TEST REPORT

Applicant:	Marathon Watch Company Limited
Address of Applicant:	30 Mural Street #10, Richmond Hill, Ontario, Canada, L4B 1B5
Manufacturer:	DATU ELECTRONICS MANUFACTORY LIMITED
Address of Manufacturer:	TANGLI, FENGGANG TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

Equipment Under Test (EUT)

Product Name:	Wireless Charging Clock
Model No.:	CL030088WH, CL030088BK
Trade Mark:	MARATHON
FCC ID:	2AGNSCL030088
Applicable standards:	FCC CFR Title 47 Part 18
Date of sample receipt:	May 12, 2020
Date of Test:	May 12- 26, 2020
Date of report issued:	May 27, 2020
Test Result :	Pass *

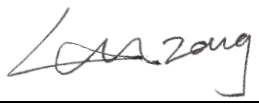
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	*Date*	*Description*
00	*May 27, 2020*	*Original*

Prepared by:  ***Date:*** *May 27, 2020*

Project Engineer

Reviewed by:  ***Date:*** *May 27, 2020*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	FCC Part18 Clause18.307(a)	Pass
Radiated Emissions	FCC Part18 Clause18.305(b)	Pass

Pass: The EUT comply with the essential requirements in the standard.

N/A: Not applicable.

5 General Information

5.1 General Description of EUT

Product Name:	Wireless Charging Clock
Model No.:	CL030088WH, CL030088BK
Test Model No:	CL030088WH
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.	
Operation Frequency:	110KHz~205KHz
Modulation type:	Backscatter modulation
Antenna Type:	Inductive loop coil Antenna
Antenna Gain:	0dBi (Max)
Power Supply:	SWITCHING ADAPTER Model: HX36B-0903000-AU Input: AC100-240V, 50/60Hz, 1.0A Max Output: DC 9.0V, 3.0A or Backup Battery: 1*DC 3V CR2032

5.2 Test mode and Test voltage

Test mode:	
On mode	Keep the EUT in operating status.
Test voltage:	
AC 120V/60Hz	

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
Samsung	Mobile Phone	SM-G9350	R28H835BJ2B
HUAWEI	Mobile Phone	P10 PLUS	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0.

5.7 Test Location

Tests were performed at:
Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 26 2019	June. 25 2020
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 26 2019	June. 25 2020
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

7 Test Results and Measurement Data

7.1 Radiated Emission

Test Requirement:	FCC Part18:Clause18.305(b)
Test Method:	FCC/OST MP-5(1986)
Test Frequency Range:	9KHz to 1GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)

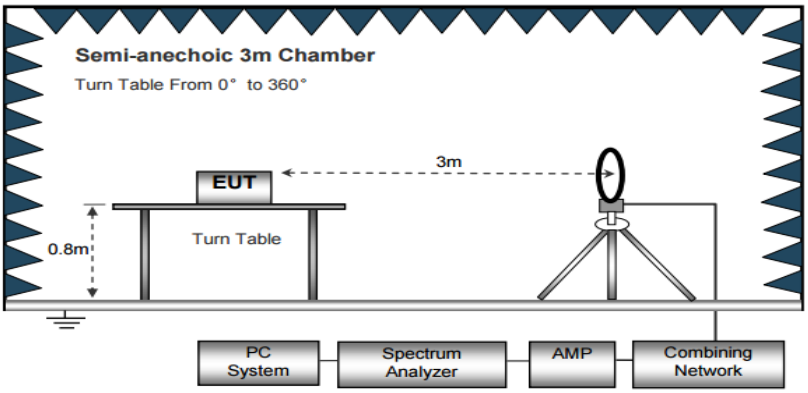
Receiver setup:

Frequency	Detector	RBW	VBW	Value
0.15MHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak

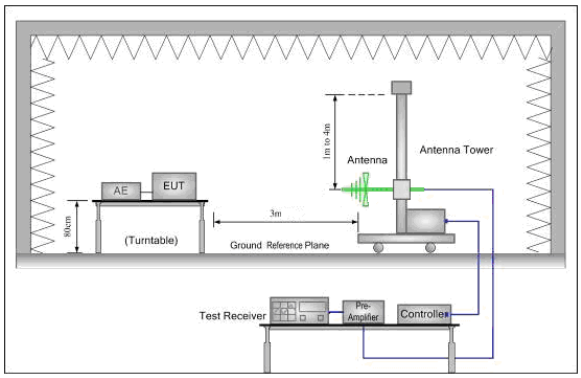
Limit:

Frequency	Limit (dBμV/m @3m)	Value
9KHz to 30MHz	103.50	Quasi-peak
30MHz to 1GHz	63.50	Quasi-peak

Test setup: The test setup for emission measurement below 30MHz.



Below 1GHz



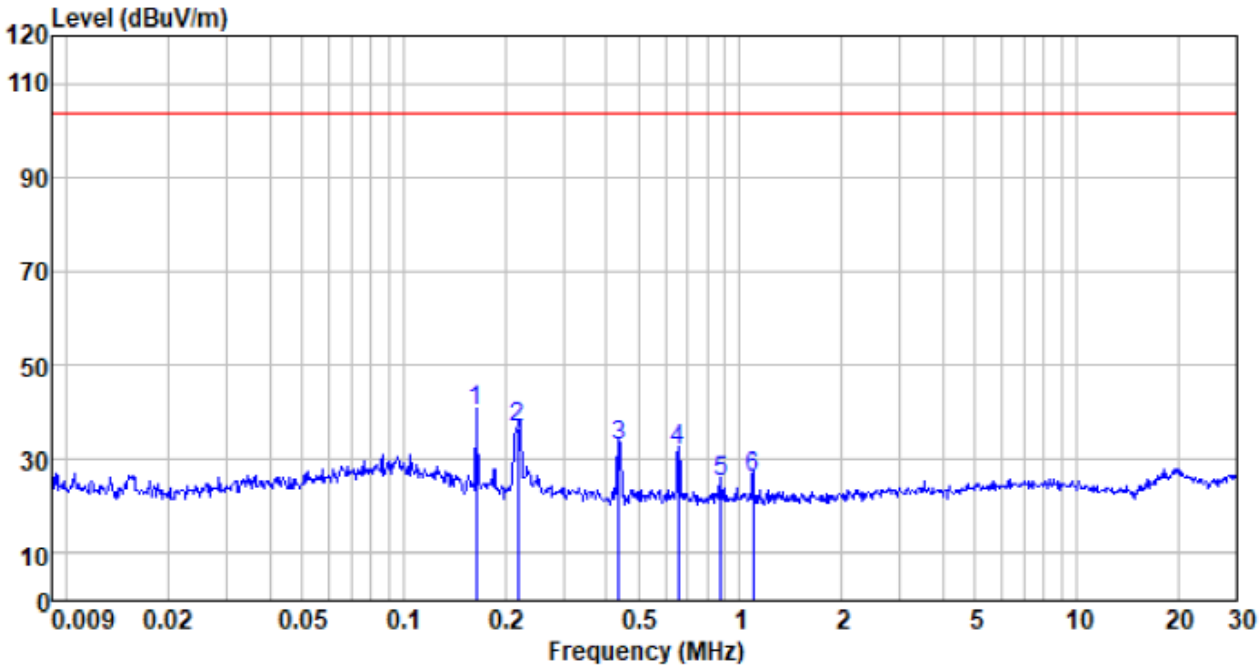
Test Procedure:

1. The EUT was placed on the top of a rotating table 1 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 1 meters away from the interference-receiving antenna,
3. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360

	degrees to find the maximum reading. 4. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 5. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Measurement Record:	Uncertainty: 4.32dB（9kHz-30MHz） 3.8039dB （30MHz-200MHz） 3.9679dB （200MHz-1GHz）					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Data
Below 30MHz.

