Article 2 Paragraph 1, item 19

TEST REPORT

For

BEITONG PanGu Custom Modular Controller

MODEL NUMBER: BTP-PG01A

REPORT NUMBER: E04A26010784J00601

ISSUE DATE: February 5, 2026

Prepared for

Guangzhou Pinzhong Electronic Technology Co.,Ltd.

Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City, China

Prepared by

Guangdong Global Testing Technology Co., Ltd.

Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

This report is based on a single evaluation of the submitted sample(s) of the above mentioned product, it does not imply an assessment of the production of the products. This report shall not be reproduced, except in full, without the written approval of Guangdong Global Testing Technology Co., Ltd.

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	February 5, 2026	Initial Issue	

Summary of Test Results

Test Item	Clause	Result
Frequency tolerance	Article 2 Paragraph 1, item 19	Pass
Antenna power	Article 2 Paragraph 1, item 19	Pass
Spurious emission intensity	Article 2 Paragraph 1, item 19	Pass
Spreading bandwidth	Article 2 Paragraph 1, item 19	Pass
Occupied bandwidth	Article 2 Paragraph 1, item 19	Pass
Dwell time	Article 2 Paragraph 1, item 19	Pass
Receiver – limit of secondarily emitted radio wave strength	Article 2 Paragraph 1, item 19	Pass
Radio Interference prevention function	Article 2 Paragraph 1, item 19	Pass
Carrier sense capability	Article 2 Paragraph 1, item 19	N/A

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to < Article 2 Paragraph 1, item 19> when <Accuracy Method> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City, China

Manufacturer Information

Company Name:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City, China

EUT Information

Product Description:	BEITONG PanGu Custom Modular Controller
Model:	BTP-PG01A
Series Model:	/
Brand:	北通 BEITONG
Sample Received Date:	January 20, 2026
Sample Status:	Normal
Sample ID:	A25101088 001
Date of Tested:	January 21, 2026 to January 30, 2026

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
Article 2 Paragraph 1, item 19	**Pass**

Prepared By:

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Project Engineer

Checked By:

Alan He
Laboratory Leader

Approved By:

Shawn Wen
Laboratory Manager

Guangdong Global Testing Technology Co., Ltd. GTG CERTIFICATE

2. TEST METHODOLOGY

All tests were performed in accordance with the standard Article 2 Paragraph 1, item 19

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 6947.01)** Guangdong Global Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1343)** Guangdong Global Testing Technology Co., Ltd. has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules **ISED (Company No.: 30714)** Guangdong Global Testing Technology Co., Ltd. has been registered and fully described in a report filed with ISED. The Company Number is 30714 and the test lab Conformity Assessment Body Identifier (CABID) is CN0148.

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People’s Republic of China, 523808

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty
Occupied bandwidth	1.96	±9.2 PPM
Spreading bandwidth	1.96	±9.2 PPM
Frequency tolerance	1.96	±9.0 PPM
Dwell time	1.96	±0.57%
Antenna power	1.96	±1.5 dB
Conducted Spurious Emission	1.96	9 kHz-30 MHz: ± 0.95 dB 30 MHz-1 GHz: ± 1.5 dB 1GHz-12.75GHz: ± 1.8 dB 12.75 GHz-26.5 GHz: ± 2.1dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.		

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name		BEITONG PanGu Custom Modular Controller
Model		BTP-PG01A
Ratings		Type-C Input: DC 5V Battery: 3.7V, 1000mAh, 3.7Wh
Power Supply	DC	5V
	Battery	3.7V

Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	V5.3
Modulation Technique:	Frequency Hopping Spread Spectrum (FHSS)
Type of Modulation:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Rated Antenna Power	0.05 mW/MHz for GFSK 0.05 mW/MHz for π/4DQPSK 0.05 mW/MHz for 8DPSK
Antenna Type:	Chip Antenna
Antenna Gain:	1.85 dBi
EUT Test software:	FCC_assist1.0.4.exe

5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480

19	2421	39	2441	59	2461	/	/

5.3. TEST ENVIRONMENT

Test Voltage: 3.7V DC
The EUT is supplied with 3.7V DC The fluctuation of input voltage to the circuit of RF unit of test equipment is under ±1%, when input voltage from 3.7V DC to the test equipment is fluctuated by ±10%, So all measurement was conducted on the rated voltage (3.7V DC).

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz
π /4-DQPSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz
8DPSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz

Note: The hop is hopping mode.

PACKET TYPE CONFIGURATION

Test Mode	Packet Type	Setting (Packet Length)
GFSK	DH1	27
	DH3	183
	DH5	339
π /4-DQPSK	2-DH1	54
	2-DH3	367
	2-DH5	679
8DPSK	3-DH1	83
	3-DH3	552
	3-DH5	1021

5.5. THE WORSE CASE POWER SETTING PARAMETER

WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BR	FHSS	GFSK	1Mbit/s
EDR	FHSS	π /4-DQPSK	2Mbit/s
EDR	FHSS	8DPSK	3Mbit/s

Note: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		FCC_assist1.0.4.exe		
Modulation Type	Transmit Antenna Number	Test Software setting value		
		CH 00	CH 39	CH 78
GFSK	1	10	10	10
π /4-DQPSK	1	10	10	10
8DPSK	1	10	10	10

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

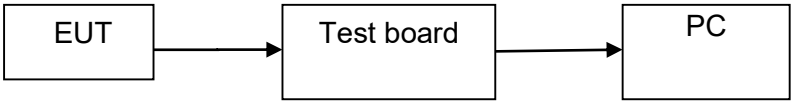
Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	Chip Antenna	1.85

Test Mode	Transmit and Receive Mode	Description
GFSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
π /4-DQPSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
8DPSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

5.7. SUPPORT UNITS FOR SYSTEM TEST

Equipment	**Manufacturer**	**Model No.**
PC	Lenovo	T14
Test board	/	/

5.8. SETUP DIAGRAM



6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Conducted RF					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40	102257	2025/08/25	2026/08/24
Spectrum Analyzer	KEYSIGHT	N9020A	MY51285127	2025/08/25	2026/08/24
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY61253075	2025/08/25	2026/08/24
Vector Signal Generator	Rohde & Schwarz	SMM100A	101899	2025/08/25	2026/08/24
RF Control box	MWRF-test	MW100-RFCB	MW220926GTG	2025/08/25	2026/08/24
Wideband Radio Communication Tester	Rohde & Schwarz	CMW270	102792	2025/08/25	2026/08/24
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	103235	2025/08/25	2026/08/24
temperature humidity chamber	Espec	SH-241	SH-241-2014	2025/08/25	2026/08/24
RF Test Software	MWRF-test	MTS8310E (Ver. V2/0)	N/A	N/A	N/A

Note: The instruments and equipment listed in the table are calibrated by GRG, and the calibration method is referred to item ii c) of Article 24-2 paragraph 4.

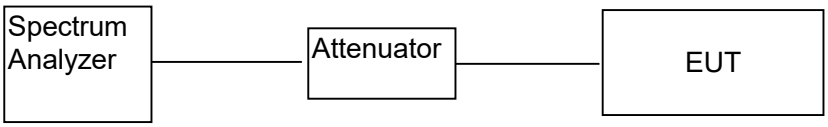
7. TEST RESULTS

7.1. FREQUENCY ERROR

LIMIT

+/- 50 x 10^{-6} or less (50ppm)

TEST CONFIGURATION



TEST PROCEDURE

1. Configure EUT according clause 2.3 and 4.3
2. Set EUT work in carrier Tx mode as described in clause 2.3
3. Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
Centre Frequency: The centre frequency of the channel under test.
Resolution BW: 10KHz.
Video BW: 10KHz.
Span: 1MHz.
Detector: Peak.
Trace Mode: Max Hold.
4. When the trace is complete, find the peak value of the power envelope and record the frequency.

