	0.466	2
			QPSK	6	0	0	-85	23.02	3.7	26.72	0.470	2
			QPSK	6	0	15	-85	23.03	3.7	26.73	0.471	2
			16QAM	1	0	0	-85	23.14	3.7	26.84	0.483	2
			16QAM	1	5	0	-85	23.01	3.7	26.71	0.469	2
			16QAM	1	0	7	-85	22.96	3.7	26.66	0.463	2
			16QAM	1	5	7	-85	22.99	3.7	26.69	0.467	2
			16QAM	1	0	15	-85	22.71	3.7	26.41	0.438	2
			16QAM	1	5	15	-85	22.71	3.7	26.41	0.438	2
			16QAM	3	0	0	-85	22.99	3.7	26.69	0.467	2
			16QAM	3	3	15	-85	22.97	3.7	26.67	0.465	2
			16QAM	5	0	0	-85	22.91	3.7	26.61	0.458	2
			16QAM	5	0	15	-85	22.96	3.7	26.66	0.463	2

Note1: EIRP = Conducted Output Power + Antenna Gain.

Note2: Conducted power refers to test report of FCC ID: N7NHL78. Test report no.: RF181126C15-1

3.1.5 Verification of Conducted Output Power

LTE Cat-M1 Band 2, BW (MHz): 1.4								
Test Frequency ID	NUL	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Conducted Power (dBm)
Low Range	18607	1850.7	QPSK	1	0	0	-85	23.14
			QPSK	1	5	0	-85	23.11
			QPSK	3	3	0	-85	21.94
			QPSK	6	0	0	-85	20.96
			16QAM	1	0	0	-85	21.77
			16QAM	1	5	0	-85	21.86
			16QAM	3	0	0	-85	20.88
			16QAM	5	0	0	-85	21.06
Mid. Range	18900	1880	QPSK	1	0	0	-85	22.82
			QPSK	1	5	0	-85	22.72
			QPSK	3	3	0	-85	21.8
			QPSK	6	0	0	-85	20.77
			16QAM	1	0	0	-85	21.56
			16QAM	1	5	0	-85	21.57
			16QAM	3	0	0	-85	21.01
			16QAM	5	0	0	-85	20.59
High Range	19193	1909.3	QPSK	1	0	0	-85	22.87
			QPSK	1	5	0	-85	22.71
			QPSK	3	3	0	-85	21.72
			QPSK	6	0	0	-85	20.78
			16QAM	1	0	0	-85	21.4
			16QAM	1	5	0	-85	21.48
			16QAM	3	0	0	-85	20.88
			16QAM	5	0	0	-85	20.4

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

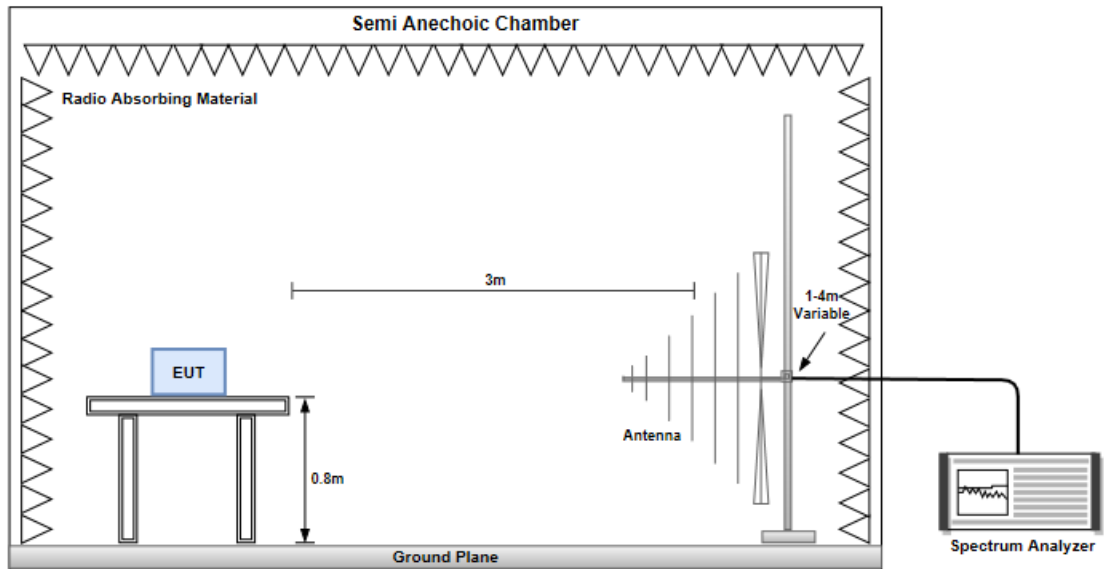
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

3.2.2 Test Procedures

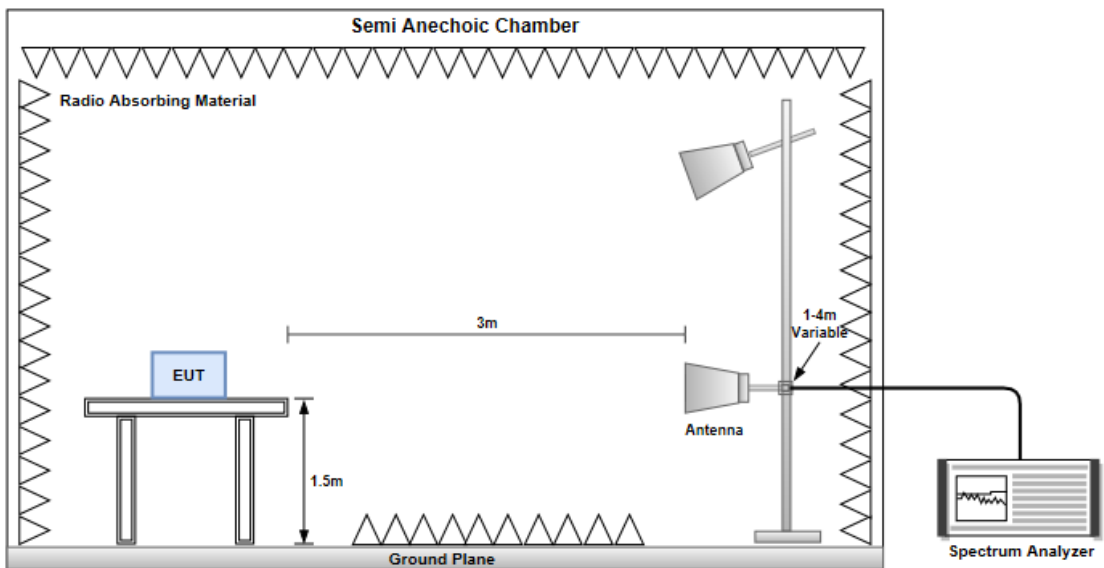
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

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

Mode	LTE Band 2, QPSK, CB:1.4 MHz, 1 RB Offset 0, Channel: 18900						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
144.57	H	-62.45	-13	-49.45	-61.84	-55.8	-6.65
166.54	H	-62.51	-13	-49.51	-61.85	-56.73	-5.78
214.83	H	-65.79	-13	-52.79	-61.86	-63.36	-2.43
264.81	H	-61.51	-13	-48.51	-58.84	-60.25	-1.26
286.84	H	-61.75	-13	-48.75	-59.84	-60.48	-1.27
311.28	H	-62.63	-13	-49.63	-61.86	-61.4	-1.23
51.28	V	-60.67	-13	-47.67	-58.83	-44.85	-15.82
90.28	V	-66.72	-13	-53.72	-66.89	-61.81	-4.91
144.854	V	-60.58	-13	-47.58	-62.84	-53.94	-6.64
158.94	V	-60.13	-13	-47.13	-62.94	-53.83	-6.3
263.88	V	-61.9	-13	-48.9	-63.64	-60.64	-1.26
311.421	V	-61.38	-13	-48.38	-62.83	-60.15	-1.23

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:3 MHz, 1 RB Offset 0, Channel: 18900						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
144.25	H	-62.36	-13	-49.36	-61.75	-55.7	-6.66
166.98	H	-62.48	-13	-49.48	-61.82	-56.73	-5.75
214.89	H	-64.33	-13	-51.33	-60.4	-61.9	-2.43
263.57	H	-60.55	-13	-47.55	-57.84	-59.29	-1.26
287.64	H	-60.56	-13	-47.56	-58.68	-59.29	-1.27
310.897	H	-61.69	-13	-48.69	-60.89	-60.46	-1.23
51.564	V	-60.35	-13	-47.35	-58.57	-44.59	-15.76
90.64	V	-66.37	-13	-53.37	-66.56	-61.45	-4.92
144.64	V	-60.6	-13	-47.6	-62.85	-53.95	-6.65
159.85	V	-62	-13	-49	-64.84	-55.73	-6.27
264.3	V	-64.92	-13	-51.92	-66.66	-63.66	-1.26
310.95	V	-64.36	-13	-51.36	-65.81	-63.13	-1.23

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:5 MHz, 1 RB Offset 0, Channel: 19175						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
143	H	-62.65	-13	-49.65	-62.04	-55.96	-6.69
166.89	H	-62.5	-13	-49.5	-61.84	-56.75	-5.75
214.89	H	-65.82	-13	-52.82	-61.89	-63.39	-2.43
264.64	H	-61.88	-13	-48.88	-59.21	-60.62	-1.26
286.64	H	-61.48	-13	-48.48	-59.57	-60.21	-1.27
312.84	H	-62.17	-13	-49.17	-61.5	-60.95	-1.22
51.52	V	-60.44	-13	-47.44	-58.65	-44.67	-15.77
90.25	V	-66.67	-13	-53.67	-66.84	-61.76	-4.91
143.25	V	-61.04	-13	-48.04	-63.24	-54.36	-6.68
159.24	V	-61.06	-13	-48.06	-63.88	-54.77	-6.29
262.85	V	-64.89	-13	-51.89	-66.64	-63.63	-1.26
310.86	V	-63.8	-13	-50.8	-65.25	-62.57	-1.23

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, 16QAM, CB:10 MHz, 1 RB Offset 0, Channel: 19150						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
143.49	H	-63.42	-13	-50.42	-62.81	-56.75	-6.67
167.74	H	-63	-13	-50	-62.34	-57.31	-5.69
215.27	H	-66.63	-13	-53.63	-62.71	-64.22	-2.41
263.77	H	-61.77	-13	-48.77	-59.07	-60.51	-1.26
287.05	H	-62.66	-13	-49.66	-60.76	-61.39	-1.27
311.3	H	-63.07	-13	-50.07	-62.3	-61.84	-1.23
51.34	V	-60.89	-13	-47.89	-59.06	-45.08	-15.81
90.14	V	-66.9	-13	-53.9	-67.06	-61.99	-4.91
143.49	V	-61.4	-13	-48.4	-63.61	-54.73	-6.67
159.01	V	-62.21	-13	-49.21	-65.02	-55.92	-6.29
263.77	V	-66.25	-13	-53.25	-68	-64.99	-1.26
311.3	V	-64.63	-13	-51.63	-66.08	-63.4	-1.23

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, 16QAM, CB:15 MHz, 1 RB Offset 0, Channel: 19125						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
143.59	H	-63.49	-13	-50.49	-62.88	-56.82	-6.67
167.34	H	-63.51	-13	-50.51	-62.85	-57.79	-5.72
215.26	H	-67.8	-13	-54.8	-63.88	-65.39	-2.41
264.81	H	-61.66	-13	-48.66	-58.99	-60.4	-1.26
287.25	H	-62.75	-13	-49.75	-60.86	-61.48	-1.27
310.89	H	-62.72	-13	-49.72	-61.92	-61.49	-1.23
51.28	V	-60.67	-13	-47.67	-58.83	-44.85	-15.82
90.28	V	-66.4	-13	-53.4	-66.57	-61.49	-4.91
142.85	V	-60.67	-13	-47.67	-62.85	-53.98	-6.69
159.25	V	-61.71	-13	-48.71	-64.53	-55.42	-6.29
263.852	V	-66.26	-13	-53.26	-68	-65	-1.26
312.54	V	-64.34	-13	-51.34	-65.81	-63.12	-1.22

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:20 MHz, 1 RB Offset 0, Channel: 19100						
Frequency (MHz)	Antenna Polarity	E.IR.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
142.85	H	-63.36	-13	-50.36	-62.75	-56.67	-6.69
167.85	H	-63.25	-13	-50.25	-62.59	-57.57	-5.68
215.39	H	-66.49	-13	-53.49	-62.57	-64.08	-2.41
264.28	H	-63.57	-13	-50.57	-60.88	-62.31	-1.26
287.05	H	-61.74	-13	-48.74	-59.84	-60.47	-1.27
311.05	H	-63.36	-13	-50.36	-62.57	-62.13	-1.23
51.88	V	-60.64	-13	-47.64	-58.92	-44.95	-15.69
89.988	V	-64.85	-13	-51.85	-65	-59.94	-4.91
142.84	V	-62.66	-13	-49.66	-64.84	-55.97	-6.69
159.94	V	-62.86	-13	-49.86	-65.71	-56.59	-6.27
263.57	V	-65.14	-13	-52.14	-66.89	-63.88	-1.26
311.587	V	-64.08	-13	-51.08	-65.53	-62.85	-1.23

Note: EIRP = S.G Power value + Correction factor.

3.2.5 Test Result of Radiated Emissions above 1GHz

Mode	LTE Band 2, QPSK, CB:1.4 MHz, 1 RB Offset 0, Channel: 18607						
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)
3700.5	H	-47.46	-13	-34.46	-61.02	-54.33	6.87
5550.75	H	-33.54	-13	-20.54	-50.31	-40.17	6.63
9251.25	H	-39.42	-13	-26.42	-62.75	-41.04	1.62
3700.5	V	-47.17	-13	-34.17	-60.52	-54.04	6.87
5550.75	V	-38.87	-13	-25.87	-55.63	-45.5	6.63
9251.25	V	-40.31	-13	-27.31	-61.51	-41.93	1.62

Mode	LTE Band 2, QPSK, CB:1.4 MHz, 1 RB Offset 0, Channel: 18900						
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)
3759.1	H	-47.37	-13	-34.37	-61.18	-54.29	6.92
5638.65	H	-32.62	-13	-19.62	-49.59	-39.18	6.56
9397.75	H	-39.12	-13	-26.12	-62.44	-40.65	1.53
3759.1	V	-46.79	-13	-33.79	-60.39	-53.71	6.92
5638.65	V	-38.92	-13	-25.92	-55.88	-45.48	6.56
9397.75	V	-40.3	-13	-27.3	-61.31	-41.83	1.53

Mode	LTE Band 2, QPSK, CB:1.4 MHz, 1 RB Offset 0, Channel: 19193						
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)
3817.7	H	-47.41	-13	-34.41	-61.38	-54.36	6.95
5726.55	H	-32.68	-13	-19.68	-49.85	-39.18	6.5
9544.25	H	-39.17	-13	-26.17	-62.86	-40.69	1.52
3817.7	V	-46.73	-13	-33.73	-60.52	-53.68	6.95
5726.55	V	-38.29	-13	-25.29	-55.52	-44.79	6.5
9544.25	V	-39.99	-13	-26.99	-61.56	-41.51	1.52

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:3 MHz, 1 RB Offset 0, Channel: 18615						
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)
3705.02	H	-47.67	-13	-34.67	-61.24	-54.54	6.87
5557.53	H	-33.88	-13	-20.88	-50.66	-40.5	6.62
9262.55	H	-39.22	-13	-26.22	-62.55	-40.83	1.61
3705.02	V	-47.47	-13	-34.47	-60.83	-54.34	6.87
5557.53	V	-38.43	-13	-25.43	-55.2	-45.05	6.62
9262.55	V	-40.81	-13	-27.81	-61.98	-42.42	1.61

Mode	LTE Band 2, QPSK, CB:3 MHz, 1 RB Offset 0, Channel: 18900						
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)
3762.02	H	-47.68	-13	-34.68	-61.5	-54.6	6.92
5643.03	H	-32.91	-13	-19.91	-49.9	-39.47	6.56
9405.05	H	-39.39	-13	-26.39	-62.72	-40.92	1.53
3762.02	V	-47.67	-13	-34.67	-61.28	-54.59	6.92
5643.03	V	-38.91	-13	-25.91	-55.89	-45.47	6.56
9405.05	V	-40.6	-13	-27.6	-61.63	-42.13	1.53

Mode	LTE Band 2, QPSK, CB:3 MHz, 1 RB Offset 0, Channel: 19185						
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)
3815.02	H	-47.27	-13	-34.27	-61.25	-54.22	6.95
5722.53	H	-32.46	-13	-19.46	-49.62	-38.96	6.5
9537.55	H	-39.02	-13	-26.02	-62.7	-40.54	1.52
3815.02	V	-46.45	-13	-33.45	-60.24	-53.4	6.95
5722.53	V	-37.91	-13	-24.91	-55.12	-44.41	6.5
9537.55	V	-40.25	-13	-27.25	-61.79	-41.77	1.52

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:5 MHz, 1 RB Offset 0, Channel: 18625						
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)
3709.24	H	-47.64	-13	-34.64	-61.23	-54.51	6.87
5563.86	H	-33.19	-13	-20.19	-49.99	-39.81	6.62
9273.1	H	-39.87	-13	-26.87	-63.2	-41.48	1.61
3709.24	V	-46.95	-13	-33.95	-60.33	-53.82	6.87
5563.86	V	-39.14	-13	-26.14	-55.92	-45.76	6.62
9273.1	V	-40.69	-13	-27.69	-61.85	-42.3	1.61

Mode	LTE Band 2, QPSK, CB:5 MHz, 1 RB Offset 0, Channel: 18900						
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)
3764.24	H	-47.19	-13	-34.19	-61.02	-54.11	6.92
5646.36	H	-32.23	-13	-19.23	-49.22	-38.79	6.56
9410.6	H	-38.48	-13	-25.48	-61.82	-40.01	1.53
3764.24	V	-46.5	-13	-33.5	-60.12	-53.42	6.92
5646.36	V	-38.38	-13	-25.38	-55.36	-44.94	6.56
9410.6	V	-39.97	-13	-26.97	-61.02	-41.5	1.53

Mode	LTE Band 2, QPSK, CB:5 MHz, 1 RB Offset 0, Channel: 19175						
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)
3814.86	H	-47.98	-13	-34.98	-61.96	-54.93	6.95
5722.29	H	-32.5	-13	-19.5	-49.66	-39	6.5
9537.15	H	-38.96	-13	-25.96	-62.63	-40.48	1.52
3814.86	V	-47.29	-13	-34.29	-61.08	-54.24	6.95
5722.29	V	-38.04	-13	-25.04	-55.25	-44.54	6.5
9537.15	V	-40.19	-13	-27.19	-61.73	-41.71	1.52

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, 16QAM, CB:10 MHz, 1 RB Offset 0, Channel: 18650						
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)
3716.82	H	-48.22	-13	-35.22	-61.85	-55.1	6.88
5575.23	H	-35.79	-13	-22.79	-52.62	-42.4	6.61
9292.05	H	-39.29	-13	-26.29	-62.62	-40.88	1.59
3716.82	V	-48.27	-13	-35.27	-61.69	-55.15	6.88
5575.23	V	-40.08	-13	-27.08	-56.88	-46.69	6.61
9292.05	V	-41.55	-13	-28.55	-62.69	-43.14	1.59

Mode	LTE Band 2, 16QAM, CB:10 MHz, 1 RB Offset 0, Channel: 18900						
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)
3751.54	H	-48.68	-13	-35.68	-62.46	-55.59	6.91
5627.31	H	-35.32	-13	-22.32	-52.27	-41.89	6.57
9378.85	H	-38.84	-13	-25.84	-62.15	-40.38	1.54
3751.54	V	-48.64	-13	-35.64	-62.21	-55.55	6.91
5627.31	V	-39.89	-13	-26.89	-56.82	-46.46	6.57
9378.85	V	-41.56	-13	-28.56	-62.59	-43.1	1.54

Mode	LTE Band 2, 16QAM, CB:10 MHz, 1 RB Offset 0, Channel: 19150						
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)
3801.54	H	-47.29	-13	-34.29	-61.27	-54.24	6.95
5702.31	H	-33.13	-13	-20.13	-50.25	-39.65	6.52
9503.85	H	-38.81	-13	-25.81	-62.41	-40.33	1.52
3801.54	V	-47.25	-13	-34.25	-61.02	-54.2	6.95
5702.31	V	-38.06	-13	-25.06	-55.21	-44.58	6.52
9503.85	V	-40.43	-13	-27.43	-61.86	-41.95	1.52

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, 16QAM, CB:15 MHz, 1 RB Offset 0, Channel: 18675						
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)
3727.34	H	-48.01	-13	-35.01	-61.68	-54.9	6.89
5591.01	H	-33.79	-13	-20.79	-50.66	-40.39	6.6
9318.35	H	-39.89	-13	-26.89	-63.22	-41.47	1.58
3727.34	V	-47.53	-13	-34.53	-60.99	-54.42	6.89
5591.01	V	-39.49	-13	-26.49	-56.32	-46.09	6.6
9318.35	V	-41.12	-13	-28.12	-62.23	-42.7	1.58

Mode	LTE Band 2, 16QAM, CB:15 MHz, 1 RB Offset 0, Channel: 18900						
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)
3747.22	H	-48.48	-13	-35.48	-62.23	-55.39	6.91
5620.83	H	-35.76	-13	-22.76	-52.69	-42.34	6.58
9368.05	H	-39.98	-13	-26.98	-63.3	-41.53	1.55
3747.22	V	-49.03	-13	-36.03	-62.57	-55.94	6.91
5620.83	V	-40.67	-13	-27.67	-57.58	-47.25	6.58
9368.05	V	-41.94	-13	-28.94	-62.99	-43.49	1.55

Mode	LTE Band 2, 16QAM, CB:15 MHz, 1 RB Offset 0, Channel: 19125						
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)
3792.22	H	-47.29	-13	-34.29	-61.24	-54.23	6.94
5688.33	H	-33.15	-13	-20.15	-50.23	-39.68	6.53
9480.55	H	-39.17	-13	-26.17	-62.71	-40.69	1.52
3792.22	V	-47.08	-13	-34.08	-60.82	-54.02	6.94
5688.33	V	-38.47	-13	-25.47	-55.58	-45	6.53
9480.55	V	-40.48	-13	-27.48	-61.82	-42	1.52

Note: EIRP = S.G Power value + Correction factor.

Mode	LTE Band 2, QPSK, CB:20 MHz, 1 RB Offset 0, Channel: 18700						
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)
3737.48	H	-47.81	-13	-34.81	-61.53	-54.71	6.9
5606.22	H	-33.75	-13	-20.75	-50.66	-40.31	6.56
9343.7	H	-38.89	-13	-25.89	-62.21	-40.45	1.56
3737.48	V	-47.16	-13	-34.16	-60.67	-54.06	6.9
5606.22	V	-38.91	-13	-25.91	-55.78	-45.47	6.56
9343.7	V	-40.64	-13	-27.64	-61.71	-42.2	1.56

Mode	LTE Band 2, QPSK, CB:20 MHz, 1 RB Offset 0, Channel: 18900						
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)
3777.48	H	-47.38	-13	-34.38	-61.27	-54.31	6.93
5666.22	H	-32.98	-13	-19.98	-50.02	-39.52	6.54
9443.7	H	-38.73	-13	-25.73	-62.17	-40.26	1.53
3777.48	V	-46.86	-13	-33.86	-60.54	-53.79	6.93
5666.22	V	-38.88	-13	-25.88	-55.93	-45.42	6.54
9443.7	V	-40.46	-13	-27.46	-61.65	-41.99	1.53

Mode	LTE Band 2, 16QAM, CB:20 MHz, 1 RB Offset 0, Channel: 19100						
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)
3782.9	H	-47.36	-13	-34.36	-61.27	-54.3	6.94
5674.35	H	-32.91	-13	-19.91	-49.97	-39.45	6.54
9457.25	H	-39.08	-13	-26.08	-62.55	-40.6	1.52
3782.9	V	-46.58	-13	-33.58	-60.28	-53.52	6.94
5674.35	V	-38.86	-13	-25.86	-55.93	-45.4	6.54
9457.25	V	-40.59	-13	-27.59	-61.83	-42.11	1.52

Note: EIRP = S.G Power value + Correction factor.

3.3 Conducted Emissions

3.3.1 Limit of Conducted Emissions

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.

3.3.2 Test Procedures

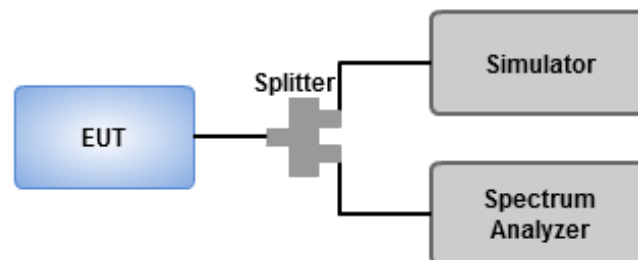
1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 30 MHz ~ 20 GHz.
3. Emission below 1GHz
Set RBW = 100 kHz, VBW = 300 kHz, detector = Peak, sweep time = auto.

Emission above 1GHz

Set RBW = 1MHz, VBW = 3MHz, detector = Peak, sweep time = auto.

