

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

Magnetic wireless power bank

Model No.: DB01

Trademark: N/A

FCC ID: 2AZTTDB01

Report No.: EA21040548F03001

Issue Date: May 12, 2021

Prepared for

Dongguan Xiaogu Electronic Technology Co., Ltd

**Room 601, 6th Floor, R&D Building, No2 Longpu Road, Longbeiling
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Prepared by

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Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr.,
China.**

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Dong Guan Anci Electronic Technology Co., Ltd.**

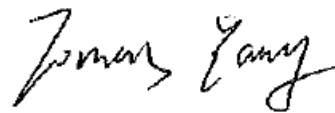
VERIFICATION OF COMPLIANCE

Applicant:	Dongguan Xiaogu Electronic Technology Co.,Ltd Room 601, 6th Floor, R&D Building, No2 Longpu Road, Longbeiling Community, Tangxia Town, Dongguan City, China
Manufacturer:	Dongguan Xiaogu Electronic Technology Co.,Ltd Room 601, 6th Floor, R&D Building, No2 Longpu Road, Longbeiling Community, Tangxia Town, Dongguan City, China
Product Description:	Magnetic wireless power bank
Trade Mark:	N/A
Model Number:	DB01

We hereby certify that:

The above equipment was tested by Dong Guan Anci Electronic Technology Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.209(2020).

Date of Test : May 05, 2021 to May 11, 2021



Prepared by :

Tomas Yang/Supervisor



Reviewer &
Authorized Signer :

Alan He/Manager



Report No.: EA21040548F03001

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Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	EA21040548F03001



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1 General Information

1.1 Product Description

Characteristics	Description
Product Name	Magnetic wireless power bank
Model number	DB01
Operation Mode	Wireless Charging
Input Rating	TYPE-C: 5V/3A 9V/2A 12V/1.5A Lightning: 5V/2A
Power Supply	AC120V/60Hz for adapter
Operating Frequency	110-205KHz
Wireless Charging Power	15W Max
Modulation Technique	ASK
Antenna Type	Induction coil

1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: 2AZTTDB01 filing to comply with the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description EMC Lab.	:	Accredited by CNAS, 2017.06.26 The certificate is valid until 2022.10.28 The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L6214. Accredited by A2LA, 2018.03.15 The Certificate Number is 4422.01.
Name of Firm	:	Dong Guan Anci Electronic Technology Co., Ltd.
Site Location	:	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan, Lake Hi-tech Industrial Development Zone, Dongguan City, development Zone, Dongguan City, Guangdong Pr., China.

2 System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the fixed in a particular direction according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

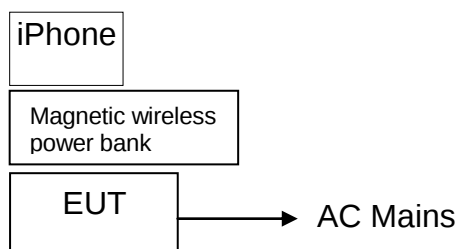


Table 2-1 Equipment Used in Tested System

Item	Equipment	Trade Mark	Model No.	FCC ID	Note
1.	Magnetic wireless power bank	N/A	DB01	2AZTTDB01	<i>EUT</i>
2.	Adapter	UGREEN	Model:CD217 Input: AC 100-240V, 50/60Hz Output: DC 9V/3A,DC 12V/2.5A	N/A	<i>Support EUT</i>
3.	SAMSUNG S9	SAMSUNG	Samsung Galaxy S9	N/A	<i>Support Equipment</i>
4.	Xiaomi 9	MI	Xiaomi 9	N/A	<i>Support Equipment</i>
5.	Wireless Charging Receiver Module	Universal	N/A	N/A	<i>Support Equipment</i>

Note:

- (1) Unless otherwise denoted as EUT in 『Remark』 column, device(s) used in tested system is a support equipment.

3 Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	AC Power Conducted Emission	Compliant
§15.209	Radiated Emission	Compliant
§2.1049	20dB Bandwidth	Compliant
§15.203	Antenna Requirement	Compliant

4 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Conducted Emissions Test	$\pm 2.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Temperature	$\pm 0.5^{\circ}\text{C}$
Humidity	$\pm 3\%$

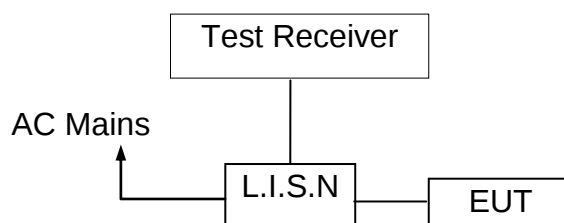
Remark: The coverage Factor ($k=2$), and measurement Uncertainty for a level of Confidence of 95%

5 Conducted Emissions Test

5.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.2 Test SET-UP (Block Diagram of Configuration)



5.3 Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	Calibrated until
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-669	2021-05-18
10 db attenuator	JFW	50FP-010-H4	4360846-427-1	2021-05-18
RF Cable	N/A	N/A	2#	2021-05-18
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101358	2021-05-18

