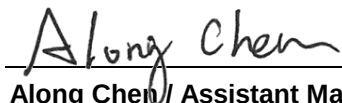


FCC Test Report

FCC ID : 2AQYEFMP169
Equipment : Mobile Phone
Model No. : F-02L
Brand Name : FUJITSU
Applicant : FUJITSU CONNECTED TECHNOLOGIES Ltd.
Address : 1-1, Kamikodanaka 4-chome, Nakahara-ku,
Kawasaki 211-8588, Japan
Standard : 47 CFR FCC Part 22 Subpart H
Received Date : Feb. 12, 2019
Tested Date : Feb. 15 ~ Feb. 23, 2019

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
FG8D1403P22	Rev. 01	Initial issue	Mar. 22, 2019

Summary of Test Results

FCC Rules	Test Items	Measured	Result
2.1046 / 22.913(a)(5)	Effective Radiated Power	Power[dBm] : GSM: 26.96 WCDMA: 17.59 LTE: 17.67	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 / 22.917(a)	Occupied Bandwidth	Meet the requirement of limit	Pass
-	Peak to Average Ratio	Meet the requirement of limit	Pass
2.1055 / 22.355	Frequency Stability	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 values of gain for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of the gain.

1 General Description

1.1 Information

1.1.1 Product Details

Product Name	Mobile Phone
Brand Name	FUJITSU
Model Name	F-02L
IMEI Code	353323100015584 / 353323100015543
H/W Version	v2.1.0
S/W Version	R016.5e

1.1.2 Specification of the Equipment under Test (EUT)

Operating Frequency	GSM 850: 824.2 MHz ~ 848.8 MHz WCDMA V: 826.4 MHz ~ 846.6 MHz LTE Band 5: Channel Bandwidth: 1.4MHz: 824.7 MHz ~ 848.3 MHz Channel Bandwidth: 3MHz: 825.5 MHz ~ 847.5 MHz Channel Bandwidth: 5MHz: 826.5 MHz ~ 846.5 MHz Channel Bandwidth: 10MHz: 829 MHz ~ 844 MHz
Modulation	GSM / GPRS: GMSK WCDMA / HSDPA / HSUPA: BPSK (Uplink) LTE: QPSK, 16QAM (Uplink)
Multislot Class	33 for GPRS
Duplex Mode	FDD
Release Version	WCDMA: R9 LTE: 10
UE Category	WCDMA: Cat. 10 / Cat. 6 LTE: Cat. 4

1.1.3 Antenna Details

Ant. No.	Type	Connector	Gain (dBi)	Remark
1	Monopole	No	-4.1	---

1.1.4 EUT Operational Condition

Supply Voltage	3.8Vdc from battery: 9Vdc,1.5A from adapter (No bundle, support unit only)		
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (55°C)	☒ Tmin (-10°C)

1.1.5 Accessories

No.	Equipment	Description
1	Battery	Brand: FUJITSU CONNECTED TECHNOLOGIES LIMITED Model Name: CA54310-0074 Power Rating: 3.8Vdc, 2,780mAh, 10.6Wh

1.1.6 Maximum ERP and Emission Designator

Mode	Modulation	Maximum ERP (W)	Emission Designator
GSM 850	GMSK	0.497	248KGXW
WCDMA V	BPSK	0.057	4M14F9W
LTE Band 5, CB: 1.4MHz	QPSK	0.057	1M08G7D
LTE Band 5, CB: 1.4MHz	16QAM	0.041	1M08W7D
LTE Band 5, CB: 3MHz	QPSK	0.055	2M69G7D
LTE Band 5, CB: 3MHz	16QAM	0.041	2M69W7D
LTE Band 5, CB: 5MHz	QPSK	0.058	4M46G7D
LTE Band 5, CB: 5MHz	16QAM	0.042	4M47W7D
LTE Band 5, CB: 10MHz	QPSK	0.058	8M95G7D
LTE Band 5, CB: 10MHz	16QAM	0.046	8M97W7D

1.1.7 Operating Channel List

GSM & GPRS		
	Channel	Frequency (MHz)
Low	128	824.2
Middle	189	836.4
High	251	848.8

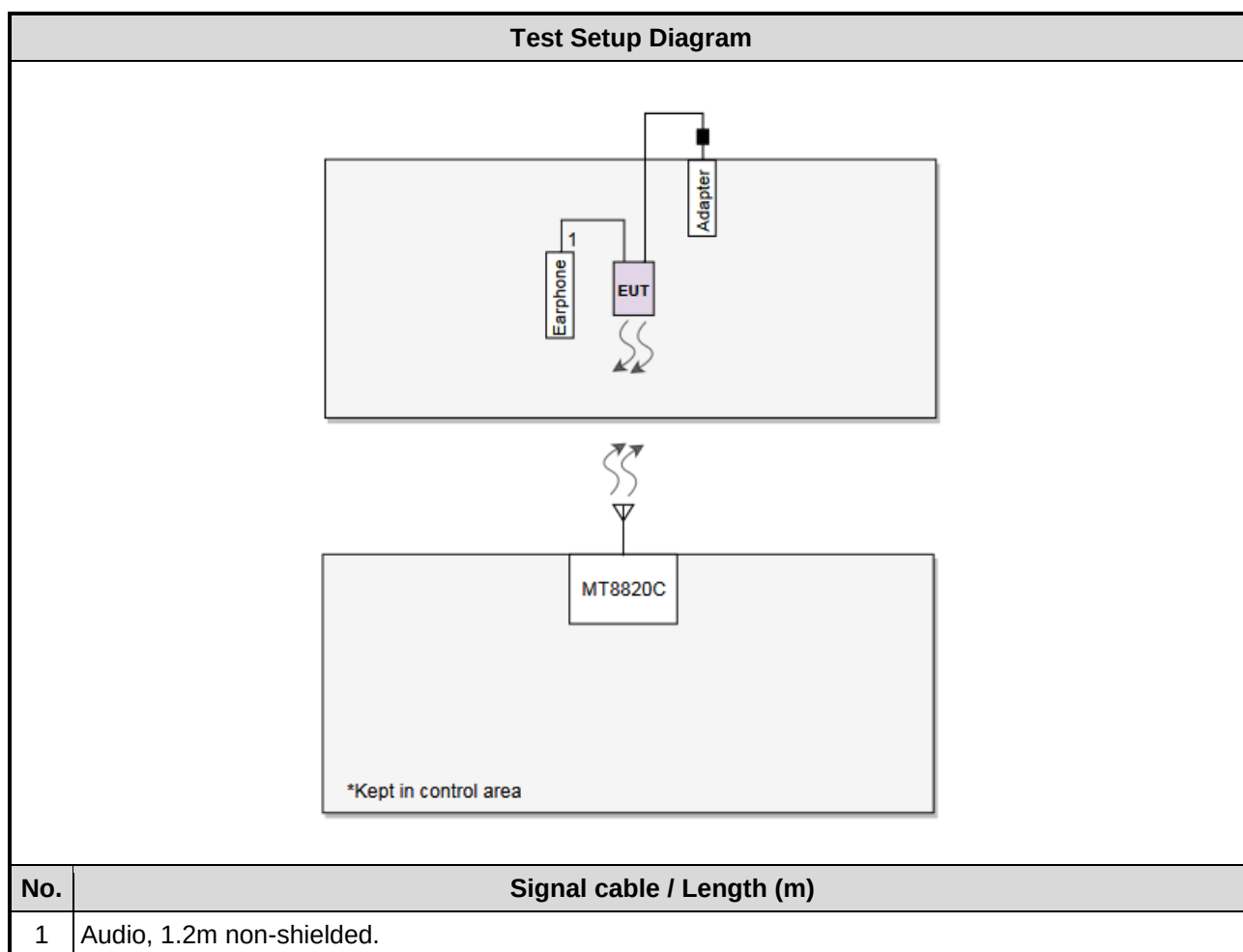
WCDMA V		
Channel Location	Channel	Frequency (MHz)
Low	4132	826.4
Middle	4182	836.4
High	4233	846.6

LTE Band 5		
Channel Bandwidths (MHz)	Channel	Frequency (MHz)
1.4	20407	824.7
1.4	20525	836.5
1.4	20643	848.3
3	20415	825.5
3	20525	836.5
3	20635	847.5
5	20425	826.5
5	20525	836.5
5	20625	846.5
10	20450	829.0
10	20525	836.5
10	20600	844.0

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Remarks
1	Earphone	APPLE	MD827FE/A	6	---
2	Adapter	NTT docomo	AC Adapter 06	---	Provided by applicant.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 27, 2018	Dec. 26, 2019
Receiver	R&S	ESR3	101658	Dec. 11, 2018	Dec. 10, 2019
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 18, 2018	Jul. 17, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 18, 2018	Dec. 17, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2018	Nov. 14, 2019
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 09, 2018	Nov. 08, 2019
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 08, 2018	Oct. 07, 2019
Preamplifier	EMC	EMC02325	980225	Jul. 20, 2018	Jul. 19, 2019
Preamplifier	Agilent	83017A	MY39501308	Oct. 04, 2018	Oct. 03, 2019
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF Cable	EMC	EMC104-SM-SM-80 00	181106	Oct. 08, 2018	Oct. 07, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 08, 2018	Oct. 07, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 08, 2018	Oct. 07, 2019
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 08, 2018	Oct. 07, 2019
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 08, 2018	Oct. 07, 2019
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 08, 2018	Oct. 07, 2019
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)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Apr. 16, 2018	Apr. 15, 2019
Spectrum Analyzer	Keysight	N9010A	MY54510374	Jun. 21, 2018	Jun. 20, 2019
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 05, 2018	Dec. 04, 2019
Power Meter	Anritsu	ML2495A	1241002	Oct. 09, 2018	Oct. 08, 2019
Power Sensor	Anritsu	MA2411B	1207366	Oct. 09, 2018	Oct. 08, 2019
Radio Communication Analyzer	Anritsu	MT8820C	6201240341	Apr. 08, 2018	Apr. 07, 2019
AC POWER SOURCE	APC	AFC-500W	F312060012	Nov. 29, 2018	Nov. 28, 2019
Measurement Software	Sporton	SENSE-15407_NII	V5.9	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 22 Subpart H

ANSI C63.4-2014

ANSI C63.26-2015

FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	± 34.139 Hz
Conducted power	± 0.808 dB
Frequency error	$\pm 1 \times 10^{-9}$
Conducted emission	± 2.680 dB
Radiated emission ≤ 1 GHz	± 3.41 dB
Radiated emission > 1 GHz	± 4.59 dB
Time	$\pm 0.1\%$
Temperature	$\pm 0.8^{\circ}\text{C}$

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
Radiated Emissions	03CH01-WS	22-24°C / 63-65%	Akun Chung
RF Conducted	TH01-WS	20-22°C / 63-66%	Aska Huang

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

GSM 850 / WCDMA V		
Test item	Mode	Test Channel
Effective Radiated Power	GPRS WCDMA	128, 189, 251 4132, 4182, 4233
Radiated Emissions ≤ 1GHz	GPRS WCDMA	189 4182
Radiated Emissions > 1GHz	GPRS WCDMA	128, 189, 251 4132, 4182, 4233
Conducted Emissions	GPRS WCDMA	128, 189, 251 4132, 4182, 4233
Band Edge	GPRS WCDMA	128, 251 4132, 4233
Occupied Bandwidth	GPRS WCDMA	128, 189, 251 4132, 4182, 4233
Peak to average ratio	GPRS WCDMA	128, 189, 251 4132, 4182, 4233
Frequency Stability	GPRS WCDMA	189 4182
NOTE:		
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The Z-plane results were found as the worst case and were shown in this report.		

LTE Band 5			
Test item	Channel Bandwidths	Modulation	Test channel
Effective Radiated Power	1.4 MHz	QPSK / 16QAM	20407 / 20525 / 20643
Conducted Emissions	3 MHz	QPSK / 16QAM	20415 / 20525 / 20635
Occupied Bandwidth	5 MHz	QPSK / 16QAM	20425 / 20525 / 20625
Peak to Average Ratio	10 MHz	QPSK / 16QAM	20450 / 20525 / 20600
Radiated Emission $\leq$ 1GHz	1.4 MHz	QPSK	20525
	3 MHz	QPSK	20525
	5 MHz	QPSK	20525
	10 MHz	QPSK	20525
Radiated Emission $>$ 1GHz	1.4 MHz	QPSK	20407 / 20525 / 20643
	3 MHz	QPSK	20415 / 20525 / 20635
	5 MHz	QPSK	20425 / 20525 / 20625
	10 MHz	QPSK	20450 / 20525 / 20600
Band Edge	1.4 MHz	QPSK / 16QAM	20407 / 20643
	3 MHz	QPSK / 16QAM	20415 / 20635
	5 MHz	QPSK / 16QAM	20425 / 20625
	10 MHz	QPSK / 16QAM	20450 / 20600
Frequency Stability	1.4 MHz	QPSK	20525
	3 MHz	QPSK	20525
	5 MHz	QPSK	20525
	10 MHz	QPSK	20525
NOTE:			
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The Z-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

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

3.1.2 Test Procedures

For E.R.P measurement

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

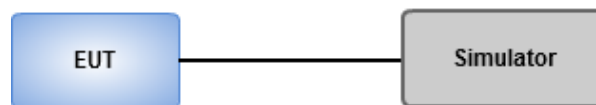
1. $EIRP = P_T + G_T - L_C$
 P_T = transmitter output power, in dBm.
 G_T = gain of the transmitting antenna, in dBi (EIRP).
 L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.
2. $ERP = EIRP - 2.15 \text{ dB}$.

