

EMF TEST REPORT

Test Report No. : OT-237-RWD-005

Reception No. : 2305001412

Applicant : BROS&COMPANY INC.

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Type of Equipment : HANDS3 PRO DUAL

FCC ID. : 2AQIS-POUT-04101

Model Name : POUT-04101

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 22 pages (including this page)

Date of Incoming : June 15, 2023

Date of issue : July 06, 2023

SUMMARY

The equipment complies with the regulation; **FCC CFR 47 PART 1.1310**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This report is not correlated with the "KS Q ISO/IEC 17025 and KOLAS accreditation" of Korean Laboratory Accreditation Scheme.



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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-237-RWD-005	July 06, 2023	Initial Release	All

2. GENERAL INFORMATION

2.1 Product Description

The BROS&COMPANY INC., Model: POUT-04101 (referred to as the EUT in this report) is an HANDS3 PRO DUAL. Product specification information described herein was obtained from product data sheet or user’s manual.

DEVICE TYPE	HANDS3 PRO DUAL
OPERATING FREQUENCY	Antenna 1: 110.58 kHz ~ 147.27 kHz Antenna 2: 110.61 kHz ~ 147.26 kHz
RATED RF OUTPUT POWER	85.70 dB μ V/m
ANTENNA TYPE	Coil Antenna
MODULATION	ASK
RATED SUPPLY VOLTAGE	DC 5.0 V, DC 9.0 V

2.2 Accessories Description

DEVICE	MODEL	MANUFACTURER	SERIAL
Galaxy S8	SM-G950N	SAMSUNG	R39J306J4J
Galaxy Buds2 Pro	SM-R510	SAMSUNG	RFAT827V65D

2.3 Alternative type(s)/model(s); also covered by this test report.

-. None

2.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set as following condition.

Mode		Operating Status	Operating Supply Voltage
1	Standby	Adapter + EUT	DC 5.0 V
2	Antenna 1	Adapter + EUT + EarPhone (Battery Status:<10 %)	DC 5.0 V
3		Adapter + EUT + EarPhone (Battery Status:50 % ~ 55 %)	DC 5.0 V
4		Adapter + EUT + EarPhone (Battery Status:> 90 %)	DC 5.0 V
5	Antenna 2	Adapter + EUT + MobilePhone (Battery Status:<10 %)	DC 5.0 V
6		Adapter + EUT + MobilePhone (Battery Status:50 % ~ 55 %)	DC 5.0 V
7		Adapter + EUT + MobilePhone (Battery Status:> 90 %)	DC 5.0 V
8	Antenna 1 + Antenna 2	Adapter + EUT + EarPhone + MobilePhone (Battery Status:<10 %)	DC 5.0 V
9		Adapter + EUT + EarPhone + MobilePhone (Battery Status:50 % ~ 55 %)	DC 5.0 V
10		Adapter + EUT + EarPhone + MobilePhone (Battery Status:>90 %)	DC 5.0 V
11	Standby	Adapter + EUT	DC 9.0 V
12	Antenna 1	Adapter + EUT + EarPhone (Battery Status:<10 %)	DC 9.0 V
13		Adapter + EUT + EarPhone (Battery Status:50 % ~ 55 %)	DC 9.0 V
14		Adapter + EUT + EarPhone (Battery Status:> 90 %)	DC 9.0 V
15	Antenna 2	Adapter + EUT + MobilePhone (Battery Status:<10 %)	DC 9.0 V
16		Adapter + EUT + MobilePhone (Battery Status:50 % ~ 55 %)	DC 9.0 V
17		Adapter + EUT + MobilePhone (Battery Status:> 90 %)	DC 9.0 V
18	Antenna 1 + Antenna 2	Adapter + EUT + EarPhone + MobilePhone (Battery Status:<10 %)	DC 9.0 V
19		Adapter + EUT + EarPhone + MobilePhone (Battery Status:50 % ~ 55 %)	DC 9.0 V
20		Adapter + EUT + EarPhone + MobilePhone (Battery Status:>90 %)	DC 9.0 V

To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XY” axis.

3. EUT MODIFICATIONS

-. None

4. Environmental evaluation and exposure limit

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter

Frequency Range [MHz]	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm ²]	Average Time [minutes]
(A) Limits for Occupational / Control Exposures				
0.3 – 3.0	614	1.63	*(100)	6
3.0 – 30	1 842/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 – 3.0	614	1.63	*(100)	30
3.0 – 30	824/f	2.19/f	*(180/f ²)	30
30 – 300	27.5	0.073	0.2	30
300 – 1 500			f/1 500	30
1 500 – 100 000			1.0	30

f = frequency in MHz

* = Plane wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The EUT does meet the requirement of section 5. b) of KDB 680106 D01 RF Exposure Wireless Charging Apps v03

