EMC MEASUREMENT REPORT

FCC ID:	2ATTC-P1
Applicant:	Shenzhen Lefeet Innovation Technology Co., Ltd
Address:	Area A, 2F, Bldg A, Junxiangda Office Bldg, West Zhongshanyuan Rd, Nanlian Community, Nanshan Dist., Shenzhen, Guangdong, CN 518000
Product:	REMOTE CONTROLLER
Model No.:	P1
Brand Name:	LEFEET
FCC Rule Part(s):	FCC Part 15.209
Test Procedure:	ANSI C63.10 - 2013
Result:	Complies
Received Date:	2024-06-21
Test Date:	2024-07-10

Reviewed By: Denise Zhou

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.02

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. Test results reported herein relate only to the item(s) tested.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Shenzhen) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2407RSU006-U3	V01	Initial Report	2024-08-07	Valid

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1. General Information

1.1. Applicant

Shenzhen Lefeet Innovation Technology Co., Ltd

Area A, 2F, Bldg A, Junxiangda Office Bldg, West Zhongshanyuan Rd, Nanlian Community, Nanshan Dist., Shenzhen, Guangdong, CN 518000

1.2. Manufacturer

Shenzhen Lefeet Innovation Technology Co., Ltd

Area A, 2F, Bldg A, Junxiangda Office Bldg, West Zhongshanyuan Rd, Nanlian Community, Nanshan Dist., Shenzhen, Guangdong, CN 518000

1.3. Testing Facility

☐	**Test Site – MRT Suzhou Laboratory**
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China **Laboratory Location (Suzhou - SIP)** 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: ☐R-20025 ☐G-20034 ☐C-20020 ☐T-20020 ☐R-20141 ☐G-20134 ☐C-20103 ☐T-20104
☒	**Test Site – MRT Shenzhen Laboratory**
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
☐	**Test Site – MRT Taiwan Laboratory**
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: 3261 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	REMOTE CONTROLLER
Model No.	P1
Brand Name	LEFEET
EUT Identification No.	20240621Sample#01
Wireless Specification	125kHz
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Operating Frequency	125kHz
Type of modulation	ASK

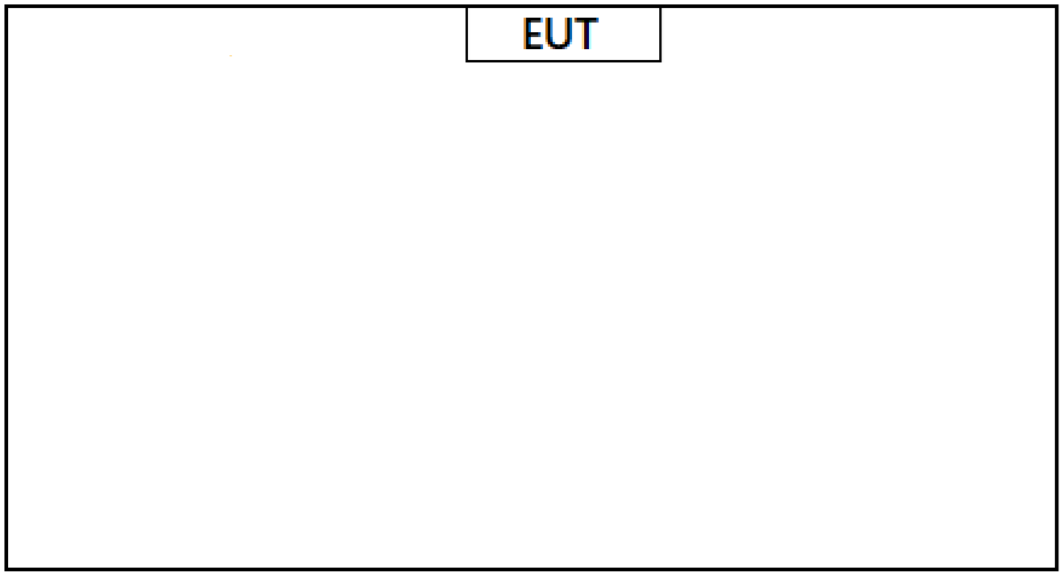
2. Test Configuration

2.1. Test Mode

Mode 1: Transmit at 125kHz.

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing.

Connection Diagram


2.3. Test Software

The EUT has entered engineering mode.

2.4. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.209
- ANSI C63.10-2013

2.5. Test Environment Condition

Ambient Temperature	15 ~ 35 °C
Relative Humidity	20 ~75 %RH

3. Antenna Requirement

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antenna of the device is **permanently attached.**
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. Measuring Instrument

Instrument Name	Manufacturer	Model No.	Asset No.	Cali. Interval	Cal. Due Date	Test Site
Anechoic Chamber	BOOMWAVE	NS-AC1	MRTSUE06496	1 year	2025-07-05	NS-AC1
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06573	1 year	2025-05-12	NS-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06575	1 year	2025-06-10	NS-AC1
Thermohygrometer	testo	608-H1	MRTSUE11294	1 year	2025-05-14	NS-AC1

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
Controller_T-E-TAC-2	1.02	RE Antenna & turntable

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Radiated Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
Coaxial:	9kHz~30MHz: 2.61dB
Coplanar:	9kHz~30MHz: 2.62dB
Horizontal:	30MHz~200MHz: 3.49dB
	200MHz~1GHz: 4.03dB
	1GHz~40GHz: 4.70dB
Vertical:	30MHz~200MHz: 4.07dB
	200MHz~1GHz: 5.42dB
	1GHz~40GHz: 4.63dB

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.209	General Field Strength (Radiated Emission)	Radiated	Pass

Notes:

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

6.2. Radiated Spurious Emission Measurement

6.2.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.2.2. Test Procedure

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

6.2.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

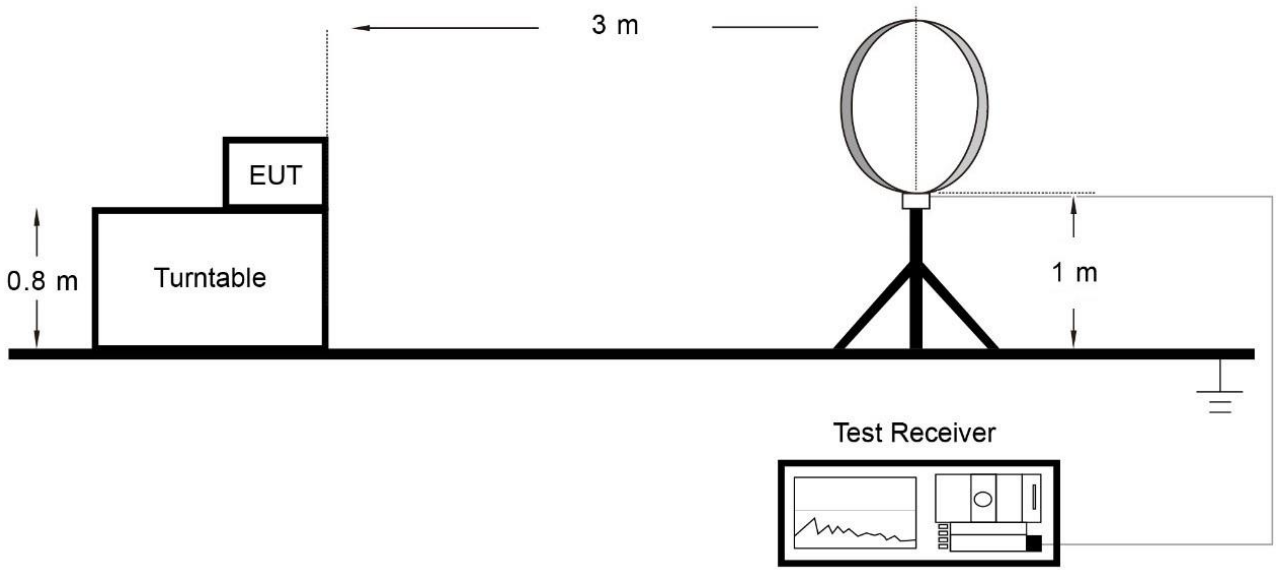
Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; if the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10Hz

