TEST REPORT

Applicant:	Radiolink Electronic Limited
Address of Applicant:	3/F,Building 2, Fuguo industrial park, Kaifeng Road, Meilin, Shenzhen, Guangdong, China
Manufacturer/Factory:	Radiolink Electronic Limited
Address of Manufacturer/Factory:	3/F,Building 2, Fuguo industrial park, Kaifeng Road, Meilin, Shenzhen, Guangdong, China

Equipment Under Test (EUT)

Product Name:	Flight controller
Model No.:	Byme-A, Byme-D
Trade Mark:	Radiolink
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B
Date of sample receipt:	October 26, 2021
Date of Test:	October 26- November 01, 2021
Date of report issued:	November 01, 2021
Test Result :	Pass *

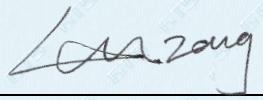
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

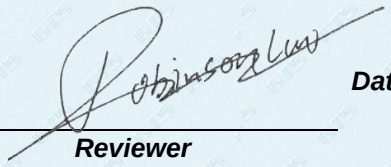
Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	November 01, 2021	Original

Prepared by:  **Date:** November 01, 2021

Project Engineer

Reviewed by:  **Date:** November 01, 2021

Reviewer

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4 Test Summary

Test Item	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission	FCC Part15.107	ANSI C63.4	Class B	N/A
Radiated Emissions #	FCC Part15.109	ANSI C63.4	Class B	PASS

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *N/A: Not applicable.*
3. *# Refer to FCC Part 15.33 (b)(1) conditional testing procedure :*

The highest frequency generated or used in the EUT	*Test frequency range of Radiated emission*
<108MHz	*30MHz ~ 1GHz*
108MHz ~ 500MHz	*30MHz ~ 2GHz*
500MHz ~ 1GHz	*30MHz ~ 5GHz*
>1GHz	*30MHz ~ 5th harmonic of the highest frequency or 40 GHz, whichever is lower.*

The highest frequency of the internal sources of the EUT is more than 108MHz.

5 General Information

5.1 General Description of EUT

Product Name:	Flight controller
Model No.:	Byme-A, Byme-D
Test Model No:	Byme-A
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The difference is model name for commercial purpose.	
Power supply:	DC 5-6V

5.2 Test mode and Test voltage

Test mode:	
Operation mode	Keep the EUT in the operation status.
Test voltage:	
DC 5V	

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
GW	DC POWER SUPPLY	GPR-6030D	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC —Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

Tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480 Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17 2021	Oct. 16 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17 2021	Oct. 16 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17 2021	Oct. 16 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

7 Test Results and Measurement Data

7.1 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109
Test Method:	ANSI C63.4:2014
Test Frequency Range:	30MHz to 6GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Receiver setup:	

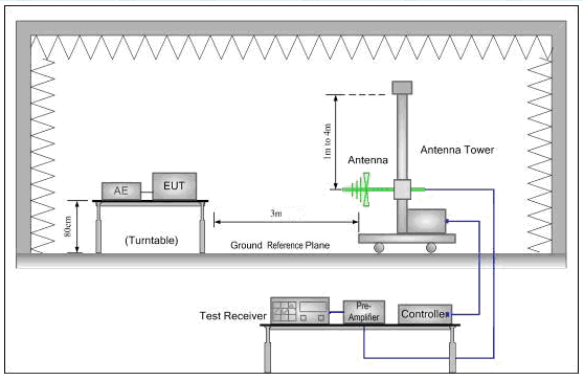
Frequency	Detector	RBW	VBW	Value
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

Limit:

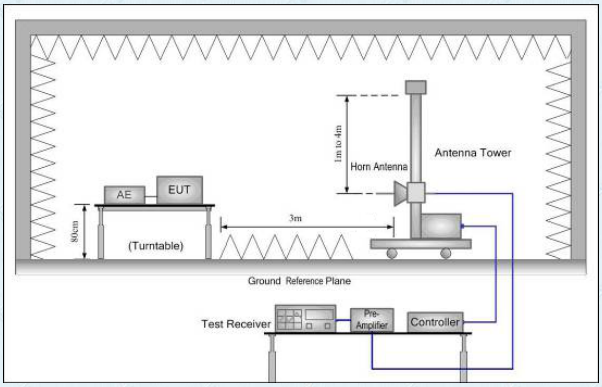
Frequency	Limit (dBμV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

Test setup:

Below 1GHz



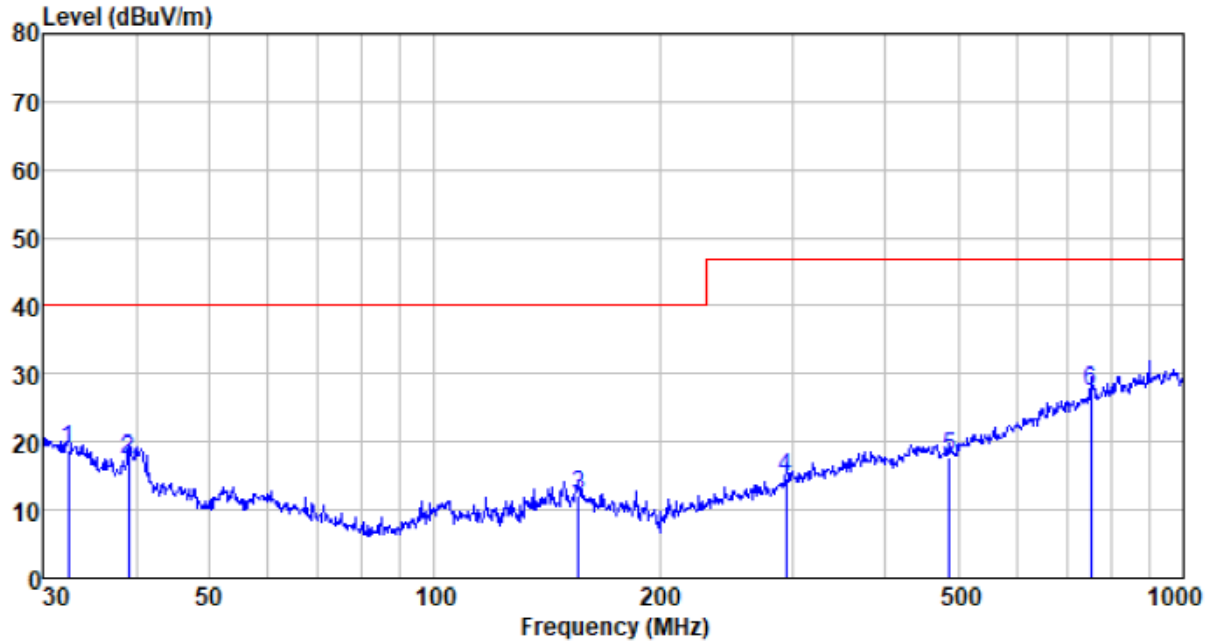
Above 1GHz



Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Measurement Record:	Uncertainty: 3.8039dB （30MHz-200MHz） 3.9679dB （200MHz-1GHz） 4.29dB （1GHz-18GHz）					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

