RF Exposure Report

Report No.: AGC10315220802FH01

FCC ID	:	2A74I-TLL151311
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	15W WIRELESS DESK CHARGER
BRAND NAME	:	Tellur
MODEL NAME	:	TLL151311
APPLICANT	:	ABN SYSTEMS INTERNATIONAL S.A.
DATE OF ISSUE	:	Sep. 26, 2022
STANDARD(S)	:	KDB680106 D01 RF Exposure Wireless Charging Base App v03r01
REPORT VERSION	:	V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 26, 2022	Valid	Initial Release

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1. GENERAL INFORMATION

Applicant	ABN SYSTEMS INTERNATIONAL S.A.
Address	Str. Marinarilor, nr. 31, Sector 1 Bucuresti, Romania
Manufacturer	COMPRO ELECTRONICS
Address	2nd Floor, Building No.5, Jinmeiwei Industrial Park, No.12 Xingye West Road, Heyi Community, Shajing Street, Baoan District, Shenzhen
Product Designation	15W WIRELESS DESK CHARGER
Brand Name	Tellur
Test Model	TLL151311
Date of Test	Sep. 02, 2022 to Sep. 23, 2022
Deviation from Standard	No any deviation from the test method
Test Result	Pass

Prepared By	Alan Duan (Project Engineer)	Sep. 26, 2022
Reviewed By	Calvin Liu (Reviewer)	Sep. 26, 2022
Approved By	Max Zhang (Authorized Officer)	Sep. 26, 2022

2. PRODUCT INFORMATION

2.1 PRODUCT TECHNICAL DESCRIPTION

Equipment Specification	WPT
Operation Frequency	110.5KHz-205KHz
Hardware Version	KEP-WCPS-5-2C-V4.1
Software Version	V1.0
Modulation Type	ASK
Number of channels	1
Field Strength of Fundamental	84.20dBuV/m (Max)
Antenna Designation	Coil Antenna
Antenna Gain	0dBi
Power Supply	DC 5V/3A, DC 9V/1.67A, DC 12V/1.5A
Wireless Charging Output Power	5W, 7.5W, 10W, 15W

2.2 TEST FREQUENCY LIST

Frequency Band	Channel Number	Test Frequency
110.5KHz-205KHz	01	113.6 KHz

3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. 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 our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS
Temperature range (℃)	15 - 35	--
Relative humidity range	20 % - 75 %	--
Pressure range (kPa)	86 - 106	--
Power supply	--	--
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.		

3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
E-Field Strength(0.003-0.4MHz)	±1.5dB
E-Field Strength(0.4-10MHz)	±1.3dB
H-Field Strength(0.003-0.4MHz)	±1.3dB
H-Field Strength(0.4-10MHz)	±1.2dB

3.5 LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Broadband Field Meter	WAVECONTROL	SMP2	J-0004	Jun. 08, 2022	Jun. 07, 2023
Probe FHP	WAVECONTROL	WP400	J-0015	Jun. 08, 2022	Jun. 07, 2023

4. EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:
☒ Test Accessories Come From The Laboratory

Item	Equipment	Model No.	Identifier	Note
1	Wireless charging load	Huawei	N/A	AE
2	Adapter	HW-050200C01	DC 5V	AE

☒ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	15W WIRELESS DESK CHARGER	TLL151311	2A74I-TLL151311	EUT

5. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION	Exposure Conditions
1	Wireless charging Mode (15W Full load mode)	Mobile
2	Wireless charging Mode (10W Full load mode)	Mobile
3	Wireless charging Mode (7.5W Full load mode)	Mobile
4	Wireless charging Mode (5W Full load mode)	Mobile
5	Wireless charging Mode (7.5W Half load mode)	Mobile
6	Wireless charging Mode (5W Half load mode)	Mobile
7	Wireless charging Mode (Null load mode)	Mobile
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

6. RF EXPOSURE MEASUREMENT

6.1 REFER EVALUATION METHOD

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
FCC KDB publication 680106 D01v03r01 RF Exposure Wireless Charging Apps v03: RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications
FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.
FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.
FCC CFR 47 part 18.107: Indusial, Scientific, and Medical Equipment.