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

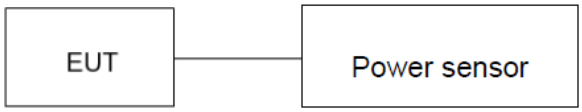
Please refer to "Test Data"-Appendix A

7.2. ANTENNA POWER

LIMIT

Item	Mode	Limits
Antenna Power Density	FH form 2400~2483.5MHz OFDM, DS from 2400~2483.5MHz Other from 2400~2483.5MHz	≦ 3mW/MHz ≦ 10mW/MHz ≦ 10mW
Antenna Power Error	+20% (Base on manufacturer declare antenna power density)	

TEST CONFIGURATION



TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to "Test Data"-Appendix A

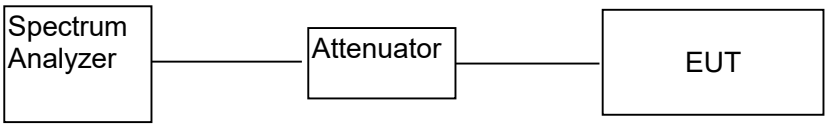
Note:
1. Power(mW) = $10^{(\text{Power(dBm)} / 10)}$
2. Antenna Power(mW/MHz) = Power(mW) / Spreading Bandwidth(MHz)
3. Tolerance(%) = (Antenna Power(mW/MHz) - Declared Power(mW/MHz)) / Declared Power(mW/MHz) * 100
4. Antenna Power(dBm/MHz) = $\log_{10}$(Antenna Power(mW/MHz)) * 10
5. EIRP Power(dBm/MHz) = Antenna Power(dBm/MHz) + Gain(dBi)

7.3. OCCUPIED BANDWIDTH

LIMIT

Occupied bandwidth: FH≤83.5 MHz; OFDM≤38 MHz, DS≤26 MHz; Others≤26 MHz

TEST CONFIGURATION



TEST PROCEDURE

1. Spectrum analyzer shall be follows:
   Center frequency: Center frequency of service band (e.g. 2441 MHz).
   Frequency sweep width: Approximately 2 to 3 times of the tolerance value (e.g. 120 MHz).
   Resolution bandwidth: Approximately 3% of tolerance value (e.g. 100 kHz)
   Video bandwidth: Approximately the same as the resolution bandwidth.
   Y-axis scale: 10dB/Div.
   Input level: Carrier level shall be enough higher than floor noise of spectrum analyzer.
   Sweep time: Minimum time to ensure the measuring accuracy (In case of burst wave, one burst shall be included per data point.)
   Data points: 400 points or more (e.g. 1001 points)
   Sweep mode: Continuous
   Detection mode: Positive peak
   Display mode: Maximum hold

2. The values measured by the spectrum analyzer shall be processed by external or internal computer.

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

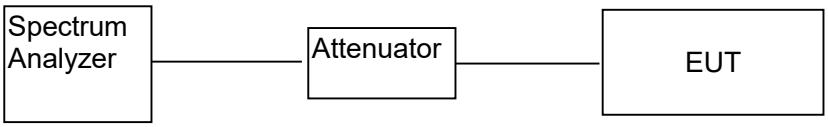
Please refer to "Test Data"-Appendix A

7.4. SPREADING BANDWIDTH

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

1. Spectrum analyzer shall be follows:
   Center frequency: Center frequency of service band (e.g. 2441 MHz).
   Frequency sweep width: Approximately 2 to 3 times of the tolerance value (e.g. 120MHz).
   Resolution bandwidth: Approximately 3% of tolerance value (e.g. 300 kHz)
   Video bandwidth: Approximately the same as the resolution bandwidth.
   Y-axis scale: 10dB/Div.
   Input level: Carrier level shall be enough higher than floor noise of spectrum analyzer.
   Sweep time: Minimum time to ensure the measuring accuracy (In case of burst wave, one burst shall be included per data point.)
   Data points: 400 points or more (e.g. 1001 points)
   Sweep mode: Continuous
   Detection mode: Positive peak
   Display mode: Maximum hold

2. The values measured by the spectrum analyzer shall be processed by external or internal computer.

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

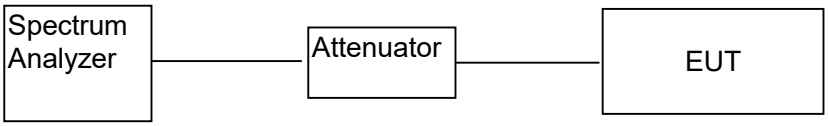
Please refer to "Test Data"-Appendix A

7.5. SPURIOUS EMISSION INTENSITY

LIMIT

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:
a. 2,387MHz ≤ f ≤ 2,400MHz and 2,483.5MHz < f ≤ 2,496.5MHz 25 μW or less
b. 2,387MHz > f and 2,496.5MHz < f 2.5 μW or less

TEST CONFIGURATION



TEST PROCEDURE

Spectrum Analyzer	Setting
Attenuation	Auto
RBW	100 kHz: 30 MHz ≦ f < 1000 MHz 1 MHz: 1000 MHz ≦ f < 5th Harmonics
VBW	100 kHz: 30 MHz ≦ f < 1000 MHz 1 MHz: 1000 MHz ≦ f < 5th Harmonics
Detector	Positive Peak
Trace	Max Hold
Sweep Time	Auto

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as 30MHz and stop frequency 1000MHz. Then to mark peak reading value + cable loss shall be less than 0.25μW/100kHz(-36dBm/100kHz).
3. Setting of SA is following as 1000MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5μW/MHz(-26dBm/1MHz).
4. SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25μW/MHz(-16dBm/1MHz).
5. SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz. Then to mark peak reading value + cable loss shall be less than 25μW/MHz(-16dBm/1MHz).
6. SA adjusted to start frequency 2496.5MHz and stop frequency 13000MHz. Then to mark peak reading value + cable loss shall be less than 2.5μW/MHz(-26dBm/1MHz).

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

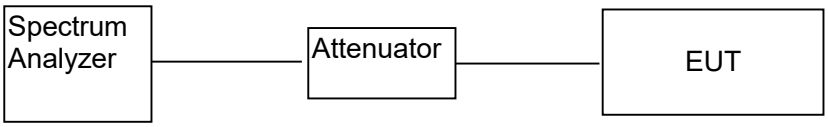
Please refer to "Test Data"-Appendix A

7.6. DWELL TIME

LIMIT

Tolerance: 0.4 sec or less
In addition, total sum of holding time at arbitrary frequency in the period obtained by multiplying 0.4 sec by spreading ratio ((spreading bandwidth) / (frequency equivalent to transmission rate of modulation signal)) shall be 0.4 sec or less.

TEST CONFIGURATION



TEST PROCEDURE

1. Set the spectrum analyzer according to below, and wait for a signal that hops into the hopping frequency.
Set the spectrum analyzer as follows;
Center frequency: Hopping frequency to be measured
Frequency sweep width: 0 MHz
Resolution bandwidth: Approximately 1MHz
Video bandwidth: Approximately same as the resolution bandwidth
Sweep time: Hopping repetition period
Sweep mode: Single sweep
Trigger condition: Video trigger
Detection mode: Positive peak

2.Read the maximum holding time at the hopping frequency in a hopping repetition period from locus on the screen using a marker etc of the spectrum analyzer. Then confirm that the maximum holding time is 0.4 sec or less.

