



TEST REPORT

Product Name: Yuqilin Industry version
Trademark: N/A
Model Number: X8T
Prepared For: MicroMultiCopter Innovation Technology Co., Ltd.
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Manufacturer: MicroMultiCopter Innovation Technology Co., Ltd.
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Sample Received Date: Jul. 21, 2025
Sample tested Date: Jul. 21, 2025 to Aug. 15, 2025
Issue Date: Aug. 15, 2025
Report No.: CTB25072104006RE03
Test Standards: ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-17 V3.3.1 (2024-09)
Test Results: PASS
Remark: This is EMC test report.

Compiled by:

Reviewed by:

Approved by:

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Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

TABLE OF CONTENT

Test Report Declaration	Page
1. VERSION	4
2. TEST SUMMARY	5
3. MEASUREMENT UNCERTAINTY	6
4. PRODUCT INFORMATION AND TEST SETUP	7
4.1 Product Information	7
4.2 Test Setup Configuration	7
4.3 Support Equipment	7
4.4 Test Mode	8
5. TEST FACILITY AND TEST INSTRUMENT USED	9
5.1 Test Facility	9
6. CONDUCTED EMISSIONS	13
6.1 Block Diagram Of Test Setup	13
6.2 Limit	13
6.3 Test procedure	13
6.4 Test Result	14
7. RADIATEDEMISSIONS TEST	16
7.1 Block Diagram Of Test Setup	16
7.2 Limits	17
7.3 Test Procedure	17
7.4 Test Results	18
8. HARMONIC CURRENT EMISSION(H)	21
8.1 Block Diagram of Test Setup	21
8.2 Limit	21
8.3 Test Procedure	21
8.4 Test Results	21
9. VOLTAGE FLUCTUATIONS &FLICKER(F)	22
9.1 Block Diagram of Test Setup	22
9.2 Limit	22
9.3 Test Procedure	22
9.4 Test Results	23
10. IMMUNITY TEST OF GENERAL THE PERFORMANCE CRITERIA	24
11. ELECTROSTATIC DISCHARGE (ESD)	27
11.1 Test Specification	27
11.2 Block Diagram of Test Setup	27
11.3 Test Procedure	27
11.4 Test Results	28
12. CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES(RS)	29
12.1 Test Specification	29
12.2 Block Diagram of Test Setup	29
12.3 Test Procedure	30
12.4 Test Results	30
13. ELECTRICAL FAST TRANSIENTS/BURST (EFT)	31
13.1 Test Specification	31
13.2 Block Diagram of EUT Test Setup	31
13.3 Test Procedure	31
13.4 Test Results	32
14. SURGES IMMUNITY TEST	33
14.1 Test Specification	33
14.2 Block Diagram of EUT Test Setup	33
14.3 Test Procedure	33
14.4 Test Result	34
15. CONTINUOUS INDUCED RF DISTURBANCES (CS)	35
15.1 Test Specification	35

15.2	Block Diagram of EUT Test Setup	35
15.3	Test Procedure.....	35
15.4	Test Result	36
16.	VOLTAGE DIPS AND INTERRUPTIONS (DIPS).....	37
16.1	Test Specification	37
16.2	Block Diagram of EUT Test Setup	37
16.3	Test Procedure.....	37
16.4	Test Result	38
17.	EUT PHOTOGRAPHS.....	39
18.	EUT TEST SETUP PHOTOGRAPHS	63
(NOTE: N/A MEANS NOT APPLICABLE)		

1. VERSION

Report No.	Issue Date	Description	Approved
CTB25072104004RE03	Aug. 15, 2025	Original	Valid
CTB25072104006RE03	Aug. 15, 2025	Modification	Valid

Remark:

This report was commissioned by MicroMultiCopter Innovation Technology Co., Ltd. and is based on the same product specification as the original report CTB25072104004RE03. Only the product name has been changed. The test data and conclusions in this report are based on the original report CTB25072104004RE03.

2. TEST SUMMARY

The Product has been tested according to the following specifications:

EMISSION		
Standard	Test Item	Test result
EN 55032	Conducted emissions from the AC mains power ports	Pass
EN 55032	Asymmetric mode conducted emissions	N/A ¹
EN 55032	Conducted differential voltage emissions	N/A ²
EN 55032	Radiated emissions	Pass
EN 61000-3-2	Harmonic current emission(H)	N/A ³
EN 61000-3-3	Voltage fluctuations & flicker(F)	N/A ⁴

IMMUNITY		
Standard	Test Item	Test result
IEC 61000-4-2	Electrostatic discharge (ESD)	Pass
IEC 61000-4-3	Continuous RF electromagnetic field disturbances(RS)	Pass
IEC 61000-4-4	Electrical fast transients/burst (EFT)	Pass
IEC 61000-4-5	Surges	Pass
IEC 61000-4-6	Radio frequency, common mode	Pass
IEC 61000-4-11	Voltage dips and interruptions (DIPS)	Pass

Remark:

1. Applicable to ports listed above and intended to connect to cables longer than 3 m.
2. The Product has no antenna port.
3. The Product belongs to Class A, and its power is less than 75W, so it deems to fulfil this standard without testing.
4. The EUT is powered by the DC battery, the test item is not applicable.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product 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 $k=2$.

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.2
Radiated Emission(30MHz-1000MHz)	4.8
Radiated Emission(1GHz-6GHz)	4.9

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	X8T
Model Description:	N/A
Wi-Fi Specification:	IEEE 802.11b/g/n/ax
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	WiFi: IEEE 802.11b/g/n/ax20: 2412-2472MHz/ 13 channel IEEE 802.11n/ax40: 2422-2462MHz/ 9 channel
Max. RF output power:	WiFi (2.4G): 16.19dBm
Type of Modulation:	WiFi (2.4G): DSSS, OFDM, OFDMA
Antenna installation:	WiFi (2.4G): Internal antenna
Antenna Gain:	WiFi (2.4G): Ant1: 2.7dBi Ant2: 2.7dBi
Ratings:	For adapter: Input: 100-240V~50/60Hz 1.5A Output: 5.0V=3.0A /9.0V=3.0A /12.0V=3.0 /15.0V=3.0A /20.0V=2.25A DC 14.4V by battery

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	AC ADAPTOR	RUI YU	RYF909CPD45WVU	/	AE

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Test Mode

Test Mode	Description	Remark
Mode 1	2.4G WIFI	TR, CR, TT, CT for EMS testing

NOTE: 1 The test modes were carried out for all operation modes. The final test mode of the EUT was the worst test mode for EMI, and its test data was showed.

2 "Link" is the connect horn alarm mode.

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinh Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Continuous disturbance							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated Date	Calibrated until
1	843 Shield Room	C/ R/ T	843	/	/	2024/6/22	2027/6/21
2	LISN	ROHDE&SCHWARZ	ESH3-Z5	831551852	/	2025/5/22	2026/5/21
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428	V4.42.SP3	2025/5/22	2026/5/21
4	Coaxial cable	ZDECL	Z302S	18091904	/	2025/5/22	2026/5/21
5	ISN	Schwarzbeck	NTFM8158	183	/	2025/6/18	2026/6/17
6	Voltage sensor	Schwarzbeck	TK 9420	01189	/	2024/10/26	2025/10/25
7	EZ-EMC	Frad	EMC-con3A1.1	/	/	/	/
8	Current Probe	FCC	F-52B	199453	/	2025/5/24	2026/5/23
9	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/5/23	2026/5/22
10	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/5/23	2026/5/22

Radiated emission(No.1 Chamber)							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2024/6/23	2027/6/22
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	/	2025/6/1	2026/5/31
3	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/29	2026/6/28
4	Amplifier	Agilent	8449B	3008A01838	/	2025/6/3	2026/6/2
5	Amplifier	HP	8447E	2945A02747	/	2025/5/23	2026/5/22
6	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/2	2026/6/1
7	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/5/23	2026/5/22
8	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/5/23	2026/5/22
9	Coaxial cable	ETS	RFC-SNS-100-NMS-80	/	/	2025/5/24	2026/5/23

10	Coaxial cable	ETS	RFC-SN-100-NMS-20	/	/	2025/5/24	2026/5/23
11	Coaxial cable	ETS	RFC-SNS-100-SMS-20	/	/	2025/5/24	2026/5/23
12	Coaxial cable	ETS	RFC-NNS-100-NMS-300	/	/	2025/5/24	2026/5/23
13	EMI test software	Frad	EZ-EMC	Ver/FA-03A2 RE	/	/	/
14	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/5/23	2026/5/22
15	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/5/23	2026/5/22

Harmonic current emission& Voltage changes, voltage fluctuations and flicker							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	Flicker & Harmonic Tester	Laplace Instruments	AC2000A	311363	Version 2.0	2025/5/30	2026/5/29
2	POWER SOURCE	HTEC Instruments	HPF5010	633088	/	2025/6/18	2026/6/17
3	H&F Test PC	HVAEIPC	S25	/	/	/	/
4	Flicker & Harmonic software	HTEC	Version 2.0	/	V2.0	/	/
5	Three-phase harmonic scintillation	Schloder	LMG 641	07552407	/	2025/6/18	2026/6/17
6	Three-phase harmonic power supply	CI	60kVA	/	/	2025/6/18	2026/6/17
7	Three-phase 75A impedance network	Yian	YIAN-3-75	375025	/	2025/6/18	2026/6/17
8	Harmonic flicker test system software GMC	GMC	LMG600 Control 3.130	/	LMG600 Control 3.130		/
9	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
10	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

Electrostatic discharges							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	V01.00	2025/6/2	2026/6/1
2	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
3	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

Ringing Wave &Surges & Fast transients							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	Surge& Burst Generator	Lioncel	LSE-545CB	0180602	/	2025/5/21	2026/5/20
2	Capacitive coupling clamp	Lioncel	EFTC	018071801	/	2025/5/21	2026/5/20
3	Isolation transformer	Soulemc	HIT 90K	234915	/	/	/

4	Coupled decoupling network	Soulemc	SCDN SR200A	234909	/	2025/2/25	2026/2/24
5	Combinationsurge wave module	Soulemc	SCWG 10KP	234906	/	2025/2/25	2026/2/24
6	Communicationsurge wave module	Soulemc	STSG 10KP	234907	/	2025/2/25	2026/2/24
7	Ring wave module	Soulemc	SRWG 10KP	234908	/	2025/2/25	2026/2/24
8	surge computer	Soulemc	SCWG 10KP	234905	V0.1.0	/	/
9	Unshielded Symmetric Communication Line Coupling Network	Soulemc	SCN 8T	234910	/	2025/2/25	2026/2/24
10	Unshielded symmetrical communication line decoupling network	Soulemc	SDE 8T	234911	/	2025/2/25	2026/2/24
11	Capacitive coupling clamp	Soulemc	SCCC.4	234912	/	2025/2/25	2026/2/24
12	EFT Clamp SHVcable	Soulemc	50 欧 · 1.5M	/	/	/	/
13	Surge LAN cable	Soulemc	(8 线) 1M	/	/	/	/
14	Surge LAN cable	Soulemc	(8 线) 1.2M	/	/	/	/
15	EFT generator	Soulemc	SUCG 5000E	231903	V1.3.4	2025/2/25	2026/2/24
16	EFT Coupled decoupling network	Soulemc	SCDN E200A	234904	/	2025/2/25	2026/2/24
17	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
18	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

Voltage dips

No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	Voltage dip simulator	Lioncel	VDS-1102	180902	V1.04	2025/5/22	2026/5/21
2	DIPS fault simulator	Soulemc	SSAG 3P200T	234913	V1.5.4	2025/5/22	2026/5/21
3	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
4	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

Injected currents

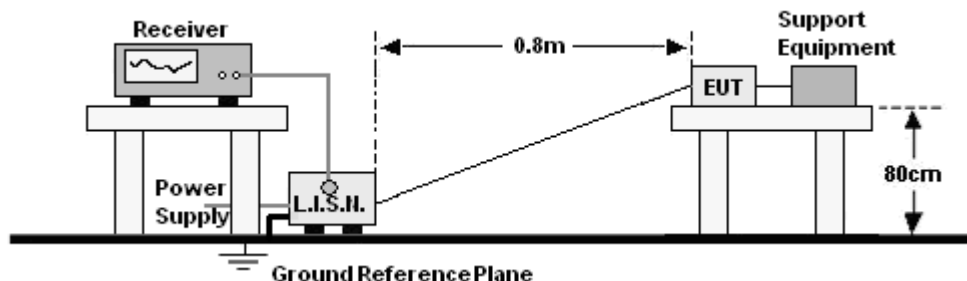
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated Date	Calibrated until
1	C/S Test System	SKET	CITS-150K230M-75W	SK20210604	20H2	2025/6/18	2026/6/17
2	CDN	SKET	CDN-150K230M-M2/M3-16A	21302	/	2025/5/22	2026/5/21
3	CDN	Schaffner	CDNT400	/	/	2025/5/22	2026/5/21
4	6dB 100Watt Attenuator	SKET	AP-DC03G-100W-N-6dB	/	/	2025/5/28	2026/5/27
5	Electromagnetic Injection Clamp	Prima	PECL-100	/	/	2025/6/18	2026/6/17

6	50Ω Load	SKET	TL-DC01G-2W-50 BNC	/	/	2025/6/18	2026/6/17
7	CS test software	SKET	EMC-S	V2.0.0.11	/	/	/
8	M5 Coupled decoupling network	HTEC	CDN M5	234902	/	2025/6/3	2026/6/2
9	M2 Coupled decoupling network	HTEC	CDN M2	234901	/	2025/6/3	2026/6/2
10	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
11	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

Radio frequency electromagnetic field							
No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2024/6/23	2027/6/22
2	Signal Generator	Agilent	N5181A	MY49060920	A.01.60	2025/5/22	2026/5/21
3	Stacked Double Log.-Per. Antenna	SKET	STLP 9129 Plus	2106070106	/	/	/
4	Switch Controller	SKET	RFSU-DC18G-4C	2106070105	/	/	/
5	RF Power Meter	Agilent	E9304A	MY41490462	/	2025/5/23	2026/5/22
6	RF Power Meter	Agilent	E9301A	MY41495675	/	2025/5/23	2026/5/22
7	E-Field Probe	Narda	EP-601	811ZX10305	/	2025/6/3	2026/6/2
8	Power Amplifier	SKET	HAP-80M01G-250 W	2106070103	/	2025/5/30	2026/5/29
9	Power Amplifier	SKET	HAP-01G 06G-75W	2106070104	/	2025/5/30	2026/5/29
10	Audio Analysis	R&S	ATS-1	ATS 1-41152	/	2025/5/23	2026/5/22
11	Audio Output Matching Network	SKET	RCO Network	/	/	2025/5/23	2026/5/22
12	RS test software	SKET	V2.0.0.19	/	/	/	/
13	Communication test set	R&S	CMW500	108058	Version 2.0	2025/5/23	2026/5/22
14	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/23	2026/5/22