6.2 TEST LIMITS

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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
300-1,500	/	/	f/300	6
1,500-100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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
300-1,500	/	/	f/1500	30
1,500-100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density

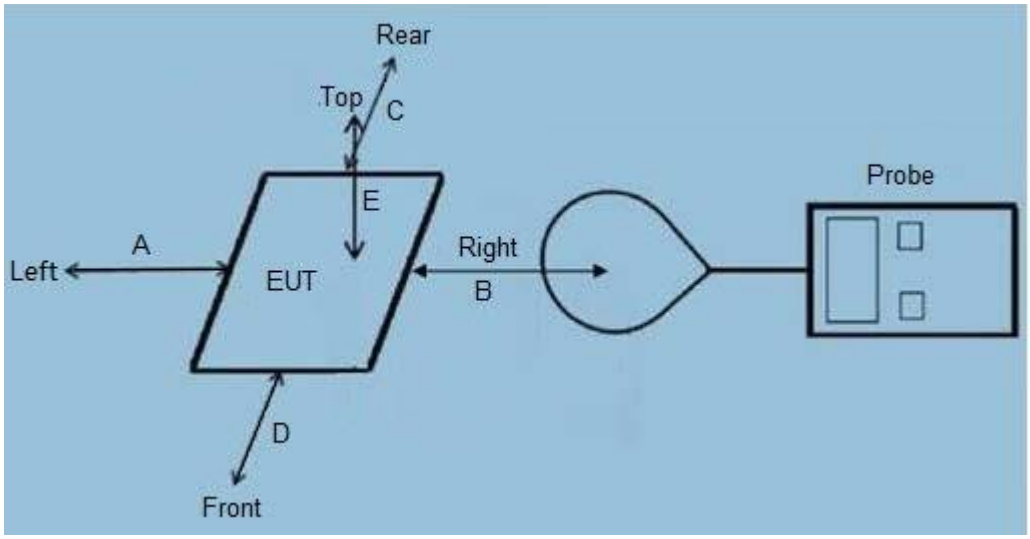
According to FCC KDB 680106 D01v03r01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 KHz to 300 KHz should be assessed versus the limits at 300 KHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

	E-Field	*/*	B-Field
Frequency	V/m	A/m	uT
0.3 MHz – 3.0 MHz	614	1.613	2.0
3.0 MHz – 30 MHz	$824/f\ (=27.5_{30MHz})$	$2.19/f\ (=0.073_{30MHz})$	--

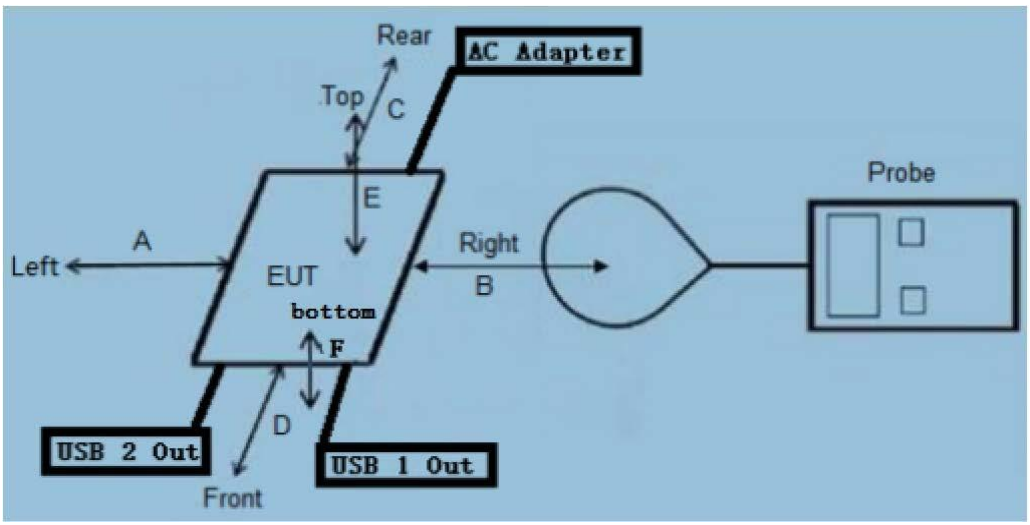
A KDB inquire was required to determine/confirm the applicable limits below 100 KHz.

