TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2ABBSM350

Product: Mobile Phone

Model No.: M350

Additional Model: N/A

Trade Mark: MOX

Report No.: TCT160325E003

Issued Date: May. 03, 2016

Issued for:

MOX GROUP LIMITED
RM2508-2509, T-Share international building A, taoyuan Road, Nanshan, Shenzhen, China

Issued By:

Shenzhen Tongce Testing Lab
1F, Leinuo Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China
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Hotline: 400-6611-140 Tel: 86-755- 27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. Test Certification

Product:	Mobile Phone
Model No.:	M350
Additional Model No.:	N/A
Applicant:	MOX GROUP LIMITED
Address:	RM2508-2509, T-Share international building A, taoyuan Road, Nanshan, Shenzhen, China
Manufacturer:	MOX GROUP LIMITED
Address:	RM2508-2509, T-Share international building A, taoyuan Road, Nanshan, Shenzhen, China
Test Voltage:	DC 5 V(PC Input AC 120 V/ 60 Hz)
Date of Test:	Mar. 25 – Apr. 29, 2016
Applicable Standards:	47 CFR FCC Part 15 Subpart B: 2016 ANSI C63.4: 2014

The above equipment has been tested by Shenzhen Tongce Testing Lab and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:	Jerry Xie	***Date:***	***Apr. 29, 2016***
	Jerry Xie		
Check By:	Joe Zhou	***Date:***	***May 03, 2016***
	Joe Zhou		
Approved By:	Tomsin	***Date:***	***May 03, 2016***
	Tomsin		

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2. Test Result Summary

Emission		
Test Method	**Item**	**Result**
FCC 47 CFR Part 15 Subpart B	Conducted Emission at Mains Terminals	Pass
	Radiated Emission	Pass

Note:

1. Pass: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.
5. The information of measurement uncertainty is available upon the customer's request.

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3. EUT Description

Product Name:	Mobile Phone
Model No.:	M350
Additional Model No.:	N/A
Trade Mark:	MOX
Hardware Version:	L035_MB_V1.4
Software Version:	MOCOR_12C.YHY_MOX_V0.8_Release
Product Parameter:	Input: AC 100-240 V, 50/60 Hz, 0.1 A Output: DC 5.0 V, 500 mA
Highest Frequency:	1.2 GHz
AC Line(PC):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.2 m
AC Line(Monitor):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.2 m
AC Line(Printer):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.2 m
USB Line (PC to EUT):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.0 m
USB Line (PC to Printer):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.0 m
USB Line (Mouse):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.5 m
USB Line (Keyboard):	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.5 m
VGA Line:	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.2 m
Earphone Line:	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.2 m

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4. Test Methodology

4.1. Decision of Final Test Mode

The EUT was tested together with the thereinafter additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.
The following test mode(s) were assessed:

Test Mode
Mode 1: Data Transmitting
Mode 2: Charging + Camera Shooting
Mode 3: Charging + Recording
Mode 4: Charging + SD Playing
Mode 5: Charging + FM

The following test mode was found to produce the highest emission level.

The Worst Test Mode		
Emission	Conducted Emission	Mode 3: Charging + Recording
	Radiated Emission	Mode 1: Data Transmitting

4.2. EUT System Operation

1. Set up EUT with the support equipments.
2. Make sure the EUT work normally during the test.

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5. Setup of Equipment under Test

5.1. 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.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
PC	BM6620	D1PFCG008HP	DOC	ASUS
Monitor	VX239	VX239H	DOC	ASUS
Keyboard	PK1100UE	04G104180039DP	DOC	ASUS
Printer	L11121E	FE2-2902	DOC	CANON
Mouse	MOBTUO	04G125610170DP	DOC	ASUS

