

FCC Test Report

FCC ID : MXF-WLTMS11041
Equipment : LTE Cat 6 Single-Mode Outdoor CPE
Model No. : WLTMS-110_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. 07, 2016
Tested Date : Dec. 22, 2016 ~ Jan. 10, 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
FW6D0703	Rev. 01	Initial issue	Mar. 03, 2017

Summary of Test Results

FCC Rules	Description of Test	Measured	Result
2.1046 / 27.50(h)(2)	Output power	Conducted Power [dBm]: 23.35	Pass
2.1053 / 27.53(m)(2)(6)	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(m)(2)(6)	Conducted Emissions	Meet the requirement of limit	Pass
2.1051 / 27.53(m)(2)(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: WLTM5-110_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 Conducted Power (W)	Emission Designator
LTE Band 41, CB: 5MHz	QPSK	0.169	4M55G7D
LTE Band 41, CB: 5MHz	16QAM	0.187	4M51W7D
LTE Band 41, CB: 10MHz	QPSK	0.165	8M98G7D
LTE Band 41, CB: 10MHz	16QAM	0.181	8M99W7D
LTE Band 41, CB: 15MHz	QPSK	0.163	13M4G7D
LTE Band 41, CB: 15MHz	16QAM	0.178	13M5W7D
LTE Band 41, CB: 20MHz	QPSK	0.196	18M0G7D
LTE Band 41, CB: 20MHz	16QAM	0.216	18M0W7D

1.1.3 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector	Remark
1	Patch	14.61	UFL	---

1.1.4 EUT Operational Condition

Power Supply Type	56Vdc from POE		
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 (55°C)	<input checked="" type="checkbox"/> Tmin (-40°C)

1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	POE 1	Brand: SHENZHEN FRECOM Model: PGOC24D01-560027 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.7A O/P: 56Vdc, 0.27A
2	POE 2	Brand: GOSPELL Model: G0720-560-027 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.75A O/P: 56Vdc, 0.27A
3	Power Line	0.72m non-shielded without core
4	Core for RJ45	Brand: King core Model: KCF-130

