FCC TEST REPORT

FCC ID: 2A5WY-F3001

Product	:	Wireless Charging Station
Basic model	:	F3002
Serial model	:	F3001,F300211110,F300251111,F300212110,F300252111,F300111110,F300151111,F300112110,F300152111
Brand	:	N/A
Report No.	:	PTC22031402102E-FC01

Prepared for

Dongguan Nuomi Innovation Technology Co., Ltd.

Room 501, Building 1, No. 7 Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province

Prepared by

Precise Testing & Certification Co., Ltd.

Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

1 TEST RESULT CERTIFICATION

Applicant's name	:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address	:	Room 501, Building 1, No. 7 Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province
Manufacture's name	:	Dongguan Nuomi Innovation Technology Co., Ltd.
Address	:	Room 501, Building 1, No. 7 Industrial North Road, Songshan Lake Park, Dongguan City, Guangdong Province
Product name	:	Wireless Charging Station
Basic model	:	F3002
Serial model	:	F3001,F300211110,F300251111,F300212110,F300252111,F300111110,F300151111, F300112110,F300152111
Standards	:	FCC Part15 Subpart C
Test procedure	:	ANSI C63.10:2013
Test Date	:	Mar. 21, 2022 to Apr. 28, 2022
Date of Issue	:	Apr. 28, 2022
Test Result	:	Pass

This device described above has been tested by PTC, 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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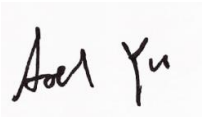
Test Engineer:



Abel Yu / Engineer

Technical Manager:

Ronnie Liu / Manager

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2 Test Summary

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 General Information

3.1 General Description of E.U.T.

Product Name	:	Wireless Charging Station
Basic model	:	F3002
Serial model	:	F3001,F300211110,F300251111,F300212110,F300252111,F300111110,F300151111,F300112110,F300152111 Note:F3002 double coil part with watch bracket, F3001 does not have watch bracket, other coil parts are the same; F300211110, F300251111, F300212110, F300252111 and F3002 with the same product, the model name is different; F300111110, F300151111, F300112110, F300152111 and F3001 same product, different model name.
Operation Frequency	:	110-205KHz
Type of Modulation	:	ASK
Antenna installation	:	Inductive loop coil Antenna
Antenna Gain	:	0 dBi
Power supply	:	Adapter: Model:A653-2402700U Input: 100-240V~ 50/60Hz, 1.5A Output: DC 24V, 2.7A Monocoil:5W Twin coil:15W
Hardware Version	:	N/A
Software Version	:	N/A

3.2 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 (Twin coil (Mobile phone load)+ Monocoil Load:15W+5W)
Mode 2	EUT+Mobile phone load (15W)
Mode 3	EUT+Monocoil Load (5W)

For Conducted Emission	
Final Test Mode	Description
Mode 1	Full load, Wireless charger module (Twin coil (Mobile phone load)+ Monocoil Load:15W+5W)

For Radiated Emission	
Final Test Mode	Description
Mode 1	Full load, Wireless charger module (Twin coil (Mobile phone load)+ Monocoil Load:15W+5W)

Note:

(1) Test channel is 0.1250MHz.

(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.

(3) All modes have been tested. This report only show the test result of the worst case(Full load).

(4)Upper and lower coil of Twin coil, in which the upper coil is the worst mode.

3.3 Test Site

Precise Testing & Certification Co., Ltd.

Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Last calibration	Calibration Due	Calibration period
MXG Signal Analyzer	Agilent	N9020A	MY56070279	Aug. 21, 2021	Aug. 20, 2022	1 year
Spectrum Analyzer	Rohde&Schwarz	FSU26	1166.1660.26	Aug. 21, 2021	Aug. 20, 2022	1 year
Coaxial Cable	CDS	79254	46107086	Aug. 21, 2021	Aug. 20, 2022	1 year
Power Meter	Anritsu	ML2495A	0949003	Aug. 21, 2021	Aug. 20, 2022	1 year
Power Sensor	Anritsu	MA2411B	0917017	Aug. 21, 2021	Aug. 20, 2022	1 year

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Radiated Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Last calibration	Calibration Due	Calibration period
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	Aug. 21, 2021	Aug. 20, 2022	1 year
Loop Antenna	Schwarzbeck	FMZB 1519	012	Aug. 21, 2021	Aug. 20, 2022	1 year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	Aug. 21, 2021	Aug. 20, 2022	1 year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	Aug. 21, 2021	Aug. 20, 2022	1 year
Cable	Schwarzbeck	PLF-100	549489	Aug. 21, 2021	Aug. 20, 2022	1 year
Spectrum Analyzer	Agilent	E4407B	MY45109572	Aug. 21, 2021	Aug. 20, 2022	1 year
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	Aug. 21, 2021	Aug. 20, 2022	1 year
Power Amplifier	LUNAR EM	LNA1G18-40	J101000000081	Aug. 21, 2021	Aug. 20, 2022	1 year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-181	Aug. 21, 2021	Aug. 20, 2022	1 year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	Aug. 21, 2021	Aug. 20, 2022	1 year
Cable	H+S	CBL-26	N/A	Aug. 21, 2021	Aug. 20, 2022	1 year

RF Cable	R&S	R204	R21X	Aug. 21, 2021	Aug. 20, 2022	1 year

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Last calibration	Calibration Due	Calibration period
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	Aug. 21, 2021	Aug. 20, 2022	1 year
Artificial Mains Network	Rohde&Schwarz	L2-16B	000WX31025	Aug. 21, 2021	Aug. 20, 2022	1 year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	Aug. 21, 2021	Aug. 20, 2022	1 year

4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9KHz~30MHz)	±3.15dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

