FCC TEST REPORT

Client Name	:	EPSILON ELECTRONICS,INC
Address	:	1550 South Maple Ave. Montebello, CA 90640, U.S.A
Product Name	:	Sound Table
Date	:	Apr. 01, 2019

Shenzhen Anbotek Compliance Laboratory Limited

Contents

1. General Information 4
1.1. Client Information 4
1.2. Description of Device (EUT) 4
1.3. Auxiliary Equipment Used During Test 5
1.4. Description of Test Modes 5
1.5. Description Of Test Setup 6
1.6. Test Equipment List 7
1.7. Description of Test Facility 8
2. Summary of Test Results 9
3. Conducted Emission Test 10
3.1. Test Standard and Limit 10
3.2. Test Setup 10
3.3. Test Procedure 10
3.4. Test Data 11
4. Radiation Spurious Emission and Band Edge 20
4.1. Test Standard and Limit 20
4.2. Test Setup 20
4.3. Test Procedure 21
4.4. Test Data 22
5. Antenna Requirement 33
5.1. Test Standard and Requirement 33
5.2. Antenna Connected Construction 33
APPENDIX I -- TEST SETUP PHOTOGRAPH 34
APPENDIX II -- EXTERNAL PHOTOGRAPH 36
APPENDIX III -- INTERNAL PHOTOGRAPH 37

TEST REPORT

Applicant	:	EPSILON ELECTRONICS,INC
Manufacturer	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Product Name	:	Sound Table
Model No.	:	ST-180MCM-G, ST-180MCM-B, ST-360MCM-G, ST-180TRD-G, ST-180TRD-B, ST-180AMA-G, ST-180AMA-B, ST-180ARTD-G, ST-180ARTD-B, ST-180RET-G, ST-180RET-B, ST-180MOD-G, ST-180MOD-B
Trade Mark	:	SOUNDSTREAM
Rating(s)	:	Input: DC 18V, 3.5A(via adapter input:AC 100~240V,50/60Hz ,1.5A) Wireless Output: 5W USB output: DC 5V, 2.4A

Test Standard(s)	:	**FCC Part15 Subpart C 2018, Paragraph 15.209**
Test Method(s)	:	**ANSI C63.10: 2013**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	Feb. 12, 2019
Date of Test	Feb. 12~Apr. 01, 2019
Prepared By	(Engineer / Oliay Yang)
Reviewer	(Supervisor / Snowy Meng)
Approved & Authorized Signer	(Manager / Sally Zhang)

Anbotek (SZ) Compliance Laboratory Limited Anbotek Product Safety * Approved *

Address: 1/F, Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86)755-26066440 Fax:(86)755-26014772 Email:service@anbotek.com
Hotline 400-003-0500 www.anbotek.com

1. General Information

1.1. Client Information

Applicant	:	EPSILON ELECTRONICS,INC
Address	:	1550 South Maple Ave. Montebello, CA 90640, U.S.A
Manufacturer	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Address	:	Building B, No.5, Shunxing Five Road, Dajingtou Community, Dalang Town, Dongguan City, Guangdong Province
Factory	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Address	:	Building B, No.5, Shunxing Five Road, Dajingtou Community, Dalang Town, Dongguan City, Guangdong Province

1.2. Description of Device (EUT)

Product Name	:	Sound Table	
Model No.	:	ST-180MCM-G, ST-180MCM-B, ST-360MCM-G, ST-180TRD-G, ST-180TRD-B, ST-180AMA-G, ST-180AMA-B, ST-180ARTD-G, ST-180ARTD-B, ST-180RET-G, ST-180RET-B, ST-180MOD-G, ST-180MOD-B (Note: All samples are the same except the color, material and appearance, so we prepare "ST-180MCM-G " for test only.)	
Trade Mark	:	SOUNDSTREAM	
Test Power Supply	:	AC 240V, 60Hz for adapter/ AC 120V, 60Hz for adapter	
Test Sample No.	:	S1(Normal Sample), S2(Engineering Sample)	
Product Description	:	Operation Frequency:	111~205KHz
		Modulation Type:	MSK
		Antenna Type:	Inductive loop coil Antenna
		Antenna Gain(Peak):	0 dBi
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.			

1.3. Auxiliary Equipment Used During Test

Adapter 1	:	Model: A653-1803500D Input: 100-240V~50/60Hz 1.5A Output: DC 18V, 3500mA
Adapter 2	:	Model: QX72W180350D2 Input: 100-240V~50/60Hz 1.5A Output: DC 18V, 3500mA
Mobile Phone	:	iPhone X

1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates 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	Full load, Wireless charger module

For Conducted Emission	
Final Test Mode	Description
Mode 1	Full load, Wireless charger module

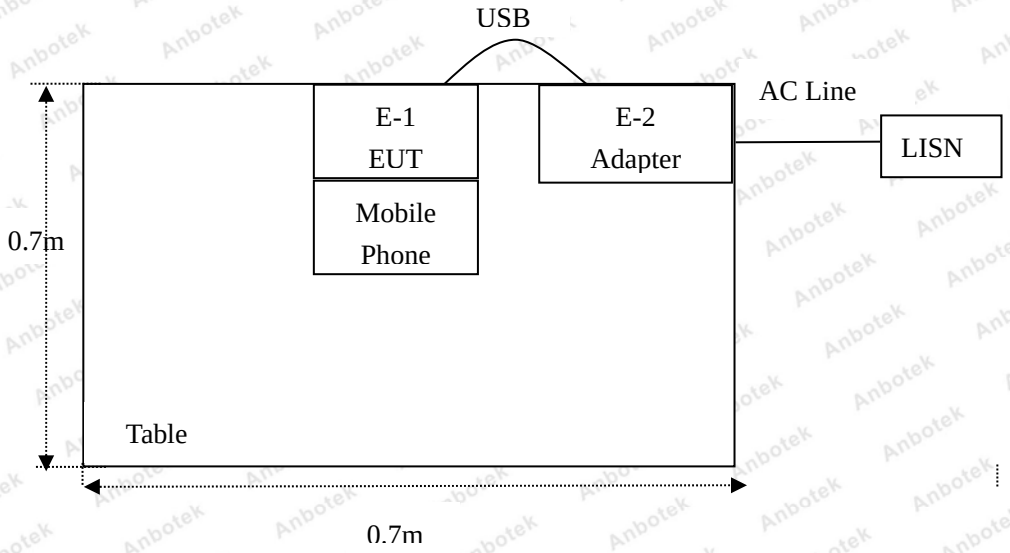
For Radiated Emission	
Final Test Mode	Description
Mode 1	Full load, Wireless charger module

Note: (1)Test channel is 0.1184MHz.

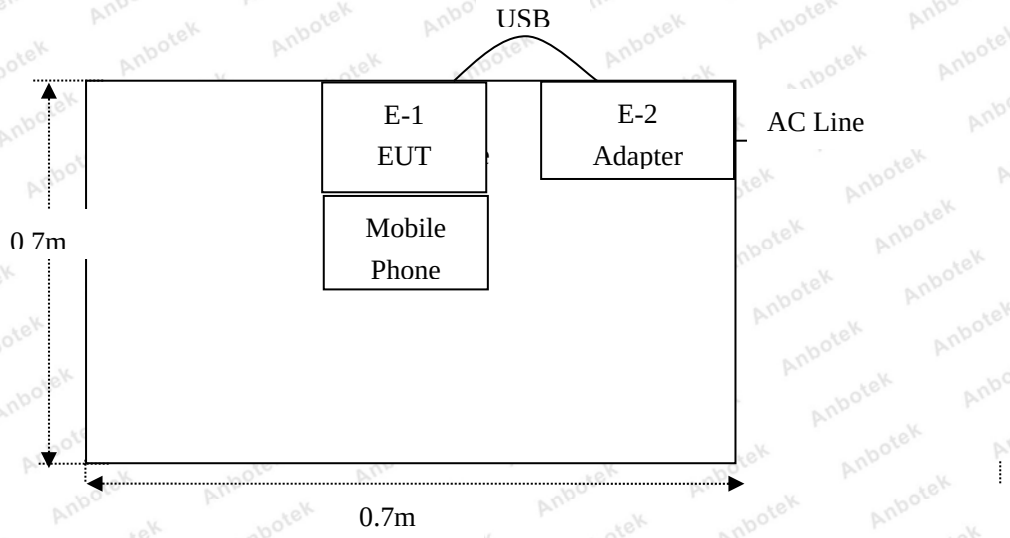
(2)All the situation(full load, half load and empty load) has been tested,only the worst situation (full load) was recorded in the report.

