RF EXPOSURE REPORT FOR CERTIFICATION
On Behalf of

mophie LLC

mophie wireless charging pad

Model Number: SC-WRLS-BASE-15W-M2

FCC ID: 2ACWB-BASE15M2

Prepared for:	mophie LLC
	6244 Technology Ave.Kalamazoo.MI49009 United States of America.
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
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Report Number:	ESTE-R2010174
Date of Test:	Sep. 21~Oct. 26, 2020
Date of Report:	Oct. 27, 2020

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Description Page

EST Technology Co., Ltd.

Applicant: **Address:**	mophie LLC 6244 Technology Ave.Kalamazoo.MI49009 United States of America.		
Manufacturer: **Address:**	mophie LLC 6244 Technology Ave.Kalamazoo.MI49009 United States of America.		
E.U.T:	mophie wireless charging pad		
Model Number:	SC-WRLS-BASE-15W-M2		
Power Supply:	Input: 19V⎓1.3A Output (Qi): 15W		
Trade Name:	mophie	Serial No.:	------
Date of Receipt:	Sep. 21, 2020	Date of Test:	Sep. 21~Oct. 26, 2020
Test Specification:	FCC CFR 47 Part 1.1307(b)&1.1310 KDB 680106 D01 RF Exposure Wireless Charging Apps v03		
Test Result:	The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC CFR 47 Part 1.1307(b)&1.1310 requirements.This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.		

Date: Oct. 27, 2020

Prepared by:	Reviewed by:	Approved by:
Ring Yang	Seven Wang	
Ring Wang / Assistant	Seven Wang / Engineer	Iceman Hu / Manager

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

1. SUMMARY OF TEST

1.1. Summary of test result

Report Section	Description of Test Item	FCC Standard Section	Results
3	Maximum Permissible Exposure	Part 1.1307(b)&1.1310	PASS

1.2. Test Mode

Test Item	Test Mode
Maximum Permissible Exposure	Wireless Charging with Empty Load
	Wireless Charging with Half Load
	Wireless Charging with Full Load

1.3. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Electric and Magnetic Field Probe-Analyzer	Narda S.T.S./PMM	EHP-200A	EST-E106	Feb.14,20	1 Year
Simulated load(Full)	/	/	EST-306	N/A	N/A
Simulated load(Half)	/	/	EST-307	N/A	N/A
Test Software	Narda	EHP200-TS	Rel 1.92	N/A	N/A

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit

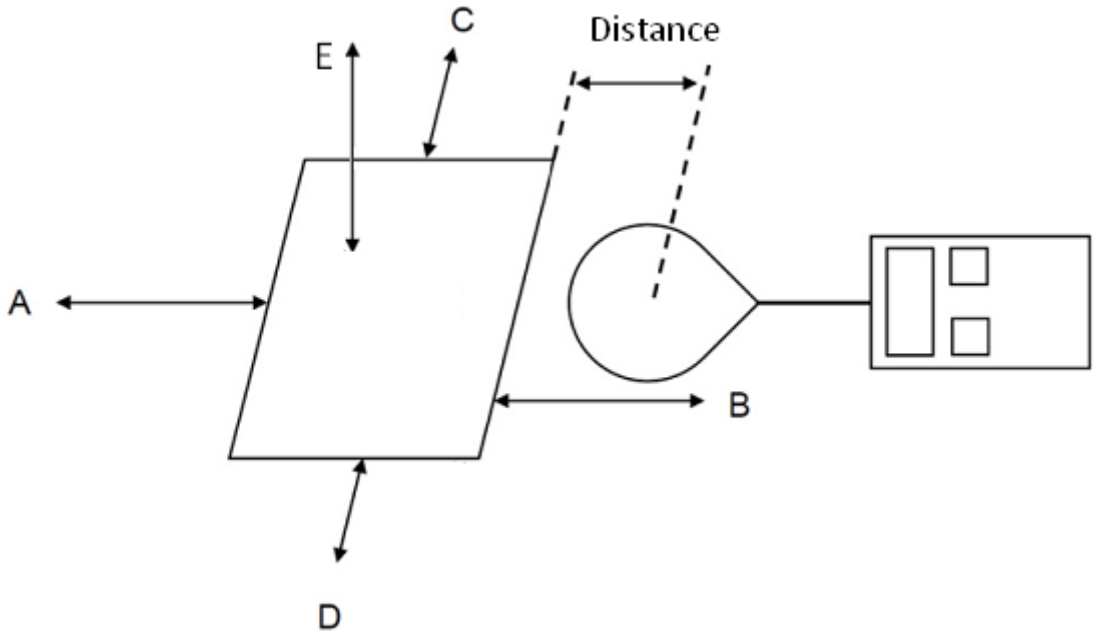
Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) 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
(B) 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

Note:

1. f = frequency in MHz * = Plane-wave equivalent power density.
2. 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.