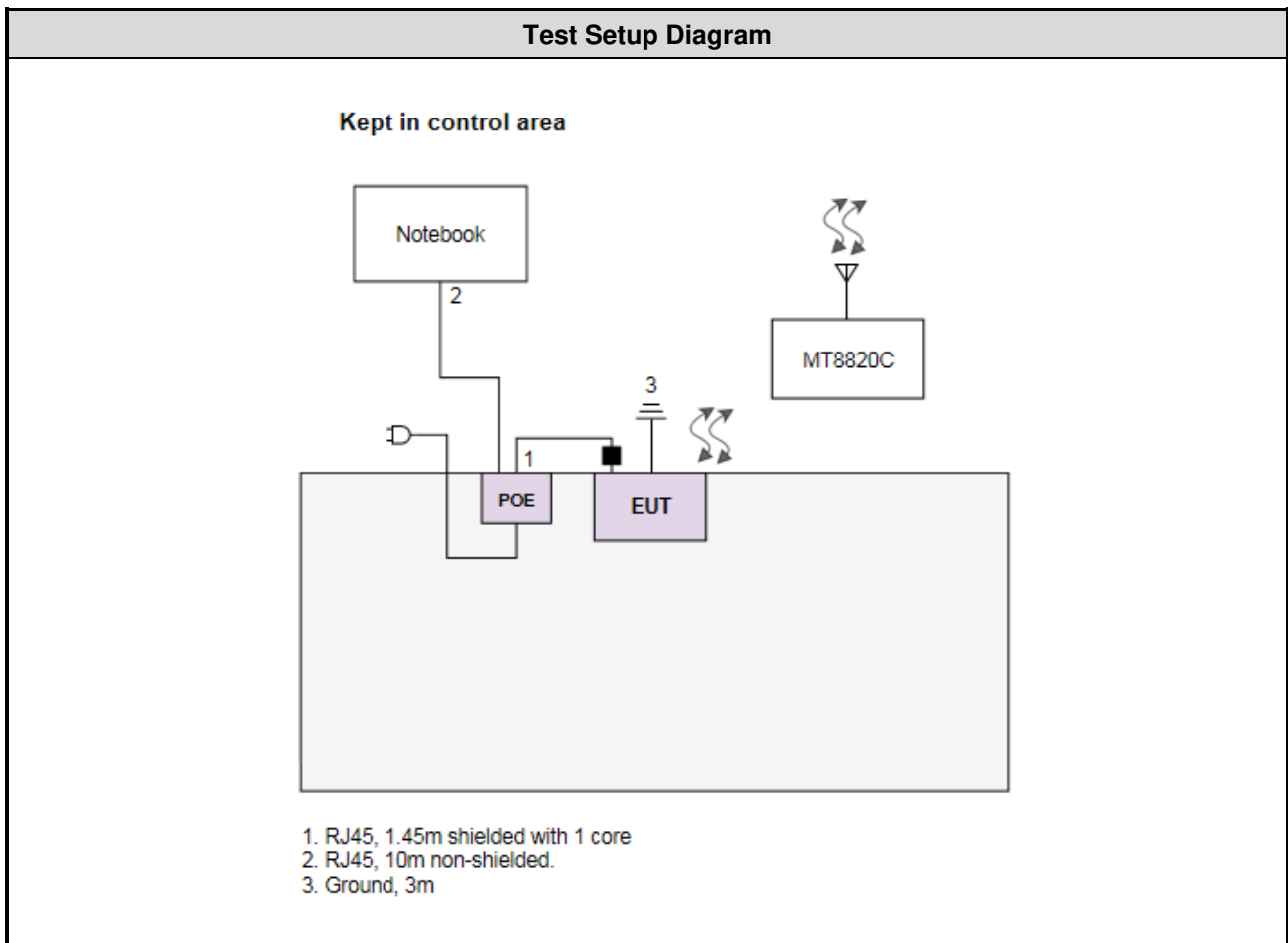
1.1.6 Operating Channel List

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

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6430	9ZFB4X1	DoC	RJ45, 10m non-shielded.

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
Radio Communication Analyzer	Anritsu	MT8820C	6201240341	Mar. 28, 2016	Mar. 27, 2017
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 1095	Sep. 21, 2016	Sep. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 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
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	6201240341	Mar. 28, 2016	Mar. 27, 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	23-24°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	QPSK	2593.0
	10 MHz	QPSK	2593.0
	15 MHz	QPSK	2682.5
	20 MHz	QPSK	2680.0
Radiated Emission > 1GHz	5 MHz	QPSK	2498.5 / 2593.0 / 2687.5
	10 MHz	QPSK	2501.0 / 2593.0 / 2685.0
	15 MHz	QPSK	2503.5 / 2593.0 / 2682.5
	20 MHz	QPSK	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	QPSK	2593.0
	10 MHz	QPSK	2593.0
	15 MHz	QPSK	2593.0
	20 MHz	QPSK	2593.0

NOTE:

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

3 Test Results

3.1 Output Power

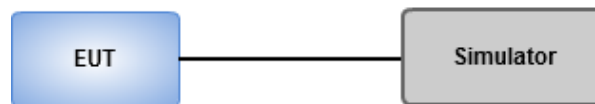
3.1.1 Limit of Output Power

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 / middle / 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)

Channel Bandwidth: 5MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39675	2498.5	1	0	21.89	0.155	2	14.61	36.50	4.467
		1	12	22.00	0.158	2	14.61	36.61	4.581
		1	24	21.61	0.145	2	14.61	36.22	4.188
		12	0	21.89	0.155	2	14.61	36.50	4.467
		12	6	21.92	0.156	2	14.61	36.53	4.498
		12	11	21.80	0.151	2	14.61	36.41	4.375
		25	0	21.85	0.153	2	14.61	36.46	4.426
40620	2593	1	0	21.82	0.152	2	14.61	36.43	4.395
		1	12	22.29	0.169	2	14.61	36.90	4.898
		1	24	21.99	0.158	2	14.61	36.60	4.571
		12	0	22.02	0.159	2	14.61	36.63	4.603
		12	6	22.17	0.165	2	14.61	36.78	4.764
		12	11	22.19	0.166	2	14.61	36.80	4.786
		25	0	22.17	0.165	2	14.61	36.78	4.764
41565	2687.5	1	0	21.88	0.154	2	14.61	36.49	4.457
		1	12	22.02	0.159	2	14.61	36.63	4.603
		1	24	21.51	0.142	2	14.61	36.12	4.093
		12	0	21.94	0.156	2	14.61	36.55	4.519
		12	6	21.94	0.156	2	14.61	36.55	4.519
		12	11	21.81	0.152	2	14.61	36.42	4.385
		25	0	21.89	0.155	2	14.61	36.50	4.467

