FCC EMC Test Report

FCC ID: QISMAR-LX3AM

Project No.	:	1904C018
Equipment	:	Smart Phone
Test Model	:	MAR-LX3Am
Series Model	:	N/A
Applicant	:	Huawei Technologies Co., Ltd.
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China

Date of Receipt	:	Apr. 04, 2019
Date of Test	:	Apr. 08, 2019 ~ Apr. 18, 2019
Issued Date	:	May 20, 2019
Tested by	:	BTL Inc.

Testing Engineer : Jason Yang
(Jason Yang)

Technical Manager : Bill Zhang
(Bill Zhang)

Authorized Signatory : Kevin Li
(Kevin Li)

BTL INC.

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

Certificate #5123.02

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.
Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Apr. 22, 2019
R01	Changed Software Version.	May 13, 2019
R02	Changed the FCC ID QISMAR-LX3Am to QISMAR-LX3AM.	May 20, 2019

1. GENERAL SUMMARY

Equipment	:	Smart Phone
Brand Name	:	HUAWEI
Test Model	:	MAR-LX3Am
Series Model	:	N/A
Applicant	:	Huawei Technologies Co., Ltd.
Manufacturer	:	Huawei Technologies Co., Ltd.
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China
Date of Test	:	Apr. 08, 2019 ~ Apr. 18, 2019
Test Sample	:	Engineering Sample No.: D190403529 IMEI1:865004040000701, IMEI2:865004040001626
Standard(s)	:	FCC Part 15, Subpart B ANSI C63.4-2014

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCE-1-1904C018) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

EMC Emission				
Standard(s)	Test Item	Limit	Judgment	Remark
FCC Part15, Subpart B ANSI C63.4-2014	Conducted Emission	Class B	PASS	
	Radiated emission Below 1 GHz	Class B	PASS	
	Radiated emission Above 1 GHz	Class B	PASS	**NOTE(1)**

NOTE:

(1) The EUT's max operating frequency is 2.4 GHz which does exceed 108 MHz, so the test will be performed.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's Test Firm Registration Number for FCC: 357015
BTL's Designation Number for FCC: CN1240

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.
The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C01	CISPR	150 kHz ~ 30MHz	3.16

B. Radiated Measurement

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB02 (3m)	CISPR	30MHz ~ 200MHz	V	3.83
		30MHz ~ 200MHz	H	3.79
		200MHz ~ 1,000MHz	V	4.04
		200MHz ~ 1,000MHz	H	4.02

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-CB02 (3m)	CISPR	1GHz ~ 6GHz	4.50
		6GHz ~ 18GHz	5.18

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Phone
Brand Name	HUAWEI
Test Model	MAR-LX3Am
Series Model	N/A
Model Difference(s)	N/A
Work Frequency	Please refer to Note 2.
Hardware Version	HL4MARM
Software Version	9.0.1.156(SP1C900E141R1P6)
Power Source	1# DC voltage supplied from AC/DC adapter. 2# Supplied from battery. 3# Supplied from USB port.
Power Rating	1# I/P: 100-240V~ 50/60Hz, 0.5A O/P: 5V ⎓ 2A OR 9V ⎓ 2A 2# DC 3.82V, 3240 mAh 3# DC 5V

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2.

Mode		Work Frequency	
		Transmit Frequency(MHz)	Receive Frequency(MHz)
GSM	GSM 850	824 - 849	869 - 894
	PCS1900	1850-1910	1930-1990
WCDMA B5		824 - 849	869 - 894
WCDMAB4		1710-1755	2110-2155
WCDMA B2		1850-1910	1930-1990
LTE B2		1850 -1910	1930 -1990
LTE B4		1710 -1755	2110 -2155
LTE B5		824-849	869-894
LTE B7		2500 -2570	2620 -2690
LTE B12		699-716	729-746
LTE B17		704-716	734-746
LTE B66		1710–1780	2110–2200
Bluetooth		2400-2483.5	
2.4G Wi-Fi		2400-2483.5	
GPS		/	1575.42
BDS		/	1561.098
Glonass		/	1602
FM		/	Support

*The above work frequency is exemption frequency.

3. The EUT contains following accessory devices.

Items	Factory	Model Name	Description
Adapter	Salcomp (Manufacturer: Huawei Technologies Co., Ltd.)	HW-090200EH0 HW-090200BH0 HW-090200AH0 HW-090200UH0 HW-059200EHQ	I/P: 100-240V ~50/60Hz, 0.5A O/P: 5V ⎓ 2A OR 9V ⎓ 2A
	BYD (Manufacturer: Huawei Technologies Co., Ltd.)		
	HUNTKEY (Manufacturer: Huawei Technologies Co., Ltd.)	HW-090200EH0 HW-090200BH0 HW-090200UH0	
	Huawei Technologies Co., Ltd.	HW-090200UH1	
Battery	Sunwoda (Manufacturer: Huawei Technologies Co., Ltd.)	HB356687ECW	Rated capacity: 3240mAh Nominal Voltage: ⎓ +3.82V Charging Voltage: ⎓ +4.40V
	Desay (Manufacturer: Huawei Technologies Co., Ltd.)		
	SCUD (Manufacturer: Huawei Technologies Co., Ltd.)		
Earphone	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	MEND1532B528A02 MEND1532B528B00	-
	Boluo County Quancheng Electronic Co.,ltd	1293-3283-3.5mm-322 1293-3283-3.5mm-336	
	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	EPAB542-2WH05-DH EPAB542-2WH06-DH	
USB Cable	HUIZHOU DEHONG TECHNOLOGY CO.,LTD.	330-50507	-
	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	CUDU01B-HC295-EH	
	NingBo Broad Telecommunication Co.,Ltd.	WA0020	
	LUXSHARE Precision Industry Co., Ltd.	L99UC131-CS-H	
	Freeport Resources Enterprises (Jiangxi) Co.,Ltd	18-93C2CHO-001HF	
	Dongguan Mingji Electronics Technology Group Co.,Ltd	203-1572-0	

4. Configuration table:

Item	Factory	Model	config1	config2	config3	config4	config5	config6	config7	config8	config9
Adapter	HuntKey	HW-090200EH0	V								
		HW-090200UH0		V							
	Salcomp	HW-090200EH0			V						
		HW-090200UH0				V					
		HW-059200EHQ					V				
	BYD	HW-090200EH0						V			
		HW-090200UH0							V		
		HW-059200EHQ								V	
	HUAWEI	HW-090200UH1									V
USB Cable	LUXSHARE	L99UC131-CS-H	V						V	V	V
	DEHONG	330-50507		V							
	Lianji	18-93C2CHO-001HF			V						
	FOXCONN	CUDU01B-HC295-EH				V					
	Mingji	203-1572-0					V				
	Ningbo Broad	WA0020						V			
Battery	Desay	HB356687ECW	V			V	V	V	V	V	V
	Sunwoda			V							
	SCUD				V						
Earphone	Quancheng	1293-3283-3.5mm-322	V						V	V	V
	Quancheng	1293-3283-3.5mm-336		V							
	Lianchuang	MEND1532B528A02			V						
	Lianchuang	MEND1532B528B00				V					
	FOXCONN	EPAB542-2WH05-DH					V				
	FOXCONN	EPAB542-2WH06-DH						V			

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Adapter+ Idle+ Playing+ Earphone
Mode 2	Adapter+ Idle+ Playing+ Speaker
Mode 3	Adapter+Idle+2.4G WIFI +GPS+BT +Camera on(Front)
Mode 4	Adapter+Idle+2.4G WIFI +GPS+BT +Camera on(Rear)
Mode 5	Adapter + FM 88MHz+ Earphone
Mode 6	Adapter + FM 98MHz+ Earphone
Mode 7	Adapter + FM 108MHz+ Earphone
Mode 8	Adapter + Traffic(GSM)
Mode 9	Adapter+ Traffic(WCDMA)
Mode 10	Adapter+ Traffic(LTE)
Mode 11	USB Copy + Idle

For Conducted Test	
Final Test Mode	Description
Mode 1	Adapter+ Idle+ Playing+ Earphone
Mode 2	Adapter+ Idle+ Playing+ Speaker
Mode 3	Adapter+Idle+2.4G WIFI +GPS+BT +Camera on(Front)
Mode 6	Adapter + FM 98MHz+ Earphone
Mode 10	Adapter+ Traffic(LTE)
Mode 11	USB Copy + Idle

For Radiated Test	
Final Test Mode	Description
Mode 1	Adapter+ Idle+ Playing+ Earphone
Mode 2	Adapter+ Idle+ Playing+ Speaker
Mode 3	Adapter+Idle+2.4G WIFI +GPS+BT +Camera on(Front)
Mode 6	Adapter + FM 98MHz+ Earphone
Mode 10	Adapter+ Traffic(LTE)
Mode 11	USB Copy + Idle

Evaluation description:

1. Mode 1 tested config 1-9, config 1 is the worst case and tested Mode 2-10.
2. Mode 11 tested config 1-6.
3. Config 1 with Mode 1/2/3/6/10/11 are the worst case and recorded in this report.

3.3 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The standard test signals and output signal as following:

Mode 1-10:

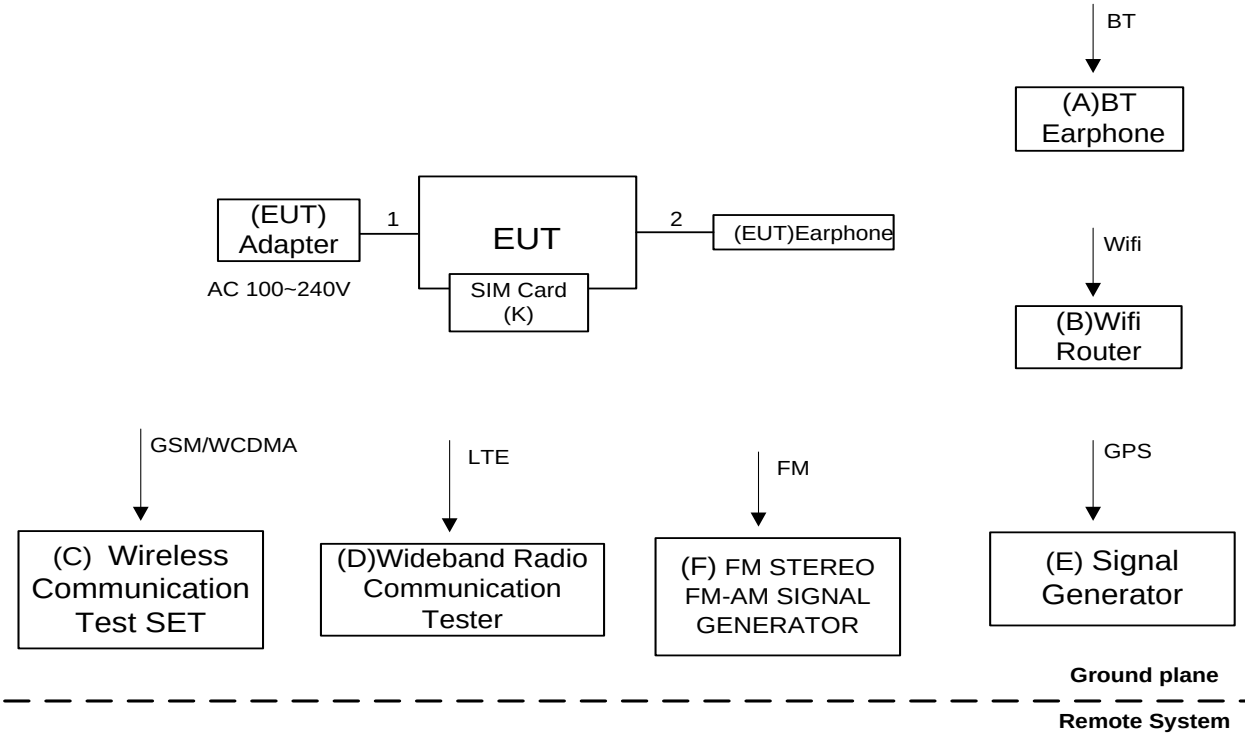
1. EUT connected to earphone via earphone cable.
2. EUT connected to adapter via DC cable.
3. EUT connected to wireless router via WiFi function.
4. EUT connected to BT earphone via BT function.
5. EUT connected to wireless communication test SET via radio signal.
6. EUT connected to GPS signal generator via radio signal.
7. EUT connected to wideband radio communication tester via radio signal.
8. EUT connected to FM STEREO FM-AM signal generator via FM function.

Mode 11:

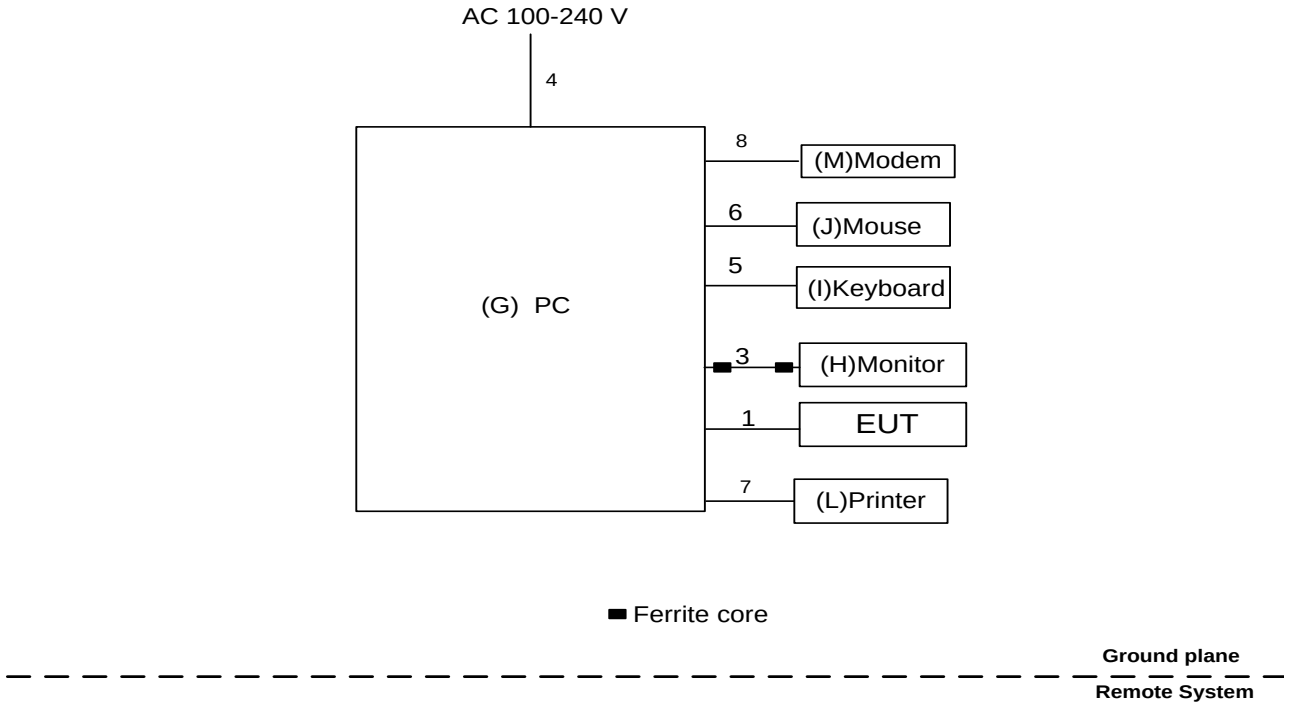
1. Send "H" pattern to video port device (Monitor).
2. EUT connected to PC via USB cable and transmission the data.
3. PC connected to mouse and keyboard via USB cable.
4. PC connected to printer via parallel cable.
5. PC connected to modem via RS232 cable.

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1-10



Mode 11



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	BT earphone	MICROKIA	M9	N/A
B	wireless router	ASUS	RT-AC66U	E8ICGG000138
C	Wireless Communication Test SET	Agilent	(8960 Series) E5515C	MY48364183
D	Wideband Radio Communication Tester	RS	CMW500	122125
E	Signal Generator	Agilent	E4438C	MY49071316
F	FM STEREO FM-AM SIGNAL GENERATOR	KENWOOD	SG-5110	HR1010099
G	PC	Dell	DCSM	G7K832X
H	LCD monitor	Dell	E177FPc	CNOFJ179-64180-6AG-1WNS
I	Keyboard	Dell	L100	CNORH6596589071T08NE
J	Mouse	Dell	MO56UOA	FQJ000BS
K	SIM Card	R&S	N/A	N/A
L	Printer	SII	DPU-414	3018507 B
M	Modem	ACEEX	DM-1414V	0603002131

Item	Shielded Type	Ferrite Core	Length	Note
1	YES	NO	1m	USB Cable
2	NO	NO	1.2m	Earphone Cable
3	YES	YES	1.8m	D-SUB Cable
4	NO	NO	1.8m	AC Cable
5	YES	NO	1.8m	USB Cable
6	YES	NO	1.8m	USB Cable
7	YES	NO	1.8m	Parallel Cable
8	YES	NO	1.8m	RS232 Cable

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150KHZ-30MHZ)

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.5 - 5.0	56.00	46.00
5.0 - 30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value - Limit Value

4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1*	LISN	EMCO	3816/2SH	52766	Mar. 10, 2022
2	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 10, 2020
3	TWO-LINE V-NETWORK	R&S	ENV216	100526	Mar. 10, 2020
4	EMI Test Receiver	R&S	ESR3	101862	Aug. 11, 2019
5	Cable	N/A	N/A(6m)	N/A	Mar. 12, 2020
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A 1-01	N/A	N/A

Remark: “N/A” denotes no model name, serial no. or calibration specified.
“*” calibration period of equipment list is three year.
Except * item, all calibration period of equipment list is one year.