2.2. Test Setup



2.3. Test Procedure

a. The test was performed on turn table in anechoic chamber with a dummy load.
b. The dummy load must be placed horizontal of the EUT at the top (Parallel to the coil).
c. The probe was placed at 15 cm surrounding the device and 20 cm above the top of the charger and the geometric centre of the probe.
d. The highest emission level was recorded and compared with limit as soon as measurement of each point; A, B, C, D, E were completed.

2.4. Equipment Approval Considerations

Inductive wireless power transfer applications with supporting field strength results and meeting all of the following requirements are not required to submit a KDB inquiry for devices approved using SDoC or a PAG for equipment approved using certification to address RF exposure compliance.

1	Power transfer frequency is less that 1 MHz
	YES; the device operated in the frequency range from 110.5-205KHz.
2	Output power from each primary coil is less than or equal to 15 watts.
	YES; the maximum output power of the primary coil is 15W.
3	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.
	YES; the transfer system includes only single primary and secondary coils.
4	Client device is placed directly in contact with the transmitter.
	YES; Client device is placed directly in contact with the transmitter.
5	Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
	YES.
6	The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
	YES; The EUT field strength levels are 50% x MPE limts.

2.5. Test Result for Test setup A:

E-field strength			
Frequency range (KHz)	110.5 to 205		
Test Mode	Full Load	Half Load	Empty Load
Position A(V/m)	0.345	0.346	0.344
Position B(V/m)	0.346	0.344	0.345
Position C(V/m)	0.345	0.344	0.343
Position D(V/m)	0.367	0.348	0.344
Position E(V/m)	0.618	0.523	0.345
Limits (V/m)	614		
50% Limits(V/m)	307		

H-field strength			
Frequency range (KHz)	110.5 to 205		
Test Mode	Full Load	Half Load	Empty Load
Position A(A/m)	0.048	0.043	0.046
Position B(A/m)	0.052	0.044	0.044
Position C(A/m)	0.046	0.043	0.045
Position D(A/m)	0.046	0.044	0.045
Position E(A/m)	0.044	0.043	0.047
Limits (A/m)	1.630		
50% Limits (A/m)	0.815		

2.6. Test Result for Test setup B:

Empty , Half , Full load all have been tested ,only worse case Max load (Full) is reported.

E-Filed Strength at (distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, ……. 1cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (V/m)

Test distance (cm)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	Limits (V/m)
1	20.128	19.198	21.984	19.228	36.951	614
2	17.489	16.287	17.189	17.164	28.789	614
3	15.115	14.718	15.129	15.289	25.225	614
4	13.198	13.335	12.394	13.585	23.794	614
5	11.239	10.294	11.791	12.498	20.498	614
6	9.491	9.198	9.281	9.394	16.492	614
7	7.289	7.648	7.121	7.281	13.189	614
8	5.492	4.876	4.987	4.484	11.335	614
9	2.394	2.192	2.139	2.298	9.249	614
10	0.397	0.484	0.589	0.679	7.303	614