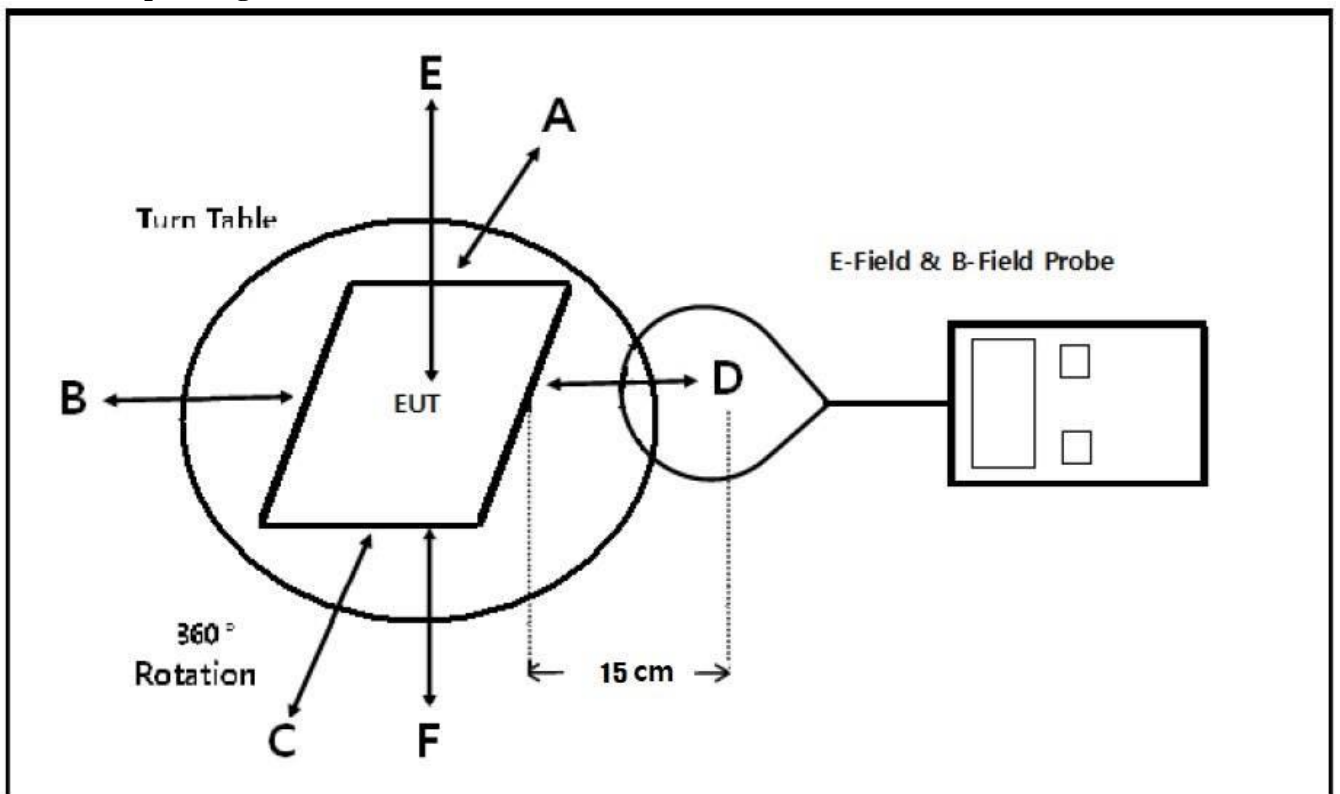
Conditions requirement	Answers
Power transfer frequency is less than 1MHz	After measuring the product the transfer frequency is 110-205 kHz
Output power from each primary coil is less than 15 watts	After measuring the product the each primary coil power is 15 watts
The transfer system includes only single 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.	The transfer system includes single primary
Client devices is inserted in or placed directly in contact with the transmitter.	Client device is placed directly in contact with the transmitter
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Mobile exposure conditions only
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.	After measuring the product the Max H-field Strength is 0.213 A/m Far less than 50% of the MPE limit.

5. H / E field strength

5.1 EUT Operating condition

Mode	Test Mode	Description
Charging Mode With load	Power <10% charging	Using Max. load
	Power 50 ~ 55% charging	Using Mid. load
	Power 90 ~ 95% charging	Using Min. load

5.2 EUT Operating condition



5.3 Measurement procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.
- 3) 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.
- 4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

Remark: The EUT's test position A, B, C, D, E and F is valid for the E and H field measurements.

5.4 Test data for Antenna 1 [DC 5 V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.188	0.152	0.130	0.152	0.500	0.493	-	-
	A/m	0.150	0.121	0.104	0.121	0.399	0.393	0.815	1.630
	V/m	56.26	45.49	38.90	45.49	149.62	147.53	307.00	614.00
Mid. load	uT	0.190	0.140	0.100	0.158	0.511	0.435	-	-
	A/m	0.152	0.112	0.080	0.126	0.407	0.347	0.815	1.630
	V/m	56.86	41.90	29.93	47.28	152.91	130.17	307.00	614.00
Min. load	uT	0.185	0.139	0.129	0.168	0.551	0.490	-	-
	A/m	0.148	0.111	0.103	0.134	0.439	0.391	0.815	1.630
	V/m	55.36	41.60	38.61	50.28	164.88	146.63	307.00	614.00

※ Note. Calculation

$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

$$A/m = uT/1.25$$

5.5 Test data for Antenna 2 [DC 5 V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.232	0.188	0.125	0.200	0.497	0.622	-	-
	A/m	0.185	0.150	0.100	0.160	0.396	0.496	0.815	1.630
	V/m	69.43	56.26	37.41	59.85	148.72	186.13	307.00	614.00
Mid. load	uT	0.222	0.190	0.133	0.205	0.456	0.598	-	-
	A/m	0.177	0.152	0.106	0.164	0.364	0.477	0.815	1.630
	V/m	66.43	56.86	39.80	61.35	136.46	178.95	307.00	614.00
Min. load	uT	0.211	0.191	0.135	0.200	0.442	0.593	-	-
	A/m	0.168	0.153	0.108	0.160	0.352	0.473	0.815	1.630
	V/m	63.14	57.16	40.40	59.85	132.27	177.45	307.00	614.00

※ Note. Calculation

$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

$$A/m = uT/1.25$$

5.6 Test data for Antenna 1 + Antenna 2 [DC 5V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.255	0.173	0.132	0.211	0.564	0.658	-	-
	A/m	0.203	0.138	0.106	0.168	0.449	0.524	0.815	1.630
	V/m	76.31	51.77	39.50	63.14	168.77	196.90	307.00	614.00
Mid. load	uT	0.243	0.165	0.142	0.200	0.543	0.638	-	-
	A/m	0.194	0.132	0.114	0.160	0.433	0.508	0.815	1.630
	V/m	72.72	49.38	4250	59.85	162.49	190.92	307.00	614.00
Min. load	uT	0.242	0.166	0.138	0.197	0.540	0.625	-	-
	A/m	0.193	0.133	0.110	0.157	0.430	0.498	0.815	1.630
	V/m	72.42	49.68	41.30	58.95	161.59	187.03	307.00	614.00