1.5. Description Of Test Setup

CE



RE



1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 05, 2018	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 05, 2018	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 05, 2018	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 19, 2018	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 19, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Nov. 20, 2018	1 Year
11.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 05, 2018	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 05, 2018	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 05, 2018	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 05, 2018	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Apr. 02, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Nov. 01, 2018	1 Year

1.7. Description of Test Facility

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

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed 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. 184111, July 31, 2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

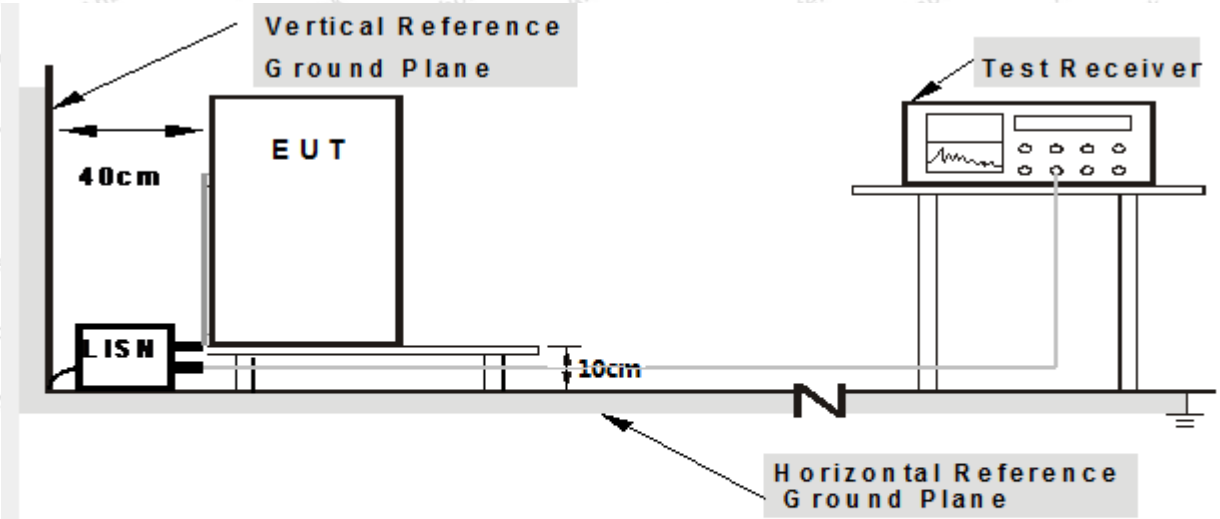
Standard Section	Test Item	Result
FCC Part 15, Paragraph 15.207	Conducted Emission Test	PASS
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS
Part 15.203	Antenna Requirement	PASS

3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

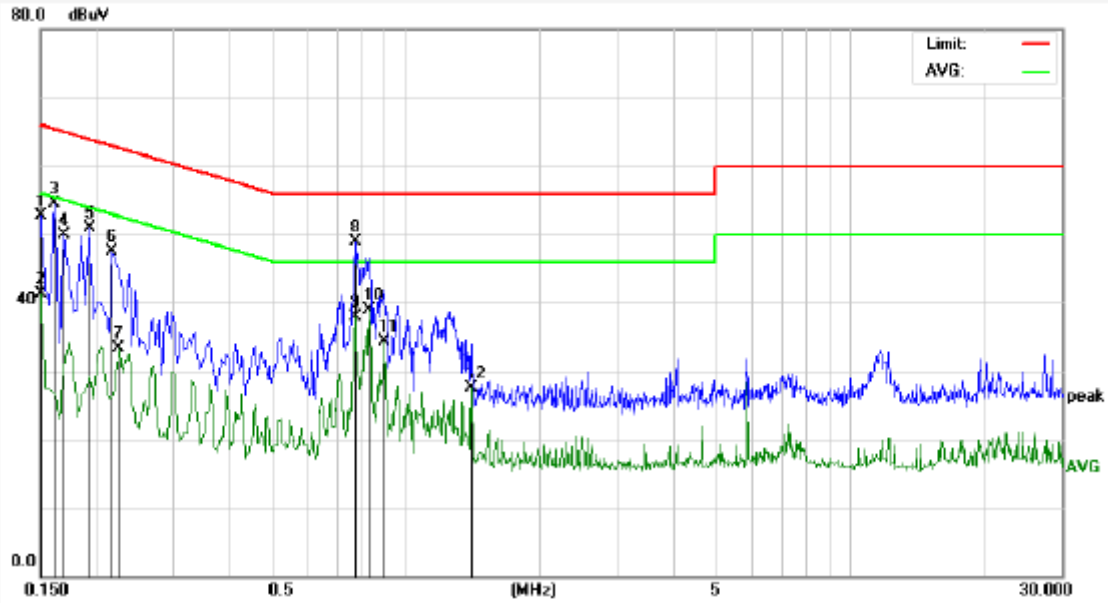
The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

Please to see the following pages

Conducted Emission Test Data

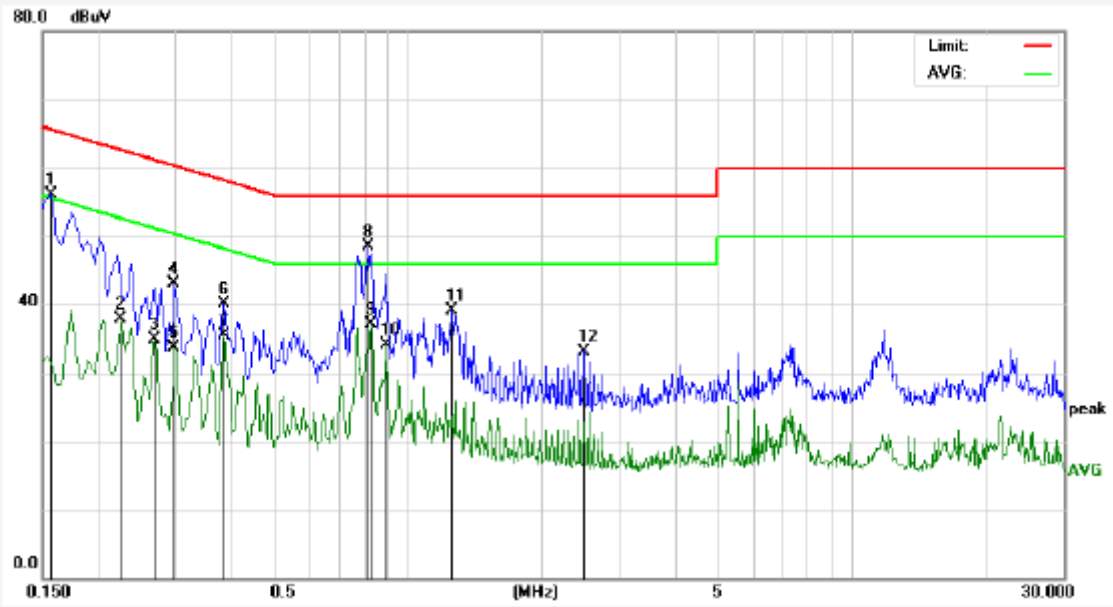
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1499	32.86	19.90	52.76	66.00	-13.24	peak	
2	0.1499	21.37	19.90	41.27	56.00	-14.73	AVG	
3	0.1620	34.59	19.90	54.49	65.36	-10.87	peak	
4	0.1700	29.93	19.90	49.83	64.96	-15.13	peak	
5	0.1940	31.03	19.90	50.93	63.86	-12.93	peak	
6	0.2180	27.64	19.90	47.54	62.89	-15.35	peak	
7	0.2260	13.50	19.89	33.39	52.59	-19.20	AVG	
8	0.7700	28.92	20.06	48.98	56.00	-7.02	peak	
9	0.7700	17.77	20.06	37.83	46.00	-8.17	AVG	
10	0.8300	18.91	20.07	38.98	46.00	-7.02	AVG	
11	0.8980	14.20	20.09	34.29	46.00	-11.71	AVG	
12	1.4060	7.33	20.13	27.46	46.00	-18.54	AVG	

Conducted Emission Test Data

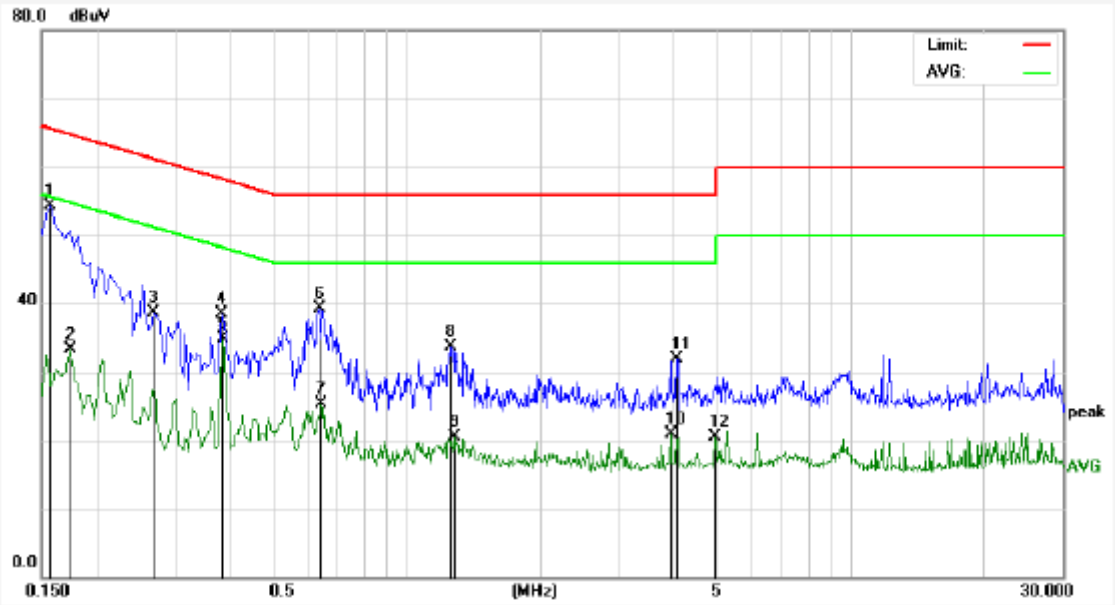
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 240V, 60Hz for adapter
Comment: Neutral Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1580	36.12	19.90	56.02	65.56	-9.54	peak	
2	0.2260	18.09	19.89	37.98	52.59	-14.61	AVG	
3	0.2700	14.99	19.89	34.88	51.12	-16.24	AVG	
4	0.2980	23.28	19.89	43.17	60.30	-17.13	peak	
5	0.2980	13.83	19.89	33.72	50.30	-16.58	AVG	
6	0.3860	20.27	19.93	40.20	58.15	-17.95	peak	
7	0.3860	15.59	19.93	35.52	48.15	-12.63	AVG	
8	0.8139	28.41	20.07	48.48	56.00	-7.52	peak	
9	0.8300	17.05	20.07	37.12	46.00	-8.88	AVG	
10	0.8940	14.04	20.09	34.13	46.00	-11.87	AVG	
11	1.2540	18.97	20.13	39.10	56.00	-16.90	peak	
12	2.4980	13.05	20.15	33.20	56.00	-22.80	peak	

