TEST REPORT

Product Name	:	CitySense-X
Brand Mark	:	N/A
Model No.	:	CitySense-X
FCC ID	:	2BEK2CITYSENSE
Report Number	:	BLA-EMC-202401-A3901
Date of Sample Receipt	:	2024/1/15
Date of Test	:	2024/1/16 to 2024/1/25
Date of Issue	:	2024/1/26
Test Standard	:	47 CFR Part 15, Subpart B
Test Result	:	Pass

Prepared for:

SOARABILITY PTE. LTD.
60 PAYA LEBAR ROAD #11-53 PAYA LEBAR SQUARE SINGAPORE (409051)

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
TEL: +86-755-23059481

Compiled by: charlie

Review by: Sweely

Approved by: Blue.Zheng

Date: 2024/1/26

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

REPORT REVISE RECORD

Version No.	Date	Description
00	2024/1/26	Original

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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class A	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class A	Pass
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class A	N/A

Remark:

N/A: Not Applicable

2 GENERAL INFORMATION

Applicant	SOARABILITY PTE. LTD.
Address	60 PAYA LEBAR ROAD #11-53 PAYA LEBAR SQUARE SINGAPORE (409051)
Manufacturer	SOARABILITY PTE. LTD.
Address	60 PAYA LEBAR ROAD #11-53 PAYA LEBAR SQUARE SINGAPORE (409051)
Factory	N/A
Address	N/A
Product Name	CitySense-X
Test Model No.	CitySense-X

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Power Supply	DC12V
Engineer sample no:	BLA-EMC-202401-A39

4 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
TM1	Keep the EUT in normal working mode
Remark:Only the data of the worst mode would be recorded in this report.	

5 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

6 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
rechargeable batteries	TIANNENG GROUP	N/A	N/A	N/A

7 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

8 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Spurious Emissions					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Chamber 1	SKET	966	N/A	2023/11/16	2026/11/15
Chamber 2	SKET	966	N/A	2021/07/20	2024/7/19
Spectrum	R&S	FSP40	100817	2023/08/30	2024/08/29
Receiver	R&S	ESR7	101199	2023/08/30	2024/08/29
Receiver	R&S	ESPI7	101477	2023/07/07	2024/07/06
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/10/12	2025/10/11
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12
Horn Antenna	Schwarzbeck	BBHA 9170	1106	2022/04/24	2024/04/23
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2023/07/07	2024/07/06
Amplifier	SKET	PA-000318G-45	N/A	2023/08/30	2024/08/29
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2023/07/14	2024/07/13
Filter group	SKET	2.4G/5G Filter group r	N/A	2023/07/07	2024/07/06
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/09/14	2025/09/13
1kHZ calibration audio source	SKET	MCS-ABT-C35	N/A	2023/09/04	2024/09/03
Free Field Microphone	SKET	MGS MP 663	0414	2023/09/04	2024/09/03
Audio shielding box	SKET	SB-ABT-C35	N/A	2023/03/30	2024/03/29
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A
Signal Generator DTV	ECREDIX	DSG-1000	N/A	N/A	N/A

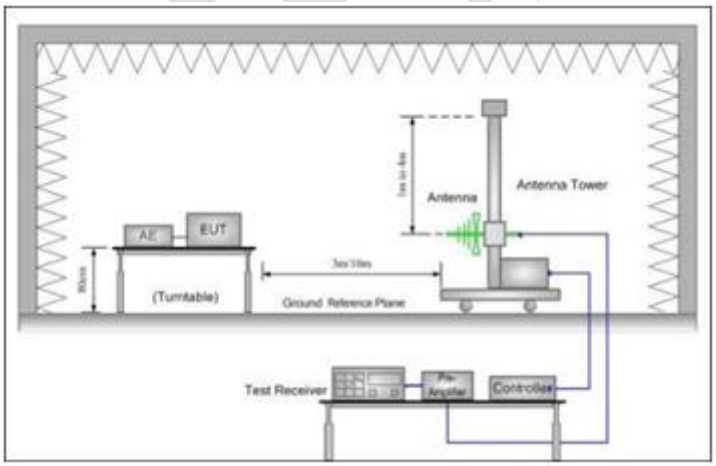
9 RADIATED EMISSIONS (30MHZ-1GHZ)

Test Standard	47 CFR Part 15, Subpart B
Test Method	ANSI C63.4:2014
Test Mode (Pre-Scan)	TM1
Test Mode (Final Test)	TM1
Tester	Charlie
Temperature	25℃
Humidity	60%

9.1 LIMITS

Frequency Range	Limit
30MHz -88MHz	49.5(dBμV/m) quasi-peak
88MHz-216MHz	54.0(dBμV/m) quasi-peak
216MHz-960MHz	57.0(dBμV/m) quasi-peak
960MHz-1000MHz	60.0(dBμV/m) quasi-peak

9.2 BLOCK DIAGRAM OF TEST SETUP

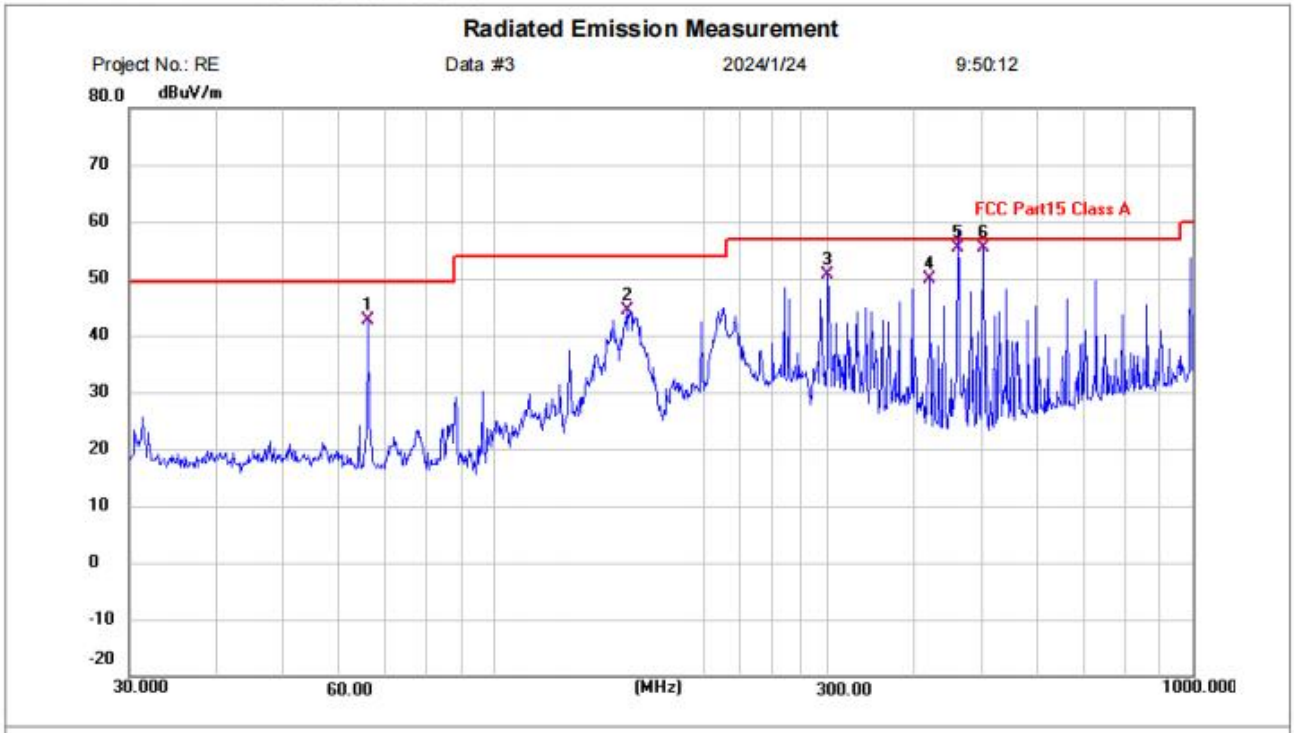


9.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.
Remark:
1. Final Level =Receiver Read level + Correct factor
2. Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