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

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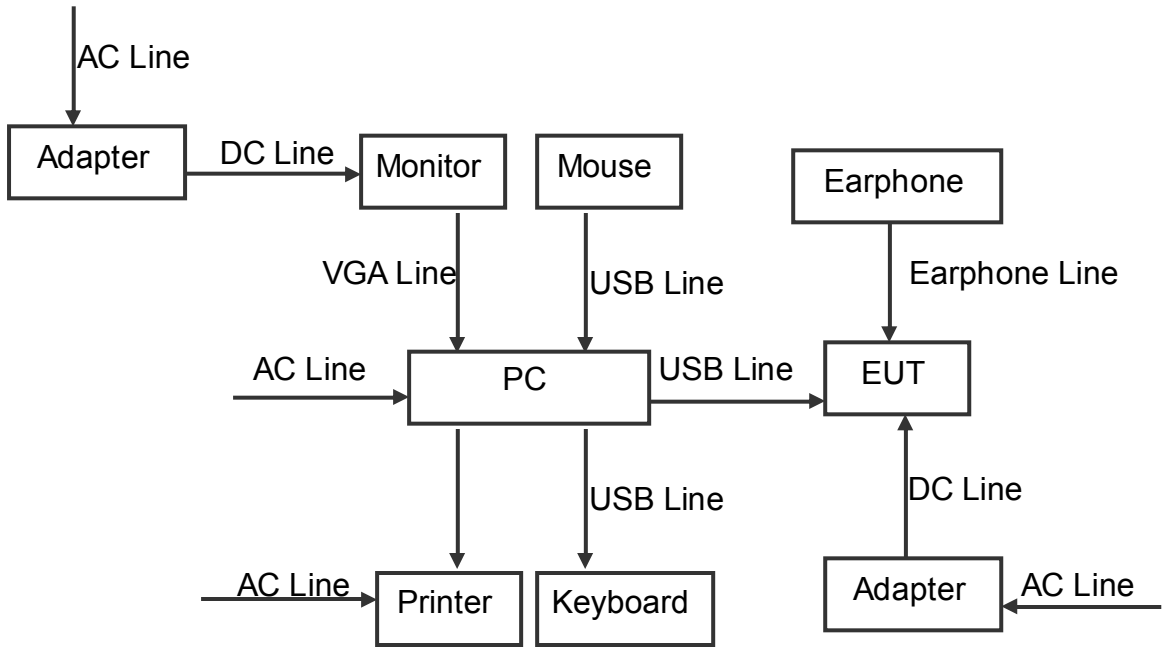
5.2. Configuration of System Under Test



(EUT: Mobile Phone)

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6. Facilities and Accreditations

6.1. Facilities

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

● FCC - Registration No.: 572331

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

● IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

● CNAS - Registration No.: CNAS L6165

Shenzhen TCT Testing Technology Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6165.

6.2. Location

Shenzhen Tongce Testing Lab

Address: 1F, Leinuo Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China

Tel: 86-755-36638142

6.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

7. Emission Test

7.1. Conducted Emission at Mains Terminals

7.1.1. Test Specification

Test Requirement:	FCC 47 CFR Part 15 Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	150 kHz to 30 MHz

7.1.2. Limits

Frequency (MHz)	Class B dB(uV)	
	Quasi-peak	Average
0.15 - 0.5	66 – 56[a]	56 – 46[a]
0.50 - 5.0	56	46
5.0 - 30.0	60	50
a. Decreases with the logarithm of the frequency		

