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RF Exposure Evaluation

Report No.....: AB25060009FW02

FCC ID.....: 2BP62-W19

Applicant: Kachemak LLC

Address: Unit 3E,2248 W Belmont Ave, Chicago, IL.60618,US

Manufacturer.....: Shenzhen Meifaner Technology Co., Ltd.

Address.....: 4th Floor, Building A1, Zedali Science and Technology Park, Fuhai Sub-district, Bao'an District, Shenzhen City

Product Name: 10 IN 1 Type-c HUB Adapter

TradeMark.....: Arctalis

Model/Type reference: BTJ-W19

Listed Model(s): N/A

**Standard.....: FCC CFR Title 47 Part 1 Subpart I, Section 1.1310
KDB 680106 D01**

Date of Receipt: 2025.06.05

Date of Test Date: 2025.06.05-2025.07.11

Date of issue: 2025.07.11

Test result: Pass

Compiled by:
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Huaijie Li

Supervised by:
(Printed name+signature) Jay Liu

Jay Liu

Approved by:
(Printed name+signature) Mic Cheng

Mic Cheng

Testing Laboratory Name.....: Aibo Standard Technology (Shenzhen) Co., Ltd.

Address: 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

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1. GENERAL INFORMATION

1.1 General Description of EUT

Product Name:	10 IN 1 Type-c HUB Adapter
Model/Type reference:	BTJ-W19
Trademark:	Arctalis
Listed models:	N/A
Model Difference:	N/A
Power supply:	DC 9V-2A PD charging input: 100W
Power supply(Battery):	N/A
Hardware version:	N/A
Software version:	N/A
RF Specification	
Operation frequency:	110.5- 205 KHz
Modulation Type:	ASK
Test Frequency	127 KHz
Power Rating	Output: 15W(Wireless charger)
Test Sample ID	AB25060009-1#
Antenna Type	Coil Antenna
Antenna Gain	0dBi
Note 1:For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	

1.2 Test facility

Test Lab: Aibo Standard Technology (Shenzhen) Co., Ltd.

Address: 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street, Guangming District, Shenzhen City, Guangdong Province, China

Tel.: +(86) 0755 85250797

E-mail: Aibonorm@aibonorm.com

Website: www.Aibonorm.com

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

FCC Accredited Lab.

Designation Number: CN1411

Test Firm Registration Number: 567066

Aibo Standard Technology (Shenzhen) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromaagnetic emission measurement.

A2LA-Lab Certificate No.: 7514.01

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

ISED Wireless Device Testing Laboratories

ISED#:33924

CAB identifier: CN0185

Aibo Standard Technology (Shenzhen) Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

2. SUMMARY OF TEST RESULTS

2.1 Test procedures according to the technical standards:

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 680106 D01 Wireless Power Transfer v04	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

2.2 Measurement uncertainty

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

No.	Item	Frequency Range	Uncertainty
1	Field Strength Uncertainty	1Hz~400KHz	$\pm 2.45\text{dB}$
2	Temperature	/	$\pm 0.5^{\circ}\text{C}$
3	Humidity	/	$\pm 2\%$

2.3 Test Instruments

Equipment	Manufacturer	Model	Serial no.	Calibrated date	Calibrated Due
Exposure Level Tester	Narda	ELT-400	N-0713	2024-08-07	2025-08-06
B-Field Probe	Narda	ELT-400	M-1154	2024-08-07	2025-08-06

NOTE: 1. The calibration interval of the above test instruments is 12 months.