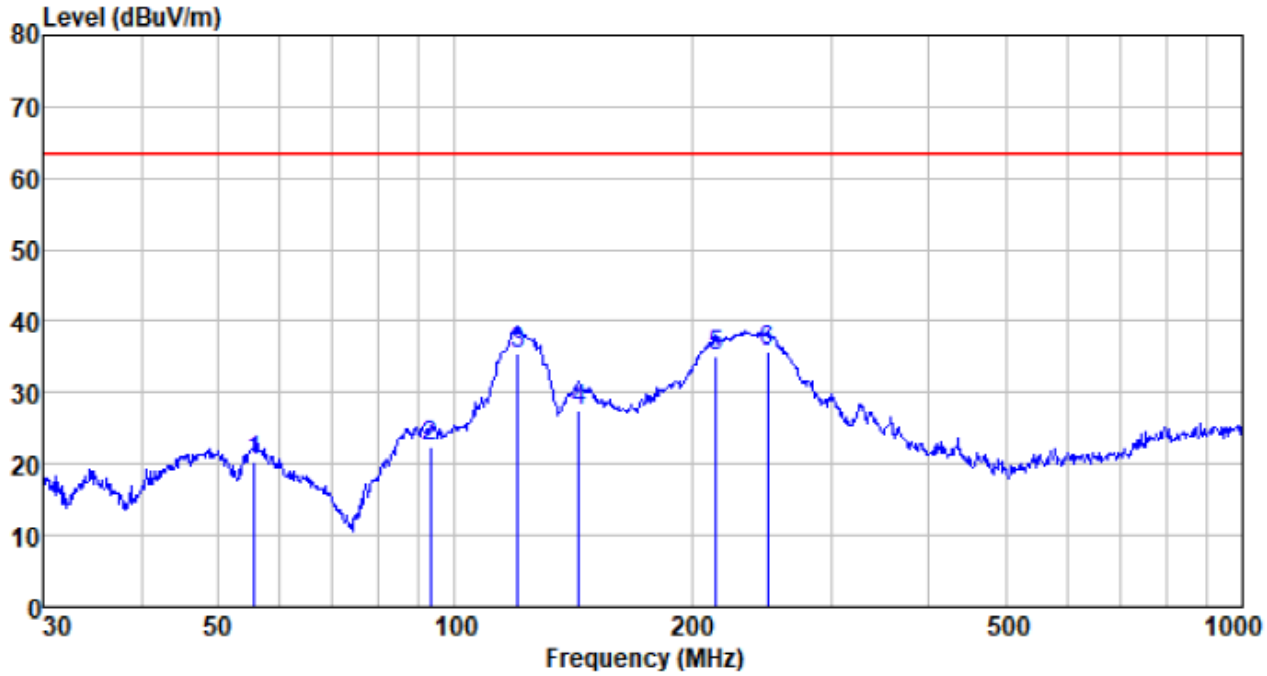
Test mode:	On mode



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
0.164	17.48	22.69	0.20	0.00	40.37	103.50	-63.13	QP
0.219	14.71	22.02	0.22	0.00	36.95	103.50	-66.55	QP
0.435	11.81	20.90	0.27	0.00	32.98	103.50	-70.52	QP
0.654	10.87	20.63	0.30	0.00	31.80	103.50	-71.70	QP
0.876	4.15	20.81	0.32	0.00	25.28	103.50	-78.22	QP
1.094	4.95	20.96	0.33	0.00	26.24	103.50	-77.26	QP

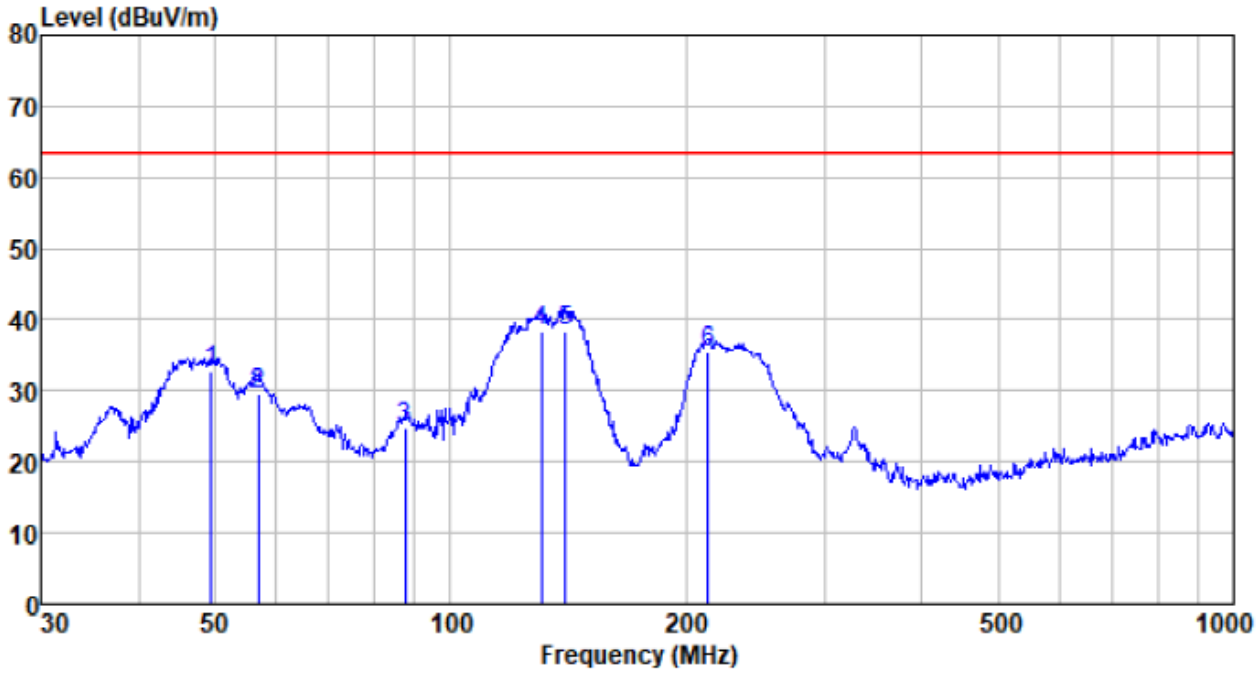
Below 1GHz

Test mode:	On mode	Antenna Polarity:	Horizontal



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
55.609	44.20	11.73	0.82	36.26	20.49	63.50	-43.01	QP
93.113	46.73	11.18	1.14	36.66	22.39	63.50	-41.11	QP
120.277	61.46	9.42	1.36	36.88	35.36	63.50	-28.14	QP
143.830	55.55	7.47	1.53	37.04	27.51	63.50	-35.99	QP
214.514	59.56	10.95	1.93	37.35	35.09	63.50	-28.41	QP
249.425	58.91	12.15	2.12	37.38	35.80	63.50	-27.70	QP

