



FCC SDoC Test Report

For

Applicant Name: Shenzhen Qichang Intelligent Technology Co., Ltd
Address: Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang, Shenzhen, China
EUT Name: Smart phone
Brand Name: FOSSIBOT
Model Number: F109
Series Model Number: F109 Pro, F109 P, F109 S, F109 Plus

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: BTF240704E01901
Test Standards: 47 CFR Part 15, Subpart B

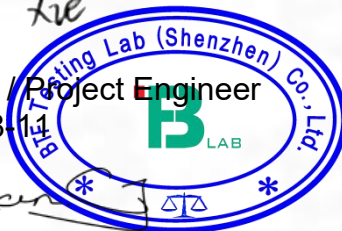
Test Conclusion: Pass
FCC ID: 2BAK2-F109
Test Date: 2024-07-07 to 2024-08-10
Date of Issue: 2024-08-11

Test by: Zero Zeng
Zero Zeng / Tester

Prepared By: Ace Xie
Ace Xie / Project Engineer

Date: 2024-08-11

Approved By: Ryan.CJ
Ryan.CJ / EMC Manager
Date: 2024-08-11



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.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-08-11	Original
<i>Note: Once the revision has been made, then previous versions reports are invalid.</i>		

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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:	Shenzhen Qichang Intelligent Technology Co., Ltd
Address:	Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang, Shenzhen, China

2.2 Manufacturer Information

Company Name:	Shenzhen Qichang Intelligent Technology Co., Ltd
Address:	Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang, Shenzhen, China

2.3 Factory Information

Company Name:	Shenzhen Qichang Intelligent Technology Co., Ltd
Address:	Room 510, Building 7, Yunli Intelligent Park, No. 7, Bantian Street, Longgang, Shenzhen, China

2.4 General Description of Equipment under Test (EUT)

EUT name	Smart phone
Under test model name	F109
Series model name	F109 Pro, F109 P, F109 S, F109 Plus
Description of model name differentiation	Only the model name is different, everything else is the same.
Hardware version	E393_MAIN_PCB_V1.1
Software version	FOSSiBOT_F109_E
Power supply:	AC100-240V, 50/60Hz From Adapter Rechargeable Li-ion polymer Battery DC3.87
AC adapter:	Model No.: QZ-0180AAA00 Input: AC100-240V, 50/60Hz 0.5A Output: 5V $\overline{\overline{=}}$ 3.0A 15.0W 9.0V $\overline{\overline{=}}$ 2.0A 18.0W 12.0V $\overline{\overline{=}}$ 1.5A 18.0W

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)	$\pm 2.64\text{dB}$
Radiated Emissions (30M - 1GHz)	$\pm 4.12\text{dB}$
Radiated Emissions (above 1GHz)	1-6GHz: $\pm 3.94\text{dB}$ 6-18GHz: $\pm 4.16\text{dB}$

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	2023-11-15	2024-11-14

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	2023-11-13	2024-11-12
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	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-13	2024-11-12

4.2 Test Auxiliary Equipment

The EUT was tested as an independent device.

4.3 Test Modes

No.	Test Modes	Description
TM 1:	Keep the EUT in charging and recording mode	
TM 2:	Keep the EUT in charging and playing mode	
TM 3:	USB cable to PC (Data exchange) mode	
TM 4:	Keep the EUT in FM receive mode	

5 Emission Test Results (EMI)

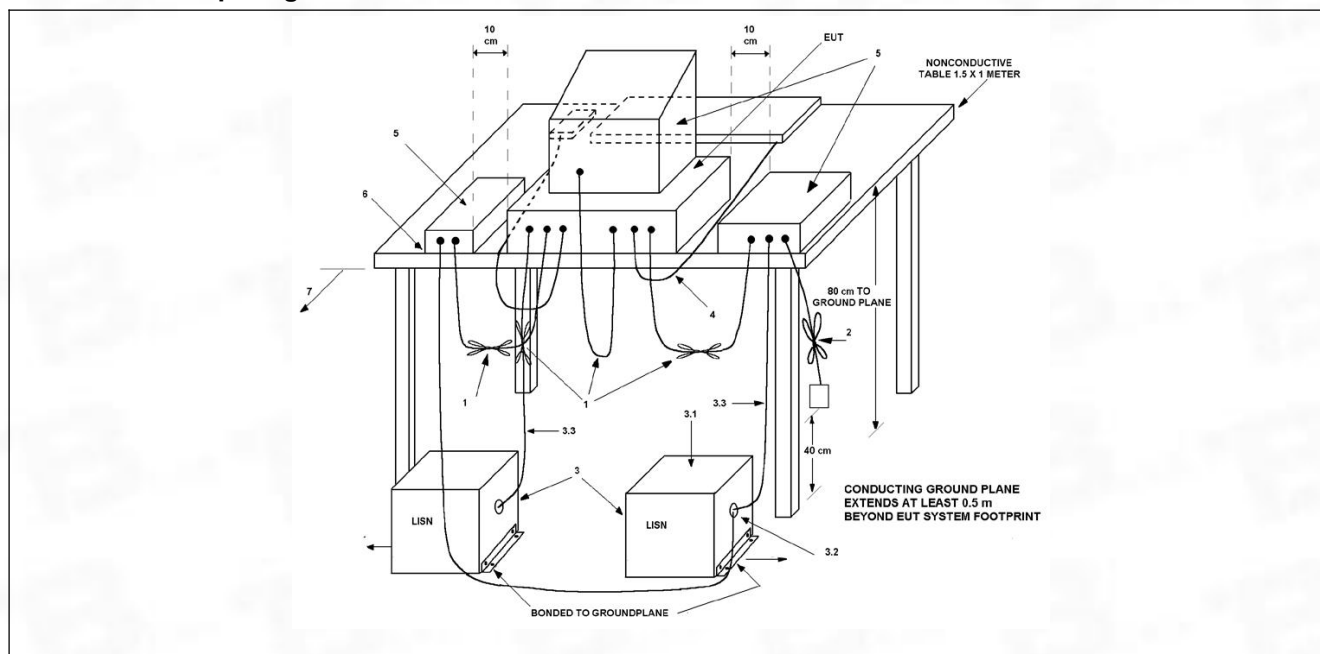
5.1 Conducted emissions on AC mains

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:

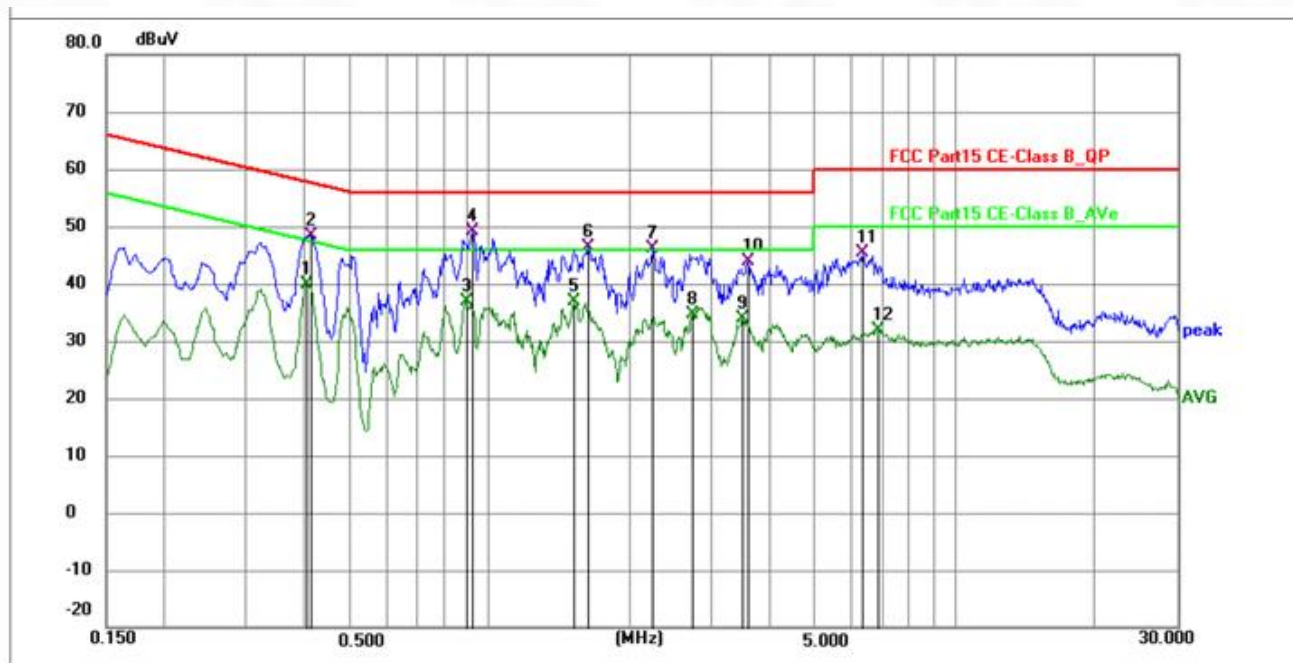
Operating Environment:	
Temperature:	23.5°C
Humidity:	50 %
Atmospheric Pressure:	1010 mbar