Channel Bandwidth: 5MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39675	2498.5	1	0	22.22	0.167	2	14.61	36.83	4.819
		1	12	22.32	0.171	2	14.61	36.93	4.932
		1	24	21.94	0.156	2	14.61	36.55	4.519
		12	0	21.98	0.158	2	14.61	36.59	4.560
		12	6	21.99	0.158	2	14.61	36.60	4.571
		12	11	21.86	0.153	2	14.61	36.47	4.436
		25	0	21.82	0.152	2	14.61	36.43	4.395
40620	2593	1	0	22.28	0.169	2	14.61	36.89	4.887
		1	12	22.73	0.187	2	14.61	37.34	5.420
		1	24	22.43	0.175	2	14.61	37.04	5.058
		12	0	22.12	0.163	2	14.61	36.73	4.710
		12	6	22.27	0.169	2	14.61	36.88	4.875
		12	11	22.29	0.169	2	14.61	36.90	4.898
		25	0	22.25	0.168	2	14.61	36.86	4.853
41565	2687.5	1	0	22.38	0.173	2	14.61	36.99	5.000
		1	12	22.51	0.178	2	14.61	37.12	5.152
		1	24	22.00	0.158	2	14.61	36.61	4.581
		12	0	22.10	0.162	2	14.61	36.71	4.688
		12	6	22.10	0.162	2	14.61	36.71	4.688
		12	11	21.98	0.158	2	14.61	36.59	4.560
		25	0	21.99	0.158	2	14.61	36.60	4.571

Channel Bandwidth: 10MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39700	2501	1	0	21.55	0.143	2	14.61	36.16	4.130
		1	24	21.87	0.154	2	14.61	36.48	4.446
		1	49	21.28	0.134	2	14.61	35.89	3.882
		25	0	21.70	0.148	2	14.61	36.31	4.276
		25	12	21.75	0.150	2	14.61	36.36	4.325
		25	24	21.56	0.143	2	14.61	36.17	4.140
		50	0	21.60	0.145	2	14.61	36.21	4.178
40620	2593	1	0	21.35	0.136	2	14.61	35.96	3.945
		1	24	22.17	0.165	2	14.61	36.78	4.764
		1	49	21.60	0.145	2	14.61	36.21	4.178
		25	0	21.72	0.149	2	14.61	36.33	4.295
		25	12	22.04	0.160	2	14.61	36.65	4.624
		25	24	21.94	0.156	2	14.61	36.55	4.519
		50	0	21.87	0.154	2	14.61	36.48	4.446
41540	2685	1	0	21.77	0.150	2	14.61	36.38	4.345
		1	24	22.18	0.165	2	14.61	36.79	4.775
		1	49	21.11	0.129	2	14.61	35.72	3.733
		25	0	21.87	0.154	2	14.61	36.48	4.446
		25	12	21.93	0.156	2	14.61	36.54	4.508
		25	24	21.66	0.147	2	14.61	36.27	4.236
		50	0	21.71	0.148	2	14.61	36.32	4.285

Channel Bandwidth: 10MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39700	2501	1	0	21.88	0.154	2	14.61	36.49	4.457
		1	24	22.20	0.166	2	14.61	36.81	4.797
		1	49	21.62	0.145	2	14.61	36.23	4.198
		25	0	21.64	0.146	2	14.61	36.25	4.217
		25	12	21.72	0.149	2	14.61	36.33	4.295
		25	24	21.51	0.142	2	14.61	36.12	4.093
		50	0	21.50	0.141	2	14.61	36.11	4.083
40620	2593	1	0	21.63	0.146	2	14.61	36.24	4.207
		1	24	22.58	0.181	2	14.61	37.19	5.236
		1	49	21.85	0.153	2	14.61	36.46	4.426
		25	0	21.76	0.150	2	14.61	36.37	4.335
		25	12	22.08	0.161	2	14.61	36.69	4.667
		25	24	21.96	0.157	2	14.61	36.57	4.539
		50	0	21.86	0.153	2	14.61	36.47	4.436
41540	2685	1	0	22.05	0.160	2	14.61	36.66	4.634
		1	24	22.47	0.177	2	14.61	37.08	5.105
		1	49	21.43	0.139	2	14.61	36.04	4.018
		25	0	21.93	0.156	2	14.61	36.54	4.508
		25	12	22.00	0.158	2	14.61	36.61	4.581
		25	24	21.72	0.149	2	14.61	36.33	4.295
		50	0	21.74	0.149	2	14.61	36.35	4.315