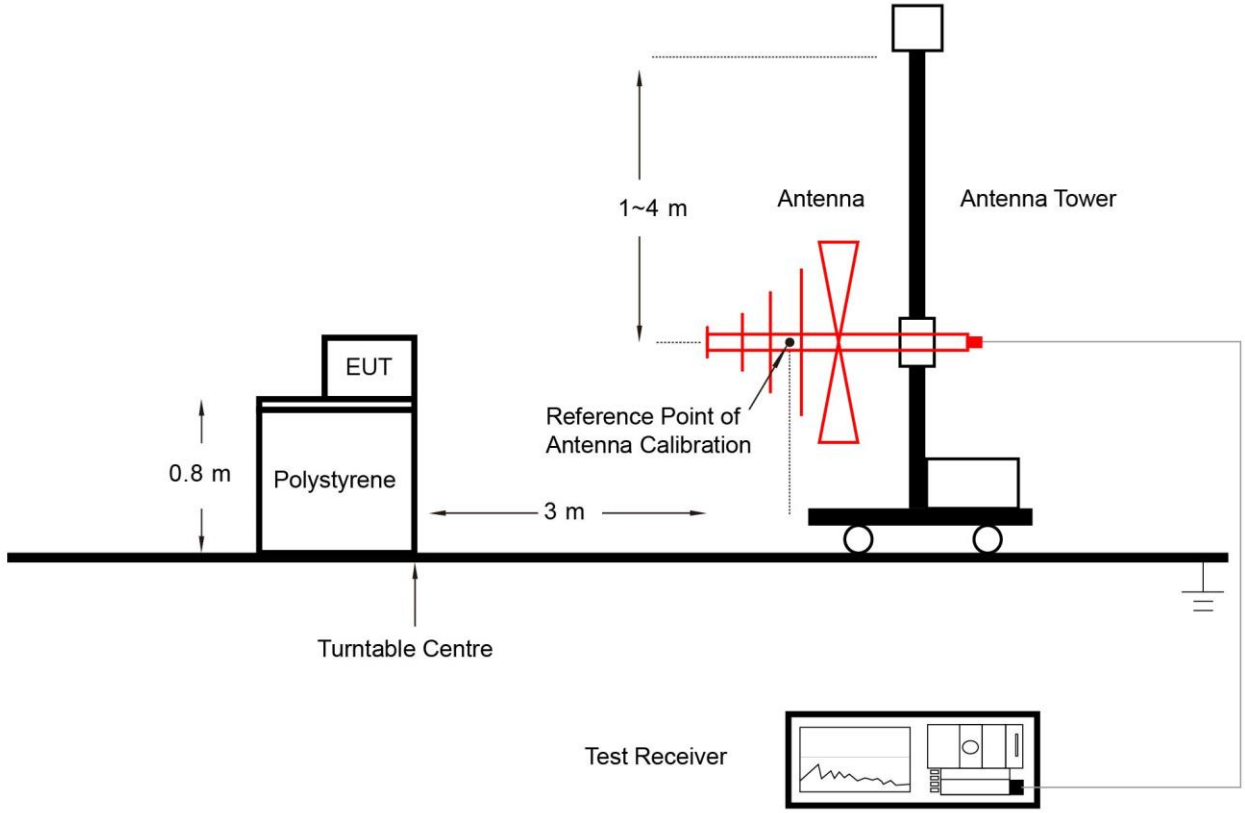
   If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = Auto
7. Trace mode = Max hold
8. Trace was allowed to stabilize

6.2.4. Test Setup

Below 30MHz Test Setup:



Below 1GHz Test Setup:



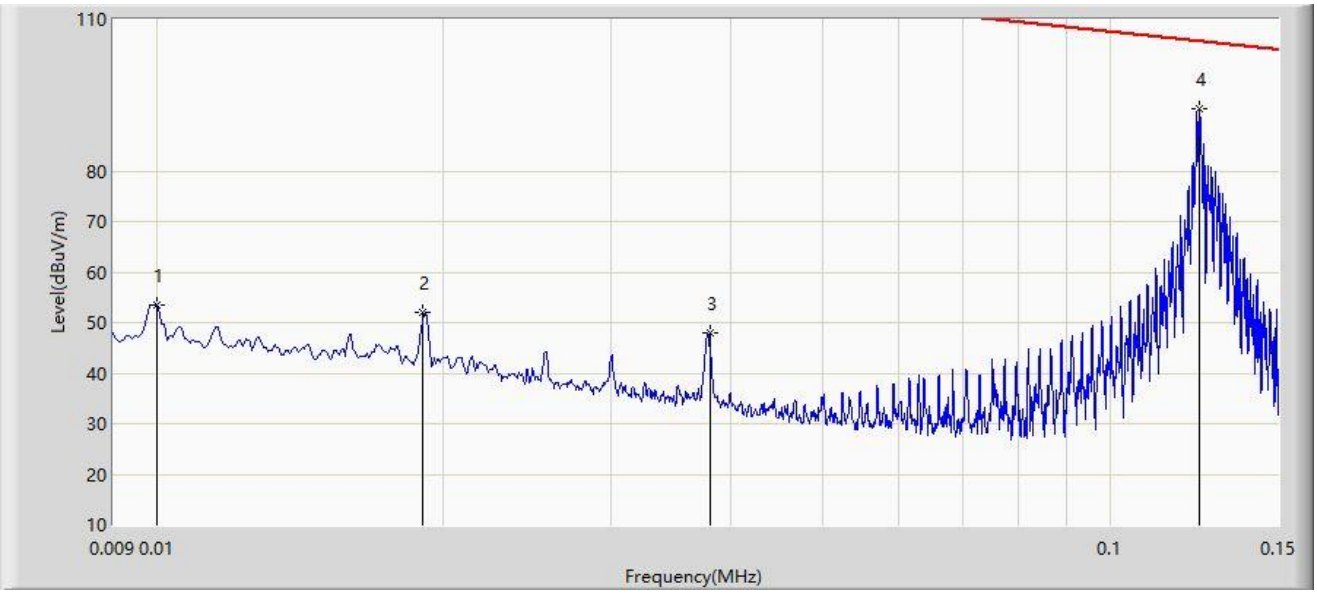
6.2.5. Test Result

Refer to Appendix A.1.

Appendix A - Test Result

A.1 Radiated Spurious Emission Test Result

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_FMZB1519	Polarity: Horizontal
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.010	53.549	32.848	-74.037	127.585	20.701	PK
2		0.019	51.914	32.037	-70.099	122.013	19.877	PK
3		0.038	47.907	29.768	-68.089	115.996	18.139	PK
4	*	0.124	92.313	74.538	N/A	N/A	17.775	PK