※ Note. Calculation

$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

$$A/m = uT/1.25$$

5.7 Test data for Antenna 1 [DC 9 V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.151	0.160	0.122	0.168	0.500	0.523	-	-
	A/m	0.121	0.128	0.098	0.134	0.399	0.417	0.815	1.630
	V/m	45.19	47.88	36.51	50.28	149.62	156.50	307.00	614.00
Mid. load	uT	0.148	0.154	0.120	0.159	0.487	0.521	-	-
	A/m	0.118	0.123	0.096	0.127	0.388	0.415	0.815	1.630
	V/m	44.29	46.09	35.91	47.58	145.73	155.91	307.00	614.00
Min. load	uT	0.146	0.155	0.117	0.152	0.473	0.499	-	-
	A/m	0.117	0.124	0.094	0.121	0.377	0.398	0.815	1.630
	V/m	43.69	46.39	35.01	45.49	141.54	149.32	307.00	614.00

※ Note. Calculation

$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

$$A/m = uT/1.25$$

5.8 Test data for Antenna 2 [DC 9 V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.193	0.163	0.137	0.180	0.513	0.576	-	-
	A/m	0.154	0.130	0.110	0.144	0.409	0.459	0.815	1.630
	V/m	57.76	48.78	41.00	53.87	153.51	172.36	307.00	614.00
Mid. load	uT	0.187	0.154	0.135	0.174	0.500	0.572	-	-
	A/m	0.149	0.123	0.108	0.139	0.399	0.456	0.815	1.630
	V/m	55.96	46.09	40.40	52.07	149.62	171.17	307.00	614.00
Min. load	uT	0.186	0.152	0.133	0.159	0.498	0.556	-	-
	A/m	0.149	0.121	0.106	0.127	0.397	0.443	0.815	1.630
	V/m	55.66	45.49	39.80	47.58	149.02	166.38	307.00	614.00

※ Note. Calculation

$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

$$A/m = uT/1.25$$

5.9 Test data for Antenna 1 + Antenna 2 [DC 9 V]

Mode	Field strength	Position A	Position B	Position C	Position D	Position E	Position F	50% Limits	Limits
Max. load	uT	0.232	0.225	0.150	0.236	0.661	0.650	-	-
	A/m	0.185	0.180	0.120	0.188	0.527	0.518	0.815	1.630
	V/m	69.43	67.33	44.89	70.62	197.80	194.51	307.00	614.00
Mid. load	uT	0.226	0.213	0.151	0.233	0.658	0.646	-	-
	A/m	0.180	0.170	0.121	0.186	0.524	0.515	0.815	1.630
	V/m	67.63	63.74	45.19	69.73	196.90	193.31	307.00	614.00
Min. load	uT	0.220	0.204	0.145	0.220	0.648	0.632	-	-
	A/m	0.176	0.163	0.116	0.176	0.516	0.504	0.815	1.630
	V/m	65.84	61.05	43.39	65.84	193.91	189.12	307.00	614.00