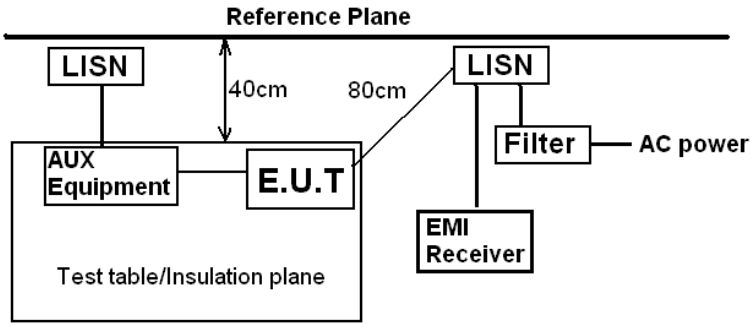
Test mode:	On mode	Antenna Polarity:	Vertical



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
49.533	55.77	12.30	0.77	36.16	32.68	63.50	-30.82	QP
56.792	53.33	11.60	0.83	36.28	29.48	63.50	-34.02	QP
87.418	50.48	9.81	1.09	36.62	24.76	63.50	-38.74	QP
130.837	65.85	8.11	1.44	36.96	38.44	63.50	-25.06	QP
140.342	66.62	7.40	1.51	37.02	38.51	63.50	-24.99	QP
213.015	59.83	10.91	1.92	37.34	35.32	63.50	-28.18	QP

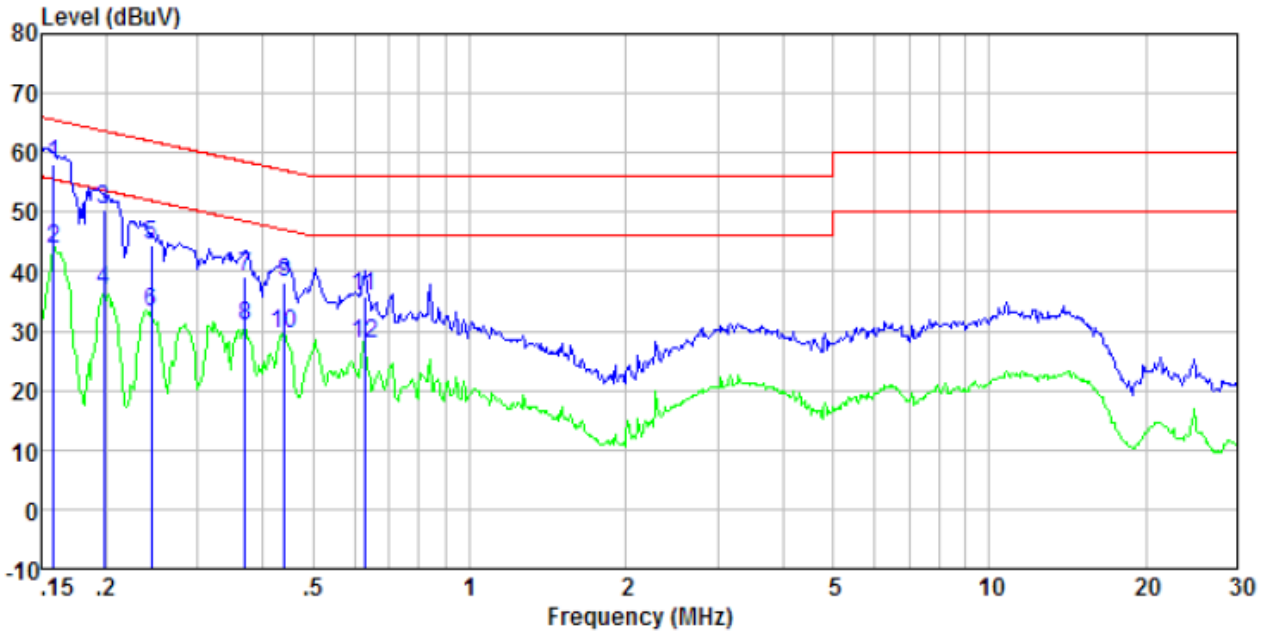
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor

7.2 Conducted Emissions

Test Requirement:	FCC Part18:2013 Clause18.307(a)
Test Method:	FCC/OST MP-5(1986)
Test Frequency Range:	9kHz to 30MHz
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Quasi-peak 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to FCC/OST MP-5(1986) on conducted measurement
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1 012mbar
Measurement Record:	Uncertainty: 3.44dB
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details,
Test results:	Pass