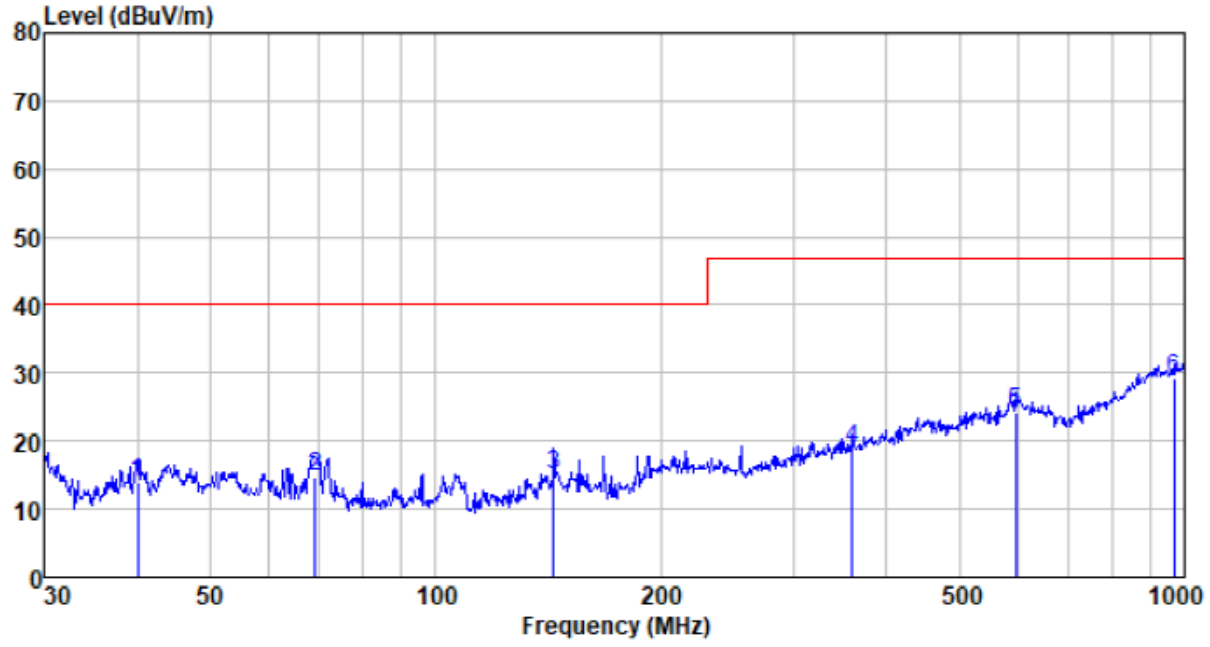
Measurement Data
Below 1GHz:

Test mode:	Operation mode	Antenna Polarity:	Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
32.406	26.04	20.61	1.08	28.84	18.89	40.00	-21.11	QP
39.024	28.64	16.72	1.16	29.15	17.37	40.00	-22.63	QP
155.910	28.97	12.06	2.10	30.90	12.23	40.00	-27.77	QP
295.147	28.81	14.37	2.90	31.19	14.89	47.00	-32.11	QP
487.315	27.51	17.82	4.18	31.86	17.65	47.00	-29.35	QP
752.743	30.35	22.95	5.49	31.38	27.41	47.00	-19.59	QP

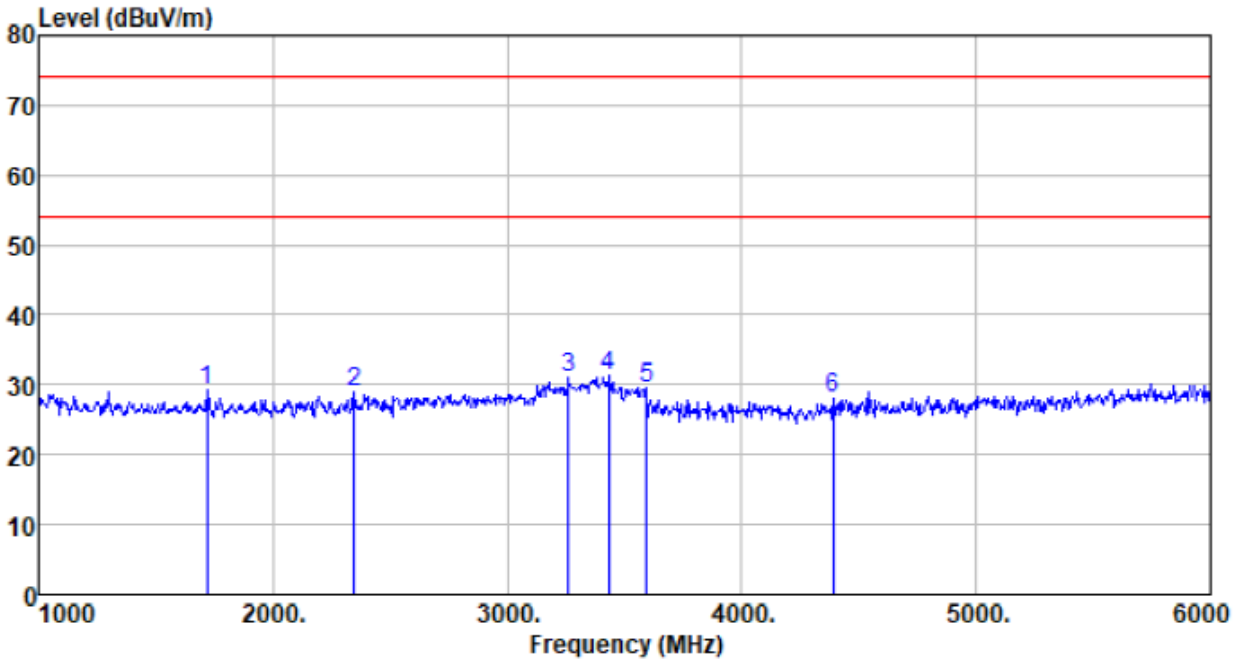
Test mode:	Operation mode	Antenna Polarity:	Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.994	30.88	11.16	1.17	29.19	14.02	40.00	-25.98	QP
69.114	35.17	8.26	1.44	30.09	14.78	40.00	-25.22	QP
143.830	34.54	9.30	2.02	30.87	14.99	40.00	-25.01	QP
360.448	30.66	16.32	3.46	31.45	18.99	47.00	-28.01	QP
595.133	30.22	20.53	4.98	31.64	24.09	47.00	-22.91	QP
968.934	29.13	24.88	6.54	31.31	29.24	47.00	-17.76	QP