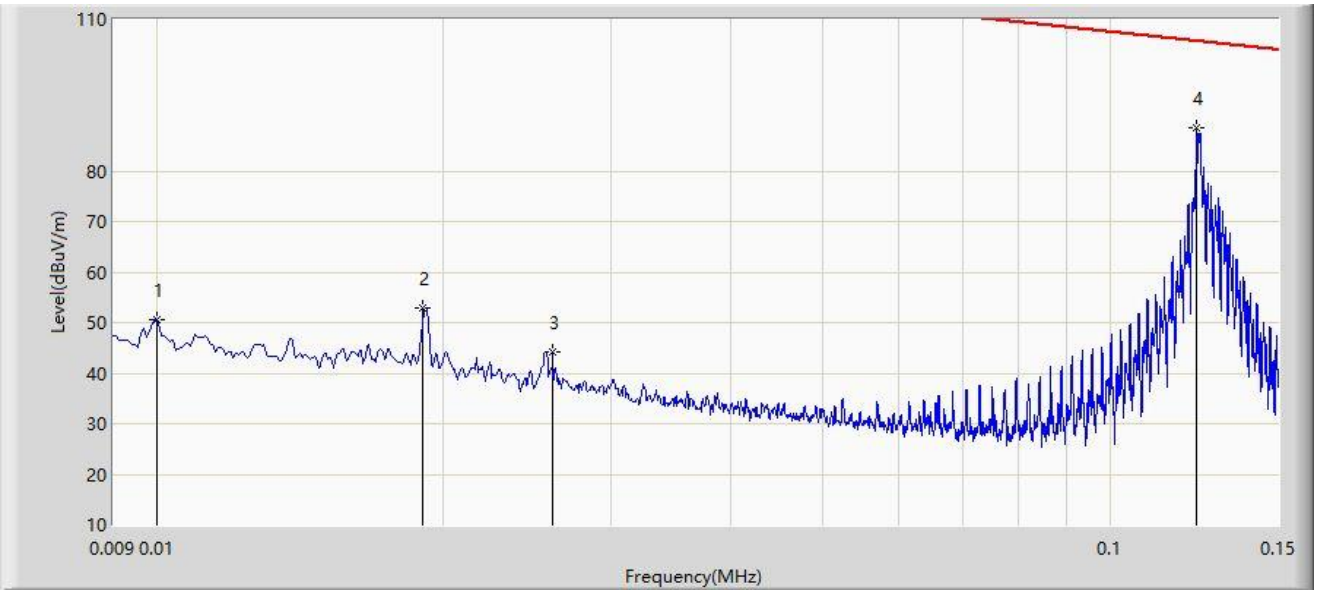
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_FMZB1519	Polarity: Vertical
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.010	50.595	29.894	-76.991	127.585	20.701	PK
2		0.019	52.956	33.079	-69.057	122.013	19.877	PK
3		0.026	44.069	24.832	-75.222	119.290	19.237	PK
4	*	0.123	88.536	70.759	N/A	N/A	17.777	PK

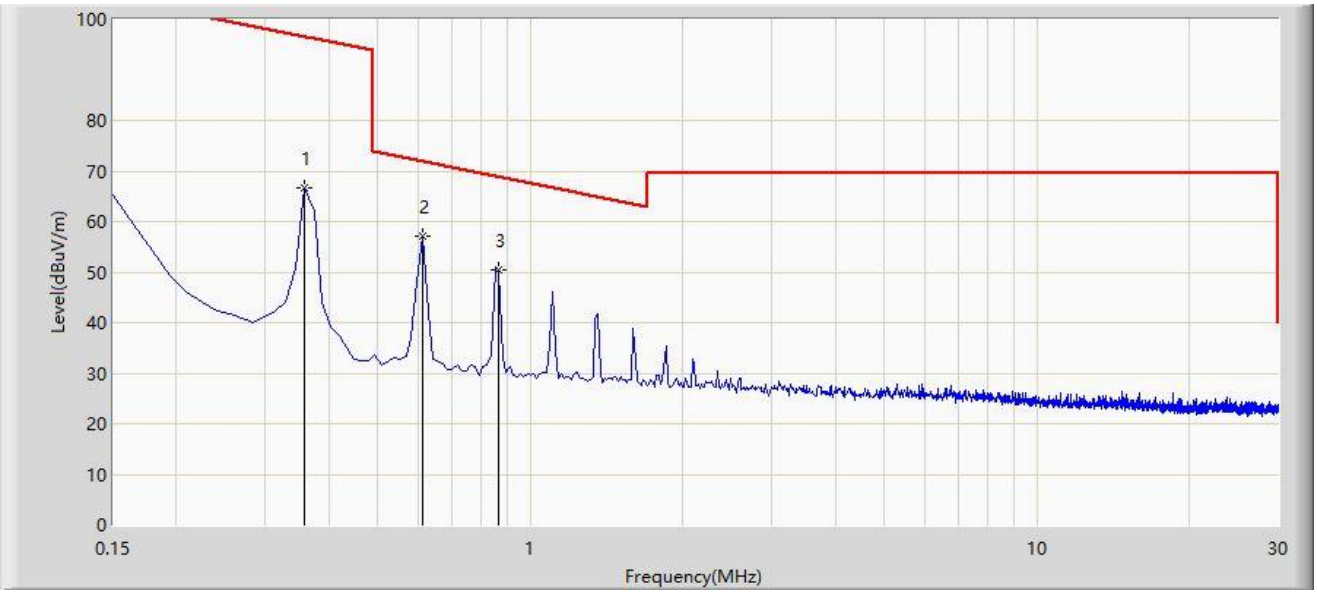
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_FMZB1519	Polarity: Horizontal
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.359	66.770	48.956	-29.730	96.501	17.814	PK
2	*	0.613	56.991	39.034	-14.869	71.860	17.958	PK
3		0.866	50.324	32.315	-18.544	68.868	18.008	PK

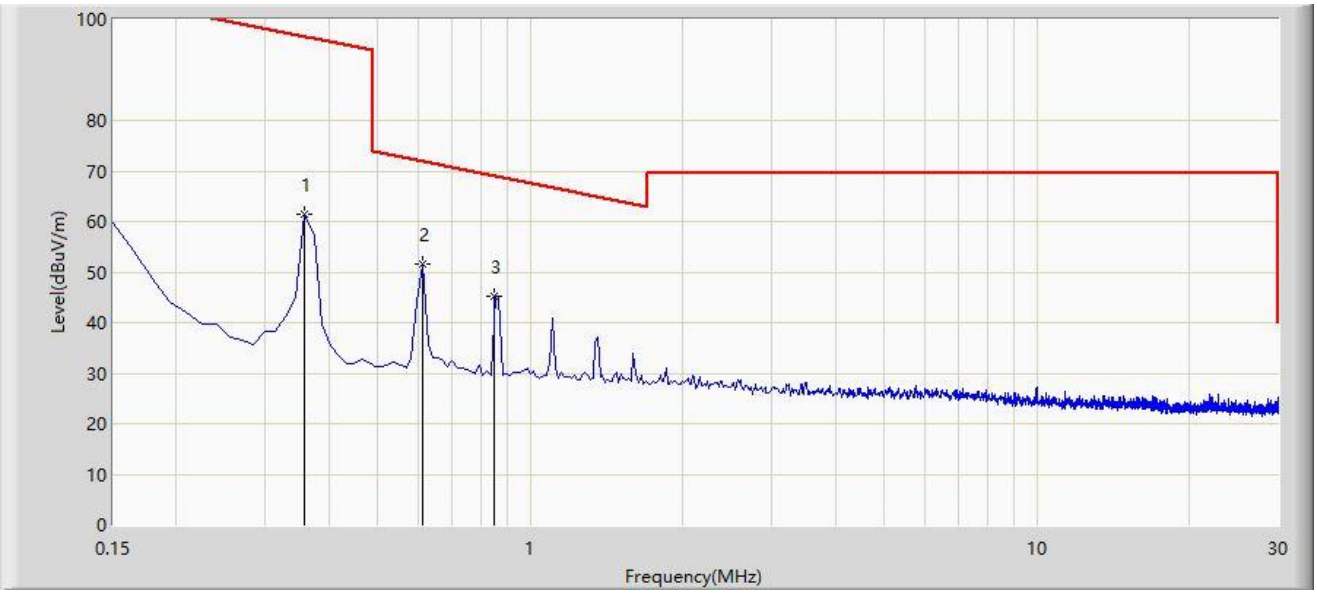
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_FMZB1519	Polarity: Vertical
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.359	61.435	43.621	-35.065	96.501	17.814	PK
2	*	0.613	51.601	33.644	-20.259	71.860	17.958	PK
3		0.851	45.319	27.313	-23.699	69.019	18.006	PK