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

Conducted Power Measurement



3.1.4 Test Result of Conducted Output Power (dBm)

Band	GSM 850		
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
GSM	33.07	33.21	33.01
GPRS 8 (GMSK, 1 slot)	33.08	33.21	33.03
GPRS 10 (GMSK, 2 slots)	31.40	31.64	31.55
GPRS 11 (GMSK, 3 slots)	29.74	29.87	29.77
GPRS 12 (GMSK, 4 slots)	28.18	28.50	28.46

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
AMR 12.2Kbps	23.48	23.81	23.70
RMC 12.2Kbps	23.48	23.84	23.72
HSDPA Subtest-1	22.63	22.99	22.87
HSDPA Subtest-2	22.73	23.06	22.91
HSDPA Subtest-3	22.24	22.56	22.42
HSDPA Subtest-4	22.24	22.56	22.41
HSUPA Subtest-1	22.75	23.10	22.88
HSUPA Subtest-2	20.83	21.08	20.94
HSUPA Subtest-3	21.84	22.08	22.06
HSUPA Subtest-4	20.84	21.08	20.94
HSUPA Subtest-5	22.70	23.00	23.00

Band / Channel Bandwidth			LTE Band 5 / CB: 1.4MHz		
Channel			20407	20525	20643
Frequency (MHz)			824.7	836.5	848.3
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	22.95	23.28	23.12
	1	3	23.70	23.80	23.45
	1	5	23.08	23.43	23.14
	3	0	22.57	22.71	22.47
	3	1	22.64	22.82	22.63
	3	3	22.53	22.79	22.49
	6	0	22.65	22.67	22.48
16QAM	1	0	22.09	22.35	22.36
	1	3	22.32	22.33	22.16
	1	5	22.11	22.39	21.99
	3	0	21.37	21.56	21.48
	3	1	21.51	21.74	21.57
	3	3	21.67	21.88	21.37
	6	0	21.66	21.75	21.45

Band / Channel Bandwidth			LTE Band 5 / CB: 3MHz		
Channel			20415	20525	20635
Frequency (MHz)			825.5	836.5	847.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	23.02	23.21	23.08
	1	8	23.66	23.69	23.41
	1	14	23.13	23.56	22.94
	8	0	22.66	22.77	22.54
	8	4	22.56	22.80	22.50
	8	7	22.68	22.63	22.57
	15	0	22.60	22.78	22.53
16QAM	1	0	22.13	22.32	22.36
	1	8	22.35	22.31	22.15
	1	14	22.04	22.33	22.02
	8	0	21.49	21.62	21.55
	8	4	21.65	21.75	21.63
	8	7	21.52	21.76	21.49
	15	0	21.82	21.72	21.55

Band / Channel Bandwidth			LTE Band 5 / CB: 5MHz		
Channel			20425	20525	20625
Frequency (MHz)			826.5	836.5	846.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	23.14	23.34	23.22
	1	12	23.80	23.86	23.51
	1	24	23.24	23.60	23.14
	12	0	22.70	22.82	22.62
	12	7	22.76	22.89	22.70
	12	13	22.68	22.79	22.62
	25	0	22.72	22.86	22.59
16QAM	1	0	22.25	22.50	22.36
	1	12	22.44	22.48	22.29
	1	24	22.18	22.48	22.19
	12	0	21.54	21.63	21.55
	12	7	21.69	21.83	21.66
	12	13	21.71	21.91	21.57
	25	0	21.83	21.78	21.63

Band / Channel Bandwidth			LTE Band 5 / CB: 10MHz		
Channel			20450	20525	20600
Frequency (MHz)			829	836.5	844
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	23.27	23.34	23.51
	1	25	23.81	23.92	23.76
	1	49	23.30	23.62	23.26
	25	0	22.82	22.84	22.77
	25	12	22.71	22.91	22.62
	25	25	22.71	22.86	22.58
	50	0	22.78	22.85	22.64
16QAM	1	0	22.37	22.39	22.62
	1	25	22.67	22.90	22.70
	1	49	22.44	22.42	22.04
	25	0	21.75	21.78	21.80
	25	12	21.75	21.84	21.65
	25	25	21.65	21.83	21.90
	50	0	21.53	21.88	21.66

3.1.5 Test Result of Effective Radiated Power (dBm)

Mode	GPRS						
Channel	Frequency (MHz)	Conducted Output Power (dBm)	Max Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (W)	Limit (W)
128	824.2	33.08	-4.1	28.98	26.83	0.482	7
189	836.4	33.21	-4.1	29.11	26.96	0.497	7
251	848.8	33.03	-4.1	28.93	26.78	0.476	7

Mode	RMC 12.2K						
Channel	Frequency (MHz)	Conducted Output Power (dBm)	Max Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (W)	Limit (W)
4132	826.4	23.48	-4.1	19.38	17.23	0.053	7
4182	836.4	23.84	-4.1	19.74	17.59	0.057	7
4233	846.6	23.72	-4.1	19.62	17.47	0.056	7

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

LTE Band 5 CB:1.4MHz	Channel	Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.R.P Power (dBm)	E.R.P Power (W)	E.R.P Limit (W)
QPSK	20407	824.7	1	0	22.95	-4.1	18.85	16.70	0.047	7
			1	3	23.70	-4.1	19.60	17.45	0.056	7
			1	5	23.08	-4.1	18.98	16.83	0.048	7
			3	0	22.57	-4.1	18.47	16.32	0.043	7
			3	1	22.64	-4.1	18.54	16.39	0.044	7
			3	3	22.53	-4.1	18.43	16.28	0.042	7
			6	0	22.65	-4.1	18.55	16.40	0.044	7
	20525	836.5	1	0	23.28	-4.1	19.18	17.03	0.050	7
			1	3	23.80	-4.1	19.70	17.55	0.057	7
			1	5	23.43	-4.1	19.33	17.18	0.052	7
			3	0	22.71	-4.1	18.61	16.46	0.044	7
			3	1	22.82	-4.1	18.72	16.57	0.045	7
			3	3	22.79	-4.1	18.69	16.54	0.045	7
			6	0	22.67	-4.1	18.57	16.42	0.044	7
	20643	848.3	1	0	23.12	-4.1	19.02	16.87	0.049	7
			1	3	23.45	-4.1	19.35	17.20	0.052	7
			1	5	23.14	-4.1	19.04	16.89	0.049	7
			3	0	22.47	-4.1	18.37	16.22	0.042	7
			3	1	22.63	-4.1	18.53	16.38	0.043	7
			3	3	22.49	-4.1	18.39	16.24	0.042	7
			6	0	22.48	-4.1	18.38	16.23	0.042	7
16QAM	20407	824.7	1	0	22.09	-4.1	17.99	15.84	0.038	7
			1	3	22.32	-4.1	18.22	16.07	0.040	7
			1	5	22.11	-4.1	18.01	15.86	0.039	7
			3	0	21.37	-4.1	17.27	15.12	0.033	7
			3	1	21.51	-4.1	17.41	15.26	0.034	7
			3	3	21.67	-4.1	17.57	15.42	0.035	7
			6	0	21.66	-4.1	17.56	15.41	0.035	7
	20525	836.5	1	0	22.35	-4.1	18.25	16.10	0.041	7
			1	3	22.33	-4.1	18.23	16.08	0.041	7
			1	5	22.39	-4.1	18.29	16.14	0.041	7
			3	0	21.56	-4.1	17.46	15.31	0.034	7
			3	1	21.74	-4.1	17.64	15.49	0.035	7
			3	3	21.88	-4.1	17.78	15.63	0.037	7
			6	0	21.75	-4.1	17.65	15.50	0.035	7
	20643	848.3	1	0	22.36	-4.1	18.26	16.11	0.041	7
			1	3	22.16	-4.1	18.06	15.91	0.039	7
			1	5	21.99	-4.1	17.89	15.74	0.037	7
			3	0	21.48	-4.1	17.38	15.23	0.033	7
			3	1	21.57	-4.1	17.47	15.32	0.034	7
			3	3	21.37	-4.1	17.27	15.12	0.033	7
			6	0	21.45	-4.1	17.35	15.20	0.033	7

LTE Band 5 CB:3MHz	Channel	Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.R.P Power (dBm)	E.R.P Power (W)	E.R.P Limit (W)
QPSK	20415	825.5	1	0	23.02	-4.1	18.92	16.77	0.048	7
			1	8	23.66	-4.1	19.56	17.41	0.055	7
			1	14	23.13	-4.1	19.03	16.88	0.049	7
			8	0	22.66	-4.1	18.56	16.41	0.044	7
			8	4	22.56	-4.1	18.46	16.31	0.043	7
			8	7	22.68	-4.1	18.58	16.43	0.044	7
			15	0	22.60	-4.1	18.50	16.35	0.043	7
	20525	836.5	1	0	23.21	-4.1	19.11	16.96	0.050	7
			1	8	23.69	-4.1	19.59	17.44	0.055	7
			1	14	23.56	-4.1	19.46	17.31	0.054	7
			8	0	22.77	-4.1	18.67	16.52	0.045	7
			8	4	22.80	-4.1	18.70	16.55	0.045	7
			8	7	22.63	-4.1	18.53	16.38	0.043	7
			15	0	22.78	-4.1	18.68	16.53	0.045	7
	20635	847.5	1	0	23.08	-4.1	18.98	16.83	0.048	7
			1	8	23.41	-4.1	19.31	17.16	0.052	7
			1	14	22.94	-4.1	18.84	16.69	0.047	7
			8	0	22.54	-4.1	18.44	16.29	0.043	7
			8	4	22.50	-4.1	18.40	16.25	0.042	7
			8	7	22.57	-4.1	18.47	16.32	0.043	7
			15	0	22.53	-4.1	18.43	16.28	0.042	7
16QAM	20415	825.5	1	0	22.13	-4.1	18.03	15.88	0.039	7
			1	8	22.35	-4.1	18.25	16.10	0.041	7
			1	14	22.04	-4.1	17.94	15.79	0.038	7
			8	0	21.49	-4.1	17.39	15.24	0.033	7
			8	4	21.65	-4.1	17.55	15.40	0.035	7
			8	7	21.52	-4.1	17.42	15.27	0.034	7
			15	0	21.82	-4.1	17.72	15.57	0.036	7
	20525	836.5	1	0	22.32	-4.1	18.22	16.07	0.040	7
			1	8	22.31	-4.1	18.21	16.06	0.040	7
			1	14	22.33	-4.1	18.23	16.08	0.041	7
			8	0	21.62	-4.1	17.52	15.37	0.034	7
			8	4	21.75	-4.1	17.65	15.50	0.035	7
			8	7	21.76	-4.1	17.66	15.51	0.036	7
			15	0	21.72	-4.1	17.62	15.47	0.035	7
	20635	847.5	1	0	22.36	-4.1	18.26	16.11	0.041	7
			1	8	22.15	-4.1	18.05	15.90	0.039	7
			1	14	22.02	-4.1	17.92	15.77	0.038	7
			8	0	21.55	-4.1	17.45	15.30	0.034	7
			8	4	21.63	-4.1	17.53	15.38	0.035	7
			8	7	21.49	-4.1	17.39	15.24	0.033	7
			15	0	21.55	-4.1	17.45	15.30	0.034	7

LTE Band 5 CB:5MHz	Channel	Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.R.P Power (dBm)	E.R.P Power (W)	E.R.P Limit (W)
QPSK	20425	826.5	1	0	23.14	-4.1	19.04	16.89	0.049	7
			1	12	23.80	-4.1	19.70	17.55	0.057	7
			1	24	23.24	-4.1	19.14	16.99	0.050	7
			12	0	22.70	-4.1	18.60	16.45	0.044	7
			12	7	22.76	-4.1	18.66	16.51	0.045	7
			12	13	22.68	-4.1	18.58	16.43	0.044	7
			25	0	22.72	-4.1	18.62	16.47	0.044	7
	20525	836.5	1	0	23.34	-4.1	19.24	17.09	0.051	7
			1	12	23.86	-4.1	19.76	17.61	0.058	7
			1	24	23.60	-4.1	19.50	17.35	0.054	7
			12	0	22.82	-4.1	18.72	16.57	0.045	7
			12	7	22.89	-4.1	18.79	16.64	0.046	7
			12	13	22.79	-4.1	18.69	16.54	0.045	7
			25	0	22.86	-4.1	18.76	16.61	0.046	7
	20625	846.5	1	0	23.22	-4.1	19.12	16.97	0.050	7
			1	12	23.51	-4.1	19.41	17.26	0.053	7
			1	24	23.14	-4.1	19.04	16.89	0.049	7
			12	0	22.62	-4.1	18.52	16.37	0.043	7
			12	7	22.70	-4.1	18.60	16.45	0.044	7
			12	13	22.62	-4.1	18.52	16.37	0.043	7
			25	0	22.59	-4.1	18.49	16.34	0.043	7
16QAM	20425	826.5	1	0	22.25	-4.1	18.15	16.00	0.040	7
			1	12	22.44	-4.1	18.34	16.19	0.042	7
			1	24	22.18	-4.1	18.08	15.93	0.039	7
			12	0	21.54	-4.1	17.44	15.29	0.034	7
			12	7	21.69	-4.1	17.59	15.44	0.035	7
			12	13	21.71	-4.1	17.61	15.46	0.035	7
			25	0	21.83	-4.1	17.73	15.58	0.036	7
	20525	836.5	1	0	22.50	-4.1	18.40	16.25	0.042	7
			1	12	22.48	-4.1	18.38	16.23	0.042	7
			1	24	22.48	-4.1	18.38	16.23	0.042	7
			12	0	21.63	-4.1	17.53	15.38	0.035	7
			12	7	21.83	-4.1	17.73	15.58	0.036	7
			12	13	21.91	-4.1	17.81	15.66	0.037	7
			25	0	21.78	-4.1	17.68	15.53	0.036	7
	20625	846.5	1	0	22.36	-4.1	18.26	16.11	0.041	7
			1	12	22.29	-4.1	18.19	16.04	0.040	7
			1	24	22.19	-4.1	18.09	15.94	0.039	7
			12	0	21.55	-4.1	17.45	15.30	0.034	7
			12	7	21.66	-4.1	17.56	15.41	0.035	7
			12	13	21.57	-4.1	17.47	15.32	0.034	7
			25	0	21.63	-4.1	17.53	15.38	0.035	7

