Human Exposure Report

FCC ID: 2A5N8AR500

Project No.	:	2110H005
Equipment	:	AR500 Rechargeable Lithium-ion Battery
Brand Name	:	PYLONTECH
Test Model	:	AR500
Series Model	:	N/A
Applicant	:	Pylon Technologies Co., Ltd.
Address	:	5 / F, No.72, Lane 887,Zu Chongzhi Road, Zhangjiang Hi-Tech Park Pudong,Shanghai201203, China
Manufacturer	:	Pylon Technologies Co., Ltd.
Address	:	Plant 8, No.505 Kunkai Road, JinXi Town, Kunshan City, Jiangsu Province, PEOPLE'S REPUBLIC OF CHINA
Factory	:	Pylon Technologies Co., Ltd.
Address	:	Plant 8, No.505 Kunkai Road, JinXi Town, Kunshan City, Jiangsu Province, PEOPLE'S REPUBLIC OF CHINA
Date of Receipt	:	Oct. 11, 2021
Date of Test	:	Feb. 23, 2022~ Jul. 22, 2022
Issued Date	:	Aug. 17, 2022
Report Version	:	R03
Test Sample	:	Engineering Sample No.: SH2021110267 for EUT
Standard(s)	:	47 CFR PART 1, Subpart I, Section 1.1310 KDB680106 D01 RF Exposure Wireless Charging Apps v03

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Maker Qi

Prepared by : Maker Qi

Ryan. Wang

Approved by : Ryan Wang

TESTING CERT #5123.03

BTL Inc.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2110H005	R00	Original Issue.	May 25, 2022	Invalid
BTL-FCCP-2-2110H005	R01	Revised report to address TCB's comments.	Jul. 26, 2022	Invalid
BTL-FCCP-2-2110H005	R02	Revised report to address TCB's comments.	Aug. 03, 2022	Invalid
BTL-FCCP-2-2110H005	R03	Revised report to address TCB's comments.	Aug. 17, 2022	Valid

1. GENERAL INFORMATION

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China
BTL's Test Firm Registration Number for FCC: 476765
BTL's Designation Number for FCC: CN1241

1.1.1 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))
The BTL measurement uncertainty as below table:

A.

Parameter	U
Electrical Field strength	5.450%
Magnetic Field strength	5.330%

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

2. TEST RESULTS

2.1 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	WPC-5W
Mode 2	WPC-7.5W
Mode 3	WPC-10W
Mode 4	WPC-15W

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

Electric Field Emissions and Magnetic Field Emissions	
Final Test Mode	Description
Mode 4	WPC-15W

Note:
All the models have been evaluated and tested, and the worst case was recorded in this report.

2.2 LIMITS

For 47 CFR PART 1, Subpart I, Section 1.1310:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density ($m/W/cm^2$)	Averaging time (minutes)
(A) Limits for Occupational / Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*($900/f^2$)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100000	/	/	5	6
(B) Limits for General Population / Uncontrolled Exposures				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310 (use the 300kHz limits for 150kHz: 614V/m, 1.63A/m).				

For KDB680106 D01:

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

2.3 MEASUREMENT DATA

Electric Field Emissions for WPC-15W

Test Position(20cm)	Probe Measure Results (V/m)	Limit (V/m)
	intermediate charge	
Top	0.85	614

Test Position(15cm)	Probe Measure Results (V/m)	Limit (V/m)
	intermediate charge	
Front Side	0.92	614
Back Side	1.05	614
Left Side	0.89	614
Right Side	0.94	614
Top	1.03	614
Bottom	1.12	614

Note:
The maximum Probe Measure Results of this EUT is 1.12 V/m, less than 307 V/m(614 *50%).

Magnetic Field Emissions for WPC-15W

Test Position(20cm)	Probe Measure Results (A/m)	Limit (A/m)
	intermediate charge	
Top	0.033	1.63

Test Position(15cm)	Probe Measure Results (A/m)	Limit (A/m)
	intermediate charge	
Front Side	0.026	1.63
Back Side	0.032	1.63
Left Side	0.045	1.63
Right Side	0.039	1.63
Top	0.056	1.63
Bottom	0.041	1.63

Note:
The maximum Probe Measure Results of this EUT is 0.056 A/m, less than 0.815 V/m(1.63*50%).

