

FCC TEST REPORT

Client Name : DONGGUAN CITY BLUEMAN ELECTRONIC
TECHNOLOGY CO., LTD.
Address : No. 5, ShunXing 5th Road DaJingTon 2nd Industrial
Zone, DaLang Town, Dongguan City, Guangdong
Province, China
Product Name : Bluetooth Speaker
Date : Jul. 02, 2017

Shenzhen Anbotech Compliance Laboratory Limited

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TEST REPORT

Applicant : DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Manufacturer : DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Product Name : Bluetooth Speaker
Model No. : BT-Z1(main test), BT-Z8A, BT-Z8B, BT-Z9, BT-ZX(X=0-9)
Trade Mark : **BLUEMAN**
Input: DC 16V, 3A(Via adapter input: AC 100~240V, 50/60Hz; With DC 11.1V,
Rating(s) : 2200 mAh Battery inside)
Wireless Output: 5W
USB1 Output: 5V/2.1A Max; USB2 Output: 5V/1A Max

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 Anbotech 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 Anbotech 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 Anbotech Compliance Laboratory Limited.

Date of Receipt

Jun. 06, 2019

Date of Test

Jun. 06~19, 2019

Prepared By



Oliay Yang

(Engineer / Oliay Yang)

Reviewer

Snowy Meng

(Supervisor / Snowy Meng)

Approved & Authorized Signer

Sally Zhang

(Manager / Sally Zhang)

1. General Information

1.1. Client Information

Applicant	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Address	:	No. 5, ShunXing 5th Road DaJingTon 2nd Industrial Zone, DaLang Town, Dongguan City, Guangdong Province, China
Manufacturer	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Address	:	No. 5, ShunXing 5th Road DaJingTon 2nd Industrial Zone, DaLang Town, Dongguan City, Guangdong Province, China
Factory	:	DONGGUAN CITY BLUEMAN ELECTRONIC TECHNOLOGY CO., LTD.
Address	:	No. 5, ShunXing 5th Road DaJingTon 2nd Industrial Zone, DaLang Town, Dongguan City, Guangdong Province, China

1.2. Description of Device (EUT)

Product Name	:	Bluetooth Speaker	
Model No.	:	BT-Z1(main test), BT-Z8A, BT-Z8B, BT-Z9, BT-ZX(X=0-9) (Note: All samples are the same except the name and the appearance, so we prepare "BT-Z1" for test only.)	
Trade Mark	:	BLUEMAN	
Test Power Supply	:	AC 120V, 60Hz for adapter / AC 240V, 60Hz for adapter/ DC 11.1V Battery inside	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Operation Frequency:	BT 4.2 BDR+EDR: 2402~2480MHz Wireless Charging: 111-205KHz
		Transfer Rate:	BT 4.2 BDR+EDR: 1/2/3 Mbits/s
		Number of Channel:	BT 4.2 BDR+EDR: 79 Channels
		Modulation Type:	BT 4.2 BDR+EDR: GFSK, π /4-DQPSK, 8-DPSK Wireless Charging: ASK
		Antenna Type:	BT 4.2 BDR+EDR: PCB Antenna Wireless Charging: Inductive loop coil Antenna
		Antenna Gain(Peak):	BT 4.2 BDR+EDR: 0.5 dBi Wireless Charging: 0 dBi
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2)This report is for Wireless Charging module.			

1.3. Auxiliary Equipment Used During Test

Adapter 1	:	Model: R481-1603000D Input: AC 100-240V~50/60Hz, 1.5A Output: DC 16V--- 3A
Adapter 2	:	Model: DYS650-160300M Input: AC 100-240V~50/60Hz, 1.3A Max Output: DC 16V--- 3A
Adapter 3	:	Model: FJ-SW20171603000D Input: AC 100-240V~50/60Hz, 1.5A Max Output: DC 16V--- 3A
Adapter 4	:	Model:BI65-160300-E2 Input: AC 100-240V~50/60Hz, 2A Output: DC 16V--- 3A

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

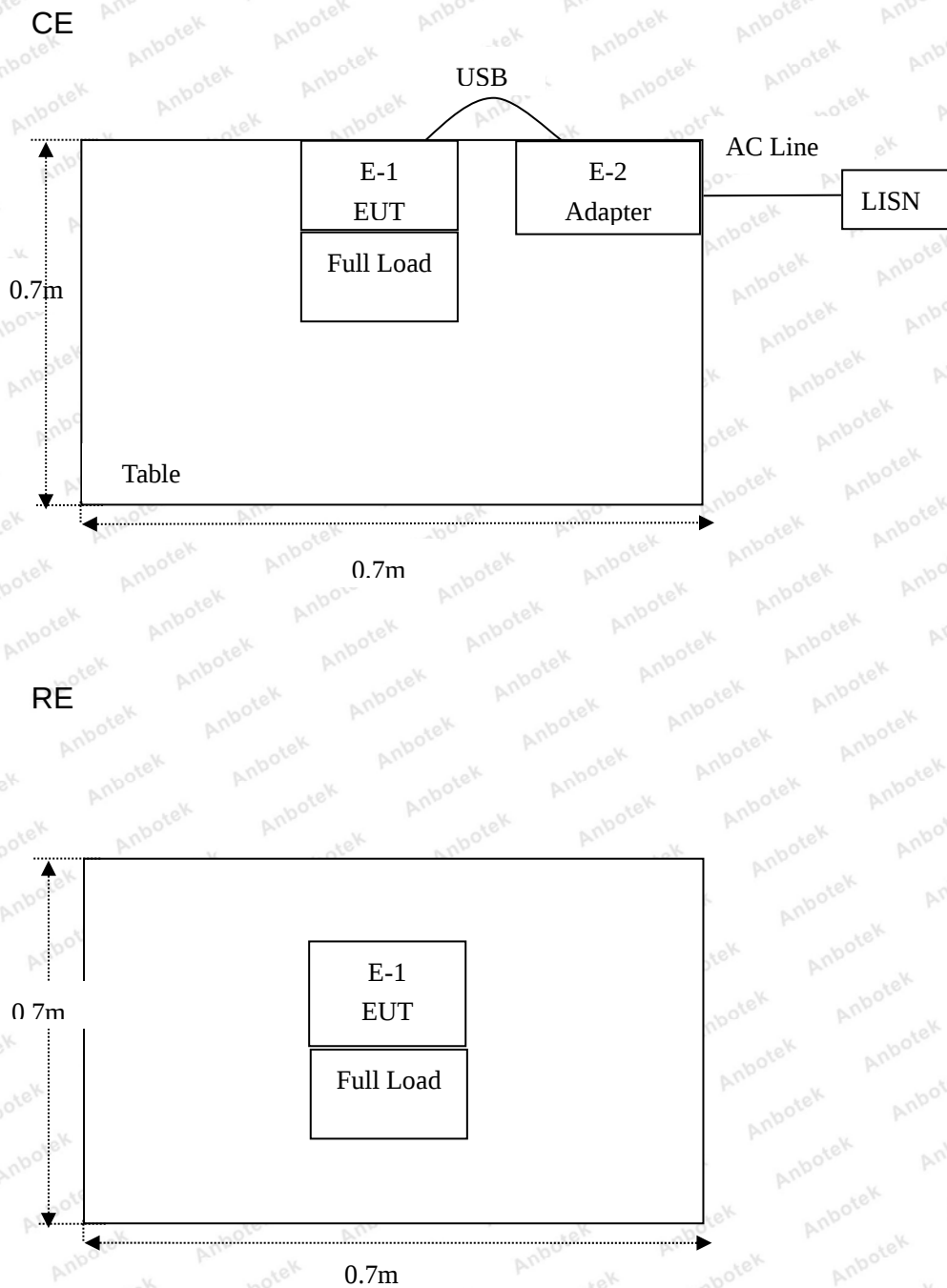
For Conducted Emission	
Final Test Mode	Description
Mode 1	Full load, Wireless charger module

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

Note: (1)Test channel is 0.1259MHz.