Channel Bandwidth: 15MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39725	2503.5	1	0	21.04	0.127	2	14.61	35.65	3.673
		1	37	21.73	0.149	2	14.61	36.34	4.305
		1	74	21.01	0.126	2	14.61	35.62	3.648
		36	0	21.33	0.136	2	14.61	35.94	3.926
		36	18	21.59	0.144	2	14.61	36.20	4.169
		36	37	21.40	0.138	2	14.61	36.01	3.990
		75	0	21.37	0.137	2	14.61	35.98	3.963
40620	2593	1	0	21.01	0.126	2	14.61	35.62	3.648
		1	37	22.12	0.163	2	14.61	36.73	4.710
		1	74	21.02	0.126	2	14.61	35.63	3.656
		36	0	21.41	0.138	2	14.61	36.02	3.999
		36	18	21.87	0.154	2	14.61	36.48	4.446
		36	37	21.67	0.147	2	14.61	36.28	4.246
		75	0	21.65	0.146	2	14.61	36.26	4.227
41515	2682.5	1	0	21.25	0.133	2	14.61	35.86	3.855
		1	37	22.11	0.163	2	14.61	36.72	4.699
		1	74	20.55	0.114	2	14.61	35.16	3.281
		36	0	21.78	0.151	2	14.61	36.39	4.355
		36	18	21.99	0.158	2	14.61	36.60	4.571
		36	37	21.51	0.142	2	14.61	36.12	4.093
		75	0	21.69	0.148	2	14.61	36.30	4.266

Channel Bandwidth: 15MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39725	2503.5	1	0	21.29	0.135	2	14.61	35.90	3.890
		1	37	22.03	0.160	2	14.61	36.64	4.613
		1	74	21.22	0.132	2	14.61	35.83	3.828
		36	0	21.28	0.134	2	14.61	35.89	3.882
		36	18	21.53	0.142	2	14.61	36.14	4.111
		36	37	21.34	0.136	2	14.61	35.95	3.936
		75	0	21.28	0.134	2	14.61	35.89	3.882
40620	2593	1	0	21.10	0.129	2	14.61	35.71	3.724
		1	37	22.50	0.178	2	14.61	37.11	5.140
		1	74	21.42	0.139	2	14.61	36.03	4.009
		36	0	21.40	0.138	2	14.61	36.01	3.990
		36	18	21.87	0.154	2	14.61	36.48	4.446
		36	37	21.64	0.146	2	14.61	36.25	4.217
		75	0	21.64	0.146	2	14.61	36.25	4.217
41515	2682.5	1	0	21.68	0.147	2	14.61	36.29	4.256
		1	37	22.51	0.178	2	14.61	37.12	5.152
		1	74	21.01	0.126	2	14.61	35.62	3.648
		36	0	21.80	0.151	2	14.61	36.41	4.375
		36	18	21.99	0.158	2	14.61	36.60	4.571
		36	37	21.52	0.142	2	14.61	36.13	4.102
		75	0	21.72	0.149	2	14.61	36.33	4.295

Channel Bandwidth: 20MHz- QPSK

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39750	2506	1	0	22.41	0.174	2	14.61	37.02	5.035
		1	49	21.83	0.152	2	14.61	36.44	4.406
		1	99	22.67	0.185	2	14.61	37.28	5.346
		50	0	21.96	0.157	2	14.61	36.57	4.539
		50	24	21.88	0.154	2	14.61	36.49	4.457
		50	49	22.14	0.164	2	14.61	36.75	4.732
		100	0	22.06	0.161	2	14.61	36.67	4.645
40620	2593	1	0	22.11	0.163	2	14.61	36.72	4.699
		1	49	22.02	0.159	2	14.61	36.63	4.603
		1	99	22.53	0.179	2	14.61	37.14	5.176
		50	0	22.01	0.159	2	14.61	36.62	4.592
		50	24	22.09	0.162	2	14.61	36.70	4.677
		50	49	22.25	0.168	2	14.61	36.86	4.853
		100	0	22.28	0.169	2	14.61	36.89	4.887
41490	2680	1	0	22.92	0.196	2	14.61	37.53	5.662
		1	49	22.24	0.167	2	14.61	36.85	4.842
		1	99	22.13	0.163	2	14.61	36.74	4.721
		50	0	22.57	0.181	2	14.61	37.18	5.224
		50	24	22.30	0.170	2	14.61	36.91	4.909
		50	49	22.16	0.164	2	14.61	36.77	4.753
		100	0	22.55	0.180	2	14.61	37.16	5.200