4.3 Description of Support Units

Equipment	Model No.	Technical Parameters
Mobile phone	iPhone 13	7.5W/15W
Wireless charging load	KAZIDUN	5W/7.5W/10W/15W

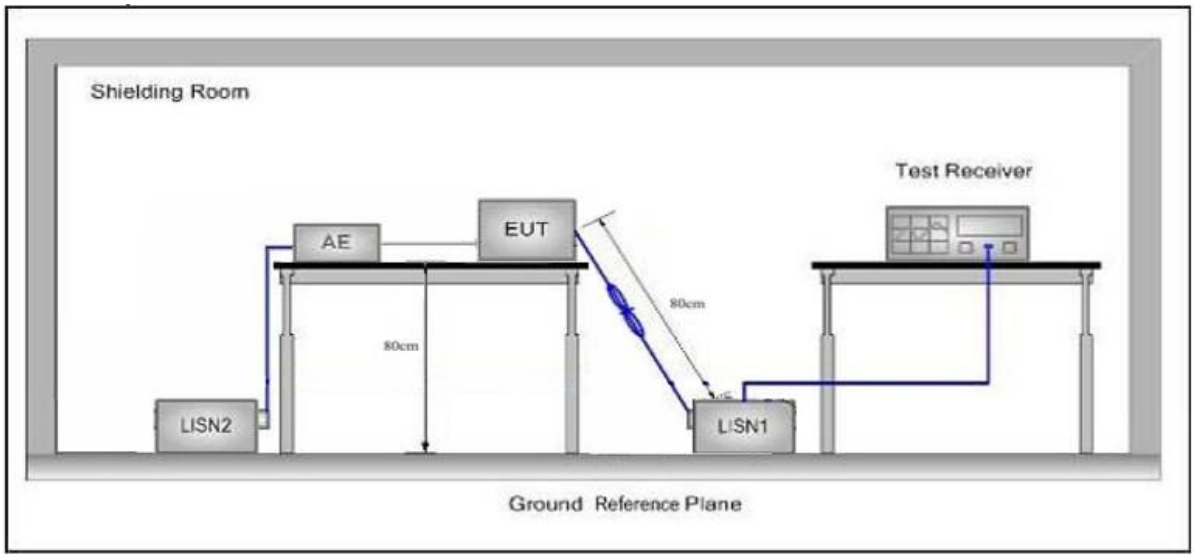
Adapter	A653-2402700U	DC 24V,2.7A

5 Conducted Emission

5.1 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.			

5.2 Test Setup



5.3 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.

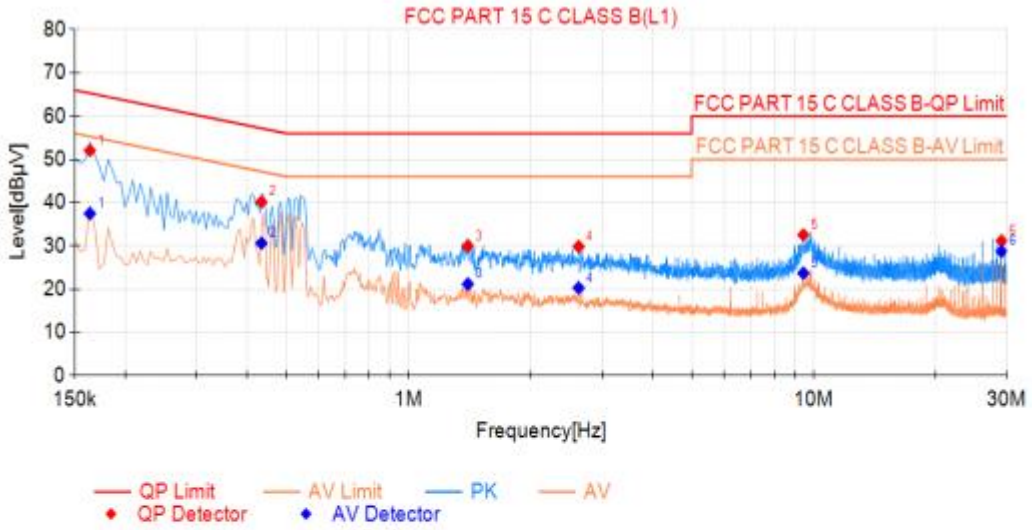
5.4 Test Data

Please to see the following pages

Note:During the test, pre-scan 120Vac/60Hz and 240Vac/60Hz of the Power supply, found 120Vac/60Hz was worse case,mode, the report only reflects the worst mode.

Conducted Emission Test Data

Operating Condition:	Mode 1
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Live Line
	Tem.: 25℃ Hum.: 60%



Final Data List

NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1635	52.05	65.28	13.23	37.47	55.28	17.81	PASS
2	0.4335	40.15	57.19	17.04	30.62	47.19	16.57	PASS
3	1.401	29.95	56.00	26.05	21.19	46.00	24.81	PASS
4	2.6295	29.86	56.00	26.14	20.29	46.00	25.71	PASS
5	9.4335	32.53	60.00	27.47	23.68	50.00	26.32	PASS
6	29.094	31.14	60.00	28.86	28.74	50.00	21.26	PASS