9.4 TEST DATA

[TestMode: TM1]; [Polarity: Horizontal]



Site
Limit: FCC Part15 Class A
EUT: CitySense-X
M/N: CitySense-X
Mode: TM1
Note:

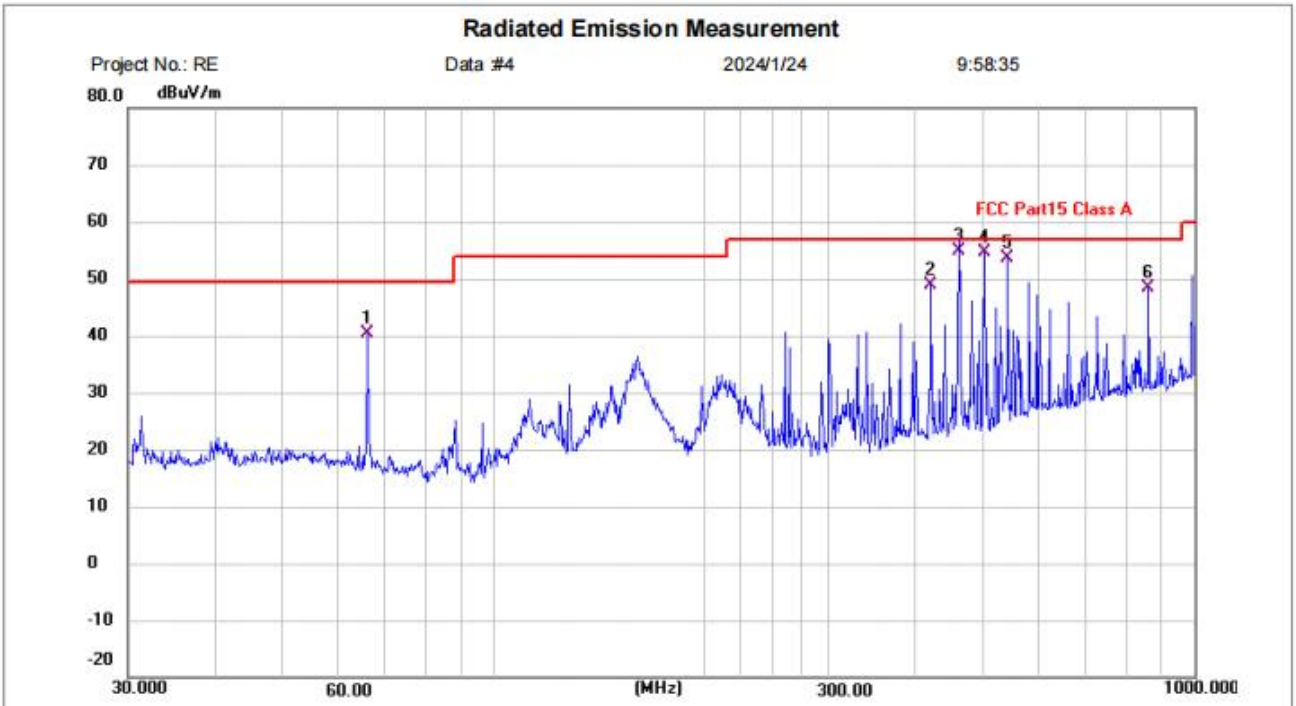
Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	66.0342	25.14	17.57	42.71	49.50	-6.79	QP	P	
2	155.3643	25.05	19.29	44.34	54.00	-9.66	QP	P	
3	300.3672	31.16	19.38	50.54	57.00	-6.46	QP	P	
4	420.5803	27.37	22.50	49.87	57.00	-7.13	QP	P	
5 *	460.7271	31.91	23.49	55.40	57.00	-1.60	QP	P	
6	501.1790	31.29	24.06	55.35	57.00	-1.65	QP	P	

Test Result: Pass

[TestMode: TM1]; [Polarity: Vertical]



Site
Limit: FCC Part15 Class A
EUT: CitySense-X
M/N: CitySense-X
Mode: TM1
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	66.0342	22.85	17.57	40.42	49.50	-9.08	QP	P	
2	420.5803	26.50	22.50	49.00	57.00	-8.00	QP	P	
3 *	460.7271	31.31	23.49	54.80	57.00	-2.20	QP	P	
4	501.1790	30.53	24.06	54.59	57.00	-2.41	QP	P	
5	541.3725	29.02	24.69	53.71	57.00	-3.29	QP	P	
6	860.0352	18.19	30.08	48.27	57.00	-8.73	QP	P	

Test Result: Pass

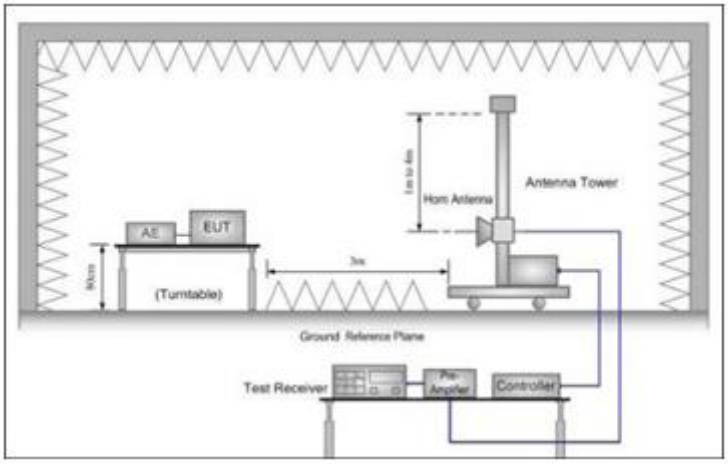
10 RADIATED EMISSIONS (ABOVE 1GHZ)

Test Standard	47 CFR Part 15, Subpart B
Test Method	ANSI C63.4:2014
Test Mode (Pre-Scan)	TM1
Test Mode (Final Test)	TM1
Tester	Charlie
Temperature	25℃
Humidity	60%

10.1 LIMITS

Frequency Range	Limit
Above 1GHz	80(dBμV/m) peak, 60(dBμV/m) average

10.2 BLOCK DIAGRAM OF TEST SETUP

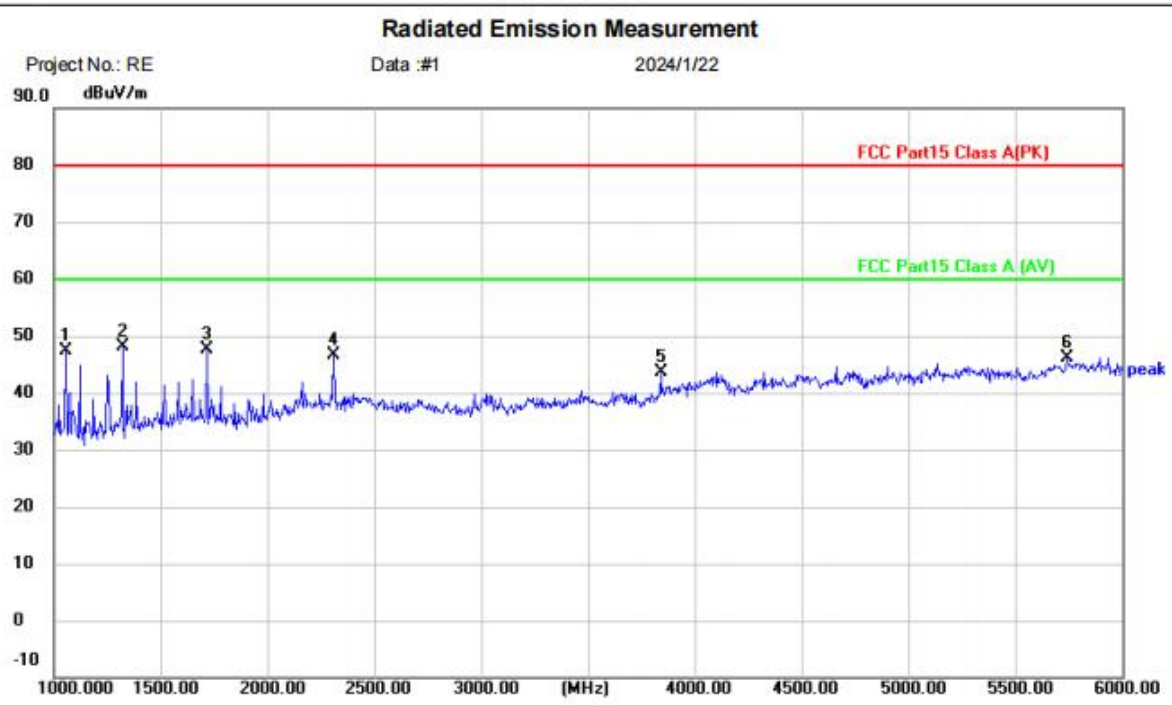


10.3 PROCEDURE

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.
Remark:
1. Final Level =Receiver Read level + Correct factor
2. Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