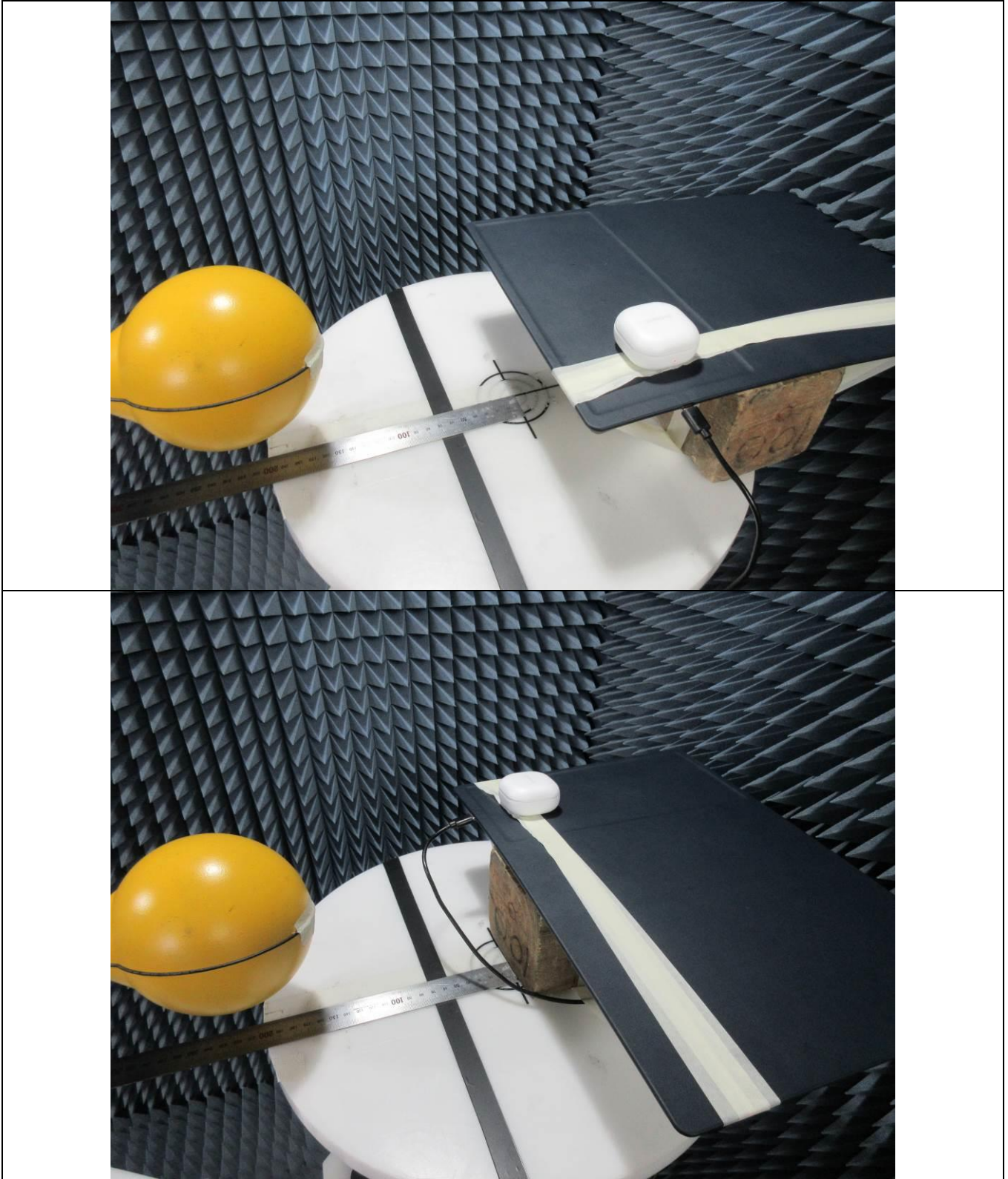
※ Note. Calculation

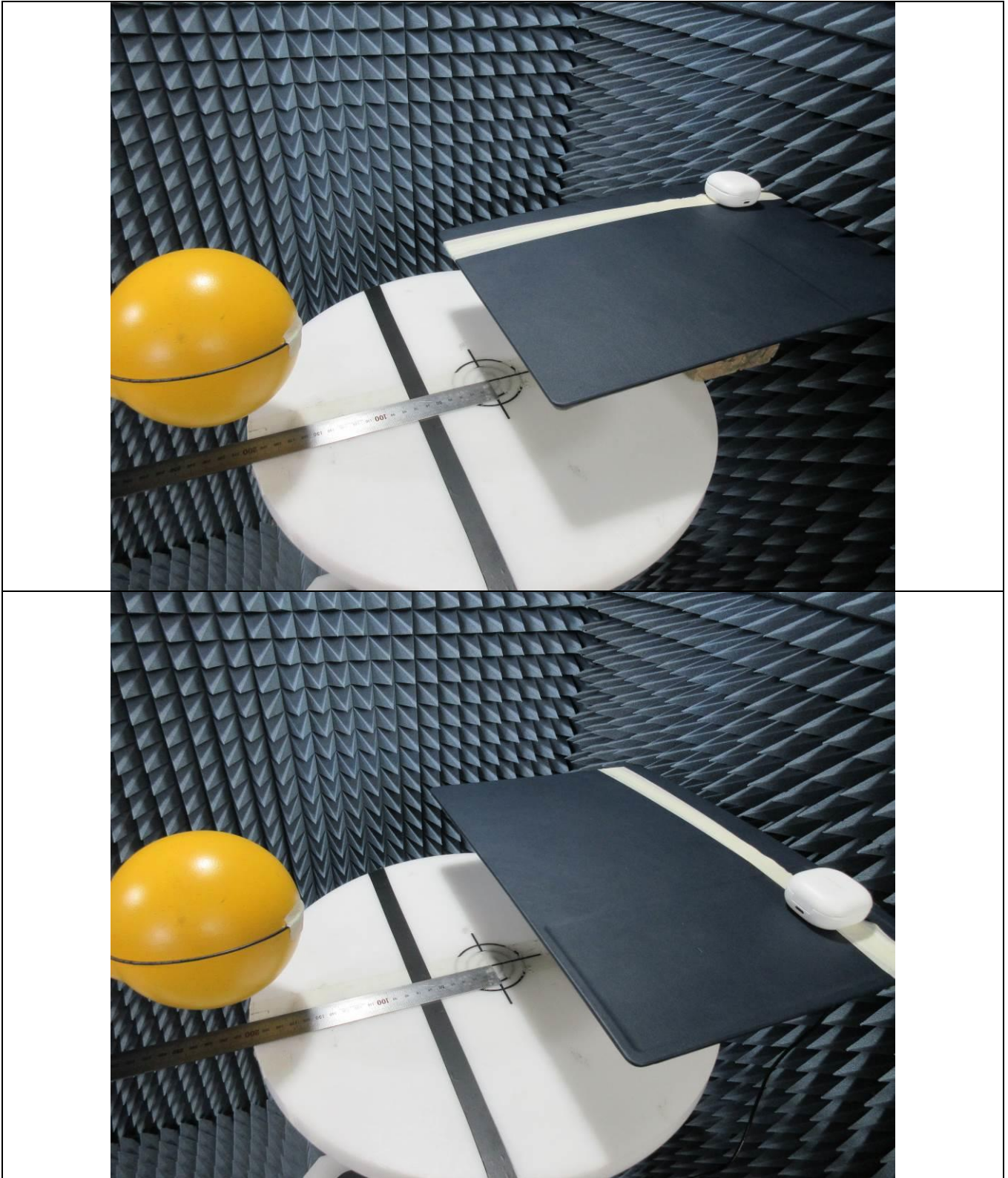
$$V/m = 10^{((dBuV/m)-120)/20} = 10^{((dBuA/m+51.5)-120)/20} = 10^{((20lg(A/m*10^6)+51.5)-120)/20}$$