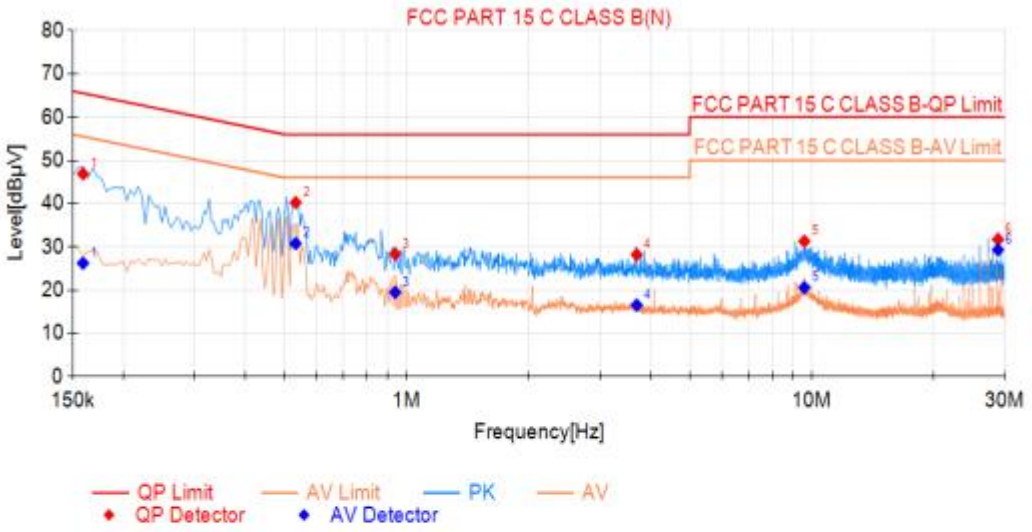
Conducted Emission Test Data

Operating Condition: Mode 1

Test Specification: AC 120V, 60Hz for adapter

Comment: Neutral Line

Tem.: 25℃ Hum.: 60%



Final Data List								
NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.159	46.90	65.52	18.62	26.22	55.52	29.30	PASS
2	0.5325	40.24	56.00	15.76	30.78	46.00	15.22	PASS
3	0.9375	28.40	56.00	27.60	19.49	46.00	26.51	PASS
4	3.7005	28.21	56.00	27.79	16.54	46.00	29.46	PASS
5	9.591	31.30	60.00	28.70	20.63	50.00	29.37	PASS
6	28.8375	31.70	60.00	28.30	29.34	50.00	20.66	PASS

6 Radiation Spurious Emission and Band Edge

6.1 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.

6.2 Test Setup

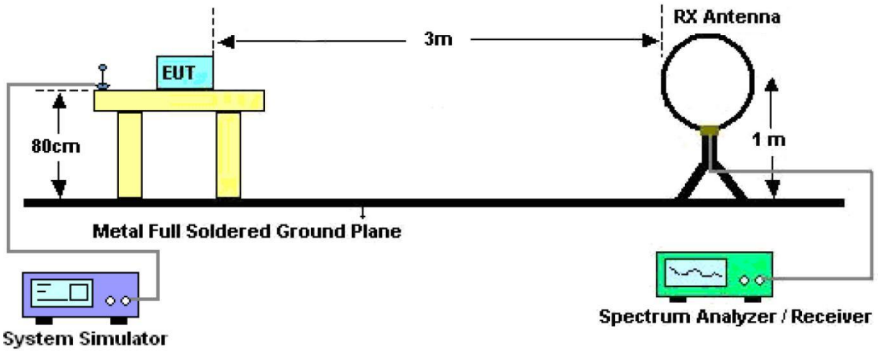


Figure 1. Below 30MHz

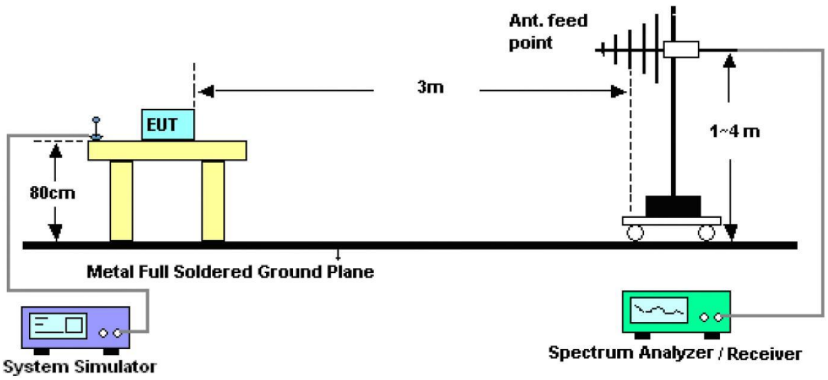


Figure 2. 30MHz to 1GHz

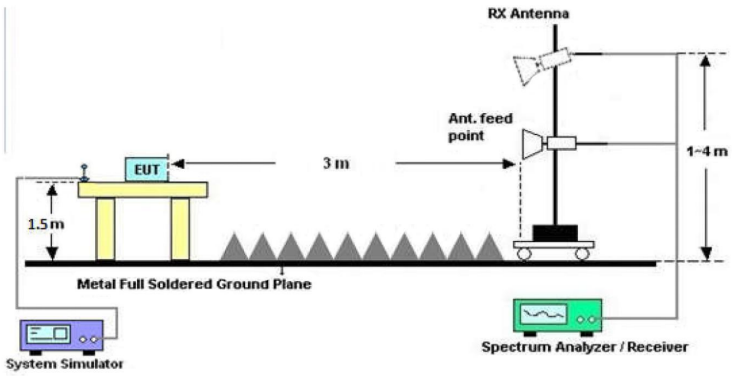


Figure 3. Above 1 GHz

6.3 Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m 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.