TEST ENVIRONMENT

Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

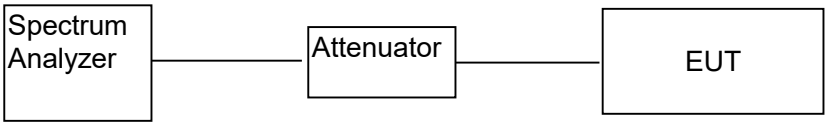
Please refer to "Test Data"-Appendix A

7.7. LIMITATION OF COLLATERAL EMISSIONS OF RECEIVER

LIMIT

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4 nW or less at a frequency below 1 GHz and 20 nW or less at a frequency of 1 GHz or higher as measured using the circuit.

TEST CONFIGURATION



TEST PROCEDURE

Spectrum Analyzer	Setting
Attenuation	Auto
RBW	100 kHz: 30 MHz ≦ f < 1000 MHz 1 MHz: 1000 MHz ≦ f < 5th Harmonics
VBW	100 kHz: 30 MHz ≦ f < 1000 MHz 1 MHz: 1000 MHz ≦ f < 5th Harmonics
Detector	Positive Peak
Trace	Max Hold
Sweep Time	Auto

1. EUT have the continuous reception mode and fixed only one channelize.
2. Start frequency 30MHz and Stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
3. Start frequency 1000MHz and Stop frequency 5th Harmonics. Search to mark peak reading value + cable loss shall be less than 20nW

TEST ENVIRONMENT

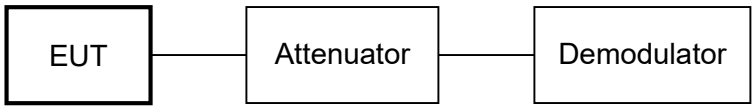
Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

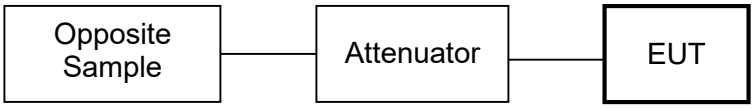
Please refer to "Test Data"-Appendix A

7.8. RADIO INTERFERENCE PREVENTION FUNCTION

(1) In case identification code is transmitted



(2) In case identification code is received



(3) Measuring Equipment Conditions

The Demodulator shall demodulate the TX-signal transmitted by the EUT and be able to display the contents of the identification code.

The opposite sample shall be able to transmit TX-signal equivalent to the TX-signal transmitted by the EUT.

(4) Conditions of EUT

The EUT is set on the usual operating mode.

(5) Measurement Procedure

(1) In case the EUT possesses function to transmit identification code automatically
Predetermined identification code is transmitted by the EUT.
Verify the transmitted identification code.

(2) In case the EUT possesses function to receive identification code automatically
Predetermined identification code is transmitted by the opposite sample.
Verify the working of the normal communication.
Other code than the predetermined identification code is transmitted by the opposite sample.
Verify the EUT to stop transmitting or to display that the ID code is different.

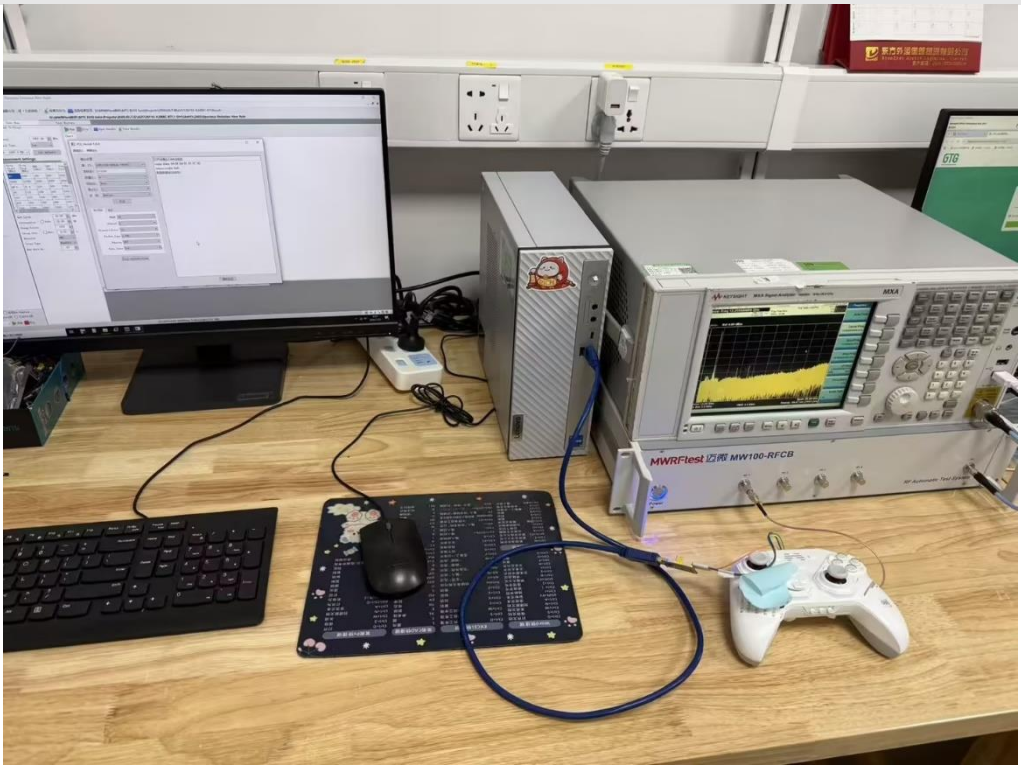
TEST ENVIRONMENT

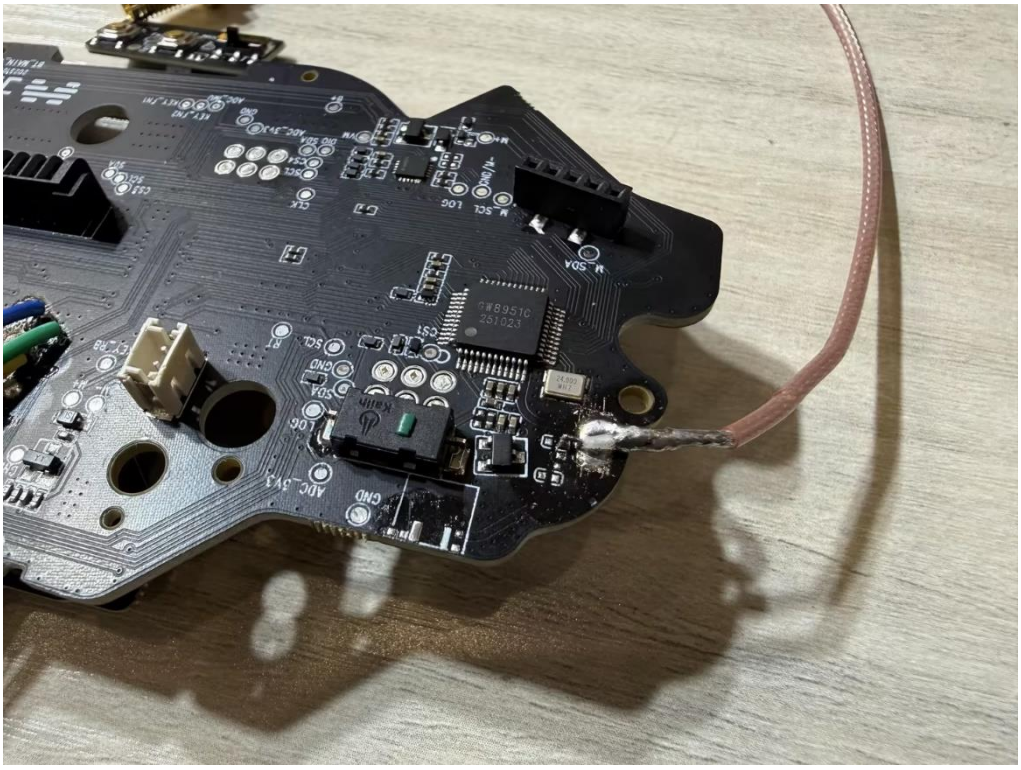
Temperature	20.2℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