2.4 Special Accessories

No.	Equipment	Manufacturer	Model
1	Mobile Phone	Apple	A2108
2	AC adapter	GOOD-SHE	GS-551

2.5 Operation of EUT during testing

Test Modes:		
Mode 1	AC/DC Adapter(DC 9V) + EUT + Mobile Phone (battery status: 1%)	Record
Mode 2	AC/DC Adapter(DC 9V) + EUT + Mobile Phone (battery status: 50%)	Record
Mode 3	AC/DC Adapter(DC 9V) + EUT + Mobile Phone (battery status: 100%)	Record
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

3. MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180 / f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

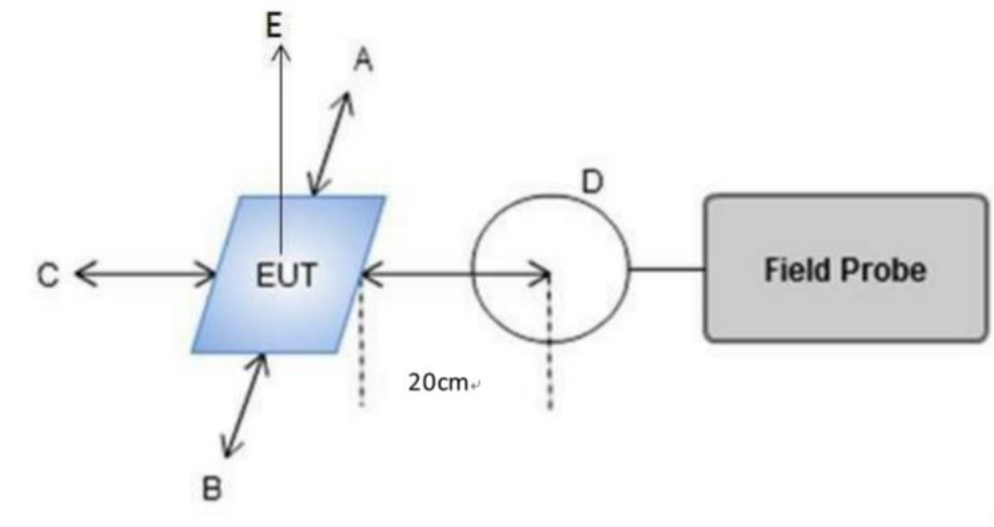
Note 2: For the applicable limit, see FCC 1.1310(e).

Note 3: 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

4. TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 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 20 cm measured from the center of the probe(s) to the edge of the device.

4.1 TEST SETUP



4.2 RESULT OF MAXIMUM PERMISSIBLE EXPOSURE

Temperature	22.8°C	Humidity	55%
Test Engineer	Guangke Zhao	Configurations	Mode 1, Mode 2, Mode 3

Mode 1(operation frequency: 110.5- 205 KHz)						
Test Position	Test Distance (cm)	Probe Measure Result (uT)	Probe Measure Result (A/m)	Probe Measure Result (V/m)	Limit (A/m)	Limit (V/m)
Side 1(A)	20	0.015500	0.0124	4.6748	1.63	614
Side 2(B)	20	0.015375	0.0123	4.6371	1.63	614
Side 3(C)	20	0.015375	0.0123	4.6371	1.63	614
Side 4(D)	20	0.015375	0.0123	4.6371	1.63	614
Top(E)	20	0.015625	0.0125	4.7125	1.63	614

Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

$$V/m = 10(((20 \lg(A/m \cdot 10^6) + 51.5) - 120) / 20)$$

$$A/m = uT / 1.25$$

Mode 2(operation frequency: 110.5- 205 KHz)						
Test Position	Test Distance (cm)	Probe Measure Result (uT)	Probe Measure Result (A/m)	Probe Measure Result (V/m)	Limit (A/m)	Limit (V/m)
Side 1(A)	20	0.015250	0.0122	4.5994	1.63	614
Side 2(B)	20	0.015375	0.0123	4.6371	1.63	614
Side 3(C)	20	0.015375	0.0123	4.6371	1.63	614
Side 4(D)	20	0.015500	0.0124	4.6748	1.63	614
Top(E)	20	0.015375	0.0123	4.6371	1.63	614

Mode 3(operation frequency: 110.5- 205 KHz)						
Test Position	Test Distance (cm)	Probe Measure Result (uT)	Probe Measure Result (A/m)	Probe Measure Result (V/m)	Limit (A/m)	Limit (V/m)
Side 1(A)	20	0.0155	0.0124	4.6748	1.63	614
Side 2(B)	20	0.0155	0.0124	4.6748	1.63	614
Side 3(C)	20	0.015375	0.0123	4.6371	1.63	614
Side 4(D)	20	0.01525	0.0122	4.5994	1.63	614
Top(E)	20	0.0155	0.0124	4.6748	1.63	614

Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

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

$$A/m=uT/1.25$$

4.3 Equipment Approval Considerations

The EUT does comply with KDB 680106 D01 as follow table.

