SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

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Email: ee.shenzhen@sgs.com

TEST REPORT

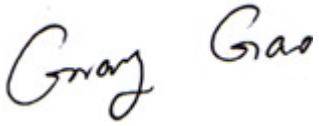
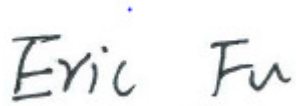
Application No.:	SZEM1612010750RG
Applicant:	LG Electronics Mobile Comm USA
Address of Applicant:	1000 Sylvan Avenue Englewood Cliffs, NJ 07632
Manufacturer:	Huaqin Telecom Technology Co. Ltd.
Address of Manufacturer:	No.1 Building,399 Keyuan Road ,Zhangjiang Hi-Tech Park, Pudong New Area, Shanghai, China
Factory:	Dong Guan Huabel Electronic Technology Co., Ltd
Address of Factory:	No.9 Industrial Northern Road, National High-Tech Industrial Development Zone, SongShan Lake, Dong Guan
Equipment Under Test (EUT):	
EUT Name:	Mobile Handset
Model No.:	LG-X230ds
Trade Mark:	LG
FCC ID:	ZNFX230DS
Standards:	47 CFR PART 15,Subpart B:2015
Date of Receipt:	2016-12-23
Date of Test:	2016-12-26 to 2016-12-27
Date of Issue:	2017-02-16
Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-01-13		Original
02		2017-02-16		Add RE 10m to 3m translate info.

Authorized for issue by:				
Tested By				2016-12-27
		(Gray Gao) /Project Engineer		**Date**
Checked By				2017-02-16
		PM /Reviewer		**Date**

2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass
Radiated Disturbance (30MHz-1GHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass
Radiated Disturbance (above 1GHz)	47 CFR PART 15,Subpart B:2015	ANSI C63.4:2014	Class B	Pass

InternalSource	UpperFrequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

3 Contents

4 General Information

4.1 Details of E.U.T.

Power Supply:	Adaptor: Model:MCS-02WR2
	Input: AC100-240V 50/60Hz 0.2A
	Output:DC5.0V 0.85A
	DC3.85V (1 x 3.85V Rechargeable battery) 2500mAh
	Battery: Charge by DC 5V
Cable:	USB cable:100cm shielded
	earphone cable: 110cm unshielded.

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction emission	3.45dB (9kHz to 150kHz)
		3.0dB (150kHz to 30MHz)
2	Radiated Power	3.64dB
3	Radiated emission	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)
4	Radiated Immunity	1.64dB
5	Conducted Immunity	0.96dB
6	ESD	6 %
7	EFT (Electrical Fast Transients)	5 %
8	Surge Immunity	5 %
9	Voltage Dips and Interruptions	4 %
10	20 system	1.5dB
11	Temperature test	1℃
12	Humidity test	3%
13	DC power test	0.5 %

4.4 Standards Applicable for Testing

Table 1 : Tests Carried Out Under 47 CFR PART 15,Subpart B:2015

Item	Status
Conducted Disturbance at Mains Terminals(150kHz-30MHz)	√
Radiated Disturbance(30MHz-1GHz)	√
Radiated Disturbance(above 1GHz)	√

× Indicates that the test is not applicable
√ Indicates that the test is applicable

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emission					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2016-05-13	2017-05-13
LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
8 Line ISN	Fischer Custom Communications Inc	FCC-TLISN-T8-02	EMC0120	2016-09-28	2017-09-28
4 Line ISN	Fischer Custom Communications Inc	FCC-TLISN-T4-02	EMC0121	2016-09-28	2017-09-28
2 Line ISN	Fischer Custom Communications Inc	FCC-TLISN-T2-02	EMC0122	2016-09-28	2017-09-28
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2016-04-25	2017-04-25

Radiated Disturbance(30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2016-05-13	2017-05-13
EMI Test Receiver (9k-3GHz)	Rohde & Schwarz	ESCI	SEM004-01	2016-04-25	2017-04-25
Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-29
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2016-07-06	2017-07-06
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2015-08-14	2018-08-14

Radiated Disturbance(above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2016-05-13	2017-05-13
EXA Spectrum Analyzer	AgilentTechnologies Inc	N9010A	SEM004-09	2016-07-19	2017-07-19
Horn Antenna(1-18GHz)	Rohde & Schwarz	HF907	SEM003-06	2015-06-14	2018-06-14
Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2016-10-09	2017-10-09

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2016-10-12	2017-10-12
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2016-05-18	2017-05-18

6 Emission Test Results

6.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz)

Test Requirement:	47 CFR PART 15,Subpart B:2015
Test Method:	ANSI C63.4:2014
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

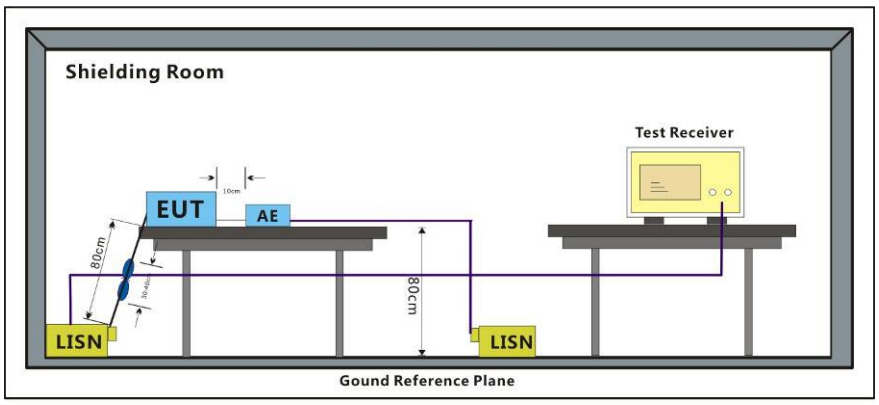
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 53 % RH Atmospheric Pressure: 1015 mbar

Pretest these mode to find the worst case:	a: GSM(Idle)+BT+ WLAN + GPS Rx + playing MP4 + earphone + battery + adapter
	b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter
	c: LTE(Idle)+BT + WLAN+ GPS Rx + camera(rear) + earphone + battery + adapter
	d: Transfer data between the EUT and the PC
	e: FM mode
The worst case for final test:	b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter
	d: Transfer data between the EUT and the PC

