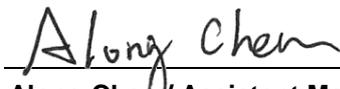


FCC Test Report

FCC ID : MXF-WLTFSM13641
Equipment : LTE Cat 6 Single-Mode Indoor CPE
Model No. : WLTFSM-136ACN_384041
Brand Name : Gemtek
Applicant : Gemtek Technology Co., Ltd.
Address : No.15-1 Zhonghua Road, Hsinchu Industrial
Park, Hukou, Hsinchu, Taiwan, 30352
Standard : 47 CFR FCC Part 27 Subpart M
Received Date : Dec. 09, 2016
Tested Date : Mar. 30 ~ Apr. 06, 2017

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
FW6D1001	Rev. 01	Initial issue	May 10, 2017

Summary of Test Results

FCC Rules	Description of Test	Measured	Result
2.1046 / 27.50(h)(2)	Output power	Conducted Power [dBm]: 23.88	Pass
2.1053 / 27.53(m)(4)(6)	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(m)(4)(6)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(m)(4)(6)	Channel Edge Measurement	Meet the requirement of limit	Pass
2.1049(h) / 27.53(m)(6)	Emission Bandwidth	Meet the requirement of limit	Pass
2.1055 / 27.54	Frequency Stability	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

Operating Frequency	Channel Bandwidth: 5MHz: 2498.5 MHz ~ 2687.5 MHz Channel Bandwidth: 10MHz: 2501.0 MHz ~ 2685.0 MHz Channel Bandwidth: 15MHz: 2503.5 MHz ~ 2682.5 MHz Channel Bandwidth: 20MHz: 2506.0 MHz ~ 2680.0 MHz
Modulation Type	QPSK, 16QAM (Uplink)
Duplex Mode	TDD
Category	Cat. 5 / Cat. 6
Release Version	9
H/W Version	Mother board: WLTFSM-136ACN_MB_V00 ; Daughter board (LTE RF module): WLTSS-119_RF_module_V00
S/W Version	01.01.02.115

1.1.2 Maximum Conducted Power and Emission Designator

Mode	Modulation	Maximum EIRP (W)	Emission Designator
LTE Band 41, CB: 5MHz	QPSK	0.434	4M51G7D
LTE Band 41, CB: 5MHz	16QAM	0.466	4M50W7D
LTE Band 41, CB: 10MHz	QPSK	0.445	8M94G7D
LTE Band 41, CB: 10MHz	16QAM	0.475	9M03W7D
LTE Band 41, CB: 15MHz	QPSK	0.454	13M4G7D
LTE Band 41, CB: 15MHz	16QAM	0.490	13M4W7D
LTE Band 41, CB: 20MHz	QPSK	0.553	17M9G7D
LTE Band 41, CB: 20MHz	16QAM	0.571	17M9W7D

1.1.3 Antenna Details

Ant. No.	Type	Connector	Gain (dBi)	Remark
1	Internal Dipole	UFL	3.69	---

1.1.4 EUT Operational Condition

Power Supply Type	12Vdc from adapter		
Operational Voltage	<input checked="" type="checkbox"/> Vnom (120 V)	<input checked="" type="checkbox"/> Vmax (138 V)	<input checked="" type="checkbox"/> Vmin (102 V)
Operational Climatic	<input checked="" type="checkbox"/> Tnom (20°C)	<input checked="" type="checkbox"/> Tmax (50°C)	<input checked="" type="checkbox"/> Tmin (-30°C)

1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter 1	Brand Name: SHENZHEN FRECOM Model Name: F18W8-120150SPAU Power Rating: I/P: 100-240Vac, 50-60Hz, 0.6A O/P: 12Vdc, 1.5A DC 1.2m non-shielded cable w/o core
2	AC adapter 2	Brand Name: Leader Model Name: MU18AY120150-A1 Power Rating: I/P: 100-240Vac, 50-60Hz, 0.6A O/P: 12Vdc, 1.5A DC 1.5m non-shielded cable w/o core

1.1.6 Operating Channel List

LTE Band 41		
Channel Bandwidth (MHz)	Channel	Frequency (MHz)
5	39675	2498.5
5	40620	2593.0
5	41565	2687.5
10	39700	2501.0
10	40620	2593.0
10	41540	2685.0
15	39725	2503.5
15	40620	2593.0
15	41515	2682.5
20	39750	2506.0
20	40620	2593.0
20	41490	2680.0

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	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 29, 2016	Dec. 28, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Preamplifier	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Radio Communication Analyzer	Anritsu	MT8820C	6201465544	Aug. 19, 2016	Aug. 18, 2017
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	Agilent	N9010A	MY53400091	Sep. 09, 2016	Sep. 08, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 21, 2016	Nov. 20, 2017
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
Radio Communication Analyzer	Anritsu	MT8820C	6201465544	Aug. 19, 2016	Aug. 18, 2017
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 28, 2016	Oct. 27, 2017
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 27 Subpart M

ANSI C63.4-2014

ANSI/TIA-603-D 2010

FCC KDB 971168 D01 Power Meas License Digital Systems v02r02

FCC KDB 971168 D02 Misc OOBE License Digital Systems v01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 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	± 34.134 Hz
Conducted power	± 0.808 dB
Frequency error	± 34.134 Hz
Conducted emission	± 2.670 dB
Radiated emission ≤ 1 GHz	± 3.66 dB
Radiated emission > 1 GHz	± 5.63 dB
Temperature	± 0.6 °C

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
RF Conducted	TH01-WS	22°C / 63%	Alex Huang
Radiated Emissions	03CH01-WS	21-24°C / 62%	Kevin Lee Vincent Yeh

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

2.2 The Worst Test Modes and Channel Details

Test item	Channel Bandwidth	Modulation	Test channel
Output Power Conducted Emissions Occupied Bandwidth	5 MHz	QPSK / 16QAM	2498.5 / 2593.0 / 2687.5
	10 MHz	QPSK / 16QAM	2501.0 / 2593.0 / 2685.0
	15 MHz	QPSK / 16QAM	2503.5 / 2593.0 / 2682.5
	20 MHz	QPSK / 16QAM	2506.0 / 2593.0 / 2680.0
Radiated Emission ≤ 1GHz	5 MHz	16QAM	2593.0
	10 MHz	16QAM	2685.0
	15 MHz	16QAM	2682.5
	20 MHz	16QAM	2506.0
Radiated Emission > 1GHz	5 MHz	16QAM	2498.5 / 2593.0 / 2687.5
	10 MHz	16QAM	2501.0 / 2593.0 / 2685.0
	15 MHz	16QAM	2503.5 / 2593.0 / 2682.5
	20 MHz	16QAM	2506.0 / 2593.0 / 2680.0
Band Edge	5 MHz	QPSK / 16QAM	2498.5 / 2687.5
	10 MHz	QPSK / 16QAM	2501.0 / 2685.0
	15 MHz	QPSK / 16QAM	2503.5 / 2682.5
	20 MHz	QPSK / 16QAM	2506.0 / 2680.0
Frequency Stability	5 MHz	16QAM	2593.0
	10 MHz	16QAM	2593.0
	15 MHz	16QAM	2593.0
	20 MHz	16QAM	2593.0

NOTE:

- Two adapters had been covered during the pretest and found that **Adapter 1** was the worst case and was selected for final testing (Adapter 1: SHENZHEN FRECOM adapter; Adapter 2: Leader adapter).

3 Test Results

3.1 Output Power

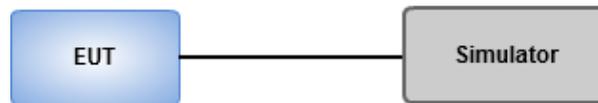
3.1.1 Limit of Output Power

Mobile stations are limited to 2.0 watts EIRP

3.1.2 Test Procedures

1. The EUT links up with simulator and is set to maximum output power level at low / middle / high channel.
2. Measure the output power of low / middle / high channel of the EUT
3. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.1.3 Test Setup



3.1.4 Test Result of Conducted power (dBm)

Channel Bandwidth: 5MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39675	2498.5	1	0	22.03	0.160	3.69	25.72	0.373	2
		1	12	22.44	0.175	3.69	26.13	0.410	2
		1	24	22.12	0.163	3.69	25.81	0.381	2
		12	0	22.14	0.164	3.69	25.83	0.383	2
		12	6	22.19	0.166	3.69	25.88	0.387	2
		12	11	22.21	0.166	3.69	25.90	0.389	2
		25	0	22.19	0.166	3.69	25.88	0.387	2
40620	2593	1	0	22.25	0.168	3.69	25.94	0.393	2
		1	12	22.68	0.185	3.69	26.37	0.434	2
		1	24	22.38	0.173	3.69	26.07	0.405	2
		12	0	22.41	0.174	3.69	26.10	0.407	2
		12	6	22.56	0.180	3.69	26.25	0.422	2
		12	11	22.54	0.179	3.69	26.23	0.420	2
		25	0	22.49	0.177	3.69	26.18	0.415	2
41565	2687.5	1	0	22.35	0.172	3.69	26.04	0.402	2
		1	12	22.54	0.179	3.69	26.23	0.420	2
		1	24	22.06	0.161	3.69	25.75	0.376	2
		12	0	22.43	0.175	3.69	26.12	0.409	2
		12	6	22.46	0.176	3.69	26.15	0.412	2
		12	11	22.38	0.173	3.69	26.07	0.405	2
		25	0	22.35	0.172	3.69	26.04	0.402	2

