



# TEST REPORT

Applicant: Guangzhou Chengzhi Intelligent Machinery Technology Co., Ltd  
Address: No.5, Longlin middle street, Tianhe District, Guangzhou  
Manufacturer: Guangzhou Chengzhi Intelligent Machinery Technology Co., Ltd  
Address: No.5, Longlin middle street, Tianhe District, Guangzhou  
EUT: Throwing hook  
Trade Mark: N/A  
Model Number: TH4 V2  
Date of Receipt: Dec. 01, 2021  
Test Date: Dec. 01, 2021 - Dec. 06, 2021  
Date of Report: Dec. 06, 2021  
Prepared By: Shenzhen DL Testing Technology Co., Ltd.  
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China  
Applicable Standards: FCC PART 15 Subpart B  
ANSI C63.4:2019  
Test Result: Pass  
Report Number: DL-20211204004E

Prepared (Engineer): Lily Fu  
Reviewer (Supervisor): Jack Bu  
Approved (Manager): Jade Yang



*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 Shenzhen DL Testing Technology Co., Ltd.*



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**1. VERSION**

Version No.	Date	Description
00	Dec. 06, 2021	Original

**2. TEST SUMMARY**

EMC Emission				
Standard	Test Item	Limit	Result	Remark
FCC PART 15 Subpart B	Conducted Emission at power ports	Class B	N/A	
	Radiated Emission below 1GHz	Class B	PASS	
	Radiated Emission above 1GHz	Class B	N/A	

**NOTE:**

(1) "N/A" denotes test is not applicable in this Test Report

(2) Test Facility: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China



**3. GENERAL INFORMATION**

**3.1 Description of Device (EUT)**

EUT: Throwing hook  
Trade Mark: N/A  
Model Number: TH4 V2  
Test Model: TH4 V2  
Model difference: N/A  
Power Supply: DC 12V  
Working Frequency: Below 108MHz

**3.2 Tested System Details**

None.

**3.3 Block Diagram of Test Set-up**



**3.4 Test Mode Description**

Mode1. On Mode

**3.5 Test Auxiliary Equipment**

None.

**3.6 Test Uncertainty**

Conducted Emission Uncertainty : ±2.56dB

Radiated Emission Uncertainty : ±3.24dB

**4. TEST INSTRUMENT USED****For Conducted Emission Test (843 Shielded Room)**

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
843 Shielded Room	ChengYu	843 Room	843	Nov. 25, 2019	Nov. 24, 2022
EMI Receiver	R&S	ESR	101421	Dec. 07, 2020	Dec. 06, 2021
LISN	R&S	ENV216	102417	Dec. 07, 2020	Dec. 06, 2021
Clamp	COM-POWER	CLA-050	431071	Dec. 05, 2021	Dec. 04, 2022
3-Loop Antenna	DAZE	ZN30401	13021	Dec. 07, 2020	Dec. 06, 2021
ISN T8	Schwarzbeck	NTFM 8158	101135	Dec. 07, 2020	Dec. 06, 2021
ISN T5	Schwarzbeck	NTFM 8158	101136	Dec. 07, 2020	Dec. 06, 2021
843 Cable 1#	ChengYu	CE Cable	001	Dec. 07, 2020	Dec. 06, 2021
843 Cable 1#	ChengYu	CE Cable	002	Dec. 07, 2020	Dec. 06, 2021

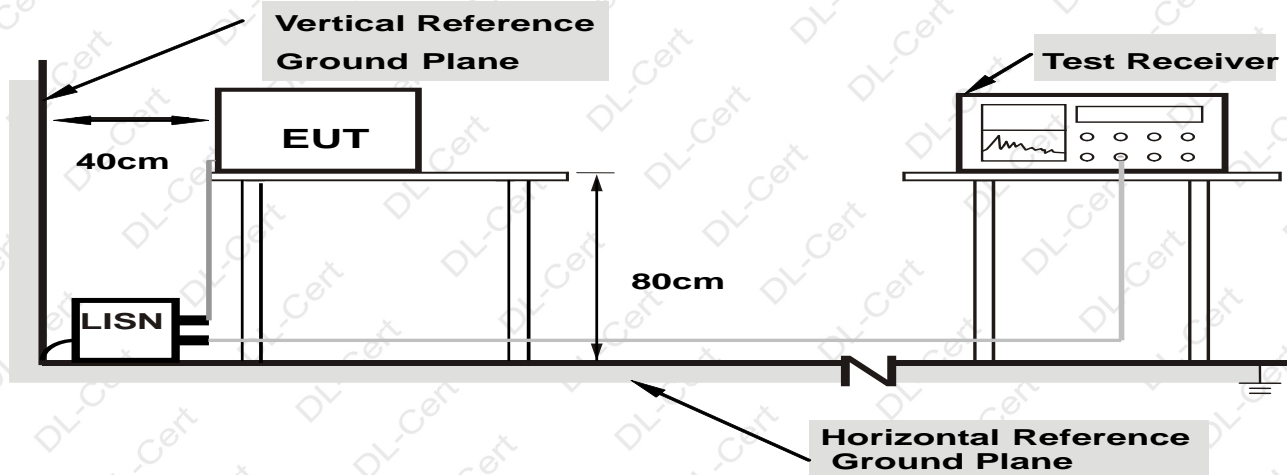
**For Radiated Emission Test (966 chamber)**