10.4 TEST DATA

[TestMode: TM1]; [Polarity: Horizontal]



Site
Limit: FCC Part15 Class A(PK)
EUT: CitySense-X
M/N: CitySense-X
Mode: TM1
Note:

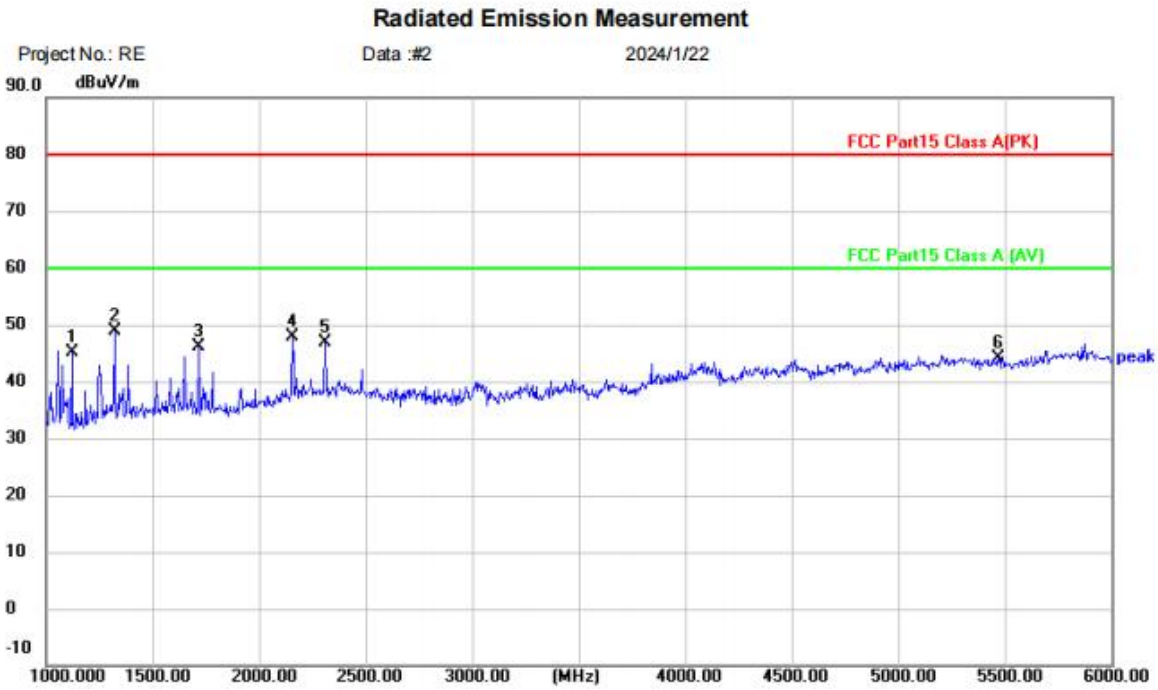
Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1055.000	58.11	-10.73	47.38	80.00	-32.62	peak	
2	*	1320.000	57.17	-8.95	48.22	80.00	-31.78	peak	
3		1715.000	54.38	-6.63	47.75	80.00	-32.25	peak	
4		2310.000	49.42	-2.89	46.53	80.00	-33.47	peak	
5		3840.000	44.72	-1.00	43.72	80.00	-36.28	peak	
6		5740.000	40.20	5.99	46.19	80.00	-33.81	peak	

Test Result: Pass

[TestMode: TM1]; [Polarity: Vertical]



Site
Limit: FCC Part15 Class A(PK)
EUT: CitySense-X
M/N: CitySense-X
Mode: TM1
Note:

Polarization: *Vertical*
Power:

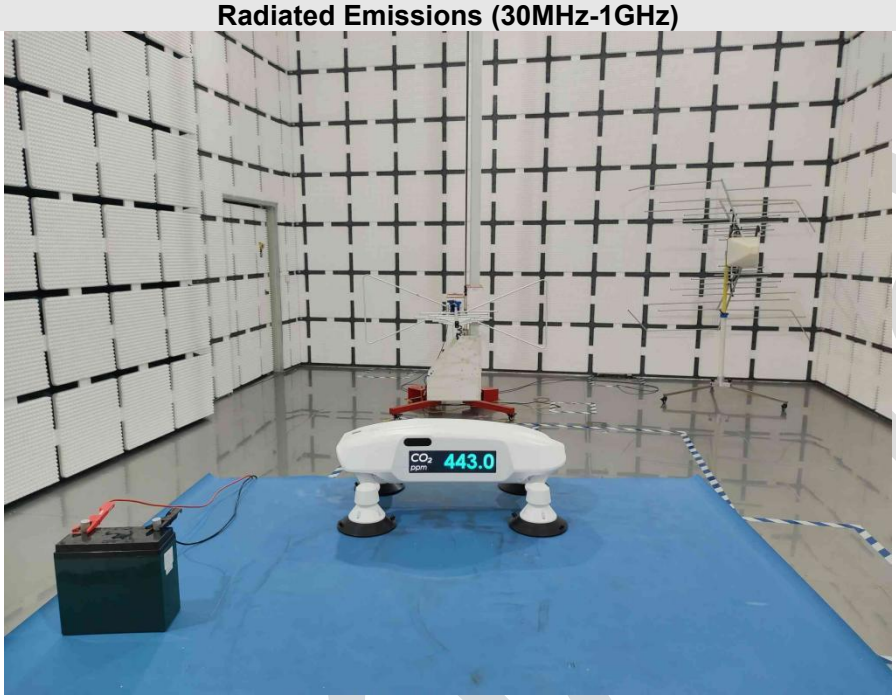
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1120.000	55.37	-10.30	45.07	80.00	-34.93	peak	
2	*	1320.000	57.95	-8.95	49.00	80.00	-31.00	peak	
3		1715.000	52.74	-6.63	46.11	80.00	-33.89	peak	
4		2155.000	52.00	-4.12	47.88	80.00	-32.12	peak	
5		2310.000	49.69	-2.89	46.80	80.00	-33.20	peak	
6		5470.000	39.00	5.16	44.16	80.00	-35.84	peak	