Test Power	Normal Voltage
Test Mode	Signaling Mode
Test Result	Good, MAC Address:(6B:EE:3E:90:7F:16)

APPENDIX: PHOTOGRAPHS OF TEST CONFIGURATION





APPENDIX: PHOTOGRAPHS OF EUT

External

Made in China

Made in China

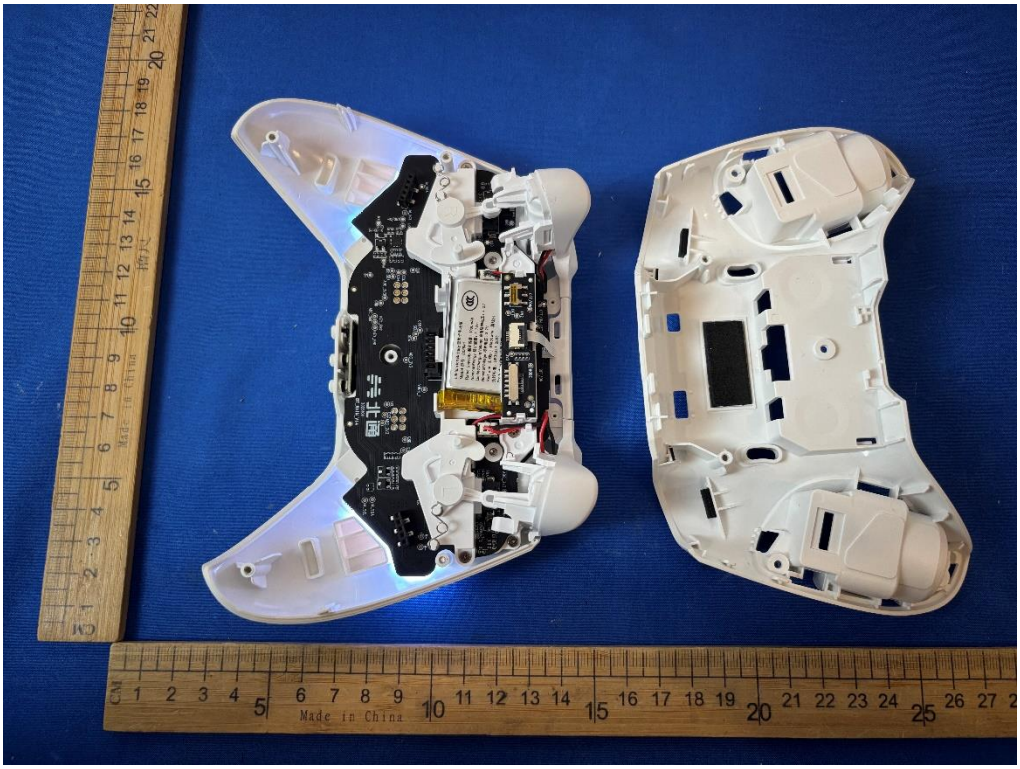
Made in China

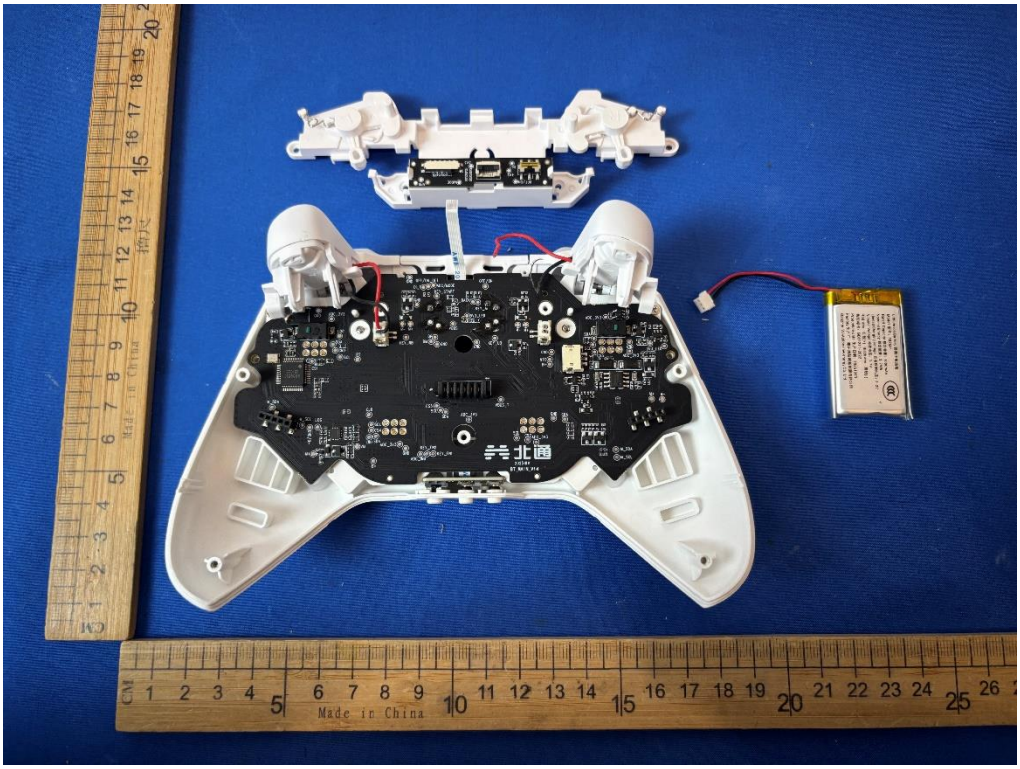