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
966 Chamber	ChengYu	966 Room	966	Nov. 25, 2019	Nov. 24, 2022
Spectrum Analyzer	Agilent	E4408B	MY50140780	Dec. 07, 2020	Dec. 06, 2021
EMI Receiver	R&S	ESRP7	101393	Dec. 07, 2020	Dec. 06, 2021
Amplifier	Schwarzbeck	BBV9743B	00153	Dec. 07, 2020	Dec. 06, 2021
Amplifier	EMEC	EM01G8GA	00270	Dec. 07, 2020	Dec. 06, 2021
Broadband Trilog Antenna	Schwarzbeck	VULB9162	00306	Nov. 28, 2021	Nov. 27, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	02139	Nov. 28, 2021	Nov. 27, 2022
966 Cable 1#	ChengYu	966	004	Dec. 07, 2020	Dec. 06, 2021
966 Cable 2#	ChengYu	966	003	Dec. 07, 2020	Dec. 06, 2021

**5. CONDUCTED EMISSION TEST**

5.1 Block Diagram of Test Setup

**For Mains Terminals Test**



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

5.2 Test Standard and Limit

FCC Part 15 Subpart B

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15~0.50	66 ~ 56*	55 ~ 46*
0.50~5.00	56	46
5.00~30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

5.3 EUT Configuration on Test

The following equipment's are installed on conducted emission test to meet FCC Part 15 Subpart B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

5.4 Operating Condition of EUT

5.4.1 Setup the EUT and simulators as shown in Section 5.1.

5.4.2 Turn on the power of all equipments.

5.4.3 Let the EUT work in test modes and test it.



### 5.5 Test Procedure

The EUT is put on the table and connected to the AC mains through a Artificial Mains Network (AMN) or ISN. This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **ANSI C63.4** regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESR) is set at 10KHz.

The frequency range from 150 KHz to 30 MHz is investigated.

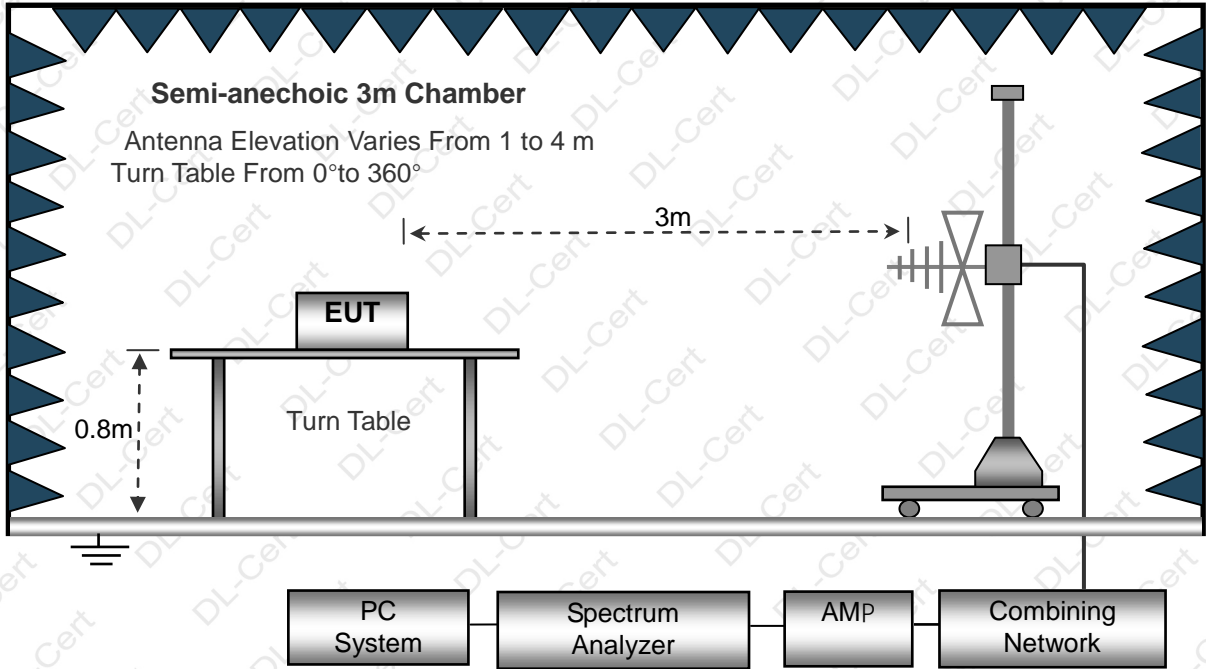
### 5.6 Test Result

The EUT is powered by DC, no requirements for this item.

