FCC Test Report

Report No.: AGC04183150401FE08

FCC ID	:	2AEMHM4GLTE
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Mobile Phone
BRAND NAME	:	OEM
MODEL NAME	:	M4GLTE
CLIENT	:	Shenzhen RF Technology Co., Ltd
DATE OF ISSUE	:	May 14, 2015
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15.247 KDB 558074 v03r02
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 14, 2015	Valid	Original Report

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1. VERIFICATION OF COMPLIANCE

Applicant	Shenzhen RF Technology Co., Ltd
Address	F/3~5, BuildingD, Longhua Baokun Industrial Zone, Baoan District, Shenzhen, China
Manufacturer	Shenzhen RF Technology Co., Ltd
Address	F/3~5, BuildingD, Longhua Baokun Industrial Zone, Baoan District, Shenzhen, China
Product Designation	Mobile Phone
Brand Name	OEM
Test Model	M4GLTE
Date of test	Apr.27, 2015 to May 13,2015
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BLE/RF

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By	Matt Zhang	
	Matt Zhang	May 14, 2015
Checked By	Kidd Yang	
	Kidd Yang	May 14, 2015
Authorized By	Solger Zhang	
	Solger Zhang	May 14, 2015

2.GENERAL INFORMATION

2.1PRODUCT DESCRIPTION

The EUT is designed as "**Mobile Phone**". It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
Bluetooth Version	V4.0
Modulation	GFSK
Number of channels	40 Channel(37 Hopping Channel,3 advertising Channel)
Antenna Designation	Integrated Antenna
Antenna Gain	1.0dBi
Hardware Version	L800B-25
Software Version	SW-M4QL-OEM-L800B-V01-20150101
Power Supply	DC3.7V by Battery

2.2 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: 2AEMHM4GLTE** filing to comply with Section 15.247of the FCC Part 15, Subpart C Rules.

2.3TEST METHODOLOGY

All measurements contained in this report were conducted with KDB 558074 D01 DTS Meas Guidance v03r02, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

2.4 TEST FACILITY

Site	Compliance Certification Services (Shenzhen) Inc.
Location	No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd.,Guan Lan Town, Baoan District, Shenzhen, China
Description	Test Firm Registration Number: 441872

2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

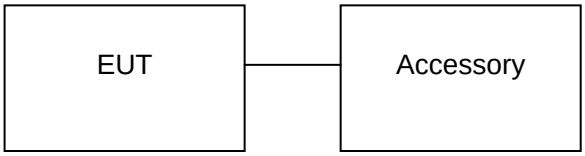
2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. SYSTEM TEST CONFIGURATION

3.1 CONFIGURATION OF TESTED SYSTEM

Configuration:



3.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	M4GLTE	FCC ID: 2AEMHM4GLTE	EUT
2	Adapter	M4GLTE	DC5V /1A	Accessory
3	Battery	M4GLTE	DC3.7V/ 2000mAh	Accessory
4	Earphone	M4GLTE	N/A	Accessory
5	USB Cable	M4GLTE	N/A	Accessory

TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Power Probe	R&S	NRP-Z23	100323	07/25/2014	07/24/2015
RF attenuator	N/A	RFA20db	68	07/25/2014	07/24/2015
Spectrum Analyzer	Agilent	E4440A	US41421290	02/17/2015	02/16/2016
Amplifier	EM	EM30180	0607030	02/17/2015	02/16/2016
Horn Antenna	EM	EM-AH-10180	67	02/17/2015	02/16/2016
Horn Antenna	A.H. Systems Inc.	SAS-574	N/A	07/25/2014	07/24/2015
EMI Test Receiver	Rohde & Schwarz	ESCI	100694	07/25/2014	07/24/2015
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	26	08/16/2014	08/15/2015
Loop Antenna	A.H.	SAS-526B	SEL0097	05/10/2014	05/09/2015
Loop Antenna	A.H.	SAS-526B	SEL0097	05/09/2015	05/08/2016
LISN	R&S	ESH3-Z5	8389791009	07/25/2014	07/24/2015
Radiation Cable 1	Sat	RE1	R003	06/04/2014	06/03/2015
Radiation Cable 2	Sat	RE2	R002	06/04/2014	06/03/2015
Conduction Cable	Sat	CE1	C001	06/04/2014	06/03/2015

Radiated Emission Test Site 966(2)					
Name of Equipment	**Manufacturer**	**Model**	**S/N**	**Calibration Date**	**Calibration Due.**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	Mar.01, 2015	Mar.01, 2016
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	Mar.09, 2015	Mar.08, 2016
Amplifier	MITEQ	AM-1604-3000	1123808	Mar.18, 2015	Mar.17, 2016
High Noise Amplifier	Agilent	8449B	3008A01838	Mar.18, 2015	Mar.17, 2016
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	July 10, 2014	July 09, 2015
Bilog Antenna	SCHAFFNER	CBL6143	5082	Mar.01, 2015	Mar.01, 2016
Horn Antenna	SCHWARZBECK	BBHA9120	D286	Mar.01, 2015	Mar.01, 2016
Loop Antenna	COM-POWER	AL-130	121044	Sep.27, 2014	Sep.26, 2015
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	Feb.28, 2015	Feb.27, 2016
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

Conducted Emission Test Site					
Name of Equipment	**Manufacturer**	**Model**	**S/N**	**Calibration Date**	**Calibration Due.**
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	Mar.09, 2015	Mar.08, 2016
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	Mar.09, 2015	Mar.08, 2016
LISN	EMCO	3825/2	8901-1459	Mar.09, 2015	Mar.08, 2016
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	Mar.04, 2015	Mar.03, 2016
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

4. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203	Antenna Requirement	Compliant
§15.209 §15.247(d)	Radiated Emission	Compliant
§15.247(d)	Band Edges	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247(b)	Conducted Power	Compliant
§15.247(e)	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.207	Line Conduction Emission	Compliant

5. DESCRIPTION OF TEST MODES

The EUT has been operated in three modulations: GFSK independently.

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal Operating (BT)

Note:
1. All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report if no any records.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. Eut is operating at its maximum duty cycle>or equal 98%

6. ANTENNA REQUIREMENT

6.1. STANDARD APPLICABLE

According to FCC 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

6.2. TEST RESULT

This product has a permanent antenna, fulfill the requirement of this section.

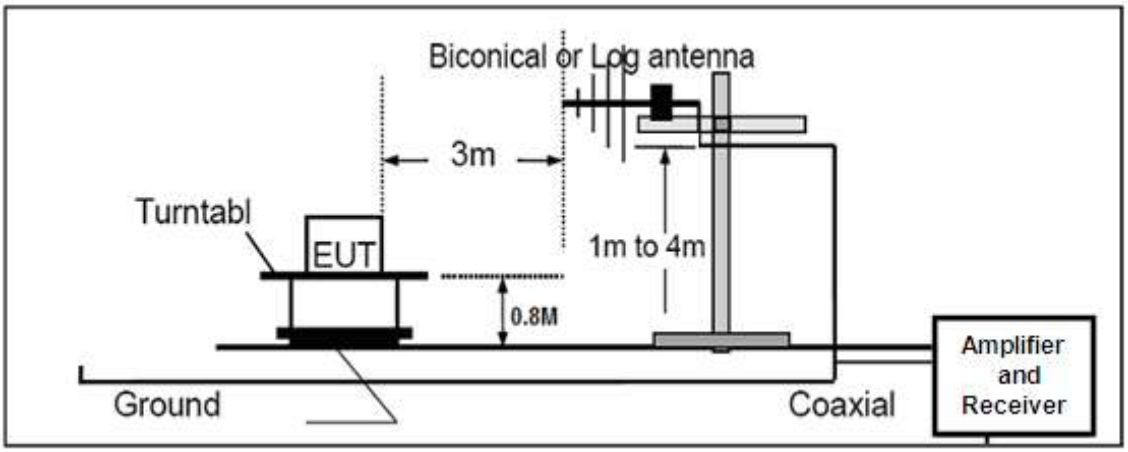
7. RADIATED EMISSION

7.1 MEASUREMENT PROCEDURE

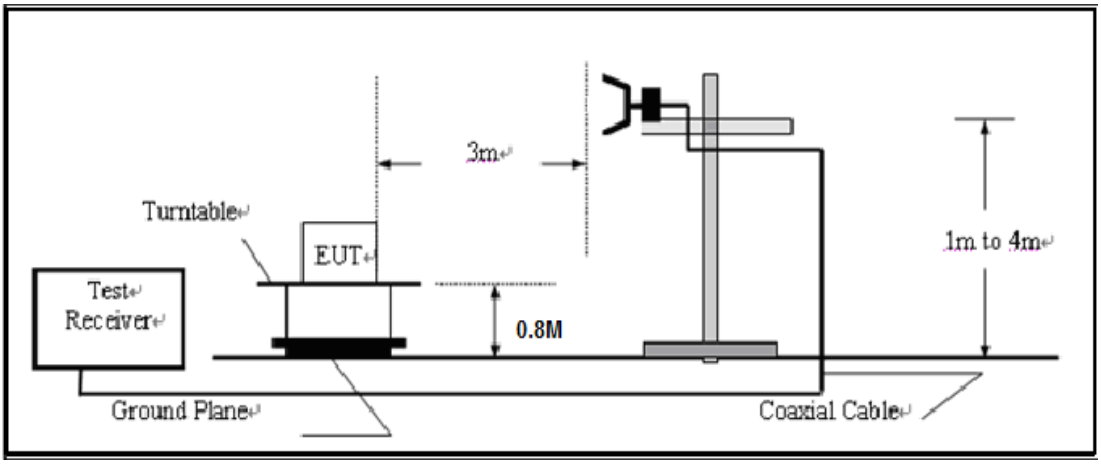
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

7.2 TEST SETUP

RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



7.3 LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

7.4 TEST RESULT

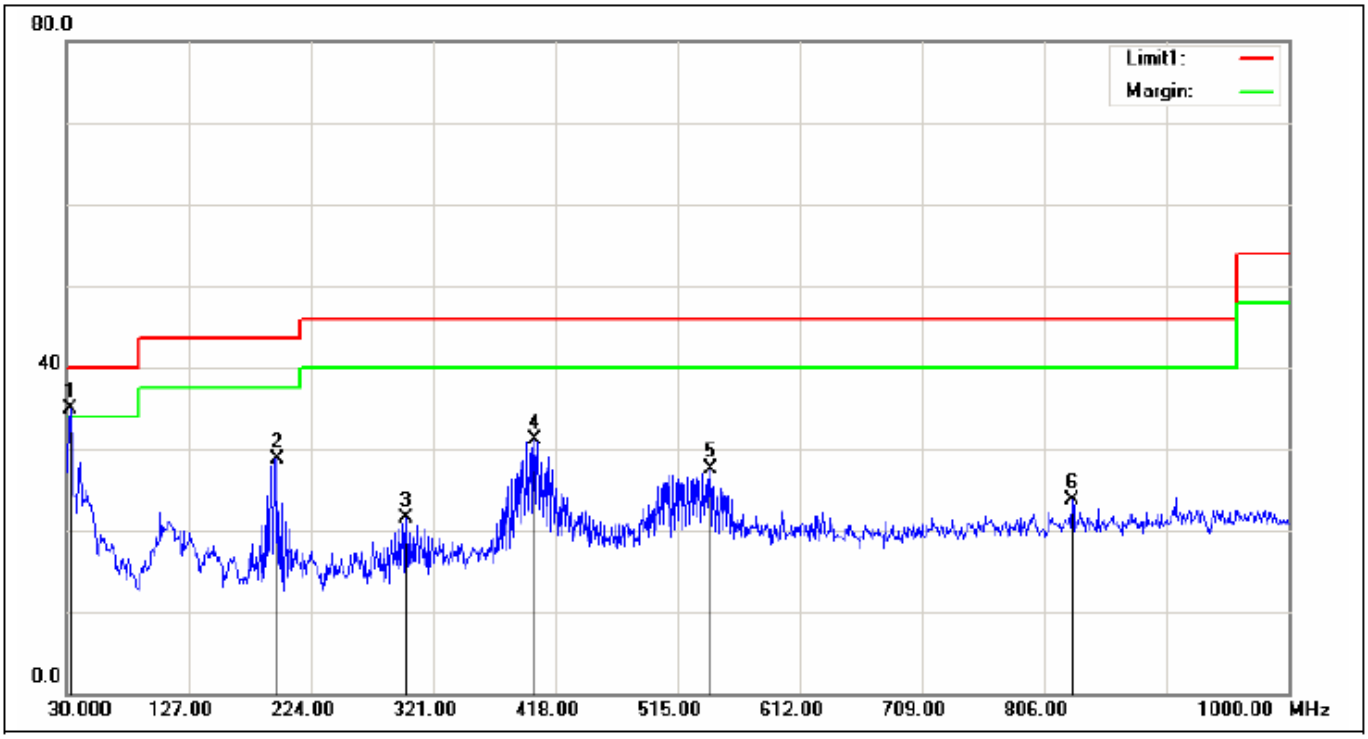
RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ