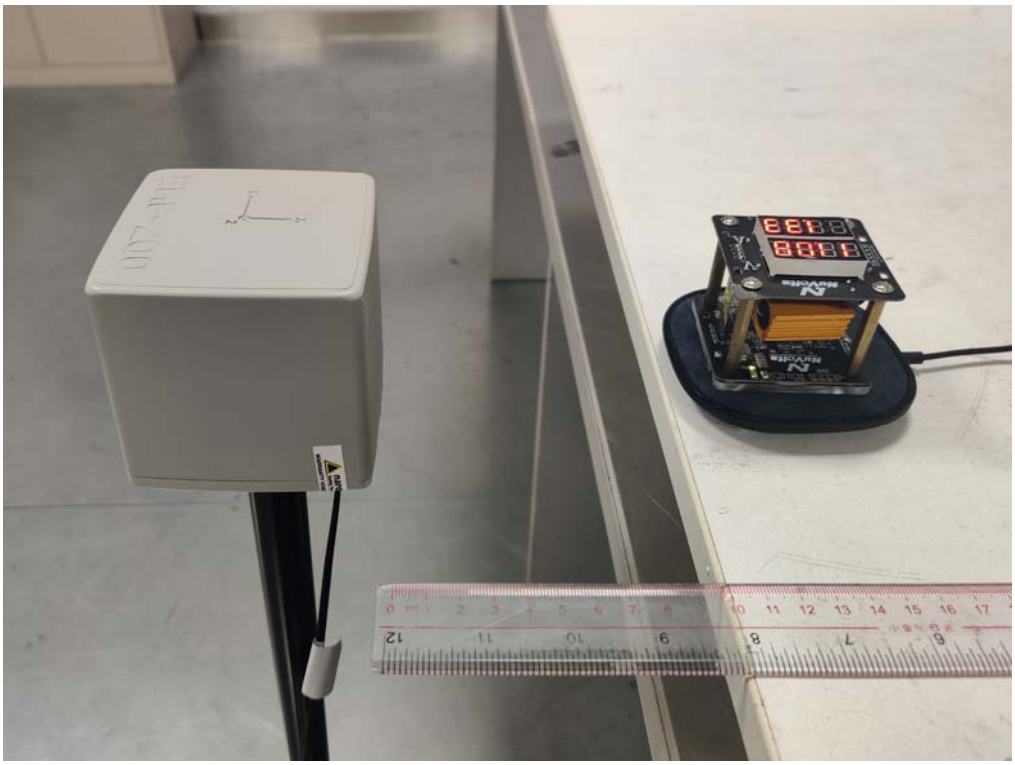
H-Filed Strength at (distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, ……. 1cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (A/m)

Test distance (cm)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	Limits (A/m)
1	0.279	0.213	0.242	0.232	0.926	1.63
2	0.175	0.181	0.180	0.187	0.555	1.63
3	0.141	0.133	0.125	0.125	0.441	1.63
4	0.083	0.089	0.087	0.084	0.372	1.63
5	0.051	0.065	0.057	0.065	0.262	1.63
6	0.046	0.054	0.045	0.049	0.203	1.63
7	0.046	0.046	0.044	0.044	0.125	1.63
8	0.044	0.048	0.046	0.045	0.049	1.63
9	0.045	0.046	0.046	0.043	0.048	1.63
10	0.044	0.045	0.044	0.044	0.044	1.63