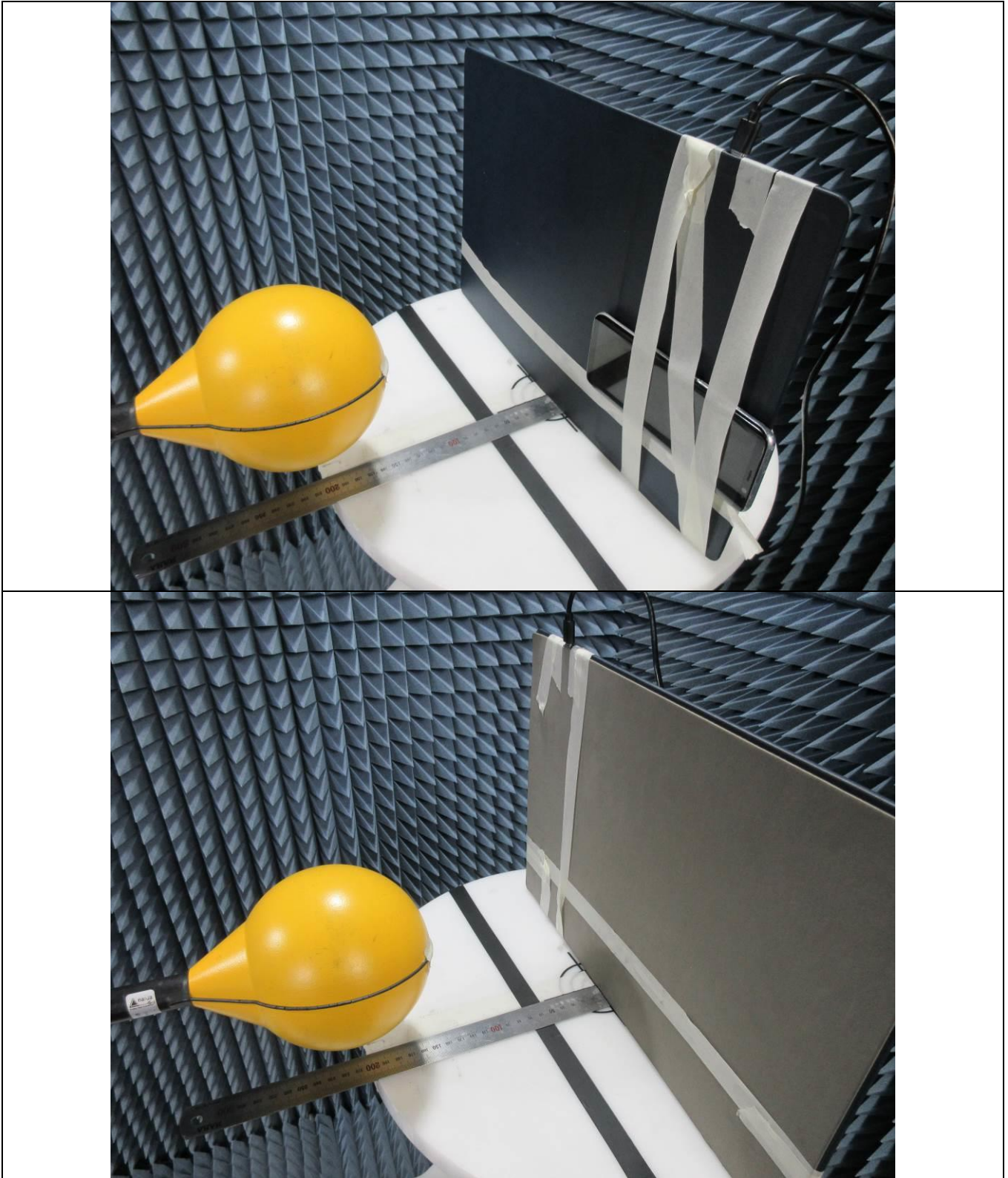
$$A/m = uT/1.25$$

5. TEST PHOTO

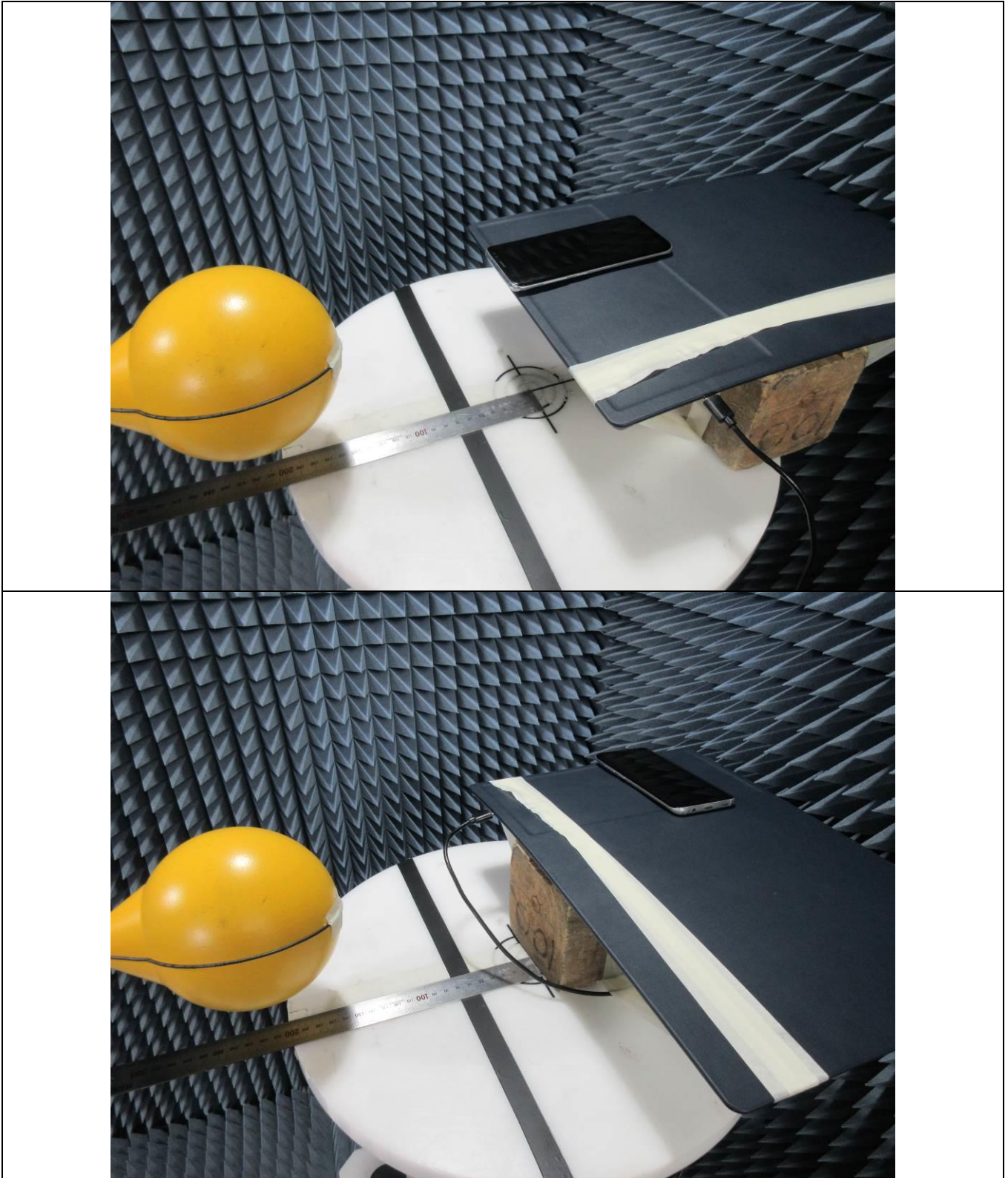