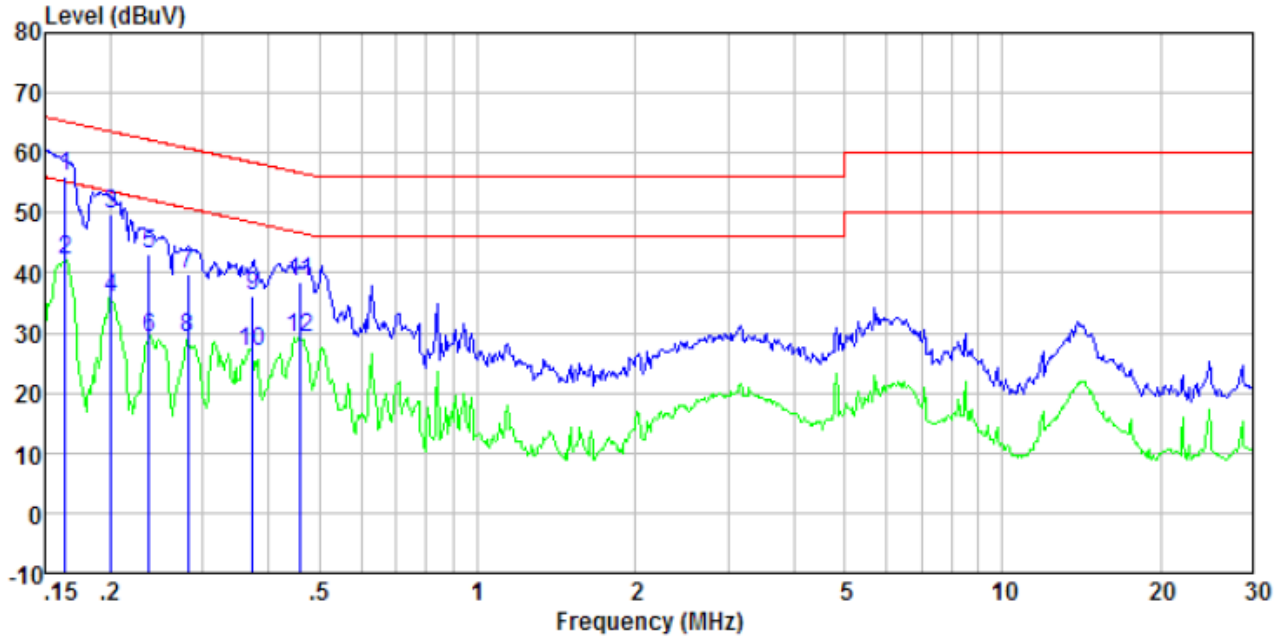
Measurement Data

Test mode:	On mode	Phase Polarity:	Line



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	37.66	20.40	0.08	58.14	65.56	-7.42	QP
0.16	23.32	20.40	0.08	43.80	55.56	-11.76	Average
0.20	29.94	20.40	0.11	50.45	63.71	-13.26	QP
0.20	16.22	20.40	0.11	36.73	53.71	-16.98	Average
0.24	24.07	20.40	0.11	44.58	61.95	-17.37	QP
0.24	12.54	20.40	0.11	33.05	51.95	-18.90	Average
0.37	18.63	20.37	0.10	39.10	58.52	-19.42	QP
0.37	10.26	20.37	0.10	30.73	48.52	-17.79	Average
0.44	17.78	20.34	0.11	38.23	57.07	-18.84	QP
0.44	9.02	20.34	0.11	29.47	47.07	-17.60	Average
0.63	15.40	20.28	0.12	35.80	56.00	-20.20	QP
0.63	7.58	20.28	0.12	27.98	46.00	-18.02	Average

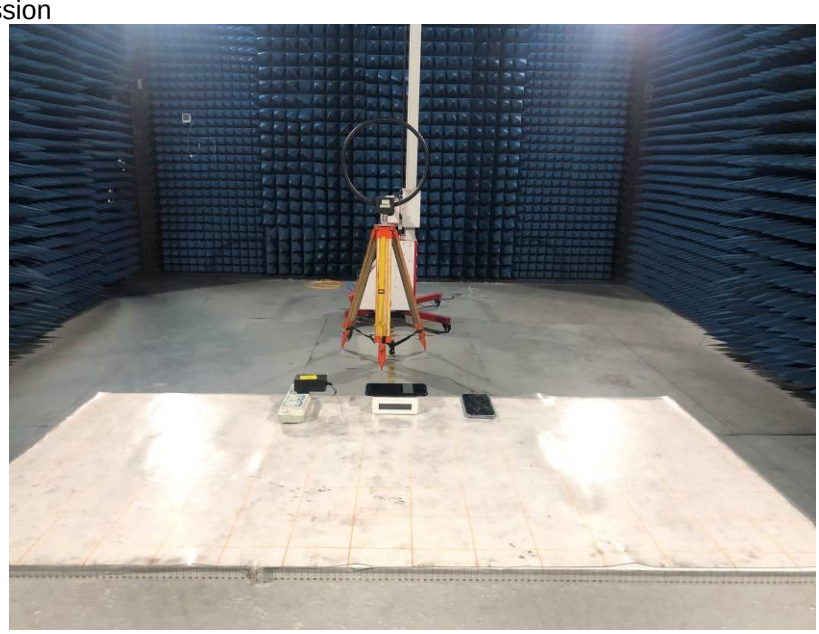
Test mode:	On mode	Phase Polarity:	Neutral

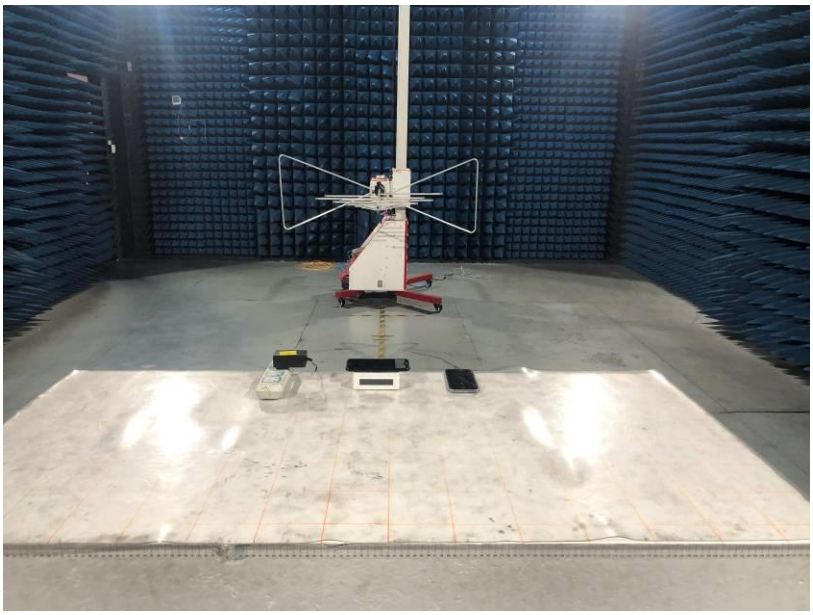


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	35.55	20.40	0.08	56.03	65.25	-9.22	QP
0.16	21.78	20.40	0.08	42.26	55.25	-12.99	Average
0.20	29.20	20.40	0.11	49.71	63.58	-13.87	QP
0.20	15.26	20.40	0.11	35.77	53.58	-17.81	Average
0.24	22.54	20.40	0.11	43.05	62.22	-19.17	QP
0.24	8.83	20.40	0.11	29.34	52.22	-22.88	Average
0.28	19.31	20.40	0.10	39.81	60.81	-21.00	QP
0.28	8.65	20.40	0.10	29.15	50.81	-21.66	Average
0.37	15.56	20.36	0.10	36.02	58.43	-22.41	QP
0.37	6.56	20.36	0.10	27.02	48.43	-21.41	Average
0.46	18.16	20.33	0.11	38.60	56.67	-18.07	QP
0.46	8.74	20.33	0.11	29.18	46.67	-17.49	Average