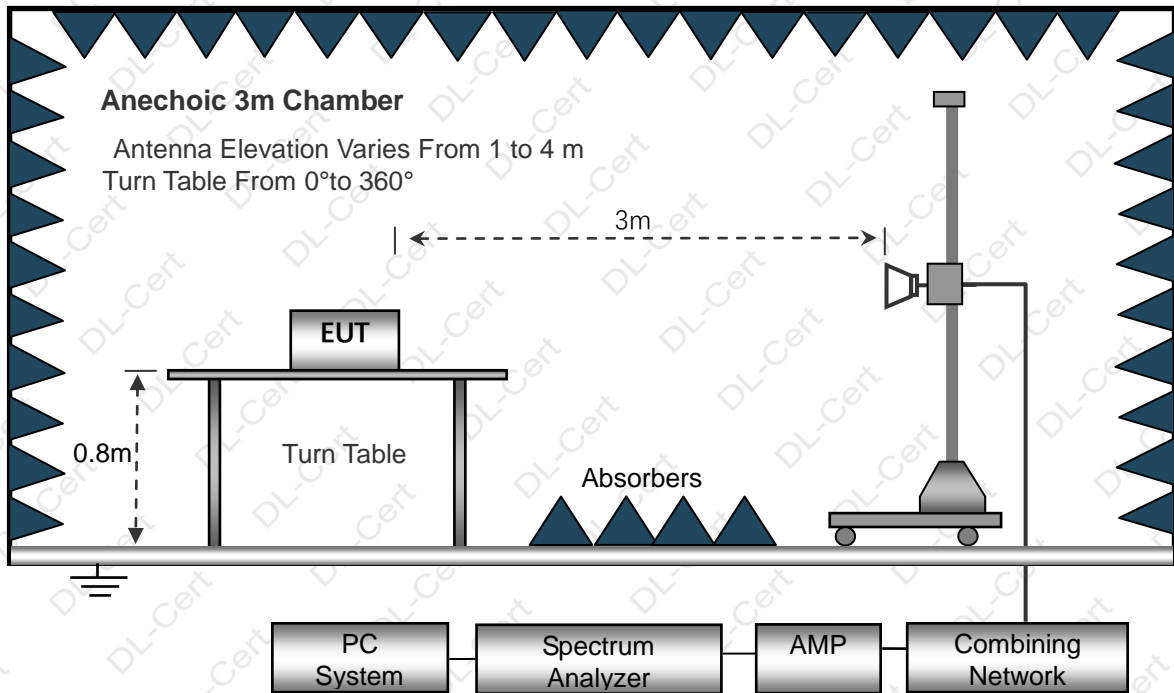
## 6. RADIATION EMISSION TEST

### 6.1 Block Diagram of Test Setup

Below 1GHz



Above 1GHz







## 6.2 Test Standard and Limit

FCC Part 15 Subpart B

Below 1GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB $\mu$ V/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Above 1GHz

Frequency MHz	Distance (Meters)	Field Strengths Limits dB( $\mu$ V)/m	Detector
Above 1000	3	74.0	PEAK
Above 1000	3	54.0	AVERAGE

Remark:

(1) The smaller limit shall apply at the cross point between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

## 6.3 EUT Configuration on Test

The FCC Part 15 Subpart B regulations test method must be used to find the maximum emission during radiated emission test.

The configuration of EUT is the same as used in conducted emission test.

Please refer to Section 5.3.

## 6.4 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 5.4 except the test set up replaced as Section 6.2.

## 6.5 Test Procedure

1) The radiated emissions test was conducted in a semi-anechoic chamber.

2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

3) Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.

4) The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

5) The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz.

6) The frequency range from 30MHz to 1000MHz is checked.