Made in China

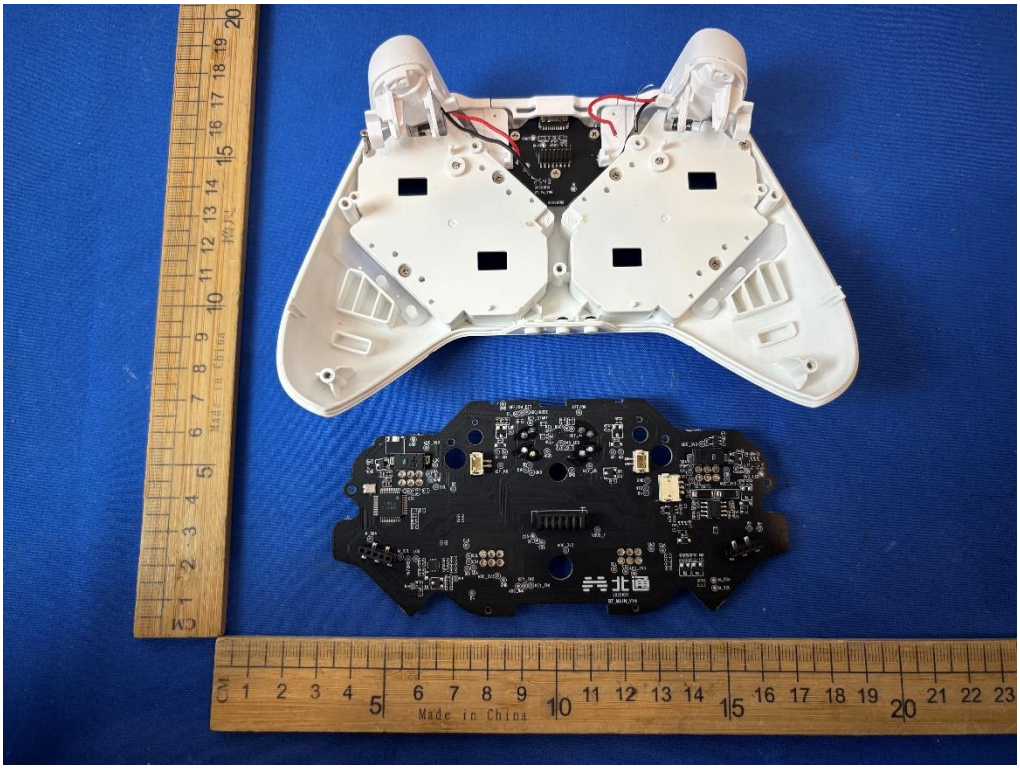
Made in China

RB
LB
RT
LT

Internal



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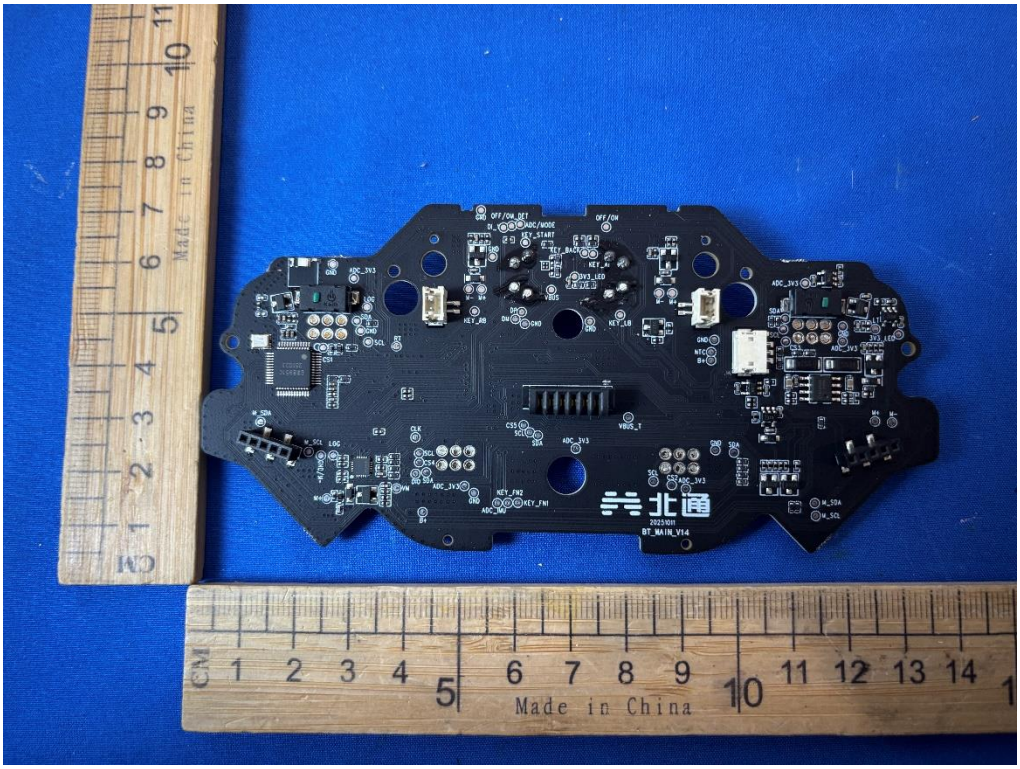
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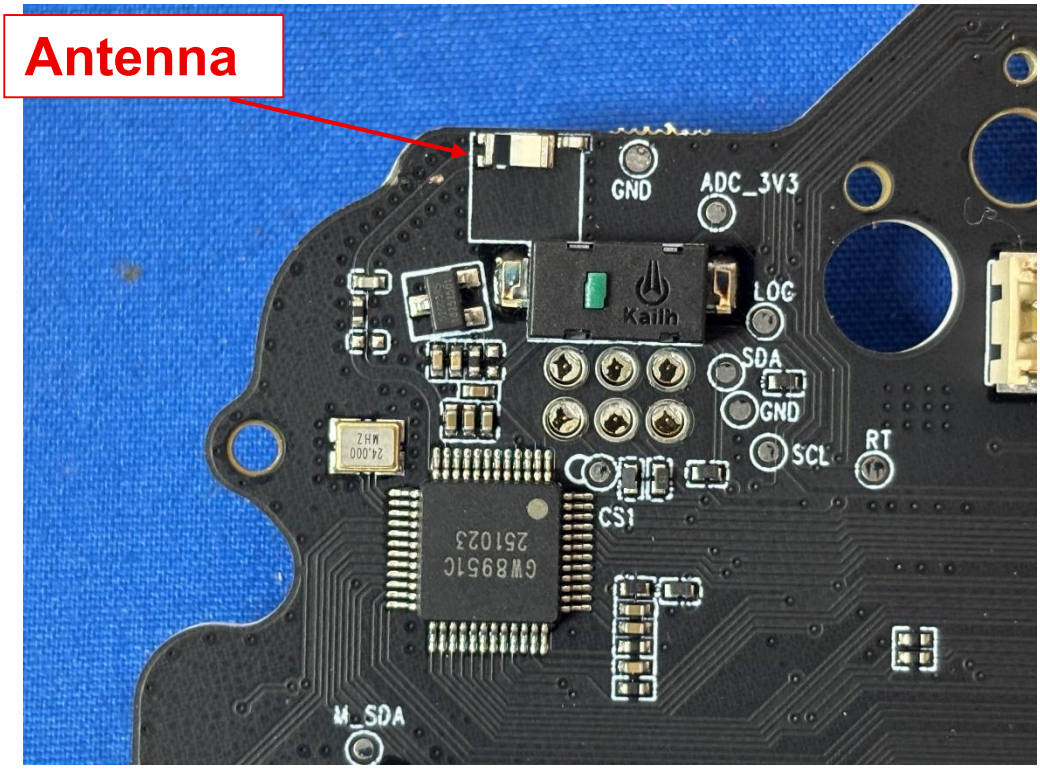
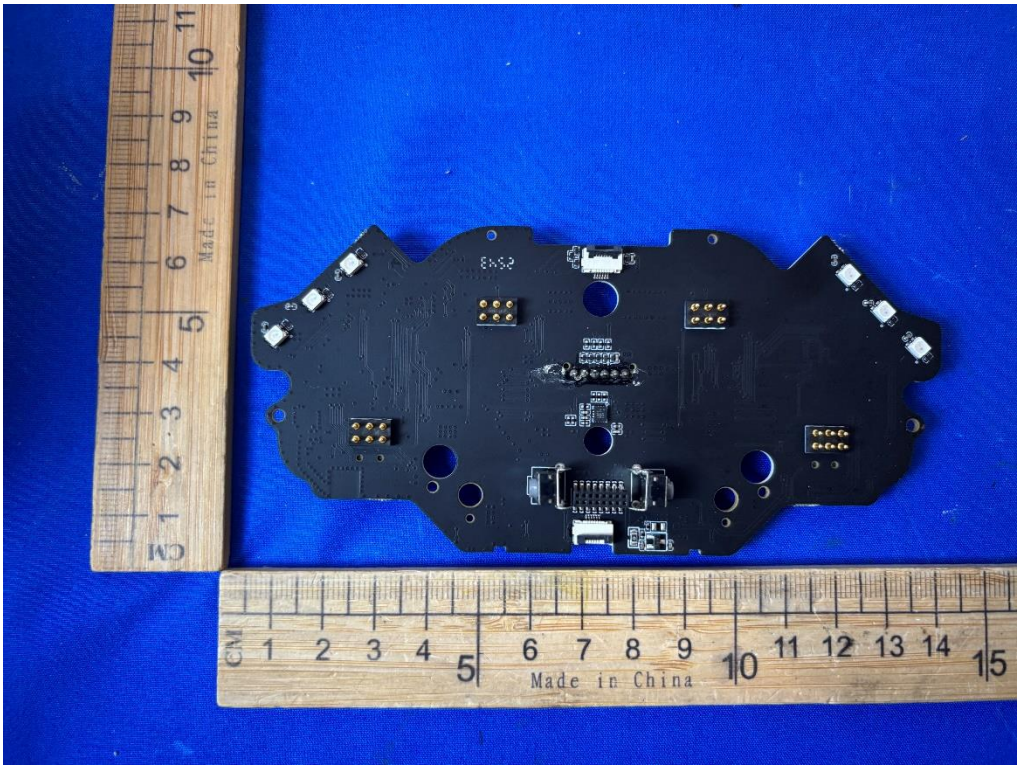