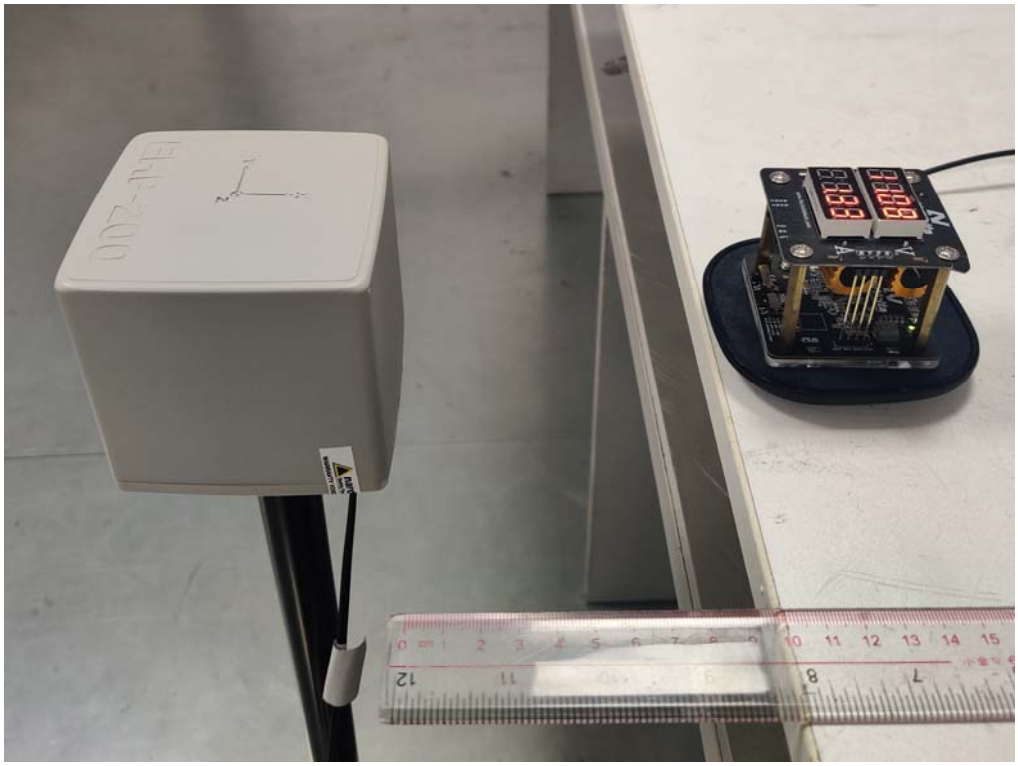
3. TEST SETUP PHOTO

10cm

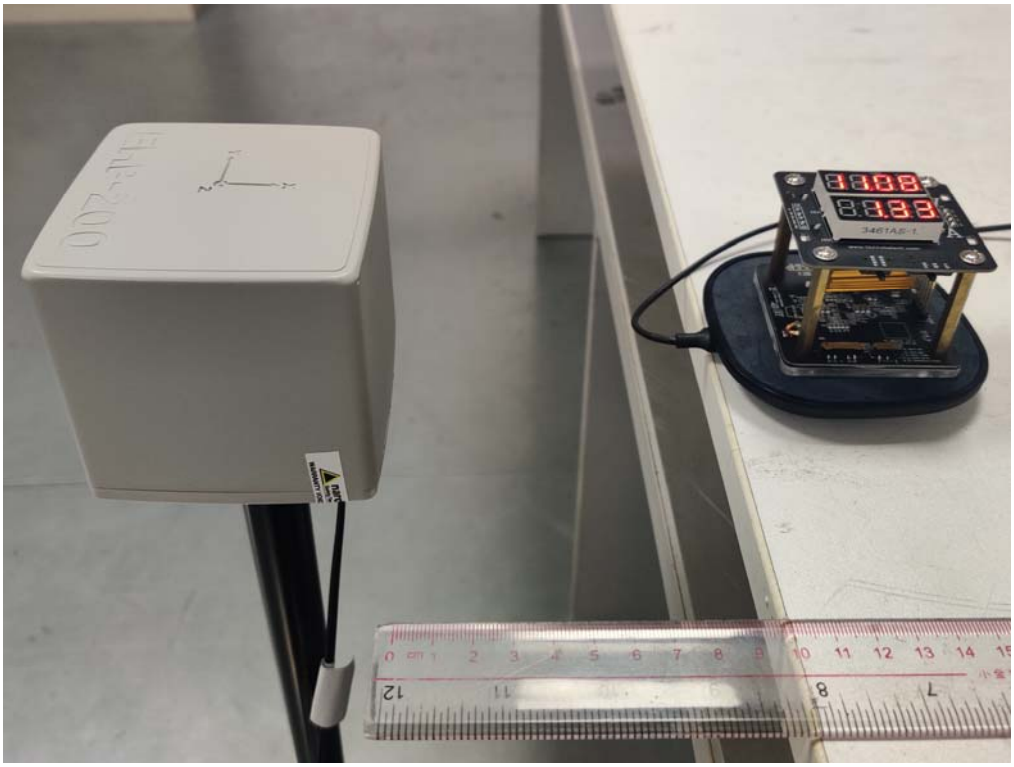