6. CONDUCTED EMISSIONS

6.1 Block Diagram Of Test Setup



6.2 Limit

Limits for Conducted emissions at the mains ports of Class B MME

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

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

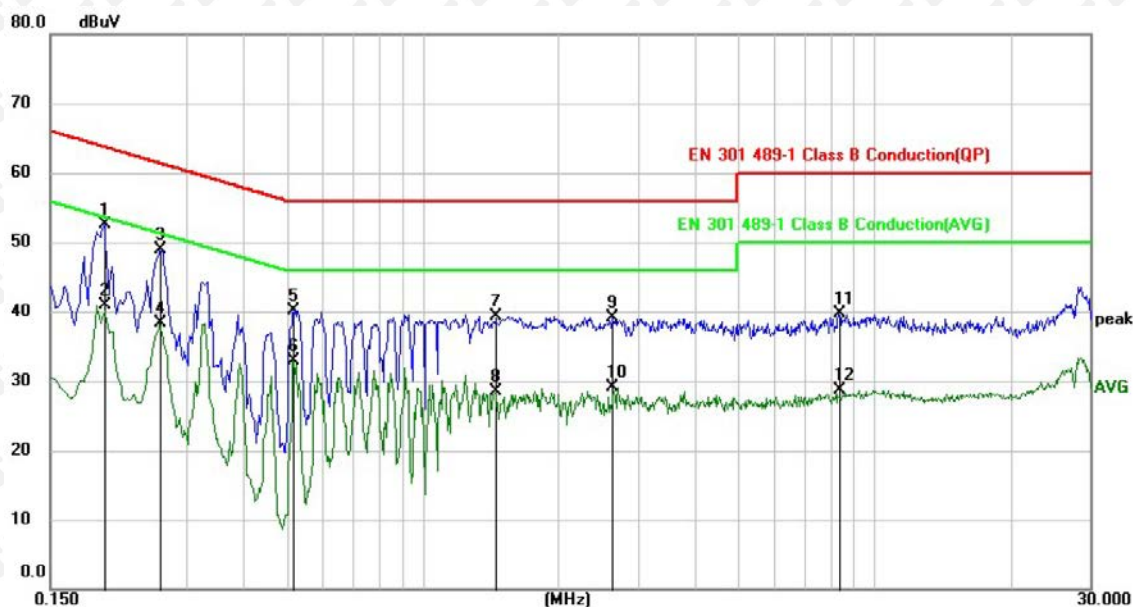
2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

- The Product was placed on a nonconductive table 0.8m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 Test Result

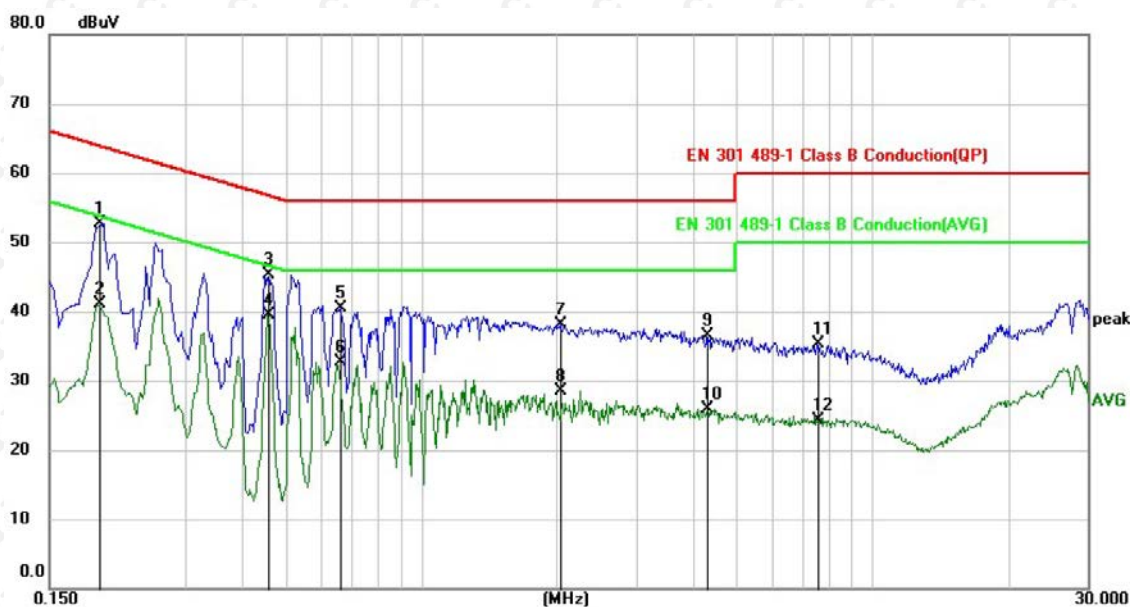
Temperature:	23℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Mode	1	Remark:	N/A



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1	*	0.1980	42.36	10.08	52.44	63.69	-11.25	QP
2		0.1980	30.74	10.08	40.82	53.69	-12.87	AVG
3		0.2620	38.78	10.08	48.86	61.37	-12.51	QP
4		0.2620	28.24	10.08	38.32	51.37	-13.05	AVG
5		0.5180	30.05	10.09	40.14	56.00	-15.86	QP
6		0.5180	22.85	10.09	32.94	46.00	-13.06	AVG
7		1.4500	29.19	10.15	39.34	56.00	-16.66	QP
8		1.4500	18.35	10.15	28.50	46.00	-17.50	AVG
9		2.6300	28.89	10.19	39.08	56.00	-16.92	QP
10		2.6300	18.85	10.19	29.04	46.00	-16.96	AVG
11		8.3660	29.34	10.41	39.75	60.00	-20.25	QP
12		8.3660	18.35	10.41	28.76	50.00	-21.24	AVG

Remark: Result=Reading +Factor
Over Limit=Result -Limit

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Mode	1	Remark:	N/A



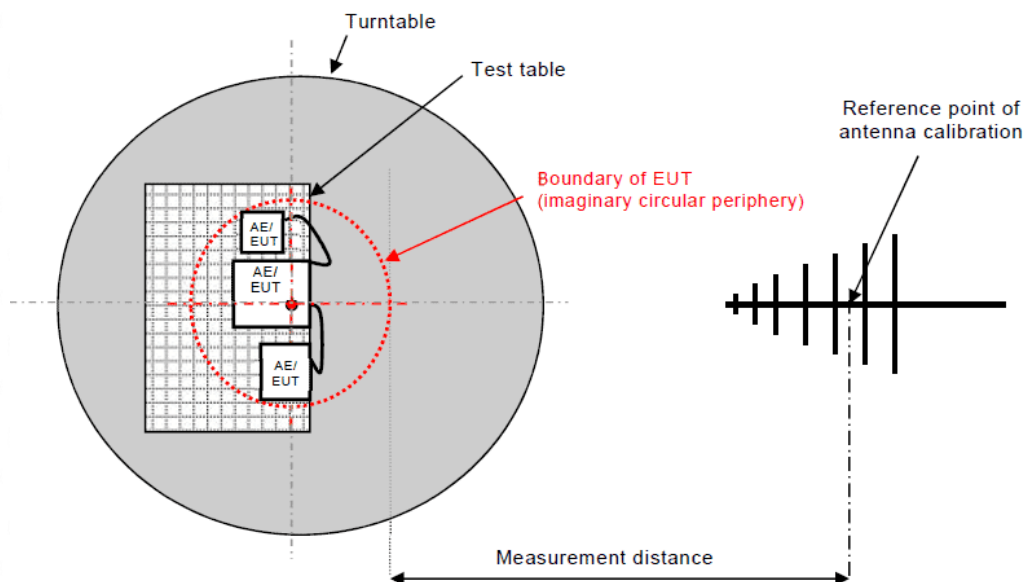
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV	dBuV	dB	
1		0.1940	42.55	10.08	52.63	63.86	-11.23	QP
2		0.1940	30.99	10.08	41.07	53.86	-12.79	AVG
3		0.4580	35.13	10.09	45.22	56.73	-11.51	QP
4	*	0.4580	29.32	10.09	39.41	46.73	-7.32	AVG
5		0.6620	30.47	10.11	40.58	56.00	-15.42	QP
6		0.6620	22.50	10.11	32.61	46.00	-13.39	AVG
7		2.0380	27.96	10.17	38.13	56.00	-17.87	QP
8		2.0380	18.29	10.17	28.46	46.00	-17.54	AVG
9		4.3060	26.35	10.25	36.60	56.00	-19.40	QP
10		4.3060	15.71	10.25	25.96	46.00	-20.04	AVG
11		7.5420	24.96	10.39	35.35	60.00	-24.65	QP
12		7.5420	13.99	10.39	24.38	50.00	-25.62	AVG

Remark: Result=Reading +Factor
Over Limit=Result -Limit

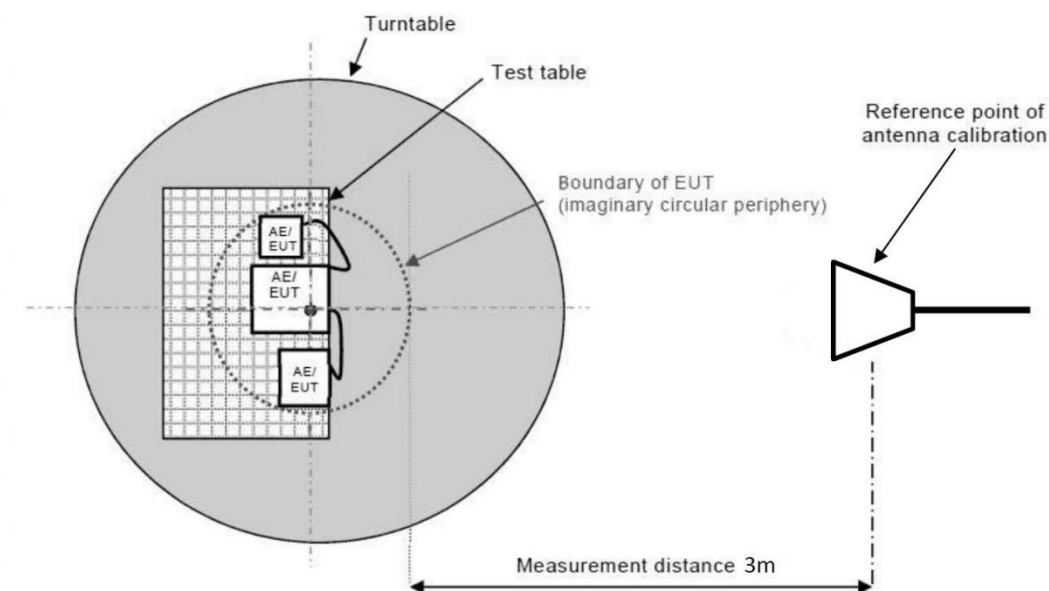
7. RADIATEDEMISSIONS TEST

7.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



Above 1GHz:



7.2 Limits

Limits for radiated disturbance of Class B MME

Frequency (MHz)	Quasi-peak limits at 3m dB(μ V/m)
30-230	40
230-1000	47

Frequency (GHz)	limit above 1G at 3m dB(μ V/m)	
	Average	peak
1-3	50	70
3-6	54	74

Note: The lower limit shall apply at the transition frequencies.

7.3 Test Procedure

30MHz ~ 1GHz:

- The Product was placed on the nonconductive turntable 0.8m above the ground in a semi anechoic chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

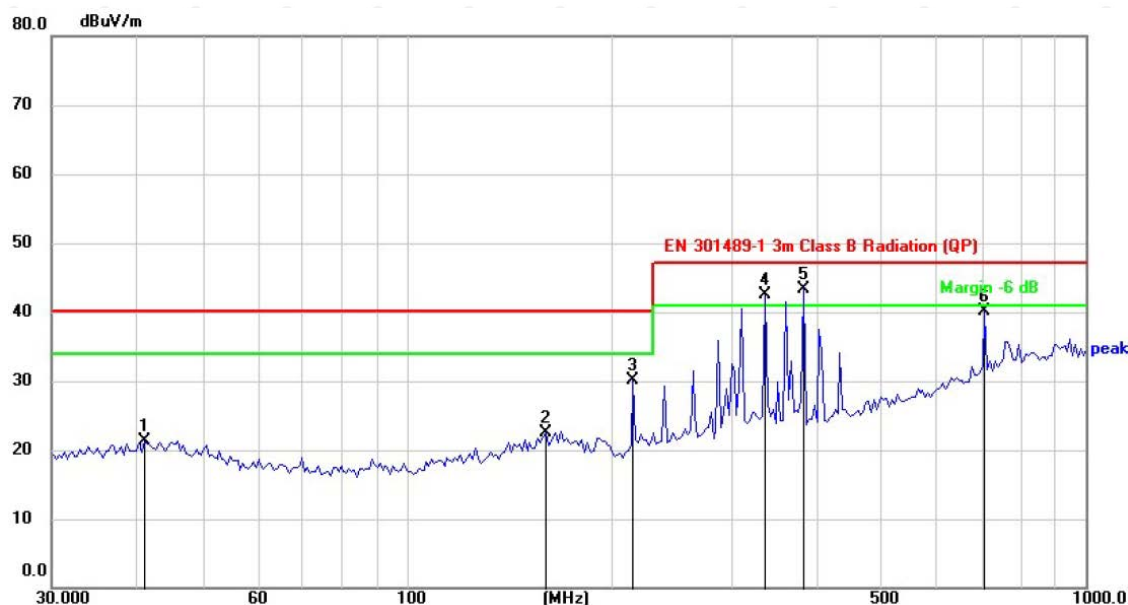
Above 1GHz:

- The Product was placed on the non-conductive turntable 0.8m above the ground in a full anechoic chamber..
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

7.4 Test Results

Below 1GHz

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Horizontal
Test Mode	1	Remark:	N/A



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		41.1319	27.24	-5.93	21.31	40.00	-18.69	QP
2		160.0646	25.88	-3.43	22.45	40.00	-17.55	QP
3		215.6453	36.10	-5.92	30.18	40.00	-9.82	QP
4	!	337.2155	44.49	-1.92	42.57	47.00	-4.43	QP
5	*	384.6055	44.39	-1.15	43.24	47.00	-3.76	QP
6		710.4266	33.57	6.61	40.18	47.00	-6.82	QP

Remark: Result=Reading +Factor
Over Limit=Result -Limit

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Vertical
Test Mode	1	Remark:	N/A



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		44.9006	27.87	-6.15	21.72	40.00	-18.28	QP
2		182.5592	27.88	-4.53	23.35	40.00	-16.65	QP
3		337.2155	37.84	-1.92	35.92	47.00	-11.08	QP
4	*	384.6055	37.67	-1.15	36.52	47.00	-10.48	QP
5		575.6342	29.02	3.25	32.27	47.00	-14.73	QP
6		846.5707	25.85	9.00	34.85	47.00	-12.15	QP

Remark: Result=Reading +Factor
Over Limit=Result -Limit

Above 1GHz

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Horizontal
Test Mode	1	Remark:	N/A

