FCC TEST REPORT
FCC ID:2BCI7-S19000460

Report Number.....:	**ZHT-230803004E**
Date of Test.....	Aug. 03, 2023 to Aug. 11, 2023
Date of issue.....:	Aug. 14, 2023
Test Result ..... :	PASS
Testing Laboratory.....:	**Guangdong Zhonghan Testing Technology Co., Ltd.**
Address ..... :	Room 104, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Applicant's name .....:	**Shenzhen Mano Electronic Co.,Ltd.**
Address ..... :	5F bldg A shangxue industrial area bantian town longgang district shenzhen city Guangdong province .China 51812
Manufacturer's name .....:	**Shenzhen Mano Electronic Co.,Ltd.**
Address ..... :	5F bldg A shangxue industrial area bantian town longgang district shenzhen city Guangdong province .China 51812
Test specification:	
Standard.....:	FCC CFR Title 47 Part 15 Subpart C
Test procedure..... :	/
Non-standard test method .....:	N/A

This device described above has been tested by ZHT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name.....:	**WirelessChargingPowerBank**
Trademark .....:	STUCO
Model/Type reference..... :	S19000460
Ratings..... :	Micro/Type-C input : 5 V⎓ 2 A USB-1+USB-2 output: 5 V⎓ 2 A (total) Wireless output: 5 W

Testing procedure and testing location:

Testing Laboratory..... :	Guangdong Zhonghan Testing Technology Co., Ltd.
Address..... :	Room 104, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Tested by (name + signature)..... :	Leon Li Leon Li
Reviewer (name + signature)..... :	Baret Wu Baret Wu
Approved (name + signature)..... :	Levi Lee

TABLE OF CONTENTS

1. VERSION 4
2. TEST SUMMARY 5
2.1 TEST FACILITY 6
2.2 MEASUREMENT UNCERTAINTY 6
3. GENERAL INFORMATION 7
3.1 GENERAL DESCRIPTION OF EUT 7
3.2 Test mode 7
3.3 Block Diagram of EUT Configuration 7
3.4 Test Conditions 7
3.5 Description Of Support Units (Conducted Mode) 8
3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS 9
4. CONDUCTED EMISSION TEST 11
4.1 CONDUCTED EMISSION MEASUREMENT 11
4.1.1 POWER LINE CONDUCTED EMISSION Limits 11
4.1.2 TEST PROCEDURE 11
4.1.3 DEVIATION FROM TEST STANDARD 11
4.1.4 TEST SETUP 12
4.1.5 EUT OPERATING CONDITIONS 12
4.1.6 Test Result 13
5. RADIATED EMISSION MEASUREMENT 15
5.1 Radiated Emission Limits 15
5.2 Anechoic Chamber Test Setup Diagram 16
5.3 Test Procedure 16
5.4 DEVIATION FROM TEST STANDARD 16
5.5 Test Result 17
6. BANDWIDTH TEST 20
7. ANTENNA REQUIREMENT 22
8. TEST SETUP PHOTO 23
9. EUT CONSTRUCTIONAL DETAILS 23

1. VERSION

Report No.	Version	Description	Approved
ZHT-230803004E	Rev.01	Initial issue of report	Aug. 14, 2023

2. TEST SUMMARY

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.209(a)(f)	Pass
20dB Bandwidth	15.215	Pass

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Guangdong Zhonghan Testing Technology Co., Ltd.
Add. : Room 104, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an Distric Shenzhen, Guangdong, China

FCC Registration Number:255941
Designation Number: CN0325
IC Registered No.: 29832
CAB identifier: CN0143

2.2 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	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(9k-30MHz)	±4.68dB
5	All emissions radiated(<1G)	±4.68dB
6	All emissions radiated(>1G)	±4.89dB
7	Temperature	±0.5°C
8	Humidity	±2%
9	Occupied Bandwidth	±4.96dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