Conducted Emission Test Data

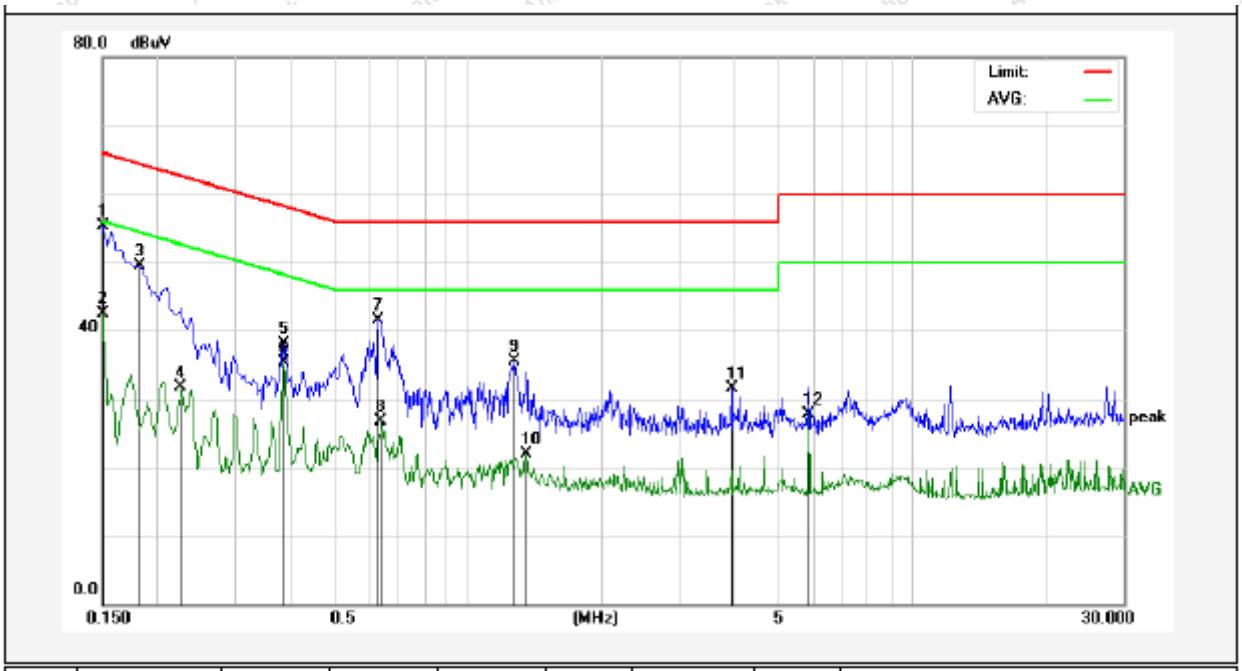
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1580	34.48	19.90	54.38	65.56	-11.18	peak	
2	0.1740	13.37	19.90	33.27	54.76	-21.49	AVG	
3	0.2700	18.77	19.89	38.66	61.12	-22.46	peak	
4	0.3820	18.50	19.93	38.43	58.23	-19.80	peak	
5	0.3860	15.03	19.93	34.96	48.15	-13.19	AVG	
6	0.6340	19.31	20.02	39.33	56.00	-16.67	peak	
7	0.6419	5.27	20.02	25.29	46.00	-20.71	AVG	
8	1.2540	13.67	20.13	33.80	56.00	-22.20	peak	
9	1.2820	0.31	20.13	20.44	46.00	-25.56	AVG	
10	3.9260	0.66	20.18	20.84	46.00	-25.16	AVG	
11	4.0700	11.78	20.18	31.96	56.00	-24.04	peak	
12	4.9500	0.35	20.21	20.56	46.00	-25.44	AVG	

Conducted Emission Test Data

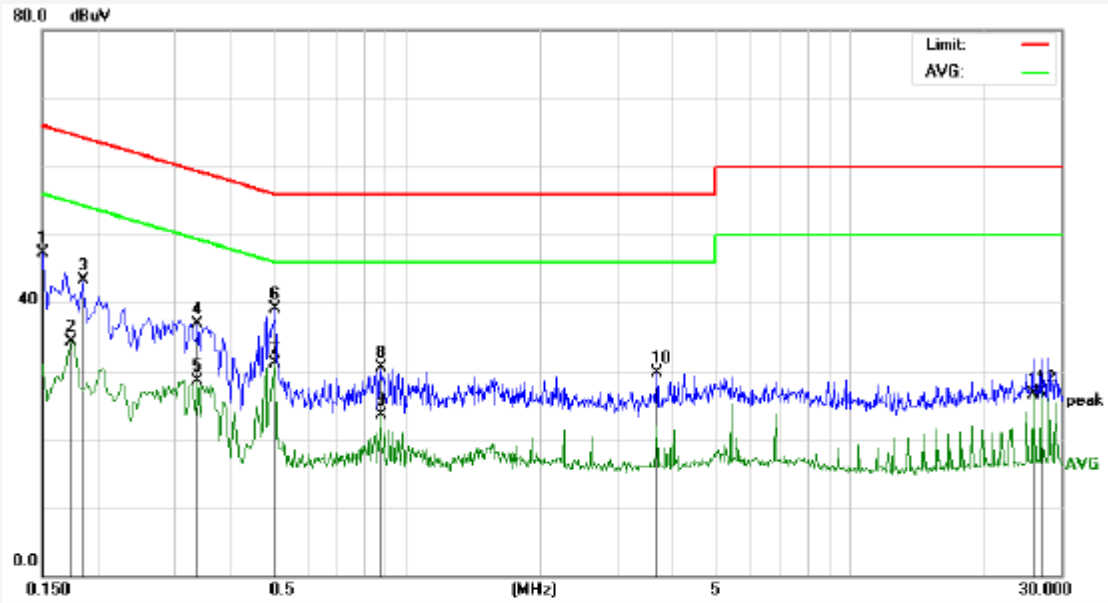
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	35.35	19.90	55.25	65.99	-10.74	peak	
2	0.1500	22.54	19.90	42.44	55.99	-13.55	AVG	
3	0.1819	29.62	19.90	49.52	64.39	-14.87	peak	
4	0.2260	11.89	19.89	31.78	52.59	-20.81	AVG	
5	0.3860	18.12	19.93	38.05	58.15	-20.10	peak	
6	0.3860	15.41	19.93	35.34	48.15	-12.81	AVG	
7	0.6300	21.44	20.02	41.46	56.00	-14.54	peak	
8	0.6419	6.65	20.02	26.67	46.00	-19.33	AVG	
9	1.2700	15.39	20.13	35.52	56.00	-20.48	peak	
10	1.3540	1.71	20.13	21.84	46.00	-24.16	AVG	
11	3.9300	11.29	20.18	31.47	56.00	-24.53	peak	
12	5.8500	7.48	20.23	27.71	50.00	-22.29	AVG	

Conducted Emission Test Data

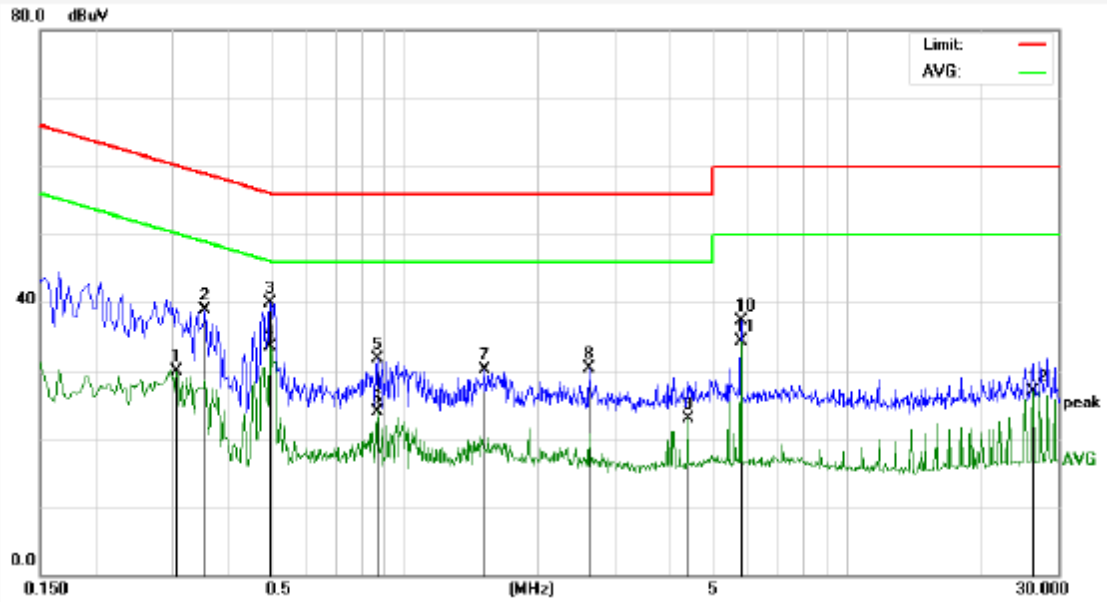
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	27.42	19.90	47.32	65.99	-18.67	QP	
2	0.1740	14.42	19.90	34.32	54.76	-20.44	AVG	
3	0.1860	23.42	19.90	43.32	64.21	-20.89	QP	
4	0.3379	17.07	19.91	36.98	59.25	-22.27	QP	
5	0.3379	8.64	19.91	28.55	49.25	-20.70	AVG	
6	0.5060	19.12	19.98	39.10	56.00	-16.90	QP	
7	0.5060	11.11	19.98	31.09	46.00	-14.91	AVG	
8	0.8740	10.32	20.09	30.41	56.00	-25.59	QP	
9	0.8740	3.33	20.09	23.42	46.00	-22.58	AVG	
10	3.6620	9.51	20.17	29.68	56.00	-26.32	QP	
11	25.9900	6.31	20.28	26.59	50.00	-23.41	AVG	
12	27.0340	6.63	20.28	26.91	50.00	-23.09	AVG	