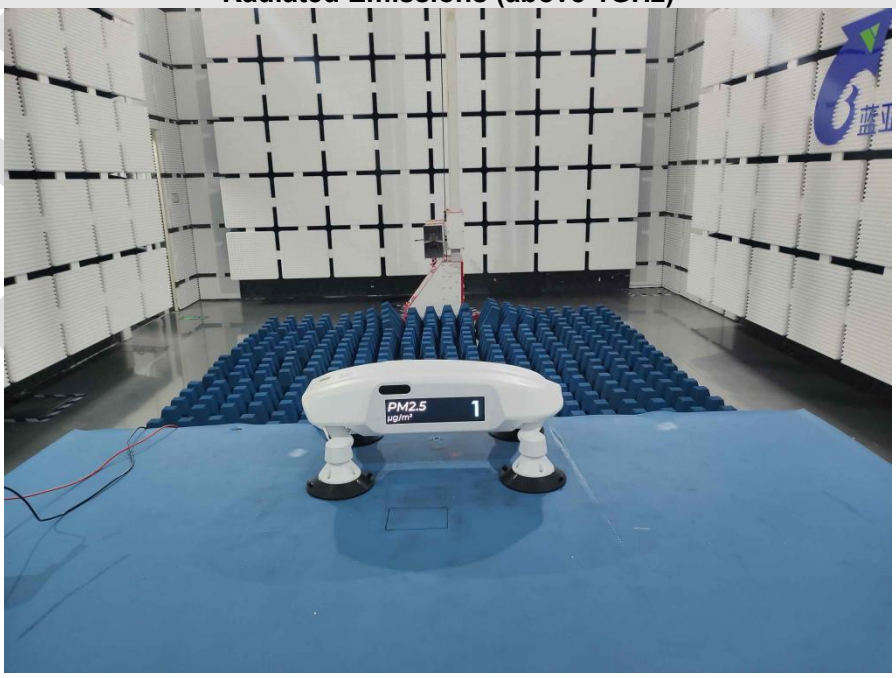
Test Result: Pass

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

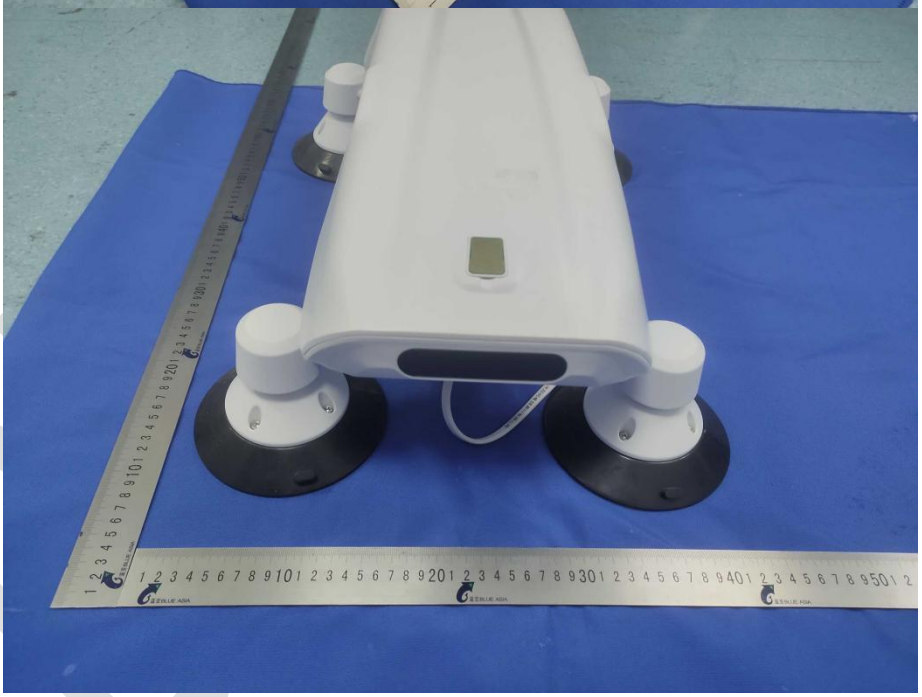
Radiated Emissions (30MHz-1GHz)

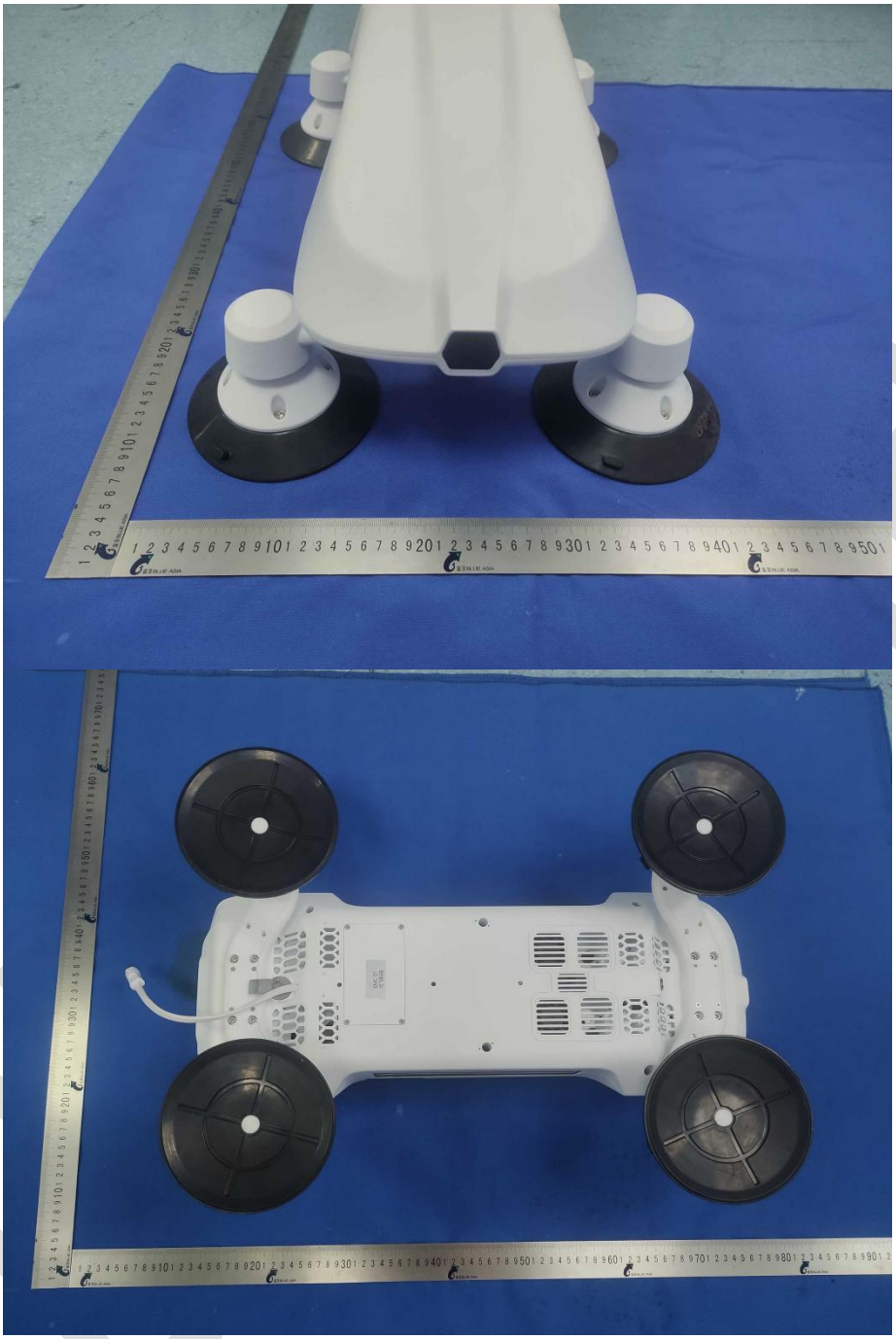


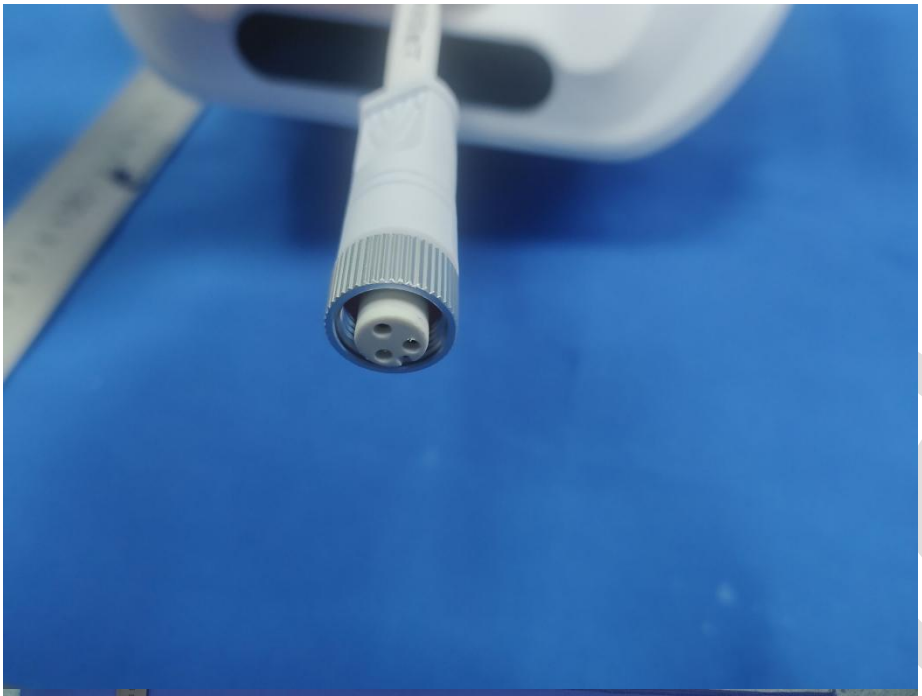
Radiated Emissions (above 1GHz)