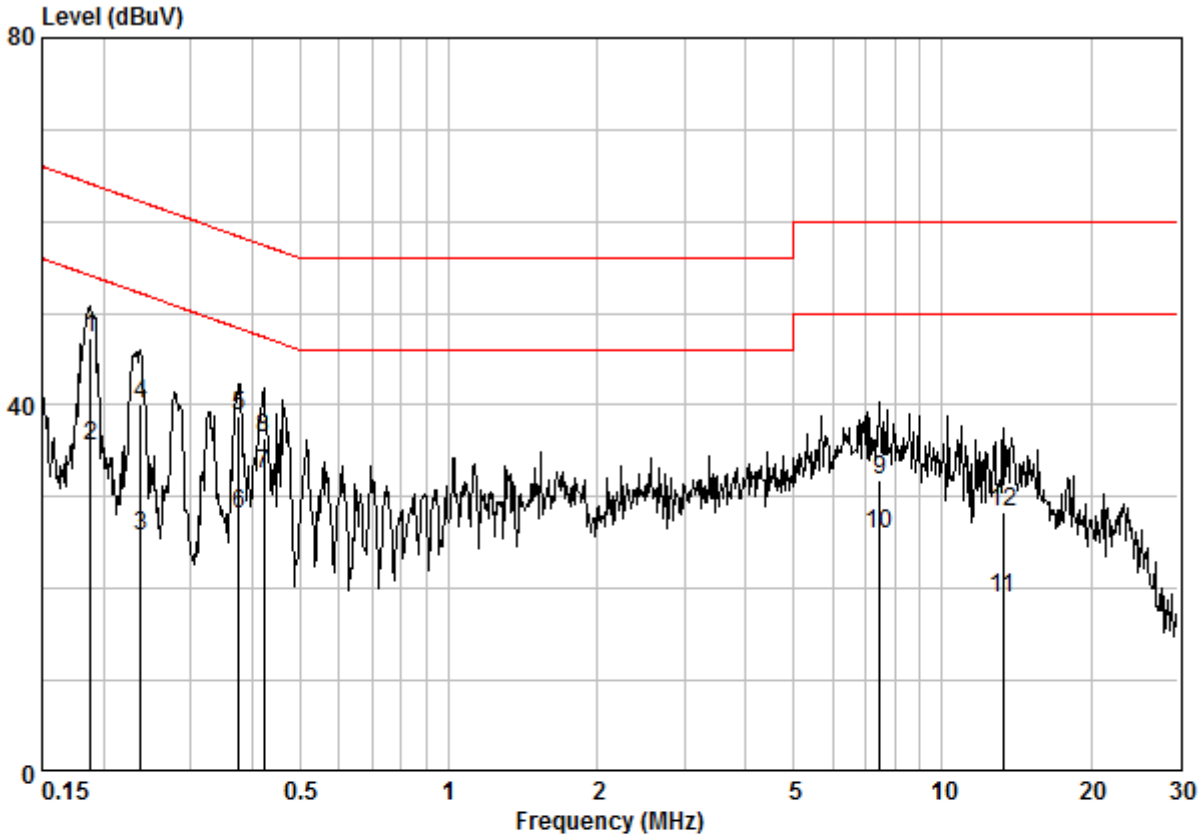
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

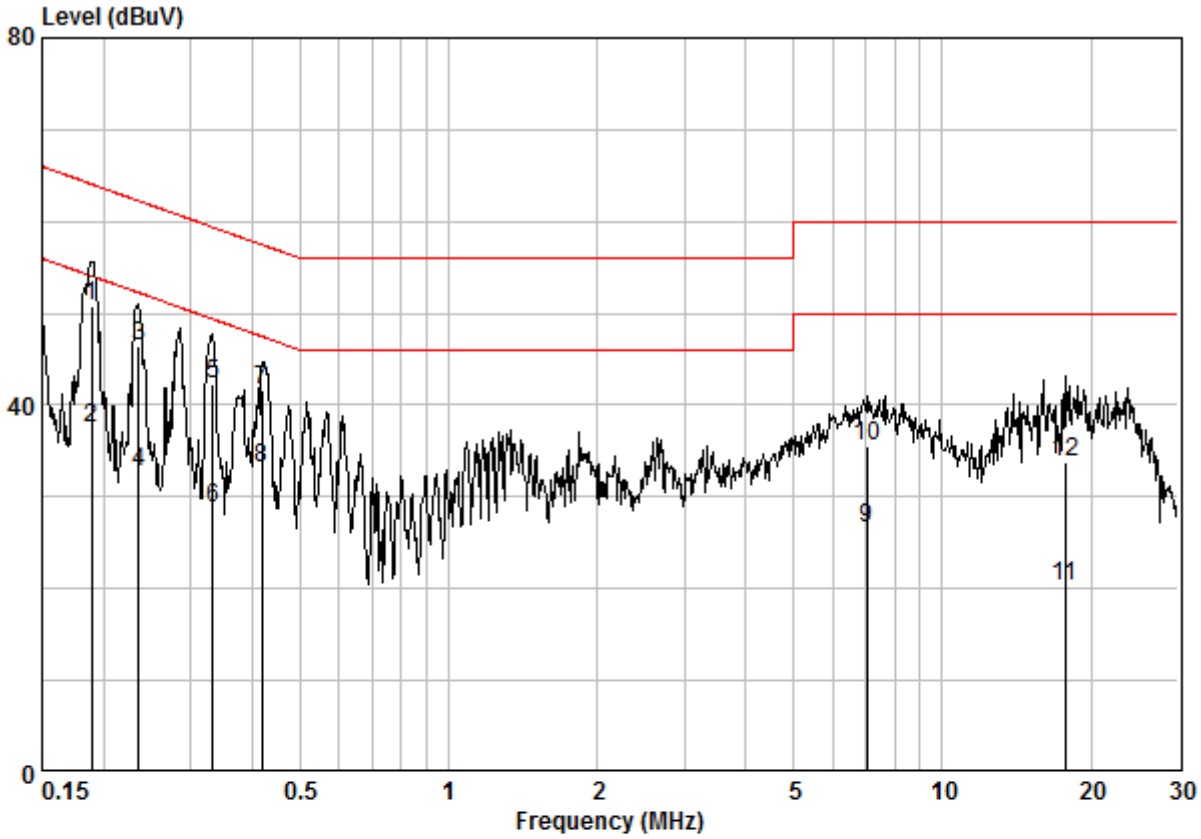
Mode:b;Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 10750RG
Test Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18838	0.02	9.60	37.65	47.27	64.11	-16.84	QP
2	0.18838	0.02	9.60	25.91	35.53	54.11	-18.57	AVERAGE
3	0.23784	0.02	9.60	16.13	25.75	52.17	-26.42	AVERAGE
4	0.23784	0.02	9.60	30.55	40.17	62.17	-22.01	QP
5	0.37512	0.02	9.60	29.20	38.81	58.39	-19.57	QP
6	0.37512	0.02	9.60	18.59	28.20	48.39	-20.18	AVERAGE
7	0.42149	0.02	9.60	22.78	32.40	47.42	-15.02	AVERAGE
8	0.42149	0.02	9.60	26.72	36.34	57.42	-21.08	QP
9	7.486	0.09	9.69	22.06	31.84	60.00	-28.16	QP
10	7.486	0.09	9.69	16.21	25.99	50.00	-24.01	AVERAGE
11	13.267	0.15	9.74	9.11	19.00	50.00	-31.00	AVERAGE
12	13.267	0.15	9.74	18.45	28.34	60.00	-31.66	QP