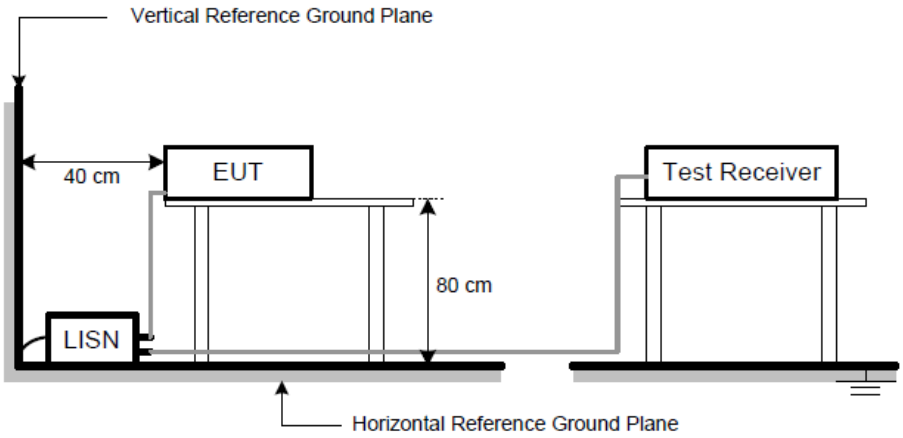
4.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
f. First the whole spectrum of emission caused by equipment under test(EUT) is recorded with Detector set to peak. Peak value recorded in table if the margin from QP Limit is larger than 2dB,otherwise,QP value is recorded, Measuring frequency range from 150KHz to 30MHz.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP

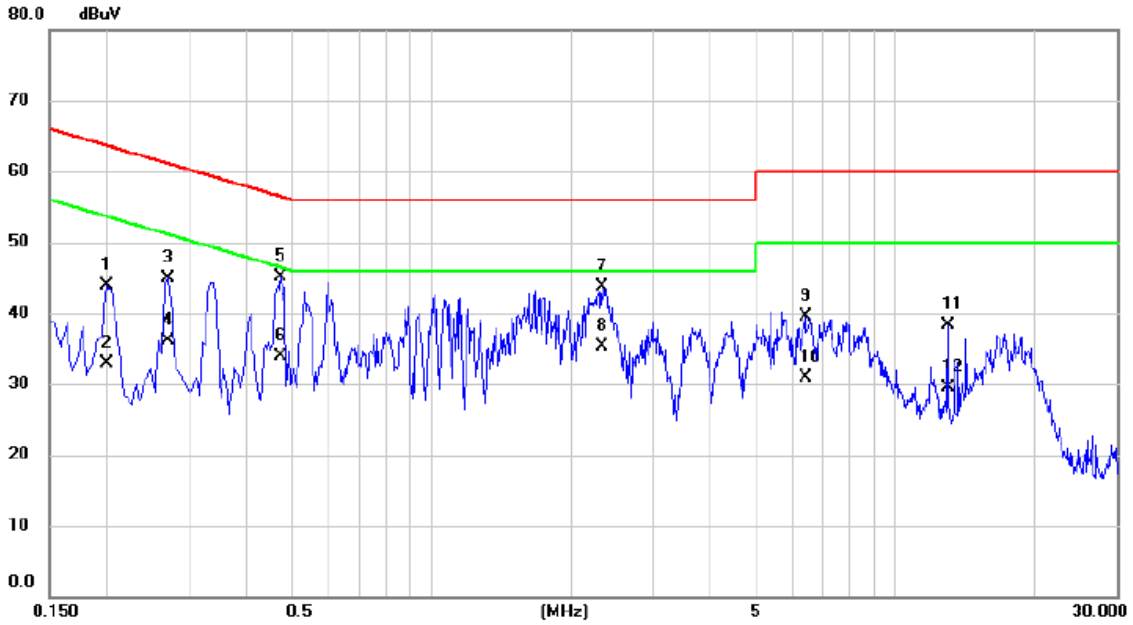


4.1.6 TEST RESULTS

Remark

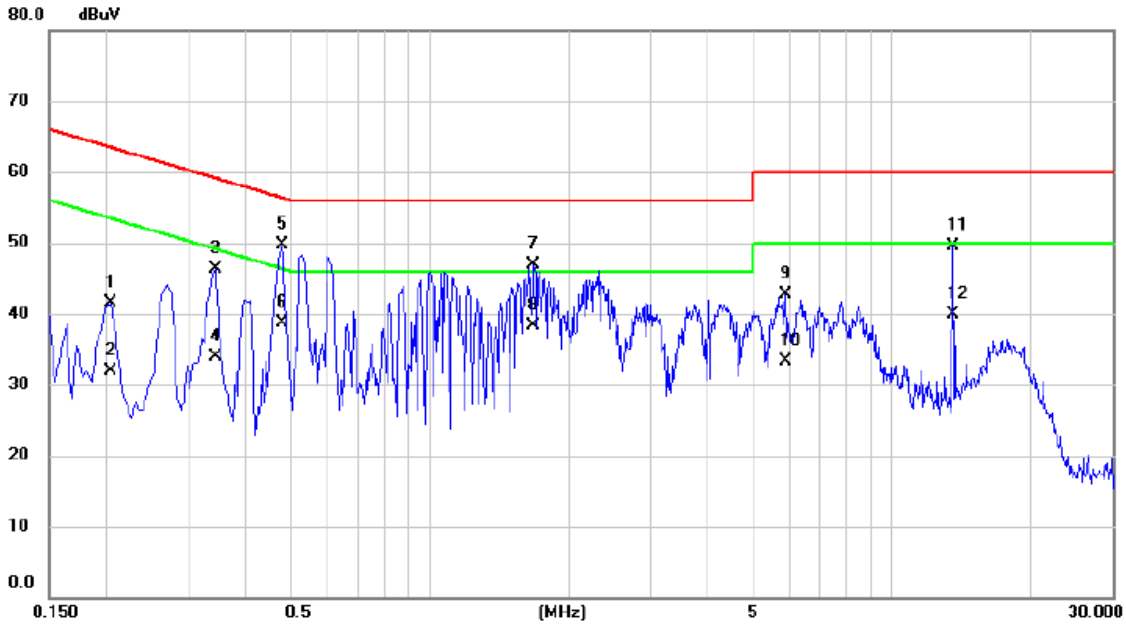
(1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.3 sec./MHz.
(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 1		
Test Engineer	Jason Yang		



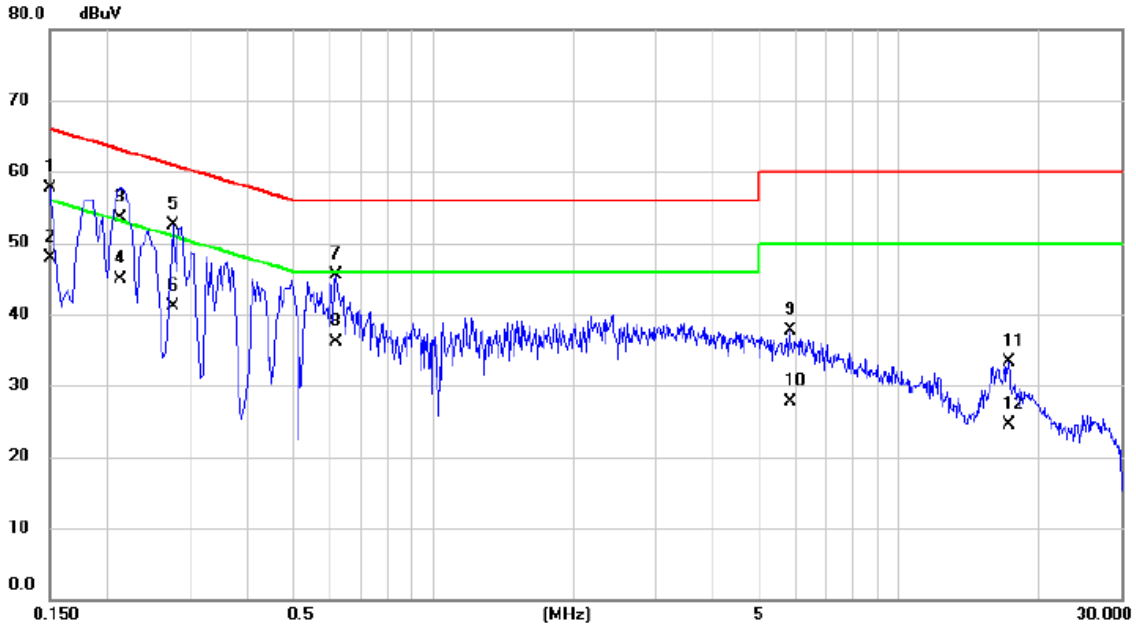
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1995	33.38	10.48	43.86	63.63	-19.77	QP	
2		0.1995	22.40	10.48	32.88	53.63	-20.75	AVG	
3		0.2714	34.51	10.48	44.99	61.07	-16.08	QP	
4		0.2714	25.60	10.48	36.08	51.07	-14.99	AVG	
5		0.4740	34.57	10.50	45.07	56.44	-11.37	QP	
6		0.4740	23.40	10.50	33.90	46.44	-12.54	AVG	
7		2.3325	33.01	10.66	43.67	56.00	-12.33	QP	
8	*	2.3325	24.64	10.66	35.30	46.00	-10.70	AVG	
9		6.4050	28.66	10.84	39.50	60.00	-20.50	QP	
10		6.4050	19.98	10.84	30.82	50.00	-19.18	AVG	
11		12.9570	27.30	10.97	38.27	60.00	-21.73	QP	
12		12.9570	18.52	10.97	29.49	50.00	-20.51	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 1		
Test Engineer	Jason Yang		



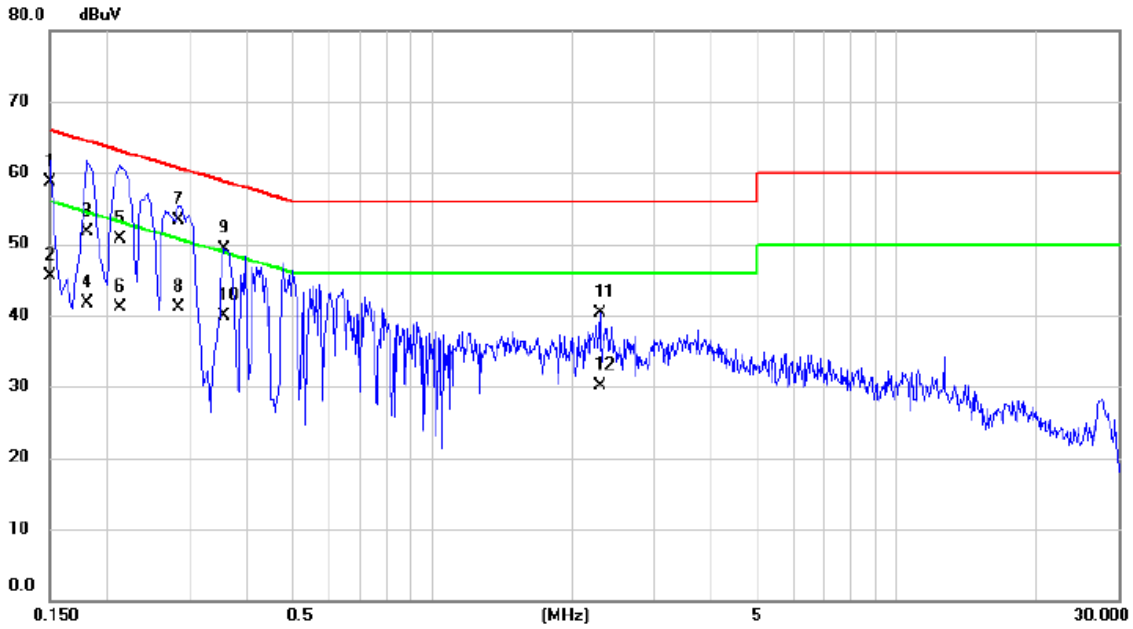
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2040	30.99	10.45	41.44	63.45	-22.01	QP	
2		0.2040	21.52	10.45	31.97	53.45	-21.48	AVG	
3		0.3435	35.80	10.46	46.26	59.12	-12.86	QP	
4		0.3435	23.41	10.46	33.87	49.12	-15.25	AVG	
5	*	0.4785	39.26	10.49	49.75	56.37	-6.62	QP	
6		0.4785	28.20	10.49	38.69	46.37	-7.68	AVG	
7		1.6800	36.36	10.56	46.92	56.00	-9.08	QP	
8		1.6800	27.82	10.56	38.38	46.00	-7.62	AVG	
9		5.8920	31.99	10.77	42.76	60.00	-17.24	QP	
10		5.8920	22.56	10.77	33.33	50.00	-16.67	AVG	
11		13.5195	38.59	10.96	49.55	60.00	-10.45	QP	
12		13.5195	28.92	10.96	39.88	50.00	-10.12	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 2		
Test Engineer	Jason Yang		



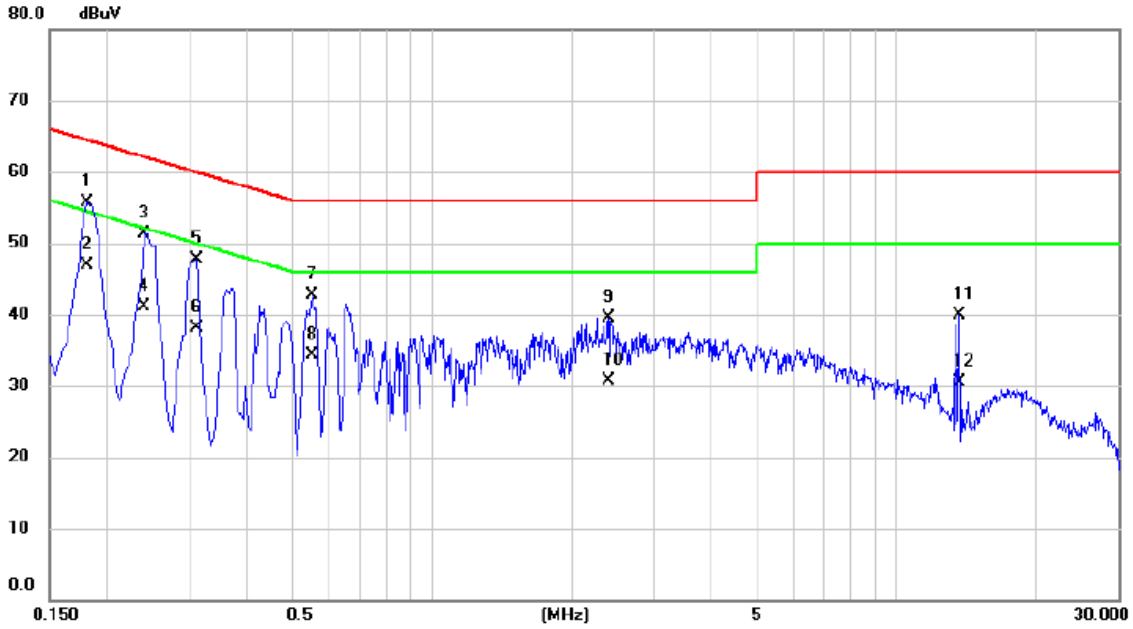
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	47.25	10.49	57.74	66.00	-8.26	QP	
2	*	0.1500	37.51	10.49	48.00	56.00	-8.00	AVG	
3		0.2130	42.99	10.47	53.46	63.09	-9.63	QP	
4		0.2130	34.40	10.47	44.87	53.09	-8.22	AVG	
5		0.2760	41.98	10.48	52.46	60.94	-8.48	QP	
6		0.2760	30.68	10.48	41.16	50.94	-9.78	AVG	
7		0.6180	34.91	10.52	45.43	56.00	-10.57	QP	
8		0.6180	25.67	10.52	36.19	46.00	-9.81	AVG	
9		5.8290	26.90	10.81	37.71	60.00	-22.29	QP	
10		5.8290	16.87	10.81	27.68	50.00	-22.32	AVG	
11		17.2545	22.35	11.01	33.36	60.00	-26.64	QP	
12		17.2545	13.45	11.01	24.46	50.00	-25.54	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 2		
Test Engineer	Jason Yang		



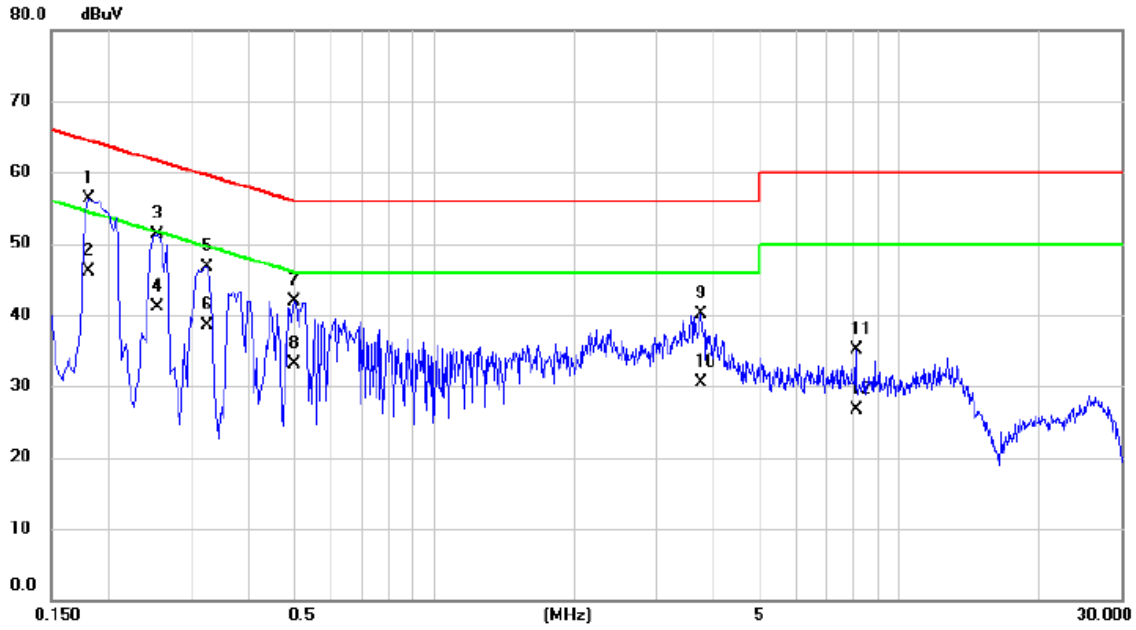
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	48.33	10.43	58.76	66.00	-7.24	QP	
2		0.1500	35.14	10.43	45.57	56.00	-10.43	AVG	
3		0.1815	41.25	10.44	51.69	64.42	-12.73	QP	
4		0.1815	31.25	10.44	41.69	54.42	-12.73	AVG	
5		0.2130	40.35	10.45	50.80	63.09	-12.29	QP	
6		0.2130	30.58	10.45	41.03	53.09	-12.06	AVG	
7		0.2850	42.92	10.46	53.38	60.67	-7.29	QP	
8		0.2850	30.58	10.46	41.04	50.67	-9.63	AVG	
9		0.3570	38.91	10.46	49.37	58.80	-9.43	QP	
10		0.3570	29.54	10.46	40.00	48.80	-8.80	AVG	
11		2.2965	29.76	10.61	40.37	56.00	-15.63	QP	
12		2.2965	19.54	10.61	30.15	46.00	-15.85	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 3		
Test Engineer	Jason Yang		