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1968.57	46.79	1.50	48.29	70.00	-21.71	peak
2	1969.22	28.07	1.50	29.57	50.00	-20.43	AVG
3	3774.76	42.91	5.75	48.67	74.00	-25.33	peak
4	3775.54	26.58	5.75	32.33	54.00	-21.67	AVG
5	4841.44	42.84	9.57	52.41	74.00	-21.59	peak
6	4840.31	24.77	9.57	34.34	54.00	-19.66	AVG

Remark: Result=Reading +Factor
Over Limit=Result -Limit

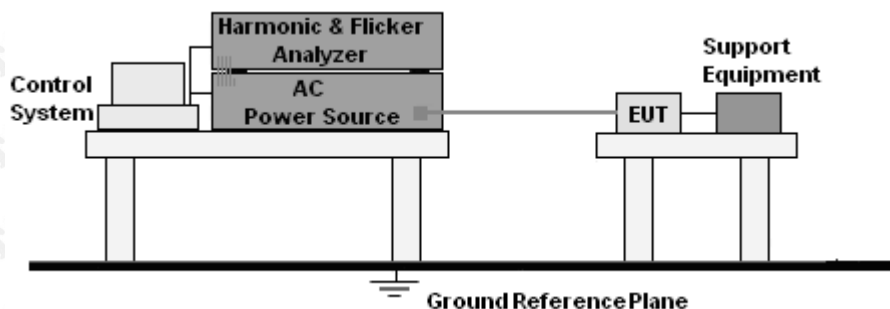
Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Polarization :	Vertical
Test Mode	1	Remark:	N/A

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1996.58	47.30	1.52	48.82	70.00	-21.18	peak
2	1996.34	29.53	1.52	31.05	50.00	-18.95	AVG
3	3807.21	45.22	5.87	51.09	74.00	-22.91	peak
4	3810.90	27.71	5.87	33.58	54.00	-20.42	AVG
5	4770.98	44.39	9.37	53.76	74.00	-20.24	peak
6	4773.85	26.61	9.37	35.98	54.00	-18.02	AVG

Remark: Result=Reading +Factor
Over Limit=Result -Limit

8. HARMONIC CURRENT EMISSION(H)

8.1 Block Diagram of Test Setup



8.2 Limit

EN IEC 61000-3-2:2019 Clause 7.

8.3 Test Procedure

- The Product was placed on the top of a non-conductive table above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.
- The correspondent test program of test instrument to measure the current harmonics emanated from Product was chosen. The measure time shall be not less than the time necessary for the Product to be exercised.

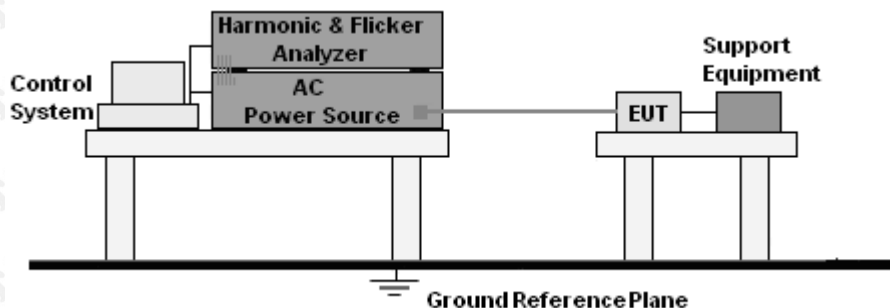
8.4 Test Results

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Mode	1(the worst data)
Remark:	N/A	Test results	N/A

Remark: No limits apply for equipment with an active input power up to and including 75W.

9. VOLTAGE FLUCTUATIONS & FLICKER(F)

9.1 Block Diagram of Test Setup



9.2 Limit

EN 61000-3-3:2013/A1:2019 Clause 5.

9.3 Test Procedure

- The Product was placed on the top of a non-conductive table above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.
- During the flick test, the measure time shall include that part of whole operation cycle in which the Product produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

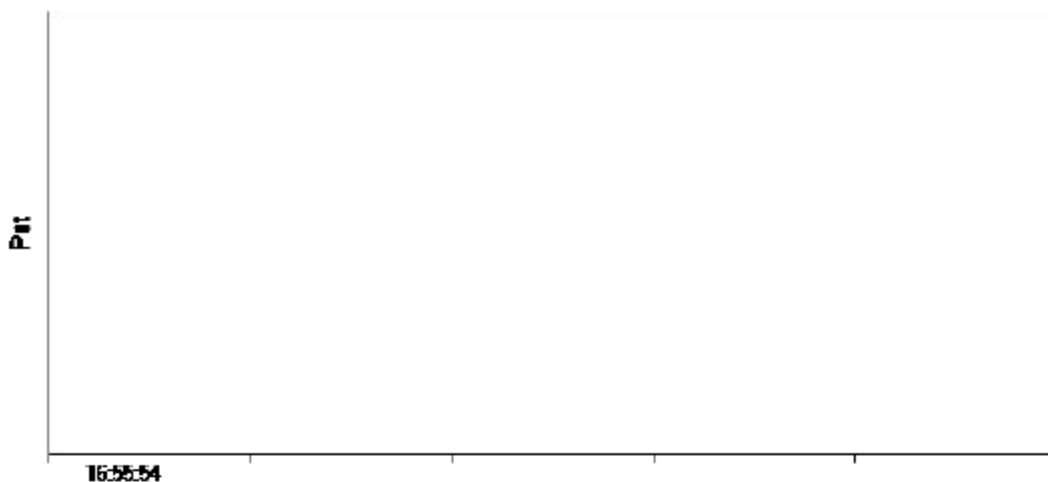
9.4 Test Results

Temperature:	23 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Mode	1(the worst data)
Remark:	N/A	Test results	PASS

Load Power : 0.001 kW **Power Factor:**0.250
Load Current : 0.018 Arms **Crest Factor:**1.167
Nominal Voltage : 231.42 Vrms

Test Result: Pass **Status:** Test Completed

Psti and limit line European Limits



Result:

T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass

10. IMMUNITY TEST OF GENERAL THE PERFORMANCE CRITERIA

Product Standard	ETSI EN 301 489-1
<p>The performance criteria are used to take a decision on whether a radio equipment passes or fails immunity tests.</p> <p>For the purpose of the present document two categories of performance criteria apply:</p> <ul style="list-style-type: none"> •Performance criteria for continuous phenomena. •Performance criteria for transient phenomena. <p>NOTE: Normally, the performance criteria depends upon the type of radio equipment and/or its intended application. Thus, the present document only contains general performance criteria commonly used for the assessment of radio equipment.</p>	
Performance criteria for continuous phenomena	<p>During the test, the equipment shall:</p> <ul style="list-style-type: none"> •continue to operate as intended; •not unintentionally transmit; •not unintentionally change its operating state; •not unintentionally change critical stored data.
Performance criteria for transient phenomena	<p>For all ports and transient phenomena with the exception described below, the following applies:</p> <ul style="list-style-type: none"> •The application of the transient phenomena shall not result in a change of the mode of operation (e.g. unintended transmission) or the loss of critical stored data. •After application of the transient phenomena, the equipment shall operate as intended. <p>For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies:</p> <ul style="list-style-type: none"> •For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be otherwise restored. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. •For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

According To EN 301489 -17standard, The General Performance Criteria As Following:

General performance criteria

The performance criteria are:

- performance criteria A for immunity tests with phenomena of a continuous nature;
- performance criteria B for immunity tests with phenomena of a transient nature;
- performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following clauses.

Table 1: Performance criteria

Criteria	During the test	After test (i.e. as a result of the application of the test)
A	Shall operate as intended. (see note). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of critical stored data.
B	May be loss of function.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no loss of critical stored data.
C	May be loss of function.	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no loss of critical stored data.
NOTE: Operate as intended during the test allows a level of degradation in accordance with clause 6.2.2.		

Minimum performance level

For equipment that supports a PER or FER, the minimum performance level shall be a PER or FER less than or equal to 10 %.

For equipment that does not support a PER or a FER, the minimum performance level shall be no loss of the wireless transmission function needed for the intended use of the equipment.

Performance criteria for Continuous phenomena applied to Transmitters (CT)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or NotACK acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission

resulting from the application of the test is correctly interpreted.

Performance criteria for Transient phenomena applied to Transmitters (TT)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Continuous phenomena applied to Receivers (CR)

The performance criteria A shall apply.

Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

Performance criteria for Transient phenomena applied to Receivers (TR)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply.

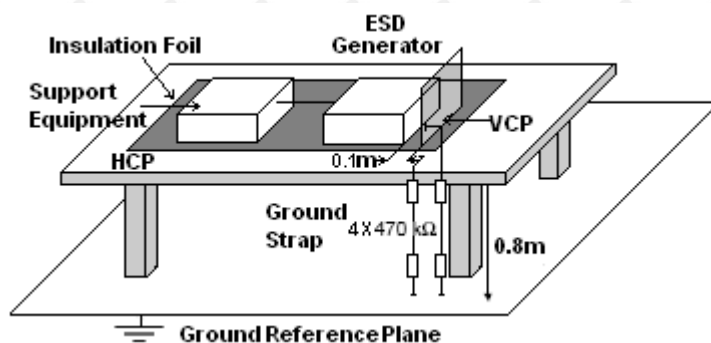
Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

11. ELECTROSTATIC DISCHARGE (ESD)

11.1 Test Specification

Test Port	: Enclosure port
Discharge Impedance	: 330 ohm / 150 pF
Discharge Mode	: Single Discharge
Discharge Period	: one second between each discharge

11.2 Block Diagram of Test Setup



11.3 Test Procedure

- Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.
- The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
- The time interval between two successive single discharges was at least 1 second.
- The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.
- Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
- Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.
- At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the Product. The ESD generator was positioned vertically at a distance of 0.1 meters from the Product with the discharge electrode touching the HCP.
- At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the Product were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the Product.

11.4 Test Results

Temperature :	23℃	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Discharge Method	Discharge Position	Voltage (±kV)	Min. No. of Discharge per polarity (Each Point)	Performance Criterion
Contact Discharge	Conductive Surfaces	4	10	A
	Indirect Discharge HCP	4	10	A
	Indirect Discharge VCP	4	10	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	8	10	A

Note: A: No performance degradation during test.

B: During the test, the EUT shut down, after the test, it reset by itself.

C: During the test, the EUT shut down, after the test, it reset by user.

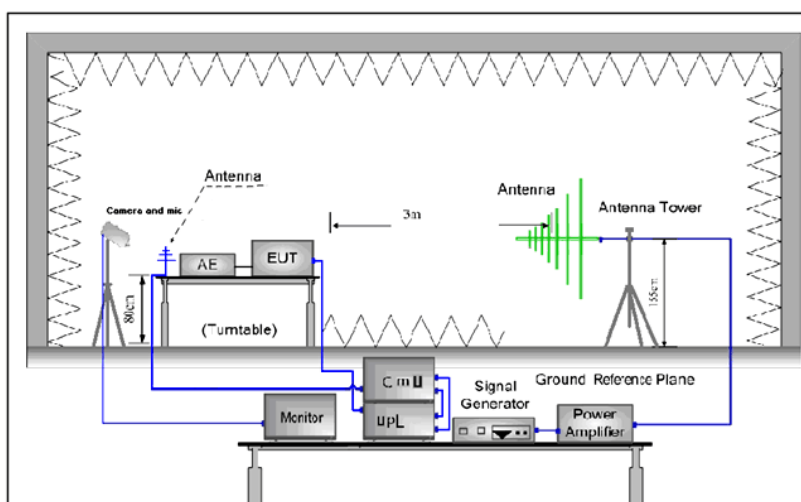
12. CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES(RS)

12.1 Test Specification

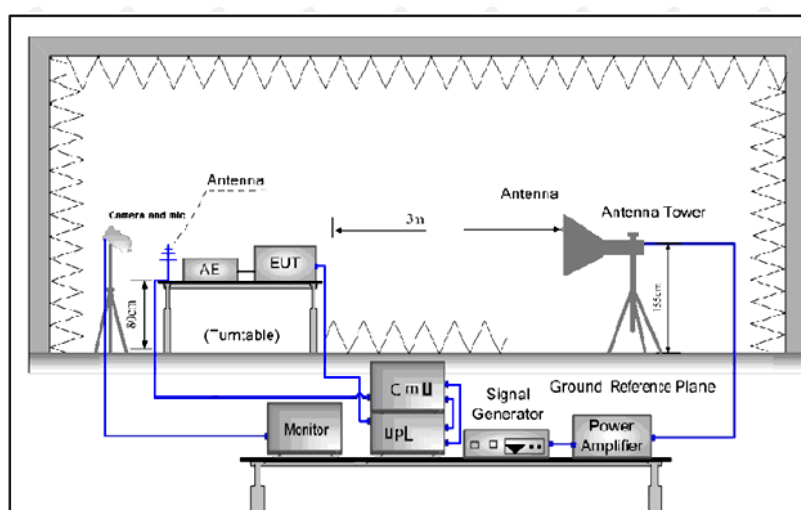
Test Port	: Enclosure port
Step Size	: 1%
Modulation	: 1kHz, 80% AM
Dwell Time	: 1 second
Polarization	: Horizontal & Vertical

12.2 Block Diagram of Test Setup

Below 1GHz:



Above 1GHz:



12.3 Test Procedure

- The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3 meters from the Product.
- The frequency range is swept from 80MHz to 6000MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave, and the step size was 1%.
- The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to be able to respond, but should not exceed 5 s at each of the frequencies during the scan.
- The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.
- For Broadcast reception function: Group 2 not apply in this test.

12.4 Test Results

Temperature :	23℃	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Frequency	Position	Field Strength (V/m)	Performance Criterion
80 - 6000MHz	Front, Right, Back, Left, Up, Down	3	A
Note: A: No performance degradation during test.			

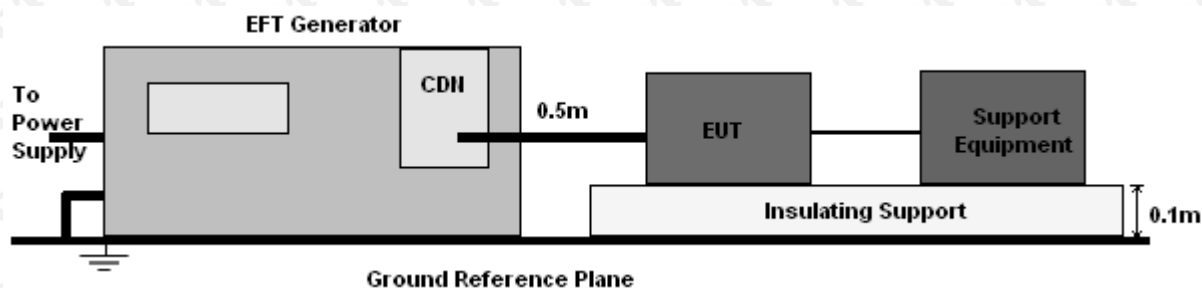
13. ELECTRICAL FAST TRANSIENTS/BURST (EFT)

13.1 Test Specification

Test Port	: input a.c. power port
Impulse Frequency	: 5 kHz
Impulse Wave-shape	: 5/50 ns
Burst Duration	: 15 ms
Burst Period	: 300 ms
Test Duration	: 2 minutes per polarity

13.2 Block Diagram of EUT Test Setup

For input a.c.power port:



13.3 Test Procedure

- The Product and support units were located on a non-conductive table above ground reference plane.
- A 0.5m-long power cord was attached to Product during the test.