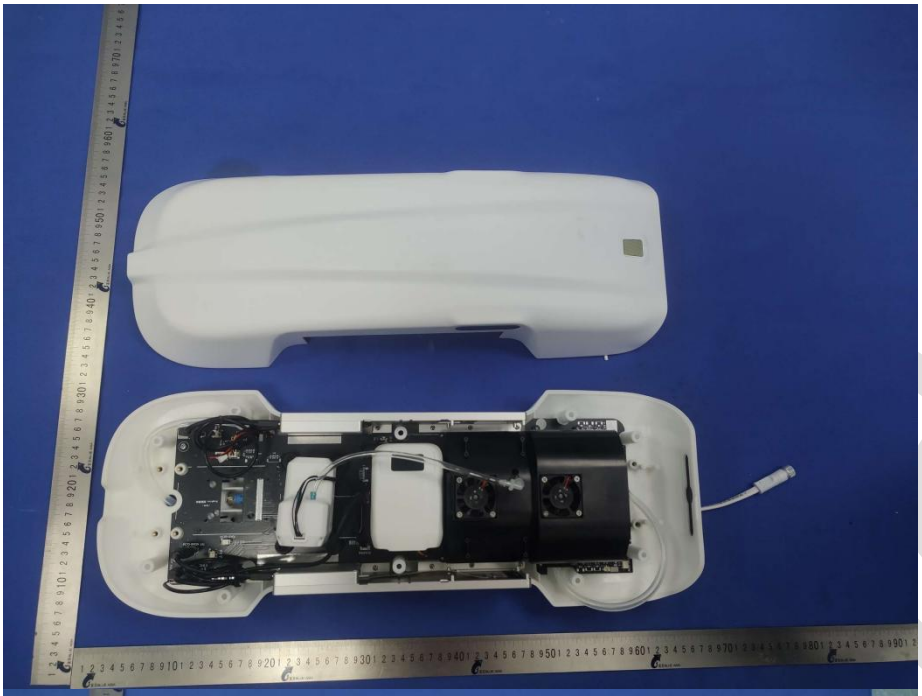


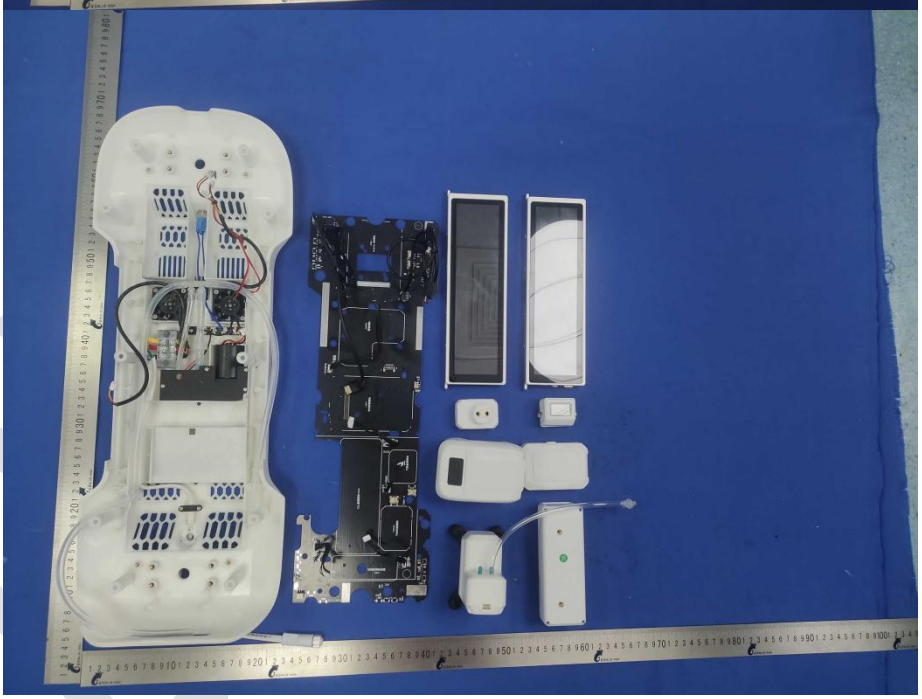
APPENDIX B: PHOTOGRAPHS OF EUT