(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



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. 26, 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	BK1G18G30 D	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-K F	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	LW	TPR-6420D	374470	Oct. 31, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Nov. 01, 2018	1 Year

1.7. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)
		Ur = 3.8 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB

1.8. Description of Test Facility

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

FCC-Registration No.: 184111

Shenzhen Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, July 31, 2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotech 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 Anbotech 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

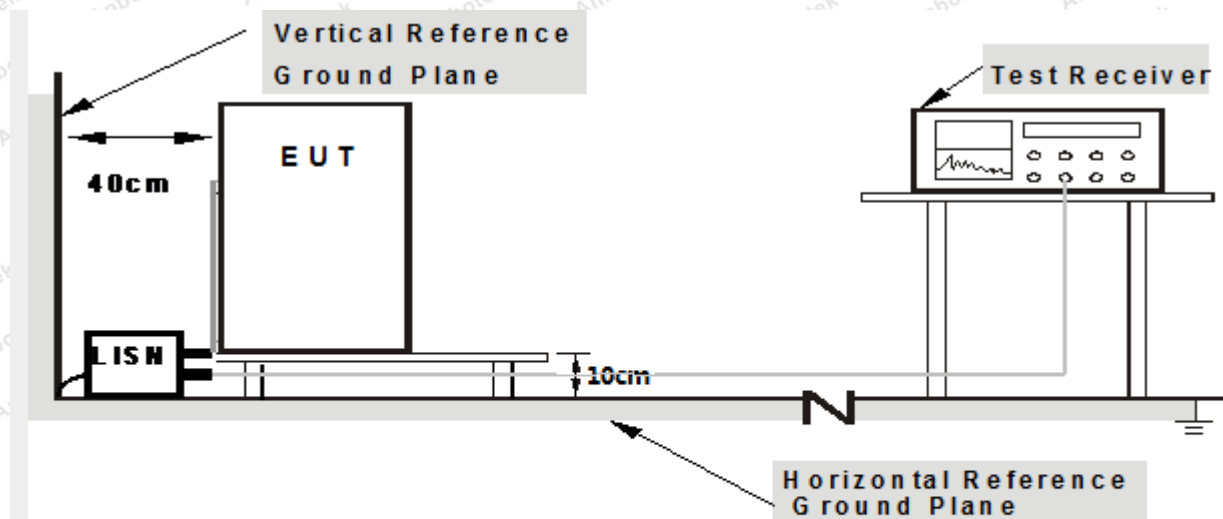
3. Conducted Emission Test

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.

Shenzhen Anbotech Compliance Laboratory Limited

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Code:AB-RF-05-a

Hotline
400-003-0500
www.anbotech.com

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

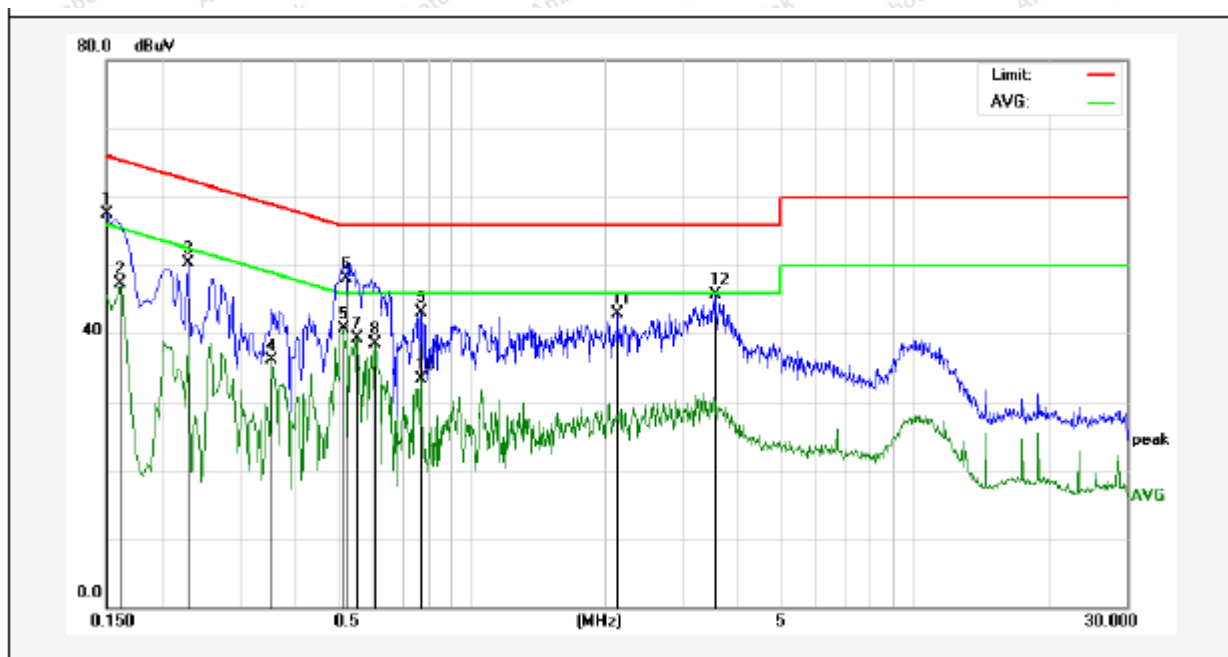
3.4. Test Data

Please to see the following pages.

During the test, pre-scan all the modes, and found the (AC 120V, 60Hz) which is the worst case, only the worst case is recorded in the report

Conducted Emission Test Data

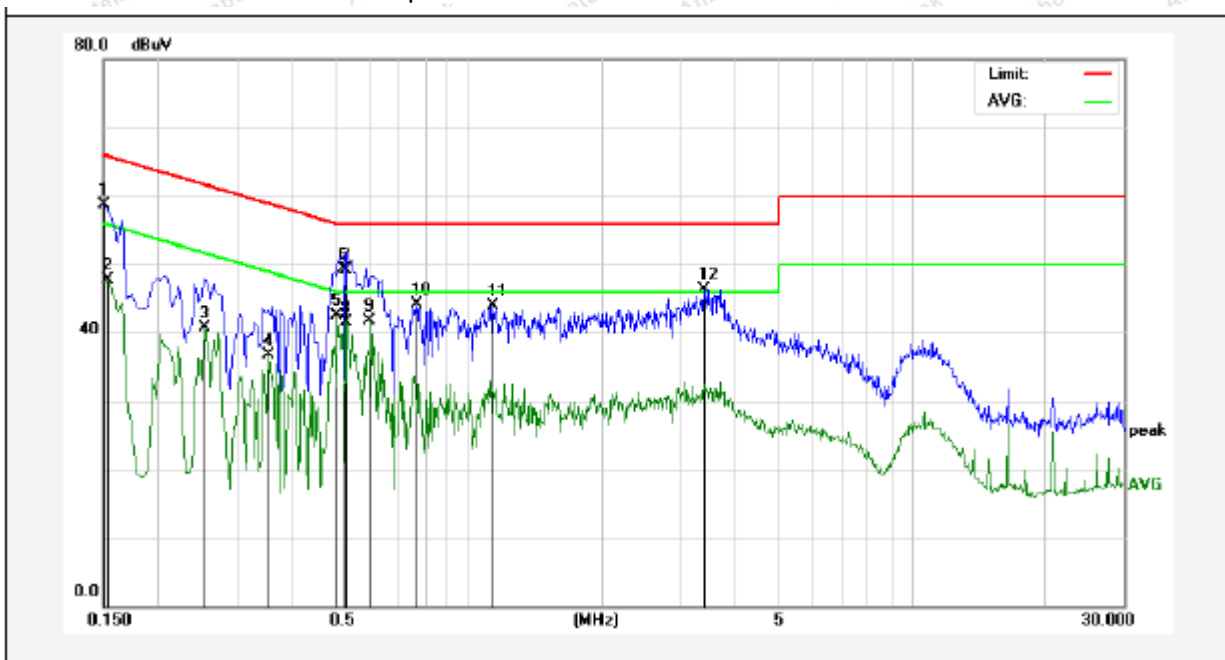
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	37.52	19.90	57.42	65.99	-8.57	QP	
2	0.1620	27.46	19.90	47.36	55.36	-8.00	AVG	
3	0.2300	30.46	19.89	50.35	62.45	-12.10	QP	
4	0.3540	16.24	19.91	36.15	48.87	-12.72	AVG	
5	0.5140	20.68	19.98	40.66	46.00	-5.34	AVG	
6	0.5220	28.17	19.99	48.16	56.00	-7.84	QP	
7	0.5540	19.24	20.00	39.24	46.00	-6.76	AVG	
8	0.6060	18.51	20.01	38.52	46.00	-7.48	AVG	
9	0.7700	22.96	20.06	43.02	56.00	-12.98	QP	
10	0.7700	13.32	20.06	33.38	46.00	-12.62	AVG	
11	2.1340	22.75	20.14	42.89	56.00	-13.11	peak	
12	3.5340	25.56	20.17	45.73	56.00	-10.27	QP	