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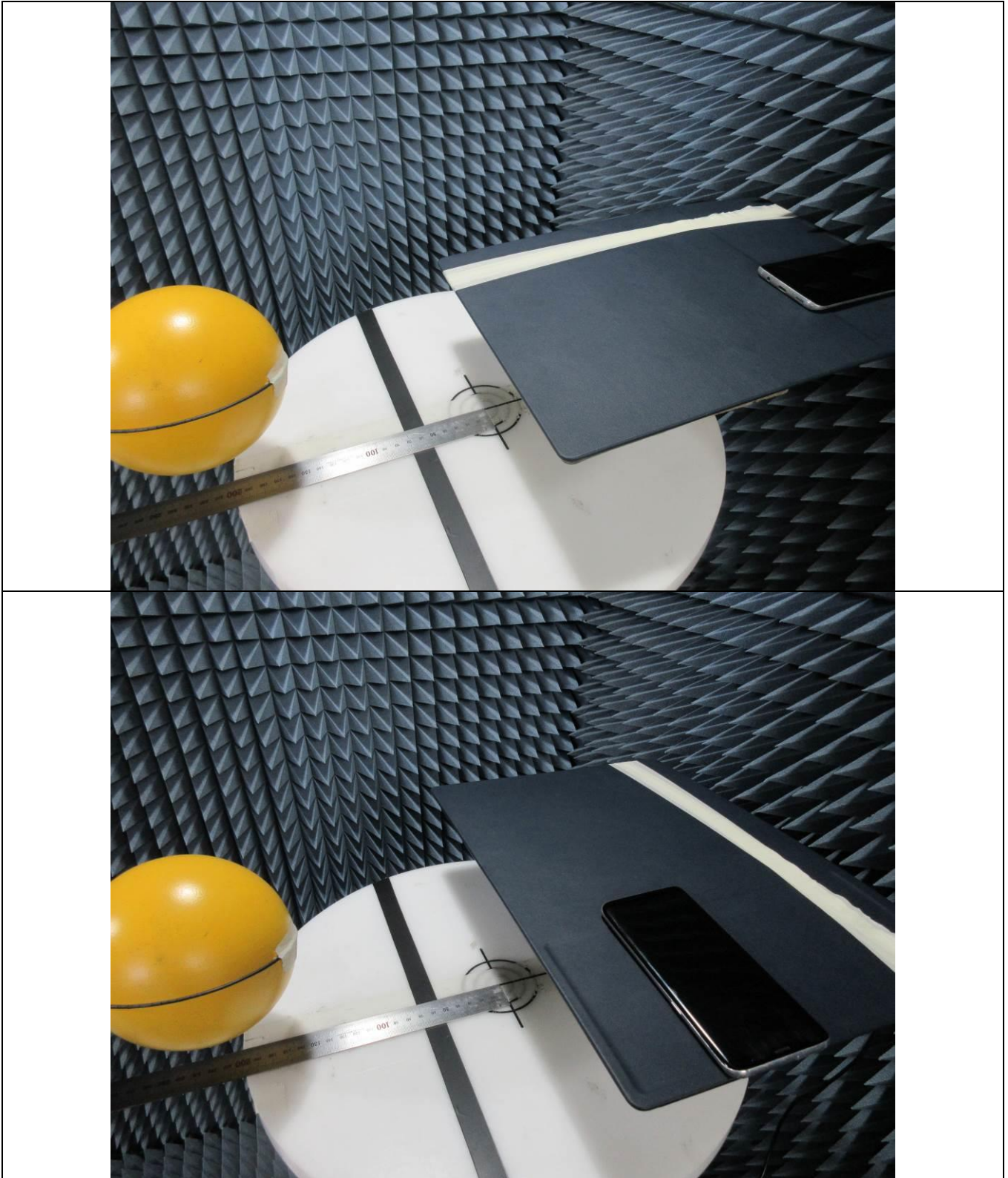


