FCC Test Report

FCC ID	:	**MXF-WLTCS105**
Equipment	:	**Band 41 TD-LTE Outdoor CPE**
Model No.	:	**WLTCS-105**
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	:	**Feb. 18, 2014**
Tested Date	:	**Apr. 14 ~ Apr. 15, 2014**

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.

Approved & Reviewed by:

Gary Chang / Manager

Testing Laboratory
2732

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Release Record

Report No.	Version	Description	Issued Date
FG421804P27M	Rev. 01	Initial issue	Apr. 30, 2014

Summary of Test Results

FCC Rules	Description of Test	Measured	Result
2.1046 / 27.50(h)(2)	Output power	Conducted Power[dBm]: LTE: 23.15	Pass
2.1053 / 27.53(l)(4)(6)	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(l)(4)(6)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(l)(4)(6)	Channel Edge Measurement	Meet the requirement of limit	Pass
2.1049(h) / 27.53(l)(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

The EUT has two versions, with VOIP and without VOIP functions.
The minor difference is only for non-transmitter portions (Components of VOIP function is soldered or not)
RF part is identical to each version

1.1.1 Specification of the Equipment under Test (EUT)

Operating Frequency (MHz)	Channel Bandwidth: 5MHz: 2498.5~2687.5 Channel Bandwidth: 10MHz: 2501~2685 Channel Bandwidth: 15MHz: 2503.5~2682.5 Channel Bandwidth: 20MHz: 2506~2680
Modulation Type	Uplink : QPSK, 16QAM Downlink : QPSK, 16QAM, 64QAM
Duplex Mode	TDD
Category	4
Release Version	9
H/W Version	Mother board: V02A ; Daughter board: V02
S/W Version	01.01.02.016

1.1.2 Maximum EIRP, Frequency Tolerance and Emission Designator

Mode	Modulation	Maximum Conducted Power (W)	Emission Designator
LTE Band 41, CB: 5MHz	QPSK	0.2065	4M47G7D
LTE Band 41, CB: 5MHz	16QAM	0.1799	4M46W7D
LTE Band 41, CB: 10MHz	QPSK	0.1936	8M98G7D
LTE Band 41, CB: 10MHz	16QAM	0.1629	8M96W7D
LTE Band 41, CB: 15MHz	QPSK	0.2056	13M3G7D
LTE Band 41, CB: 15MHz	16QAM	0.1698	13M4W7D
LTE Band 41, CB: 20MHz	QPSK	0.1816	17M9G7D
LTE Band 41, CB: 20MHz	16QAM	0.1592	17M9W7D

1.1.3 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector	Remark
1	Patch	15.15	MHF	---

1.1.4 EUT Operational Condition

Power Supply Type	56Vdc from POE		
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (55°C)	☒ Tmin (-40°C)

1.1.5 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

1.2 Accessories

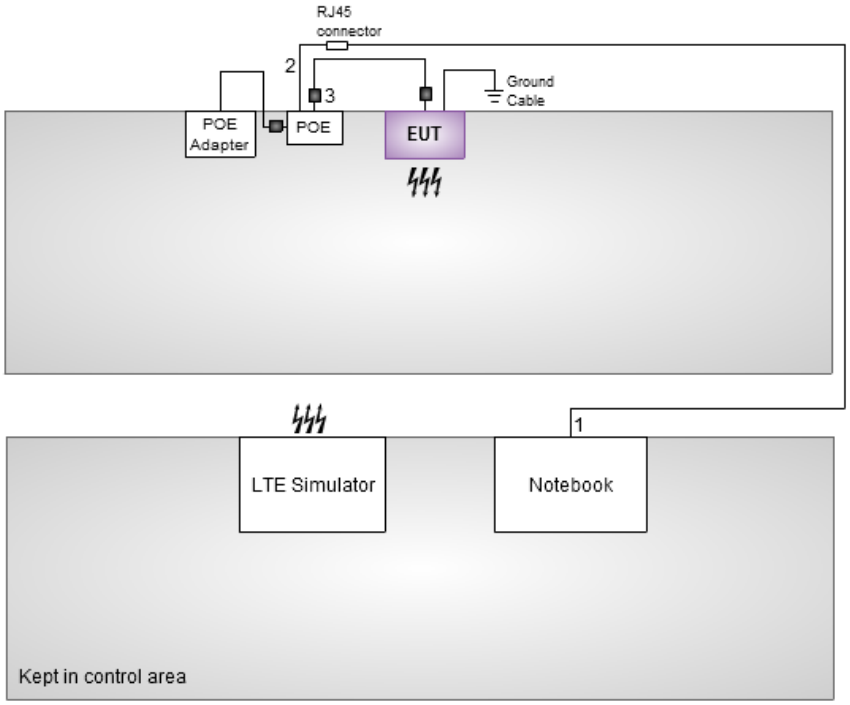
Accessories		
No.	**Equipment**	**Description**
1	POE	Brand Name: PHIHONG Model Name: PSM25R-560 Power Rating: I/P: 100-240Vac, 50-60Hz, 0.5A O/P: 56Vdc, 0.45A Power Line: DC 1.7m non-shielded cable with 1 core DC Output Connector: RJ45, 1m non-shielded cable w/o core

1.3 Local Support Equipment List

Support Equipment List						
No.	**Equipment**	**Brand**	**Model**	**S/N**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	E6430	---	---	RJ45, 1m non-shielded w/o core.

1.4 Test Setup Chart

Test Setup Diagram



1. RJ45, 10m non-shielded w/o core
3. RJ45, 1m non-shielded w/o core
4. RJ45, 1m non-shielded with 2 cores

1.5 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber 1 / (03CH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101499	Feb. 08, 2014	Feb. 07, 2015
Receiver	R&S	ESR3	101657	Jan. 18, 2014	Jan. 17, 2015
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-524	Jan. 08, 2014	Jan. 07, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Jan. 07, 2014	Jan. 06, 2015
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014
Preamplifier	Burgeon	BPA-530	100218	Dec. 09, 2013	Dec. 08, 2014
Preamplifier	Agilent	83017A	MY39501309	Dec. 09, 2013	Dec. 08, 2014
Preamplifier	EM	EM18G40G	060572	Jun. 20, 2013	Jun. 19, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 17, 2013	Dec. 16, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 17, 2013	Dec. 16, 2014
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 17, 2013	Dec. 16, 2014
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-004	Dec. 17, 2013	Dec. 16, 2014
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Note: Calibration Interval of instruments listed above is two 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	Feb. 17, 2014	Feb. 16, 2015
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 11, 2013	Dec. 10, 2014
Power Meter	Anritsu	ML2495A	1241002	Oct. 24, 2013	Oct. 23, 2014
Power Sensor	Anritsu	MA2411B	1207366	Oct. 24, 2013	Oct. 23, 2014
Radio Communication Analyzer	Anritsu	MT8820C	6201240341	Mar. 18, 2014	Mar. 17, 2015
Note: Calibration Interval of instruments listed above is one year.					