Conducted Emission Test Data

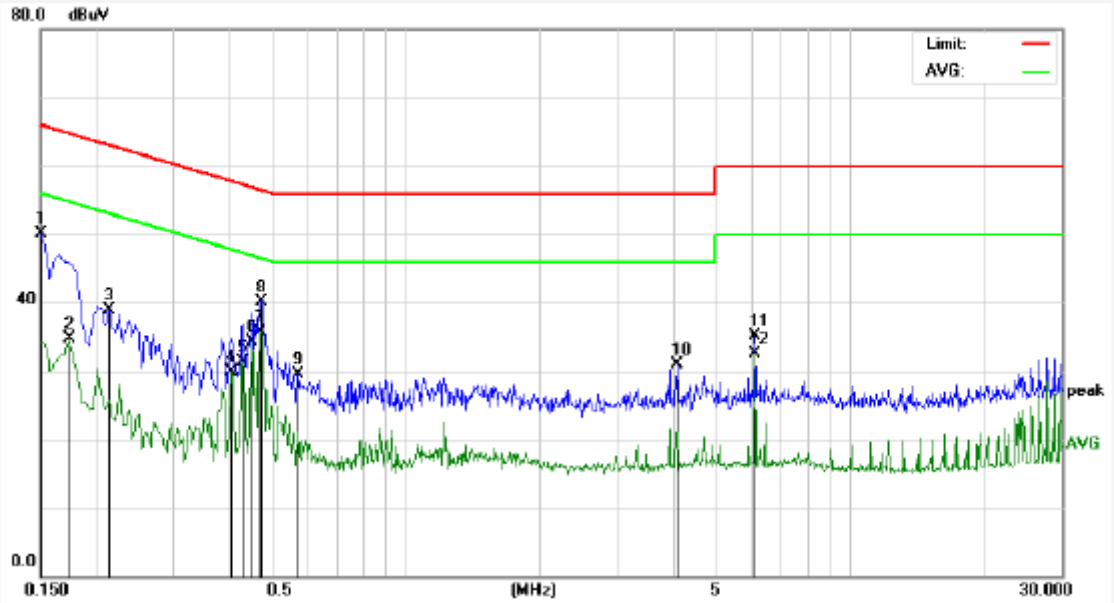
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 240V, 60Hz for adapter
Comment: Neutral Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.3060	10.04	19.89	29.93	50.08	-20.15	AVG	
2	0.3540	19.01	19.91	38.92	58.87	-19.95	QP	
3	0.4980	19.90	19.98	39.88	56.03	-16.15	QP	
4	0.4980	13.50	19.98	33.48	46.03	-12.55	AVG	
5	0.8700	11.60	20.09	31.69	56.00	-24.31	QP	
6	0.8700	3.91	20.09	24.00	46.00	-22.00	AVG	
7	1.5140	10.00	20.13	30.13	56.00	-25.87	QP	
8	2.6180	10.22	20.15	30.37	56.00	-25.63	QP	
9	4.3620	2.72	20.19	22.91	46.00	-23.09	AVG	
10	5.7580	17.00	20.23	37.23	60.00	-22.77	QP	
11	5.7580	14.10	20.23	34.33	50.00	-15.67	AVG	
12	26.3380	6.71	20.28	26.99	50.00	-23.01	AVG	

Conducted Emission Test Data

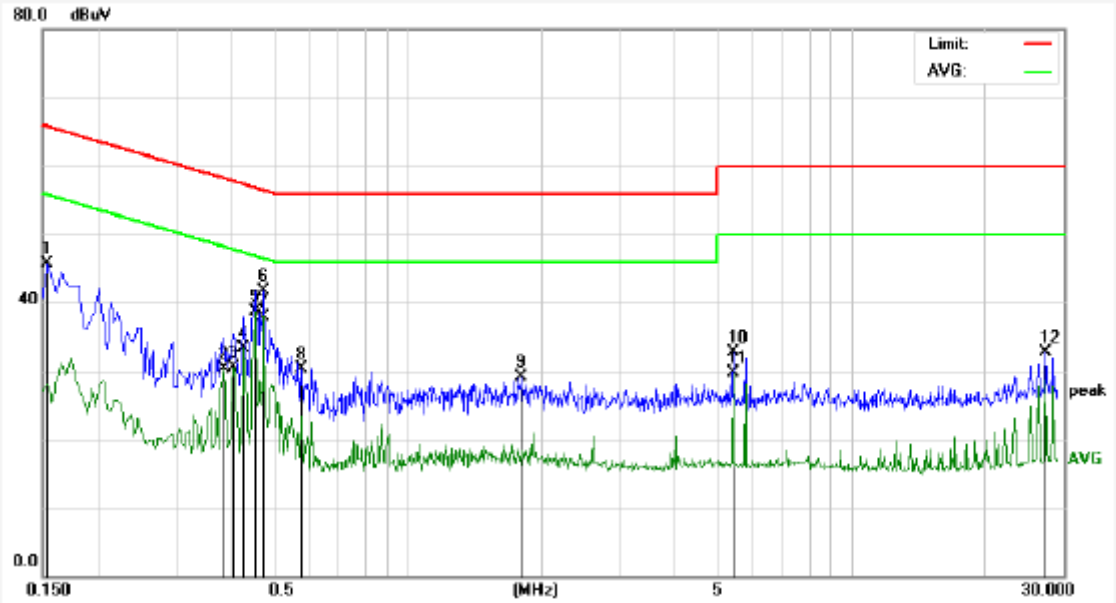
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	30.19	19.90	50.09	65.99	-15.90	QP	
2	0.1740	14.80	19.90	34.70	54.76	-20.06	AVG	
3	0.2140	19.10	19.90	39.00	63.04	-24.04	QP	
4	0.4060	9.91	19.94	29.85	47.73	-17.88	AVG	
5	0.4300	11.38	19.95	31.33	47.25	-15.92	AVG	
6	0.4500	14.41	19.96	34.37	46.87	-12.50	AVG	
7	0.4700	15.64	19.97	35.61	46.51	-10.90	AVG	
8	0.4740	20.23	19.97	40.20	56.44	-16.24	QP	
9	0.5740	9.60	20.00	29.60	56.00	-26.40	QP	
10	4.0739	10.78	20.18	30.96	56.00	-25.04	QP	
11	6.1060	14.90	20.24	35.14	60.00	-24.86	QP	
12	6.1060	12.27	20.24	32.51	50.00	-17.49	AVG	

Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.: 22.6℃ Hum.: 42%
Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1539	25.73	19.90	45.63	65.78	-20.15	QP	
2	0.3860	10.33	19.93	30.26	48.15	-17.89	AVG	
3	0.4060	10.58	19.94	30.52	47.73	-17.21	AVG	
4	0.4260	13.33	19.95	33.28	47.33	-14.05	AVG	
5	0.4540	18.69	19.96	38.65	46.80	-8.15	AVG	
6	0.4740	21.83	19.97	41.80	56.44	-14.64	QP	
7	0.4740	18.03	19.97	38.00	46.44	-8.44	AVG	
8	0.5780	10.40	20.00	30.40	56.00	-25.60	QP	
9	1.8020	9.02	20.14	29.16	56.00	-26.84	QP	
10	5.4060	12.44	20.22	32.66	60.00	-27.34	QP	
11	5.4060	9.55	20.22	29.77	50.00	-20.23	AVG	
12	27.3820	12.41	20.28	32.69	60.00	-27.31	QP	

4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:
(1)The lower limit shall apply at the transition frequency.
(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