7.1.3. Test Instruments

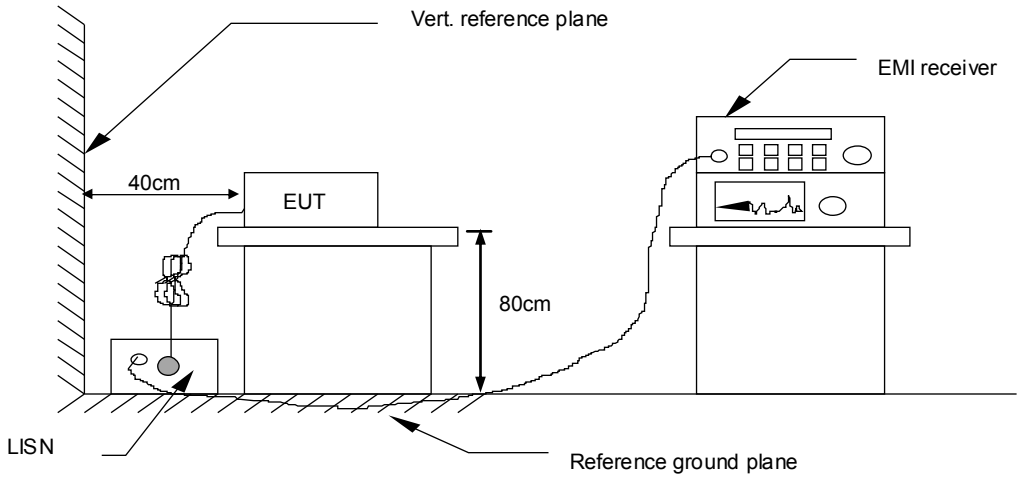
Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCS30	100139	Sep. 11, 2016
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 16, 2016
LISN	AFJ	LS16C	16010947251	Sep. 11, 2016
Coax cable	TCT	CE-05	N/A	Sep. 11, 2016

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

7.1.4. Test Method

The AMN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN

7.1.5. Block Diagram of Test Setup



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.1.6. Test Results

Test Environment:	Temp.:	23 ℃	Humid.:	54 %	Press.:	96 kPa
Test Mode:	Mode 3					
Test Voltage:	AC 120 V/ 60 Hz					
Test Result:	Pass					

Note:

L1 = Live Line / N = Neutral Line

"---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

Freq. = Emission frequency in MHz

Reading level dB(μV) = Receiver reading

Corr. Factor (dB) = Attenuator factor + Cable loss

Level dB(μV) = Reading level dB(μV) + Corr. Factor (dB)

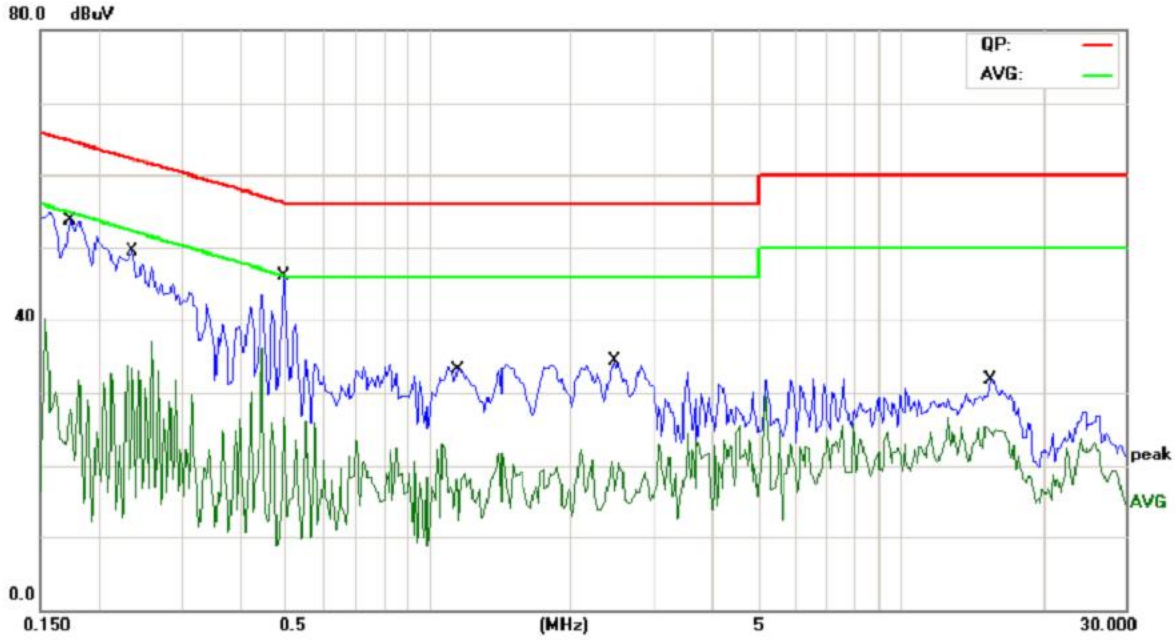
Limit dB(μV) = Limit stated in standard

Margin (dB) = Level dB(μV) – Limits dB(μV)

