



TEST REPORT

FCC ID:2A6XR-CHARGER

Applicant: Shenzhen Woka Technology Co., Limited

Address: 615Y, 6th Floor, Building 5, Office Building, Yidexing Industrial Park, Fukang Community, Longhua Street, Shenzhen, China

Manufacturer: Shenzhen Woka Technology Co., Limited

Address: 615Y, 6th Floor, Building 5, Office Building, Yidexing Industrial Park, Fukang Community, Longhua Street, Shenzhen, China

EUT: WIRELESS CHARGER

Trade Mark: N/A

Model Number: 5 IN 1
GY68, K9, K10, Q8, 2 IN 1, 3 IN 1, 4 IN 1, ZZ1, 504, Q740, Y5, Y6, A-01, W02, W3, W05, W06, 847

Date of Receipt: May. 10, 2022

Test Date: May. 10, 2022 – May. 18, 2022

Date of Report: May. 18, 2022

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: FCC PART 15 Subpart C
ANSI C63.10:2013

Test Result: Pass

Report Number: DL-20220517030E

Prepared (Engineer): Lily Fu

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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**1. VERSION**

Version No.	Date	Description
00	May. 17, 2022	Original

2. TEST SUMMARY

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

NOTE:

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

(2) Test Facility: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone,
Baolong Street, Longgang District, Shenzhen, Guangdong, China



3. GENERAL INFORMATION

3.1 Description of Device (EUT)

Product Name: WIRELESS CHARGER

Model No.: 5 IN 1
GY68, K9, K10, Q8, 2 IN 1, 3 IN 1, 4 IN 1, ZZ1, 504, Q740, Y5, Y6, A-01, W02, W3, W05, W06, 847

Model Difference: All samples are the same except the model number and appearance color, so we prepare " 5 IN 1 " for test only.

Serial No.: N/A

Hardware version: H1.0

Software version: S1.0

Operation Frequency: 115kHz ~ 205KHz

Modulation type: MSK

Antenna Type: Inductive loop coil Antenna

Antenna gain: 0dBi

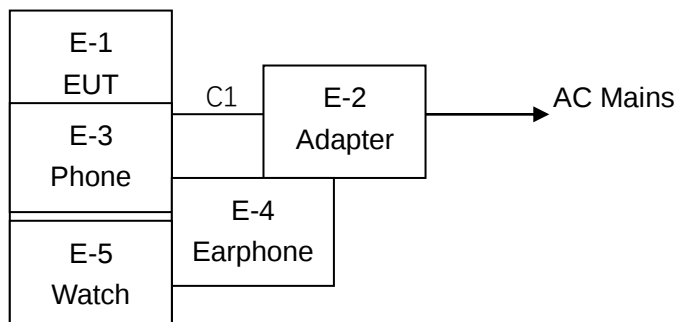
Power supply: Input: 9V 2A
Charger dock output: DC 5V 1.5A(Max)
Wireless Charger output: 5W/7.5W/10W/15W Max
Airpods output: DC 5V-0.5A

3.2 Tested System Details

None.



3.3 Block Diagram of Test Set-up



3.4 Test Mode Description

Mode1.	EUT+Phone(15W)		
Mode2.	EUT+Watch(7.5W)		
Mode3.	EUT+Earphone(2.5W)		
Mode4.	EUT+Earphone+Phone(15W)		
Mode5.	EUT+Earphone+Watch(10W)		
Mode6.	EUT+ Phone+Watch(15W)		
Mode7.	EUT+Earphone+Phone+Watch(15W)		
Note: We pretest all mode, and evaluated 1%, 50% and 99% battery charging mode, the worst mode 7(99% battery charging mode)are included in the report.			

3.5 Test Auxiliary Equipment

Item	Equipment	Model/Type No.	Series No.	Note
E-1	WIRELESS CHARGER	5 IN 1	N/A	EUT
E-2	Adapter	HW-0501000E	N/A	
E-3	Phone	iPhone 13	N/A	
E-4	Earphone	AirPods3		
E-5	Watch	Watch Series 6		