1.6 Test Standards

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

47 CFR FCC Part 27 Subpart M
ANSI C63.4-2003
ANSI / TIA / EIA-603-C -2004
KDB 971168 D01 Power Meas License Digital Systems v02r01
KDB 412172 D01 Determining ERP and EIRP v01

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

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	±34.134 Hz
Conducted power	±0.808 dB
Frequency error	±34.134 Hz
Conducted emission	±2.670 dB
AC conducted emission	±2.92 dB
Radiated emission < 1GHz	±3.26 dB
Radiated emission > 1GHz	±4.94 dB
Temperature	±0.6 ^{o}C

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
RF conducted	TH01-WS	23°C / 61%	Mark Liao
Radiated Emissions	03CH02-WS	23°C / 66%	Aska Huang

- FCC site registration No.: 657002
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Channel Bandwidth	Modulation	Test channel	Test Configuration
E.I.R.P Conducted Emissions Occupied Bandwidth Peak to Average Ratio	5 MHz 10 MHz 15 MHz 20 MHz	QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM	36975 / 40620 / 41565 39700 / 40620 / 41540 39725 / 40620 / 41515 39750 / 40620 / 41490	1
Radiated Emission ≤ 1GHz	5 MHz 10 MHz 15 MHz 20 MHz	QPSK QPSK QPSK QPSK	40620 40620 40620 40620	1, 2
Radiated Emission > 1GHz	5 MHz 10 MHz 15 MHz 20 MHz	QPSK QPSK QPSK QPSK	36975 / 40620 / 41565 39700 / 40620 / 41540 39725 / 40620 / 41515 39750 / 40620 / 41490	1
Band Edge	5 MHz 10 MHz 15 MHz 20 MHz	QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM	36975 / 41565 39700 / 41540 39725 / 41515 39750 / 41490	1
Frequency Stability	5 MHz 10 MHz 15 MHz 20 MHz	QPSK QPSK QPSK QPSK	40620 40620 40620 40620	1

NOTE:

a. The EUT supports diversity function: P0 & P1. After pre-test, P0 has the worst emission value, therefore the following test results came out from this

b. The EUT has two versions listed as below. After pre-test, test configuration 2 was found to be the worst case and was selected for final testing
   1) without VOIP function;
   2) with VOIP functions

3 Test Results

3.1 Output Power

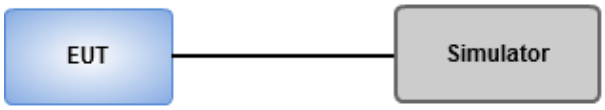
3.1.1 Limit of Output Power

All user stations are limited to 2.0 watts transmitter output power.

3.1.2 Test Procedures

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

3.1.3 Test Setup



3.1.4 Test Result of Conducted power (dBm)

Band / Channel Bandwidth			LTE Band 41 / CB: 5MHz		
Channel			39675	40620	41565
Frequency (MHz)			2498.5	2593	2687.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	23.15	22.57	22.48
	1	24	23.06	22.53	22.35
	12	6	22.68	22.07	21.91
	25	0	22.70	22.09	21.94
16QAM	1	0	22.55	21.90	21.76
	1	24	22.44	21.86	21.69
	12	6	21.97	21.00	20.82
	25	0	21.99	21.00	20.84

Band / Channel Bandwidth			LTE Band 41 / CB: 10MHz		
Channel			39700	40620	41540
Frequency (MHz)			2501	2593	2685
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	22.67	22.87	22.82
	1	49	22.73	22.77	22.66
	25	12	21.71	21.69	21.60
	50	0	21.68	21.68	21.61
16QAM	1	0	21.79	22.08	22.07
	1	49	21.88	22.00	22.12
	25	12	20.73	20.67	20.59
	50	0	20.75	20.69	20.55

Band / Channel Bandwidth			LTE Band 41 / CB: 15MHz		
Channel			39725	40620	41515
Frequency (MHz)			2503.5	2593	2682.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	22.88	23.13	22.76
	1	74	22.85	23.02	22.54
	36	18	21.17	20.98	21.40
	75	0	21.12	20.98	21.39
16QAM	1	0	21.39	21.81	22.30
	1	74	21.59	21.68	22.05
	36	18	20.12	20.03	19.74
	75	0	20.14	20.01	19.72

Band / Channel Bandwidth			LTE Band 41 / CB: 20MHz		
Channel			39750	40620	41490
Frequency (MHz)			2506	2593	2680
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	22.52	22.59	22.51
	1	99	22.43	22.44	22.39
	50	25	21.08	21.23	20.93
	100	0	20.96	21.17	20.85
16QAM	1	0	21.79	22.02	21.64
	1	99	21.68	21.90	21.30
	50	25	20.32	20.47	19.91
	100	0	20.24	20.41	19.84

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

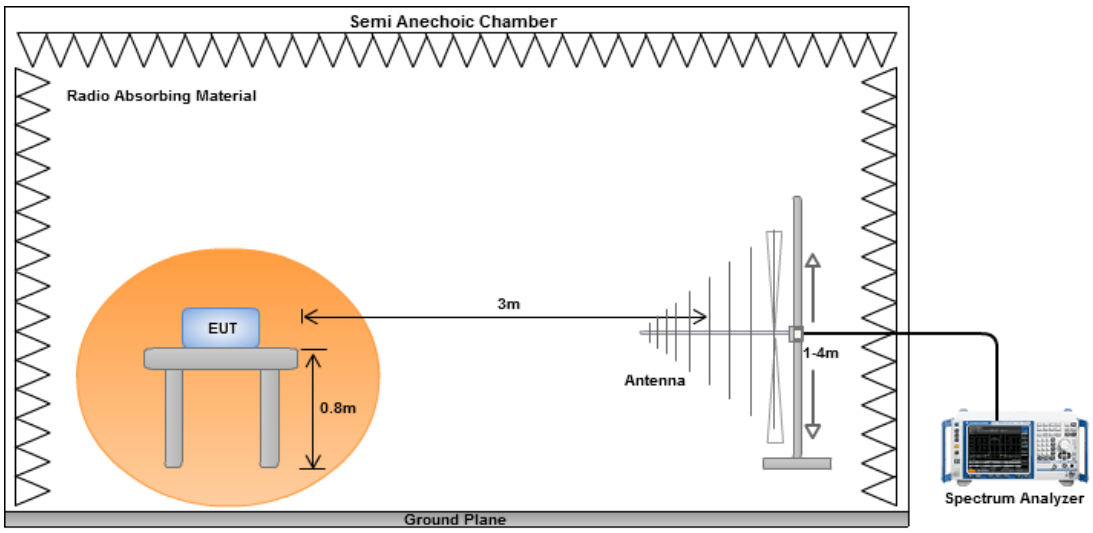
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB equal to -25dBm.

3.2.2 Test Procedures

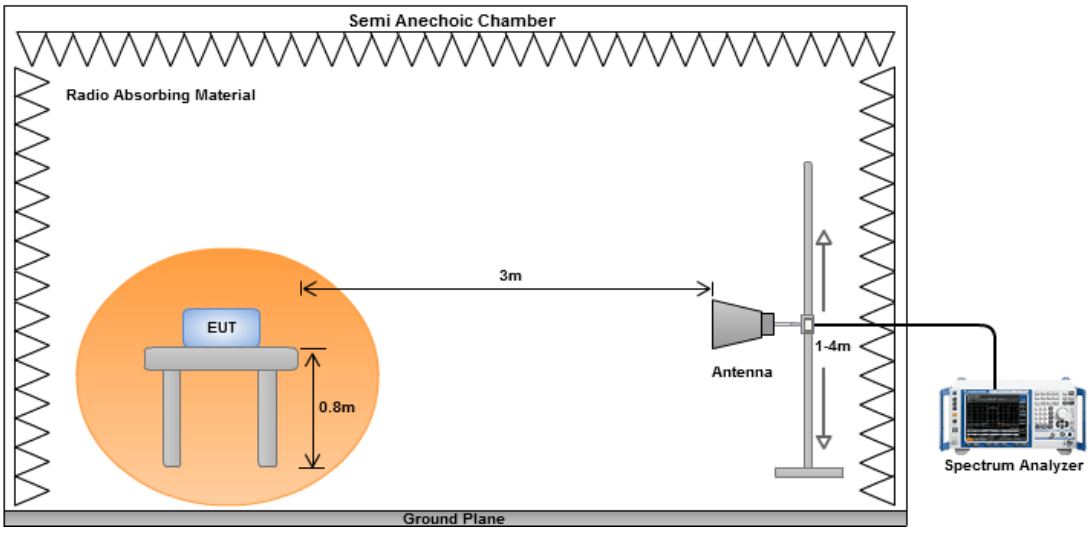
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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 and4 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 0, Channel : 39675					
Test Configuration		1					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.46	H	-43.53	-25	-18.53	-38.91	-32.28	-11.25
101.78	H	-55.56	-25	-30.56	-41.79	-55.74	0.18
228.85	H	-52.68	-25	-27.68	-42.57	-57.06	4.38
296.75	H	-52.27	-25	-27.27	-45.08	-56.48	4.21
424.79	H	-46.57	-25	-21.57	-41.08	-50.76	4.19
675.05	H	-52.87	-25	-27.87	-51.37	-56.71	3.84
47.46	V	-31.11	-25	-6.11	-23.19	-19.86	-11.25
222.06	V	-46.38	-25	-21.38	-39.28	-50.76	4.38
424.79	V	-42.09	-25	-17.09	-39.21	-46.28	4.19
524.7	V	-52.06	-25	-27.06	-50.18	-56.18	4.12
675.05	V	-54.38	-25	-29.38	-54.85	-58.22	3.84
774.96	V	-54.67	-25	-29.67	-56.56	-57.95	3.28