Channel Bandwidth: 5MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39675	2498.5	1	0	22.30	0.170	3.69	25.99	0.397	2
		1	12	22.54	0.179	3.69	26.23	0.420	2
		1	24	22.31	0.170	3.69	26.00	0.398	2
		12	0	22.12	0.163	3.69	25.81	0.381	2
		12	6	22.27	0.169	3.69	25.96	0.394	2
		12	11	22.24	0.167	3.69	25.93	0.392	2
		25	0	22.10	0.162	3.69	25.79	0.379	2
40620	2593	1	0	22.58	0.181	3.69	26.27	0.424	2
		1	12	22.99	0.199	3.69	26.68	0.466	2
		1	24	22.71	0.187	3.69	26.40	0.437	2
		12	0	22.39	0.173	3.69	26.08	0.406	2
		12	6	22.54	0.179	3.69	26.23	0.420	2
		12	11	22.51	0.178	3.69	26.20	0.417	2
		25	0	22.47	0.177	3.69	26.16	0.413	2
41565	2687.5	1	0	22.72	0.187	3.69	26.41	0.438	2
		1	12	22.88	0.194	3.69	26.57	0.454	2
		1	24	22.43	0.175	3.69	26.12	0.409	2
		12	0	22.46	0.176	3.69	26.15	0.412	2
		12	6	22.59	0.182	3.69	26.28	0.425	2
		12	11	22.48	0.177	3.69	26.17	0.414	2
		25	0	22.46	0.176	3.69	26.15	0.412	2

Channel Bandwidth: 10MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39700	2501	1	0	21.85	0.153	3.69	25.54	0.358	2
		1	24	22.58	0.181	3.69	26.27	0.424	2
		1	49	22.19	0.166	3.69	25.88	0.387	2
		25	0	22.21	0.166	3.69	25.90	0.389	2
		25	12	22.46	0.176	3.69	26.15	0.412	2
		25	24	22.39	0.173	3.69	26.08	0.406	2
		50	0	22.36	0.172	3.69	26.05	0.403	2
40620	2593	1	0	21.76	0.150	3.69	25.45	0.351	2
		1	24	22.63	0.183	3.69	26.32	0.429	2
		1	49	22.01	0.159	3.69	25.70	0.372	2
		25	0	22.21	0.166	3.69	25.90	0.389	2
		25	12	22.47	0.177	3.69	26.16	0.413	2
		25	24	22.37	0.173	3.69	26.06	0.404	2
		50	0	22.26	0.168	3.69	25.95	0.394	2
41540	2685	1	0	22.23	0.167	3.69	25.92	0.391	2
		1	24	22.79	0.190	3.69	26.48	0.445	2
		1	49	21.77	0.150	3.69	25.46	0.352	2
		25	0	22.47	0.177	3.69	26.16	0.413	2
		25	12	22.57	0.181	3.69	26.26	0.423	2
		25	24	22.40	0.174	3.69	26.09	0.406	2
		50	0	22.29	0.169	3.69	25.98	0.396	2

Channel Bandwidth: 10MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39700	2501	1	0	22.19	0.166	3.69	25.88	0.387	2
		1	24	22.89	0.195	3.69	26.58	0.455	2
		1	49	22.52	0.179	3.69	26.21	0.418	2
		25	0	22.19	0.166	3.69	25.88	0.387	2
		25	12	22.43	0.175	3.69	26.12	0.409	2
		25	24	22.37	0.173	3.69	26.06	0.404	2
		50	0	22.25	0.168	3.69	25.94	0.393	2
40620	2593	1	0	22.12	0.163	3.69	25.81	0.381	2
		1	24	22.96	0.198	3.69	26.65	0.462	2
		1	49	22.37	0.173	3.69	26.06	0.404	2
		25	0	22.20	0.166	3.69	25.89	0.388	2
		25	12	22.46	0.176	3.69	26.15	0.412	2
		25	24	22.36	0.172	3.69	26.05	0.403	2
		50	0	22.28	0.169	3.69	25.97	0.395	2
41540	2685	1	0	22.54	0.179	3.69	26.23	0.420	2
		1	24	23.08	0.203	3.69	26.77	0.475	2
		1	49	22.10	0.162	3.69	25.79	0.379	2
		25	0	22.48	0.177	3.69	26.17	0.414	2
		25	12	22.68	0.185	3.69	26.37	0.434	2
		25	24	22.30	0.170	3.69	25.99	0.397	2
		50	0	22.28	0.169	3.69	25.97	0.395	2

Channel Bandwidth: 15MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39725	2503.5	1	0	21.40	0.138	3.69	25.09	0.323	2
		1	37	22.71	0.187	3.69	26.40	0.437	2
		1	74	22.13	0.163	3.69	25.82	0.382	2
		36	0	22.08	0.161	3.69	25.77	0.378	2
		36	18	22.54	0.179	3.69	26.23	0.420	2
		36	37	22.53	0.179	3.69	26.22	0.419	2
		75	0	22.40	0.174	3.69	26.09	0.406	2
40620	2593	1	0	21.22	0.132	3.69	24.91	0.310	2
		1	37	22.60	0.182	3.69	26.29	0.426	2
		1	74	21.64	0.146	3.69	25.33	0.341	2
		36	0	21.96	0.157	3.69	25.65	0.367	2
		36	18	22.40	0.174	3.69	26.09	0.406	2
		36	37	22.18	0.165	3.69	25.87	0.386	2
		75	0	22.06	0.161	3.69	25.75	0.376	2
41515	2682.5	1	0	21.76	0.150	3.69	25.45	0.351	2
		1	37	22.88	0.194	3.69	26.57	0.454	2
		1	74	21.20	0.132	3.69	24.89	0.308	2
		36	0	22.27	0.169	3.69	25.96	0.394	2
		36	18	22.58	0.181	3.69	26.27	0.424	2
		36	37	22.27	0.169	3.69	25.96	0.394	2
		75	0	22.23	0.167	3.69	25.92	0.391	2

Channel Bandwidth: 15MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39725	2503.5	1	0	21.74	0.149	3.69	25.43	0.349	2
		1	37	23.01	0.200	3.69	26.70	0.468	2
		1	74	22.44	0.175	3.69	26.13	0.410	2
		36	0	22.03	0.160	3.69	25.72	0.373	2
		36	18	22.49	0.177	3.69	26.18	0.415	2
		36	37	22.48	0.177	3.69	26.17	0.414	2
		75	0	22.30	0.170	3.69	25.99	0.397	2
40620	2593	1	0	21.70	0.148	3.69	25.39	0.346	2
		1	37	22.94	0.197	3.69	26.63	0.460	2
		1	74	21.89	0.155	3.69	25.58	0.361	2
		36	0	22.05	0.160	3.69	25.74	0.375	2
		36	18	22.40	0.174	3.69	26.09	0.406	2
		36	37	22.29	0.169	3.69	25.98	0.396	2
		75	0	22.03	0.160	3.69	25.72	0.373	2
41515	2682.5	1	0	22.13	0.163	3.69	25.82	0.382	2
		1	37	23.21	0.209	3.69	26.90	0.490	2
		1	74	21.71	0.148	3.69	25.40	0.347	2
		36	0	22.35	0.172	3.69	26.04	0.402	2
		36	18	22.56	0.180	3.69	26.25	0.422	2
		36	37	22.13	0.163	3.69	25.82	0.382	2
		75	0	22.23	0.167	3.69	25.92	0.391	2