Conducted Emission Test Data

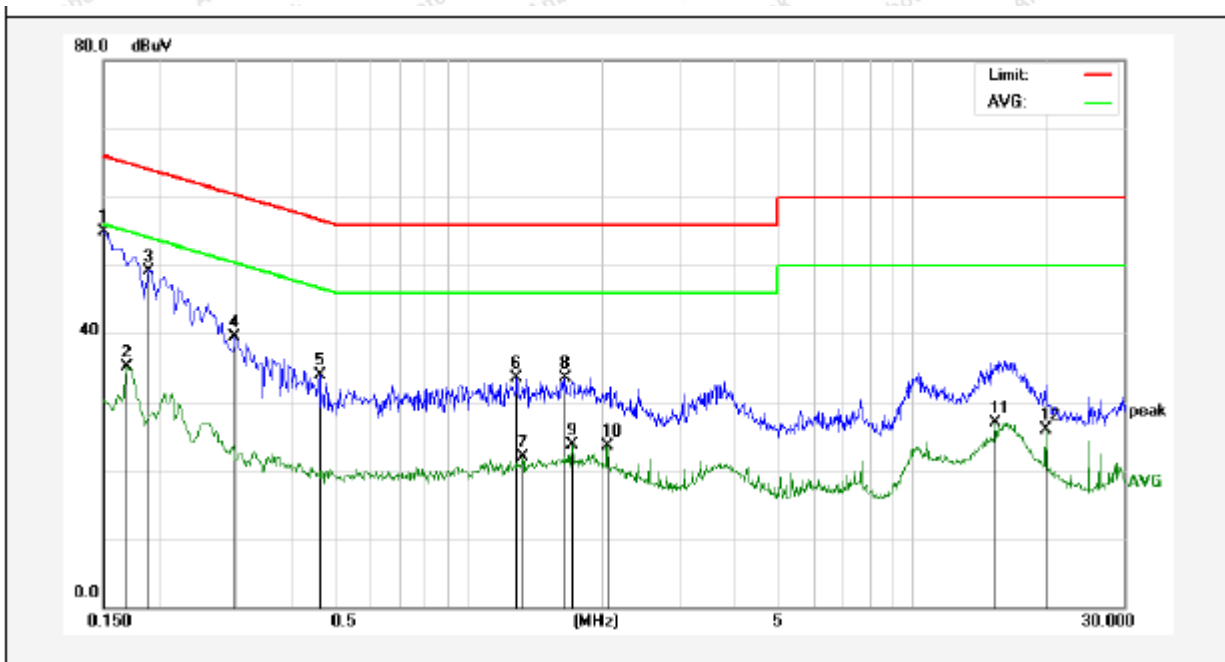
Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.: 21.9°C Hum.: 58%
Note: Adapter 1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	38.89	19.90	58.79	65.99	-7.20	QP	
2	0.1539	27.79	19.90	47.69	55.78	-8.09	AVG	
3	0.2540	20.77	19.89	40.66	51.62	-10.96	AVG	
4	0.3540	16.87	19.91	36.78	48.87	-12.09	AVG	
5	0.5060	22.49	19.98	42.47	46.00	-3.53	AVG	
6	0.5220	29.29	19.99	49.28	56.00	-6.72	QP	
7	0.5299	29.07	19.99	49.06	56.00	-6.94	QP	
8	0.5299	21.48	19.99	41.47	46.00	-4.53	AVG	
9	0.5980	21.66	20.01	41.67	46.00	-4.33	AVG	
10	0.7660	24.04	20.06	44.10	56.00	-11.90	QP	
11	1.1380	23.87	20.12	43.99	56.00	-12.01	QP	
12	3.4020	26.14	20.17	46.31	56.00	-9.69	QP	

Conducted Emission Test Data

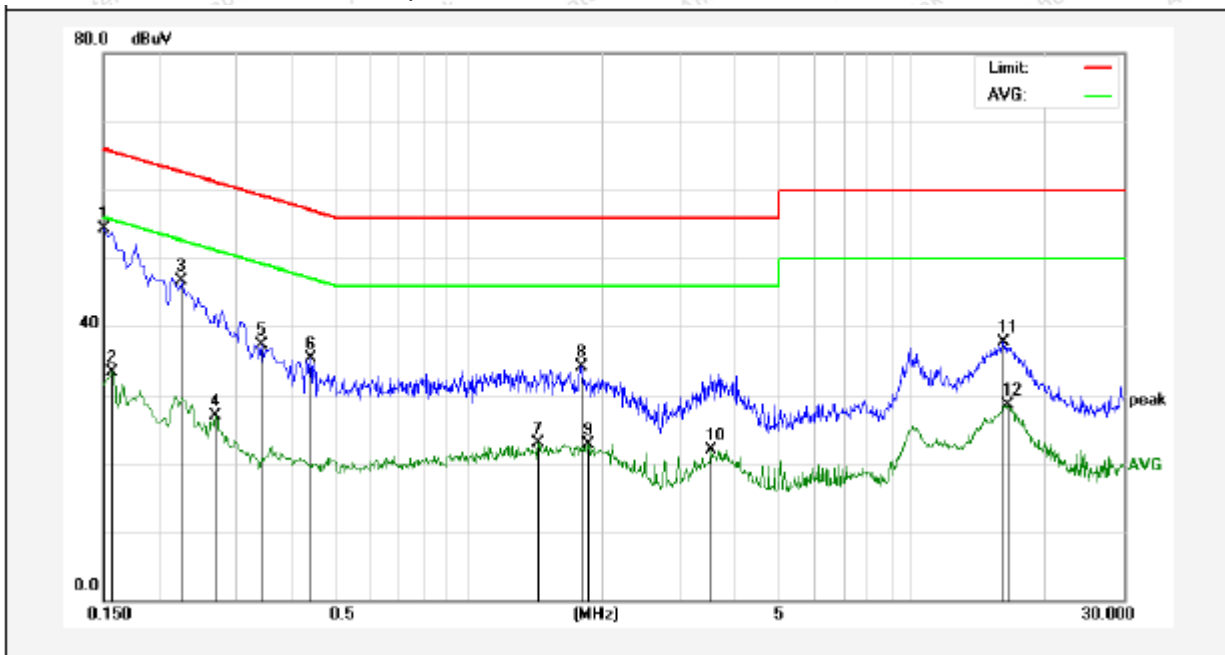
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	34.94	19.90	54.84	65.99	-11.15	QP	
2	0.1700	15.14	19.90	35.04	54.96	-19.92	AVG	
3	0.1900	29.30	19.90	49.20	64.03	-14.83	QP	
4	0.2980	19.52	19.89	39.41	60.30	-20.89	QP	
5	0.4620	14.01	19.96	33.97	56.66	-22.69	QP	
6	1.2860	13.43	20.13	33.56	56.00	-22.44	QP	
7	1.3300	1.70	20.13	21.83	46.00	-24.17	AVG	
8	1.6620	13.44	20.13	33.57	56.00	-22.43	QP	
9	1.7140	3.59	20.13	23.72	46.00	-22.28	AVG	
10	2.0579	3.35	20.14	23.49	46.00	-22.51	AVG	
11	15.4180	6.69	20.27	26.96	50.00	-23.04	AVG	
12	20.0459	5.63	20.34	25.97	50.00	-24.03	AVG	