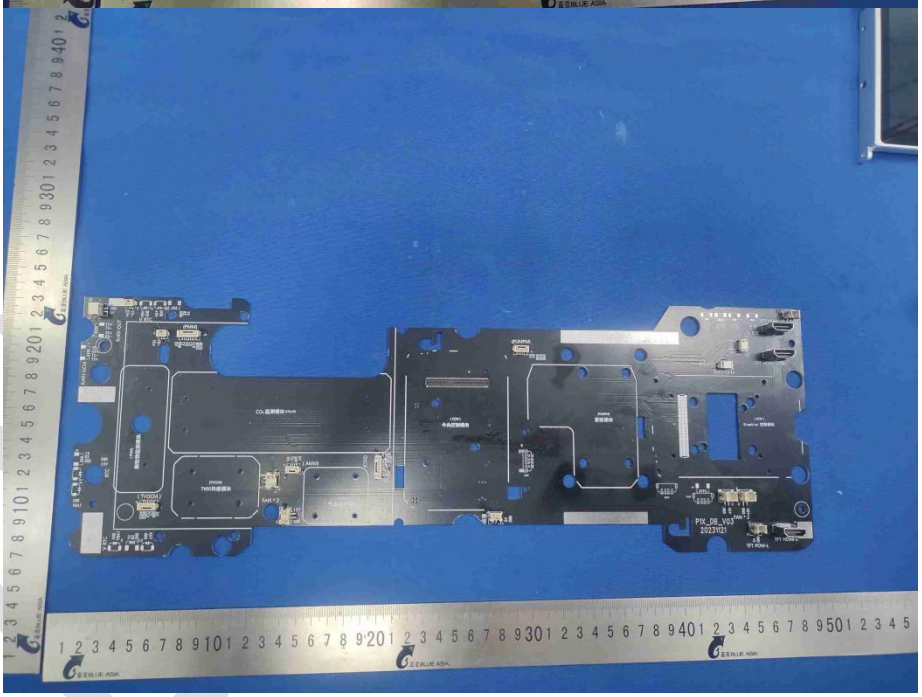


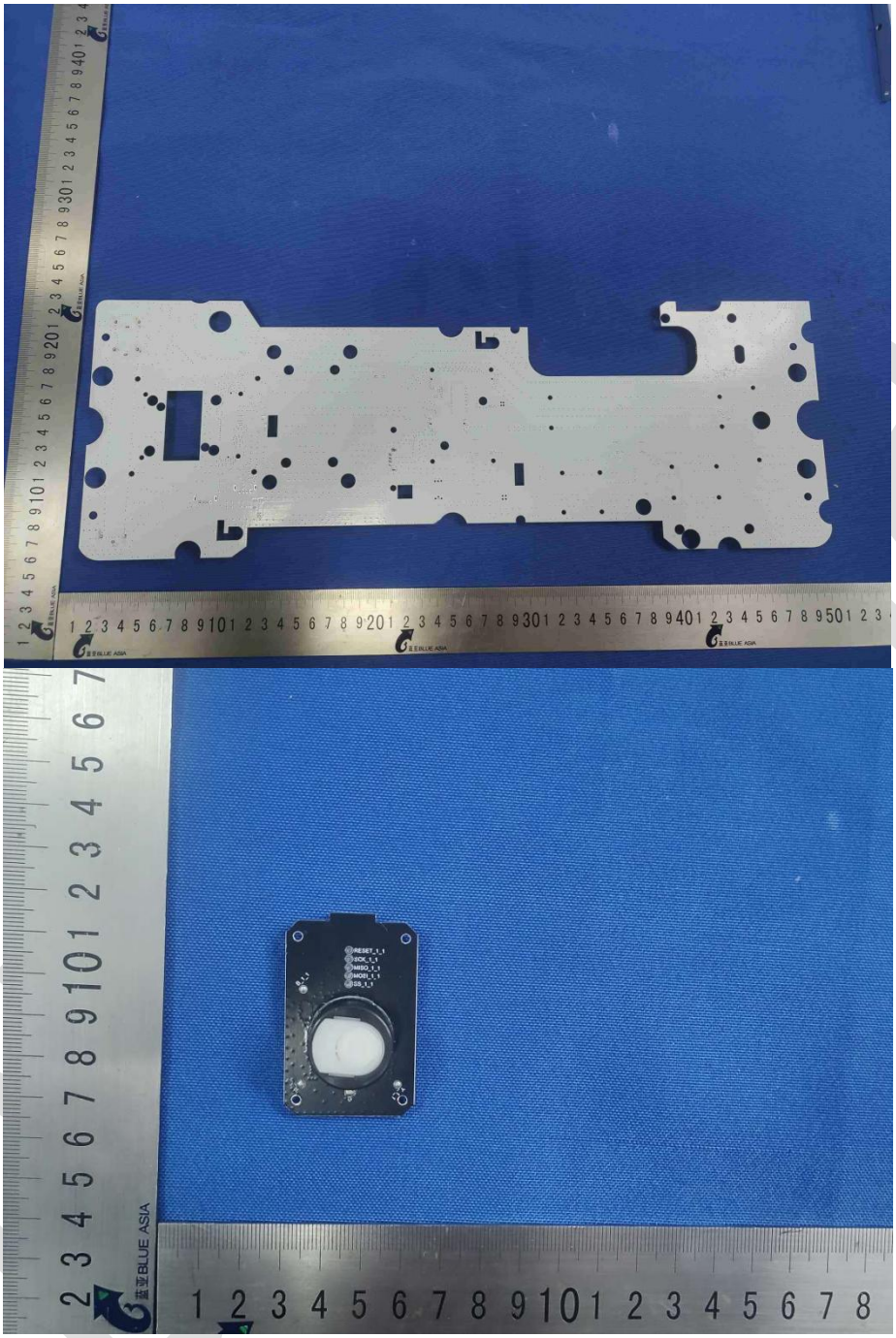


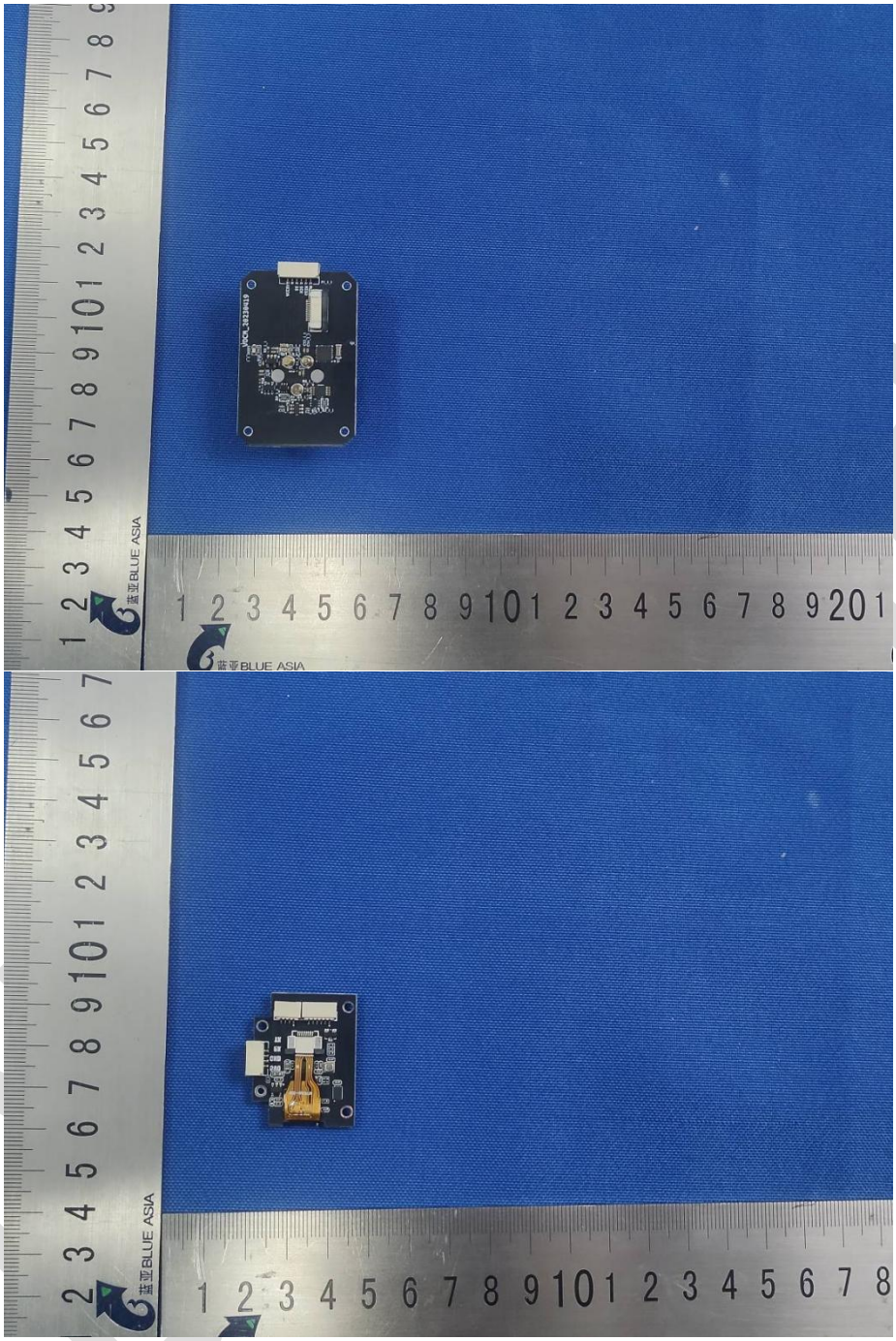