13.4 Test Results

Temperature :	23 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Coupling	Voltage (kV)	Polarity	Performance Criterion
AC Mains L-N	1.0	±	A
Signal Line	0.5	±	N/A
LAN Ports	0.5	±	N/A
DC Ports	0.5	±	N/A

Note: A: No performance degradation during test.

B: During the test, the EUT shut down, after the test, it reset by itself.

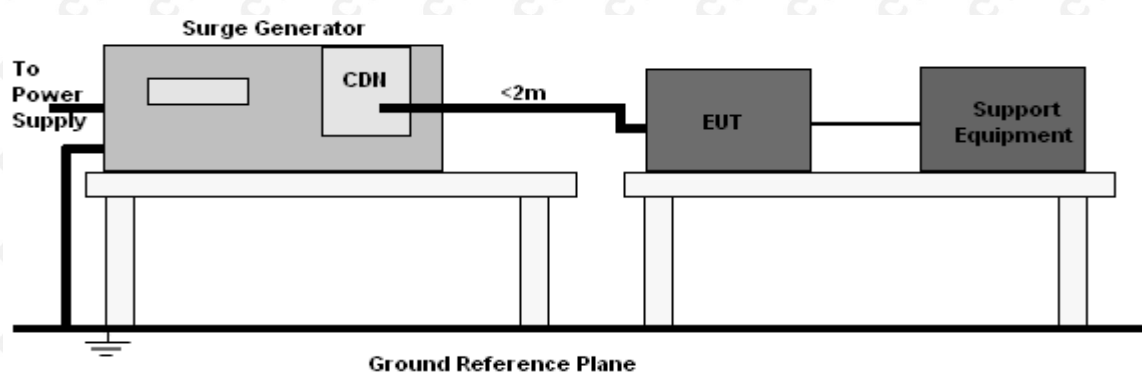
C: During the test, the EUT shut down, after the test, it reset by user.

14. SURGES IMMUNITY TEST

14.1 Test Specification

Test Port	: input a.c. power port
Wave-Shape	: Open Circuit Voltage - 1.2 / 50 us Short Circuit Current - 8 / 20 us
Pulse Repetition Rate	: 1 pulse / min.
Phase Angle	: 0° / 90° / 180° / 270°
Test Events	: 5 pulses (positive & negative) for each polarity

14.2 Block Diagram of EUT Test Setup



14.3 Test Procedure

- The surge is to be applied to the Product power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave.
- The power cord between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter). Interconnection line between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter).

14.4 Test Result

Temperature :	23 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Coupling Line	Voltage (kV)	Polarity	Performance Criterion
L - N	1	±	A
L - PE	2	±	N/A
N - PE	2	±	N/A
LAN Ports	±1	/	N/A
Note: A: No performance degradation during test. B: During the test, the EUT shut down, after the test, it reset by itself. C: During the test, the EUT shut down, after the test, it reset by user.			

Remark: No test shall be required where normal functioning cannot be achieved because of the impact of the CDN on the Product.

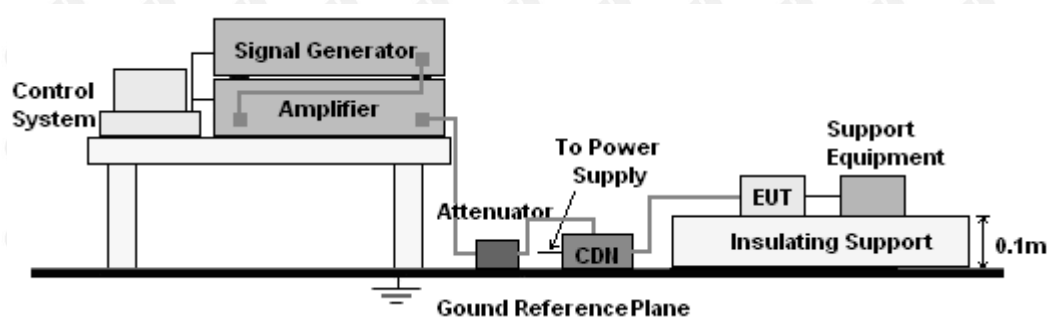
15. CONTINUOUS INDUCED RF DISTURBANCES (CS)

15.1 Test Specification

Test Port	: input a.c.power port
Step Size	: 1%
Modulation	: 1kHz, 80% AM
Dwell Time	: 1 second

15.2 Block Diagram of EUT Test Setup

For input a.c. power port:



15.3 Test Procedure

For input a.c.power port:

- The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
- The frequency range is swept from 150 kHz to 10MHz, 10MHz to 30MHz, 30MHz to 80MHz with the signal 80% amplitude modulated with a 1 kHz sine wave, and the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

15.4 Test Result

Temperature :	23 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Inject Line	Frequency (MHz)	Voltage Level (V r.m.s.)	Performance Criterion
ac. port	0.15 - 80	3	A
LAN Ports	0.15 - 80	3	N/A

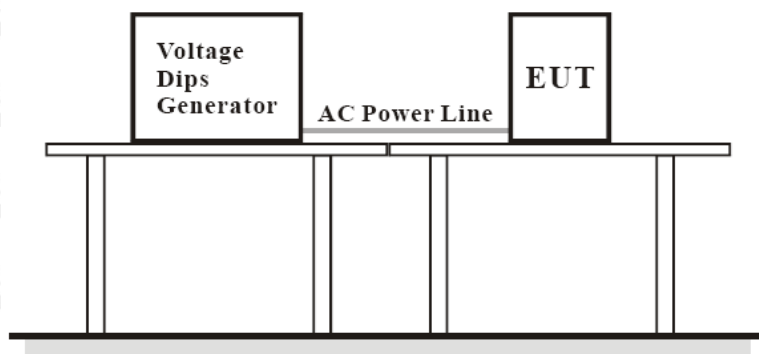
Note: A: No performance degradation during test.

16. VOLTAGE DIPS AND INTERRUPTIONS (DIPS)

16.1 Test Specification

Test Port	: input a.c. power port
Phase Angle	: 0°, 180°
Test cycle	: 3 times

16.2 Block Diagram of EUT Test Setup



16.3 Test Procedure

- The Product and support units were located on a non-conductive table above ground floor.
- Set the parameter of tests and then perform the test software of test simulator.
- Conditions changes to occur at 0 degree crossover point of the voltage waveform.

16.4 Test Result

Temperature :	23 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Mode :	Mode1

Voltage Dips:			
Test Level % U_T	Voltage dips in % U_T	Duration (ms)	Performance Criterion
0	100	10	A
0	100	20	A
70	30	500	A
Voltage Interruptions:			
0	100	5000	C
Note: A: No performance degradation during test. B: During the test, the EUT shut down, after the test, it reset by itself. C: During the test, the EUT shut down, after the test, it reset by user.			

17. EUT PHOTOGRAPHS

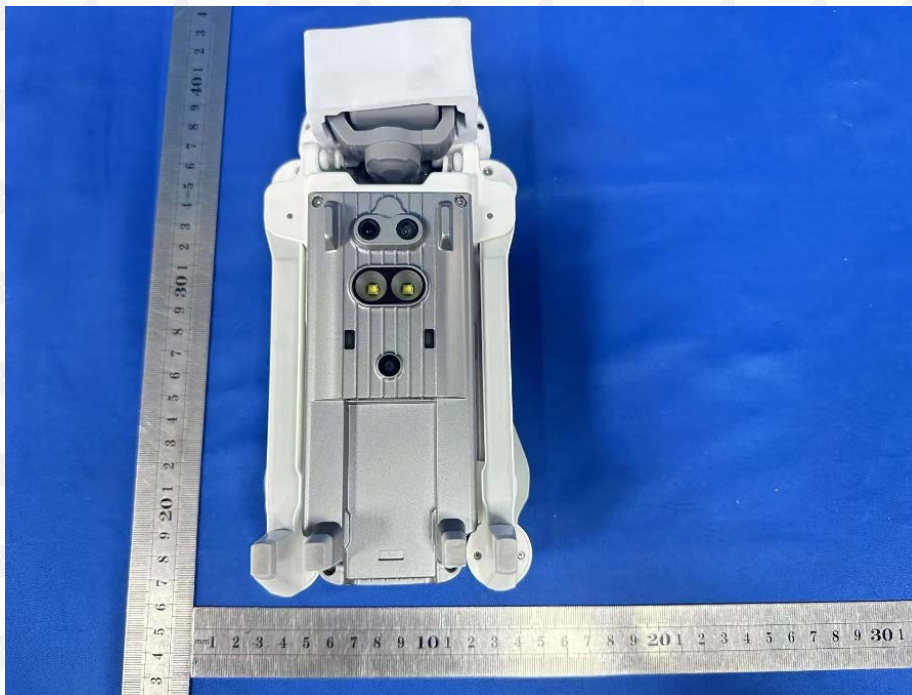
External Photos EUT Photo 1



EUT Photo 2



EUT Photo 3



EUT Photo 4



EUT Photo 5



EUT Photo 6



EUT Photo 7



EUT Photo 8



EUT Photo 9



EUT Photo 10



EUT Photo 11



Rechargeable Lithium-ion Battery
可充电锂离子电池
可充电锂离子蓄电池

Model No.: 充电器型号: DCS043

Nominal Charge Voltage/标称充电电压/额定电压: 7.6V

Nominal Capacity/标称容量/额定容量: 14.8V 400mAh

Rated Current/额定电流/额定功率: 800mA

POWER ON/OFF Press once and hold the power button for more than 2 seconds to power OFF the battery.

请勿长时间充电，如长时间一充，充电器将停止工作。

请勿长时间充电，如长时间一充，充电器将停止工作。

POWER CHECK: Short press once.

请勿长时间充电，如长时间一充，充电器将停止工作。

Made in China/中国制造/中国制造 Date: 2025/03/16

WARNING 警告

1. Only use approved charger.
仅使用认可的充电器。

2. Stop using if there are signs of swelling or leakage.
请勿在电池膨胀或泄漏时继续使用。

3. Do not disassemble, crush, reuse, short-circuit, or expose to fire.
禁止拆解、刺穿、弯曲、短路、重复使用或暴露在火中。

Authorized by HANGJIA PAK TECHNOLOGY CO., LTD.
由杭嘉帕克电子科技有限公司授权。

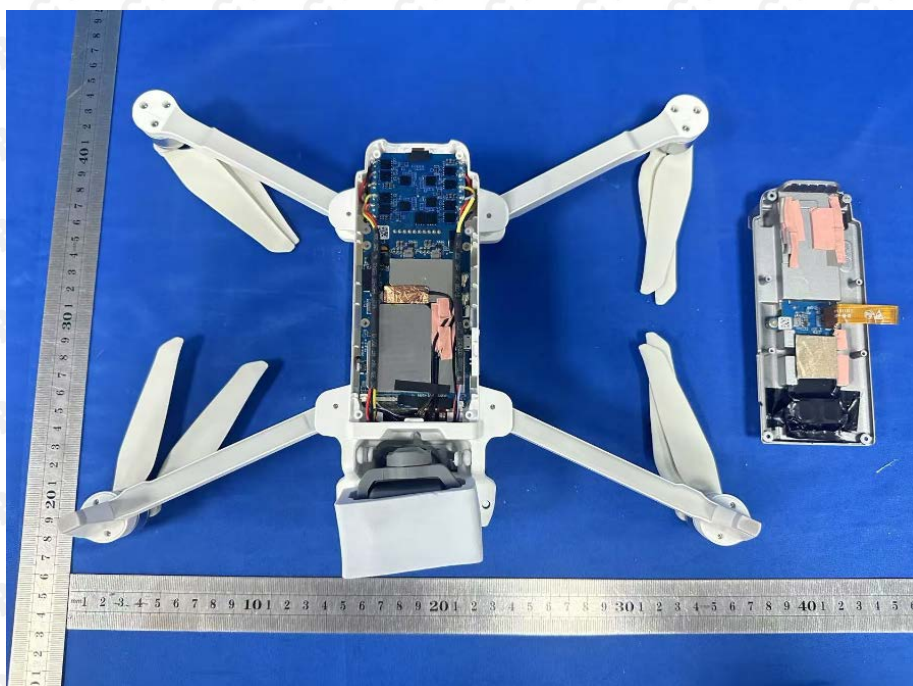
Manufacturer: Guan Energy Technology (Dongguan) Co., Ltd.
制造商：广东管能科技有限公司