8 Test Setup Photo

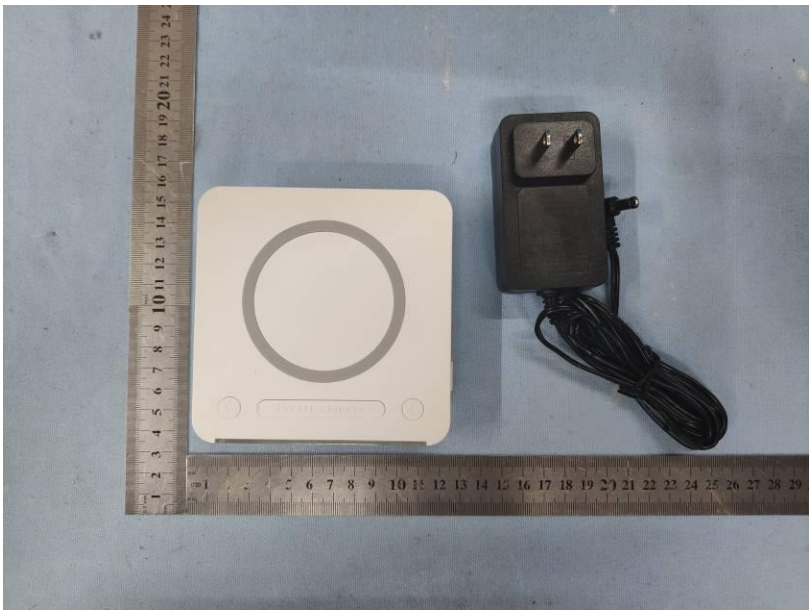
Radiated Emission

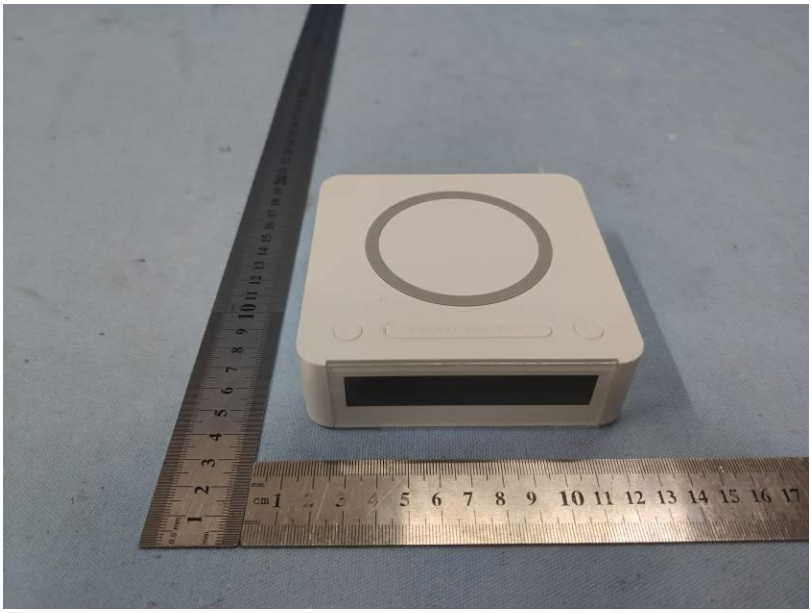


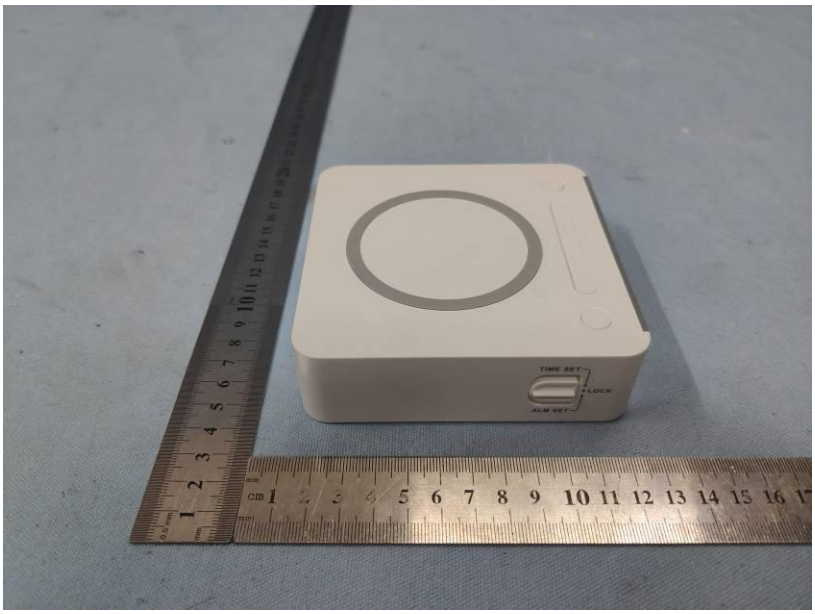


Conducted Emission

9 EUT Constructional Details