4. Record the max trace value and capture the test plot of each sub frequency band.

3.3.3 Test Setup



3.3.4 Test Result of Conducted Emissions

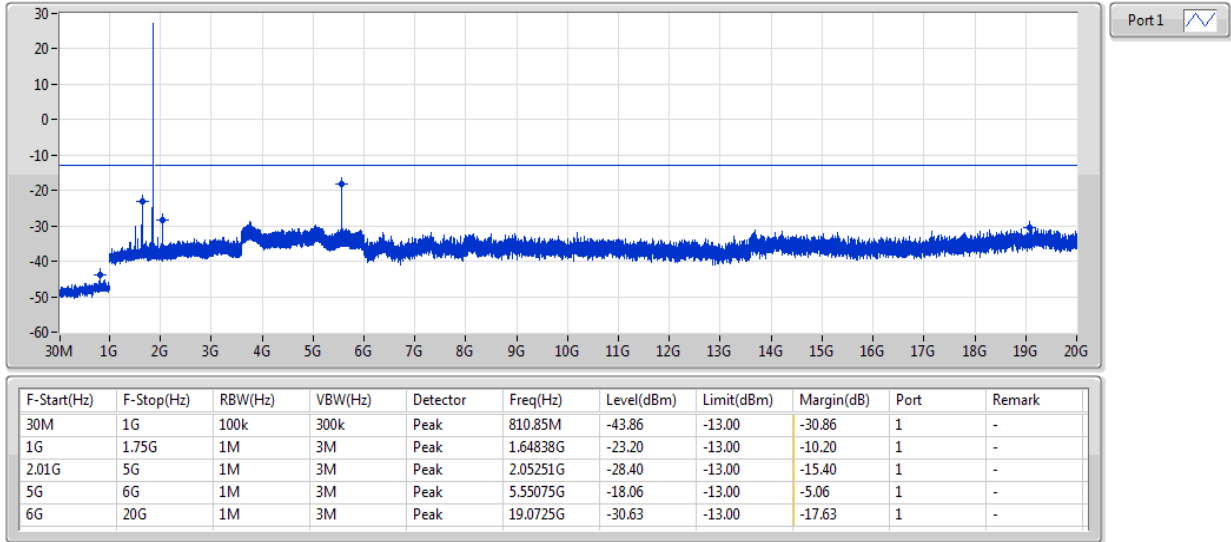
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port	Remark	Ref.Limit (dB)
Band 2	-	-	-	-	-	-	-	-	-	-	-	-	-
LTE-M1_1.4MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.72663G	-18.05	-13.00	-5.05	1	-	-
LTE-M1_1.4MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.7265G	-17.43	-13.00	-4.43	1	-	-
LTE-M1_3MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.55384G	-17.11	-13.00	-4.11	1	-	-
LTE-M1_3MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.554G	-18.02	-13.00	-5.02	1	-	-
LTE-M1_5MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.64619G	-17.09	-13.00	-4.09	1	-	-
LTE-M1_5MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.64609G	-14.98	-13.00	-1.98	1	-	-
LTE-M1_10MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.63994G	-17.62	-13.00	-4.62	1	-	-
LTE-M1_10MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.56463G	-15.70	-13.00	-2.70	1	-	-
LTE-M1_15MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.57203G	-16.74	-13.00	-3.74	1	-	-
LTE-M1_15MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.63959G	-15.58	-13.00	-2.58	1	-	-
LTE-M1_20MHz_Nss1,QPSK_1TX	Pass	5G	6G	1M	3M	Peak	5.57966G	-17.08	-13.00	-4.08	1	-	-
LTE-M1_20MHz_Nss1,16QAM_1TX	Pass	5G	6G	1M	3M	Peak	5.57947G	-15.64	-13.00	-2.64	1	-	-

Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

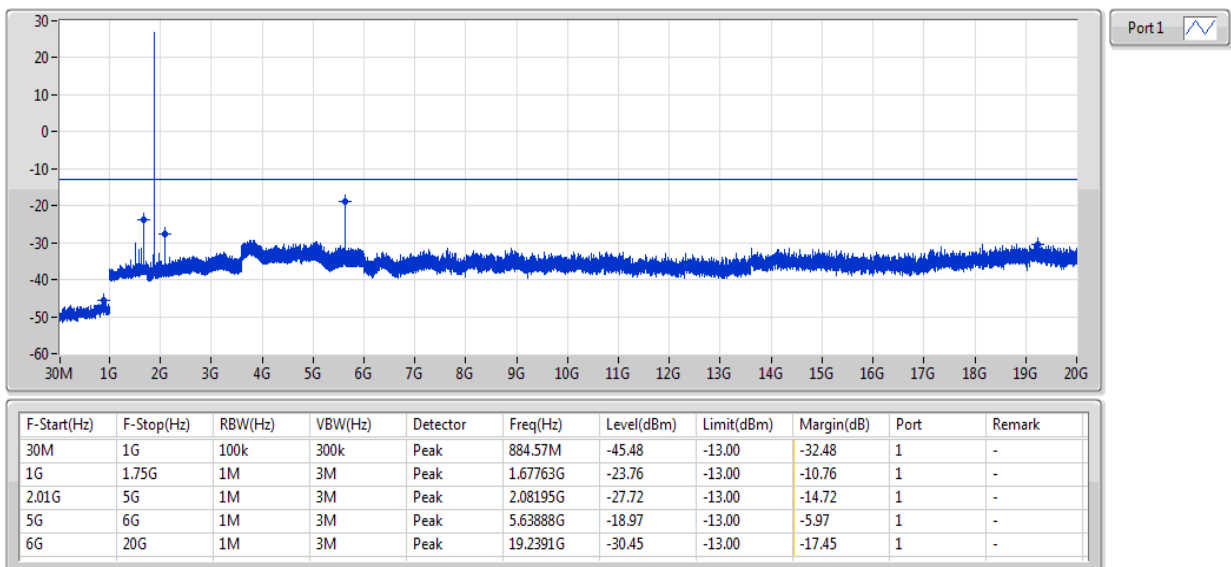
1850.7MHz



Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

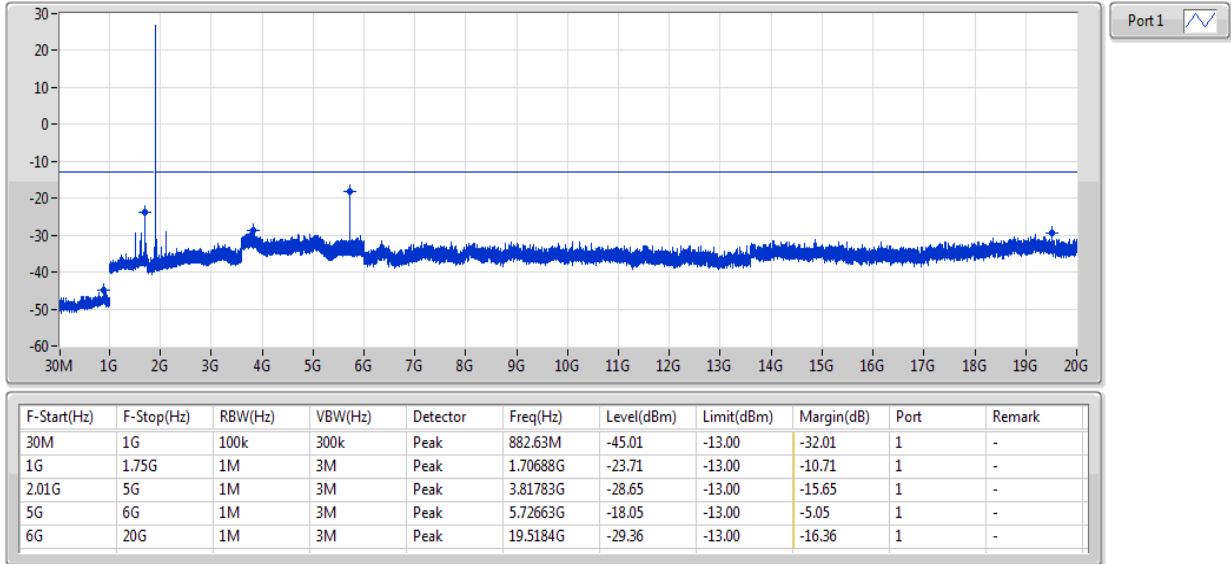
1880MHz



Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

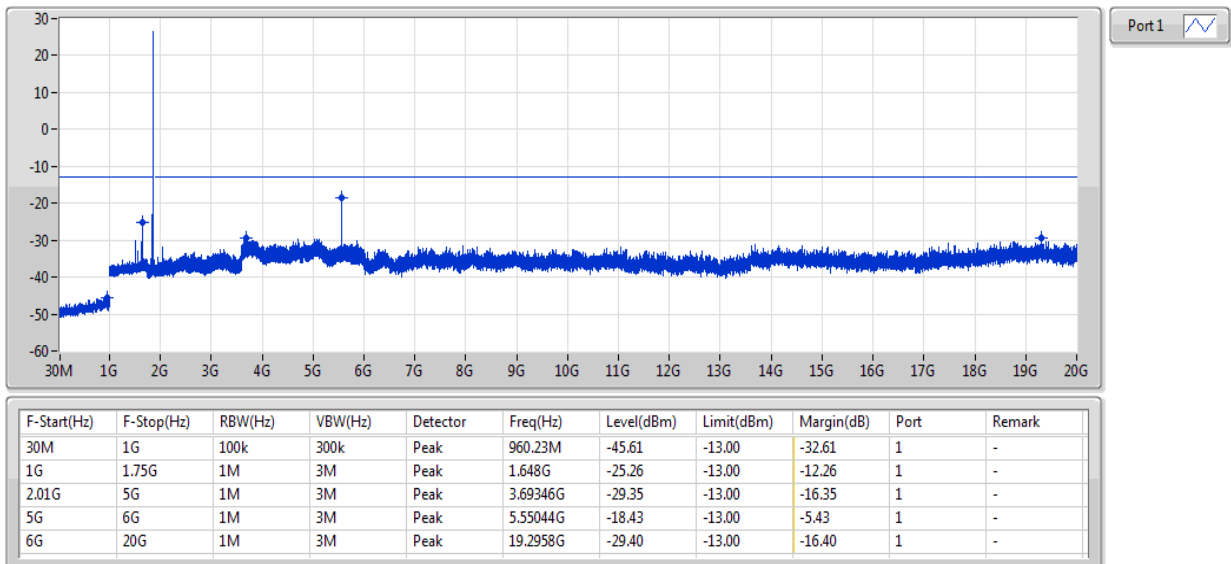
1909.3MHz



Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

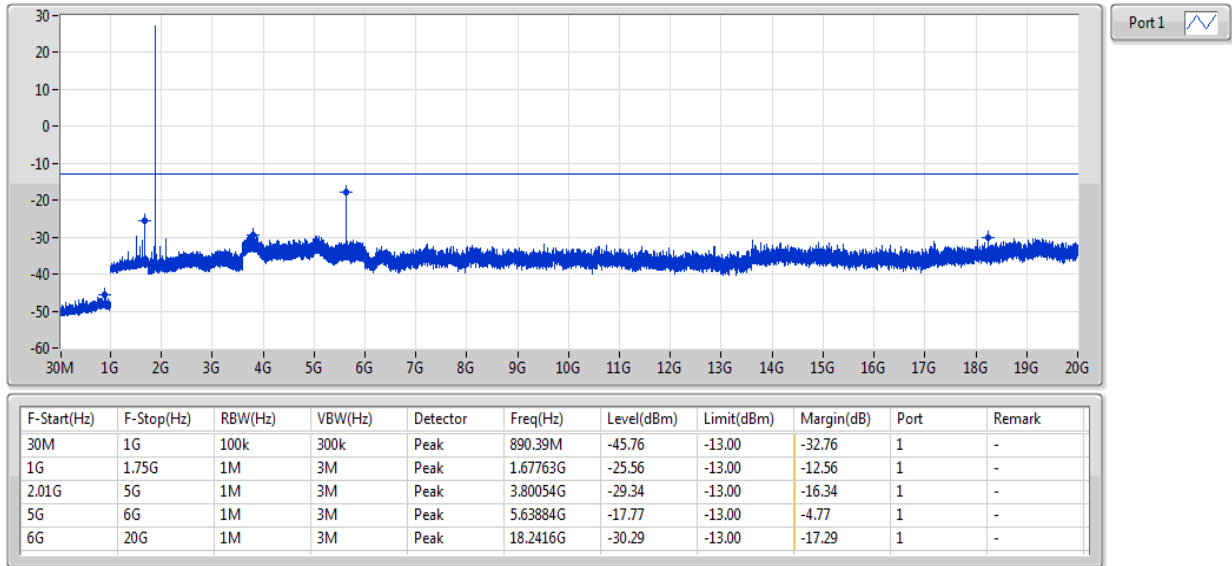
1850.7MHz



Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

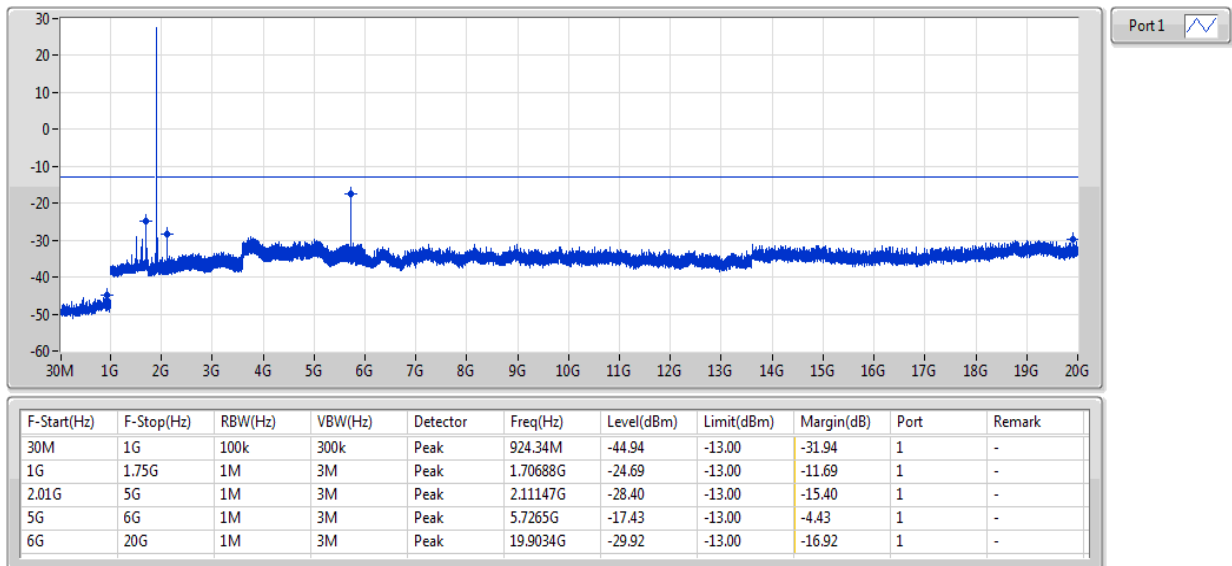
1880MHz



Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

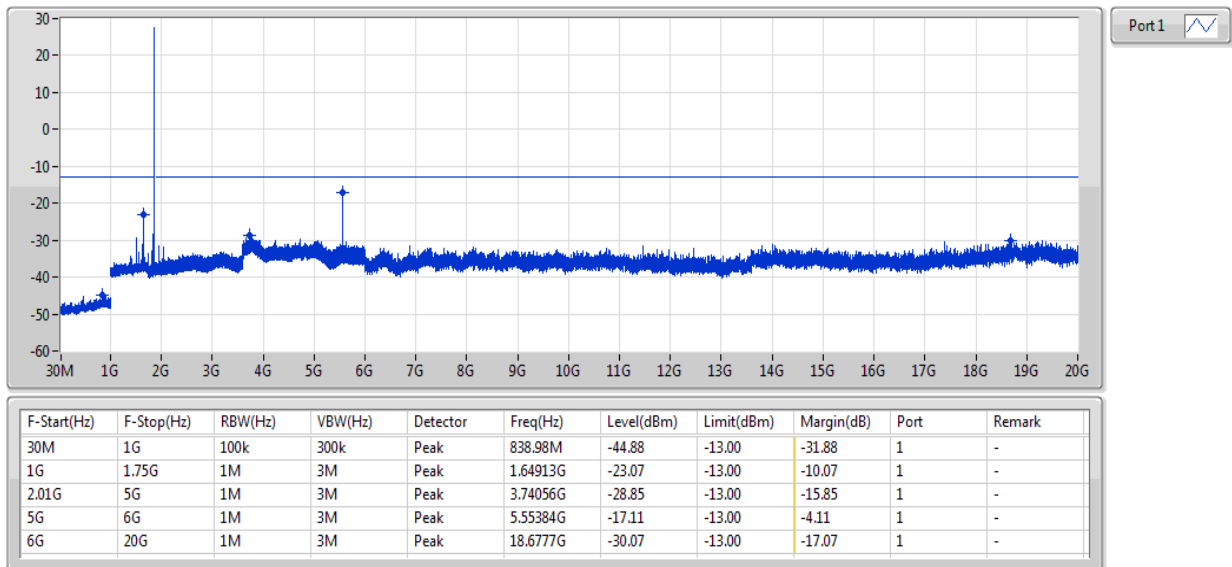
1909.3MHz



Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

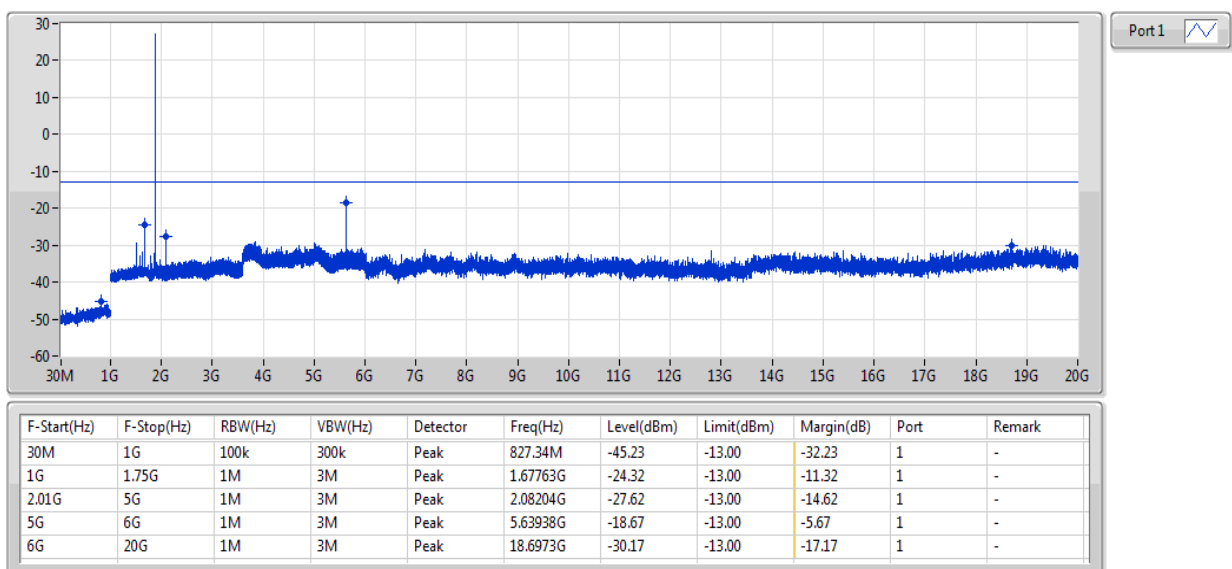
1851.5MHz



Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

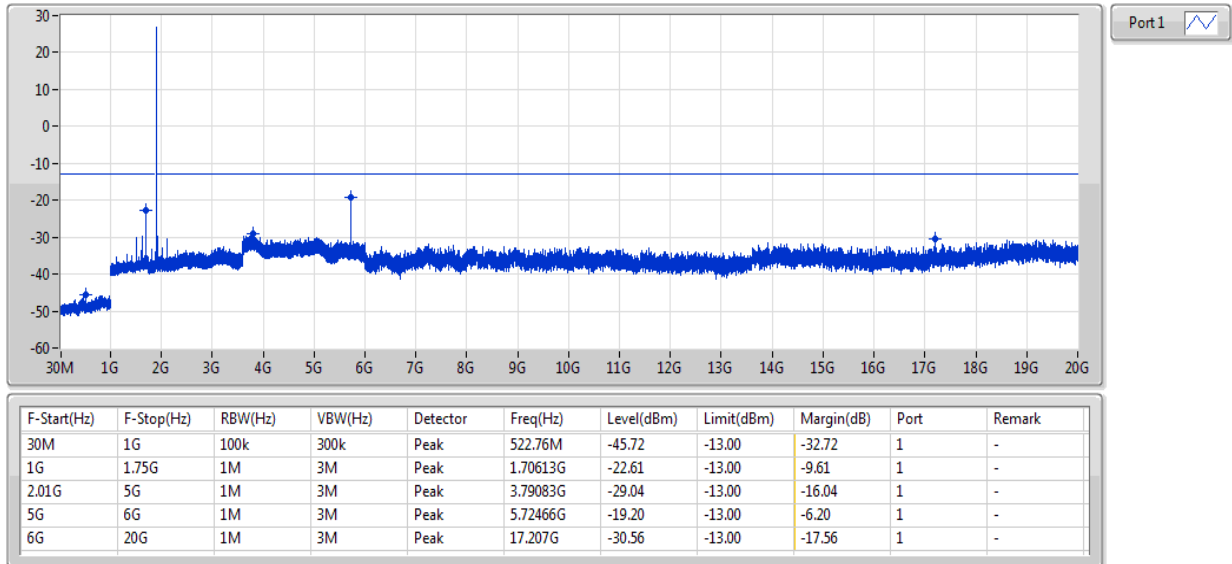
1880MHz



Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

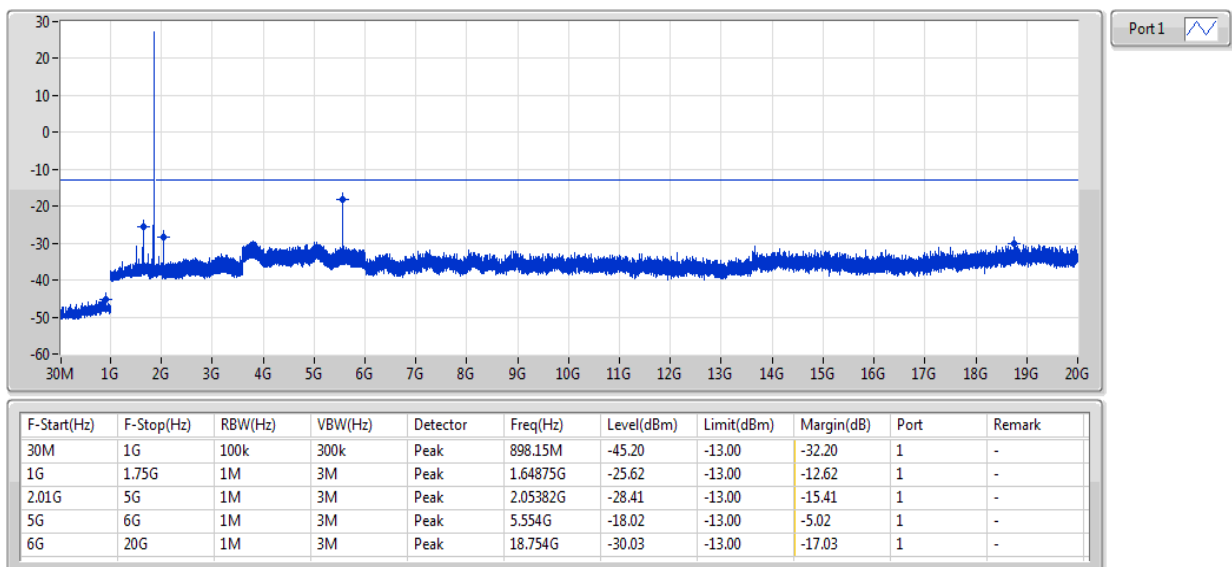
1908.5MHz



Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

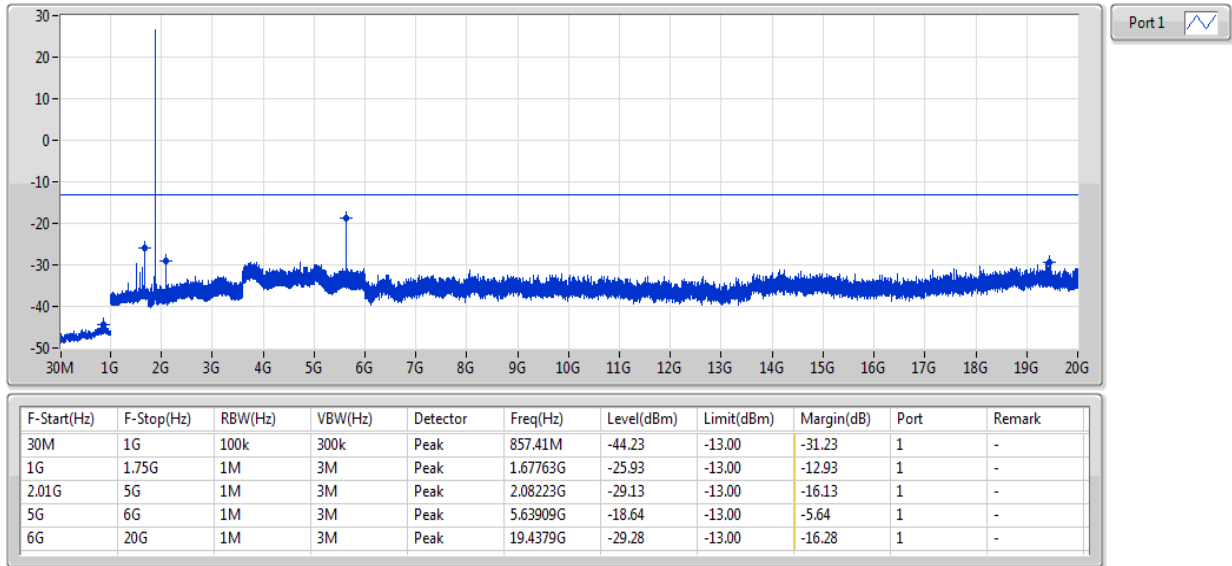
1851.5MHz



Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

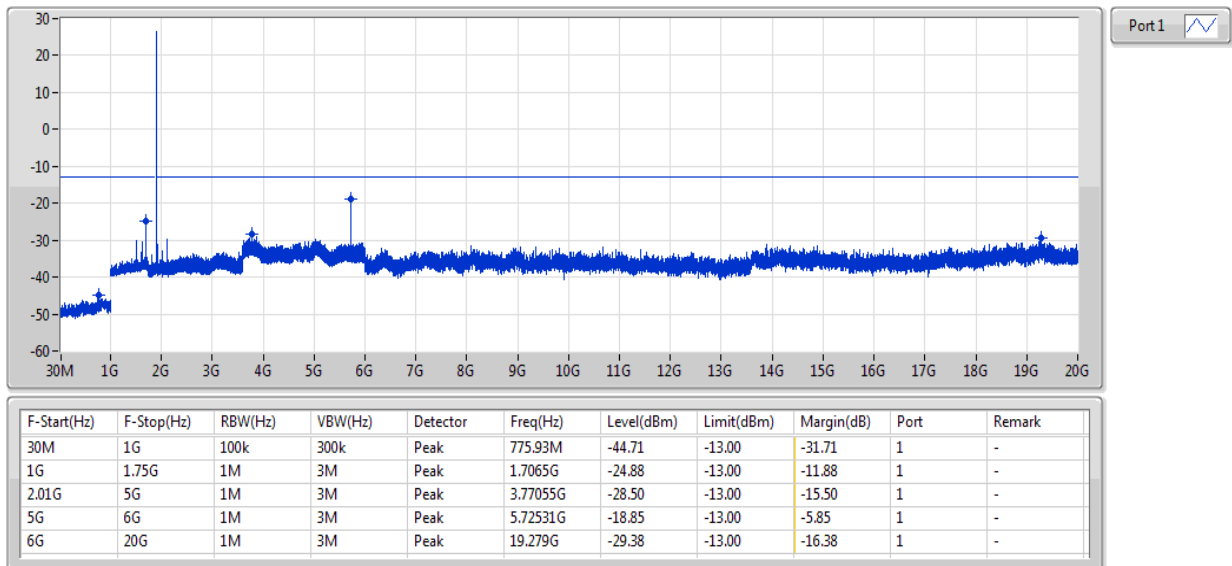
1880MHz



Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

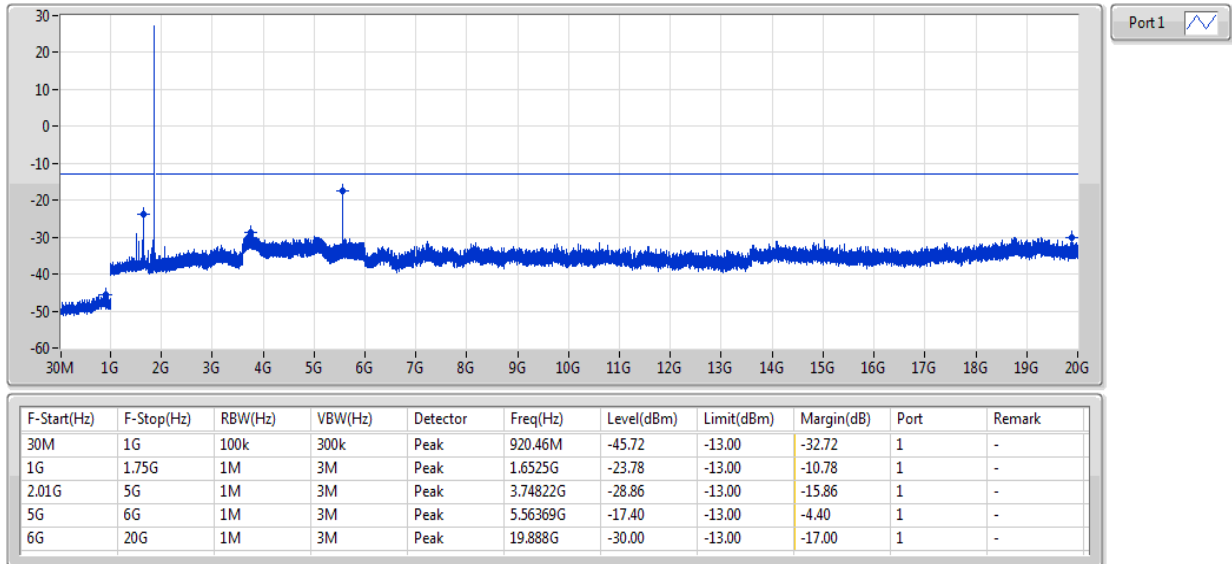
1908.5MHz



Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

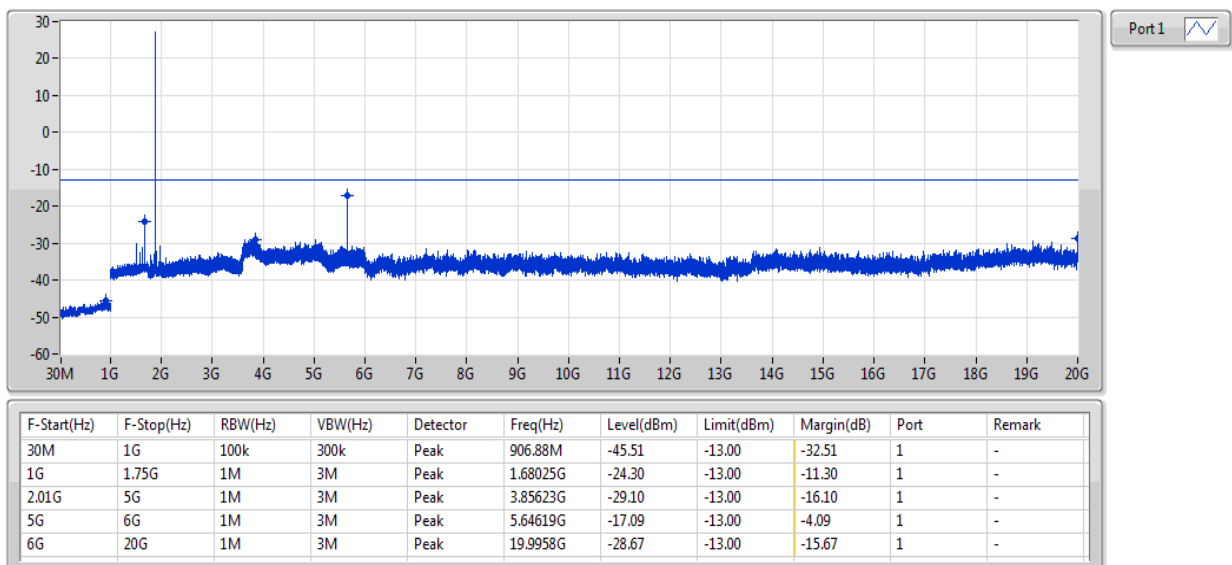
1852.5MHz



Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

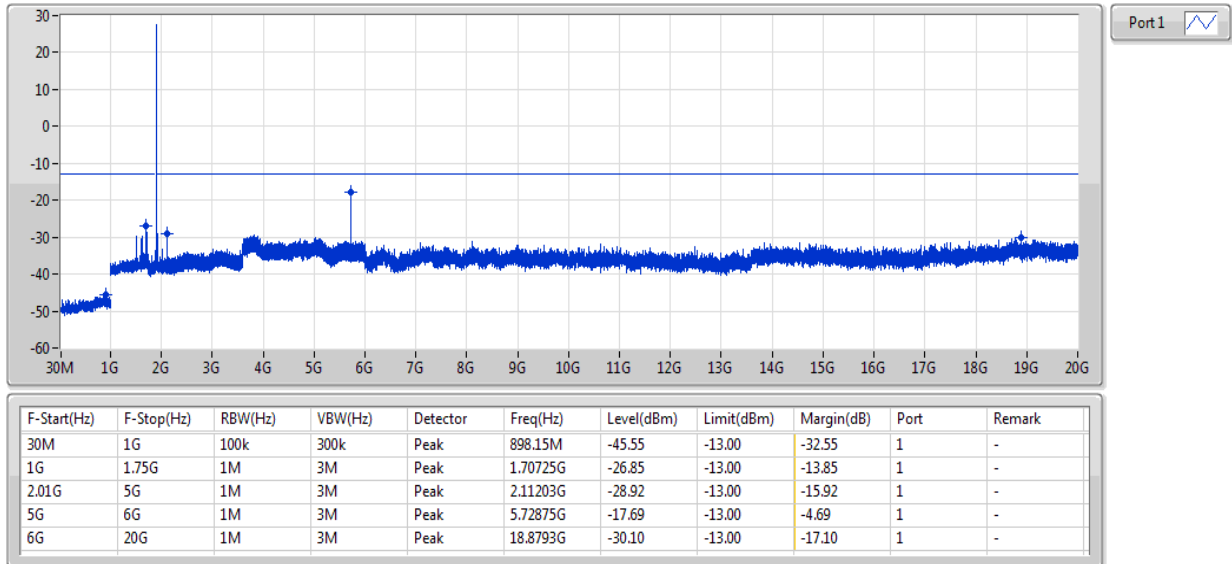
1880MHz



Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

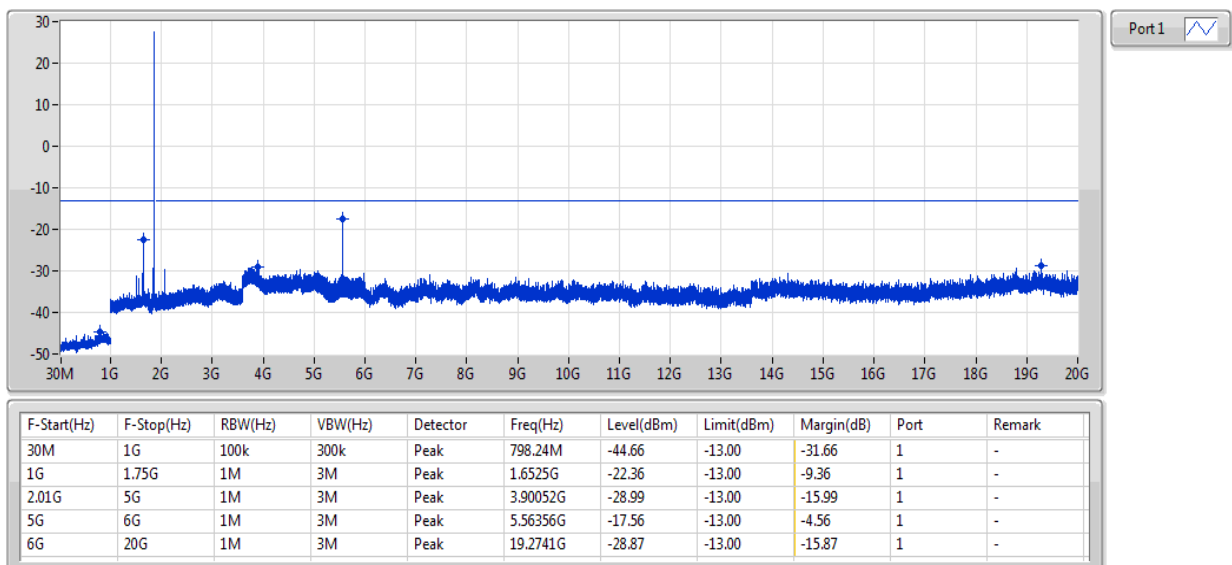
1907.5MHz



Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

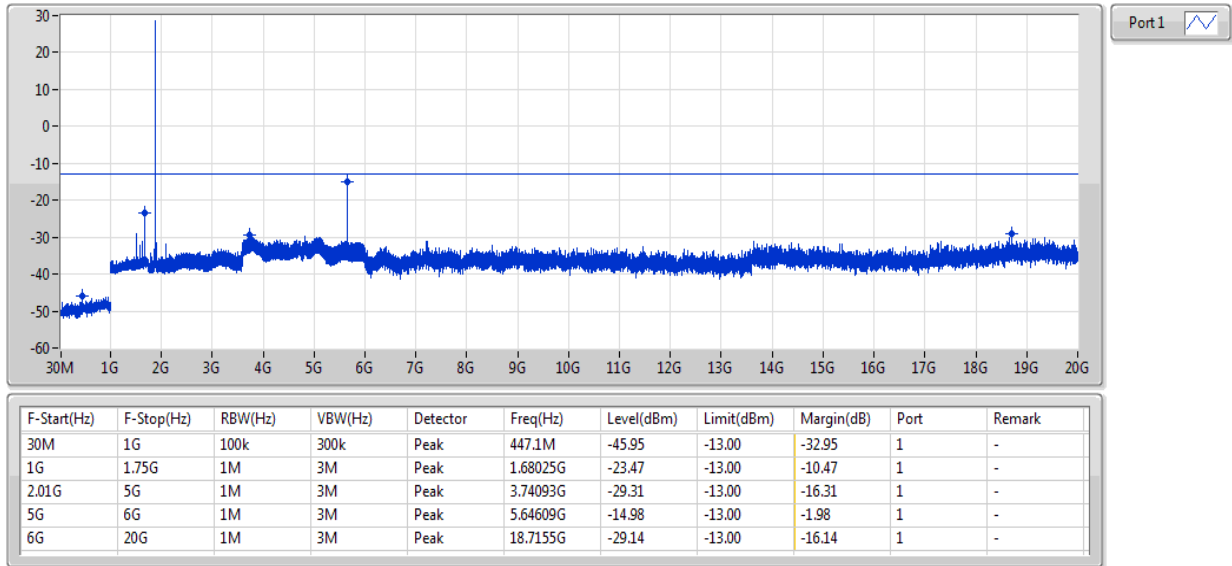
1852.5MHz



Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

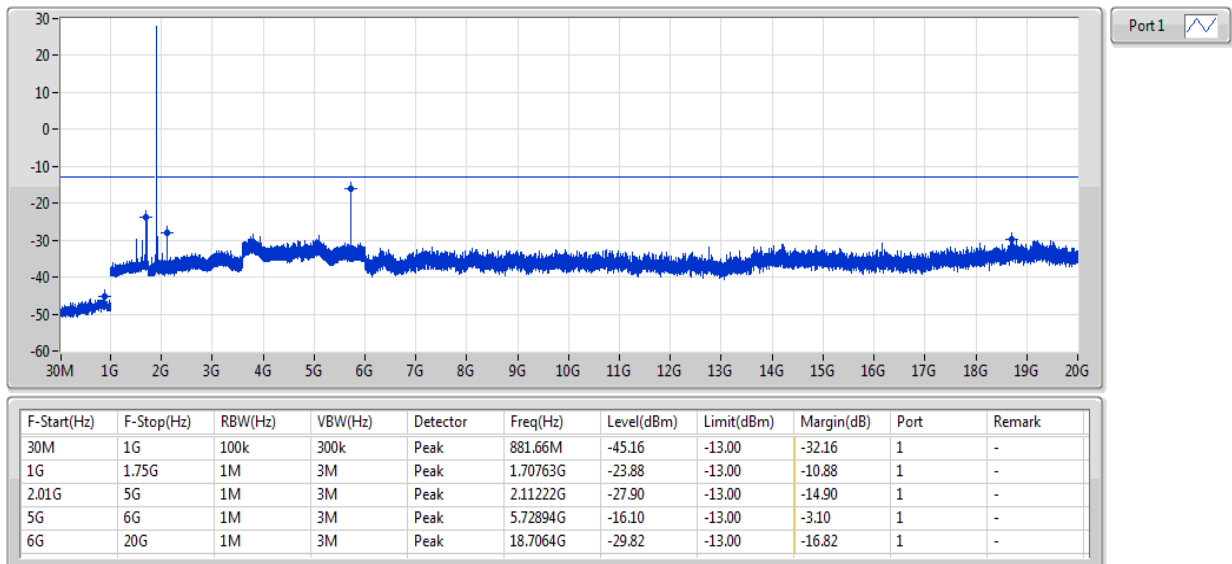
1880MHz



Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

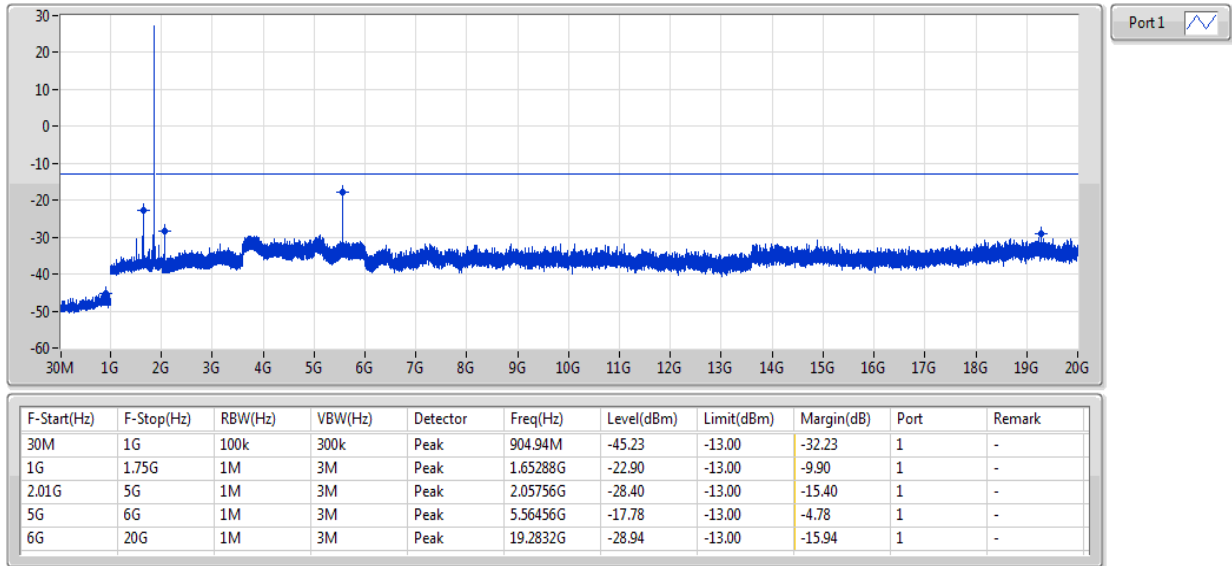
1907.5MHz



Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

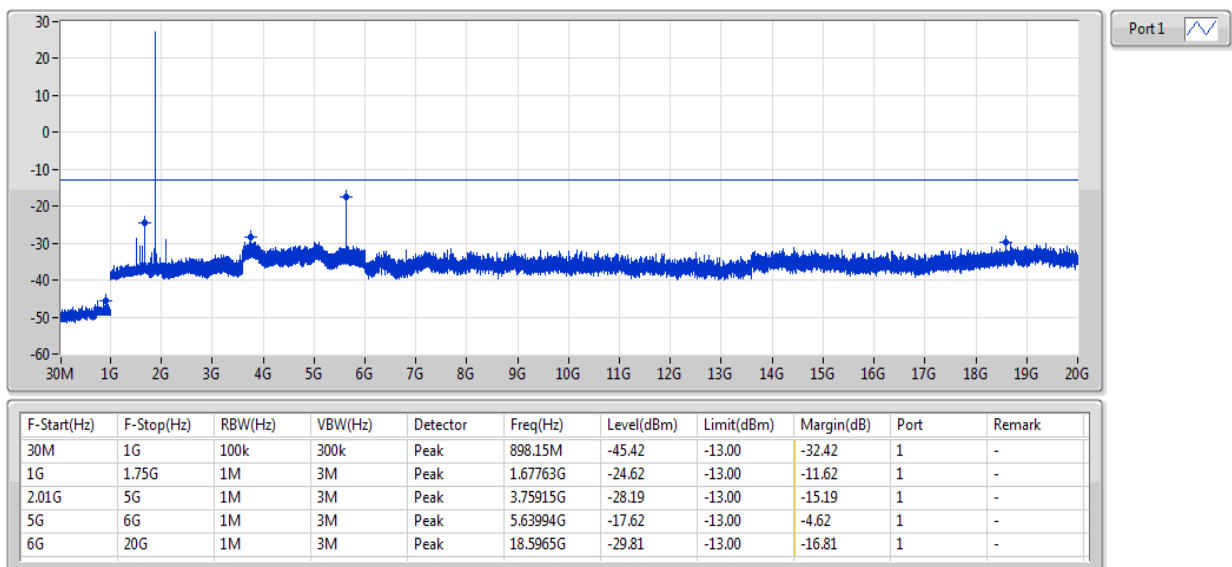
1855MHz



Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

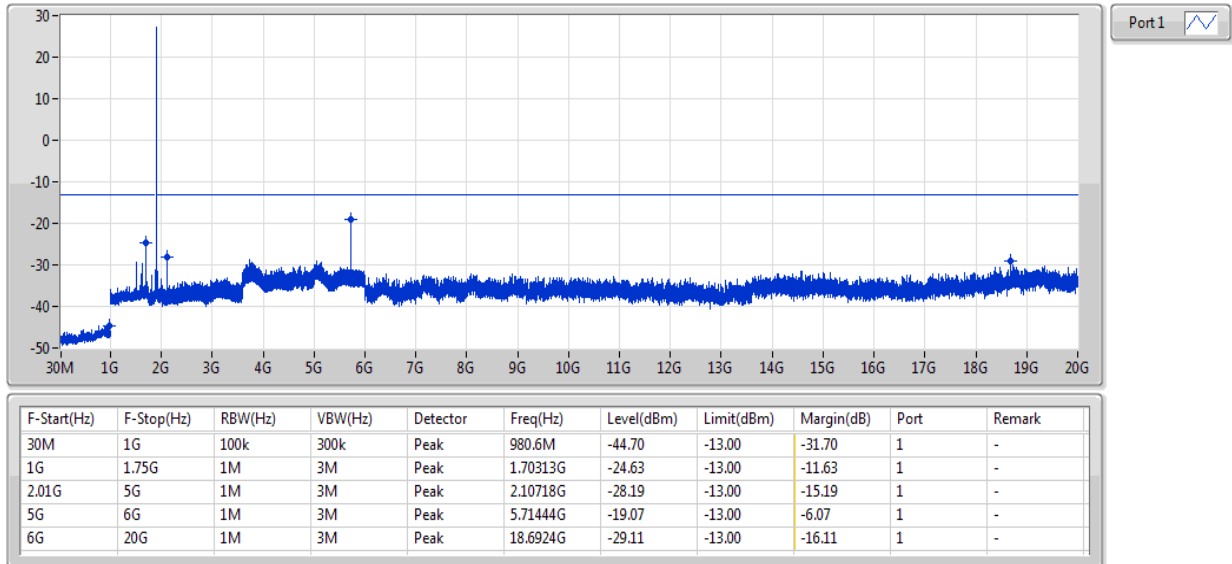
1880MHz



Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

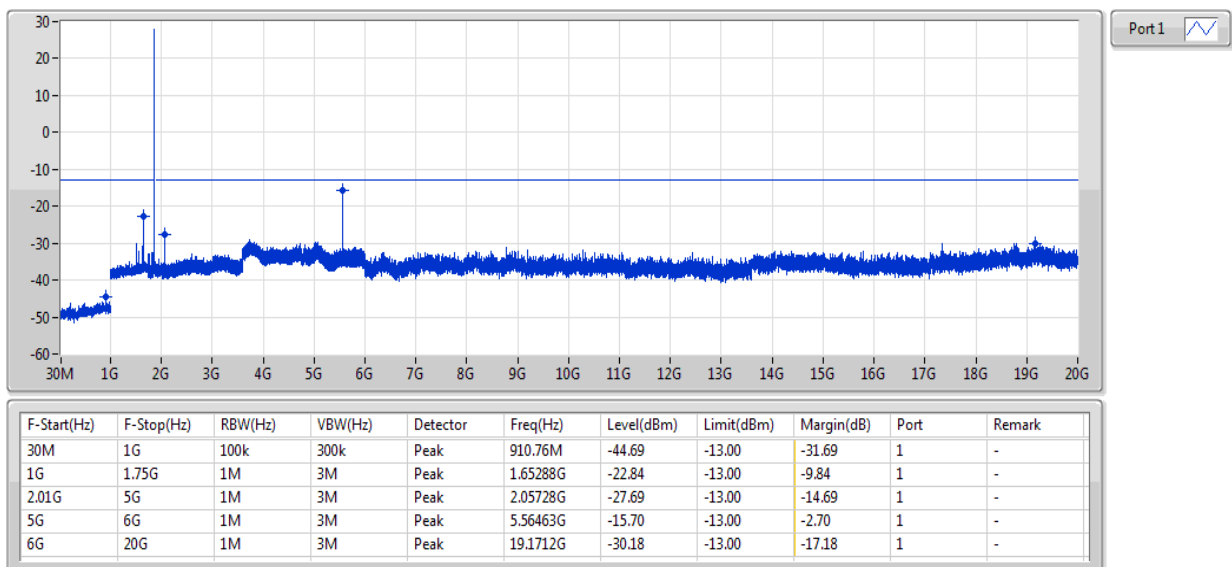
1905MHz



Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

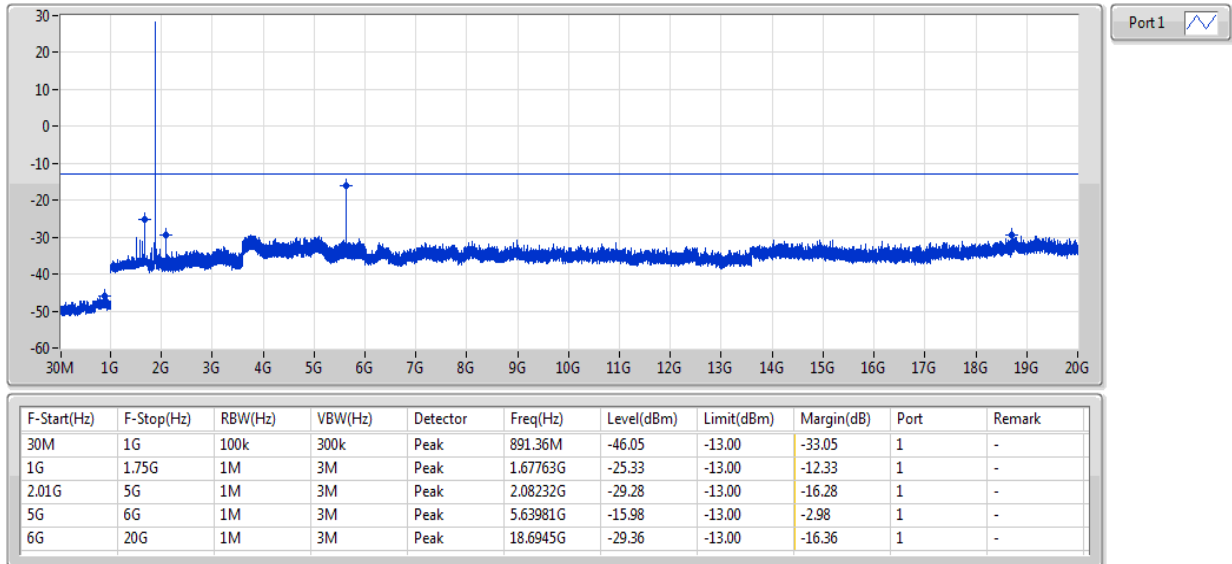
1855MHz



Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

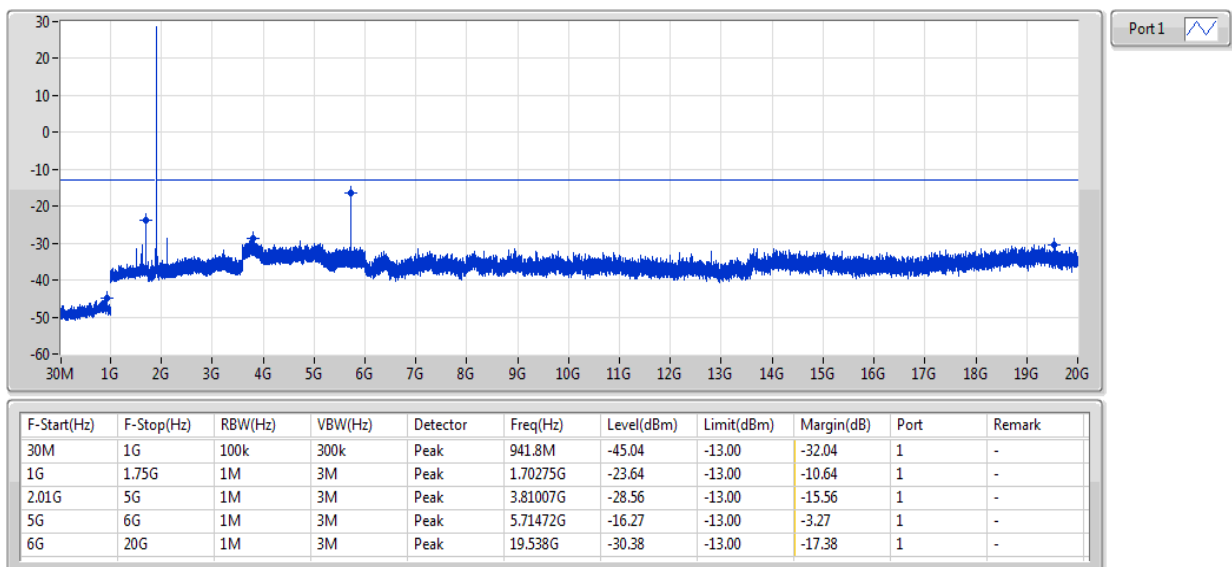
1880MHz



Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

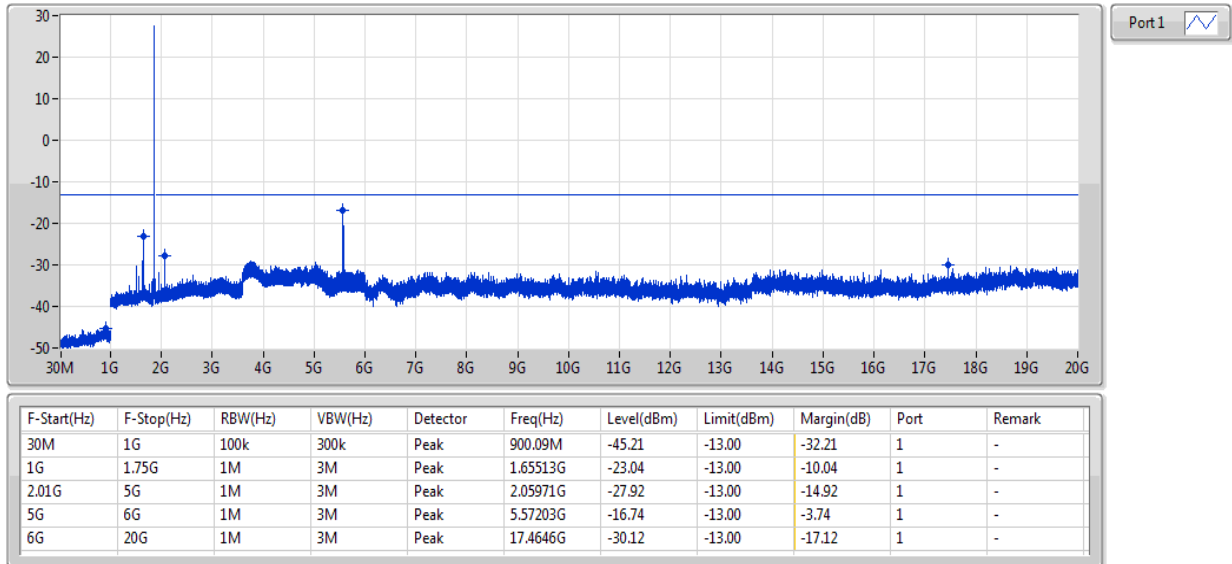
1905MHz



Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

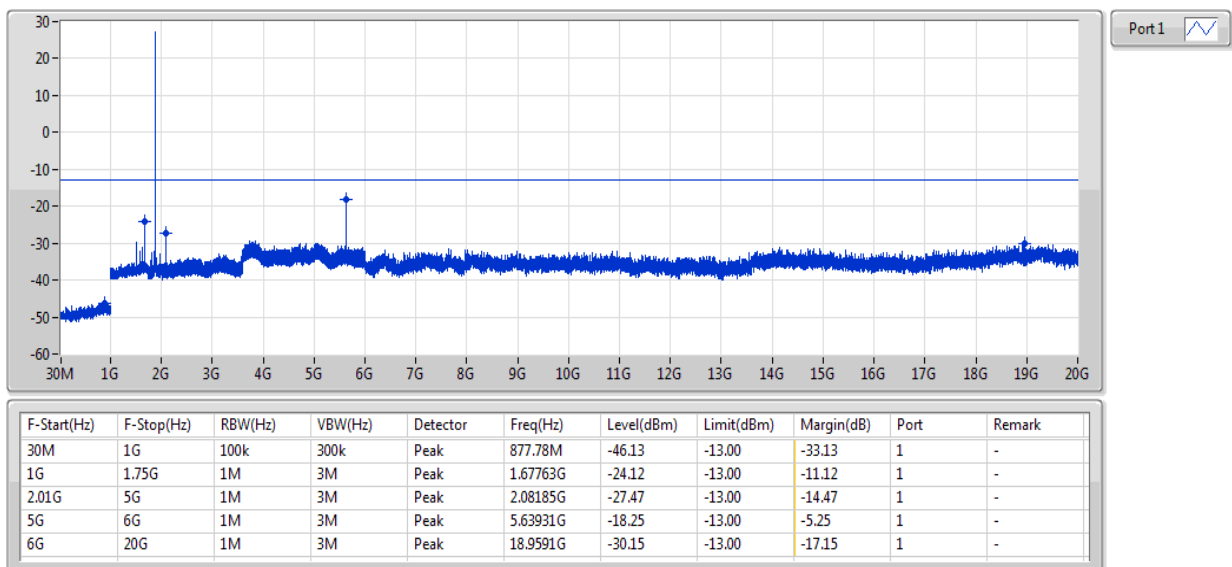
1857.5MHz



Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

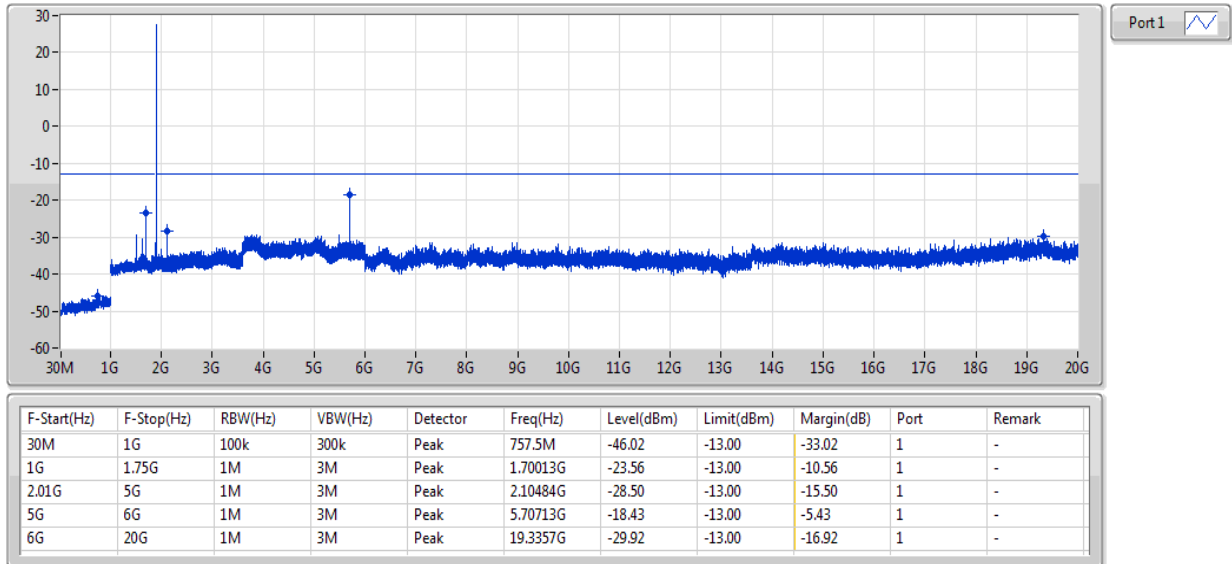
1880MHz



Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

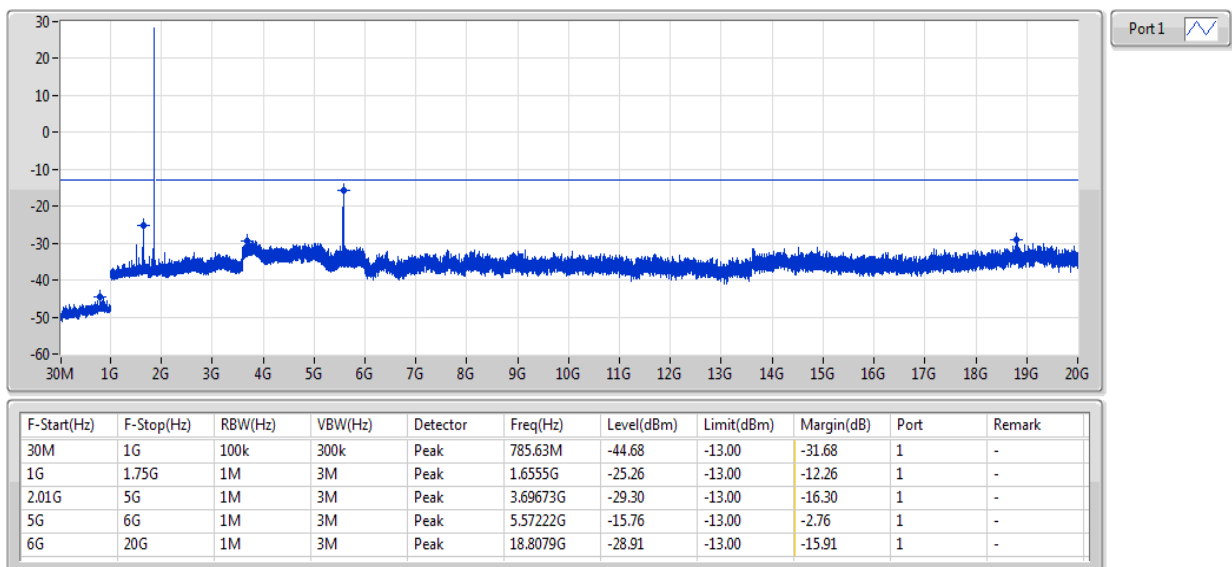
1902.5MHz



Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

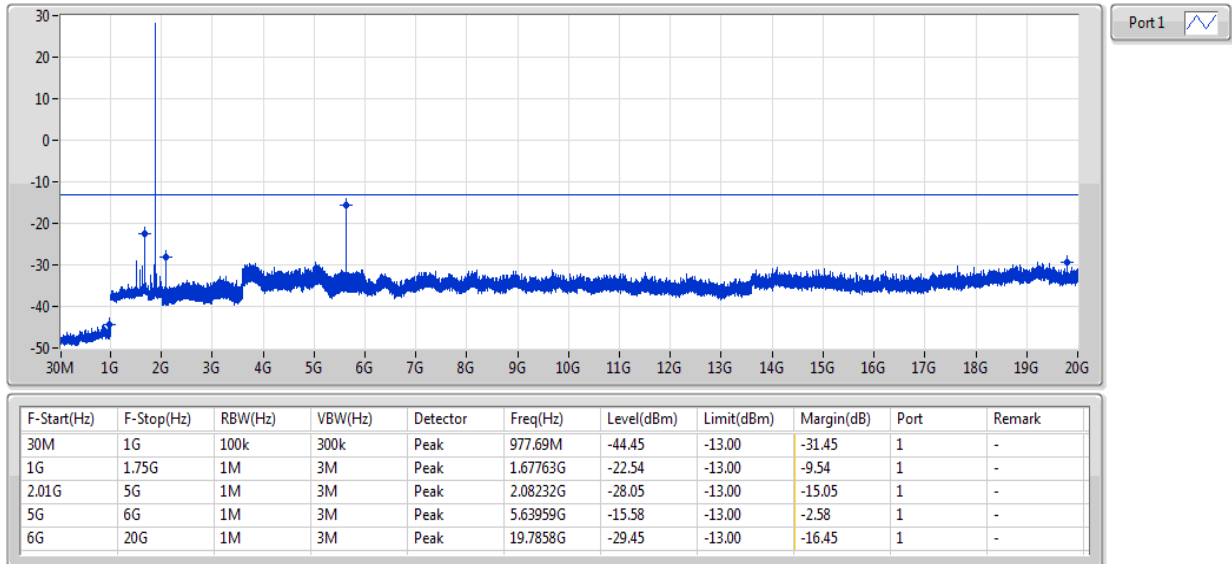
1857.5MHz



Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

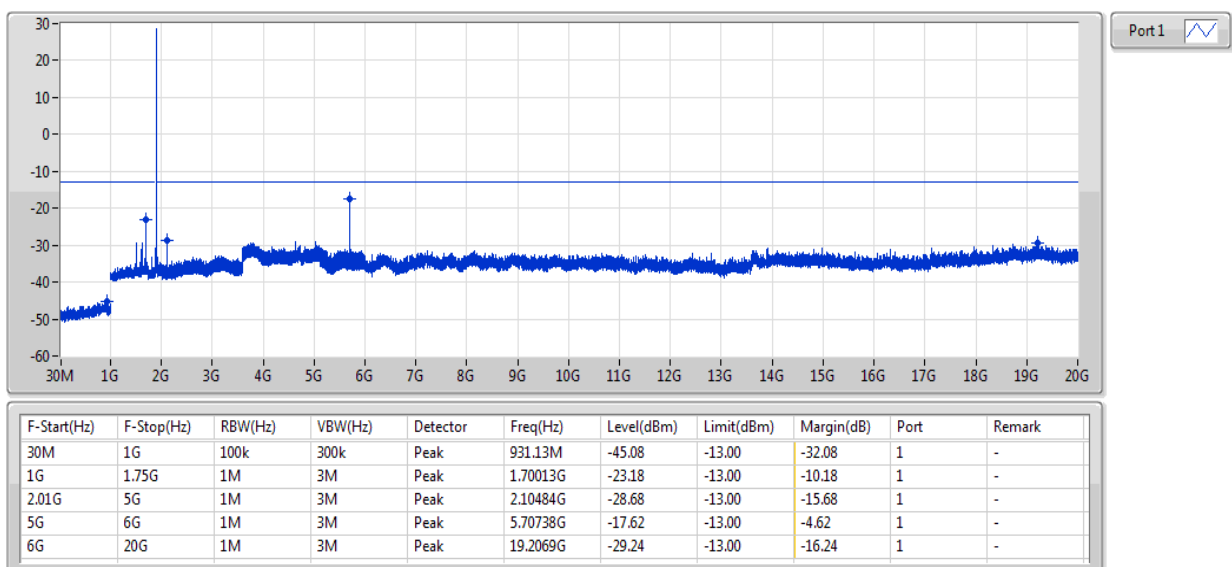
1880MHz



Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

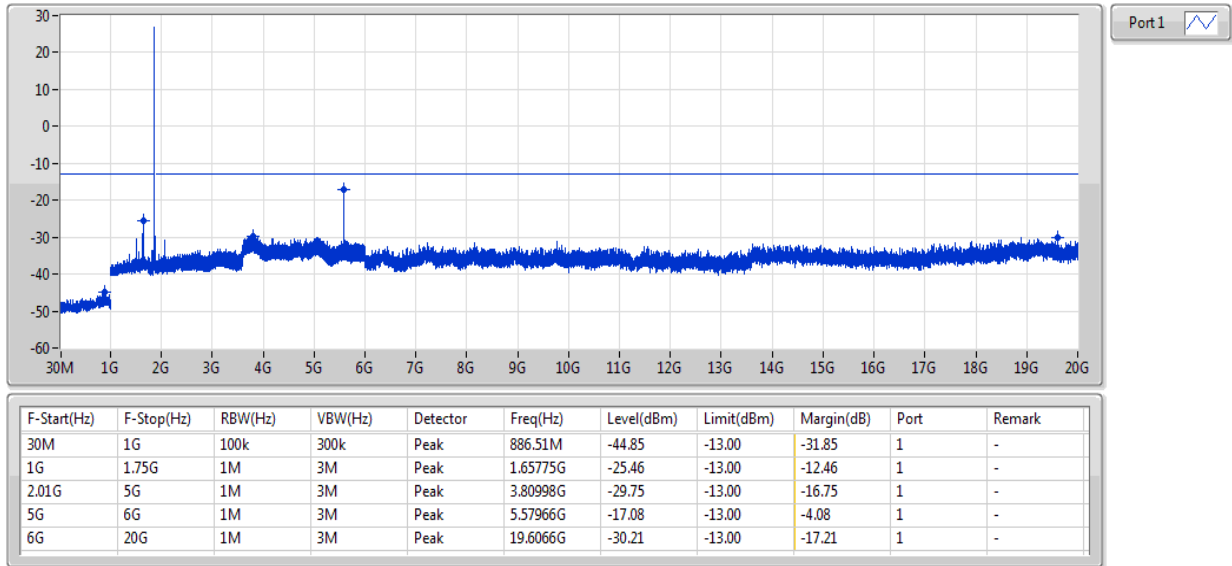
1902.5MHz



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

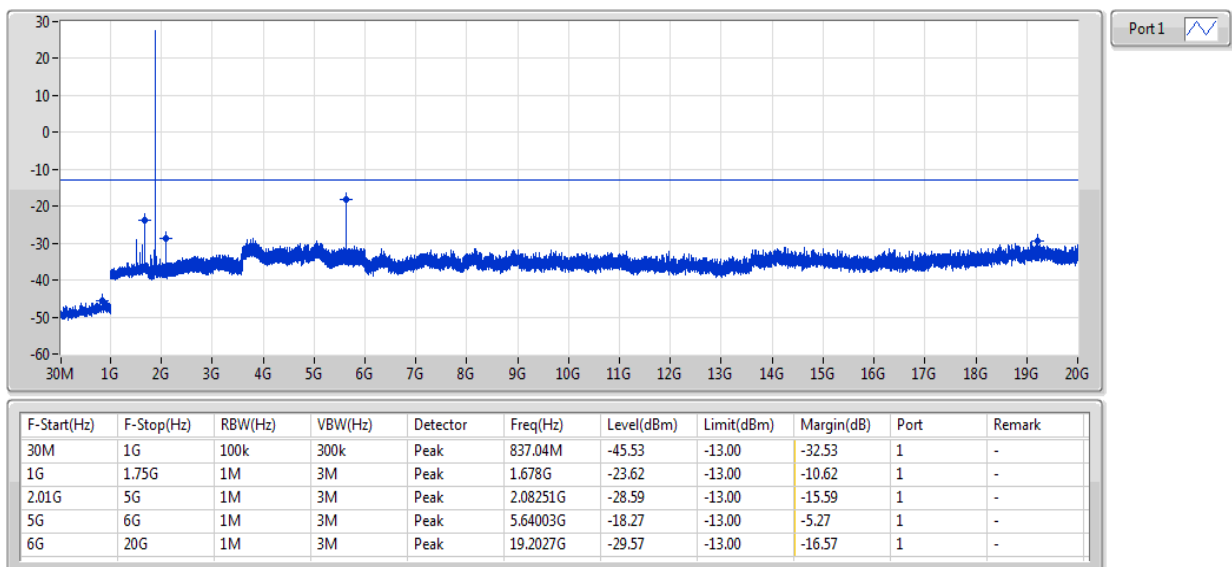
1860MHz



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

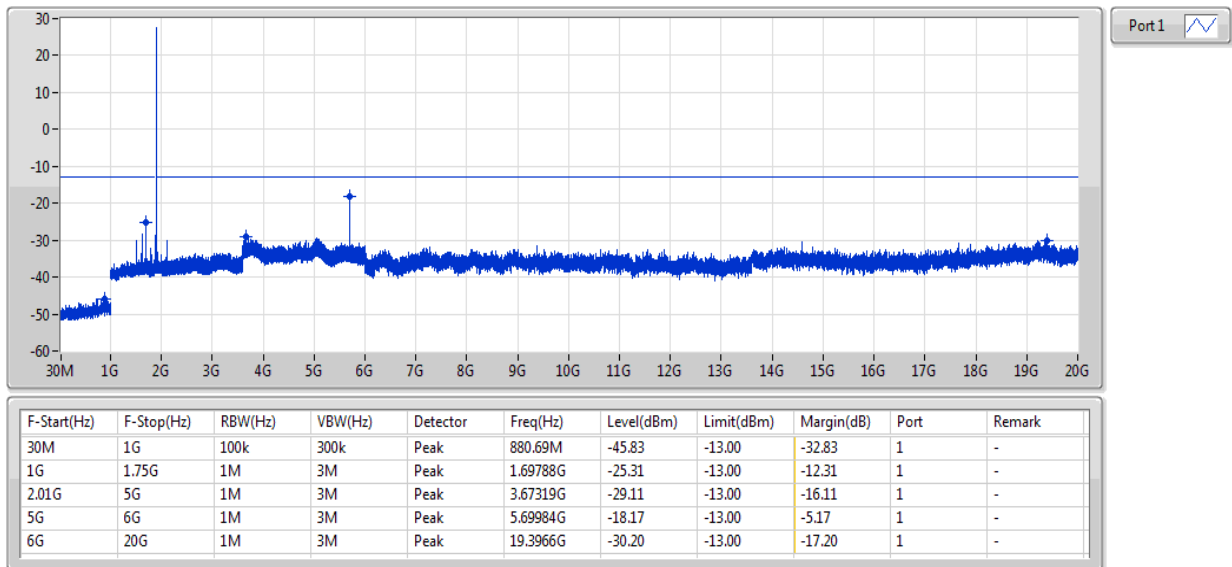
1880MHz



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

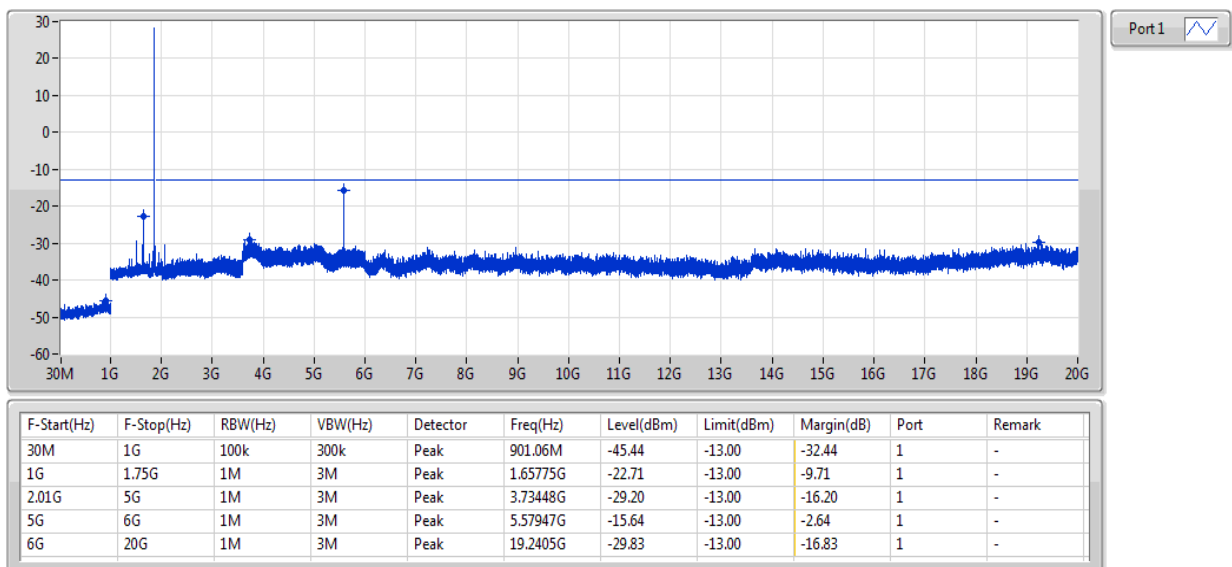
1900MHz



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

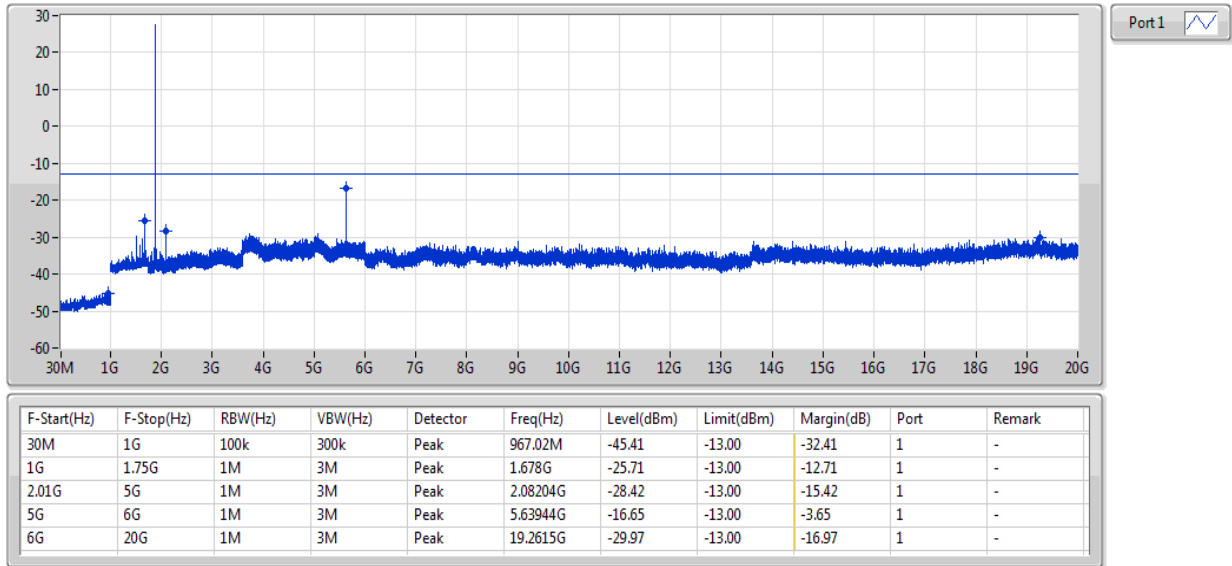
1860MHz



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

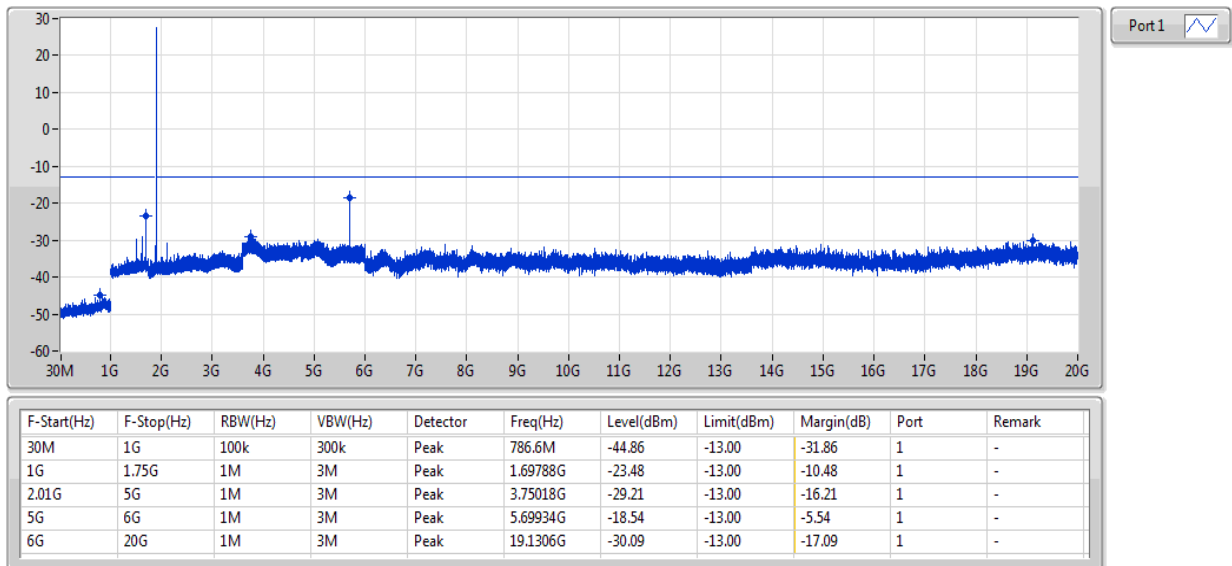
1880MHz



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

1900MHz



3.4 Band Edge

3.4.1 Limit of Band Edge

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.