Antenna
GND
ADC_3V3
LOG
SDA
GND
SCL
RT
CS1
M_SDA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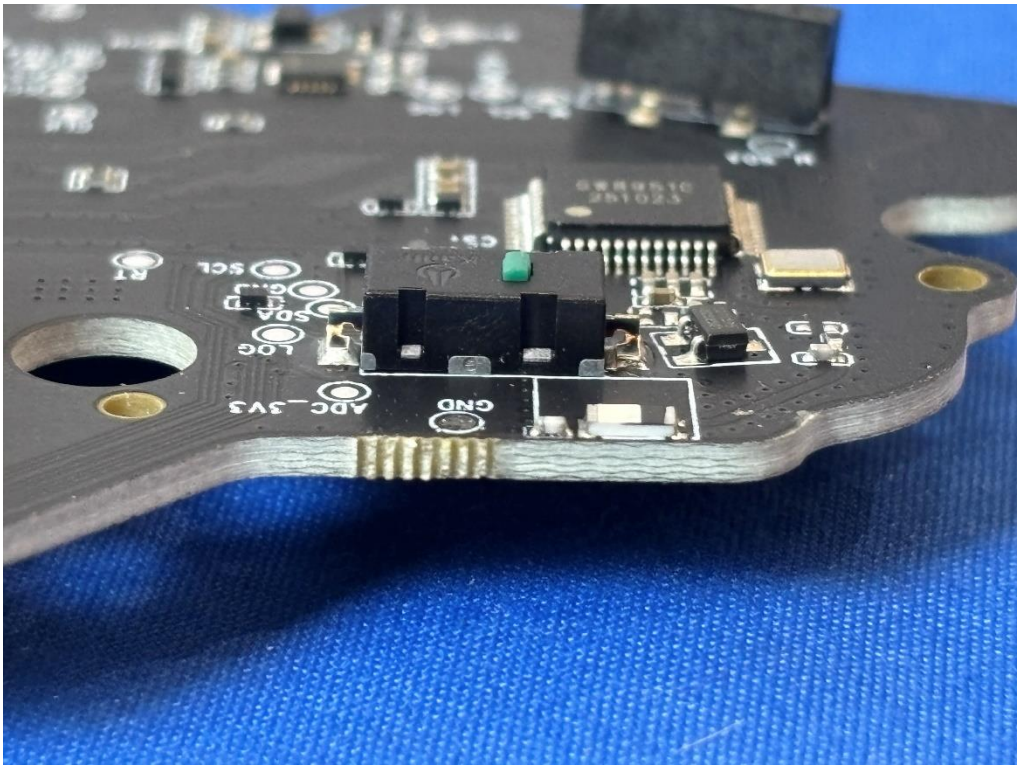
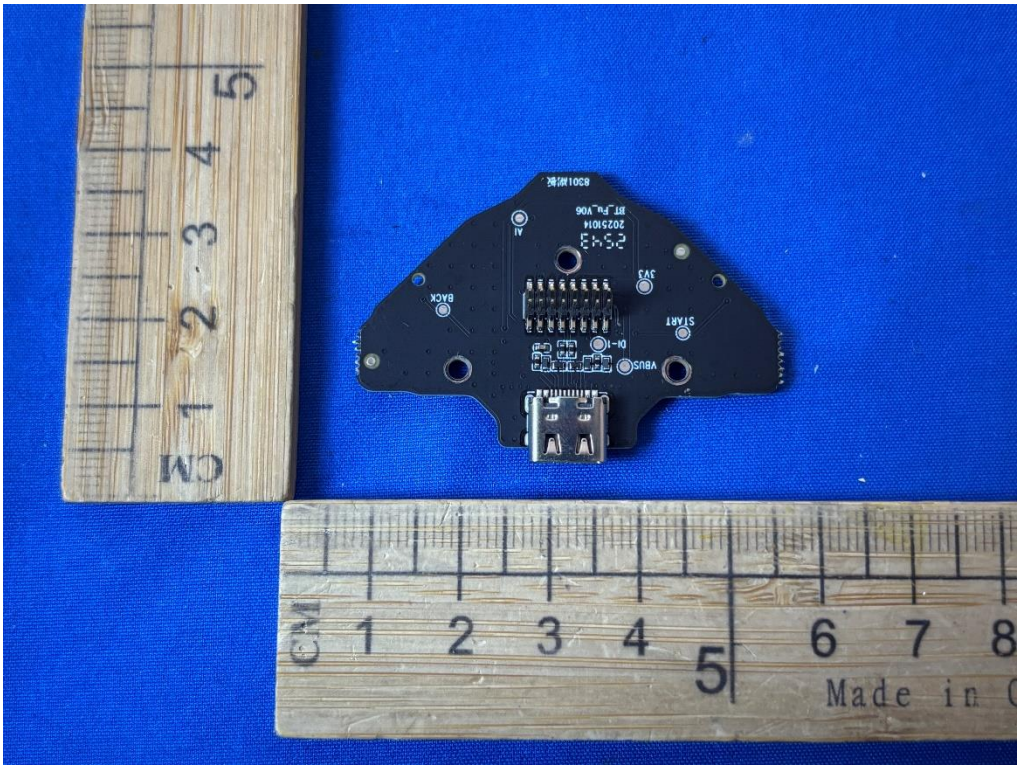