Channel Bandwidth: 20MHz- 16QAM

Channel	Channel Freq. (MHz)	RB	RB Offset	Conducted Average Power (dBm)	Conducted Average Power (W)	Conducted Limit (W)	Ant. Gain (dB)	E.I.R.P Power (dBm)	E.I.R.P Power (W)
39750	2506	1	0	22.51	0.178	2	14.61	37.12	5.152
		1	49	21.94	0.156	2	14.61	36.55	4.519
		1	99	22.77	0.189	2	14.61	37.38	5.470
		50	0	21.90	0.155	2	14.61	36.51	4.477
		50	24	21.84	0.153	2	14.61	36.45	4.416
		50	49	22.07	0.161	2	14.61	36.68	4.656
		100	0	22.00	0.158	2	14.61	36.61	4.581
40620	2593	1	0	22.53	0.179	2	14.61	37.14	5.176
		1	49	22.44	0.175	2	14.61	37.05	5.070
		1	99	22.93	0.196	2	14.61	37.54	5.675
		50	0	21.97	0.157	2	14.61	36.58	4.550
		50	24	22.08	0.161	2	14.61	36.69	4.667
		50	49	22.24	0.167	2	14.61	36.85	4.842
		100	0	22.27	0.169	2	14.61	36.88	4.875
41490	2680	1	0	23.35	0.216	2	14.61	37.96	6.252
		1	49	22.72	0.187	2	14.61	37.33	5.408
		1	99	22.60	0.182	2	14.61	37.21	5.260
		50	0	22.56	0.180	2	14.61	37.17	5.212
		50	24	22.34	0.171	2	14.61	36.95	4.955
		50	49	22.20	0.166	2	14.61	36.81	4.797
		100	0	22.56	0.180	2	14.61	37.17	5.212

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

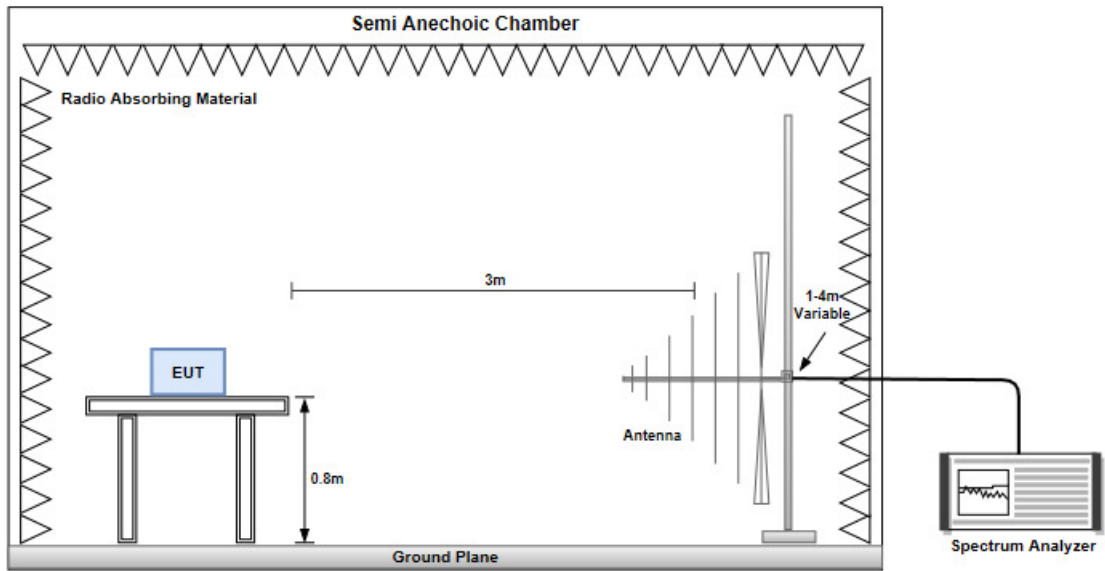
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