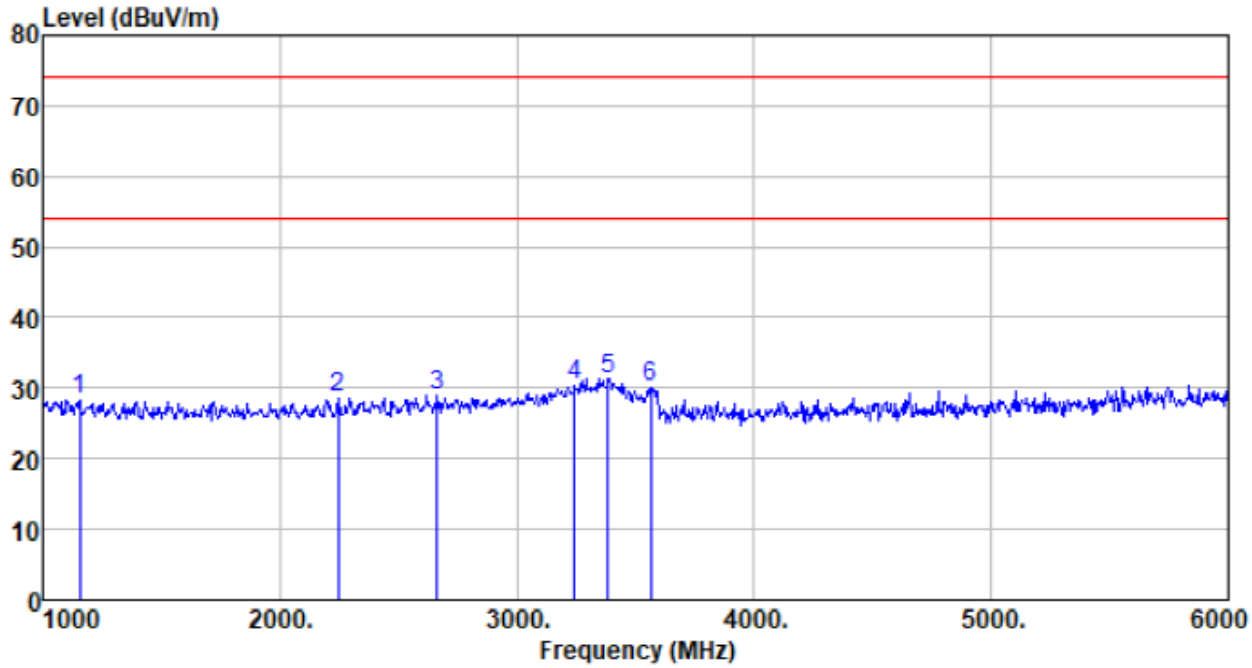
Above 1GHz:

Test mode:	Operation mode	Antenna Polarity:	Horizontal



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1720.000	37.35	25.68	2.42	36.33	29.12	74.00	-44.88	Peak
2345.000	35.66	27.24	2.85	36.81	28.94	74.00	-45.06	Peak
3260.000	36.32	28.40	3.62	37.33	31.01	74.00	-42.99	Peak
3430.000	36.45	28.40	3.67	37.35	31.17	74.00	-42.83	Peak
3595.000	34.37	28.70	3.84	37.36	29.55	74.00	-44.45	Peak
4390.000	30.64	30.52	4.31	37.57	27.90	74.00	-46.10	Peak

Test mode:	Operation mode	Antenna Polarity:	Vertical

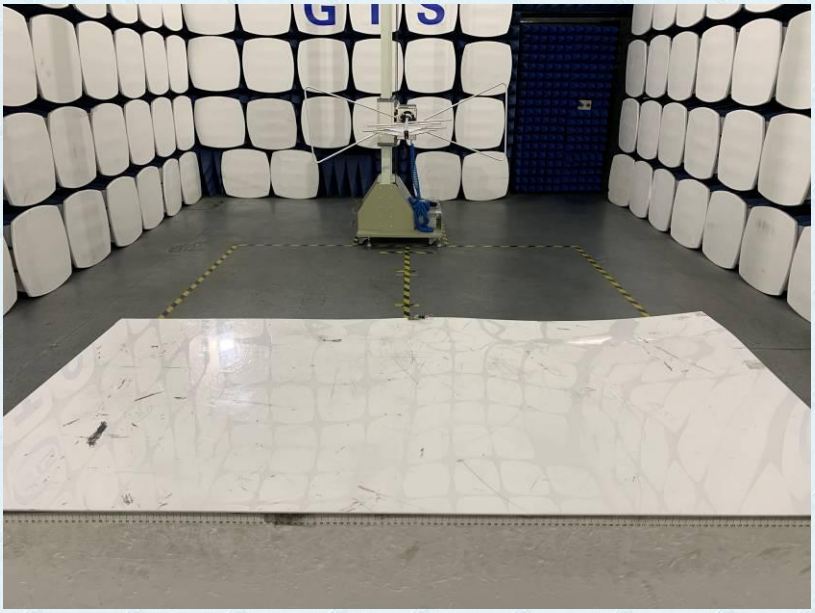


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1155.000	37.32	24.72	2.11	35.87	28.28	74.00	-45.72	Peak
2245.000	35.83	26.93	2.73	36.73	28.76	74.00	-45.24	Peak
2665.000	34.98	27.94	3.14	37.07	28.99	74.00	-45.01	Peak
3245.000	35.82	28.40	3.62	37.33	30.51	74.00	-43.49	Peak
3385.000	36.65	28.40	3.64	37.34	31.35	74.00	-42.65	Peak
3565.000	34.95	28.61	3.81	37.36	30.01	74.00	-43.99	Peak

