



FCC Test Report

For

Applicant Name: Yifei Shenzhen Electronics Co., Ltd.
Address: The third floor of the 4-2# factory building in Tongfuyu Industrial Zone,
Aiqun Road, Shangwu Community, Shiyan Street, Bao'an District,
Shenzhen
EUT Name: RF Detector
Brand Name: N/A
Model Number: K19+
Serial Model Number: K19

Issued By

Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park,
Tantou Community, Songgang Street, Bao'an District, Shenzhen,
China

Report Number: BTF240802R00301
Test Standards: 47 CFR Part 15, Subpart B

Test Conclusion: Pass
FCC ID: 2BH4F-K19
Sample receipt date: 2024-08-02
Test Date: 2024-08-03 to 2024-08-06
Date of Issue: 2024-08-06

Test By: Xing.Chen
Xing.Chen / Tester

Prepared By: Chris Liu
Chris Liu / Project Engineer

Approved By: Ryan.CJ
Ryan.CJ / EMC Manager



Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.



Test Report Number: BTF240802R00301

Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-08-06	Original
Note: Once the revision has been made, then previous versions reports are invalid.		

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1 Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Product Information

2.1 Application Information

Company Name:	Yifei Shenzhen Electronics Co., Ltd.
Address:	The third floor of the 4-2# factory building in Tongfuyu Industrial Zone, Aiqun Road, Shangwu Community, Shiyan Street, Bao'an District, Shenzhen

2.2 Manufacturer Information

Company Name:	Shenzhen MingShang Industrial Technology Limited
Address:	3/F, building 35, Dalang tongfu industrial zone, Longhua district, Shenzhen

2.3 Factory Information

Company Name:	Shenzhen MingShang Industrial Technology Limited
Address:	3/F, building 35, Dalang tongfu industrial zone, Longhua district, Shenzhen

2.4 General Description of Equipment under Test (EUT)

EUT Name:	RF Detector
Test Model Number:	K19+
Serial model Number:	K19
Model difference description	Only the model name is different, everything else is the same.

2.5 Technical Information

Power Supply:	DC 5V 1A from type C or DC 3.7V from battery
Power Adaptor:	N/A
Frequency range	100MHz-8GHz

3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15, Subpart B: Unintentional Radiators

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
Radiated Emissions (30M - 1GHz)	±4.12dB
Radiated Emissions (above 1GHz)	1-6GHz: ±3.94dB 6-18GHz: ±4.16dB
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Conducted emissions on AC mains	47 CFR Part 15, Subpart B	15.107, Class B	Pass
Radiated emissions (Below 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass
Radiated emissions (Above 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass

4 Test Configuration

4.1 Test Equipment List

Conducted emissions on AC mains					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	/	/
Coaxial Switcher	SCHWARZBECK	CX210	CX210	/	/
V-LISN	SCHWARZBECK	NSLK 8127	01073	2023-11-16	2024-11-15
LISN	AFJ	LS16/110VAC	16010020076	2023-11-16	2024-11-15
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2023-11-16	2024-11-15

Radiated emissions (Below 1GHz)					
Radiated emissions (Above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	/	/
Preamplifier	SCHWARZBECK	BBV9744	00246	/	/
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	/	/
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	/	/
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	/	/
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	/	/
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-16	2024-11-15
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2023-11-16	2024-11-15
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2023-11-16	2024-11-15
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-11-16	2024-11-15
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2023-11-16	2024-11-15
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-16	2024-11-15

4.2 Test Auxiliary Equipment

Title	Manufacturer	Model No.	Serial No.
Adapter	Huawei	HW-059200CHQ	/

4.3 Test Modes

No.	Test Modes	Description
1	mode_1	Charging +RF detection + vibration + laser scanning
2	mode_2	Charging +GS detection + vibration + laser scanning

5 Emission Test Results (EMI)

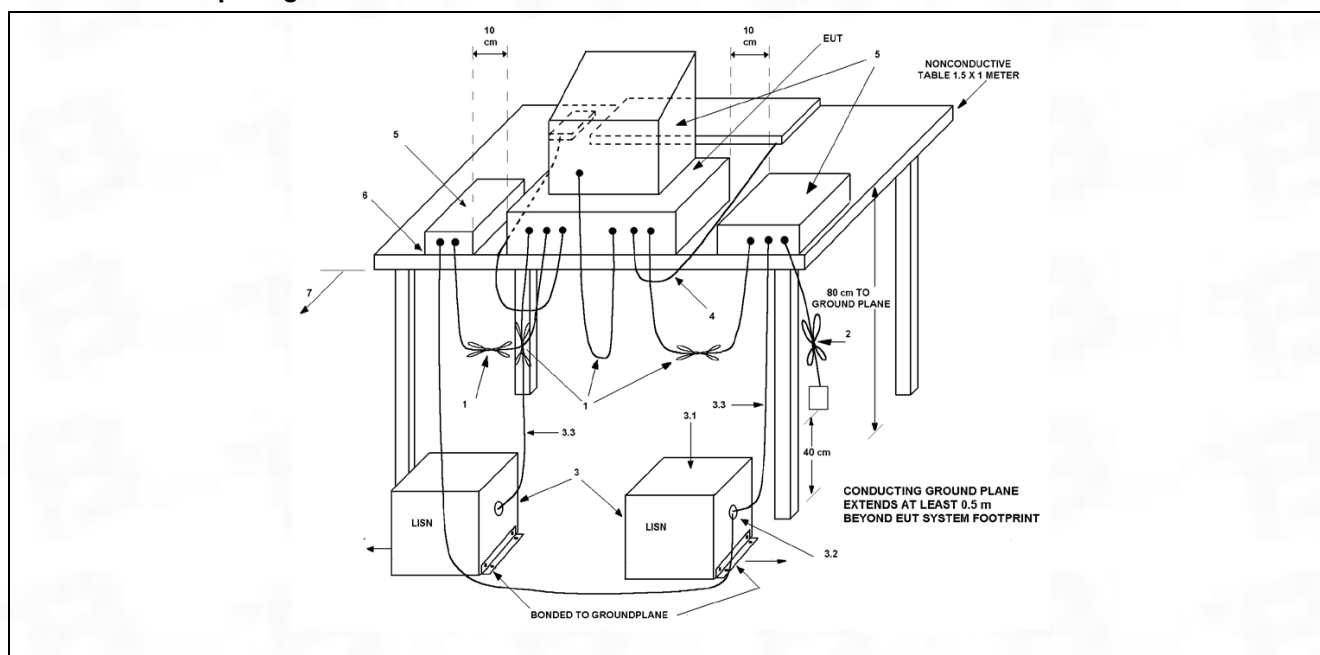
5.1 Conducted emissions on AC mains

Test Requirement:	15.107, Class B		
Test Method:	ANSI C63.4-2014		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
*Decreases with the logarithm of the frequency.			
Procedure:	An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor		