3.4.2 Test Procedures

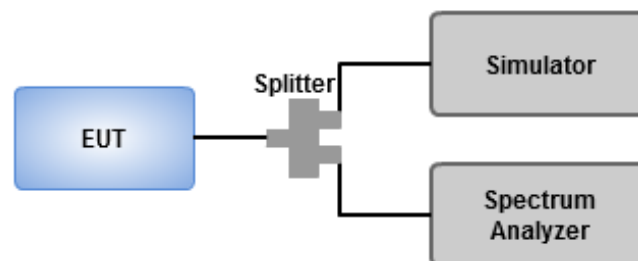
Out of band emission

1. Lowest, middle and highest operating channels are tested for this item.
2. Set RBW = 1 MHz, VBW = 3 MHz, detector = RMS, sweep time = auto.
3. 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.

3.4.3 Test Setup



3.4.4 Test Result of Band Edge

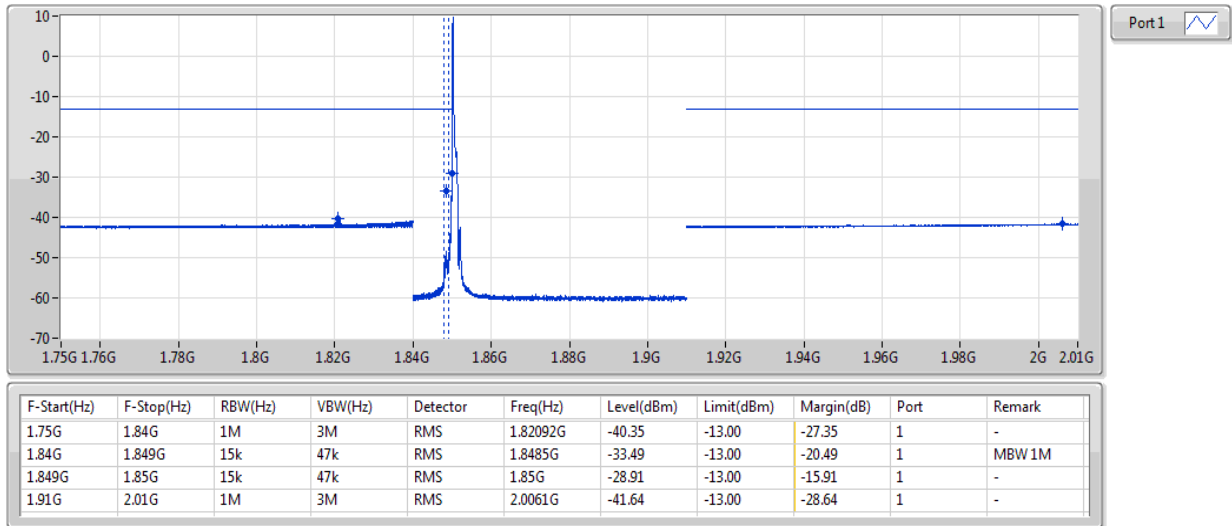
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port	Remark	Ref.Limit (dB)
Band 2	-	-	-	-	-	-	-	-	-	-	-	-	-
LTE-M1_1.4MHz_Nss1,QPSK_1TX	Pass	1.91G	1.911G	15k	47k	RMS	1.91G	-26.69	-13.00	-13.69	1	-	-
LTE-M1_1.4MHz_Nss1,16QAM_1TX	Pass	1.91G	1.911G	15k	47k	RMS	1.91G	-28.72	-13.00	-15.72	1	-	-
LTE-M1_3MHz_Nss1,QPSK_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-31.83	-13.00	-18.83	1	MBW 1M	-
LTE-M1_3MHz_Nss1,16QAM_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-32.99	-13.00	-19.99	1	MBW 1M	-
LTE-M1_5MHz_Nss1,QPSK_1TX	Pass	1.91G	1.911G	15k	47k	RMS	1.91G	-30.01	-13.00	-17.01	1	-	-
LTE-M1_5MHz_Nss1,16QAM_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-30.06	-13.00	-17.06	1	MBW 1M	-
LTE-M1_10MHz_Nss1,QPSK_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-33.75	-13.00	-20.75	1	MBW 1M	-
LTE-M1_10MHz_Nss1,16QAM_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-32.29	-13.00	-19.29	1	MBW 1M	-
LTE-M1_15MHz_Nss1,QPSK_1TX	Pass	1.911G	1.92G	15k	47k	RMS	1.9115G	-34.37	-13.00	-21.37	1	MBW 1M	-
LTE-M1_15MHz_Nss1,16QAM_1TX	Pass	1.84G	1.849G	15k	47k	RMS	1.8485G	-35.19	-13.00	-22.19	1	MBW 1M	-
LTE-M1_20MHz_Nss1,QPSK_1TX	Pass	1.84G	1.849G	15k	47k	RMS	1.8485G	-36.83	-13.00	-23.83	1	MBW 1M	-
LTE-M1_20MHz_Nss1,16QAM_1TX	Pass	1.84G	1.849G	15k	47k	RMS	1.8485G	-37.23	-13.00	-24.23	1	MBW 1M	-

Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

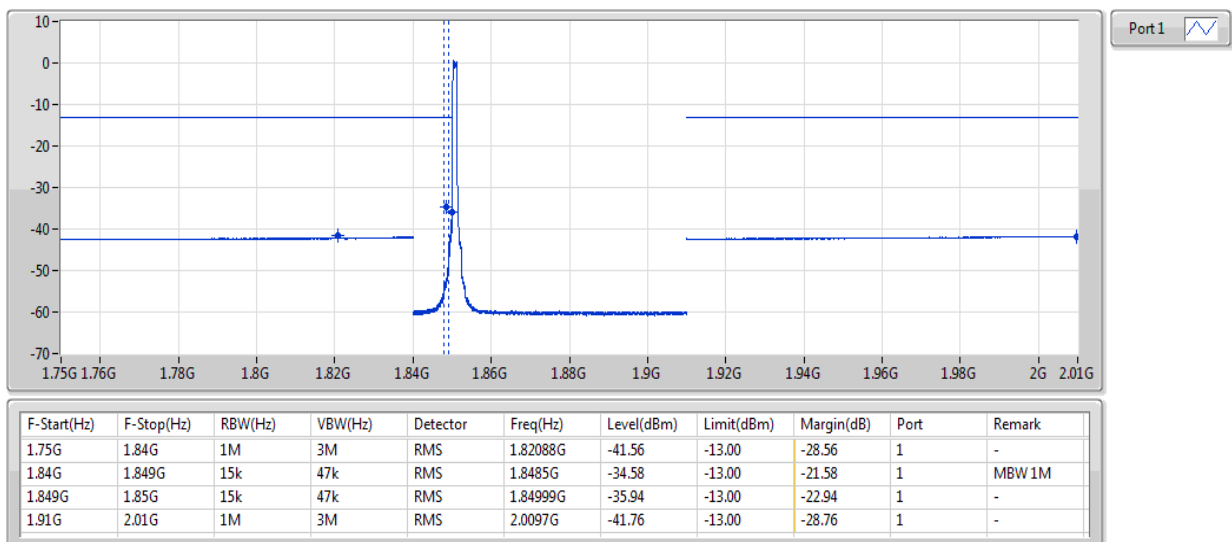
1850.7MHz_QPSK_RB 1,#RB 0,NB 0



Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

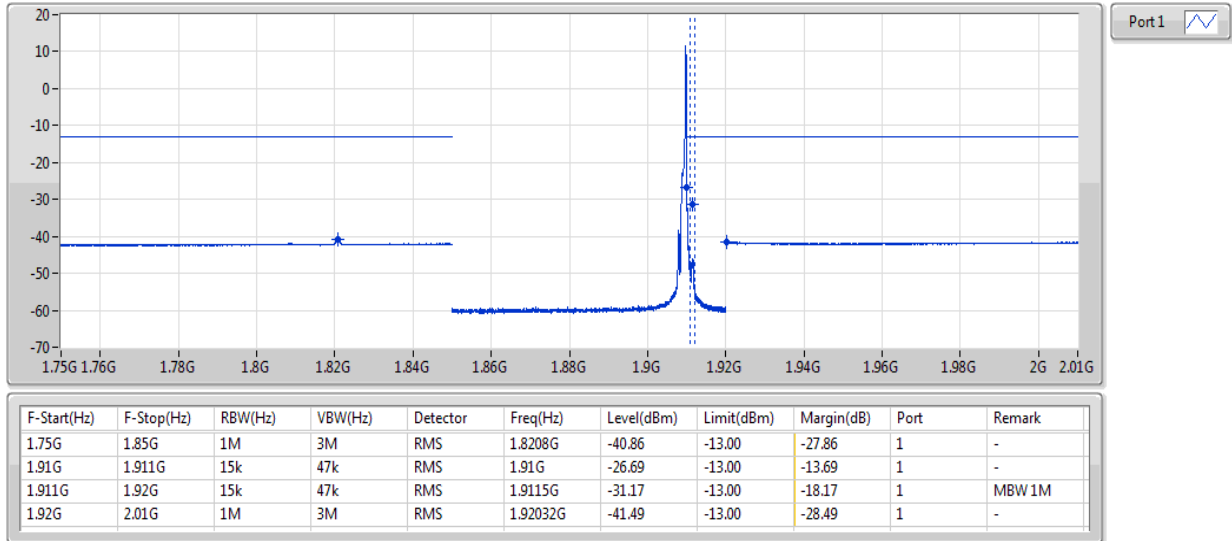
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Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

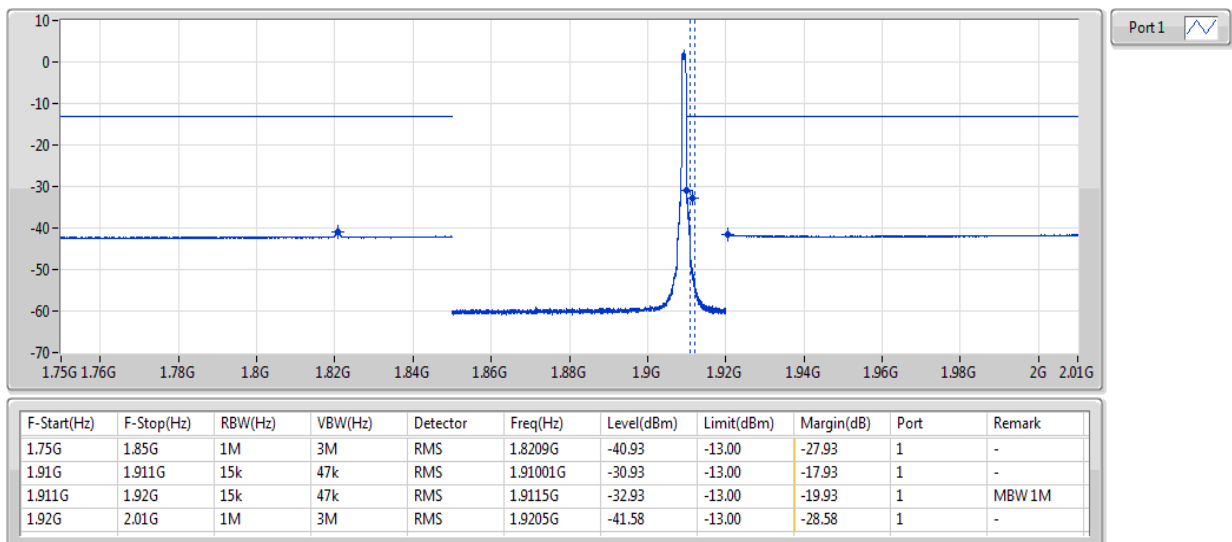
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Band 2_LTE-M1_1.4MHz_Nss1,QPSK_1TX

CSE-TX-Port

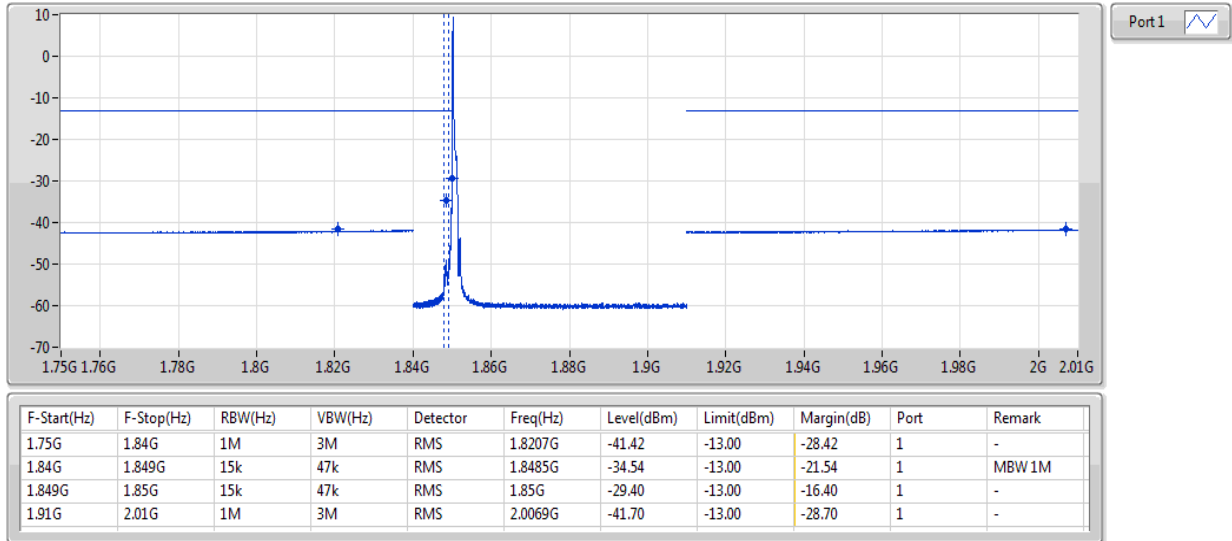
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Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

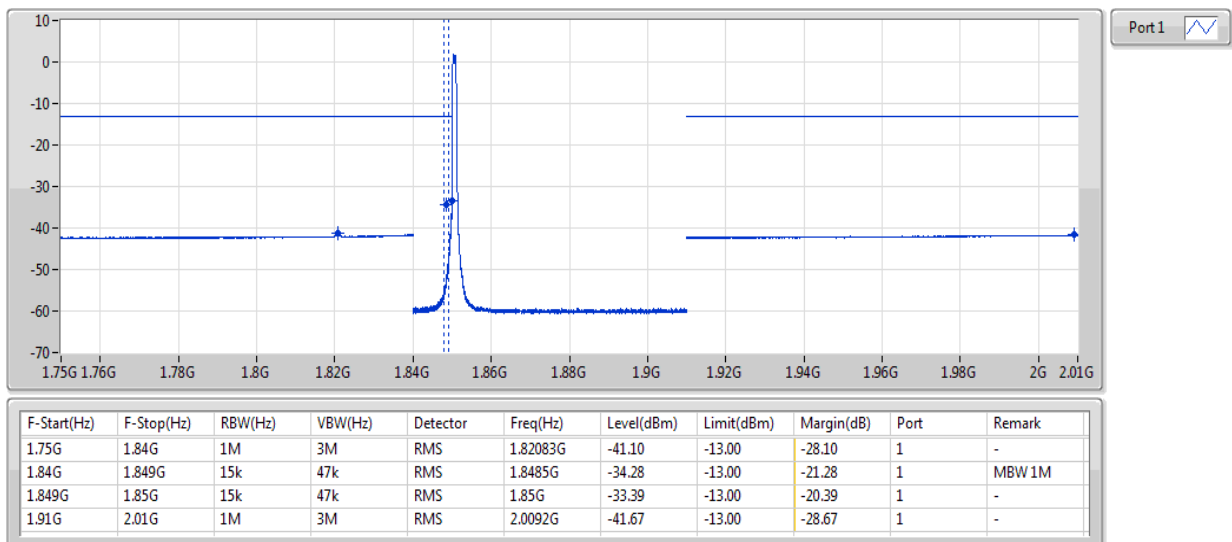
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Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

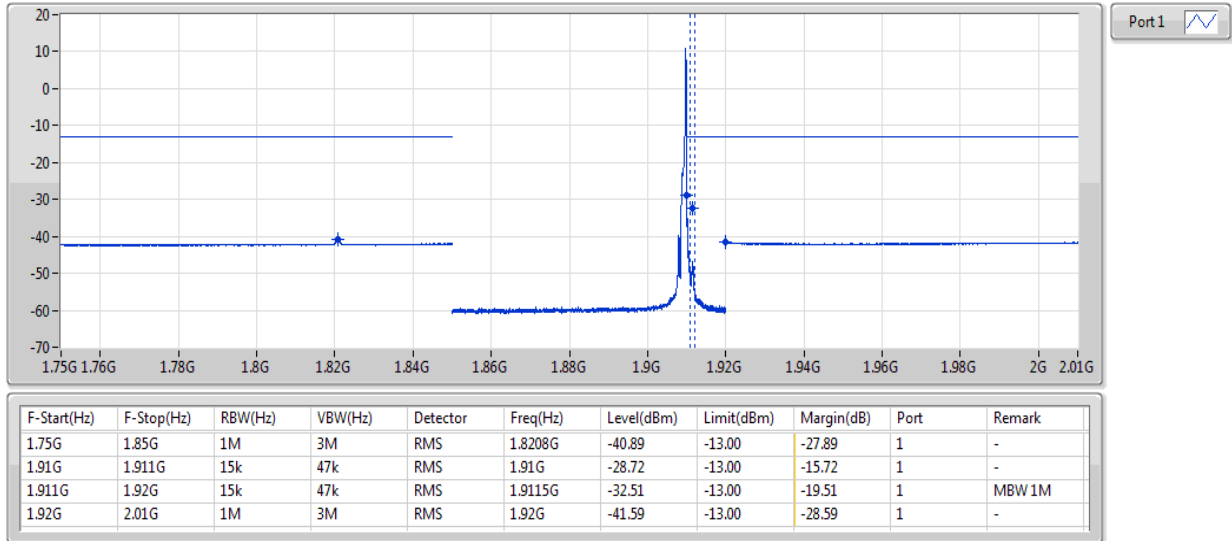
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Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

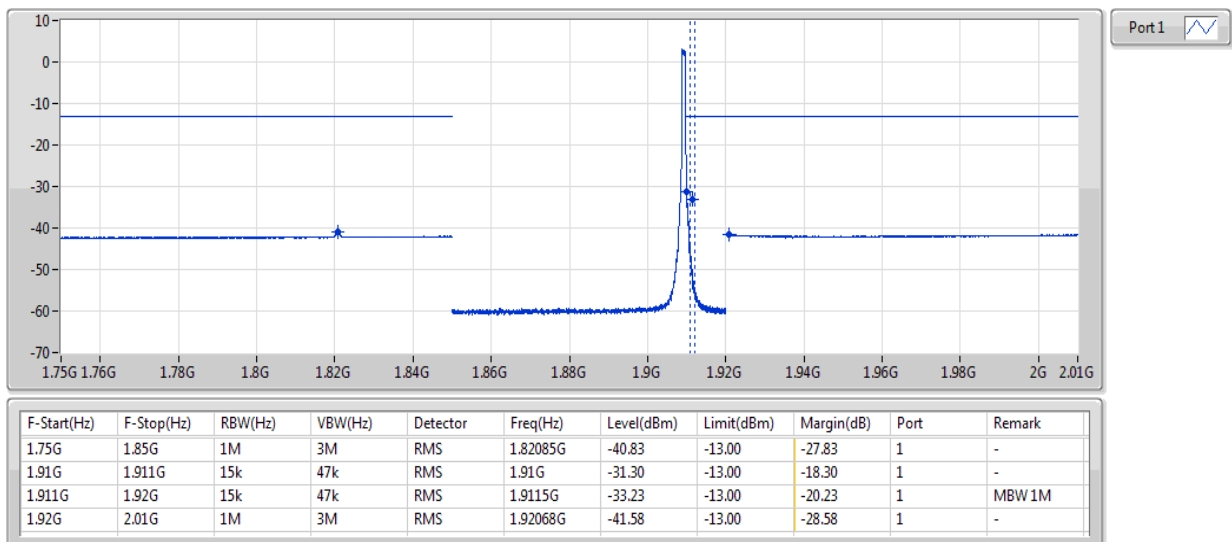
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Band 2_LTE-M1_1.4MHz_Nss1,16QAM_1TX

CSE-TX-Port

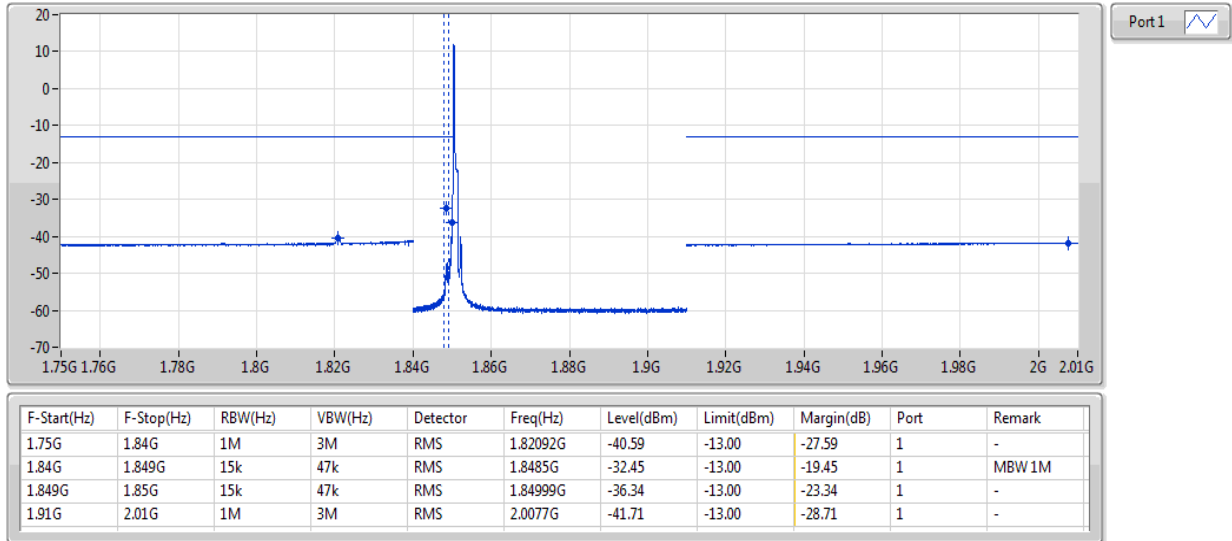
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Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

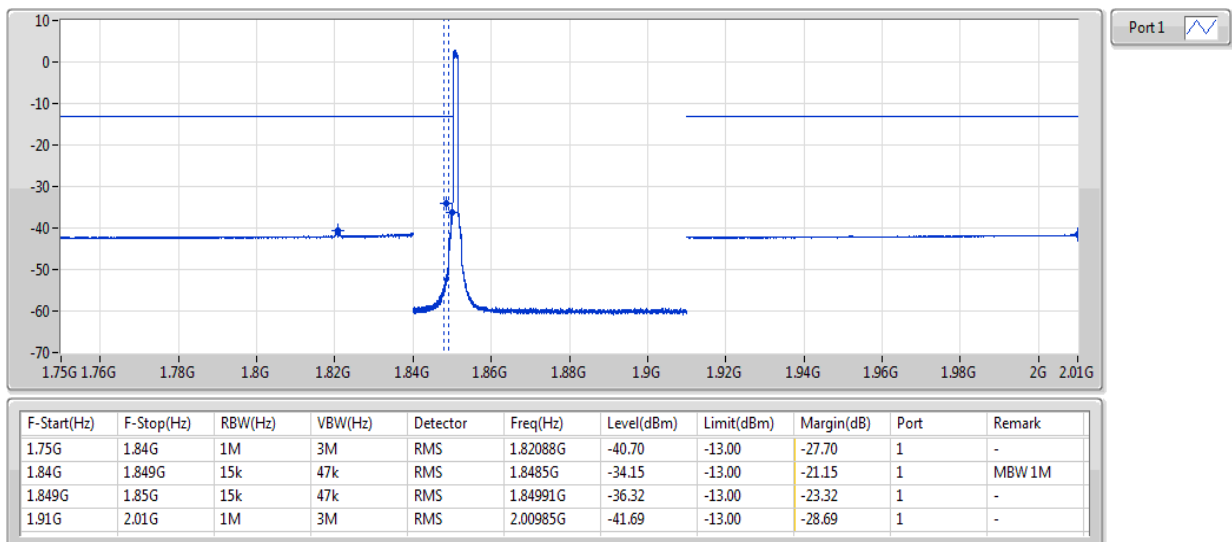
1851.5MHz_QPSK_RB 1,#RB 0,NB 0



Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

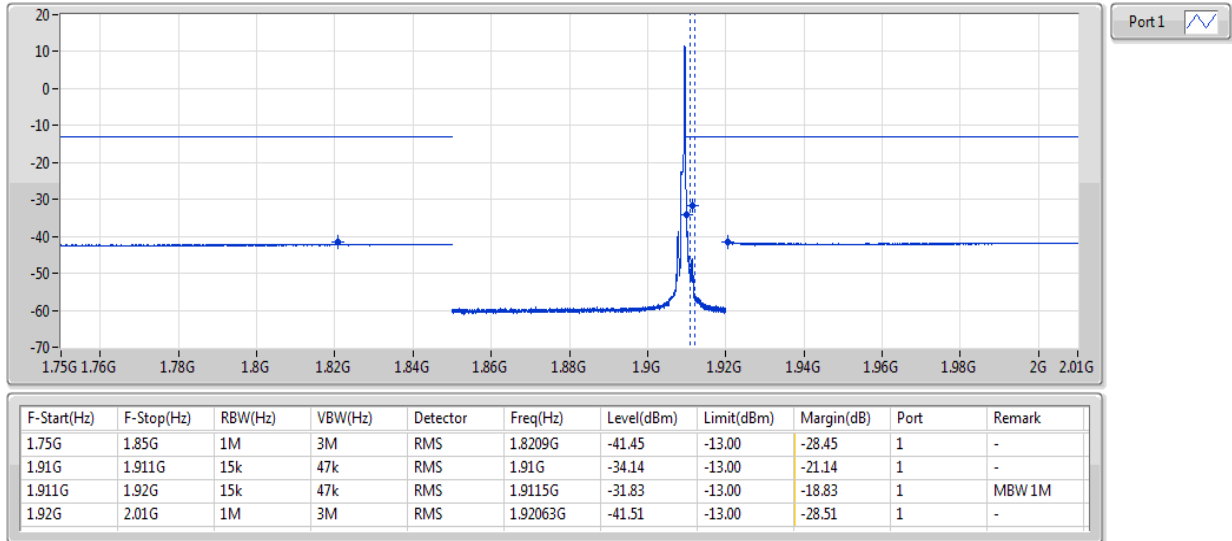
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Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