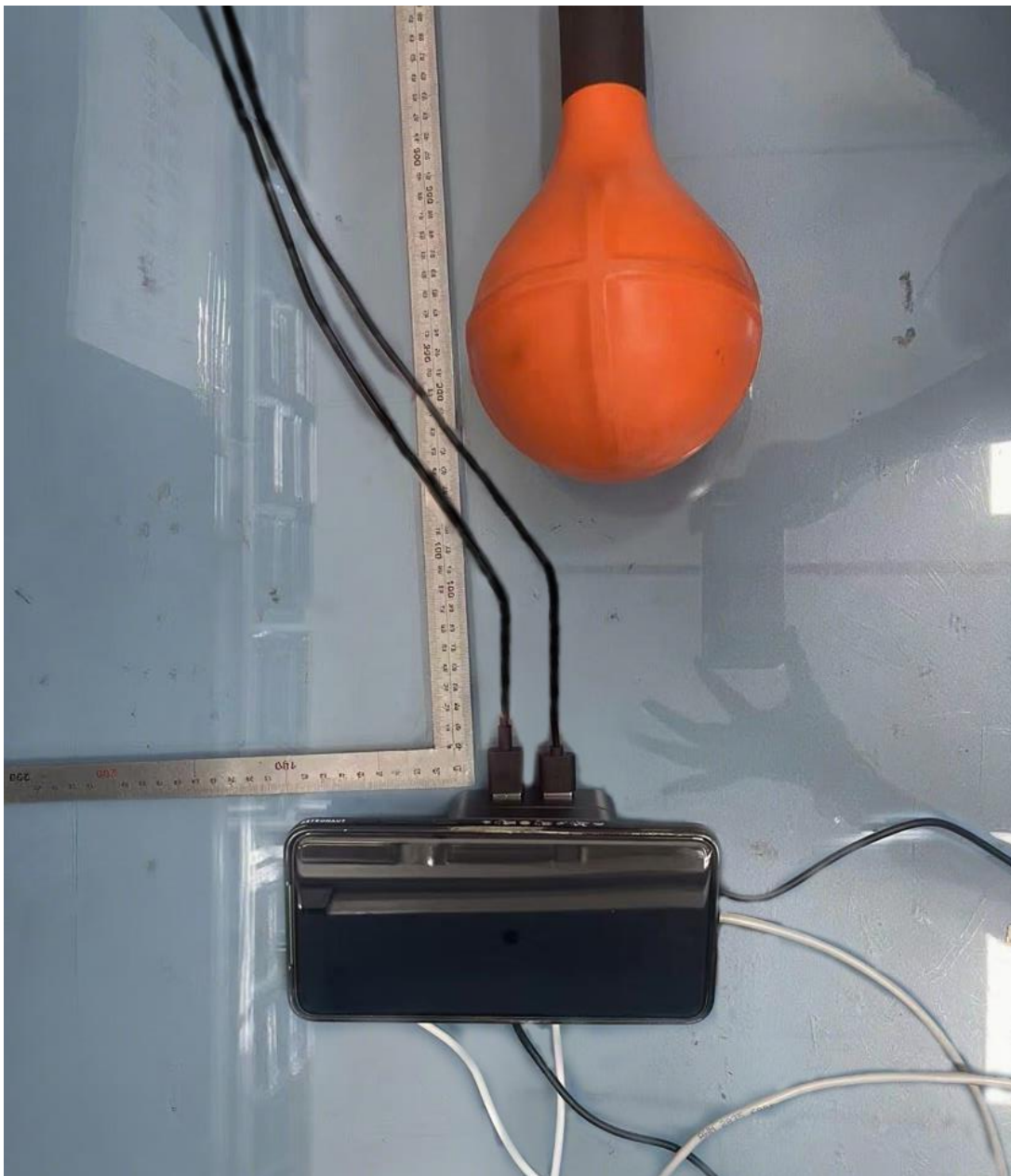
Requirements of KDB 680106 D01	Yes / No	Description
Power transfer frequency is less than 1 MHz	Yes	The device operate in the frequency range is below 1 MHz.
The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.	Yes	The maximum output power of the coil is 15W
A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)	Yes	Client device is placed directly in contact with the transmitter.
Only § 2.1091- Mobile exposure conditions apply (i.e., this provision does not cover §2.1093-Portable exposure conditions).	Yes	Mobile exposure conditions only
The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.	Yes	The E-field and H-field strengths at and beyond 20 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested	Yes	Only one radiating structure and tested at maximum Output Power.