5.4 Conducted Emission Limit

Conducted Emission Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

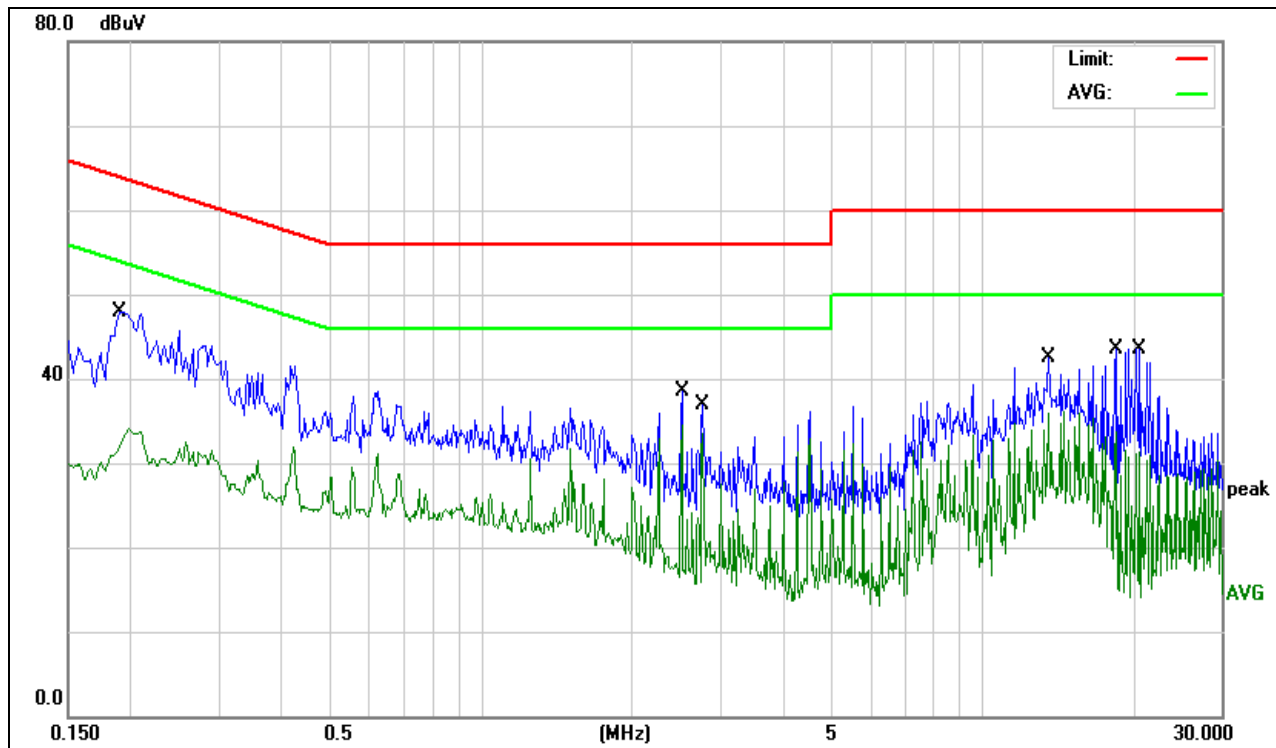
- Note:** 1. The lower limit shall apply at the transition frequencies
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.5 Measurement Result

Operation Mode:	TX	Test Date :	2021/05/10
Frequency Range:	0.15MHz~30MHz	Temperature :	28°C
Test Result:	PASS	Humidity :	65 %
Test By:	Best		

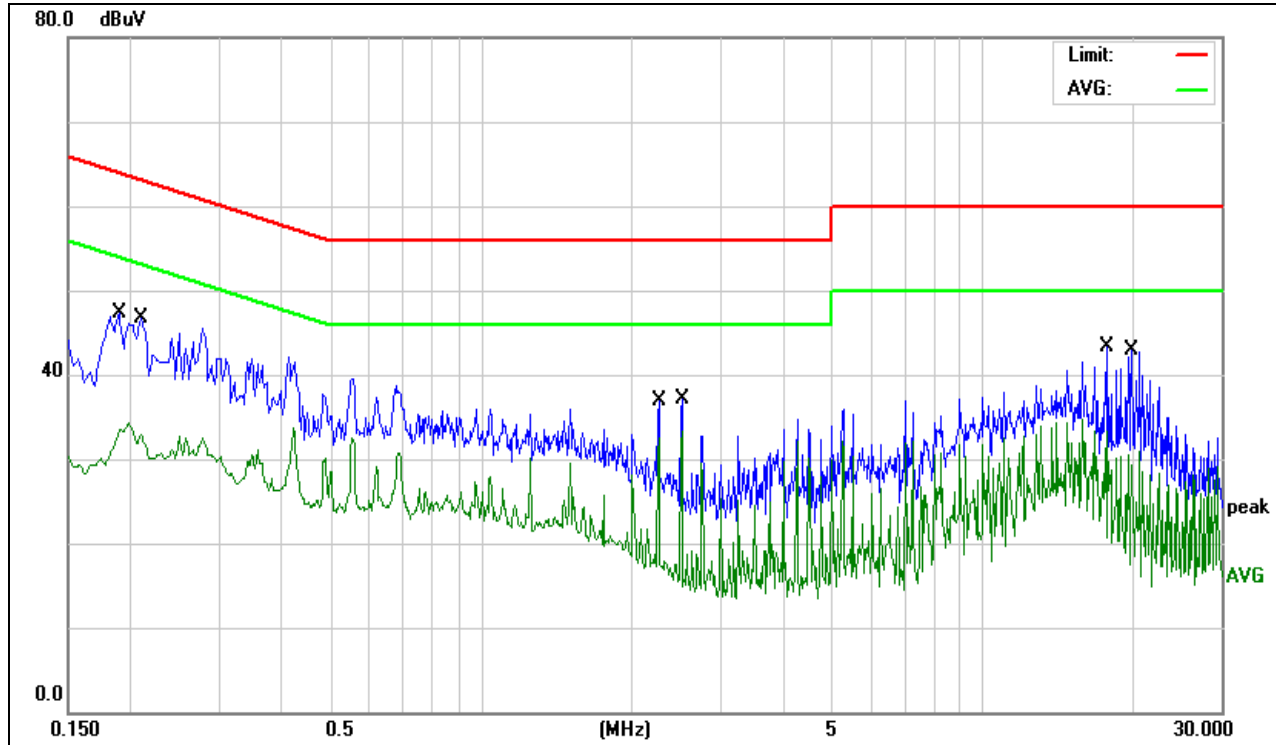
Pass

We pretested modes (Wireless Charging(15W), Wireless Charging(10W),Wireless Charging(5W)) for EUT. The worst test data see follow the table.