6.4 Test Data

PASS

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

Test Results (9K~30MHz)

Test Mode: Mode 1

Power Source: AC 120V, 60Hz for adapter

Temp.(℃)/Hum.(%RH): 24.7℃/51%RH

Distance: 3m

WORST-CASE RADIATED EMISSION BELOW 30 MHz

Frequency (MHz)	Read Level (dBuV)	Polar	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
0.1250(F)	56.29	Loop	19.30	2.54	0	78.13	105.84	-27.71	Peak
0.1250(F)	42.94	Loop	19.30	2.54	0	64.78	85.84	-21.06	AV
0.110	34.29	Loop	19.28	2.53	0	56.10	106.78	-50.68	Peak
0.110	25.46	Loop	19.28	2.53	0	47.27	86.78	-39.51	AV
0.2459	32.72	Loop	19.30	2.54	0	54.56	119.75	-65.19	Peak
0.2459	24.94	Loop	19.30	2.54	0	46.78	99.75	-52.97	AV
0.5082	30.44	Loop	19.53	2.59	0	52.33	73.48	-21.15	QP
0.9858	24.25	Loop	19.53	2.59	0	46.37	67.72	-21.35	QP
2.5380	25.76	Loop	19.53	2.59	0	47.88	69.54	-21.66	QP

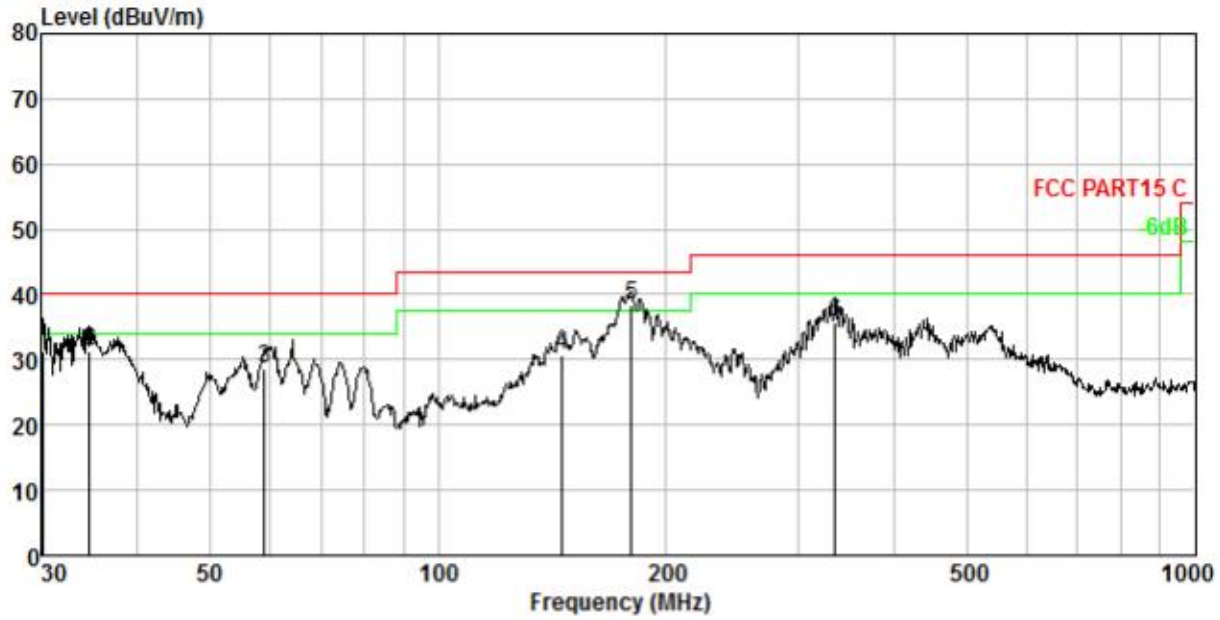
Remark：

Level=Receiver level+Antenna Factor+Cable Loss

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.

Test Results (30~1000MHz)

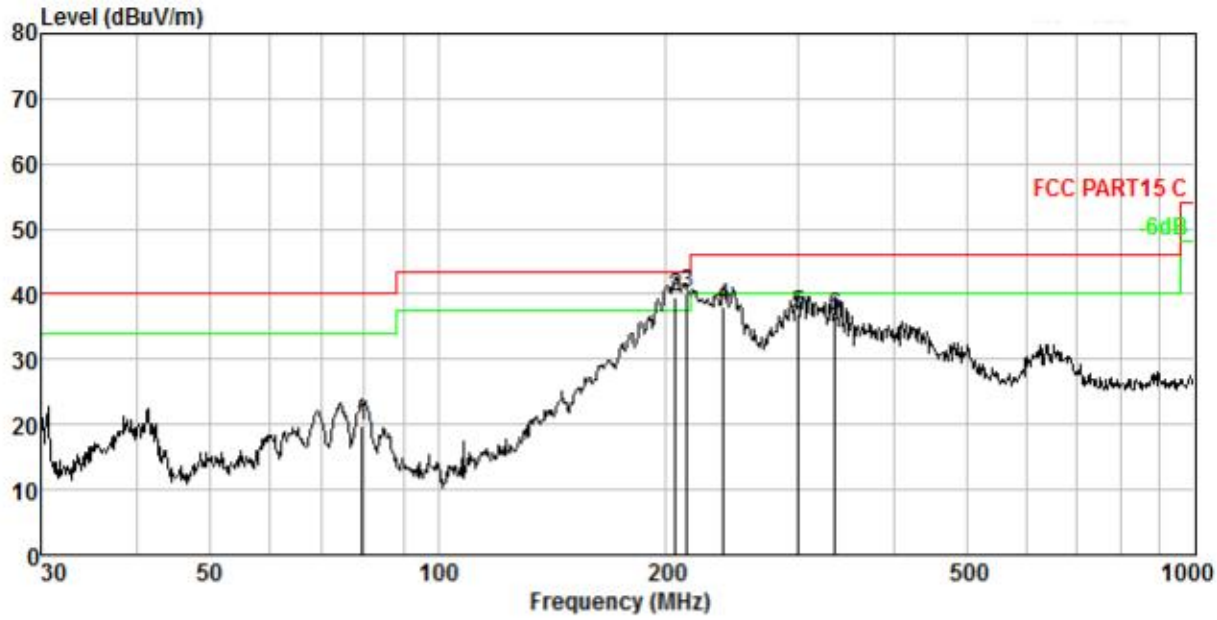
Test Mode:	Mode 1
Power Source:	AC 120V, 60Hz for adapter
Polarization:	Vertical
Temp.(℃)/Hum.(%RH):	24.5℃/52%RH
Distance:	3m