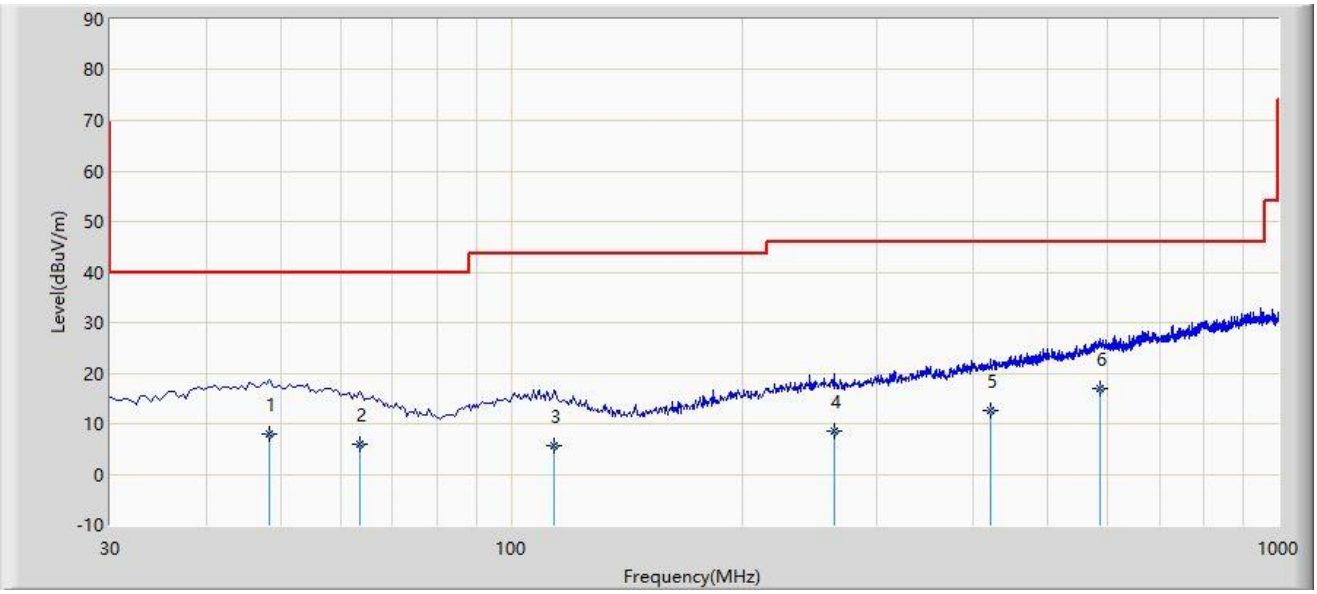
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Horizontal
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



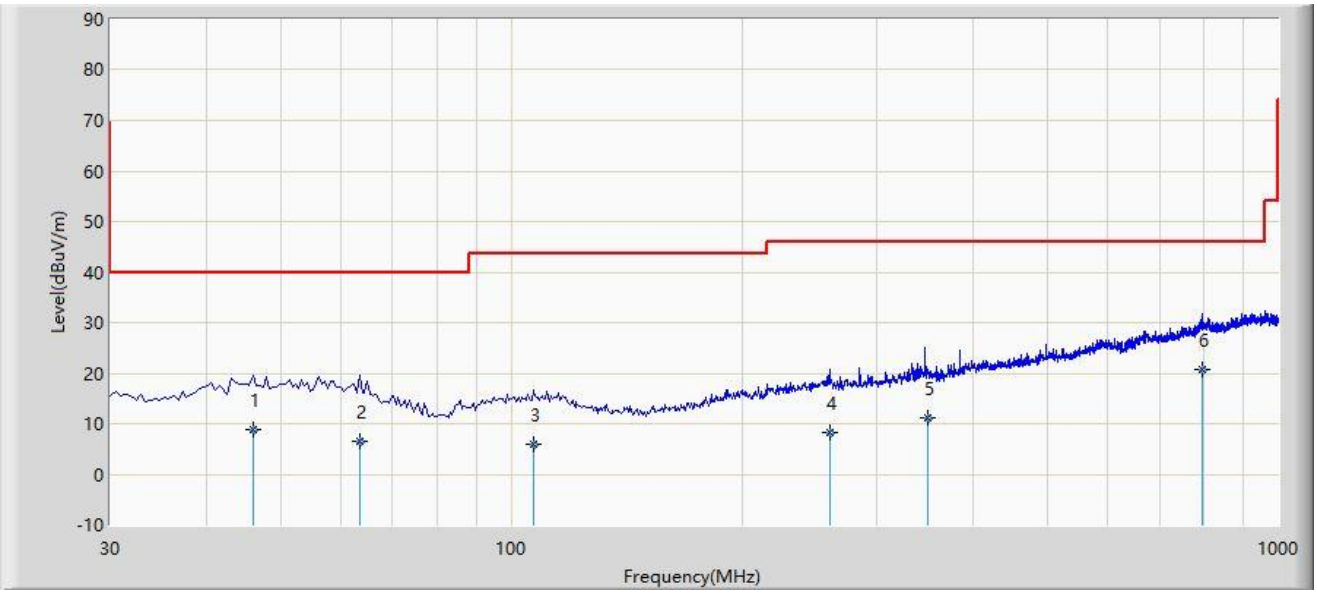
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		48.430	8.071	-10.800	-31.929	40.000	18.871	QP
2		63.465	5.821	-11.000	-34.179	40.000	16.821	QP
3		113.905	5.619	-10.700	-37.881	43.500	16.319	QP
4		263.285	8.556	-9.700	-37.444	46.000	18.257	QP
5		421.395	12.544	-9.400	-33.456	46.000	21.944	QP
6	*	586.780	16.912	-8.500	-29.088	46.000	25.412	QP

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2024-07-10
Limit: FCC_Part15.209_RSE(3m)	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Vertical
EUT: REMOTE CONTROLLER	Power: By Battery
Test Mode: Transmit at 125kHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		46.005	8.767	-10.000	-31.233	40.000	18.767	QP
2		63.465	6.521	-10.300	-33.479	40.000	16.821	QP
3		107.115	5.979	-10.700	-37.521	43.500	16.679	QP
4		259.890	8.393	-10.000	-37.607	46.000	18.393	QP
5		349.220	11.200	-9.500	-34.800	46.000	20.700	QP
6	*	795.330	20.661	-8.400	-25.339	46.000	29.061	QP

Note 1: " * ", means this data is the worst emission level.

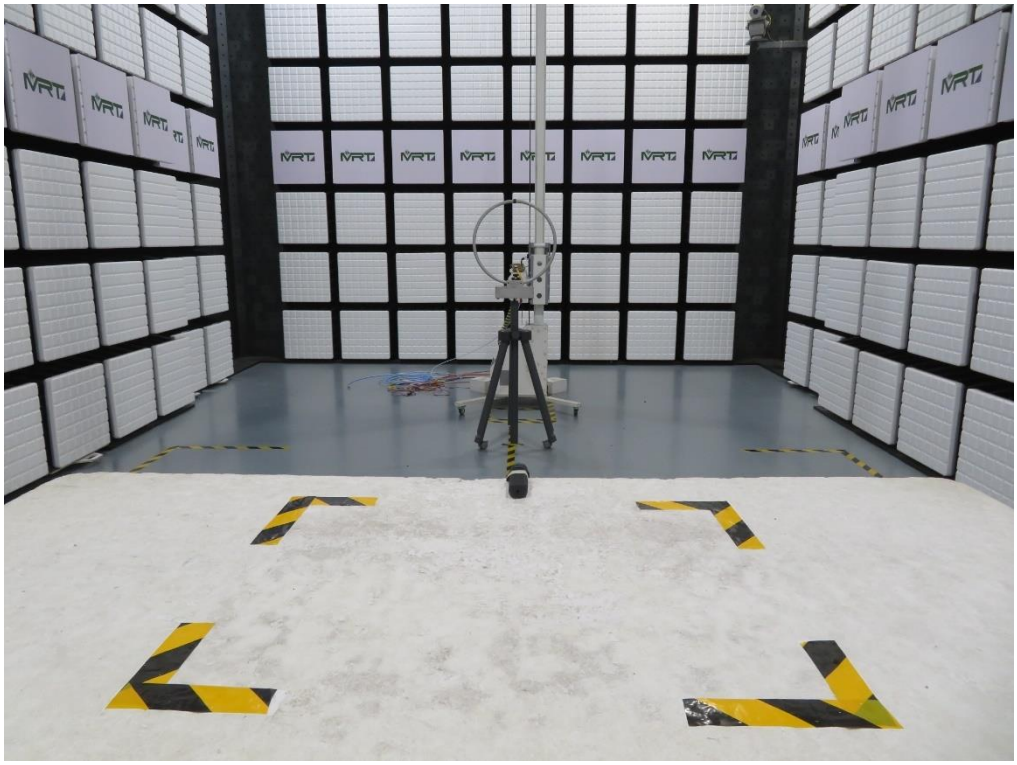
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Appendix B - Test Setup Photograph