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	0.5m	Mini USB Line

3.6 Test Uncertainty

Conducted Emission Uncertainty (150KHz-30MHz) : $\pm 2.56\text{dB}$

Radiated Emission Uncertainty (9KHz-1GHz) : $\pm 3.24\text{dB}$

**4. TEST INSTRUMENT USED****For Conducted Emission Test (843 Shielded Room)**

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
843 Shielded Room	ChengYu	843 Room	843	Nov. 25, 2019	Nov. 24, 2022
EMI Receiver	R&S	ESR	101421	Dec. 07, 2021	Dec. 06, 2022
LISN	R&S	ENV216	102417	Dec. 07, 2021	Dec. 06, 2022
Clamp	COM-POWER	CLA-050	431071	Dec. 05, 2021	Dec. 04, 2022
3-Loop Antenna	DAZE	ZN30401	13021	Dec. 07, 2021	Dec. 06, 2022
ISN T8	Schwarzbeck	NTFM 8158	101135	Dec. 07, 2021	Dec. 06, 2022
ISN T5	Schwarzbeck	NTFM 8158	101136	Dec. 07, 2021	Dec. 06, 2022
843 Cable 1#	ChengYu	CE Cable	001	Dec. 07, 2021	Dec. 06, 2022
843 Cable 1#	ChengYu	CE Cable	002	Dec. 07, 2021	Dec. 06, 2022

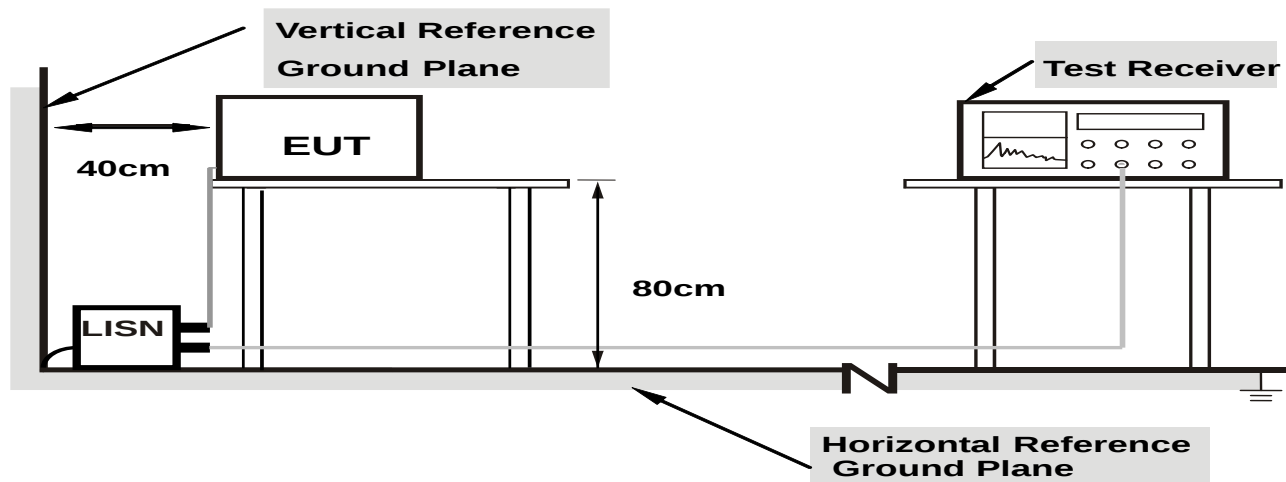
For Radiated Emission Test (966 chamber)

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
966 Chamber	ChengYu	966 Room	966	Nov. 25, 2019	Nov. 24, 2022
Spectrum Analyzer	Agilent	E4408B	MY50140780	Dec. 07, 2021	Dec. 06, 2022
EMI Receiver	R&S	ESRP7	101393	Dec. 07, 2021	Dec. 06, 2022
Amplifier	Schwarzbeck	BBV9743B	00153	Dec. 07, 2021	Dec. 06, 2022
Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Sep. 22, 2021	Sep. 21, 2022
Amplifier	EMEC	EM01G8GA	00270	Dec. 07, 2021	Dec. 06, 2022
Broadband Trilog Antenna	Schwarzbeck	VULB9162	00306	Nov. 28, 2021	Nov. 27, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	02139	Nov. 28, 2021	Nov. 27, 2022
966 Cable 1# (30MHz-1GHz)	ChengYu	966	004	Dec. 07, 2021	Dec. 06, 2022
966 Cable 2# (1GHz-40GHz)	ChengYu	966	003	Dec. 07, 2021	Dec. 06, 2022

5. CONDUCTED EMISSION TEST

5.1 Block Diagram of Test Setup

For Mains Terminals Test



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

5.2 Test Standard and Limit

FCC Part 15 Subpart B

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15~0.50	66 ~ 56*	55 ~ 46*
0.50~5.00	56	46
5.00~30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

5.3 EUT Configuration on Test

The following equipment's are installed on conducted emission test to meet FCC Part 15 Subpart B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

5.4 Operating Condition of EUT

5.4.1 Setup the EUT and simulators as shown in Section 5.1.

5.4.2 Turn on the power of all equipments.

5.4.3 Let the EUT work in test modes and test it.



5.5 Test Procedure

The EUT is put on the table and connected to the AC mains through a Artificial Mains Network (AMN) or ISN. This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **ANSI C63.4** regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESR) is set at 10KHz.