Q.P. =Quasi-Peak

AVG=Average

Please refer to following diagram for individual



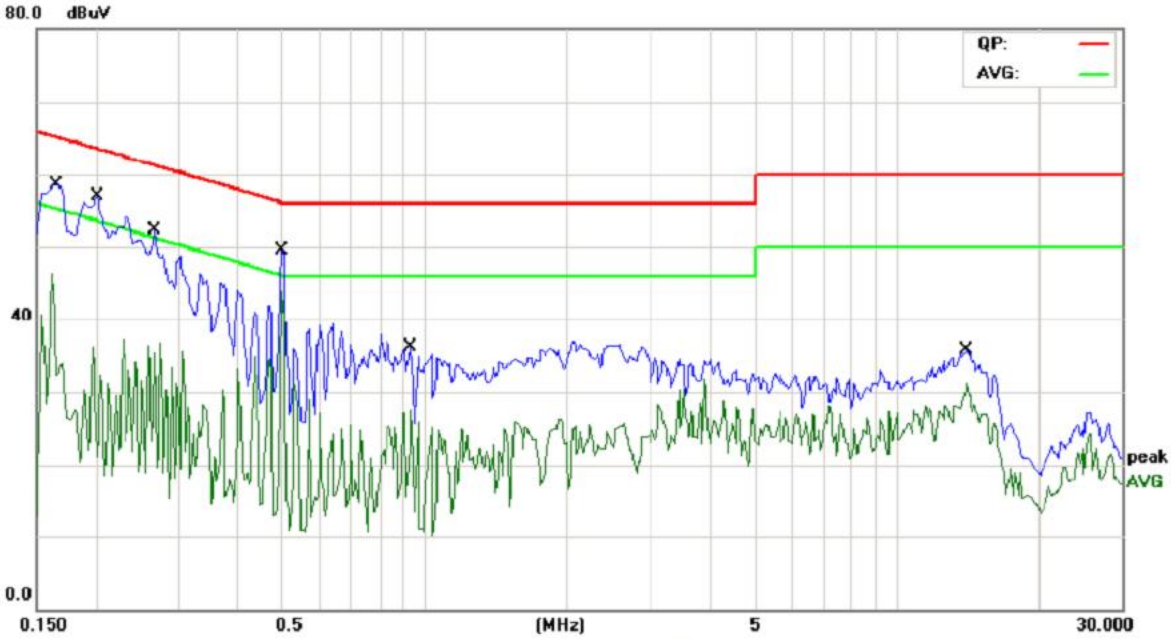
Site Chamber #2 Phase: *L1* Temperature: 23 (C)

Limit: FCC Part 15B Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 54 %

Mode: Charging and Recording

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1734	34.76	11.50	46.26	64.79	-18.53	QP	
2		0.1734	14.49	11.50	25.99	54.79	-28.80	AVG	
3		0.2359	33.06	11.46	44.52	62.24	-17.72	QP	
4		0.2359	11.85	11.46	23.31	52.24	-28.93	AVG	
5	*	0.4938	32.50	11.31	43.81	56.10	-12.29	QP	
6		0.4938	18.52	11.31	29.83	46.10	-16.27	AVG	
7		1.1539	12.19	11.25	23.44	56.00	-32.56	QP	
8		1.1539	0.58	11.25	11.83	46.00	-34.17	AVG	
9		2.4703	4.39	11.52	15.91	56.00	-40.09	QP	
10		2.4703	-1.25	11.52	10.27	46.00	-35.73	AVG	
11		15.5117	13.32	11.56	24.88	60.00	-35.12	QP	
12		15.5117	1.98	11.56	13.54	50.00	-36.46	AVG	