Remark:
1. The EUT has the maximum average output power when the support unit is in low power and being charged by EUT.
2. The transfer system includes only single primary. The transfer system desinged by Wireless Power Consortium (WPC). The main purpose is Provide convenient and universal wireless charging for mobile phones and other portable electronic devices. Under the Qi standard, the transmission and reception use flat inductors to transmit energy by inductive coupling.
3. The power transfer frequency is 110kHz-148kHz,modulation technology is FSK.
4. The transfer system includes only single primary and secondary coils, this includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
5. Mobile exposure conditions only.
6. Field strength is 84.58dBuV/m @3m,50%(614V/m and 1.63A/m).
7. Output power from each primary coil is to 15 watts.
8. The device is placed directly in contact with the transmitter. The EUT device identifies the device being charged, automatically disconnect when the charged device is fully charged.

3. MEASUREMENT INSTRUMENTS LIST

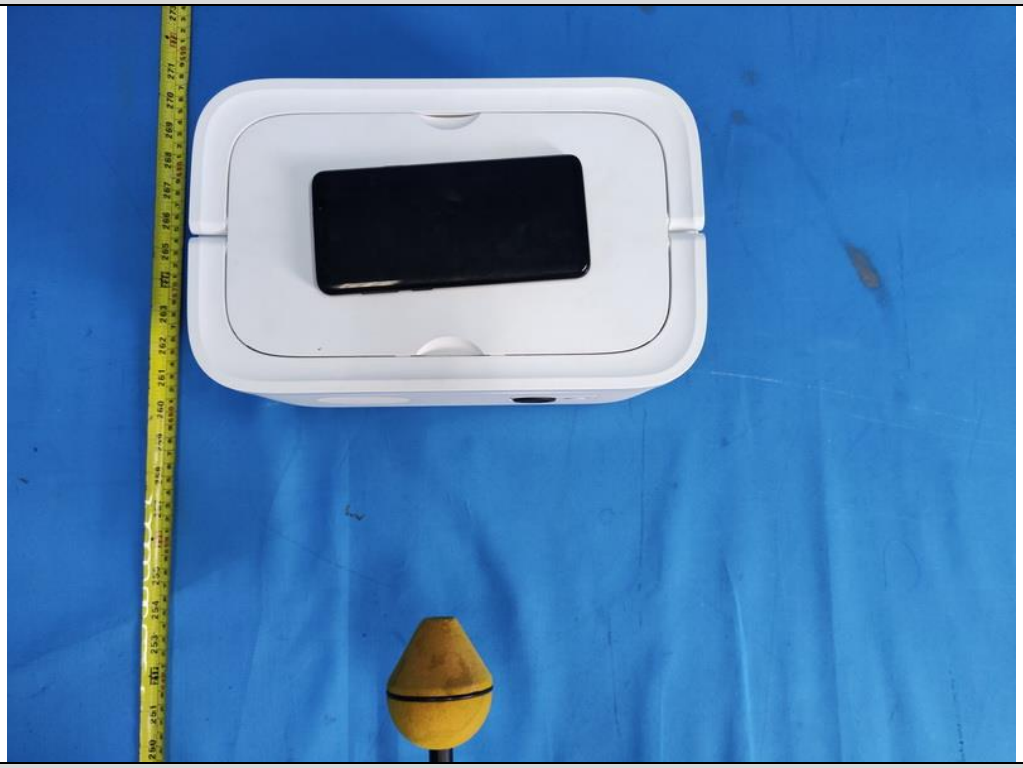
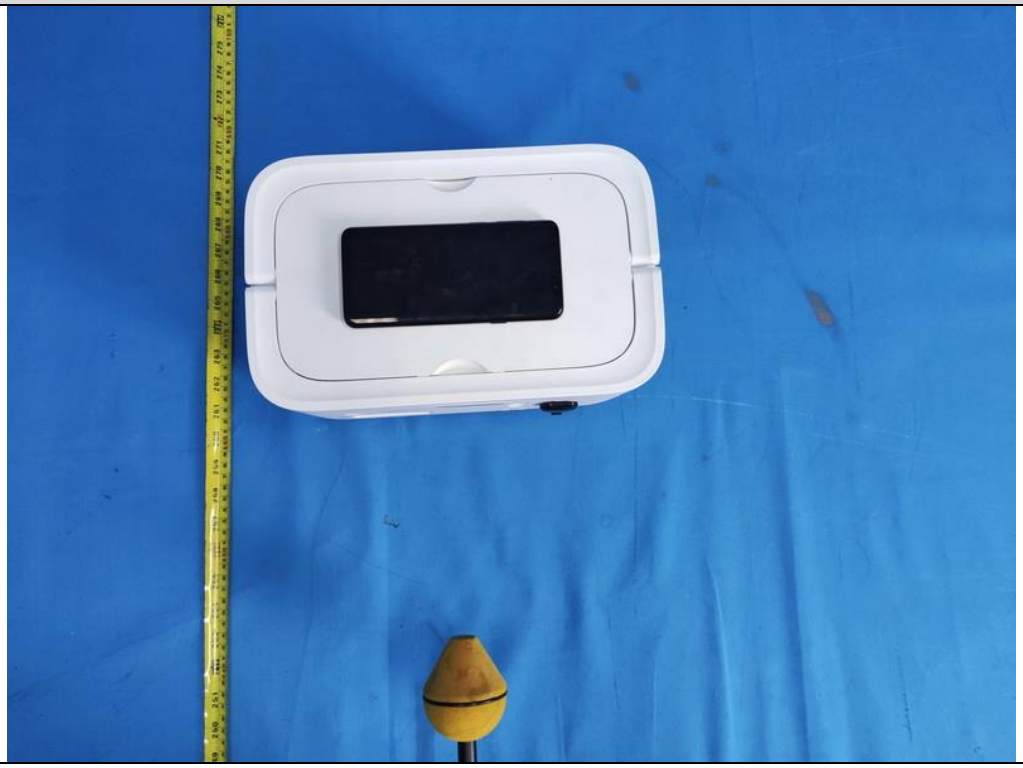
Human Exposure					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	B-Field probe	Narda Safety Test Solutions GmbH	ELT-400	O-0203/M-1594	Dec. 10, 2022
2*	EM Radiation Meter	Narda Safety Test Solutions GmbH	EMR-30	P-0137	May 16, 2022 May 16, 2025