The frequency range from 150 KHz to 30 MHz is investigated.

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

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

We pretest all mode, the data only show the worst mode's data.

5.6 Test Result

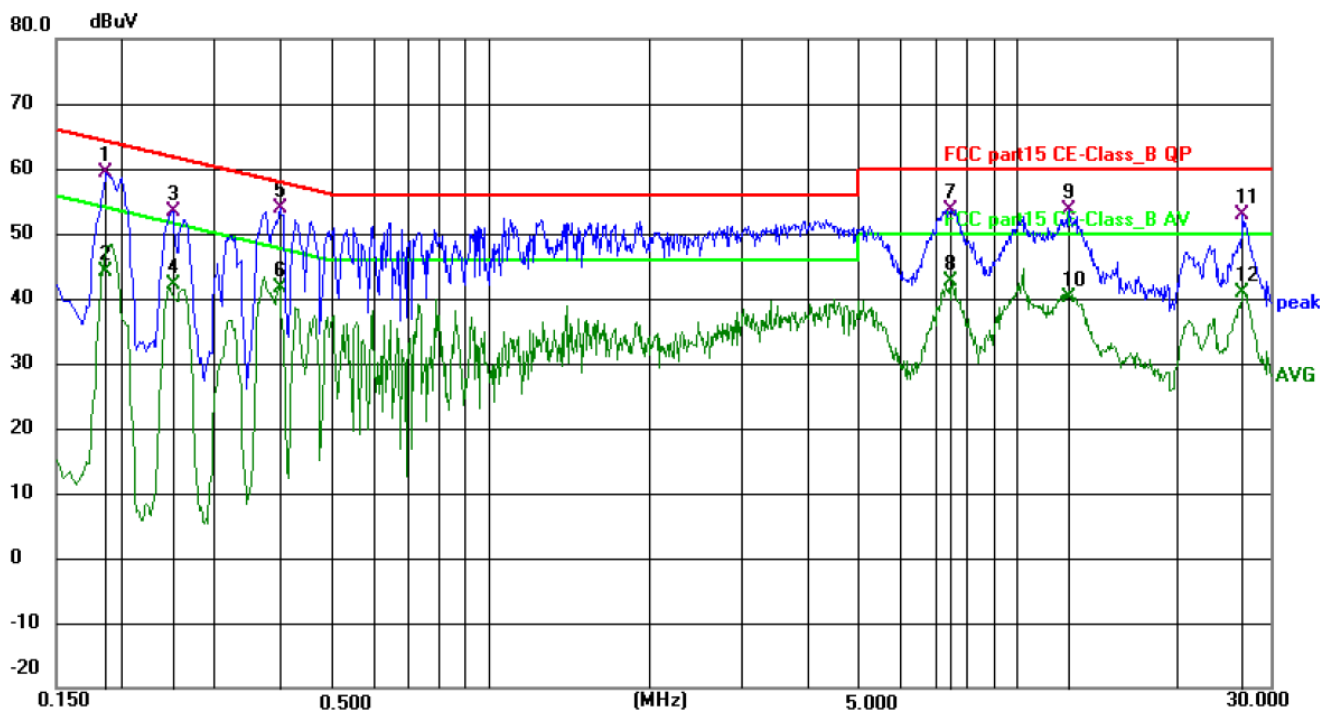
PASS

Please refer to the following page.



