Human Exposure Report

FCC ID: 2BGZ8-M001

Project No.	:	2409C114
Equipment	:	Wireless Power Bank
Brand Name	:	N/A
Test Model	:	M-001
Series Model	:	N/A
Applicant	:	Shenzhen Echarger technology Co., LTD.
Address	:	No.12,Yuling West Road, Longcheng Street Longgang District Shenzhen,Guangdong Province,China
Manufacturer	:	Shenzhen Echarger technology Co., LTD.
Address	:	No.12,Yuling West Road, Longcheng Street Longgang District Shenzhen,Guangdong Province,China
Factory	:	Shenzhen Echarger technology Co., LTD.
Address	:	No.12,Yuling West Road, Longcheng Street Longgang District Shenzhen,Guangdong Province,China
Date of Receipt	:	Sep. 10, 2024
Date of Test	:	Sep. 12, 2024 ~ Dec. 11, 2024
Issued Date	:	Dec. 11, 2024
Report Version	:	R04
Test Sample	:	Engineering Sample No.: SSL2024091011
Standard(s)	:	47 CFR PART 1, Subpart I, Section 1.1310 KDB 680106 D01 Wireless Power Transfer v04

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

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2409C114	R00	Original Report.	Oct. 28, 2024	Invalid
BTL-FCCP-2-2409C114	R01	Revised report to address comments.	Nov. 20, 2024	Invalid
BTL-FCCP-2-2409C114	R02	Revised report to address comments.	Nov. 26, 2024	Invalid
BTL-FCCP-2-2409C114	R03	Revised report to address comments.	Nov. 29, 2024	Invalid
BTL-FCCP-2-2409C114	R04	Revised report to address comments.	Dec. 11, 2024	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.3, Jinshagang 1st Road, Dalang Town, Dongguan City, Guangdong People's Republic of China.
BTL's Registration Number for FCC: 747969
BTL's Designation Number for FCC: CN1377

1.2 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:

Test Items	U
Magnetic Field strength (EMR-30, 100 kHz - 400 kHz)	5.450%
Magnetic Field strength (EMR-30, 300 kHz - 30 MHz)	15.960%
Electrical Field strength (EMR-30, 100 kHz - 3 GHz)	14.850%

2. APPLICABLE STANDARD

2.1 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).

## 3. MEASUREMENT INSTRUMENTS LIST

Human Exposure					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	H-Field Probe	Narda Safety Test Solutions GmbH	HF 3061(NBM)	A-0067	Jul. 19, 2025
2	NARDA Broadband Field Meter	Narda Safety Test Solutions GmbH	NBM-520	B-0138	Jul. 29, 2025
	E-Field Probe	Narda Safety Test Solutions GmbH	EF 0391(NBM)	A-0253	Jul. 29, 2025

Remark:
    (1) All calibration period of equipment list is one year.

4. TEST PROCEDURE

(a) Test setup example diagram:
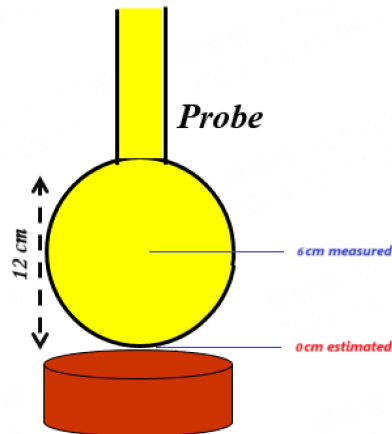
(b) Test performed with all the radiating structures operating at maximum power at the same time.
(c) Evaluate each edge surface of the host/client pair and identify the worst surface.
(d) Measurements are taken along worst surface the device from 0cm~20cm in 2cm minimum increment.
(e) Proceed to collect the 11 measurement points that will be used to build the predictive model by curve-fitting. For polynomial regression models, the order of the model shall be increased until signs of over fitting become evident.
(f) Using polynomial regression techniques to predict estimated values at touch position (0 cm).
(g) For validation purposes: If the value to show a 30% agreement between the mode and the probe measurements for the two closest points to the device surface, and with 2cm increments. Then this extrapolation method is reasonable.