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	30.105	1.21	11.71	48.19	29.89	31.22	40.00	-8.78	QP
2.	34.639	1.45	12.17	47.43	29.90	31.15	40.00	-8.85	QP
3.	59.025	2.36	11.78	44.41	29.94	28.61	40.00	-11.39	QP
4.	145.861	3.92	13.55	43.11	30.02	30.56	43.50	-12.94	QP
5.	180.017	4.28	12.50	51.56	30.03	38.31	43.50	-5.19	QP
6.	334.859	5.35	14.06	46.71	30.47	35.65	46.00	-10.35	QP

Test Results (30~1000MHz)

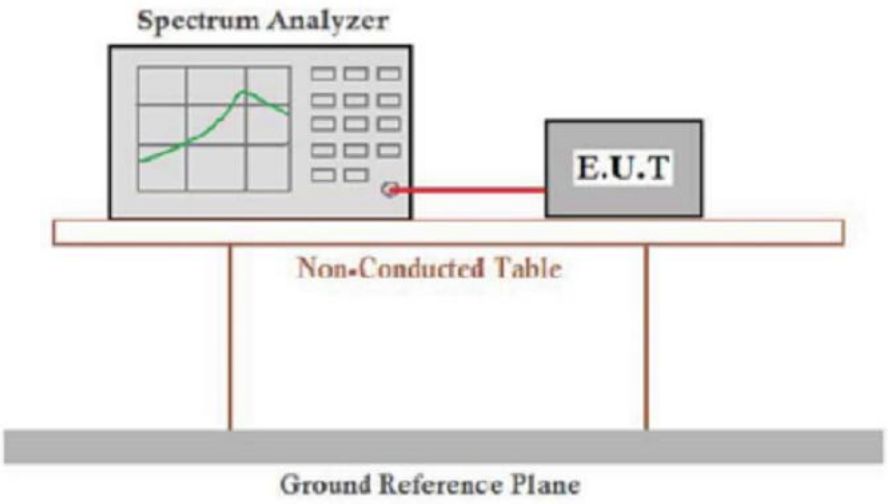
Test Mode:	Mode 1
Power Source:	AC 120V, 60Hz for adapter
Polarization:	Horizontal
Temp.(℃)/Hum.(%RH):	24.5℃/52%RH
Distance:	3m



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	79.521	2.88	9.04	37.84	29.97	19.79	40.00	-20.21	QP
2.	206.398	4.51	11.21	53.96	30.06	39.62	43.50	-3.88	QP
3.	213.763	4.57	11.45	54.20	30.09	40.13	43.50	-3.37	QP
4.	238.310	4.76	12.18	51.29	30.16	38.07	46.00	-7.93	QP
5.	299.316	5.16	13.19	48.85	30.32	36.88	46.00	-9.12	QP
6.	334.859	5.35	14.06	47.61	30.47	36.55	46.00	-9.45	QP

7 20dB Bandwidth

7.1 Block Diagram of Test Setup



7.2 Rules and specifications

DFR 47 Part 15.215(c)