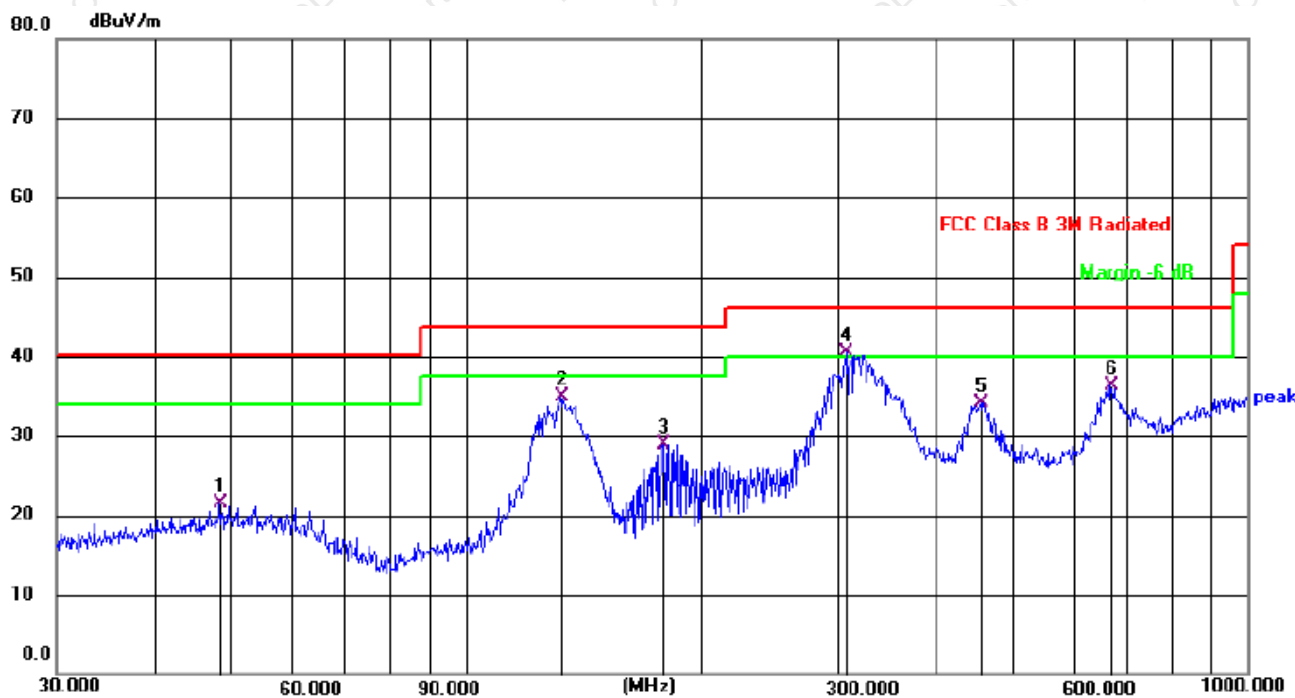
## 6.6 Test Result

PASS

Please refer to the following page.



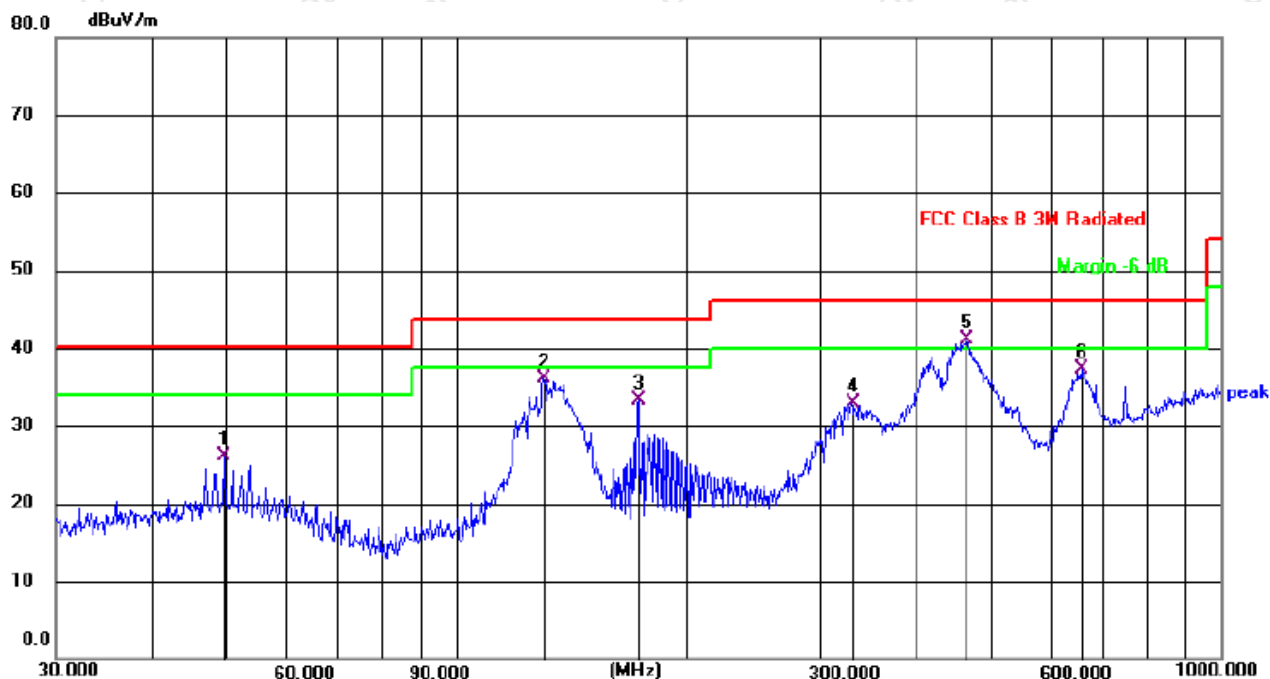
Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Horizontal
Test Voltage:	DC 12V	Test Mode:	Mode 1