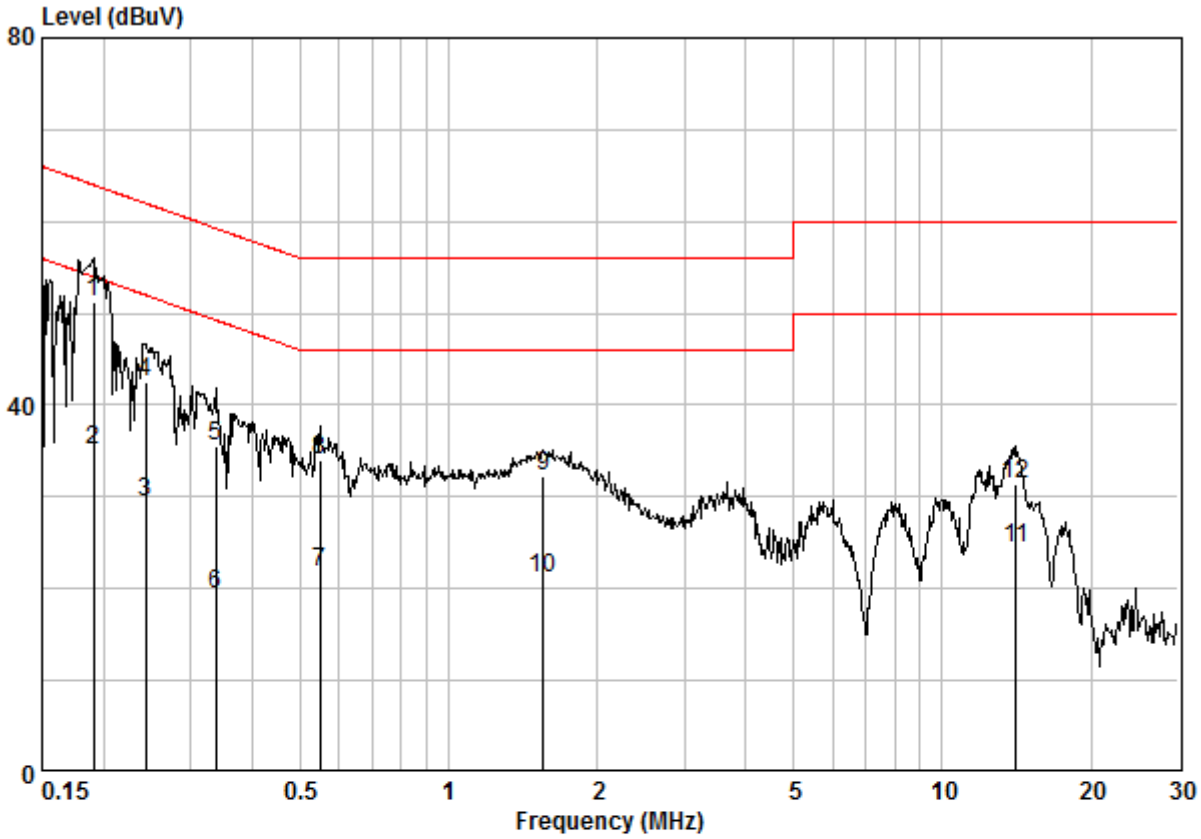
Mode:b;Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 10750RG
Test Mode : b

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18938	0.02	9.61	41.11	50.74	64.06	-13.32	QP
2	0.18938	0.02	9.61	27.96	37.59	54.06	-16.47	AVERAGE
3	0.23533	0.02	9.61	36.88	46.51	62.26	-15.75	QP
4	0.23533	0.02	9.61	23.04	32.67	52.26	-19.59	AVERAGE
5	0.33208	0.02	9.62	32.55	42.19	59.40	-17.21	QP
6	0.33208	0.02	9.62	19.03	28.67	49.40	-20.73	AVERAGE
7	0.41927	0.02	9.62	32.05	41.69	57.46	-15.77	QP
8	0.41927	0.02	9.62	23.50	33.15	47.46	-14.32	AVERAGE
9	7.025	0.08	9.74	16.82	26.64	50.00	-23.36	AVERAGE
10	7.025	0.08	9.74	25.76	35.58	60.00	-24.42	QP
11	17.755	0.16	9.95	10.14	20.26	50.00	-29.74	AVERAGE
12	17.755	0.16	9.95	23.58	33.70	60.00	-26.30	QP

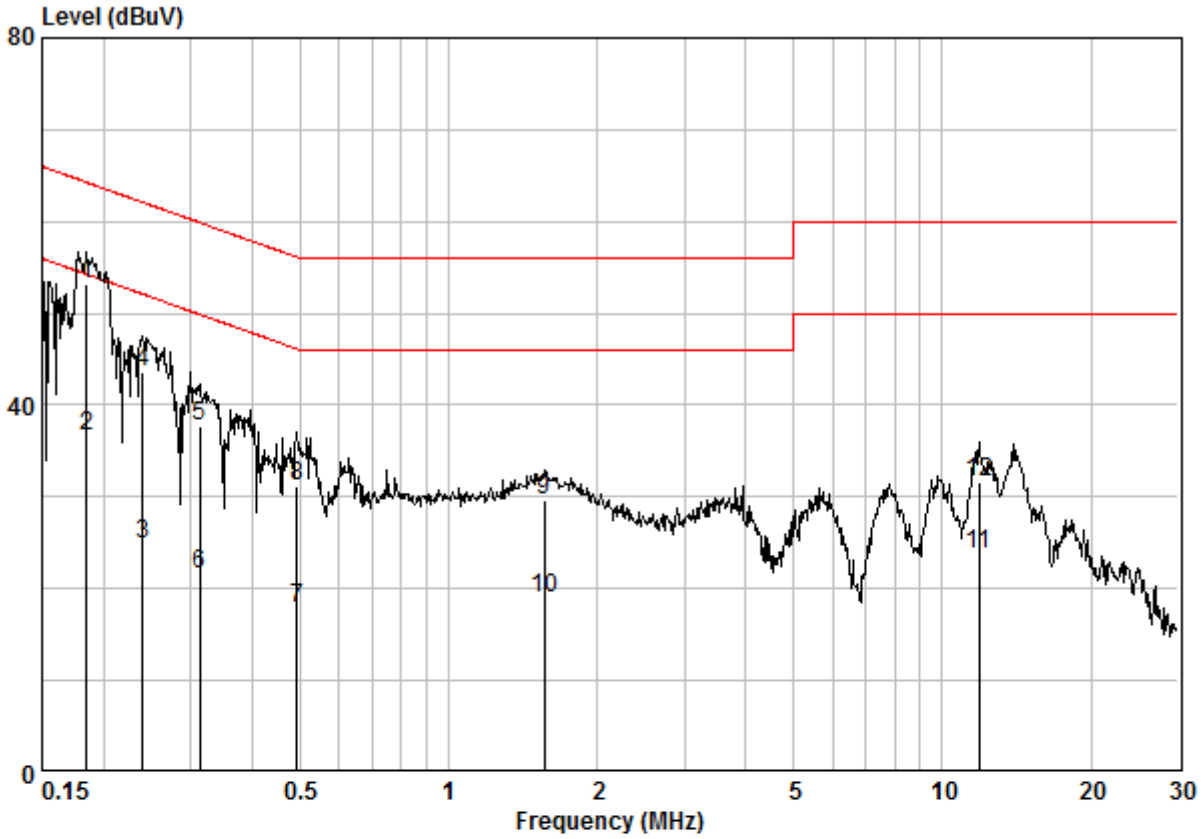
Mode:d;Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 10750RG
Test Mode : d