Position A



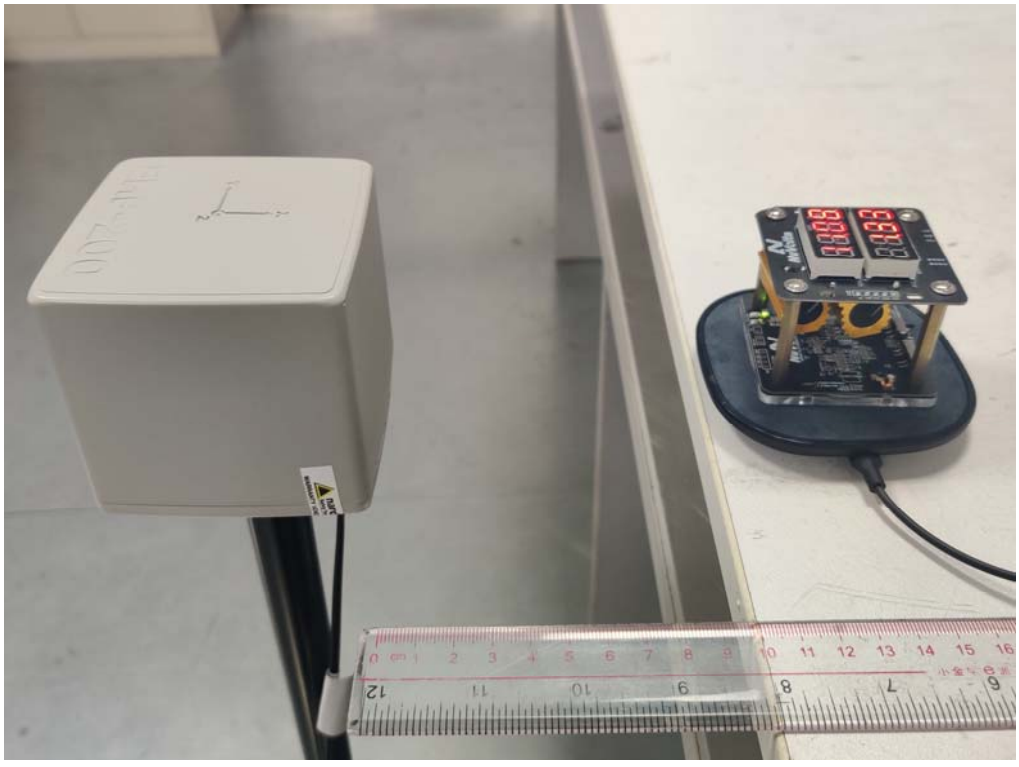
Position B



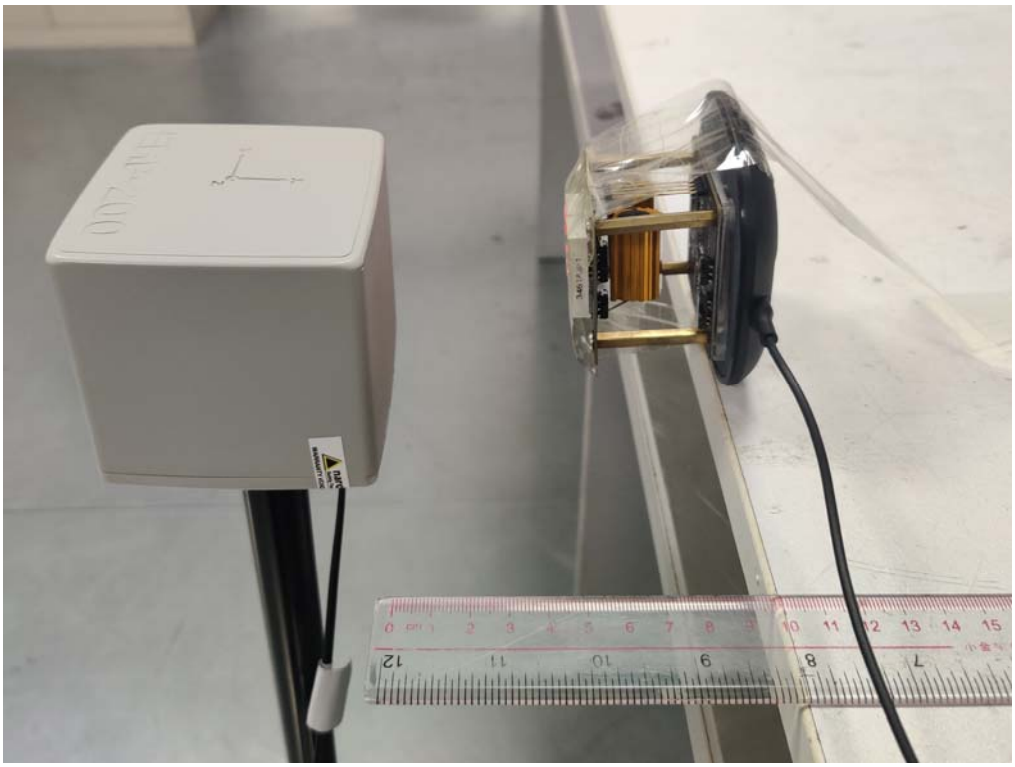