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		48.5016	34.86	-13.44	21.42	40.00	18.58	QP
2		132.2206	53.26	-18.45	34.81	43.50	8.69	QP
3		179.3863	46.36	-17.36	29.00	43.50	14.50	QP
4	*	306.7537	52.89	-12.40	40.49	46.00	5.51	QP
5		455.9058	43.35	-9.30	34.05	46.00	11.95	QP
6		668.1423	41.42	-5.20	36.22	46.00	9.78	QP



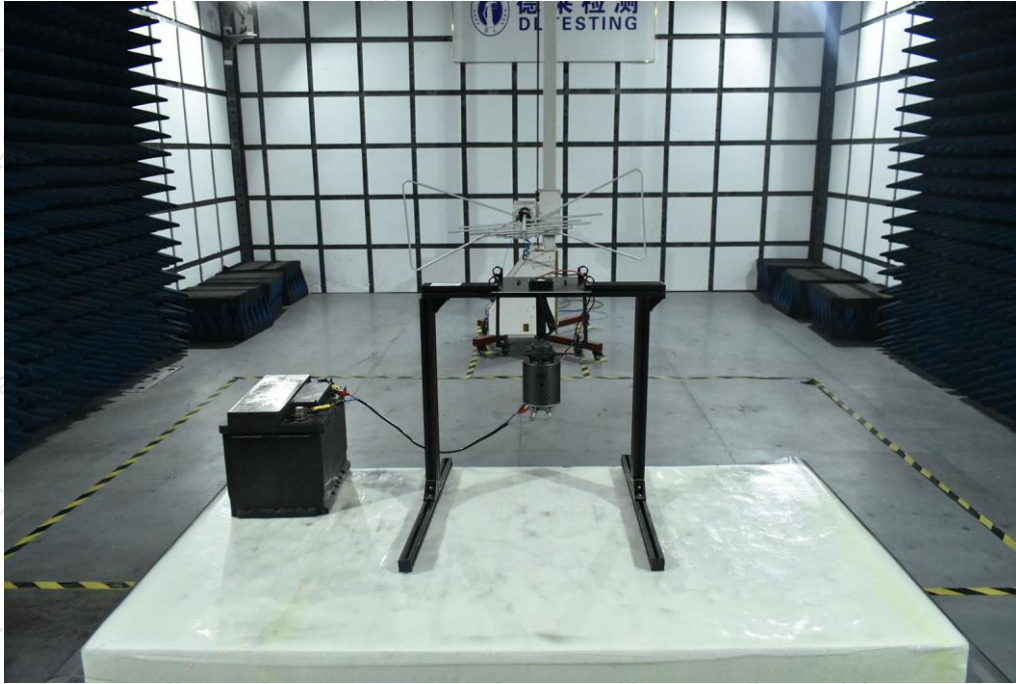
Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Vertical
Test Voltage:	DC 12V	Test Mode:	Mode 1



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		49.7068	39.36	-13.33	26.03	40.00	13.97	QP
2		129.9226	54.50	-18.37	36.13	43.50	7.37	QP
3		173.2051	51.05	-17.74	33.31	43.50	10.19	QP
4		329.0390	44.99	-12.04	32.95	46.00	13.05	QP
5	*	465.5994	50.04	-9.03	41.01	46.00	4.99	QP
6		656.5300	42.69	-5.47	37.22	46.00	8.78	QP