Test mode: Wireless Charging 15W use Xiaomi 9


Site:	843	Phase:	L1	Temperature(C):	26(C)
Limit:	FCC Part 18 C Conduction(QP)			Humidity(%):	60%
EUT:	Magnetic wireless power bank	Test Time:	2021/05/10		
M/N.:	DB01	Power Rating:	AC 120V/60Hz		
Mode:	Wireless Charging 15W	Test Engineer:	Jack		
Note:					

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measurement(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1900	35.52	9.65	45.17	64.03	-18.86	QP	
2	0.1900	24.22	9.65	33.87	54.03	-20.16	AVG	
3	2.5139	26.52	9.87	36.39	56.00	-19.61	QP	
4 *	2.5139	24.70	9.87	34.57	46.00	-11.43	AVG	
5	2.7659	23.52	9.86	33.38	56.00	-22.62	QP	
6	2.7659	23.67	9.86	33.53	46.00	-12.47	AVG	
7	13.5777	30.25	10.12	40.37	60.00	-19.63	QP	
8	13.5777	25.72	10.12	35.84	50.00	-14.16	AVG	
9	18.6018	30.14	10.14	40.28	60.00	-19.72	QP	
10	18.6018	23.60	10.14	33.74	50.00	-16.26	AVG	
11	20.6140	30.58	10.14	40.72	60.00	-19.28	QP	
12	20.6140	21.24	10.14	31.38	50.00	-18.62	AVG	



Site:	843	Phase:	N	Temperature(C):	26(C)
Limit:	FCC Part 18 C Conduction(QP)	Test Time:		Humidity(%):	60%
EUT:	Magnetic wireless power bank	Power Rating:		2021/05/10	
M/N.:	DB01	Test Engineer:		AC 120V/60Hz	
Mode:	Wireless Charging 15W			Jack	
Note:					

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1900	35.52	9.65	45.17	64.03	-18.86	QP	
2	0.1900	24.55	9.65	34.20	54.03	-19.83	AVG	
3	0.2099	35.01	9.66	44.67	63.21	-18.54	QP	
4	0.2099	23.36	9.66	33.02	53.21	-20.19	AVG	
5	2.2620	27.00	9.85	36.85	56.00	-19.15	QP	
6	2.2620	22.74	9.85	32.59	46.00	-13.41	AVG	
7	2.5139	25.63	9.87	35.50	56.00	-20.50	QP	
8 *	2.5139	23.37	9.87	33.24	46.00	-12.76	AVG	
9	17.8379	31.20	10.14	41.34	60.00	-18.66	QP	
10	17.8379	23.22	10.14	33.36	50.00	-16.64	AVG	
11	19.8458	32.58	10.14	42.72	60.00	-17.28	QP	
12	19.8458	20.86	10.14	31.00	50.00	-19.00	AVG	