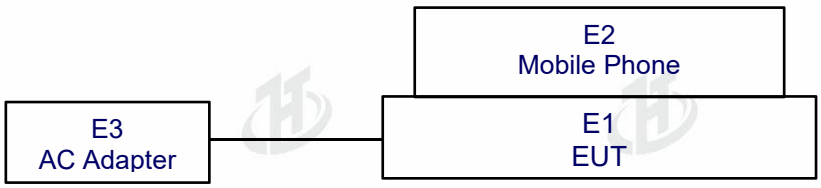
Product Name:	WirelessChargingPowerBank
Model No.:	S19000460
Model Difference:	/
Hardware version:	V1.0
Software version:	V1.0
Operation Frequency:	110~ 205kHz
Modulation type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi
Power supply:	Micro/Type-C input : 5 V⎓ 2 A USB-1+USB-2 output: 5 V⎓ 2 A (total) Wireless output: 5 W

3.2 Test mode

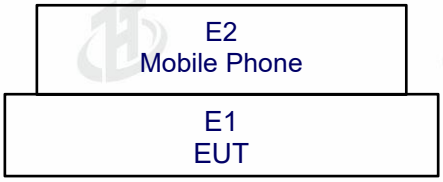
Test Modes:	
Mode 1	Wireless charging(5W)
Mode 2	Standby
Note: 1. All modes were tested, only the worst-case was recorded in the report. 2. EUT does not support wireless charging output while charging 3. EUT supports wireless charging and USB simultaneous output	

3.3 Block Diagram of EUT Configuration

Conducted Emission



Radiated Emission



3.4 Test Conditions

Temperature: 23~26℃

Relative Humidity: 54~63 %

3.5 Description Of Support Units (Conducted Mode)

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.	Note
E1	WirelessChargingPowerBank	N/A	S19000460	/	EUT
E2	Mobile Phone	SUNSUNG	Galaxy S22	/	AE
E3	Adapter	HUAWEI	HW-100400C01	/	AE

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Model	Last Cal.	Next Cal.
1	Receiver	R&S	ESCI	Mar 12, 2023	Mar 11, 2024
2	Loop antenna	EMCI	LAP600	Mar 12, 2023	Mar 11, 2024
3	Amplifier	Schwarzbeck	BBV 9743 B	Mar 12, 2023	Mar 11, 2024
4	Amplifier	Schwarzbeck	BBV 9718 B	Mar 12, 2023	Mar 11, 2024
5	Bilog Antenna	Schwarzbeck	VULB9162	Mar 17, 2023	Mar 16, 2024
6	Horn Antenna	Schwarzbeck	BBHA9120D	Mar 17, 2023	Mar 16, 2024
7	Horn Antenna	A.H.SYSTEMS	SAS574	Mar 12, 2023	Mar 11, 2024
8	Amplifier	AEROFLEX	100KHz-40GHz	Mar 12, 2023	Mar 11, 2024
9	Spectrum Analyzer	R&S	FSV40	Mar 12, 2023	Mar 11, 2024
10	CDNE	Schwarzbeck	CDNE M2 + CDNE M3	Aug. 09, 2022	Aug. 08, 2023
11	966 Anechoic Chamber	EMToni	9m6m6m	Nov. 25, 2021	Nov. 24, 2024
12	Spectrum Analyzer	KEYSIGHT	N9020A	Mar 12, 2023	Mar 11, 2024
13	WIDBAND RADIO COMMUNICATI ON TESTER	R&S	CMW500	Mar 12, 2023	Mar 11, 2024
14	Single Generator	Agilent	N5182A	Mar 12, 2023	Mar 11, 2024
15	Power Sensor	MWRFtest	MW100-RFCB	Mar 12, 2023	Mar 11, 2024
16	Audio analyzer	R&S	UPL	Mar 12, 2023	Mar 11, 2024
17	Single Generator	R&S	SMB100A	Mar 12, 2023	Mar 11, 2024
18	Power Amplifier Shielding Room	EMToni	2m3m3m	Nov. 25, 2021	Nov. 24, 2024