4.2. Test Setup

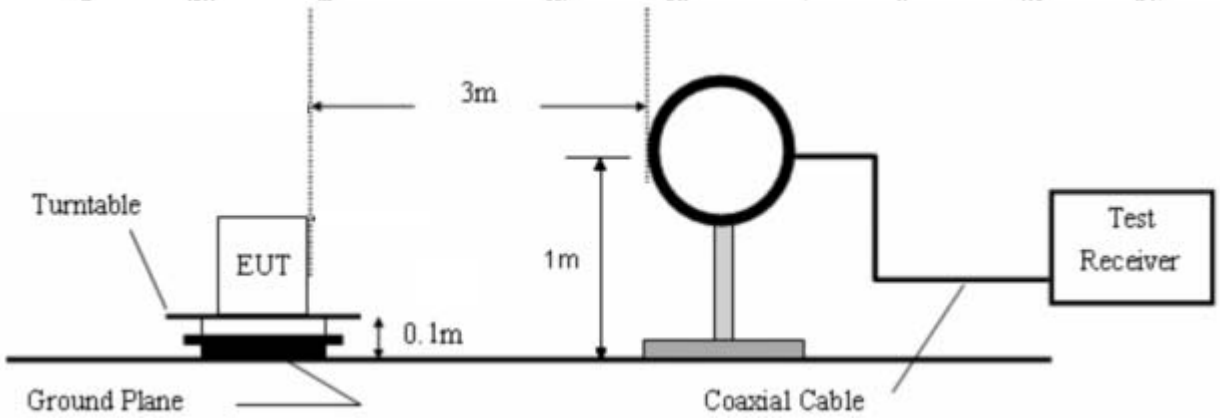


Figure 1. Below 30MHz

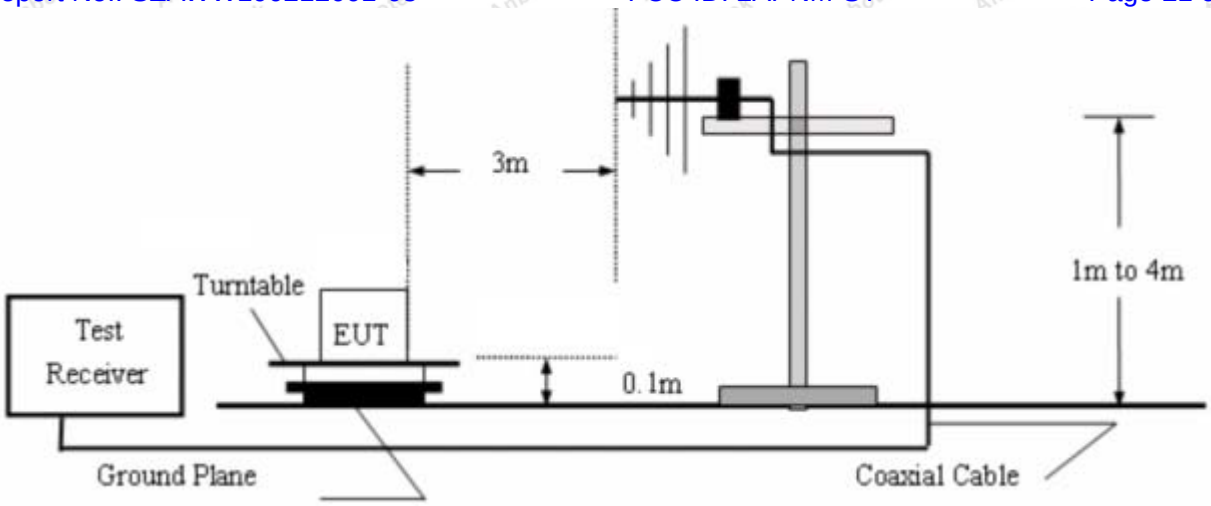


Figure 2. 30MHz to 1GHz

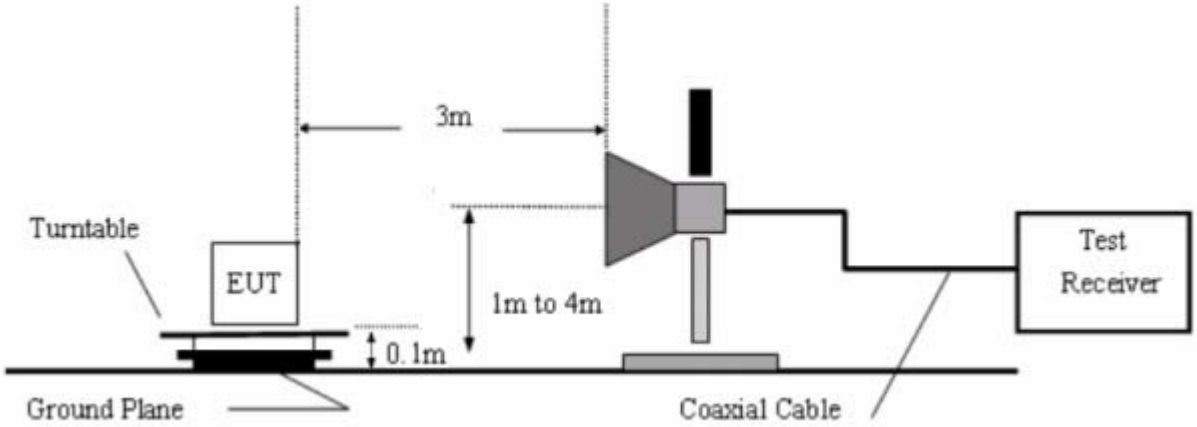


Figure 3. Above 1 GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.1m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 0.1m above the ground plane.
The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

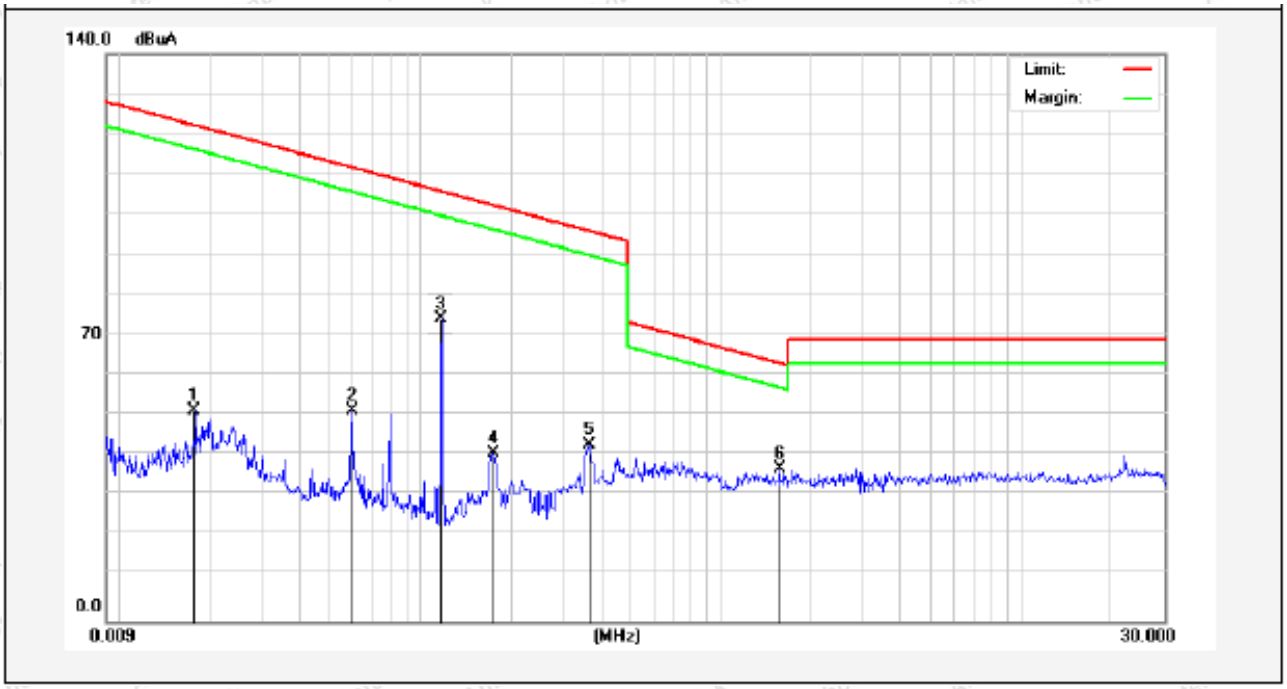
PASS

Note: The data is in TX mode, and this is the worst mode.

Test Results

(Between 9KHz – 30MHz)

Job No.:	**SZAWW190212001-03**		
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.7℃/51%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 1**		

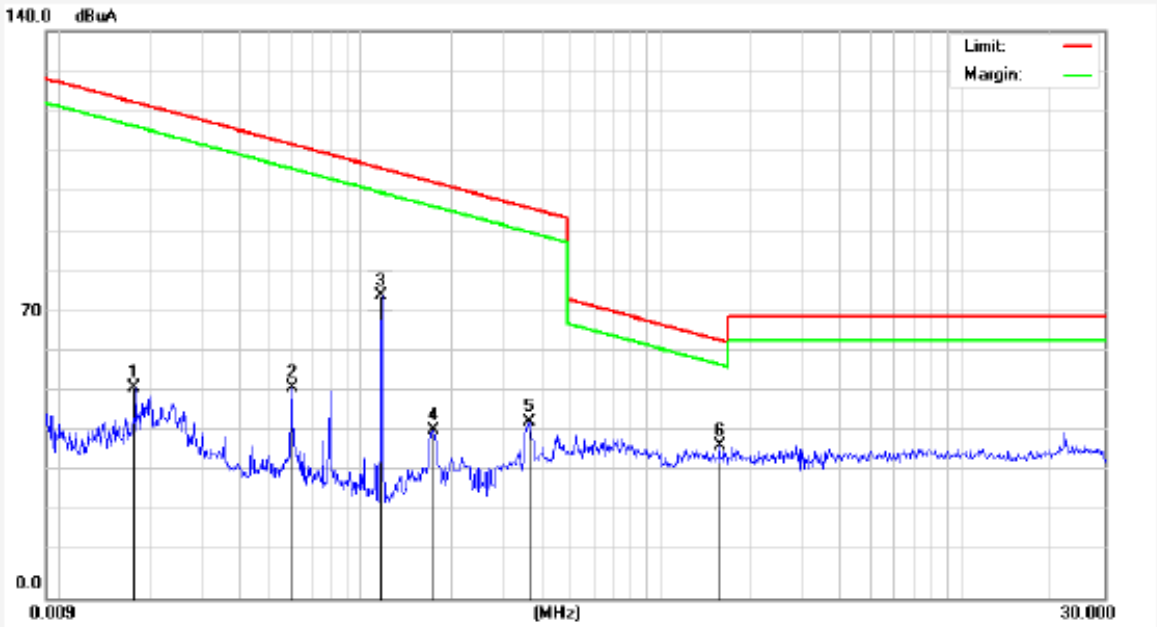


Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dge)
0.0177	37.56	19.28	2.53	0	59.37	142.48	-83.11	Peak	268
0.0177	30.16	19.28	2.53	0	51.97	122.48	-70.51	AV	268
0.0592	36.81	19.30	2.54	0	58.65	132.05	-73.40	Peak	64
0.0592	28.49	19.30	2.54	0	50.33	112.05	-61.72	AV	64
0.1184	61.11	19.30	2.54	0	82.95	126.07	-43.12	Peak	301
0.1184	51.38	19.30	2.54	0	73.22	106.07	-32.85	AV	301
0.1751	27.99	19.53	2.59	0	50.11	122.69	-72.58	Peak	129
0.1751	19.41	19.53	2.59	0	41.53	102.69	-61.16	AV	129
0.3659	30.55	19.53	2.59	0	52.67	116.32	-63.65	Peak	185
0.3659	21.36	19.53	2.59	0	43.48	96.32	-52.84	AV	185
1.5700	15.59	19.53	2.59	0	37.71	63.69	-25.98	QP	27

Remark: According to FCC PART 15.209 (d), the emission limits for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, Radiated emission limits in these three bands are based on measurements employing an average detector.