Conducted Emission Test Data

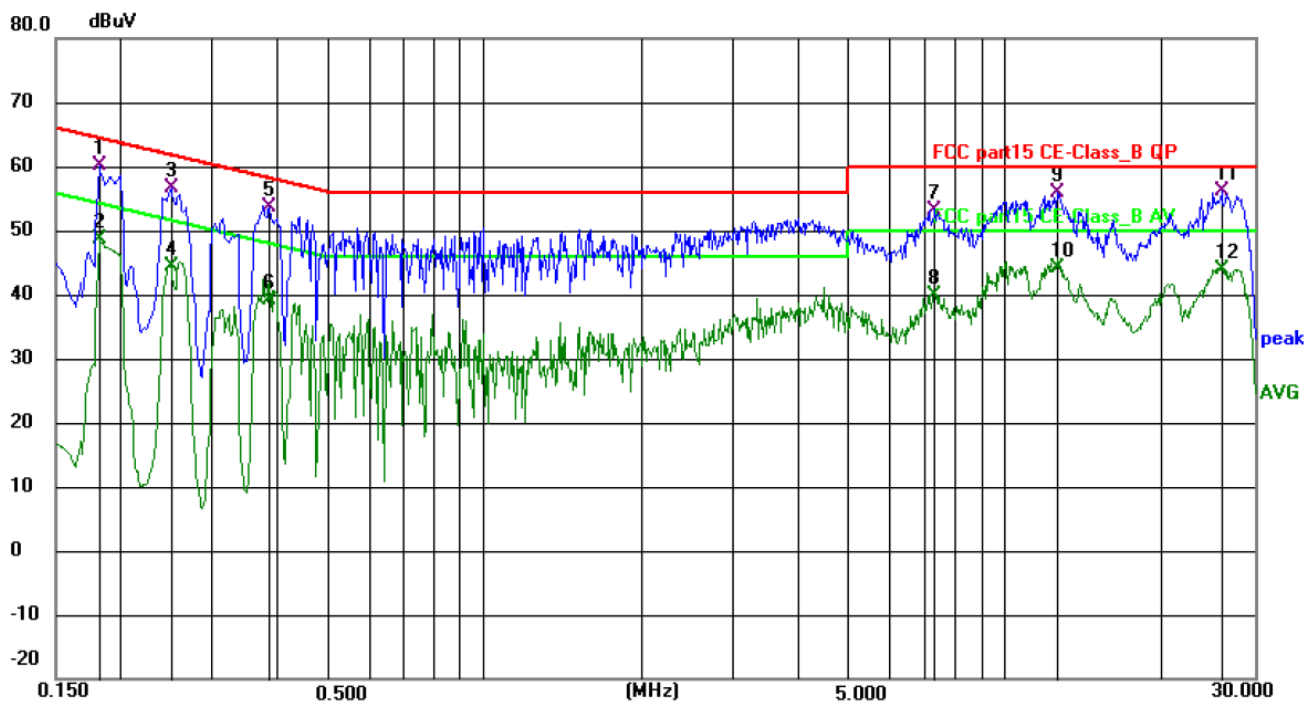
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase:	Line
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 7



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.185900	49.58	9.76	59.34	64.22	-4.88	QP	P	
2	0.185900	34.46	9.76	44.22	54.22	-10.00	AVG	P	
3	0.248900	44.09	9.34	53.43	61.79	-8.36	QP	P	
4	0.248900	32.83	9.34	42.17	51.79	-9.62	AVG	P	
5 *	0.397500	44.78	9.13	53.91	57.91	-4.00	QP	P	
6	0.397500	32.40	9.13	41.53	47.91	-6.38	AVG	P	
7	7.453500	43.98	9.76	53.74	60.00	-6.26	QP	P	
8	7.453500	32.91	9.76	42.67	50.00	-7.33	AVG	P	
9	12.493400	43.54	10.00	53.54	60.00	-6.46	QP	P	
10	12.493400	30.18	10.00	40.18	50.00	-9.82	AVG	P	
11	26.659500	41.71	11.19	52.90	60.00	-7.10	QP	P	
12	26.659500	29.75	11.19	40.94	50.00	-9.06	AVG	P	



Conducted Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase:	Neutral
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 7



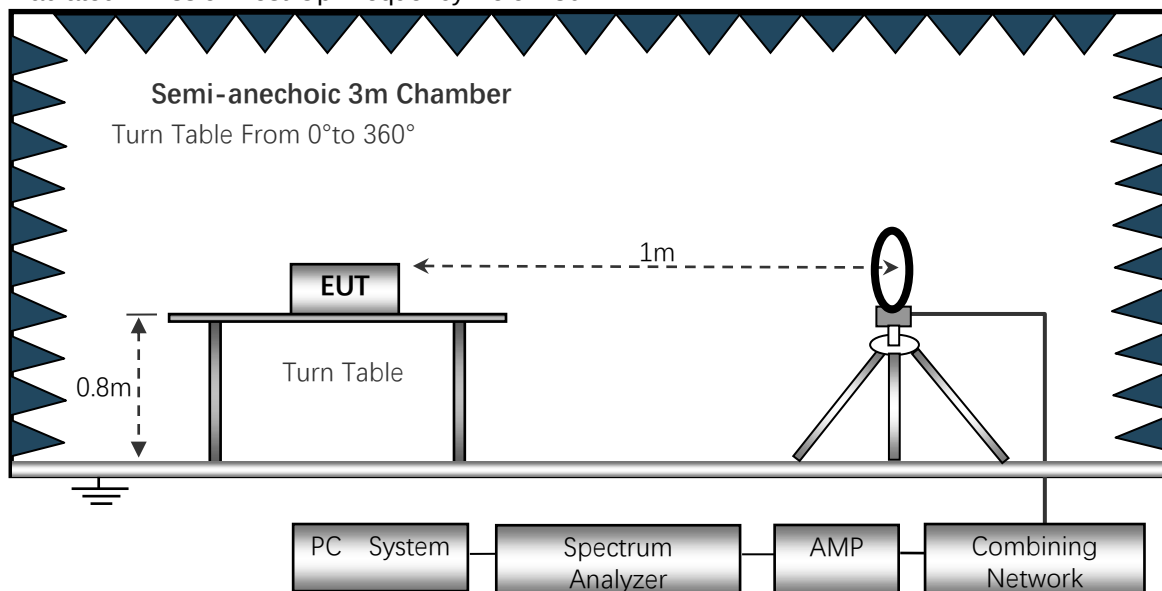
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.181400	50.71	9.41	60.12	64.42	-4.30	QP	P	
2	0.181400	39.28	9.41	48.69	54.42	-5.73	AVG	P	
3	0.248900	47.69	8.96	56.65	61.79	-5.14	QP	P	
4	0.248900	35.41	8.96	44.37	51.79	-7.42	AVG	P	
5	0.384000	44.52	9.20	53.72	58.19	-4.47	QP	P	
6	0.384000	29.85	9.20	39.05	48.19	-9.14	AVG	P	
7	7.314000	43.37	9.88	53.25	60.00	-6.75	QP	P	
8	7.314000	29.93	9.88	39.81	50.00	-10.19	AVG	P	
9	12.520500	45.79	10.18	55.97	60.00	-4.03	QP	P	
10	12.520500	33.92	10.18	44.10	50.00	-5.90	AVG	P	
11 *	25.934900	44.76	11.28	56.04	60.00	-3.96	QP	P	
12	25.934900	32.61	11.28	43.89	50.00	-6.11	AVG	P	