Conduction Test equipment

Equipment	Manufacturer	Model	Last Cal.	Next Cal.
Receiver	R&S	ESCI	Mar 12, 2023	Mar 11, 2024
LISN	R&S	ENV216	Mar 12, 2023	Mar 11, 2024
ISN CAT 6	Schwarzbeck	NTFM 8158	Mar 12, 2023	Mar 11, 2024
ISN CAT 5	Schwarzbeck	CAT5 8158	Mar 12, 2023	Mar 11, 2024
Capacitive Voltage Probe	Schwarzbeck	CVP 9222 C	Mar 12, 2023	Mar 11, 2024
Current Transformer Clamp	Schwarzbeck	SW 9605	Mar 12, 2023	Mar 11, 2024
CE Shielding Room	EMToni	9m4m3m	Nov. 25, 2021	Nov. 24, 2024

4. CONDUCTED EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	QP	AVG	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

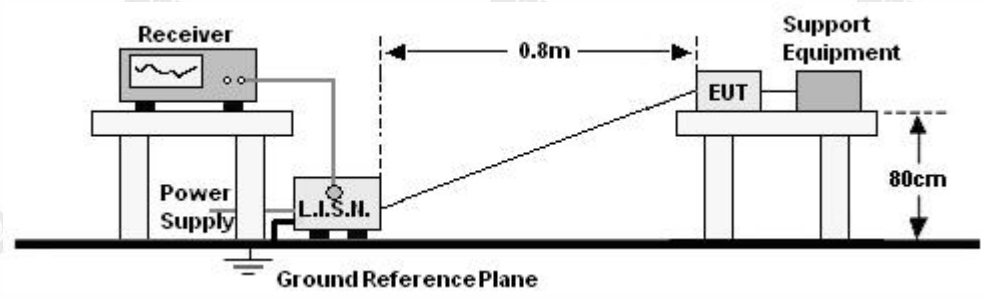
4.1.2 TEST PROCEDURE

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.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



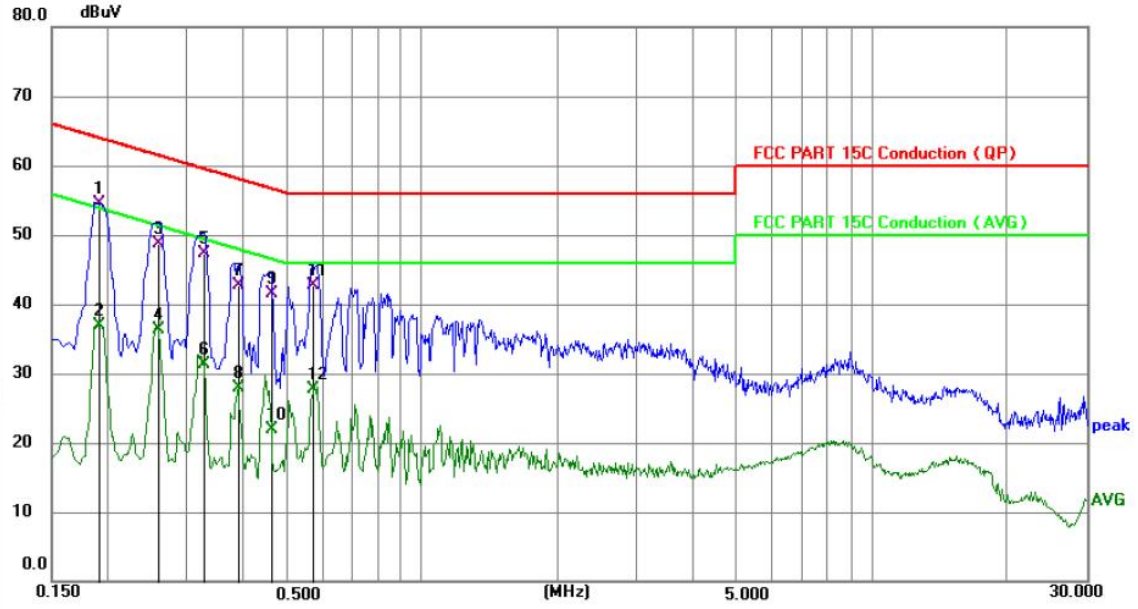
4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