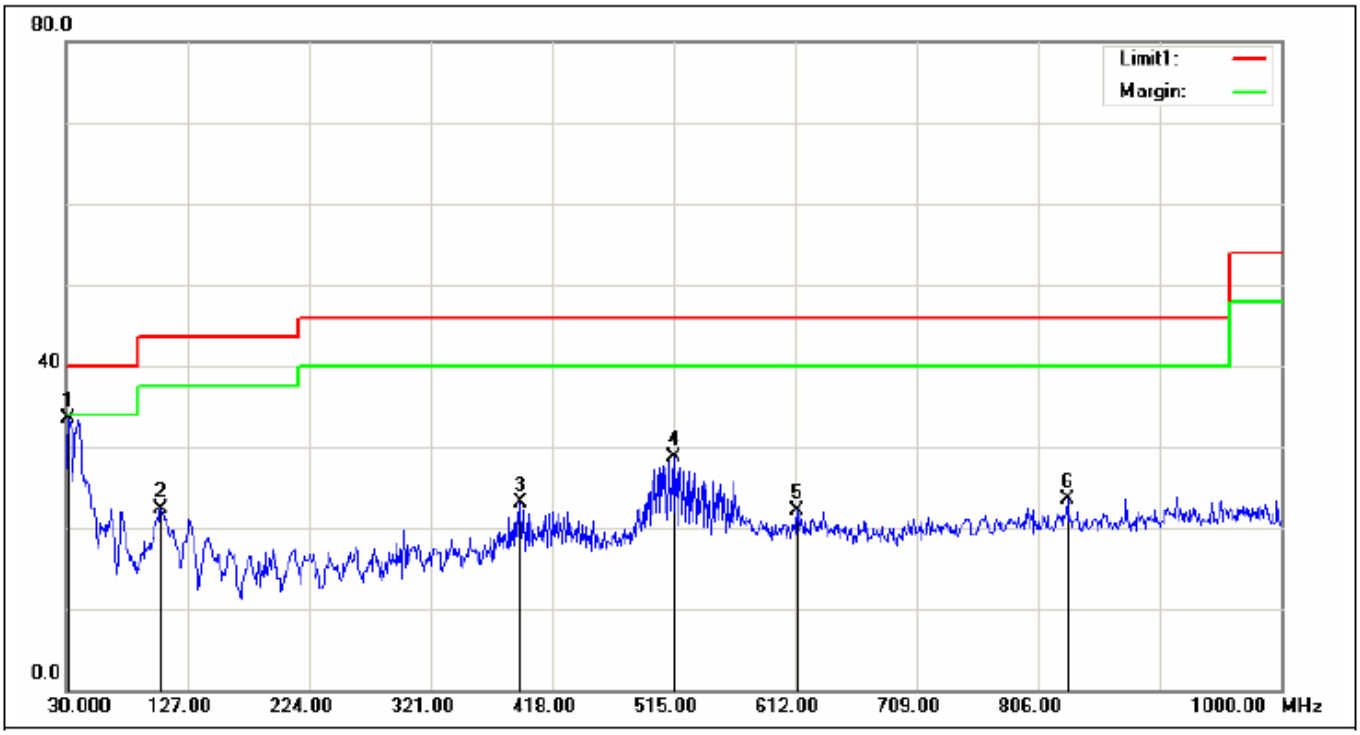
RADIATED EMISSION TEST- (30MHZ-1GHZ)

Job No.:	20150428	Ant.Polar.:	Horizontal
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:54:00
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2402		



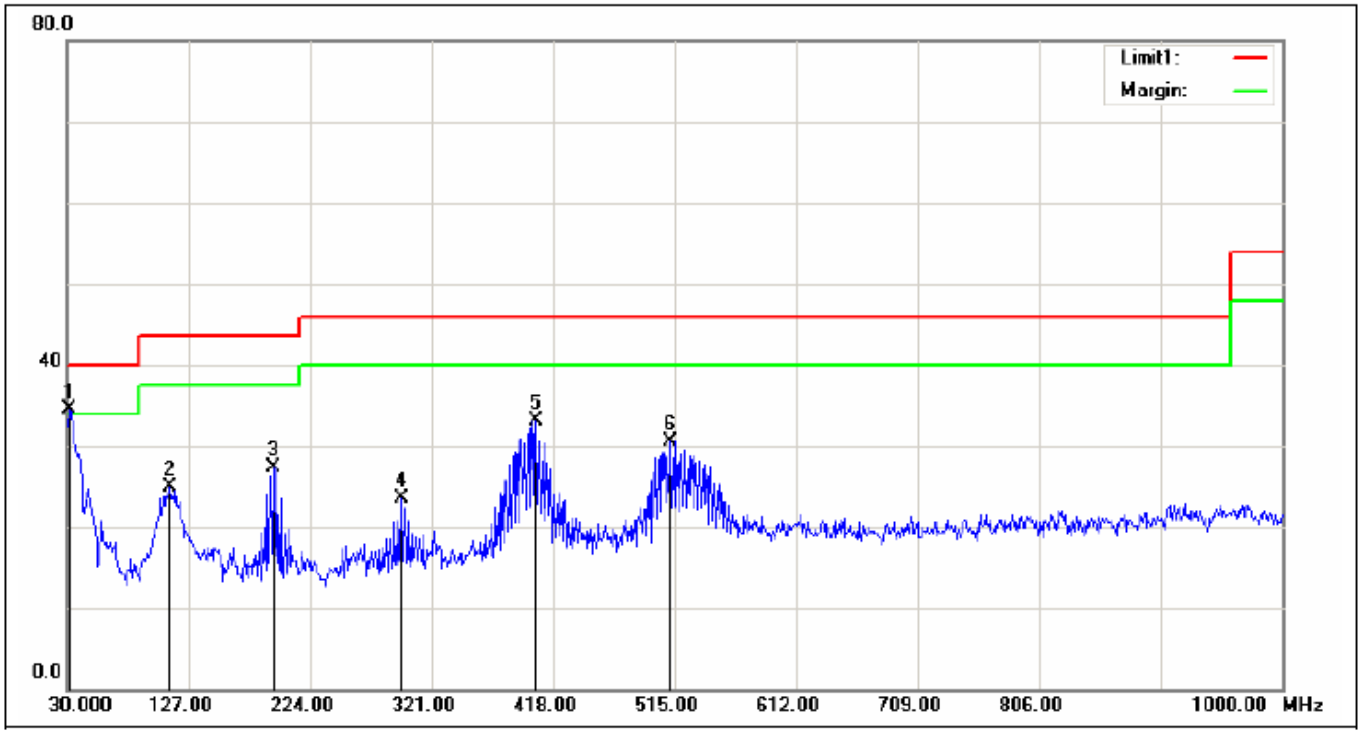
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	32.9100	48.42	-13.43	34.99	40.00	-5.01			peak
2	197.8100	51.44	-22.76	28.68	43.50	-14.82			peak
3	299.6600	41.13	-19.60	21.53	46.00	-24.47			peak
4	401.5100	47.05	-16.02	31.03	46.00	-14.97			peak
5	541.1900	40.82	-13.26	27.56	46.00	-18.44			peak
6	828.3100	34.26	-10.55	23.71	46.00	-22.29			peak

Job No.:	20150428	Ant.Polar.:	Vertical
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:53:05
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2402		



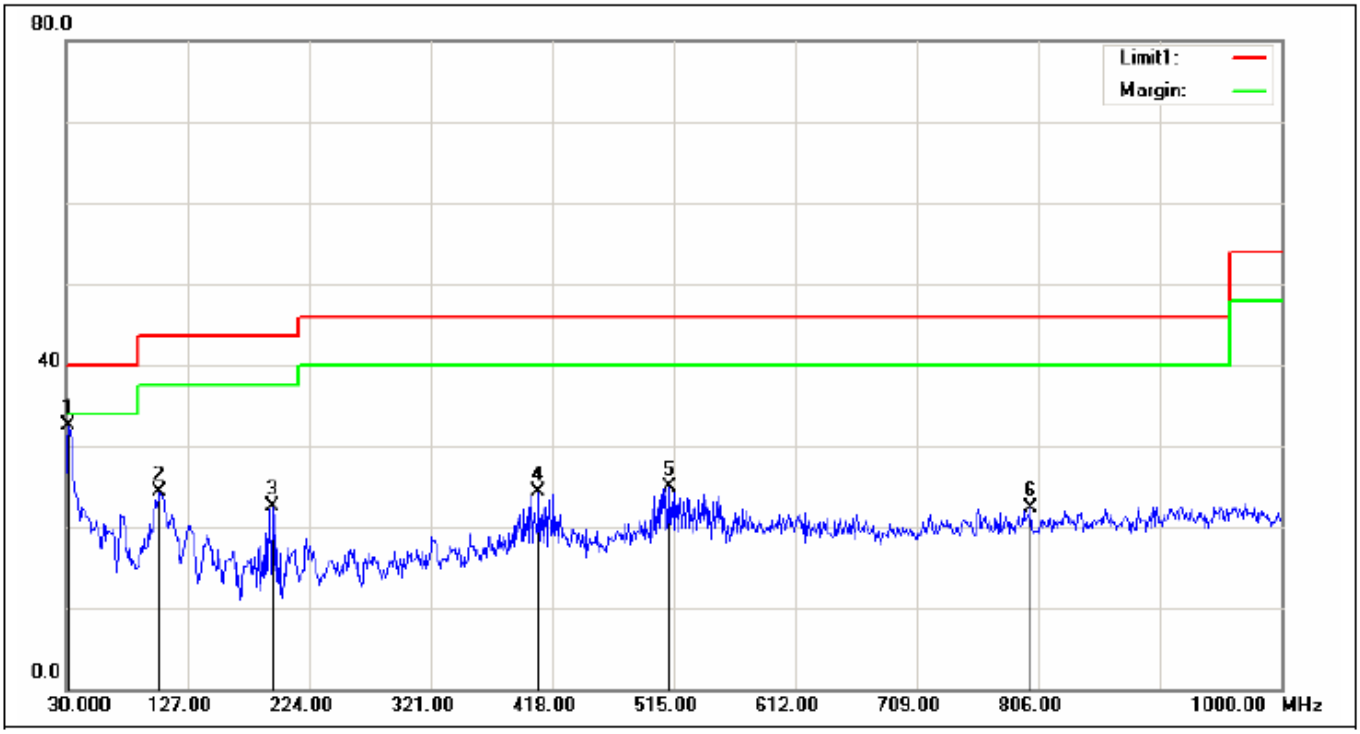
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	31.9400	46.38	-12.80	33.58	40.00	-6.42			peak
2	105.6600	44.88	-22.63	22.25	43.50	-21.25			peak
3	392.7800	39.47	-16.34	23.13	46.00	-22.87			peak
4	515.0000	42.80	-14.19	28.61	46.00	-17.39			peak
5	613.9400	34.90	-12.74	22.16	46.00	-23.84			peak
6	829.2800	34.03	-10.56	23.47	46.00	-22.53			peak