SN: S0928300011559

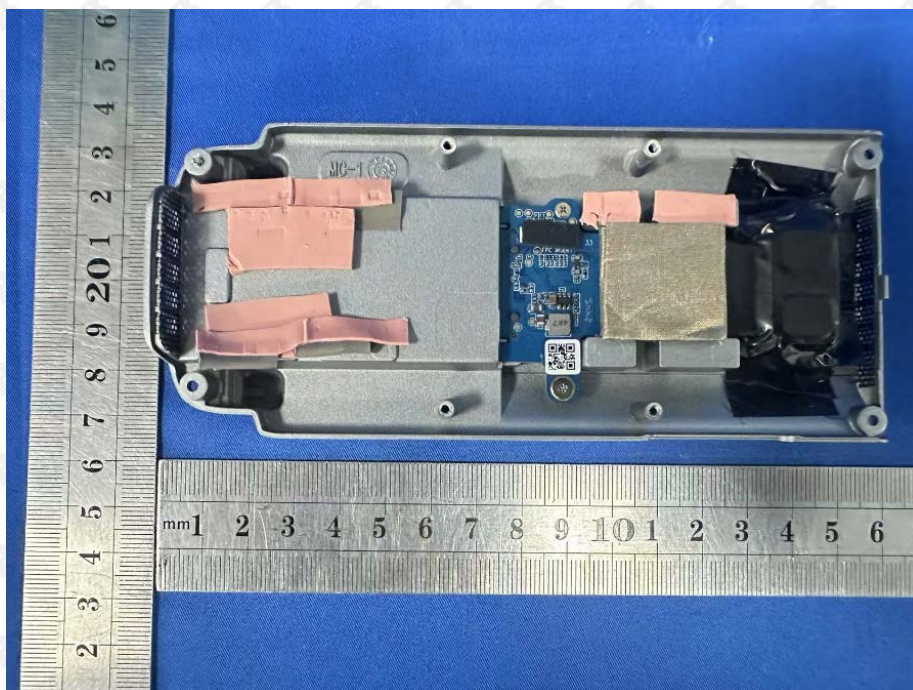
EUT Photo 3



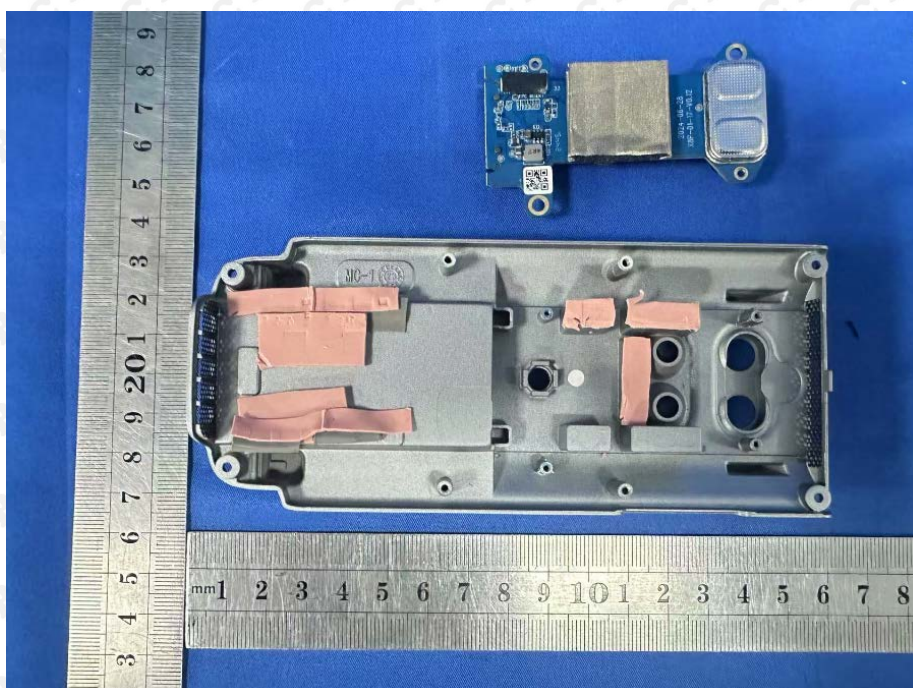
EUT Photo 4



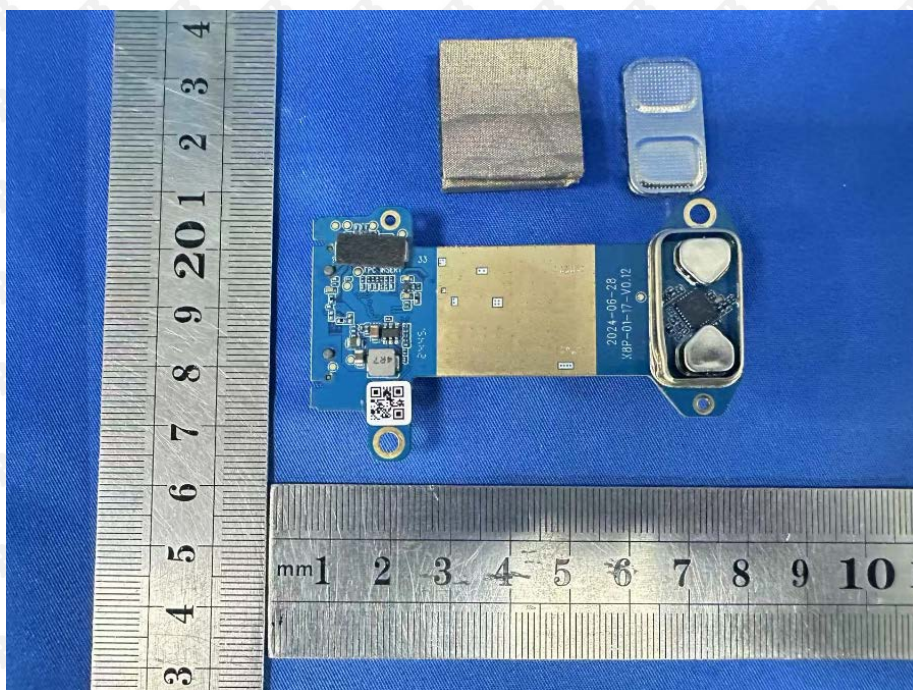
EUT Photo 5



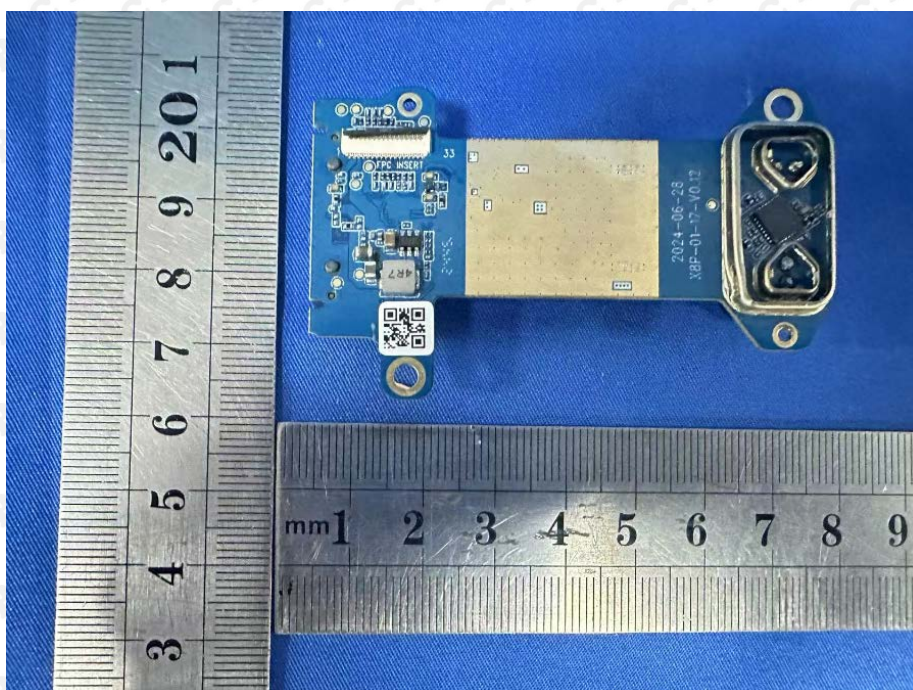
EUT Photo 6



EUT Photo 7



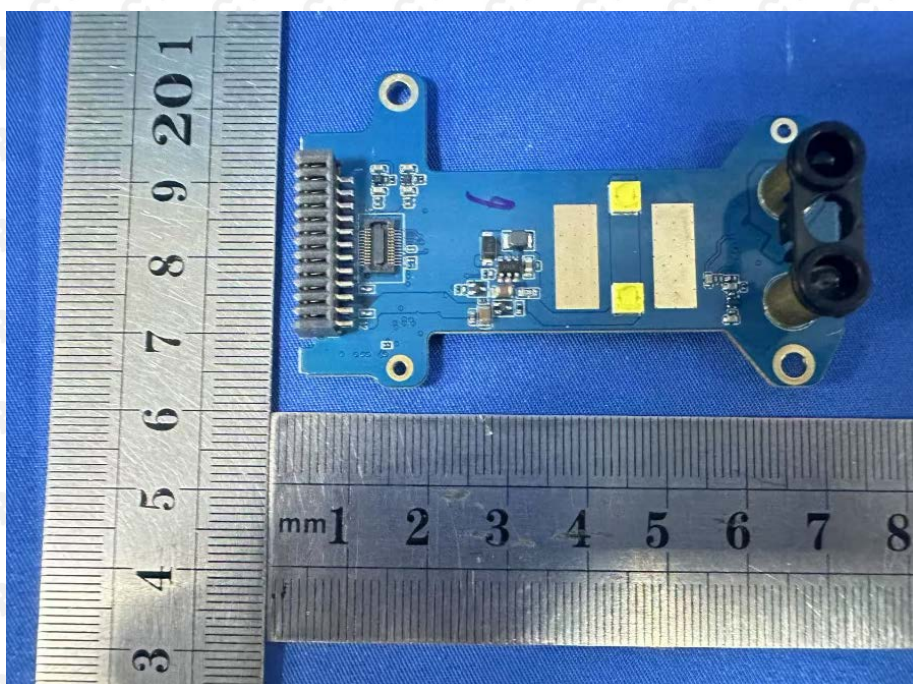
EUT Photo 8



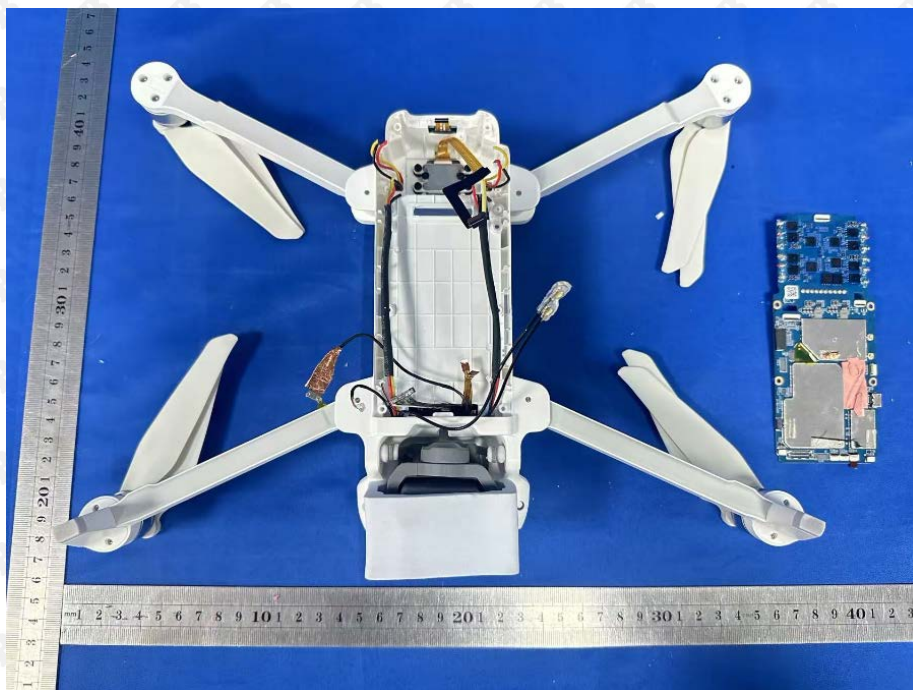
EUT Photo 9



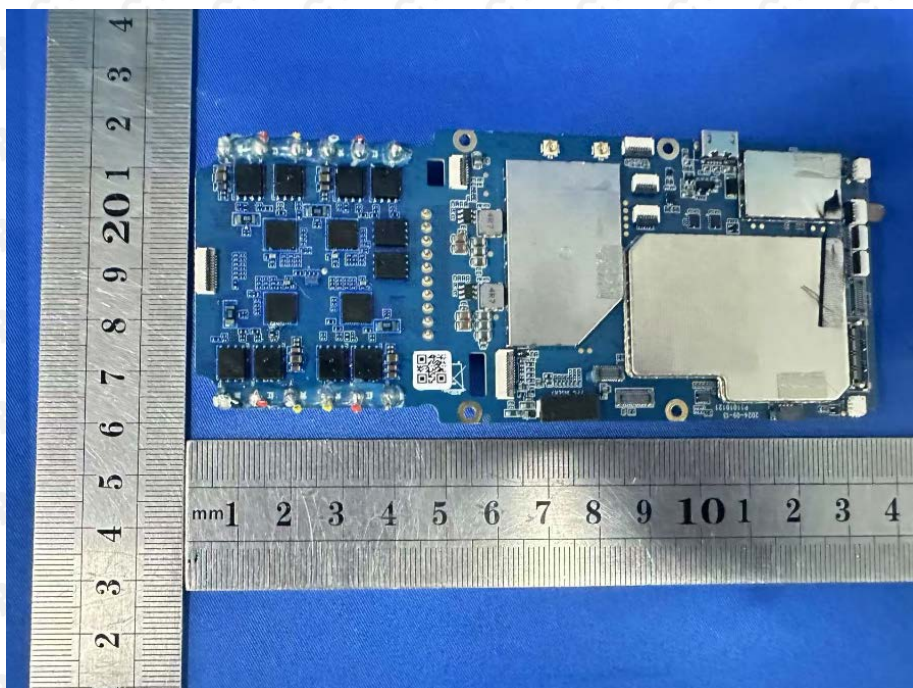
EUT Photo 10



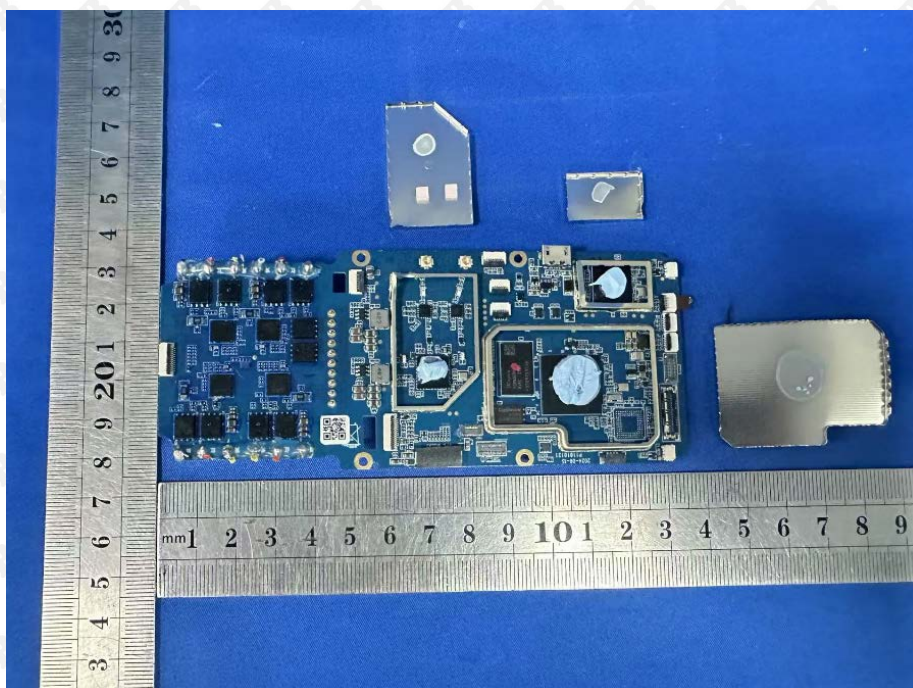
EUT Photo 11