Channel Bandwidth: 20MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39750	2506	1	0	22.93	0.196	3.69	26.62	0.459	2
		1	49	22.89	0.195	3.69	26.58	0.455	2
		1	99	23.74	0.237	3.69	27.43	0.553	2
		50	0	22.76	0.189	3.69	26.45	0.442	2
		50	24	22.92	0.196	3.69	26.61	0.458	2
		50	49	23.45	0.221	3.69	27.14	0.518	2
		100	0	23.05	0.202	3.69	26.74	0.472	2
40620	2593	1	0	22.77	0.189	3.69	26.46	0.443	2
		1	49	22.75	0.188	3.69	26.44	0.441	2
		1	99	23.15	0.207	3.69	26.84	0.483	2
		50	0	22.53	0.179	3.69	26.22	0.419	2
		50	24	22.69	0.186	3.69	26.38	0.435	2
		50	49	22.75	0.188	3.69	26.44	0.441	2
		100	0	22.68	0.185	3.69	26.37	0.434	2
41490	2680	1	0	23.34	0.216	3.69	27.03	0.505	2
		1	49	22.98	0.199	3.69	26.67	0.465	2
		1	99	23.06	0.202	3.69	26.75	0.473	2
		50	0	23.00	0.200	3.69	26.69	0.467	2
		50	24	23.02	0.200	3.69	26.71	0.469	2
		50	49	22.88	0.194	3.69	26.57	0.454	2
		100	0	23.06	0.202	3.69	26.75	0.473	2

Channel Bandwidth: 20MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)	E.I.R.P Limit (W)
39750	2506	1	0	23.21	0.209	3.69	26.90	0.490	2
		1	49	23.18	0.208	3.69	26.87	0.486	2
		1	99	23.88	0.244	3.69	27.57	0.571	2
		50	0	22.73	0.187	3.69	26.42	0.439	2
		50	24	22.88	0.194	3.69	26.57	0.454	2
		50	49	23.30	0.214	3.69	26.99	0.500	2
		100	0	23.09	0.204	3.69	26.78	0.476	2
40620	2593	1	0	23.18	0.208	3.69	26.87	0.486	2
		1	49	23.00	0.200	3.69	26.69	0.467	2
		1	99	23.55	0.226	3.69	27.24	0.530	2
		50	0	22.51	0.178	3.69	26.20	0.417	2
		50	24	22.67	0.185	3.69	26.36	0.433	2
		50	49	22.84	0.192	3.69	26.53	0.450	2
		100	0	22.76	0.189	3.69	26.45	0.442	2
41490	2680	1	0	23.61	0.230	3.69	27.30	0.537	2
		1	49	23.20	0.209	3.69	26.89	0.489	2
		1	99	23.28	0.213	3.69	26.97	0.498	2
		50	0	22.98	0.199	3.69	26.67	0.465	2
		50	24	22.91	0.195	3.69	26.60	0.457	2
		50	49	22.91	0.195	3.69	26.60	0.457	2
		100	0	23.04	0.201	3.69	26.73	0.471	2

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

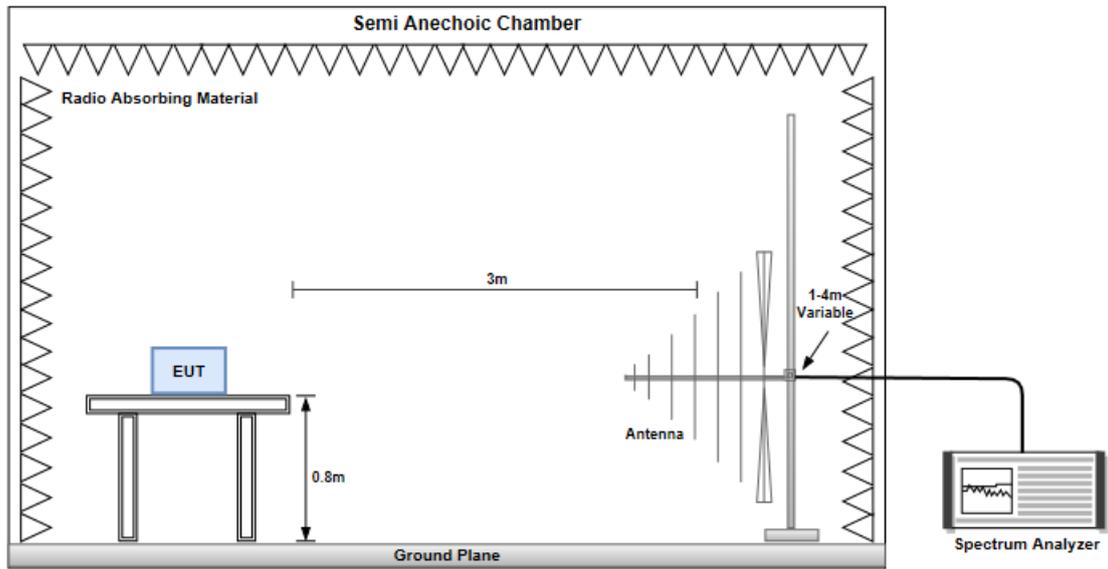
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB equal to -25dBm.

3.2.2 Test Procedures

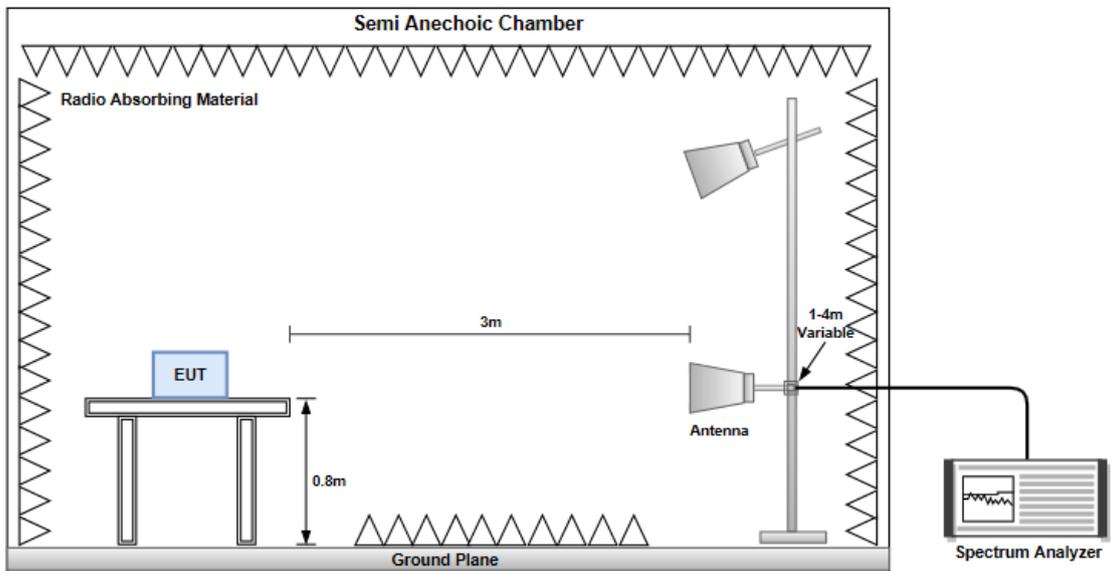
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
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 41, CB:5MHz, 1RB, Offset 12, Channel:40620					
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)
39.42	H	-54.26	-25.00	-29.26	-62.02	-41.89	-12.37
107.22	H	-58.28	-25.00	-33.28	-57.10	-58.15	-0.13
164.03	H	-55.87	-25.00	-30.87	-55.37	-56.13	0.26
215.63	H	-63.58	-25.00	-38.58	-60.00	-67.95	4.37
353.01	H	-55.46	-25.00	-30.46	-57.58	-59.80	4.34
415.33	H	-62.44	-25.00	-37.44	-65.56	-66.64	4.20
39.38	V	-56.58	-25.00	-31.58	-43.58	-44.20	-12.38
102.37	V	53.85	-25.00	78.85	-40.85	53.71	0.14
130.46	V	-54.85	-25.00	-29.85	-41.85	-53.74	-1.11
164.54	V	-55.17	-25.00	-30.17	-42.17	-55.49	0.32
355.78	V	-61.64	-25.00	-36.64	-48.64	-65.97	4.33
600.56	V	-57.89	-25.00	-32.89	-44.89	-61.43	3.54

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

Mode		LTE Band 41, CB:10MHz, 1RB, Offset 24, Channel:41540					
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)
39.76	H	-55.13	-25.00	-30.13	-62.88	-42.81	-12.32
132.59	H	-57.63	-25.00	-32.63	-57.03	-56.47	-1.16
164.48	H	-55.06	-25.00	-30.06	-54.55	-55.37	0.31
211.71	H	-57.53	-25.00	-32.53	-53.82	-61.89	4.36
355.85	H	-59.64	-25.00	-34.64	-61.81	-63.97	4.33
599.56	H	-60.44	-25.00	-35.44	-66.25	-63.98	3.54
94.99	V	-57.11	-25.00	-32.11	-57.40	-57.65	0.54
130.65	V	-54.66	-25.00	-29.66	-55.49	-53.55	-1.11
163.63	V	-56.83	-25.00	-31.83	-59.43	-57.03	0.20
217.47	V	-61.17	-25.00	-36.17	-63.20	-65.55	4.38
356.66	V	-61.54	-25.00	-36.54	-64.17	-65.87	4.33
596.13	V	-58.47	-25.00	-33.47	-67.79	-62.04	3.57