Job No.:	20150428	Ant.Polar.:	Horizontal
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:54:41
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2440		



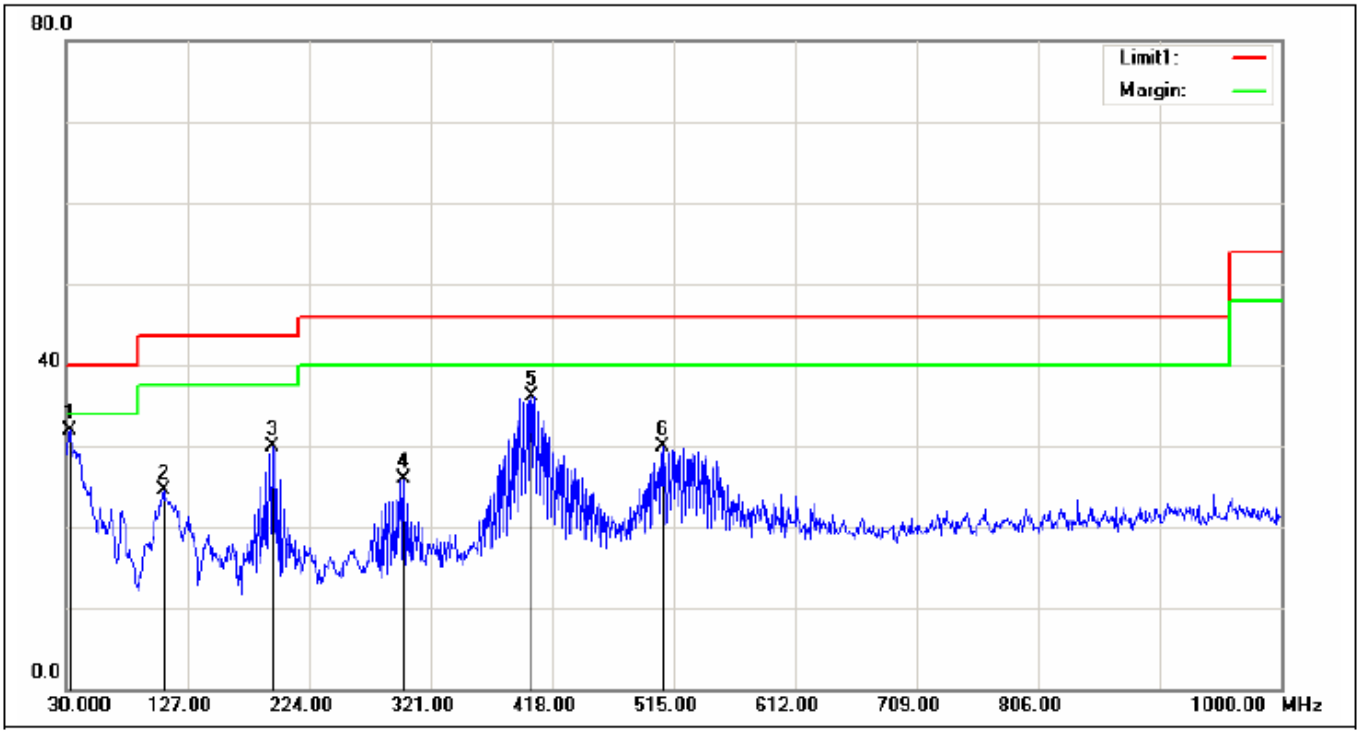
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	31.9400	47.30	-12.80	34.50	40.00	-5.50			peak
2	111.4800	46.69	-21.73	24.96	43.50	-18.54			peak
3	194.9000	50.12	-22.80	27.32	43.50	-16.18			peak
4	296.7500	43.33	-19.86	23.47	46.00	-22.53			peak
5	404.4200	49.05	-15.88	33.17	46.00	-12.83			peak
6	512.0900	44.78	-14.22	30.56	46.00	-15.44			peak

Job No.:	20150428	Ant.Polar.:	Vertical
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:55:34
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2440		



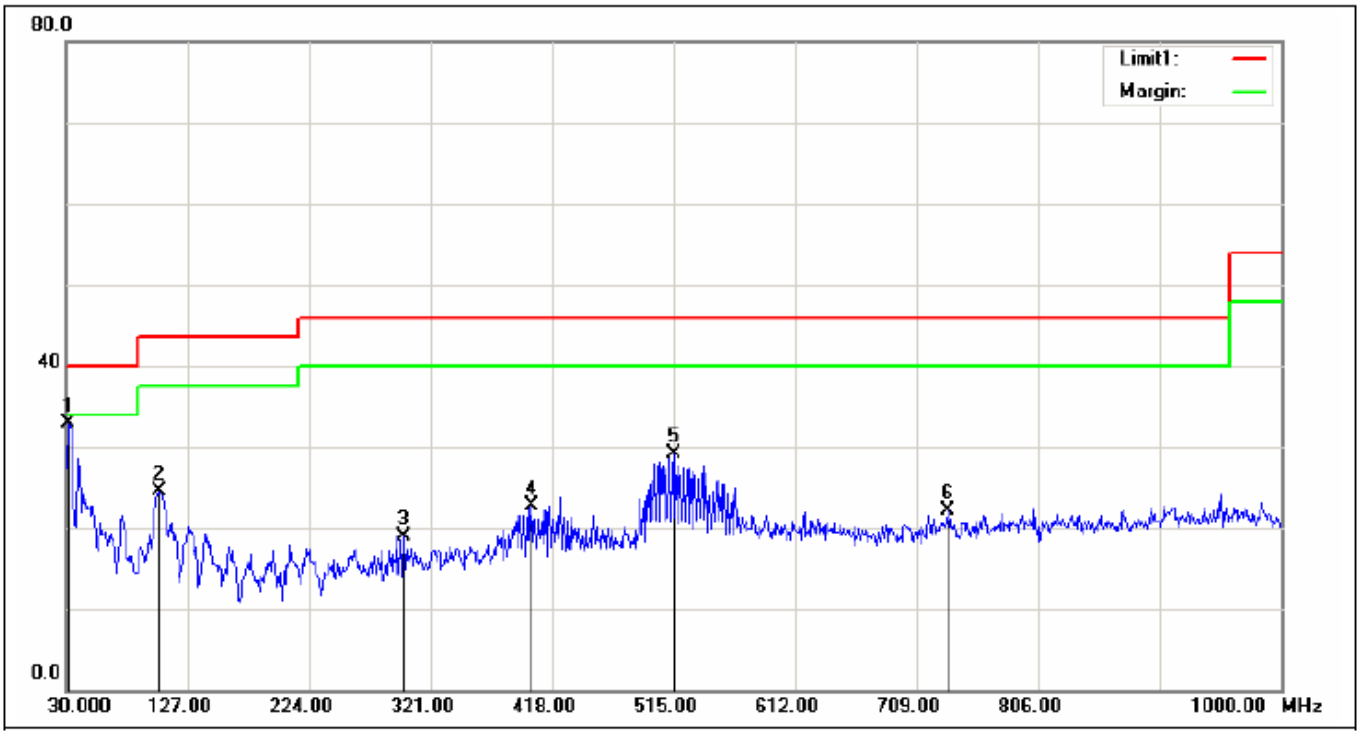
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	31.9400	45.22	-12.80	32.42	40.00	-7.58			peak
2	104.6900	47.15	-22.81	24.34	43.50	-19.16			peak
3	194.9000	45.23	-22.80	22.43	43.50	-21.07			peak
4	407.3300	40.10	-15.74	24.36	46.00	-21.64			peak
5	512.0900	39.17	-14.22	24.95	46.00	-21.05			peak
6	800.1800	33.32	-11.11	22.21	46.00	-23.79			peak

Job No.:	20150428	Ant.Polar.:	Horizontal
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:57:48
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2480		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	32.9100	45.43	-13.43	32.00	40.00	-8.00			peak
2	107.6000	46.80	-22.27	24.53	43.50	-18.97			peak
3	194.9000	52.66	-22.80	29.86	43.50	-13.64			peak
4	299.6600	45.50	-19.60	25.90	46.00	-20.10			peak
5	401.5100	52.16	-16.02	36.14	46.00	-9.86			peak
6	506.2700	44.19	-14.28	29.91	46.00	-16.09			peak

Job No.:	20150428	Ant.Polar.:	Vertical
Standard:	FCC Part15 Class B (30-1000MHz)	Test Distance:	3m
Test item:	Radiated Emission Measurement	Power:	AC 120V/60Hz
Temp.(C)/Hum.(%RH):	24(C)/52%RH	Date:2015-4-28	Time:16:56:21
Company:		EUT:	
Model:	M4GLTE	Test By:	Jimmy
Test Mode:	BLE 2480		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1*	31.9400	45.79	-12.80	32.99	40.00	-7.01			peak
2	103.7200	47.49	-22.99	24.50	43.50	-19.00			peak
3	299.6600	38.57	-19.60	18.97	46.00	-27.03			peak
4	401.5100	38.72	-16.02	22.70	46.00	-23.30			peak
5	515.0000	43.23	-14.19	29.04	46.00	-16.96			peak
6	734.2200	33.56	-11.50	22.06	46.00	-23.94			peak

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin= Result -Limit.
2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION ABOVE 1GHZ

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
Low Channel (2402 MHz)							
4804	43.84	10.44	54.28	74	-19.72	Pk	Horizontal
4804	32.39	10.44	42.83	54	-11.17	AV	Horizontal
7206	41.49	12.39	53.88	74	-20.12	pk	Horizontal
7206	31.28	12.39	43.67	54	-10.33	AV	Horizontal
4804	41.19	10.4	51.59	74	-22.41	Pk	Vertical
4804	29.74	10.4	40.14	54	-13.86	AV	Vertical
7206	31.81	12.75	44.56	74	-29.44	Pk	Vertical
7206	25.68	12.75	38.43	54	-15.57	AV	Vertical
Mid Channel (2440 MHz)							
4880	43.29	10.4	53.69	74	-20.31	Pk	Horizontal
4880	32.75	10.4	43.15	54	-10.85	AV	Horizontal
7320	41.29	12.75	54.04	74	-19.96	Pk	Horizontal
7320	32.61	12.75	45.36	54	-8.64	AV	Horizontal
4880	45.83	10.39	56.22	74	-17.78	Pk	Vertical
4880	32.64	10.44	43.08	54	-10.92	AV	Vertical
7320	32.51	12.68	45.19	74	-28.81	Pk	Vertical
7320	32.84	12.68	45.52	54	-8.48	AV	Vertical
High Channel (2480 MHz)							
4960	36.23	10.39	46.62	74	-27.38	pk	Horizontal
4960	25.86	10.39	36.25	54	-17.75	AV	Horizontal
7440	42.81	12.68	55.49	74	-18.51	pk	Horizontal
7440	31.64	12.68	44.32	54	-9.68	AV	Horizontal
4960	36.29	10.39	46.68	74	-27.32	pk	Vertical
4960	34.53	10.39	44.92	54	-9.08	AV	Vertical
7440	44.71	12.68	57.39	74	-16.61	pk	Vertical
7440	25.94	12.68	38.62	54	-15.38	AV	Vertical

RESULT: PASS

Note: 1~25GHz scan with GFSK. No recording in the test report at least have 20dB margin.