5.1.2 Test Setup Diagram:



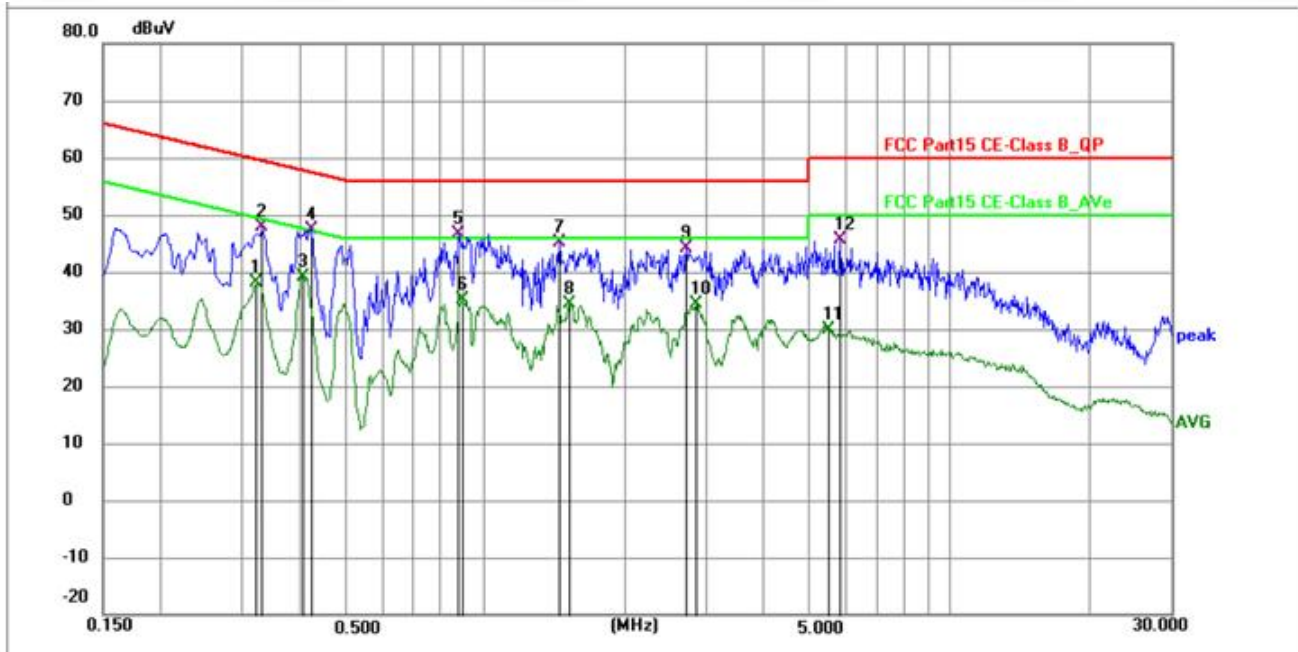
5.1.3 Test Data:

TM3 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.4020	29.27	10.57	39.84	47.81	-7.97	AVG	P	
2	0.4110	37.69	10.57	48.26	57.63	-9.37	QP	P	
3	0.8923	26.22	10.68	36.90	46.00	-9.10	AVG	P	
4 *	0.9193	38.35	10.67	49.02	56.00	-6.98	QP	P	
5	1.5135	26.26	10.66	36.92	46.00	-9.08	AVG	P	
6	1.6305	35.70	10.67	46.37	56.00	-9.63	QP	P	
7	2.2470	35.44	10.68	46.12	56.00	-9.88	QP	P	
8	2.7284	24.08	10.67	34.75	46.00	-11.25	AVG	P	
9	3.5024	23.17	10.63	33.80	46.00	-12.20	AVG	P	
10	3.5924	33.17	10.64	43.81	56.00	-12.19	QP	P	
11	6.3464	34.65	10.78	45.43	60.00	-14.57	QP	P	
12	6.8370	21.06	10.78	31.84	50.00	-18.16	AVG	P	

TM3 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.3209	27.54	10.57	38.11	49.68	-11.57	AVG	P	
2	0.3300	37.35	10.57	47.92	59.45	-11.53	QP	P	
3 *	0.4020	28.60	10.57	39.17	47.81	-8.64	AVG	P	
4	0.4200	36.81	10.57	47.38	57.45	-10.07	QP	P	
5	0.8790	35.98	10.68	46.66	56.00	-9.34	QP	P	
6	0.8923	24.56	10.68	35.24	46.00	-10.76	AVG	P	
7	1.4415	34.48	10.66	45.14	56.00	-10.86	QP	P	
8	1.5135	23.81	10.66	34.47	46.00	-11.53	AVG	P	
9	2.7105	33.39	10.67	44.06	56.00	-11.94	QP	P	
10	2.8454	23.64	10.68	34.32	46.00	-11.68	AVG	P	
11	5.4915	19.24	10.75	29.99	50.00	-20.01	AVG	P	
12	5.8334	34.96	10.76	45.72	60.00	-14.28	QP	P	

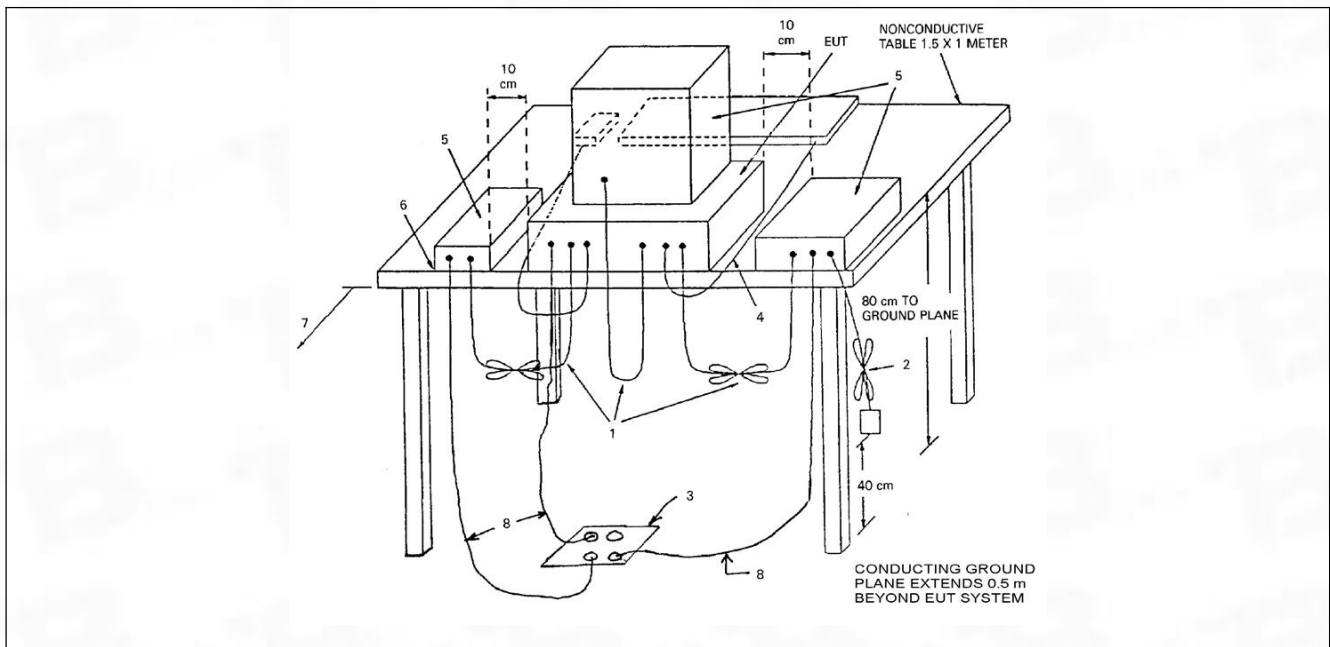
5.2 Radiated emissions (Below 1GHz)