6.3 MEASUREMENT SETUP

Mobile:



Portable:



Note:
-- RF exposure assessment tests are conducted in a shielded room.
-- Refer to the following test method description for the test distance between the edge of the charger and the measuring probe.
-- As shown in the above picture, the test layout is not for the real object, only the requirements of the test layout listed in the standard requirements are presented, for reference only.
-- The actual test EUT distinguishes the test type according to the requirements as shown in the figure above.

6.4 MEASUREMENT PROCEDURE

For mobile RF exposure:

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.

b) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric center of probe. And a test distance (20cm) which is between the Top of the charger and the geometric center of probe.

c) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.

d) The EUT were measured according to the dictates of KDB 680106 D01v03r01.

For portable RF exposure:

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.

b) The measurement probe was placed at test distance (from 0 cm to 20 cm, in 2 cm maximum increment) which is between the edge of the charger and the geometric center of probe.

c) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F,) were completed.

d) The EUT were measured according to the dictates of KDB 680106 D01v03r01

Remark：The diameter size of the probe is 11.5cm.

6.5 MEASUREMENT RESULTS

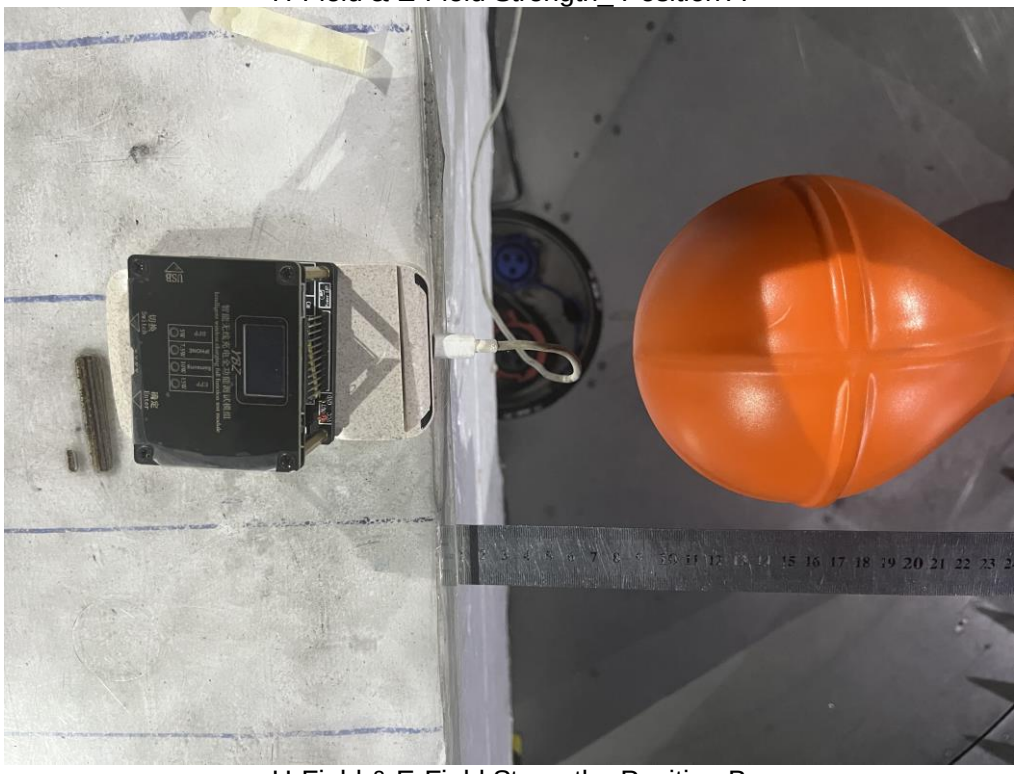
Mobile devices are evaluated as follows:

Operate Mode	Field Strength	Measured H-Field Strength Values (A/m) Measured E-Field Strength Values (V/m)					FCC Limit	50%_FCC limit
		Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
Mode 1	nT	816.58	540.20	854.27	904.52	741.21	--	--
Mode 1	A/m	0.653	0.437	0.686	0.724	0.596	1.63	0.815
Mode 1	V/m	0.587	0.563	0.782	0.657	0.546	614	307