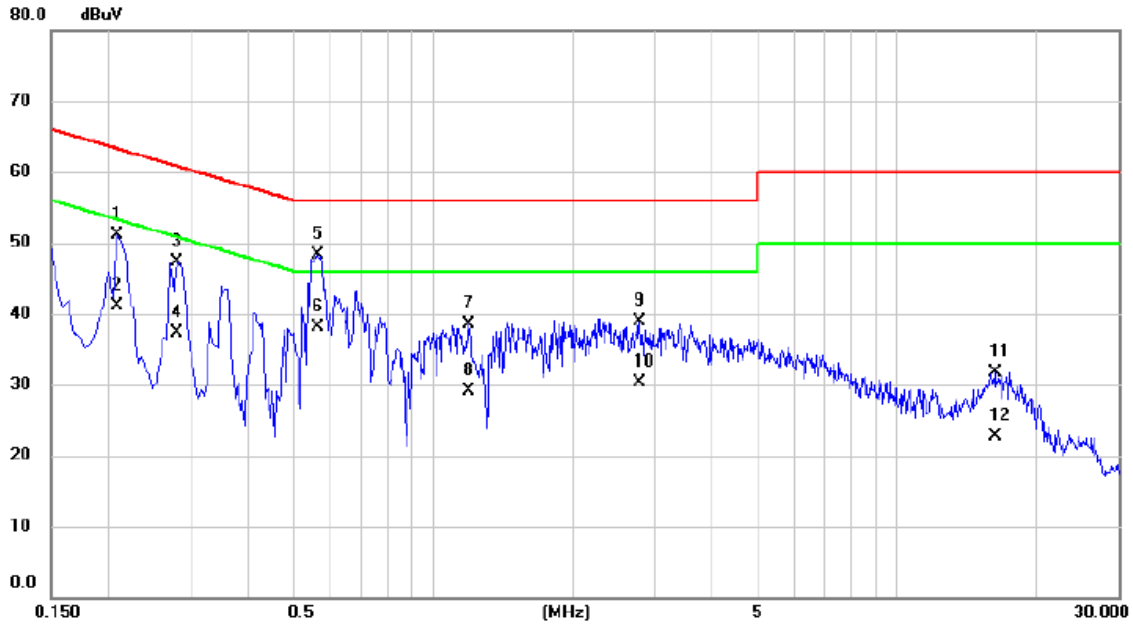
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1815	45.24	10.47	55.71	64.42	-8.71	QP	
2	*	0.1815	36.41	10.47	46.88	54.42	-7.54	AVG	
3		0.2400	40.82	10.47	51.29	62.10	-10.81	QP	
4		0.2400	30.55	10.47	41.02	52.10	-11.08	AVG	
5		0.3120	37.23	10.49	47.72	59.92	-12.20	QP	
6		0.3120	27.68	10.49	38.17	49.92	-11.75	AVG	
7		0.5505	32.18	10.52	42.70	56.00	-13.30	QP	
8		0.5505	23.69	10.52	34.21	46.00	-11.79	AVG	
9		2.4000	28.87	10.66	39.53	56.00	-16.47	QP	
10		2.4000	19.98	10.66	30.64	46.00	-15.36	AVG	
11		13.6320	28.97	10.97	39.94	60.00	-20.06	QP	
12		13.6320	19.54	10.97	30.51	50.00	-19.49	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 3		
Test Engineer	Jason Yang		



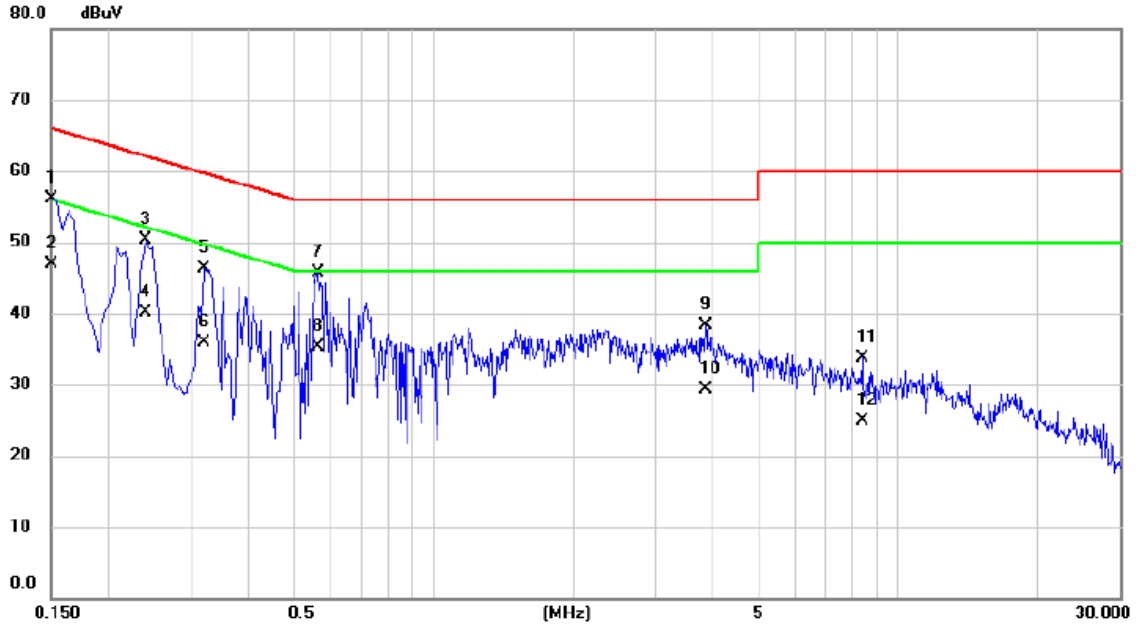
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1815	45.95	10.44	56.39	64.42	-8.03	QP	
2		0.1815	35.74	10.44	46.18	54.42	-8.24	AVG	
3		0.2535	40.88	10.47	51.35	61.64	-10.29	QP	
4		0.2535	30.57	10.47	41.04	51.64	-10.60	AVG	
5		0.3255	36.32	10.46	46.78	59.57	-12.79	QP	
6		0.3255	27.98	10.46	38.44	49.57	-11.13	AVG	
7		0.5010	31.40	10.49	41.89	56.00	-14.11	QP	
8		0.5010	22.54	10.49	33.03	46.00	-12.97	AVG	
9		3.7545	29.35	10.69	40.04	56.00	-15.96	QP	
10		3.7545	19.74	10.69	30.43	46.00	-15.57	AVG	
11		8.0745	24.30	10.83	35.13	60.00	-24.87	QP	
12		8.0745	15.89	10.83	26.72	50.00	-23.28	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 6		
Test Engineer	Jason Yang		



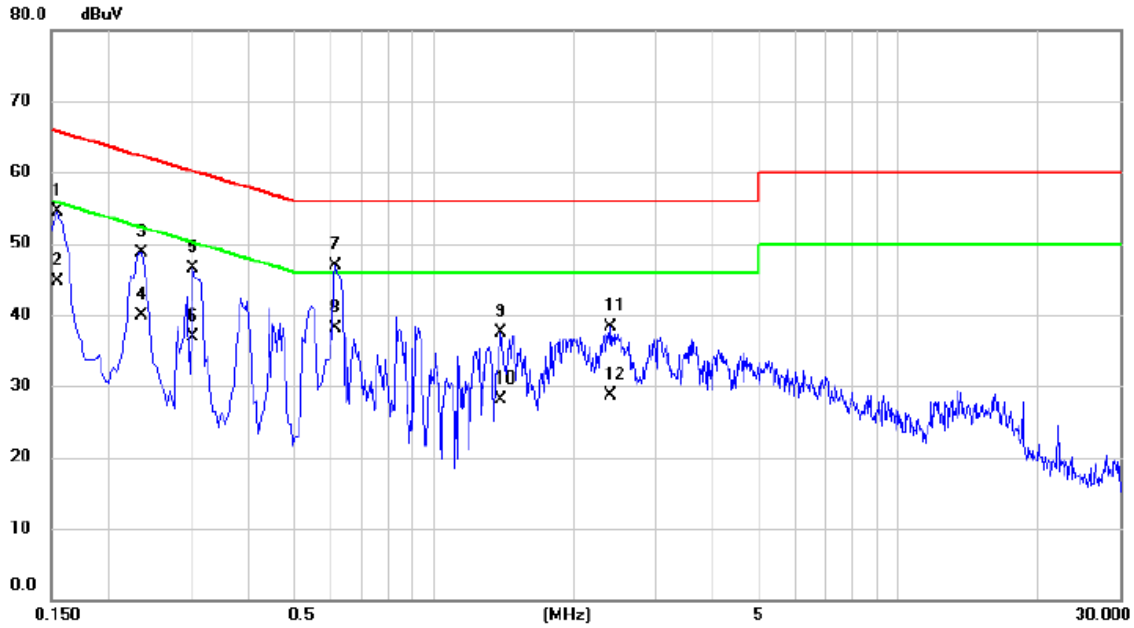
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2085	40.63	10.48	51.11	63.26	-12.15	QP	
2		0.2085	30.54	10.48	41.02	53.26	-12.24	AVG	
3		0.2805	36.91	10.48	47.39	60.80	-13.41	QP	
4		0.2805	26.88	10.48	37.36	50.80	-13.44	AVG	
5	*	0.5640	37.69	10.52	48.21	56.00	-7.79	QP	
6		0.5640	27.62	10.52	38.14	46.00	-7.86	AVG	
7		1.1894	27.95	10.59	38.54	56.00	-17.46	QP	
8		1.1894	18.43	10.59	29.02	46.00	-16.98	AVG	
9		2.7825	28.22	10.68	38.90	56.00	-17.10	QP	
10		2.7825	19.67	10.68	30.35	46.00	-15.65	AVG	
11		16.2870	20.74	11.00	31.74	60.00	-28.26	QP	
12		16.2870	11.74	11.00	22.74	50.00	-27.26	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 6		
Test Engineer	Jason Yang		



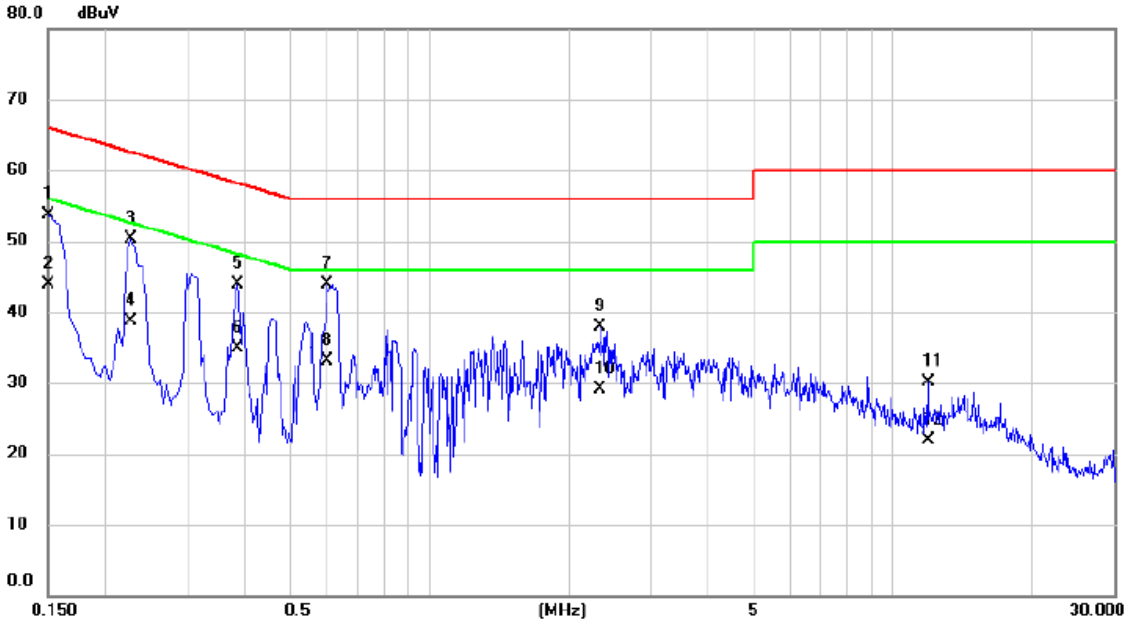
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	45.64	10.43	56.07	66.00	-9.93	QP	
2	*	0.1500	36.52	10.43	46.95	56.00	-9.05	AVG	
3		0.2400	39.80	10.47	50.27	62.10	-11.83	QP	
4		0.2400	29.63	10.47	40.10	52.10	-12.00	AVG	
5		0.3210	35.90	10.46	46.36	59.68	-13.32	QP	
6		0.3210	25.47	10.46	35.93	49.68	-13.75	AVG	
7		0.5640	35.25	10.49	45.74	56.00	-10.26	QP	
8		0.5640	24.72	10.49	35.21	46.00	-10.79	AVG	
9		3.8400	27.56	10.69	38.25	56.00	-17.75	QP	
10		3.8400	18.62	10.69	29.31	46.00	-16.69	AVG	
11		8.3535	22.96	10.84	33.80	60.00	-26.20	QP	
12		8.3535	13.98	10.84	24.82	50.00	-25.18	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 10		
Test Engineer	Jason Yang		



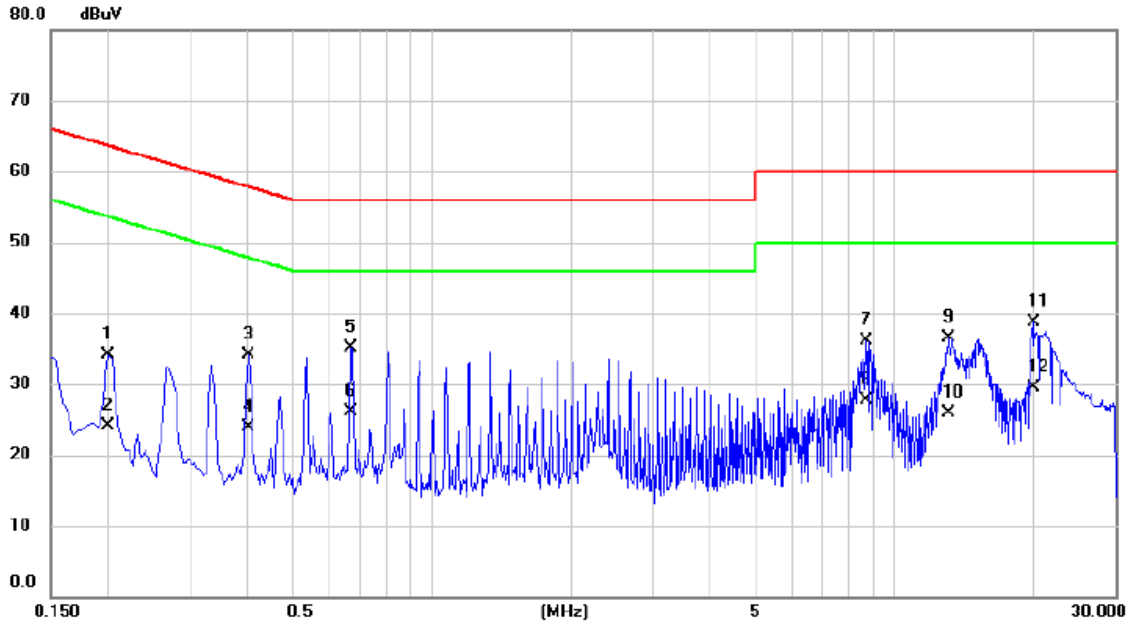
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1545	44.09	10.49	54.58	65.75	-11.17	QP	
2		0.1545	34.20	10.49	44.69	55.75	-11.06	AVG	
3		0.2355	38.27	10.47	48.74	62.25	-13.51	QP	
4		0.2355	29.52	10.47	39.99	52.25	-12.26	AVG	
5		0.3030	36.10	10.49	46.59	60.16	-13.57	QP	
6		0.3030	26.41	10.49	36.90	50.16	-13.26	AVG	
7		0.6134	36.46	10.52	46.98	56.00	-9.02	QP	
8	*	0.6134	27.63	10.52	38.15	46.00	-7.85	AVG	
9		1.3965	26.93	10.60	37.53	56.00	-18.47	QP	
10		1.3965	17.52	10.60	28.12	46.00	-17.88	AVG	
11		2.4045	27.60	10.66	38.26	56.00	-17.74	QP	
12		2.4045	18.10	10.66	28.76	46.00	-17.24	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 10		
Test Engineer	Jason Yang		