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

Mode		LTE Band 41, CB:15MHz, 1RB, Offset 37, Channel:41515					
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)
39.52	H	-54.96	-25.00	-29.96	-62.72	-42.60	-12.36
132.64	H	-58.38	-25.00	-33.38	-57.78	-57.22	-1.16
163.64	H	-54.21	-25.00	-29.21	-53.73	-54.42	0.21
217.66	H	-62.52	-25.00	-37.52	-58.99	-66.90	4.38
354.74	H	-59.36	-25.00	-34.36	-61.51	-63.70	4.34
653.54	H	-60.41	-25.00	-35.41	-66.87	-64.25	3.84
39.26	V	-58.61	-25.00	-33.61	-56.38	-46.21	-12.40
89.54	V	-53.26	-25.00	-28.26	-53.43	-53.91	0.65
132.44	V	-55.38	-25.00	-30.38	-56.29	-54.22	-1.16
164.53	V	-56.55	-25.00	-31.55	-59.15	-56.87	0.32
349.67	V	-60.78	-25.00	-35.78	-63.35	-65.12	4.34
599.54	V	-56.78	-25.00	-31.78	-66.23	-60.32	3.54

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

Mode		LTE Band 41, CB:20MHz, 1RB, Offset 99, Channel:39750					
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)
39.46	H	-54.52	-25.00	-29.52	-62.28	-42.15	-12.37
133.63	H	-57.68	-25.00	-32.68	-57.15	-56.49	-1.19
164.57	H	-54.27	-25.00	-29.27	-53.75	-54.59	0.32
217.48	H	-62.46	-25.00	-37.46	-58.93	-66.84	4.38
354.61	H	-59.53	-25.00	-34.53	-61.68	-63.87	4.34
721.35	H	-52.47	-25.00	-27.47	-60.33	-56.06	3.59
39.65	V	-60.06	-25.00	-35.06	-57.85	-47.72	-12.34
94.78	V	-56.85	-25.00	-31.85	-57.14	-57.40	0.55
126.33	V	-54.54	-25.00	-29.54	-55.17	-53.54	-1.00
163.45	V	-56.27	-25.00	-31.27	-58.86	-56.45	0.18
354.75	V	-60.86	-25.00	-35.86	-63.48	-65.20	4.34
714.63	V	-45.38	-25.00	-20.38	-54.63	-49.01	3.63

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

3.2.5 Test Result of Radiated Emissions above 1GHz

Mode							
LTE Band 41, CB:5MHz, 1RB, Offset 12, Channel:39675							
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)
4997.00	H	-41.86	-25.00	-16.86	-58.92	-47.95	6.09
7495.50	H	-27.26	-25.00	-2.26	-48.09	-30.23	2.97
9994.00	H	-27.73	-25.00	-2.73	-52.14	-29.33	1.60
4997.00	V	-40.30	-25.00	-15.30	-57.35	-46.39	6.09
7495.50	V	-33.67	-25.00	-8.67	-55.59	-36.64	2.97
9994.00	V	-34.43	-25.00	-9.43	-57.88	-36.03	1.60

Mode							
LTE Band 41, CB:5MHz, 1RB, Offset 12, Channel:40620							
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)
5186.00	H	-37.77	-25.00	-12.77	-55.22	-43.95	6.18
7779.00	H	-27.56	-25.00	-2.56	-48.78	-30.64	3.08
10372.00	H	-27.52	-25.00	-2.52	-52.02	-28.80	1.28
5186.00	V	-38.43	-25.00	-13.43	-55.96	-44.61	6.18
7779.00	V	-30.16	-25.00	-5.16	-52.23	-33.24	3.08
10372.00	V	-37.10	-25.00	-12.10	-60.91	-38.38	1.28

Mode							
LTE Band 41, CB:5MHz, 1RB, Offset 12, Channel:41565							
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)
5375.00	H	-41.47	-25.00	-16.47	-58.50	-47.70	6.23
8062.50	H	-27.04	-25.00	-2.04	-48.62	-29.99	2.95
10750.00	H	-28.71	-25.00	-3.71	-54.66	-29.59	0.88
5375.00	V	-37.11	-25.00	-12.11	-54.53	-43.34	6.23
8062.50	V	-35.48	-25.00	-10.48	-58.08	-38.43	2.95
10750.00	V	-34.36	-25.00	-9.36	-58.41	-35.24	0.88

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

Mode							
LTE Band 41, CB:10MHz, 1RB, Offset 24, Channel:39700							
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)
5002.00	H	-41.53	-25.00	-16.53	-58.61	-47.63	6.10
7503.00	H	-27.04	-25.00	-2.04	-47.83	-30.02	2.98
10004.00	H	-28.33	-25.00	-3.33	-53.75	-29.90	1.57
5002.00	V	-41.15	-25.00	-16.15	-58.23	-47.25	6.10
7503.00	V	-34.70	-25.00	-9.70	-56.56	-37.68	2.98
10004.00	V	-30.17	-25.00	-5.17	-53.65	-31.74	1.57

Mode							
LTE Band 41, CB:10MHz, 1RB, Offset 24, Channel:40620							
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)
5186.00	H	-41.39	-25.00	-16.39	-58.84	-47.57	6.18
7779.00	H	-27.41	-25.00	-2.41	-48.63	-30.49	3.08
10372.00	H	-28.35	-25.00	-3.35	-58.13	-29.63	1.28
5186.00	V	-41.39	-25.00	-16.39	-58.92	-47.57	6.18
7779.00	V	-33.13	-25.00	-8.13	-55.20	-36.21	3.08
10372.00	V	-31.53	-25.00	-6.53	-55.34	-32.81	1.28

Mode							
LTE Band 41, CB:10MHz, 1RB, Offset 24, Channel:41540							
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)
5370.00	H	-41.58	-25.00	-16.58	-58.63	-47.81	6.23
8055.00	H	-27.09	-25.00	-2.09	-48.56	-30.04	2.95
10740.00	H	-28.68	-25.00	-3.68	-54.58	-29.57	0.89
5370.00	V	-40.95	-25.00	-15.95	-58.37	-47.18	6.23
8055.00	V	-30.83	-25.00	-5.83	-53.46	-33.78	2.95
10740.00	V	-31.77	-25.00	-6.77	-55.81	-32.66	0.89

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

Mode							
LTE Band 41, CB:15MHz, 1RB, Offset 37, Channel:39725							
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)
5007.00	H	-42.67	-25.00	-17.67	-59.77	-48.76	6.09
7510.50	H	-27.71	-25.00	-2.71	-48.47	-30.69	2.98
10014.00	H	-29.98	-25.00	-4.98	-57.15	-31.56	1.58
5007.00	V	-41.26	-25.00	-16.26	-58.36	-47.35	6.09
7510.50	V	-36.38	-25.00	-11.38	-58.21	-39.36	2.98
10014.00	V	-32.99	-25.00	-7.99	-56.49	-34.57	1.58

Mode							
LTE Band 41, CB:15MHz, 1RB, Offset 37, Channel:40620							
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)
5186.00	H	-40.93	-25.00	-15.93	-58.39	-47.11	6.18
7779.00	H	-27.46	-25.00	-2.46	-48.70	-30.54	3.08
10372.00	H	-28.78	-25.00	-3.78	-56.46	-30.06	1.28
5186.00	V	-41.50	-25.00	-16.50	-59.04	-47.68	6.18
7779.00	V	-31.34	-25.00	-6.34	-53.42	-34.42	3.08
10372.00	V	-33.09	-25.00	-8.09	-56.91	-34.37	1.28

Mode							
LTE Band 41, CB:15MHz, 1RB, Offset 37, Channel:41515							
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)
5365.00	H	-39.77	-25.00	-14.77	-56.82	-46.00	6.23
8047.50	H	-27.55	-25.00	-2.55	-49.15	-30.49	2.94
10730.00	H	-28.86	-25.00	-3.86	-55.84	-29.76	0.90
5365.00	V	-40.60	-25.00	-15.60	-58.02	-46.83	6.23
8047.50	V	-33.65	-25.00	-8.65	-56.28	-36.59	2.94
10730.00	V	-34.18	-25.00	-9.18	-58.22	-35.08	0.90

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

Mode							
LTE Band 41, CB:20MHz, 1RB, Offset 99, Channel:39750							
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)
5031.80	H	-41.22	-25.00	-16.22	-58.35	-47.33	6.11
7547.70	H	-27.40	-25.00	-2.40	-48.11	-30.40	3.00
10063.60	H	-28.07	-25.00	-3.07	-53.38	-29.61	1.54
5031.80	V	-37.70	-25.00	-12.70	-54.83	-43.81	6.11
7547.70	V	-32.93	-25.00	-7.93	-54.70	-35.93	3.00
10063.60	V	-34.87	-25.00	-9.87	-58.39	-36.41	1.54