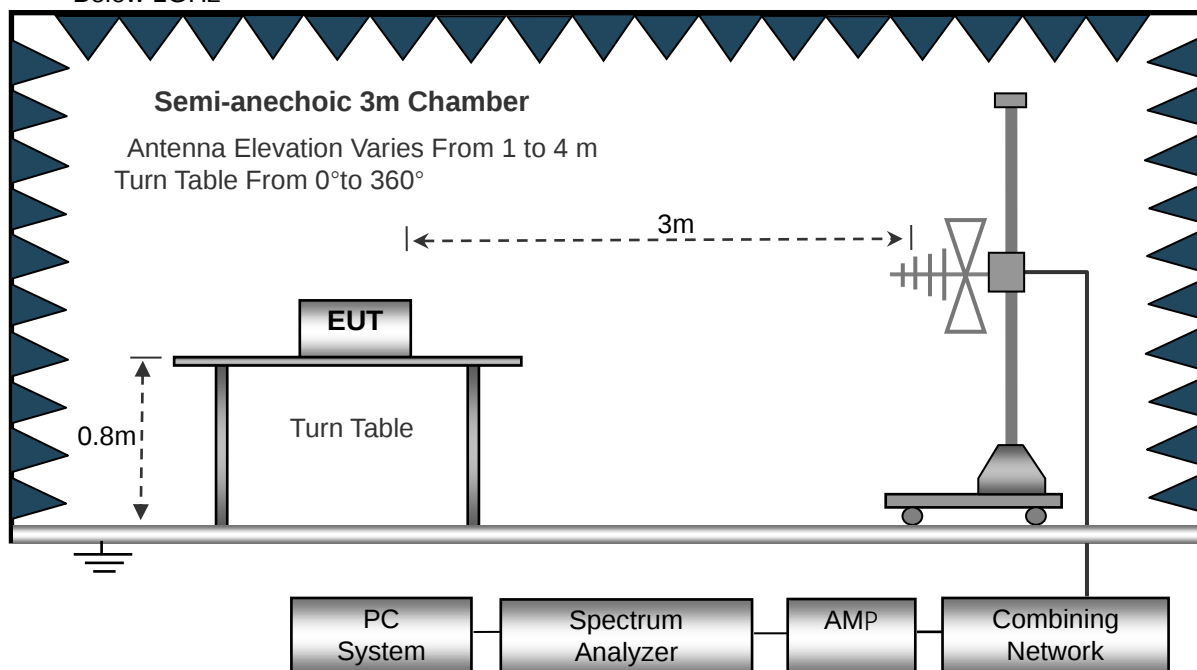
6. RADIATION EMISSION TEST

6.1 Block Diagram of Test Setup

Radiated Emission Test-Up Frequency Below 30MHz



Below 1GHz



6.2 Test Standard and Limit

FCC Part 15 Subpart B



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

Above 30MHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)	Remark
30 ~ 88	3	40.0	Quasi-peak Value
88 ~ 216	3	43.5	Quasi-peak Value
216 ~ 960	3	46.0	Quasi-peak Value
960 ~ 1000	3	54.0	Quasi-peak Value
Above 1000	3	74.0	PEAK
		54.0	AVERAGE

Remark:

(1) The smaller limit shall apply at the cross point between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

6.3 EUT Configuration on Test

The FCC Part 15 Subpart B regulations test method must be used to find the maximum emission during radiated emission test.