3.2.2 Test Procedures

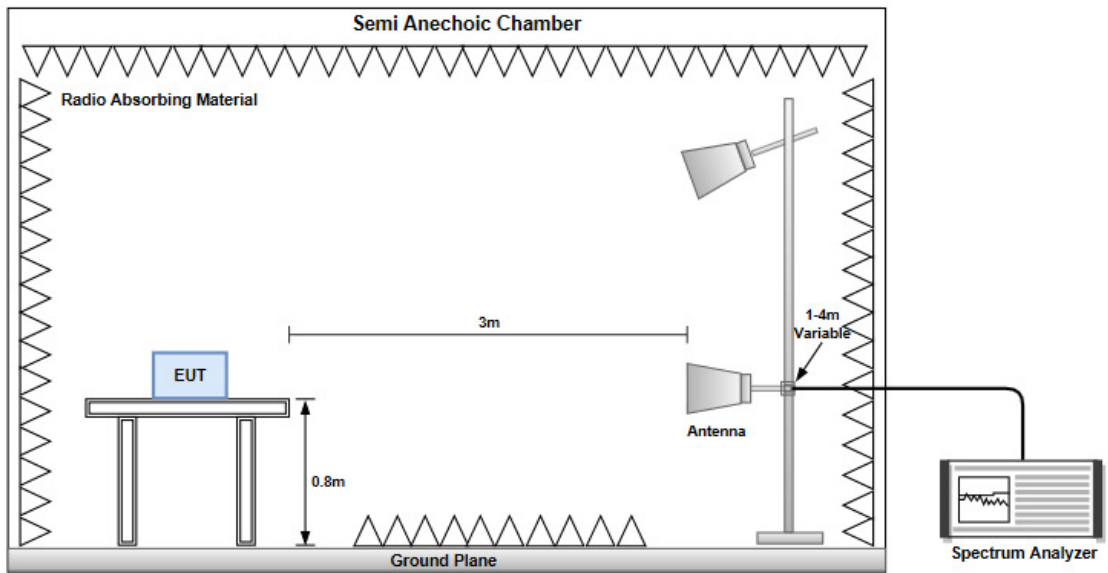
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. 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)
30.97	H	-48.46	-13.00	-35.46	-56.38	-34.49	-13.97
58.13	H	-52.92	-13.00	-39.92	-55.10	-44.29	-8.63
163.86	H	-50.17	-13.00	-37.17	-49.68	-50.40	0.23
296.75	H	-51.96	-13.00	-38.96	-50.92	-56.25	4.29
343.31	H	-53.22	-13.00	-40.22	-54.89	-57.55	4.33
518.88	H	-48.47	-13.00	-35.47	-53.13	-52.55	4.08
30.97	V	-42.31	-13.00	-29.31	-39.84	-28.34	-13.97
58.13	V	-45.87	-13.00	-32.87	-43.32	-37.24	-8.63
99.84	V	-42.41	-13.00	-29.41	-42.89	-42.69	0.28
155.13	V	-46.45	-13.00	-33.45	-48.71	-45.92	-0.53
296.75	V	-48.92	-13.00	-35.92	-50.92	-53.21	4.29
498.51	V	-46.12	-13.00	-33.12	-51.25	-50.26	4.14

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

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)
30.97	H	-48.79	-13.00	-35.79	-56.71	-8.82	-39.97
90.14	H	-49.30	-13.00	-36.30	-48.01	-50.08	0.78
164.83	H	-51.04	-13.00	-38.04	-50.51	-51.40	0.36
296.75	H	-52.40	-13.00	-39.40	-51.36	-56.69	4.29
343.31	H	-53.26	-13.00	-40.26	-54.93	-57.59	4.33
512.09	H	-50.33	-13.00	-37.33	-54.91	-54.43	4.10
32.91	V	-43.38	-13.00	-30.38	-40.96	-29.88	-13.50
99.84	V	-43.12	-13.00	-30.12	-43.60	-43.40	0.28
159.01	V	-48.24	-13.00	-35.24	-50.75	-47.93	-0.31
199.75	V	-50.13	-13.00	-37.13	-51.91	-54.43	4.30
296.75	V	-49.27	-13.00	-36.27	-51.27	-53.56	4.29
498.51	V	-46.85	-13.00	-33.85	-51.98	-50.99	4.14