LTE Band 5 CB:10MHz	Channel	Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.R.P Power (dBm)	E.R.P Power (W)	E.R.P Limit (W)
QPSK	20450	829	1	0	23.27	-4.1	19.17	17.02	0.050	7
			1	25	23.81	-4.1	19.71	17.56	0.057	7
			1	49	23.30	-4.1	19.20	17.05	0.051	7
			25	0	22.82	-4.1	18.72	16.57	0.045	7
			25	12	22.71	-4.1	18.61	16.46	0.044	7
			25	25	22.71	-4.1	18.61	16.46	0.044	7
			50	0	22.78	-4.1	18.68	16.53	0.045	7
	20525	836.5	1	0	23.34	-4.1	19.24	17.09	0.051	7
			1	25	23.92	-4.1	19.82	17.67	0.058	7
			1	49	23.62	-4.1	19.52	17.37	0.055	7
			25	0	22.84	-4.1	18.74	16.59	0.046	7
			25	12	22.91	-4.1	18.81	16.66	0.046	7
			25	25	22.86	-4.1	18.76	16.61	0.046	7
			50	0	22.85	-4.1	18.75	16.60	0.046	7
	20600	844	1	0	23.51	-4.1	19.41	17.26	0.053	7
			1	25	23.76	-4.1	19.66	17.51	0.056	7
			1	49	23.26	-4.1	19.16	17.01	0.050	7
			25	0	22.77	-4.1	18.67	16.52	0.045	7
			25	12	22.62	-4.1	18.52	16.37	0.043	7
			25	25	22.58	-4.1	18.48	16.33	0.043	7
			50	0	22.64	-4.1	18.54	16.39	0.044	7
16QAM	20450	829	1	0	22.37	-4.1	18.27	16.12	0.041	7
			1	25	22.67	-4.1	18.57	16.42	0.044	7
			1	49	22.44	-4.1	18.34	16.19	0.042	7
			25	0	21.75	-4.1	17.65	15.50	0.035	7
			25	12	21.75	-4.1	17.65	15.50	0.035	7
			25	25	21.65	-4.1	17.55	15.40	0.035	7
			50	0	21.53	-4.1	17.43	15.28	0.034	7
	20525	836.5	1	0	22.39	-4.1	18.29	16.14	0.041	7
			1	25	22.90	-4.1	18.80	16.65	0.046	7
			1	49	22.42	-4.1	18.32	16.17	0.041	7
			25	0	21.78	-4.1	17.68	15.53	0.036	7
			25	12	21.84	-4.1	17.74	15.59	0.036	7
			25	25	21.83	-4.1	17.73	15.58	0.036	7
			50	0	21.88	-4.1	17.78	15.63	0.037	7
	20600	844	1	0	22.62	-4.1	18.52	16.37	0.043	7
			1	25	22.70	-4.1	18.60	16.45	0.044	7
			1	49	22.04	-4.1	17.94	15.79	0.038	7
			25	0	21.80	-4.1	17.70	15.55	0.036	7
			25	12	21.65	-4.1	17.55	15.40	0.035	7
			25	25	21.90	-4.1	17.80	15.65	0.037	7
			50	0	21.66	-4.1	17.56	15.41	0.035	7

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

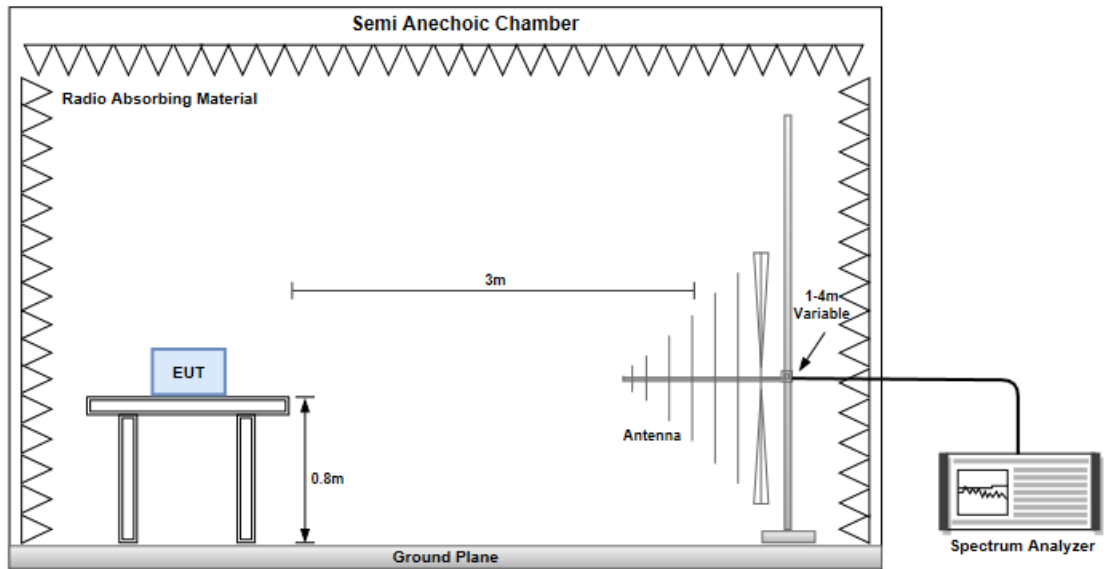
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

3.2.2 Test Procedures

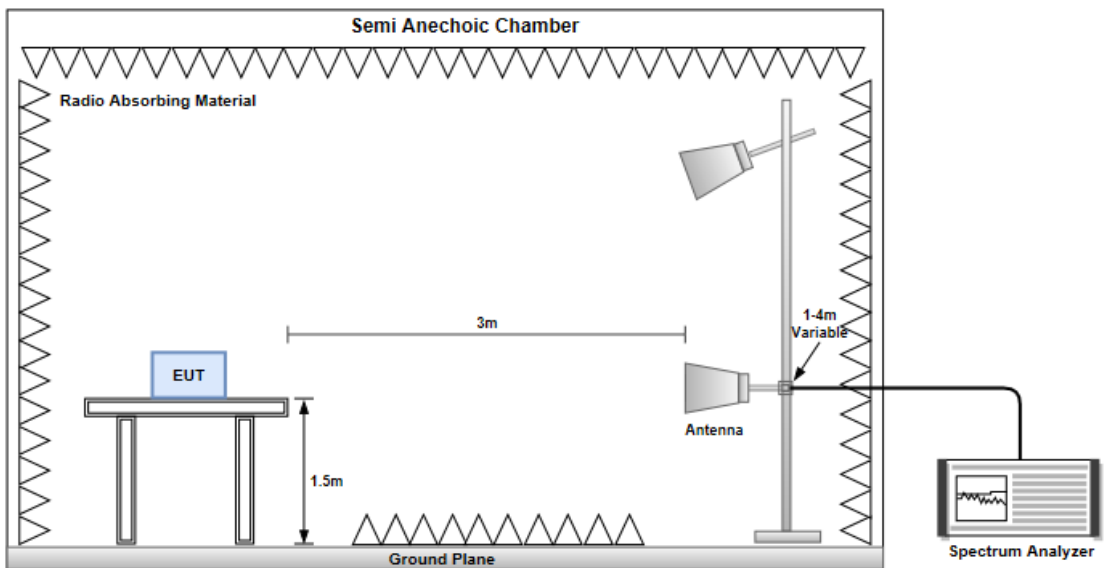
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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. $E.I.R.P = \text{output power of step 4} + \text{gain of substitution antenna} - \text{cable loss of RF cable}$. ERP can be calculated by below formula:
 $E.R.P = E.I.R.P - 2.15\text{dB}$.

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	GPRS 8 (GMSK, 1 slot), Channel : 189						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
30.00	H	-70.68	-13.00	-57.68	-78.27	-48.56	-19.97
36.79	H	-70.95	-13.00	-57.95	-76.09	-50.54	-18.26
90.14	H	-72.90	-13.00	-59.90	-69.31	-65.62	-5.13
180.35	H	-70.20	-13.00	-57.20	-67.23	-63.65	-4.40
187.14	H	-66.46	-13.00	-53.46	-62.30	-60.58	-3.73
644.01	H	-55.44	-13.00	-42.44	-58.47	-51.52	-1.77
63.95	V	-53.09	-13.00	-40.09	-51.35	-38.09	-12.85
83.35	V	-53.31	-13.00	-40.31	-50.57	-44.52	-6.64
90.14	V	-62.62	-13.00	-49.62	-60.63	-55.34	-5.13
160.50	V	-70.46	-13.00	-57.46	-71.16	-61.82	-6.49
304.51	V	-70.08	-13.00	-57.08	-69.34	-66.48	-1.45
644.01	V	-52.72	-13.00	-39.72	-58.48	-48.80	-1.77

Mode	WCDMA RMC, Channel : 4182						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
30.00	H	-70.26	-13.00	-57.26	-77.85	-48.14	-19.97
90.14	H	-72.16	-13.00	-59.16	-68.57	-64.88	-5.13
159.98	H	-74.01	-13.00	-61.01	-71.26	-65.27	-6.59
233.03	H	-7.35	-13.00	5.65	-71.44	-3.18	-2.02
321.97	H	-73.03	-13.00	-60.03	-70.76	-69.48	-1.40
364.65	H	-74.11	-13.00	-61.11	-73.66	-70.62	-1.34
30.00	V	-69.95	-13.00	-56.95	-68.76	-47.83	-19.97
90.14	V	-61.89	-13.00	-48.89	-59.90	-54.61	-5.13
139.61	V	-58.45	-13.00	-45.45	-58.34	-49.21	-7.09
161.92	V	-72.92	-13.00	-59.92	-73.62	-64.39	-6.38
208.48	V	-75.80	-13.00	-62.80	-74.63	-71.34	-2.31
520.82	V	-70.65	-13.00	-57.65	-73.46	-67.07	-1.43

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

Mode	LTE Band 5, QPSK, CB:1.4 MHz, 1 RB Offset 3, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
31.88	H	-68.39	-13.00	-55.39	-75.33	-46.80	-19.44
57.59	H	-71.75	-13.00	-58.75	-71.23	-55.02	-14.58
90.54	H	-69.71	-13.00	-56.71	-66.13	-62.46	-5.10
360.51	H	-68.81	-13.00	-55.81	-68.31	-65.32	-1.34
382.21	H	-72.36	-13.00	-59.36	-72.05	-68.85	-1.36
485.88	H	-72.66	-13.00	-59.66	-73.27	-69.16	-1.35
65.24	V	-69.11	-13.00	-56.11	-67.40	-54.50	-12.46
90.52	V	-60.76	-13.00	-47.76	-58.79	-53.51	-5.10
117.24	V	-65.47	-13.00	-52.47	-64.00	-57.00	-6.32
199.24	V	-68.42	-13.00	-55.42	-67.15	-63.72	-2.55
271.24	V	-65.47	-13.00	-52.47	-64.99	-61.85	-1.47
419.24	V	-71.36	-13.00	-58.36	-71.51	-67.91	-1.30

Mode	LTE Band 5, QPSK, CB:3 MHz, 1 RB Offset 8, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
35.27	H	-68.42	-13.00	-55.42	-74.16	-47.76	-18.51
58.24	H	-71.39	-13.00	-58.39	-70.70	-54.81	-14.43
89.99	H	-69.72	-13.00	-56.72	-66.13	-62.43	-5.14
362.24	H	-69.42	-13.00	-56.42	-68.94	-65.93	-1.34
380.80	H	-72.67	-13.00	-59.67	-72.35	-69.16	-1.36
485.67	H	-72.70	-13.00	-59.70	-73.30	-69.20	-1.35
65.24	V	-68.39	-13.00	-55.39	-66.68	-53.78	-12.46
90.26	V	-60.82	-13.00	-47.82	-58.84	-53.55	-5.12
118.45	V	-65.49	-13.00	-52.49	-50.34	-56.94	-6.40
197.27	V	-69.73	-13.00	-56.73	-54.58	-64.83	-2.75
273.58	V	-67.38	-13.00	-54.38	-52.23	-63.76	-1.47
419.50	V	-71.65	-13.00	-58.65	-56.50	-68.21	-1.29

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

Mode	LTE Band 5, QPSK, CB:5 MHz, 1 RB Offset 12, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
32.67	H	-69.01	-13.00	-56.01	-75.67	-47.64	-19.22
58.34	H	-71.09	-13.00	-58.09	-70.37	-54.53	-14.41
90.24	H	-68.72	-13.00	-55.72	-65.14	-61.45	-5.12
326.58	H	-69.04	-13.00	-56.04	-68.57	-65.55	-1.34
381.23	H	-72.72	-13.00	-59.72	-72.40	-69.21	-1.36
486.57	H	-74.50	-13.00	-61.50	-75.11	-70.99	-1.36
65.30	V	-68.45	-13.00	-55.45	-66.71	-53.86	-12.44
91.24	V	-60.49	-13.00	-47.49	-58.57	-53.29	-5.05
118.32	V	-65.42	-13.00	-52.42	-63.93	-56.88	-6.39
198.24	V	-68.40	-13.00	-55.40	-67.23	-63.60	-2.65
274.57	V	-64.35	-13.00	-51.35	-63.84	-60.73	-1.47
425.30	V	-70.39	-13.00	-57.39	-70.62	-66.97	-1.27

Mode	LTE Band 5, QPSK, CB:10 MHz, 1 RB Offset 25, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
30.00	H	-69.61	-13.00	-56.61	-77.20	-47.49	-19.97
57.16	H	-72.81	-13.00	-59.81	-72.40	-55.97	-14.69
90.14	H	-70.79	-13.00	-57.79	-67.20	-63.51	-5.13
360.77	H	-70.00	-13.00	-57.00	-69.51	-66.51	-1.34
381.14	H	-73.58	-13.00	-60.58	-73.26	-70.07	-1.36
486.87	H	-74.02	-13.00	-61.02	-74.63	-70.51	-1.36
64.92	V	-70.01	-13.00	-57.01	-68.42	-55.30	-12.56
90.14	V	-61.47	-13.00	-48.47	-59.48	-54.19	-5.13
117.30	V	-66.29	-13.00	-53.29	-64.82	-57.81	-6.33
198.78	V	-70.06	-13.00	-57.06	-68.84	-65.31	-2.60
273.47	V	-67.90	-13.00	-54.90	-67.40	-64.28	-1.47
418.97	V	-72.40	-13.00	-59.40	-72.54	-68.95	-1.30

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

3.2.5 Test Result of Radiated Emissions above 1GHz

Mode	GPRS 8 (GMSK, 1 slot), Channel : 128						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1648.40	H	-55.69	-13.00	-42.69	-57.72	-59.36	5.82
2472.60	H	-41.11	-13.00	-28.11	-48.33	-45.27	6.31
3296.80	H	-55.78	-13.00	-42.78	-64.89	-60.68	7.05
1648.40	V	-53.21	-13.00	-40.21	-55.26	-56.88	5.82
2472.60	V	-37.80	-13.00	-24.80	-44.94	-41.96	6.31
3296.80	V	-56.10	-13.00	-43.10	-65.28	-61.00	7.05

Mode	GPRS 8 (GMSK, 1 slot), Channel : 189						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1672.80	H	-46.78	-13.00	-33.78	-49.03	-50.55	5.92
2509.20	H	-39.70	-13.00	-26.70	-46.93	-44.00	6.45
3345.60	H	-57.49	-13.00	-44.49	-66.34	-62.59	7.25
1672.80	V	-52.68	-13.00	-39.68	-54.90	-56.45	5.92
2509.20	V	-37.32	-13.00	-24.32	-44.37	-41.62	6.45
3345.60	V	-55.69	-13.00	-42.69	-64.59	-60.79	7.25