Mode		LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel : 39675					
Test Configuration		2					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.89	H	-44.66	-25	-19.66	-40.36	-33.47	-11.19
101.97	H	-56.03	-25	-31.03	-42.27	-56.2	0.17
228.41	H	-53.19	-25	-28.19	-43.01	-57.57	4.38
296.53	H	-52.89	-25	-27.89	-45.35	-57.1	4.21
424.88	H	-47.21	-25	-22.21	-41.33	-51.4	4.19
675.32	H	-53.64	-25	-28.64	-51.97	-57.48	3.84
47.58	V	-32.05	-25	-7.05	-25.29	-20.82	-11.23
222.37	V	-47.38	-25	-22.38	-40.32	-51.76	4.38
424.64	V	-43.32	-25	-18.32	-40.32	-47.51	4.19
524.36	V	-52.4	-25	-27.4	-50.33	-56.52	4.12
675.49	V	-55.15	-25	-30.15	-55.32	-58.99	3.84
774.18	V	-55.51	-25	-30.51	-56.97	-58.79	3.28

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

Mode		LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		1					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.46	H	-43.22	-25	-18.22	-38.6	-31.97	-11.25
101.78	H	-55.37	-25	-30.37	-41.6	-55.55	0.18
222.06	H	-45.97	-25	-20.97	-35.52	-50.35	4.38
424.79	H	-44.71	-25	-19.71	-39.22	-48.9	4.19
524.7	H	-52.15	-25	-27.15	-48.82	-56.27	4.12
675.05	H	-54.79	-25	-29.79	-53.29	-58.63	3.84
48.43	V	-30.85	-25	-5.85	-23.35	-19.73	-11.12
222.06	V	-47.60	-25	-22.6	-40.5	-51.98	4.38
424.79	V	-42.00	-25	-17.00	-39.12	-46.19	4.19
501.42	V	-49.8	-25	-24.8	-47.76	-53.9	4.10
675.05	V	-54.35	-25	-29.35	-54.82	-58.19	3.84
972.84	V	-55.99	-25	-30.99	-59.64	-58.74	2.75

Mode		LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		2					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.53	H	-44.42	-25	-19.42	-40.24	-33.18	-11.24
101.83	H	-56.15	-25	-31.15	-42.37	-56.33	0.18
222.41	H	-46.93	-25	-21.93	-36.48	-51.31	4.38
424.74	H	-45.06	-25	-20.06	-39.18	-49.25	4.19
524.28	H	-53.04	-25	-28.04	-49.57	-57.16	4.12
675.18	H	-56.28	-25	-31.28	-54.61	-60.12	3.84
48.41	V	-31.9	-25	-6.9	-25.11	-20.78	-11.12
222.14	V	-48.42	-25	-23.42	-41.36	-52.8	4.38
424.36	V	-43.2	-25	-18.2	-40.19	-47.39	4.19
501.65	V	-50.33	-25	-25.33	-48.29	-54.43	4.1
675.31	V	-55.44	-25	-30.44	-55.61	-59.28	3.84
972.49	V	-56.53	-25	-31.53	-59.88	-59.27	2.74

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

Mode		LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		1					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.46	H	-43.16	-25	-18.16	-38.54	-31.91	-11.25
101.78	H	-55.25	-25	-30.25	-41.48	-55.43	0.18
222.06	H	-46.08	-25	-21.08	-35.63	-50.46	4.38
424.79	H	-44.92	-25	-19.92	-39.43	-49.11	4.19
524.7	H	-52.08	-25	-27.08	-48.75	-56.2	4.12
675.05	H	-54.98	-25	-29.98	-53.48	-58.82	3.84
48.43	V	-31.04	-25	-6.04	-23.54	-19.92	-11.12
222.06	V	-47.57	-25	-22.57	-40.47	-51.95	4.38
424.79	V	-42.21	-25	-17.21	-39.33	-46.4	4.19
501.42	V	-49.3	-25	-24.3	-47.26	-53.4	4.1
675.05	V	-54.32	-25	-29.32	-54.79	-58.16	3.84
972.84	V	-55.74	-25	-30.74	-59.39	-58.49	2.75

Mode		LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		2					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.25	H	-44.42	-25	-19.42	-40.34	-33.14	-11.28
101.49	H	-56.29	-25	-31.29	-42.47	-56.49	0.2
222.18	H	-46.89	-25	-21.89	-36.43	-51.27	4.38
424.96	H	-46.46	-25	-21.46	-40.58	-50.65	4.19
524.42	H	-52.72	-25	-27.72	-49.25	-56.84	4.12
675.39	H	-55.77	-25	-30.77	-54.1	-59.61	3.84
48.24	V	-32.35	-25	-7.35	-25.57	-21.2	-11.15
222.38	V	-48.27	-25	-23.27	-41.21	-52.65	4.38
424.95	V	-43.11	-25	-18.11	-40.12	-47.3	4.19
501.26	V	-50.49	-25	-25.49	-48.45	-54.59	4.1
675.44	V	-55.21	-25	-30.21	-55.38	-59.05	3.84
972.71	V	-56.54	-25	-31.54	-59.89	-59.29	2.75

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

Mode		LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		1					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.46	H	-43.1	-25	-18.1	-38.48	-31.85	-11.25
101.78	H	-55.32	-25	-30.32	-41.55	-55.5	0.18
228.85	H	-52.64	-25	-27.64	-42.53	-57.02	4.38
296.75	H	-51.72	-25	-26.72	-44.53	-55.93	4.21
424.79	H	-46.84	-25	-21.84	-41.35	-51.03	4.19
675.05	H	-53.16	-25	-28.16	-51.66	-57	3.84
47.46	V	-31.02	-25	-6.02	-23.1	-19.77	-11.25
222.06	V	-45.65	-25	-20.65	-38.55	-50.03	4.38
424.79	V	-41.35	-25	-16.35	-38.47	-45.54	4.19
524.7	V	-52.41	-25	-27.41	-50.53	-56.53	4.12
675.05	V	-53.31	-25	-28.31	-53.78	-57.15	3.84
774.96	V	-53.89	-25	-28.89	-55.78	-57.17	3.28

Mode		LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel : 40620					
Test Configuration		2					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
47.94	H	-43.83	-25	-18.83	-39.51	-32.64	-11.19
101.49	H	-56.5	-25	-31.5	-42.68	-56.7	0.2
228.43	H	-53.11	-25	-28.11	-42.93	-57.49	4.38
296.56	H	-52.62	-25	-27.62	-45.08	-56.83	4.21
424.32	H	-47.47	-25	-22.47	-41.59	-51.66	4.19
675.25	H	-53.61	-25	-28.61	-51.94	-57.45	3.84
47.31	V	-31.88	-25	-6.88	-25.13	-20.61	-11.27
222.19	V	-46.34	-25	-21.34	-39.28	-50.72	4.38
424.67	V	-42.61	-25	-17.61	-39.61	-46.8	4.19
524.93	V	-53.55	-25	-28.55	-51.48	-57.67	4.12
675.29	V	-53.76	-25	-28.76	-53.93	-57.6	3.84
774.84	V	-54.39	-25	-29.39	-55.86	-57.67	3.28

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 0, Channel : 39675						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4992.7	H	-46.45	-25	-21.45	-63.54	-52.3	5.85
7488.9	H	-33.46	-25	-8.46	-54.56	-36.4	2.94
9984.8	H	-38.87	-25	-13.87	-64.21	-40.02	1.15
4992.7	V	-48	-25	-23	-63.77	-53.85	5.85
7488.9	V	-35.23	-25	-10.23	-54.53	-38.17	2.94
9984.8	V	-40.59	-25	-15.59	-63.54	-41.74	1.15