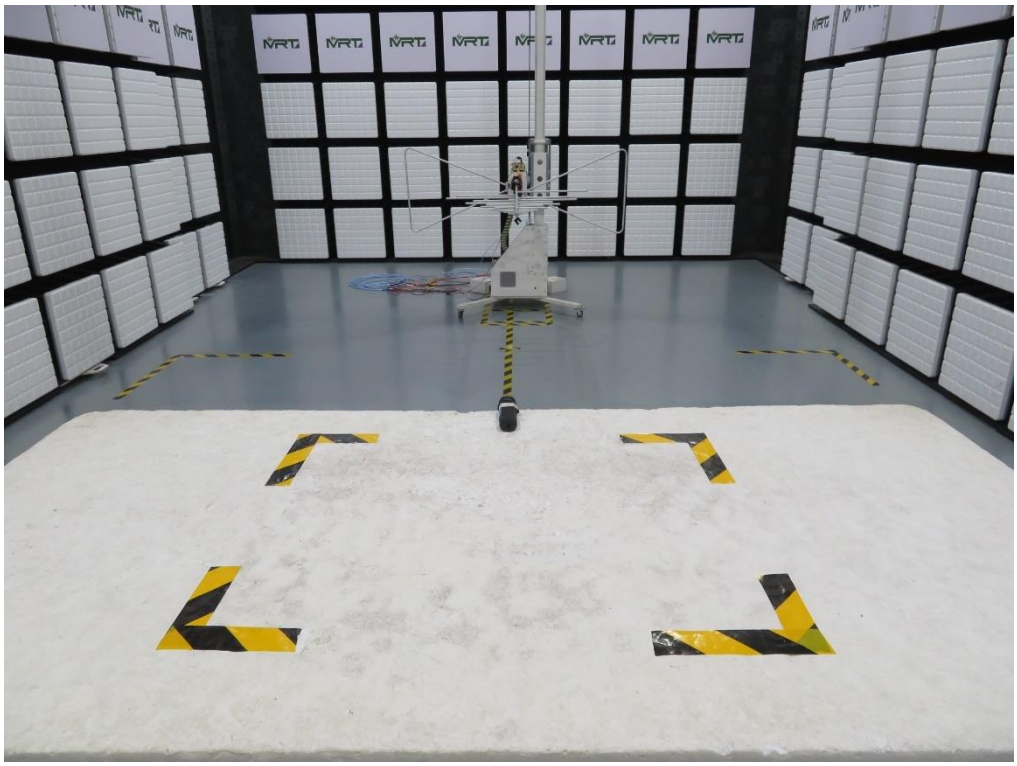
Test Mode 1

Description: Radiated Emission Test Setup (Below 30MHz)



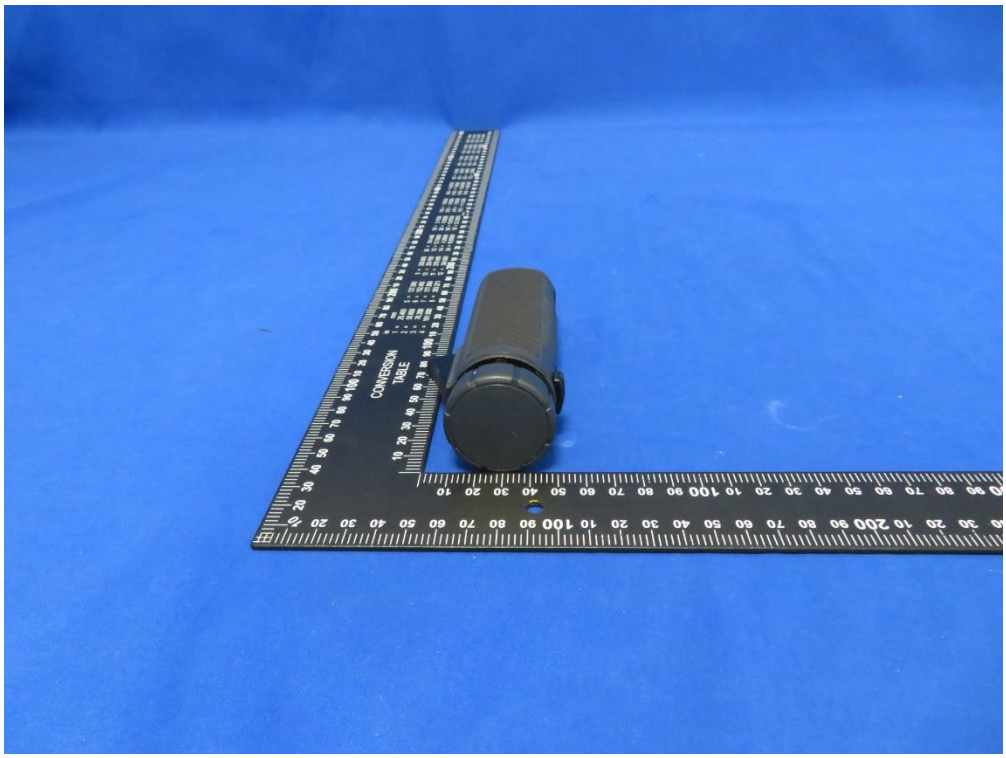
Test Mode 2

Description: Radiated Emission Test Setup (Above 30GHz)