Site Chamber #2 Phase: N Temperature: 23 (C)

Limit: FCC Part 15B Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 54 %

Mode: Charging and Recording

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1655	44.15	11.51	55.66	65.18	-9.52	QP	
2		0.1655	23.92	11.51	35.43	55.18	-19.75	AVG	
3		0.2008	35.66	11.48	47.14	63.57	-16.43	QP	
4		0.2008	20.09	11.48	31.57	53.57	-22.00	AVG	
5		0.2672	33.51	11.45	44.96	61.20	-16.24	QP	
6		0.2672	17.28	11.45	28.73	51.20	-22.47	AVG	
7		0.4977	35.61	11.31	46.92	56.04	-9.12	QP	
8	*	0.4977	31.79	11.31	43.10	46.04	-2.94	AVG	
9		0.9352	20.30	11.18	31.48	56.00	-24.52	QP	
10		0.9352	17.22	11.18	28.40	46.00	-17.60	AVG	
11		14.0820	13.30	11.60	24.90	60.00	-35.10	QP	
12		14.0820	2.09	11.60	13.69	50.00	-36.31	AVG	

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7.2. Radiated Emission

7.2.1. Test Specification

Test Requirement:	FCC 47 CFR Part 15 Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	30 MHz to 6000 MHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical

7.2.2. Limits

Frequency (MHz)	Class B (at 3m)
	dBuV/m
30 ~ 88	40.0
88 ~ 216	43.5
216 ~ 960	46.0
960 ~ 1000	54.0
Above 1000	74.0(Peak) 54.0(Average)

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level dB(μV/m) = 20 log Emission level (μV/m).

7.2.3. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESVD	100008	Sep. 11, 2016
Spectrum Analyzer	R&S	FSEM	848597-001	Sep. 11, 2016
Amplifier	HP	8447D	2727A05017	Sep. 11, 2016
Amplifier	EM	EM30265	07032613	Sep. 11, 2016
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 13, 2016
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 13, 2016
Antenna Mater	CCS	CC-A-4M	N/A	Sep.15 , 2016

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Coax cable	TCT	RE-low-01	N/A	Sep. 11, 2016
Coax cable	TCT	RE-high-02	N/A	Sep. 11, 2016
Coax cable	TCT	RE-low-03	N/A	Sep. 11, 2016
Coax cable	TCT	RE-high-04	N/A	Sep. 11, 2016