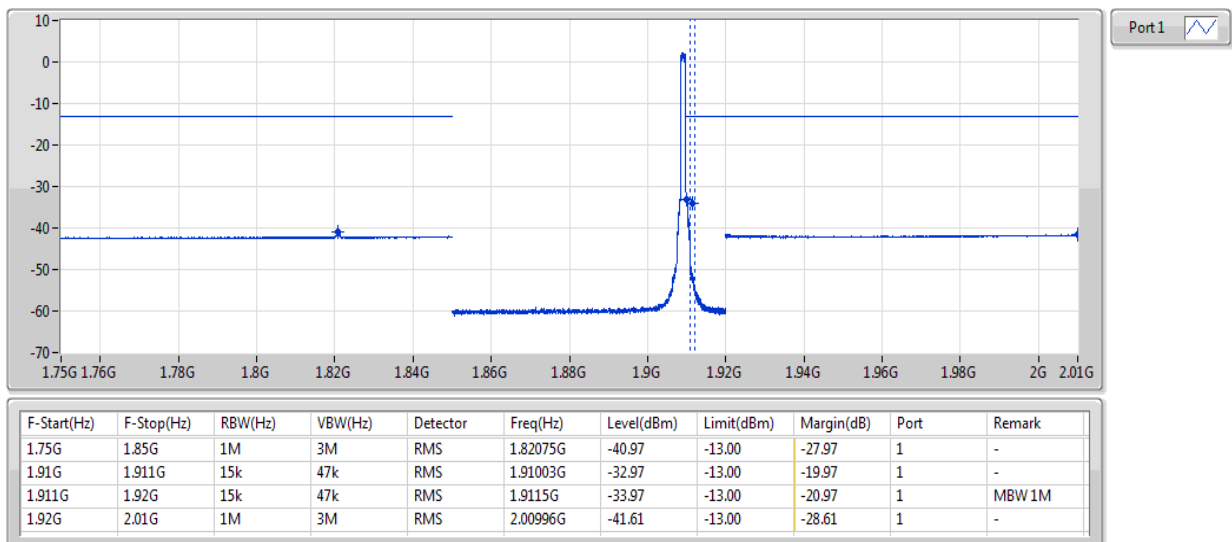
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Band 2_LTE-M1_3MHz_Nss1,QPSK_1TX

CSE-TX-Port

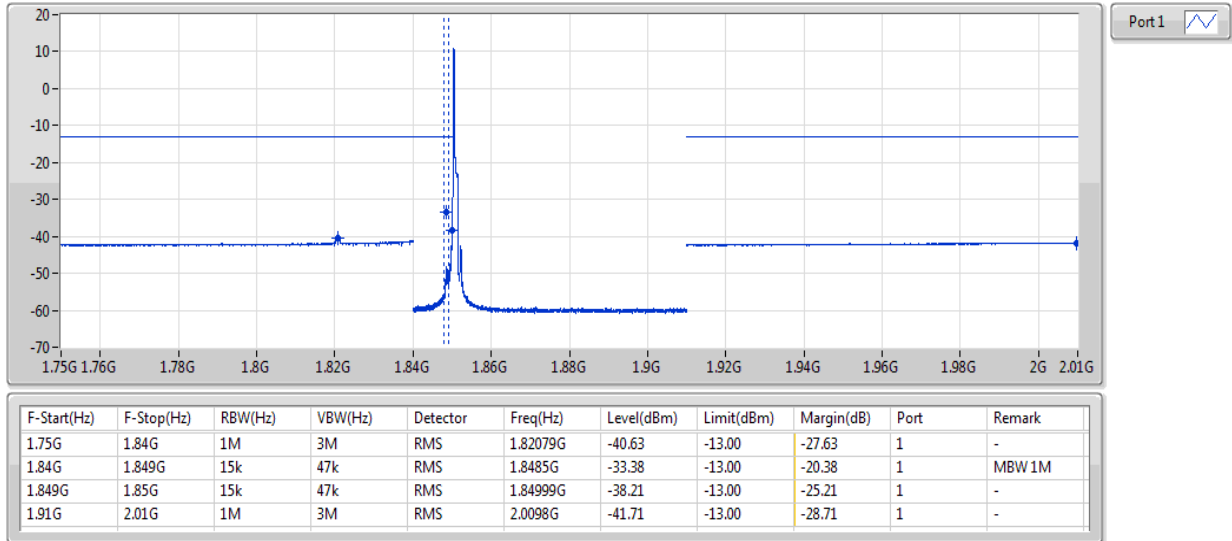
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Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

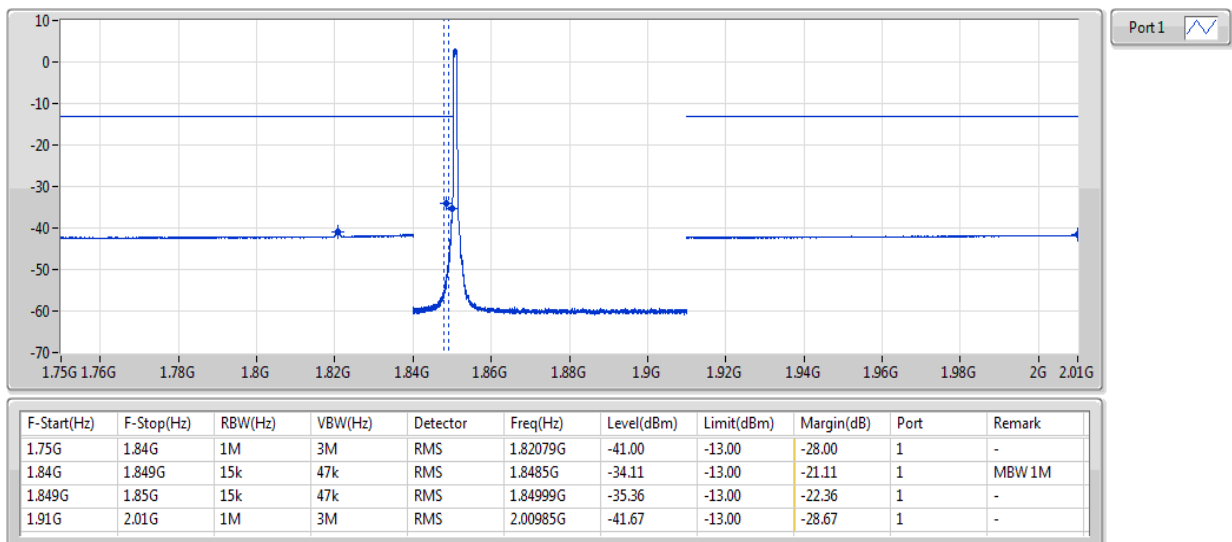
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Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

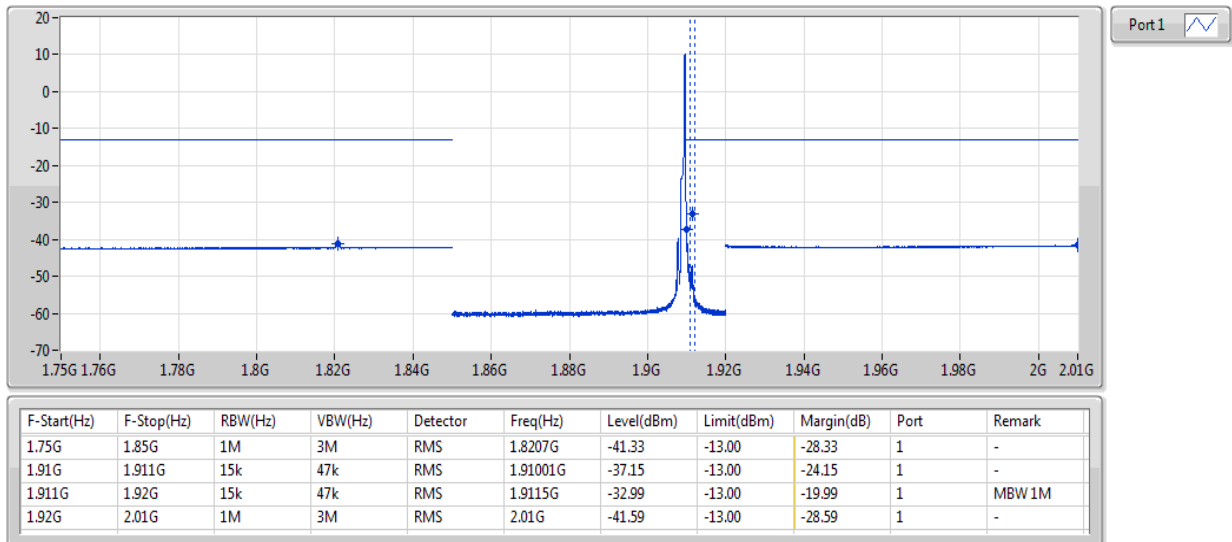
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Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

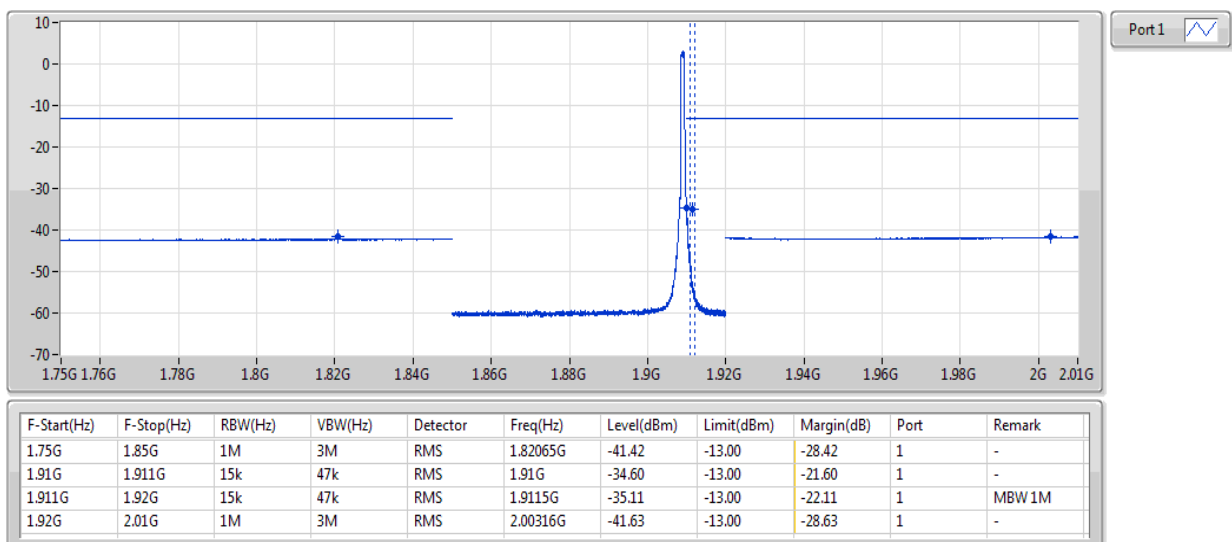
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Band 2_LTE-M1_3MHz_Nss1,16QAM_1TX

CSE-TX-Port

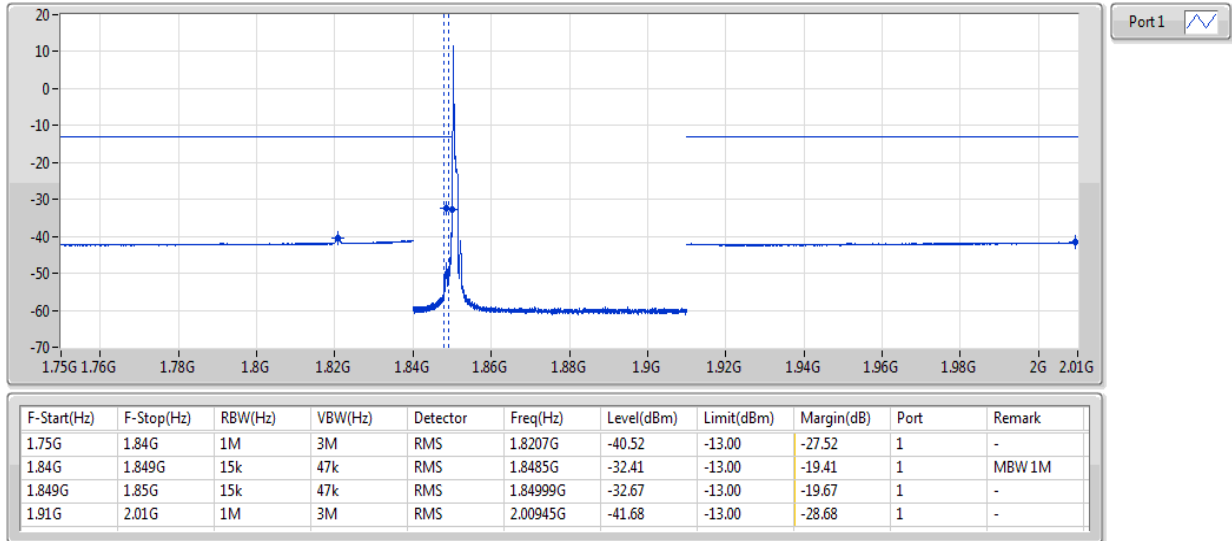
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Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

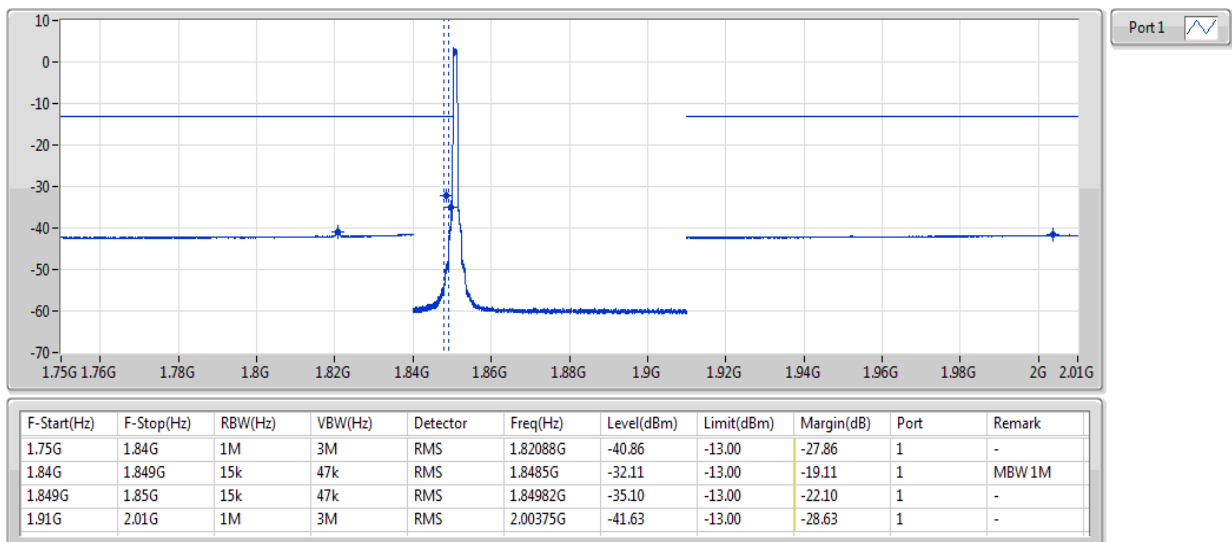
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Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

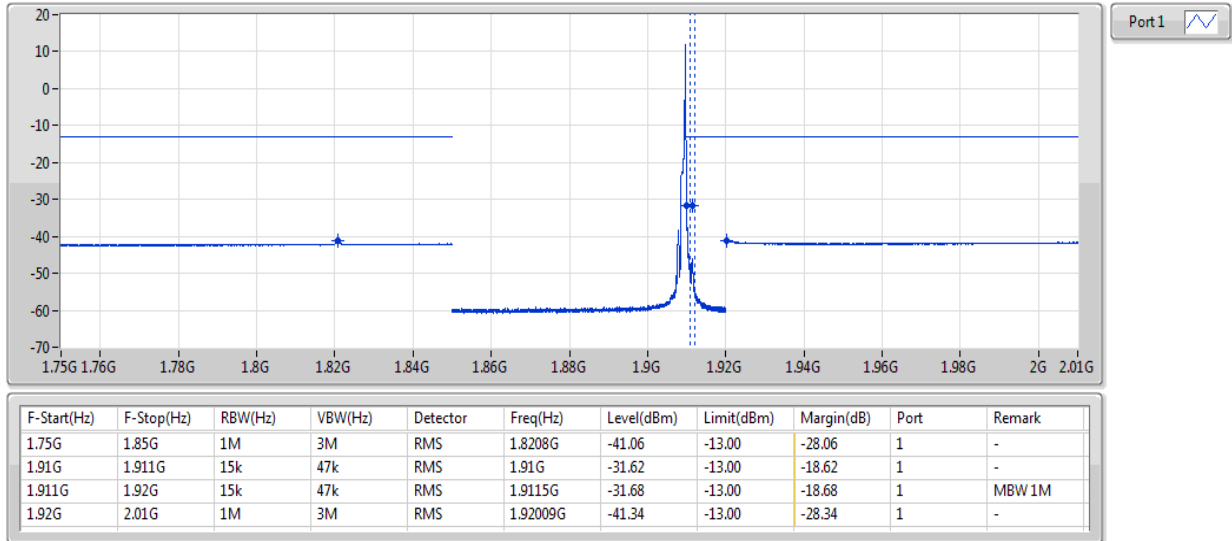
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Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

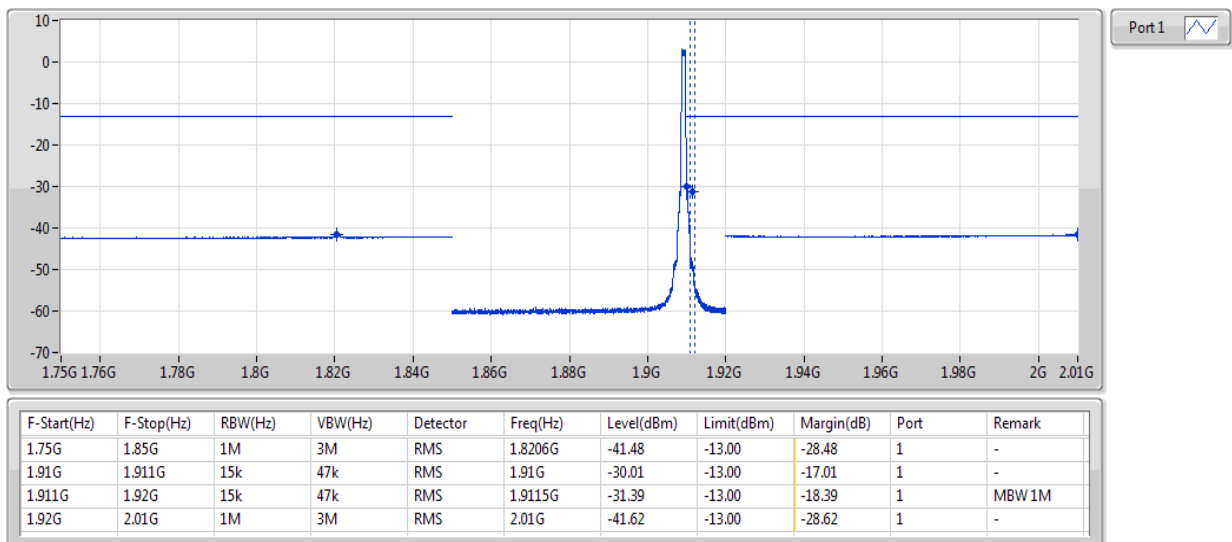
1907.5MHz_QPSK_RB 1,#RB 5,NB 3



Band 2_LTE-M1_5MHz_Nss1,QPSK_1TX

CSE-TX-Port

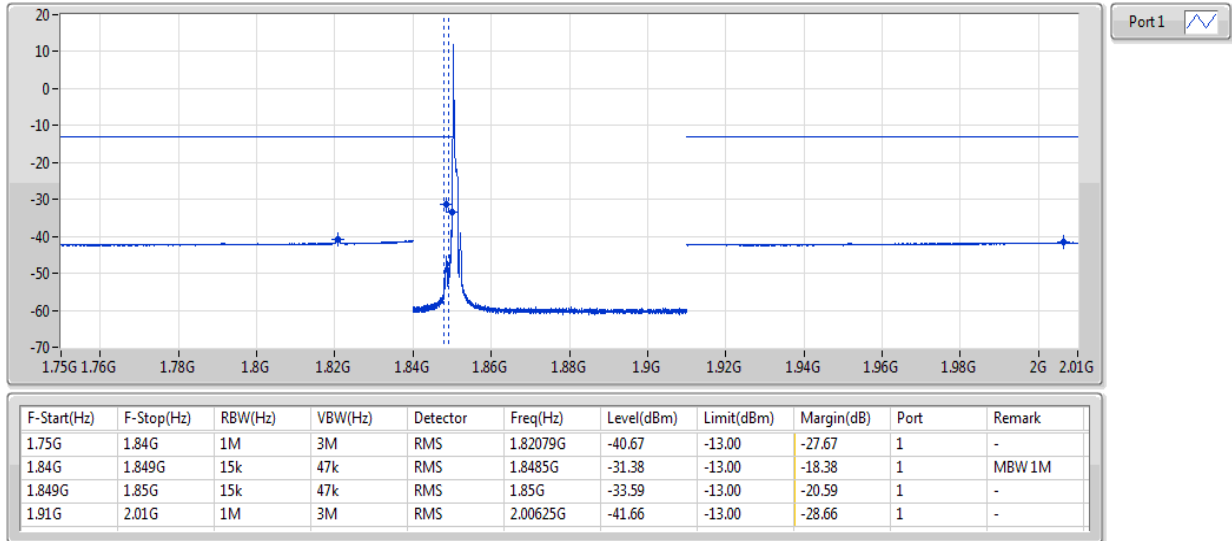
1907.5MHz_QPSK_RB 6,#RB 0,NB 3



Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

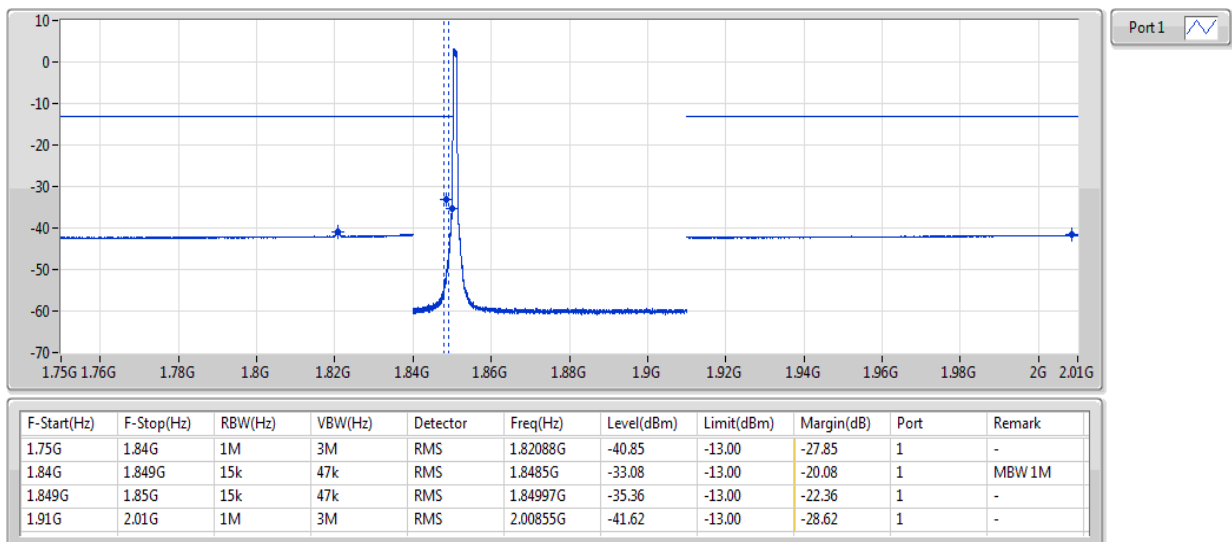
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Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

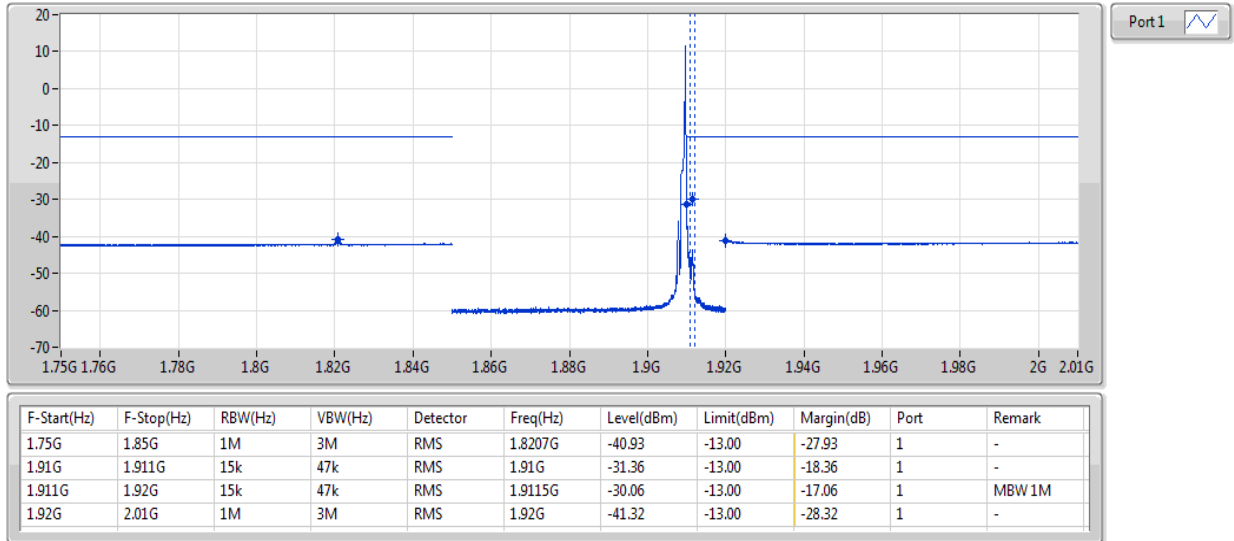
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Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