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Meter Reading + Factor

Margin = Emission - Leve Limit

8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

1)Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

2)Conducted Emissions at the bang edge

a)The transmitter output was connected to the spectrum analyzer

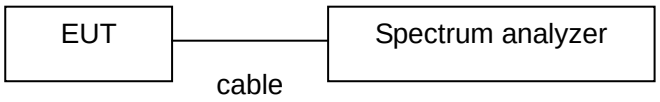
b)Set RBW=100kHz,VBW=300kHz

c)Suitable frequency span including 100kHz bandwidth from band edge

8.2. TEST SET-UP

Radiated same as 6.2

Conducted set up



8.3. Radiated Test Result

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)							
2399.9	78.84	-13	65.84	74	-8.16	peak	Horizontal
2399.9	59.28	-13	46.28	54	-7.72	AVG	Horizontal
2400	79.17	-12.99	66.18	74	-7.82	peak	Horizontal
2400	58.64	-12.99	45.65	54	-8.35	AVG	Horizontal
2399.9	79.29	-12.97	66.32	74	-7.68	peak	Vertical
2399.9	59.33	-12.97	46.36	54	-7.64	AVG	Vertical
2400	79.75	-12.94	66.81	74	-7.19	peak	Vertical
2400	59.61	-12.94	46.67	54	-7.33	AVG	Vertical
High Channel (2480 MHz)							
2483.5	78.14	-12.78	65.36	74	-8.64	peak	Horizontal
2483.5	58.25	-12.78	45.47	54	-8.53	AVG	Horizontal
2483.6	78.81	-12.77	66.04	74	-7.96	peak	Horizontal
2483.6	58.34	-12.77	45.57	54	-8.43	AVG	Horizontal
2483.5	79.62	-12.76	66.86	74	-7.14	peak	Vertical
2483.5	57.56	-12.76	44.8	54	-9.2	AVG	Vertical
2483.6	78.76	-12.72	66.04	74	-7.96	peak	Vertical
2483.6	58.64	-12.72	45.92	54	-8.08	AVG	Vertical

RESULT: PASS

Note: Factor=Antenna Factor + Cable loss - Amplifier gain,

Emission Level = Meter Reading + Factor

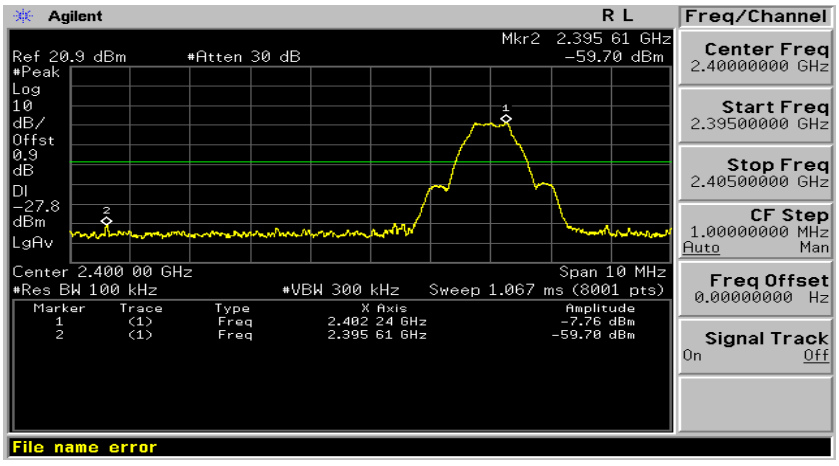
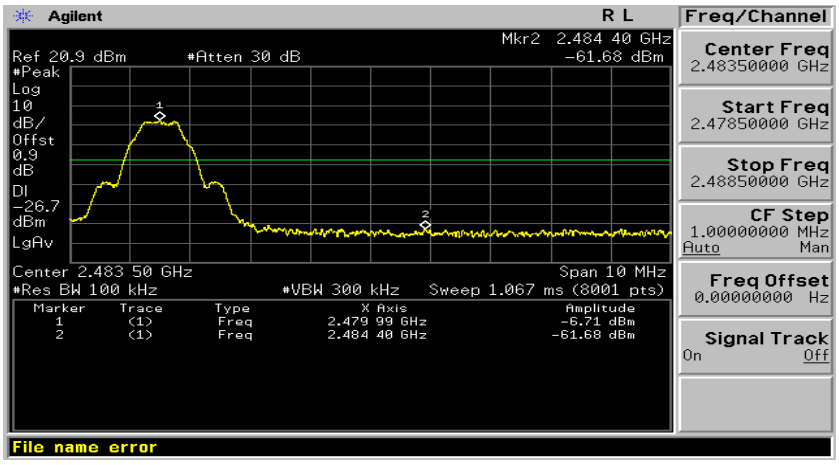
Margin= Emission Level -Limit.

The “Factor” value can be calculated automatically by software of measurement system.

8.4. Conducted Test Result

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BLE	LCH	-7.76	-59.697	-27.76	PASS
BLE	HCH	-6.71	-61.681	-26.71	PASS

Test Graph

Graphs	
LCH	
HCH	

9. 6DB BANDWIDTH

9.1. TEST EQUIPMENT LIST AND DETAILS

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	Feb.17,2015	Feb.16,2016
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Aug.16, 2014	Aug.15, 2015

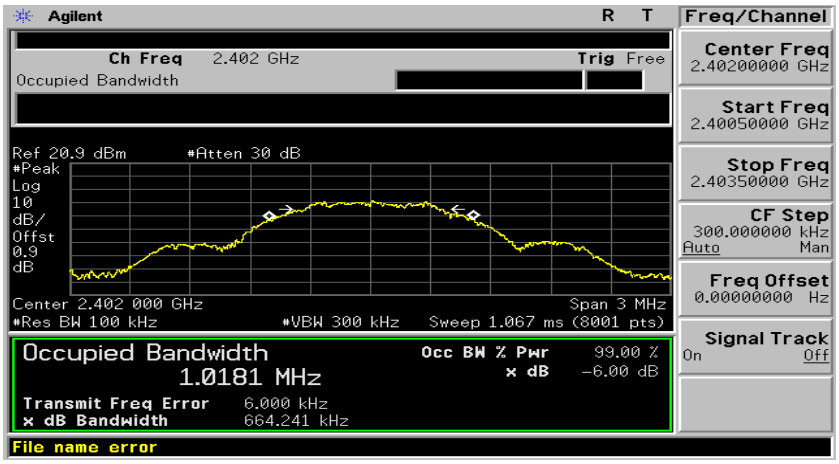
9.2. TEST PROCEDURE

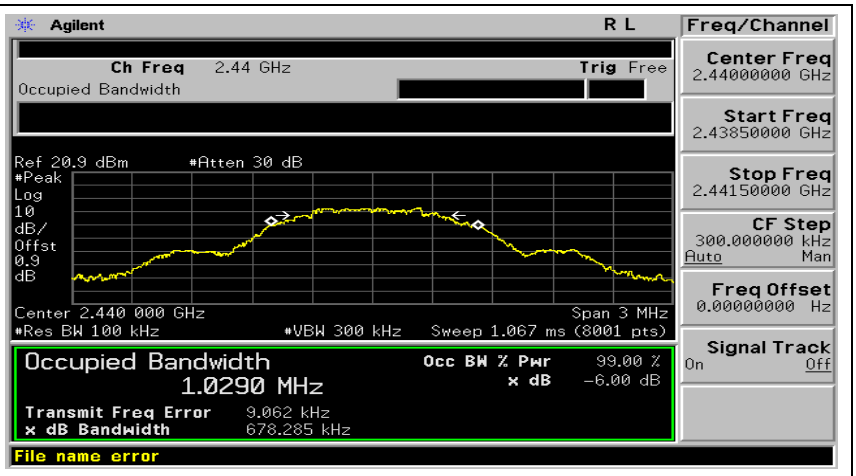
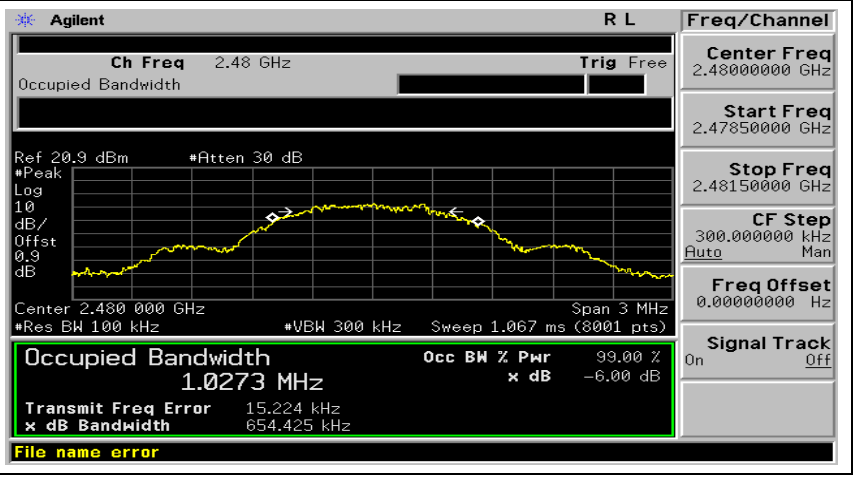
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW≥RBW.
4. Set SPA Trace 1 Max hold, then View.

9.3. SUMMARY OF TEST RESULTS/PLOTS

Mode	Channel	6dB Bandwidth [MHz]	OBW[MHz]	Verdict
BLE	LCH	0.6642	1.0181	PASS
BLE	MCH	0.6783	1.0290	PASS
BLE	HCH	0.6544	1.0273	PASS

Test Graph

Graphs	
LCH	

MCH	 Agilent R L Freq/Channel Ch Freq 2.44 GHz Trig Free Occupied Bandwidth Ref 20.9 dBm #Atten 30 dB #Peak Log 10 dB/ Offst 0.9 dB Center 2.440 000 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts) Occupied Bandwidth 1.0290 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 9.062 kHz x dB Bandwidth 678.285 kHz File name error Center Freq 2.44000000 GHz Start Freq 2.43850000 GHz Stop Freq 2.44150000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
HCH	 Agilent R L Freq/Channel Ch Freq 2.48 GHz Trig Free Occupied Bandwidth Ref 20.9 dBm #Atten 30 dB #Peak Log 10 dB/ Offst 0.9 dB Center 2.480 000 GHz Span 3 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts) Occupied Bandwidth 1.0273 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 15.224 kHz x dB Bandwidth 654.425 kHz File name error Center Freq 2.48000000 GHz Start Freq 2.47850000 GHz Stop Freq 2.48150000 GHz CF Step 300.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

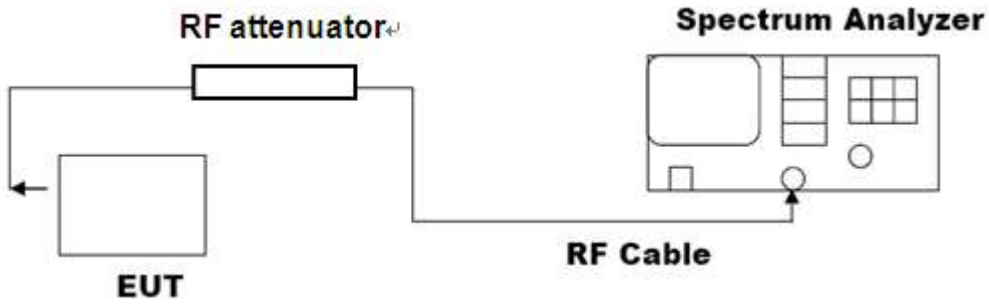
10. CONDUCTED OUTPUT POWER

10.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, middle and the bottom operation frequency individually.
3. Use the following spectrum analyzer settings:
   Set the RBW ≥ DTS bandwidth
   Set the VBW ≥ 3 x RBW
   Set the span ≥ 3 x RBW
   Detector = peak
   Sweep time = auto couple
   Trace mode = max hold
4. Allow the trace to stabilize. Use peak marker function to determine the peak amplitude level
5. Record the result form the Spectrum Analyzer.