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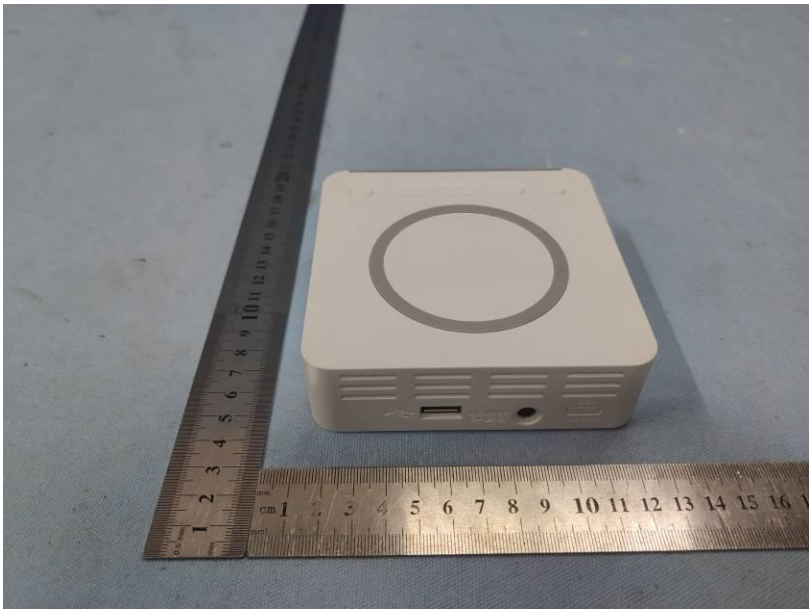
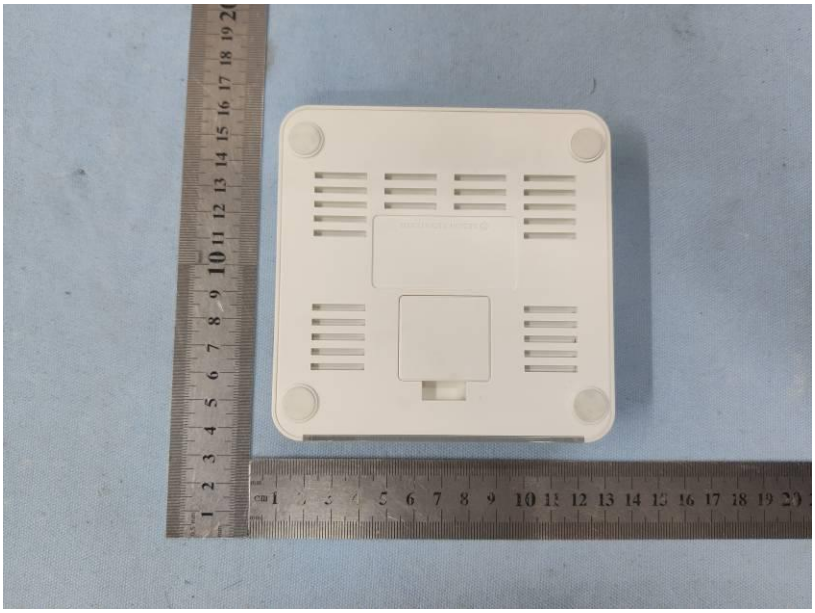
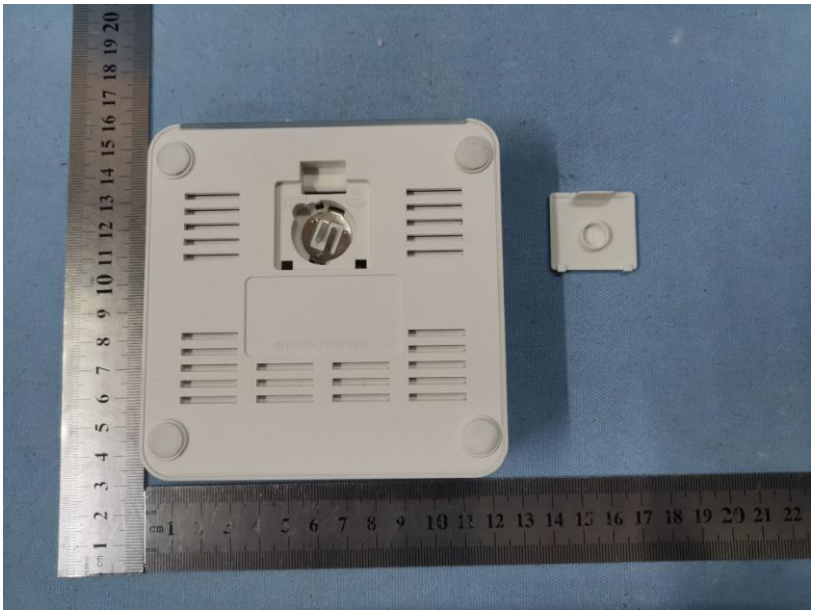
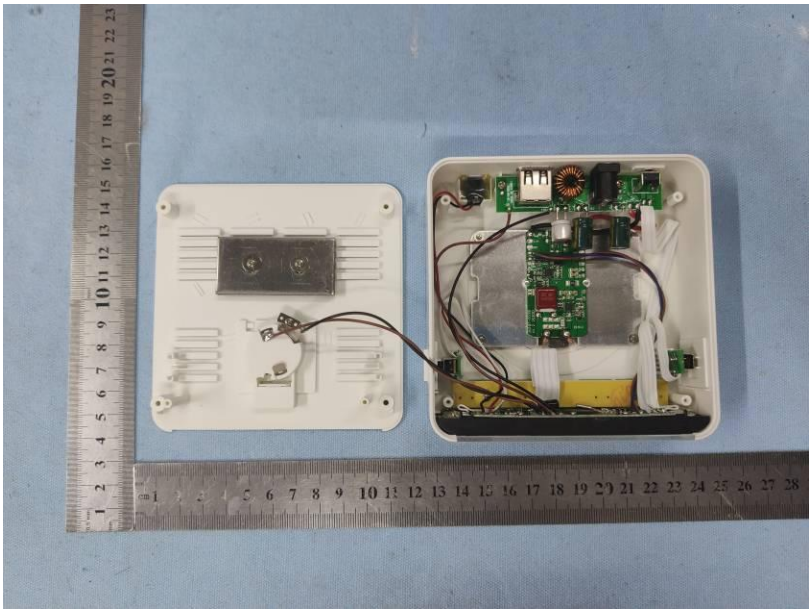
LOCK
ALM SET