Conducted Emission Test Data

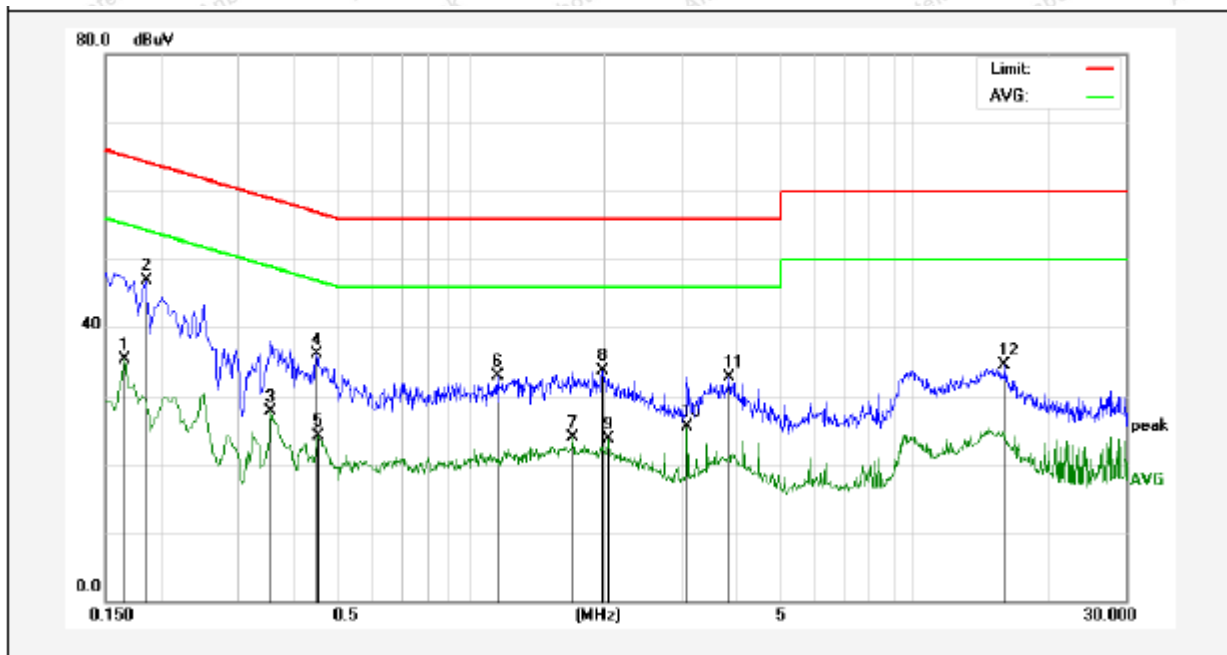
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 2



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	34.43	19.90	54.33	65.99	-11.66	QP	
2	0.1580	13.45	19.90	33.35	55.56	-22.21	AVG	
3	0.2260	26.88	19.89	46.77	62.59	-15.82	QP	
4	0.2700	7.07	19.89	26.96	51.12	-24.16	AVG	
5	0.3420	17.42	19.91	37.33	59.15	-21.82	QP	
6	0.4420	15.39	19.95	35.34	57.02	-21.68	QP	
7	1.4380	2.80	20.13	22.93	46.00	-23.07	AVG	
8	1.7940	14.06	20.14	34.20	56.00	-21.80	QP	
9	1.8620	2.62	20.14	22.76	46.00	-23.24	AVG	
10	3.5100	1.82	20.17	21.99	46.00	-24.01	AVG	
11	16.1220	17.45	20.28	37.73	60.00	-22.27	QP	
12	16.4060	8.20	20.28	28.48	50.00	-21.52	AVG	

Conducted Emission Test Data

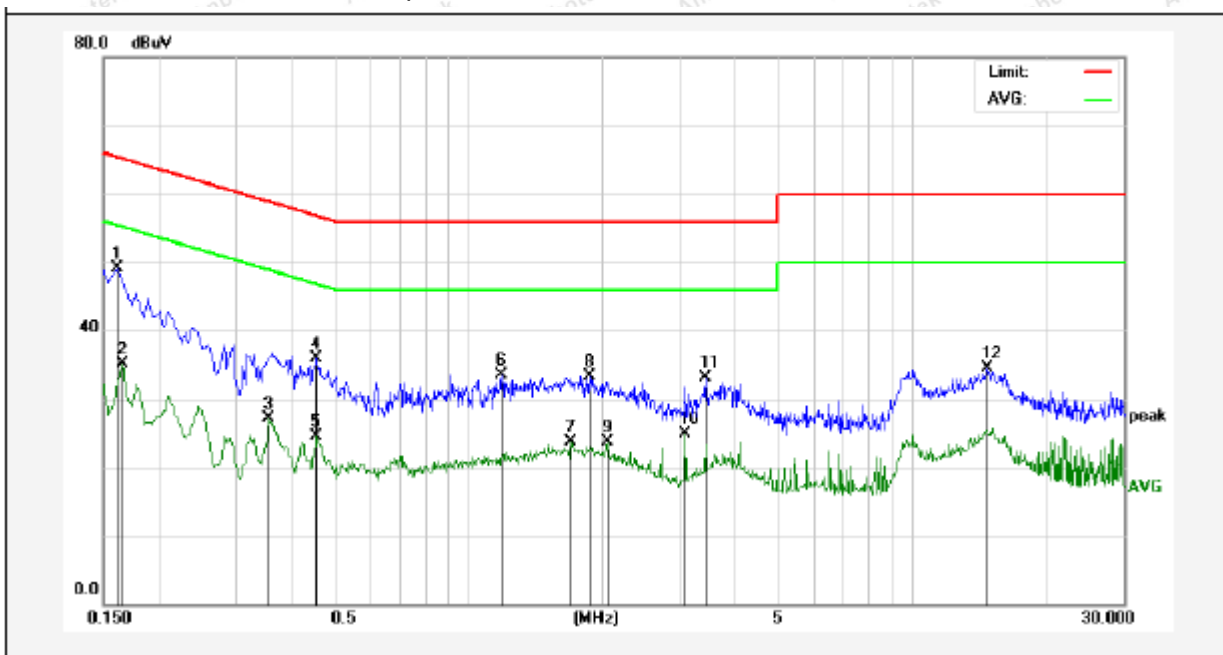
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 3



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1660	15.34	19.90	35.24	55.15	-19.91	AVG	
2	0.1860	26.96	19.90	46.86	64.21	-17.35	QP	
3	0.3540	7.80	19.91	27.71	48.87	-21.16	AVG	
4	0.4500	16.22	19.96	36.18	56.87	-20.69	QP	
5	0.4540	4.23	19.96	24.19	46.80	-22.61	AVG	
6	1.1539	12.79	20.12	32.91	56.00	-23.09	QP	
7	1.7020	3.85	20.13	23.98	46.00	-22.02	AVG	
8	1.9860	13.56	20.14	33.70	56.00	-22.30	QP	
9	2.0420	3.63	20.14	23.77	46.00	-22.23	AVG	
10	3.0660	5.41	20.16	25.57	46.00	-20.43	AVG	
11	3.8220	12.61	20.18	32.79	56.00	-23.21	QP	
12	16.0100	14.23	20.28	34.51	60.00	-25.49	QP	