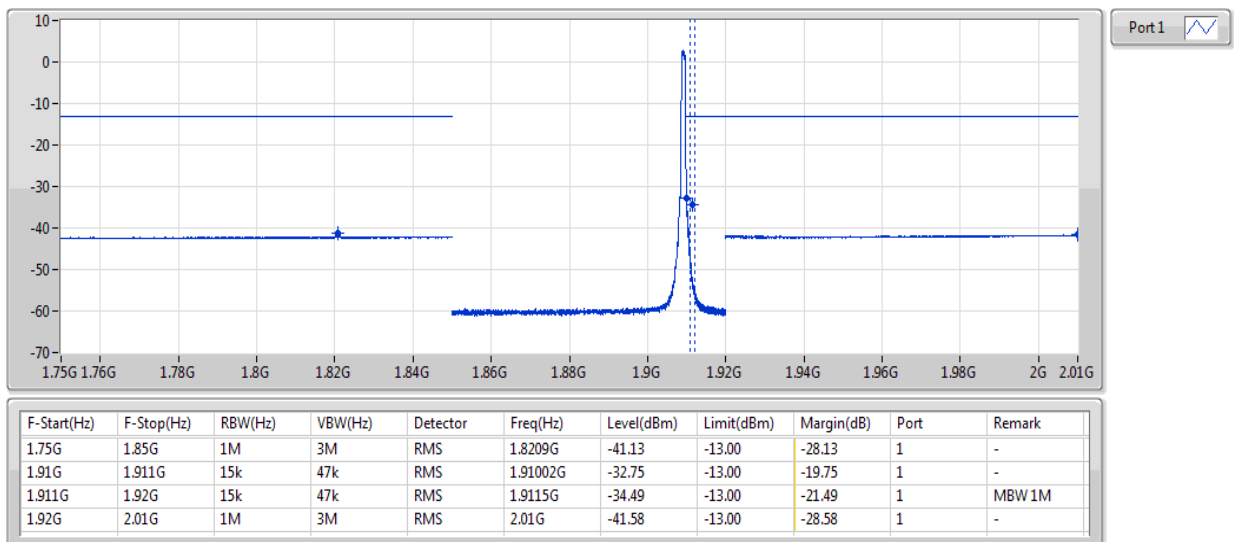
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Band 2_LTE-M1_5MHz_Nss1,16QAM_1TX

CSE-TX-Port

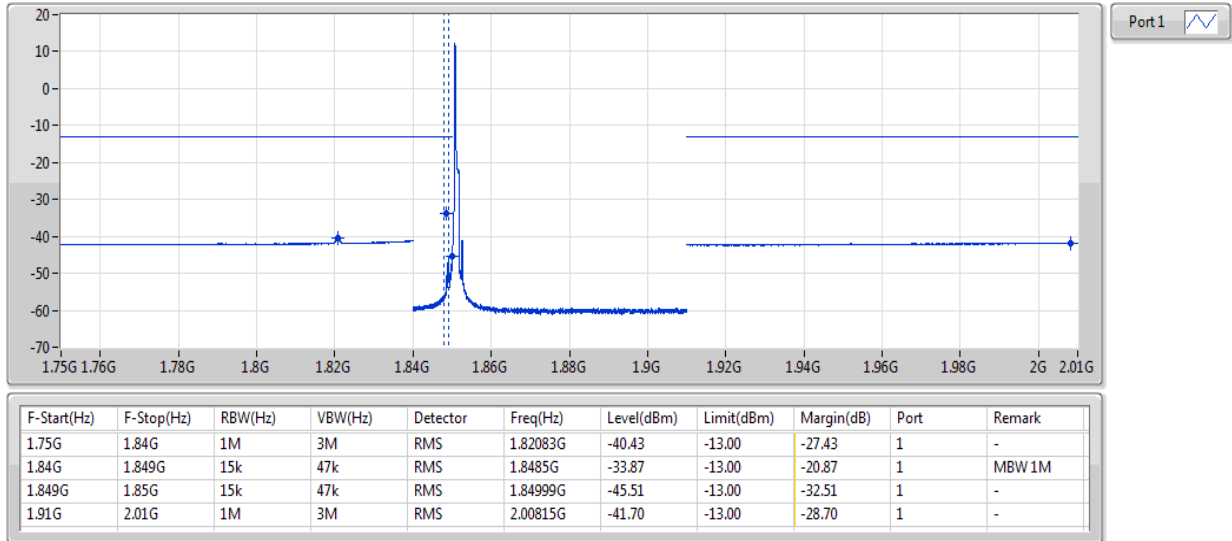
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Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

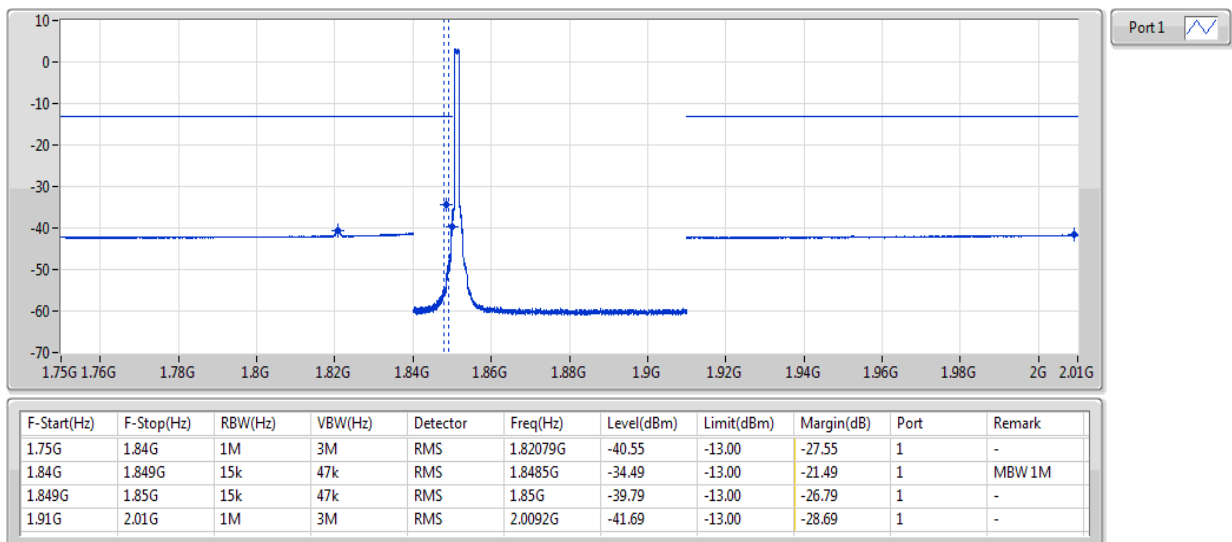
1855MHz_QPSK_RB 1,#RB 0,NB 0



Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

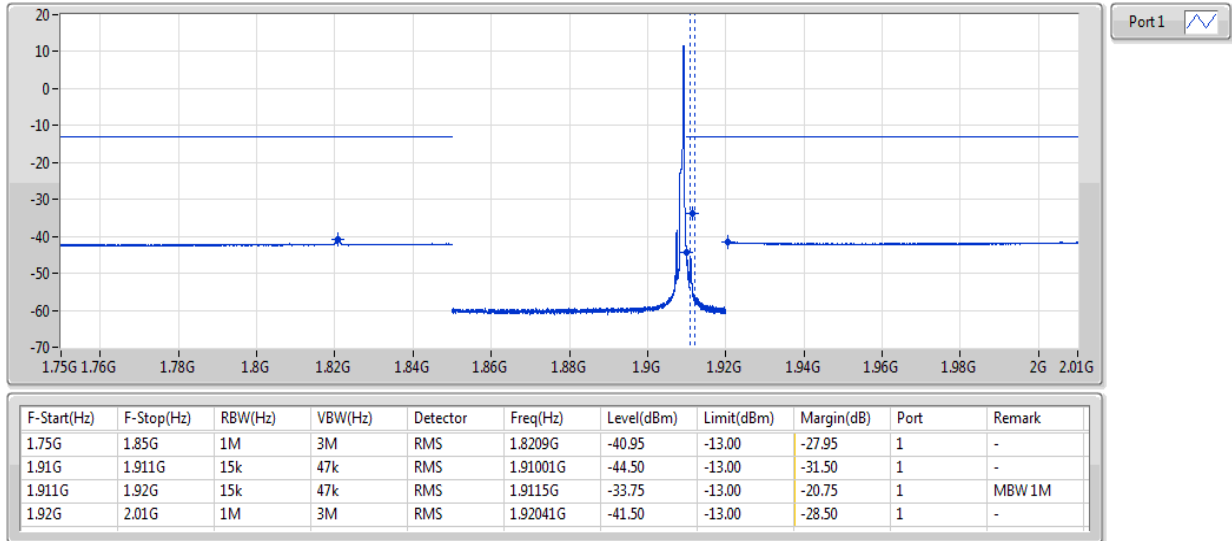
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Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

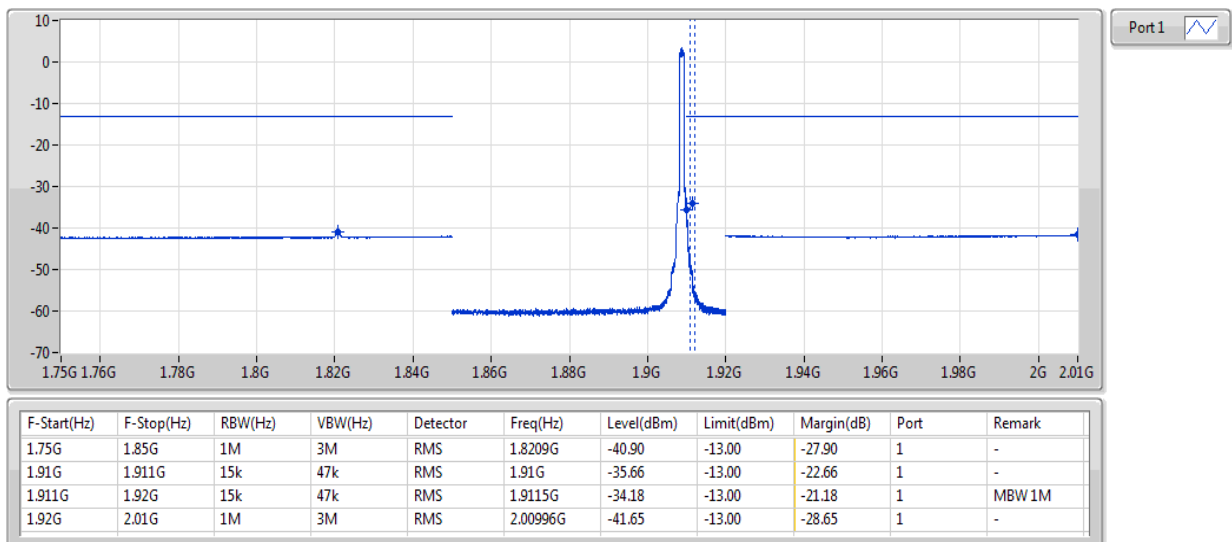
1905MHz_QPSK_RB 1,#RB 5,NB 7



Band 2_LTE-M1_10MHz_Nss1,QPSK_1TX

CSE-TX-Port

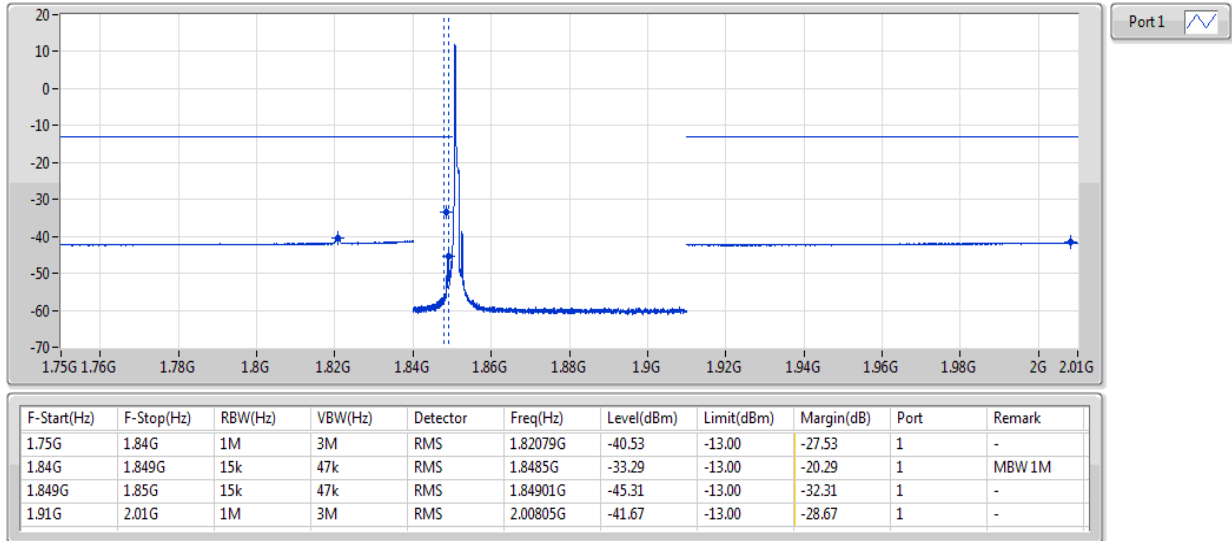
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Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

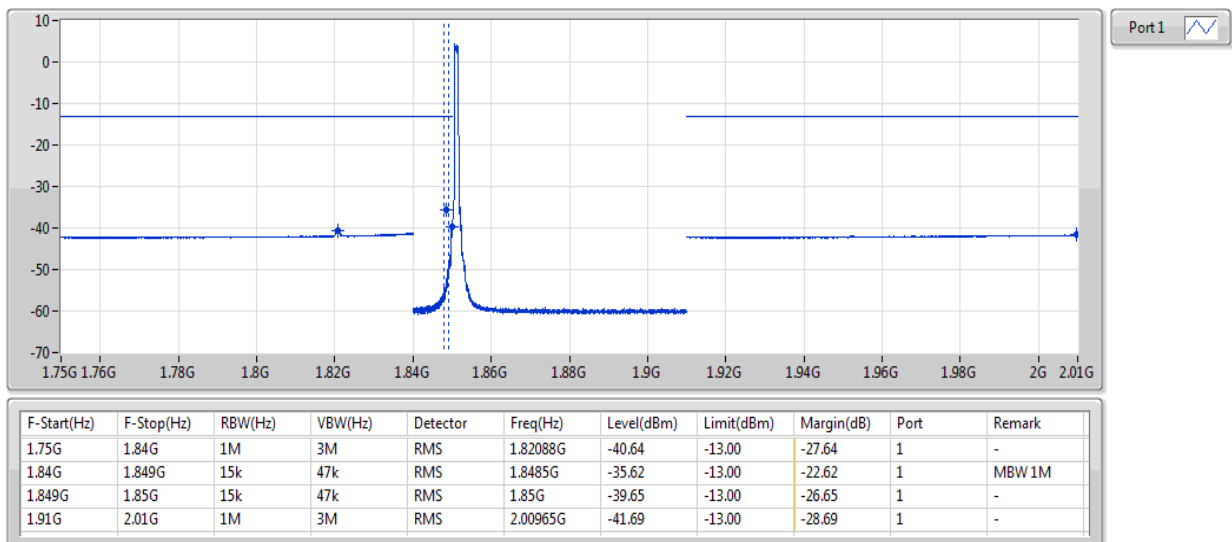
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Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

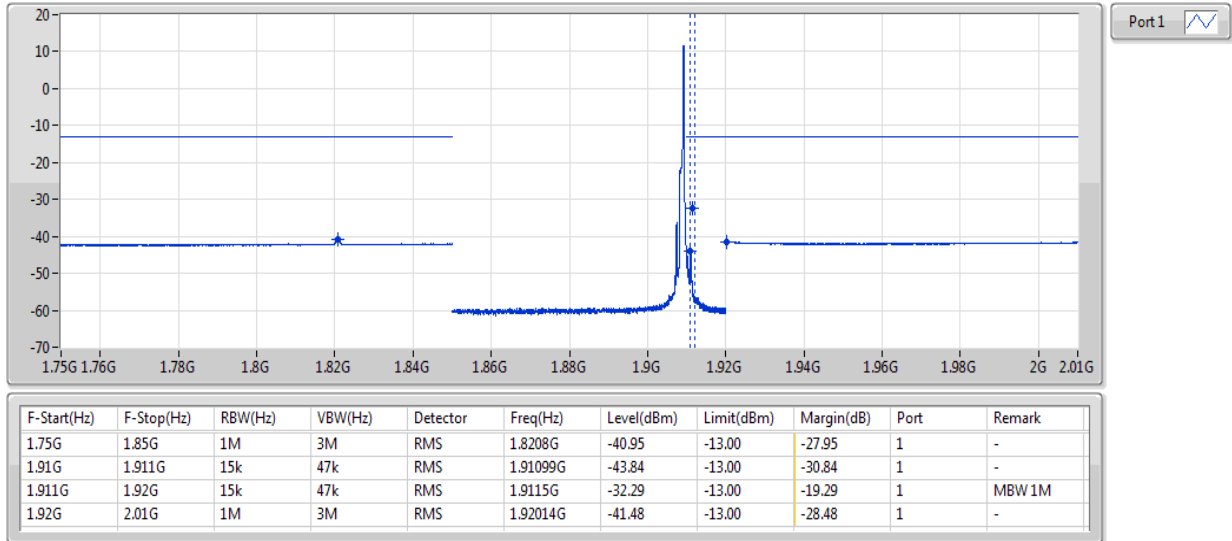
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Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

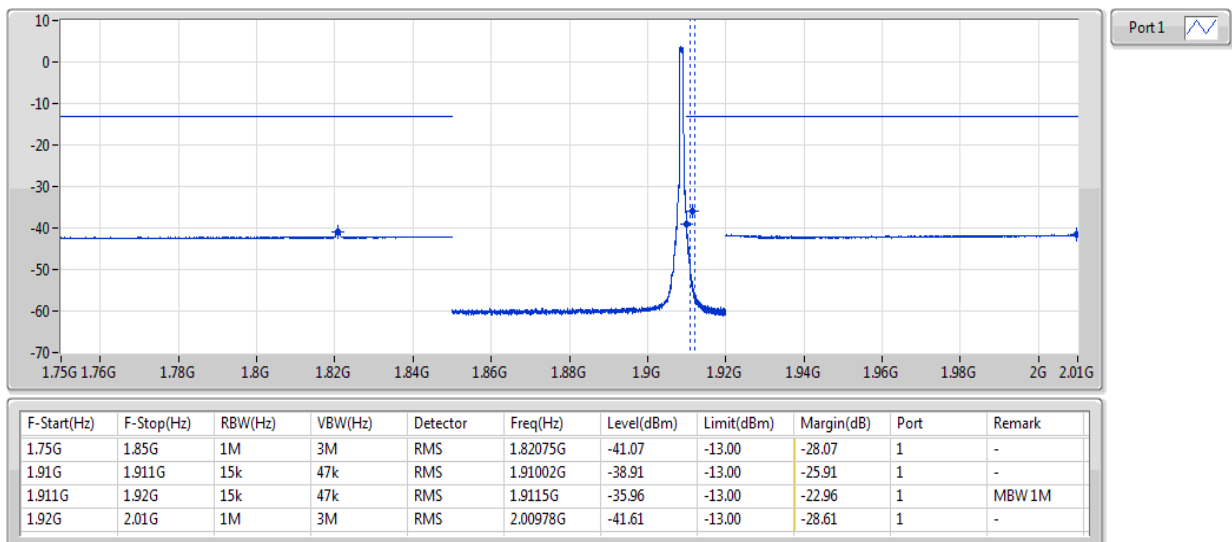
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Band 2_LTE-M1_10MHz_Nss1,16QAM_1TX

CSE-TX-Port

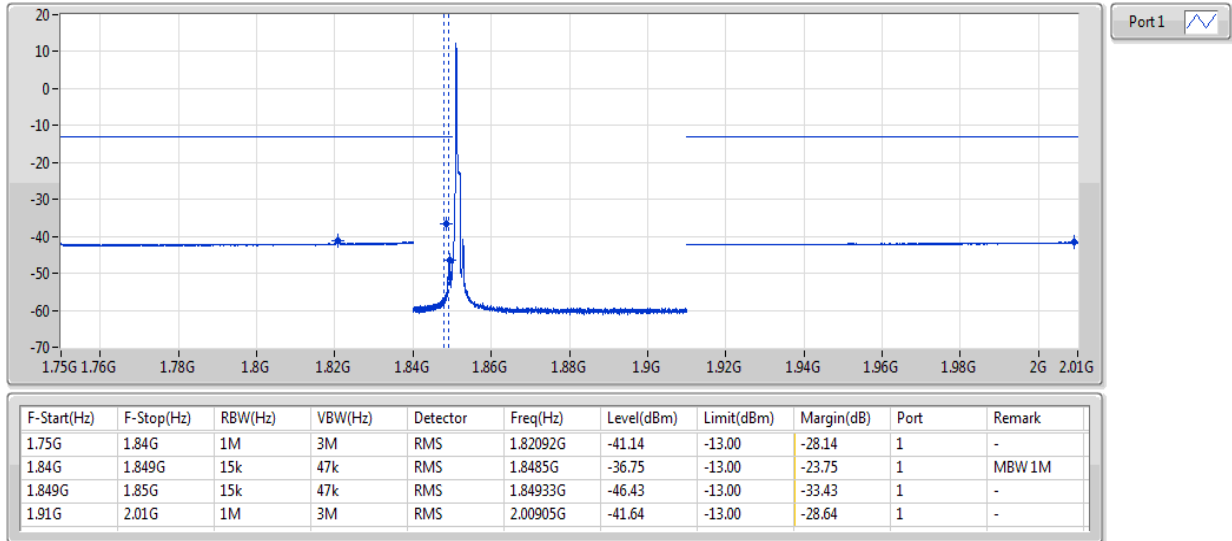
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Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

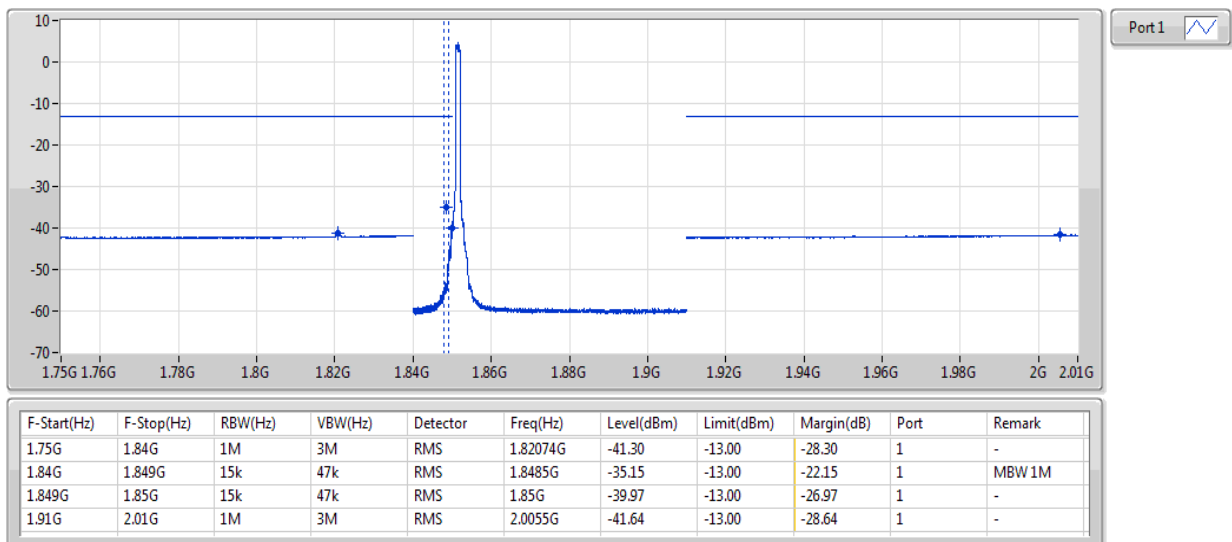
1857.5MHz_QPSK_RB 1,#RB 0,NB 0



Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

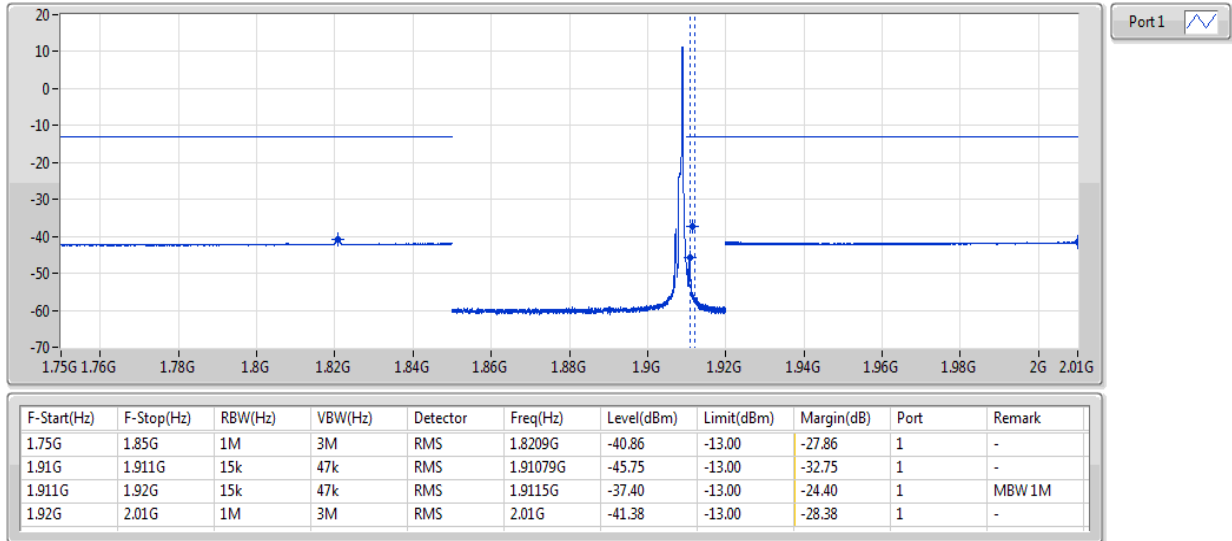
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Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

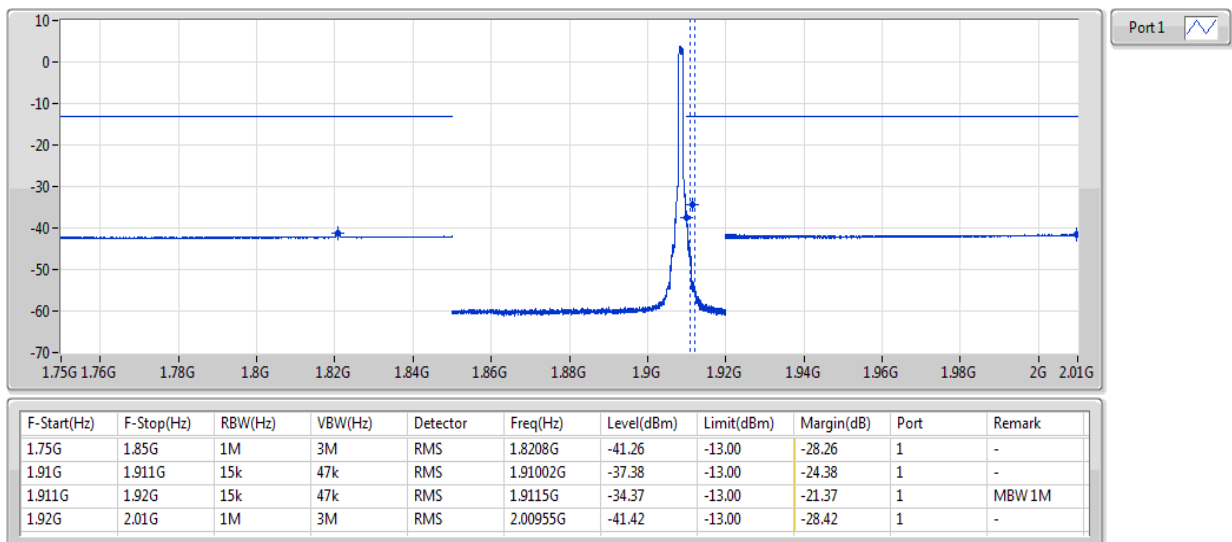
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Band 2_LTE-M1_15MHz_Nss1,QPSK_1TX