(Between 9KHz – 30MHz)

Job No.:	**SZAWW190212001-03**		
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.7℃/51%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 2**		

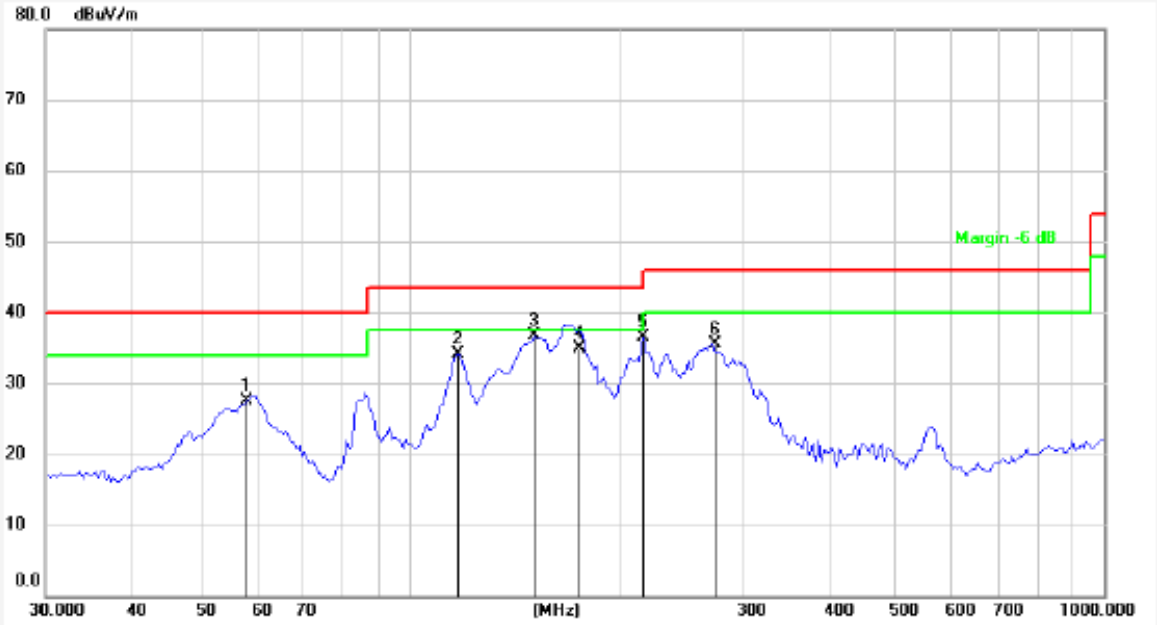


Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dge)
0.0173	37.44	19.28	2.53	0	59.25	142.48	-83.23	Peak	251
0.0173	30.11	19.28	2.53	0	51.92	122.48	-70.56	AV	251
0.0589	36.63	19.30	2.54	0	58.47	132.05	-73.58	Peak	50
0.0589	28.52	19.30	2.54	0	50.36	112.05	-61.69	AV	50
0.1184	61.09	19.30	2.54	0	82.93	126.07	-43.14	Peak	315
0.1184	51.35	19.30	2.54	0	73.19	106.07	-32.88	AV	315
0.1755	27.94	19.53	2.59	0	50.06	122.69	-72.63	Peak	133
0.1755	19.55	19.53	2.59	0	41.67	102.69	-61.02	AV	133
0.3661	30.24	19.53	2.59	0	52.36	116.32	-63.96	Peak	187
0.3661	21.30	19.53	2.59	0	43.42	96.32	-52.90	AV	187
1.5709	15.43	19.53	2.59	0	37.55	63.69	-26.14	QP	39

Remark: According to FCC PART 15.209 (d), the emission limits for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, Radiated emission limits in these three bands are based on measurements employing an average detector.

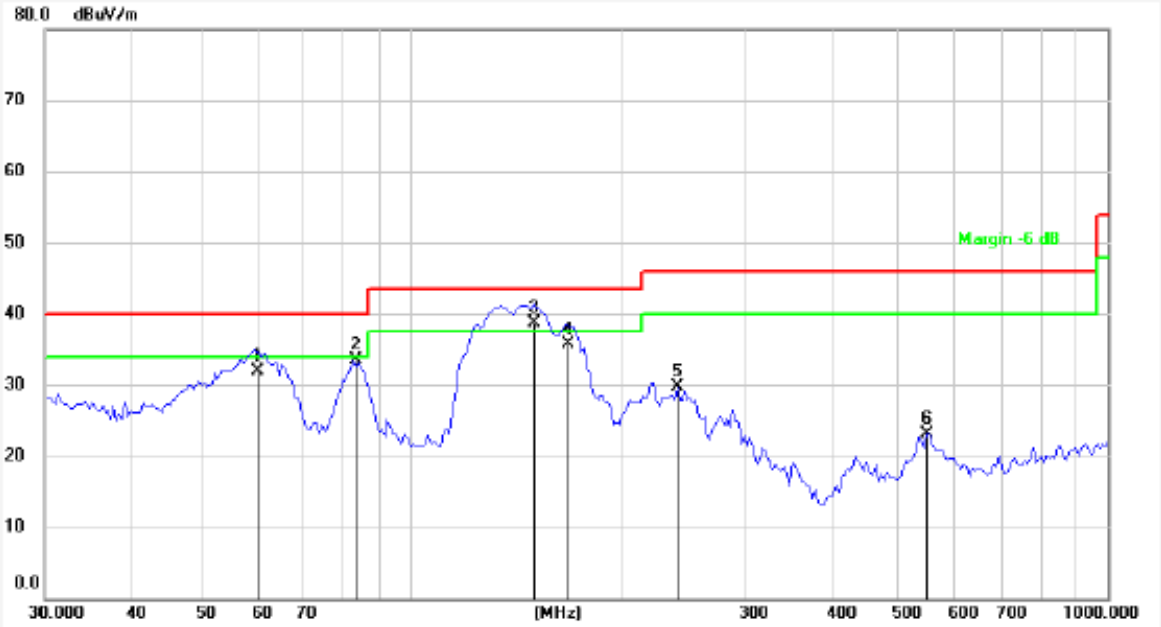
(Between 30MHz –1000 MHz)

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Horizontal**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 1**		



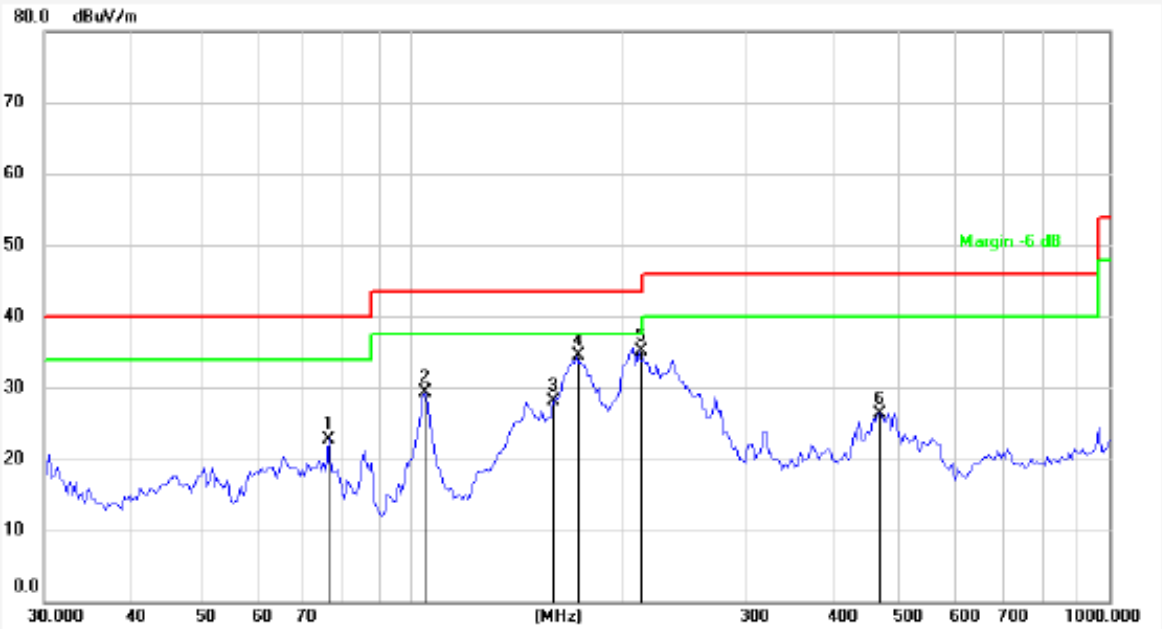
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	58.4074	43.56	-16.15	27.41	40.00	-12.59	QP	300	0	
2	117.7725	56.75	-22.65	34.10	43.50	-9.40	QP	300	65	
3	151.8632	59.59	-22.94	36.65	43.50	-6.85	QP	300	127	
4	176.2686	56.28	-21.31	34.97	43.50	-8.53	QP	300	196	
5	217.5443	57.34	-20.75	36.59	46.00	-9.41	QP	300	269	
6	273.2341	54.87	-19.34	35.53	46.00	-10.47	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Vertical**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH) :**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 1**		