Conducted Emission Test Data

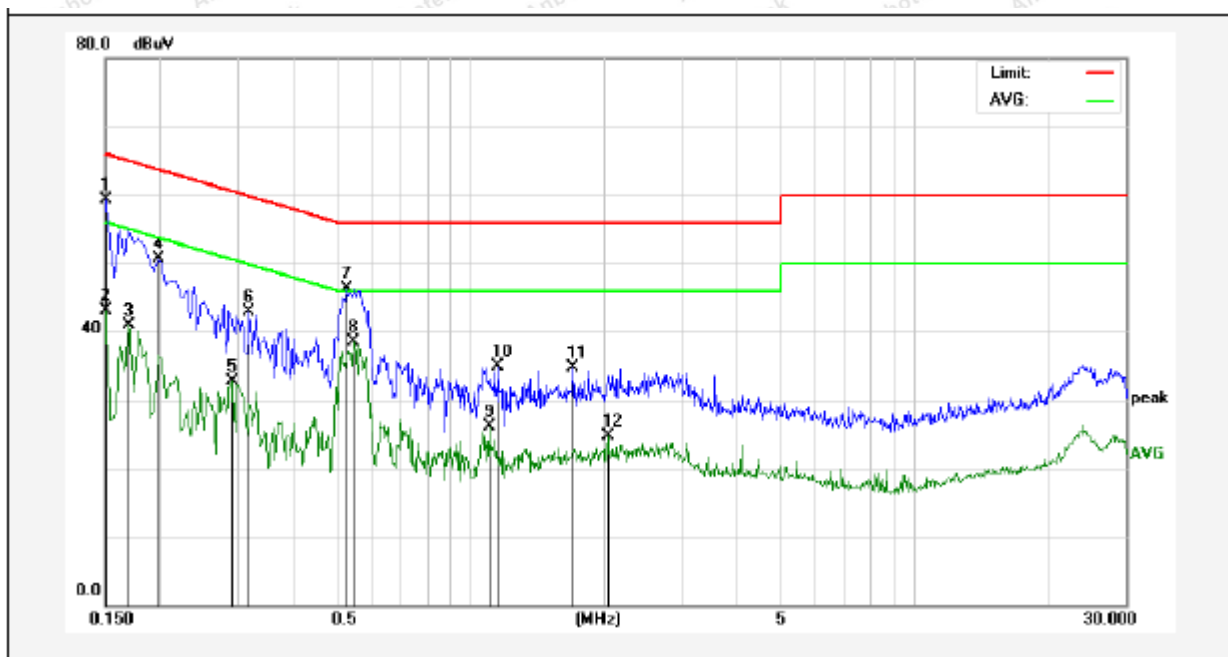
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 3



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1620	29.15	19.90	49.05	65.36	-16.31	QP	
2	0.1660	15.26	19.90	35.16	55.15	-19.99	AVG	
3	0.3540	7.17	19.91	27.08	48.87	-21.79	AVG	
4	0.4540	15.90	19.96	35.86	56.80	-20.94	QP	
5	0.4540	4.52	19.96	24.48	46.80	-22.32	AVG	
6	1.1860	13.44	20.12	33.56	56.00	-22.44	QP	
7	1.7020	3.62	20.13	23.75	46.00	-22.25	AVG	
8	1.8700	13.20	20.14	33.34	56.00	-22.66	QP	
9	2.0579	3.57	20.14	23.71	46.00	-22.29	AVG	
10	3.0860	4.80	20.16	24.96	46.00	-21.04	AVG	
11	3.4300	12.91	20.17	33.08	56.00	-22.92	QP	
12	14.8180	14.18	20.26	34.44	60.00	-25.56	QP	

Conducted Emission Test Data

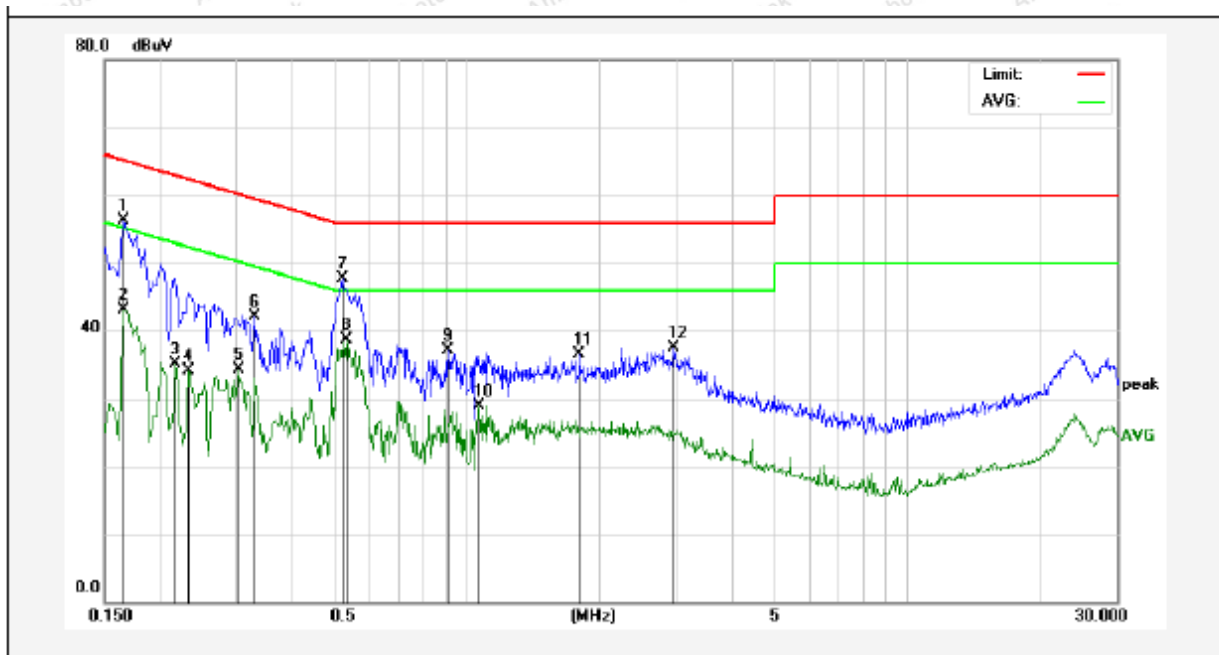
Test Site: 1# Shielded Room
 Operating Condition: Mode 1
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 21.9°C Hum.: 58%
 Note: Adapter 4



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1500	39.44	19.90	59.34	65.99	-6.65	QP	
2	0.1500	23.29	19.90	43.19	55.99	-12.80	AVG	
3	0.1700	20.95	19.90	40.85	54.96	-14.11	AVG	
4	0.1980	30.73	19.90	50.63	63.69	-13.06	QP	
5	0.2900	12.75	19.89	32.64	50.52	-17.88	AVG	
6	0.3180	23.03	19.90	42.93	59.76	-16.83	QP	
7	0.5260	26.30	19.99	46.29	56.00	-9.71	QP	
8	0.5460	18.60	19.99	38.59	46.00	-7.41	AVG	
9	1.1019	5.91	20.12	26.03	46.00	-19.97	AVG	
10	1.1539	14.85	20.12	34.97	56.00	-21.03	QP	
11	1.7020	14.50	20.13	34.63	56.00	-21.37	QP	
12	2.0420	4.54	20.14	24.68	46.00	-21.32	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.: 21.9°C Hum.: 58%
 Note: Adapter 4



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1660	36.31	19.90	56.21	65.15	-8.94	QP	
2	0.1660	23.25	19.90	43.15	55.15	-12.00	AVG	
3	0.2180	15.25	19.90	35.15	52.89	-17.74	AVG	
4	0.2340	14.18	19.89	34.07	52.30	-18.23	AVG	
5	0.3020	14.49	19.89	34.38	50.19	-15.81	AVG	
6	0.3300	22.16	19.90	42.06	59.45	-17.39	QP	
7	0.5220	27.79	19.99	47.78	56.00	-8.22	QP	
8	0.5340	18.71	19.99	38.70	46.00	-7.30	AVG	
9	0.9060	16.99	20.09	37.08	56.00	-18.92	QP	
10	1.0700	8.88	20.12	29.00	46.00	-17.00	AVG	
11	1.8060	16.40	20.14	36.54	56.00	-19.46	QP	
12	2.9539	17.43	20.16	37.59	56.00	-18.41	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