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)
30.97	H	-50.14	-13.00	-37.14	-58.06	-36.17	-13.97
89.17	H	-53.87	-13.00	-40.87	-52.38	-54.40	0.53
163.86	H	-52.48	-13.00	-39.48	-51.99	-52.71	0.23
296.75	H	-52.52	-13.00	-39.52	-51.48	-56.81	4.29
343.31	H	-53.63	-13.00	-40.63	-55.30	-57.96	4.33
498.51	H	-53.82	-13.00	-40.82	-58.22	-57.96	4.14
32.91	V	-43.04	-13.00	-30.04	-40.62	-29.54	-13.50
57.16	V	-47.62	-13.00	-34.62	-45.25	-38.75	-8.87
99.84	V	-42.65	-13.00	-29.65	-43.13	-42.93	0.28
160.95	V	-48.56	-13.00	-35.56	-51.15	-48.42	-0.14
296.75	V	-49.07	-13.00	-36.07	-51.07	-53.36	4.29
498.51	V	-46.26	-13.00	-33.26	-51.39	-50.40	4.14

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

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)
30.97	H	-49.79	-13.00	-36.79	-57.71	-35.82	-13.97
90.14	H	-48.31	-13.00	-35.31	-47.02	-49.09	0.78
163.86	H	-50.43	-13.00	-37.43	-49.94	-50.66	0.23
296.75	H	-52.58	-13.00	-39.58	-51.54	-56.87	4.29
354.95	H	-53.04	-13.00	-40.04	-55.19	-57.38	4.34
518.88	H	-49.93	-13.00	-36.93	-54.59	-54.01	4.08
30.97	V	-42.87	-13.00	-29.87	-40.40	-28.90	-13.97
95.96	V	-42.83	-13.00	-29.83	-43.16	-43.32	0.49
156.10	V	-47.83	-13.00	-34.83	-50.15	-47.36	-0.47
201.69	V	-51.42	-13.00	-38.42	-53.22	-55.75	4.33
296.75	V	-50.27	-13.00	-37.27	-52.27	-54.56	4.29
498.51	V	-47.08	-13.00	-34.08	-52.21	-51.22	4.14

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	-46.33	-13.00	-33.33	-63.39	-52.42	6.09
7495.50	H	-39.20	-13.00	-26.20	-60.03	-42.17	2.97
9994.00	H	-37.13	-13.00	-24.13	-62.54	-38.82	1.69
4997.00	V	-45.61	-13.00	-32.61	-62.66	-51.70	6.09
7495.50	V	-37.53	-13.00	-24.53	-59.45	-40.50	2.97
9994.00	V	-39.06	-13.00	-26.06	-62.51	-40.75	1.69

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	-42.83	-13.00	-29.83	-60.28	-49.01	6.18
7779.00	H	-35.35	-13.00	-22.35	-56.57	-38.43	3.08
10372.00	H	-34.00	-13.00	-21.00	-58.50	-35.28	1.28
5186.00	V	-42.69	-13.00	-29.69	-60.22	-48.87	6.18
7779.00	V	-34.65	-13.00	-21.65	-56.72	-37.73	3.08
10372.00	V	-37.57	-13.00	-24.57	-61.38	-38.85	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	-45.47	-13.00	-32.47	-62.50	-51.70	6.23
8062.50	H	-26.75	-13.00	-13.75	-48.33	-29.70	2.95
10750.00	H	-31.47	-13.00	-18.47	-55.35	-32.35	0.88
5375.00	V	-46.06	-13.00	-33.06	-63.48	-52.29	6.23
8062.50	V	-29.30	-13.00	-16.30	-51.90	-32.25	2.95
10750.00	V	-33.04	-13.00	-20.04	-57.09	-33.92	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	-45.47	-13.00	-32.47	-62.53	-51.56	6.09
7503.00	H	-40.32	-13.00	-27.32	-61.14	-43.29	2.97
10004.00	H	-37.03	-13.00	-24.03	-62.49	-38.62	1.59
5002.00	V	-43.35	-13.00	-30.35	-60.41	-49.44	6.09
7503.00	V	-37.07	-13.00	-24.07	-58.97	-40.04	2.97
10004.00	V	-37.37	-13.00	-24.37	-60.84	-38.96	1.59