The configuration of EUT is the same as used in conducted emission test.

Please refer to Section 5.3.

6.4 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 5.4 except the test set up replaced as Section 6.2.

6.5 Test Procedure

1) The radiated emissions test was conducted in a semi-anechoic chamber.

2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

3) Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.

4) The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

5) The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz.

6) The frequency range from 30MHz to 1000MHz is checked.

We pretest all mode, the data only show the worst mode's data.



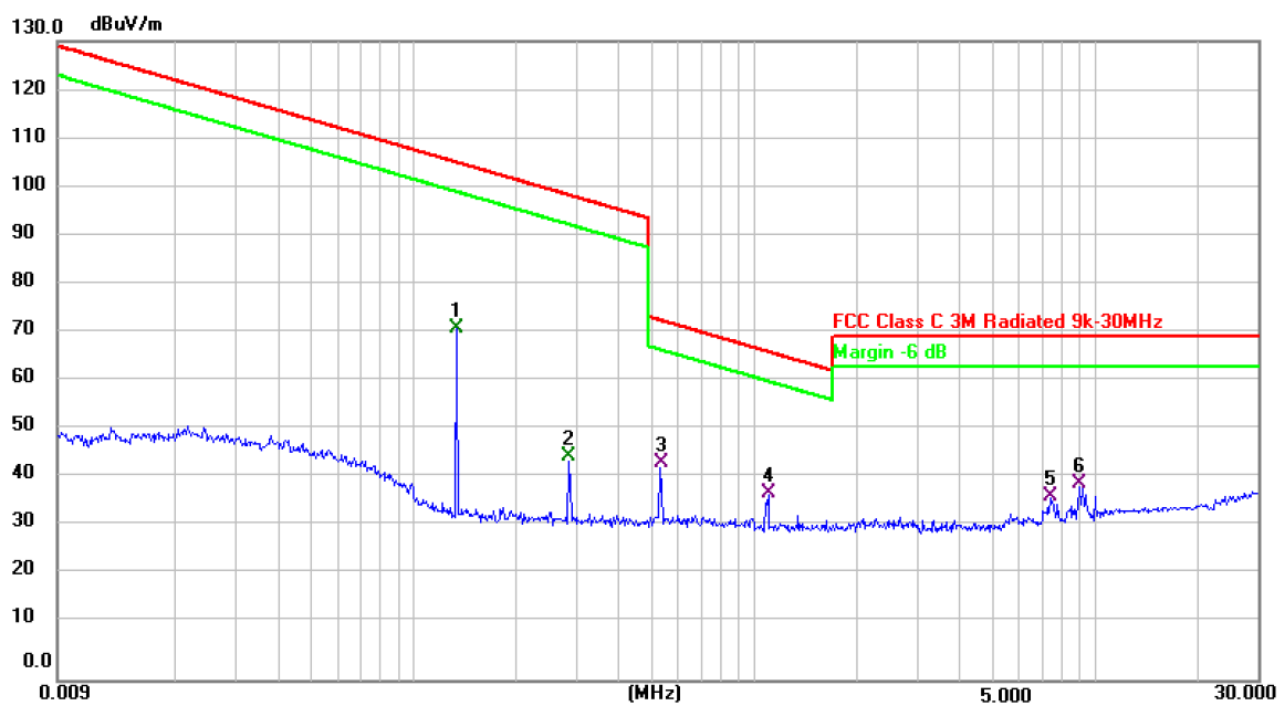
We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

6.6 Test Result

PASS

Please refer to the following page.

Radiation Emission Test Data 9 kHz~30 MHz			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa		
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 7



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.1341	66.17	5.56	71.73	105.35	-33.62	AVG
2		0.2850	41.70	3.82	45.52	98.75	-53.23	AVG
3		0.5324	41.55	2.69	44.24	73.27	-29.03	QP
4	*	1.0959	36.12	2.20	38.32	66.90	-28.58	QP
5		7.3733	22.87	14.74	37.61	70.00	-32.39	QP
6		8.9580	22.14	17.92	40.06	70.00	-29.94	QP

Note:

Pre-scan in the all of mode, the worst case in of was recorded.