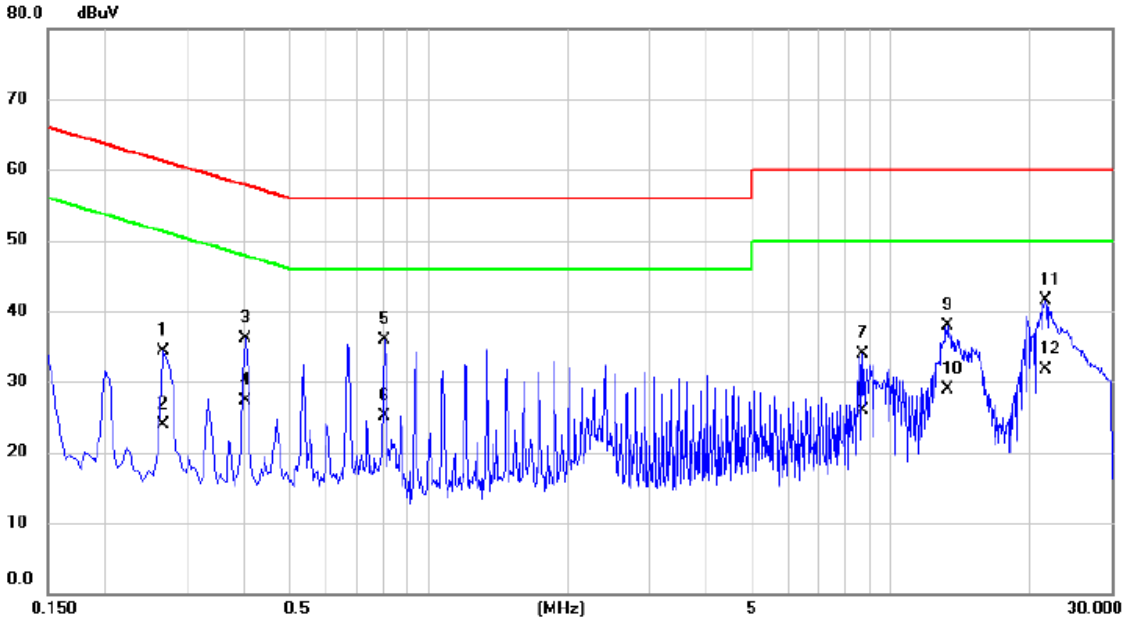
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	43.22	10.43	53.65	66.00	-12.35	QP	
2		0.1500	33.52	10.43	43.95	56.00	-12.05	AVG	
3		0.2265	39.87	10.46	50.33	62.58	-12.25	QP	
4		0.2265	28.22	10.46	38.68	52.58	-13.90	AVG	
5		0.3840	33.45	10.46	43.91	58.19	-14.28	QP	
6		0.3840	24.52	10.46	34.98	48.19	-13.21	AVG	
7	*	0.6000	33.49	10.49	43.98	56.00	-12.02	QP	
8		0.6000	22.67	10.49	33.16	46.00	-12.84	AVG	
9		2.3370	27.27	10.62	37.89	56.00	-18.11	QP	
10		2.3370	18.53	10.62	29.15	46.00	-16.85	AVG	
11		11.9040	19.18	10.94	30.12	60.00	-29.88	QP	
12		11.9040	10.89	10.94	21.83	50.00	-28.17	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 11		
Test Engineer	Jason Yang		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1995	23.69	10.48	34.17	63.63	-29.46	QP	
2		0.1995	13.57	10.48	24.05	53.63	-29.58	AVG	
3		0.4020	23.53	10.49	34.02	57.81	-23.79	QP	
4		0.4020	13.47	10.49	23.96	47.81	-23.85	AVG	
5		0.6675	24.56	10.52	35.08	56.00	-20.92	QP	
6	*	0.6675	15.63	10.52	26.15	46.00	-19.85	AVG	
7		8.7000	25.12	10.90	36.02	60.00	-23.98	QP	
8		8.7000	16.87	10.90	27.77	50.00	-22.23	AVG	
9		13.1190	25.44	10.97	36.41	60.00	-23.59	QP	
10		13.1190	14.97	10.97	25.94	50.00	-24.06	AVG	
11		19.9455	27.77	11.03	38.80	60.00	-21.20	QP	
12		19.9455	18.52	11.03	29.55	50.00	-20.45	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	53%
Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 11		
Test Engineer	Jason Yang		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2670	23.78	10.46	34.24	61.21	-26.97	QP	
2		0.2670	13.51	10.46	23.97	51.21	-27.24	AVG	
3		0.4020	25.65	10.47	36.12	57.81	-21.69	QP	
4		0.4020	16.85	10.47	27.32	47.81	-20.49	AVG	
5		0.8025	25.38	10.50	35.88	56.00	-20.12	QP	
6		0.8025	14.52	10.50	25.02	46.00	-20.98	AVG	
7		8.7000	23.01	10.86	33.87	60.00	-26.13	QP	
8		8.7000	14.96	10.86	25.82	50.00	-24.18	AVG	
9		13.2495	26.89	10.95	37.84	60.00	-22.16	QP	
10		13.2495	17.95	10.95	28.90	50.00	-21.10	AVG	
11		21.5475	30.44	11.02	41.46	60.00	-18.54	QP	
12	*	21.5475	20.77	11.02	31.79	50.00	-18.21	AVG	

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Below 1 GHz
Measurement Method and Applied Limits:
ANSI C63.4:

Frequency (MHz)	Class B (at 3m)	
	(uV/m) Field strength	(dBuV/m) Field strength
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

Above 1 GHz
Measurement Method and Applied Limits:
ANSI C63.4:

Frequency (MHz)	Class B (dBuV/m) (at 3m)	
	Peak	Average
Above 1000	74	54

FREQUENCY RANGE OF RADIATED MEASUREMENT (FOR UNINTENTIONAL RADIATORS)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 40 GHz, whichever is lower

NOTE:
(1) The limit for radiated test was performed according to as following:
FCC Part 15, Subpart B
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m) = 20log Emission level (uV/m).
3m Emission level = 10m Emission level + 20log(10m/3m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

4.2.2 MEASUREMENT INSTRUMENTS LIST

Below 1GHz & Above 1GHz:

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2020
2	Double Ridged Horn Antenna	ARA	DRG-118A	16554	Mar. 09, 2020
3	Amplifier	Agilent	8449B	3008A02274	Mar. 10, 2020
4	Amplifier	HP	8447D	1937A02847	Mar. 10, 2020
5	Cable	emci	LMR-400(30MHz-1GHz)(10m+2.5m)	N/A	Jun. 20, 2019
6	Cable	mitron	B10-01-01-12M	18072743	Jul. 30, 2019
7	Controller	CT	SC100	N/A	N/A
8	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
9	EMI Test Receiver	Keysight	N9038A	MY56400060	Mar. 10, 2020

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

4.2.3 TEST PROCEDURE

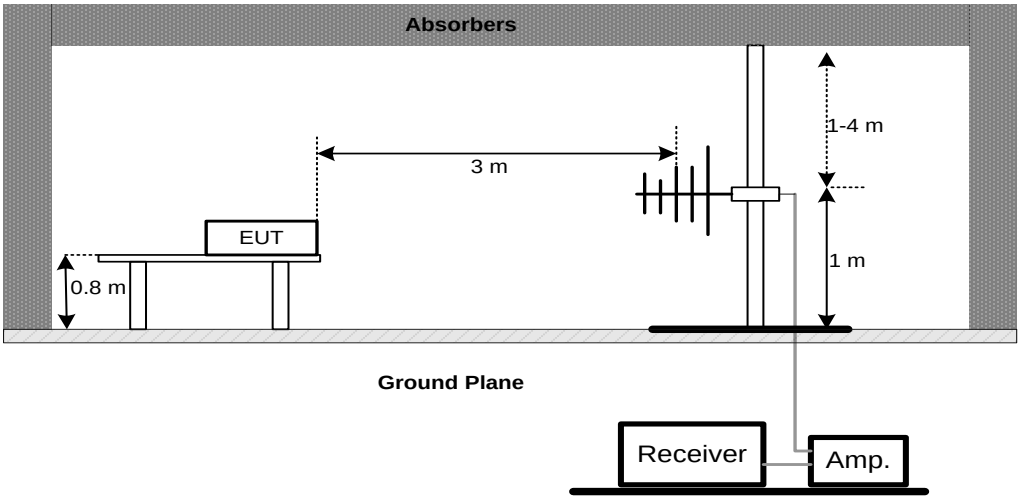
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1 GHz)
i. For the actual test configuration, please refer to the related Item - Block Diagram of system tested (please refer to 3.4).

4.2.4 DEVIATION FROM TEST STANDARD

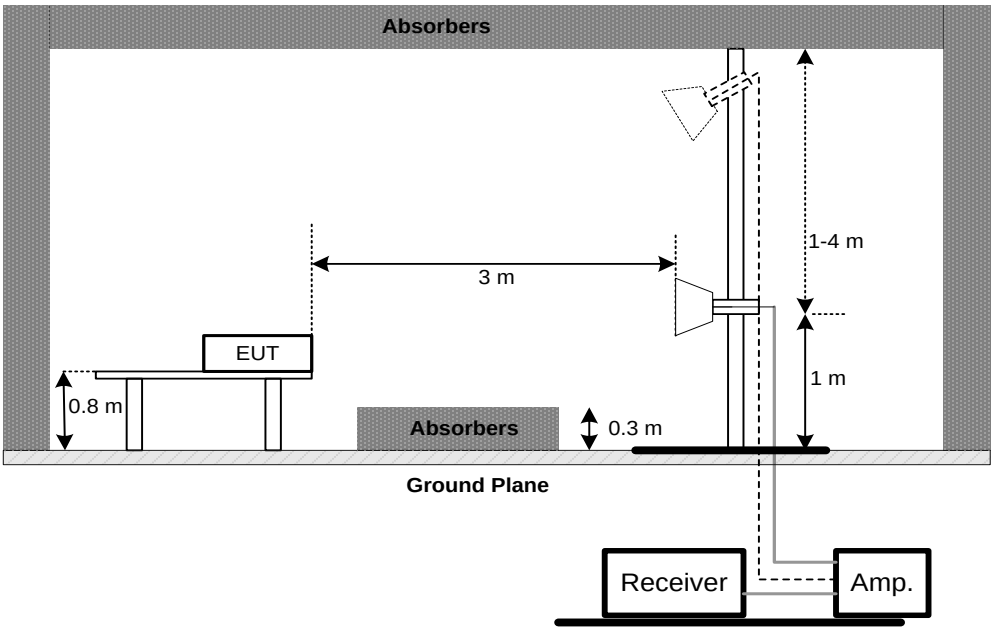
No deviation

4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz

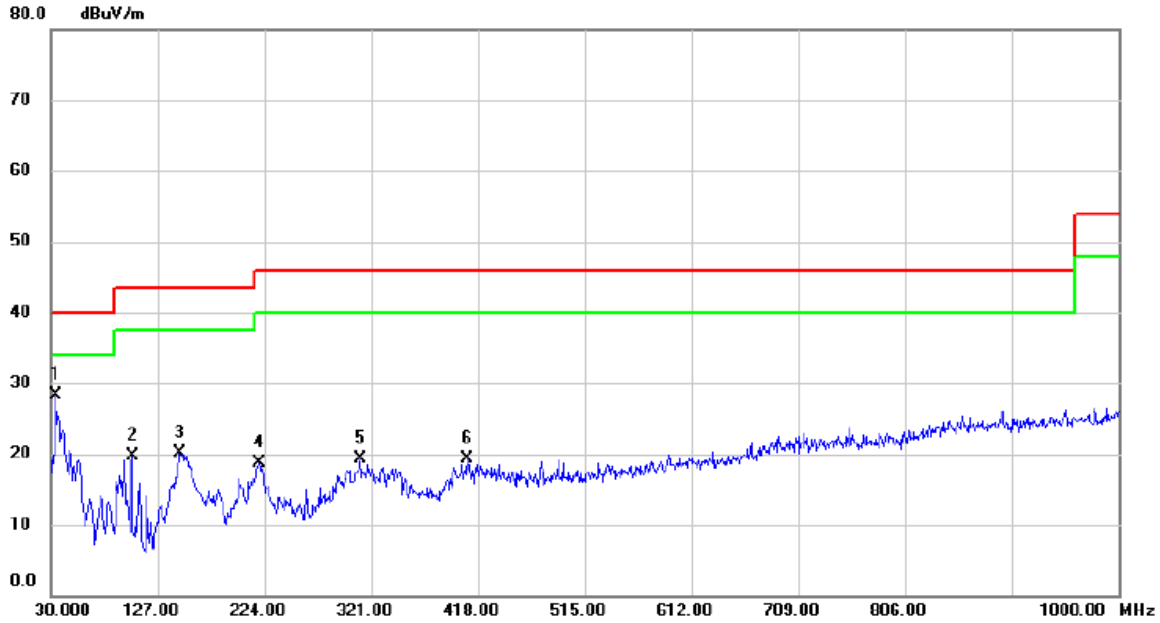


4.2.6 TEST RESULTS-BELOW 1 GHZ

Remark：

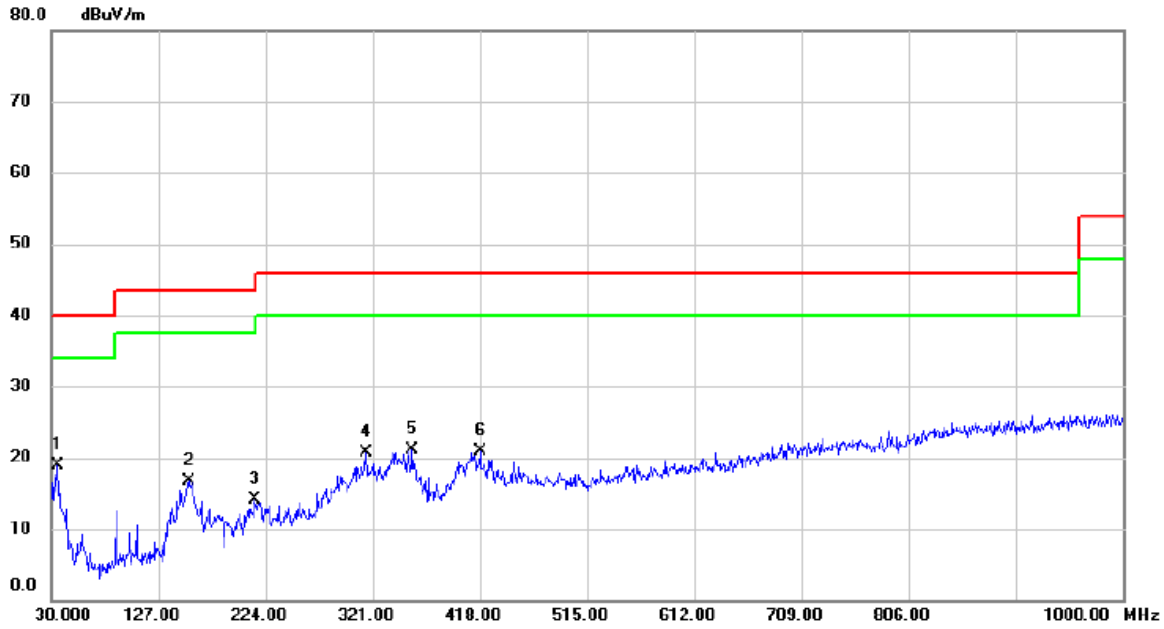
(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.
(2) Measuring frequency range from 30 MHz to 1000 MHz
(3) If the peak scan value lower limit more than 20 dB, then this signal data does not show in table.

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		
Test Engineer	Jason Yang		



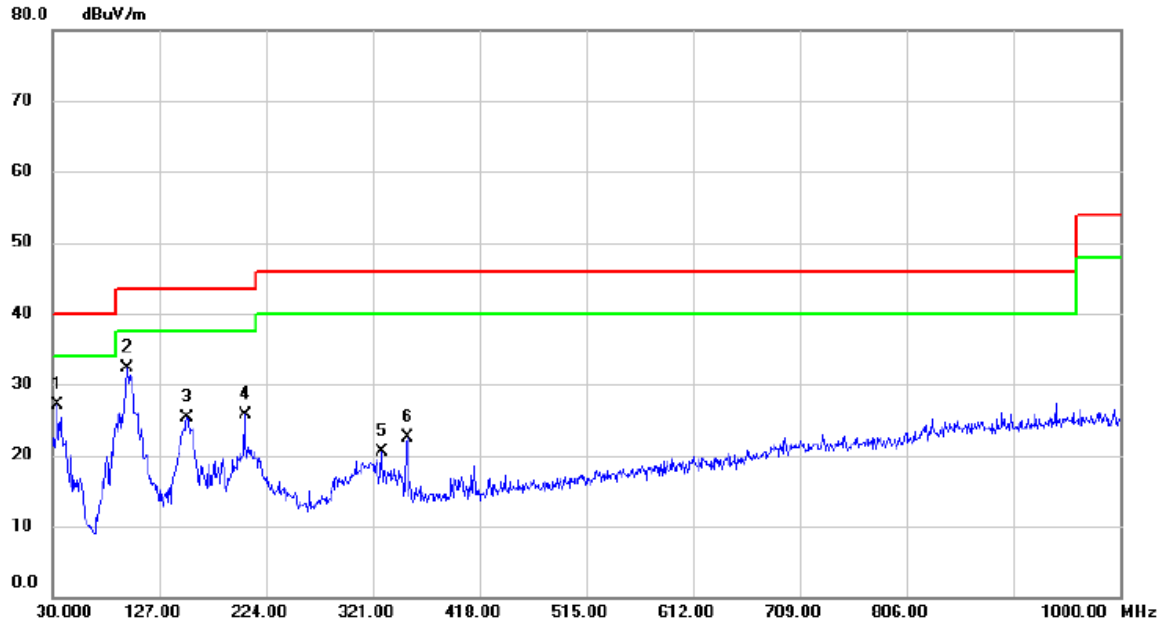
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	34.8500	42.85	-14.64	28.21	40.00	-11.79	QP	
2		103.7200	41.56	-21.78	19.78	43.50	-23.72	QP	
3		147.3700	42.44	-22.35	20.09	43.50	-23.41	QP	
4		219.1500	37.38	-18.64	18.74	46.00	-27.26	QP	
5		311.3000	35.03	-15.73	19.30	46.00	-26.70	QP	
6		408.3000	33.03	-13.74	19.29	46.00	-26.71	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		
Test Engineer	Jason Yang		