4.1.6 Test Result

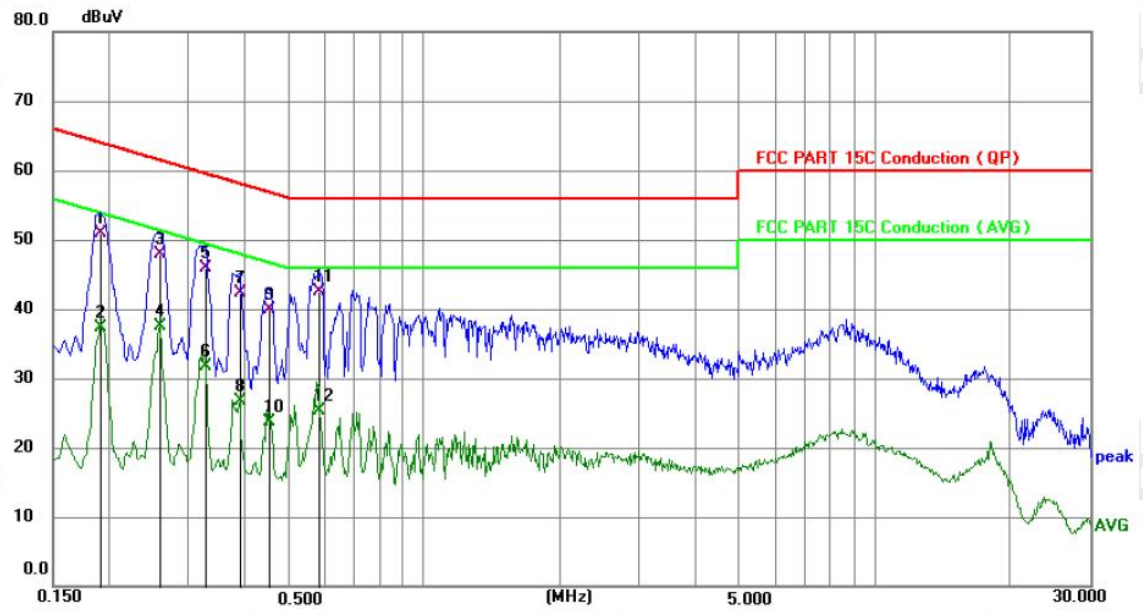
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1 *	0.1905	44.58	9.91	54.49	64.01	-9.52	QP	P
2	0.1905	27.09	9.91	37.00	54.01	-17.01	AVG	P
3	0.2580	38.80	9.93	48.73	61.50	-12.77	QP	P
4	0.2580	26.46	9.93	36.39	51.50	-15.11	AVG	P
5	0.3255	37.32	9.96	47.28	59.57	-12.29	QP	P
6	0.3255	21.26	9.96	31.22	49.57	-18.35	AVG	P
7	0.3885	32.75	9.98	42.73	58.10	-15.37	QP	P
8	0.3885	18.02	9.98	28.00	48.10	-20.10	AVG	P
9	0.4605	31.50	10.01	41.51	56.68	-15.17	QP	P
10	0.4605	11.87	10.01	21.88	46.68	-24.80	AVG	P
11	0.5730	32.69	10.03	42.72	56.00	-13.28	QP	P
12	0.5730	17.76	10.03	27.79	46.00	-18.21	AVG	P

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1 *	0.1905	40.93	9.91	50.84	64.01	-13.17	QP	P
2	0.1905	27.40	9.91	37.31	54.01	-16.70	AVG	P
3	0.2580	38.06	9.93	47.99	61.50	-13.51	QP	P
4	0.2580	27.59	9.93	37.52	51.50	-13.98	AVG	P
5	0.3255	35.95	9.96	45.91	59.57	-13.66	QP	P
6	0.3255	21.75	9.96	31.71	49.57	-17.86	AVG	P
7	0.3885	32.35	9.98	42.33	58.10	-15.77	QP	P
8	0.3885	16.78	9.98	26.76	48.10	-21.34	AVG	P
9	0.4515	29.82	10.01	39.83	56.85	-17.02	QP	P
10	0.4515	13.68	10.01	23.69	46.85	-23.16	AVG	P
11	0.5865	32.51	10.03	42.54	56.00	-13.46	QP	P
12	0.5865	15.20	10.03	25.23	46.00	-20.77	AVG	P