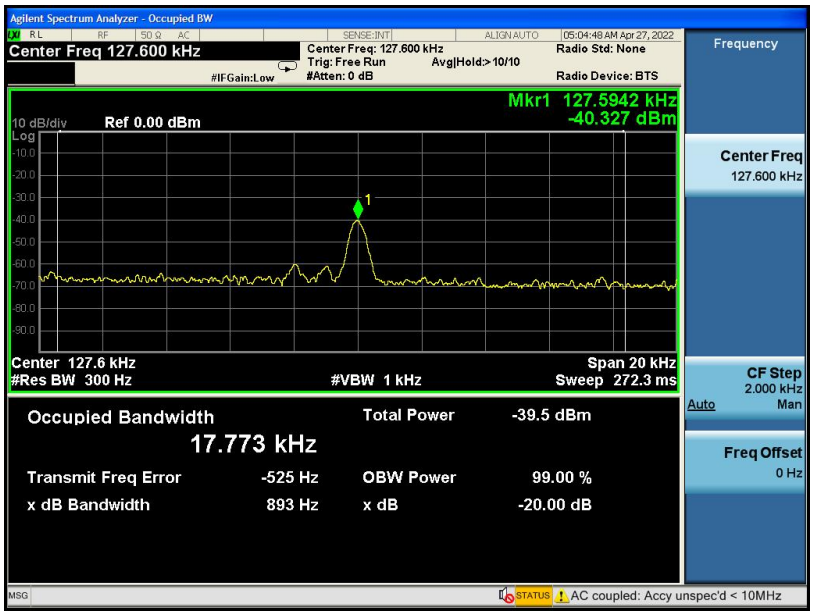
ANSI C63.10-2013

7.3 Test Procedure

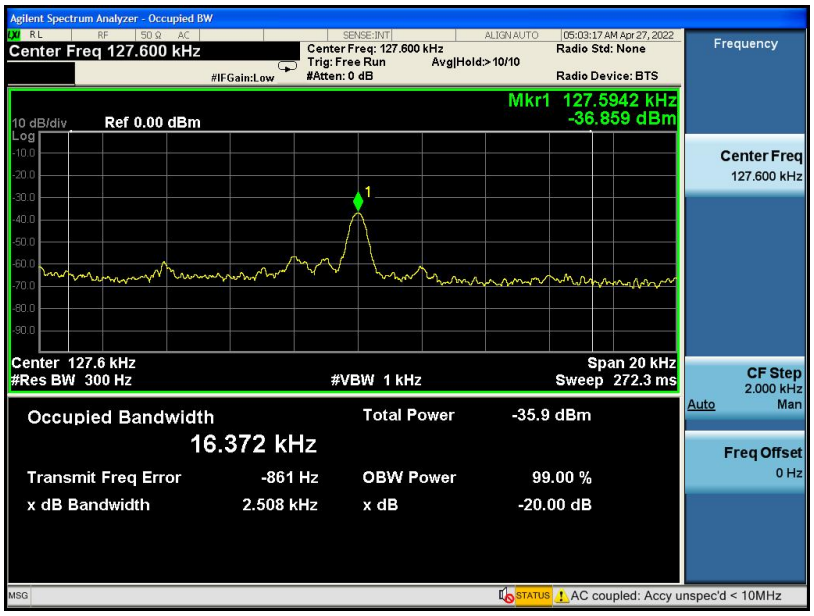
Intentional radiator operating under the altemative provisions to the general emission limits,as contained in 15.217 and in subpart E of this part,must be designed to ensure that 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equip compliance with the 20dB attenuation specification may base on measurement at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be deomonstrated by measuring the radiated emissions.

7.4 Result

Pass.



Twin coil



Monocoil

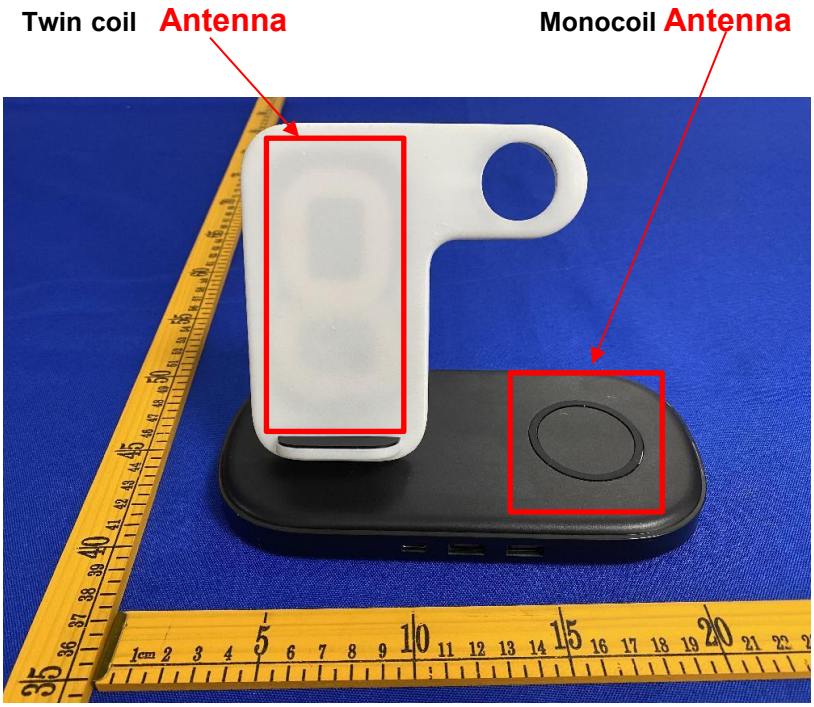
8 Antenna Requirement

8.1 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 be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

8.2 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.