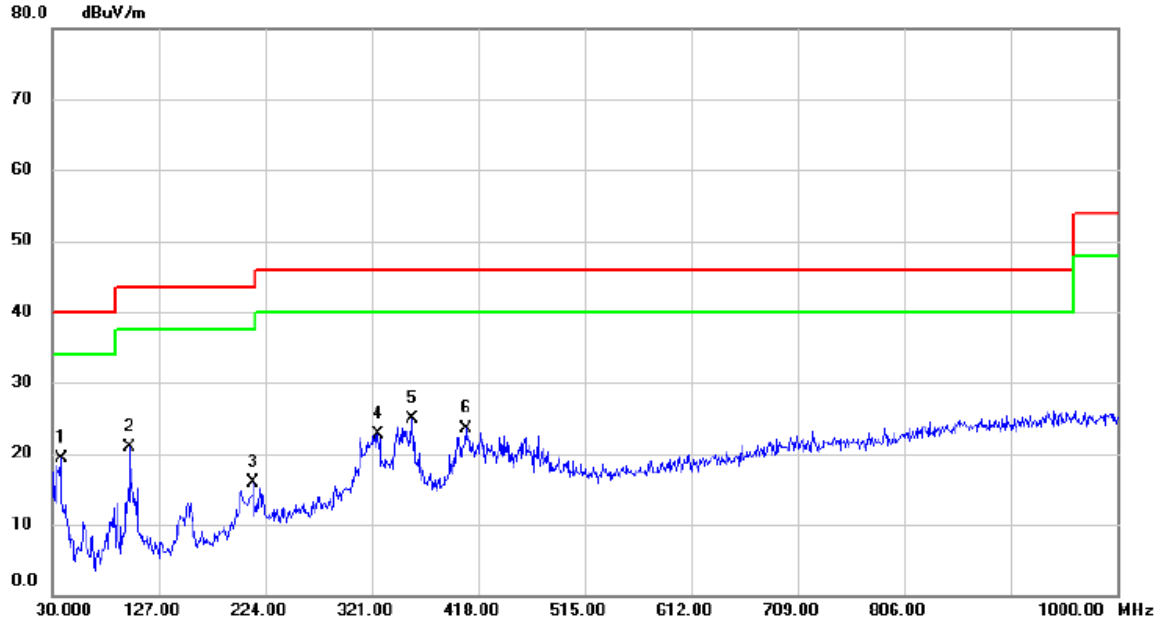
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	35.8200	33.98	-15.07	18.91	40.00	-21.09	QP	
2		154.1600	38.68	-22.04	16.64	43.50	-26.86	QP	
3		214.3000	33.12	-18.92	14.20	43.50	-29.30	QP	
4		315.1800	36.29	-15.60	20.69	46.00	-25.31	QP	
5		356.8900	35.44	-14.35	21.09	46.00	-24.91	QP	
6		418.0000	34.46	-13.58	20.88	46.00	-25.12	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 2		
Test Engineer	Jason Yang		



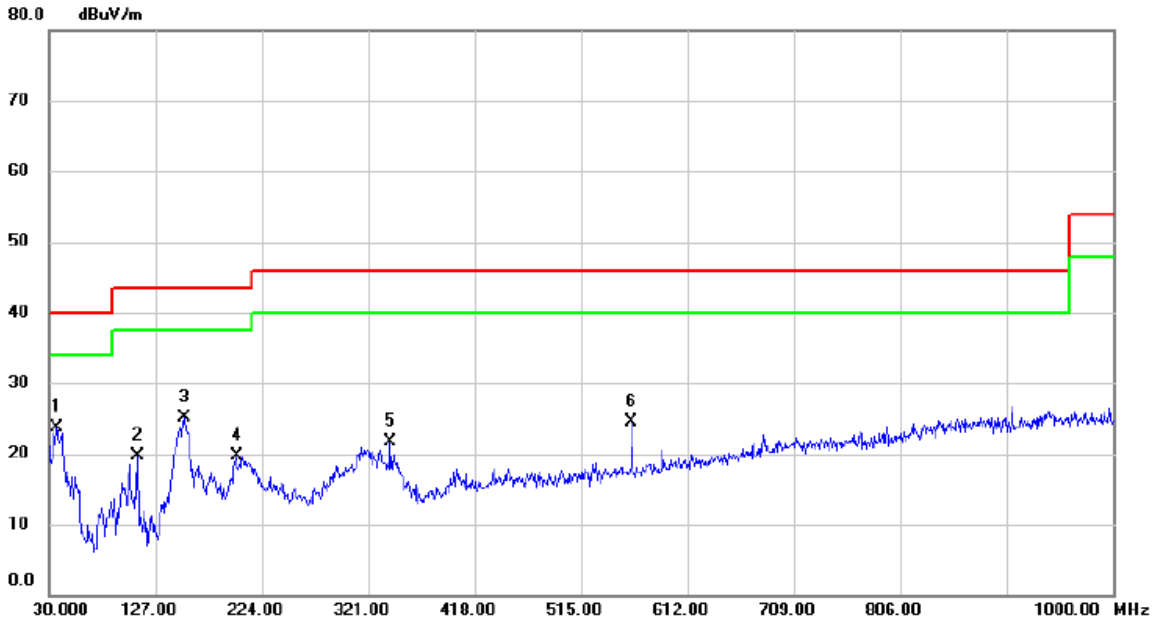
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		34.8500	41.78	-14.64	27.14	40.00	-12.86	QP	
2	*	97.9000	54.26	-21.91	32.35	43.50	-11.15	QP	
3		152.2200	47.44	-22.10	25.34	43.50	-18.16	QP	
4		204.6000	45.21	-19.49	25.72	43.50	-17.78	QP	
5		328.7600	35.81	-15.24	20.57	46.00	-25.43	QP	
6		352.0400	36.98	-14.56	22.42	46.00	-23.58	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 2		
Test Engineer	Jason Yang		



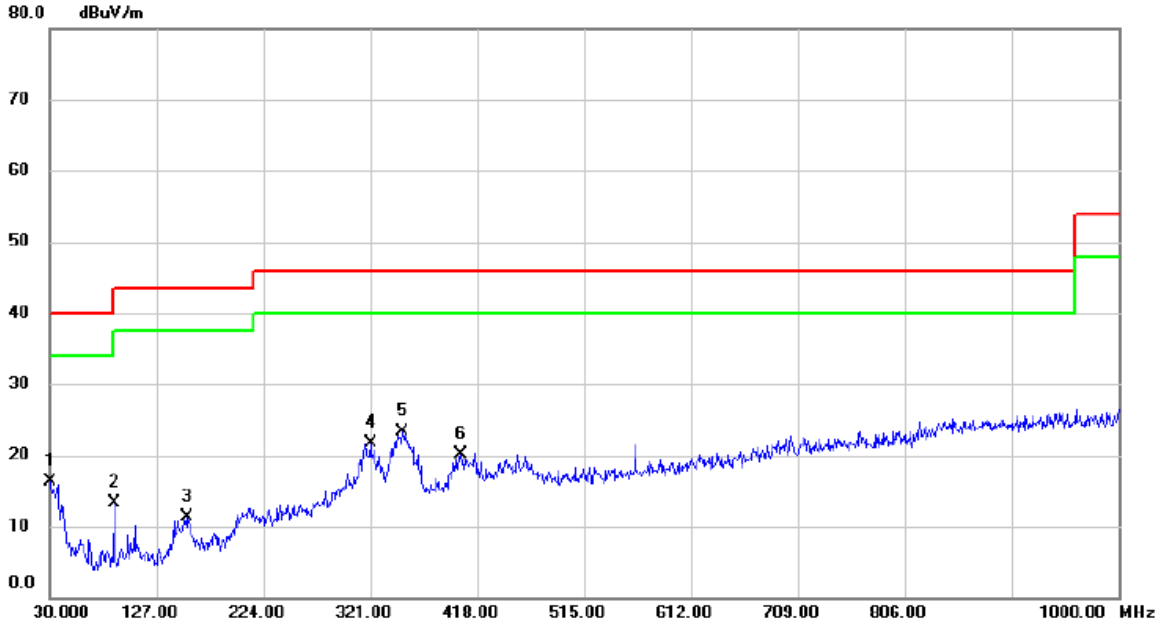
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	37.7600	35.58	-16.36	19.22	40.00	-20.78	QP	
2		100.8100	42.69	-21.75	20.94	43.50	-22.56	QP	
3		213.3300	34.91	-18.96	15.95	43.50	-27.55	QP	
4		326.8200	37.98	-15.28	22.70	46.00	-23.30	QP	
5		357.8600	39.24	-14.31	24.93	46.00	-21.07	QP	
6		406.3600	37.33	-13.77	23.56	46.00	-22.44	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		
Test Engineer	Jason Yang		



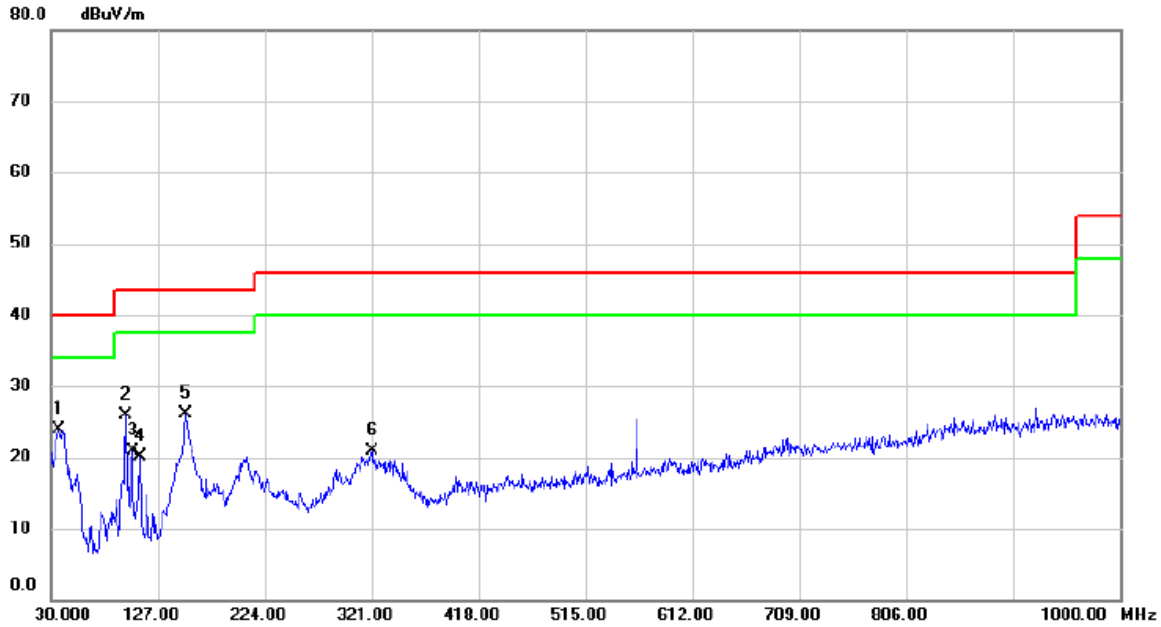
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	36.7900	39.42	-15.69	23.73	40.00	-16.27	QP	
2		110.5100	41.52	-21.91	19.61	43.50	-23.89	QP	
3		153.1900	47.11	-22.07	25.04	43.50	-18.46	QP	
4		200.7200	39.40	-19.75	19.65	43.50	-23.85	QP	
5		341.3700	36.70	-15.03	21.67	46.00	-24.33	QP	
6		561.5600	35.14	-10.55	24.59	46.00	-21.41	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		
Test Engineer	Jason Yang		



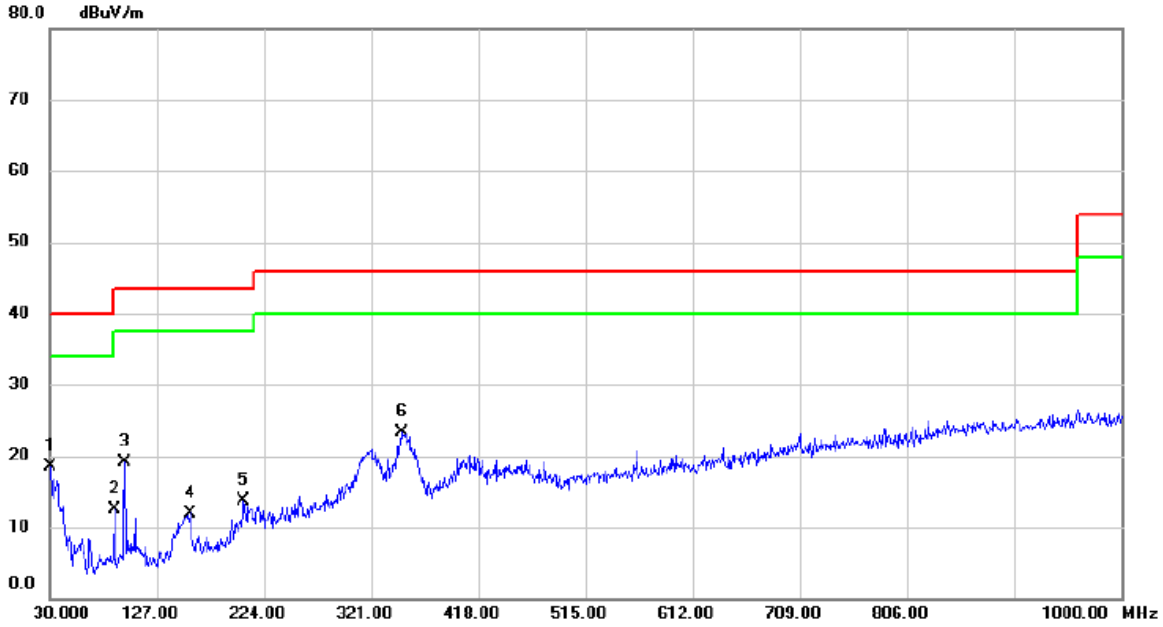
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		30.0000	28.70	-12.40	16.30	40.00	-23.70	QP	
2		88.2000	36.12	-22.73	13.39	43.50	-30.11	QP	
3		155.1300	33.32	-22.01	11.31	43.50	-32.19	QP	
4		321.0000	37.08	-15.42	21.66	46.00	-24.34	QP	
5	*	350.1000	37.88	-14.65	23.23	46.00	-22.77	QP	
6		402.4800	33.94	-13.84	20.10	46.00	-25.90	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 6		
Test Engineer	Jason Yang		



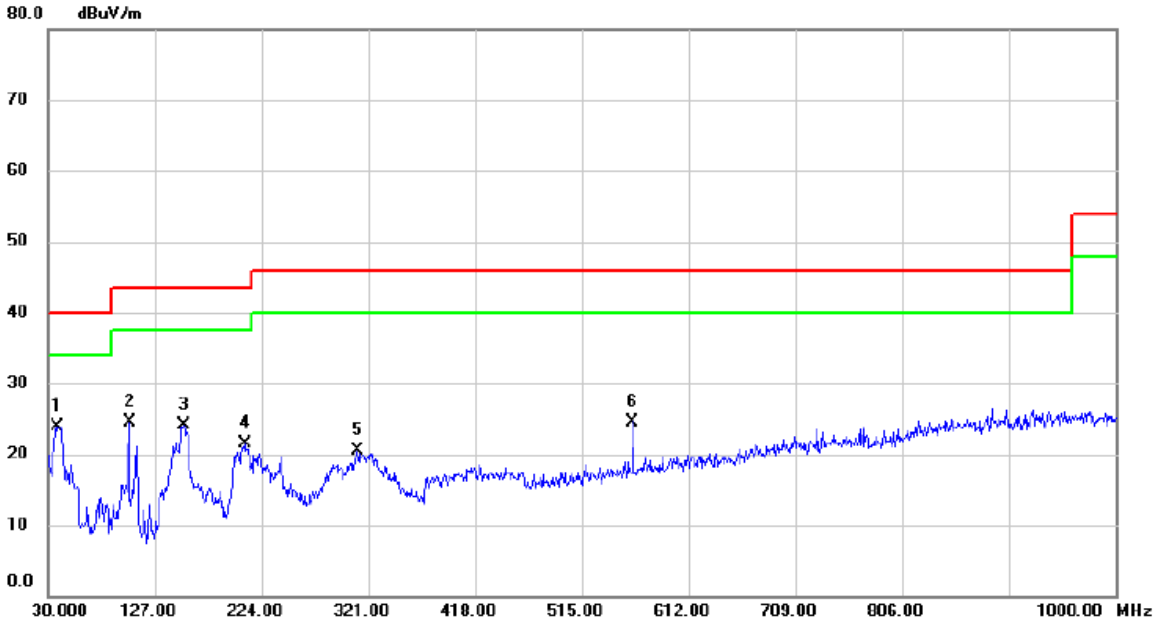
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	36.7900	39.50	-15.69	23.81	40.00	-16.19	QP	
2		97.9000	47.90	-21.91	25.99	43.50	-17.51	QP	
3		103.7200	42.64	-21.78	20.86	43.50	-22.64	QP	
4		110.5100	41.93	-21.91	20.02	43.50	-23.48	QP	
5		152.2200	48.13	-22.10	26.03	43.50	-17.47	QP	
6		321.0000	36.31	-15.42	20.89	46.00	-25.11	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 6		
Test Engineer	Jason Yang		



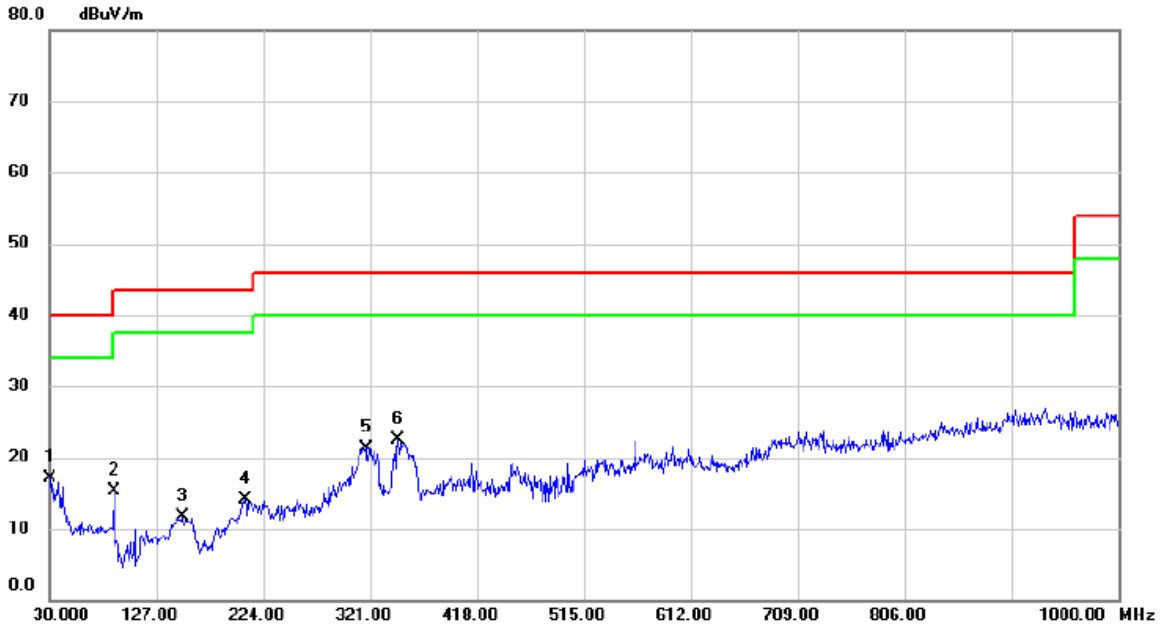
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.9700	31.41	-12.87	18.54	40.00	-21.46	QP	
2		88.2000	35.23	-22.73	12.50	43.50	-31.00	QP	
3		97.9000	41.11	-21.91	19.20	43.50	-24.30	QP	
4		157.0700	33.94	-21.94	12.00	43.50	-31.50	QP	
5		205.5700	33.22	-19.43	13.79	43.50	-29.71	QP	
6		349.1300	37.99	-14.68	23.31	46.00	-22.69	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 10		
Test Engineer	Jason Yang		