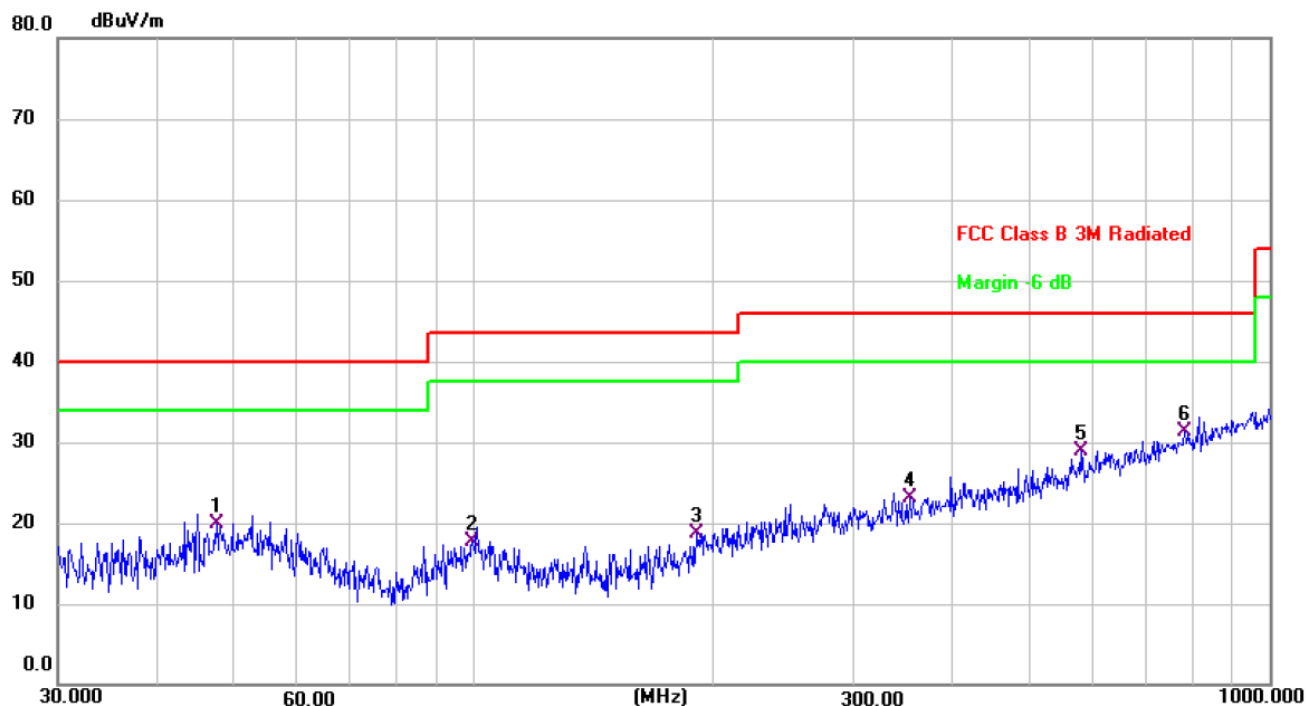


Factor = antenna factor + cable loss – pre-amplifier.

Margin = Emission Level(Meter Reading+ Factor) - Limit.



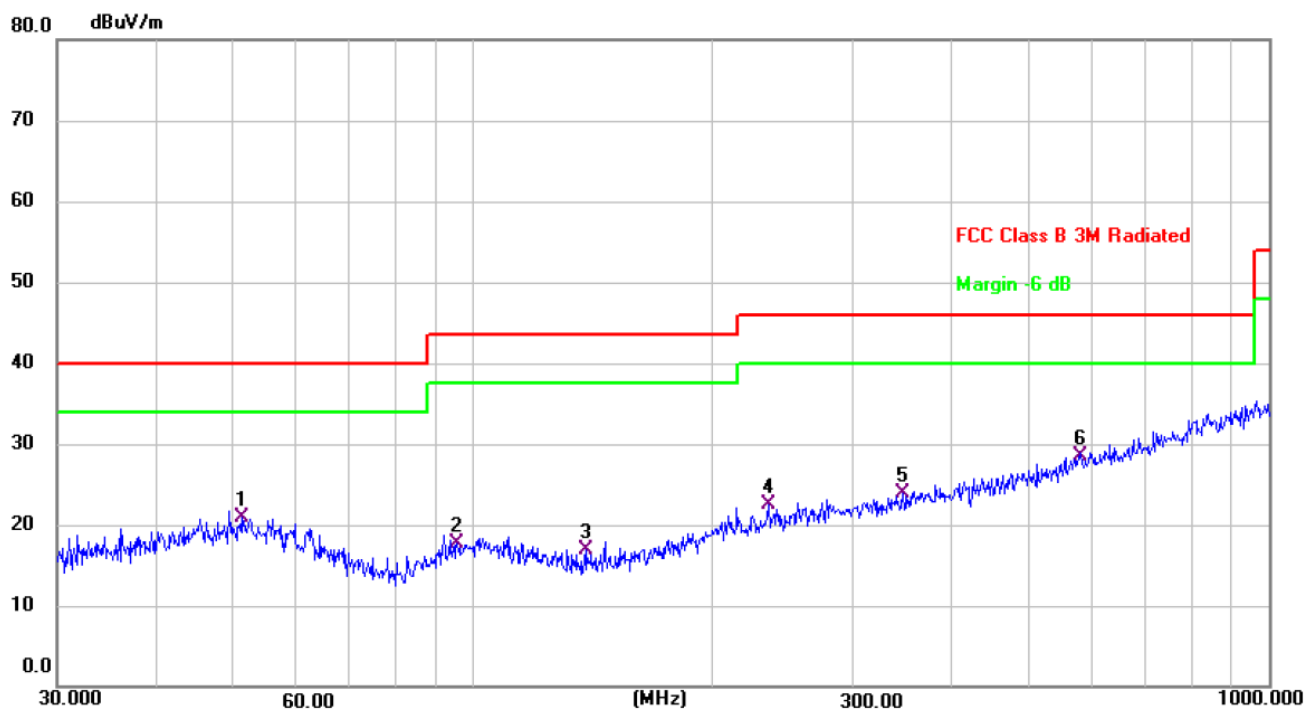
Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 7