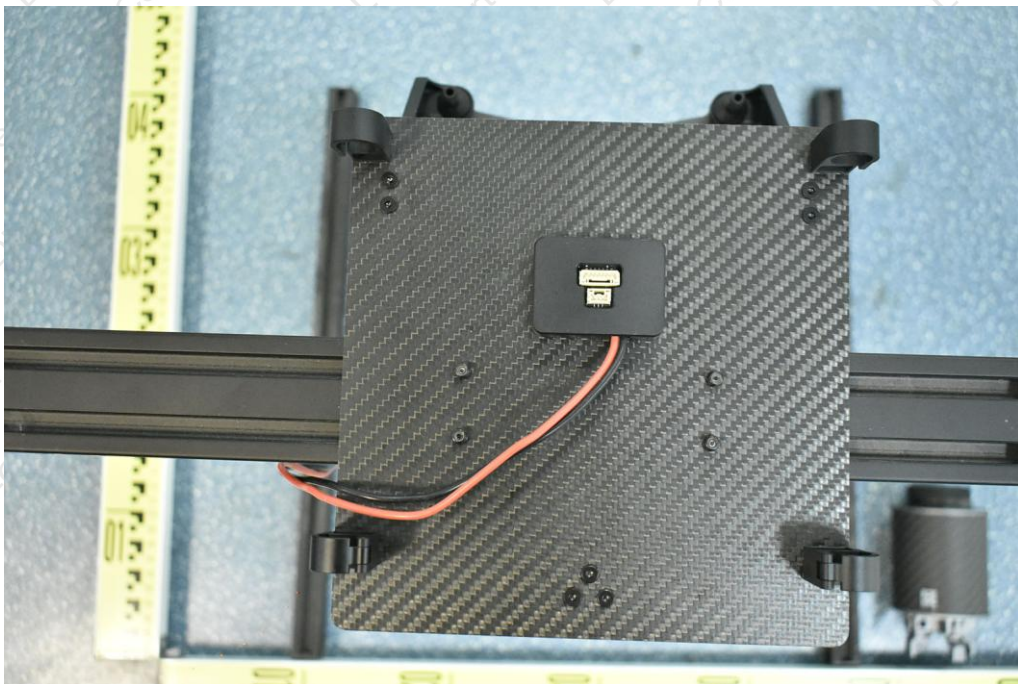


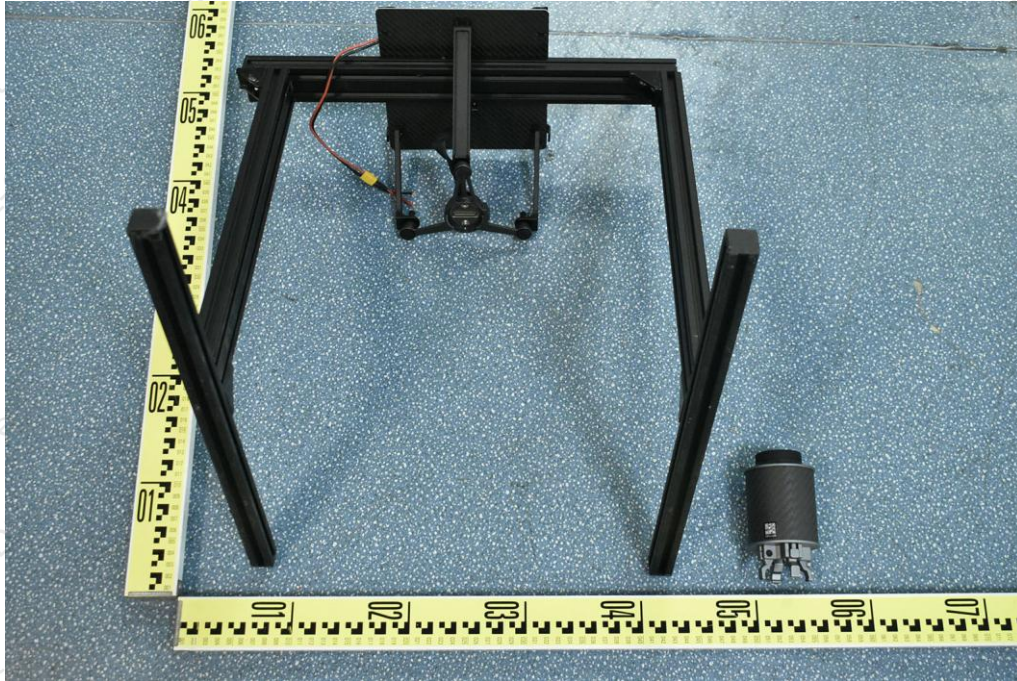
## 7. SETUP PHOTOGRAPHS