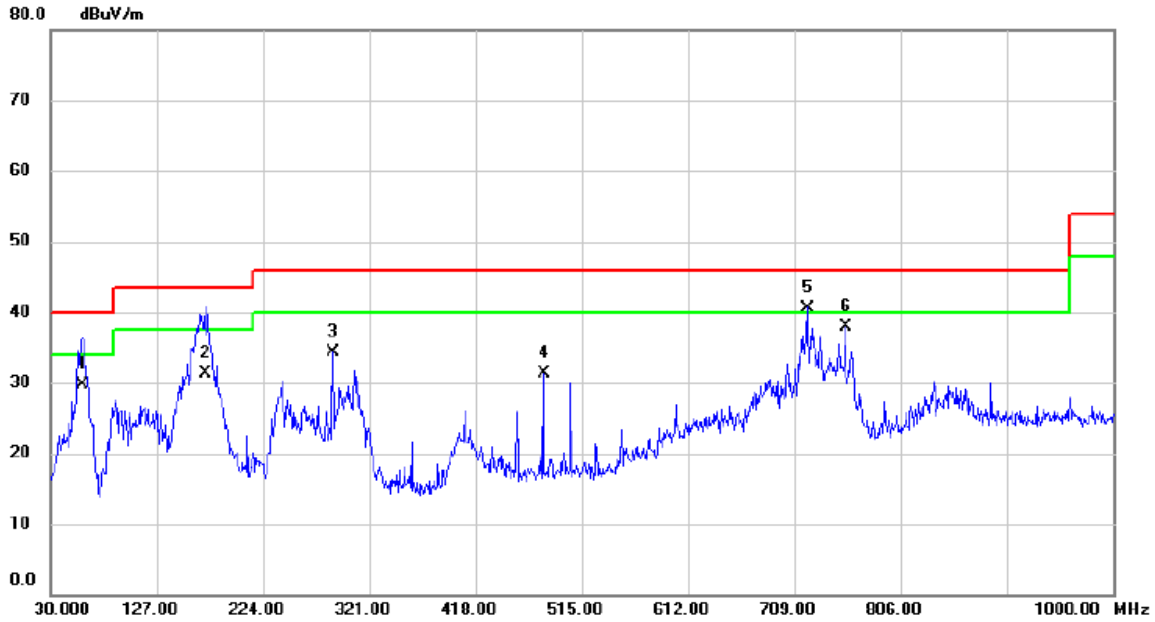
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.7300	40.78	-16.81	23.97	40.00	-16.03	QP	
2		103.7200	46.19	-21.78	24.41	43.50	-19.09	QP	
3		153.1900	46.26	-22.07	24.19	43.50	-19.31	QP	
4		208.4800	40.68	-19.24	21.44	43.50	-22.06	QP	
5		311.3000	36.25	-15.73	20.52	46.00	-25.48	QP	
6		561.5600	35.15	-10.55	24.60	46.00	-21.40	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 10		
Test Engineer	Jason Yang		



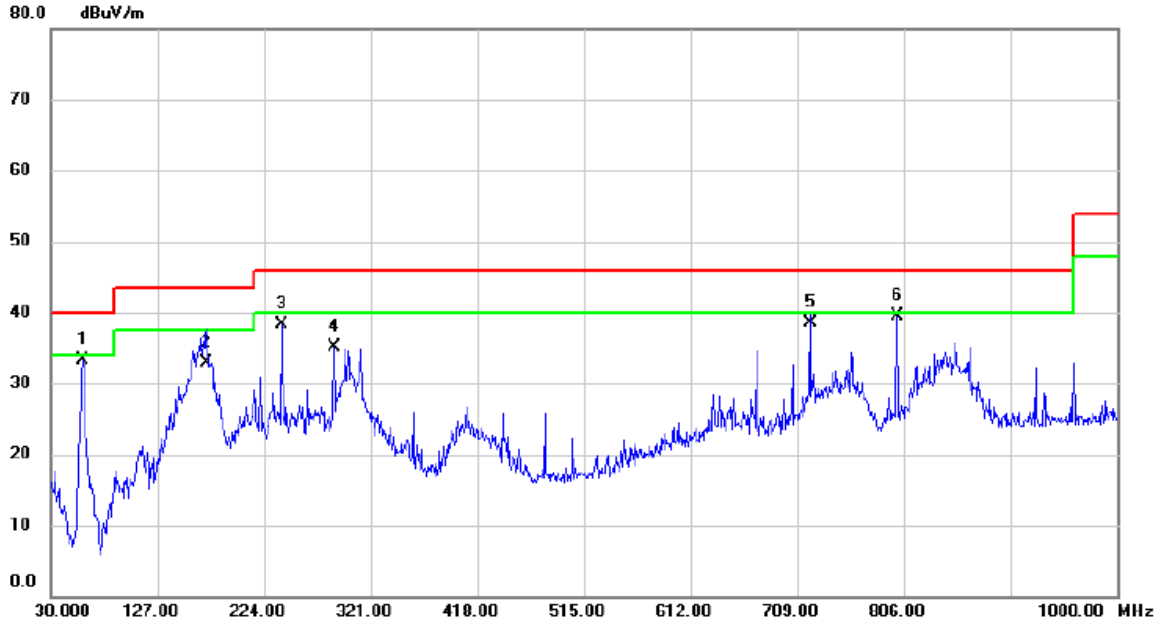
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.0000	29.44	-12.40	17.04	40.00	-22.96	QP	
2		88.2000	38.04	-22.73	15.31	43.50	-28.19	QP	
3		150.2800	33.85	-22.17	11.68	43.50	-31.82	QP	
4		207.5100	33.40	-19.30	14.10	43.50	-29.40	QP	
5		317.1200	36.95	-15.55	21.40	46.00	-24.60	QP	
6		346.2200	37.41	-14.81	22.60	46.00	-23.40	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 11		
Test Engineer	Jason Yang		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		59.1000	52.33	-22.72	29.61	40.00	-10.39	QP	
2		171.6200	52.60	-21.22	31.38	43.50	-12.12	QP	
3		288.0200	50.69	-16.41	34.28	46.00	-11.72	QP	
4		480.0800	43.59	-12.29	31.30	46.00	-14.70	QP	
5	*	720.6400	47.70	-7.10	40.60	46.00	-5.40	QP	
6		755.5600	44.68	-6.77	37.91	46.00	-8.09	QP	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 11		
Test Engineer	Jason Yang		



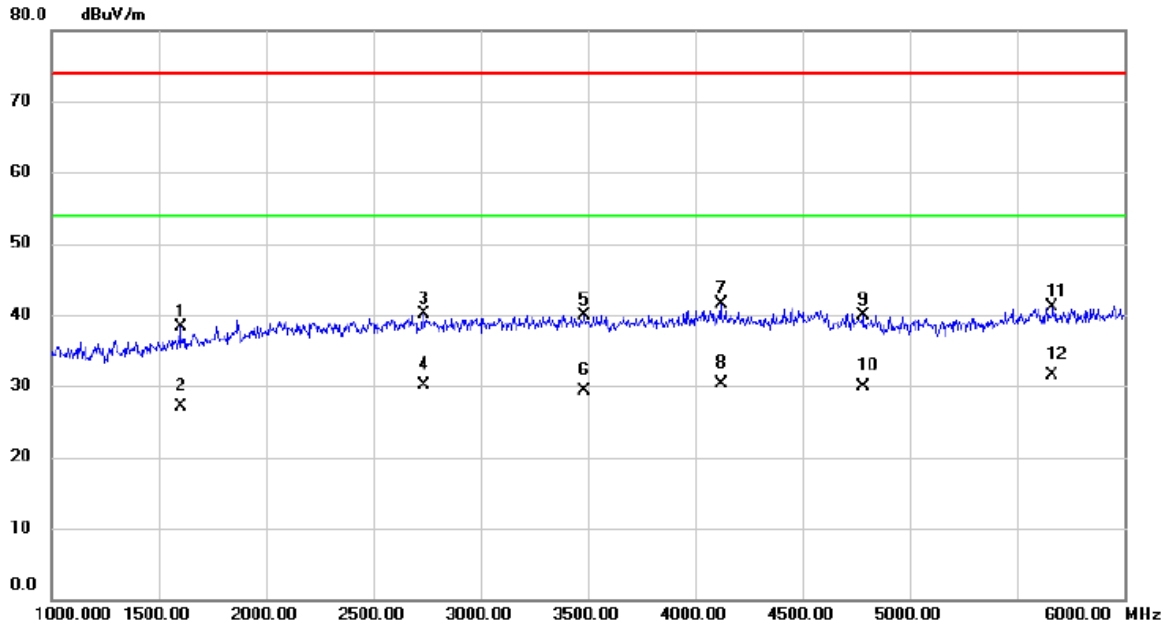
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		59.1000	56.01	-22.72	33.29	40.00	-6.71	QP	
2		171.6200	54.20	-21.22	32.98	43.50	-10.52	QP	
3		239.5200	56.01	-17.62	38.39	46.00	-7.61	QP	
4		288.0200	51.44	-16.41	35.03	46.00	-10.97	QP	
5		720.6400	45.69	-7.10	38.59	46.00	-7.41	QP	
6	*	800.1800	45.79	-6.29	39.50	46.00	-6.50	QP	

4.2.7 TEST RESULTS-ABOVE 1 GHZ

Remark：

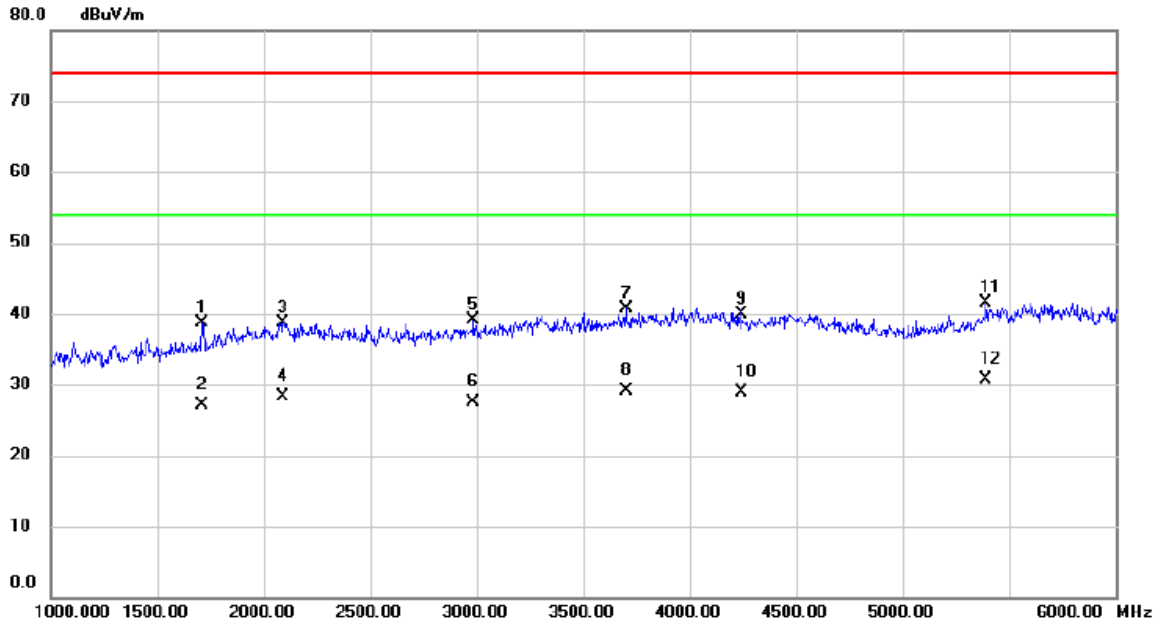
(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(2) Radiated emissions measured in frequency range above 1000 MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
(3) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
(4) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		
Test Engineer	Jason Yang		



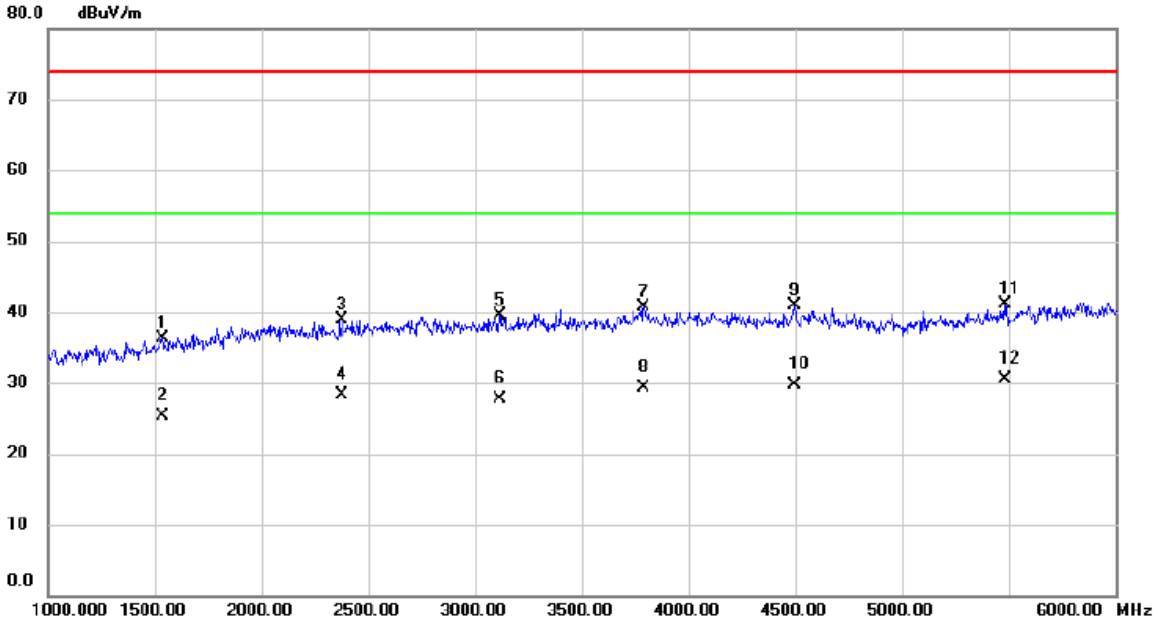
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1600.000	53.00	-14.79	38.21	74.00	-35.79	peak	
2		1600.000	41.90	-14.79	27.11	54.00	-26.89	AVG	
3		2735.000	50.27	-10.12	40.15	74.00	-33.85	peak	
4		2735.000	40.23	-10.12	30.11	54.00	-23.89	AVG	
5		3485.000	48.31	-8.36	39.95	74.00	-34.05	peak	
6		3485.000	37.74	-8.36	29.38	54.00	-24.62	AVG	
7		4120.000	48.12	-6.57	41.55	74.00	-32.45	peak	
8		4120.000	36.96	-6.57	30.39	54.00	-23.61	AVG	
9		4780.000	45.48	-5.54	39.94	74.00	-34.06	peak	
10		4780.000	35.48	-5.54	29.94	54.00	-24.06	AVG	
11		5665.000	45.34	-4.19	41.15	74.00	-32.85	peak	
12	*	5665.000	35.61	-4.19	31.42	54.00	-22.58	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		
Test Engineer	Jason Yang		



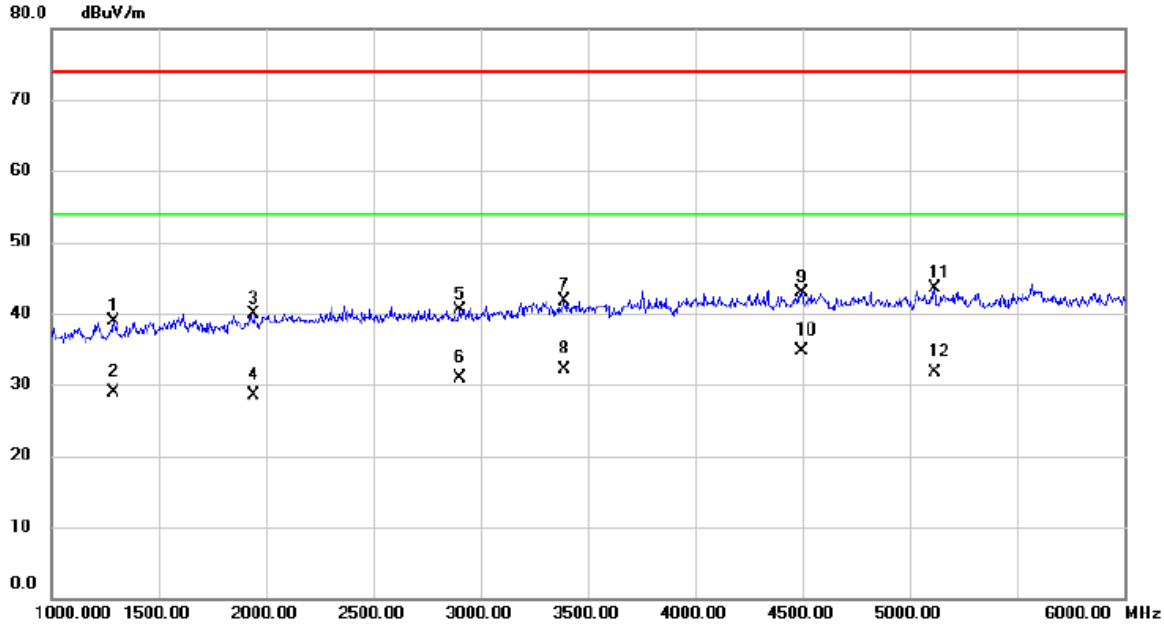
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1710.000	52.67	-14.00	38.67	74.00	-35.33	peak	
2		1710.000	41.15	-14.00	27.15	54.00	-26.85	AVG	
3		2090.000	50.36	-11.70	38.66	74.00	-35.34	peak	
4		2090.000	40.08	-11.70	28.38	54.00	-25.62	AVG	
5		2985.000	48.61	-9.53	39.08	74.00	-34.92	peak	
6		2985.000	36.96	-9.53	27.43	54.00	-26.57	AVG	
7		3700.000	48.46	-7.72	40.74	74.00	-33.26	peak	
8		3700.000	36.74	-7.72	29.02	54.00	-24.98	AVG	
9		4245.000	46.18	-6.30	39.88	74.00	-34.12	peak	
10		4245.000	35.25	-6.30	28.95	54.00	-25.05	AVG	
11		5390.000	46.24	-4.81	41.43	74.00	-32.57	peak	
12	*	5390.000	35.46	-4.81	30.65	54.00	-23.35	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 2		
Test Engineer	Jason Yang		