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.4917	31.57	-11.76	19.81	40.00	-20.19	QP
2	99.5281	31.21	-13.58	17.63	43.50	-25.87	QP
3	190.4050	32.41	-13.70	18.71	43.50	-24.79	QP
4	352.9433	32.29	-9.15	23.14	46.00	-22.86	QP
5	578.6700	34.03	-5.11	28.92	46.00	-17.08	QP
6 *	782.3453	33.16	-1.93	31.23	46.00	-14.77	QP



Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 7



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	51.1210	32.37	-11.53	20.84	40.00	-19.16	QP
2	95.4270	31.99	-14.34	17.65	43.50	-25.85	QP
3	138.3873	32.92	-16.04	16.88	43.50	-26.62	QP
4	234.9910	34.11	-11.67	22.44	46.00	-23.56	QP
5	346.8092	33.18	-9.26	23.92	46.00	-22.08	QP
6 *	578.6700	33.62	-5.11	28.51	46.00	-17.49	QP

Remarks:

- 1.Final Level =Receiver Read level + Correct factor (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.



7. BANDWIDTH TEST

7.1 TEST SETUP

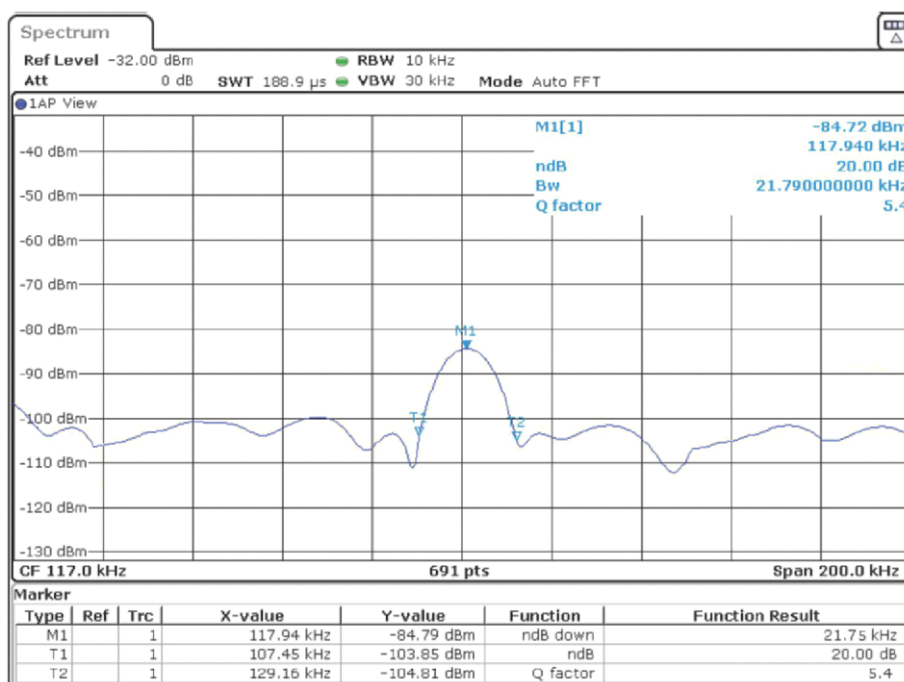
1. Set RBW = 10 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude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

7.2 TEST SETUP



7.3 TEST Result

Frequency (KHz)	20dB bandwidth (KHz)	Result
117.94	21.79	Pass





8. SETUP PHOTOGRAPHS

Reference to the setup photo for details.

9. EUT PHOTOGRAPHS

Reference to the external and internal photo for details.

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