5.6 Conducted Measurement Photo

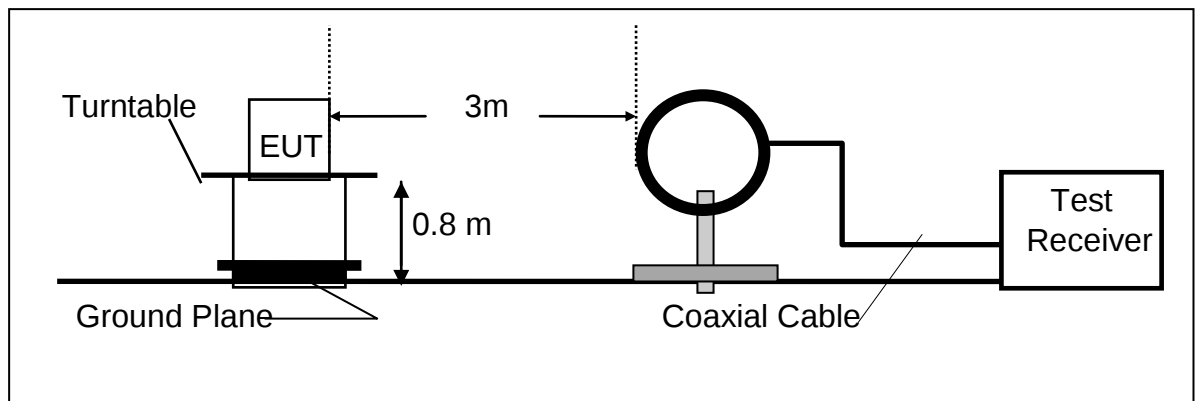
6 Radiated Emission Test

6.1 Measurement Procedure

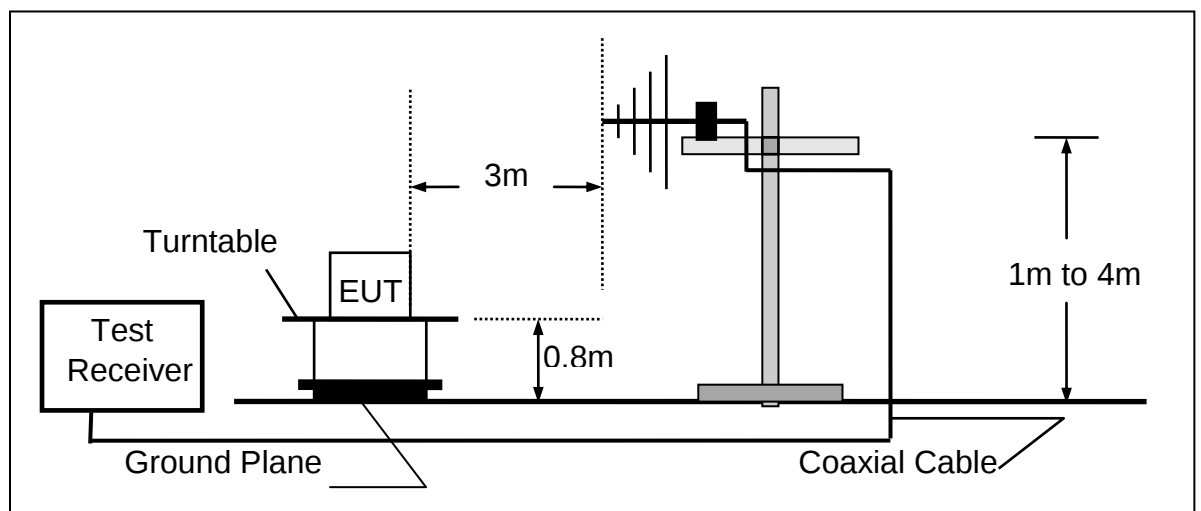
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

6.2 Test SET-UP (Block Diagram of Configuration)

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



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



6.3 Measurement Equipment Used

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1.	EMI Test Receiver	Rohde & Schwarz	ESPI	100502	2021/11/19
2.	Pre-Amplifier	HP	8447D	2727A06172	2021-05-18
3.	Bilog Antenna	Schwarzbeck	VULB9163	VULB9163-588	2021-05-18
4.	Loop Antenna	Schwarzbeck	FMZB 1516	1516-141	2021/11/19
5.	RF Cable	Gigalink Microwave	ZT40-2.92J-2.92 J-2m	N/A	2021/11/19
6.	RF Cable	Gigalink Microwave	ZT40-2.92J-2.92 J-0.3m	N/A	2021/11/19
7.	RF Cable	N/A	N/A	6#	2021-05-18
8.	3m Semi-anechoic Chamber	chengyu	9m*6m*6m	N/A	2021-05-18
9.	Test Software	Farad	EZ-EMC Ver:ANCI-3A1	N/A	N/A

6.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation Frequency tion at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	$2400 / F(\text{KHz})$	300m	$10000 * 2400/F(\text{KHz})$	$20\log 2400/F(\text{KHz}) + 80$
0.490 – 1.705	$24000 / F(\text{KHz})$	30m	$100 * 24000/F(\text{KHz})$	$20\log 24000/F(\text{KHz}) + 40$
1.705 – 30.00	30	30m	$100 * 30$	$20\log 30 + 40$
30.0 – 88.0	100	3m	100	$20\log 100$
88.0 – 216.0	150	3m	150	$20\log 150$
216.0 – 960.0	200	3m	200	$20\log 200$
Above 960.0	500	3m	500	$20\log 500$

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

6.5 Measurement Result

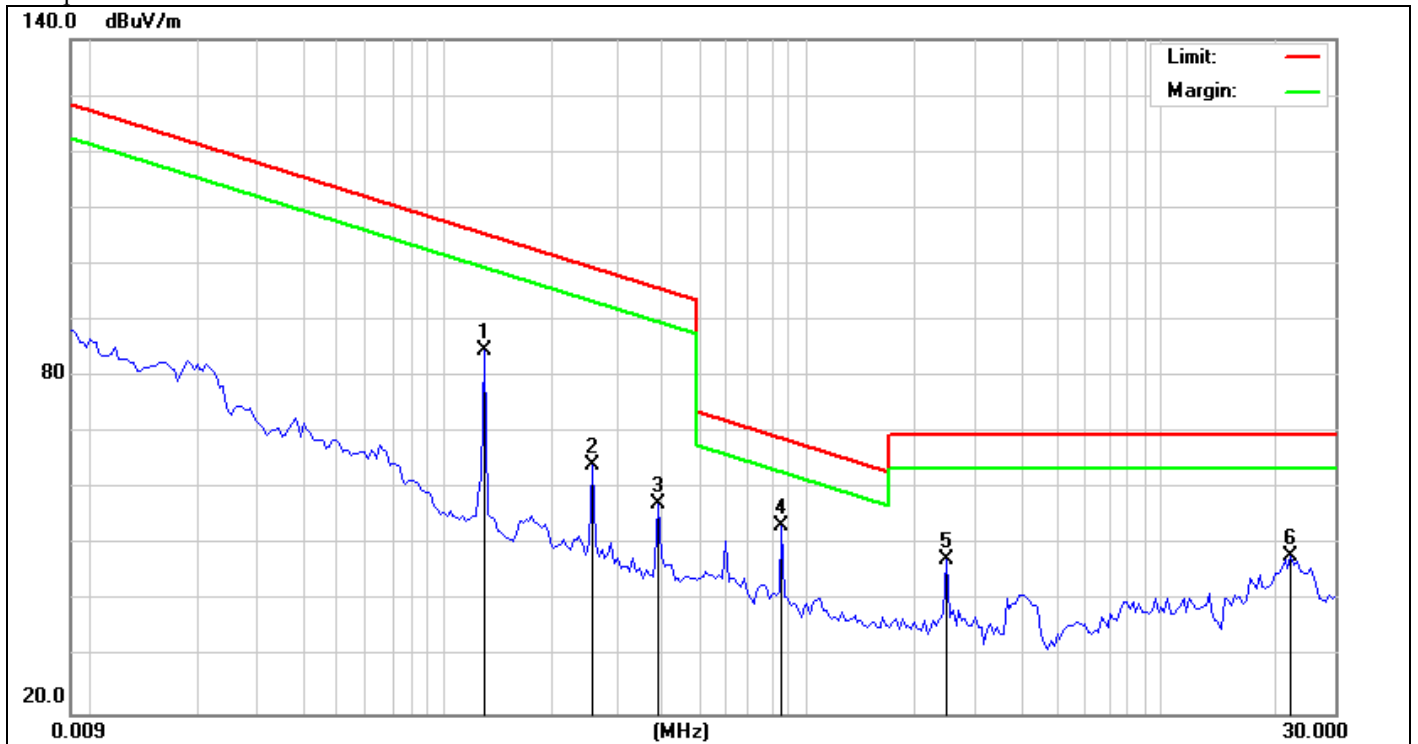
We pretested modes (Wireless Charging(15W), Wireless Charging(10W),Wireless Charging(5W)) for EUT. The worst mode (Wireless Charging(15W))test data see follow the table.