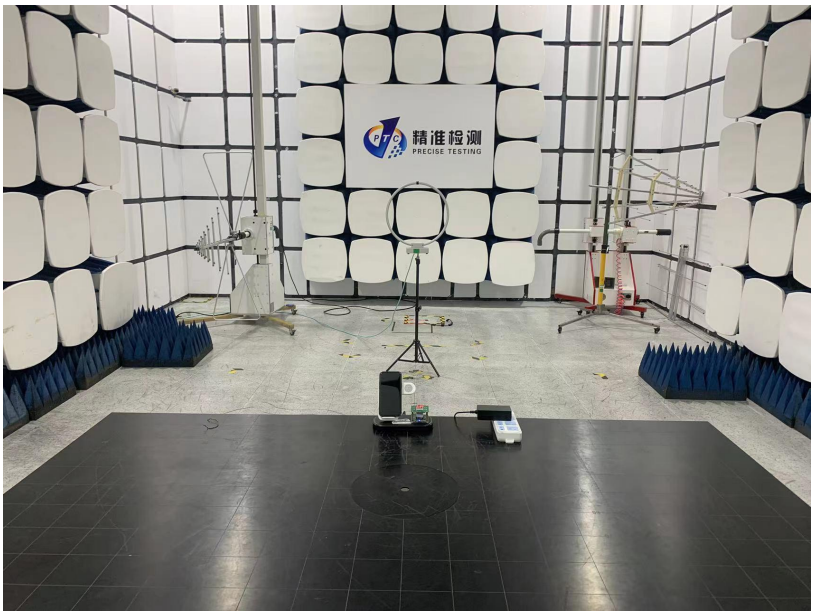


APPENDIX I -- TEST SETUP PHOTOGRAPH

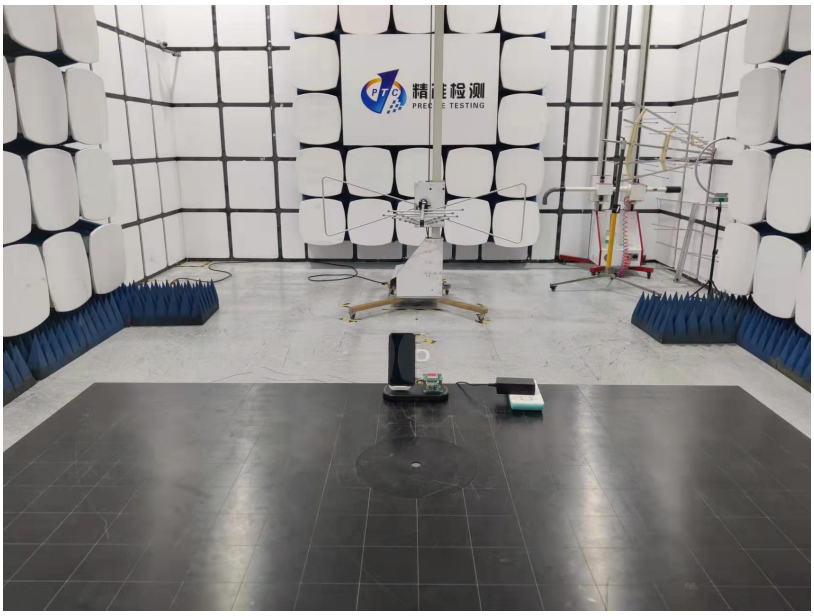
Photo of Conducted Emission Measurement

Photo of Radiation Emission Test

9kHz-30MHz



30MHz-1GHz



APPENDIX II -- EXTERNAL PHOTOGRAPH

Model:F3002

Model:F3002

Model:F3002

Model:F3002

Model:F3002

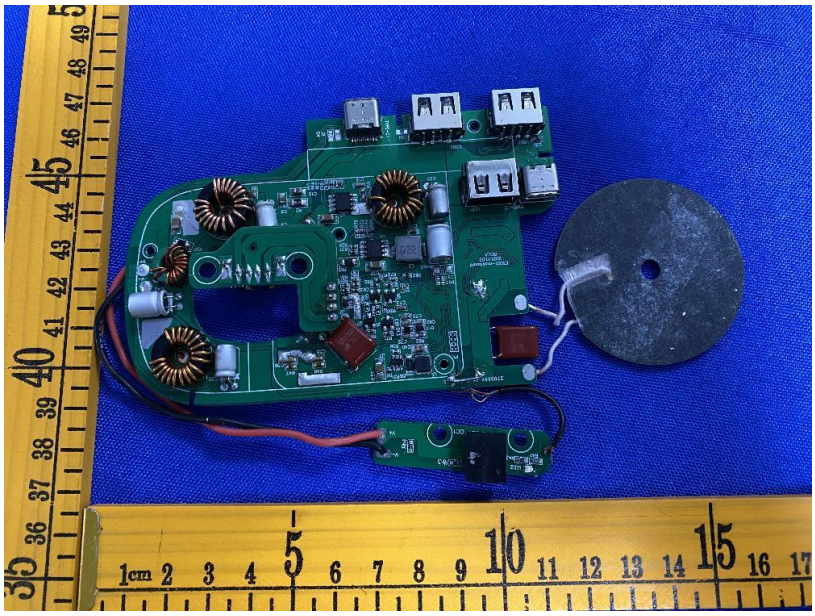
Model:F3002

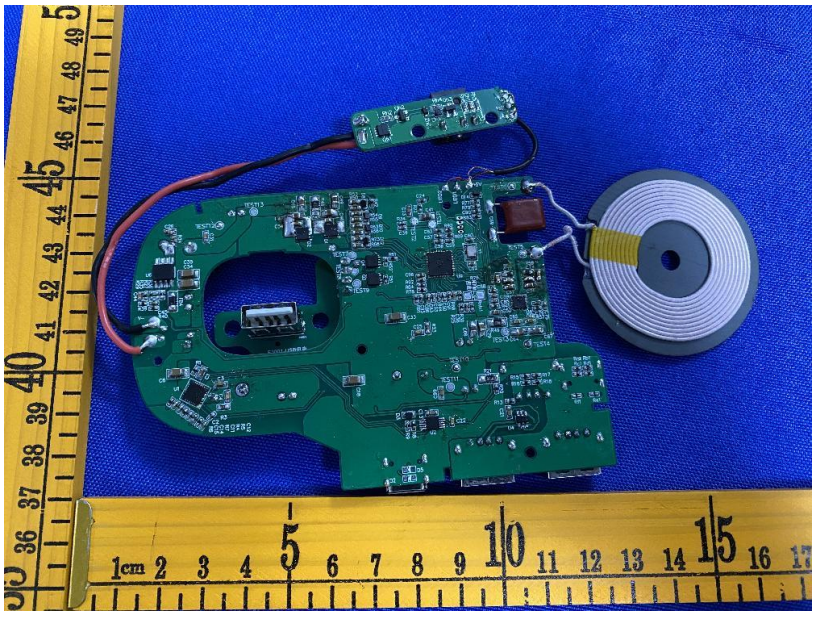
Model:F3002