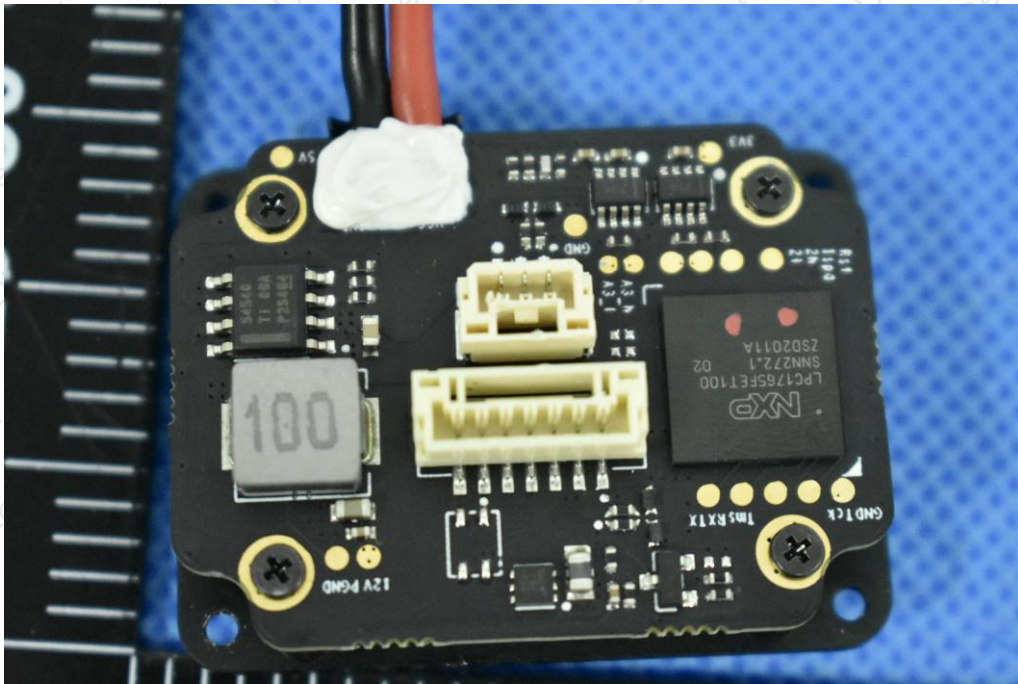


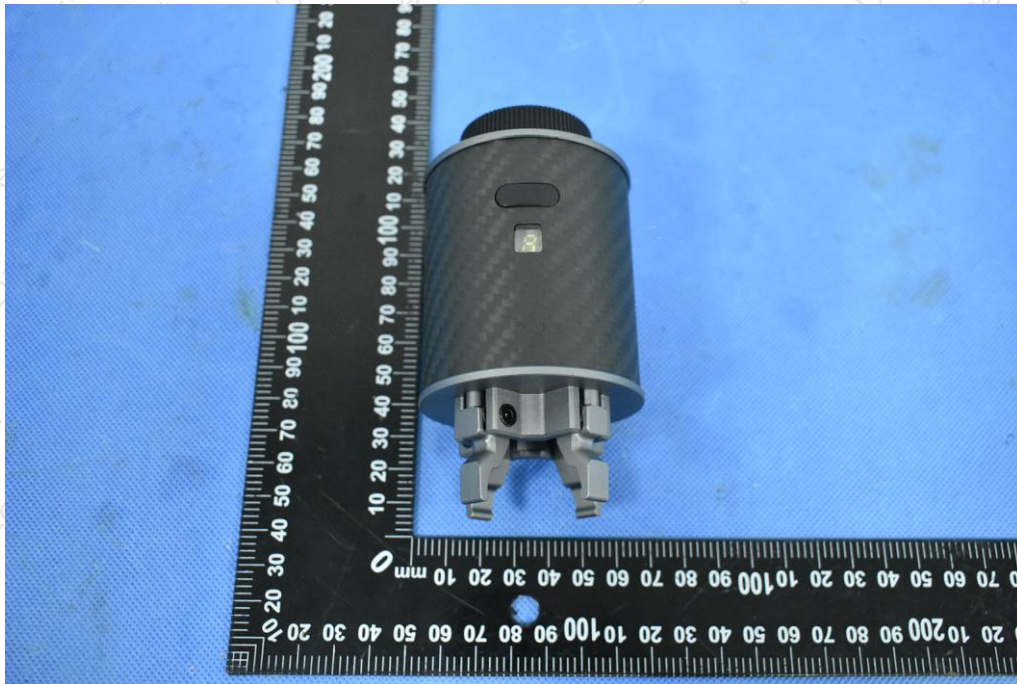
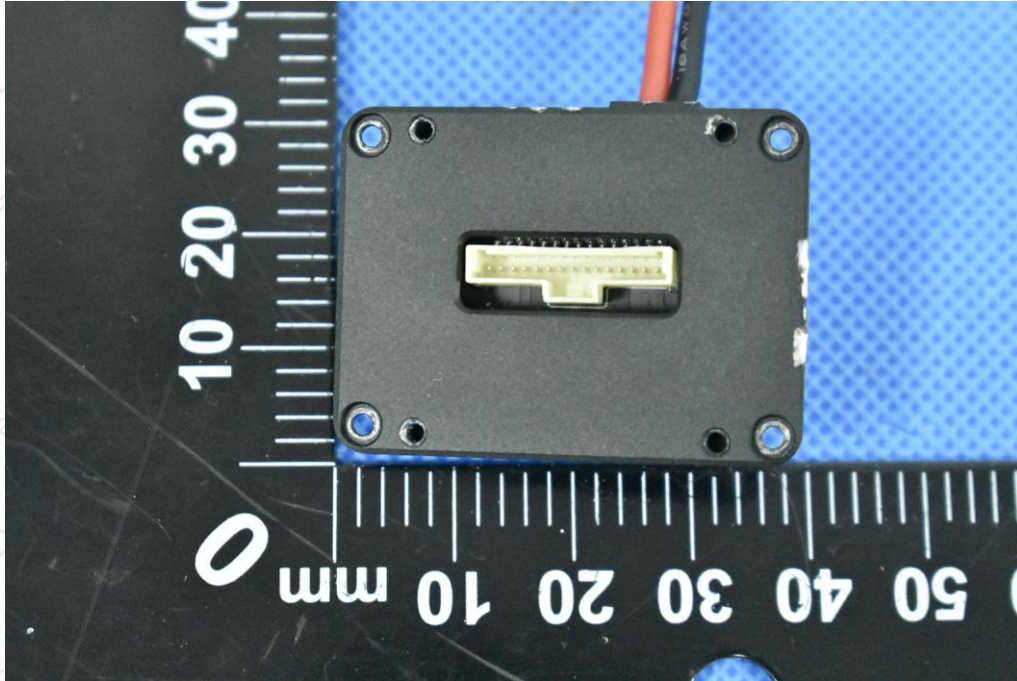