5.1.1 E.U.T. Operation:

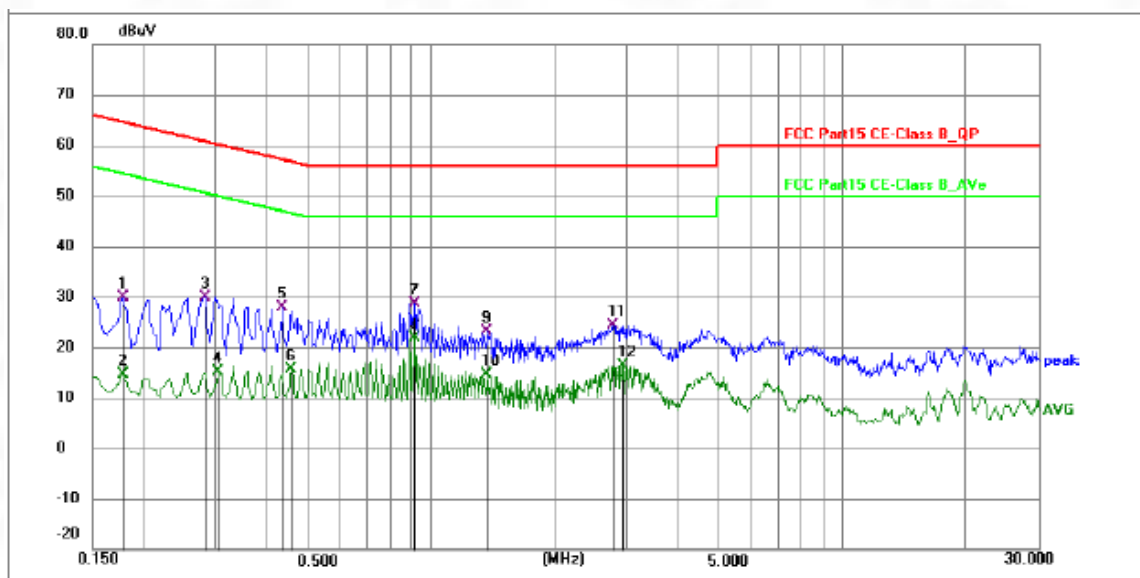
Operating Environment:	
Temperature:	22.7 °C
Humidity:	52.3 %
Atmospheric Pressure:	1010 mbar

5.1.2 Test Setup Diagram:



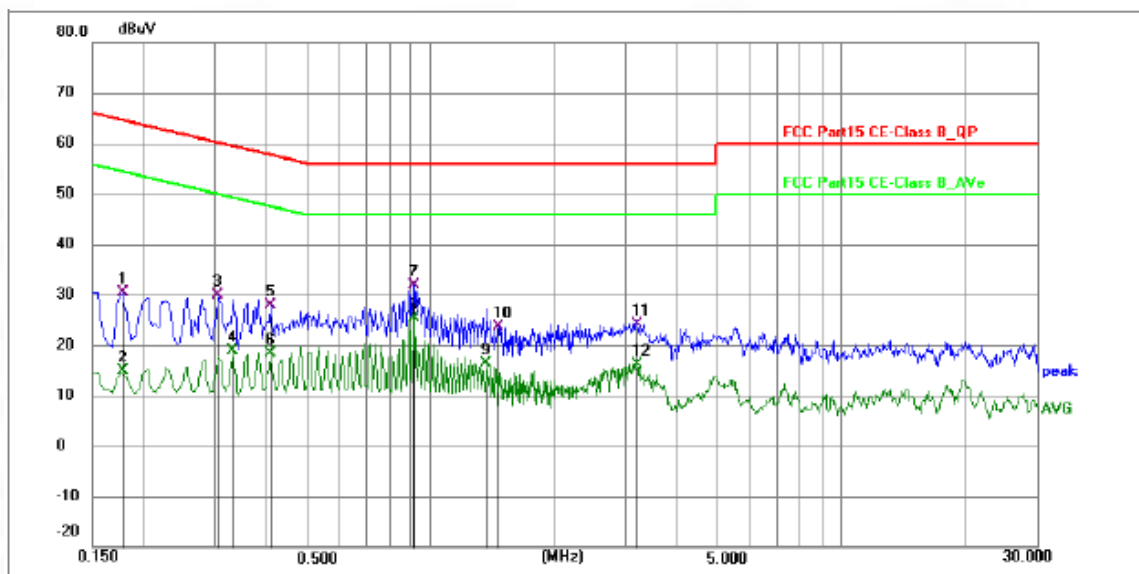
5.1.3 Test Data:

TM1 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1770	19.40	10.51	29.91	64.63	-34.72	QP	P	
2	0.1770	4.00	10.51	14.51	54.63	-40.12	AVG	P	
3	0.2805	19.41	10.56	29.97	60.80	-30.83	QP	P	
4	0.3030	4.68	10.57	15.25	50.16	-34.91	AVG	P	
5	0.4334	17.28	10.57	27.85	57.19	-29.34	QP	P	
6	0.4560	5.03	10.57	15.60	46.77	-31.17	AVG	P	
7	0.9150	17.94	10.67	28.61	56.00	-27.39	QP	P	
8 *	0.9150	11.11	10.67	21.78	46.00	-24.22	AVG	P	
9	1.3693	12.53	10.66	23.19	56.00	-32.81	QP	P	
10	1.3693	4.04	10.66	14.70	46.00	-31.30	AVG	P	
11	2.7690	13.76	10.68	24.44	56.00	-31.56	QP	P	
12	2.9445	5.74	10.68	16.42	46.00	-29.58	AVG	P	

TM1 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1770	19.81	10.51	30.32	64.63	-34.31	QP	P	
2	0.1770	4.26	10.51	14.77	54.63	-39.86	AVG	P	
3	0.3030	19.30	10.57	29.87	60.16	-30.29	QP	P	
4	0.3300	8.39	10.57	18.96	49.45	-30.49	AVG	P	
5	0.4063	17.43	10.57	28.00	57.72	-29.72	QP	P	
6	0.4063	7.91	10.57	18.48	47.72	-29.24	AVG	P	
7	0.9150	21.12	10.67	31.79	56.00	-24.21	QP	P	
8 *	0.9150	14.76	10.67	25.43	46.00	-20.57	AVG	P	
9	1.3693	5.69	10.66	16.35	46.00	-29.65	AVG	P	
10	1.4683	12.94	10.66	23.60	56.00	-32.40	QP	P	
11	3.1964	13.43	10.66	24.09	56.00	-31.91	QP	P	
12	3.1964	5.51	10.66	16.17	46.00	-29.83	AVG	P	