Mode							
LTE Band 41, CB:20MHz, 1RB, Offset 99, Channel:40620							
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)
5205.80	H	-42.11	-25.00	-17.11	-59.58	-48.30	6.19
7808.70	H	-27.65	-25.00	-2.65	-48.96	-30.73	3.08
10411.60	H	-27.37	-25.00	-2.37	-51.77	-28.62	1.25
5205.80	V	-40.09	-25.00	-15.09	-57.65	-46.28	6.19
7808.70	V	-30.22	-25.00	-5.22	-52.38	-33.30	3.08
10411.60	V	-34.11	-25.00	-9.11	-57.95	-35.36	1.25

Mode							
LTE Band 41, CB:20MHz, 1RB, Offset 0, Channel:41490							
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)
5340.20	H	-41.92	-25.00	-16.92	-59.04	-48.15	6.23
8010.30	H	-27.14	-25.00	-2.14	-48.83	-30.07	2.93
10680.40	H	-27.16	-25.00	-2.16	-51.12	-28.12	0.96
5340.20	V	-41.92	-25.00	-16.92	-59.37	-48.15	6.23
8010.30	V	-32.54	-25.00	-7.54	-55.37	-35.47	2.93
10680.40	V	-33.03	-25.00	-8.03	-57.04	-33.99	0.96

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

3.3 Conducted Emissions

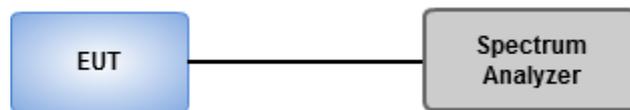
3.3.1 Limit of Conducted Emissions

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 $55 + 10 \log(P)$ dB equal to -25dBm.

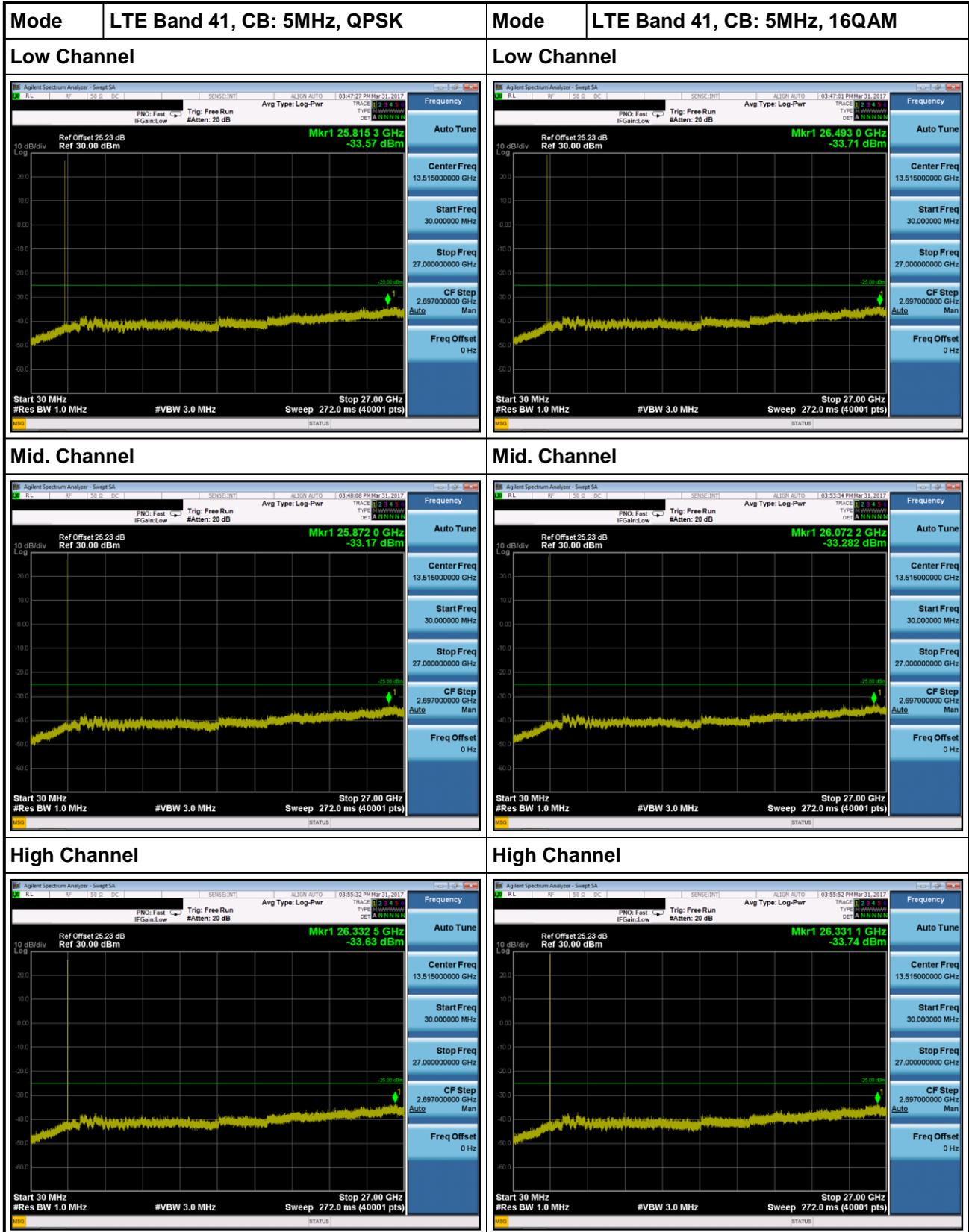
3.3.2 Test Procedures

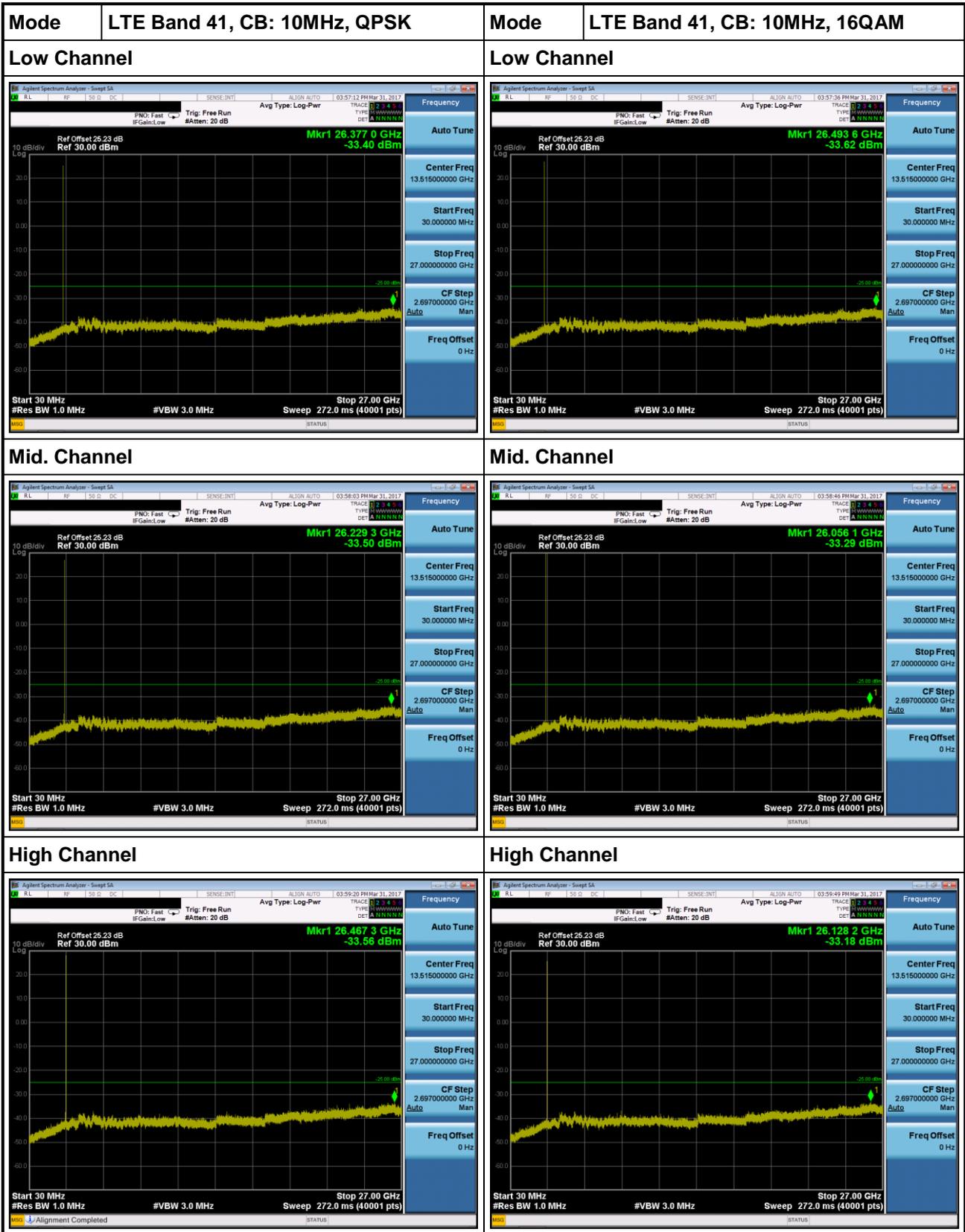
1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 30MHz~27GHz.
3. Set RBW = 1MHz, VBW = 3MHz, detector = average, sweep time = auto.
4. Record the max trace value and capture the test plot of each sub frequency band.