4.4 Conclusion

The detected emissions with a distance of 15cm surrounding the device and 20 cm above the top surface of the device are below the FCC E-Field Strength & H-Field Strength limits; and comply with the requirements of FCC KDB 680106 D01.

PHOTOGRAPH OF TEST

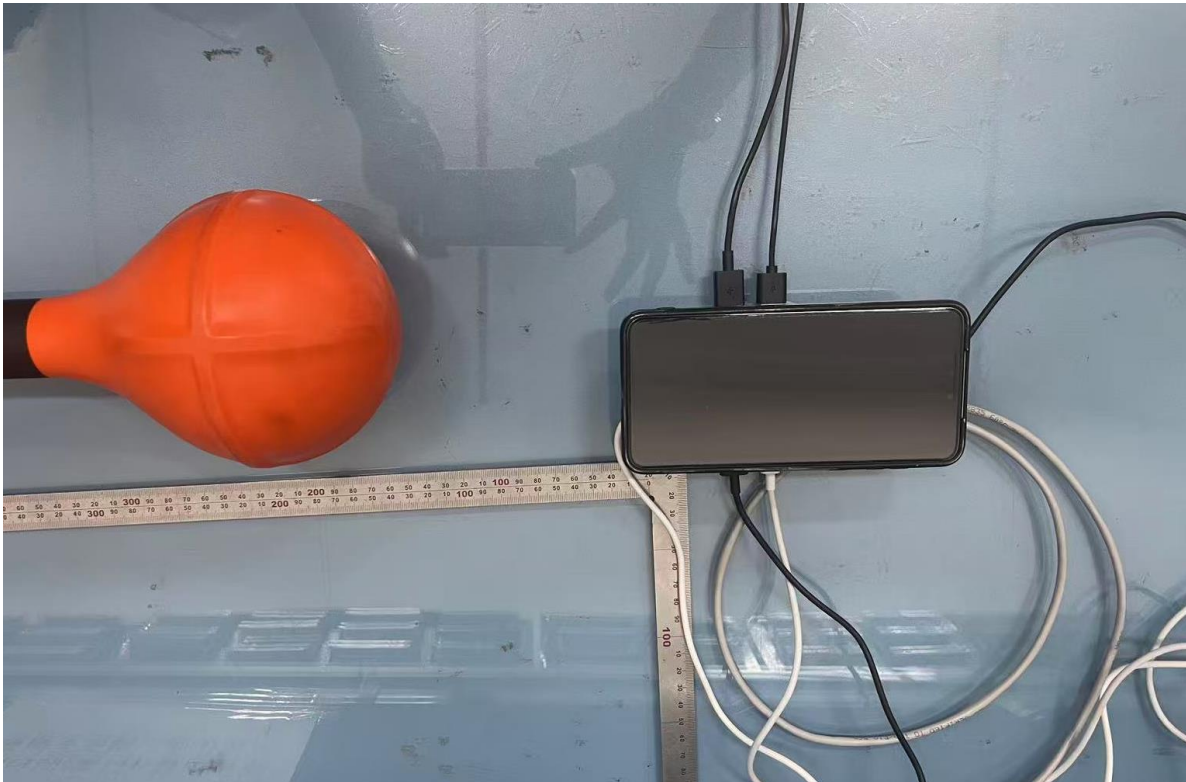
Side 1(A)