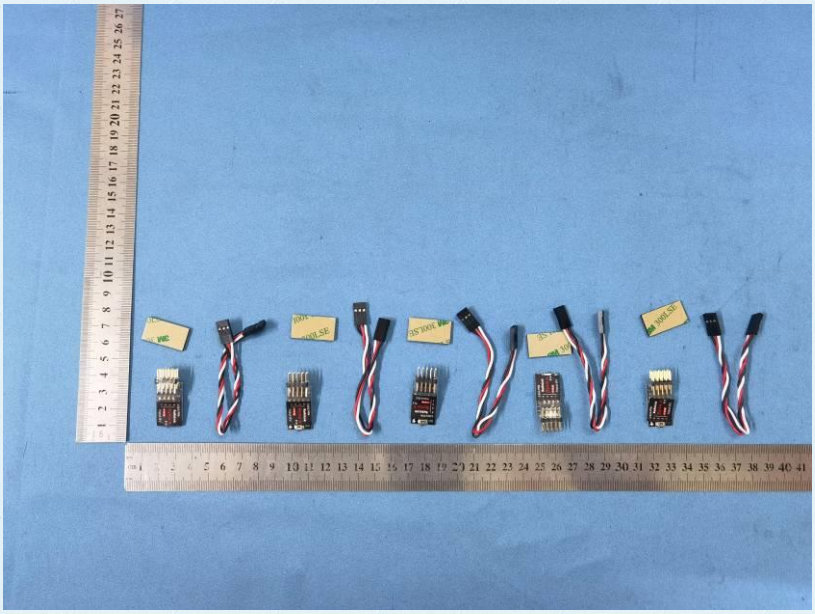
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