Mode	LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel : 40620						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5181.7	H	-44.7	-25	-19.7	-63.52	-50.54	5.84
7772.4	H	-33.94	-25	-8.94	-54.98	-36.29	2.35
10362.9	H	-38.89	-25	-13.89	-64.22	-39.6	0.71
5181.7	V	-44.3	-25	-19.3	-61.48	-50.14	5.84
7772.4	V	-35.32	-25	-10.32	-54.79	-37.67	2.35
10362.9	V	-41.44	-25	-16.44	-64.54	-42.15	0.71

Mode	LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel : 41565						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5370.7	H	-44.8	-25	-19.8	-63.49	-50.7	5.9
8056	H	-33.64	-25	-8.64	-55.37	-36.09	2.45
10741.2	H	-39.03	-25	-14.03	-64.28	-39.36	0.33
5370.7	V	-44.84	-25	-19.84	-61.53	-50.74	5.9
8056	V	-35.48	-25	-10.48	-55.21	-37.93	2.45
10741.2	V	-41.23	-25	-16.23	-64.25	-41.56	0.33

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

Mode	LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel : 39700						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4993.2	H	-46.29	-25	-21.29	-63.39	-52.14	5.85
7489.7	H	-33.59	-25	-8.59	-54.67	-36.53	2.94
9986	H	-39.07	-25	-14.07	-64.4	-40.22	1.15
4993.2	V	-46.36	-25	-21.36	-62.13	-52.21	5.85
7489.7	V	-34.75	-25	-9.75	-54.03	-37.69	2.94
9986	V	-40.84	-25	-15.84	-63.79	-41.99	1.15

Mode	LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel : 40620						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5177.2	H	-44.98	-25	-19.98	-63.76	-50.82	5.84
7765.7	H	-34.33	-25	-9.33	-55.36	-36.7	2.37
10354.2	H	-38.52	-25	-13.52	-63.85	-39.24	0.72
5177.2	V	-45.22	-25	-20.22	-62.37	-51.06	5.84
7765.7	V	-34.61	-25	-9.61	-54.07	-36.98	2.37
10354.2	V	-40.84	-25	-15.84	-63.93	-41.56	0.72

Mode	LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel : 41540						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5361.2	H	-44.84	-25	-19.84	-63.55	-50.74	5.9
8041.8	H	-34.06	-25	-9.06	-55.8	-36.47	2.41
10722.4	H	-38.08	-25	-13.08	-63.34	-38.42	0.34
5361.2	V	-44.82	-25	-19.82	-61.55	-50.72	5.9
8041.8	V	-33.86	-25	-8.86	-53.57	-36.27	2.41
10722.4	V	-40.6	-25	-15.6	-63.63	-40.94	0.34

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

Mode	LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel : 39725						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4993.6	H	-46.48	-25	-21.48	-63.58	-52.33	5.85
7490.5	H	-33.4	-25	-8.4	-54.48	-36.34	2.94
9987.6	H	-38.92	-25	-13.92	-64.24	-40.07	1.15
4993.6	V	-47.21	-25	-22.21	-62.99	-53.06	5.85
7490.5	V	-34.69	-25	-9.69	-53.97	-37.63	2.94
9987.6	V	-40.62	-25	-15.62	-63.55	-41.77	1.15

Mode	LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel : 40620						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5172.6	H	-44.84	-25	-19.84	-63.58	-50.68	5.84
7759	H	-34.48	-25	-9.48	-55.48	-36.88	2.4
10345.6	H	-38.43	-25	-13.43	-63.75	-39.16	0.73
5172.6	V	-45.42	-25	-20.42	-62.53	-51.26	5.84
7759	V	-34.71	-25	-9.71	-54.14	-37.11	2.4
10345.6	V	-40.69	-25	-15.69	-63.77	-41.42	0.73

Mode	LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel : 41515						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5351.6	H	-44.8	-25	-19.8	-63.53	-50.69	5.89
8027.5	H	-33.48	-25	-8.48	-55.25	-35.85	2.37
10703.6	H	-38.2	-25	-13.2	-63.46	-38.56	0.36
5351.6	V	-44.79	-25	-19.79	-61.55	-50.68	5.89
8027.5	V	-33.77	-25	-8.77	-63.47	-36.14	2.37
10703.6	V	-40.84	-25	-15.84	-63.88	-41.2	0.36

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

Mode	LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel : 39750						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4994.2	H	-46.34	-25	-21.34	-63.44	-52.19	5.85
7491.3	H	-33.5	-25	-8.5	-54.58	-36.44	2.94
9988.4	H	-39.03	-25	-14.03	-64.35	-40.18	1.15
4994.2	V	-47.73	-25	-22.73	-63.51	-53.58	5.85
7491.3	V	-34.96	-25	-9.96	-54.24	-37.9	2.94
9988.4	V	-40.55	-25	-15.55	-63.47	-41.7	1.15

Mode	LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel : 40620						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5168.1	H	-44.8	-25	-19.8	-63.5	-50.64	5.84
7752.3	H	-33.8	-25	-8.8	-54.79	-36.23	2.43
10336.8	H	-38.7	-25	-13.7	-64.02	-39.44	0.74
5168.1	V	-44.36	-25	-19.36	-61.44	-50.2	5.84
7752.3	V	-34.99	-25	-9.99	-54.41	-37.42	2.43
10336.8	V	-41.19	-25	-16.19	-64.26	-41.93	0.74

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 Vaule (dBm)	Correction Factor (dB)
5342.1	H	-44.75	-25	-19.75	-63.49	-50.64	5.89
8013.3	H	-33.84	-25	-8.84	-55.62	-36.18	2.34
10684.8	H	-39.1	-25	-14.1	-64.38	-39.48	0.38
5342.1	V	-44.78	-25	-19.78	-61.57	-50.67	5.89
8013.3	V	-35.38	-25	-10.38	-55.06	-37.72	2.34
10684.8	V	-41.31	-25	-16.31	-64.38	-41.69	0.38