Mode	GPRS 8 (GMSK, 1 slot), Channel : 251						
Frequency (MHz)	Antenna Polarity.	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1697.60	H	-44.70	-13.00	-31.70	-47.16	-48.58	6.03
2546.40	H	-38.61	-13.00	-25.61	-45.84	-43.04	6.58
3395.20	H	-56.50	-13.00	-43.50	-65.08	-61.81	7.46
1697.60	V	-51.21	-13.00	-38.21	-53.59	-55.09	6.03
2546.40	V	-36.61	-13.00	-23.61	-43.56	-41.04	6.58
3395.20	V	-55.20	-13.00	-42.20	-63.81	-60.51	7.46

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

Mode	WCDMA RMC, Channel : 4132						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1652.80	H	-59.50	-13.00	-46.50	-61.57	-63.19	5.84
2479.20	H	-56.31	-13.00	-43.31	-63.54	-60.50	6.34
4132.00	H	-49.12	-13.00	-36.12	-60.58	-54.03	7.06
1652.80	V	-59.11	-13.00	-46.11	-61.19	-62.80	5.84
2479.20	V	-56.13	-13.00	-43.13	-63.26	-60.32	6.34
4132.00	V	-51.06	-13.00	-38.06	-62.57	-55.97	7.06

Mode	WCDMA RMC, Channel : 4182						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
1672.80	H	-60.60	-13.00	-47.60	-62.85	-64.37	5.92
2509.20	H	-57.75	-13.00	-44.75	-64.98	-62.05	6.45
4182.00	H	-50.42	-13.00	-37.42	-61.77	-55.31	7.04
1672.80	V	-61.26	-13.00	-48.26	-63.48	-65.03	5.92
2509.20	V	-57.91	-13.00	-44.91	-64.96	-62.21	6.45
4182.00	V	-51.05	-13.00	-38.05	-62.43	-55.94	7.04

Mode	WCDMA RMC, Channel : 4233						
Frequency (MHz)	Antenna Polarity.	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1693.20	H	-60.83	-13.00	-47.83	-63.25	-64.69	6.01
2539.80	H	-58.02	-13.00	-45.02	-65.25	-62.43	6.56
4233.00	H	-50.80	-13.00	-37.80	-62.34	-55.65	7.00
1693.20	V	-61.92	-13.00	-48.92	-64.26	-65.78	6.01
2539.80	V	-58.36	-13.00	-45.36	-65.33	-62.77	6.56
4233.00	V	-51.08	-13.00	-38.08	-62.63	-55.93	7.00

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

Mode	LTE Band 5, QPSK, CB:1.4 MHz, 1 RB Offset 3, Channel: 20407						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2474.10	H	-45.14	-13.00	-32.14	-52.36	-49.31	6.32
3298.80	H	-46.98	-13.00	-33.98	-56.08	-51.89	7.06
4123.50	H	-45.73	-13.00	-32.73	-57.21	-50.64	7.06
2474.10	V	-45.22	-13.00	-32.22	-52.35	-49.39	6.32
3298.80	V	-50.79	-13.00	-37.79	-59.95	-55.70	7.06
4123.50	V	-43.52	-13.00	-30.52	-55.06	-48.43	7.06

Mode	LTE Band 5, QPSK, CB:1.4 MHz, 1 RB Offset 3, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2509.50	H	-45.38	-13.00	-32.38	-52.61	-49.68	6.45
3346.00	H	-47.24	-13.00	-34.24	-56.09	-52.35	7.26
4182.50	H	-45.33	-13.00	-32.33	-56.68	-50.22	7.04
2509.50	V	-44.27	-13.00	-31.27	-51.32	-48.57	6.45
3346.00	V	-48.14	-13.00	-35.14	-57.04	-53.25	7.26
4182.50	V	-44.17	-13.00	-31.17	-55.54	-49.06	7.04

Mode	LTE Band 5, QPSK, CB:1.4 MHz, 1 RB Offset 3, Channel: 20643						
Frequency (MHz)	Antenna Polarity.	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2544.90	H	-44.34	-13.00	-31.34	-51.57	-48.77	6.58
3393.20	H	-48.47	-13.00	-35.47	-57.06	-53.77	7.45
4241.50	H	-45.76	-13.00	-32.76	-57.36	-50.59	6.98
2544.90	V	-45.65	-13.00	-32.65	-52.61	-50.08	6.58
3393.20	V	-47.66	-13.00	-34.66	-56.28	-52.96	7.45
4241.50	V	-42.75	-13.00	-29.75	-54.36	-47.58	6.98

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

Mode	LTE Band 5, QPSK, CB:3 MHz, 1 RB Offset 8, Channel: 20415						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2476.50	H	-47.39	-13.00	-34.39	-54.61	-51.57	6.33
3302.00	H	-46.59	-13.00	-33.59	-55.68	-51.51	7.07
4127.50	H	-43.90	-13.00	-30.90	-55.37	-48.81	7.06
2476.50	V	-45.23	-13.00	-32.23	-52.36	-49.41	6.33
3302.00	V	-47.12	-13.00	-34.12	-56.27	-52.04	7.07
4127.50	V	-40.85	-13.00	-27.85	-52.37	-45.76	7.06

Mode	LTE Band 5, QPSK, CB:3 MHz, 1 RB Offset 8, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2509.50	H	-48.40	-13.00	-35.40	-55.63	-52.70	6.45
3346.00	H	-47.53	-13.00	-34.53	-56.38	-52.64	7.26
4182.50	H	-45.01	-13.00	-32.01	-56.36	-49.90	7.04
2509.50	V	-46.63	-13.00	-33.63	-53.68	-50.93	6.45
3346.00	V	-47.48	-13.00	-34.48	-56.38	-52.59	7.26
4182.50	V	-42.61	-13.00	-29.61	-53.98	-47.50	7.04

Mode	LTE Band 5, QPSK, CB:3 MHz, 1 RB Offset 8, Channel: 20635						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2542.50	H	-46.60	-13.00	-33.60	-53.53	-51.02	6.57
3390.00	H	-46.22	-13.00	-33.22	-54.83	-51.51	7.44
4237.50	H	-43.12	-13.00	-30.12	-54.70	-47.96	6.99
2542.50	V	-46.91	-13.00	-33.91	-53.88	-51.33	6.57
3390.00	V	-48.87	-13.00	-35.87	-57.51	-54.16	7.44
4237.50	V	-42.31	-13.00	-29.31	-53.89	-47.15	6.99

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

Mode	LTE Band 5, QPSK, CB:5 MHz, 1 RB Offset 12, Channel: 20425						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2479.50	H	-46.41	-13.00	-33.41	-53.64	-50.60	6.34
3306.00	H	-47.56	-13.00	-34.56	-56.62	-52.50	7.09
4132.50	H	-45.75	-13.00	-32.75	-57.21	-50.66	7.06
2479.50	V	-47.25	-13.00	-34.25	-54.38	-51.44	6.34
3306.00	V	-48.25	-13.00	-35.25	-57.38	-53.19	7.09
4132.50	V	-43.86	-13.00	-30.86	-55.37	-48.77	7.06

Mode	LTE Band 5, QPSK, CB:5 MHz, 1 RB Offset 12, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2509.50	H	-45.14	-13.00	-32.14	-52.37	-49.44	6.45
3346.00	H	-48.83	-13.00	-35.83	-57.68	-53.94	7.26
4182.50	H	-47.03	-13.00	-34.03	-58.38	-51.92	7.04
2509.50	V	-46.52	-13.00	-33.52	-53.57	-50.82	6.45
3346.00	V	-49.78	-13.00	-36.78	-58.68	-54.89	7.26
4182.50	V	-44.99	-13.00	-31.99	-56.36	-49.88	7.04

Mode	LTE Band 5, QPSK, CB:5 MHz, 1 RB Offset 12, Channel: 20625						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2539.50	H	-46.14	-13.00	-33.14	-53.37	-50.55	6.56
3386.00	H	-48.08	-13.00	-35.08	-56.71	-53.35	7.42
4232.50	H	-45.85	-13.00	-32.85	-57.39	-50.70	7.00
2539.50	V	-45.77	-13.00	-32.77	-52.74	-50.18	6.56
3386.00	V	-48.71	-13.00	-35.71	-57.37	-53.98	7.42
4232.50	V	-44.19	-13.00	-31.19	-55.73	-49.04	7.00

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

Mode	LTE Band 5, QPSK, CB:10 MHz, 1 RB Offset 25, Channel: 20450						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2487.00	H	-46.91	-13.00	-33.91	-54.14	-51.13	6.37
3316.00	H	-48.23	-13.00	-35.23	-57.23	-53.21	7.13
4145.00	H	-46.95	-13.00	-33.95	-58.39	-51.85	7.05
2487.00	V	-44.20	-13.00	-31.20	-51.30	-48.42	6.37
3316.00	V	-49.18	-13.00	-36.18	-58.24	-54.16	7.13
4145.00	V	-43.89	-13.00	-30.89	-55.37	-48.79	7.05

Mode	LTE Band 5, QPSK, CB:10 MHz, 1 RB Offset 25, Channel: 20525						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2509.50	H	-47.28	-13.00	-34.28	-54.51	-51.58	6.45
3346.00	H	-47.81	-13.00	-34.81	-56.66	-52.92	7.26
4182.50	H	-46.44	-13.00	-33.44	-57.79	-51.33	7.04
2509.50	V	-45.39	-13.00	-32.39	-52.44	-49.69	6.45
3346.00	V	-48.72	-13.00	-35.72	-57.62	-53.83	7.26
4182.50	V	-43.65	-13.00	-30.65	-55.02	-48.54	7.04

Mode	LTE Band 5, QPSK, CB:10 MHz, 1 RB Offset 25, Channel: 20600						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
2532.00	H	-45.94	-13.00	-32.94	-53.17	-50.32	6.53
3376.00	H	-48.27	-13.00	-35.27	-56.96	-53.50	7.38
4220.00	H	-45.96	-13.00	-32.96	-57.42	-50.82	7.01
2532.00	V	-46.18	-13.00	-33.18	-53.18	-50.56	6.53
3376.00	V	-48.46	-13.00	-35.46	-57.18	-53.69	7.38
4220.00	V	-44.43	-13.00	-31.43	-55.90	-49.29	7.01

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

3.3 Conducted Emissions & Band Edge

3.3.1 Limit of Conducted Emissions & 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.

3.3.2 Test Procedures

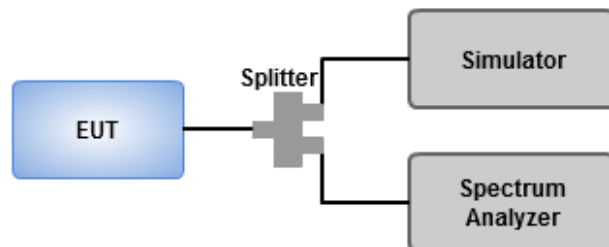
Out of band emission

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

Band edge

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

3.3.3 Test Setup

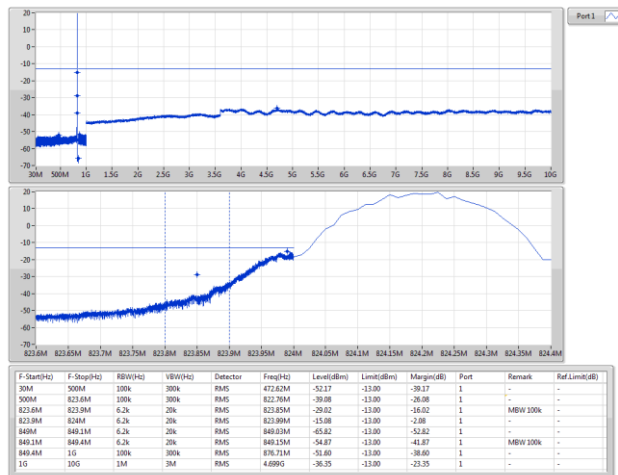


3.3.4 Test Result of Conducted Emissions & Band Edge

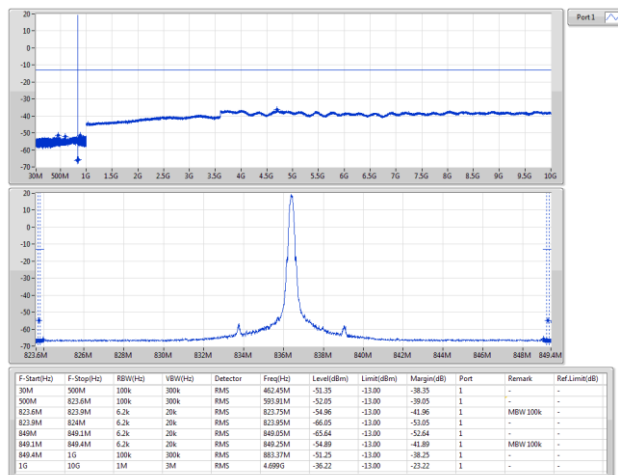
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port
GPRS_850	-	-	-	-	-	-	-	-	-	-	-
824.2MHz	Pass	823.9M	824M	6.2k	20k	RMS	823.99M	-15.08	-13.00	-2.08	1