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 (uV/m)	Field strength @3m (dBuV/m)	Field strength @10m (uV/m)
	30 – 88	100	40	30
	88 – 216	150	43.5	45
	216 – 960	200	46	60
Procedure:	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:

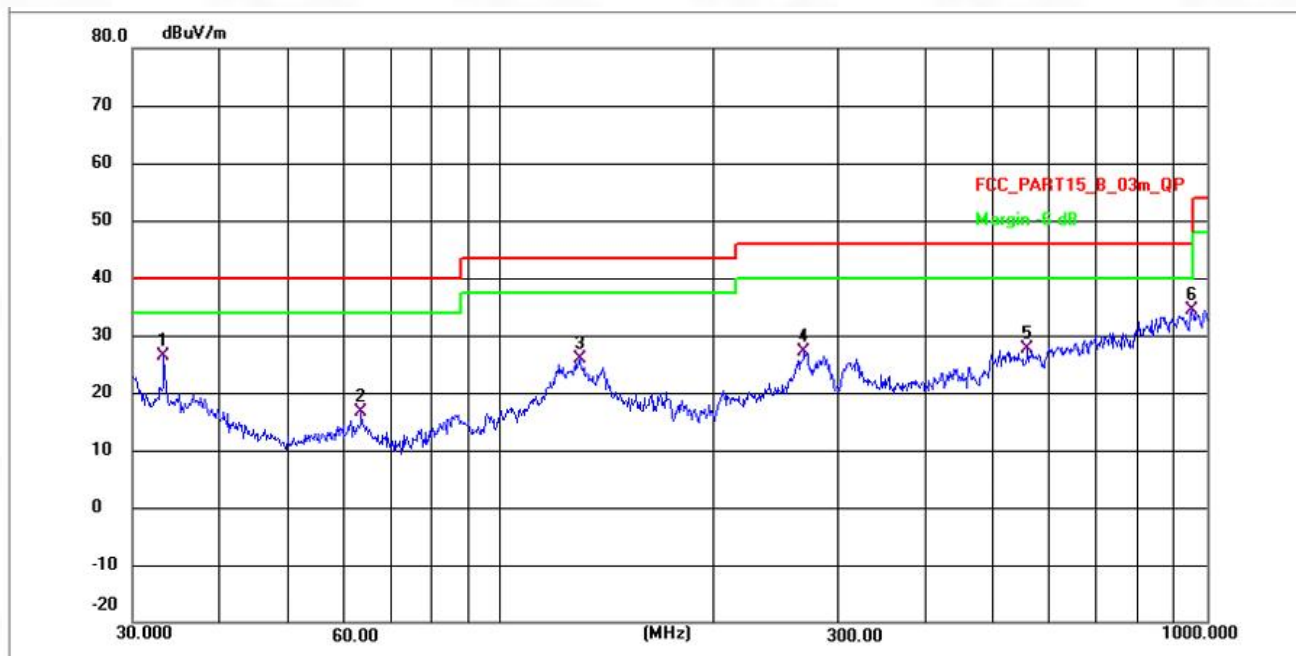
Operating Environment:	
Temperature:	24.5 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

5.2.2 Test Setup Diagram:



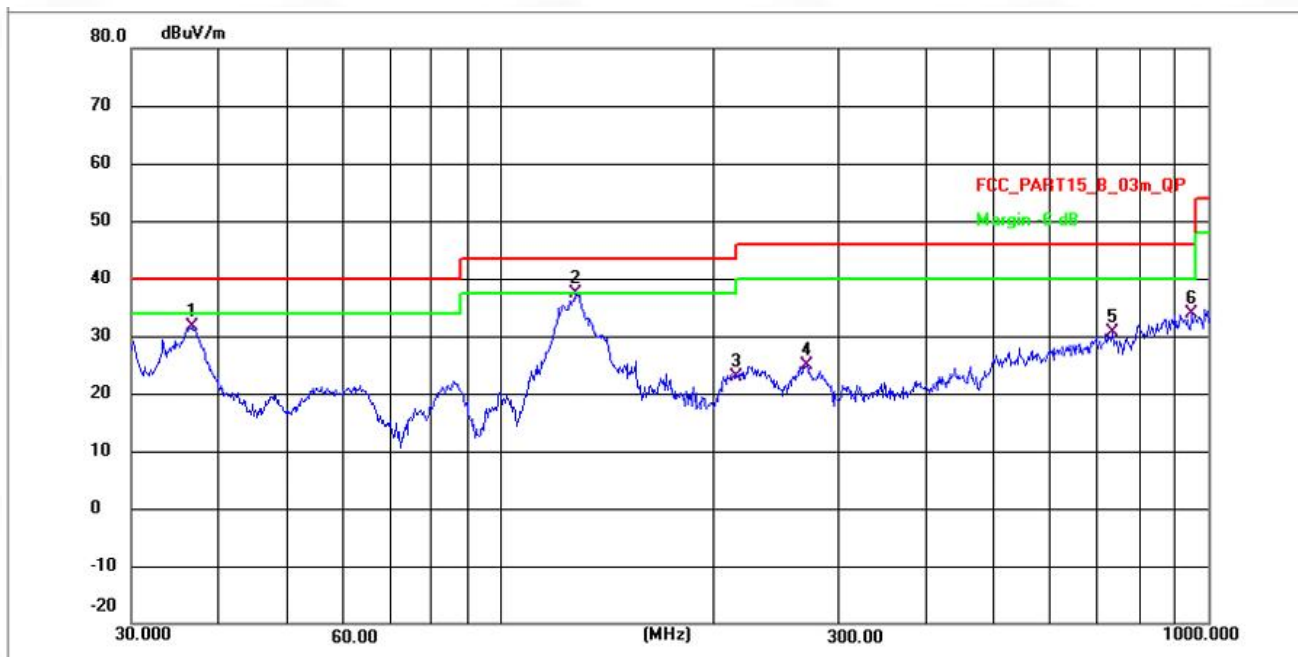
5.2.3 Test Data:

TM3 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	33.2694	36.11	-9.68	26.43	40.00	-13.57	QP	P
2	63.3132	26.12	-9.42	16.70	40.00	-23.30	QP	P
3	129.2410	48.14	-22.20	25.94	43.50	-17.56	QP	P
4	268.9564	48.02	-20.89	27.13	46.00	-18.87	QP	P
5	558.7301	46.33	-18.60	27.73	46.00	-18.27	QP	P
6 *	955.4381	50.13	-15.87	34.26	46.00	-11.74	QP	P

TM3 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	36.5733	41.17	-9.65	31.52	40.00	-8.48	QP	P
2 *	127.6645	50.96	-13.50	37.46	43.50	-6.04	QP	P
3	215.6456	37.20	-14.38	22.82	43.50	-20.68	QP	P
4	270.3748	38.55	-13.67	24.88	46.00	-21.12	QP	P
5	731.9203	48.27	-17.70	30.57	46.00	-15.43	QP	P
6	948.7610	49.69	-15.91	33.78	46.00	-12.22	QP	P