Position C



Position D

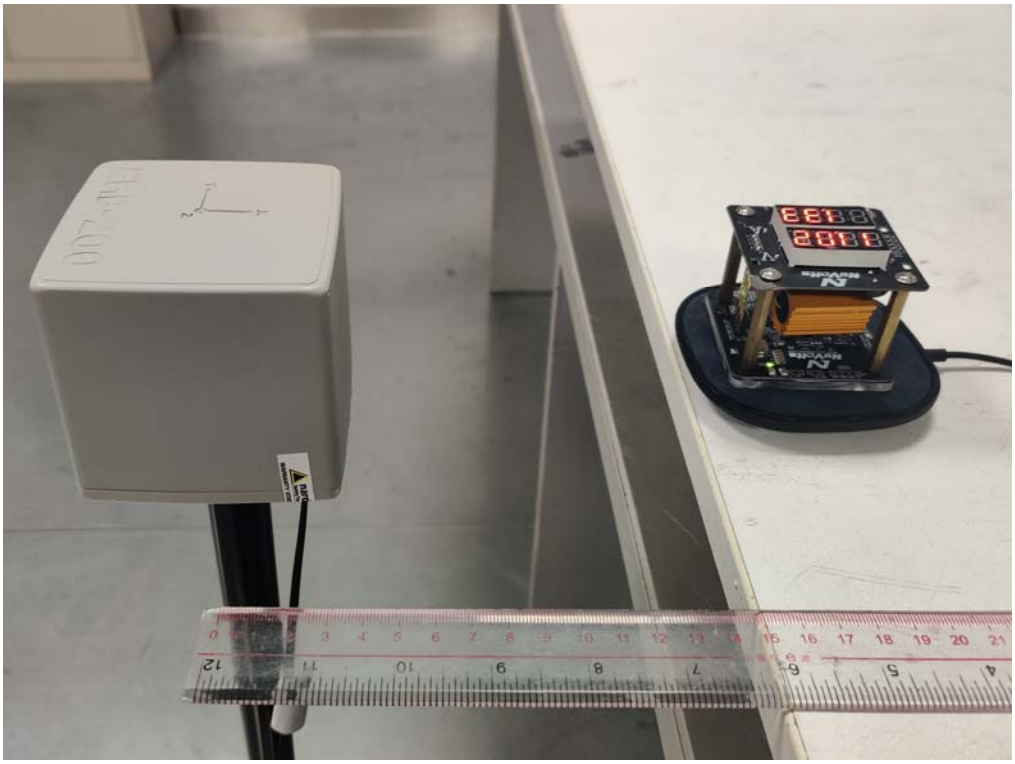


Position E

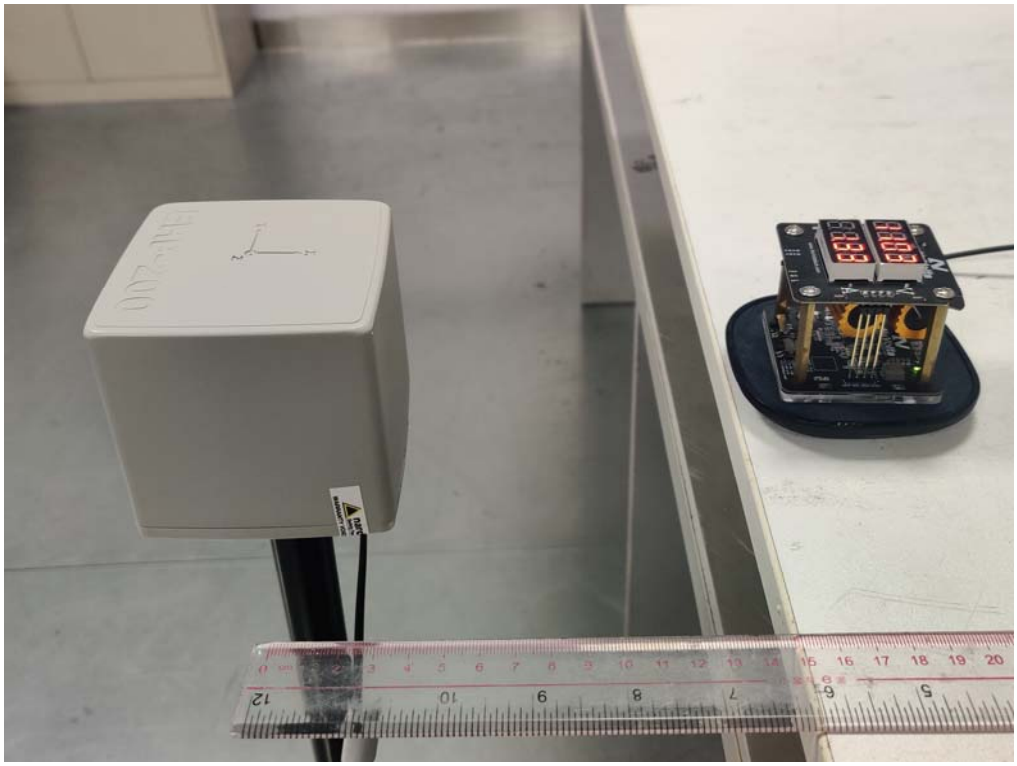