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

3.3 Conducted Emissions

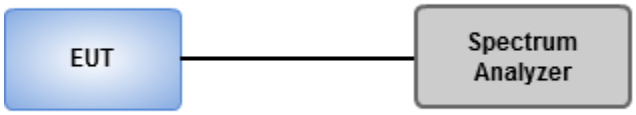
3.3.1 Limit of Conducted Emissions

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

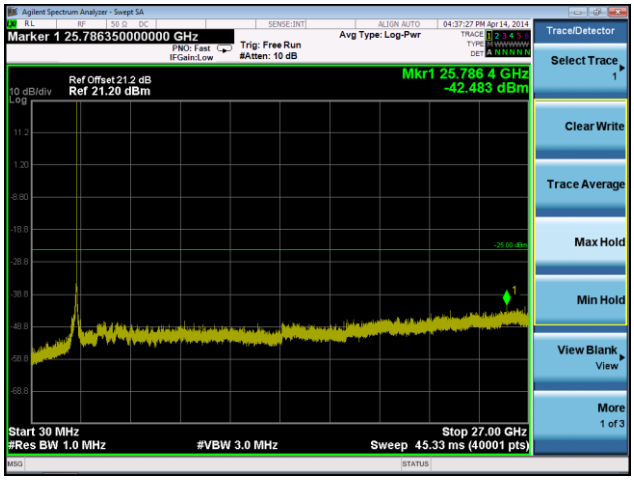
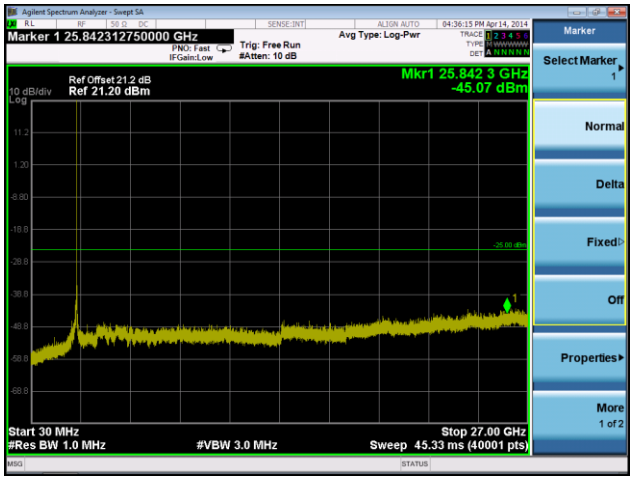
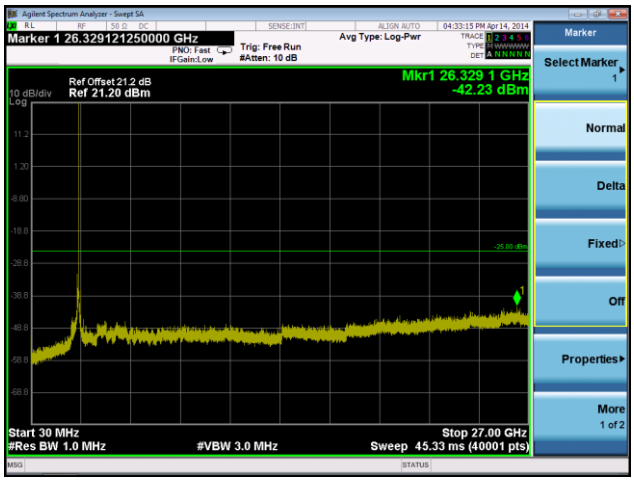
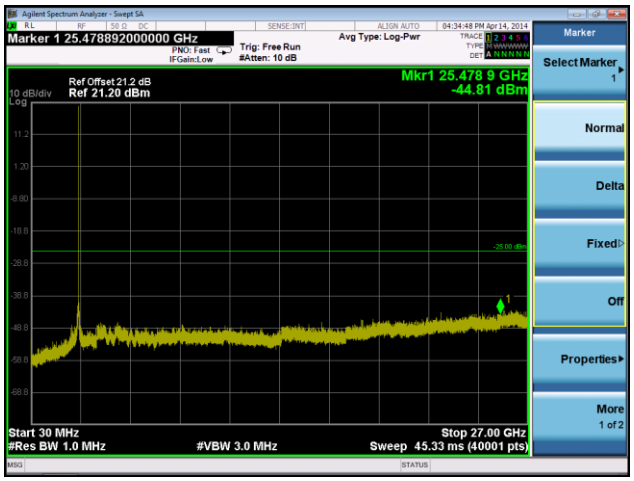
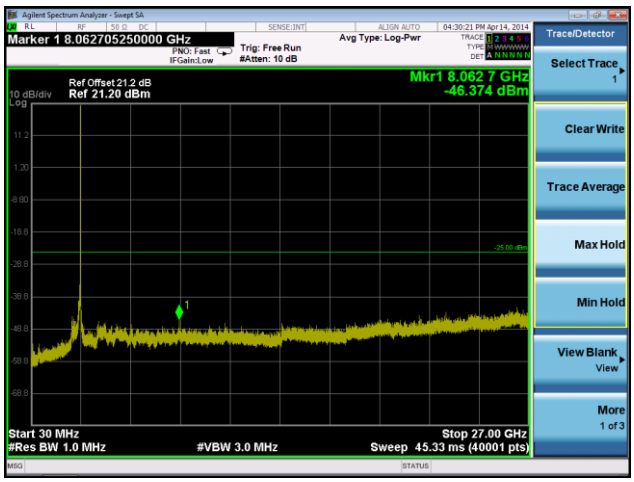
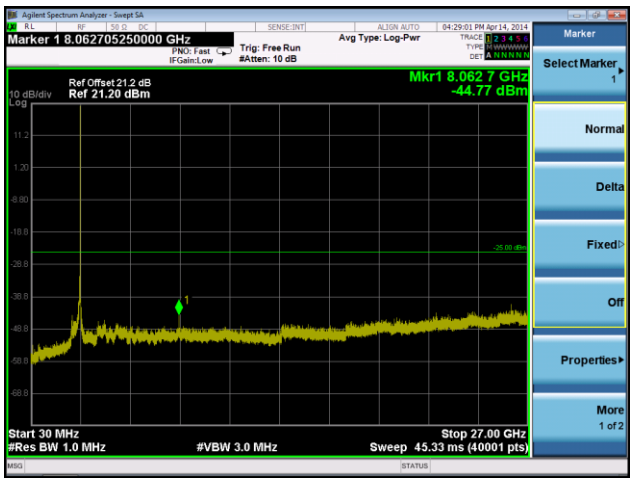
3.3.2 Test Procedures

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.

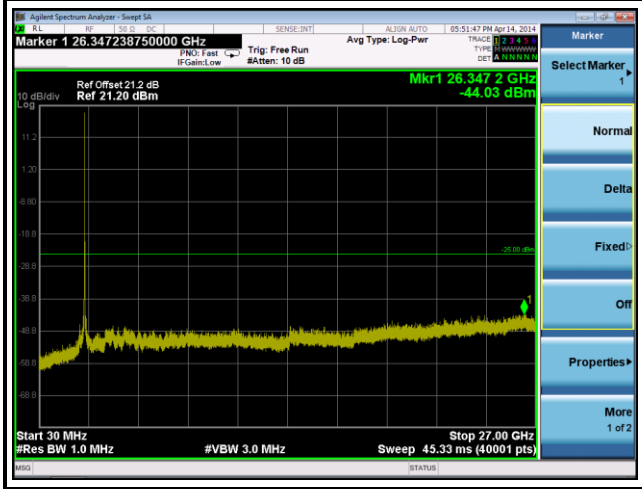
3.3.3 Test Setup

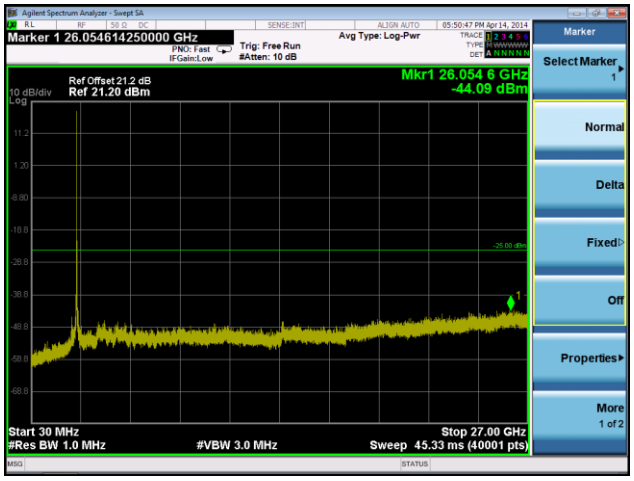


3.3.4 Test Result of Conducted Emissions

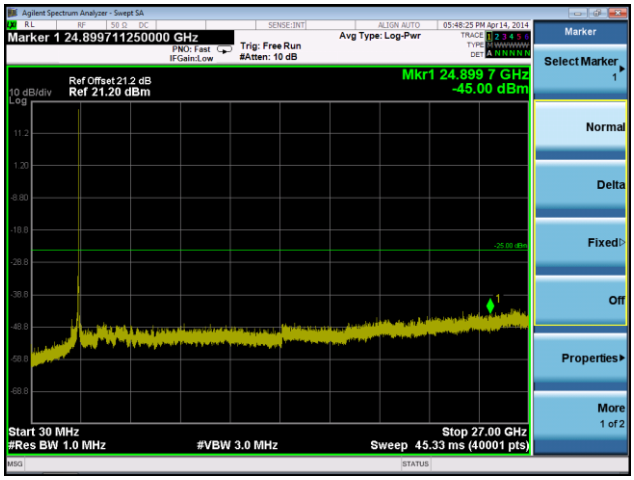
Mode	LTE Band 41, CB: 5MHz, QPSK	Mode	LTE Band 41, CB: 5MHz, 16QAM
Channel	39675	Channel	39675
			