### 8. EUT PHOTOGRAPHS

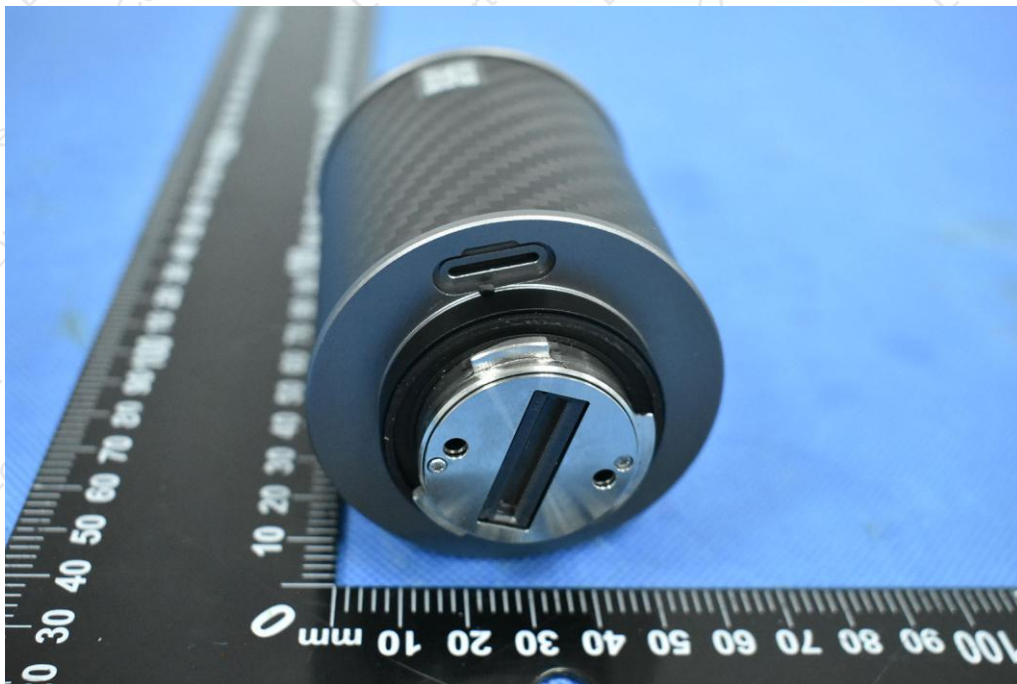
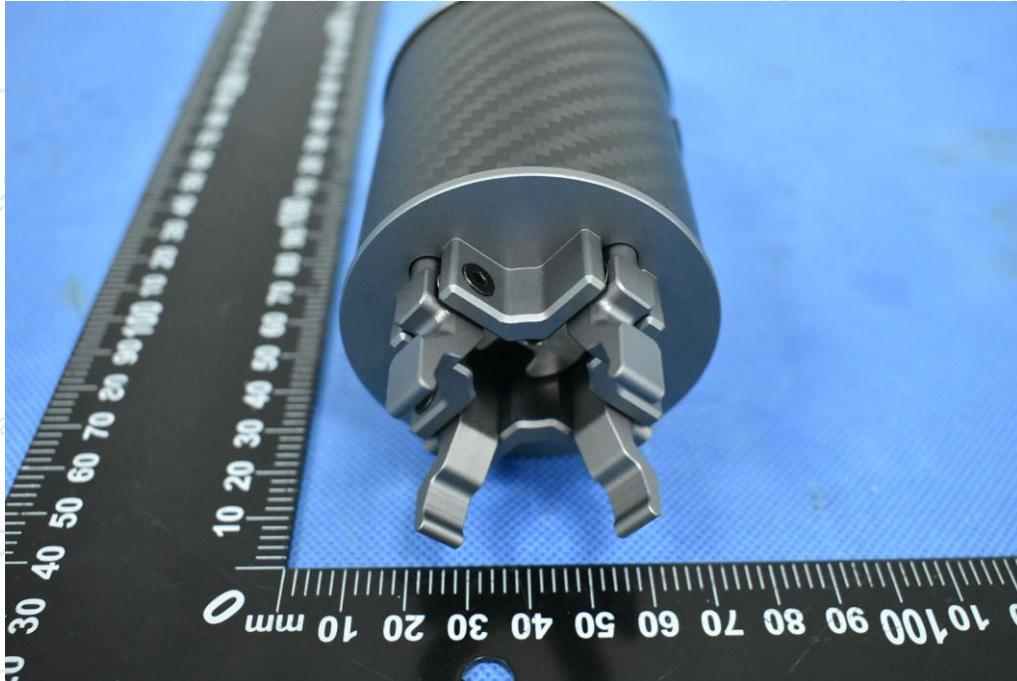












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