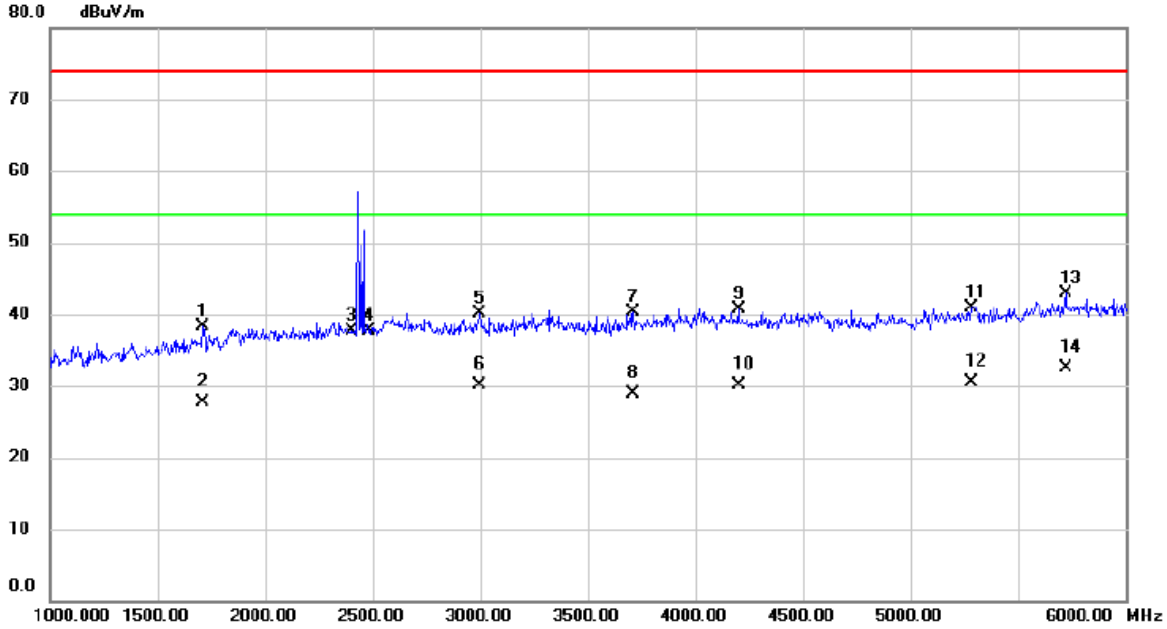
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1535.000	51.47	-15.25	36.22	74.00	-37.78	peak	
2		1535.000	40.56	-15.25	25.31	54.00	-28.69	AVG	
3		2375.000	49.90	-10.98	38.92	74.00	-35.08	peak	
4		2375.000	39.33	-10.98	28.35	54.00	-25.65	AVG	
5		3115.000	48.65	-9.23	39.42	74.00	-34.58	peak	
6		3115.000	36.87	-9.23	27.64	54.00	-26.36	AVG	
7		3790.000	48.13	-7.46	40.67	74.00	-33.33	peak	
8		3790.000	36.75	-7.46	29.29	54.00	-24.71	AVG	
9		4495.000	46.65	-5.76	40.89	74.00	-33.11	peak	
10		4495.000	35.49	-5.76	29.73	54.00	-24.27	AVG	
11		5480.000	45.80	-4.68	41.12	74.00	-32.88	peak	
12	*	5480.000	35.13	-4.68	30.45	54.00	-23.55	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 2		
Test Engineer	Jason Yang		



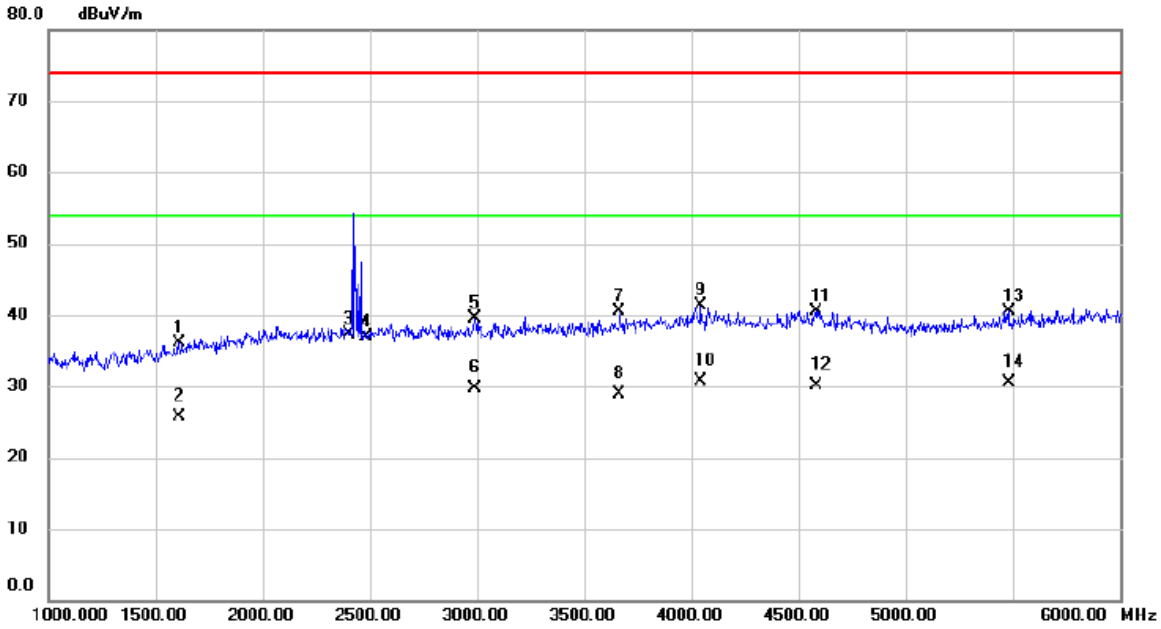
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1290.000	55.20	-16.22	38.98	74.00	-35.02	peak	
2		1290.000	45.21	-16.22	28.99	54.00	-25.01	AVG	
3		1945.000	52.27	-12.32	39.95	74.00	-34.05	peak	
4		1945.000	40.89	-12.32	28.57	54.00	-25.43	AVG	
5		2905.000	50.21	-9.72	40.49	74.00	-33.51	peak	
6		2905.000	40.62	-9.72	30.90	54.00	-23.10	AVG	
7		3390.000	50.38	-8.58	41.80	74.00	-32.20	peak	
8		3390.000	40.78	-8.58	32.20	54.00	-21.80	AVG	
9		4495.000	48.62	-5.76	42.86	74.00	-31.14	peak	
10	*	4495.000	40.52	-5.76	34.76	54.00	-19.24	AVG	
11		5115.000	48.63	-5.20	43.43	74.00	-30.57	peak	
12		5115.000	36.93	-5.20	31.73	54.00	-22.27	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		
Test Engineer	Jason Yang		



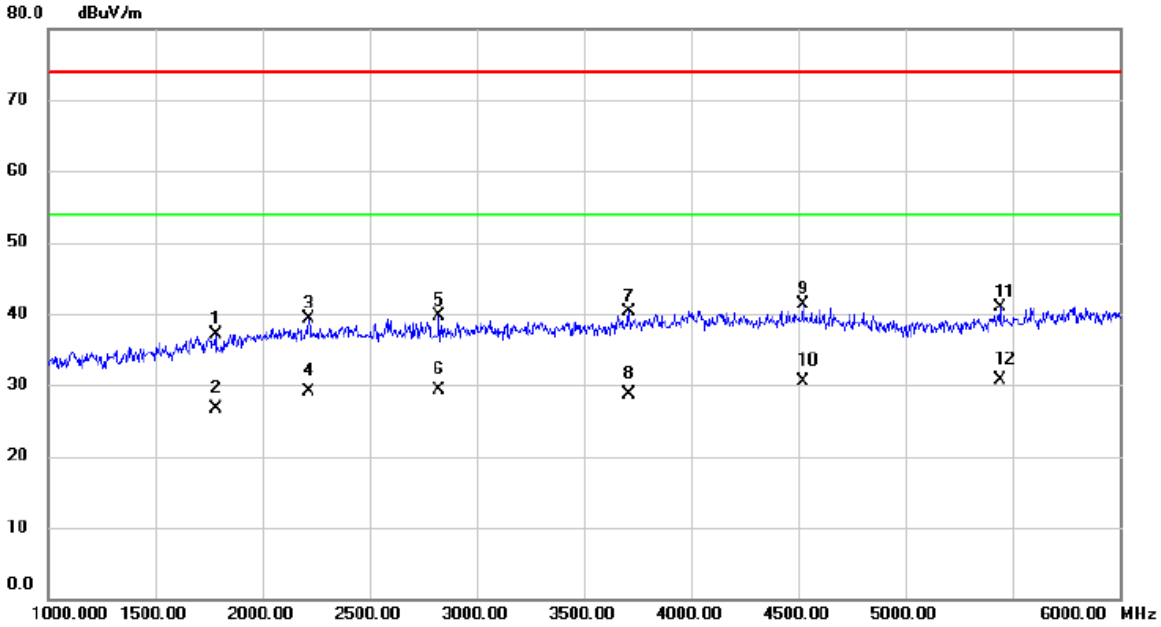
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1710.000	52.30	-14.00	38.30	74.00	-35.70	peak	
2		1710.000	41.80	-14.00	27.80	54.00	-26.20	AVG	
3		2400.000	48.68	-10.92	37.76	74.00	-36.24	peak	
4		2483.500	48.33	-10.72	37.61	74.00	-36.39	peak	
5		2995.000	49.62	-9.51	40.11	74.00	-33.89	peak	
6		2995.000	39.62	-9.51	30.11	54.00	-23.89	AVG	
7		3710.000	47.94	-7.69	40.25	74.00	-33.75	peak	
8		3710.000	36.57	-7.69	28.88	54.00	-25.12	AVG	
9		4200.000	47.12	-6.40	40.72	74.00	-33.28	peak	
10		4200.000	36.47	-6.40	30.07	54.00	-23.93	AVG	
11		5280.000	45.95	-4.96	40.99	74.00	-33.01	peak	
12		5280.000	35.52	-4.96	30.56	54.00	-23.44	AVG	
13		5720.000	46.94	-4.03	42.91	74.00	-31.09	peak	
14	*	5720.000	36.57	-4.03	32.54	54.00	-21.46	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		
Test Engineer	Jason Yang		



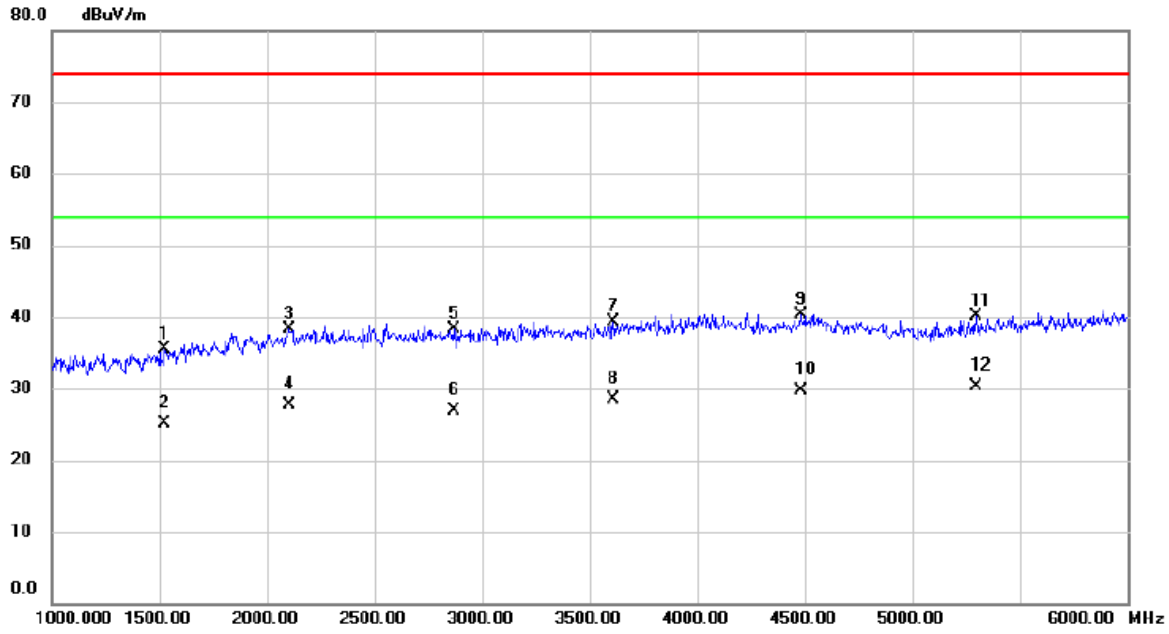
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1610.000	50.88	-14.71	36.17	74.00	-37.83	peak	
2		1610.000	40.41	-14.71	25.70	54.00	-28.30	AVG	
3		2400.000	48.27	-10.92	37.35	74.00	-36.65	peak	
4		2483.500	47.57	-10.72	36.85	74.00	-37.15	peak	
5		2990.000	49.08	-9.52	39.56	74.00	-34.44	peak	
6		2990.000	39.26	-9.52	29.74	54.00	-24.26	AVG	
7		3665.000	48.34	-7.83	40.51	74.00	-33.49	peak	
8		3665.000	36.77	-7.83	28.94	54.00	-25.06	AVG	
9		4045.000	48.00	-6.73	41.27	74.00	-32.73	peak	
10	*	4045.000	37.45	-6.73	30.72	54.00	-23.28	AVG	
11		4585.000	46.26	-5.69	40.57	74.00	-33.43	peak	
12		4585.000	35.70	-5.69	30.01	54.00	-23.99	AVG	
13		5480.000	45.19	-4.68	40.51	74.00	-33.49	peak	
14		5480.000	35.24	-4.68	30.56	54.00	-23.44	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 6		
Test Engineer	Jason Yang		



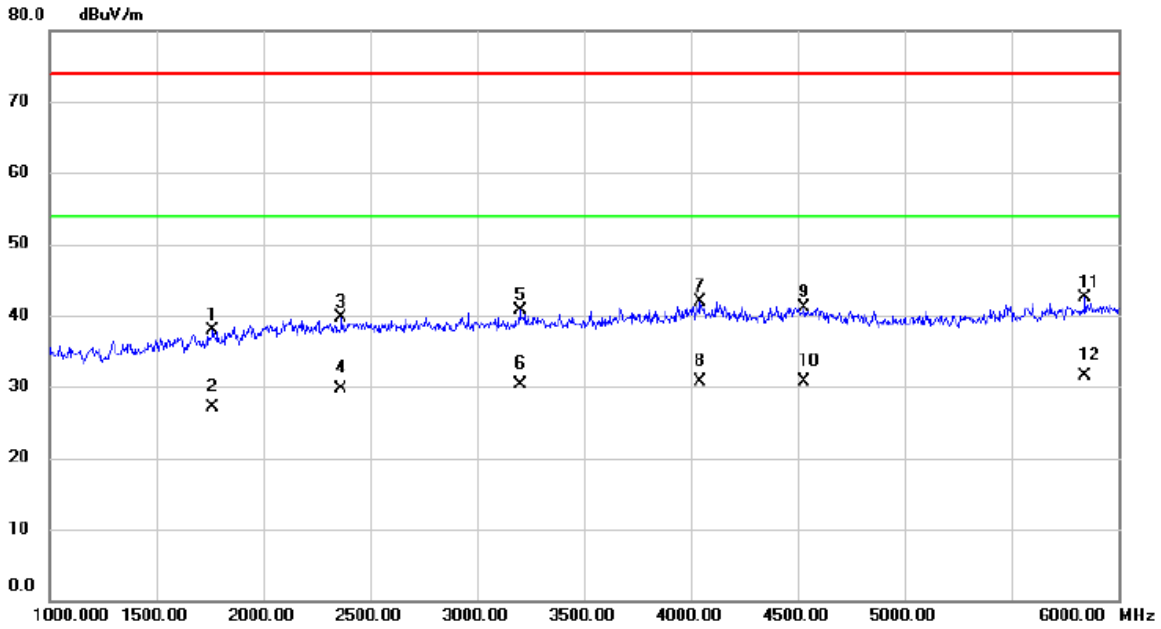
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1780.000	50.62	-13.50	37.12	74.00	-36.88	peak	
2		1780.000	40.27	-13.50	26.77	54.00	-27.23	AVG	
3		2215.000	50.71	-11.38	39.33	74.00	-34.67	peak	
4		2215.000	40.51	-11.38	29.13	54.00	-24.87	AVG	
5		2825.000	49.56	-9.90	39.66	74.00	-34.34	peak	
6		2825.000	39.26	-9.90	29.36	54.00	-24.64	AVG	
7		3710.000	47.97	-7.69	40.28	74.00	-33.72	peak	
8		3710.000	36.38	-7.69	28.69	54.00	-25.31	AVG	
9		4520.000	47.03	-5.73	41.30	74.00	-32.70	peak	
10		4520.000	36.25	-5.73	30.52	54.00	-23.48	AVG	
11		5440.000	45.55	-4.74	40.81	74.00	-33.19	peak	
12	*	5440.000	35.40	-4.74	30.66	54.00	-23.34	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 6		
Test Engineer	Jason Yang		