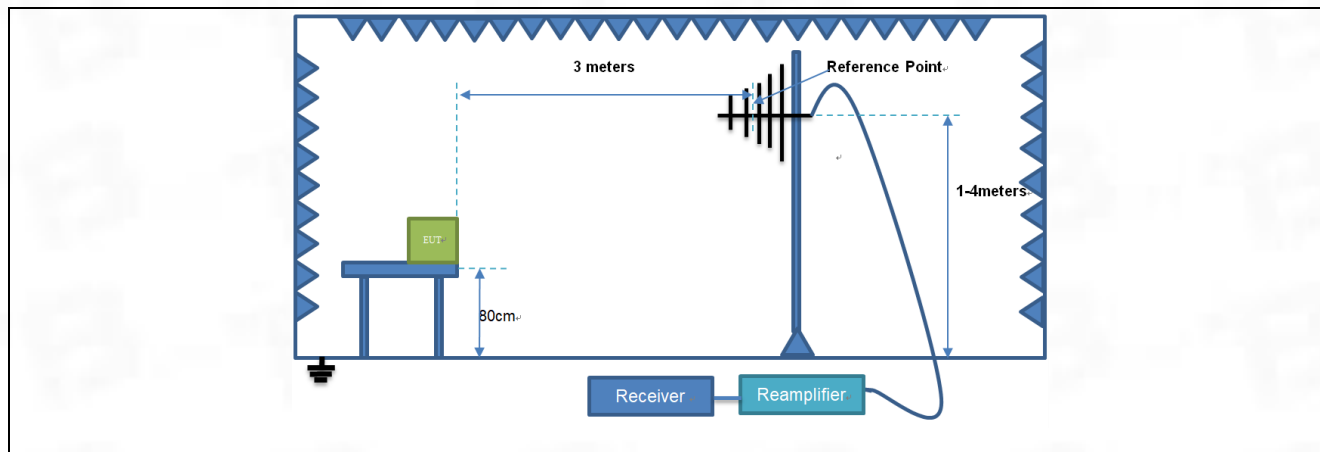
5.2 Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class B			
Test Method:	ANSI C63.4-2014			
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:			
	Frequency of emission (MHz)	Field strength @3m		Field strength @10m
		(uV/m)	(dBuV/m)	(uV/m) (dBuV/m)
	30 – 88	100	40	30 29.5
	88 – 216	150	43.5	45 33.1
Procedure:	216 – 960	200	46	60 35.6
	Above 960	500	54	150 43.5
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor				

5.2.1 E.U.T. Operation:

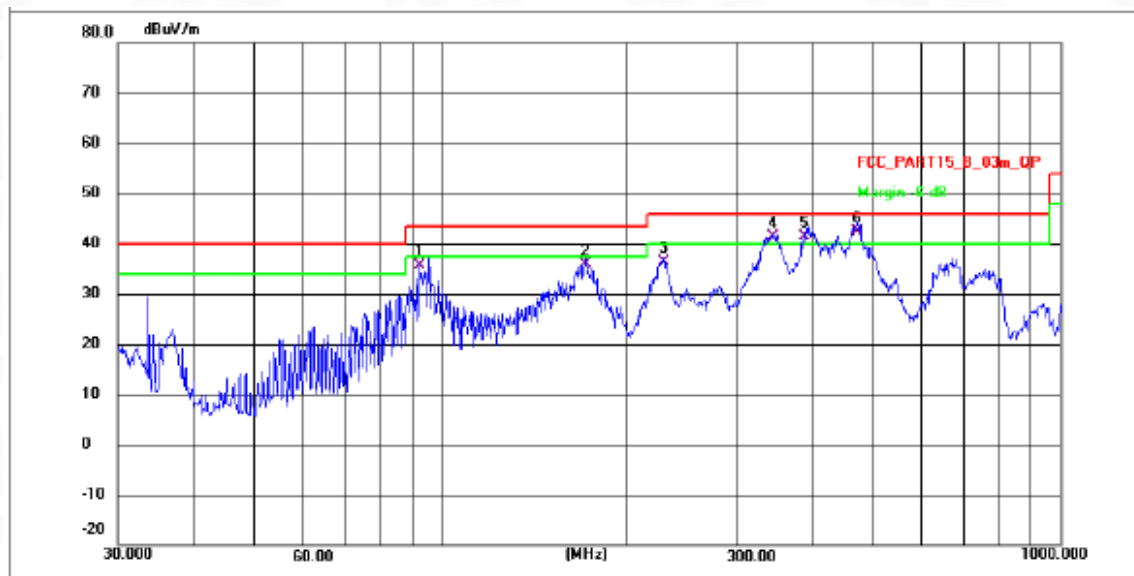
Operating Environment:	
Temperature:	22.7 °C
Humidity:	52.3 %
Atmospheric Pressure:	1010 mbar

5.2.2 Test Setup Diagram:



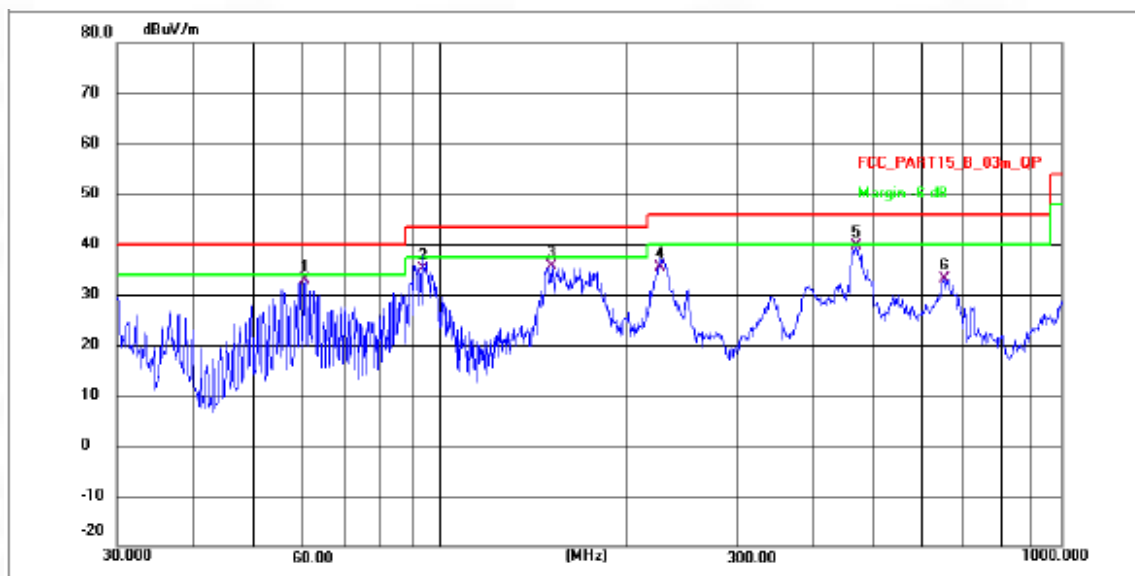
5.2.3 Test Data:

TM1 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	92.3002	65.19	-29.49	35.70	43.50	-7.80	QP	P
2	171.9944	63.59	-27.59	36.00	43.50	-7.50	QP	P
3	228.8914	62.47	-26.07	36.40	46.00	-9.60	QP	P
4 !	343.7821	66.58	-25.08	41.50	46.00	-4.50	QP	P
5 !	387.3122	66.03	-24.73	41.30	46.00	-4.70	QP	P
6 *	470.5230	64.11	-21.81	42.30	46.00	-3.70	QP	P

TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	60.2800	53.05	-20.15	32.90	40.00	-7.10	QP	P
2	93.6042	64.48	-29.28	35.20	43.50	-8.30	QP	P
3	150.5377	63.49	-27.78	35.71	43.50	-7.79	QP	P
4	226.0994	61.69	-26.19	35.50	46.00	-10.50	QP	P
5 *	468.8761	61.37	-21.85	39.52	46.00	-6.48	QP	P
6	648.5216	55.86	-22.80	33.06	46.00	-12.94	QP	P