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 1GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

5.1 Radiated Emission Limits

Limits for frequency below 30MHz

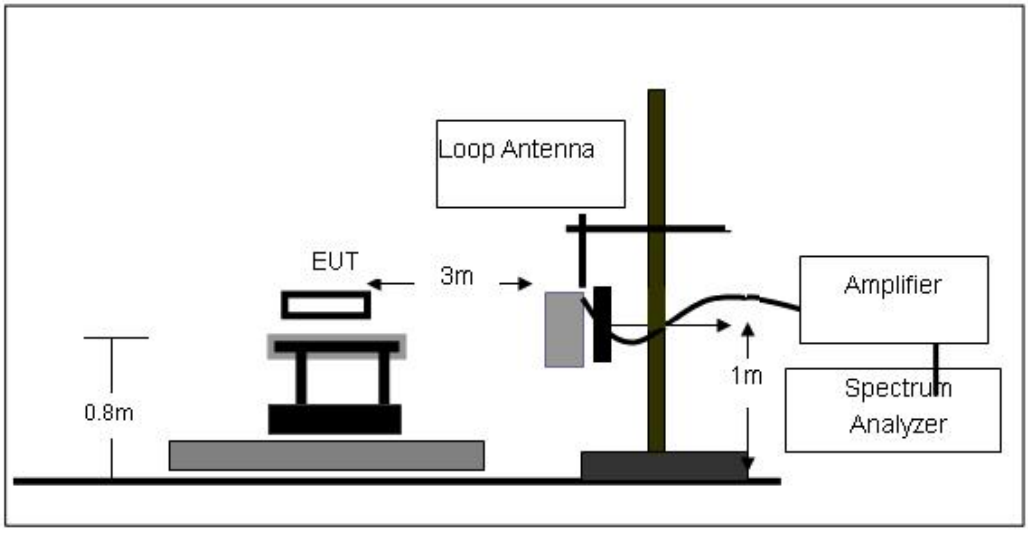
Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Quasi-peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Limits for frequency Above 30MHz

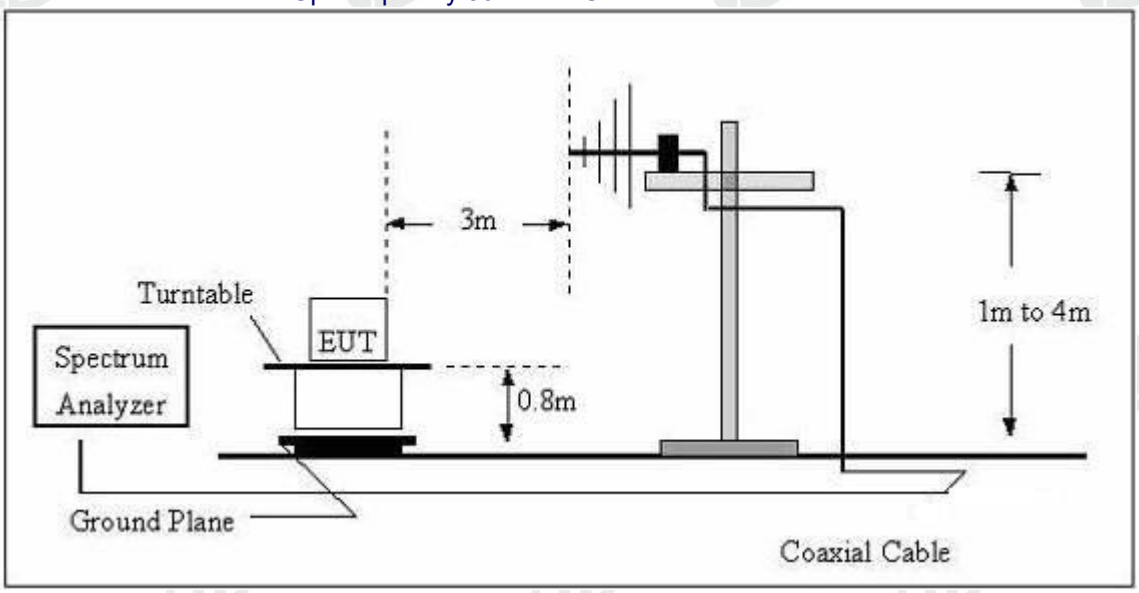
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