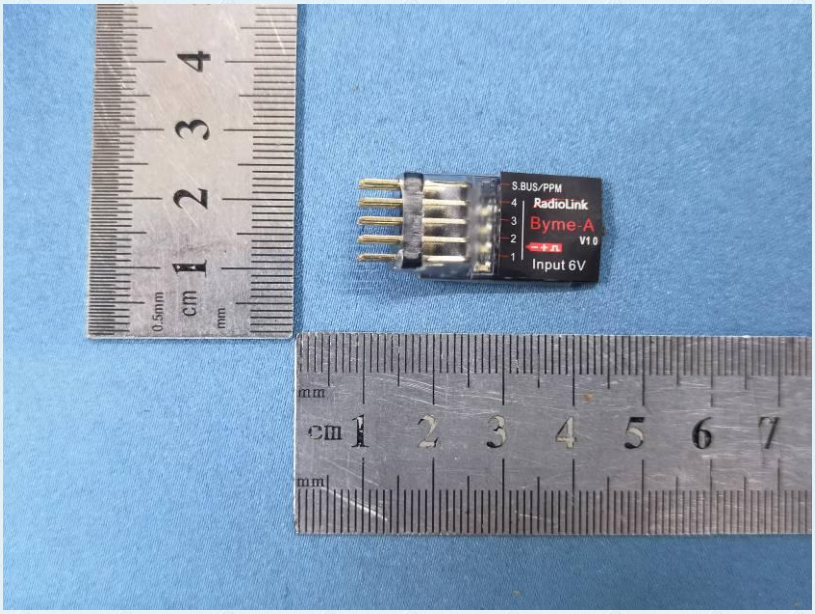
8 Test Setup Photo

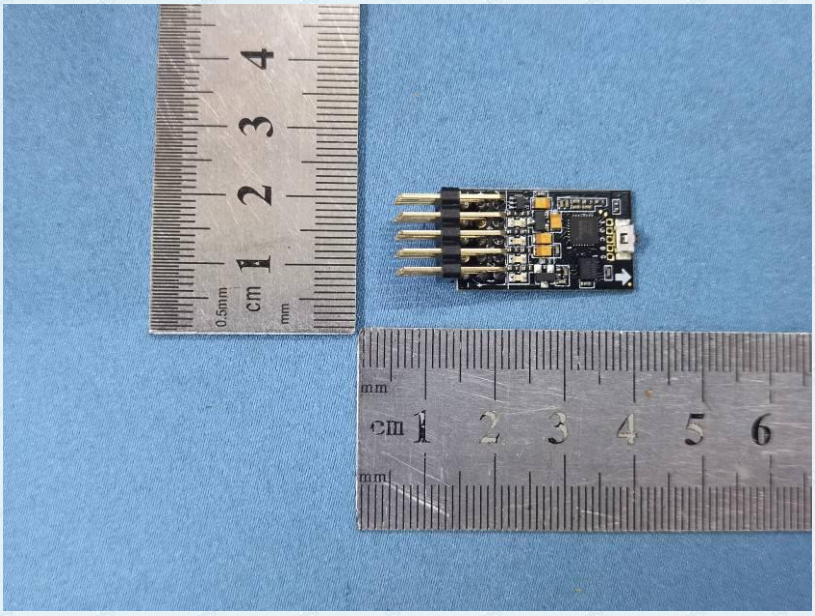
Radiated Emission

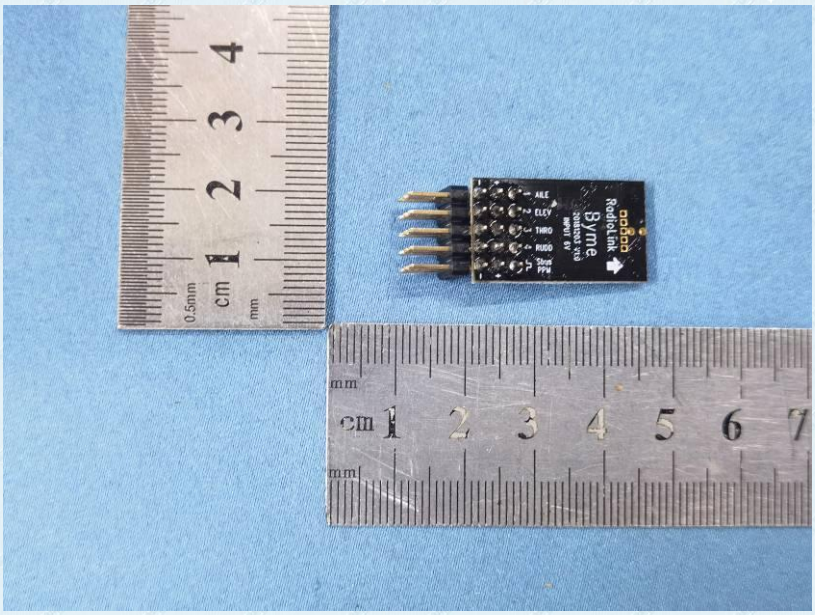


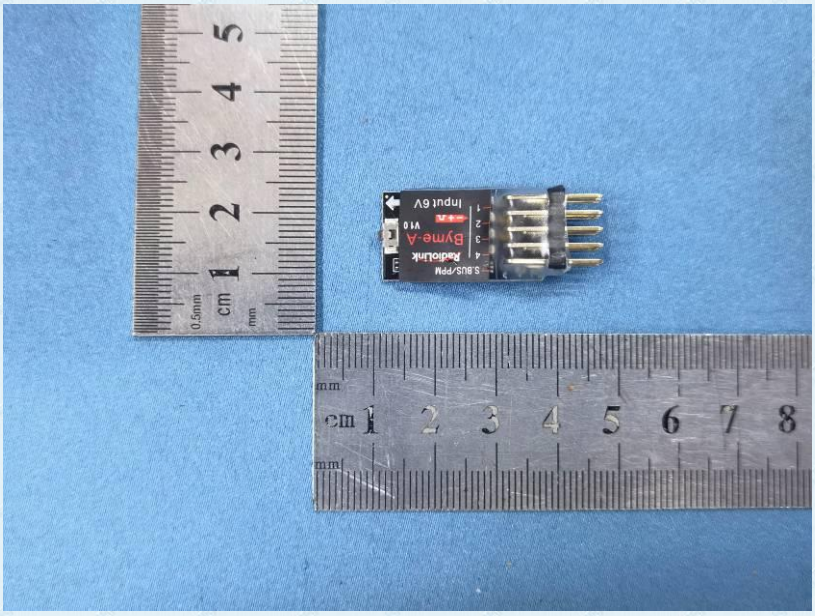
9 EUT Constructional Details








RadioLink
Byme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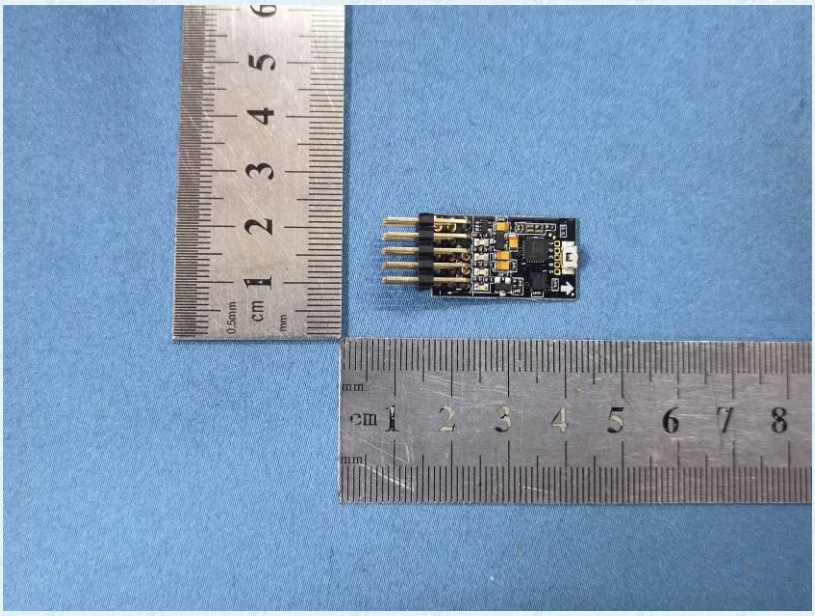