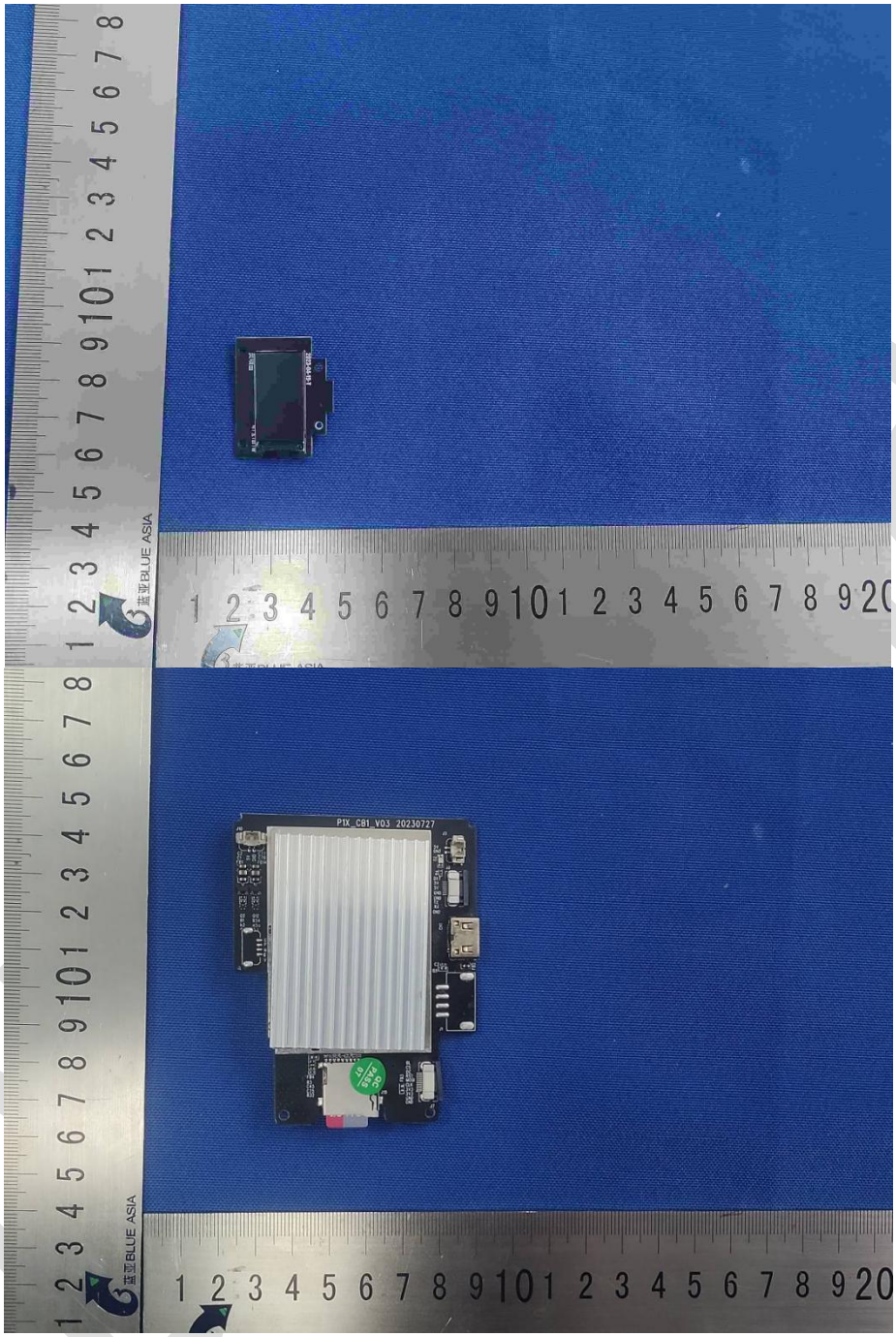








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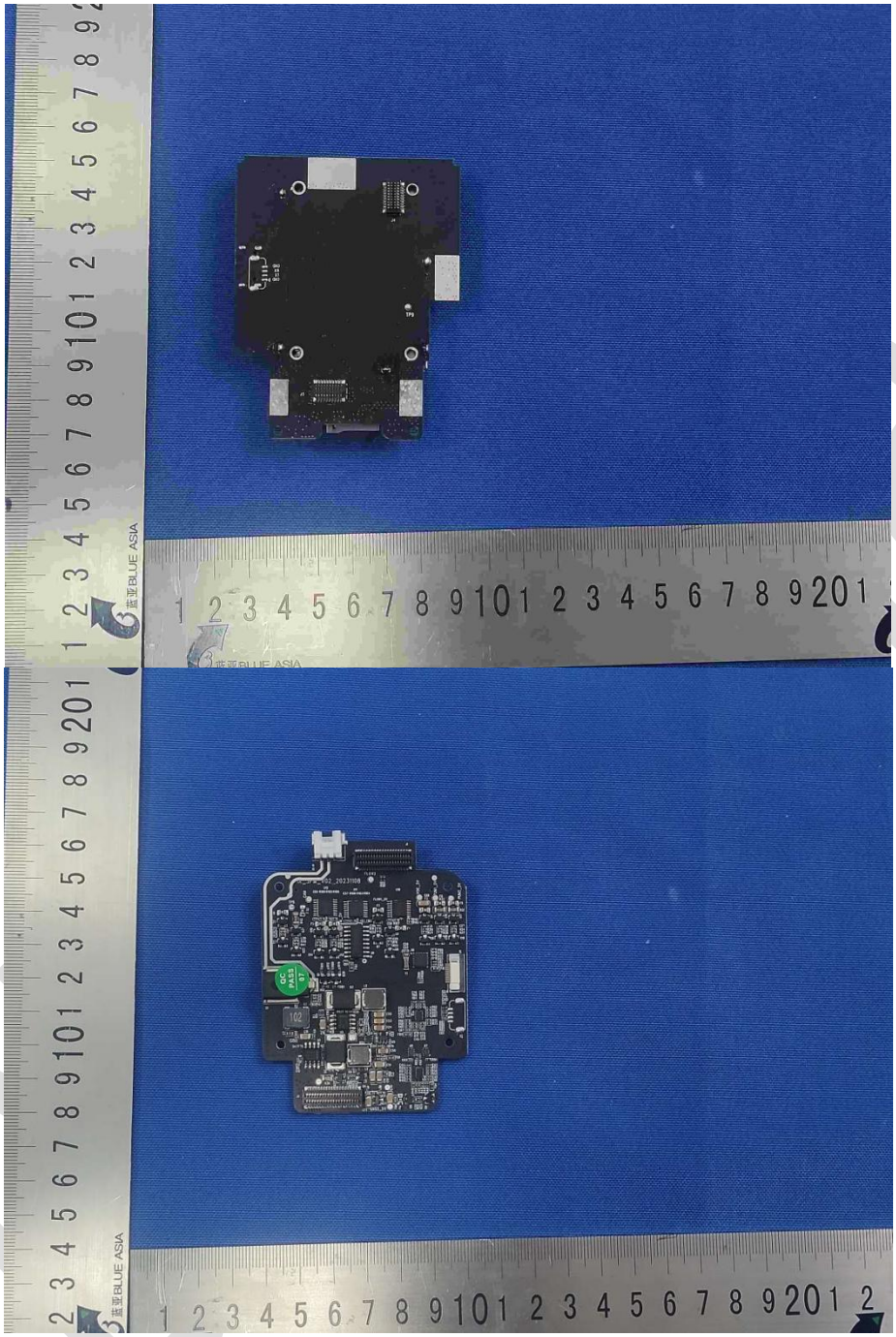