5.2 Anechoic Chamber Test Setup Diagram

（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

5.3 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. 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 move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5 Test Result

Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80
Limit dBuV/m @3m = Limit dBuV/m @30m + 40

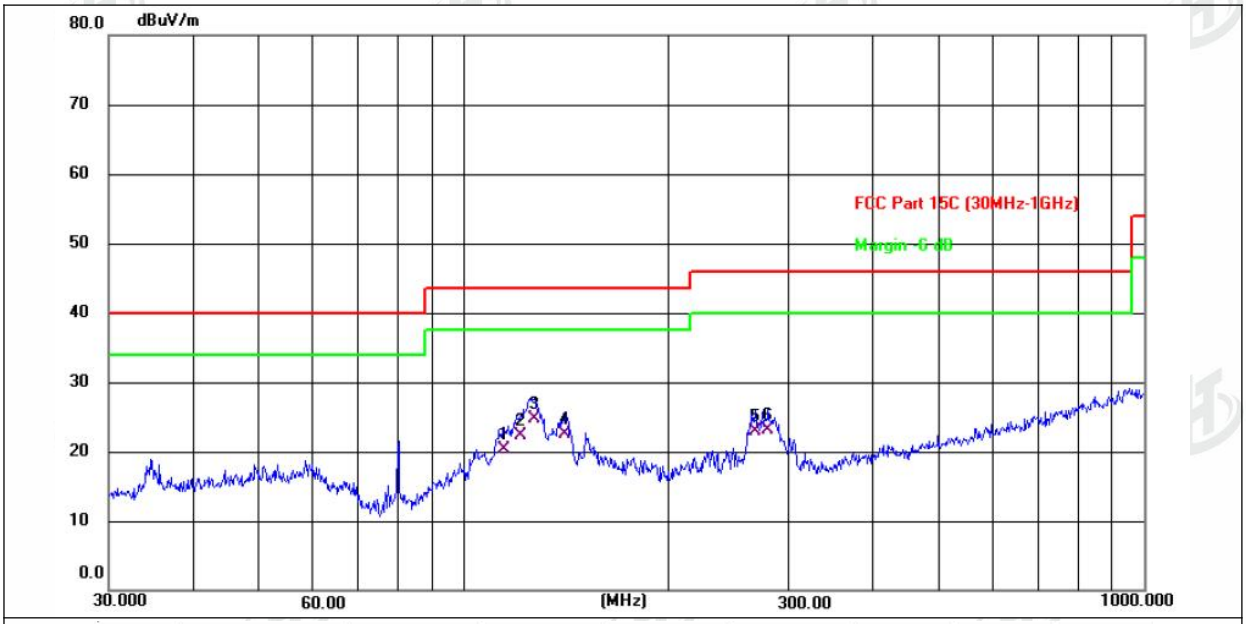
9 kHz~30 MHz

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(kHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
53.05	55.52	15.15	70.67	111.85	-41.18	AVG
110.00	56.82	15.18	70.94	106.78	-35.84	AVG
126.12	74.65	15.2	90.97	105.58	-14.61	AVG
731.57	26.61	16.33	43.46	70.83	-27.37	QP
963.14	26.58	16.87	41.99	68.37	-26.38	QP
1302.05	21.25	17.62	38.17	65.29	-27.12	QP

Note:
Pre-scan in the all of mode, the worst case in of was recorded.
Factor = antenna factor + cable loss – pre-amplifier.
Margin = Emission Level- Limit.
The amplitude of emissions which are attenuated by more than 20db below the permissible value has no need to be reported.