5. TEST RESULTS

The field strength results of the probe sensor with a center distance of 6cm~26cm from the surface of the EUT coil are as follows:

Distance (cm)	E-Field (V/m)	H-Field (A/m)
6	65.59	0.1502
8	50.17	0.1426
10	44.99	0.1206
12	39.17	0.0978
14	36.22	0.0788
16	35.03	0.0729
18	32.30	0.0630
20	29.99	0.0617
22	27.37	0.0608
24	26.57	0.0532
26	23.56	0.0508

Use the polynomial regression techniques to estimate the results of 6cm through 12cm:

E-Field Measure Value (V/m)	E-Field Estimated Value (V/m)	Agreement Ratio	Limits
65.59	46.41	29.24%	30%

As the model is sufficient, the 0cm value can be estimated through the results of 6 cm.

E-Field Estimated Value (V/m)	Limits (V/m)	H-Field Estimated Value (A/m)	Limits (A/m)
217.30	614	0.2340	1.63

Remark:
1. All surface had been evaluated, the worst surface is Right and recorded.
2. The EUT has the maximum average output power when the support unit is in low power and being charged by EUT.
3. The transfer system includes only single primary. The transfer system designed 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.
4. Analyzing results:

E-Field:

Parameter	Linear Regression Model	Quadratic Regression Model	Cubic Regression Model	4th Order Regression Model	5th Order Regression Model	6th Order Regression Model
Multiple R	0.930	0.977	0.994	0.998	0.999	0.999
R^2	0.865	0.955	0.989	0.996	0.997	0.997
Adjusted R^2	0.850	0.944	0.984	0.993	0.995	0.993
Standard Error (S)*	4.776	2.912	1.571	1.044	**0.913**	1.017
Number of data points used	11	11	11	11	11	11
Estimated magnetic field strength at touch position (V/m)	64.97	86.59	120.02	161.47	**217.30**	236.80

* The units of the standard error are the units of the measured variable V/m.
As shown in the table above, the 5th order regression model produced the lowest standard error. From the model, the estimated E-field strength at touch position 217.30 V/m. Note that the 6th order regression model was not selected as evidence of over fit were shown by the increase of S.

H-Field:

| Parameter	Linear Regression Model	Quadratic Regression Model	Cubic Regression Model
Multiple R	0.940	0.991	0.991
R^2	0.884	0.982	0.982
Adjusted R^2	0.871	0.978	0.975
Standard Error (S)*	0.013	**0.005**	0.006
Number of data points used	11	11	11
Estimated magnetic field strength at touch position (A/m)	0.1682	**0.2340**	0.2397