Note： The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

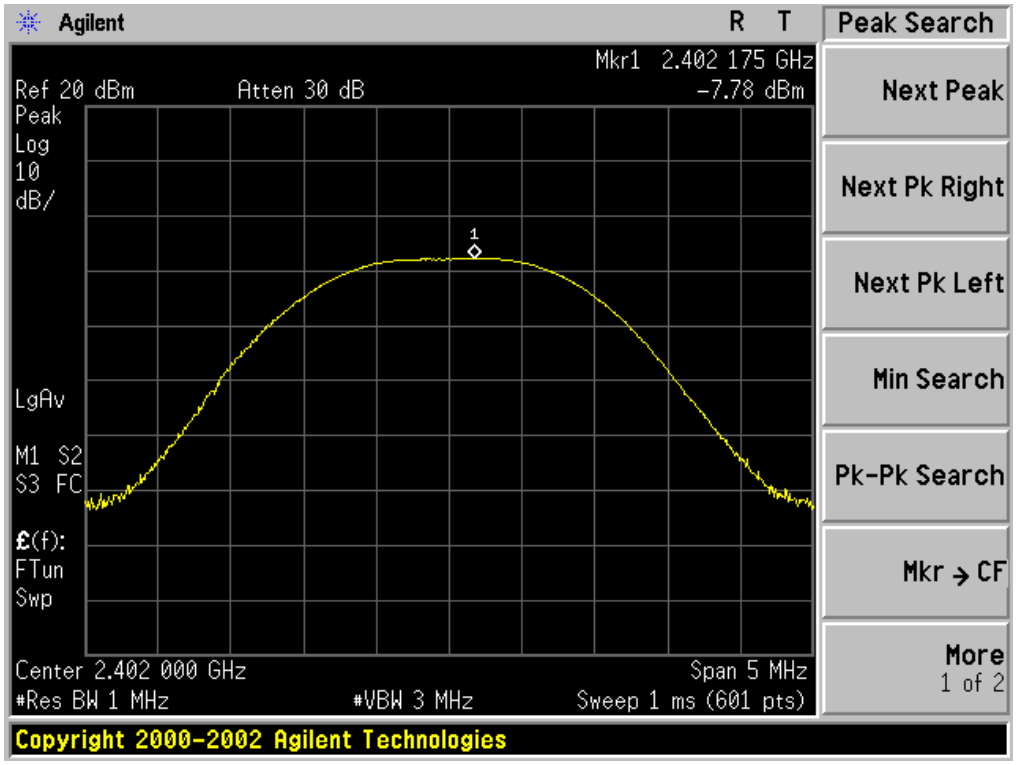
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



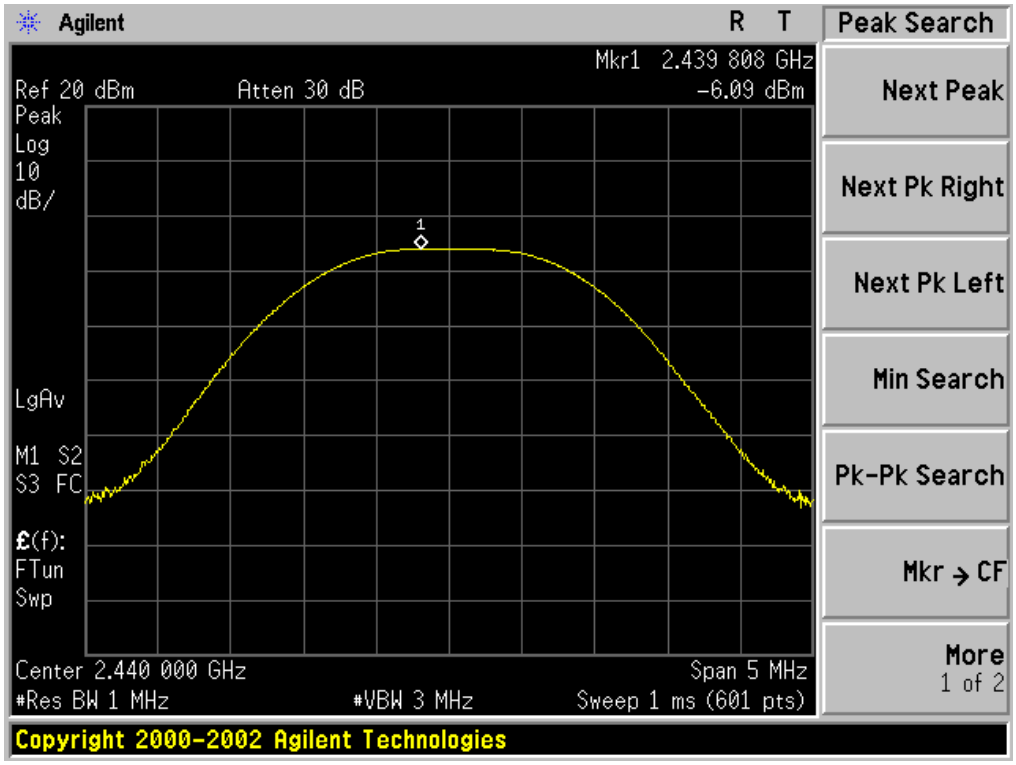
10.3. LIMITS AND MEASUREMENT RESULT

Channel	Peak Power (dBm)	Applicable Limits (dBm)	Pass/Fail
Low Channel	-7.78	20	Pass
Middle Channel	-6.09	20	Pass
High Channel	-6.68	20	Pass

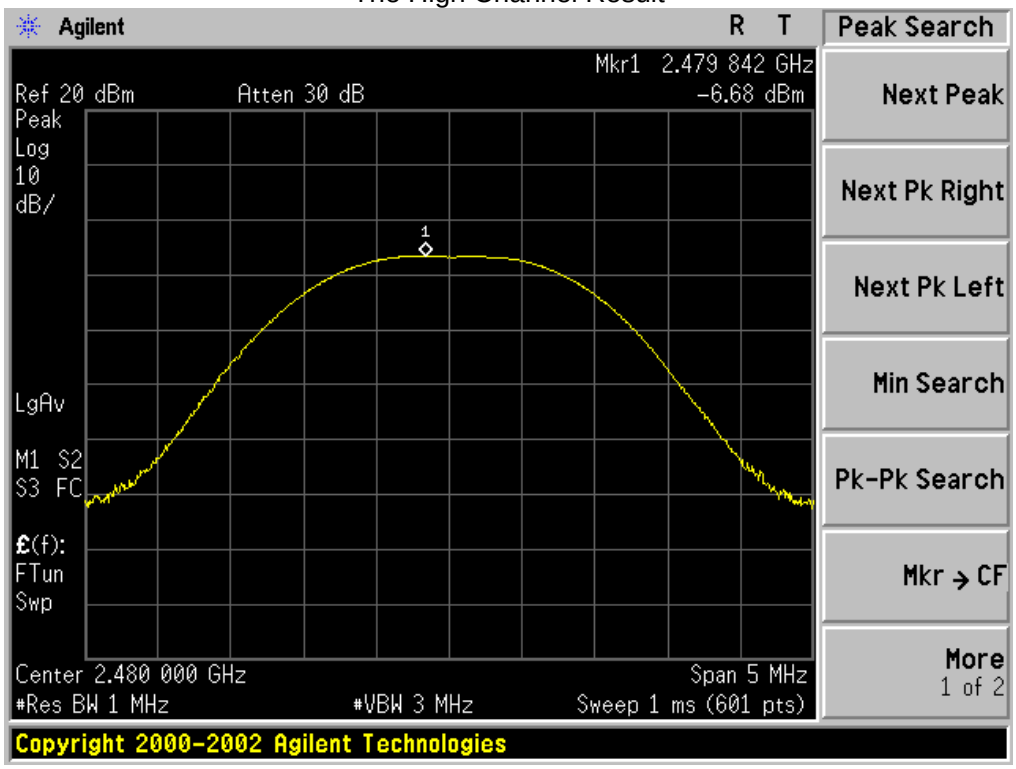
The Low Channel Result



The Middle Channel Result



The High Channel Result



11. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

11.1 MEASUREMENT PROCEDURE

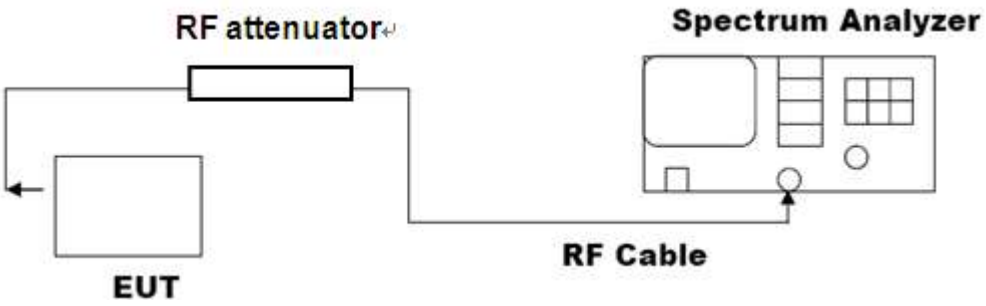
(1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator

(2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.