Site:	LAB	Antenna::Vertical	Temperature(C):23.4(C)
Limit:	FCC Part 15 Class B 3m Radiation(QP)	Test Time:	Humidity(%):56.7%
EUT:	Magnetic wireless power bank	Power Rating:	AC 120V/60Hz
M/N.:	DB01	Test Engineer:	sunshine
Mode:	Wireless Charging 15W		
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	0.1257	79.43	6.22	85.65	105.54	-19.89	QP	100	125	
2	0.2605	62.81	5.61	68.42	99.25	-30.83	QP	100	125	
3 *	0.8801	47.56	6.27	53.83	68.73	-14.90	QP	100	48	
4	1.1693	39.61	6.09	45.70	66.27	-20.57	QP	100	48	
5	7.8677	38.76	6.58	45.34	69.50	-24.16	QP	100	236	
6	17.3508	39.96	7.04	47.00	69.50	-22.50	QP	100	236	

*:Maximum data x:Over limit !:over margin



Site:	LAB	Antenna::Horizontal	Temperature(C):23.4(C)
Limit:	FCC Part 15 Class B 3m Radiation(QP)	Test Time:	Humidity(%):56.7%
EUT:	Magnetic wireless power bank	Power Rating:	2021/05/10
M/N.:	DB01	Test Engineer:	AC 120V/60Hz
Mode:	Wireless Charging 15W		sunshine
Note:			

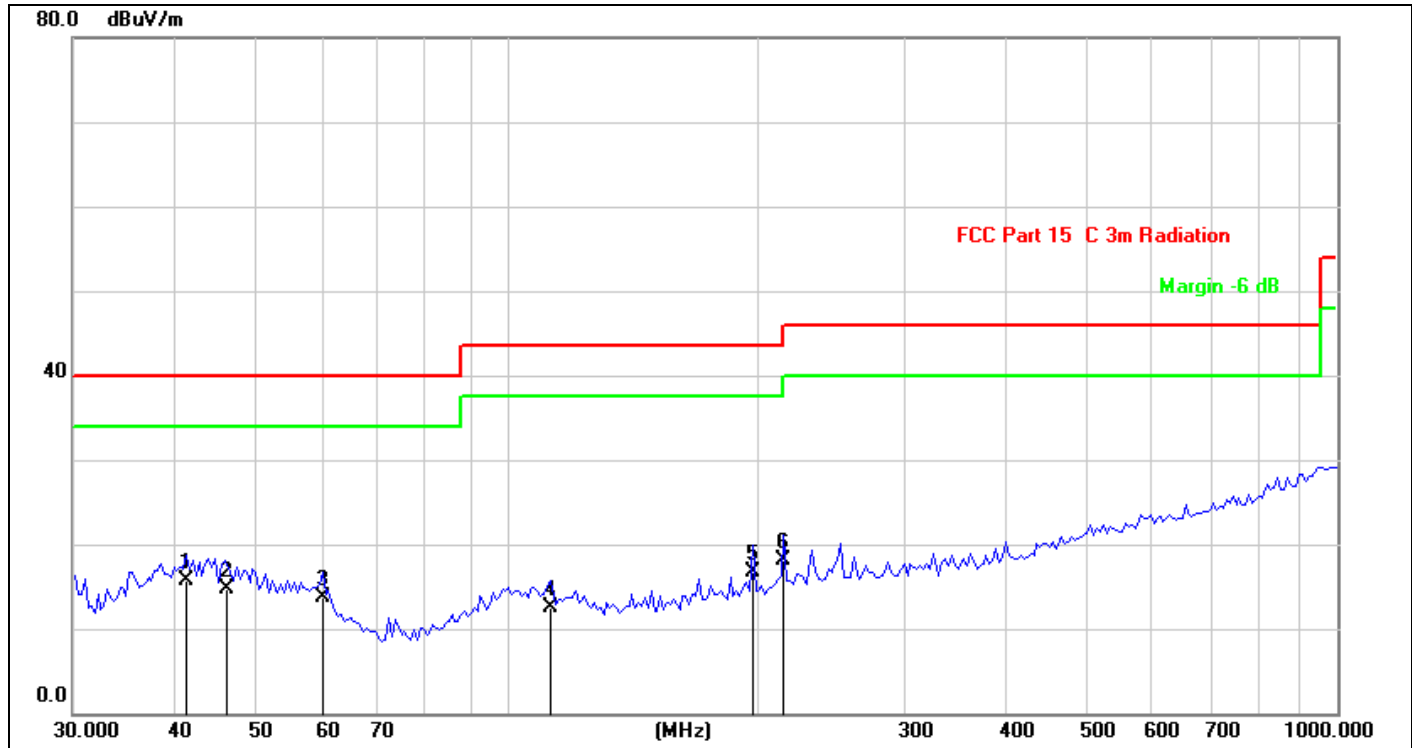
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	0.1282	78.33	6.20	84.53	105.37	-20.84	QP	100	125	
2	0.2555	58.53	5.60	64.13	99.42	-35.29	QP	100	125	
3	0.3911	51.40	5.99	57.39	95.74	-38.35	QP	100	48	
4 *	0.8627	47.09	6.30	53.39	68.90	-15.51	QP	100	48	
5	2.4765	41.01	6.31	47.32	69.50	-22.18	QP	100	236	
6	22.5849	41.49	6.56	48.05	69.50	-21.45	QP	100	236	

Note:

- (1) All Readings are Peak Value.
- (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
- (3) The average measurement was not performed when the peak measured data under the limit of average detection.
- (4) EUT lying on the table position is the worst case result in the report.