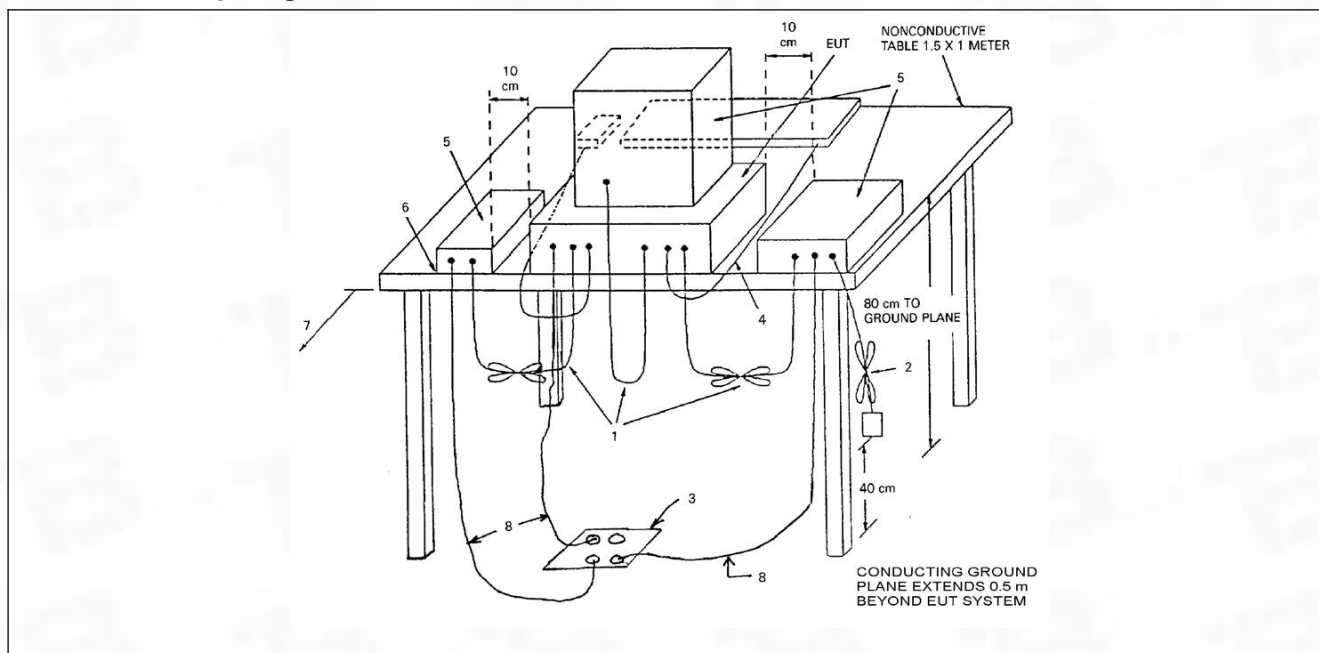
5.3 Radiated emissions (Above 1GHz)

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)
	Above 1GHz	500	54
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:

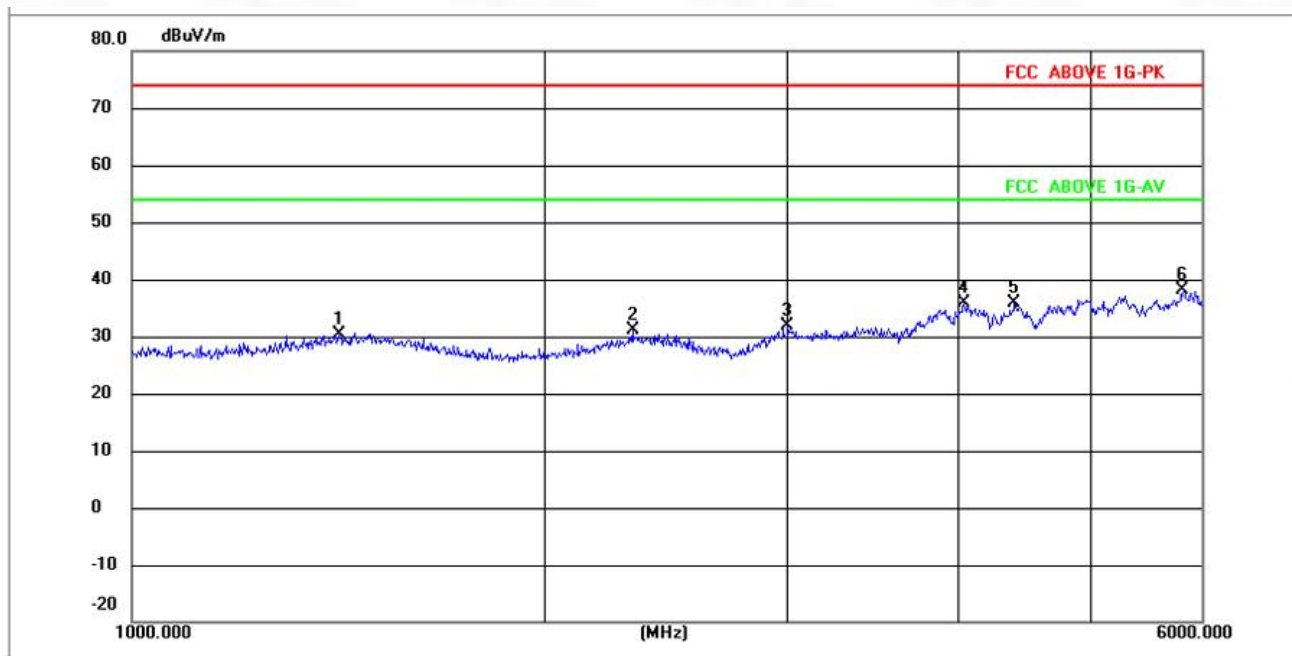
Operating Environment:	
Temperature:	22.7 °C
Humidity:	52.3 %
Atmospheric Pressure:	1010 mbar

5.3.2 Test Setup Diagram:



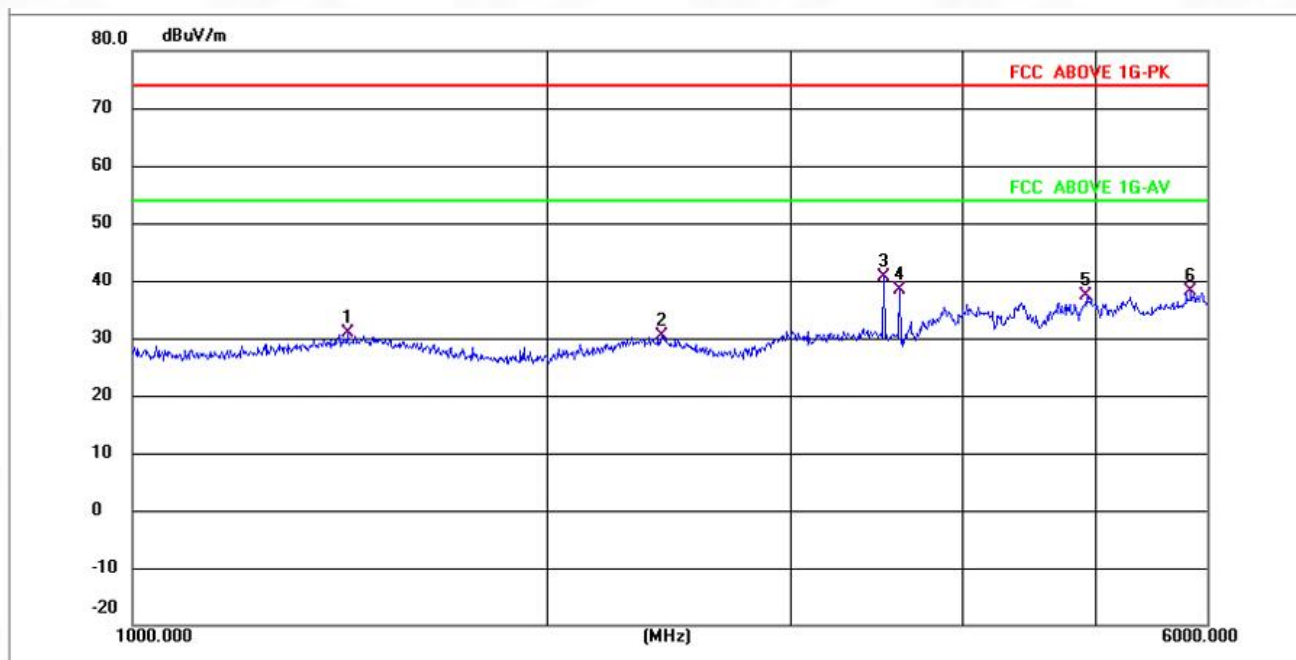
5.3.3 Test Data:

TM3 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1418.207	55.81	-25.39	30.42	74.00	-43.58	peak	P
2	2314.654	80.61	-49.60	31.01	74.00	-42.99	peak	P
3	3000.821	80.97	-49.19	31.78	74.00	-42.22	peak	P
4	4033.064	85.38	-49.38	36.00	74.00	-38.00	peak	P
5	4389.769	85.13	-49.15	35.98	74.00	-38.02	peak	P
6 *	5828.344	86.51	-48.40	38.11	74.00	-35.89	peak	P