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

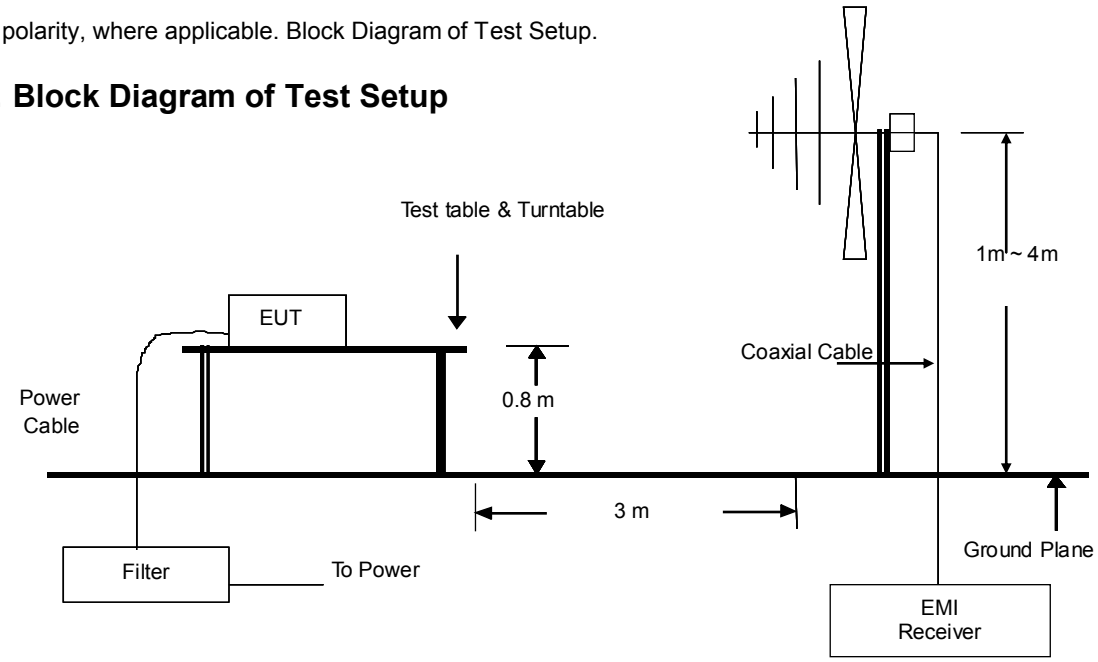
7.2.4. Test Method

For the radiated emission test above 1GHz:

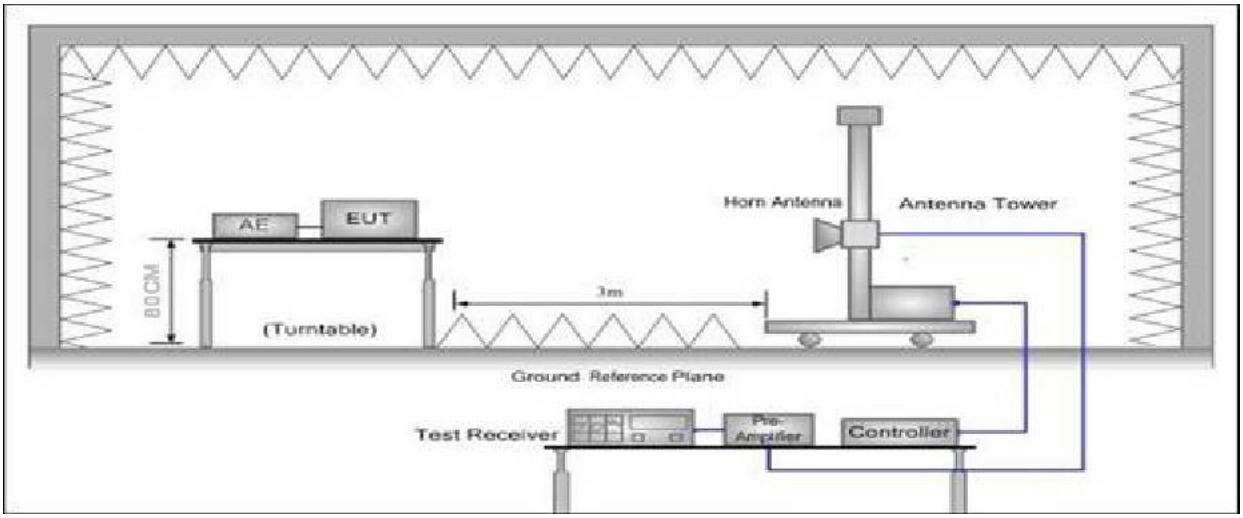
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

Measurements were made in a 3-meter semi-anechoic chamber or Open Area Test Site that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. Block Diagram of Test Setup.