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	-43.89	-13.00	-30.89	-61.34	-50.07	6.18
7779.00	H	-37.21	-13.00	-24.21	-58.43	-40.29	3.08
10372.00	H	-34.33	-13.00	-21.33	-58.83	-35.61	1.28
5186.00	V	-41.97	-13.00	-28.97	-59.50	-48.15	6.18
7779.00	V	-35.31	-13.00	-22.31	-57.38	-38.39	3.08
10372.00	V	-36.39	-13.00	-23.39	-60.20	-37.67	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	-44.38	-13.00	-31.38	-61.43	-50.61	6.23
8055.00	H	-32.15	-13.00	-19.15	-53.75	-35.10	2.95
10740.00	H	-34.75	-13.00	-21.75	-58.65	-35.64	0.89
5370.00	V	-43.84	-13.00	-30.84	-61.26	-50.07	6.23
8055.00	V	-35.79	-13.00	-22.79	-58.42	-38.74	2.95
10740.00	V	-35.24	-13.00	-22.24	-59.28	-36.13	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	-44.17	-13.00	-31.17	-61.24	-50.26	6.09
7510.50	H	-40.34	-13.00	-27.34	-61.14	-43.32	2.98
10014.00	H	-34.60	-13.00	-21.60	-60.03	-36.18	1.58
5007.00	V	-44.84	-13.00	-31.84	-61.91	-50.93	6.09
7510.50	V	-38.40	-13.00	-25.40	-60.28	-41.38	2.98
10014.00	V	-37.36	-13.00	-24.36	60.83	-38.94	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	-41.03	-13.00	-28.03	-58.48	-47.21	6.18
7779.00	H	-38.61	-13.00	-25.61	-59.83	-41.69	3.08
10372.00	H	-35.86	-13.00	-22.86	-60.36	-37.14	1.28
5186.00	V	-40.83	-13.00	-27.83	-58.36	-47.01	6.18
7779.00	V	-37.58	-13.00	-24.58	-59.65	-40.66	3.08
10372.00	V	-36.21	-13.00	-23.21	-60.02	-37.49	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	-43.37	-13.00	-30.37	-60.43	-49.60	6.23
8047.50	H	-36.86	-13.00	-23.86	-58.47	-39.80	2.94
10730.00	H	-34.93	-13.00	-21.93	-58.83	-35.83	0.90
5365.00	V	-42.83	-13.00	-29.83	-60.26	-49.06	6.23
8047.50	V	-35.76	-13.00	-22.76	-58.43	-38.70	2.94
10730.00	V	-34.17	-13.00	-21.17	-58.20	-35.07	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)
5029.95	H	-46.42	-13.00	-33.42	-63.54	-52.52	6.10
7544.92	H	-38.11	-13.00	-25.11	-58.83	-41.11	3.00
10059.90	H	-34.82	-13.00	-21.82	-60.14	-36.36	1.54
5029.95	V	-46.29	-13.00	-33.29	-63.41	-52.39	6.10
7544.92	V	-36.65	-13.00	-23.65	-58.43	-39.65	3.00
10059.90	V	-41.28	-13.00	-28.28	-64.80	-42.82	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)
5203.80	H	-44.82	-13.00	-31.82	-61.94	-51.01	6.19
7805.70	H	-33.95	-13.00	-20.95	-55.25	-37.04	3.09
10407.60	H	-33.71	-13.00	-20.71	-57.67	-34.97	1.26
5203.80	V	-46.02	-13.00	-33.02	-63.47	-52.21	6.19
7805.70	V	-33.88	-13.00	-20.88	-56.02	-36.97	3.09
10407.60	V	-34.85	-13.00	-21.85	-58.87	-36.11	1.26

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)
5342.34	H	-44.74	-13.00	-31.74	-61.86	-50.97	6.23
8013.52	H	-32.78	-13.00	-19.78	-54.47	-35.71	2.93
10684.69	H	-36.67	-13.00	-23.67	-60.63	-37.62	0.95
5342.34	V	-45.11	-13.00	-32.11	-62.56	-51.34	6.23
8013.52	V	-32.77	-13.00	-19.77	-55.59	-35.70	2.93
10684.69	V	-33.02	-13.00	-20.02	-57.04	-33.97	0.95

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

3.3 Conducted Emissions

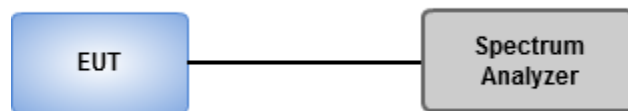
3.3.1 Limit of Conducted Emissions

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

3.3.2 Test Procedures

1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 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