TM3 / Polarization: Vertical



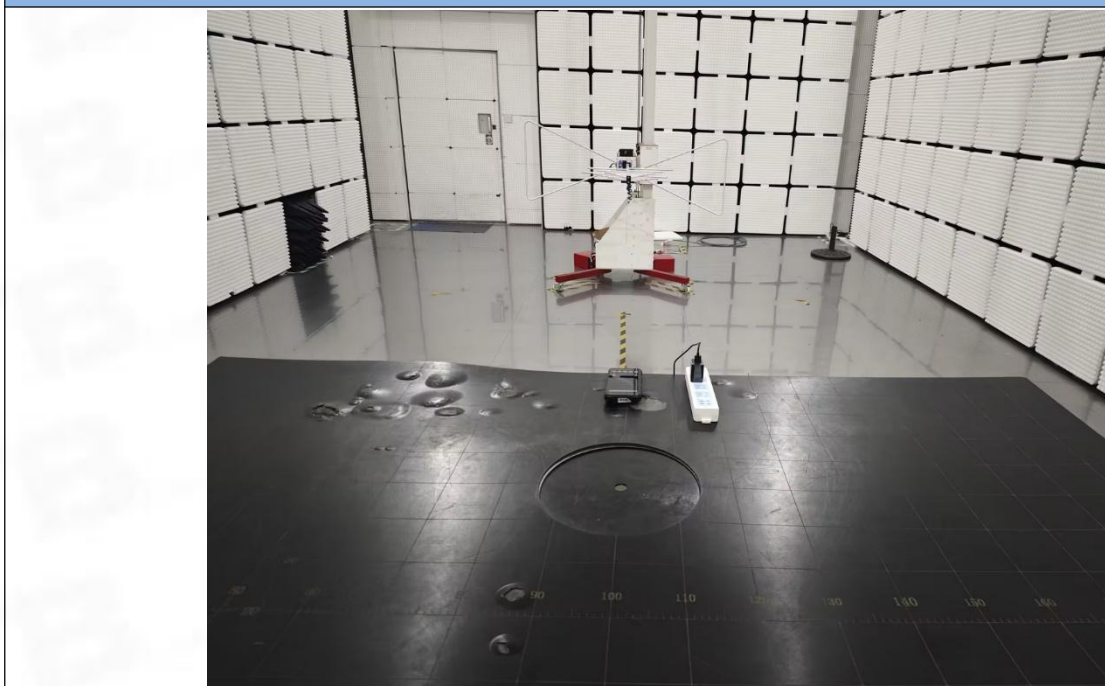
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1431.995	56.18	-25.40	30.78	74.00	-43.22	QP	P
2	2418.526	79.96	-49.54	30.42	74.00	-43.58	QP	P
3 *	3502.633	89.99	-49.29	40.70	74.00	-33.30	QP	P
4	3599.337	87.63	-49.32	38.31	74.00	-35.69	QP	P
5	4911.699	86.08	-48.81	37.27	74.00	-36.73	QP	P
6	5842.983	86.51	-48.40	38.11	74.00	-35.89	QP	P

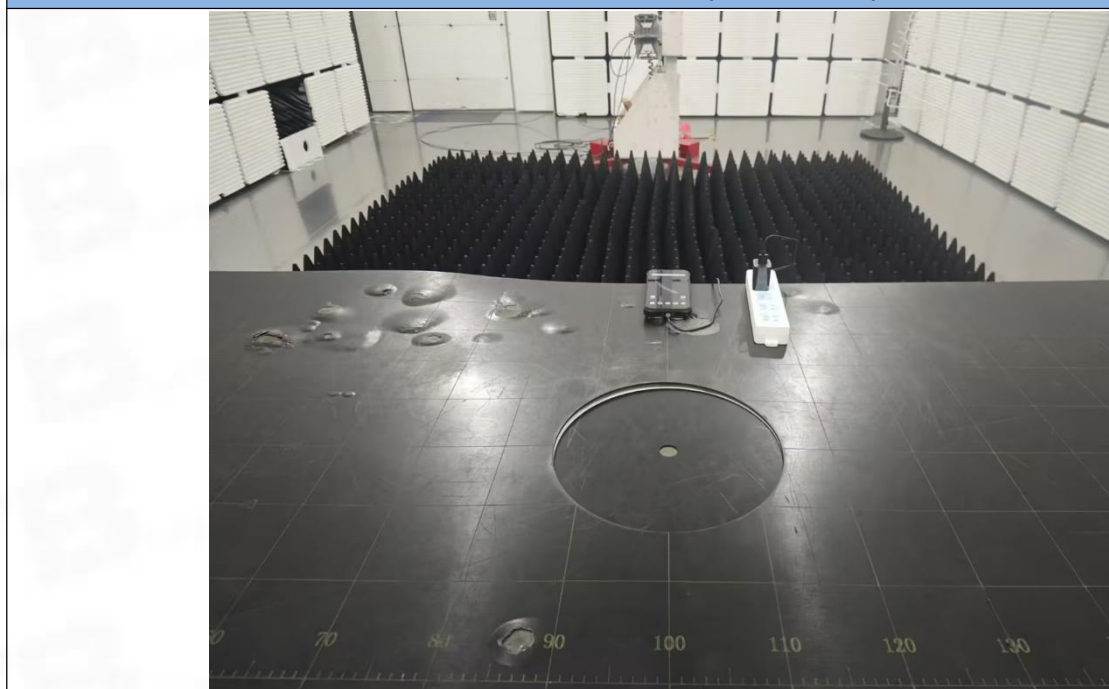
6 Test Setup Photos

Conducted emissions on AC mains



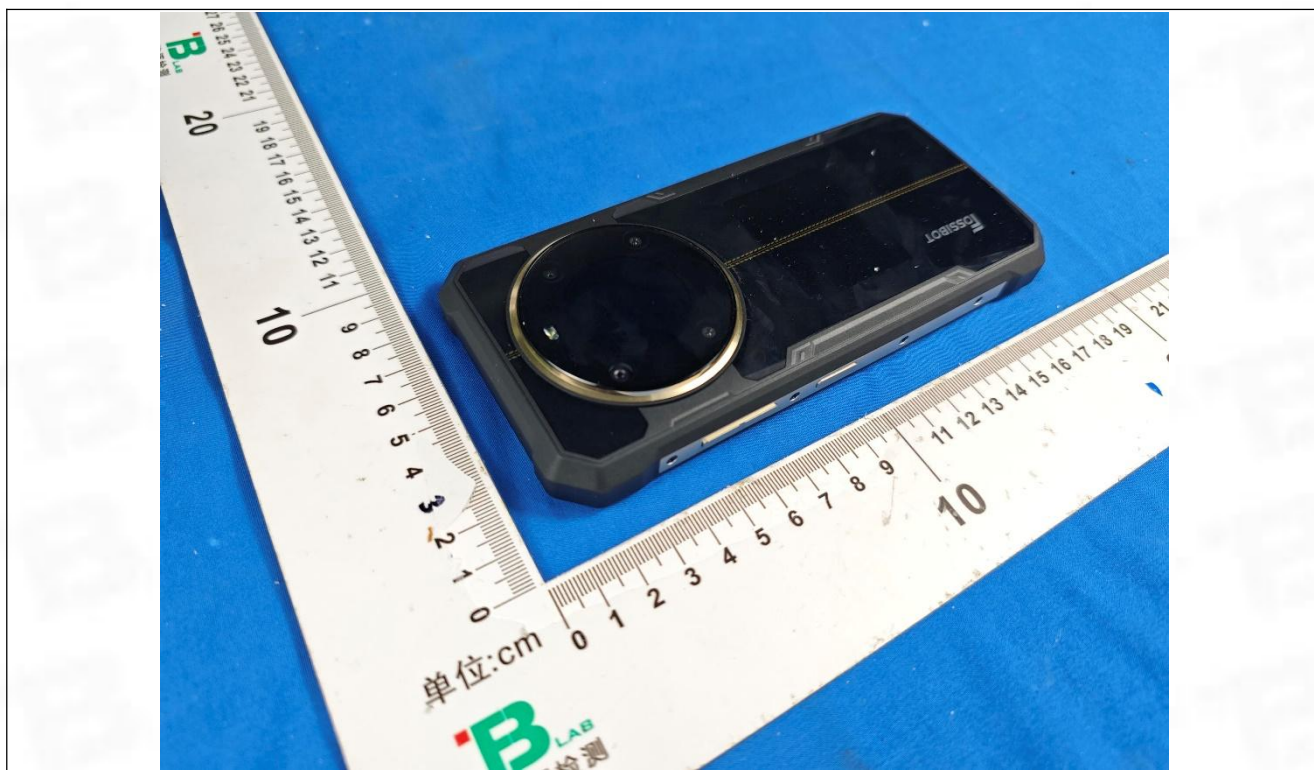
Radiated emissions (Below 1GHz)