Channel	40620	Channel	40620
			
Channel	41565	Channel	41565
			

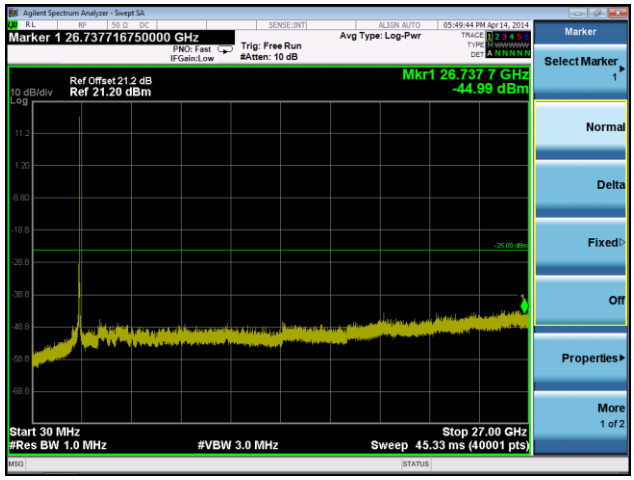
Mode	LTE Band 41, CB: 10MHz, QPSK	Mode	LTE Band 41, CB: 10MHz, 16QAM
Channel	39700	Channel	39700



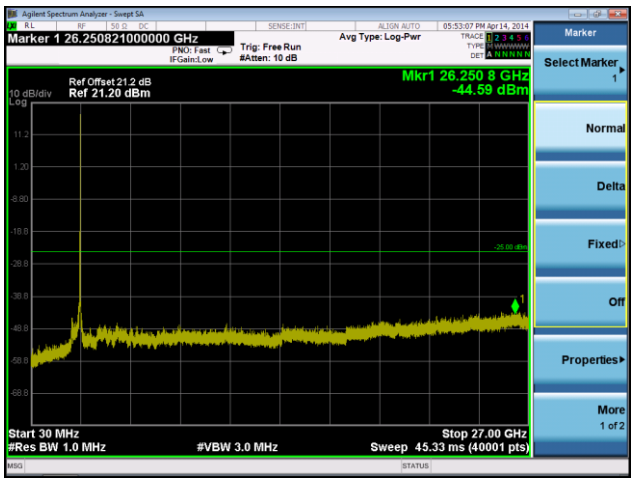


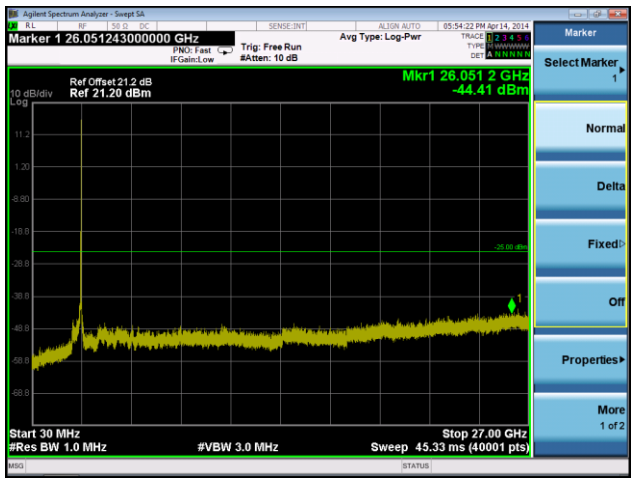
Channel	40620	Channel	40620

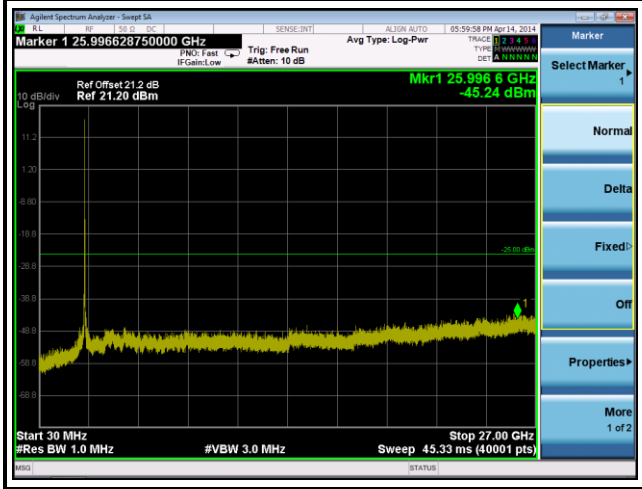
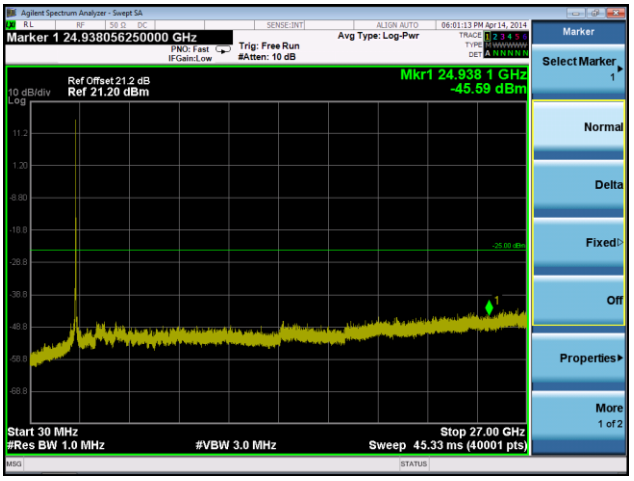
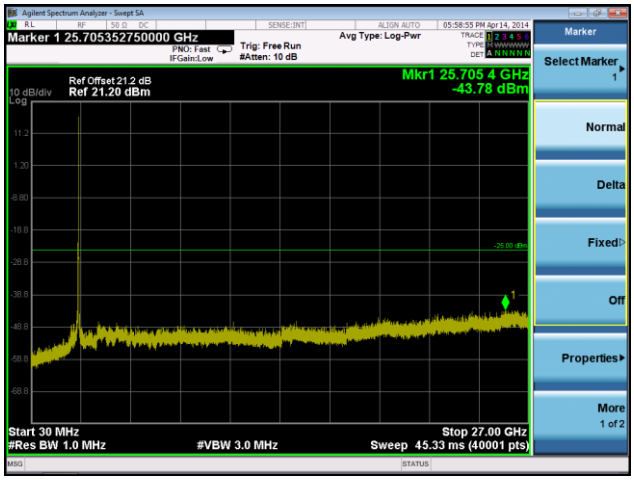
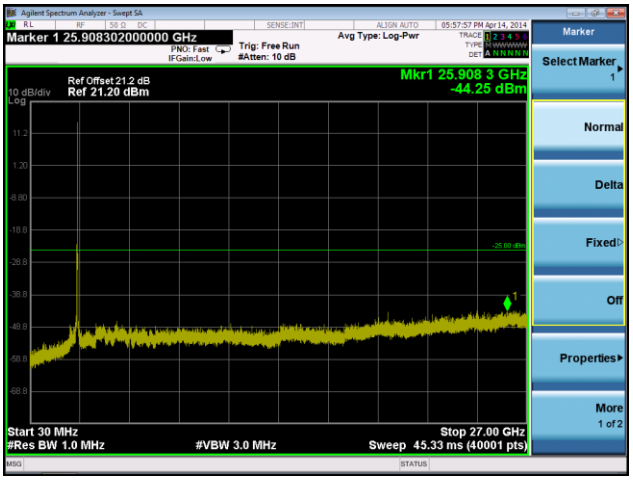
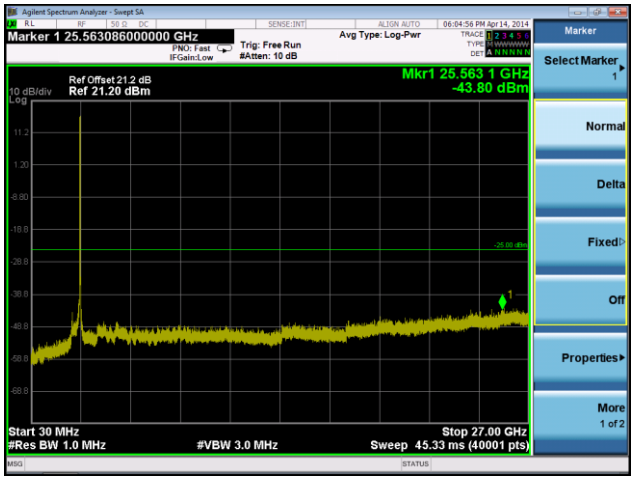
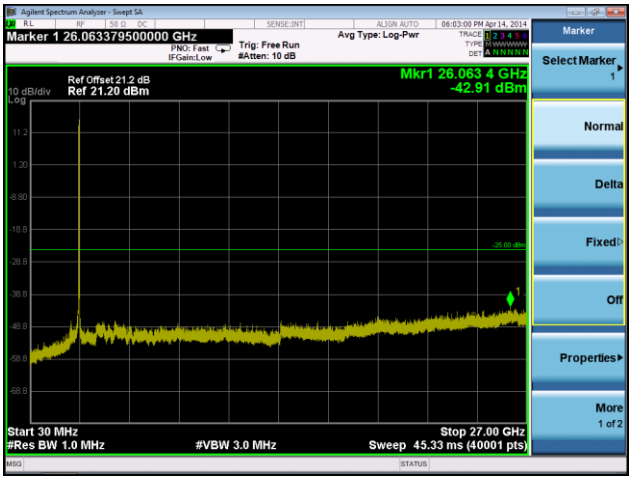