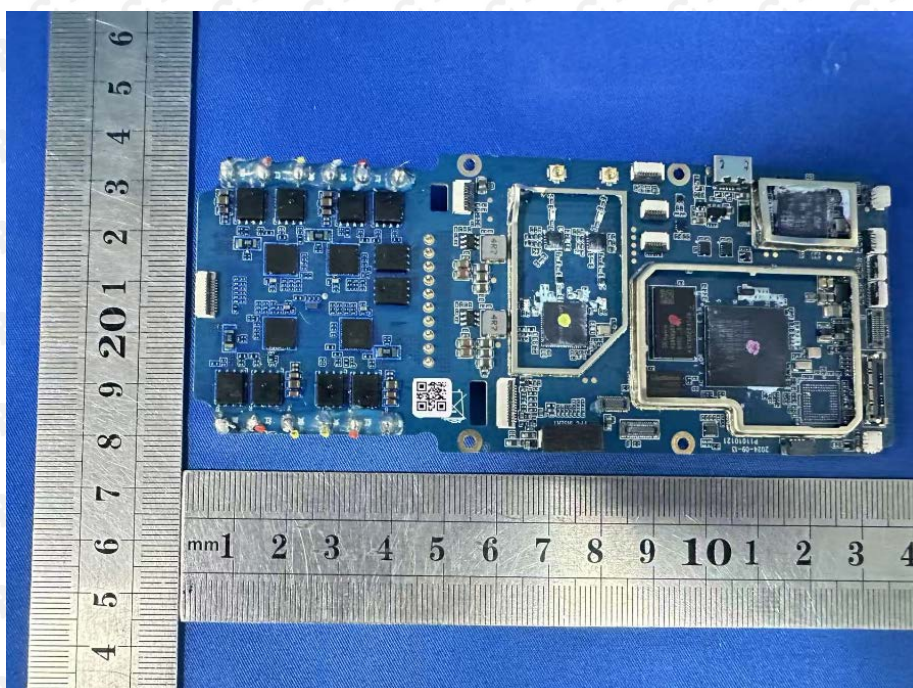
EUT Photo 12



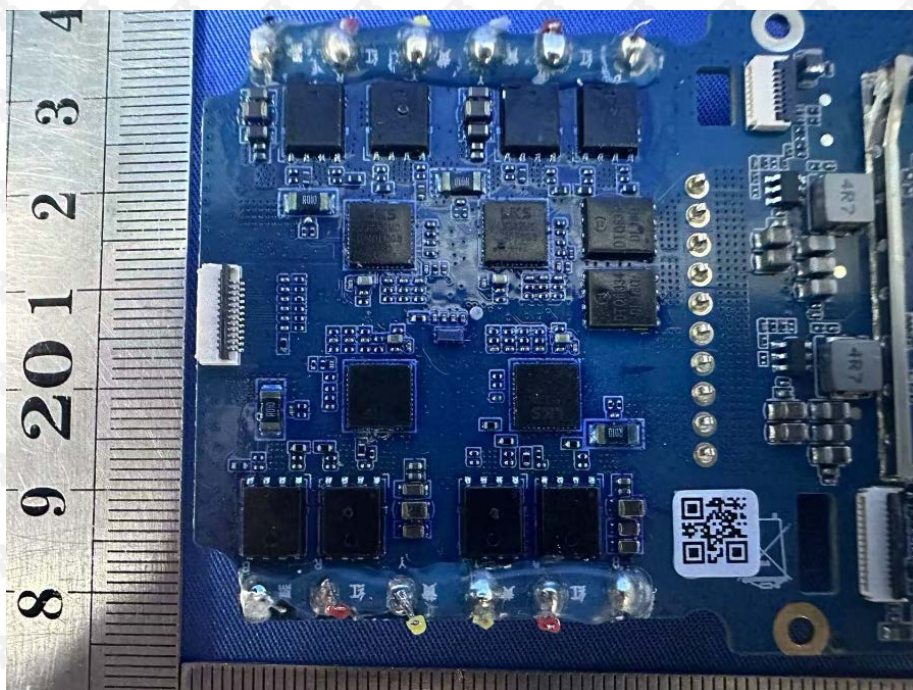
EUT Photo 13



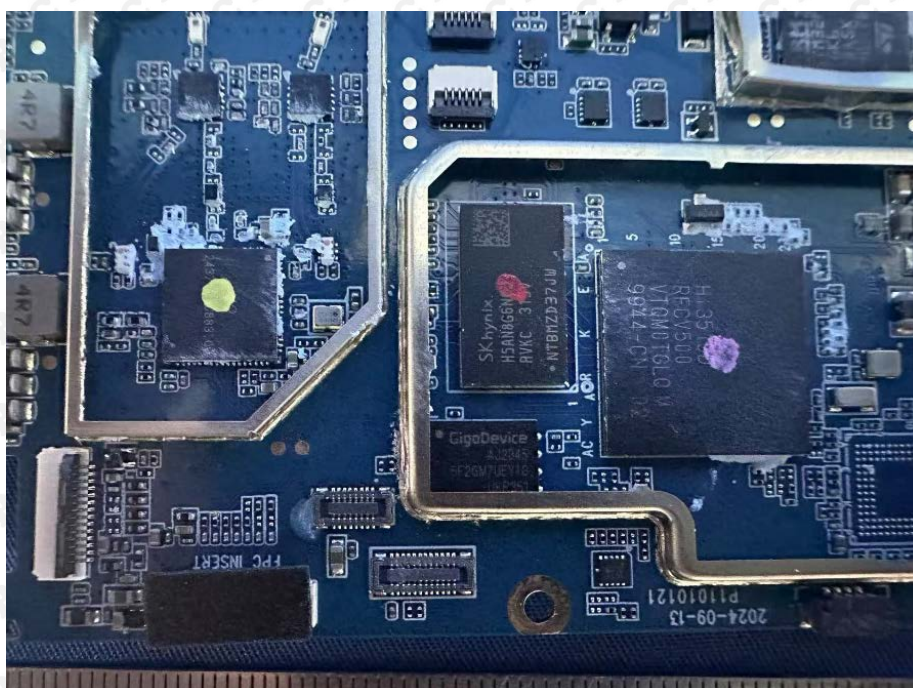
EUT Photo 14



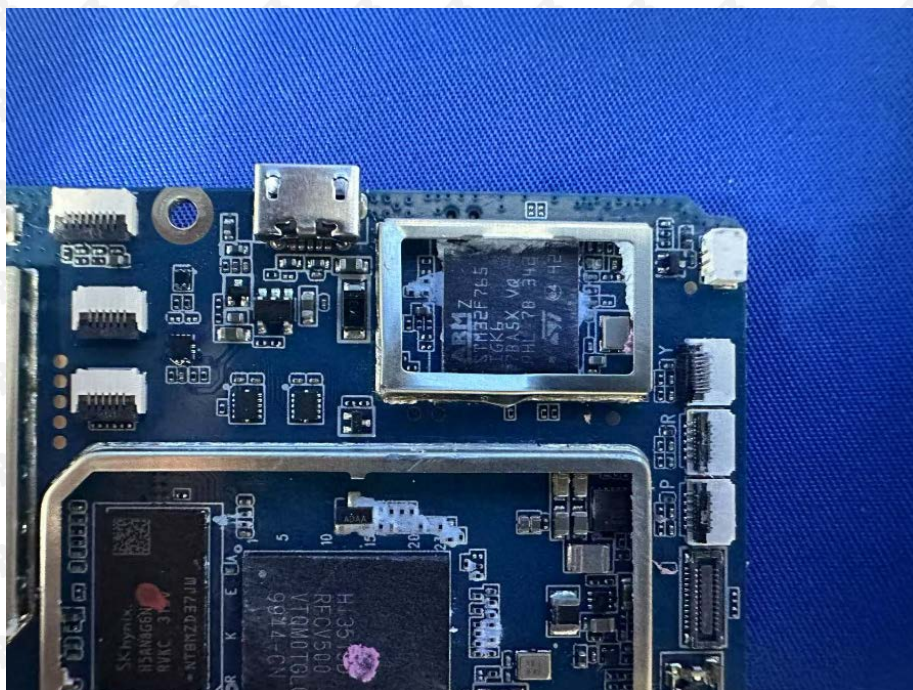
EUT Photo 15



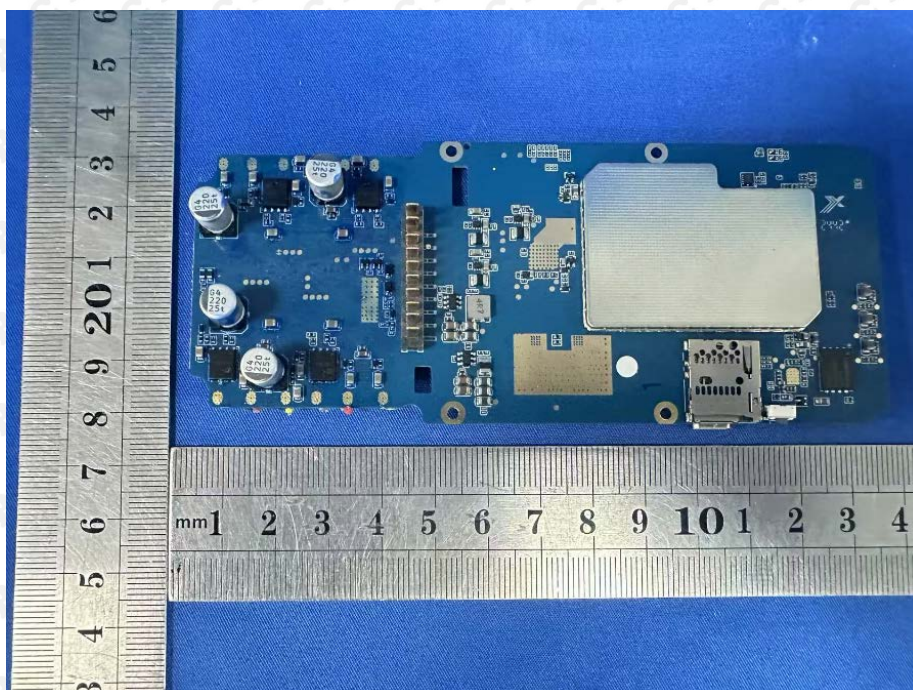
EUT Photo 16



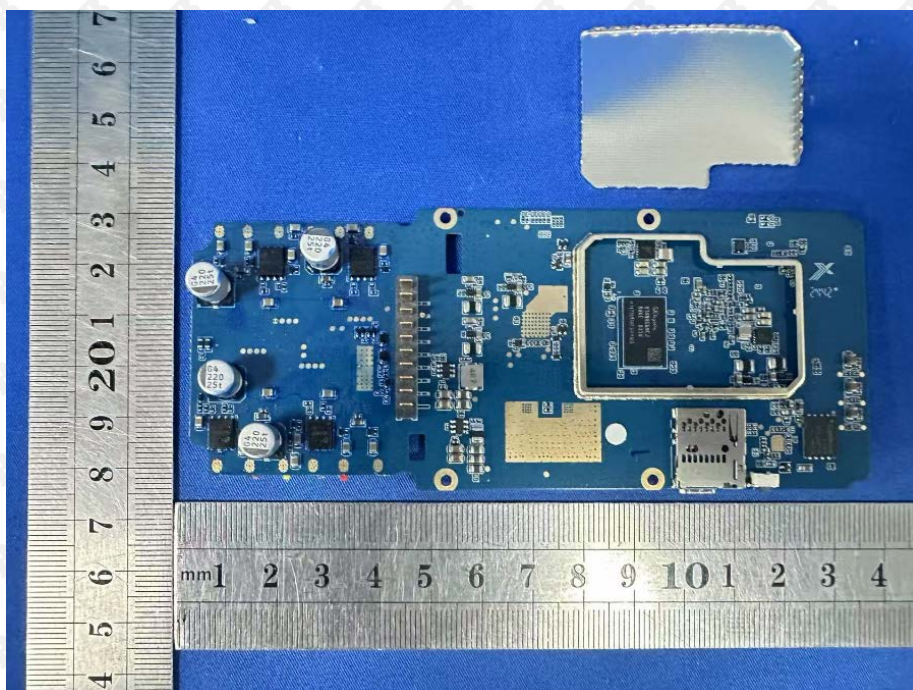
EUT Photo 17



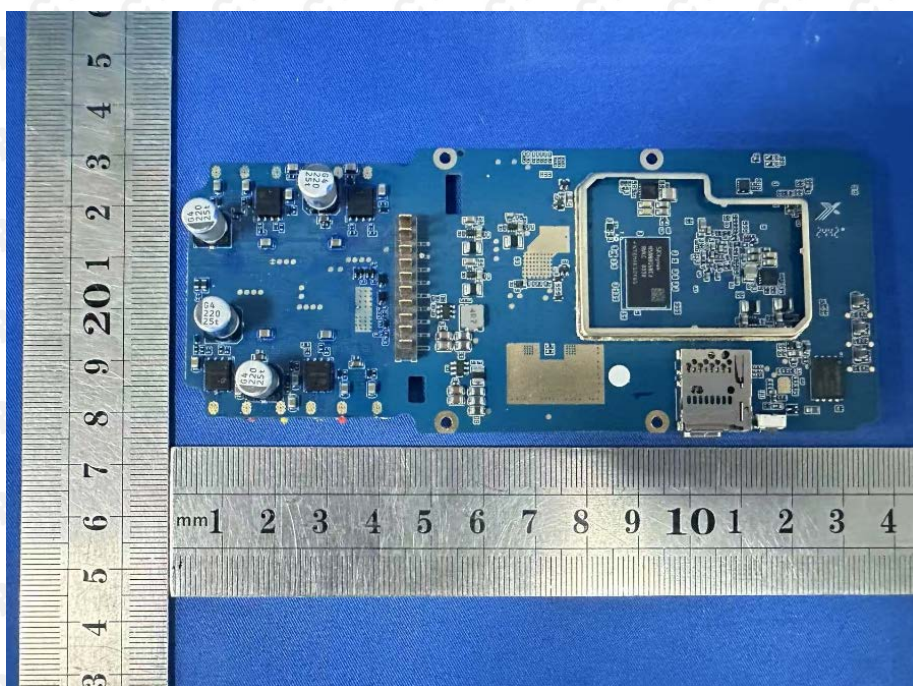
EUT Photo 18



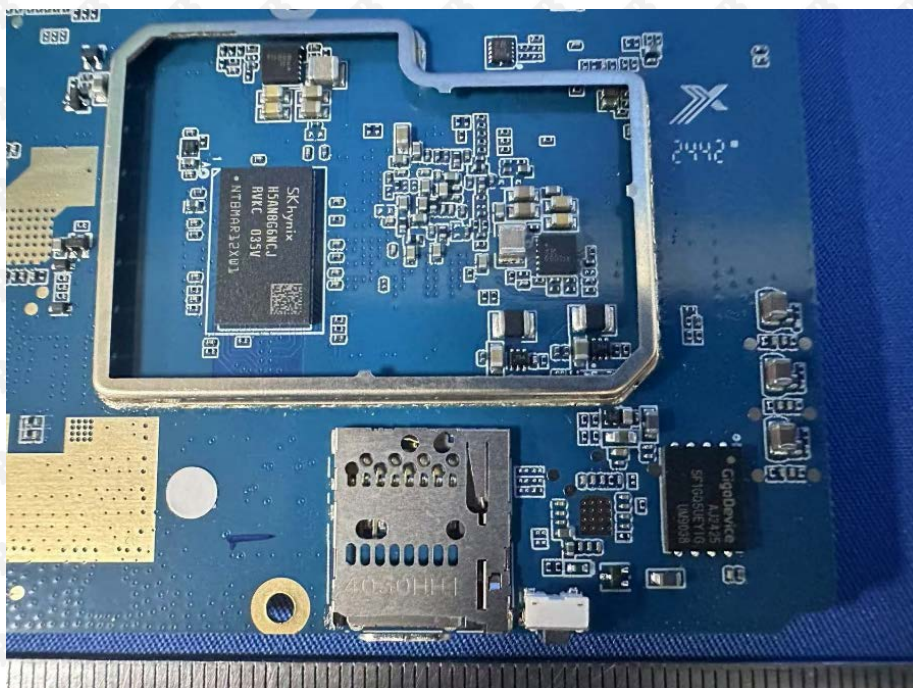
EUT Photo 19



EUT Photo 20