Radiated emissions (Above 1GHz)

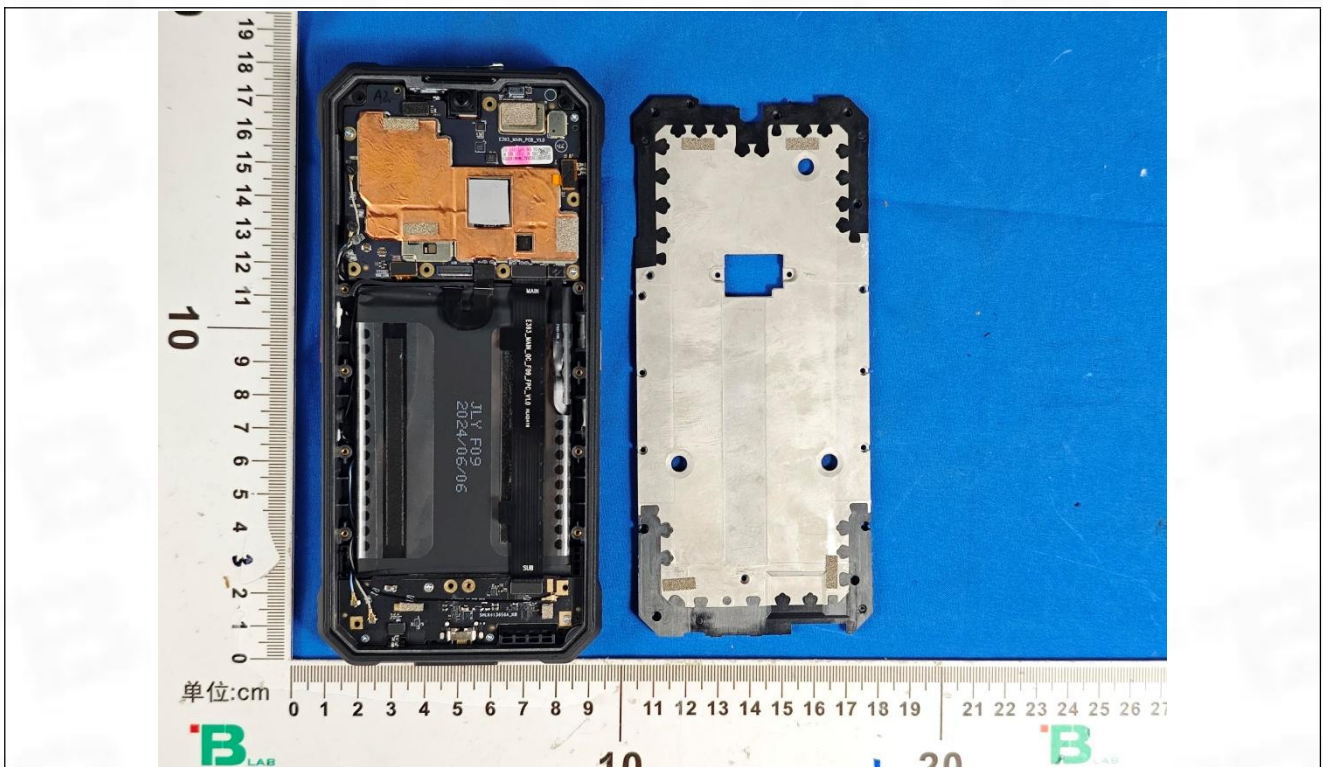
7 EUT Constructional Details (EUT Photos)