* The units of the standard error are the units of the measured variable A/m.
As shown in the table above, the quadratic regression model produced the lowest standard error. From the model, the estimated H-field strength at touch position 0.2340 A/m. Note that the cubic regression model was not selected as evidence of over fit were shown by the increase of S.
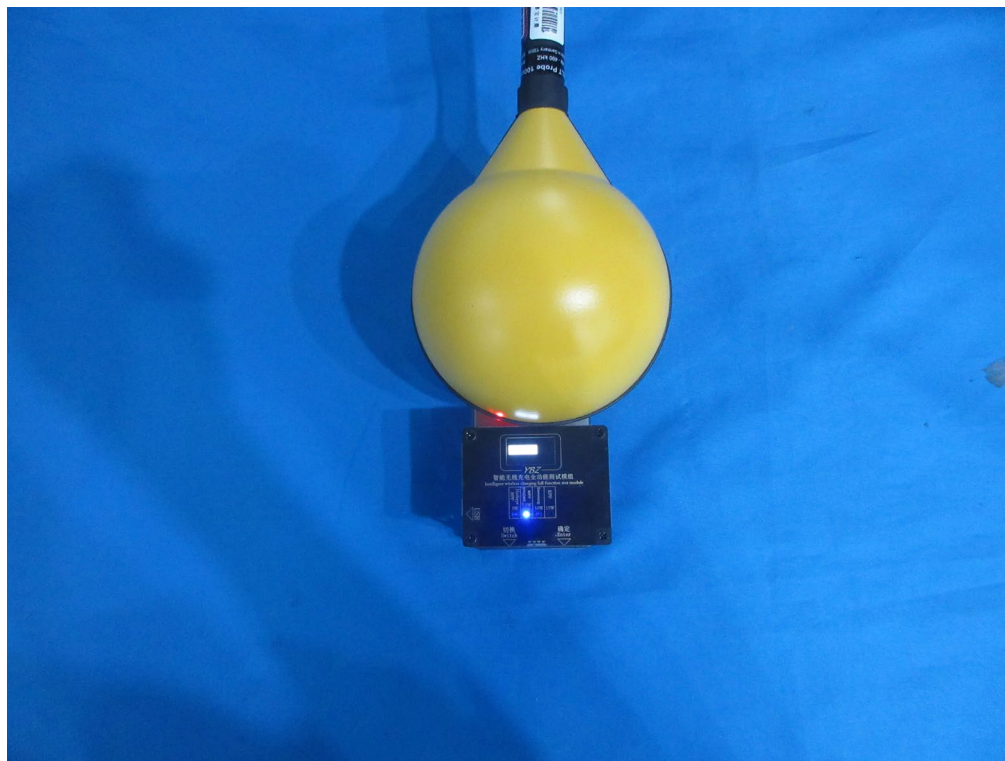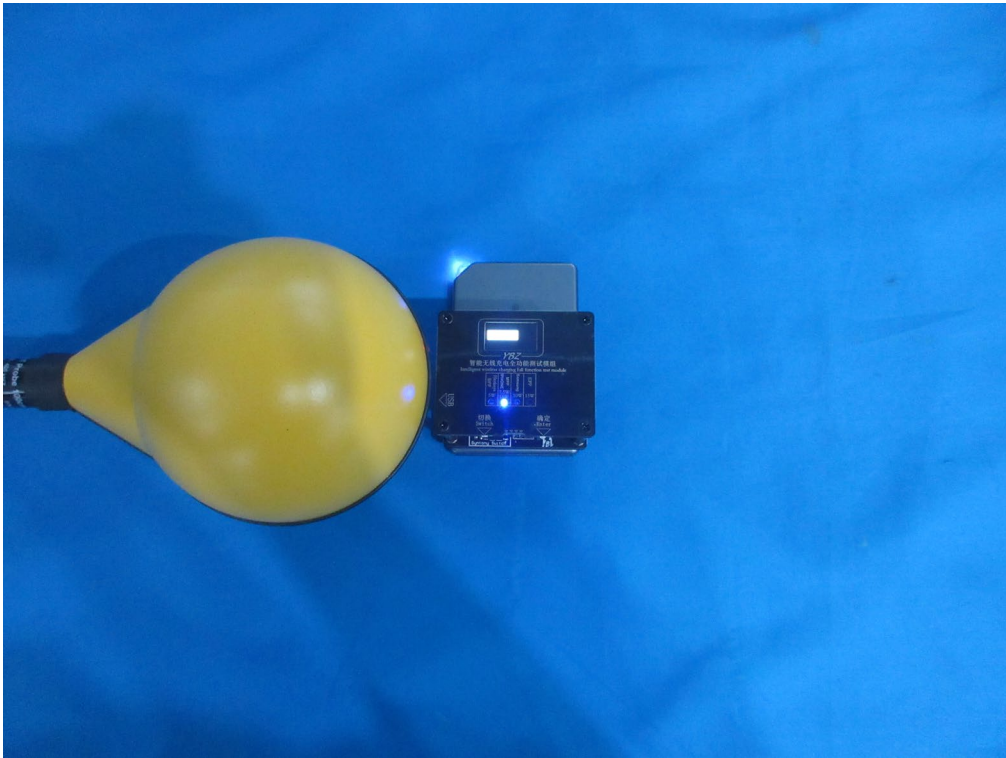
6. TEST PHOTOS

Electric Field Emissions
Front Side
(0 cm)
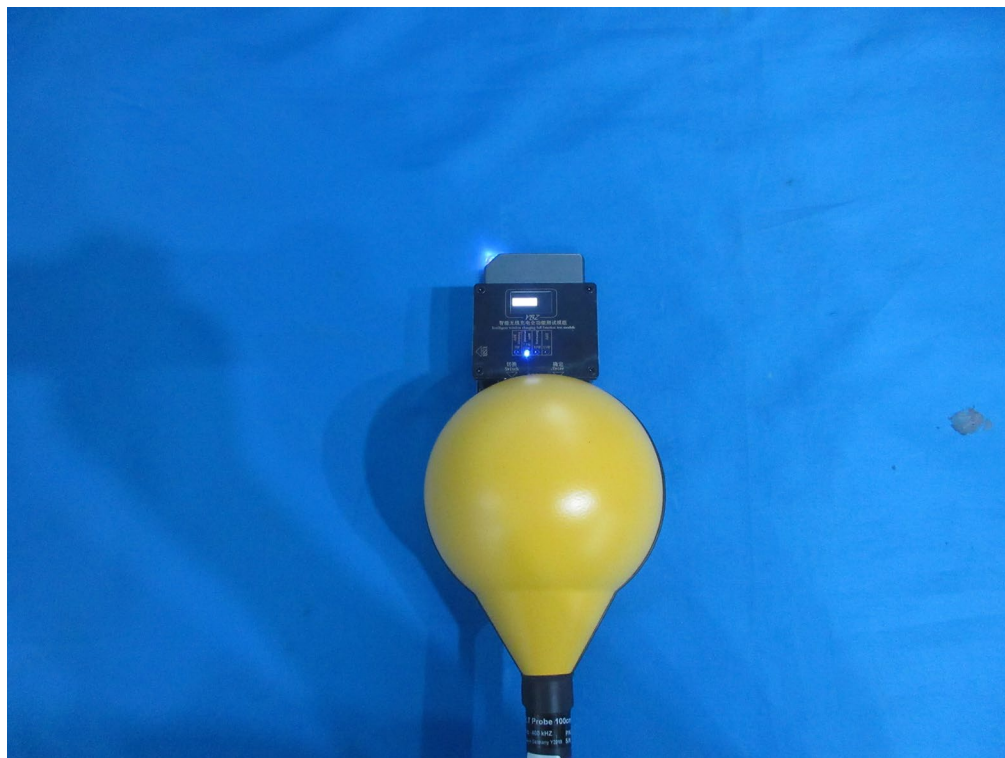
Back Side
(0 cm)