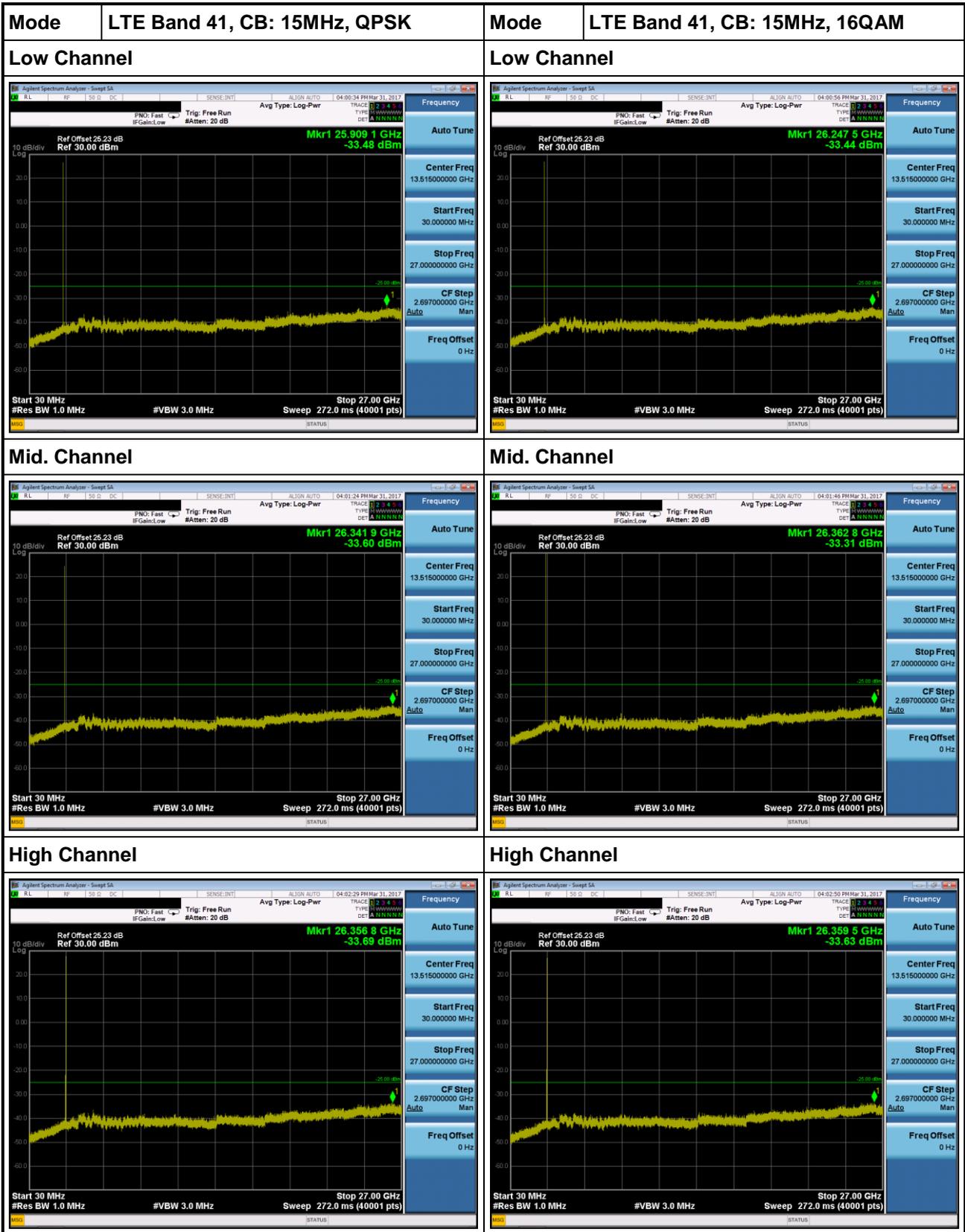
3.3.3 Test Setup

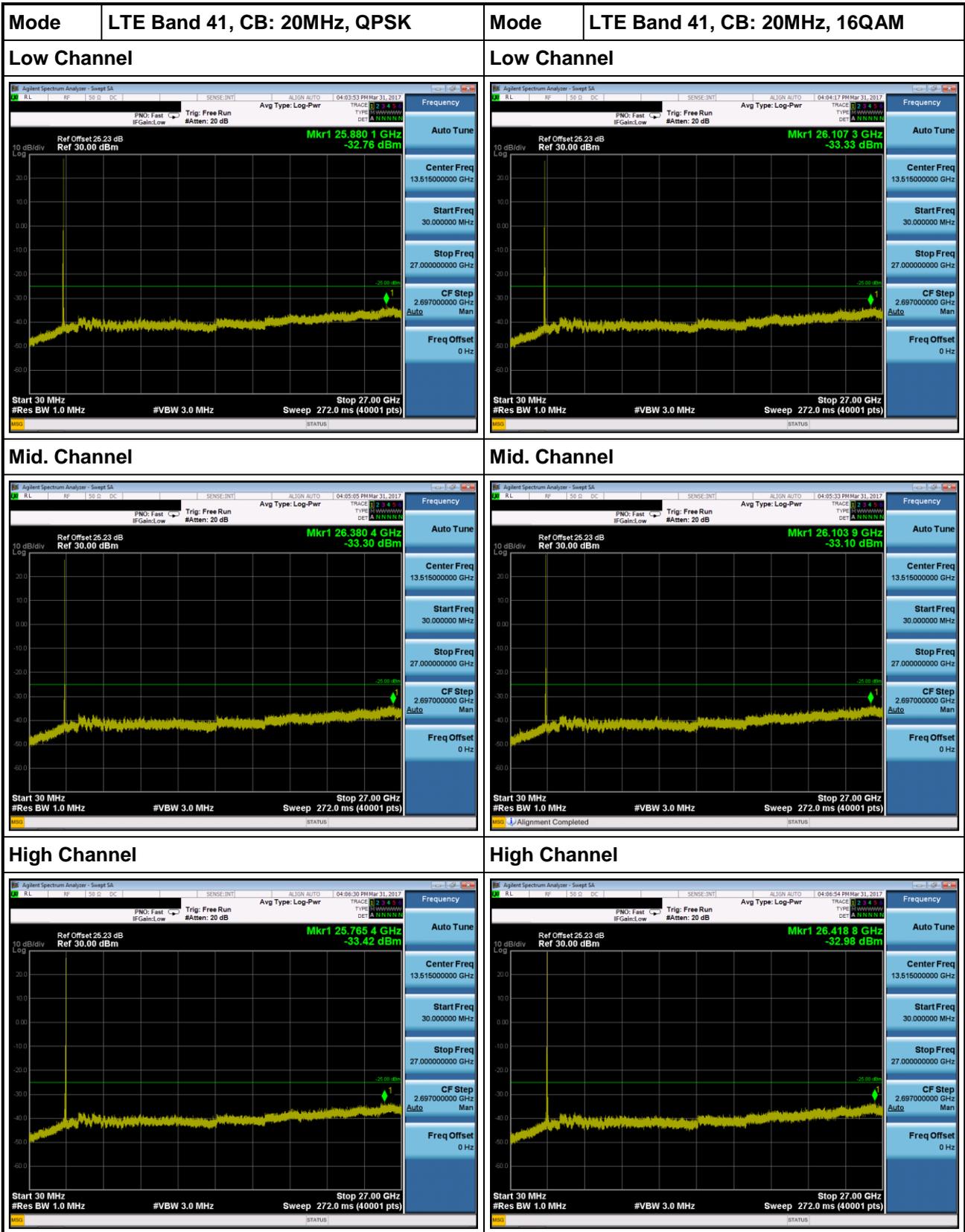


3.3.4 Test Result of Conducted Emissions









3.4 Channel Edge

3.4.1 Limit of Channel Edge

The attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph FCC Part 27.53(m)(6). In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz

3.4.2 Test Procedures

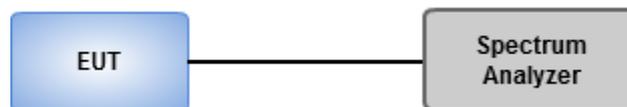
Band power measurement

1. Lowest and highest operating channels are tested for this item.
2. Set RBW = 2% of emission bandwidth, VBW = 3 x RBW, detector = RMS, sweep time = auto.
3. Enable adjacent channel power of spectrum analyzer to measure power of channel edge
4. Record the max trace value and capture the test plot.