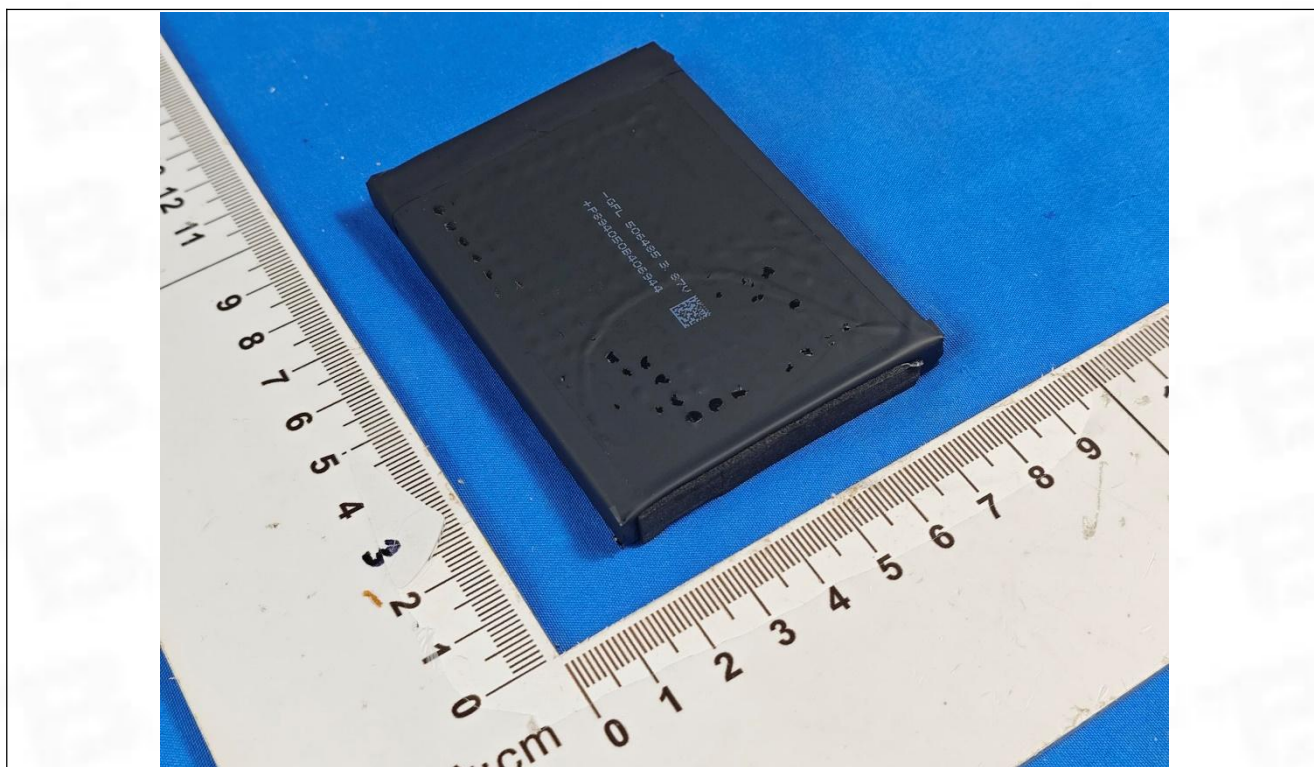


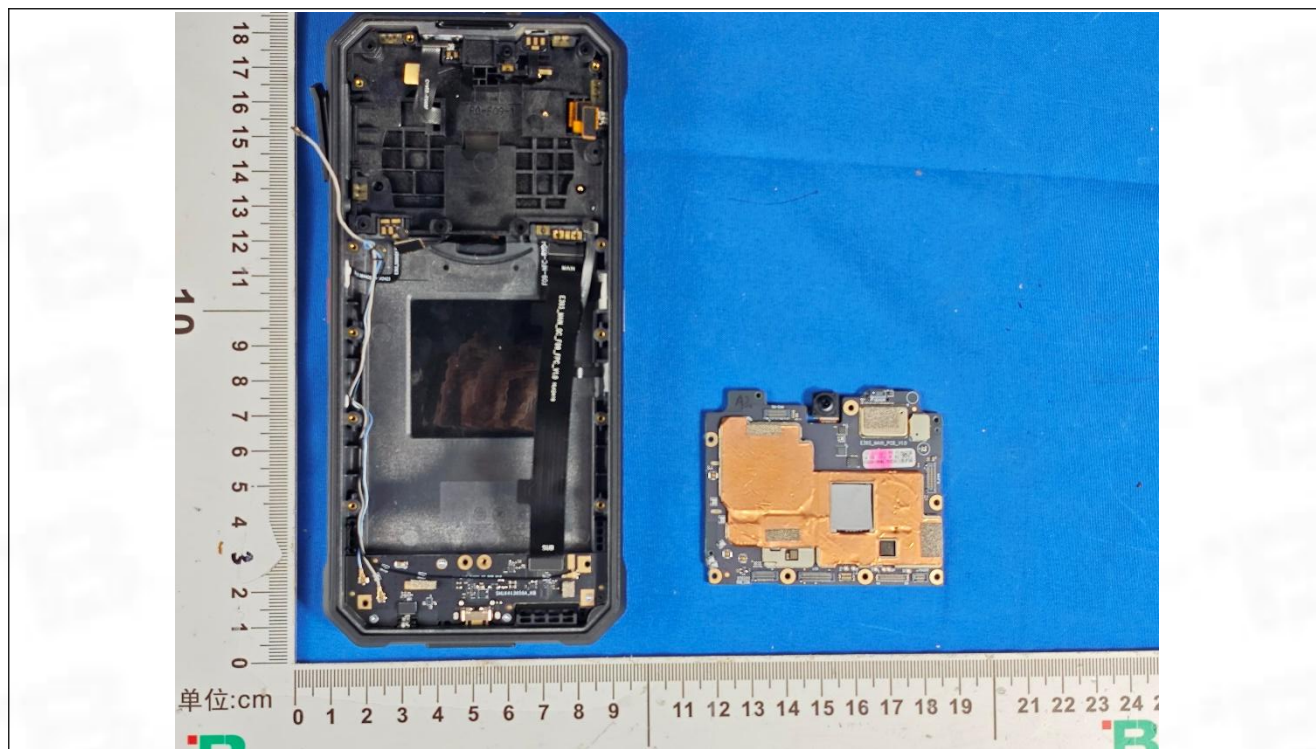


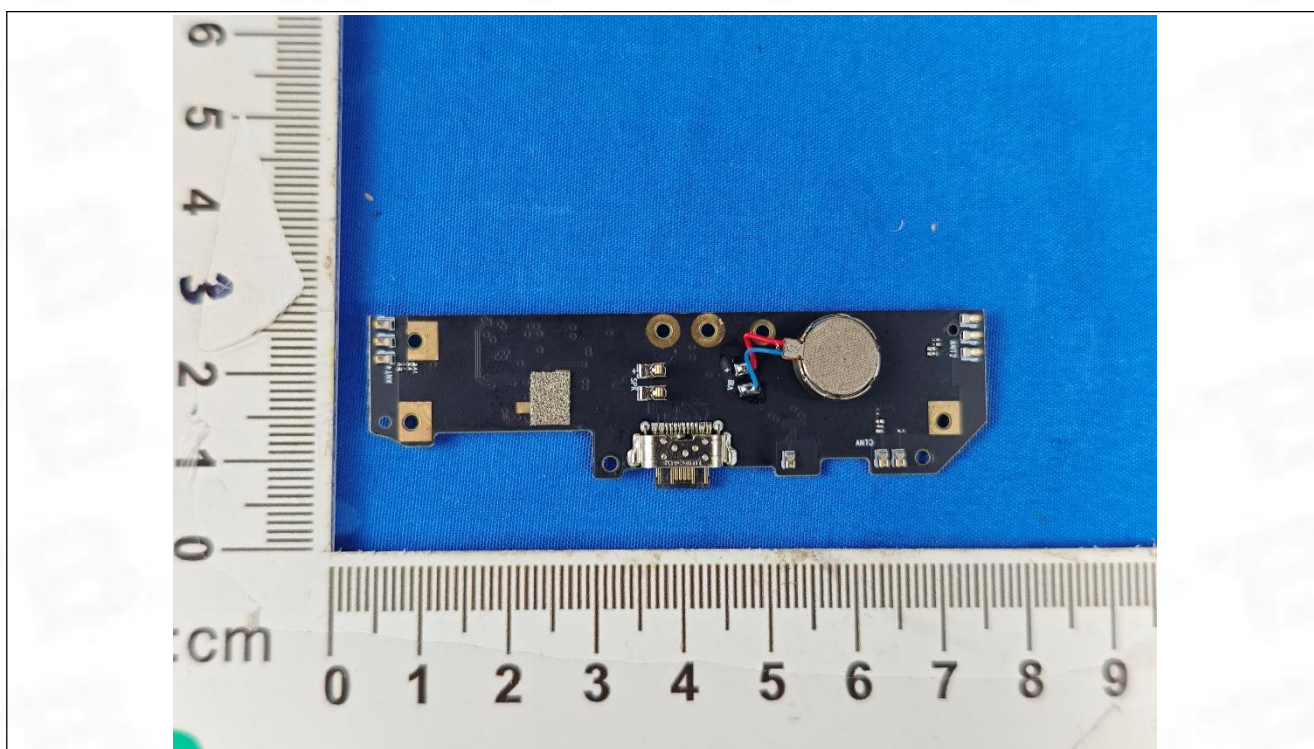
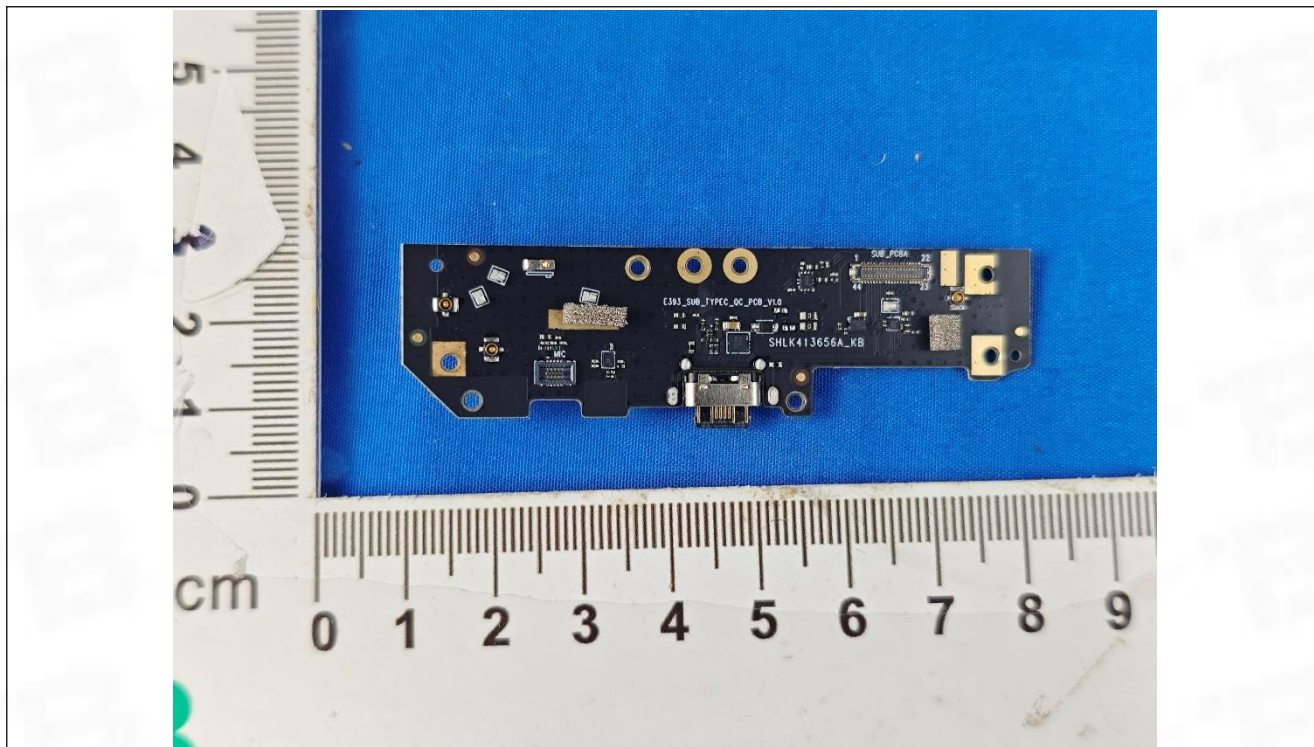
Internal