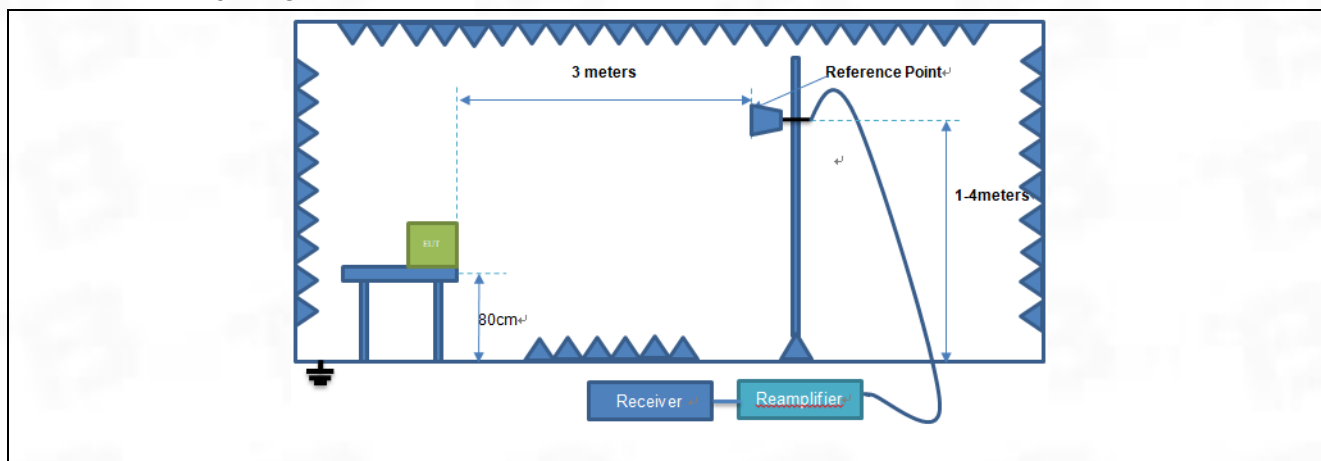
5.3 Radiated emissions (Above 1GHz)

Test Requirement:	15.109, Class B			
Test Method:	ANSI C63.4-2014			
Test Limit:	Frequency of emission (MHz)	Field strength @3m		
		Average (uV/m)	Average(dBuV/m)	Peak (dBuV/m)
	Above 1GHz	500	54	74
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. For below 1GHz test, Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. For above 1GHz test, Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor			

5.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	22.7 °C
Humidity:	52.3 %
Atmospheric Pressure:	1010 mbar

5.3.2 Test Setup Diagram:



5.3.3 Test Data:

Note: The peak value is less than the AV limit 54dBuV/m, so the AV value is not evaluated

TM1 / Polarization: Horizontal

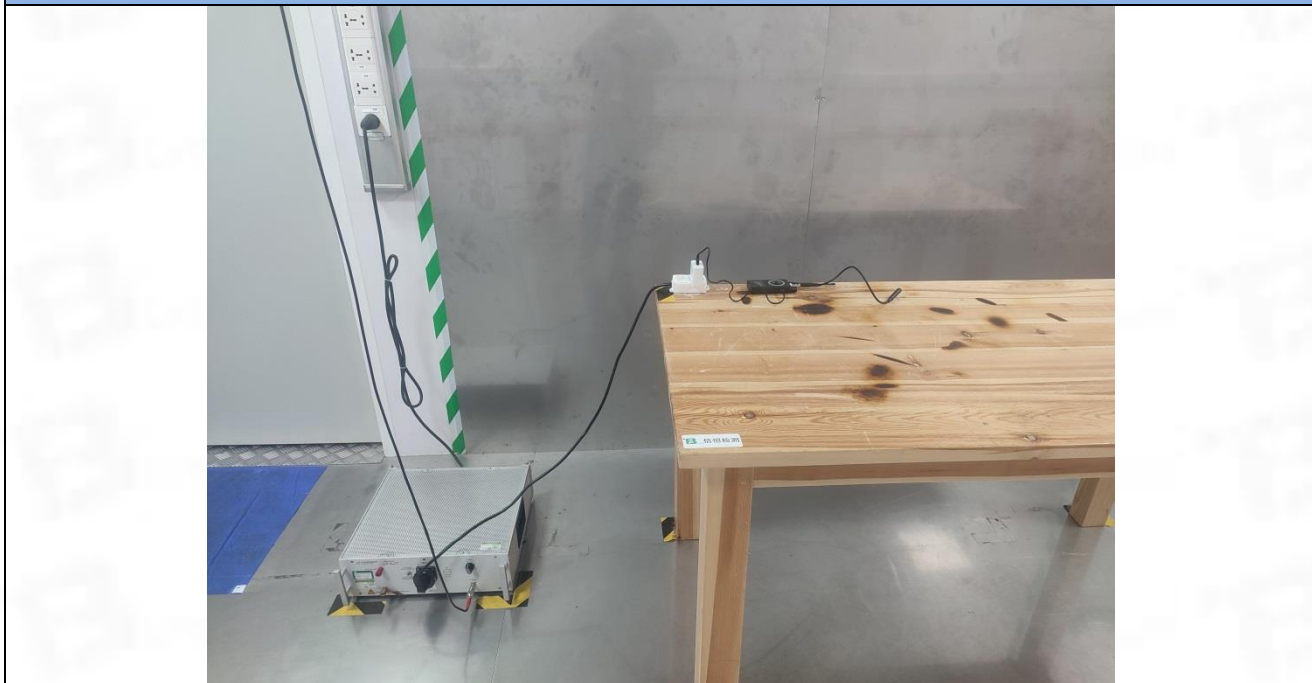
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1634.687	83.11	-45.96	37.15	74.00	-36.85	peak	P
2	1885.716	84.90	-46.47	38.43	74.00	-35.57	peak	P
3	4105.042	86.56	-46.69	39.87	74.00	-34.13	peak	P
4	7085.312	83.13	-47.47	35.66	74.00	-38.34	peak	P
5	11218.982	85.16	-47.96	37.20	74.00	-36.80	peak	P
6	17509.712	87.57	-47.05	40.52	74.00	-33.48	peak	P