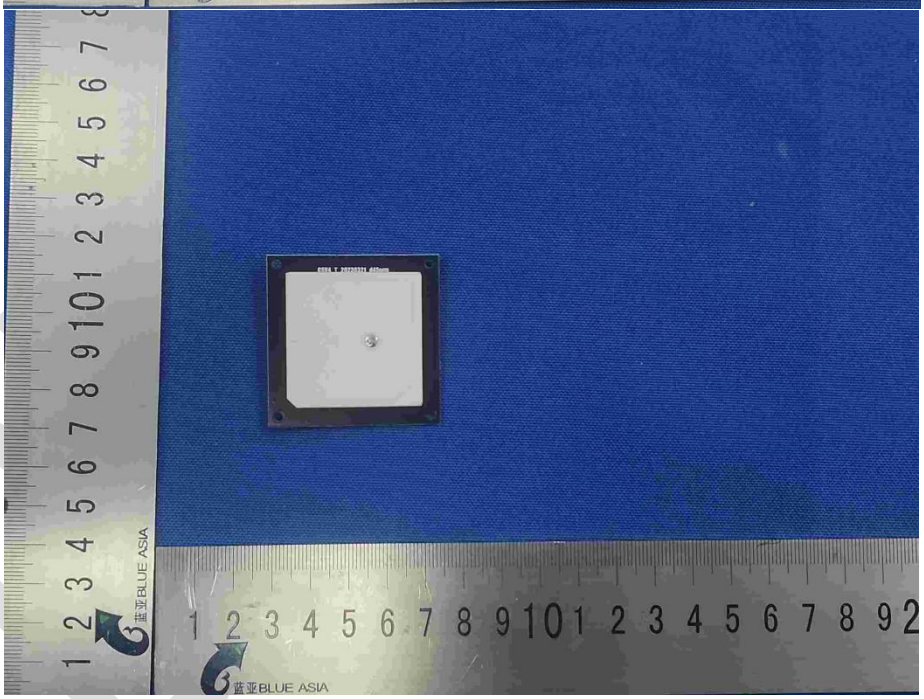

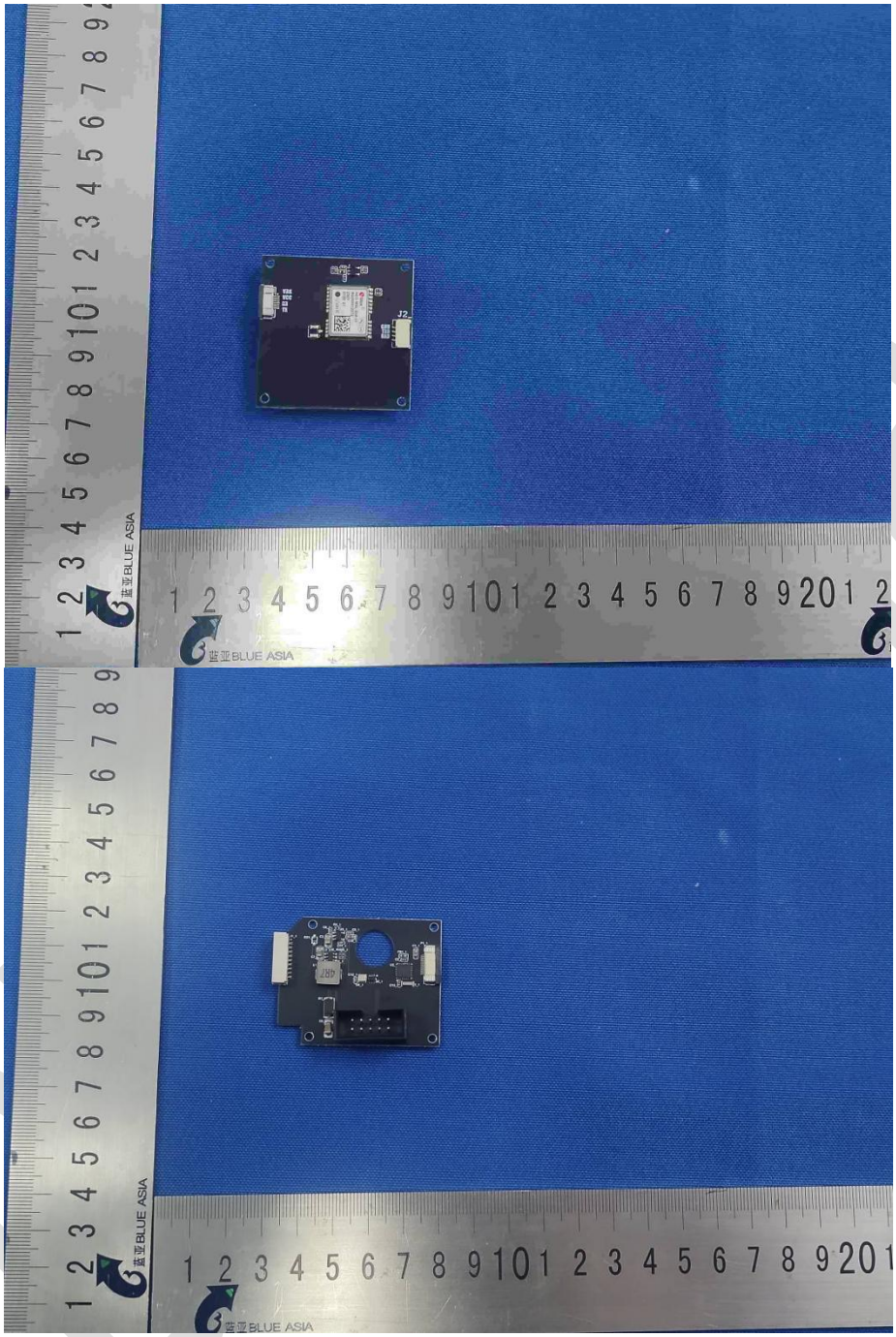

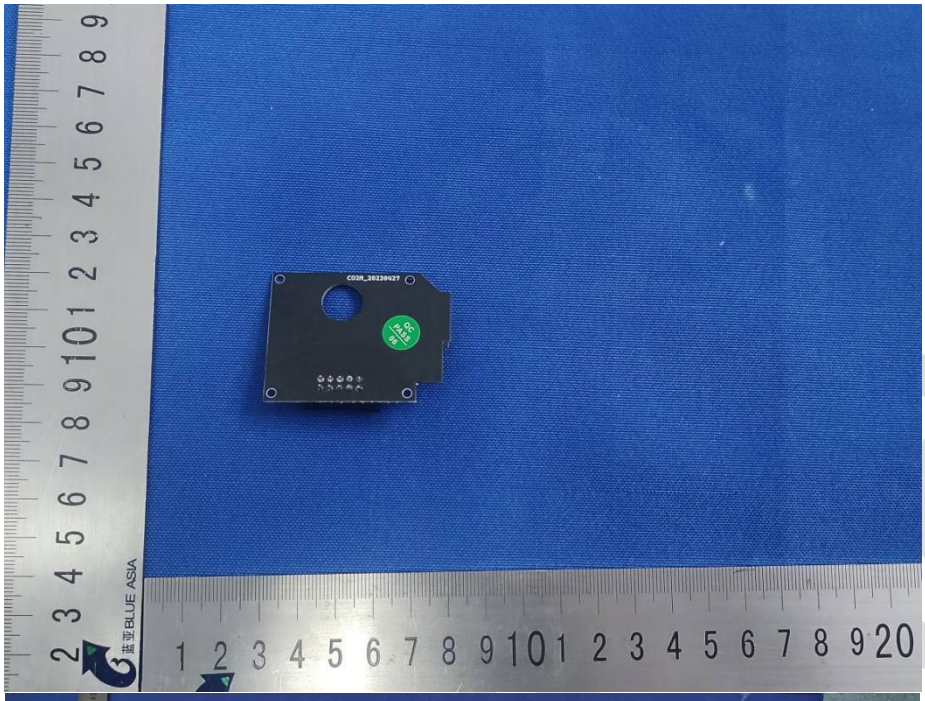

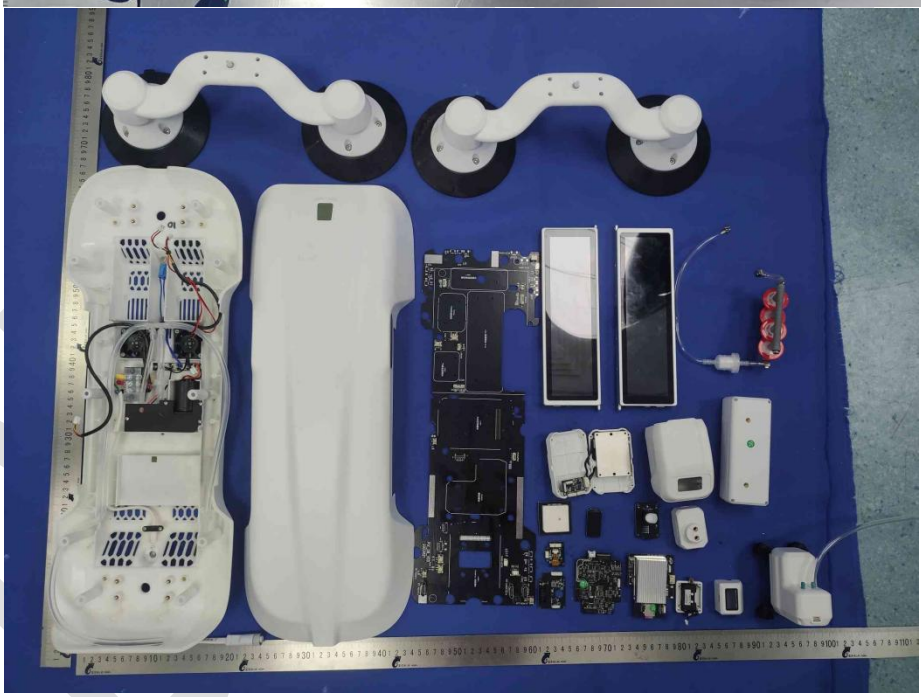

----END OF REPORT----

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