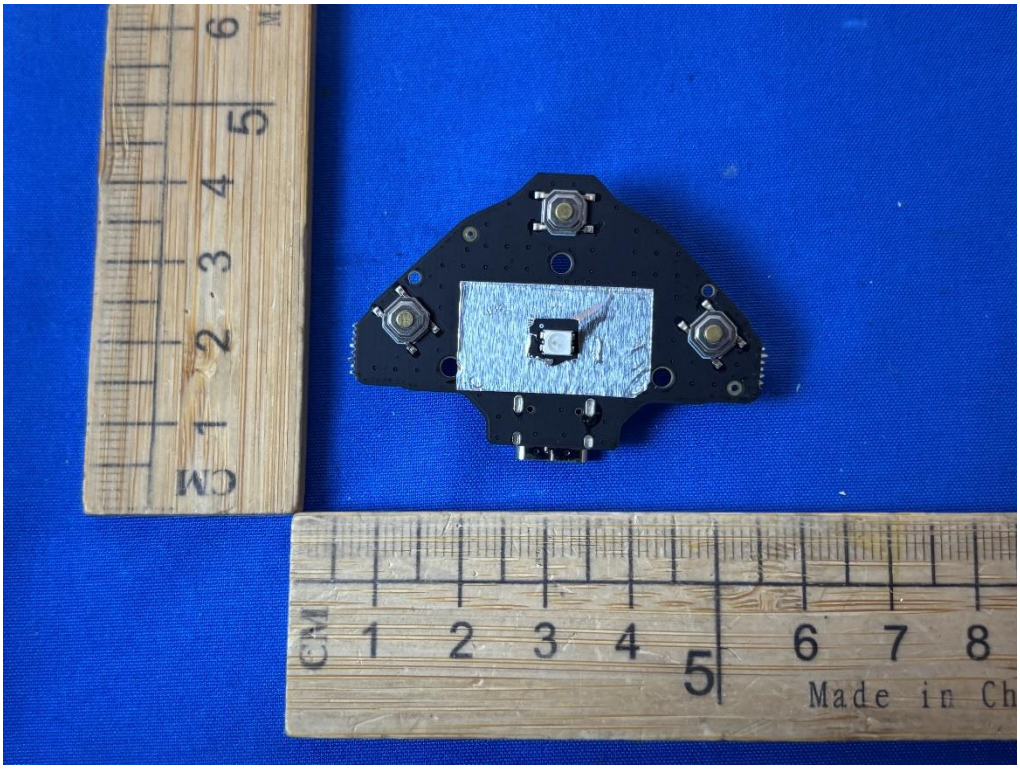
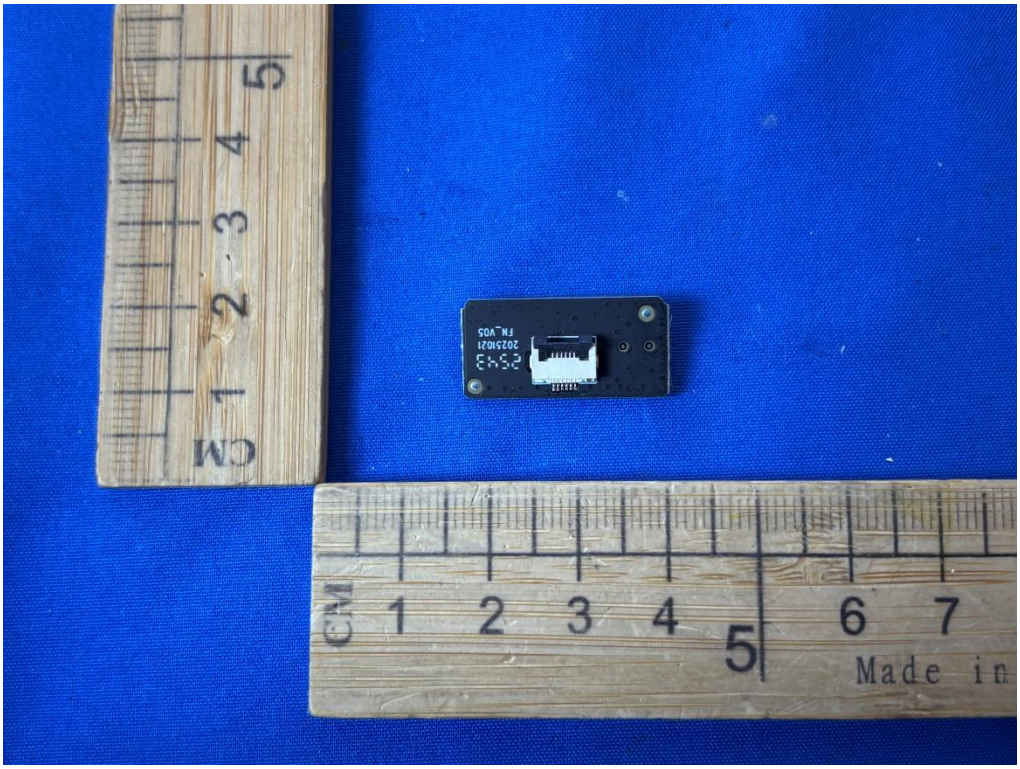
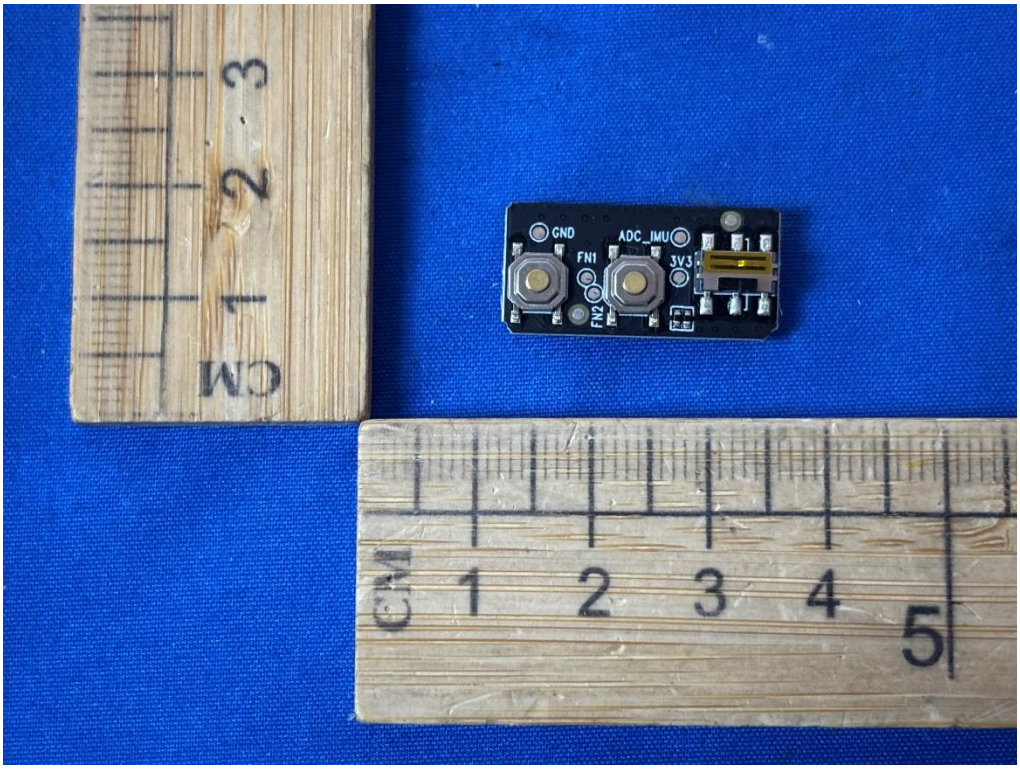
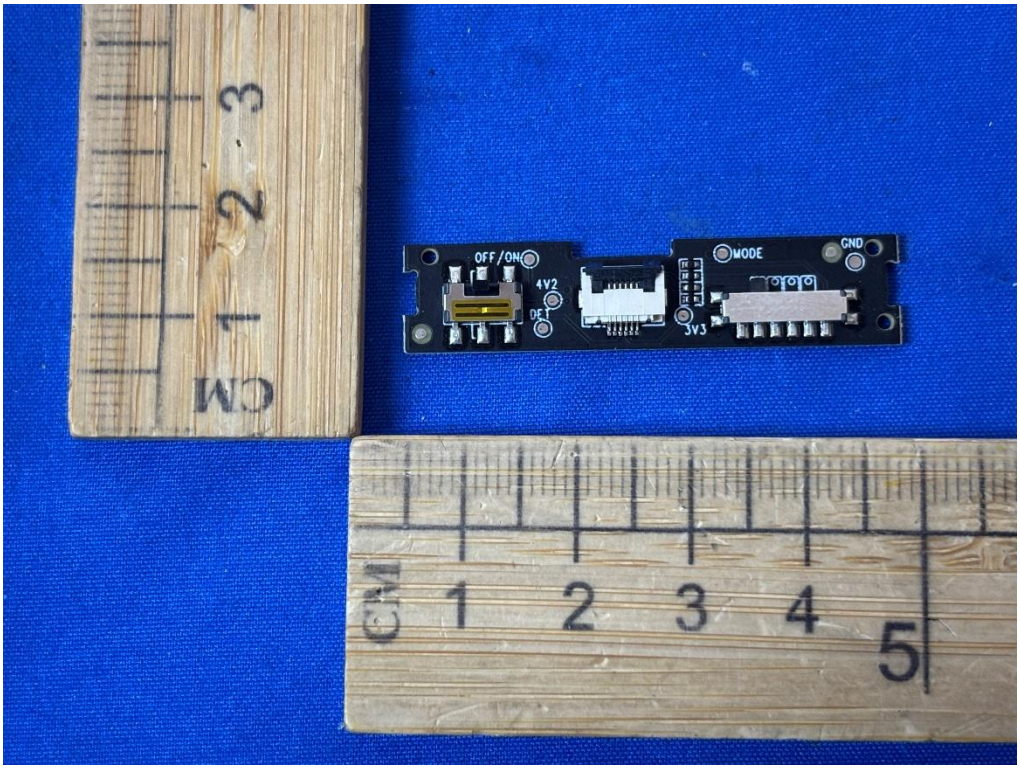