Byme-A
V1.0
RadioLink
S.BUS/PPM
cm 1 2 3 4 5 6 7 8
mm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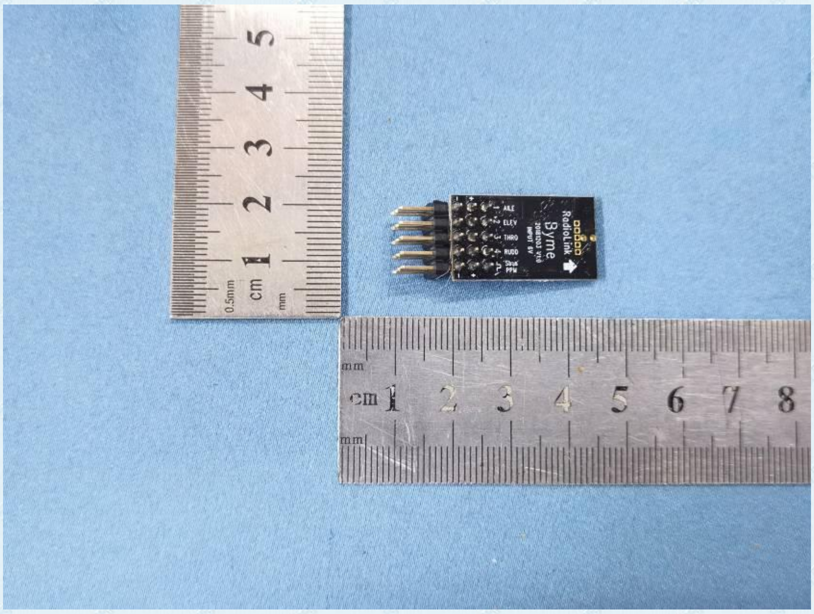
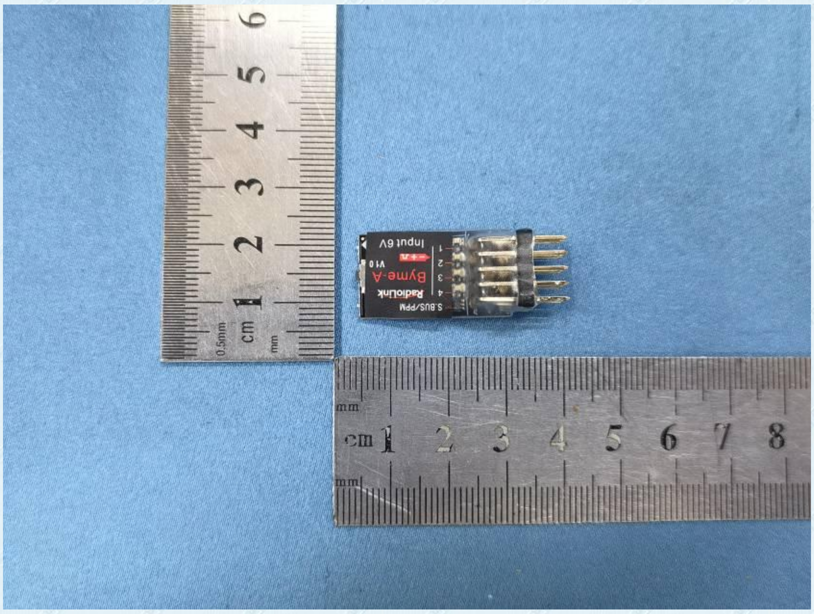
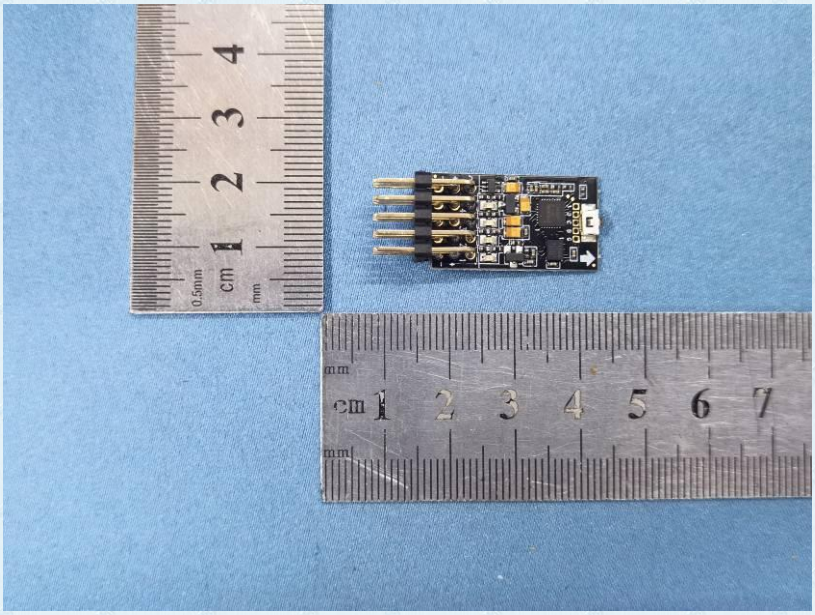
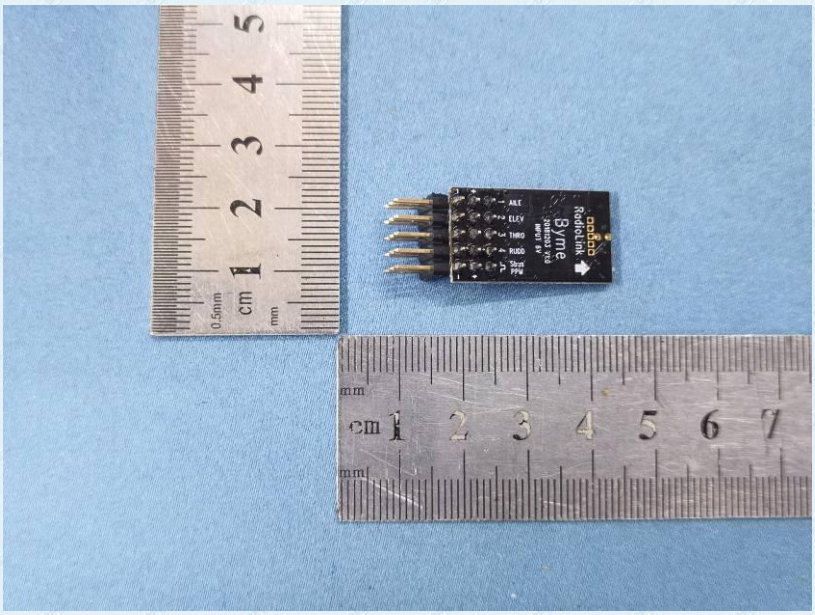
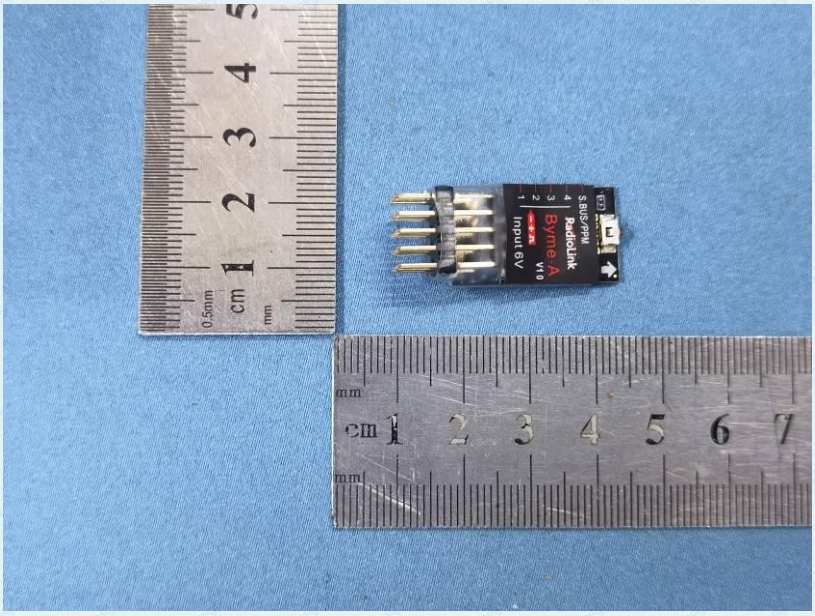
mm