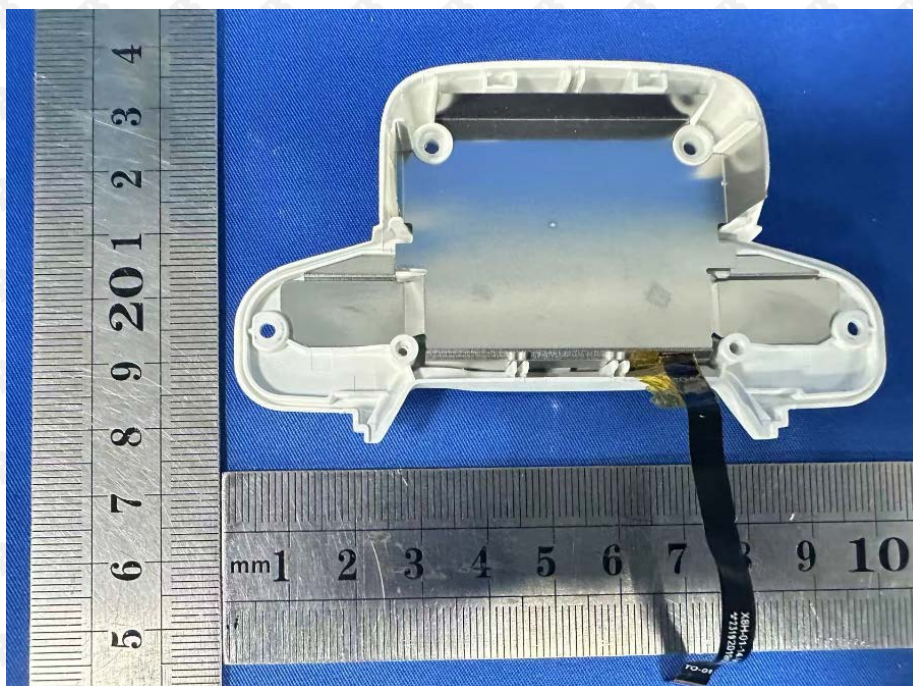
EUT Photo 21



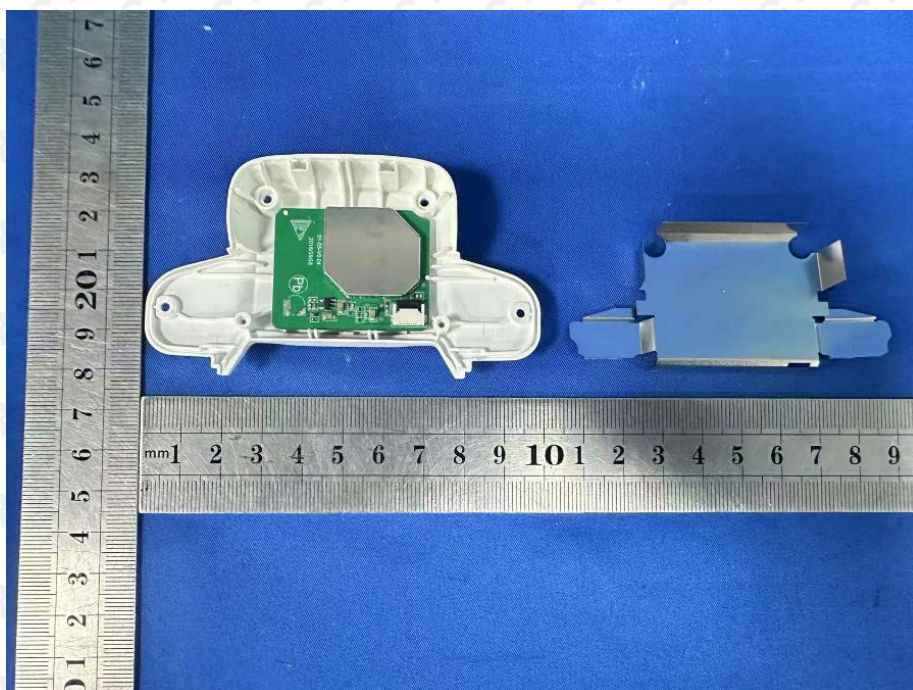
EUT Photo 22



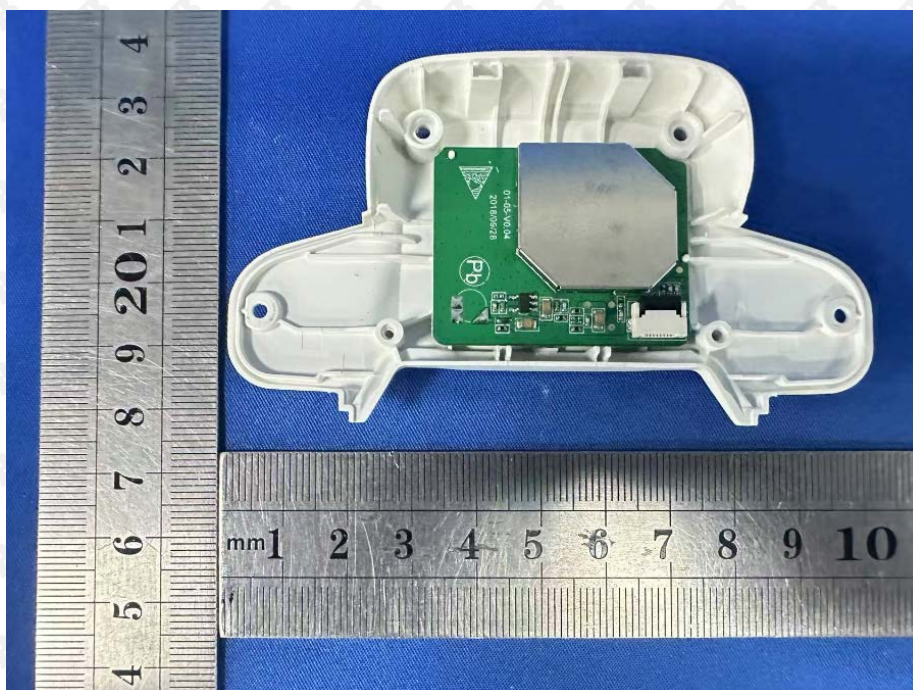
EUT Photo 23



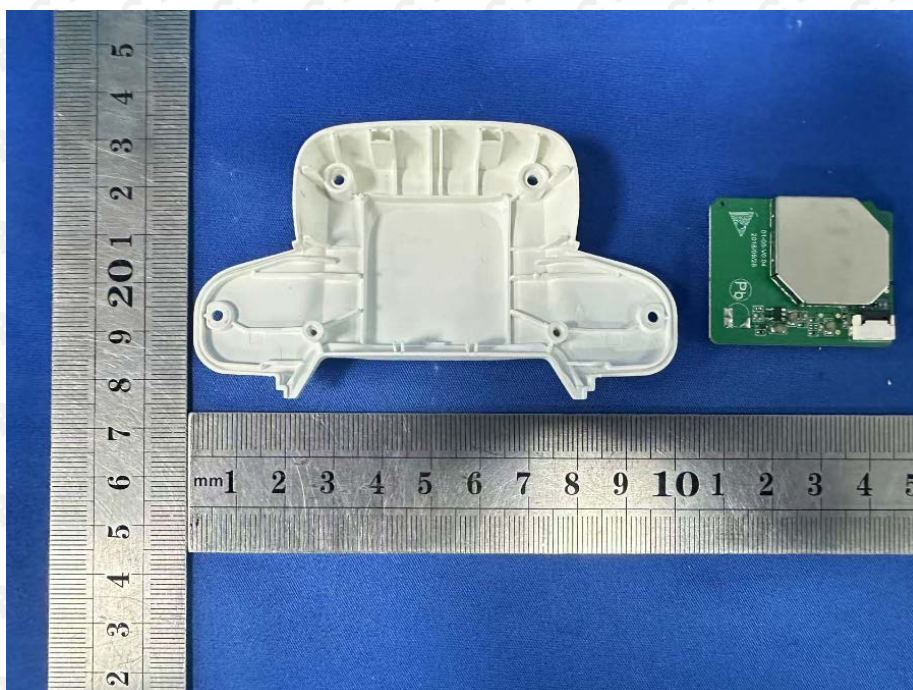
EUT Photo 24



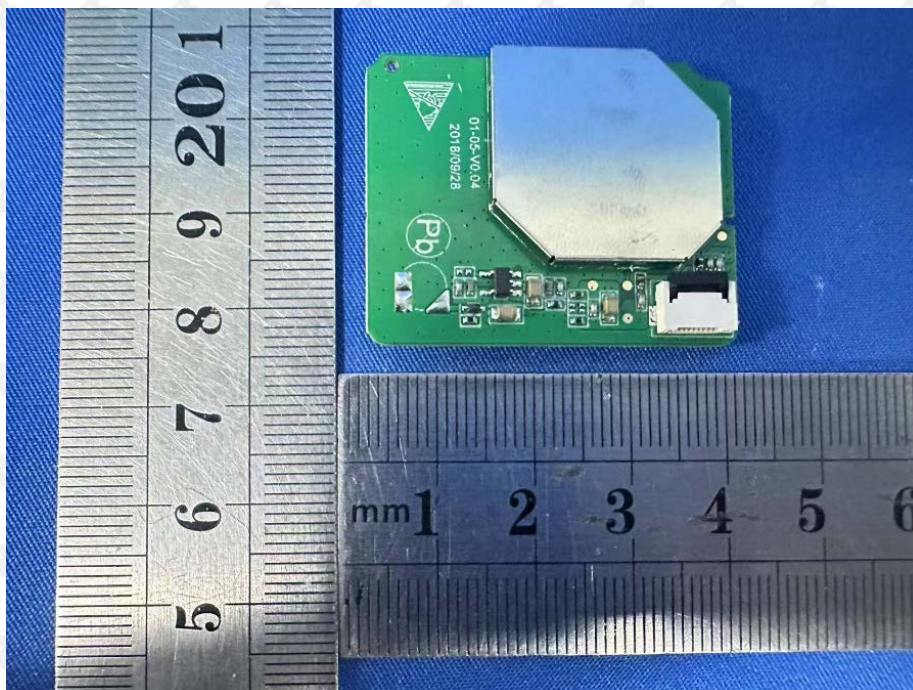
EUT Photo 25



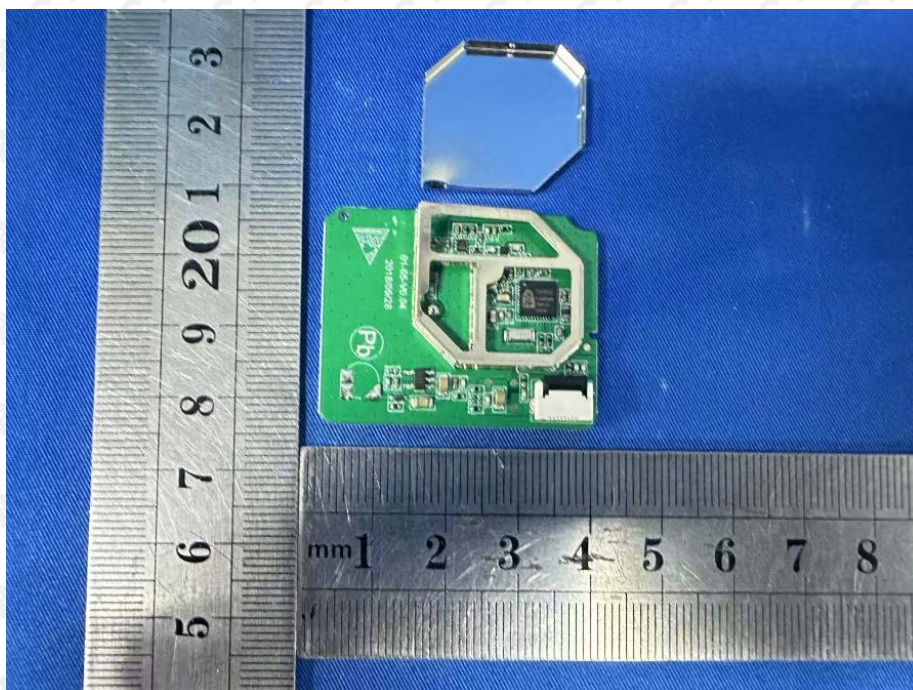
EUT Photo 26



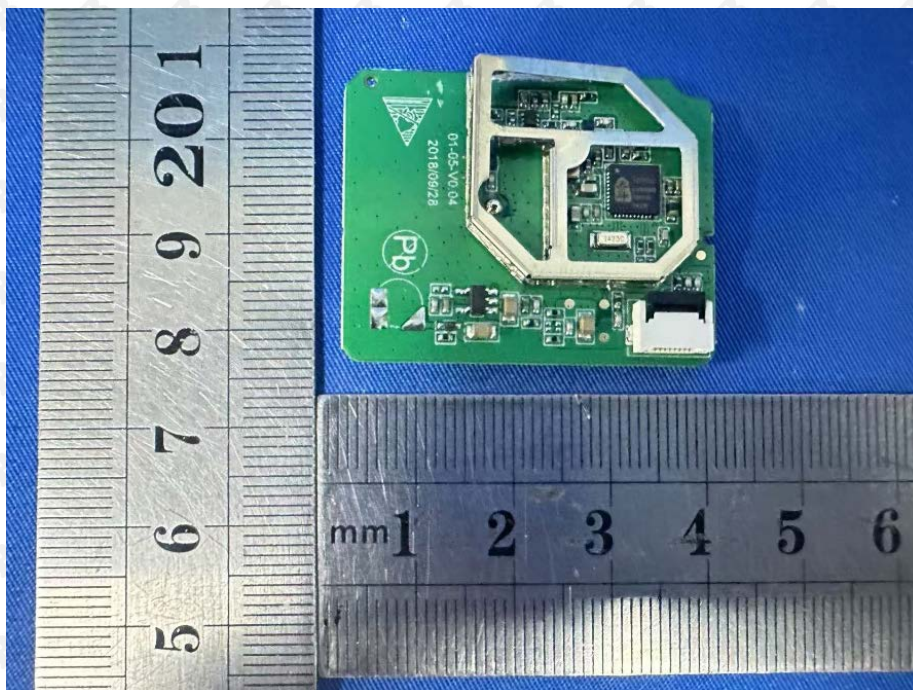
EUT Photo 27



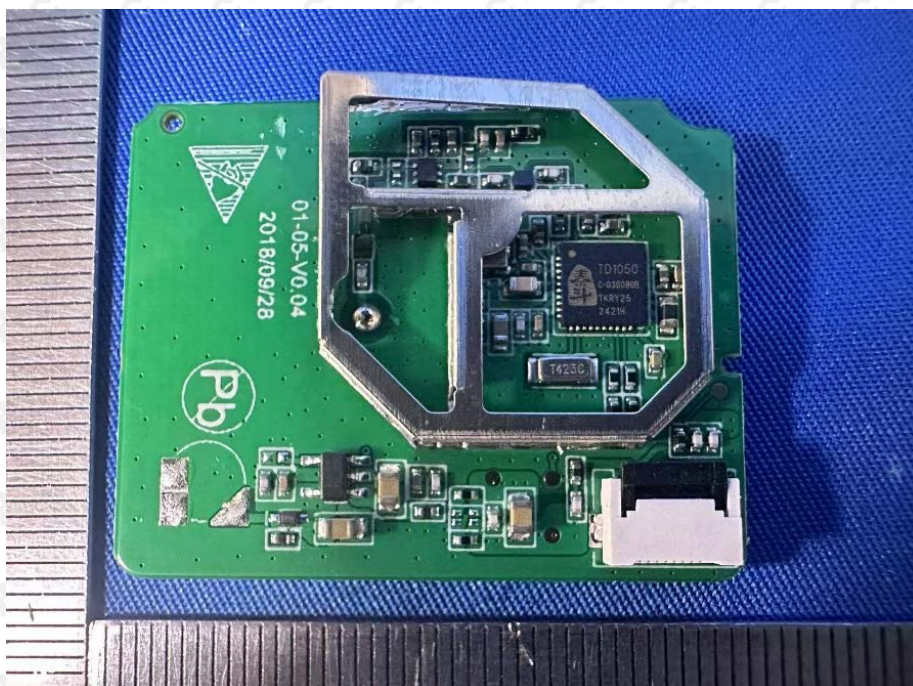
EUT Photo 28



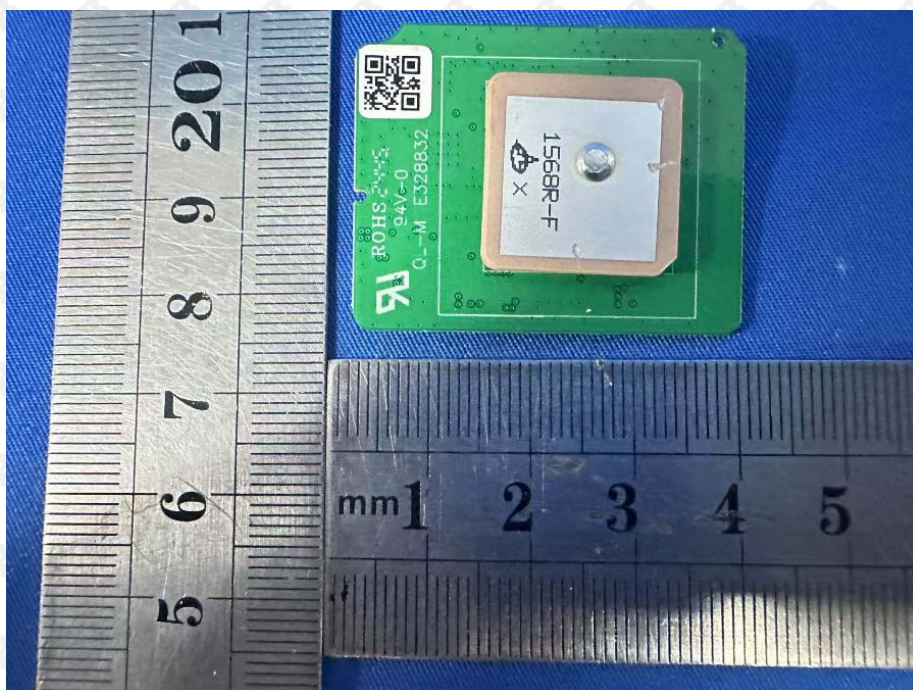