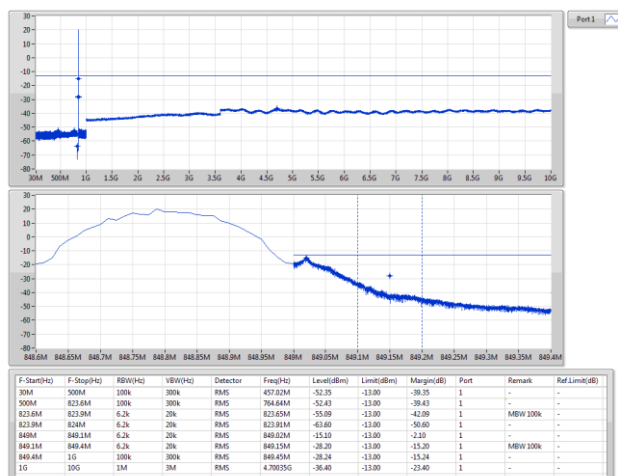
824.2MHz



836.4MHz



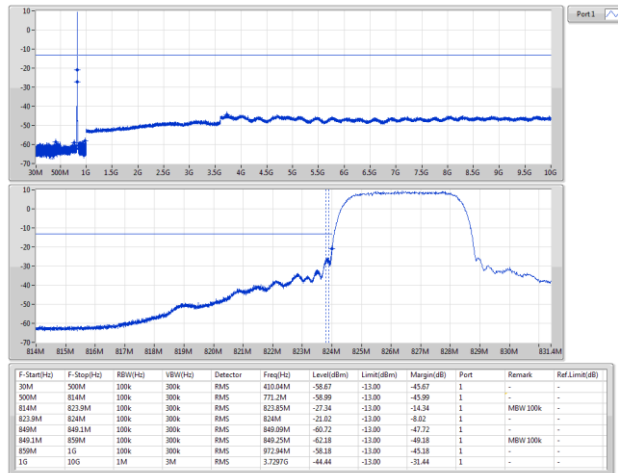
848.8MHz



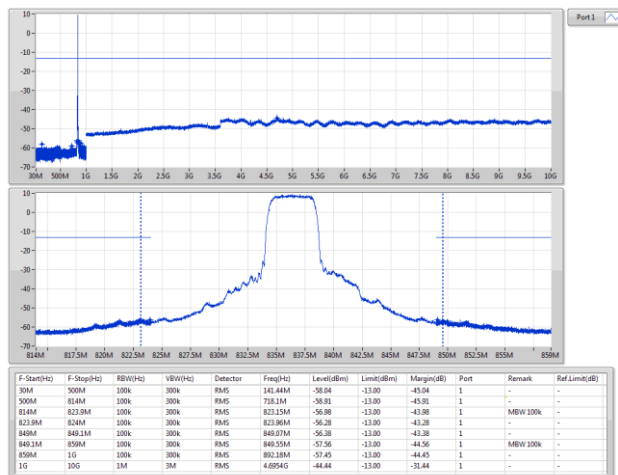
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port
Band 5	-	-	-	-	-	-	-	-	-	-	-
846.6MHz	Pass	849M	849.1M	100k	300k	RMS	849M	-20.99	-13.00	-7.99	1

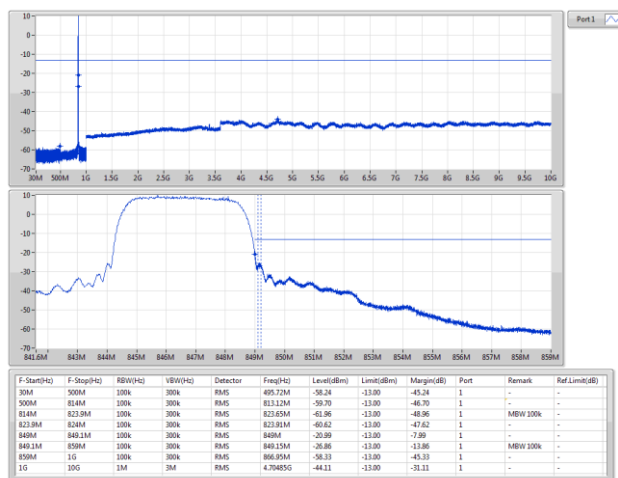
Band 5 WCDMA
826.4MHz



Band 5 WCDMA
836.4MHz



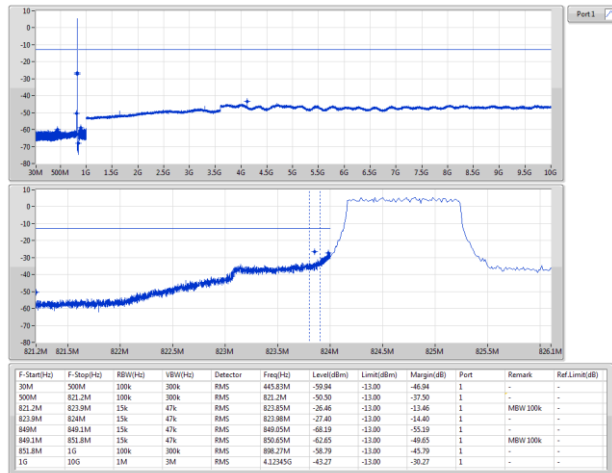
Band 5 WCDMA
846.6MHz



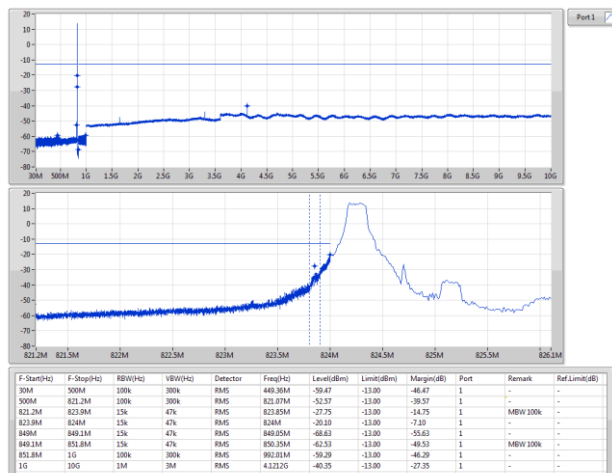
Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	VBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port
Band 5	-	-	-	-	-	-	-	-	-	-	-
LTE_1.4MHz_Nss1, QPSK_1TX											
824.7MHz_QPSK_R B 1,#RB L	Pass	823.9M	824M	15k	47k	RMS	824M	-20.10	-13.00	-7.10	1
LTE_1.4MHz_Nss1, 16QAM_1TX											
848.3MHz_16QAM_ RB 1,#RB H	Pass	849M	849.1M	15k	47k	RMS	849.02M	-21.38	-13.00	-8.38	1
LTE_3MHz_Nss1,Q PSK_1TX											
825.5MHz_QPSK_R B 1,#RB L	Pass	849M	849.1M	30k	100k	RMS	849M	-17.64	-13.00	-4.70	1
LTE_3MHz_Nss1,16 QAM_1TX											
847.5MHz_16QAM_ RB 1,#RB H	Pass	849M	849.1M	30k	100k	RMS	849M	-18.41	-13.00	-5.41	1
LTE_5MHz_Nss1,Q PSK_1TX											
846.5MHz_QPSK_R B 1,#RB H	Pass	849M	849.1M	51k	160k	RMS	849M	-19.45	-13.00	-6.45	1
LTE_5MHz_Nss1,16 QAM_1TX											
826.5MHz_16QAM_ RB 1,#RB L	Pass	823.9M	824M	51k	160k	RMS	824M	-20.43	-13.00	-7.43	1
LTE_10MHz_Nss1, QPSK_1TX											
844MHz_QPSK_RB 1,#RB H	Pass	849M	849.1M	100k	300k	RMS	849M	-29.75	-13.00	-16.75	1
LTE_10MHz_Nss1,1 6QAM_1TX											
844MHz_16QAM_R B 1,#RB H	Pass	849M	849.1M	100k	300k	RMS	849M	-27.60	-13.00	-14.60	1

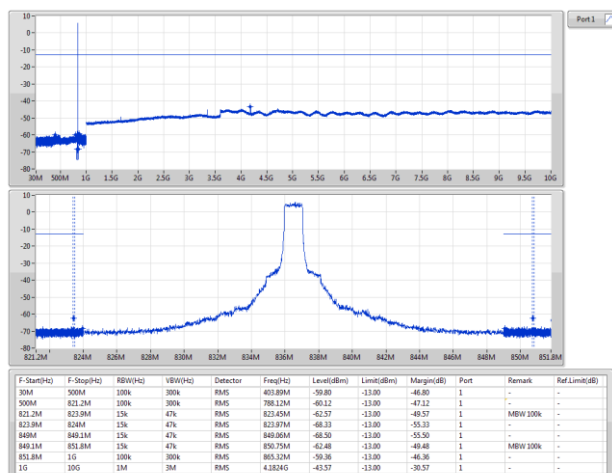
Band 5_LTE_1.4MHz_Nss1,QPSK_1TX
824.7MHz_QPSK_RB 6,#RB 0



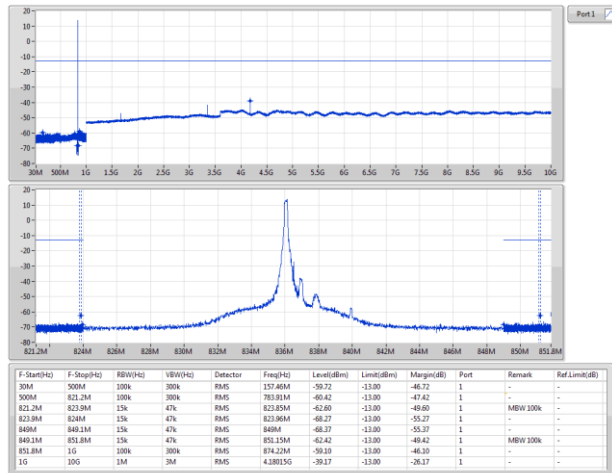
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824.7MHz_QPSK_RB 1,#RB L



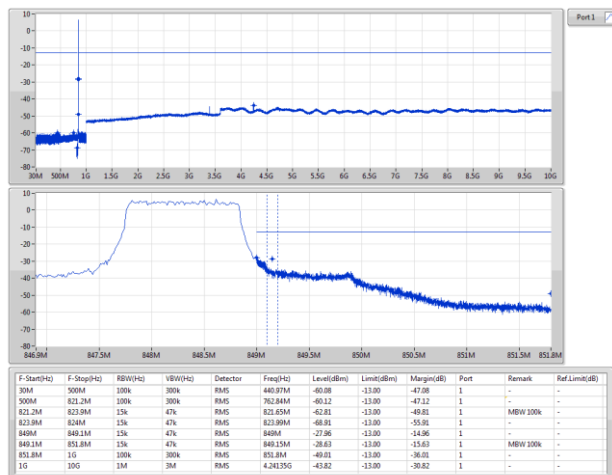
Band 5_LTE_1.4MHz_Nss1,QPSK_1TX
836.5MHz_QPSK_RB 6,#RB 0



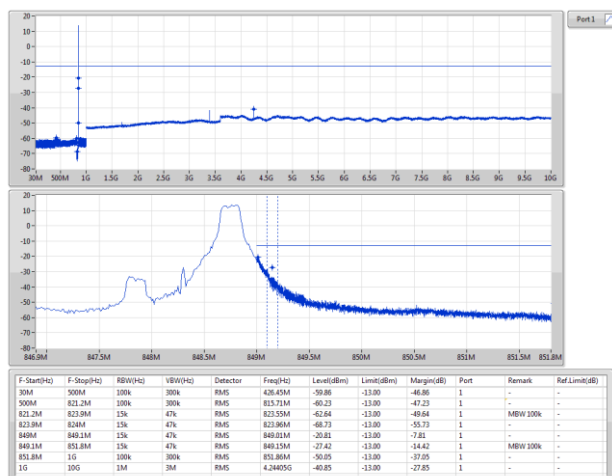
Band 5, LTE_1.4MHz_Nss1,QPSK_1TX
836.5MHz_QPSK_RB 1,#RB L



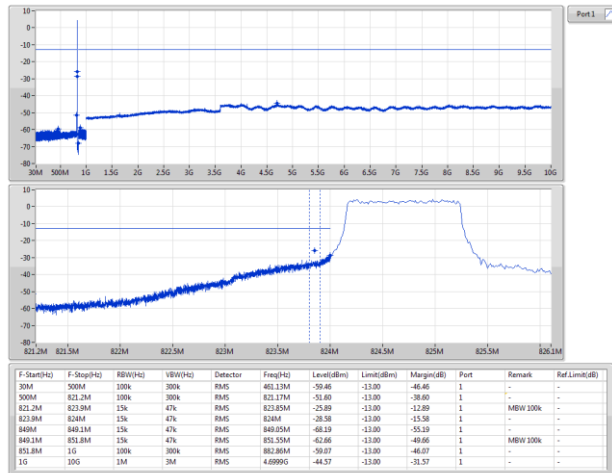
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848.3MHz_QPSK_RB 6,#RB 0



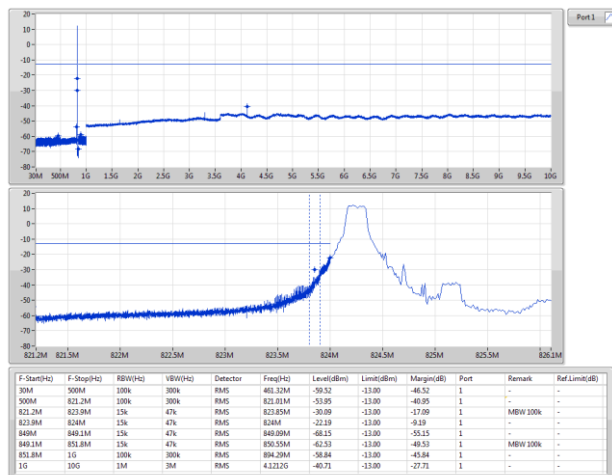
Band 5, LTE_1.4MHz_Nss1,QPSK_1TX
848.3MHz_QPSK_RB 1,#RB H



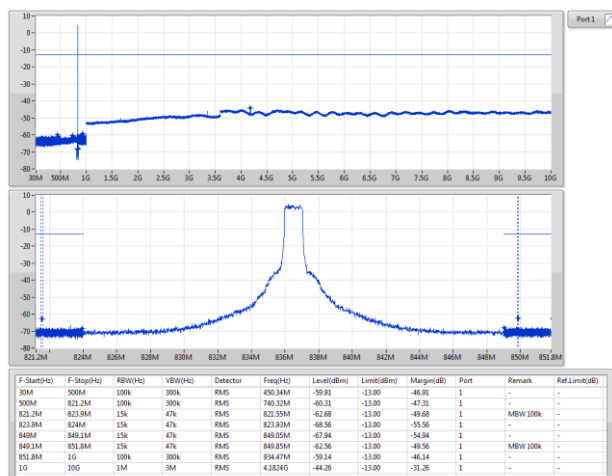
Band 5 LTE 1.4MHz Nss1,16QAM 1TX
824.7MHz 16QAM RB 6,#RB 0



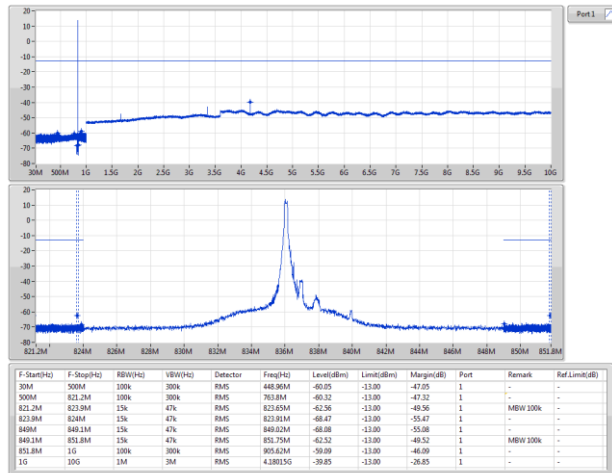
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824.7MHz 16QAM RB 1,#RB L