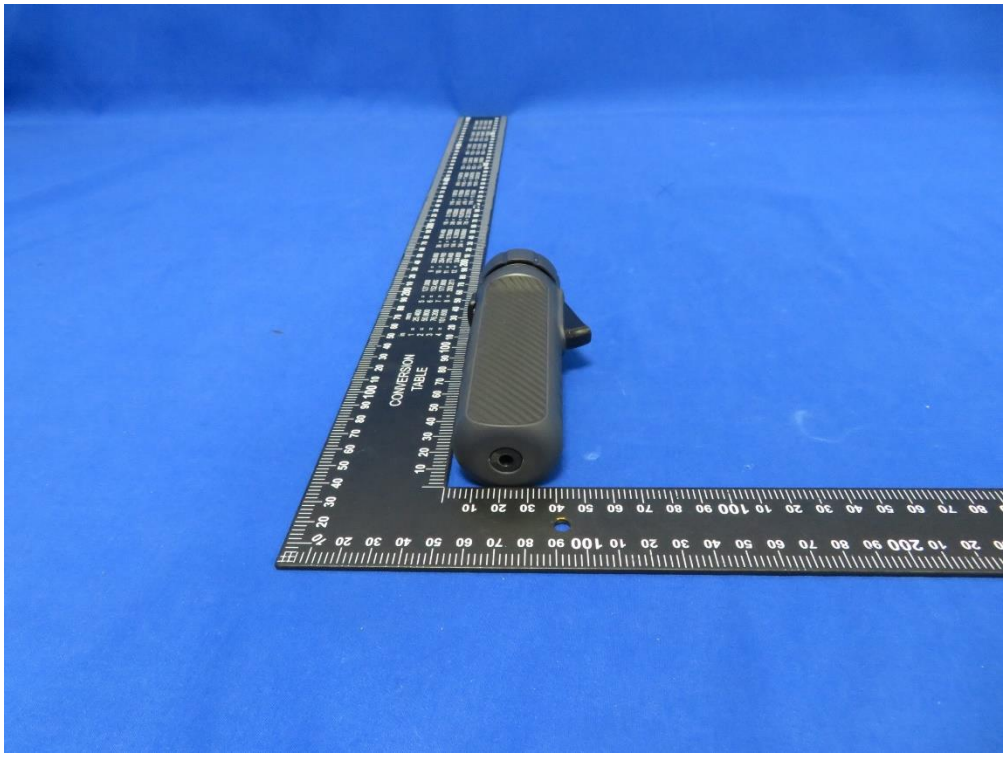


Appendix C - EUT Photograph

(1) EUT Photo



(2) EUT Photo



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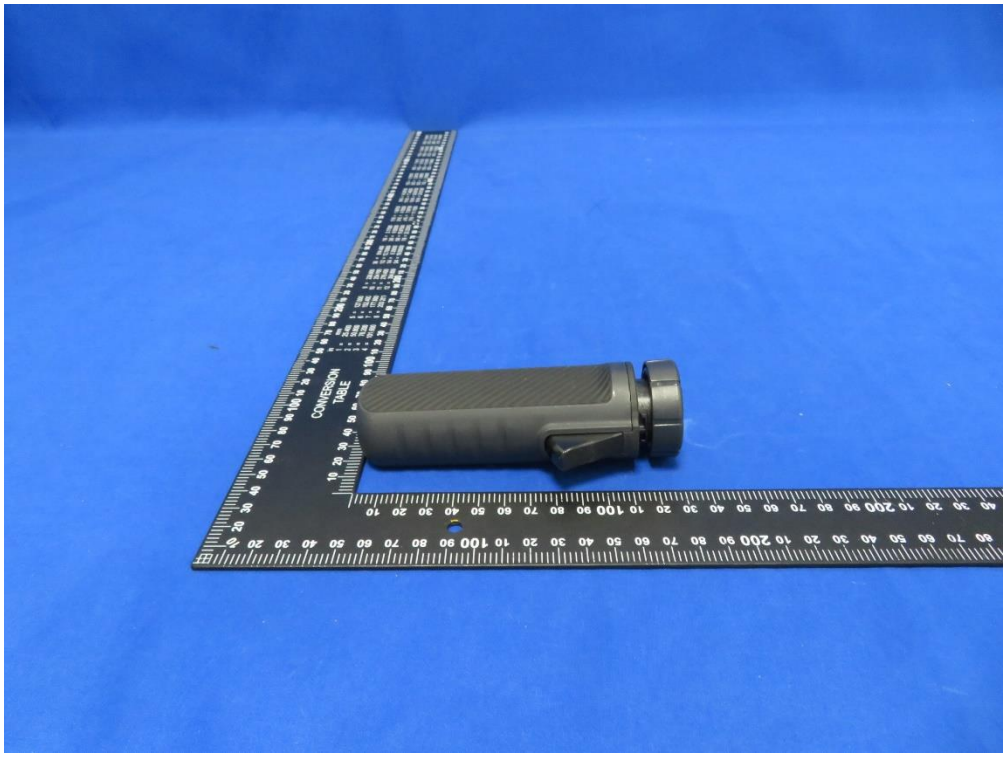
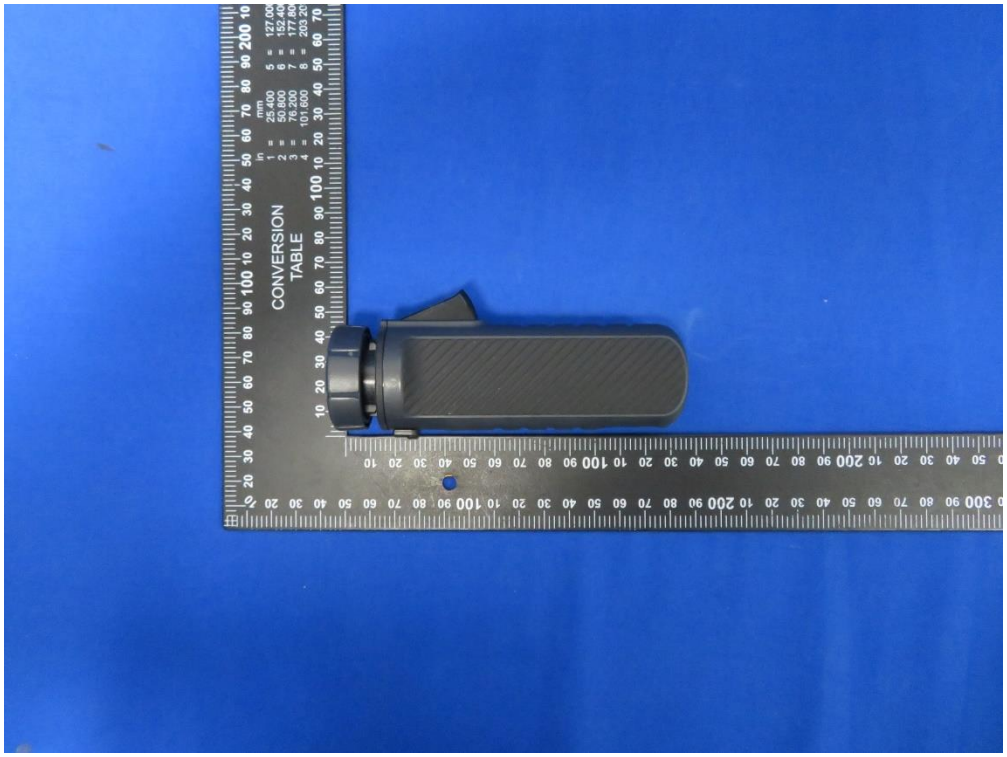
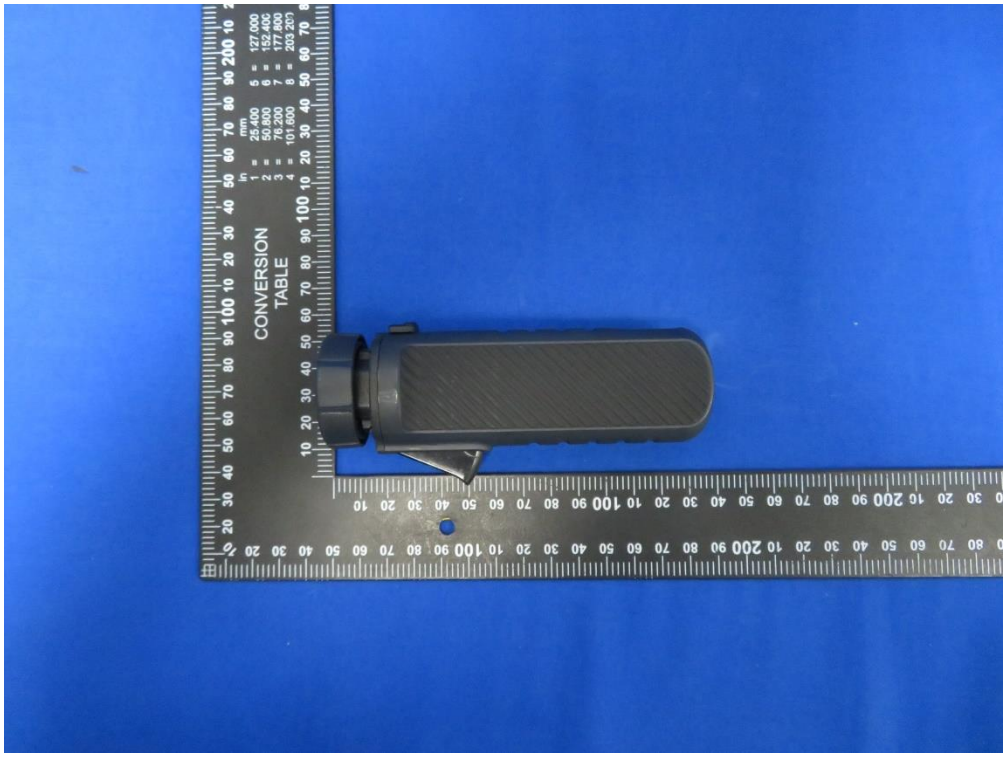