We pretested modes (Wireless Charging(15W),Wireless Charging(10W),Wireless Charging(5W)) for EUT. The worst test data see follow the table.

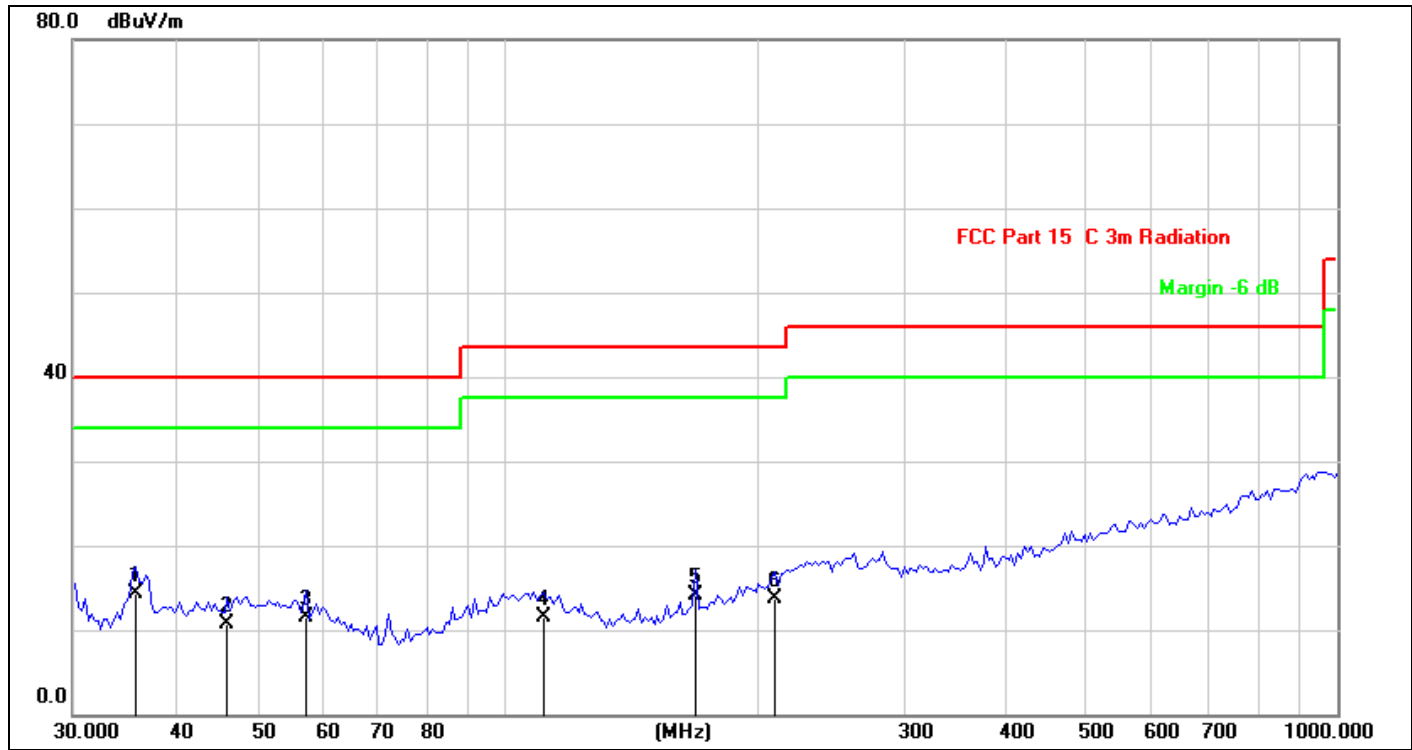
Test mode: Wireless Charging 15W use Xiaomi 9



Site:	LAB	Antenna::Vertical	Temperature(C):23.4(C)
Limit:	FCC Part 15 Class B 3m Radiation(QP)	Test Time:	Humidity(%):56.7%
EUT:	Magnetic wireless power bank	Power Rating:	Battery 3.7V
M/N.:	DB01	Test Engineer:	sunshine
Mode:	Wireless Charging 15W		
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	41.1320	28.62	-12.92	15.70	40.00	-24.30	QP	100	45	
2	46.0971	27.06	-12.36	14.70	40.00	-25.30	QP	100	45	
3	59.9639	27.26	-13.56	13.70	40.00	-26.30	QP	100	27	
4	112.7218	24.28	-11.68	12.60	43.50	-30.90	QP	100	27	
5	197.5462	27.72	-10.92	16.80	43.50	-26.70	QP	100	96	
6	215.6456	28.53	-10.43	18.10	43.50	-25.40	QP	100	96	

*:Maximum data x:Over limit !:over margin



Site:	LAB	Antenna::Horizontal	Temperature(C):23.4(C)
Limit:	FCC Part 15 Class B 3m Radiation(QP)	Test Time:	Humidity(%):56.7%
EUT:	Magnetic wireless power bank	Power Rating:	Battery 3.7V
M/N.:	DB01	Test Engineer:	sunshine
Mode:	Wireless Charging 15W		
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	35.7490	28.18	-13.78	14.40	40.00	-25.60	QP	100	45	
2	46.0971	23.16	-12.36	10.80	40.00	-29.20	QP	100	45	
3	57.3923	24.74	-13.14	11.60	40.00	-28.40	QP	100	27	
4	110.7627	22.87	-11.37	11.50	43.50	-32.00	QP	100	27	
5	168.7093	27.03	-12.93	14.10	43.50	-29.40	QP	100	96	
6	210.0482	24.35	-10.55	13.80	43.50	-29.70	QP	100	96	

6.6 Radiated Measurement Photos



7 20db Bandwidth

7.1 20dB Bandwidth Limit

None: for reporting purposed only.