15cm

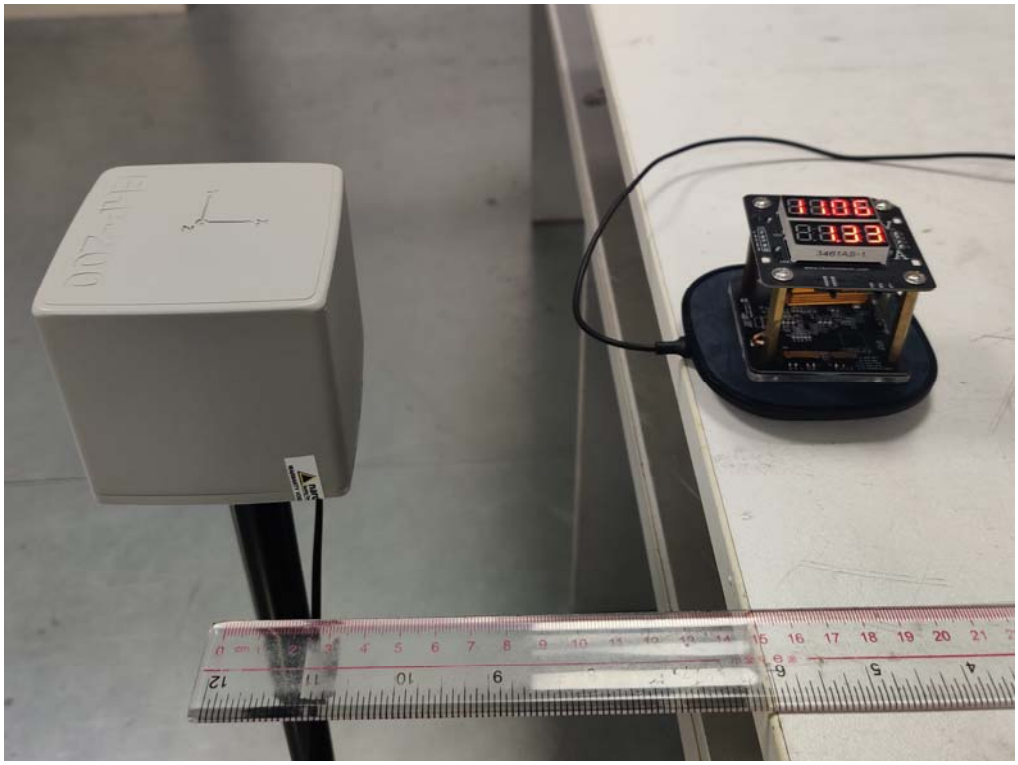
Position A



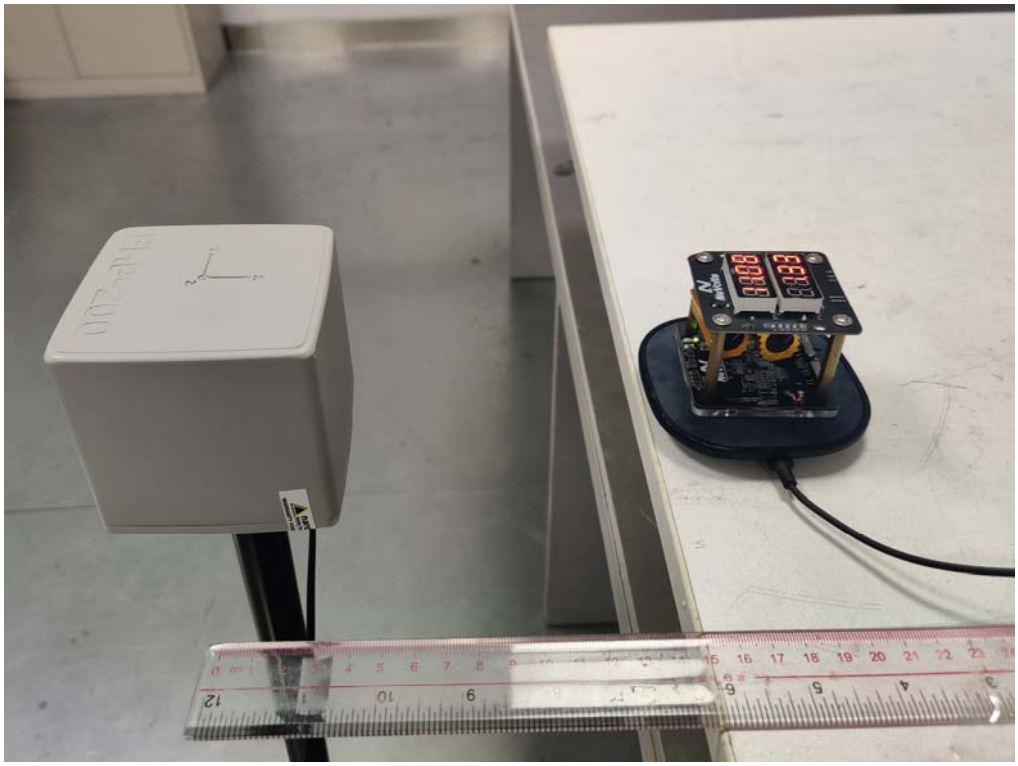