TM1 / Polarization: Vertical

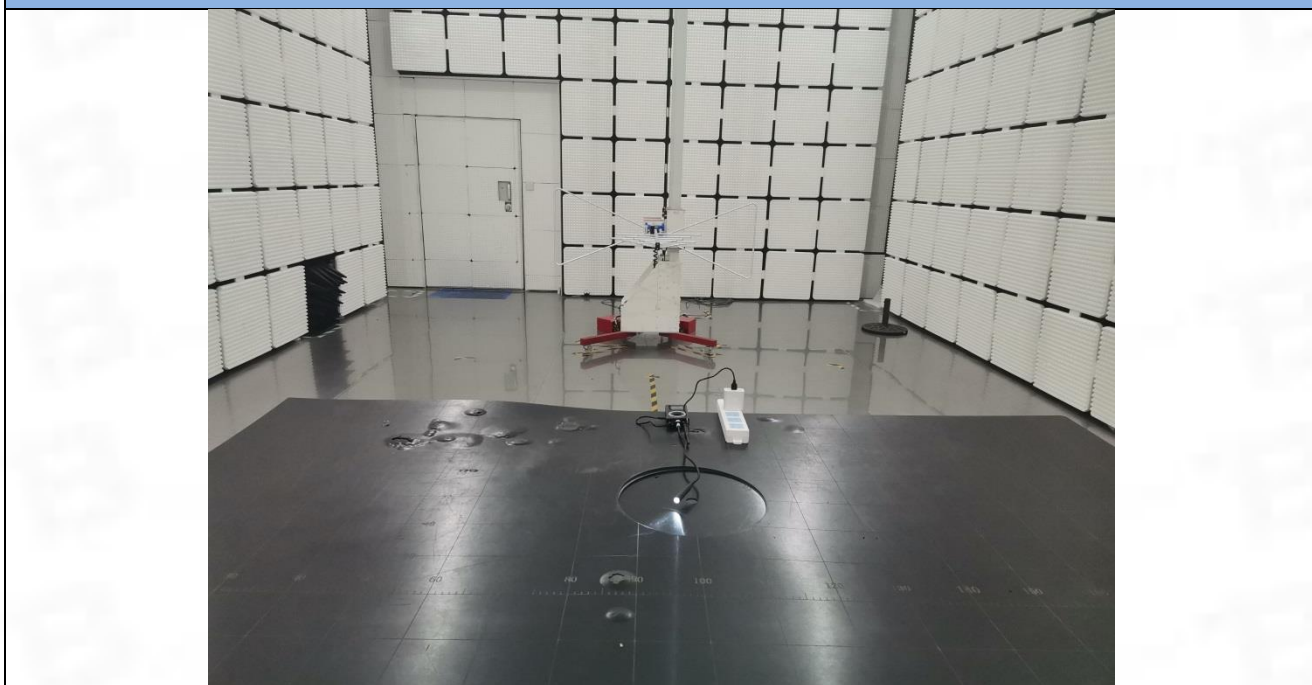
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1223.950	83.11	-45.96	37.15	74.00	-36.85	peak	P
2	1474.979	84.90	-46.47	38.43	74.00	-35.57	peak	P
3	3694.305	86.56	-46.69	39.87	74.00	-34.13	peak	P
4	6674.575	83.13	-47.47	35.66	74.00	-38.34	peak	P
5	10808.245	85.16	-47.96	37.20	74.00	-36.80	peak	P
6	17098.975	93.83	-47.05	46.78	74.00	-27.22	peak	P