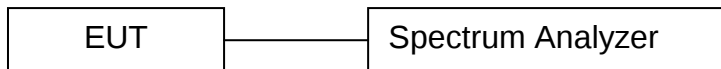
7.2 Test Instruments

Refer a test equipment and calibration data table in this test report.

7.3 Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30Hz RBW and 100Hz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

7.4 Test Setup



7.5 Test Result

Frequency (KHz)	20dB Bandwidth (kHz)	Results
126.04	25.62	PASS

8 Antenna Application

8.1 Antenna requirement

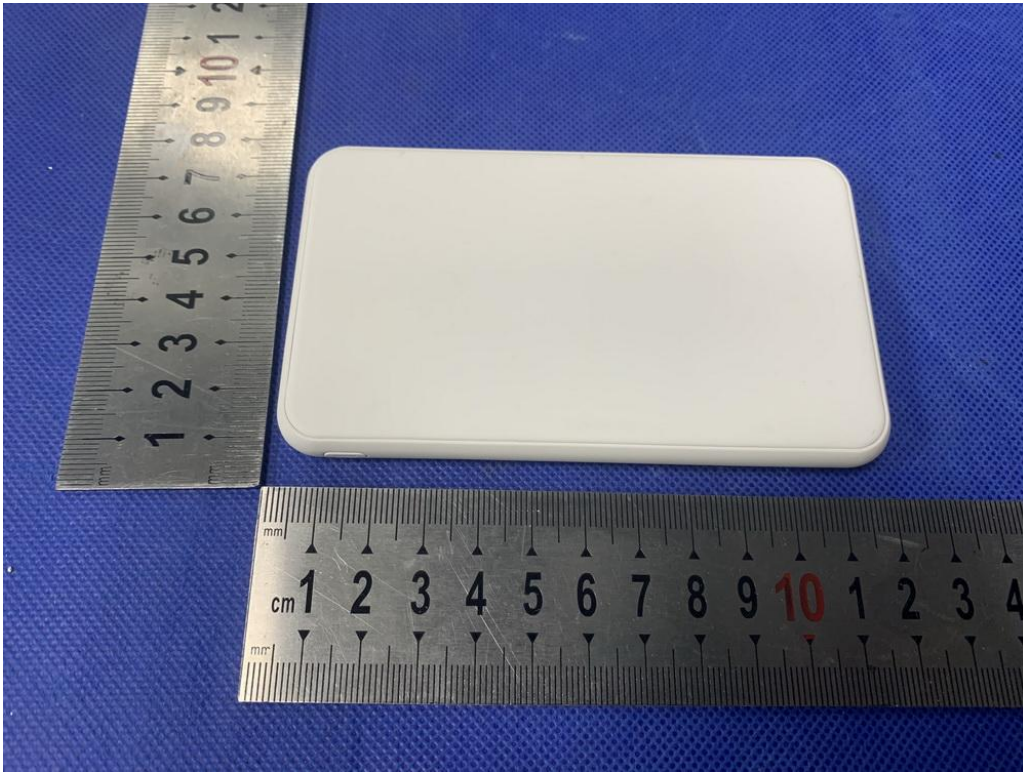
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