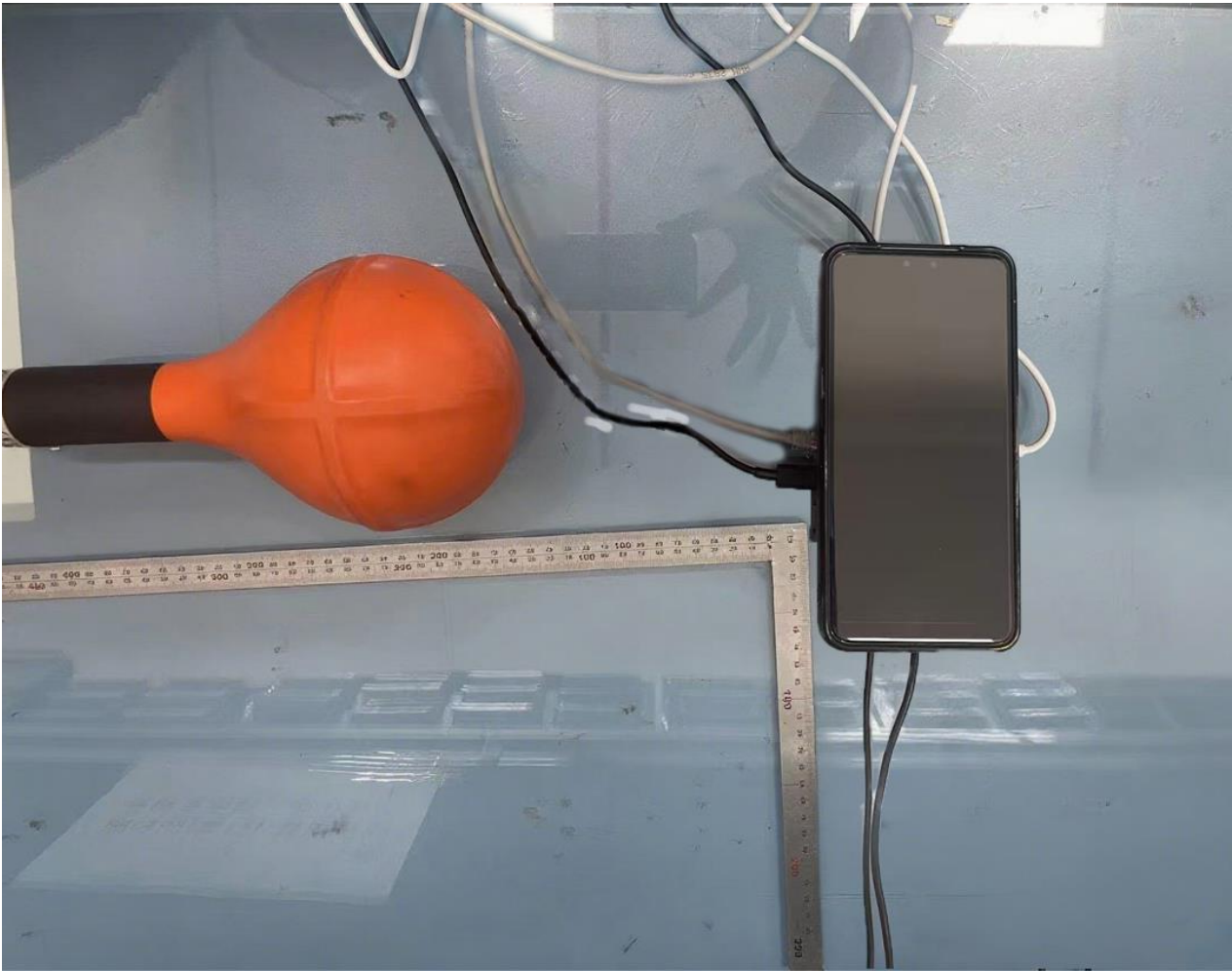
Side 2(B)