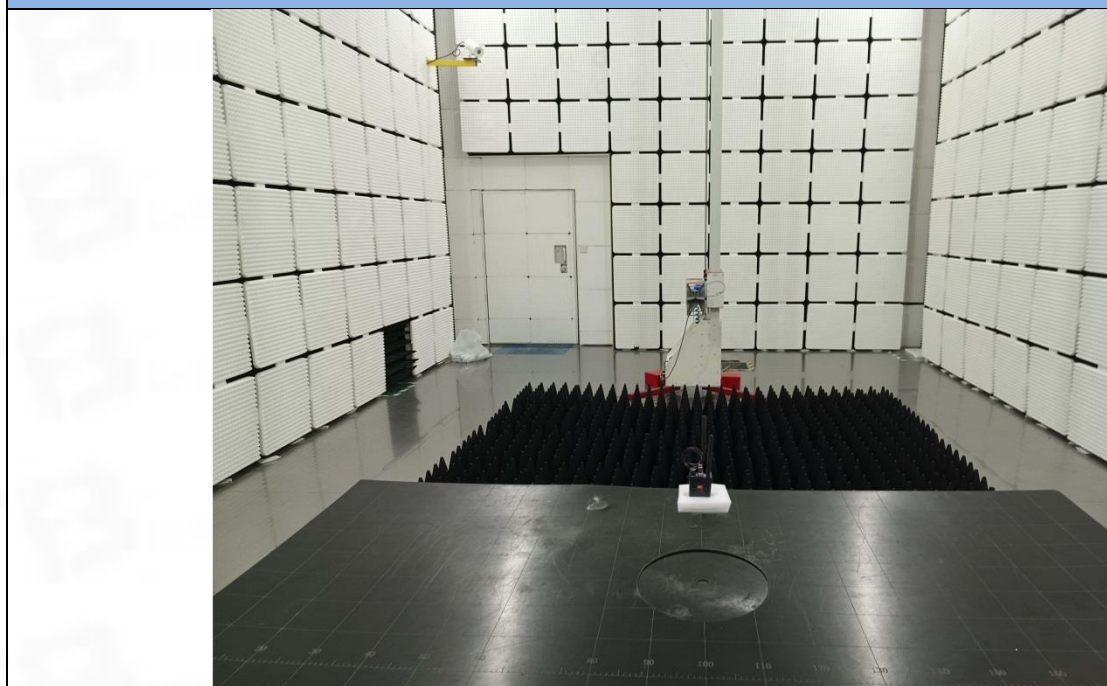
6 Test Setup Photos

Conducted emissions on AC mains

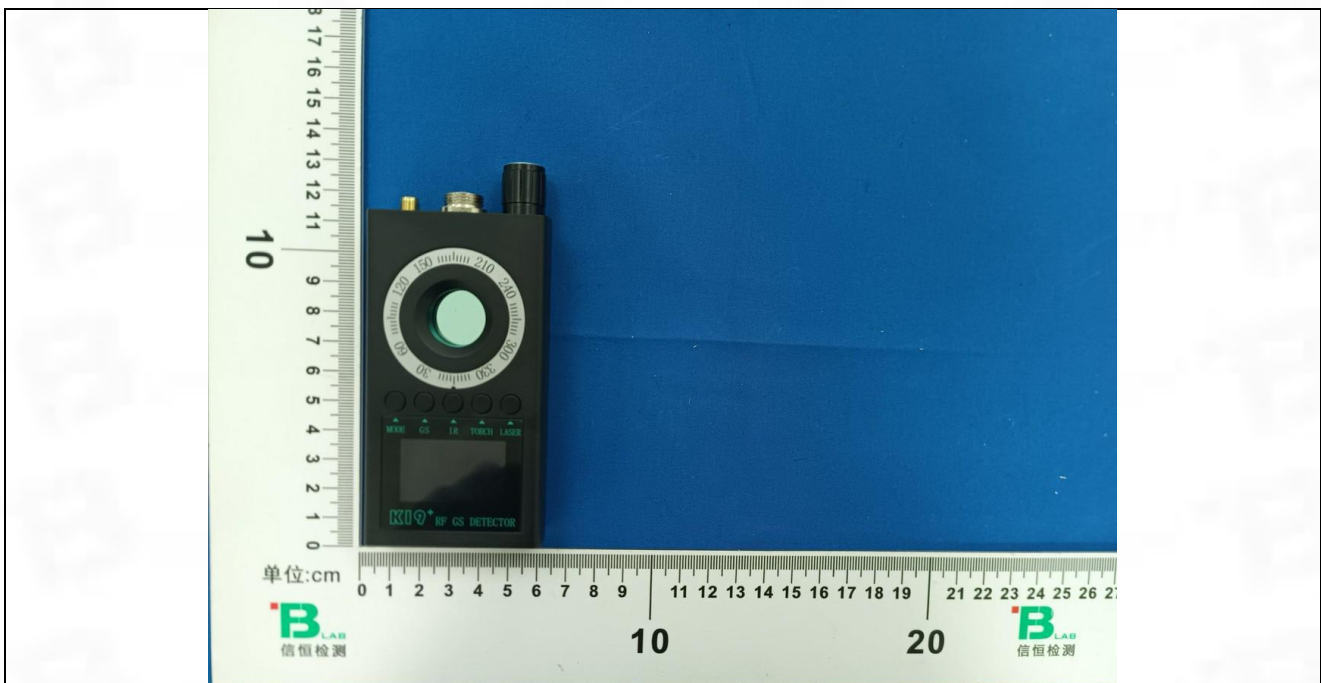
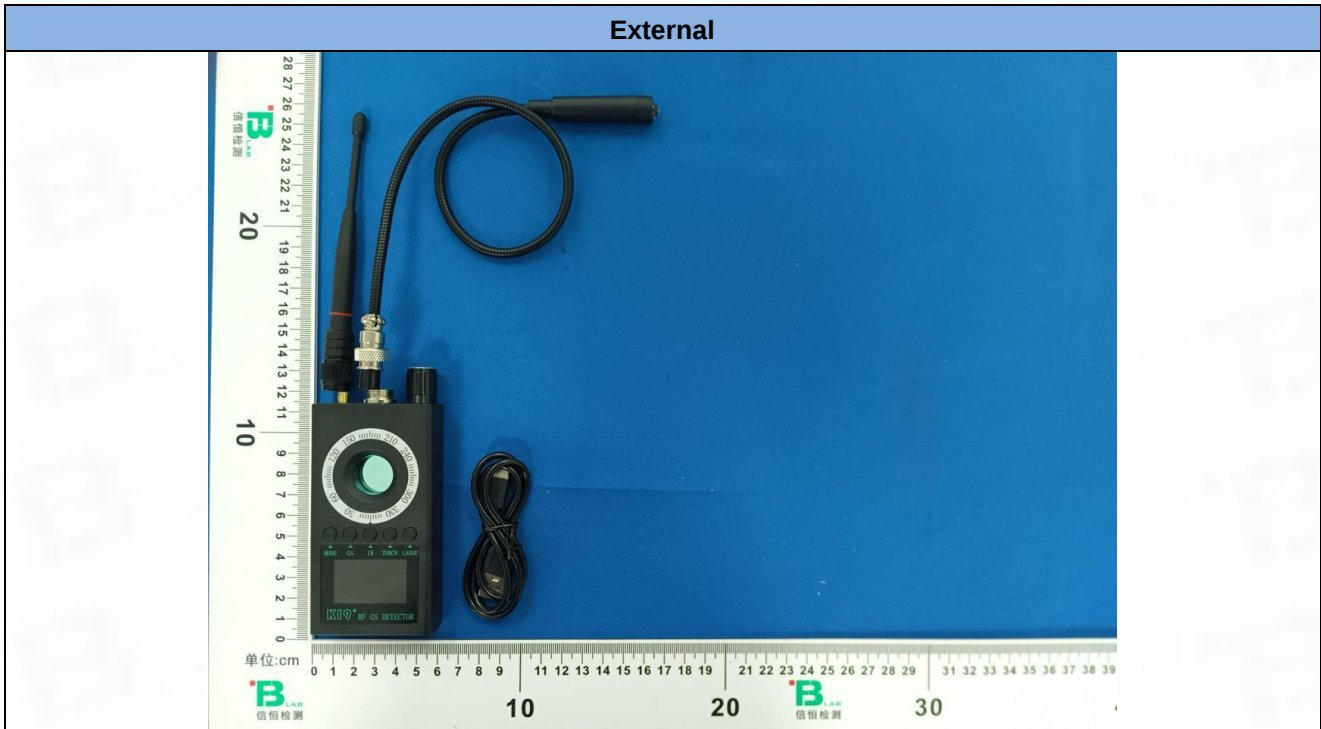


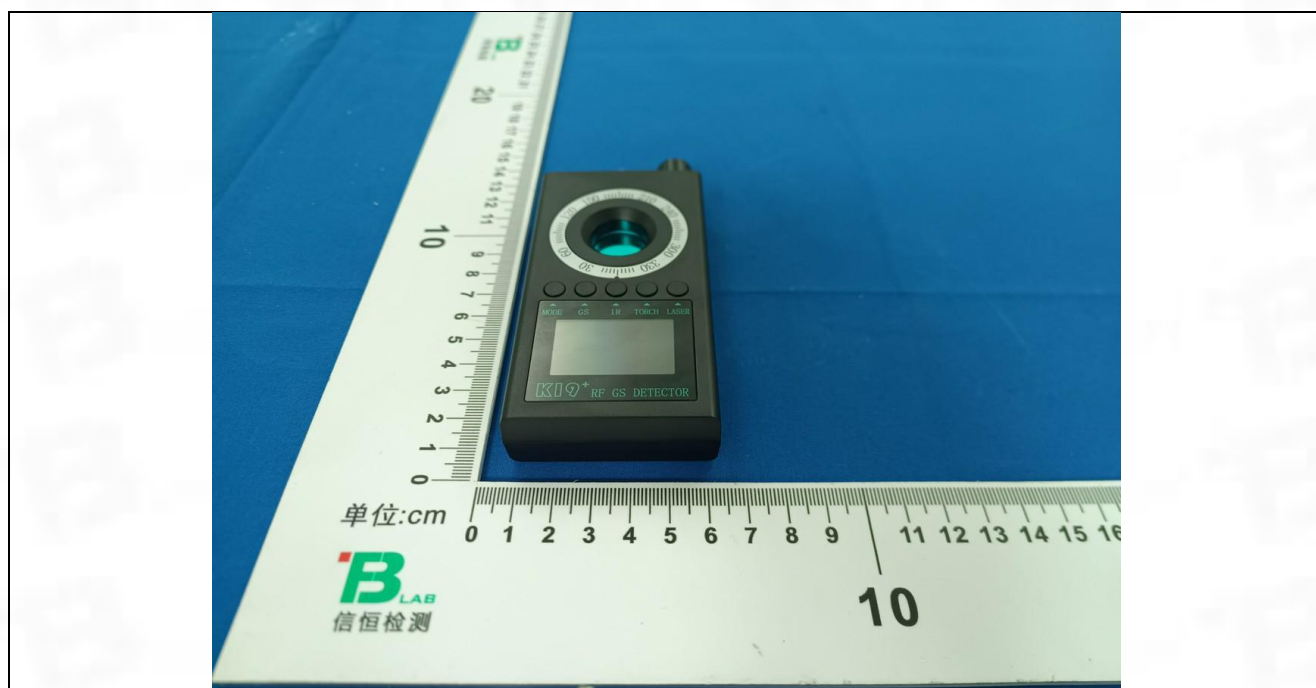
Radiated emissions (Below 1GHz)