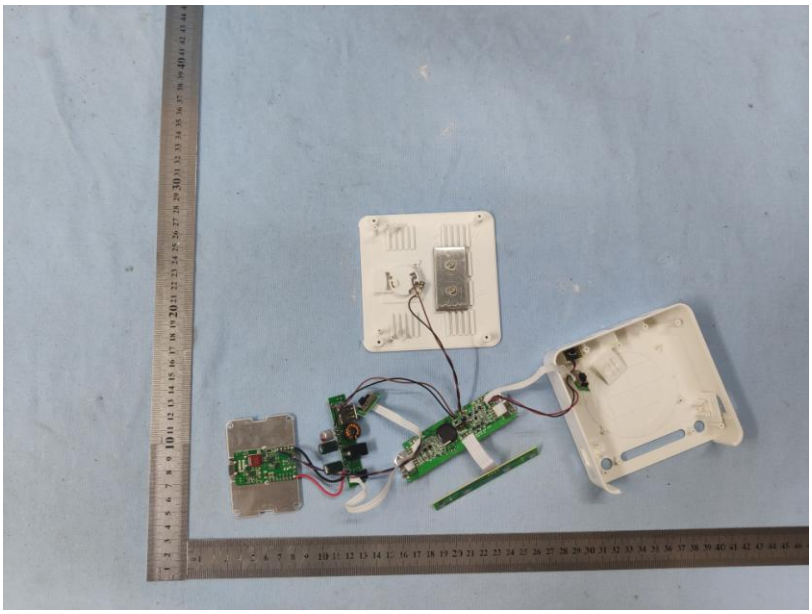


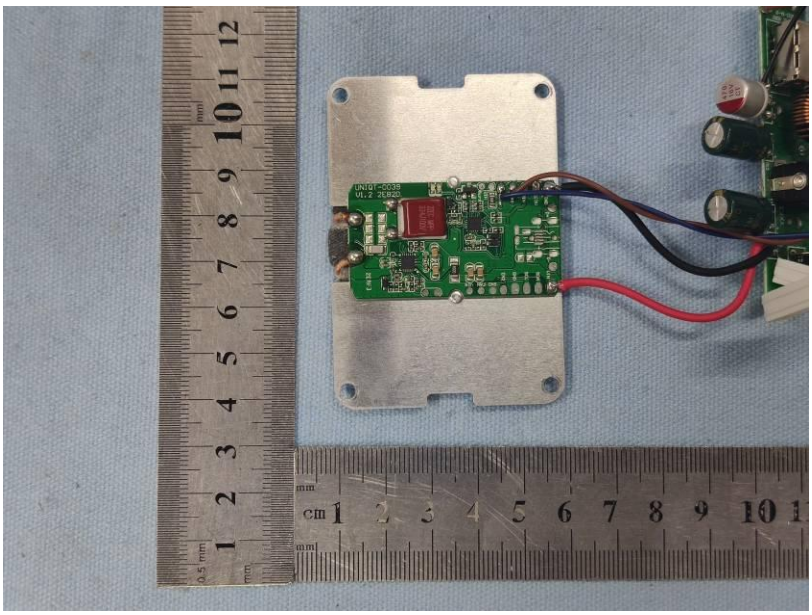

ALARM

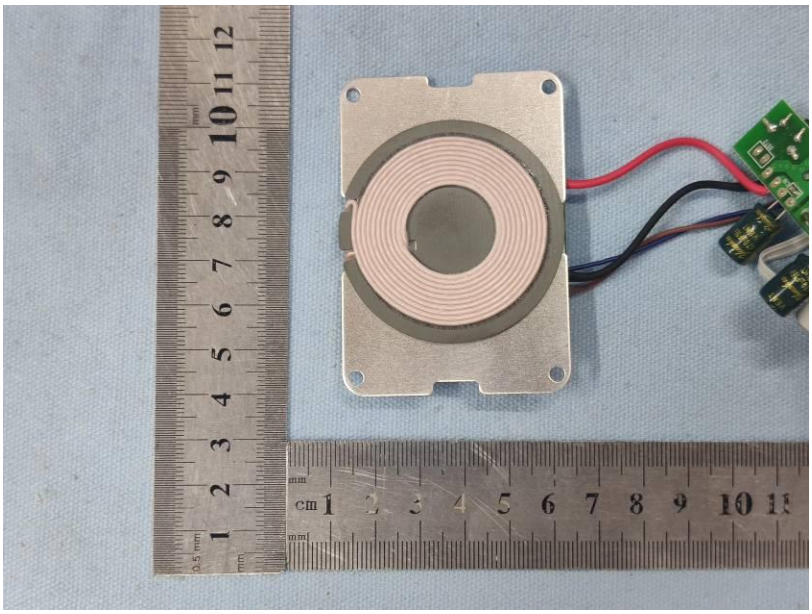


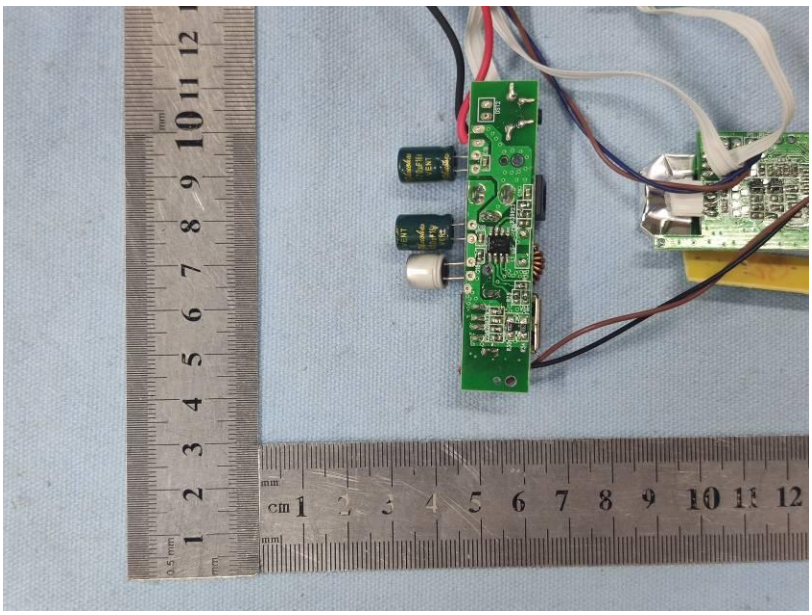


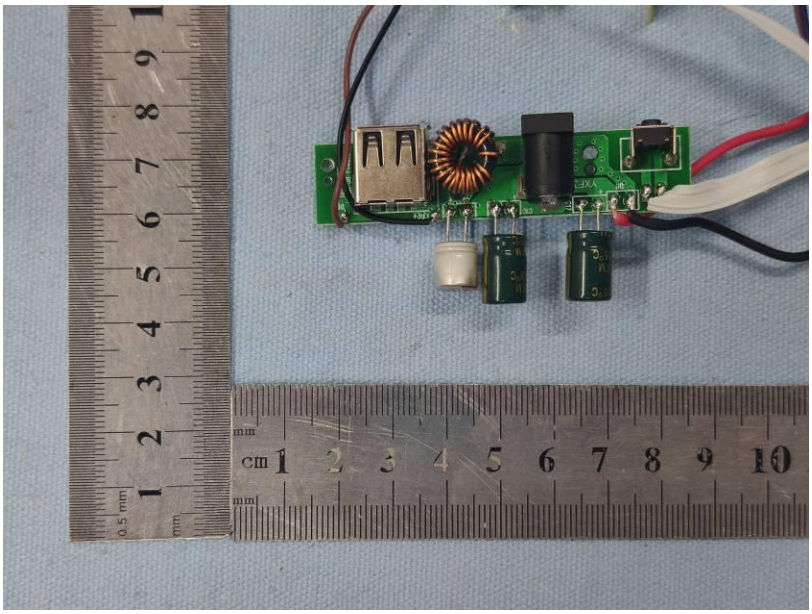


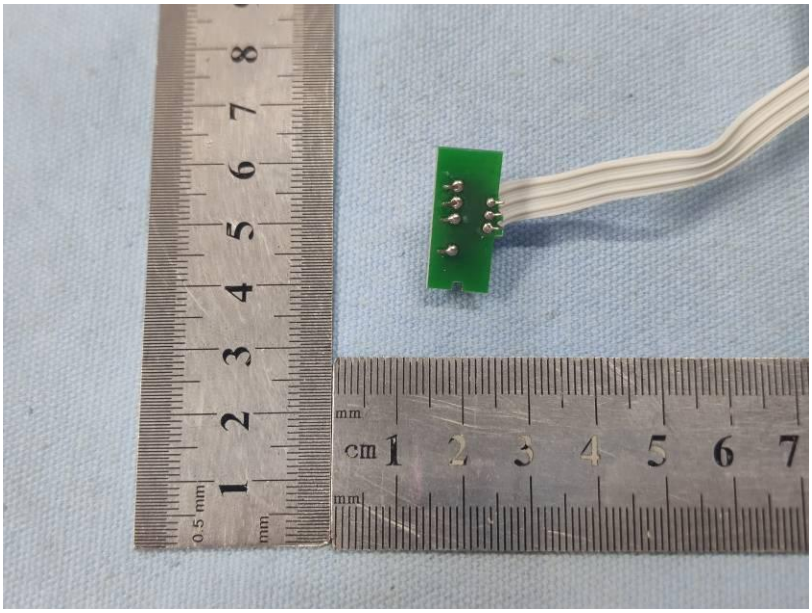


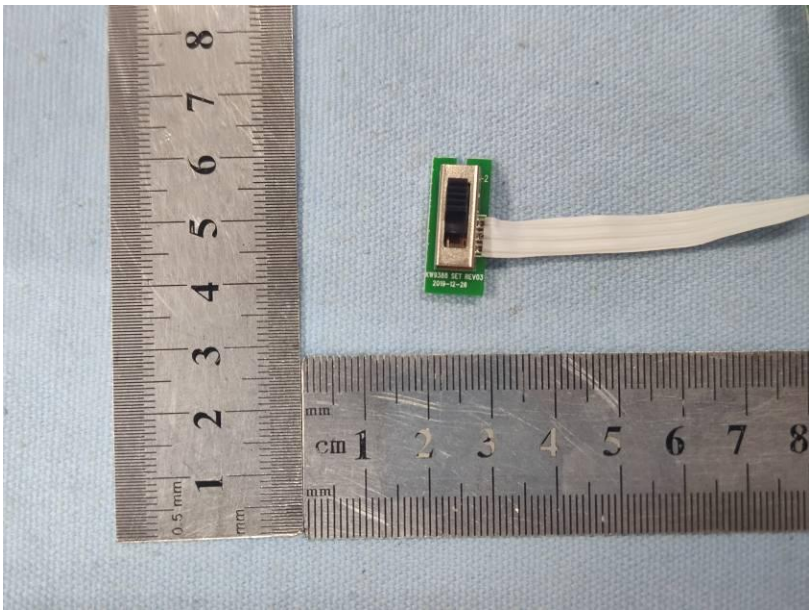


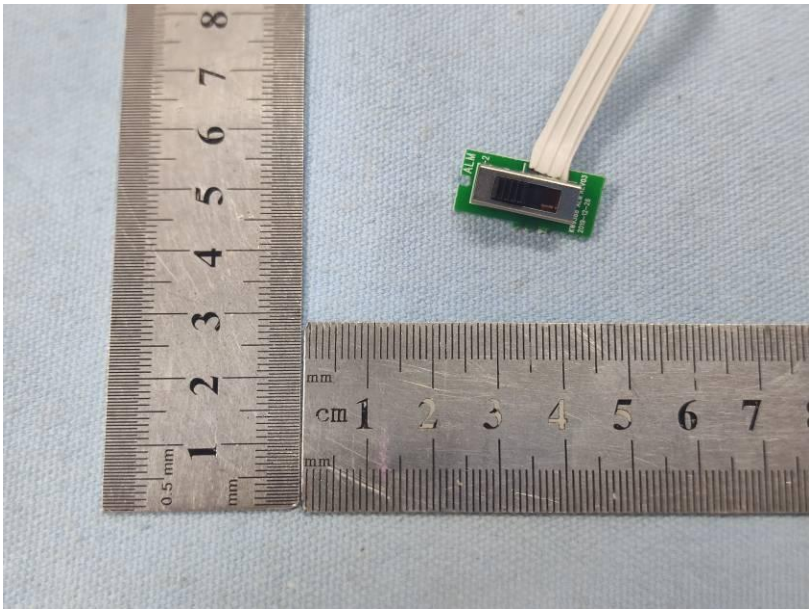