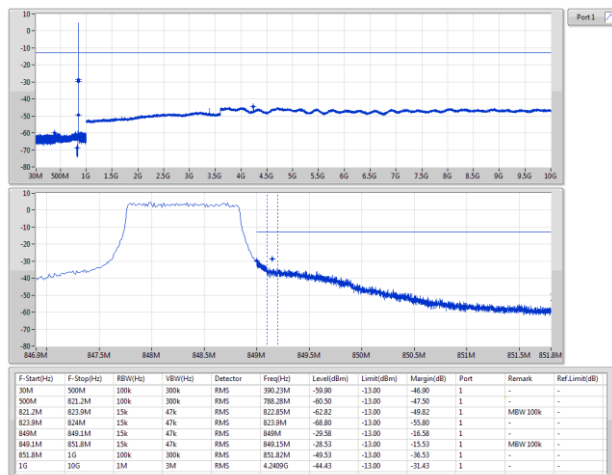
Band 5 LTE 1.4MHz Nss1,16QAM 1TX
836.5MHz 16QAM RB 6,#RB 0



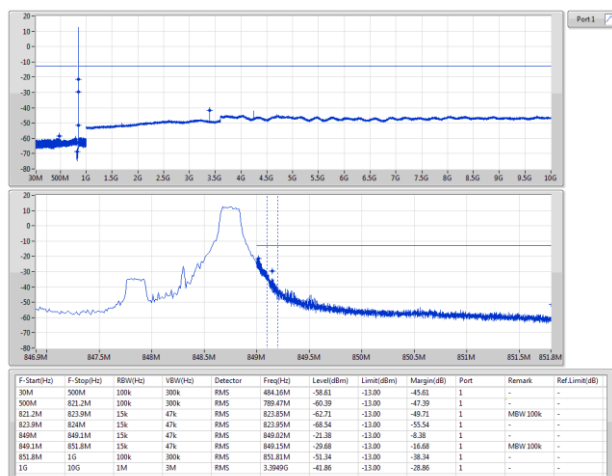
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836.5MHz 16QAM_RB 1,#RB L



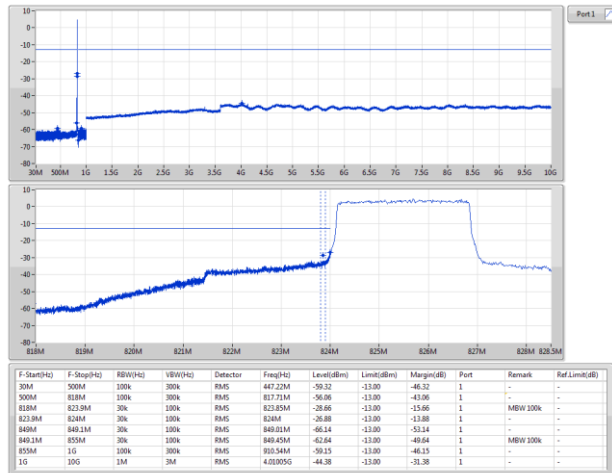
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848.3MHz 16QAM_RB 6,#RB 0



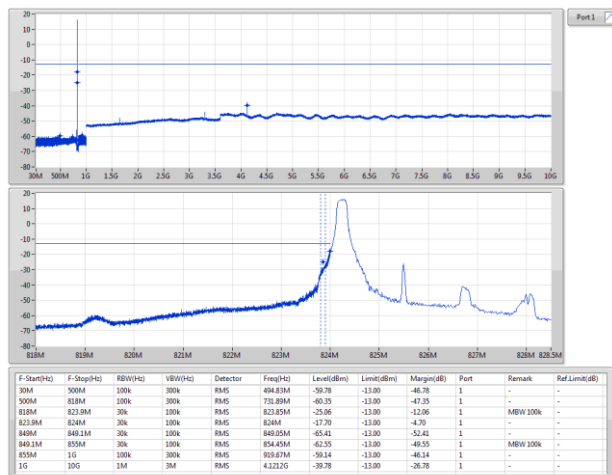
Band 5 LTE 1.4MHz Nss1,16QAM 1TX
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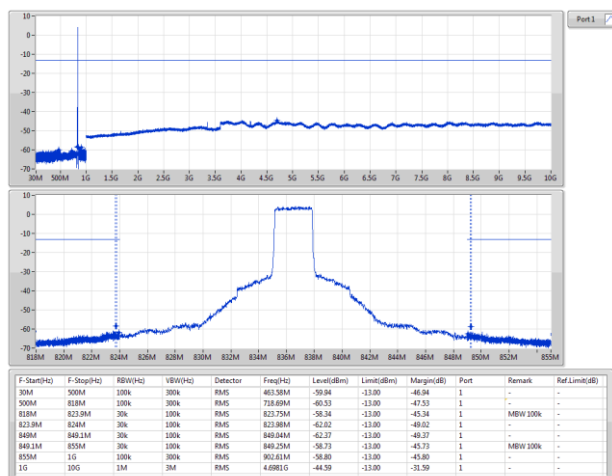
Band 5, LTE_3MHz, Nss1,QPSK_1TX
825.5MHz_QPSK_RB 15,#RB 0



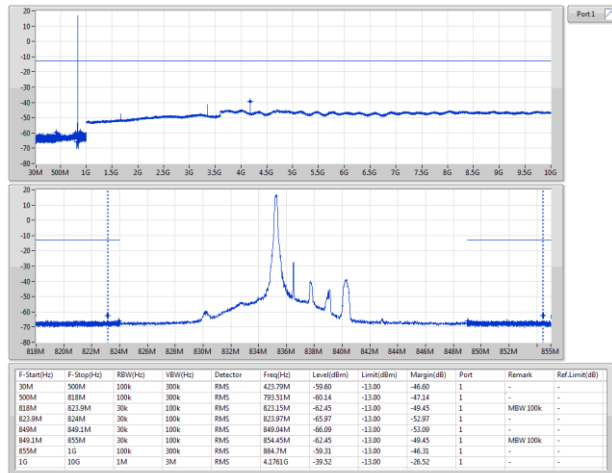
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825.5MHz_QPSK_RB 1,#RB L



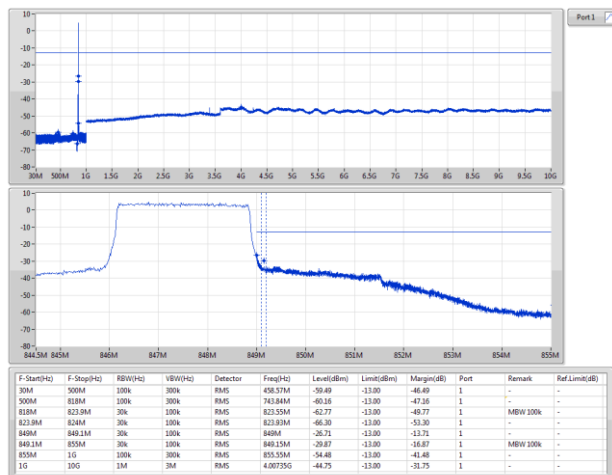
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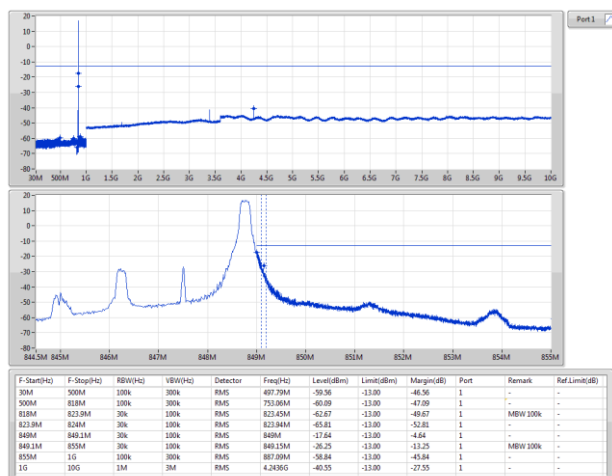
Band 5_LTE_3MHz_Nss1,QPSK_1TX
836.5MHz_QPSK_RB 1,#RB L



Band 5_LTE_3MHz_Nss1,QPSK_1TX
847.5MHz_QPSK_RB 15,#RB 0



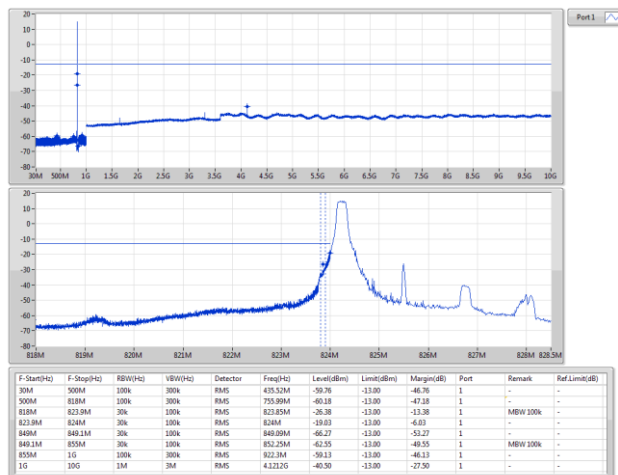
Band 5_LTE_3MHz_Nss1,QPSK_1TX
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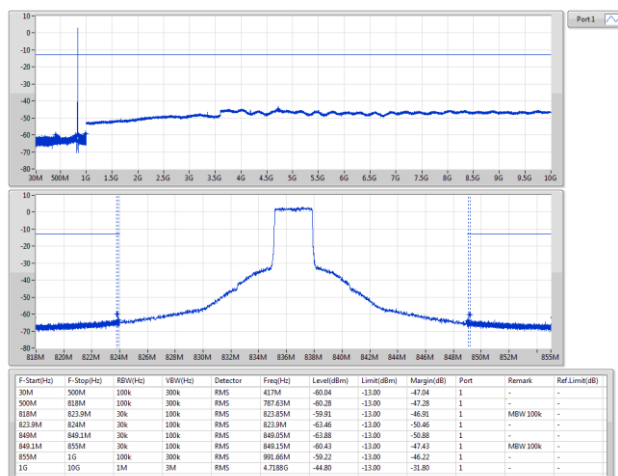
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825.5MHz 16QAM_RB 15,#RB 0



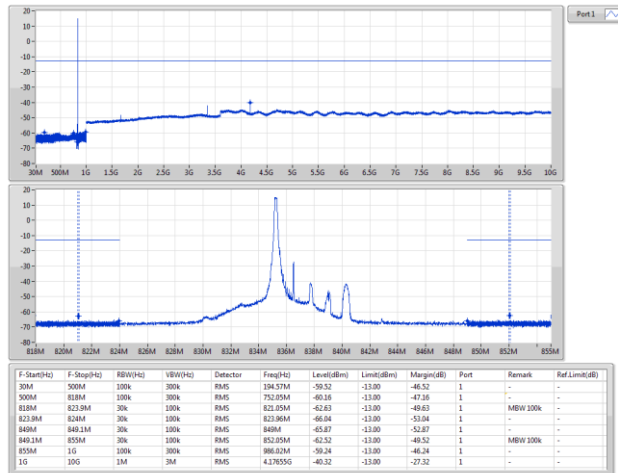
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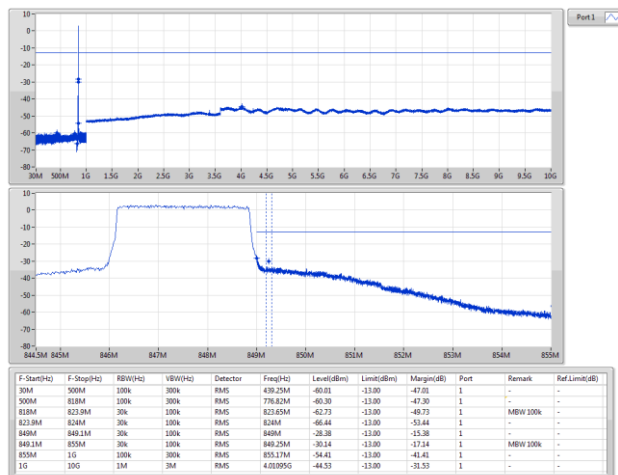
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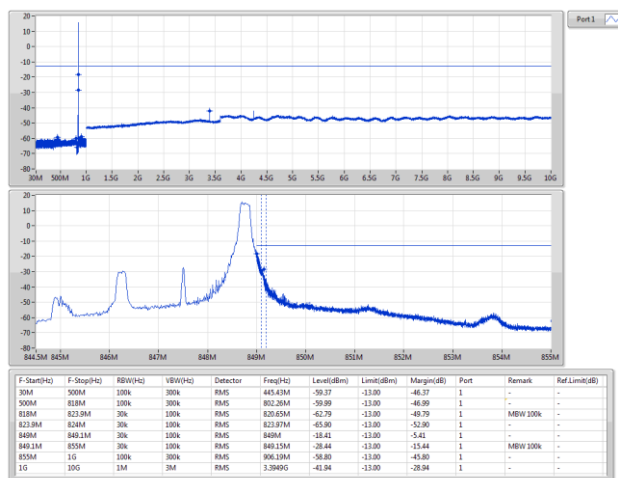
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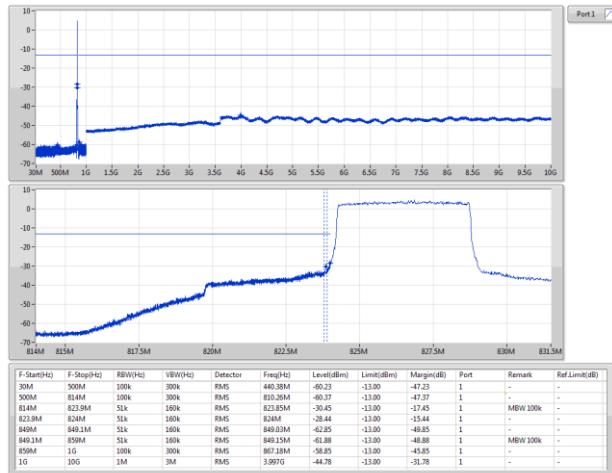
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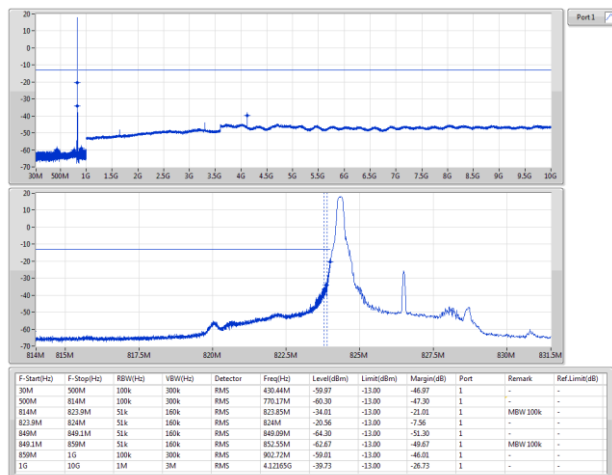
Band 5 LTE_3MHz Nss1,16QAM 1TX
847.5MHz 16QAM_RB 1,#RB H