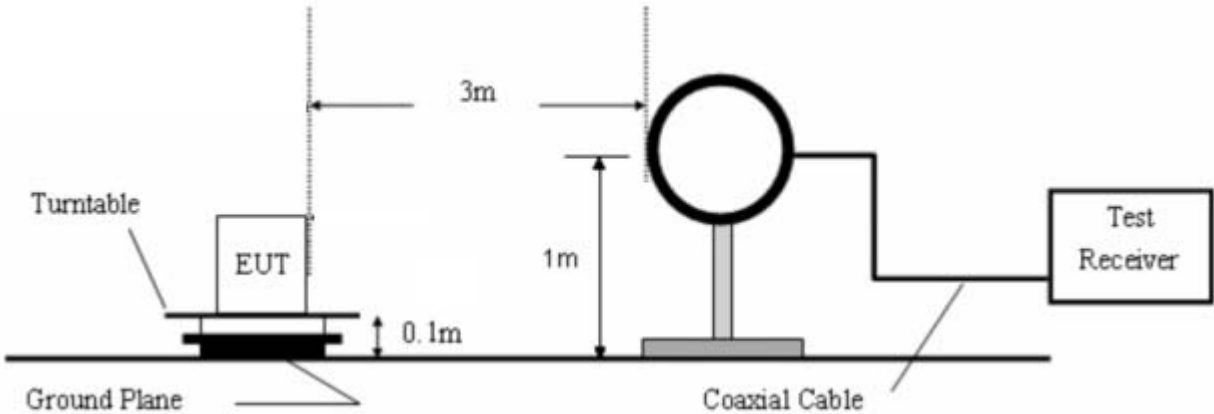


Figure 1. Below 30MHz

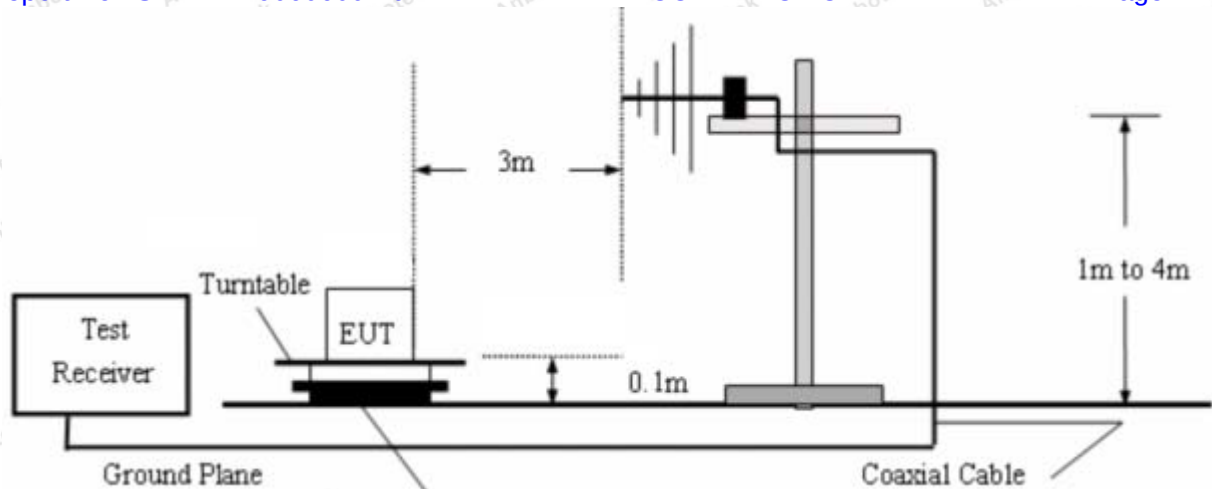


Figure 2. 30MHz to 1GHz

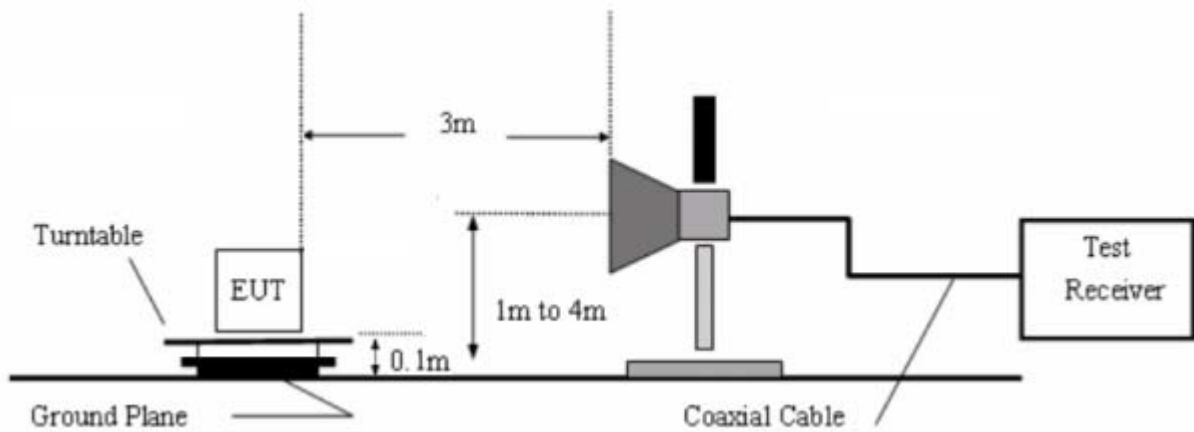


Figure 3. Above 1 GHz

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.

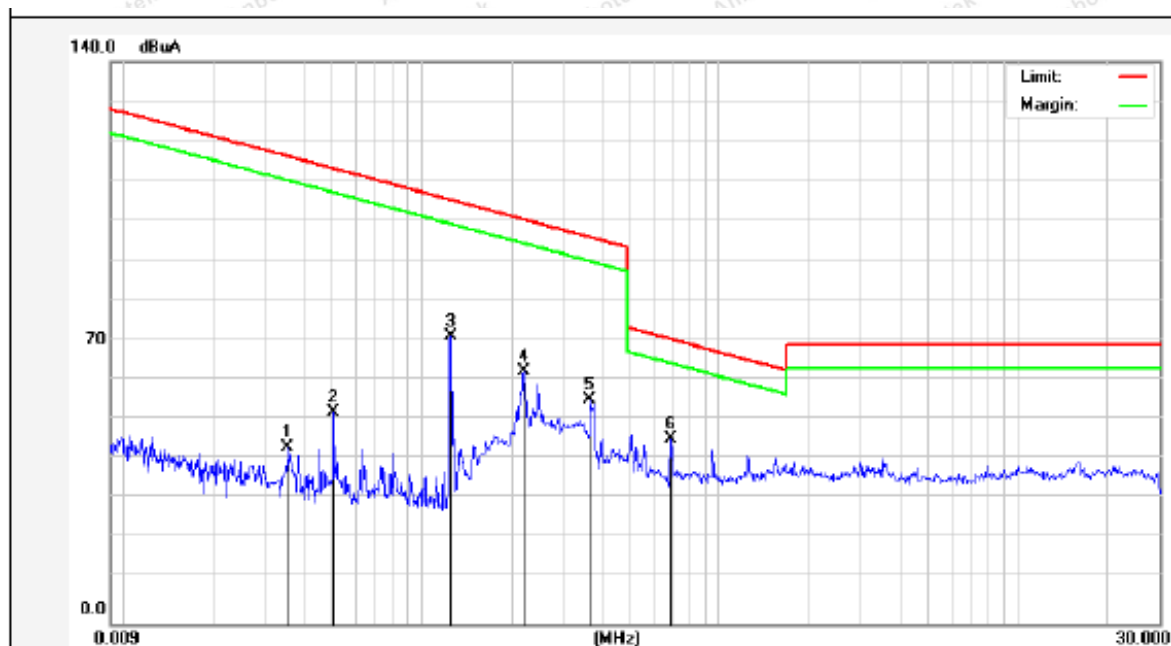
Report No.: SZAWW190606004-02

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Test Results

(Between 9KHz – 30MHz)