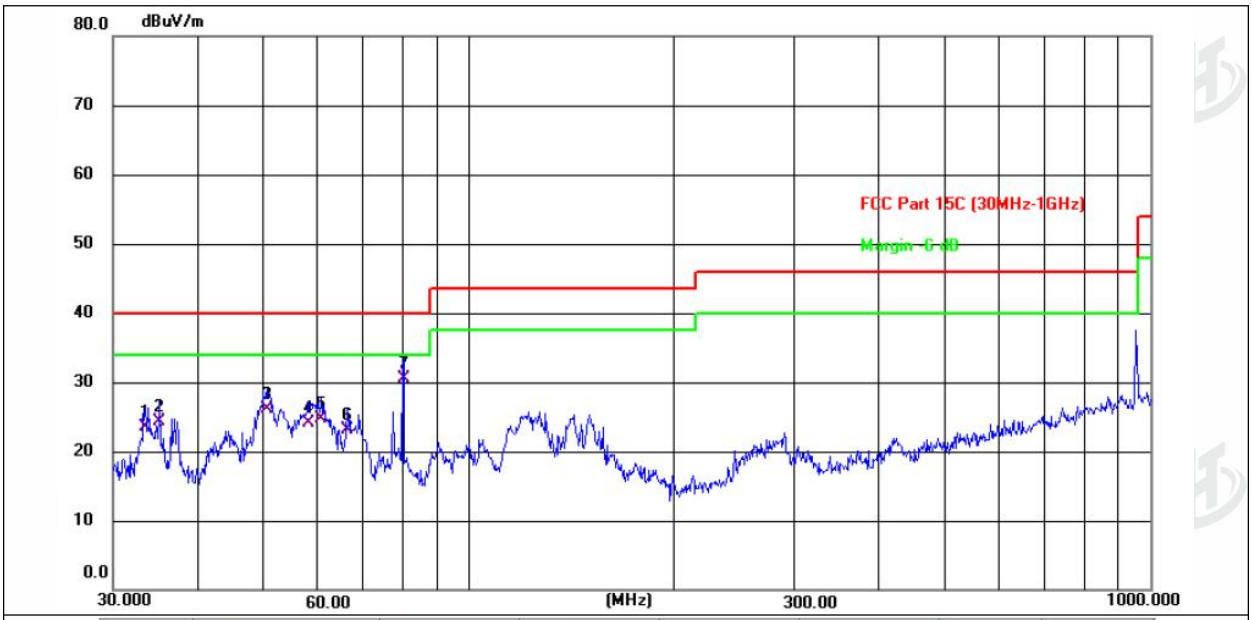
30MHz-1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)
1	114.5146	32.43	-12.09	20.34	43.50	-23.16	QP	
2	121.1230	35.09	-12.73	22.36	43.50	-21.14	QP	
3 *	126.7723	37.59	-12.95	24.64	43.50	-18.86	QP	
4	141.3296	35.96	-13.55	22.41	43.50	-21.09	QP	
5	268.4852	31.40	-8.45	22.95	46.00	-23.05	QP	
6	280.0237	31.28	-8.19	23.09	46.00	-22.91	QP	

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	33.4450	33.63	-10.09	23.54	40.00	-16.46	QP
2	35.1276	34.21	-9.85	24.36	40.00	-15.64	QP
3	50.4090	34.53	-8.47	26.06	40.00	-13.94	QP
4	57.9992	33.21	-9.06	24.15	40.00	-15.85	QP
5	60.7043	34.07	-9.44	24.63	40.00	-15.37	QP
6	66.2660	34.42	-11.27	23.15	40.00	-16.85	QP
7 *	80.0805	44.41	-13.96	30.45	40.00	-9.55	QP

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

6. BANDWIDTH TEST

1. Set RBW = 10 Hz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP

Temperature:	25.7 ℃	Relative Humidity:	55%
Pressure:	101kPa		

Frequency (KHz)	20dB bandwidth (KHz)	Result
123.32	0.099	Pass

7. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
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 be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is Inductive loop coil Antenna, the best case gain of the antennas is 0dBi, reference to the appendix II for details	

8. TEST SETUP PHOTO

Reference to the appendix I for details.

9. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

※※※※※ **END OF REPORT** ※※※※※