Position B



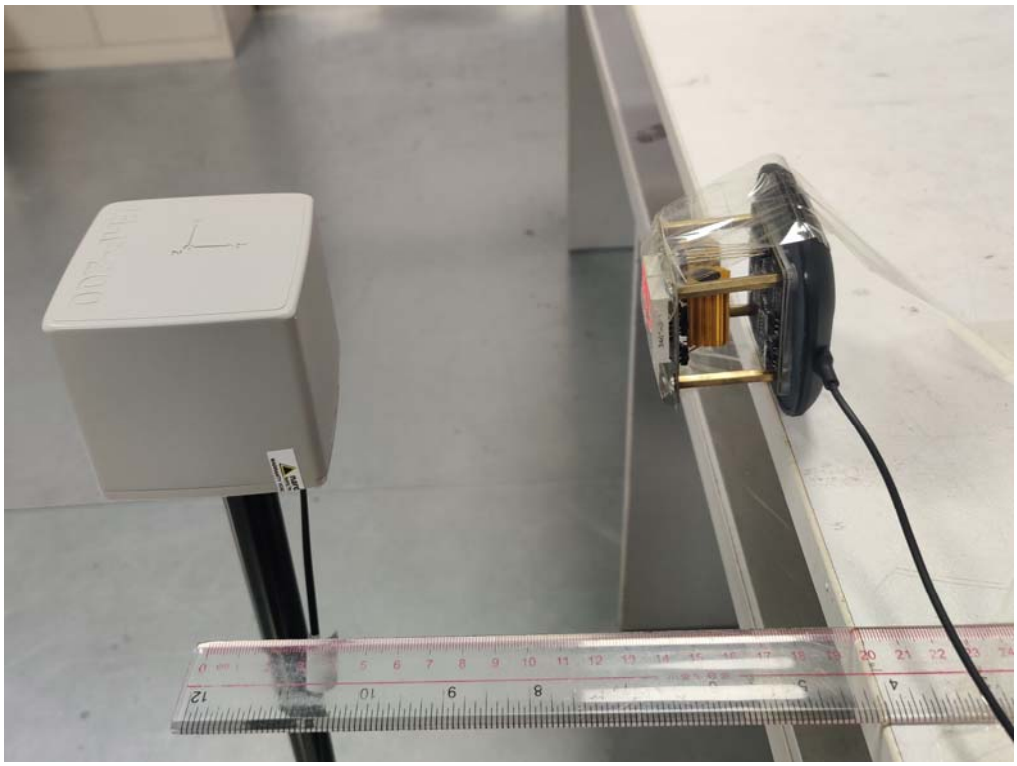
Position C



Position D



Position E



End of Test Report