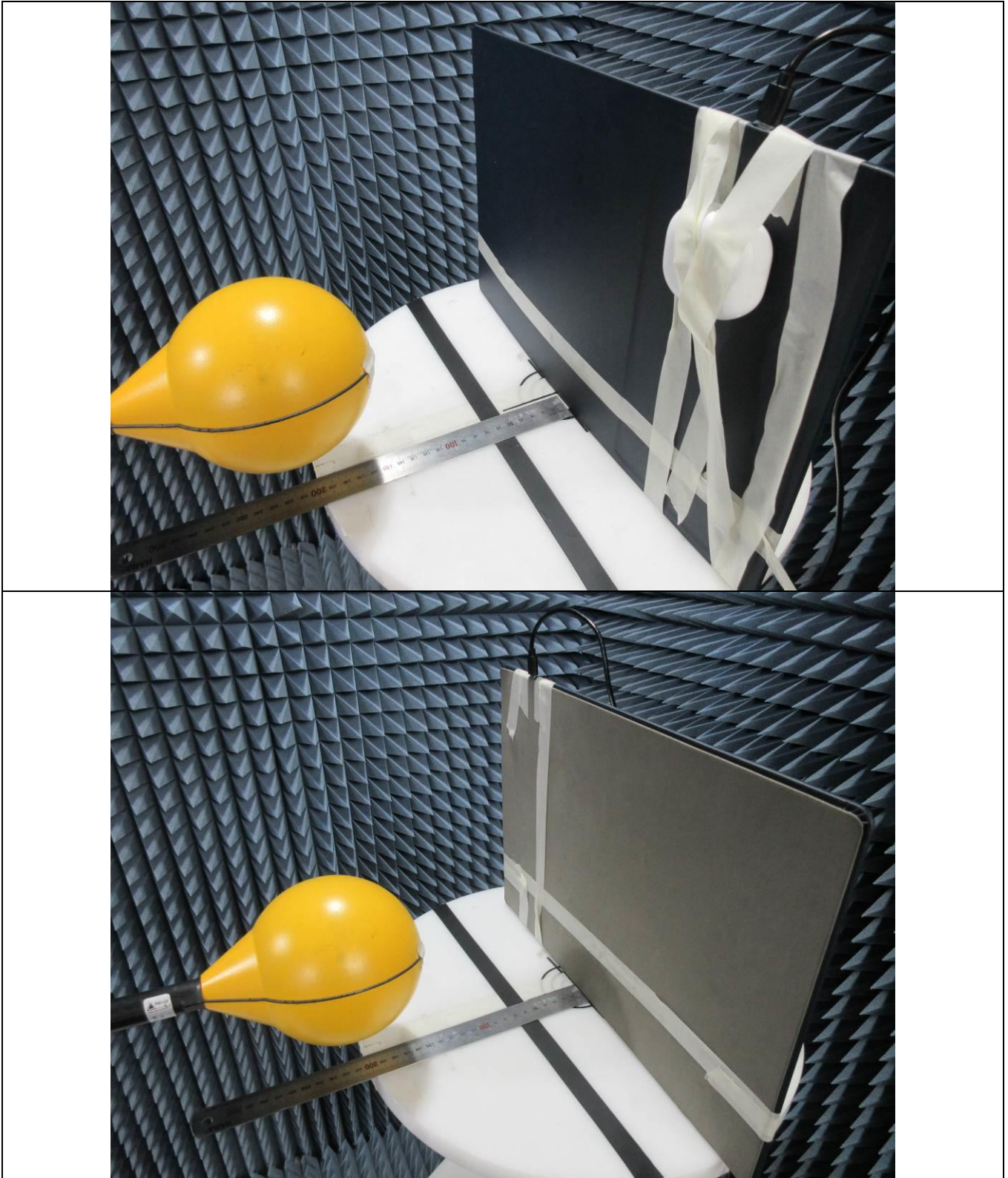




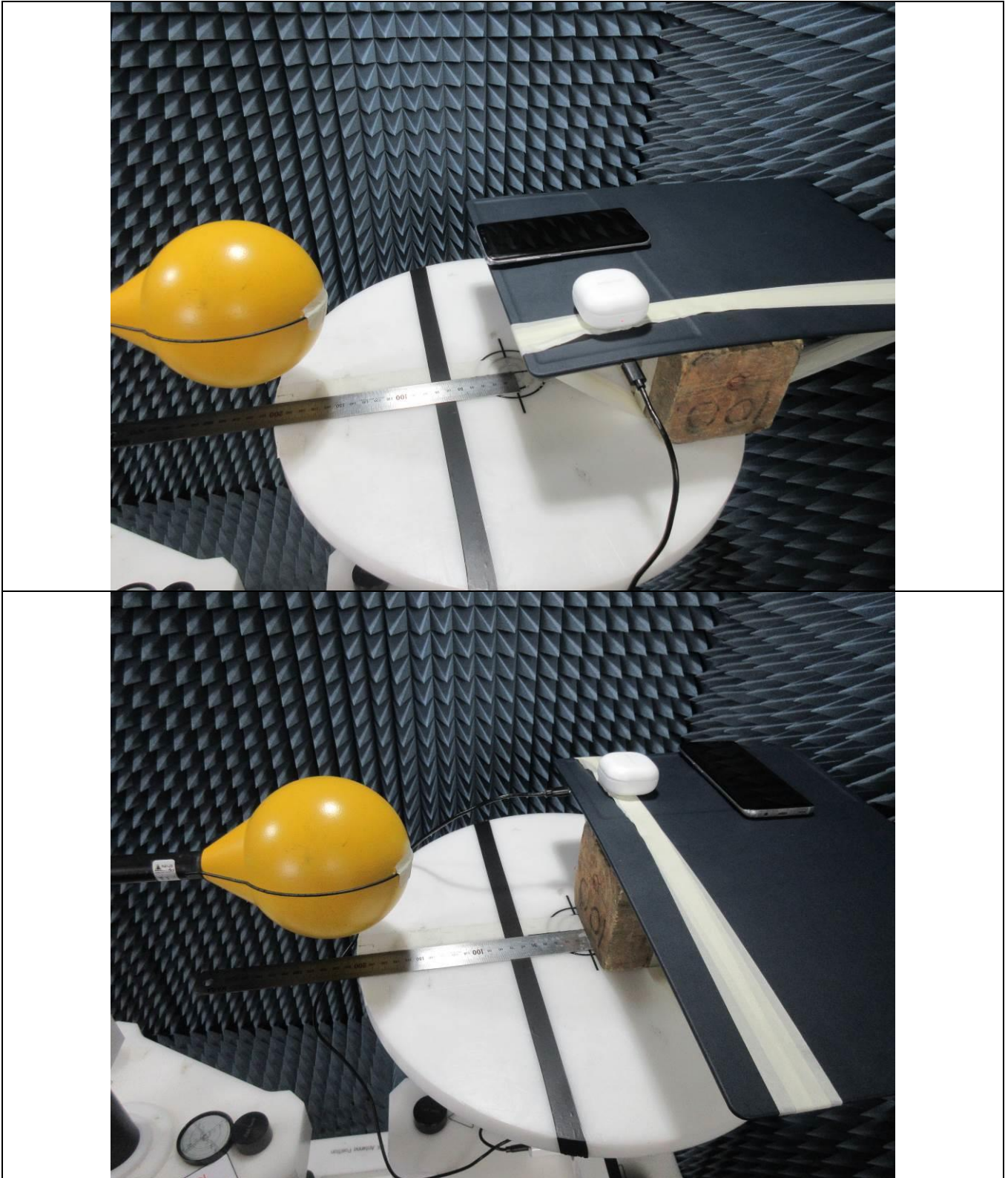
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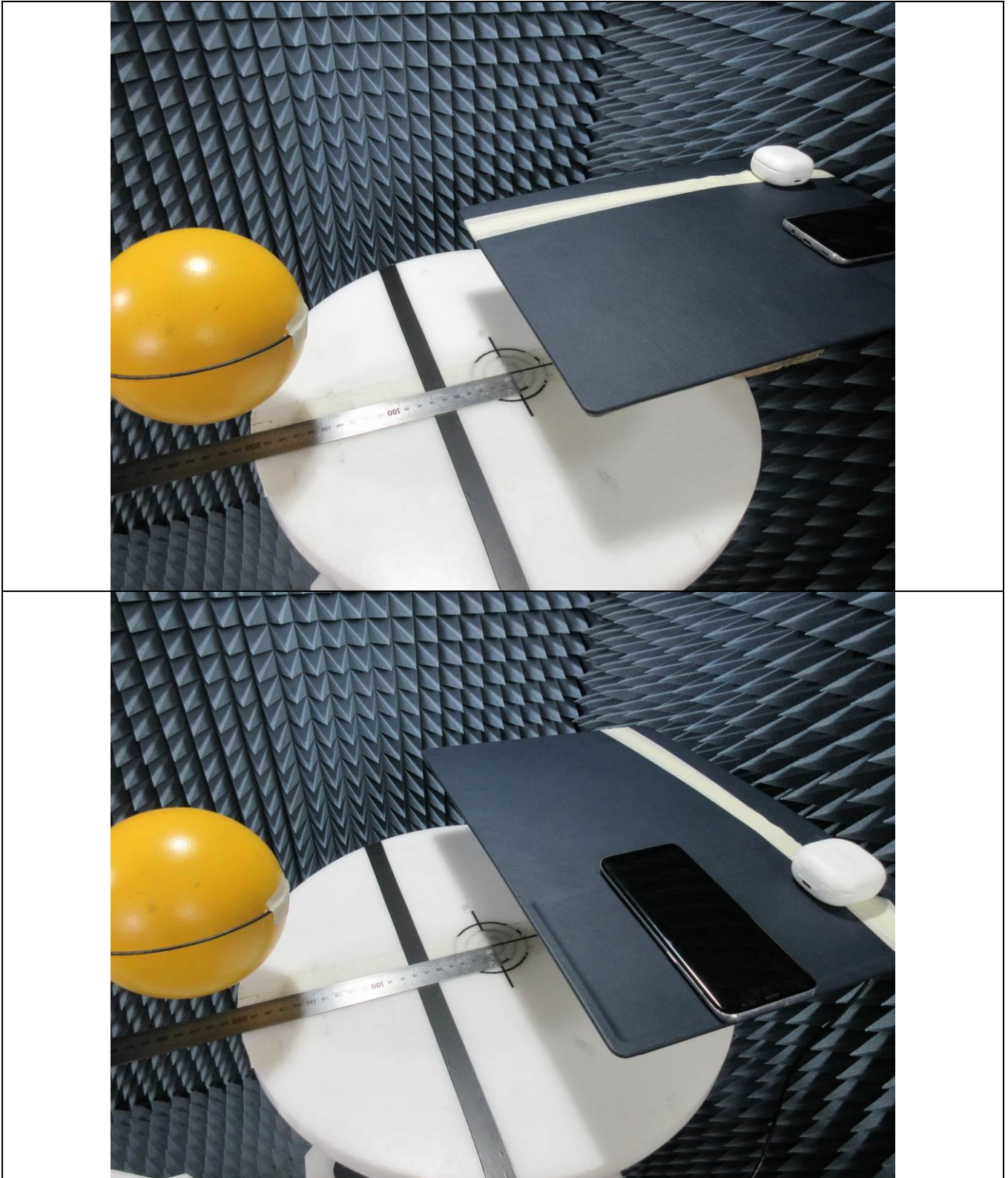






[Antenna 1 + Antenna 2]







6. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
ELT-400	NARDA	Exposure Level Meter	G-0032	Apr. 17, 2023 (1Y)