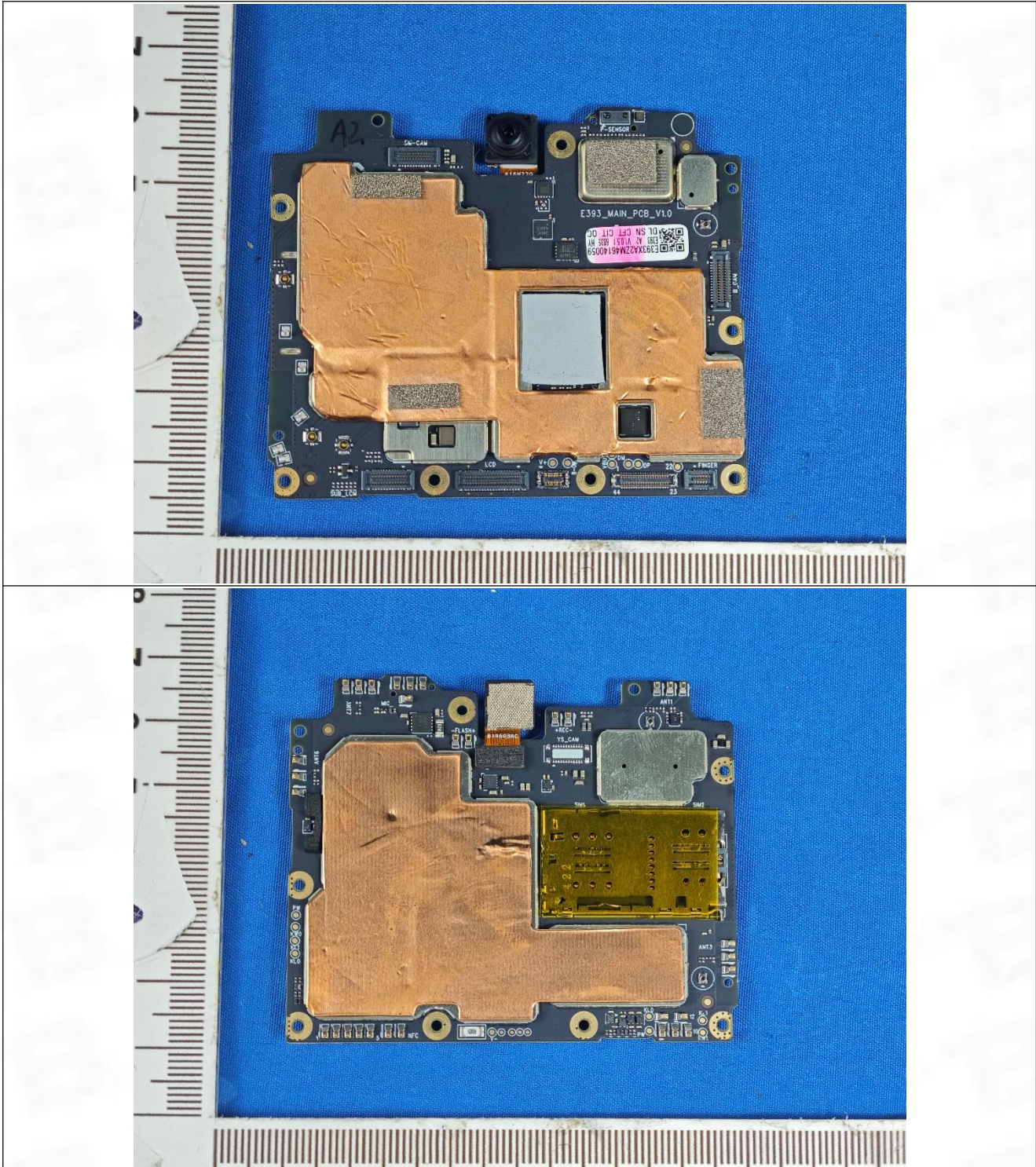


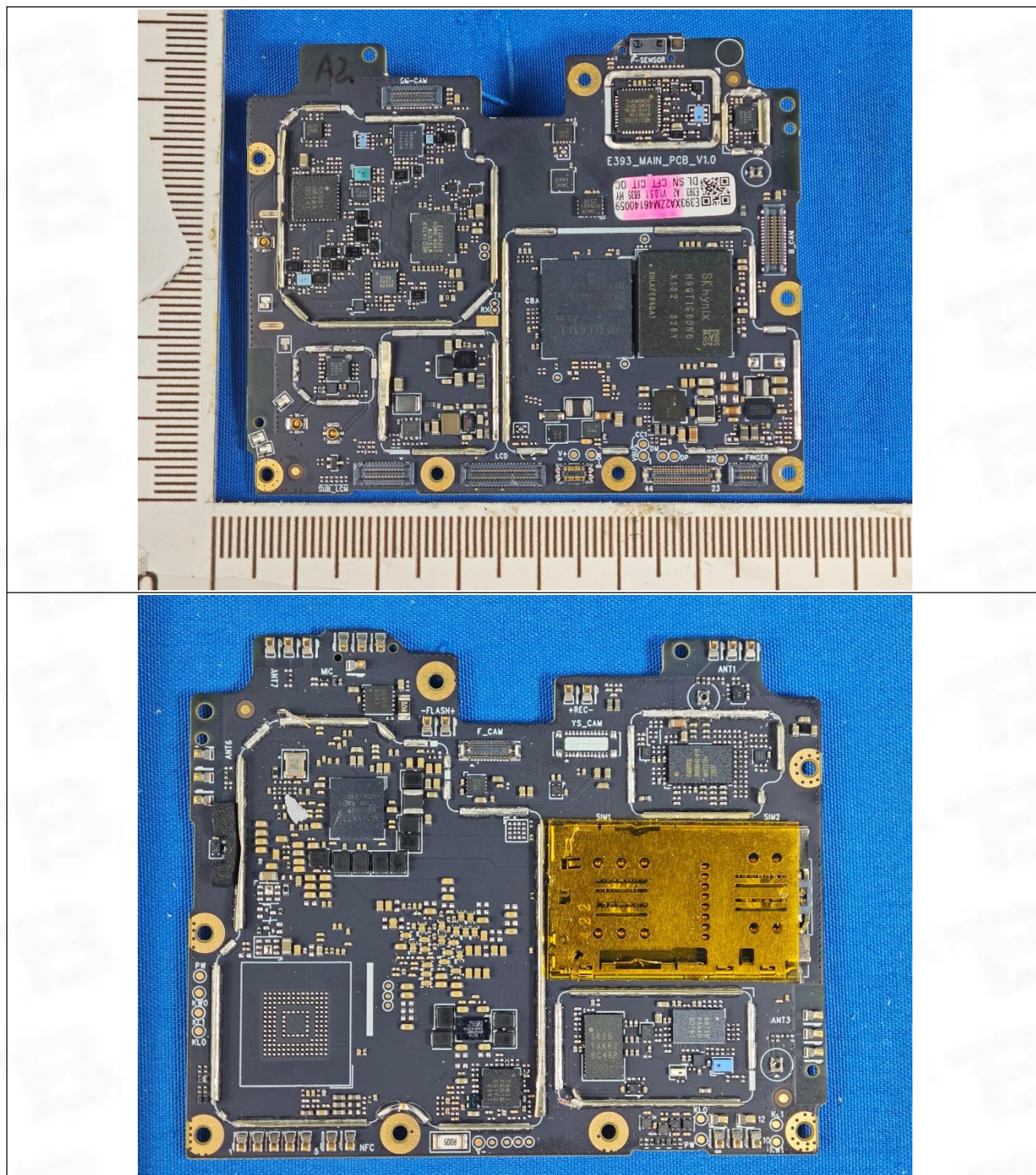














Test Report Number: BTF240704E01901



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Bao'an District, Shenzhen, China

www.btf-lab.com

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