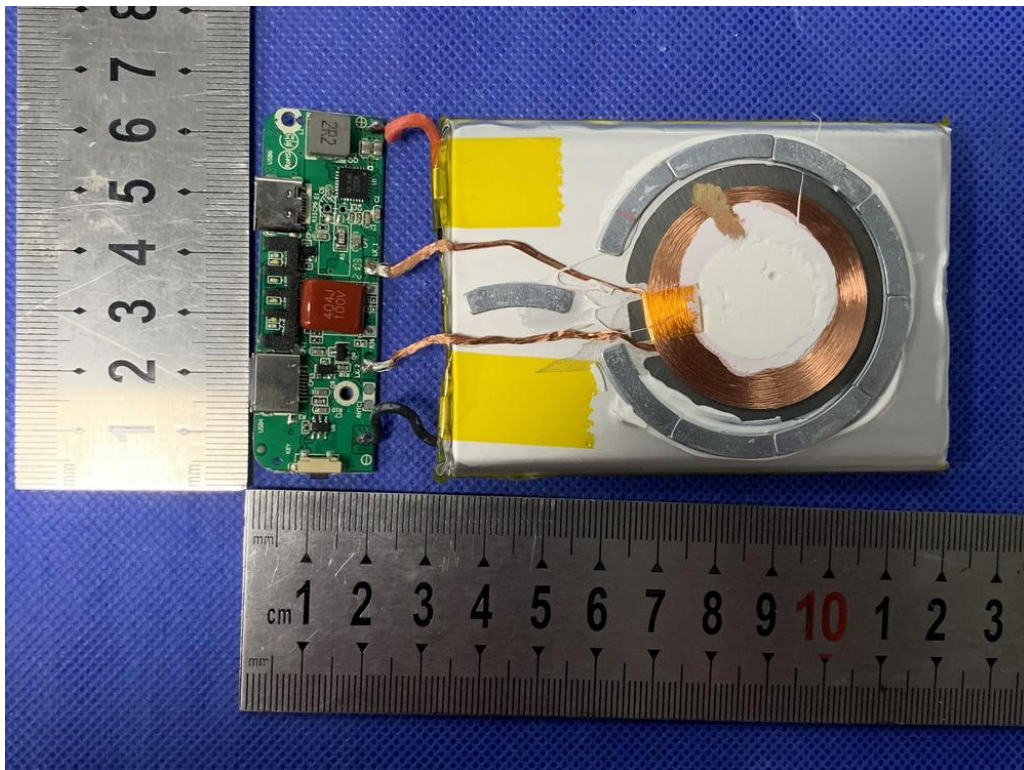
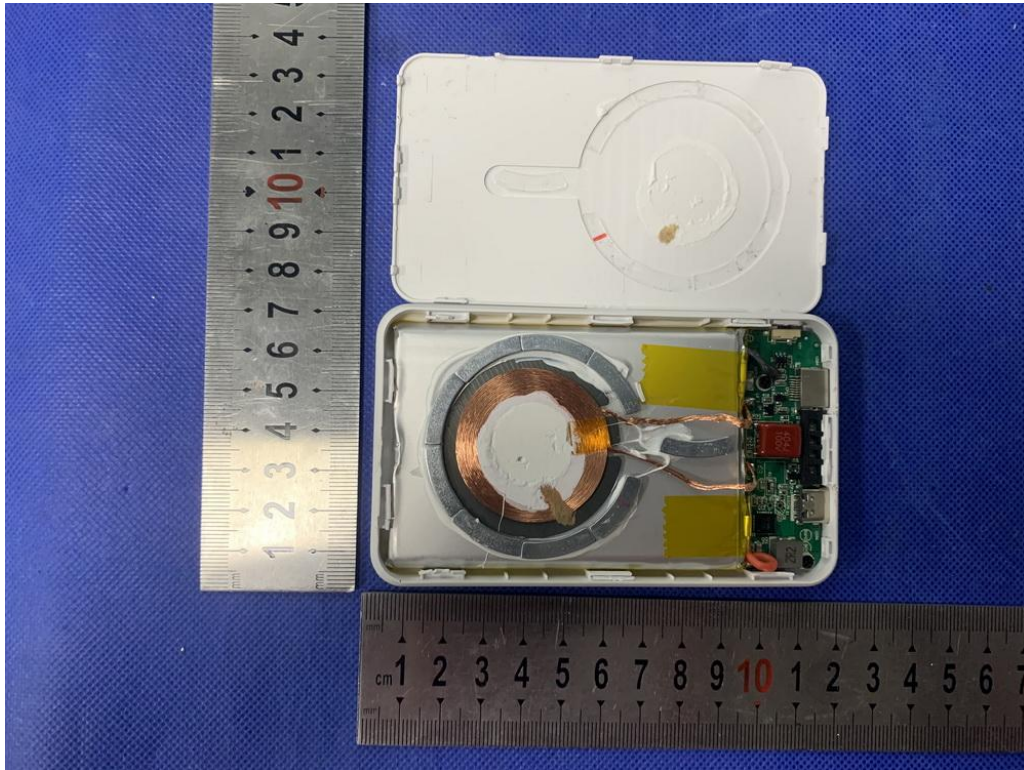
8.2 Result

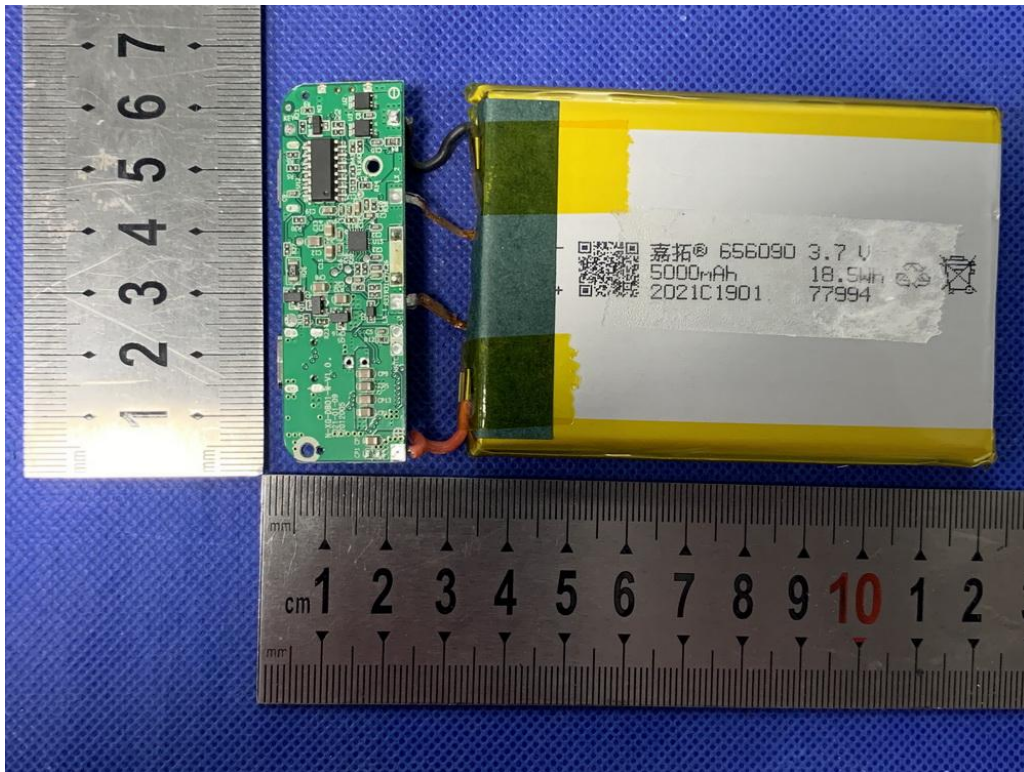
The EUT's antenna, permanent attached antenna, used an Induction coil and integrated on PCB, The antenna's gain meets the requirement.

APPENDIX (Photos of EUT)









-----The end-----