RadioLink
Byme
AILE
ELEV
THRO
RUDD


Input 6V
Byme-A
RadioLink
S.BUS/PPM



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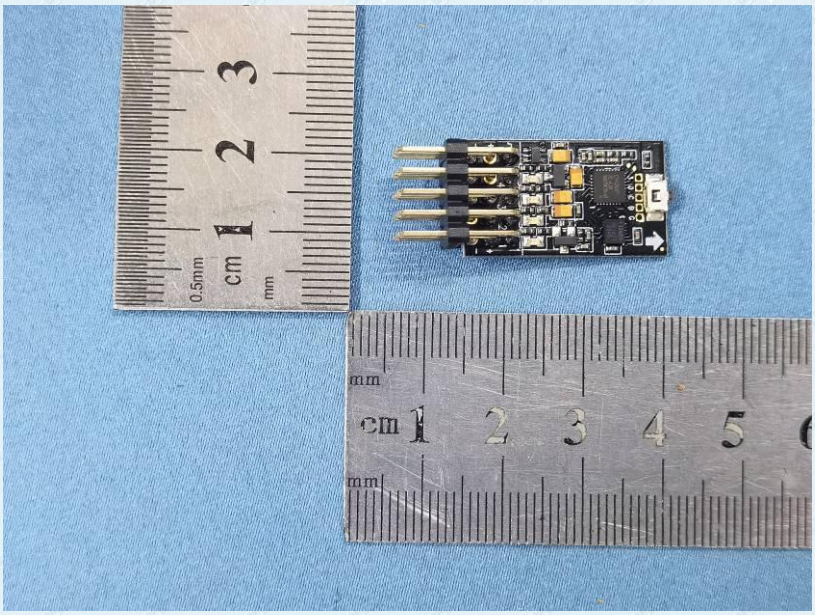
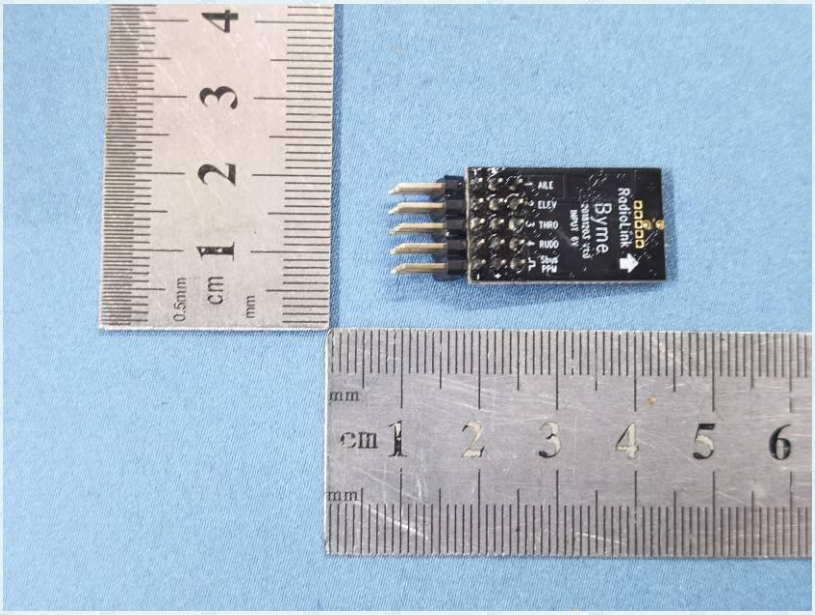
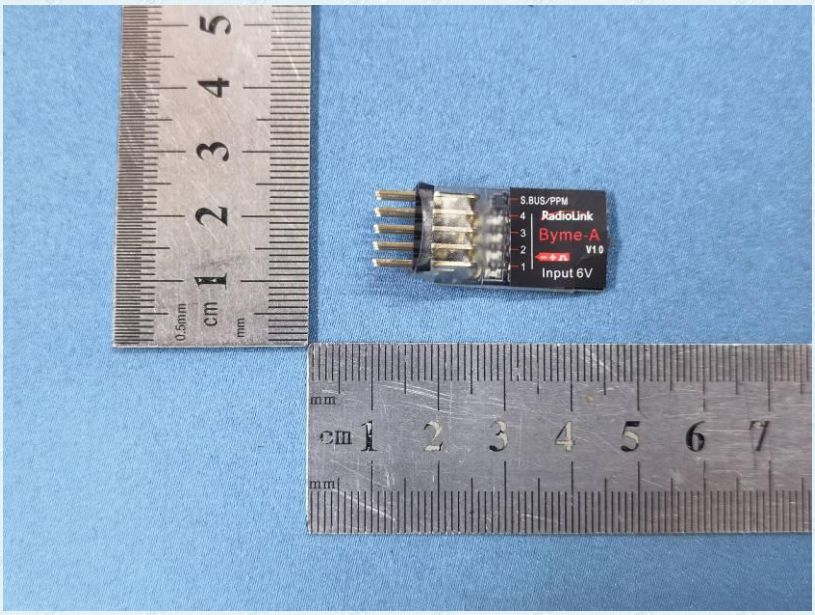
RadioLink
Byme A
V1.0
Input 6V