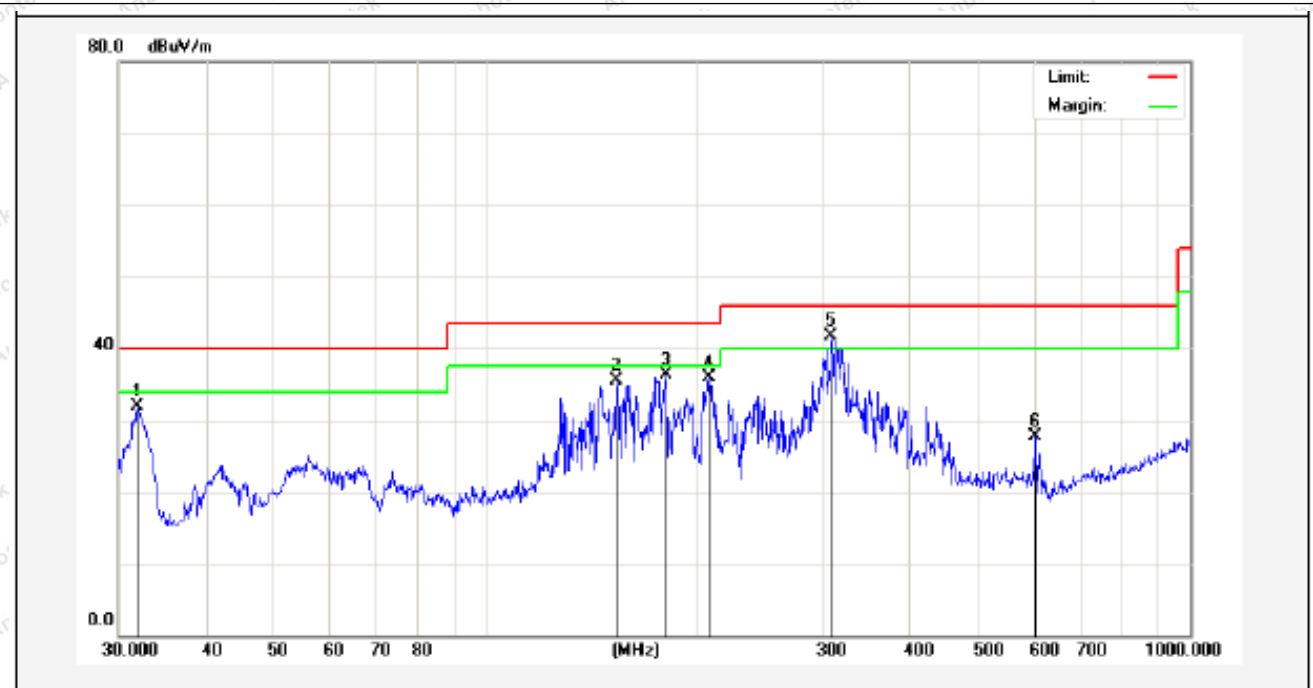
Job No.: SZAWW190606004-02**Standard:** FCC PART15 C_3m**Power Source:** DC 11.1V Battery inside**Test item:** Radiation Test**Temp.(C)/Hum. (%RH):** 23.7°C/51%RH**Test Mode:** Mode 1**Distance:** 3m

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree (dgc)
0.0354	33.38	19.28	2.53	0	55.19	136.50	-81.31	Peak	59
0.0354	22.22	19.28	2.53	0	44.03	116.50	-72.47	AV	59
0.0509	41.74	19.28	2.53	0	63.55	133.36	-69.81	Peak	247
0.0509	30.91	19.28	2.53	0	52.72	113.36	-60.64	AV	247
0.1259	60.24	19.53	2.59	0	82.36	125.54	-43.18	Peak	351
0.1259	49.49	19.53	2.59	0	71.61	105.54	-33.93	AV	351
0.2199	49.21	19.53	2.59	0	71.33	120.72	-49.39	Peak	264
0.2199	40.84	19.53	2.59	0	62.96	100.72	-37.76	AV	264
0.3664	42.16	19.53	2.59	0	64.28	116.31	-52.03	Peak	32
0.3664	33.79	19.53	2.59	0	55.91	96.31	-40.40	AV	32
0.6895	22.71	20.66	2.63	0	46.00	70.83	-24.83	QP	117

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.:	SZAWW190606004-02	Polarization:	Horizontal
Standard:	FCC PART15 C _3m	Power Source:	DC 11.1V Battery inside
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	23.7°C/51%RH
Test Mode:	Mode 1	Distance:	3m



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	31.9542	50.75	-18.93	31.82	40.00	-8.18	QP	300	55	
2	153.2004	58.68	-23.17	35.51	43.50	-7.99	QP	300	247	
3	180.0165	58.13	-21.76	36.37	43.50	-7.13	QP	300	156	
4	207.1226	56.80	-20.81	35.99	43.50	-7.51	QP	300	79	
5	308.9125	59.23	-17.50	41.73	46.00	-4.27	QP	300	42	
6	601.4265	39.73	-12.07	27.66	46.00	-18.34	QP	300	326	

Job No.: SZAWW190606004-02

Polarization: Vertical

Standard: FCC PART15 C_3m

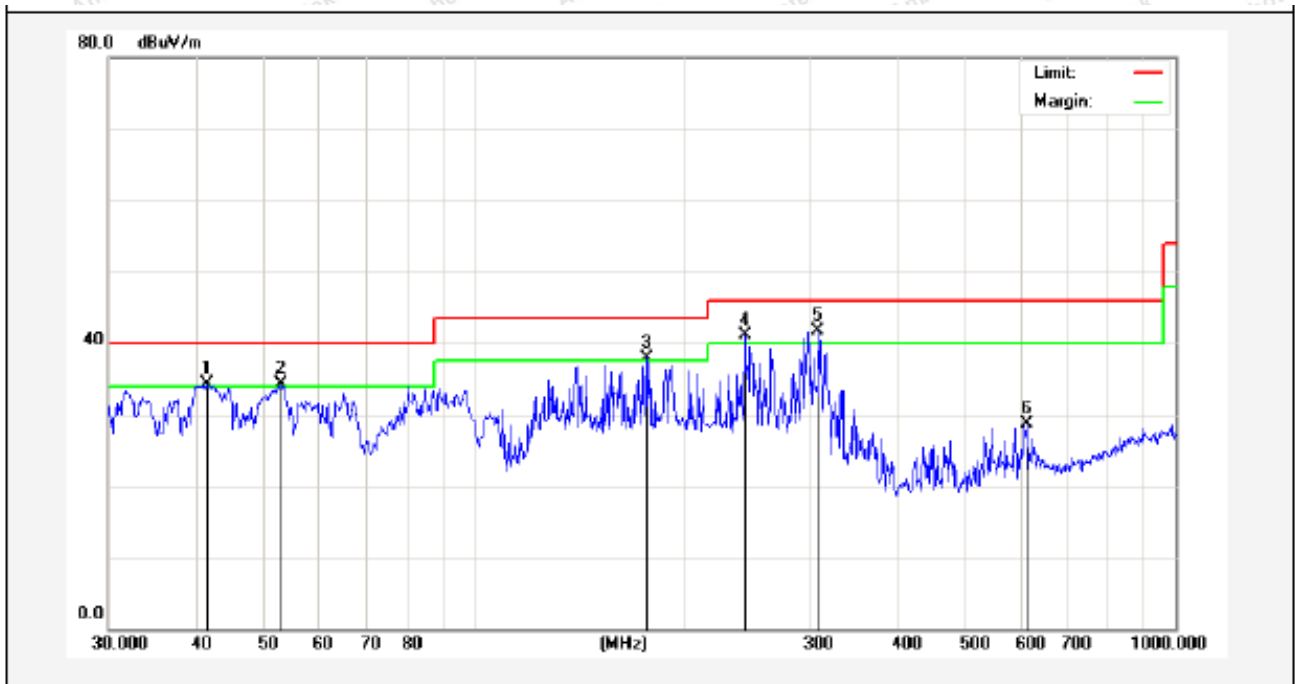
Power Source: DC 11.1V Battery inside

Test item: Radiation Test

Temp.(C)/Hum.(%RH) 23.7°C/51%RH

Test Mode: Mode 1

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	41.4215	50.93	-16.56	34.37	40.00	-5.63	QP	300	76	
2	52.9453	51.22	-16.93	34.29	40.00	-5.71	QP	300	254	
3	176.2684	55.88	-18.05	37.83	43.50	-5.67	QP	300	156	
4	242.5252	56.05	-14.95	41.10	46.00	-4.90	QP	300	338	
5	308.9125	57.07	-15.39	41.68	46.00	-4.32	QP	300	229	
6	614.2142	38.75	-9.99	28.76	46.00	-17.24	QP	300	43	