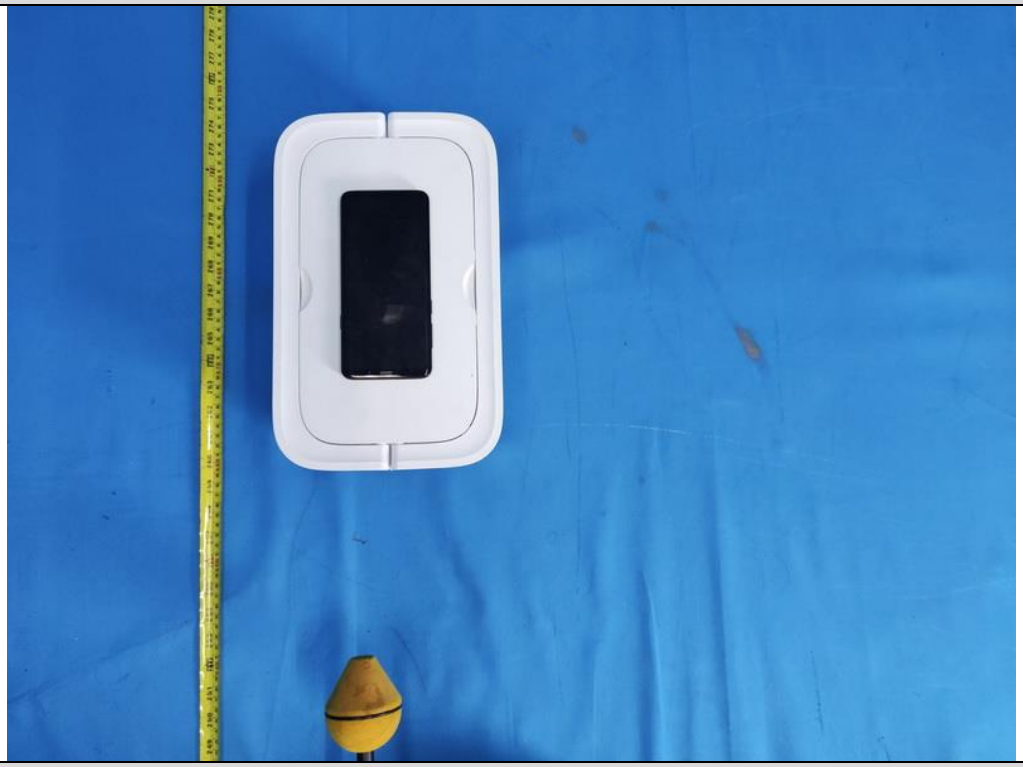
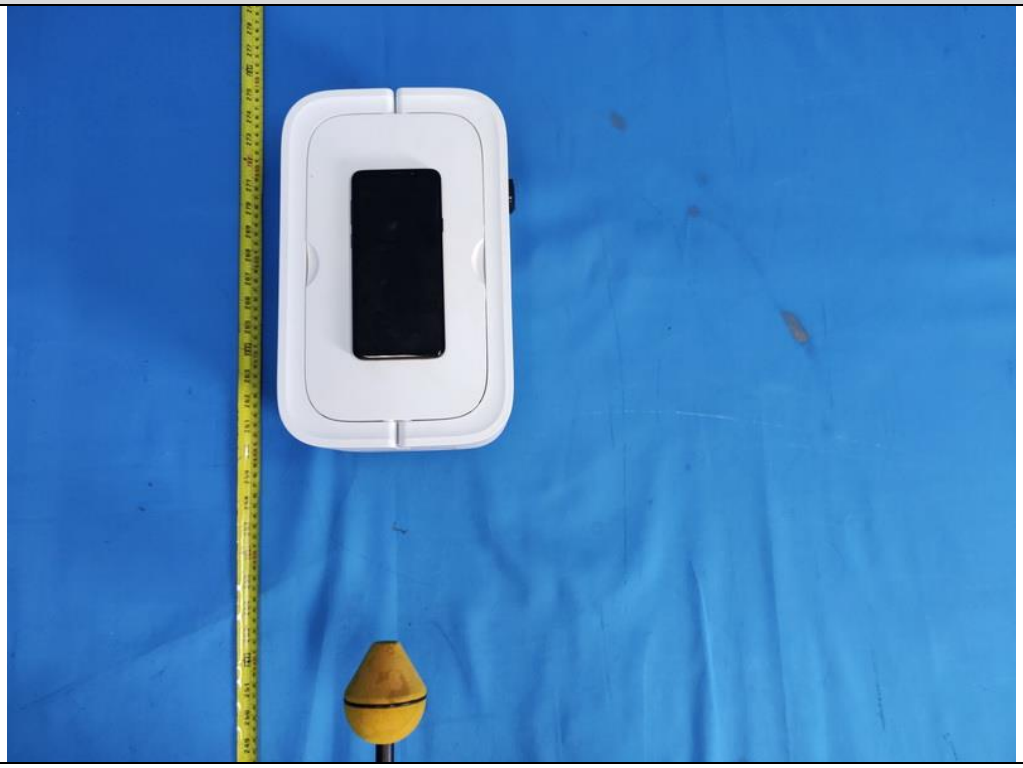
Remark: “N/A” denotes no model name, serial no. or calibration specified.