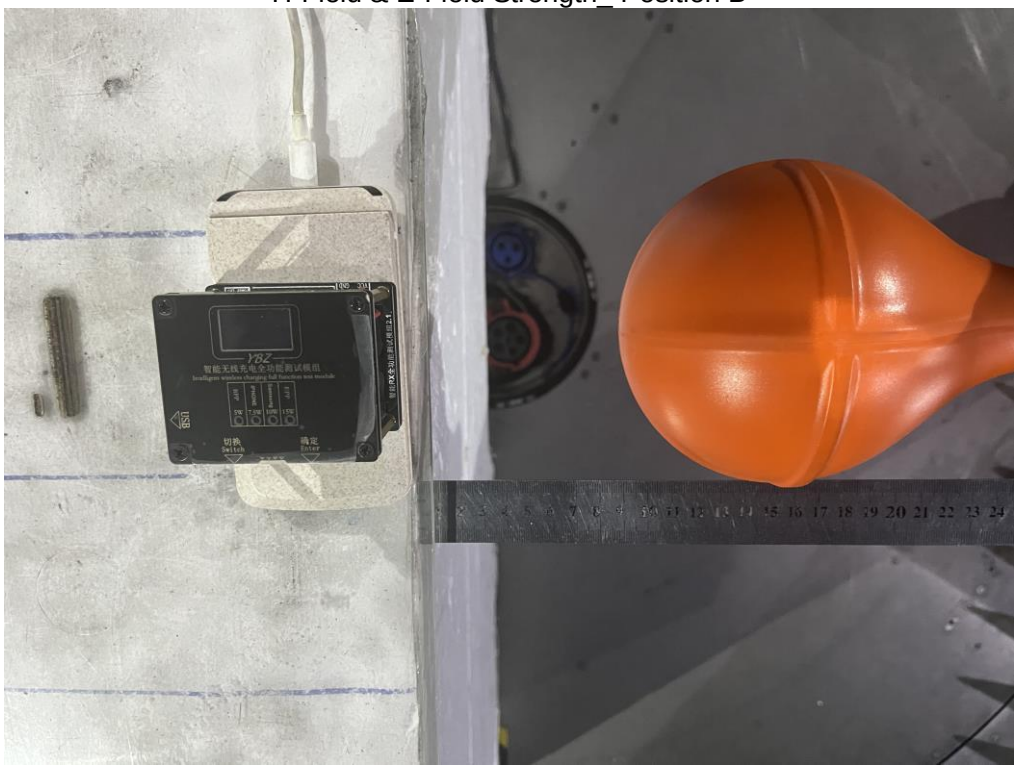
Note: Unit conversion formula: 1ut=1.25A/m