Left Side
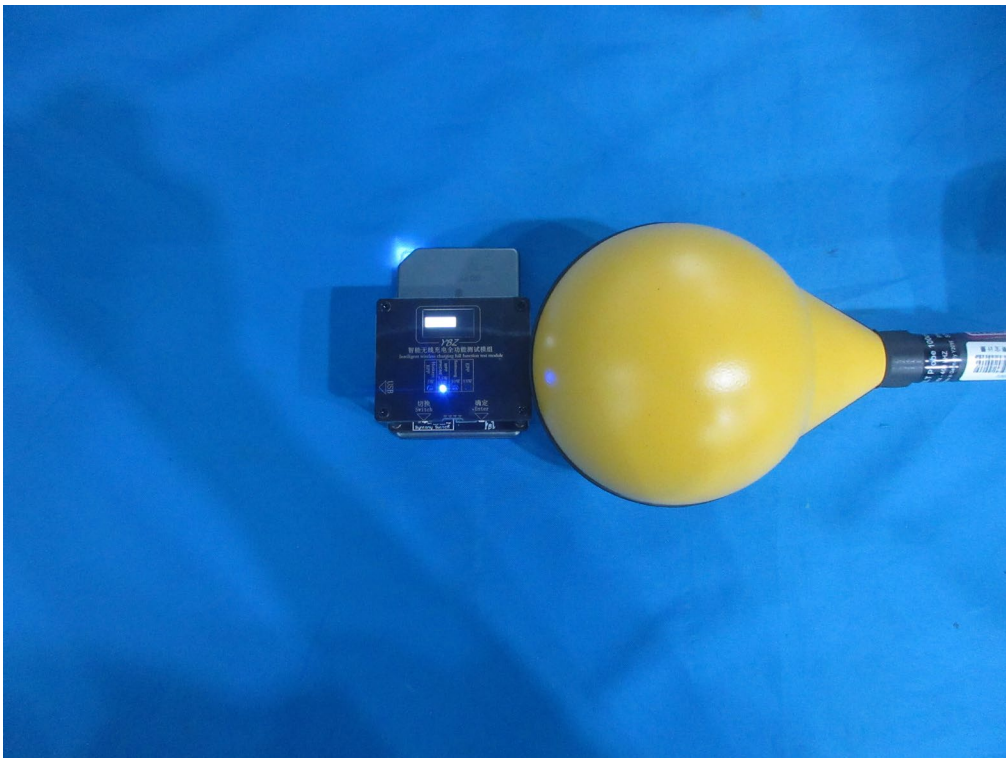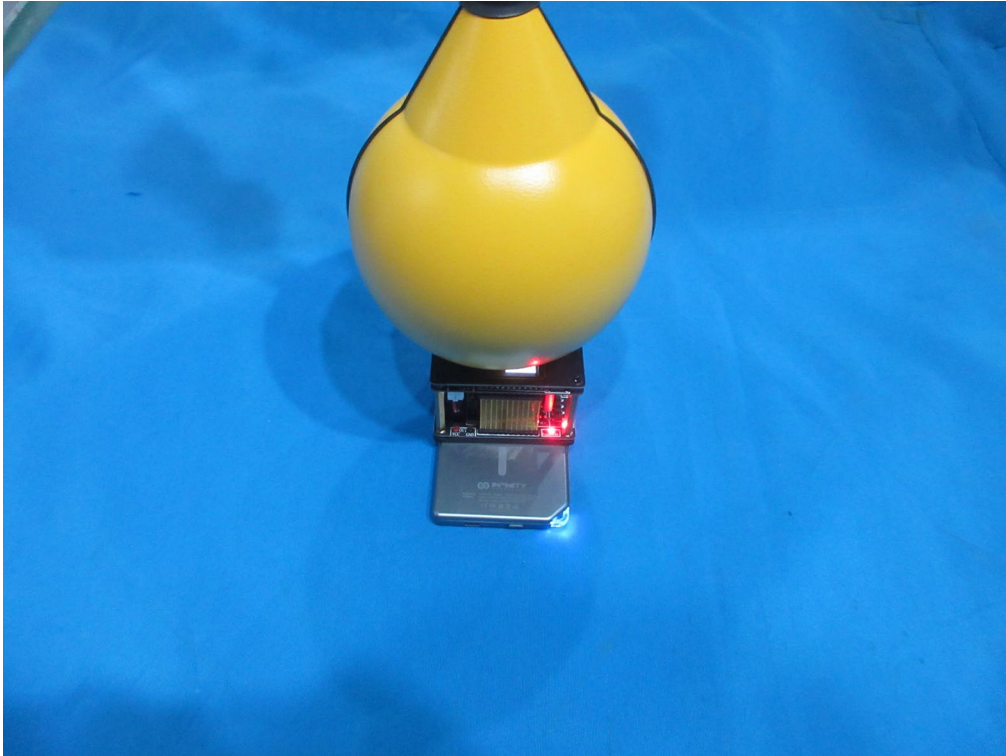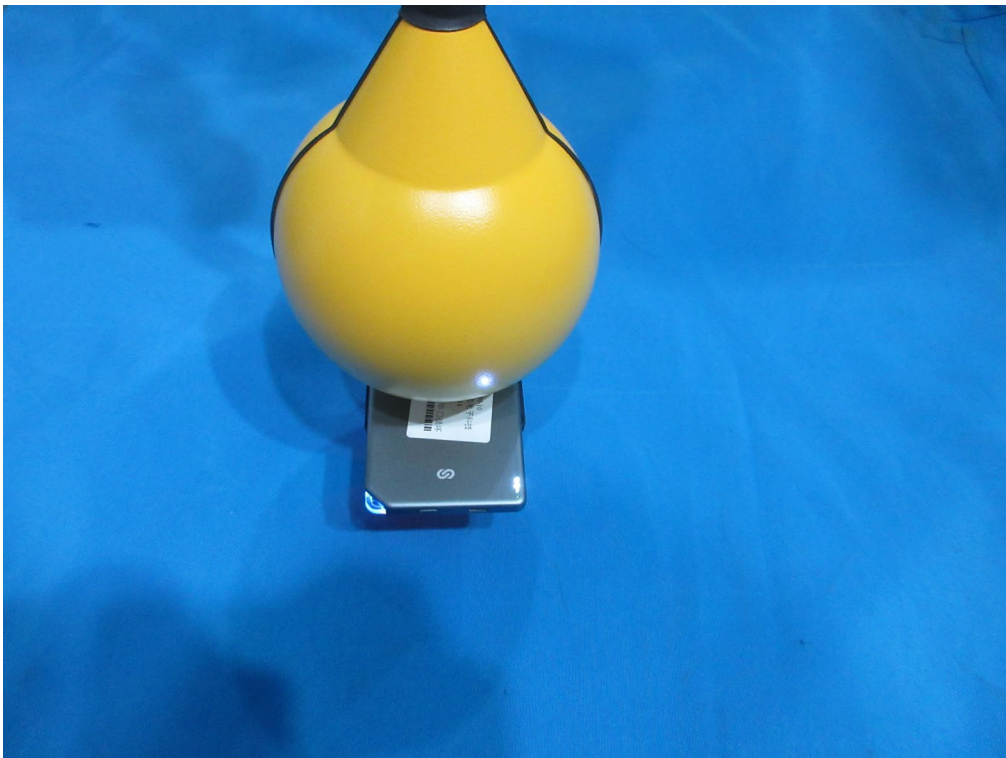**(0 cm)**

Right Side
(0 cm)

**Top
(0 cm)**

**Bottom
(0 cm)**

End of Test Report