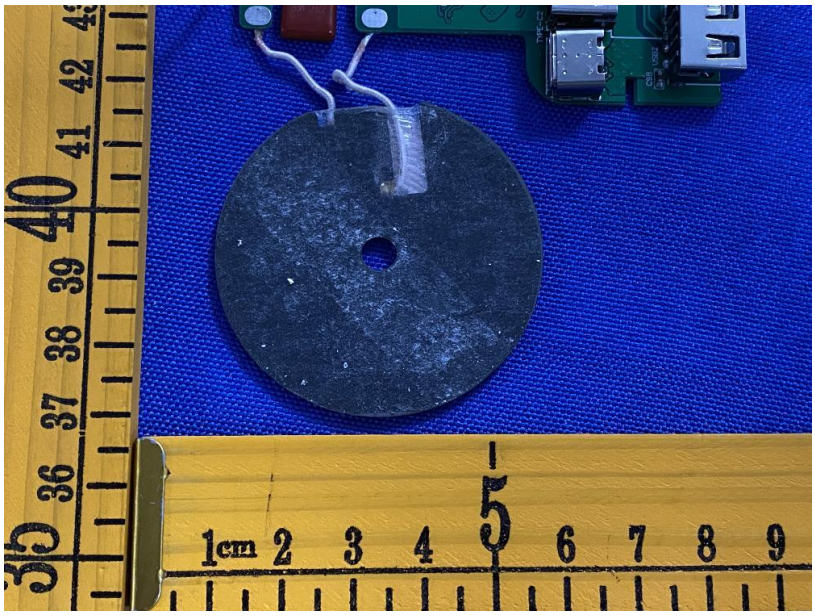
Model:F3001

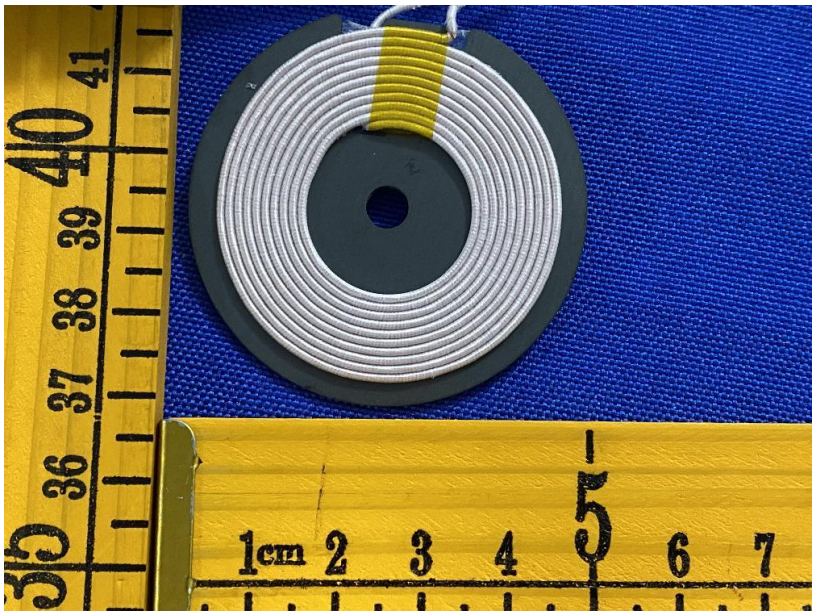

XinSPower Power Supply
MODEL:A653-2402T00U
INPUT:100-240V~
50/60Hz 1.5A
OUTPUT:24.0V⎓2.7A
LISTED
POWER SUPPLY
Shenzhen Xinspower Technology Co.,Ltd
2214

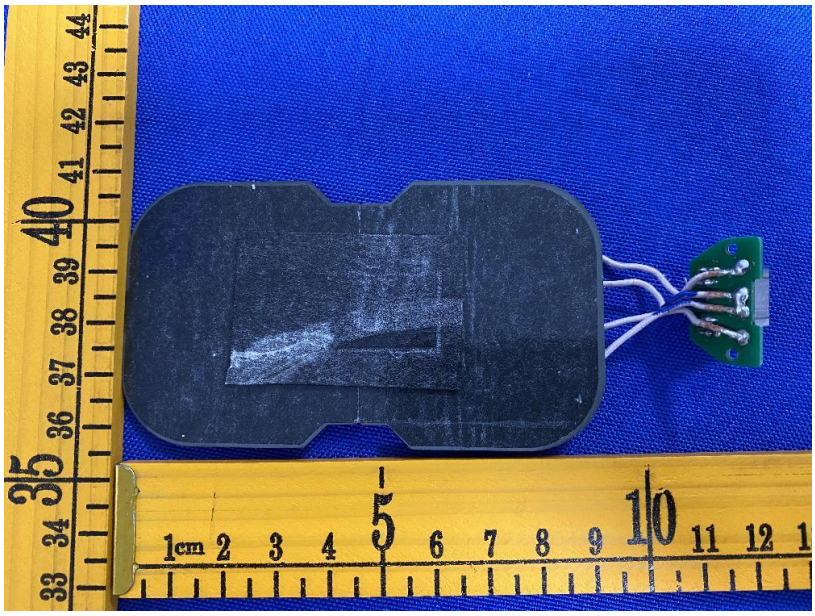
APPENDIX III -- INTERNAL PHOTOGRAPH

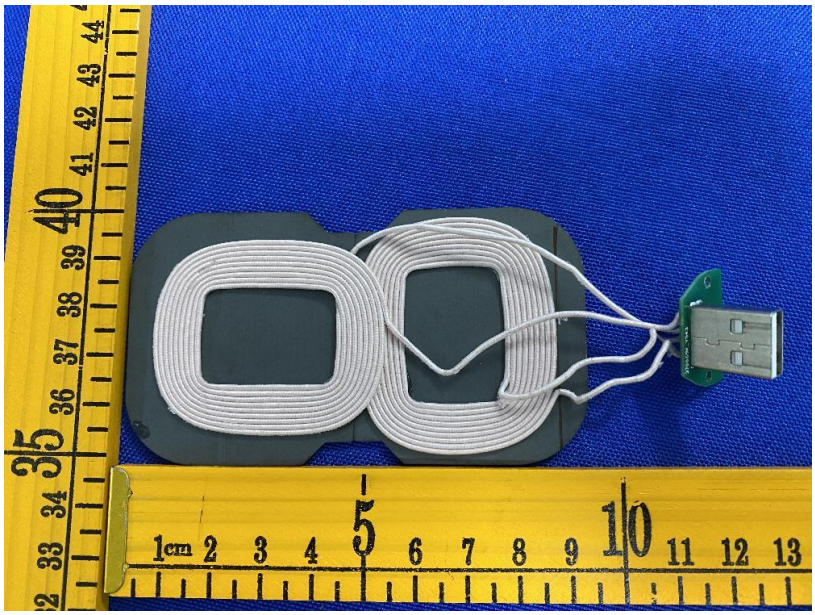





1cm 2 3 4 5 6 7 8 9


1cm 2 3 4 5 6 7





********THE END REPORT********