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	59.9639	47.08	-15.23	31.85	40.00	-8.15	QP	300	0	
2	82.9385	51.69	-18.15	33.54	40.00	-6.46	QP	300	75	
3	150.0378	57.78	-19.04	38.74	43.50	-4.76	QP	300	125	
4	168.7093	53.92	-18.21	35.71	43.50	-7.79	QP	300	196	
5	241.6763	44.48	-14.75	29.73	46.00	-16.27	QP	300	269	
6	550.9480	34.97	-11.90	23.07	46.00	-22.93	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Horizontal**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 240V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 1**		

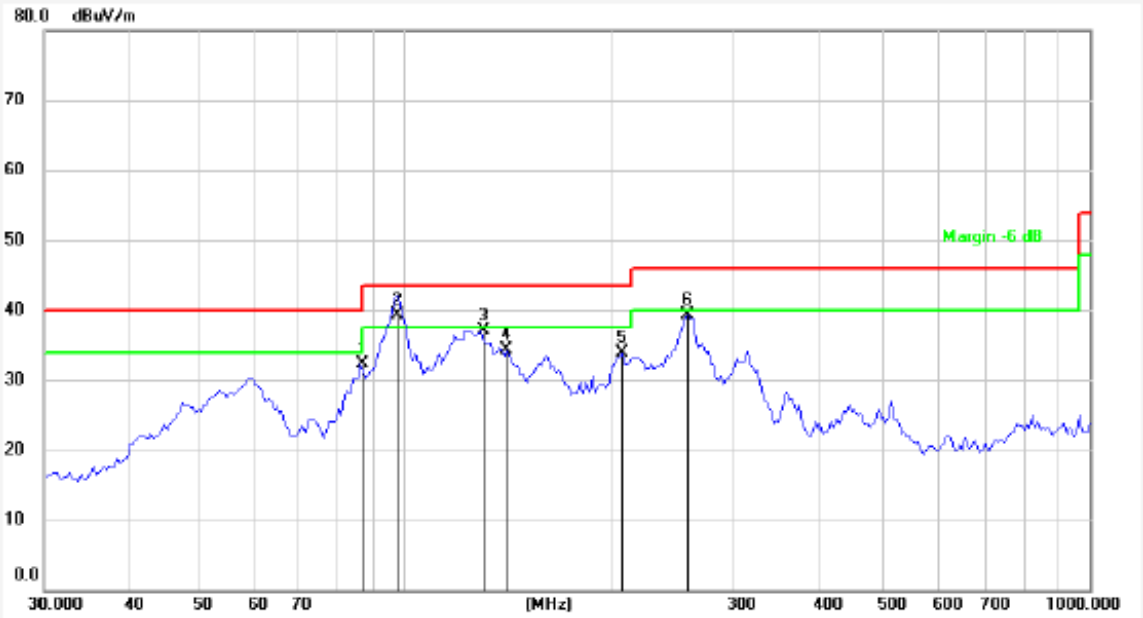


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	76.6463	44.15	-21.35	22.80	40.00	-17.20	QP	300	0	
2	105.0873	50.31	-20.93	29.38	43.50	-14.12	QP	300	65	
3	160.0648	50.56	-22.51	28.05	43.50	-15.45	QP	300	129	
4	173.2051	55.78	-21.23	34.55	43.50	-8.95	QP	300	197	
5	211.8977	55.72	-20.68	35.04	43.50	-8.46	QP	300	268	
6	470.5232	40.24	-13.88	26.36	46.00	-19.64	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Vertical**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 240V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 1**		

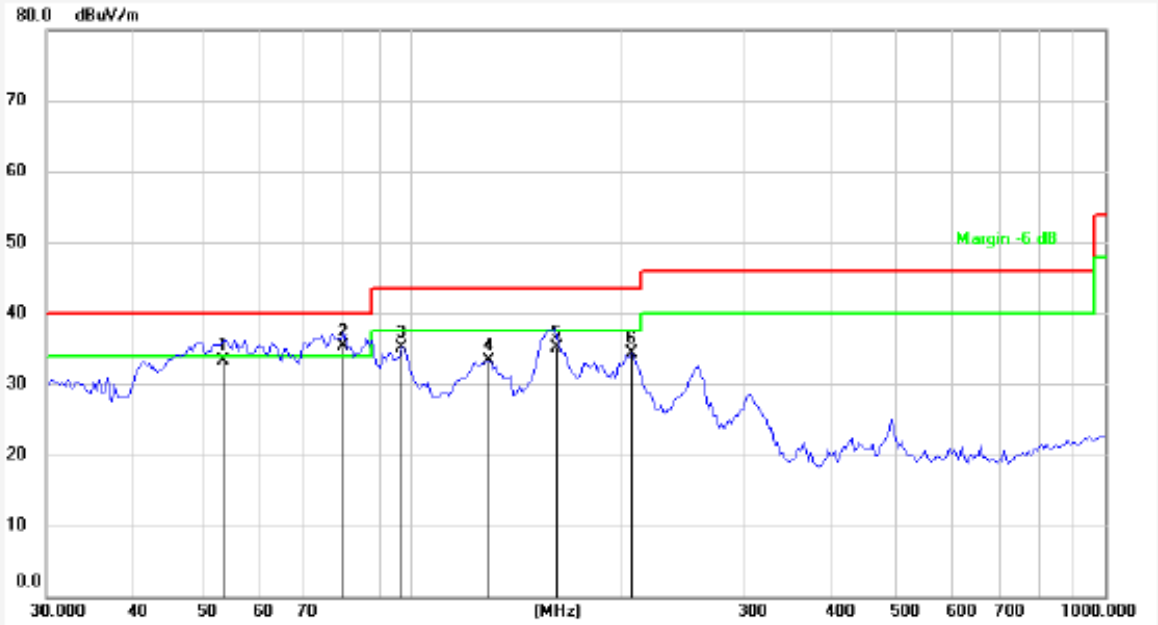
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.5306	48.53	-16.06	32.47	40.00	-7.53	QP	300	0	
2	50.7637	50.17	-14.88	35.29	40.00	-4.71	QP	300	96	
3	63.0539	51.80	-16.37	35.43	40.00	-4.57	QP	300	126	
4	80.7857	51.31	-18.94	32.37	40.00	-7.63	QP	300	195	
5	164.3301	54.10	-18.36	35.74	43.50	-7.76	QP	300	255	
6	211.8977	52.63	-16.09	36.54	43.50	-6.96	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Horizontal**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 2**		



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	86.6547	53.42	-21.19	32.23	40.00	-7.77	QP	300	0	
2	97.7199	60.05	-20.66	39.39	43.50	-4.11	QP	300	74	
3	129.6950	60.51	-23.42	37.09	43.50	-6.41	QP	300	152	
4	141.5777	57.44	-23.20	34.24	43.50	-9.26	QP	300	211	
5	208.2148	54.60	-20.64	33.96	43.50	-9.54	QP	300	296	
6	259.2338	59.03	-19.70	39.33	46.00	-6.67	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Vertical**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 120V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH) :**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 2**		

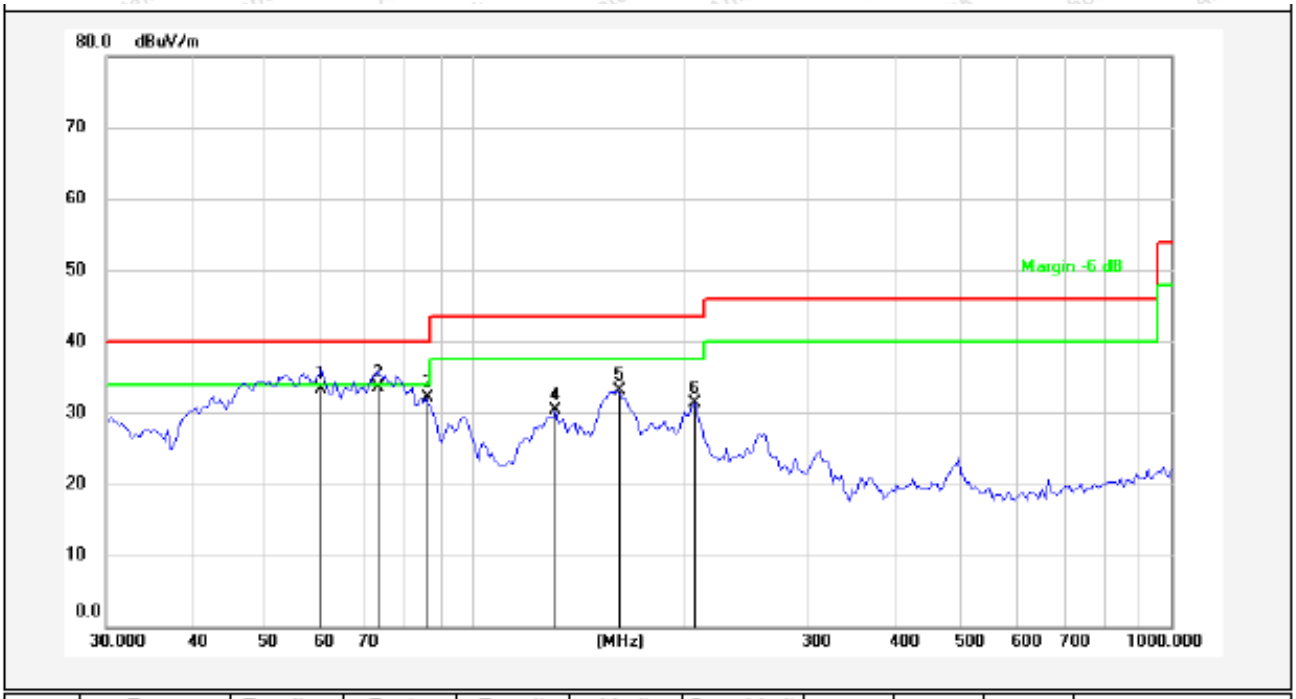


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	53.9763	48.19	-14.94	33.25	40.00	-6.75	QP	300	0	
2	80.0806	54.40	-19.19	35.21	40.00	-4.79	QP	300	65	
3	97.1148	49.84	-14.69	35.15	43.50	-8.35	QP	300	124	
4	128.5630	51.59	-18.32	33.27	43.50	-10.23	QP	300	199	
5	161.4742	53.58	-18.47	35.11	43.50	-8.39	QP	300	283	
6	208.2148	50.47	-16.23	34.24	43.50	-9.26	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Horizontal**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 240V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 2**		