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.19039	0.02	9.60	41.53	51.15	64.02	-12.87	QP
2	0.19039	0.02	9.60	25.50	35.12	54.02	-18.90	AVERAGE
3	0.24293	0.02	9.60	19.74	29.36	52.00	-22.64	AVERAGE
4	0.24293	0.02	9.60	32.91	42.53	62.00	-19.46	QP
5	0.33740	0.02	9.59	25.97	35.58	59.27	-23.68	QP
6	0.33740	0.02	9.59	9.75	19.36	49.27	-29.91	AVERAGE
7	0.54934	0.02	9.60	12.18	21.80	46.00	-24.20	AVERAGE
8	0.54934	0.02	9.60	24.45	34.07	56.00	-21.93	QP
9	1.552	0.03	9.59	22.59	32.21	56.00	-23.79	QP
10	1.552	0.03	9.59	11.45	21.07	46.00	-24.93	AVERAGE
11	14.138	0.15	9.75	14.50	24.41	50.00	-25.59	AVERAGE
12	14.138	0.15	9.75	21.58	31.49	60.00	-28.51	QP

Mode:d;Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 10750RG
Test Mode : d

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.18443	0.02	9.61	43.52	53.15	64.28	-11.13	QP
2	0.18443	0.02	9.61	26.93	36.56	54.28	-17.73	AVERAGE
3	0.24037	0.02	9.61	15.23	24.87	52.08	-27.22	AVERAGE
4	0.24037	0.02	9.61	33.95	43.58	62.08	-18.50	QP
5	0.31328	0.02	9.62	28.08	37.72	59.88	-22.16	QP
6	0.31328	0.02	9.62	11.99	21.63	49.88	-28.26	AVERAGE
7	0.49150	0.02	9.63	8.15	17.80	46.14	-28.34	AVERAGE
8	0.49150	0.02	9.63	21.46	31.11	56.14	-25.03	QP
9	1.560	0.03	9.64	19.98	29.66	56.00	-26.34	QP
10	1.560	0.03	9.64	9.25	18.92	46.00	-27.08	AVERAGE
11	11.870	0.15	9.84	13.82	23.80	50.00	-26.20	AVERAGE
12	11.870	0.15	9.84	21.58	31.57	60.00	-28.43	QP

6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement: 47 CFR PART 15,Subpart B:2015

Test Method: ANSI C63.4:2014

Frequency Range: 30MHz to 1GHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 55 % RH Atmospheric Pressure: 1015 mbar

Pretest these mode to find the worst case:

a: GSM(Idle)+BT+ WLAN + GPS Rx + playing MP4 + earphone + battery + adapter

b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter

c: LTE(Idle)+BT + WLAN+ GPS Rx + camera(rear) + earphone + battery + adapter

d: Transfer data between the EUT and the PC

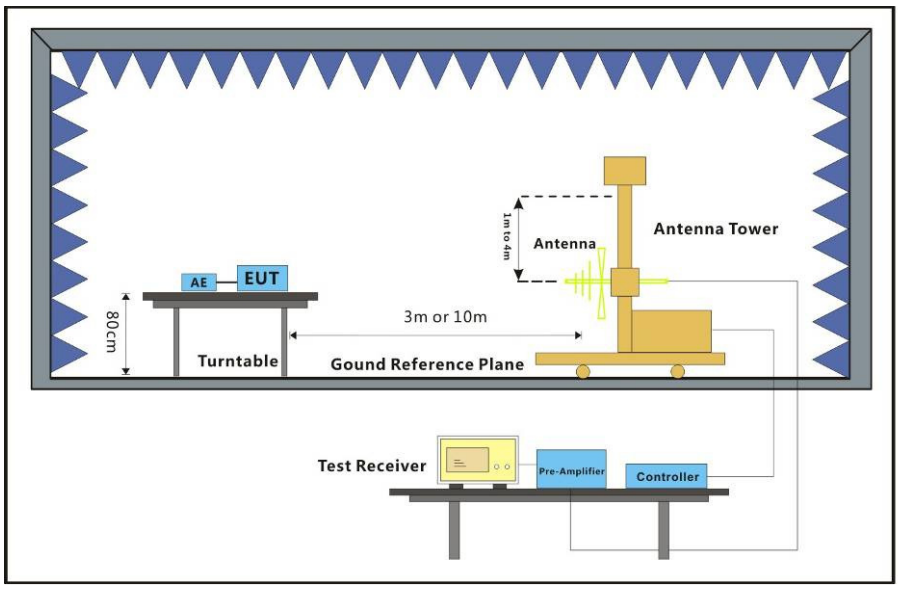
e: FM mode

The worst case for final test:

b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter

d: Transfer data between the EUT and the PC

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$L_3 / L_{10} = D_{10} / D_3$

Note:

L_3: Level @ 3m distance. Unit: uV/m;

L_{10}: Level @ 10m distance. Unit: uV/m;

D_3: 3m distance. Unit: m

D_{10}: 10m distance. Unit: m

The level at 3m test distance is below:

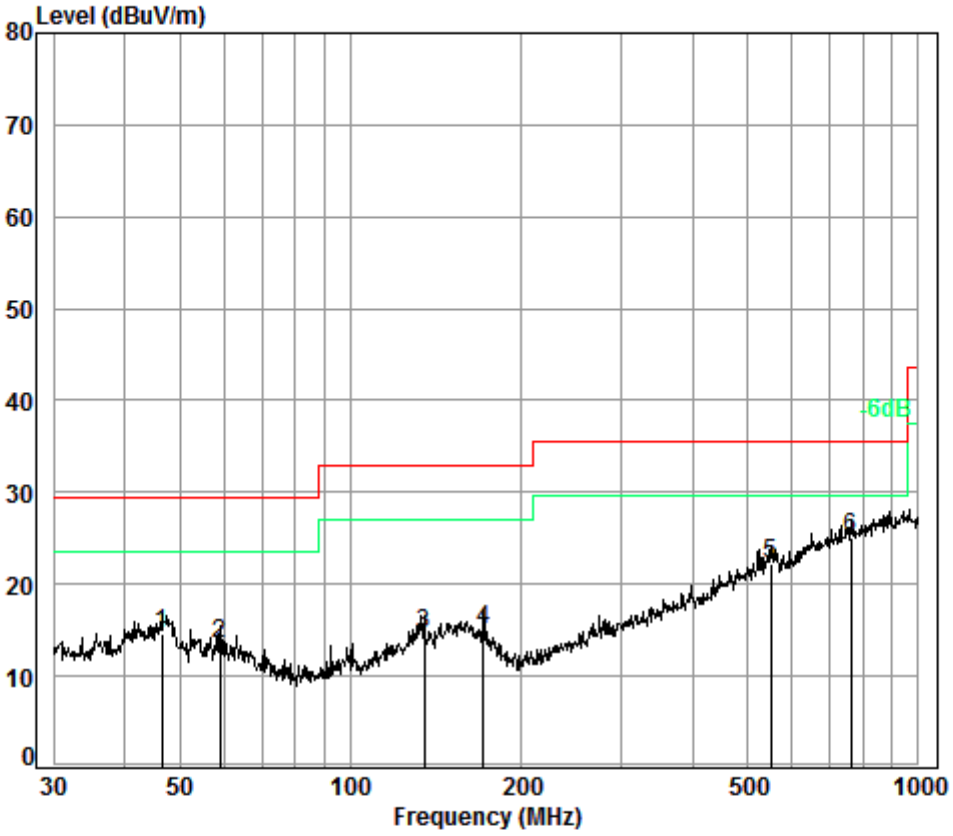
Mode b

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
43.51	24.32	16.44	54.81	34.78	40.00	-5.22	V
101.29	14.50	5.31	17.70	24.96	43.50	-18.54	V
167.24	14.62	5.38	17.94	25.08	43.50	-18.42	V
329.04	16.17	6.43	21.45	26.63	46.00	-19.37	V
570.61	21.75	12.23	40.77	32.21	46.00	-13.79	V
872.18	25.94	19.82	66.05	36.40	46.00	-9.60	V
46.50	14.68	5.42	18.07	25.14	40.00	-14.86	H
59.03	13.55	4.76	15.86	24.01	40.00	-15.99	H
135.03	14.66	5.41	18.03	25.12	43.50	-18.38	H
171.39	15.14	5.71	19.05	25.60	43.50	-17.90	H
550.95	22.16	12.82	42.74	32.62	46.00	-13.38	H
760.70	25.00	17.78	59.28	35.46	46.00	-10.54	H

Mode d

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
35.62	20.70	10.84	36.13	31.16	40.00	-8.84	V
66.03	19.10	9.02	30.05	29.56	40.00	-10.44	V
112.52	18.72	8.63	28.77	29.18	43.50	-14.32	V
171.99	21.70	12.16	40.54	32.16	43.50	-11.34	V
240.00	29.11	28.54	95.14	39.57	46.00	-6.43	V
303.54	22.31	13.05	43.49	32.77	46.00	-13.23	V
42.60	13.63	4.80	16.01	24.09	40.00	-15.91	H
66.03	19.12	9.04	30.12	29.58	40.00	-10.42	H
230.91	21.31	11.63	38.76	31.77	46.00	-14.23	H
303.54	20.71	10.85	36.17	31.17	46.00	-14.83	H
401.84	20.77	10.93	36.42	31.23	46.00	-14.77	H
935.55	25.66	19.19	63.96	36.12	46.00	-9.88	H

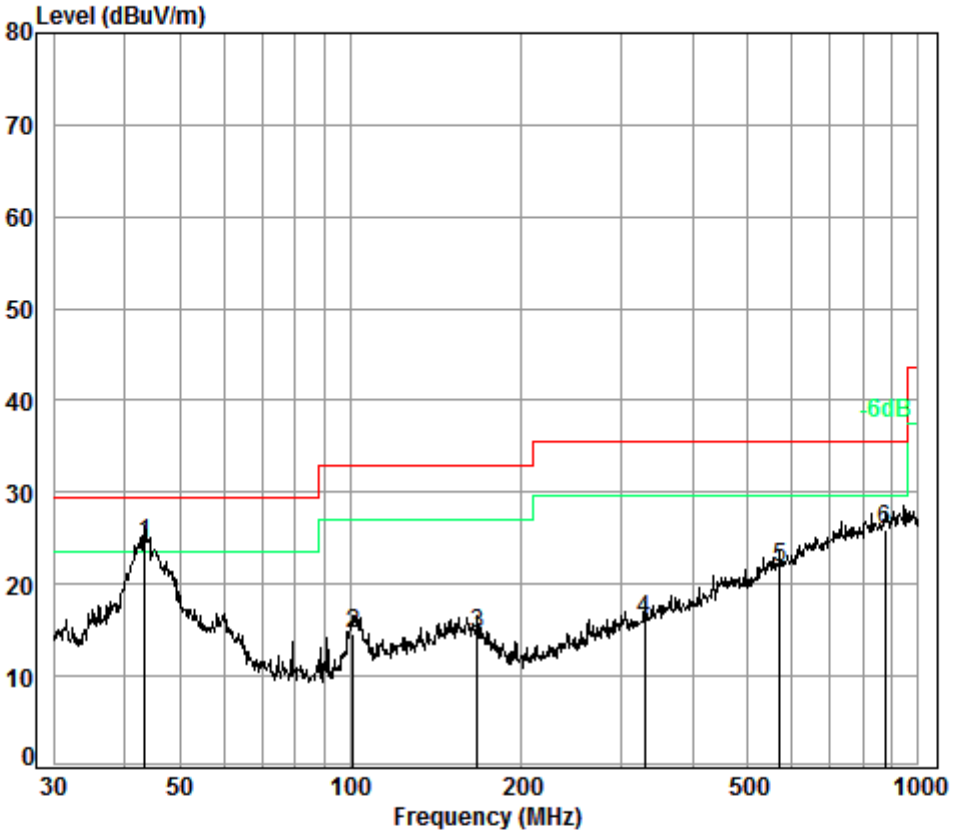
Mode:b;Polarization:Horizontal



Condition: 10m HORIZONTAL
Job No. : 10750RG
Test Mode: b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	46.50	6.83	12.86	33.00	27.99	14.68	29.50	-14.82
2	59.03	7.00	12.07	32.95	27.43	13.55	29.50	-15.95
3	135.03	7.38	12.40	32.76	27.64	14.66	33.00	-18.34
4	171.39	7.50	12.21	32.72	28.15	15.14	33.00	-17.86
5	550.95	8.78	17.75	32.60	28.23	22.16	35.60	-13.44
6 pp	760.70	9.20	20.90	32.60	27.50	25.00	35.60	-10.60