AILE
ELEV
THRO
RUDD
Byme
RadioLink
cm
mm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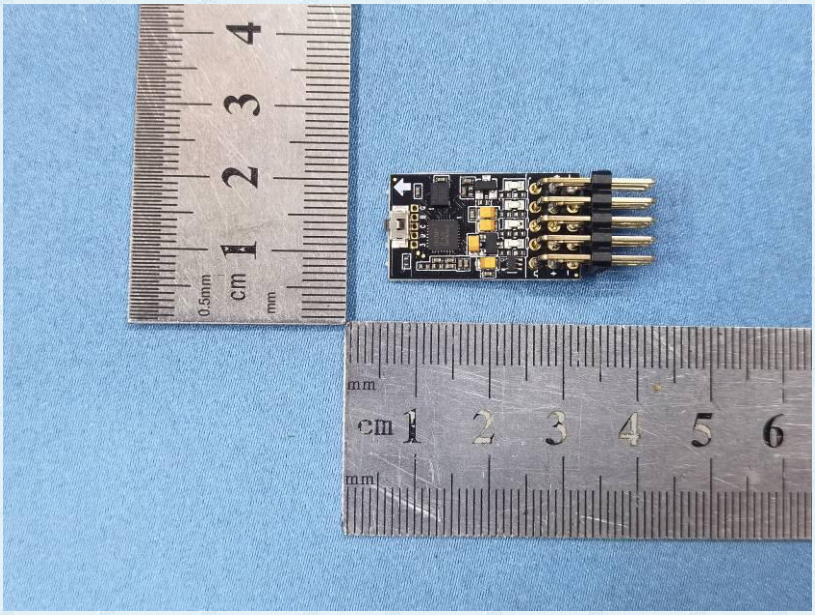
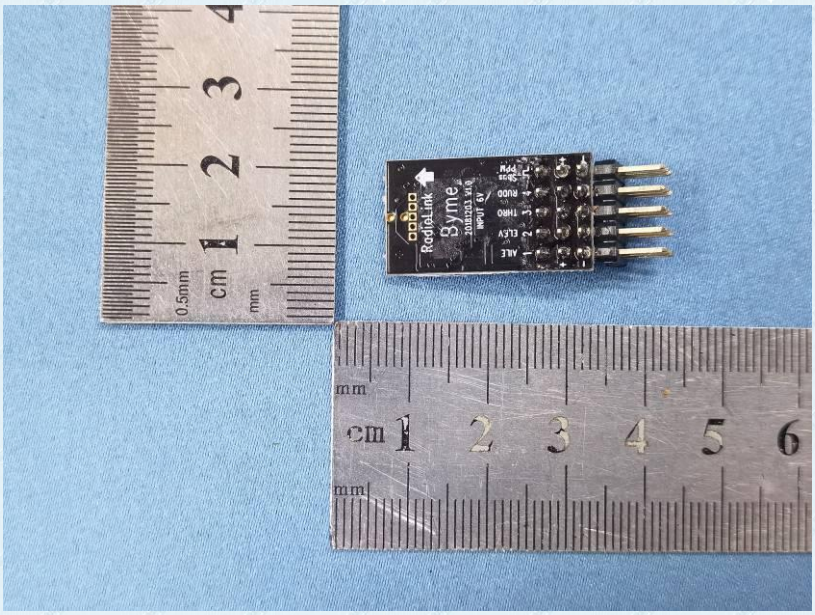
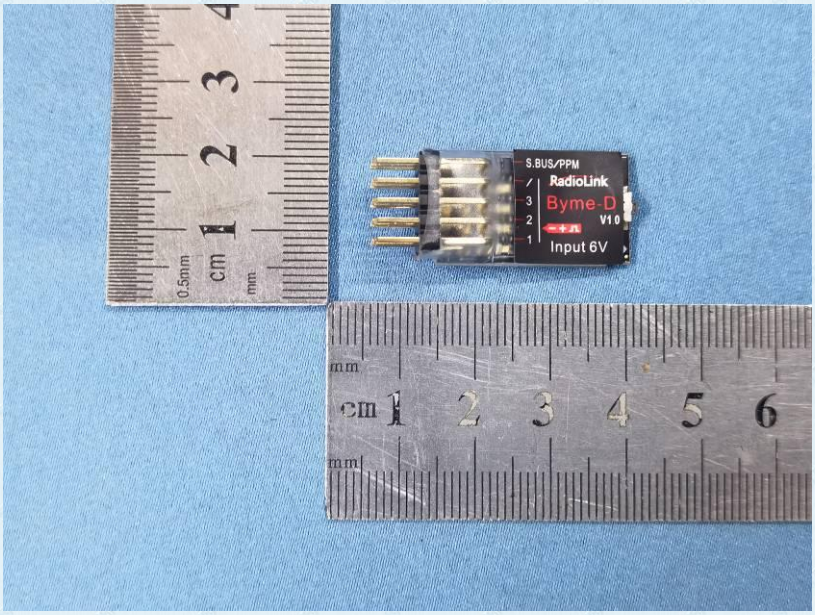
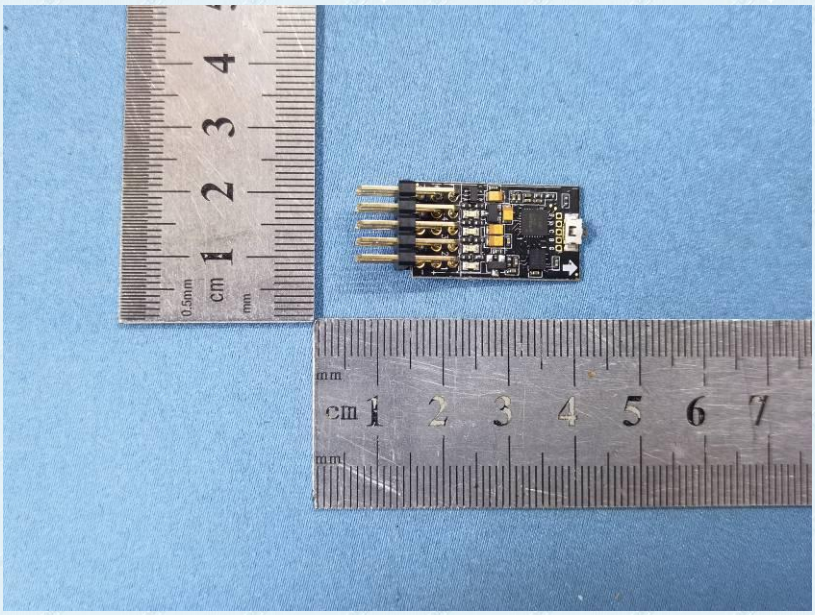
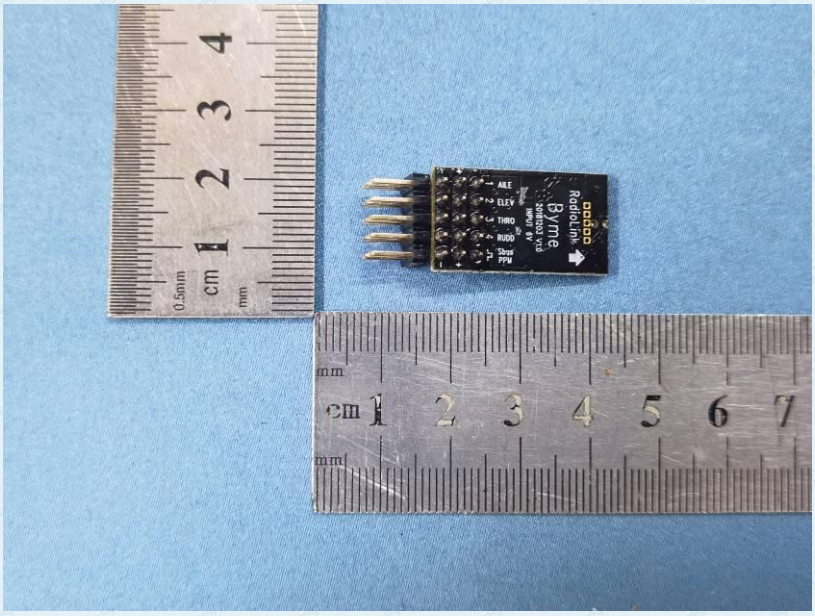
RadioLink
Byme-A
V1.0
Input 6V
cm
mm






S.BUS/PPM
RadioLink
Byme-D
V1.0
Input 6V





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