“*” calibration period of equipment list is three year.

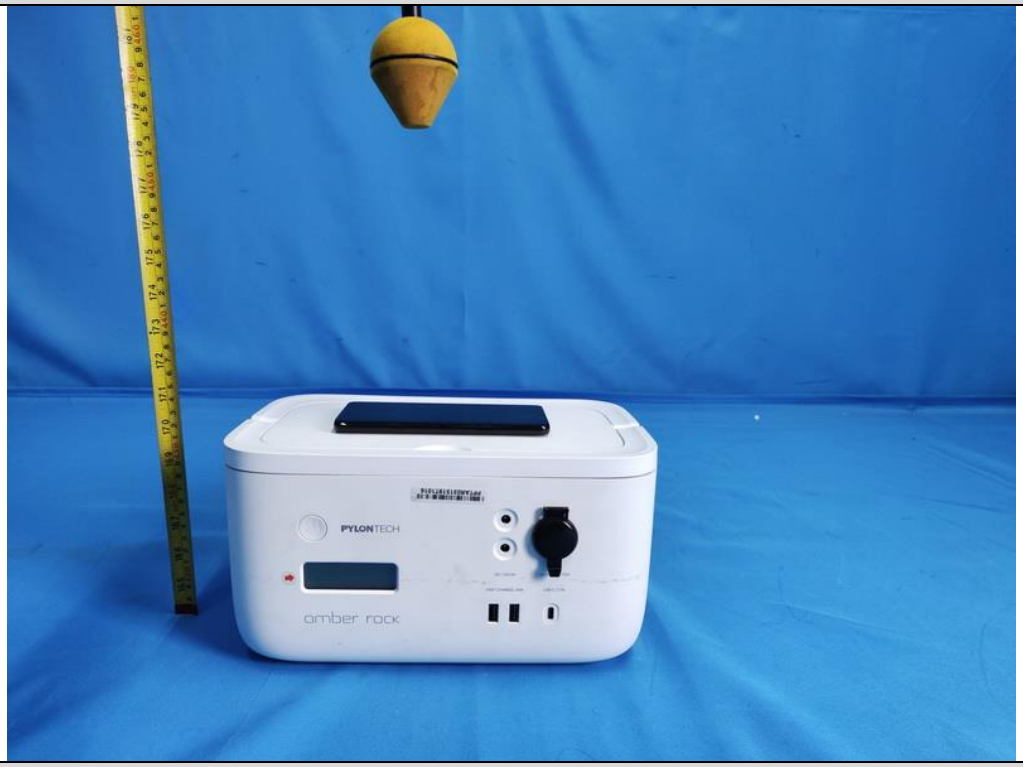
Except * item, all calibration period of equipment list is one year.

4. TEST PHOTOS

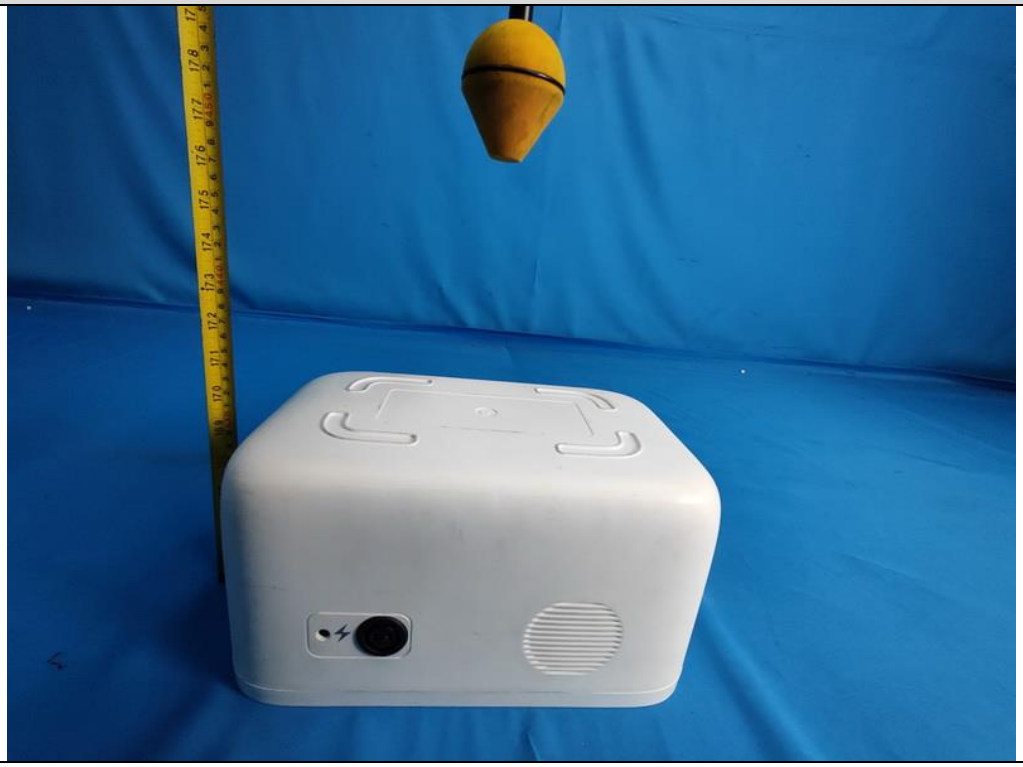
Front Side(15 cm)

Back Side(15 cm)


Left Side(15 cm)

Right Side(15 cm)


Top(20 cm)



Bottom(15 cm)



Item	Equipment	Brand	Model No.	Series No.
A	Mobile phone	Samsung	S20	N/A

Note: This phone is used as a peripheral device for testing purposes only.

End of Test Report