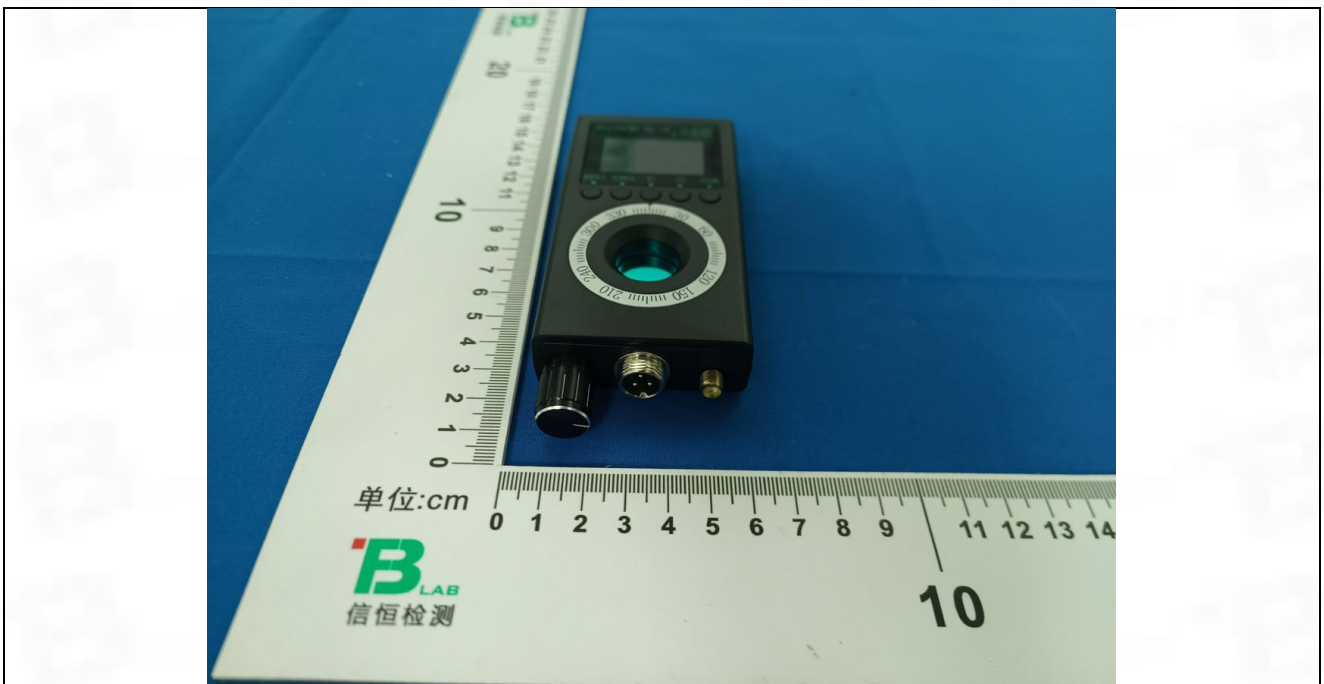
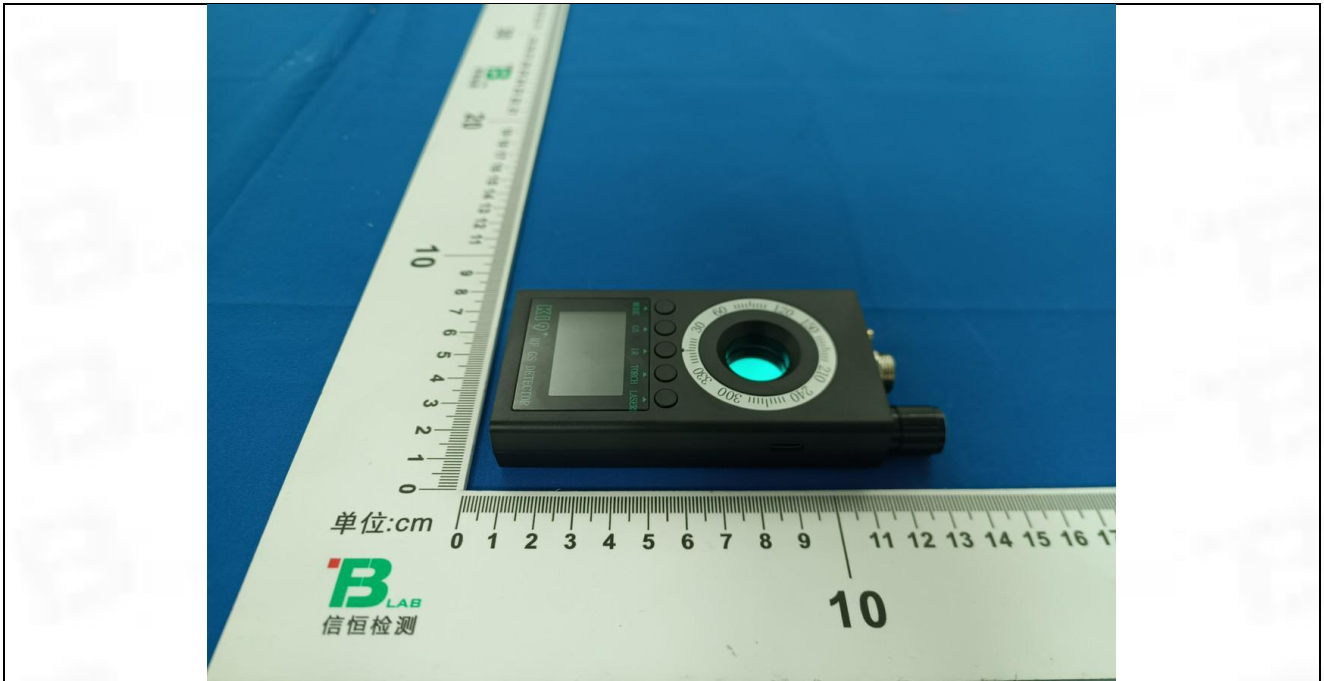


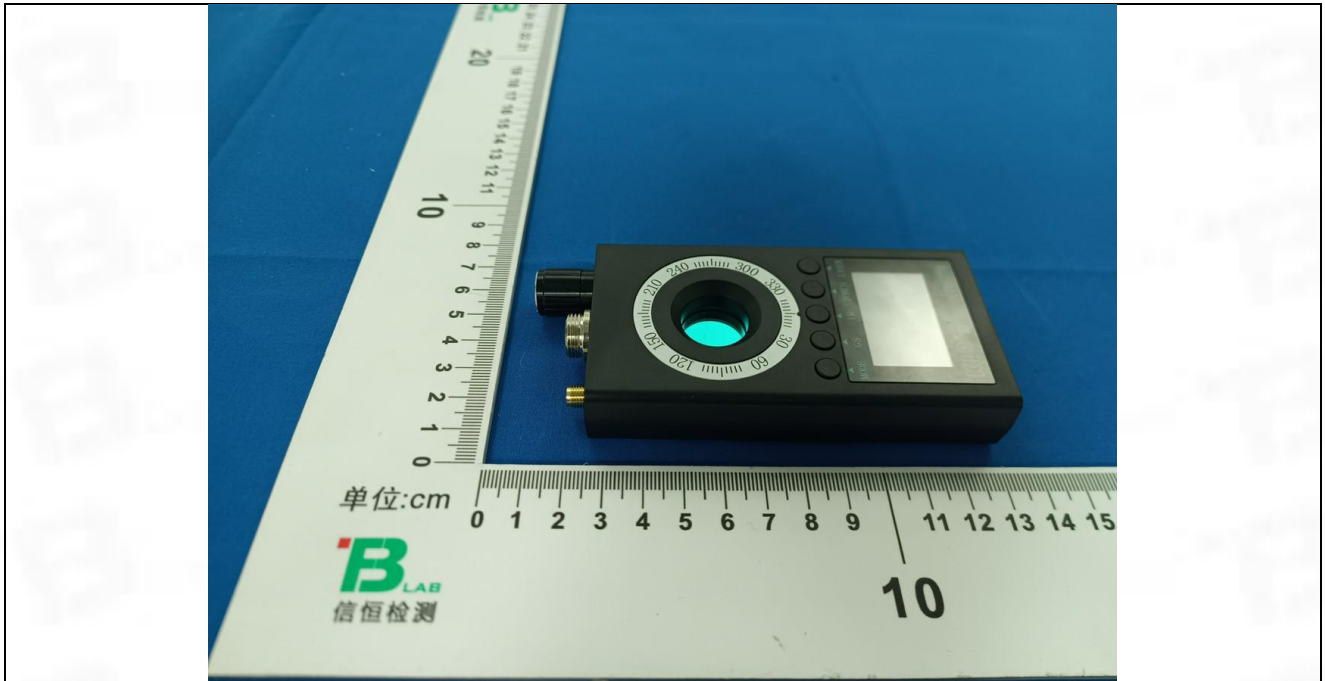
Radiated emissions (Above 1GHz)