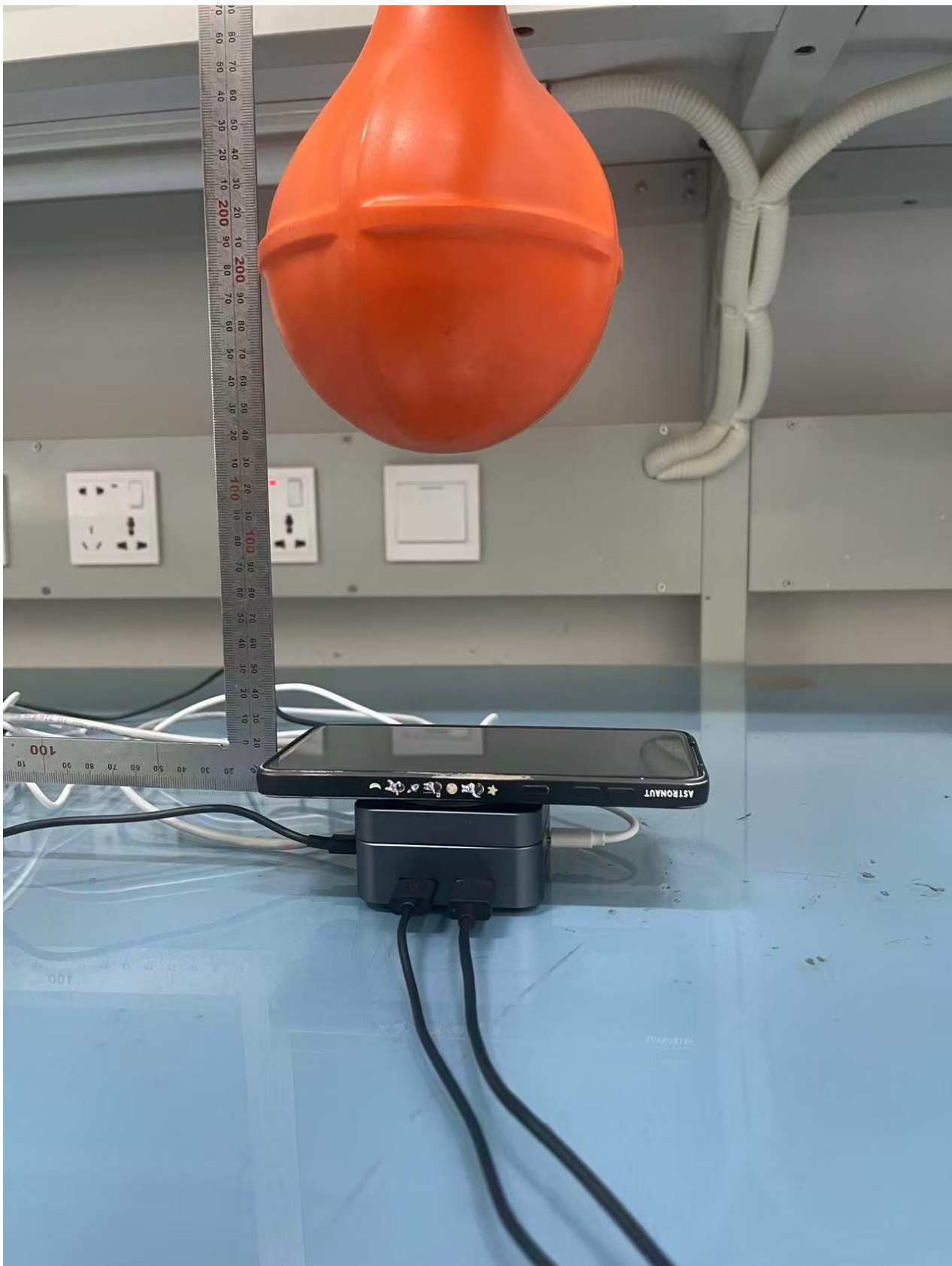
Side 3(C)



Side 4(D)



Top(E)



*****THE END*****