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	59.4405	46.59	-16.20	30.39	40.00	-9.61	QP	300	0	
2	97.9699	57.66	-20.64	37.02	43.50	-6.48	QP	300	74	
3	129.6950	56.41	-23.42	32.99	43.50	-10.51	QP	300	152	
4	140.3421	54.78	-23.22	31.56	43.50	-11.94	QP	300	211	
5	256.9712	53.99	-19.58	34.41	46.00	-11.59	QP	300	295	
6	319.9370	48.64	-16.48	32.16	46.00	-13.84	QP	300	360	

Job No.:	**SZAWW190212001-03**	**Polarization:**	**Vertical**
Standard:	**FCC PART15 C _3m**	**Power Source:**	**AC 240V, 60Hz for adapter**
Test item:	**Radiation Test**	**Temp.(C)/Hum.(%RH):**	**24.3℃/55%RH**
Test Mode:	**Mode 1**	**Distance:**	**3m**
Note:	**Adapter 2**		



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	61.0245	48.89	-15.62	33.27	40.00	-6.73	QP	300	0	
2	73.3593	53.14	-19.63	33.51	40.00	-6.49	QP	300	74	
3	85.8984	49.30	-17.29	32.01	40.00	-7.99	QP	300	152	
4	131.9889	48.95	-18.67	30.28	43.50	-13.22	QP	300	211	
5	161.4742	51.66	-18.47	33.19	43.50	-10.31	QP	300	295	
6	208.2148	47.60	-16.23	31.37	43.50	-12.13	QP	300	360	

5. Antenna Requirement

5.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can

5.2. Antenna Connected Construction

The antenna is a Inductive loop coil Antenna which permanently attached, and the best case gain of the antenna is 0 dBi. It complies with the standard requirement.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement

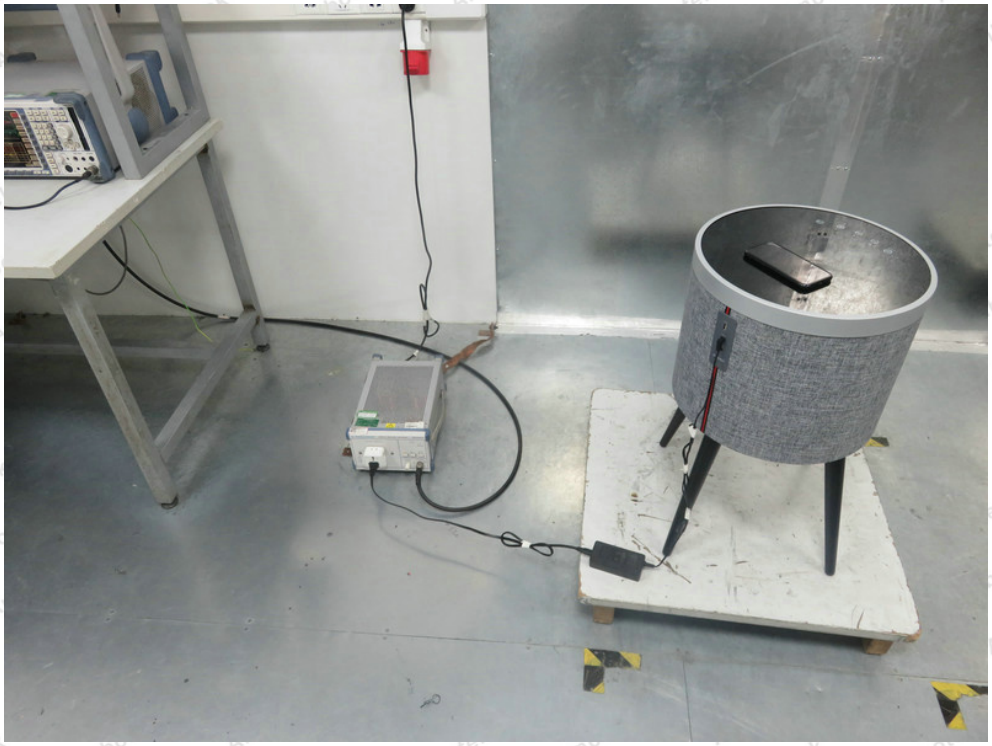
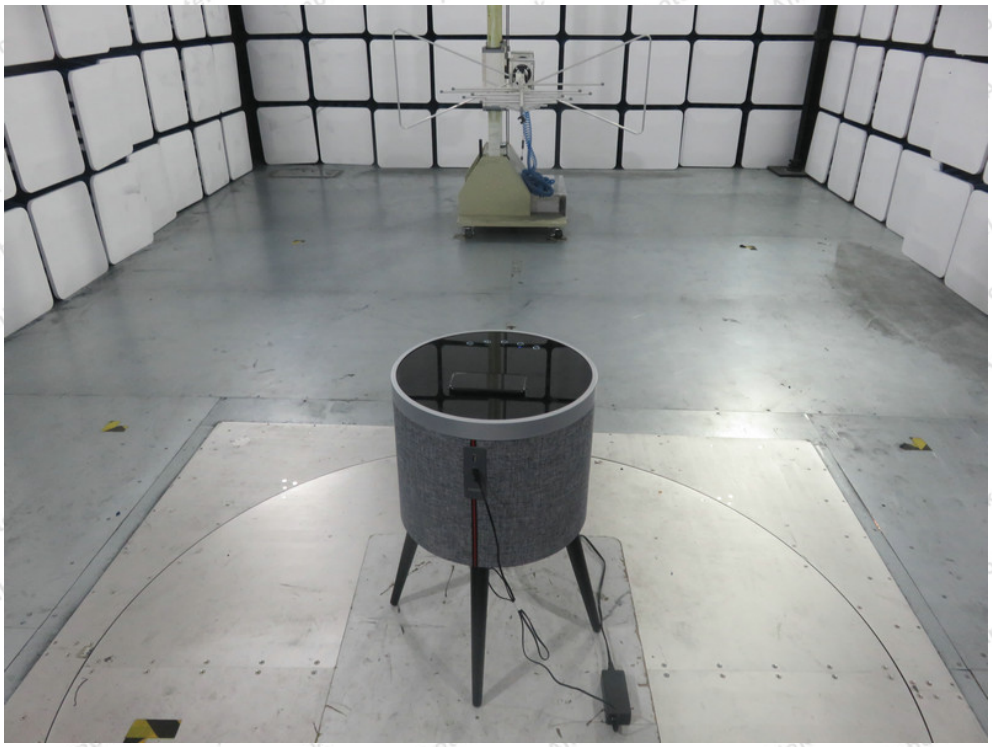
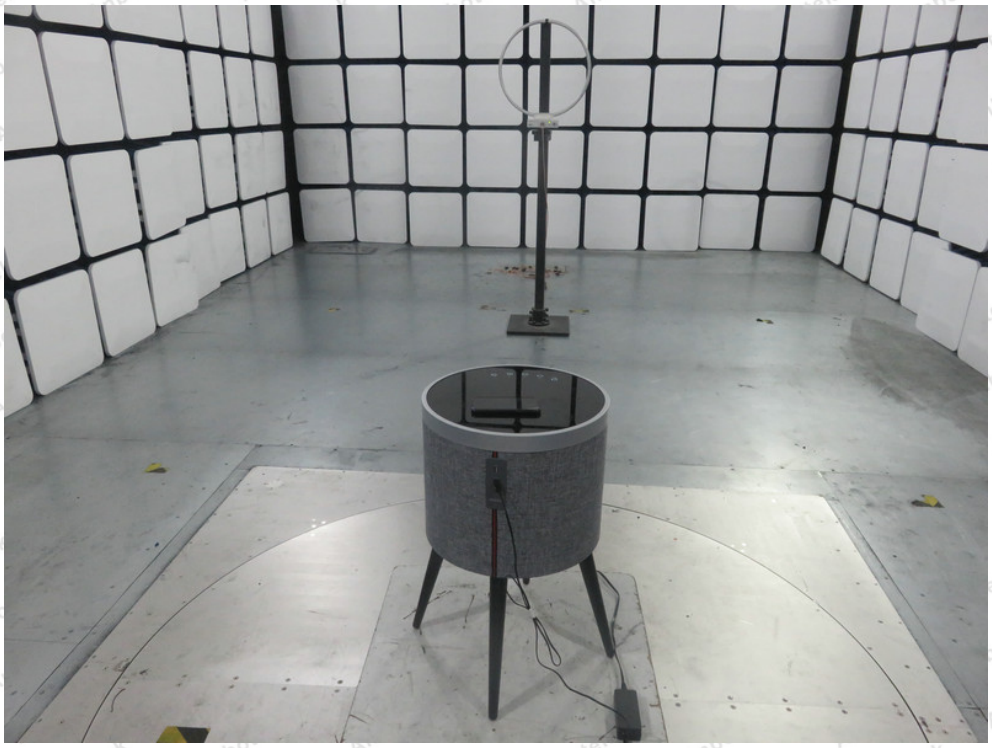


Photo of Radiation Emission Test





APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to the test report SZAWW190212001-01.

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to the test report SZAWW190212001-01.

---------- End of Report ----------

Address: 1/F, Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86)755-26066440 Fax:(86)755-26014772 Email:service@anbotek.com
Hotline 400-003-0500
www.anbotek.com