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

H-Field & E-Field Strength_ Position A

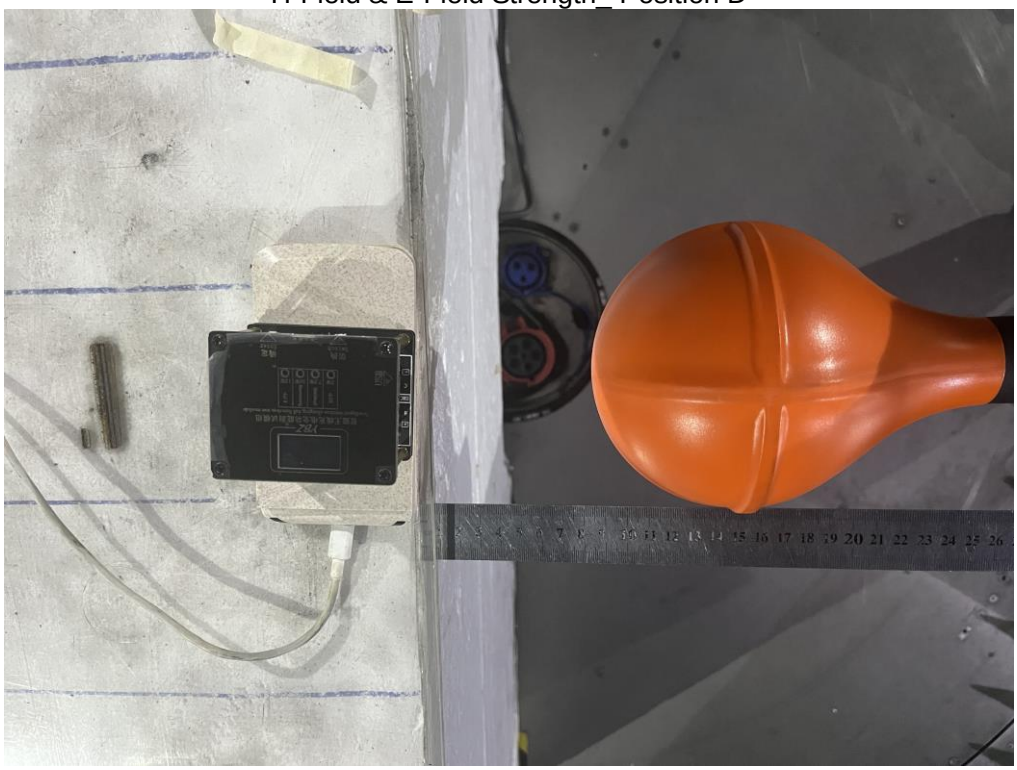


H-Field & E-Field Strength_ Position B

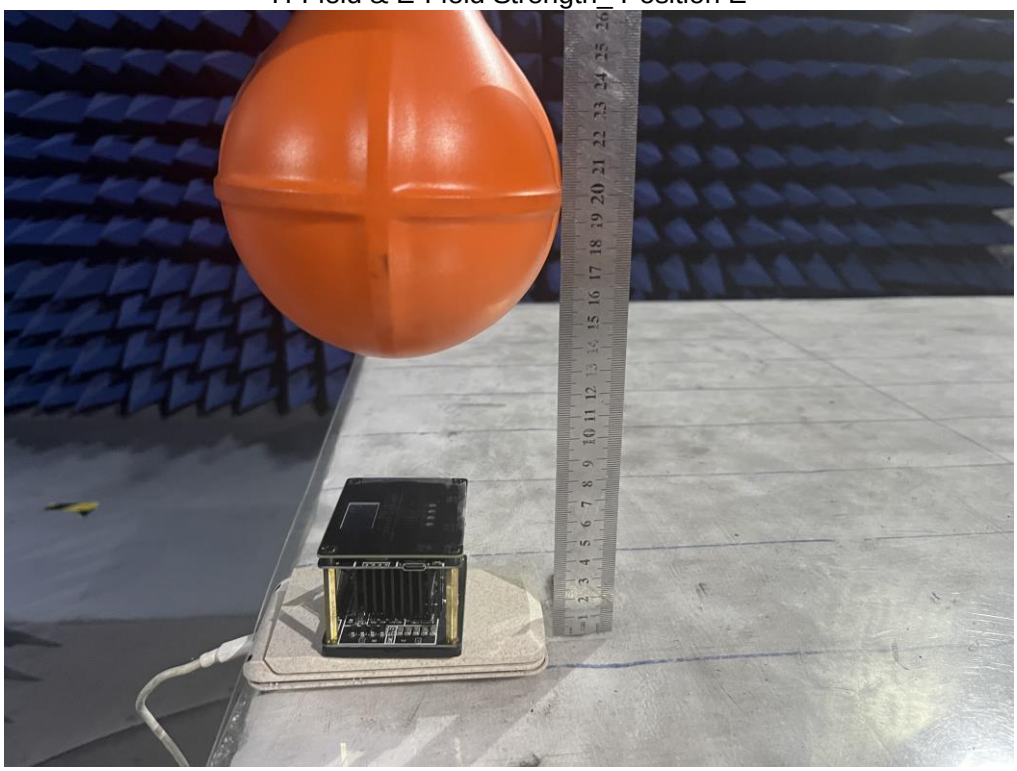


H-Field & E-Field Strength_ Position C

H-Field & E-Field Strength_ Position D



H-Field & E-Field Strength_ Position E



-----END OF REPORT-----

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