(3). Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

11.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



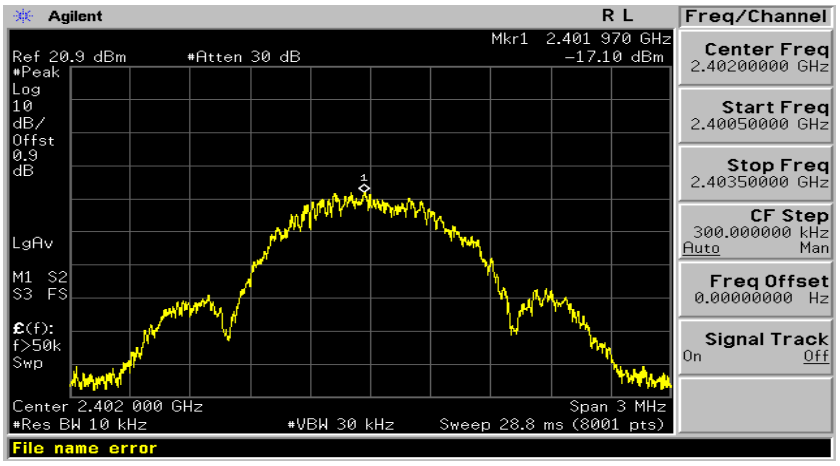
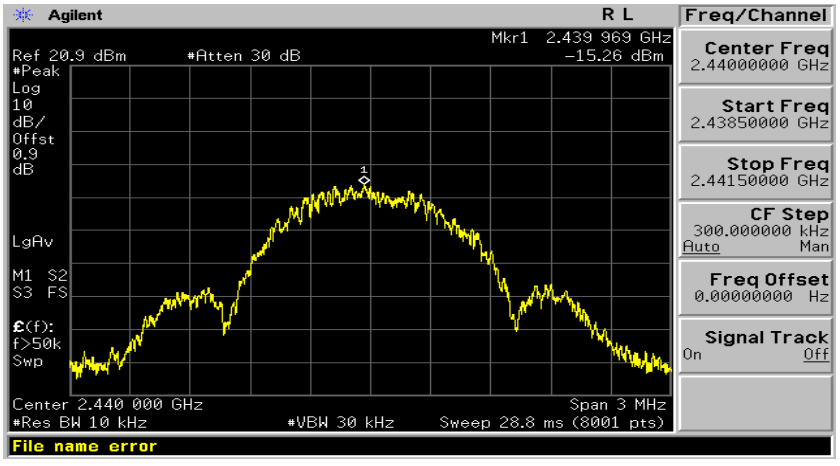
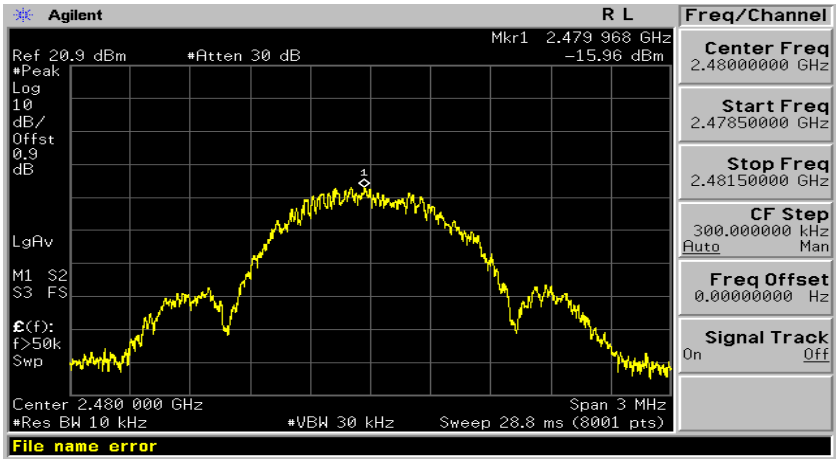
11.3 MEASUREMENT EQUIPMENT USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	Feb.17,2015	Feb.16,2016
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Aug.16, 2014	Aug.15, 2015

11.4 LIMITS AND MEASUREMENT RESULT

Mode	Channel	PSD [dBm/10kHz]	Limit[dBm/3kHz]	Verdict
BLE	LCH	-17.1	8	PASS
BLE	MCH	-15.26	8	PASS
BLE	HCH	-15.96	8	PASS

Test Graph

Graphs	
LCH	
MCH	
HCH	

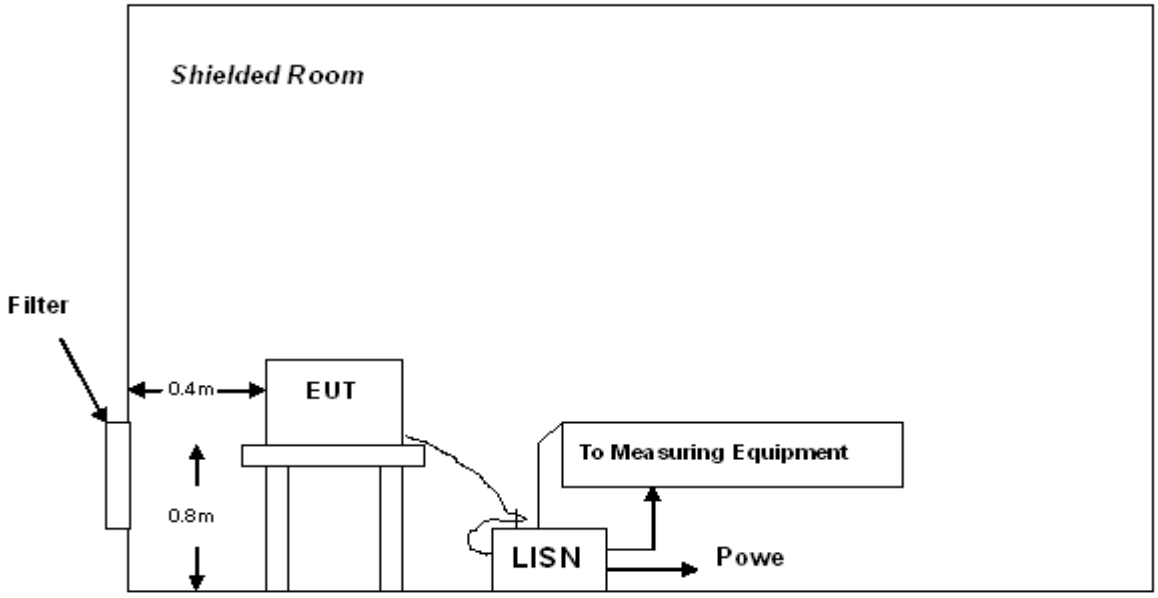
12. FCC LINE CONDUCTED EMISSION TEST

12.1 LIMITS

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

***Note:** 1. The lower limit shall apply at the transition frequency.*
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

12.2 TEST SETUP



A: Powered through filter

12.3 PRELIMINARY PROCEDURE

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per ANSI C63.4.
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) All support equipments received AC120V/60Hz power from a LISN, if any.
5) The EUT received power by adapter which received power by a LISN.
6) The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8) During the above scans, the emissions were maximized by cable manipulation.
9) The following test mode(s) were scanned during the preliminary test.
   Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

12.4 FINAL TEST PROCEDURE

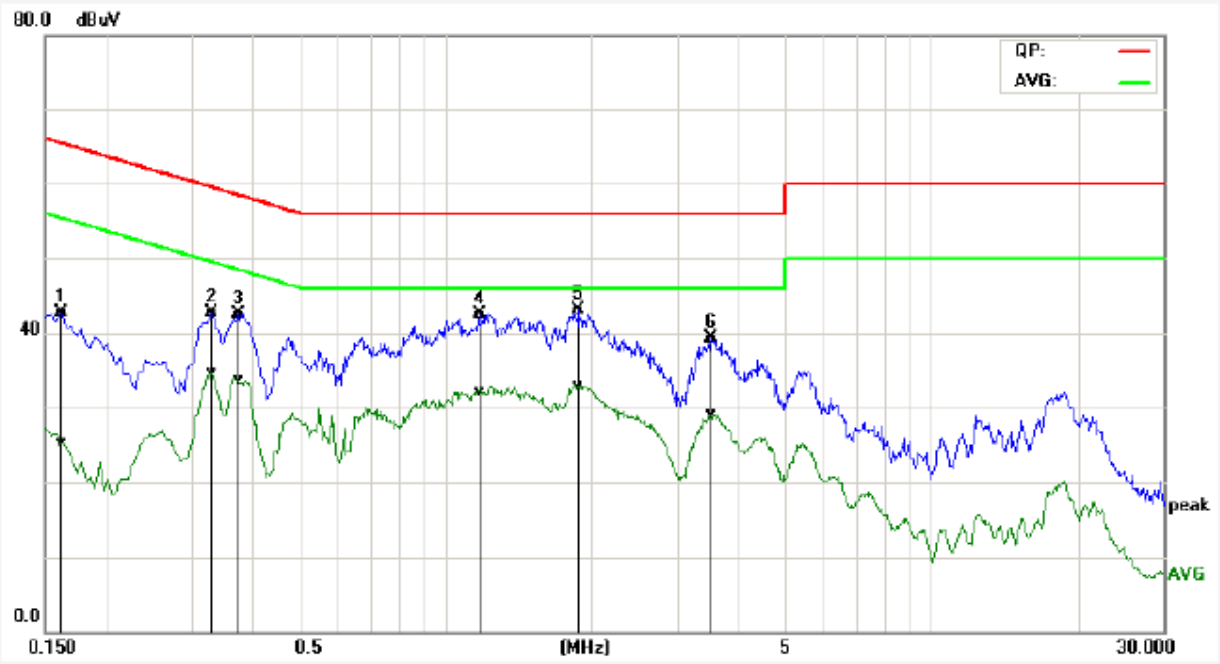
10) EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
11) 2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
12) 3) The test data of the worst case condition(s) was reported on the Summary Data page.

12.5 TEST RESULT OF POWER LINE

Line Conducted Emission Test Line 1-L

Job No.:	20150428-1	Date: 2015-4-28	
Company:		Time: 14:35:54	
Standard:	FCC Class B Conduction(QP)	Temp.(C)/Hum.(%):	26(C) / 60 %
Test item:	Conduction Test	EUT: Mobile Phone	
Line :	L1	Test Voltage	AC 120V/60Hz
Model:	M4GLTE	Test By :	

Description: Normal Operating(BT4.0)

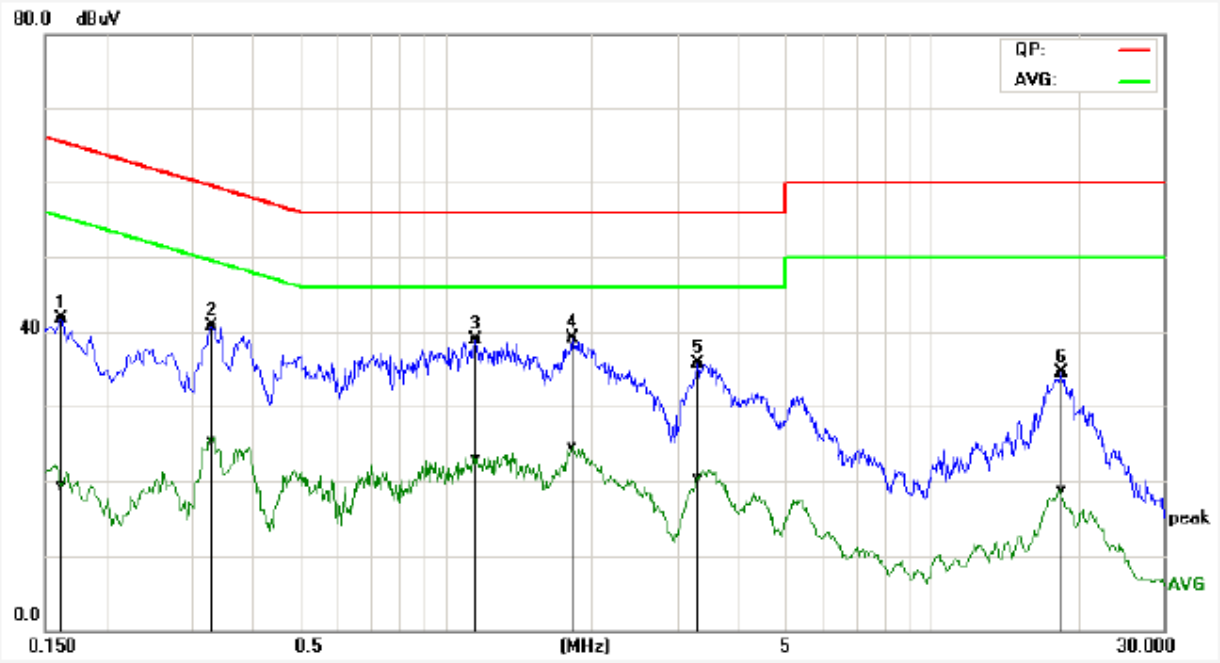


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1P	0.1620	33.10	15.76	9.60	42.70	25.36	65.36	55.36	-22.66	-30.00	Pass
2P	0.3300	33.04	25.02	9.69	42.73	34.71	59.45	49.45	-16.72	-14.74	Pass
3P	0.3740	32.83	24.08	9.68	42.51	33.76	58.41	48.41	-15.90	-14.65	Pass
4P	1.1740	32.84	22.33	9.71	42.55	32.04	56.00	46.00	-13.45	-13.96	Pass
5*	1.8860	33.39	23.11	9.73	43.12	32.84	56.00	46.00	-12.88	-13.16	Pass
6P	3.5220	29.61	19.33	9.71	39.32	29.04	56.00	46.00	-16.68	-16.96	Pass