7 EUT Constructional Details (EUT Photos)



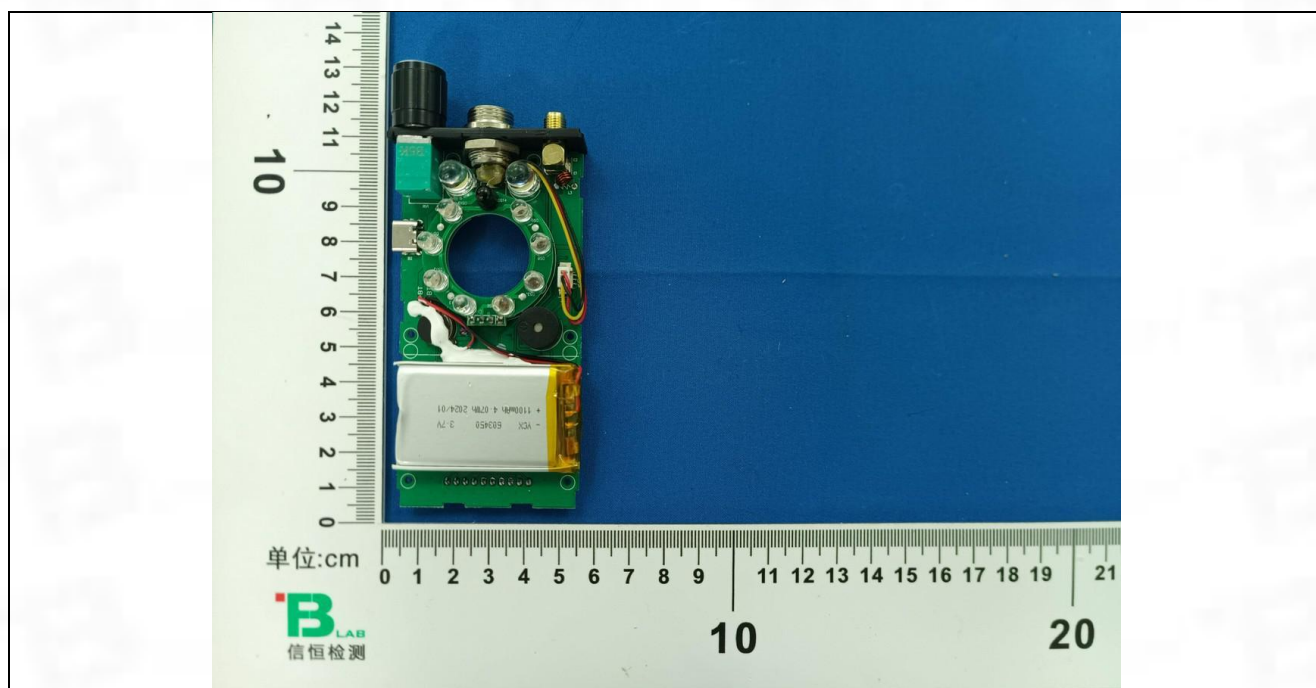
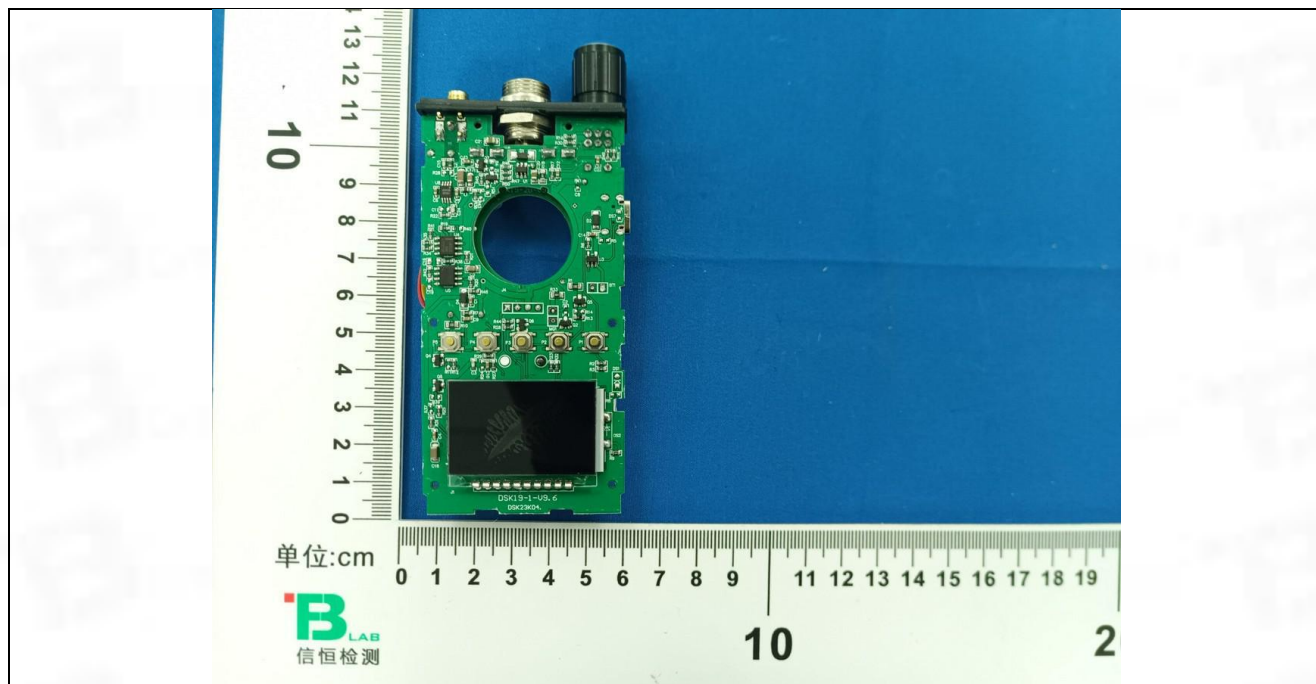






Internal







Test Report Number: BTF240802R00301



BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street,
Bao'an District, Shenzhen, China

www.btf-lab.com

-- END OF REPORT --