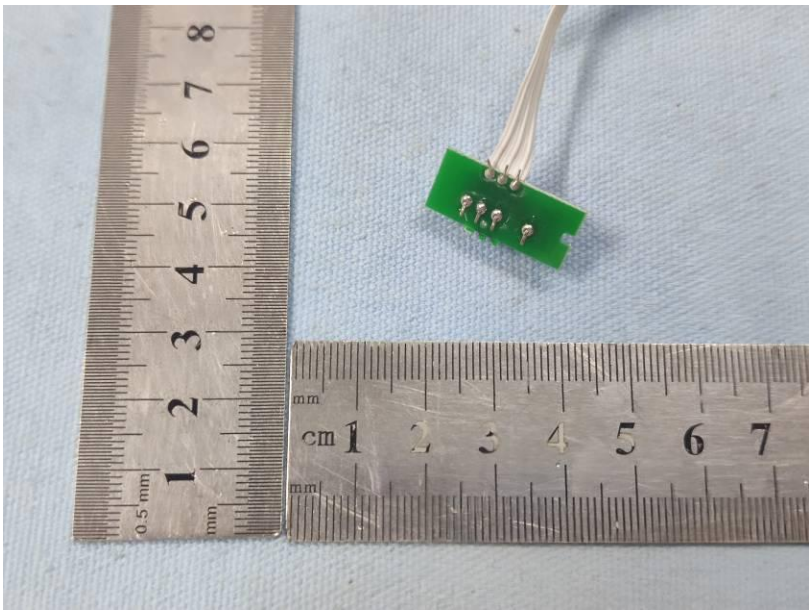


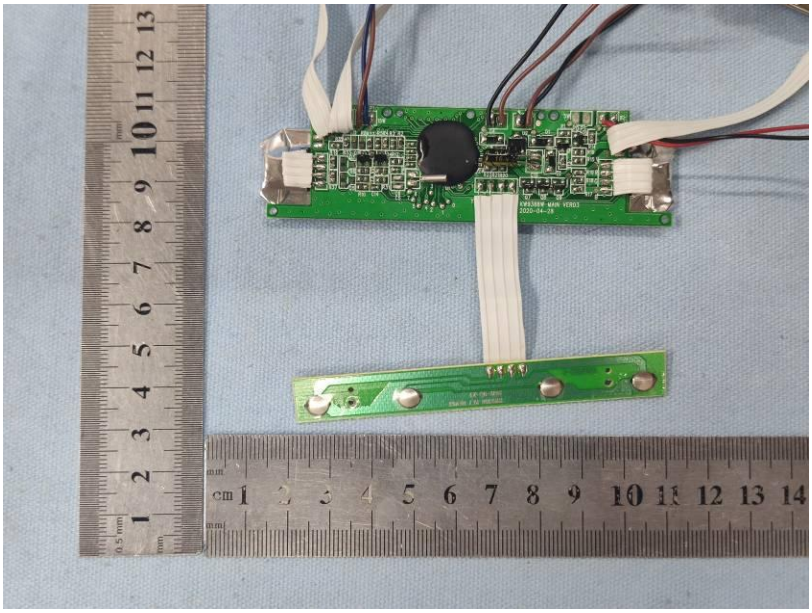


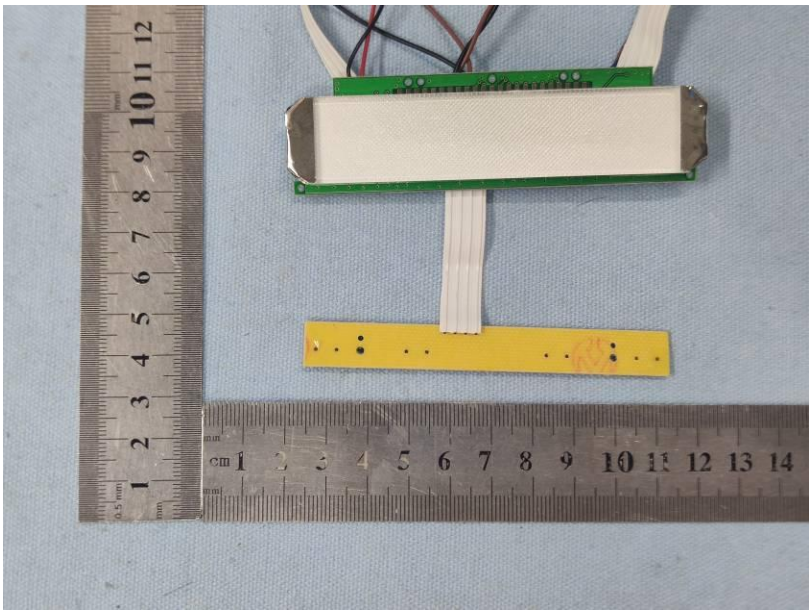













SWITCHING ADAPTER
Model No.: HX36B-0903000-AU
Input: 100-240V~50/60Hz 1.3A Max
Output: 9.0V 3.0A
I.T.E.Power Supply
E355637
HX77
LISTED
HUAXU ELECTRONICS FACTORY
MADE IN CHINA

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