CSE-TX-Port

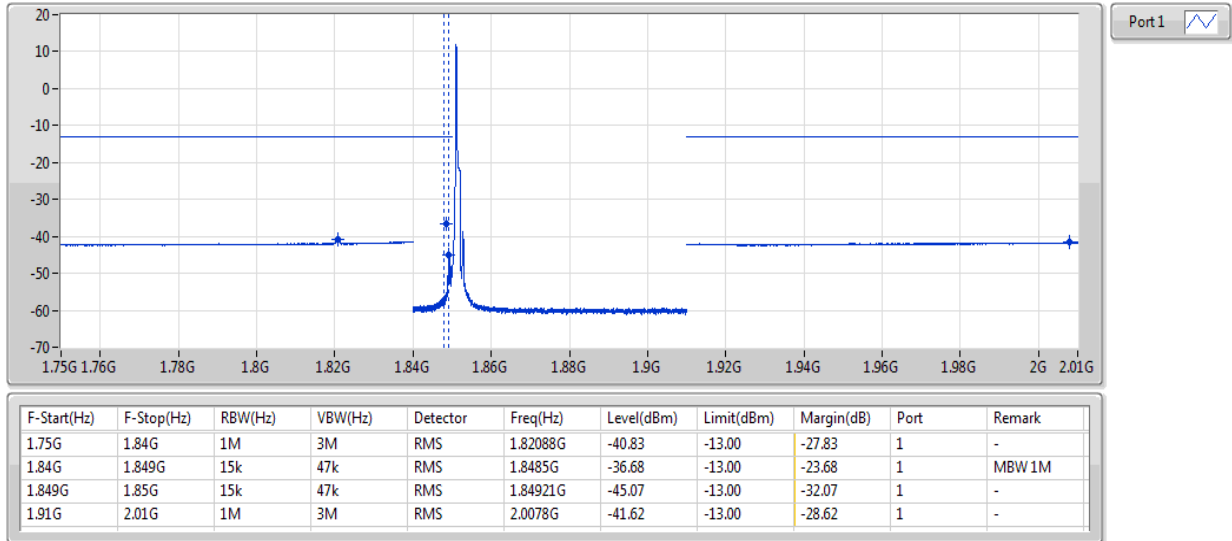
1902.5MHz_QPSK_RB 6,#RB 0,NB 11



Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

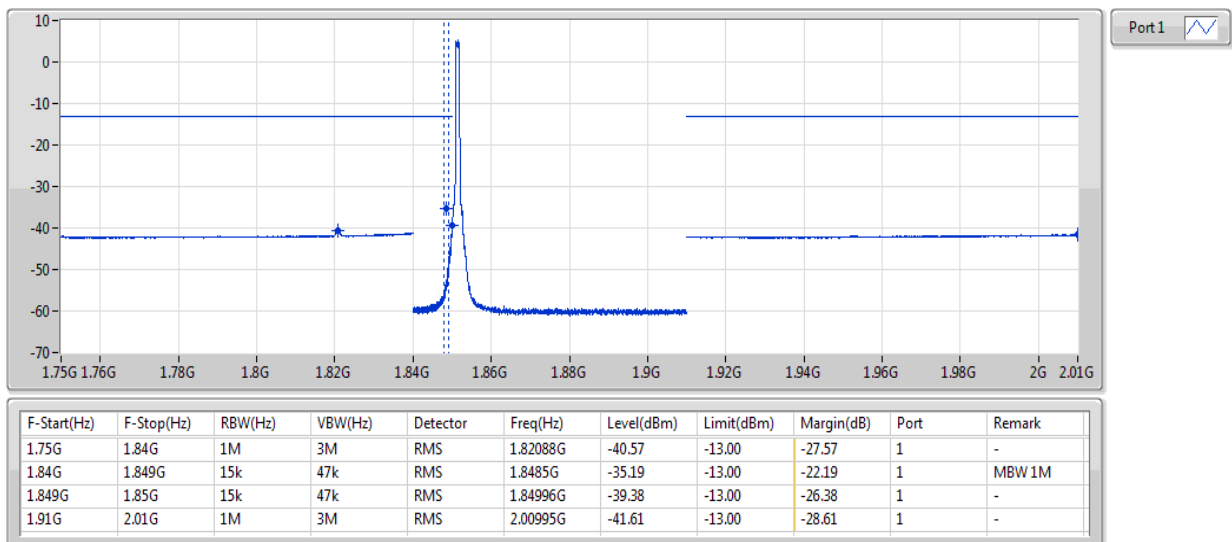
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Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

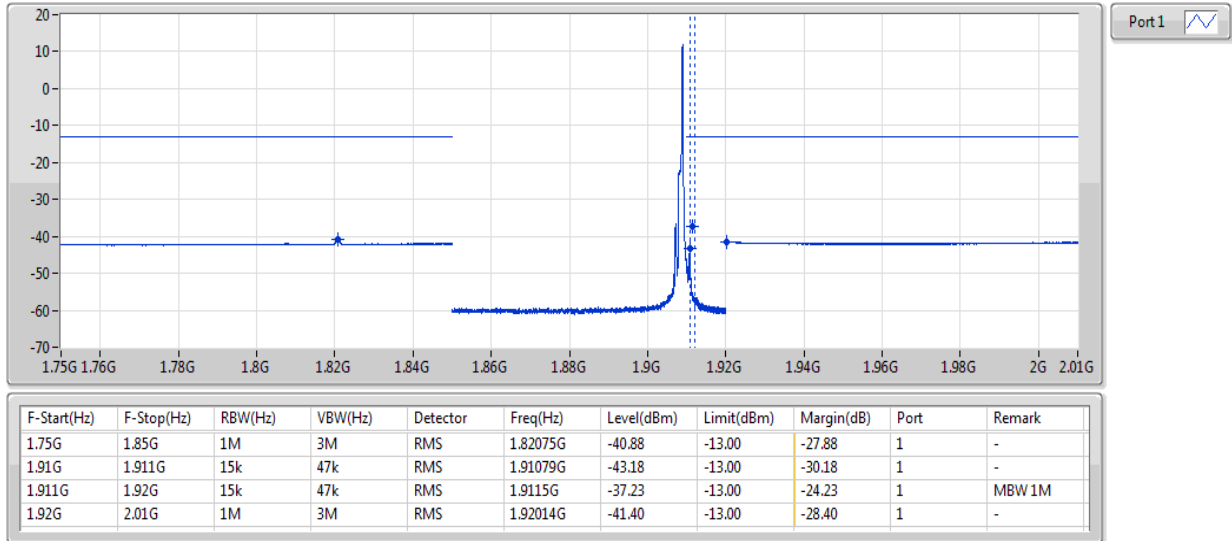
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Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

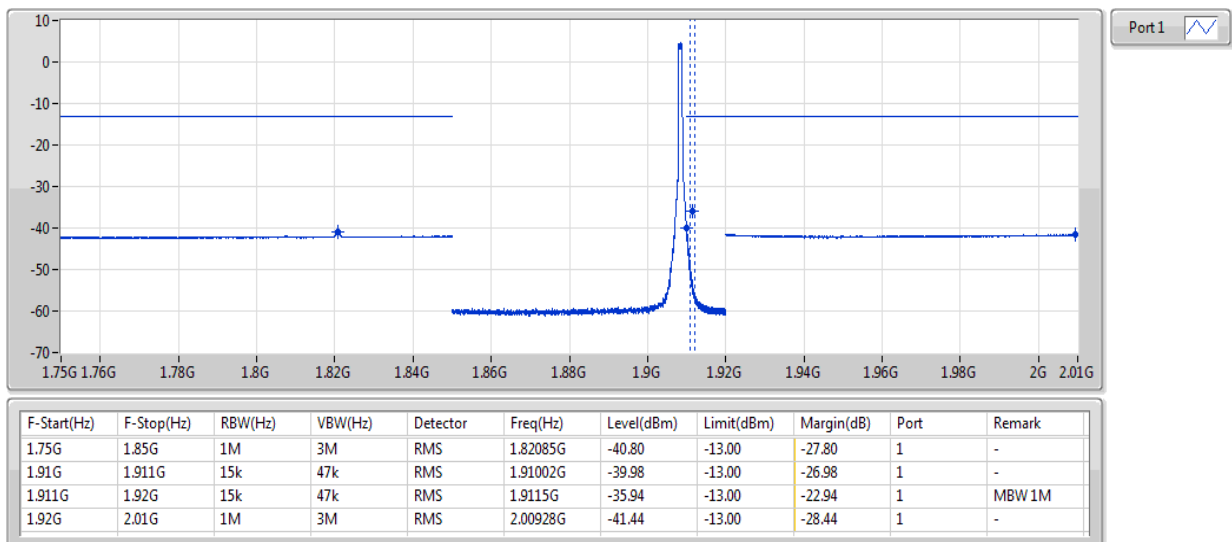
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Band 2_LTE-M1_15MHz_Nss1,16QAM_1TX

CSE-TX-Port

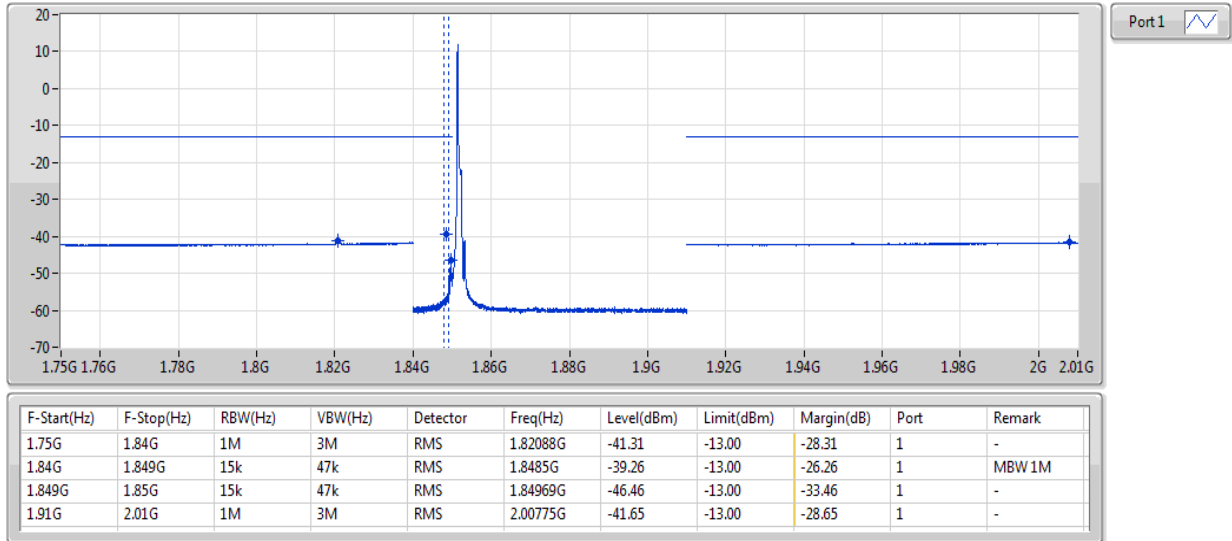
1902.5MHz_16QAM_RB 5,#RB 0,NB 11



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

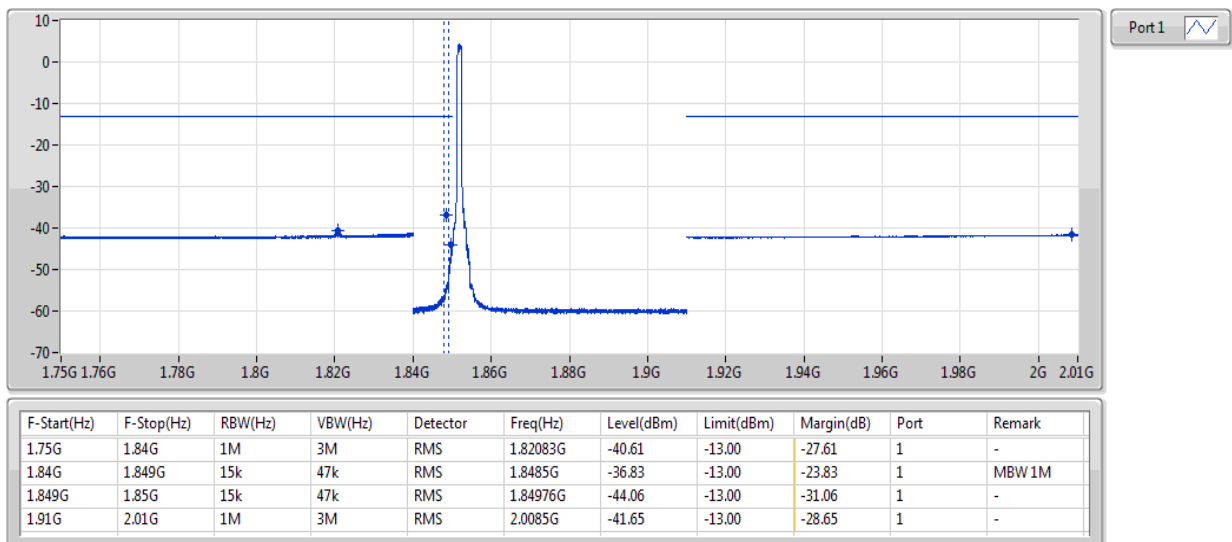
1860MHz_QPSK_RB 1,#RB 0,NB 0



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

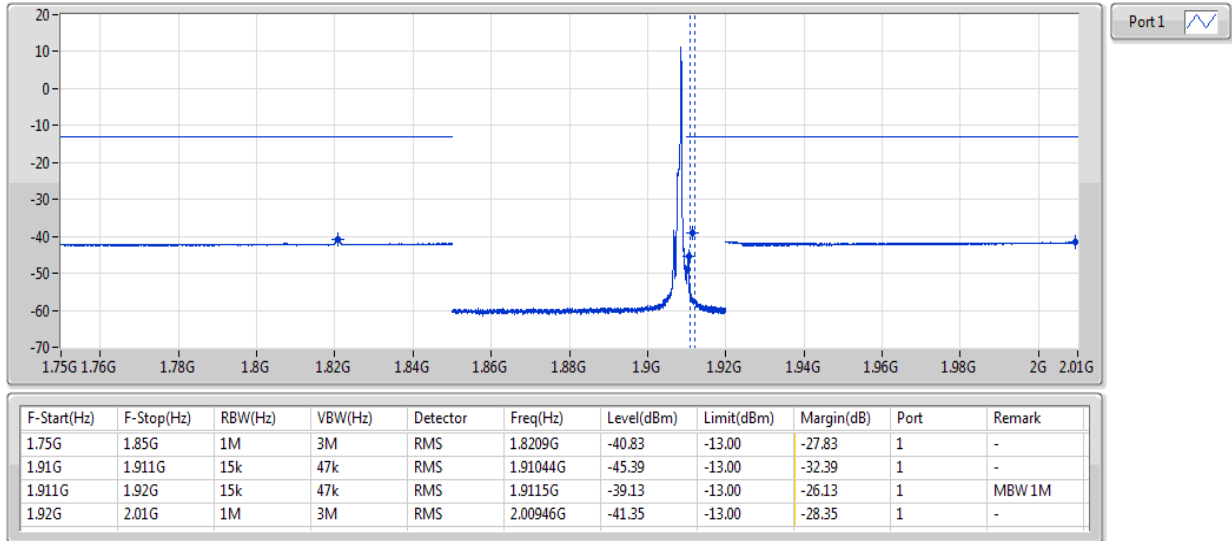
1860MHz_QPSK_RB 6,#RB 0,NB 0



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

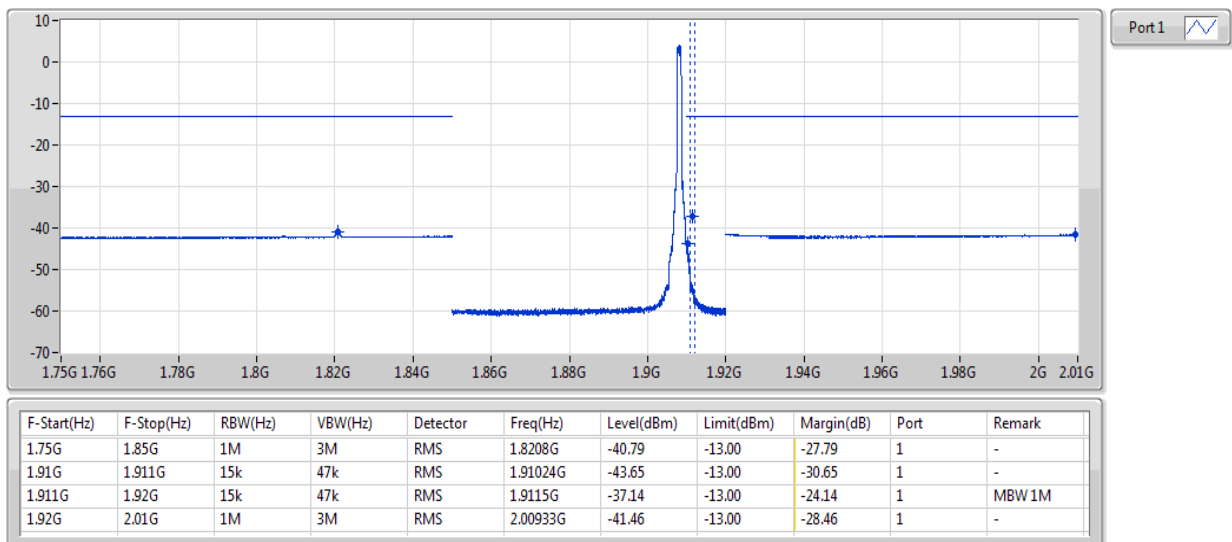
1900MHz_QPSK_RB 1,#RB 5,NB 15



Band 2_LTE-M1_20MHz_Nss1,QPSK_1TX

CSE-TX-Port

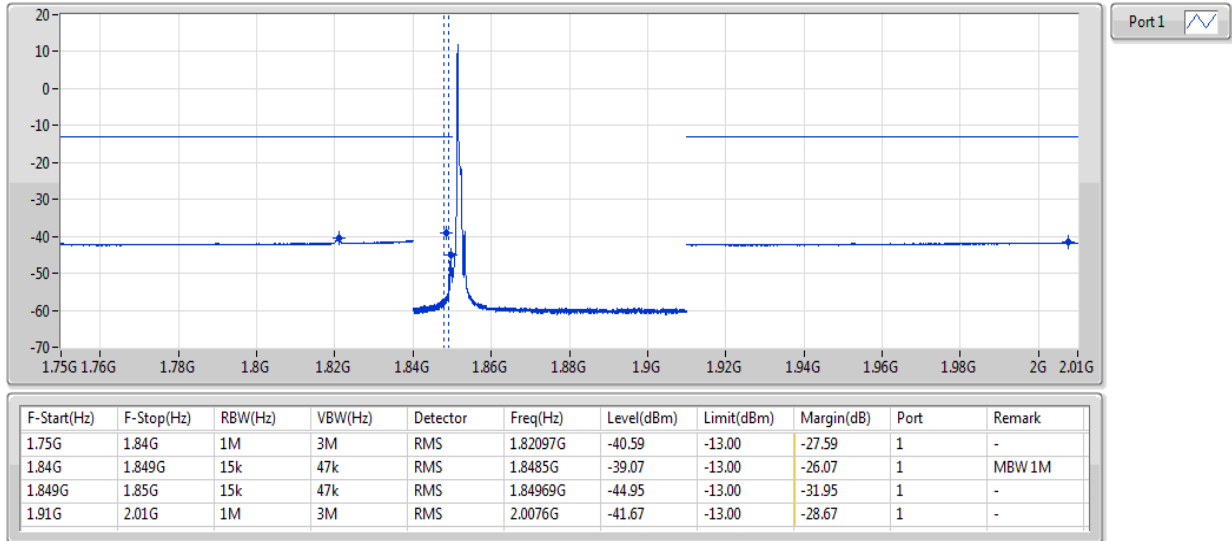
1900MHz_QPSK_RB 6,#RB 0,NB 15



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

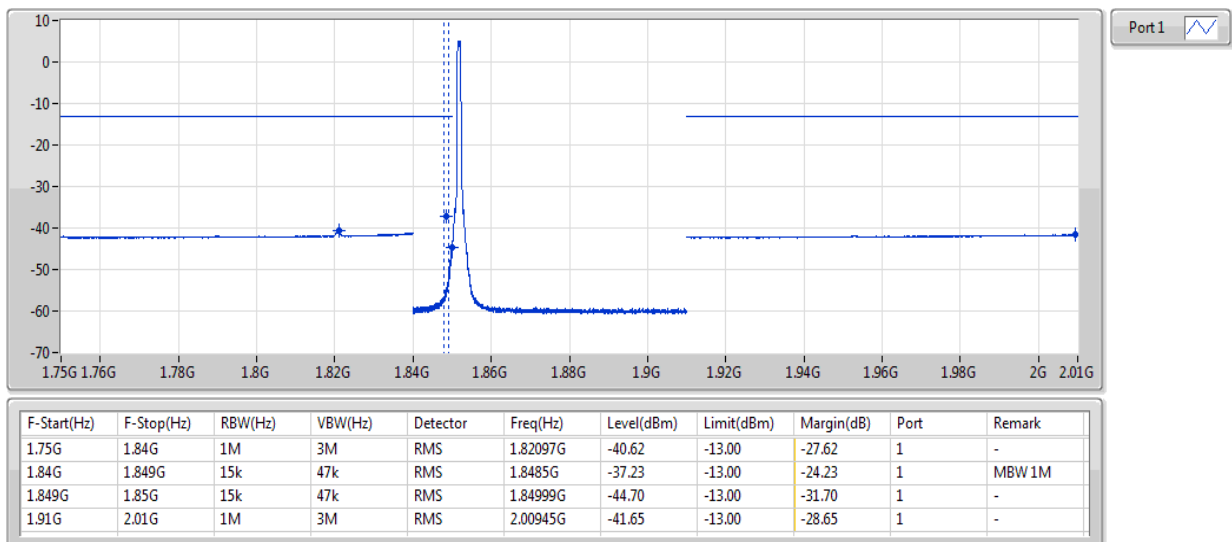
1860MHz_16QAM_RB 1,#RB 0,NB 0



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

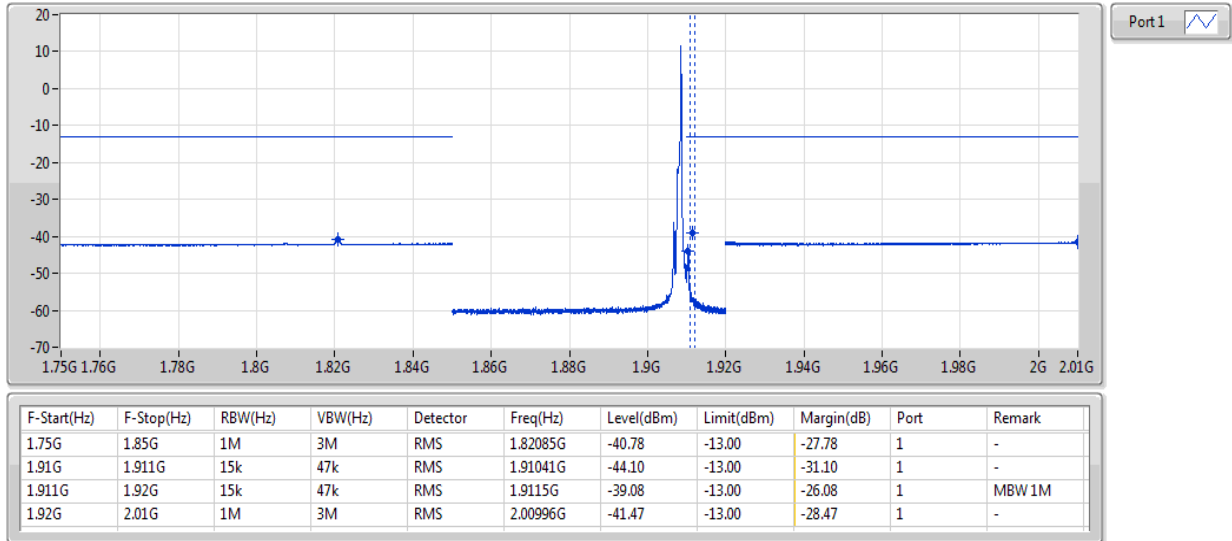
1860MHz_16QAM_RB 5,#RB 0,NB 0



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

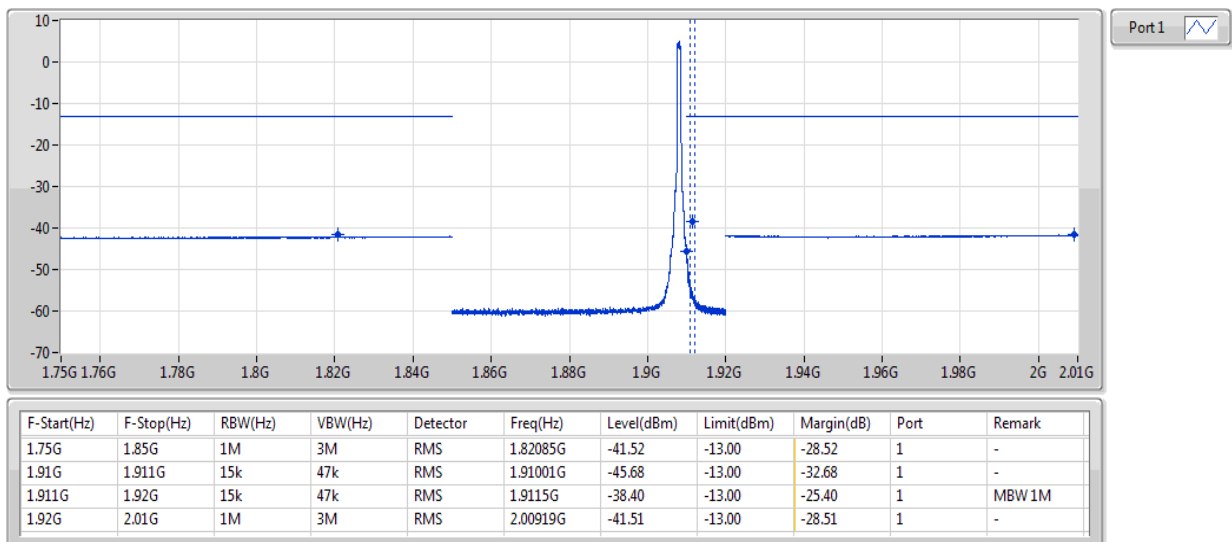
1900MHz_16QAM_RB 1,#RB 5,NB 15



Band 2_LTE-M1_20MHz_Nss1,16QAM_1TX

CSE-TX-Port

1900MHz_16QAM_RB 5,#RB 0,NB 15



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

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