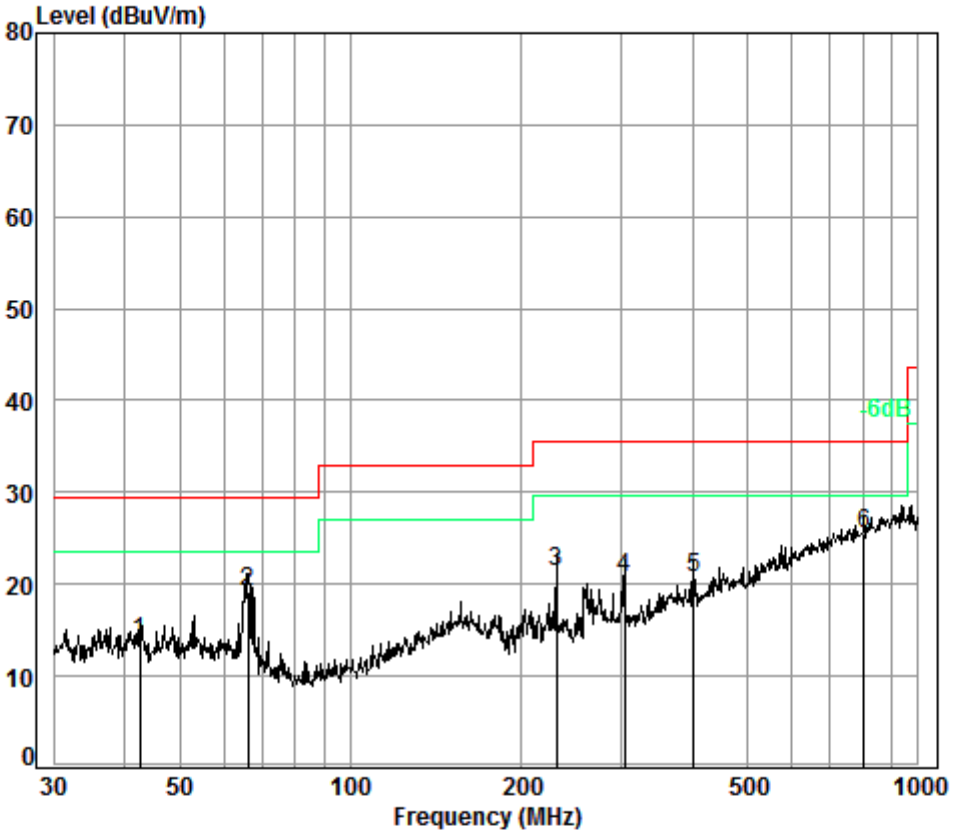
Mode:b;Polarization:Vertical



Condition: 10m VERTICAL
Job No. : 10750RG
Test Mode: b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	43.51	6.80	13.02	32.99	37.49	24.32	29.50	-5.18
2	101.29	7.21	9.52	32.80	30.57	14.50	33.00	-18.50
3	167.24	7.50	12.68	32.73	27.17	14.62	33.00	-18.38
4	329.04	8.15	13.45	32.60	27.17	16.17	35.60	-19.43
5	570.61	8.83	18.10	32.60	27.42	21.75	35.60	-13.85
6	872.18	9.46	21.86	32.53	27.15	25.94	35.60	-9.66

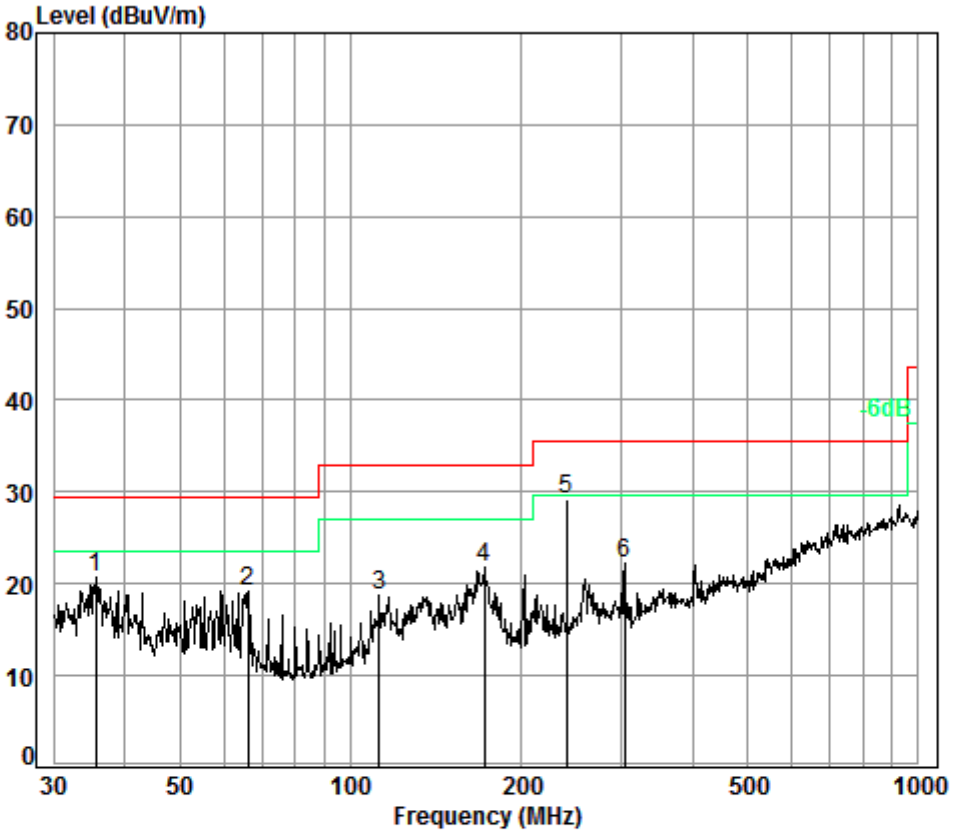
Mode:d;Polarization:Horizontal



Condition: 10m HORIZONTAL
Job No. : 10750RG
Test Mode: d

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	42.60	6.80	13.10	32.99	26.72	13.63	29.50	-15.87
2	66.03	6.98	10.80	32.92	34.26	19.12	29.50	-10.38
3	230.91	7.76	10.81	32.66	35.40	21.31	35.60	-14.29
4	303.54	8.06	12.76	32.60	32.49	20.71	35.60	-14.89
5	401.84	8.30	14.91	32.60	30.16	20.77	35.60	-14.83
6 pp	801.79	9.30	21.24	32.60	27.49	25.43	35.60	-10.17

Mode:d;Polarization:Vertical



Condition: 10m VERTICAL
Job No. : 10750RG
Test Mode: d

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	35.62	6.71	12.73	32.98	34.24	20.70	29.50	-8.80
2	66.03	6.98	10.80	32.92	34.24	19.10	29.50	-10.40
3	112.52	7.26	10.66	32.78	33.58	18.72	33.00	-14.28
4	171.99	7.50	12.11	32.72	34.81	21.70	33.00	-11.30
5 pp	240.00	7.80	11.07	32.66	42.90	29.11	35.60	-6.49
6	303.54	8.06	12.76	32.60	34.09	22.31	35.60	-13.29

6.3 Radiated Disturbance(above 1GHz)

Test Requirement:	47 CFR PART 15,Subpart B:2015
Test Method:	ANSI C63.4:2014
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
Above 1GHz	74(dBμV/m) peak, 54(dBμV/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