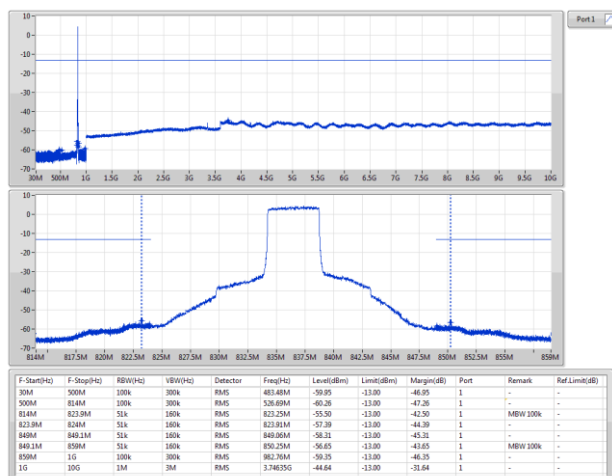
Band 5, LTE_5MHz_Nss1,QPSK_1TX
826.5MHz_QPSK_RB 25,#RB 0



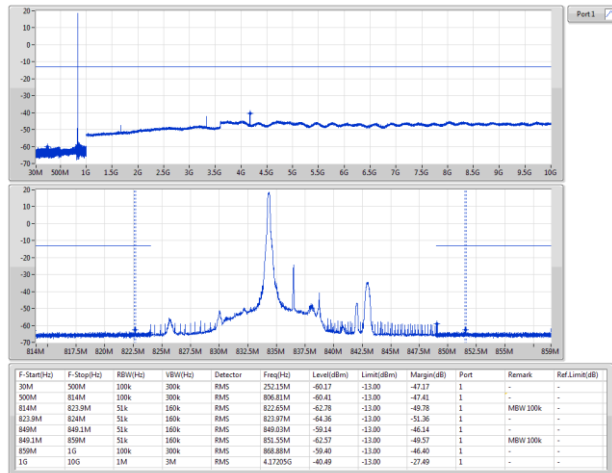
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826.5MHz_QPSK_RB 1,#RB L



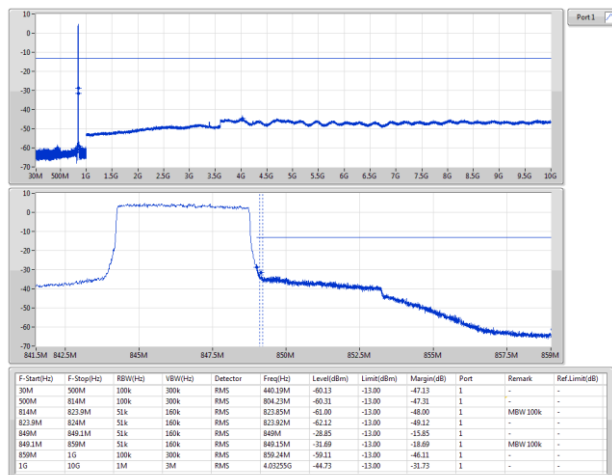
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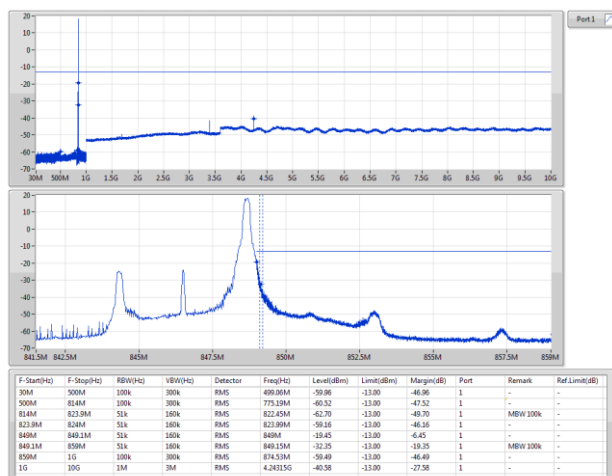
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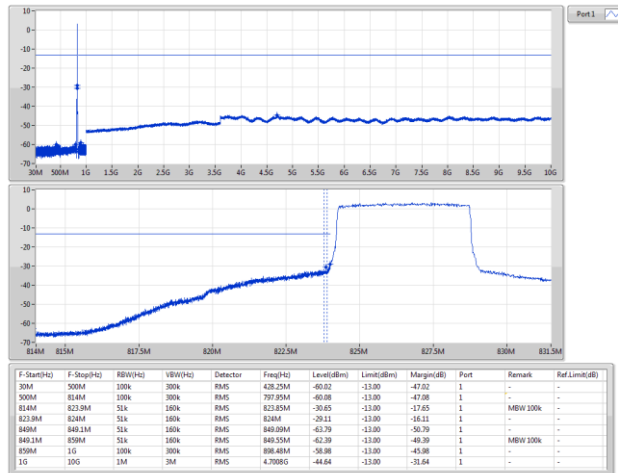
Band 5, LTE_5MHz_Nss1,QPSK_1TX
846.5MHz_QPSK_RB 25,#RB 0



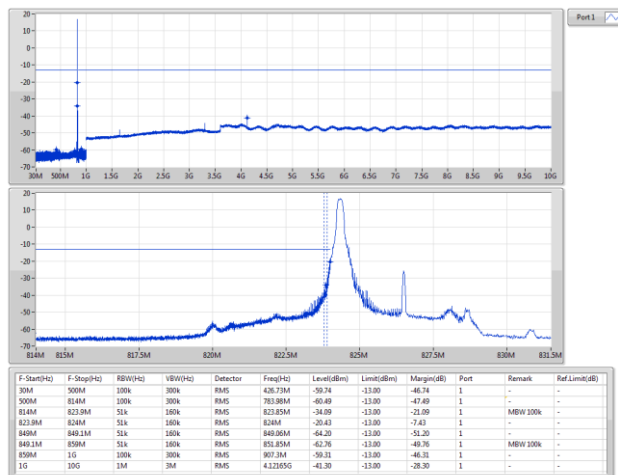
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846.5MHz_QPSK_RB 1,#RB H



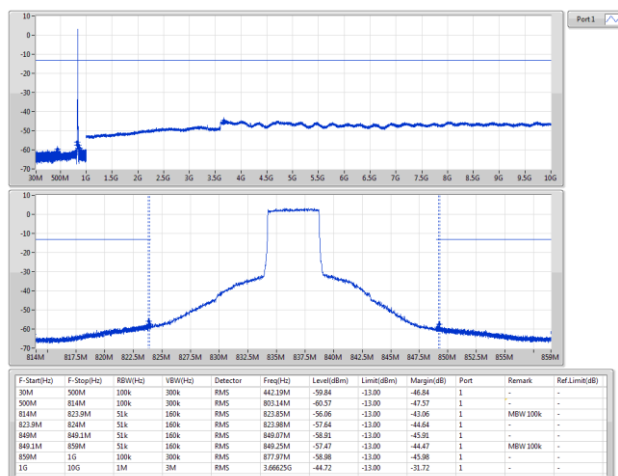
Band 5 LTE 5MHz Nss1,16QAM 1TX
826.5MHz 16QAM RB 25,#RB 0



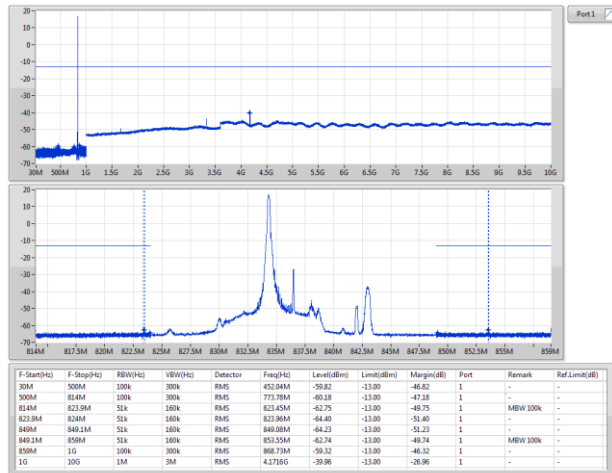
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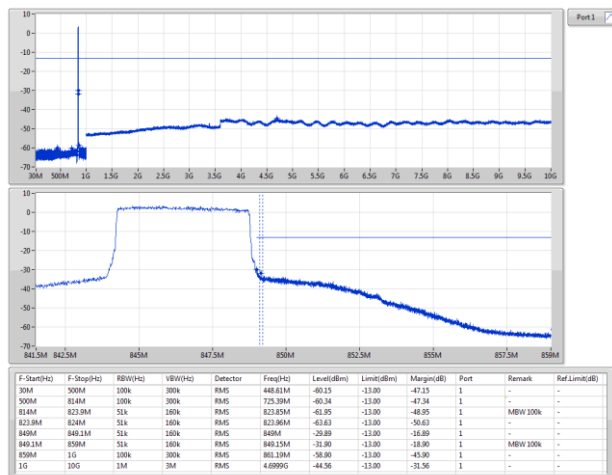
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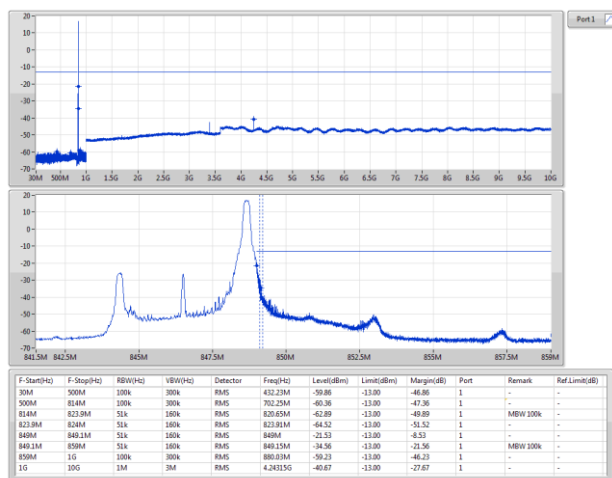
Band 5 LTE 5MHz Nss1,16QAM 1TX
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Band 5 LTE 5MHz Nss1,16QAM 1TX
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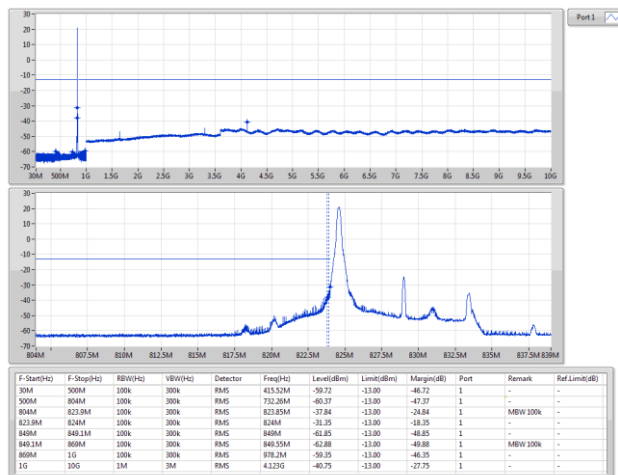
Band 5 LTE 5MHz Nss1,16QAM 1TX
846.5MHz 16QAM_RB 1,#RB H



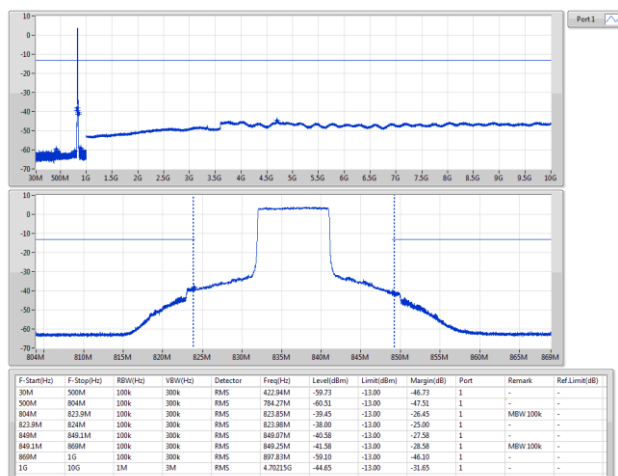
Band 5_LTE_10MHz_Nss1,QPSK_1TX
829MHz_QPSK_RB 50,#RB 0



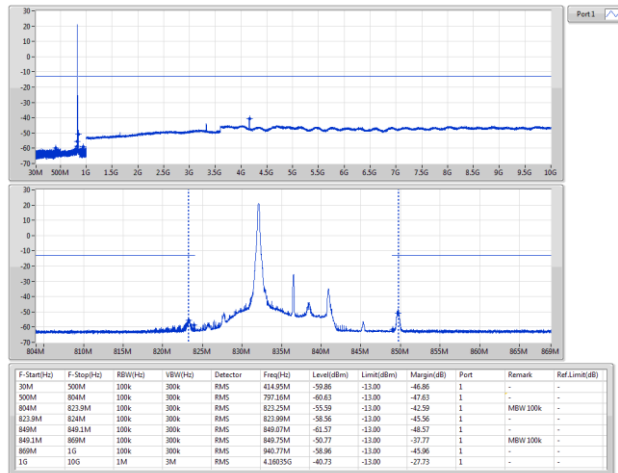
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829MHz_QPSK_RB 1,#RB 1



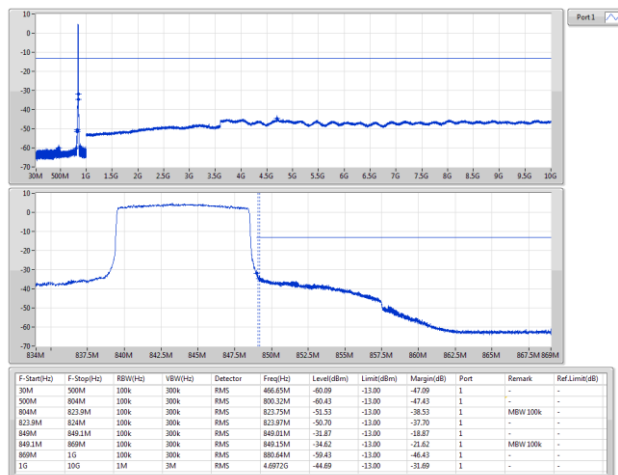
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836.5MHz_QPSK_RB 50,#RB 0