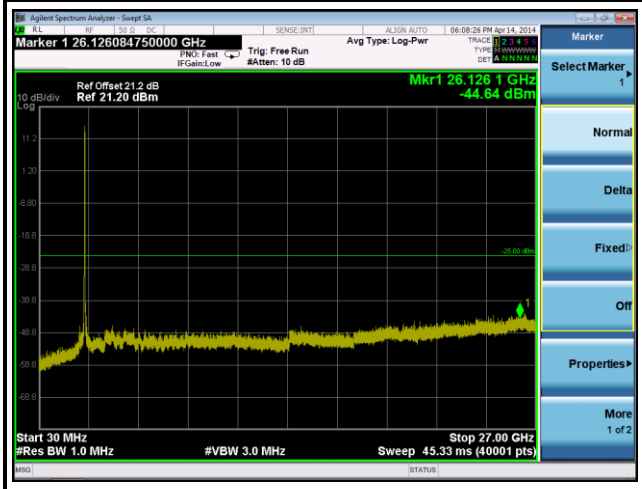
Channel	41540	Channel	41540

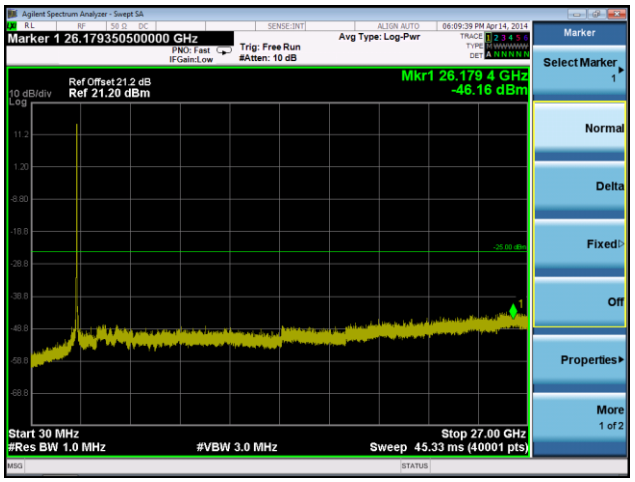




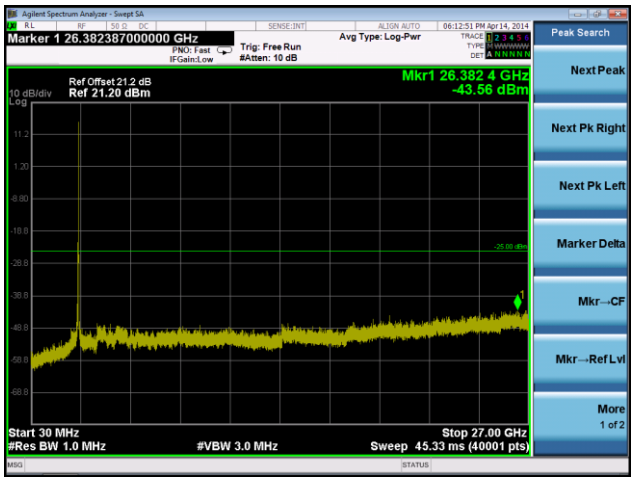
Mode	LTE Band 41, CB: 15MHz, QPSK	Mode	LTE Band 41, CB: 15MHz, 16QAM
Channel	39725	Channel	39725
			
Channel	40620	Channel	40620
			
Channel	41515	Channel	41515
			

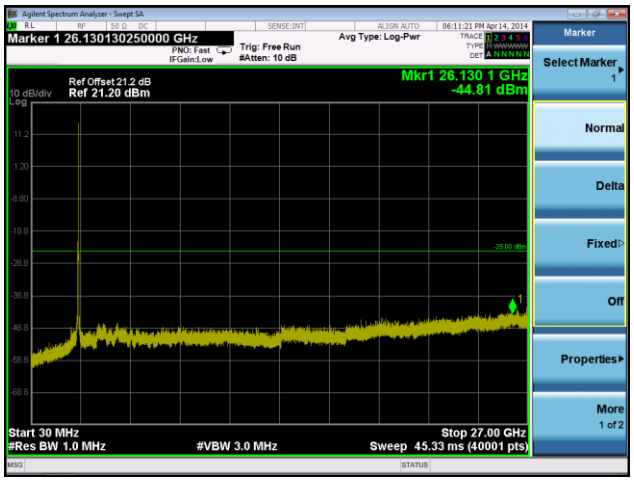
Mode	LTE Band 41, CB: 20MHz, QPSK	Mode	LTE Band 41, CB: 20MHz, 16QAM
Channel	39750	Channel	39750



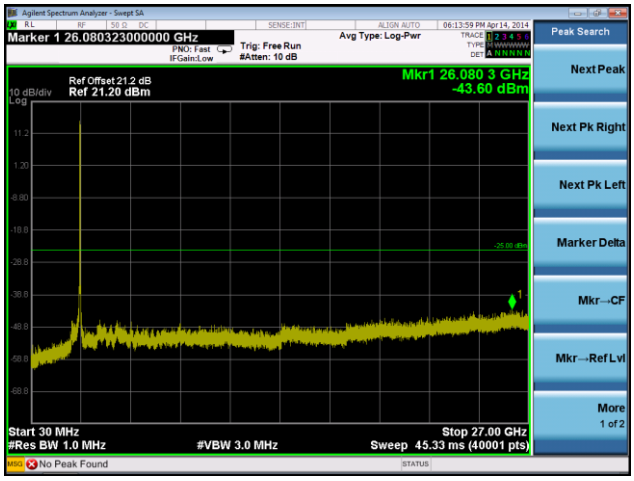


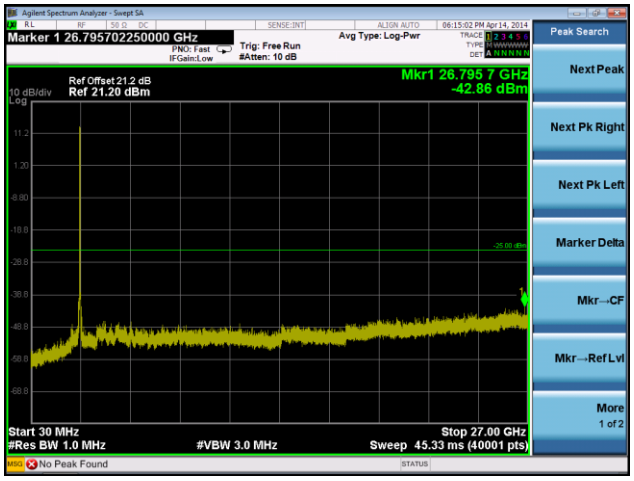
Channel	40620	Channel	40620





Channel	41490	Channel	41490





3.4 Channel Edge

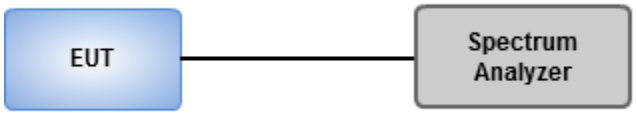
3.4.1 Limit of Channel Edge

For mobile digital stations, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and 55 + 10 log (P) dB at 5.5 megahertz from the channel edges