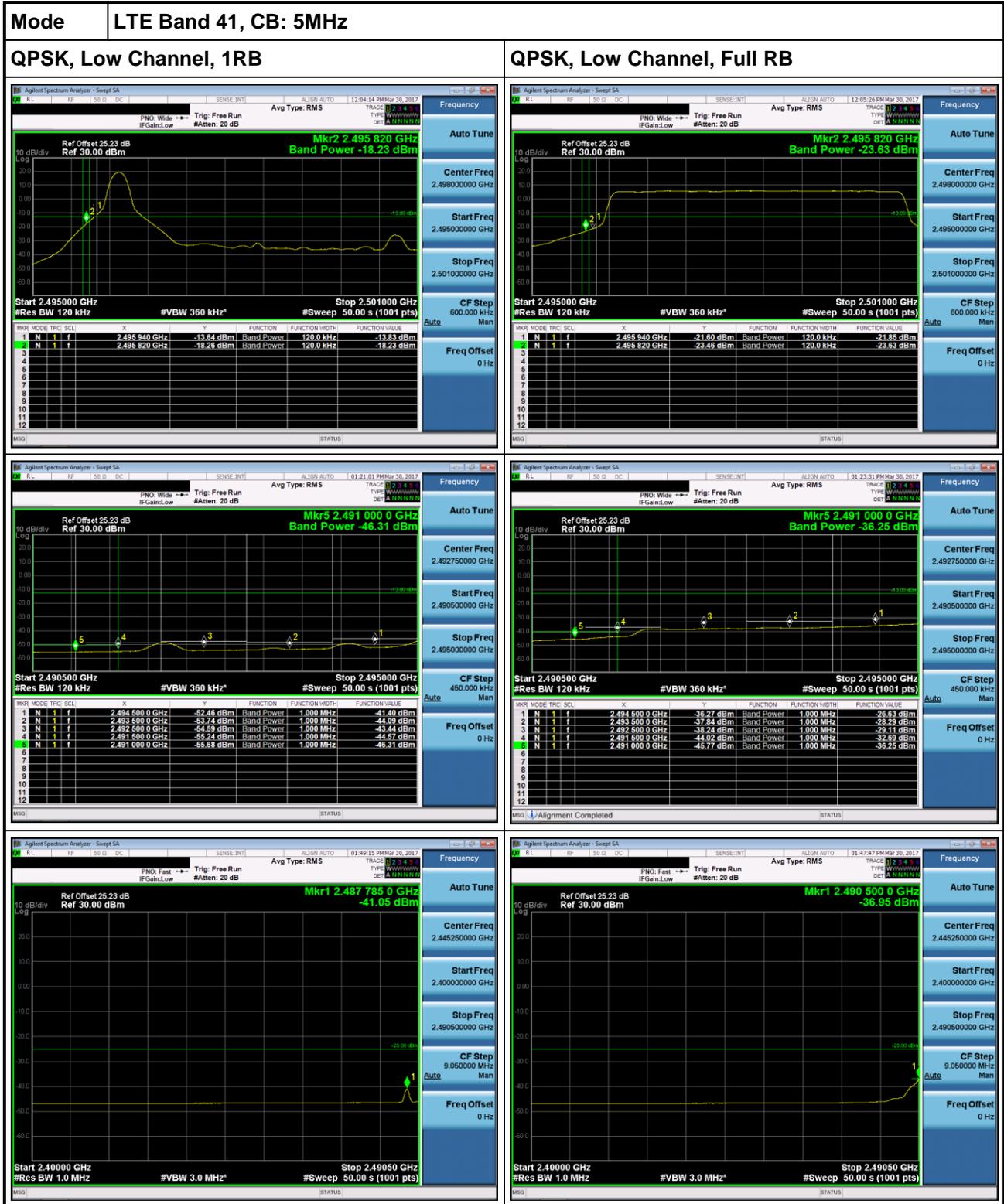
Non-Band power measurement

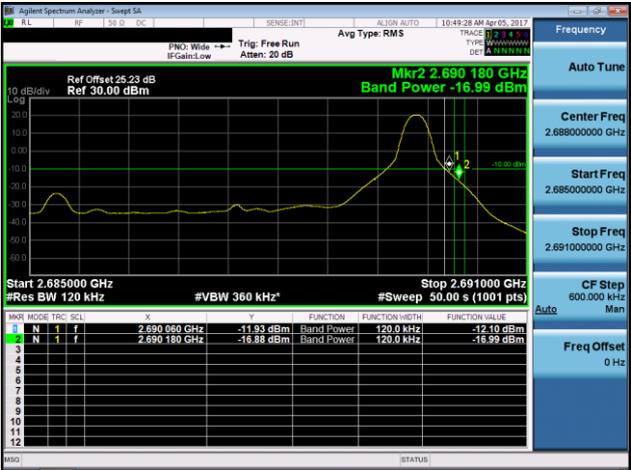
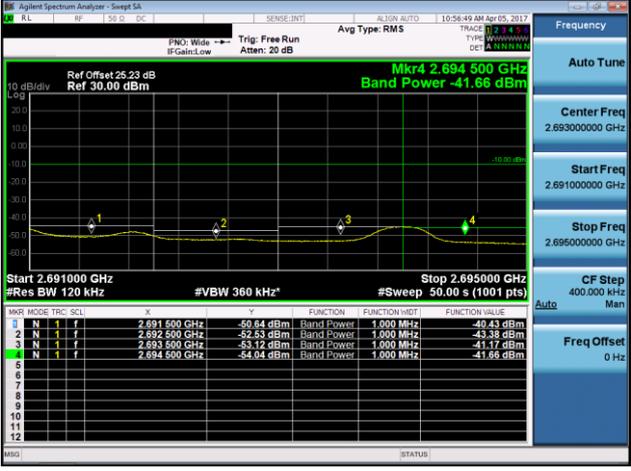
1. Lowest and highest operating channels are tested for this item.
2. Set RBW = 1MHz, VBW = 3 MHz, detector = RMS, sweep time = auto.
3. Record the max trace value and capture the test plot.