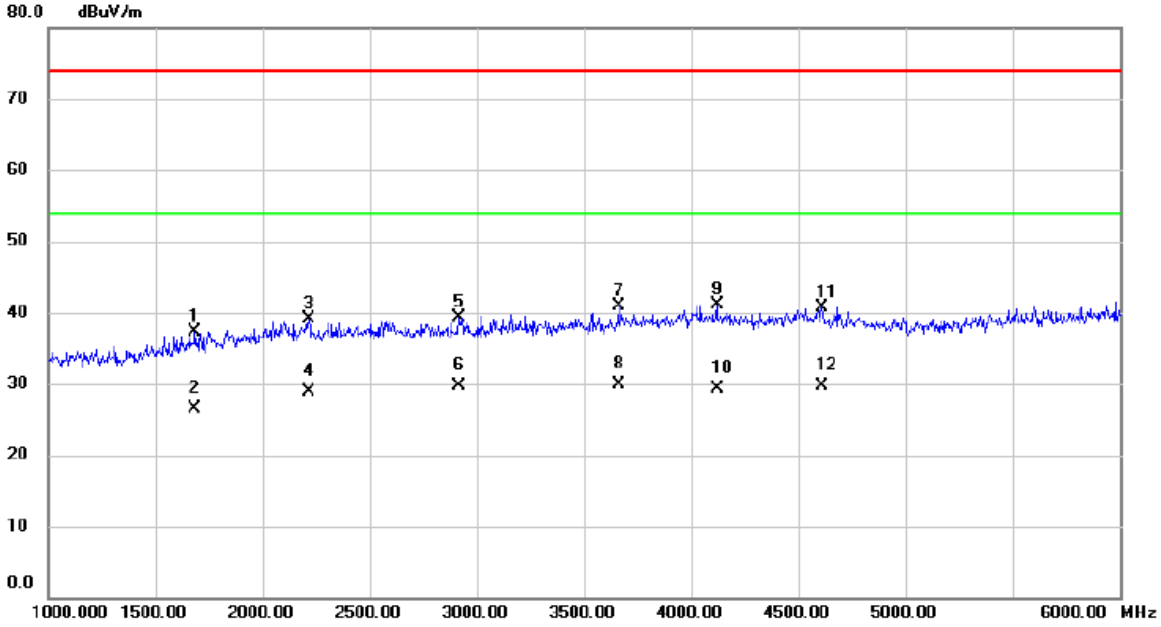
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1525.000	50.76	-15.32	35.44	74.00	-38.56	peak	
2		1525.000	40.51	-15.32	25.19	54.00	-28.81	AVG	
3		2105.000	49.88	-11.66	38.22	74.00	-35.78	peak	
4		2105.000	39.38	-11.66	27.72	54.00	-26.28	AVG	
5		2870.000	48.02	-9.80	38.22	74.00	-35.78	peak	
6		2870.000	36.79	-9.80	26.99	54.00	-27.01	AVG	
7		3610.000	47.23	-7.99	39.24	74.00	-34.76	peak	
8		3610.000	36.44	-7.99	28.45	54.00	-25.55	AVG	
9		4480.000	46.05	-5.80	40.25	74.00	-33.75	peak	
10		4480.000	35.58	-5.80	29.78	54.00	-24.22	AVG	
11		5295.000	45.12	-4.94	40.18	74.00	-33.82	peak	
12	*	5295.000	35.34	-4.94	30.40	54.00	-23.60	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 10		
Test Engineer	Jason Yang		



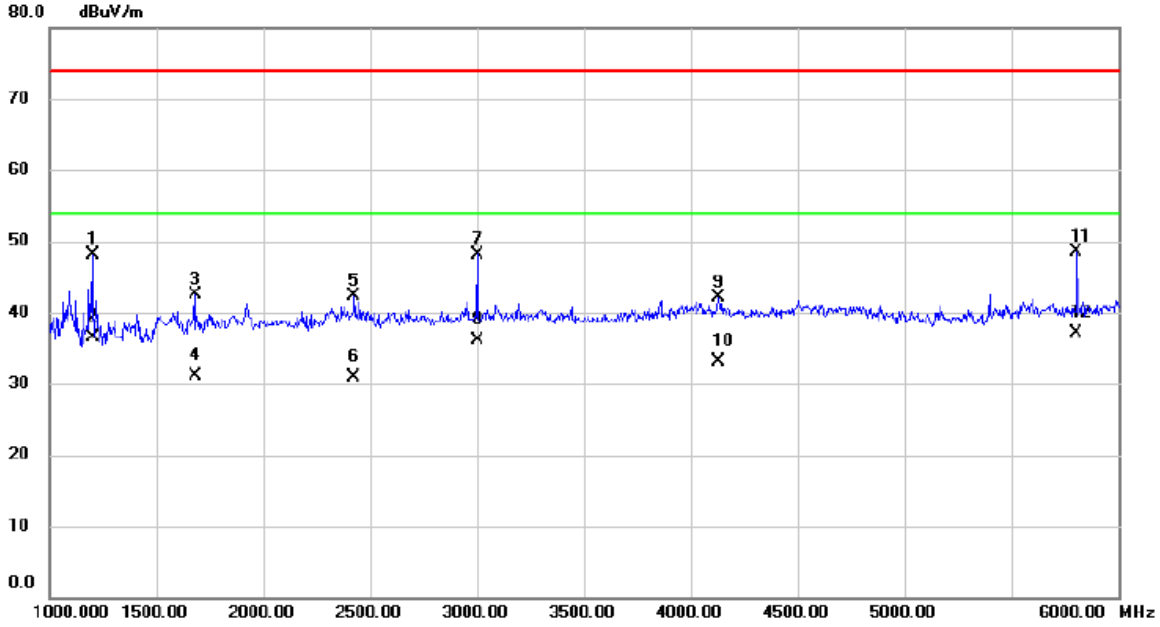
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1765.000	51.45	-13.61	37.84	74.00	-36.16	peak	
2		1765.000	40.69	-13.61	27.08	54.00	-26.92	AVG	
3		2365.000	50.66	-11.01	39.65	74.00	-34.35	peak	
4		2365.000	40.62	-11.01	29.61	54.00	-24.39	AVG	
5		3200.000	49.80	-9.03	40.77	74.00	-33.23	peak	
6		3200.000	39.37	-9.03	30.34	54.00	-23.66	AVG	
7		4045.000	48.65	-6.73	41.92	74.00	-32.08	peak	
8		4045.000	37.44	-6.73	30.71	54.00	-23.29	AVG	
9		4530.000	46.79	-5.73	41.06	74.00	-32.94	peak	
10		4530.000	36.52	-5.73	30.79	54.00	-23.21	AVG	
11		5845.000	46.17	-3.67	42.50	74.00	-31.50	peak	
12	*	5845.000	35.13	-3.67	31.46	54.00	-22.54	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 10		
Test Engineer	Jason Yang		



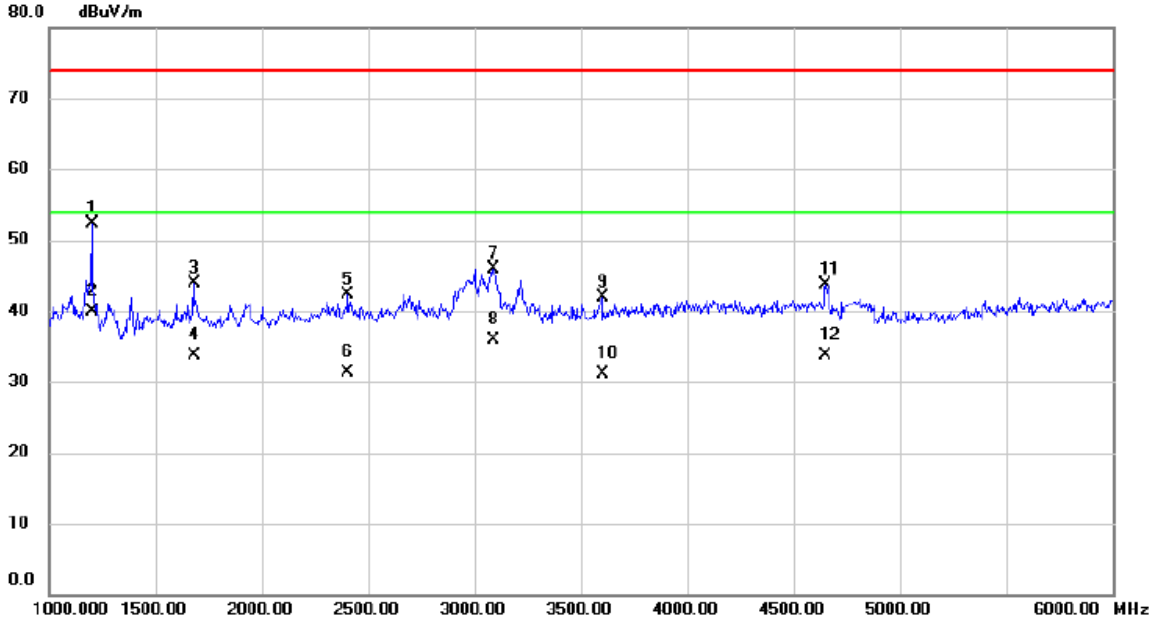
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1685.000	51.44	-14.18	37.26	74.00	-36.74	peak	
2		1685.000	40.65	-14.18	26.47	54.00	-27.53	AVG	
3		2215.000	50.46	-11.38	39.08	74.00	-34.92	peak	
4		2215.000	40.28	-11.38	28.90	54.00	-25.10	AVG	
5		2915.000	49.08	-9.70	39.38	74.00	-34.62	peak	
6		2915.000	39.37	-9.70	29.67	54.00	-24.33	AVG	
7		3660.000	48.66	-7.84	40.82	74.00	-33.18	peak	
8	*	3660.000	37.68	-7.84	29.84	54.00	-24.16	AVG	
9		4120.000	47.63	-6.57	41.06	74.00	-32.94	peak	
10		4120.000	35.79	-6.57	29.22	54.00	-24.78	AVG	
11		4610.000	46.39	-5.66	40.73	74.00	-33.27	peak	
12		4610.000	35.42	-5.66	29.76	54.00	-24.24	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 11		
Test Engineer	Jason Yang		



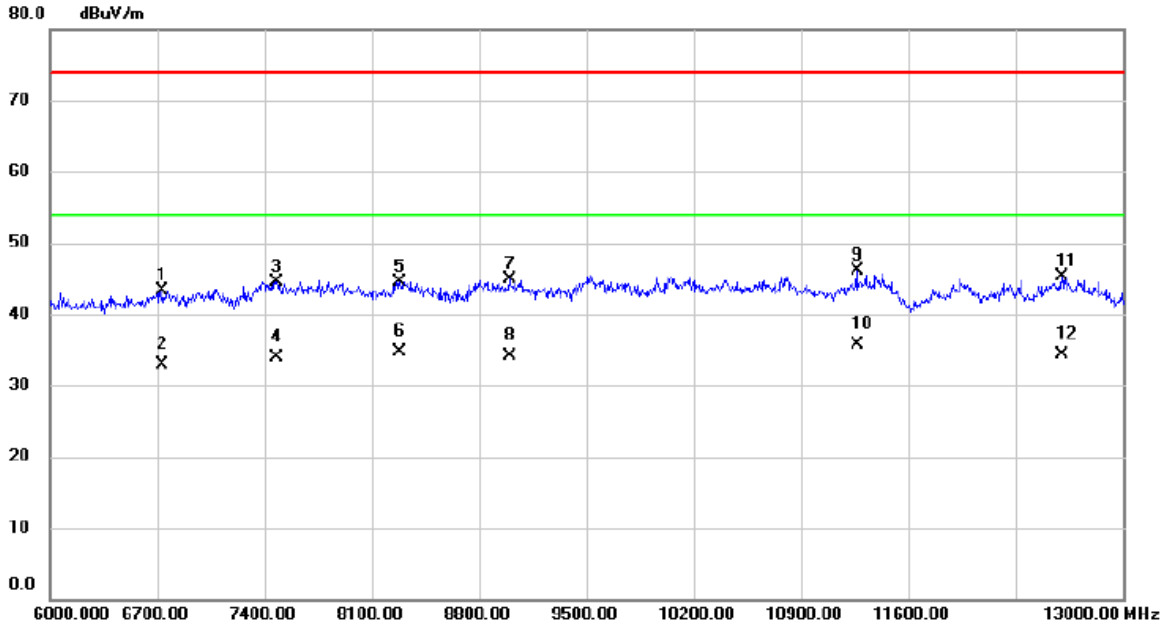
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1200.000	64.62	-16.53	48.09	74.00	-25.91	peak	
2		1200.000	52.96	-16.53	36.43	54.00	-17.57	AVG	
3		1680.000	56.75	-14.21	42.54	74.00	-31.46	peak	
4		1680.000	45.38	-14.21	31.17	54.00	-22.83	AVG	
5		2425.000	53.16	-10.85	42.31	74.00	-31.69	peak	
6		2425.000	41.79	-10.85	30.94	54.00	-23.06	AVG	
7		3000.000	57.70	-9.50	48.20	74.00	-25.80	peak	
8		3000.000	45.63	-9.50	36.13	54.00	-17.87	AVG	
9		4130.000	48.63	-6.55	42.08	74.00	-31.92	peak	
10		4130.000	39.62	-6.55	33.07	54.00	-20.93	AVG	
11		5805.000	52.19	-3.78	48.41	74.00	-25.59	peak	
12	*	5805.000	40.80	-3.78	37.02	54.00	-16.98	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 11		
Test Engineer	Jason Yang		



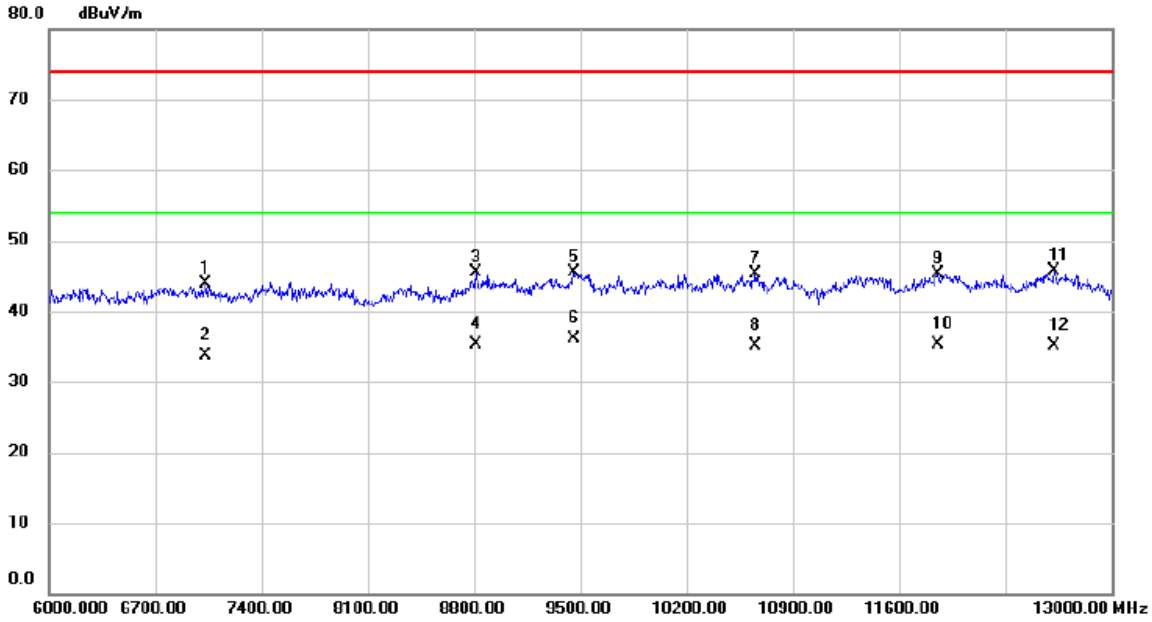
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1200.000	68.88	-16.53	52.35	74.00	-21.65	peak	
2	*	1200.000	56.36	-16.53	39.83	54.00	-14.17	AVG	
3		1680.000	58.14	-14.21	43.93	74.00	-30.07	peak	
4		1680.000	47.82	-14.21	33.61	54.00	-20.39	AVG	
5		2405.000	53.12	-10.90	42.22	74.00	-31.78	peak	
6		2405.000	42.27	-10.90	31.37	54.00	-22.63	AVG	
7		3090.000	55.21	-9.29	45.92	74.00	-28.08	peak	
8		3090.000	45.16	-9.29	35.87	54.00	-18.13	AVG	
9		3600.000	49.83	-8.02	41.81	74.00	-32.19	peak	
10		3600.000	39.16	-8.02	31.14	54.00	-22.86	AVG	
11		4650.000	49.43	-5.64	43.79	74.00	-30.21	peak	
12		4650.000	39.32	-5.64	33.68	54.00	-20.32	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		
Test Engineer	Jason Yang		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		6735.000	45.64	-2.33	43.31	74.00	-30.69	peak	
2		6735.000	35.26	-2.33	32.93	54.00	-21.07	AVG	
3		7477.000	45.84	-1.28	44.56	74.00	-29.44	peak	
4		7477.000	35.17	-1.28	33.89	54.00	-20.11	AVG	
5		8282.000	45.16	-0.58	44.58	74.00	-29.42	peak	
6		8282.000	35.23	-0.58	34.65	54.00	-19.35	AVG	
7		8996.000	44.54	0.36	44.90	74.00	-29.10	peak	
8		8996.000	33.69	0.36	34.05	54.00	-19.95	AVG	
9		11264.00	40.78	5.25	46.03	74.00	-27.97	peak	
10	*	11264.00	30.41	5.25	35.66	54.00	-18.34	AVG	
11		12601.00	36.73	8.50	45.23	74.00	-28.77	peak	
12		12601.00	25.87	8.50	34.37	54.00	-19.63	AVG	

EUT	Smart Phone	Model Name	MAR-LX3Am
Temperature	25°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		
Test Engineer	Jason Yang		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7029.000	45.84	-1.89	43.95	74.00	-30.05	peak	
2		7029.000	35.64	-1.89	33.75	54.00	-20.25	AVG	
3		8814.000	45.43	0.01	45.44	74.00	-28.56	peak	
4		8814.000	35.28	0.01	35.29	54.00	-18.71	AVG	
5		9458.000	43.11	2.42	45.53	74.00	-28.47	peak	
6	*	9458.000	33.67	2.42	36.09	54.00	-17.91	AVG	
7		10655.00	41.15	4.16	45.31	74.00	-28.69	peak	
8		10655.00	30.90	4.16	35.06	54.00	-18.94	AVG	
9		11852.00	38.24	7.15	45.39	74.00	-28.61	peak	
10		11852.00	28.14	7.15	35.29	54.00	-18.71	AVG	
11		12622.00	37.26	8.49	45.75	74.00	-28.25	peak	
12		12622.00	26.55	8.49	35.04	54.00	-18.96	AVG	

End of Test Report