Line Conducted Emission Test Line 1-N

Job No.:	20150428-1	Date: 2015-4-28	
Company:		Time: 14:39:09	
Standard:	FCC Class B Conduction(QP)	Temp.(C)/Hum.(%):	26(C) / 60 %
Test item:	Conduction Test	EUT: Mobile Phone	
Line :	N	Test Voltage	AC 120V/60Hz
Model:	M4GLTE	Test By :	

Description: Normal Operating(BT4.0)



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1P	0.1620	31.91	9.55	9.78	41.69	19.33	65.36	55.36	-23.67	-36.03	Pass
2P	0.3300	30.86	15.52	9.75	40.61	25.27	59.45	49.45	-18.84	-24.18	Pass
3P	1.1539	29.16	13.18	9.79	38.95	22.97	56.00	46.00	-17.05	-23.03	Pass
4*	1.8260	29.31	14.79	9.75	39.06	24.54	56.00	46.00	-16.94	-21.46	Pass
5P	3.2980	26.04	10.61	9.75	35.79	20.36	56.00	46.00	-20.21	-25.64	Pass
6P	18.4420	24.75	9.03	9.72	34.47	18.75	60.00	50.00	-25.53	-31.25	Pass

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

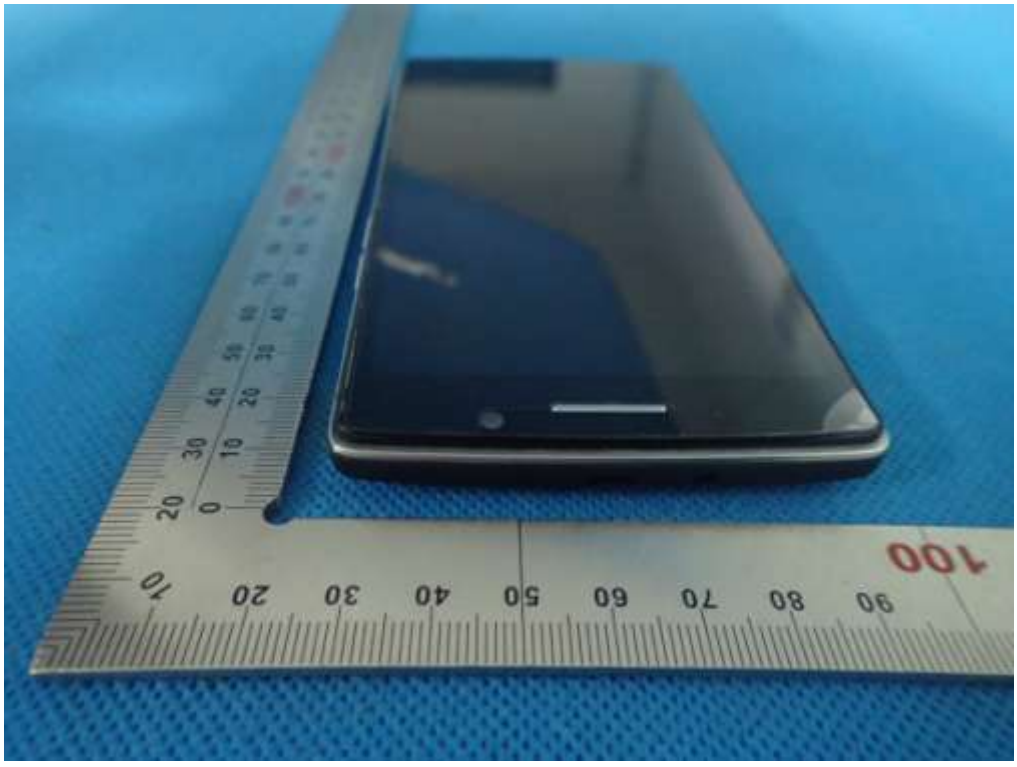
FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP

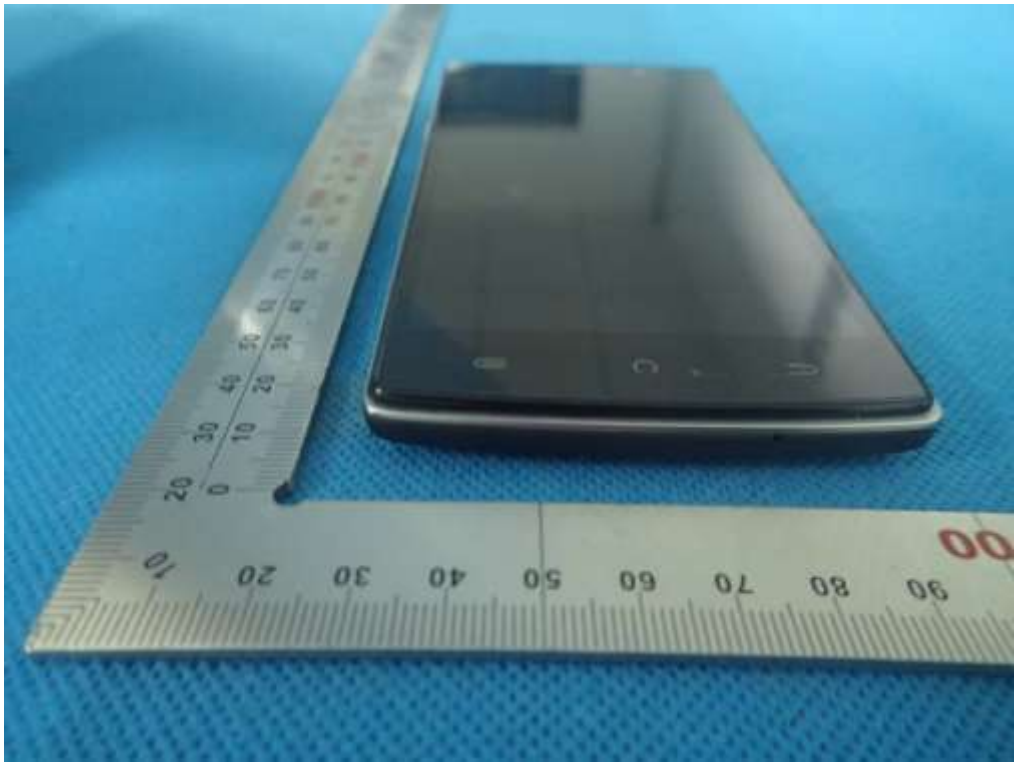
APPENDIX B: PHOTOGRAPHS OF EUT

TOTAL VIEW OF EUT

TOP VIEW OF EUT



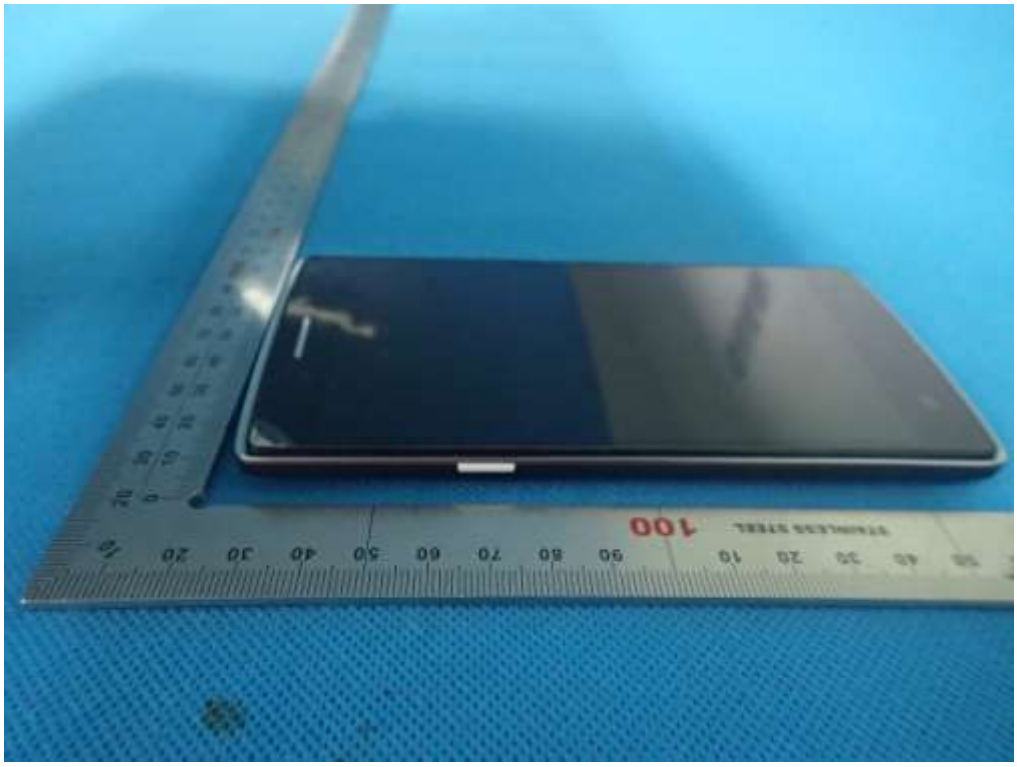
BOTTOM VIEW OF EUT



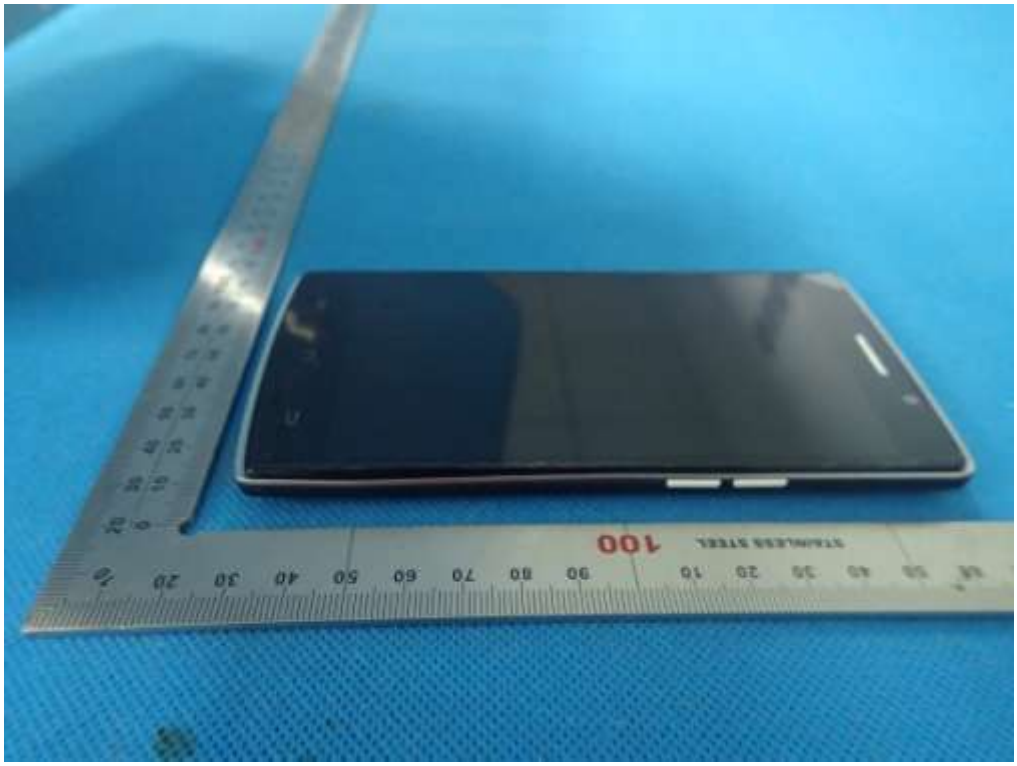
FRONT VIEW OF EUT

BACK VIEW OF EUT

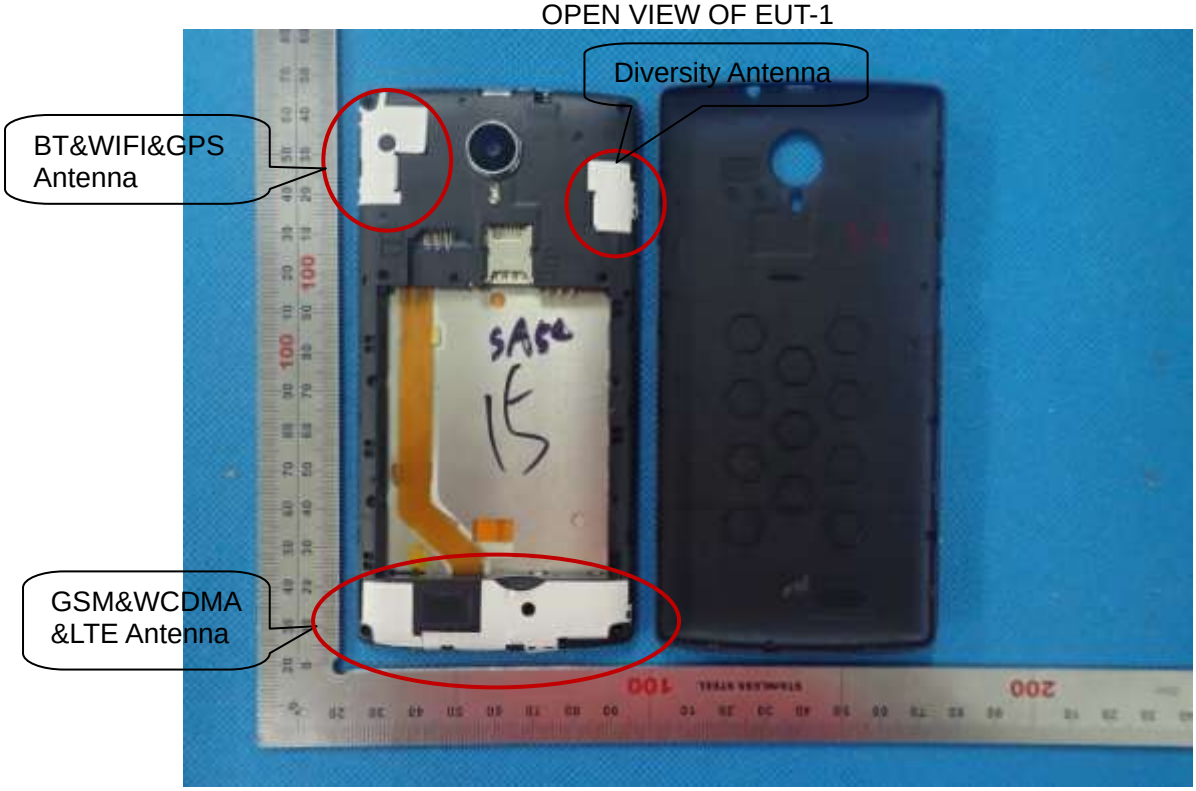
LEFT VIEW OF EUT



RIGHT VIEW OF EUT

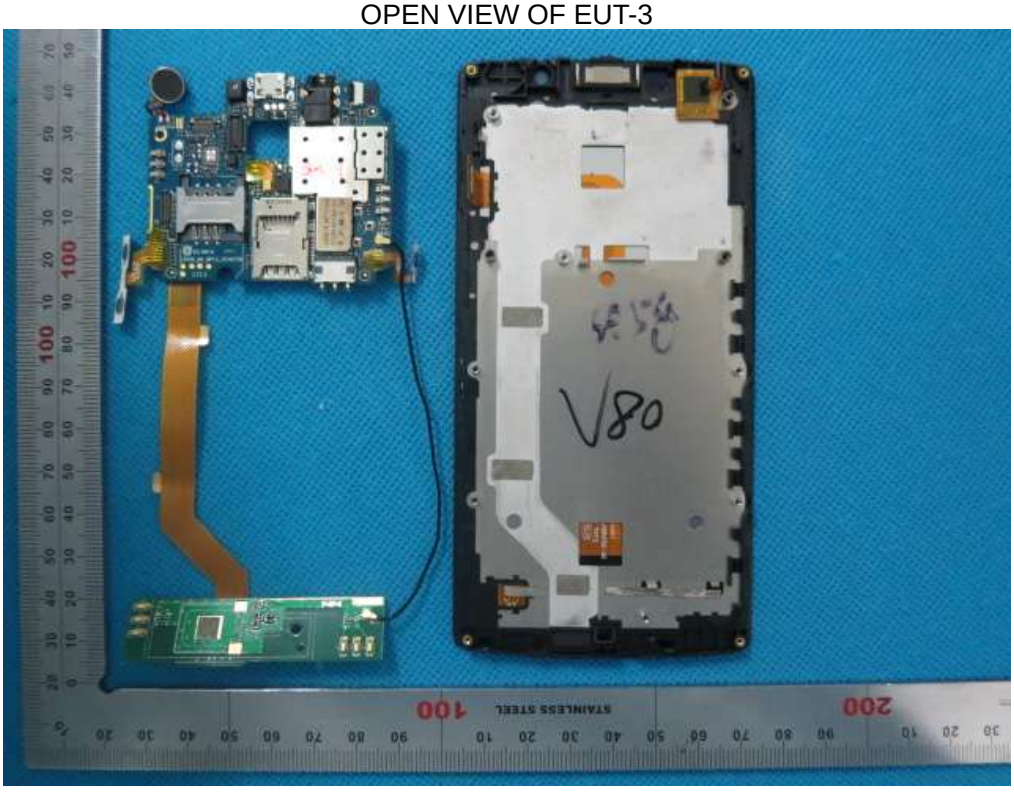


OPEN VIEW OF EUT-1

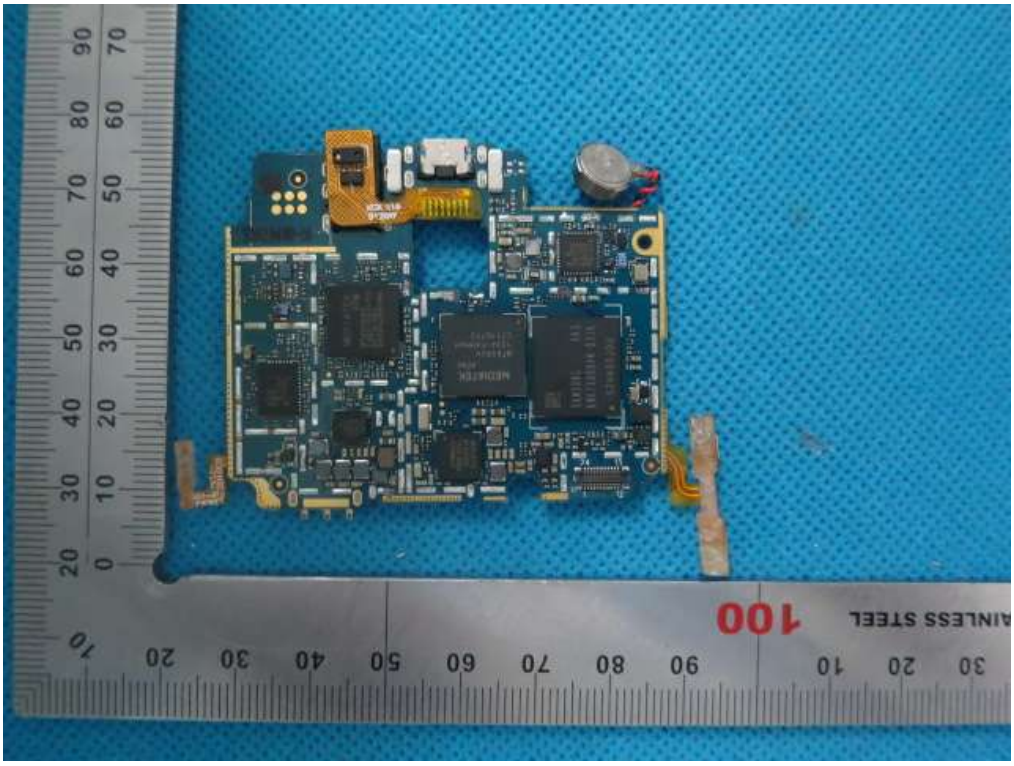


OPEN VIEW OF EUT-2

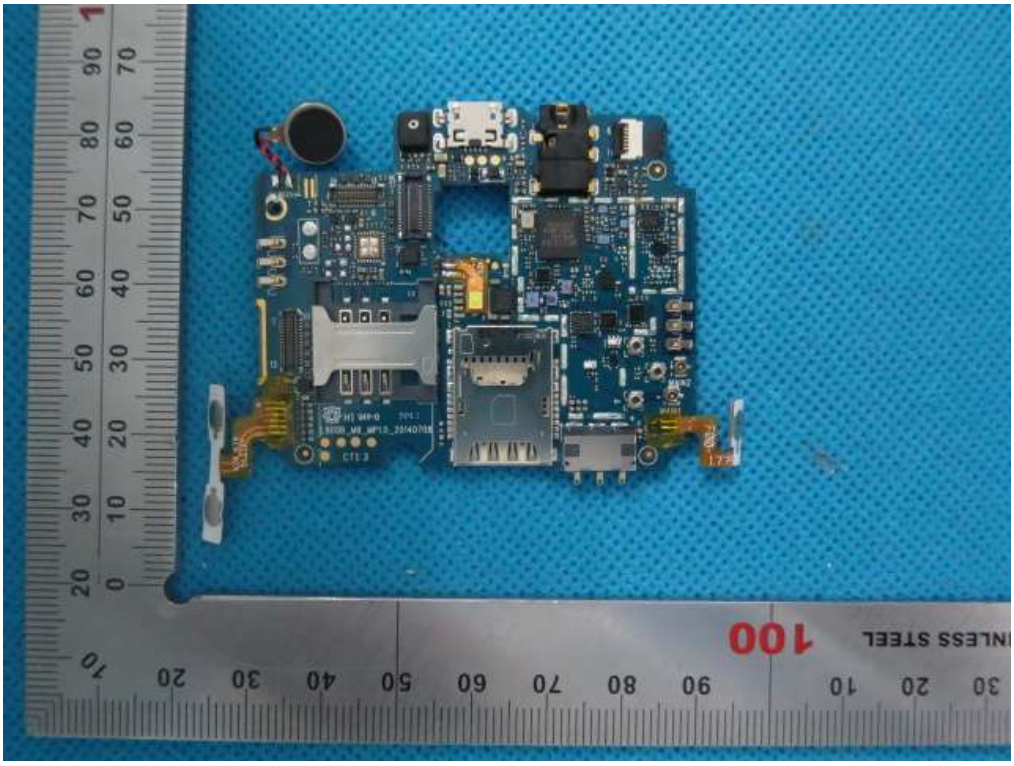
OPEN VIEW OF EUT-3



INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



----END OF REPORT----