(4) EUT Photo

(5) EUT Photo



(6) EUT Photo



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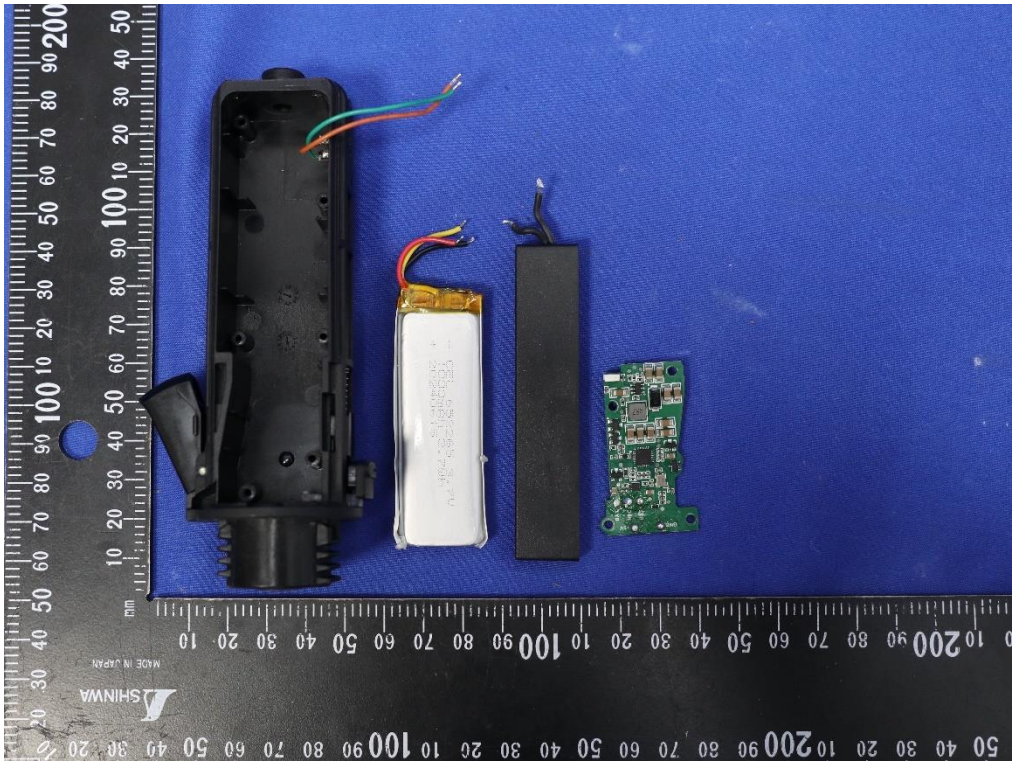
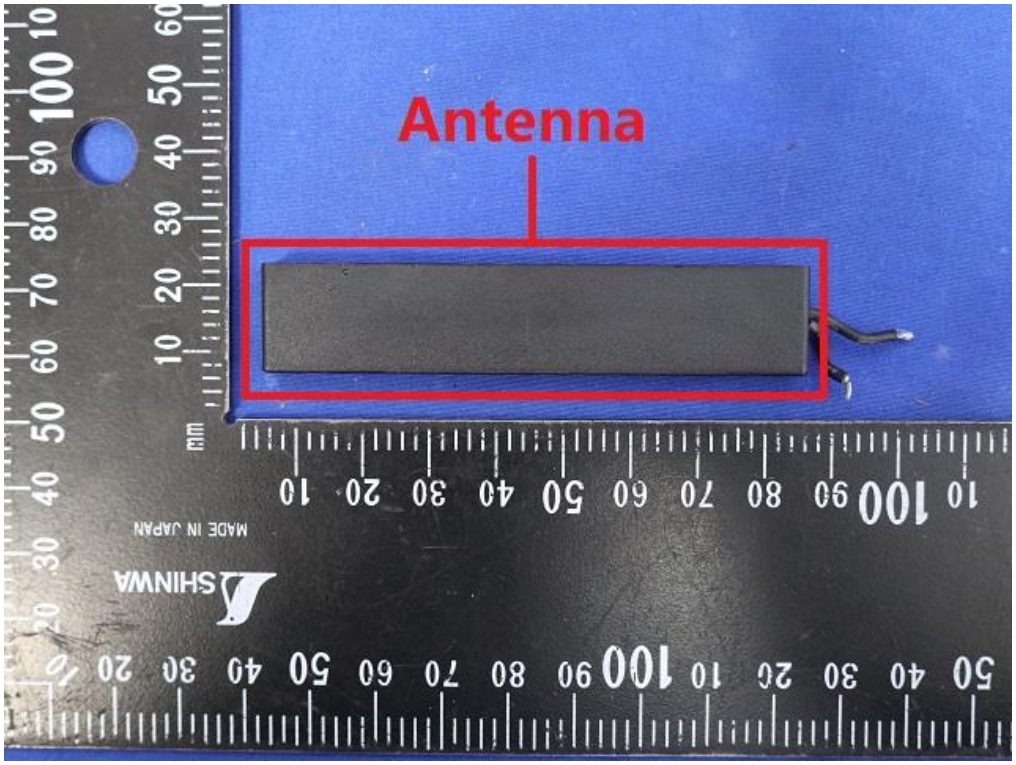
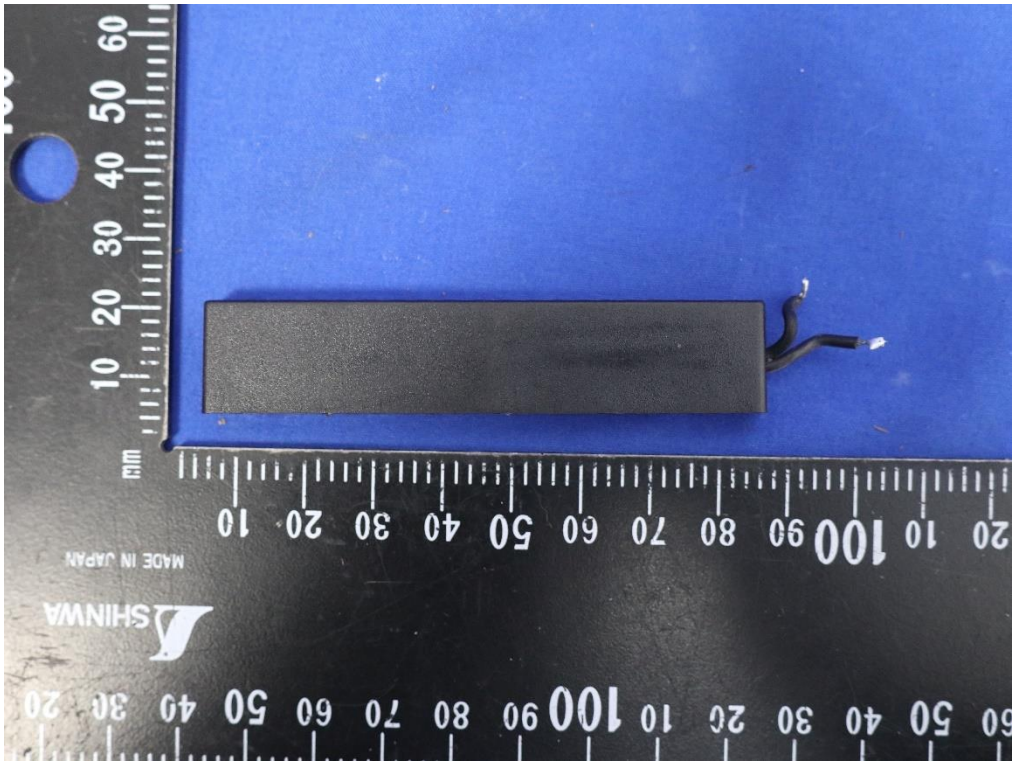