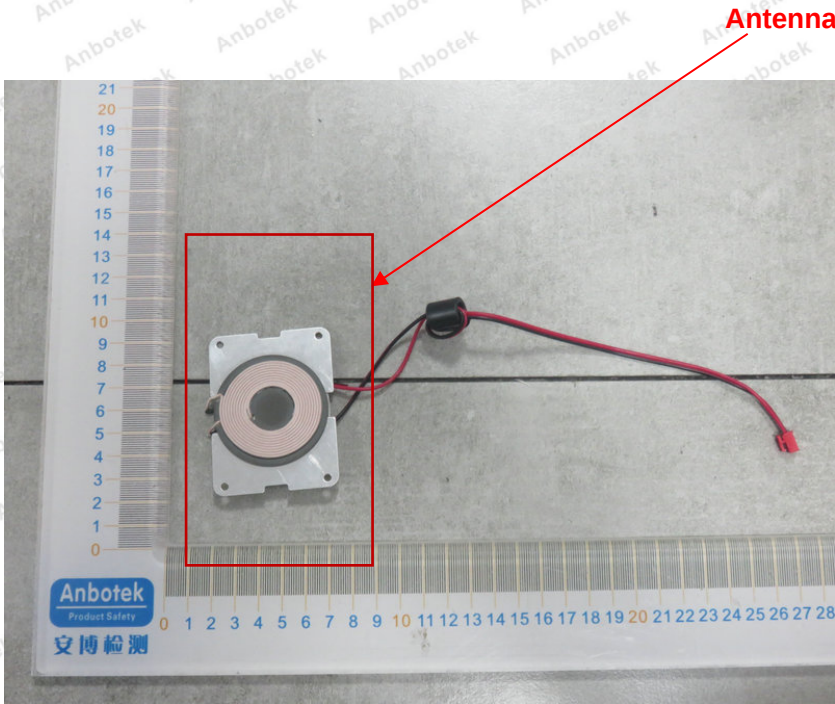
5. Antenna Requirement

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.

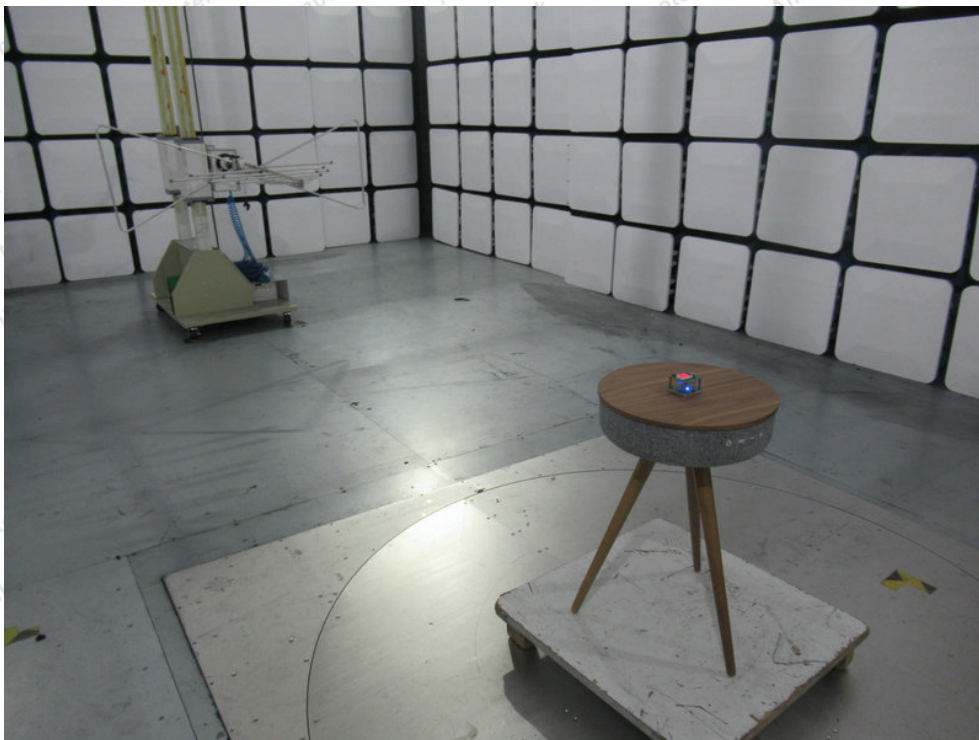


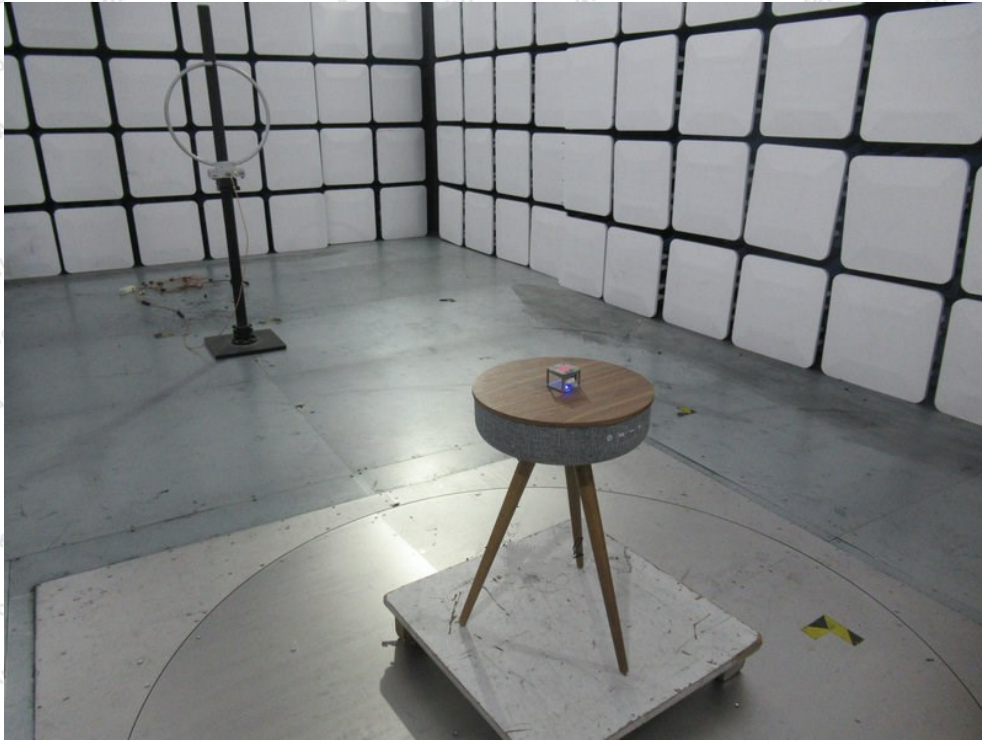
APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement



Photo of Radiation Emission Test





APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to the test report SZAWW190606004-01.

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to the test report SZAWW190606004-01.

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

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