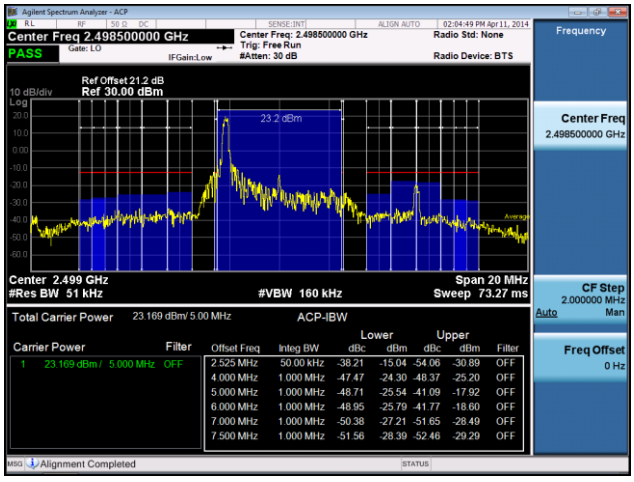
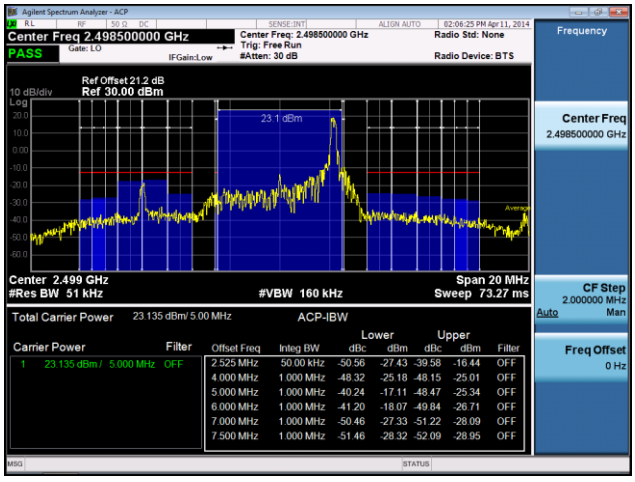
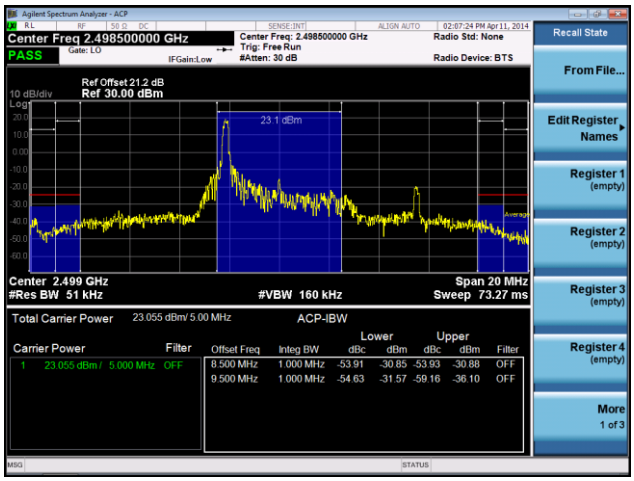
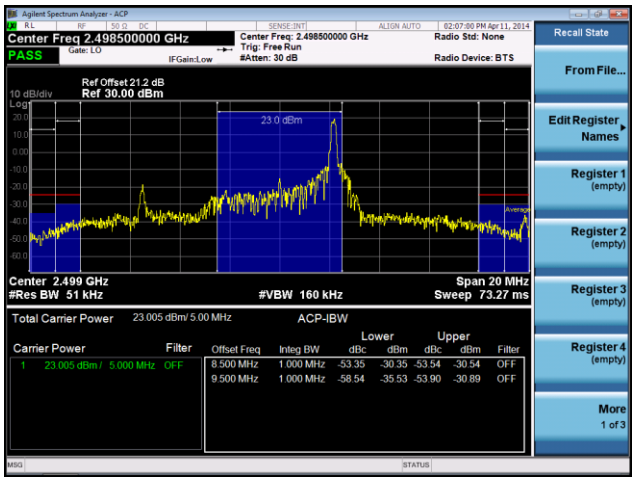
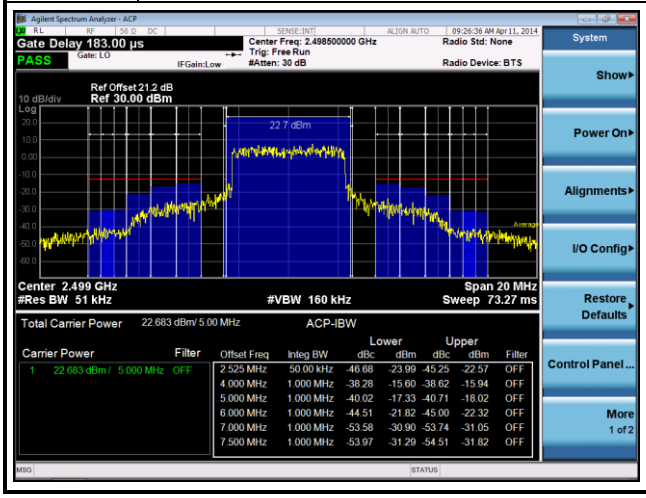
3.4.2 Test Procedures

1. Lowest, middle and highest operating channels are tested for this item.
2. Set RBW = 1% 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.

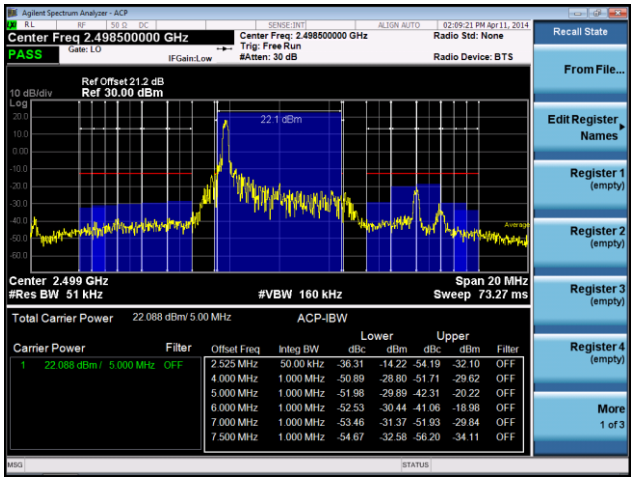
3.4.3 Test Setup



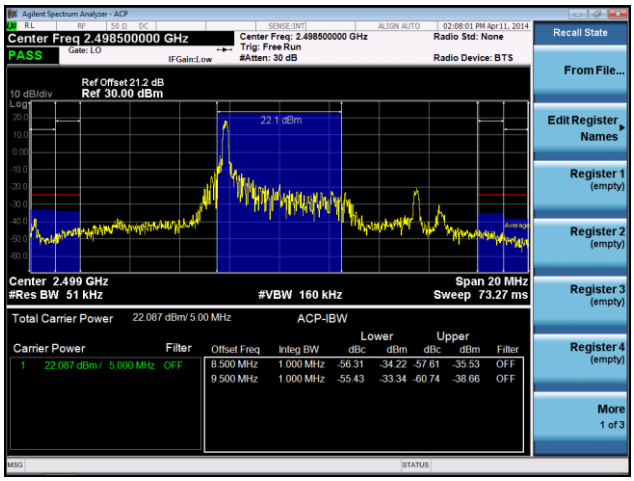
3.4.4 Test Result of Band Edge

Mode	LTE Band 41, CB: 5MHz, QPSK		
Channel	39675, 1RB at the lower edge	Channel	39675, 1RB at the upper edge
			
Channel	39675, 1RB at the lower edge	Channel	39675, 1RB at the upper edge
			
Channel	39675, 100%RB	Channel	39675, 100%RB
			

Mode	LTE Band 41, CB: 5MHz, 16QAM		
Channel	39675, 1RB at the lower edge	Channel	39675, 1RB at the upper edge



Channel	39675, 1RB at the lower edge	Channel	39675, 1RB at the upper edge



Channel	39675, 100%RB	Channel	39675, 100%RB