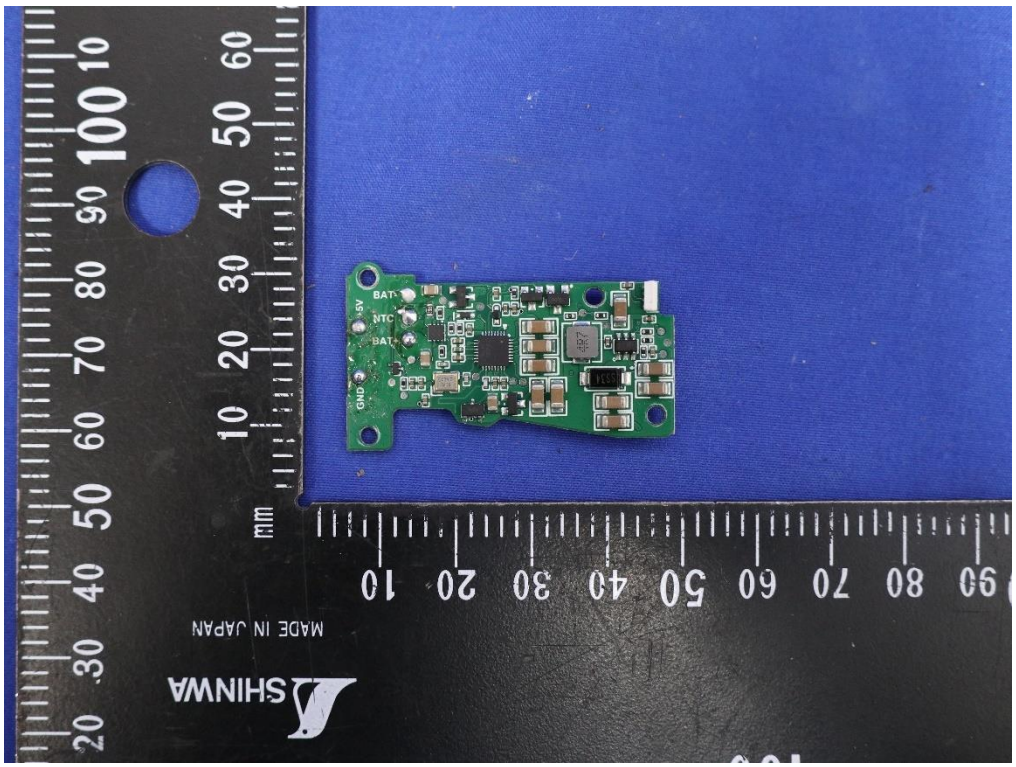
(8) EUT Photo



(9) EUT Photo



(10)EUT Photo



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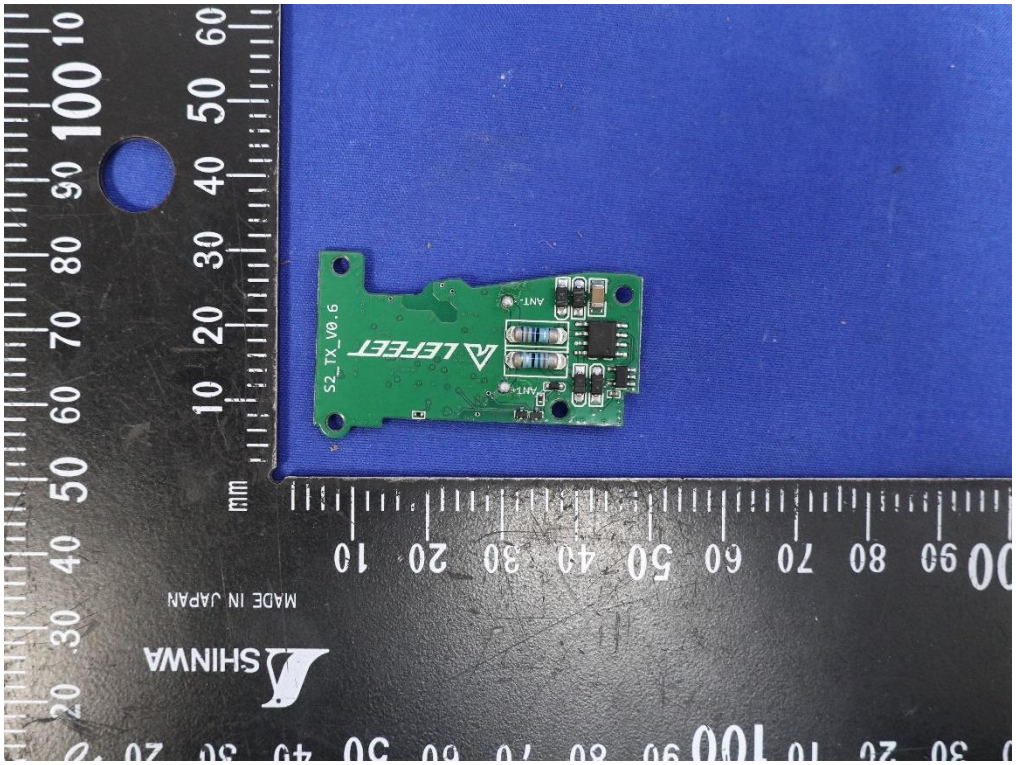

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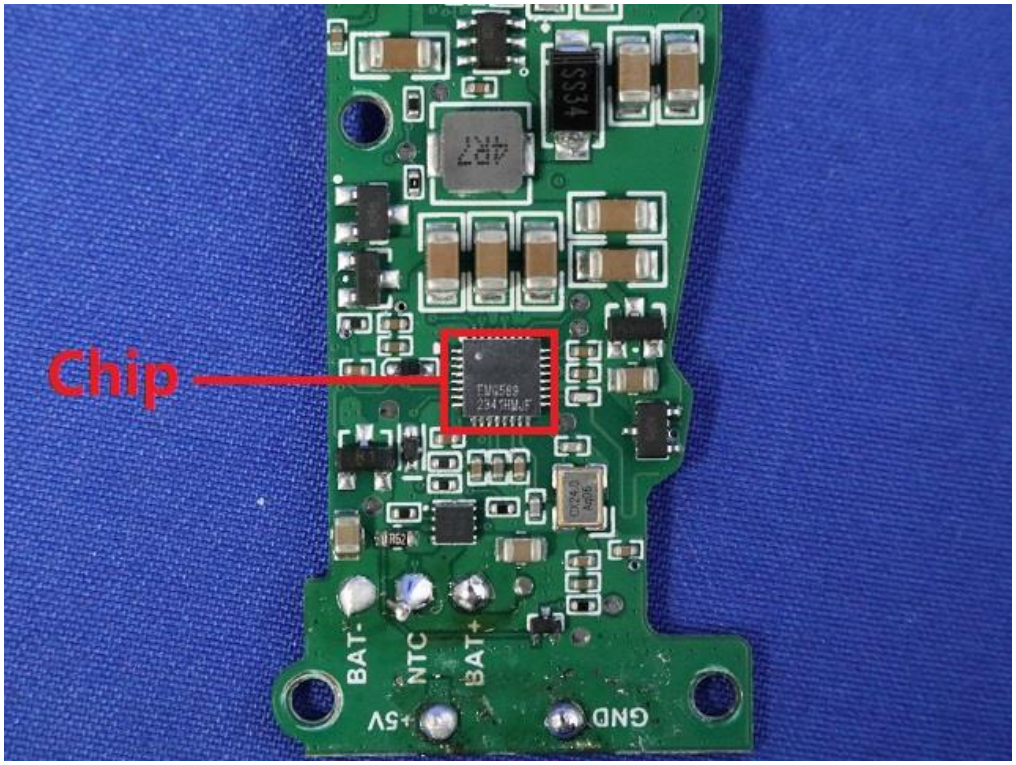

The End