7.2.5. Block Diagram of Test Setup



(30MHz to 1GHz)



(Above 1GHz)

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration

7.2.6. Test Results

Test Environment:	Temp.:	25 ℃	Humid.:	54 %	Press.:	96 kPa
Test Mode:	Mode 1					
Test Voltage:	DC 5 V(PC Input AC 120 V/ 60 Hz)					
Test Result:	Pass					

Note:

Freq. = Emission frequency in MHz

Reading level dB(μV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

Measurement dB(μV/m) = Reading level dB(μV) + Corr. Factor (dB)

Limit dB(μV/m) = Limit stated in standard

Margin (dB) = Measurement dB(μV/m) – Limits dB(μV/m)

Q.P. =Quasi-Peak

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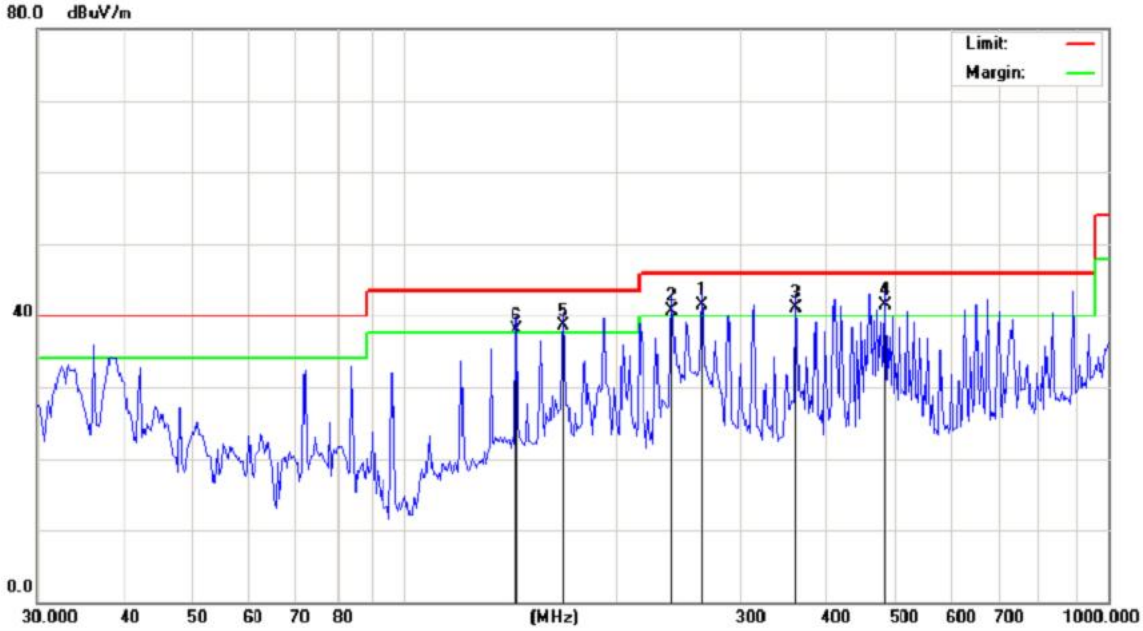
Please refer to following diagram for individual