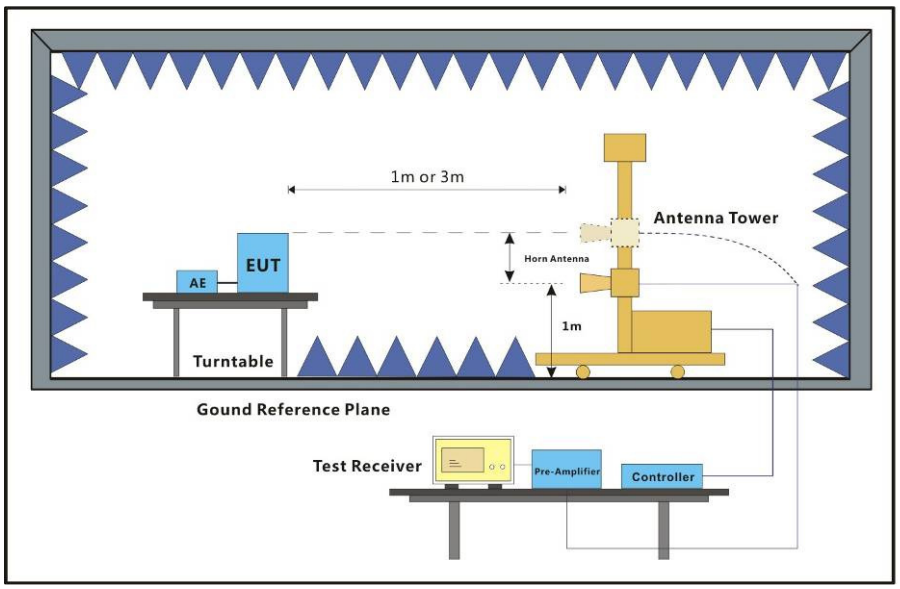
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 56 % RH Atmospheric Pressure: 1010 mbar

Pretest these mode to find the worst case:	a: GSM(Idle)+BT+ WLAN + GPS Rx + playing MP4 + earphone + battery + adapter
	b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter
	c: LTE(Idle)+BT + WLAN+ GPS Rx + camera(rear) + earphone + battery + adapter
	d: Transfer data between the EUT and the PC
	e: FM mode
The worst case for final test:	b: WCDMA(Idle)+BT + WLAN+ GPS Rx + camera(Front) + earphone + battery + adapter
	d: Transfer data between the EUT and the PC

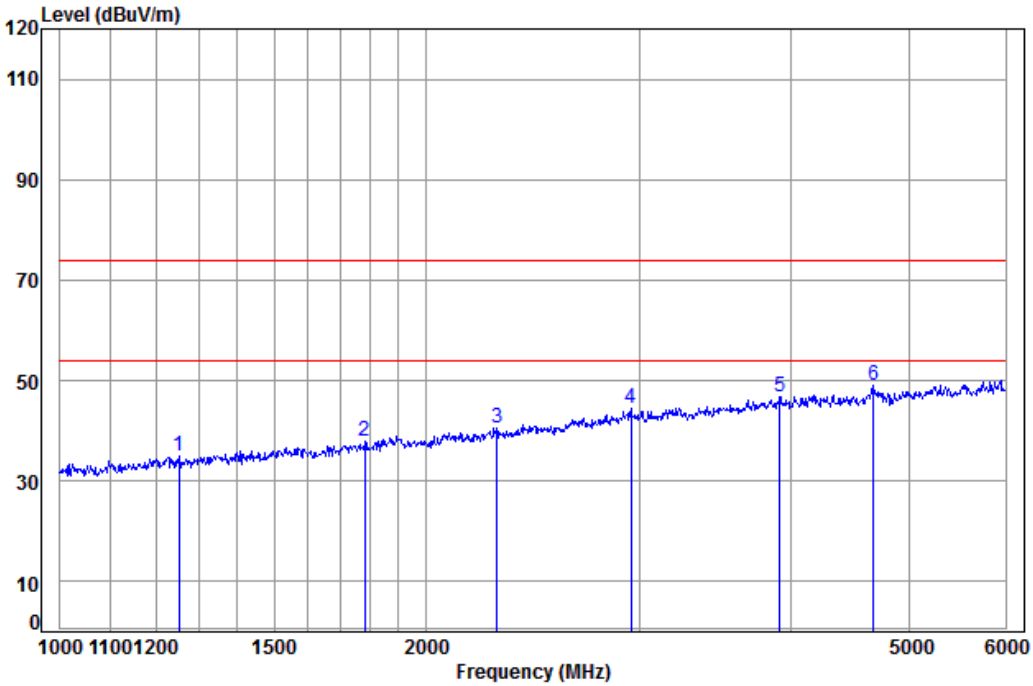
6.3.2 Test Setup Diagram



6.3.3 Measurement Data

1. An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
2. The disturbance from 6GHz to 18GHz was very low, and the below is the highest frequency could be found when testing, so only the below frequency had been displayed.

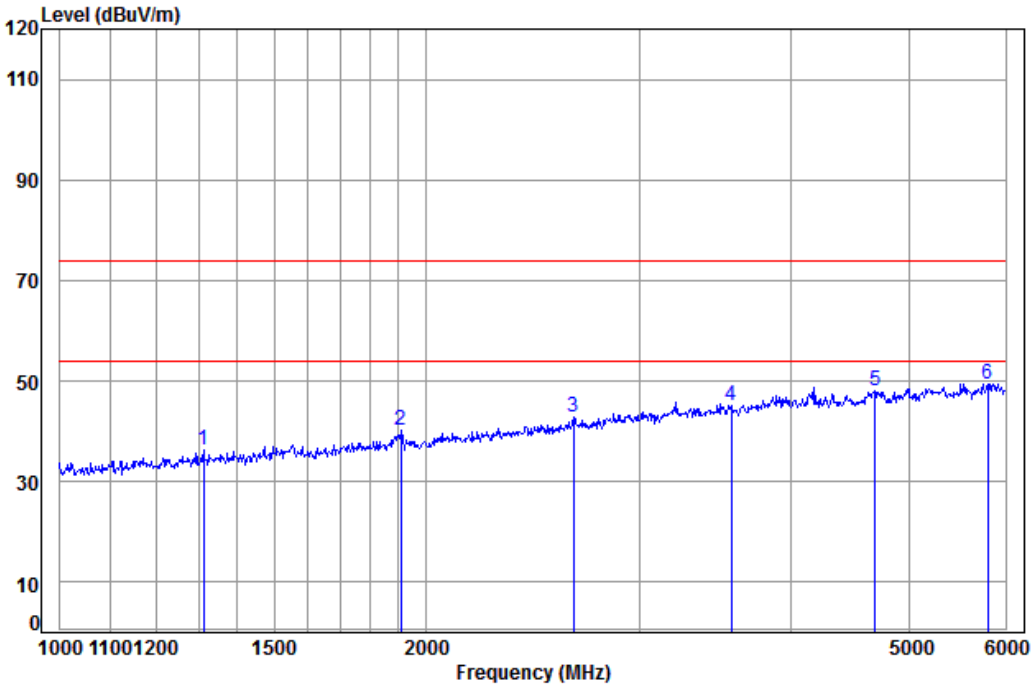
Mode:b;Polarization:Horizontal



Condition: 3m HORIZONTAL
Job No: : 10750RG
Mode: : b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1253.277	4.16	24.74	38.07	44.08	34.91	74.00	-39.09	Peak
2	1780.593	4.79	26.99	38.02	44.05	37.81	74.00	-36.19	Peak
3	2288.263	5.26	28.77	37.97	44.50	40.56	74.00	-33.44	Peak
4	2951.232	5.88	31.13	37.90	45.39	44.50	74.00	-29.50	Peak
5	3909.967	6.63	33.36	37.99	44.84	46.84	74.00	-27.16	Peak
6 pp	4668.852	7.53	33.91	38.33	46.08	49.19	74.00	-24.81	Peak