EUT Photo 29



EUT Photo 30



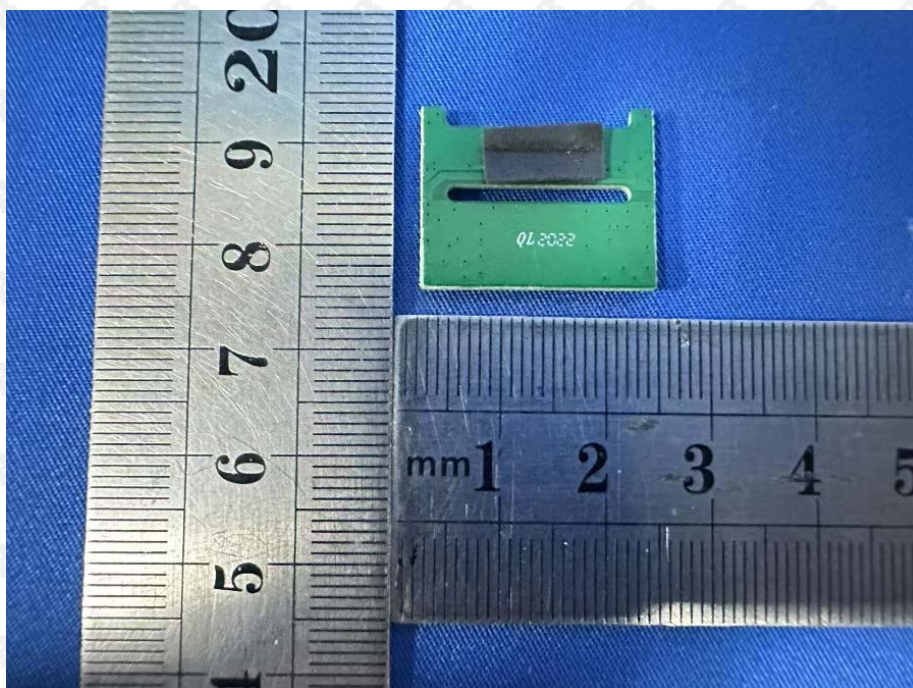
EUT Photo 31



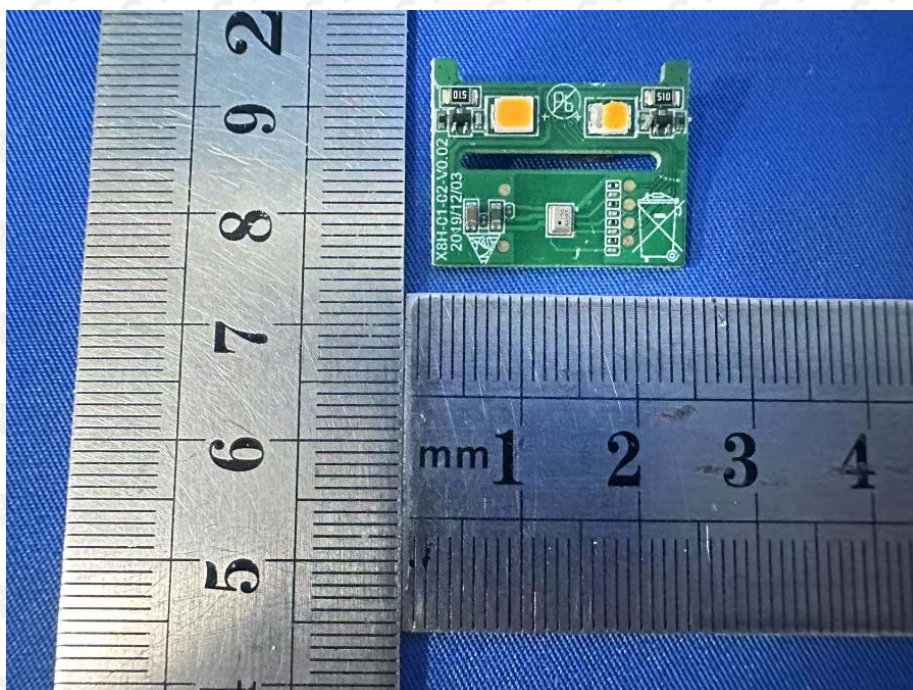
EUT Photo 32



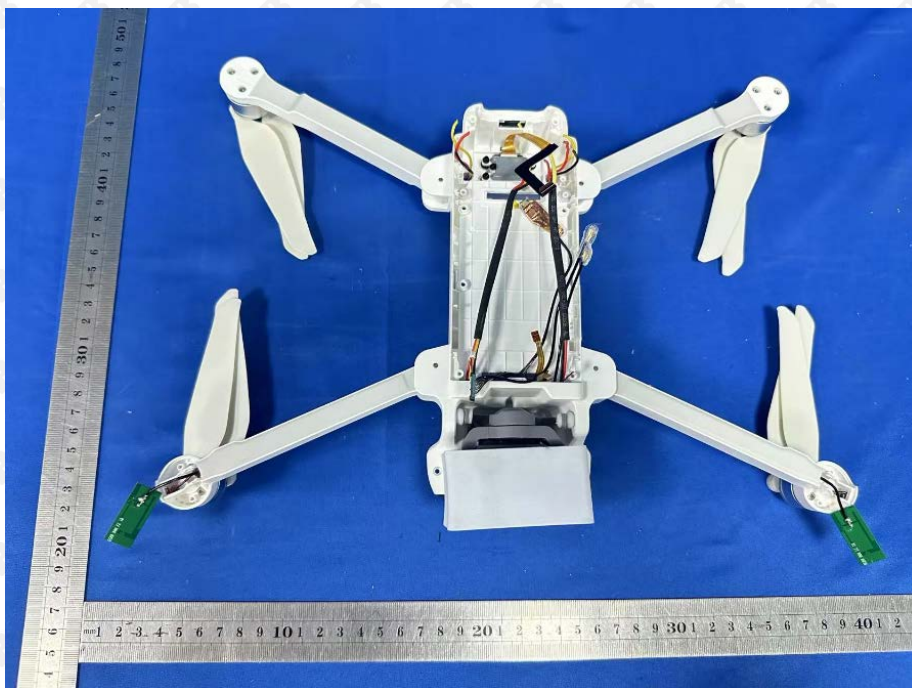
EUT Photo 33



EUT Photo 34



EUT Photo 35



18. EUT TEST SETUP PHOTOGRAPHS

Conducted emissions



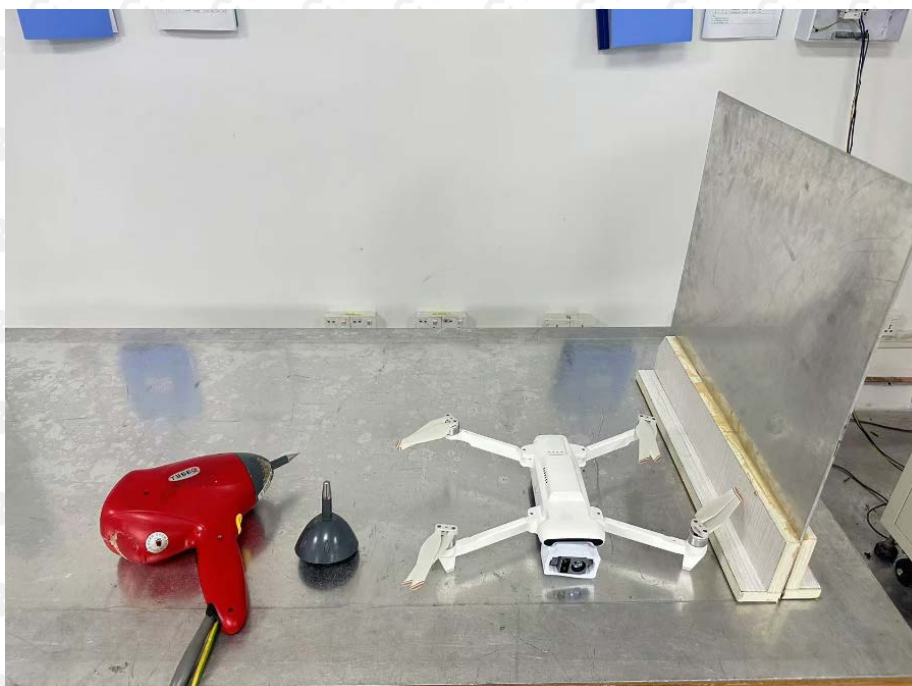
Radiated emissions below 1G



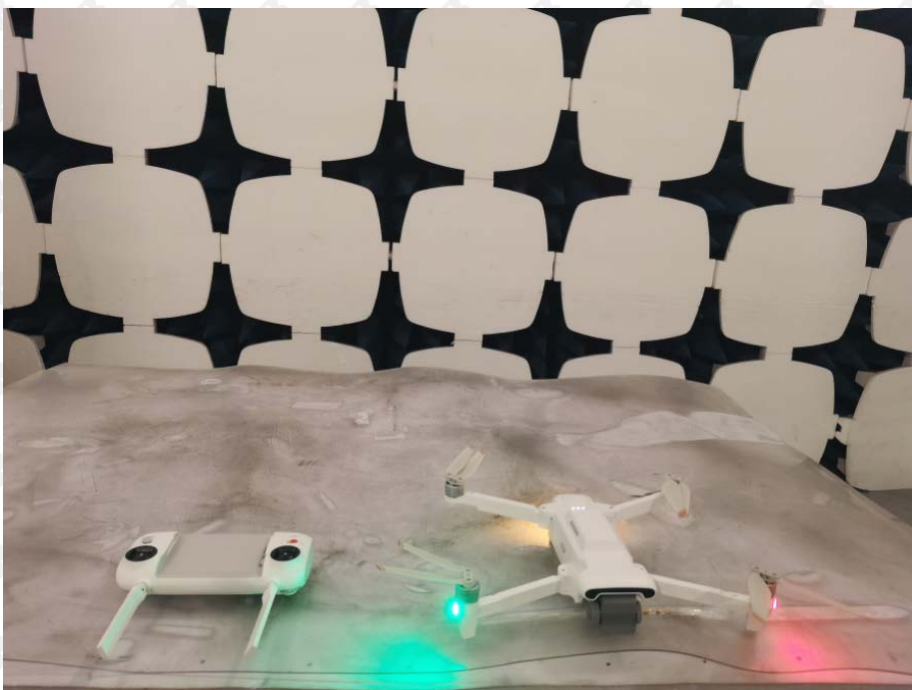
H/F



ESD



RS



CS



EFT



Surges



DIPS



***** END OF REPORT*****