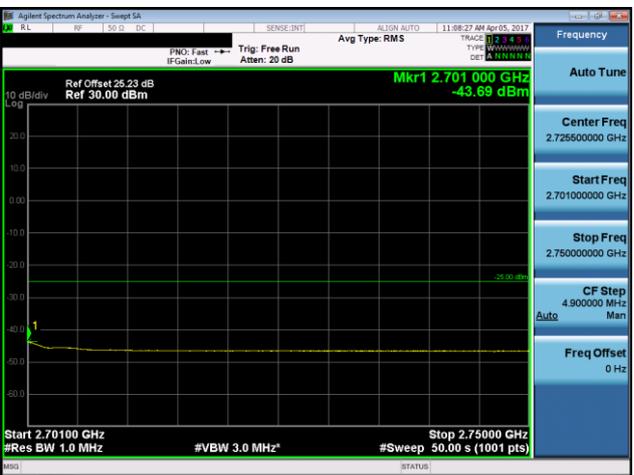
3.4.3 Test Setup

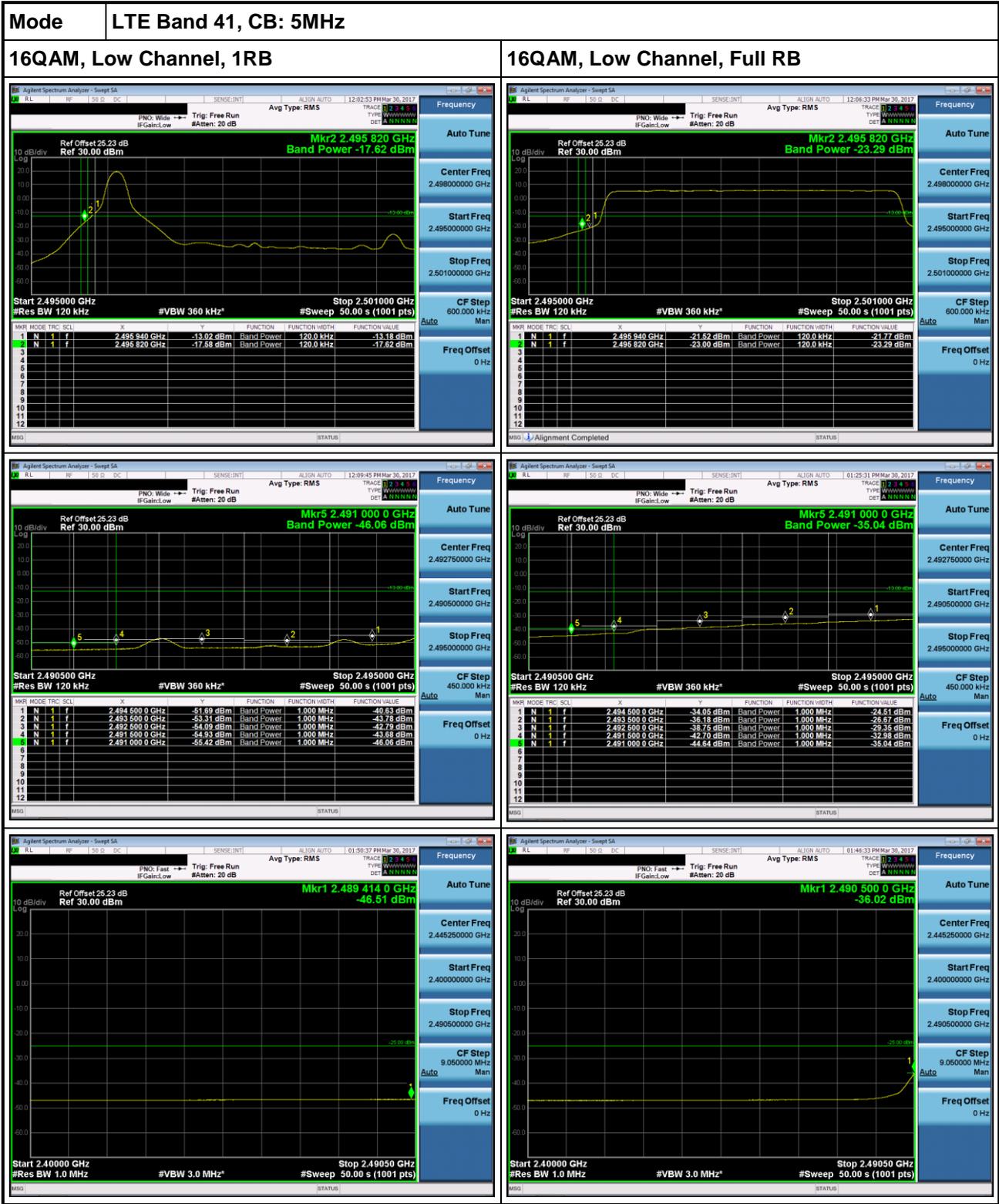


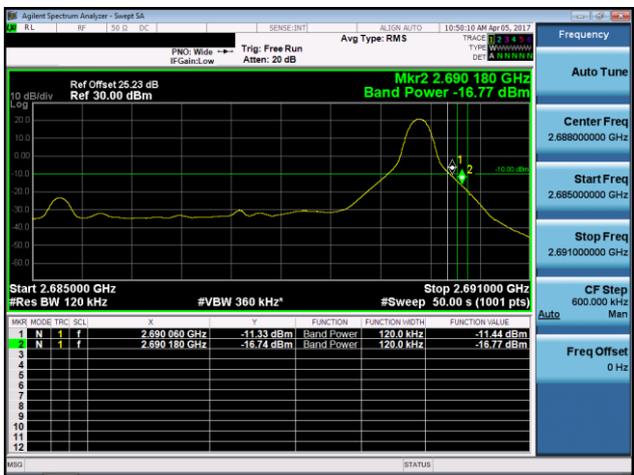
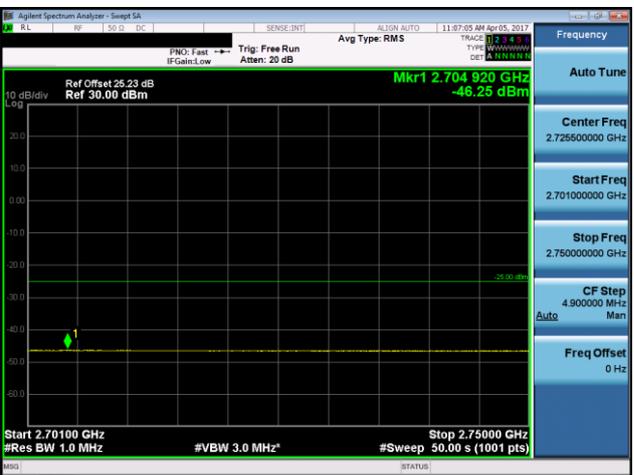
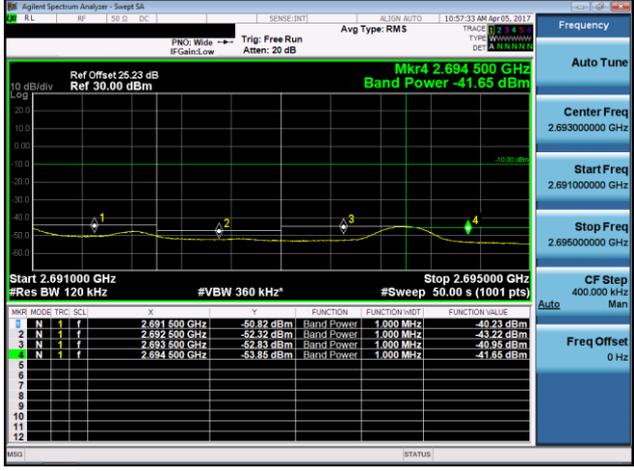
3.4.4 Test Result of Band Edge

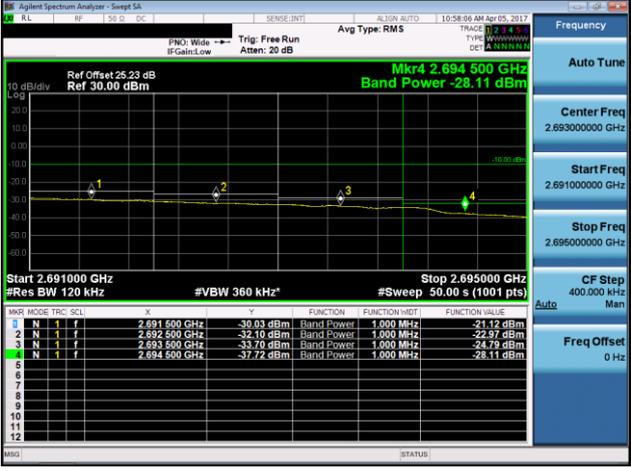


Mode	LTE Band 41, CB: 5MHz		
<p>QPSK, High Channel, 1RB</p> 	<p>QPSK, High Channel, 1RB</p> 		
	<p style="text-align: center;">---</p>		
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Mode	LTE Band 41, CB: 5MHz
QPSK, High Channel, Full RB	QPSK, High Channel, Full RB
	
	<p style="text-align: center;">---</p>
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 <p>Agilent Spectrum Analyzer - Sweep SA Ref Offset: 25.23 dB Ref: 30.00 dBm Mkr4 2.694 500 GHz Band Power -41.65 dBm Start 2.691000 GHz #Res BW 120 kHz #VBW 360 kHz* Stop 2.695000 GHz #Sweep 50.00 s (1001 pts)</p> <table border="1" style="font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.691 500 GHz</td> <td>-50.82 dBm</td> <td>Band Power</td> <td>1.000 MHz</td> <td>-40.23 dBm</td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.692 500 GHz</td> <td>-52.32 dBm</td> <td>Band Power</td> <td>1.000 MHz</td> <td>-43.22 dBm</td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.693 500 GHz</td> <td>-52.83 dBm</td> <td>Band Power</td> <td>1.000 MHz</td> <td>-40.95 dBm</td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.694 500 GHz</td> <td>-53.85 dBm</td> <td>Band Power</td> <td>1.000 MHz</td> <td>-41.65 dBm</td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.691 500 GHz	-50.82 dBm	Band Power	1.000 MHz	-40.23 dBm	2	N	1	f	2.692 500 GHz	-52.32 dBm	Band Power	1.000 MHz	-43.22 dBm	3	N	1	f	2.693 500 GHz	-52.83 dBm	Band Power	1.000 MHz	-40.95 dBm	4	N	1	f	2.694 500 GHz	-53.85 dBm	Band Power	1.000 MHz	-41.65 dBm	<p style="text-align: center;">---</p>
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