ADC_3V3
GND
LOG
SDA
SCL

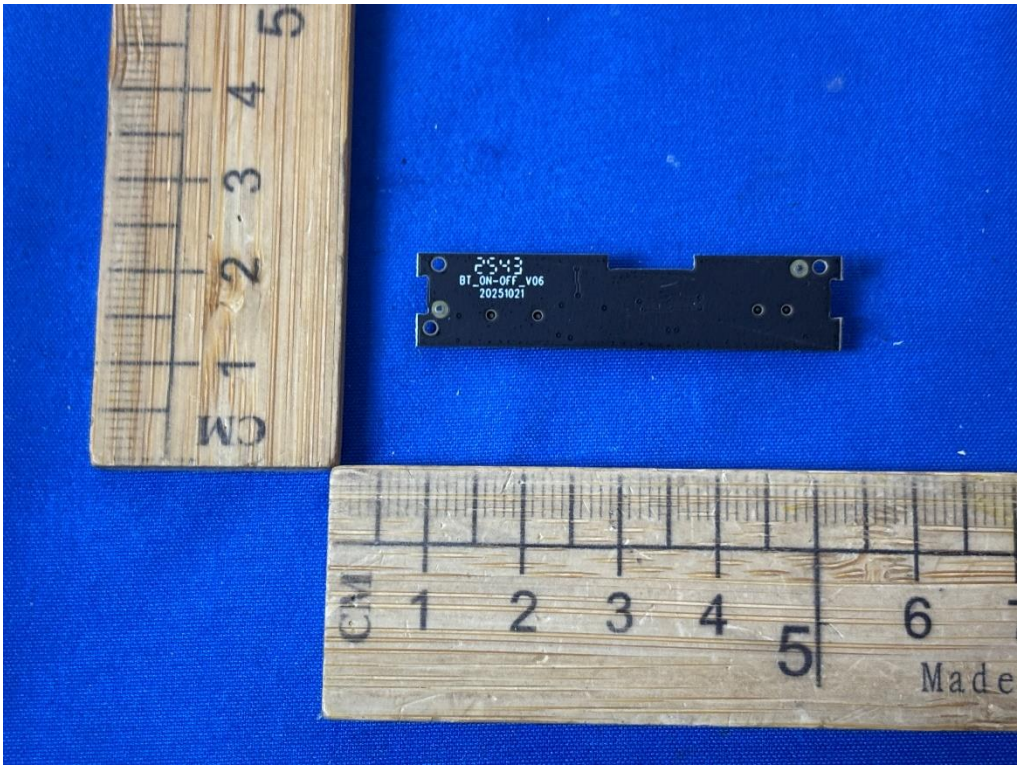

CM
1 2 3 4 5
CM
1 2 3 4 5 6 7 8
Made in

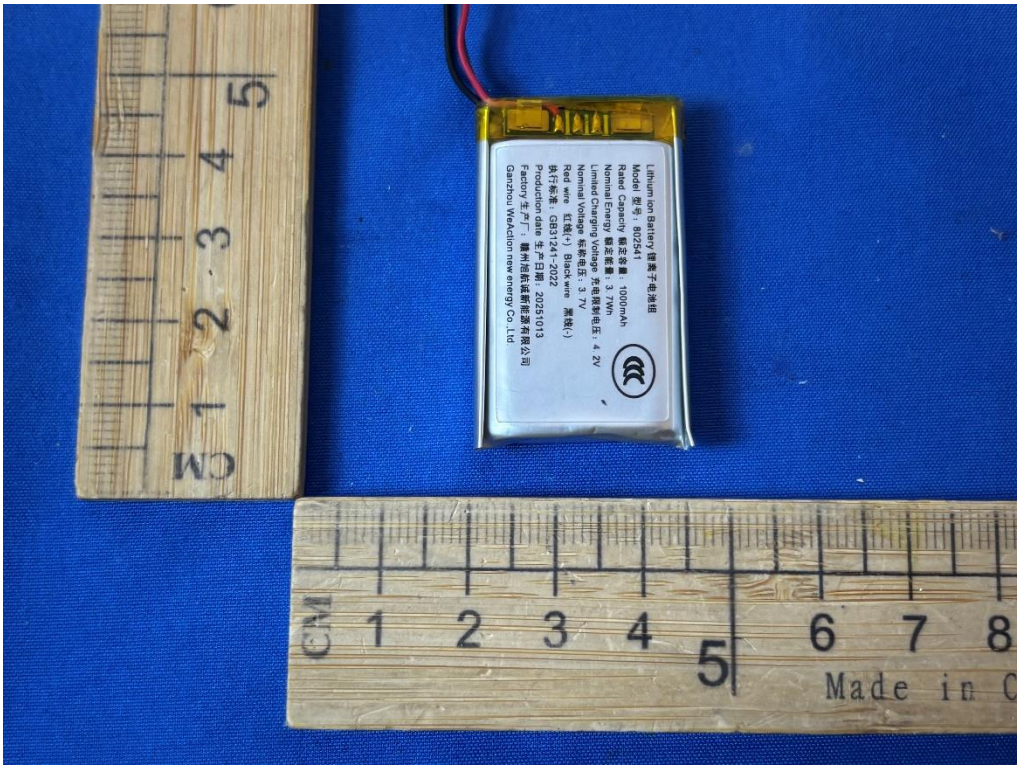

CM
1 2 3 4 5 6 7 8
Made in Ch


CM
1 2 3 4 5 6 7
Made in


GND
ADC_IMU
FN1
3V3
FN2
CM
1
2
3
4
5


OFF/ON
4V2
DET
MODE
GND
3V3
CM
1
2
3
4
5





END OF REPORT