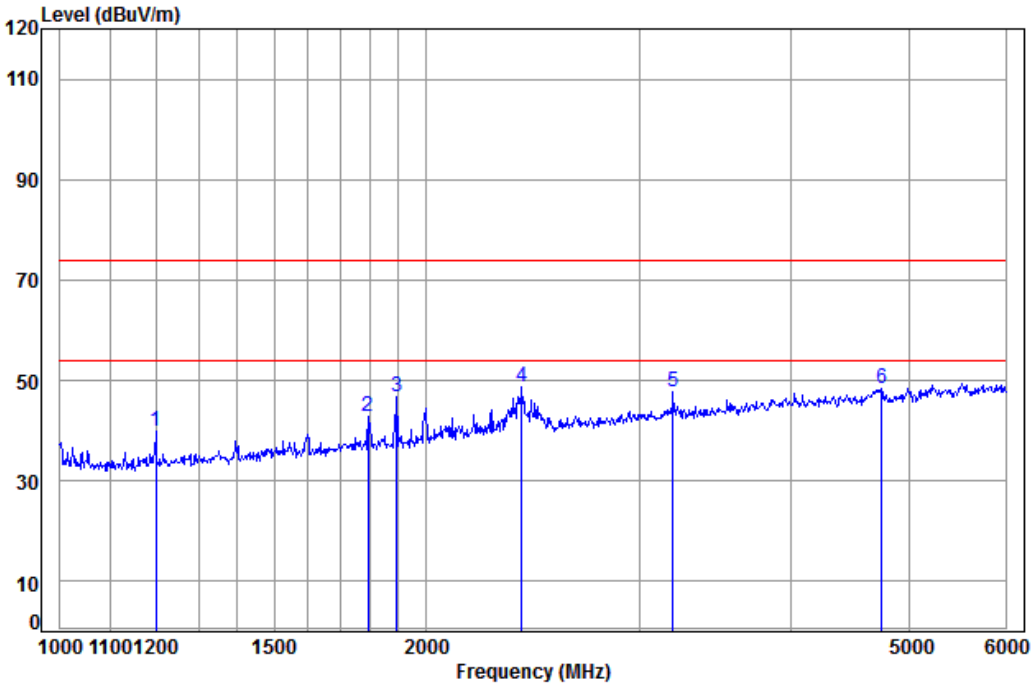
Mode:b;Polarization:Vertical



Condition: 3m VERTICAL
Job No: : 10750RG
Mode: : b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1313.043	4.24	25.01	38.07	45.05	36.23	74.00	-37.77	Peak
2	1906.051	4.92	27.47	38.01	45.85	40.23	74.00	-33.77	Peak
3	2645.673	5.58	29.99	37.94	45.09	42.72	74.00	-31.28	Peak
4	3568.514	6.36	32.40	37.96	44.44	45.24	74.00	-28.76	Peak
5	4685.613	7.56	33.95	38.34	44.89	48.06	74.00	-25.94	Peak
6 pp	5799.177	8.55	34.58	38.34	44.52	49.31	74.00	-24.69	Peak

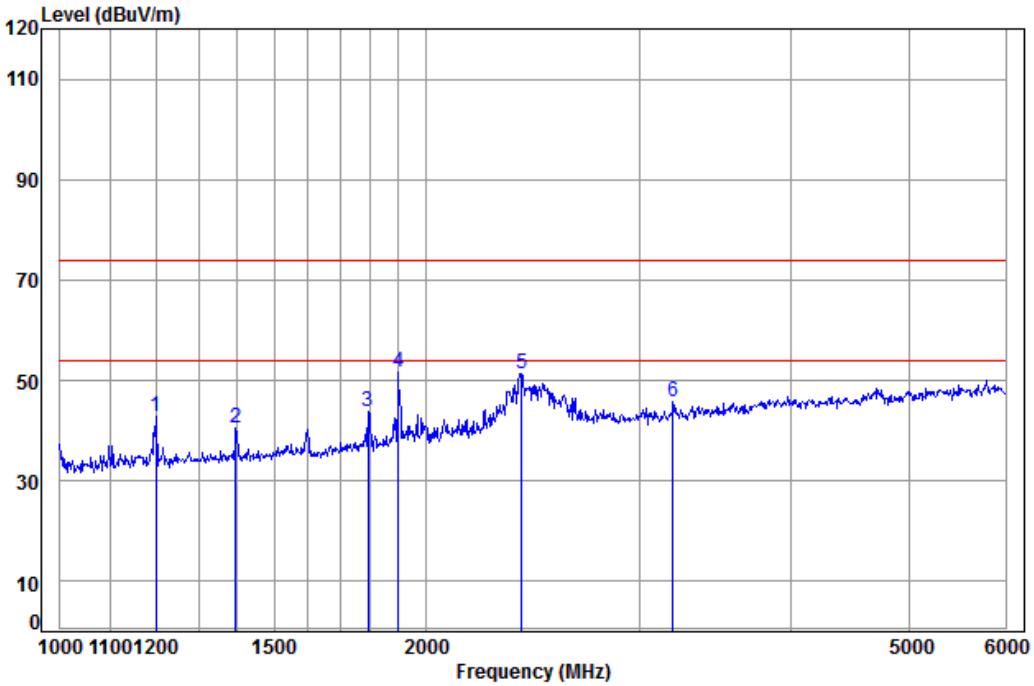
Mode:d;Polarization:Horizontal



Condition: 3m HORIZONTAL
Job No: : 10750RG
Mode: : d

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1198.376	4.08	24.47	38.08	49.42	39.89	74.00	-34.11	Peak
2	1793.401	4.81	27.04	38.02	49.03	42.86	74.00	-31.14	Peak
3	1892.439	4.91	27.42	38.01	52.43	46.75	74.00	-27.25	Peak
4 pp	2397.385	5.34	29.10	37.96	52.11	48.59	74.00	-25.41	Peak
5	3193.317	6.08	31.66	37.92	47.88	47.70	74.00	-26.30	Peak
6	4744.751	7.64	34.05	38.37	45.21	48.53	74.00	-25.47	Peak

Mode:d;Polarization:Vertical



Condition: 3m VERTICAL
Job No: : 10750RG
Mode: : d

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1198.376	4.08	24.47	38.08	52.48	42.95	74.00	-31.05	Peak
2	1395.520	4.34	25.37	38.06	48.95	40.60	74.00	-33.40	Peak
3	1793.401	4.81	27.04	38.02	50.12	43.95	74.00	-30.05	Peak
4 pp	1899.233	4.91	27.44	38.01	57.27	51.61	74.00	-22.39	Peak
5	2397.385	5.34	29.10	37.96	54.84	51.32	74.00	-22.68	Peak
6	3193.317	6.08	31.66	37.92	46.03	45.85	74.00	-28.15	Peak