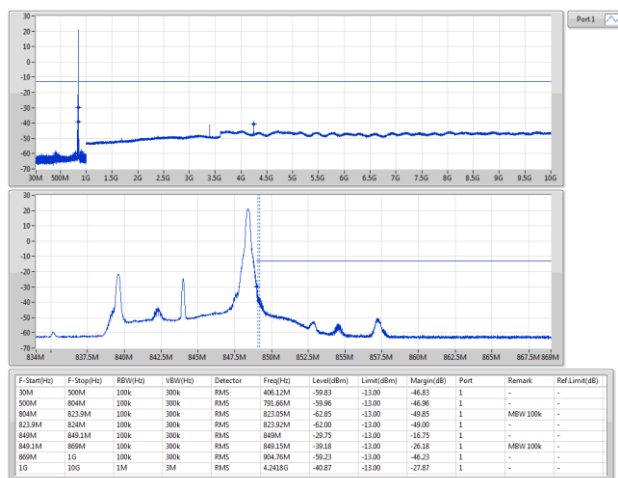
Band 5_LTE_10MHz_Nss1,QPSK_1TX
836.5MHz_QPSK_RB 1,#RB L



Band 5_LTE_10MHz_Nss1,QPSK_1TX
844MHz_QPSK_RB 50,#RB 0



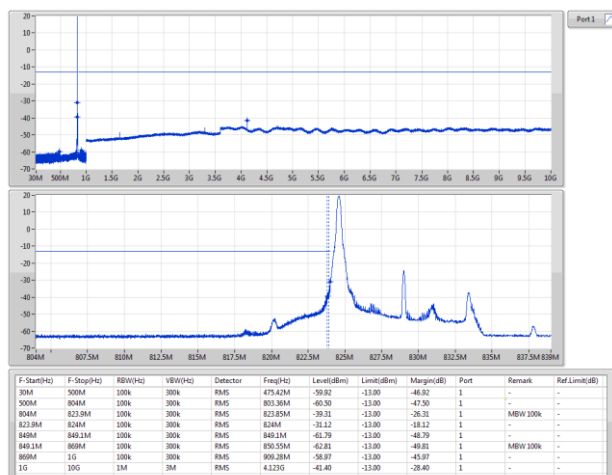
Band 5_LTE_10MHz_Nss1,QPSK_1TX
844MHz_QPSK_RB 1,#RB H



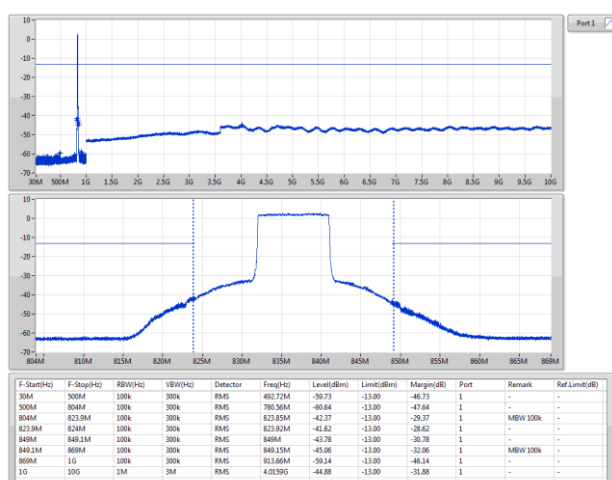
Band 5_LTE_10MHz_Nss1,16QAM_1TX
829MHz_16QAM_RB 50,#RB 0



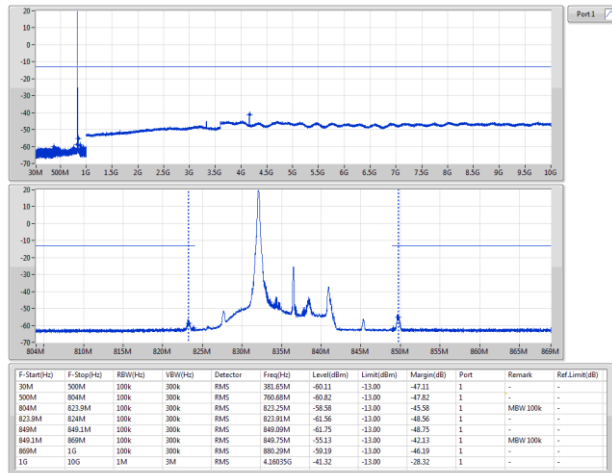
Band 5_LTE_10MHz_Nss1,16QAM_1TX
829MHz_16QAM_RB 1,#RB L



Band 5_LTE_10MHz_Nss1,16QAM_1TX
836.5MHz_16QAM_RB 50,#RB 0



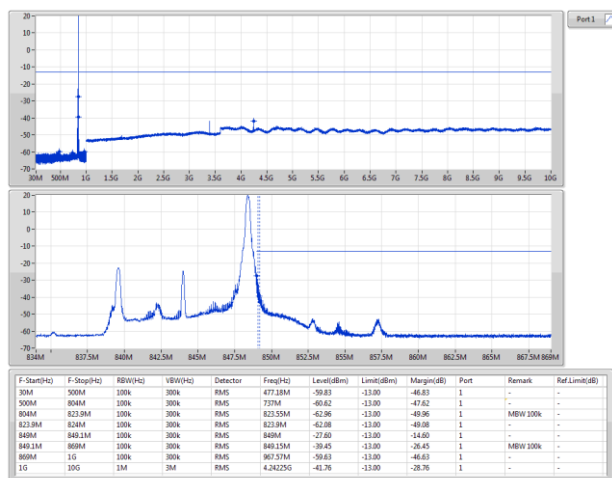
Band 5_LTE_10MHz_Nss1,16QAM_1TX
836.5MHz_16QAM_RB 1,#RB L



Band 5_LTE_10MHz_Nss1,16QAM_1TX
844MHz_16QAM_RB 50,#RB 0



Band 5_LTE_10MHz_Nss1,16QAM_1TX
844MHz_16QAM_RB 1,#RB H

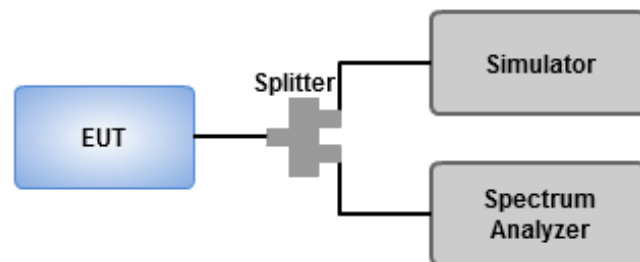


3.4 Occupied and 26 dB Bandwidth

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 Bandwidth

Summary

Mode	Max-NdB (Hz)	Max-OBW (Hz)	ITU-Code	Min-NdB (Hz)	Min-OBW (Hz)
850	-	-	-	-	-
GSM_200kHz_Nss1_1TX	319.25k	248.286k	248KGXW	313.5k	241.914k

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	Limit (Hz)	Port 1-NdB (Hz)	Port 1-OBW (Hz)
850_GSM_200kHz_Nss1_1TX	-	-	-	-
824.2MHz	Pass	Inf	313.5k	248.286k
836.4MHz	Pass	Inf	319.25k	244.057k
848.8MHz	Pass	Inf	316.25k	241.914k

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

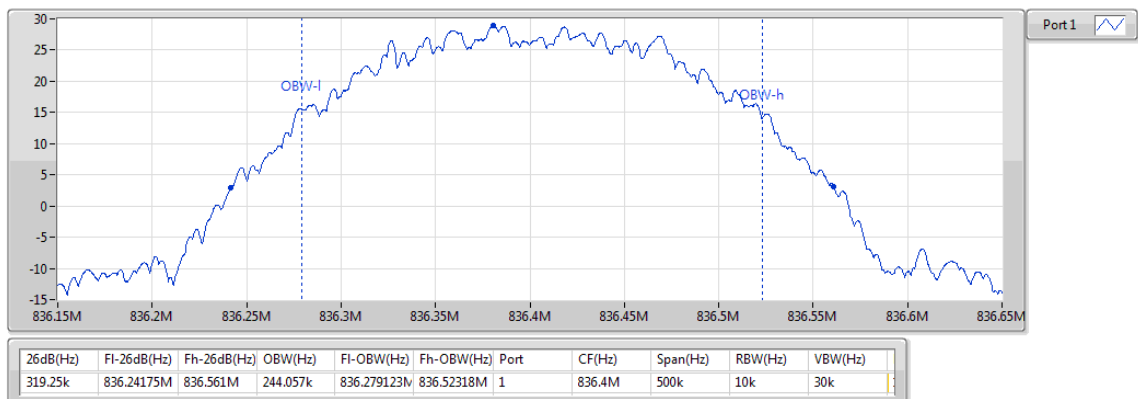
EBW

824.2MHz



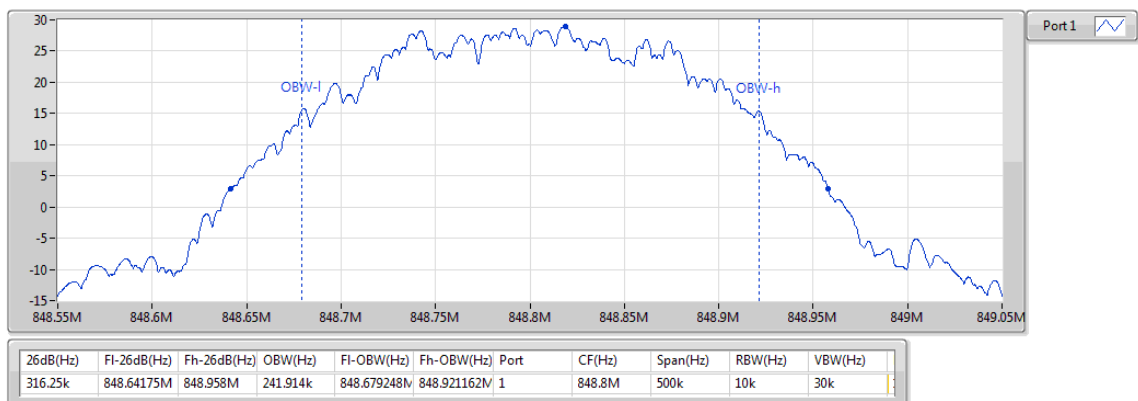
EBW

836.4MHz



EBW

848.8MHz



Summary

Mode	Max-NdB (Hz)	Max-OBW (Hz)	ITU-Code	Min-NdB (Hz)	Min-OBW (Hz)
Band 5	-	-	-	-	-
WCDMA_5MHz_Nss1_1TX	4.713M	4.136M	4M14F9W	4.675M	4.119M

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

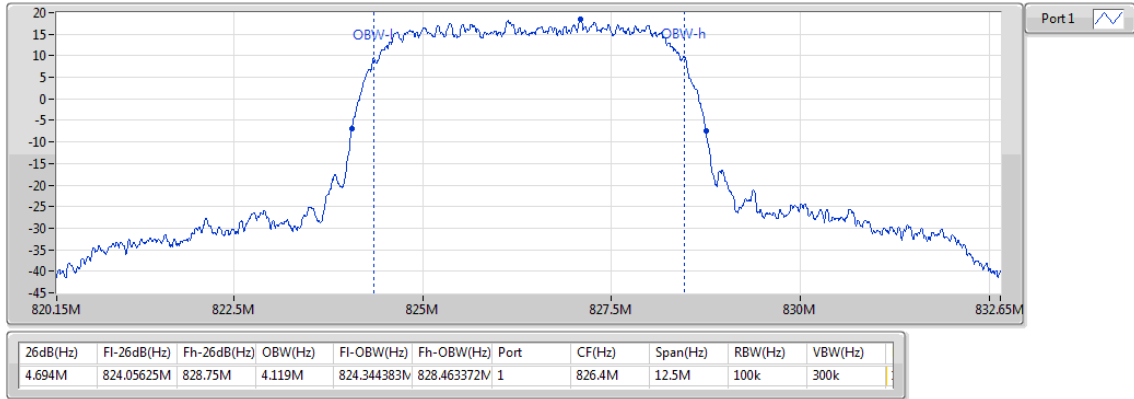
Mode	Result	Limit (Hz)	Port 1-NdB (Hz)	Port 1-OBW (Hz)
Band 5_WCDMA_5MHz_Nss1_1TX	-	-	-	-
826.4MHz	Pass	Inf	4.694M	4.119M
836.4MHz	Pass	Inf	4.713M	4.136M
846.6MHz	Pass	Inf	4.675M	4.124M

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

Band 5_WCDMA

EBW

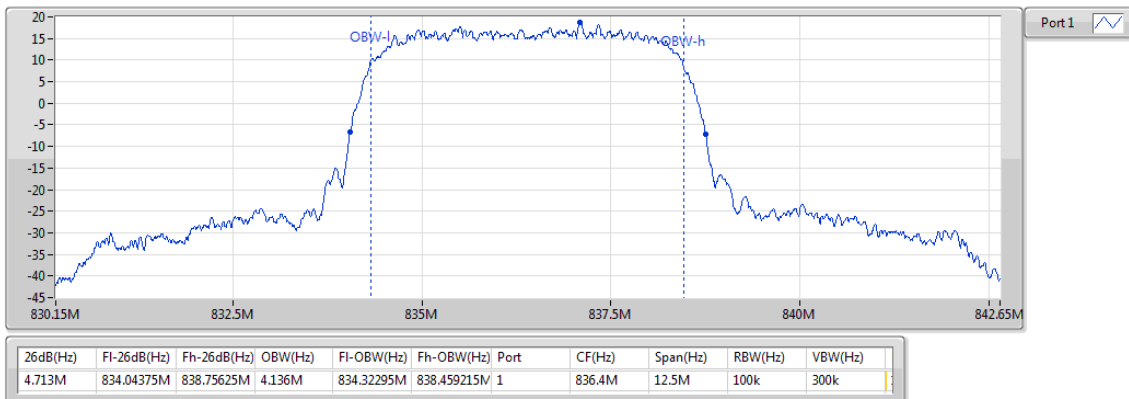
826.4MHz



Band 5_WCDMA

EBW

836.4MHz



Band 5_WCDMA

EBW

846.6MHz