Site

Limit: FCC Part 15B Class B RE_3 m

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

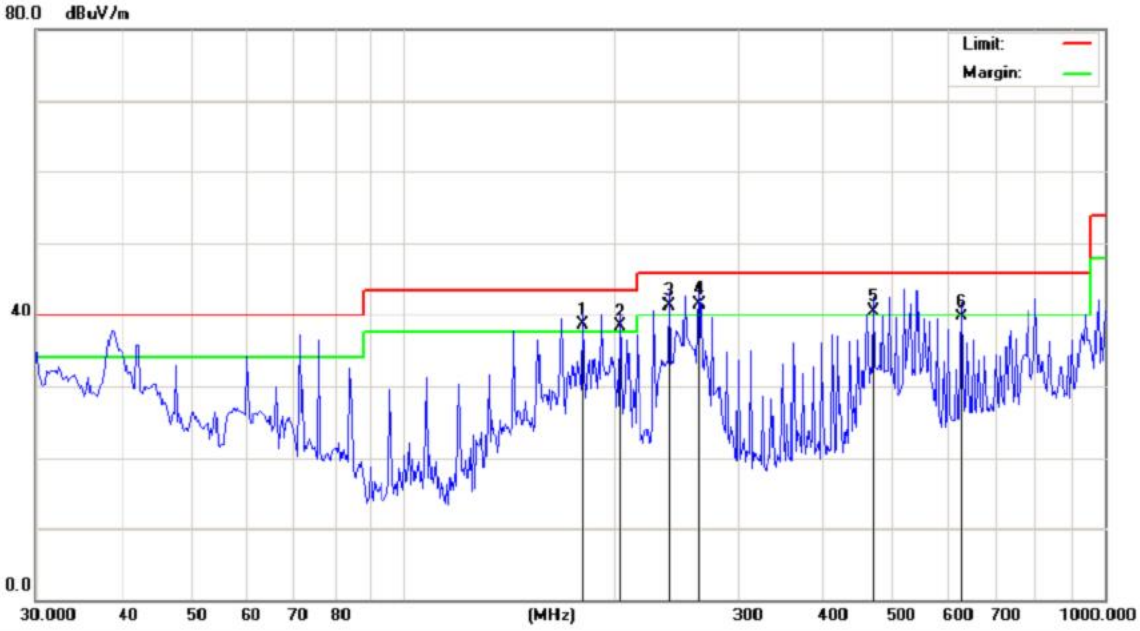
Polarization: *Horizontal*

Power:

Temperature: 25

Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	263.9970	50.97	-9.48	41.49	46.00	-4.51	QP		0	
2	!	239.9440	51.11	-10.31	40.80	46.00	-5.20	QP		0	
3	!	359.6061	48.17	-7.02	41.15	46.00	-4.85	QP		0	
4	*	481.6523	45.09	-3.56	41.53	46.00	-4.47	QP		0	
5	!	168.4062	52.33	-13.87	38.46	43.50	-5.04	QP		0	
6	!	143.8875	53.11	-15.30	37.81	43.50	-5.69	QP		0	



Site

Limit: FCC Part 15B Class B RE_3 m

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

Polarization: *Vertical*

Power:

Temperature: 25

Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	!	180.1540	51.56	-13.05	38.51	43.50	-4.99	QP		0	
2	!	203.8616	49.83	-11.54	38.29	43.50	-5.21	QP		0	
3	!	239.9440	51.64	-10.31	41.33	46.00	-4.67	QP		0	
4	*	263.9970	50.93	-9.48	41.45	46.00	-4.55	QP		0	
5	!	468.3072	44.50	-3.99	40.51	46.00	-5.49	QP		0	
6		623.7305	41.08	-1.44	39.64	46.00	-6.36	QP		0	

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Site | Polarization: *Horizontal* | Temperature: 23

Limit: FCC Part 15B Class B Above 1GHz RE(PK) | Power: | Humidity: 54 %

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1064.503	60.63	-13.18	47.45	74.00	-26.55	peak		0	
2		1504.389	57.65	-12.66	44.99	74.00	-29.01	peak		0	
3		1988.918	55.10	-10.29	44.81	74.00	-29.19	peak		0	
4		2419.232	58.07	-8.13	49.94	74.00	-24.06	peak		0	
5		3198.410	53.81	-5.77	48.04	74.00	-25.96	peak		0	
6	*	4974.768	48.76	1.40	50.16	74.00	-23.84	peak		0	

Site | Polarization: *Vertical* | Temperature: 23

Limit: FCC Part 15B Class B Above 1GHz RE(PK) | Power: | Humidity: 54 %

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1025.319	60.88	-13.26	47.62	74.00	-26.38	peak		0	
2		1523.315	57.45	-12.67	44.78	74.00	-29.22	peak		0	
3		1964.208	55.39	-10.65	44.74	74.00	-29.26	peak		0	
4		2399.153	56.53	-8.23	48.30	74.00	-25.70	peak		0	
5		3055.106	54.70	-6.09	48.61	74.00	-25.39	peak		0	
6	*	4072.888	52.77	-2.39	50.38	74.00	-23.62	peak		0	

*****END OF REPORT******