

EMC TEST REPORT

Report No.: DGATBL2503005E01

Applicant : DOKE COMMUNICATION (HK) LIMITED
Product Name : Smart phone
Model Name : COLOR 6
Series Model : /
Test Standard : EN 55032:2015/A1:2020
EN IEC 61000-3-2:2019/A2:2024
EN 61000-3-3:2013/A2:2021/AC:2022-01
EN 55035:2017/A11:2020
Date of Test : Mar. 13, 2025~Mar. 21, 2025

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(Tank Tan)

Authorized Signatory : *Forrest Lei*

(Forrest Lei)



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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	Mar. 25,2025	DGATBL2503005E01	ALL	Initial Issue

DECLARATION OF REPORT

1.The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of the Electromagnetic Compatibility(EMC) Directive. And it is applicable only to the tested sample identified in the report.

2.This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.

3.The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.

4.The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.

1. GENERAL DESCRTIONIP

Applicant	DOKE COMMUNICATION (HK) LIMITED
Address	19H MAXGRAND PLAZA NO 3 TAI YAU STREET SAN PO KONG KL
Manufacturer	Shenzhen DOKE Electronic Co., Ltd
Address	801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China.
Factory	Shenzhen DOKE Electronic Co., Ltd
Address	801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China.
Product designation	Smart phone
Brand name	Blackview
Test model	COLOR 6
Date of sample arrival	Mar. 12, 2025
Date of test	Mar. 13, 2025~Mar. 21, 2025
Deviation	None
Condition of test sample	Normal
Test result	Pass

2. SUMMARY OF THE TEST RESULTS

Test procedures according to the technical standards:

EN 55032:2015/A1:2020

EN 55035:2017/A11:2020

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032:2015/A1:2020	Conducted Emissions (AC mains power port)	Class B	PASS	/
	Radiated Emissions (30MHz-1000MHz)	Class B	PASS	/
	Radiated Emissions (1GHz-6GHz)	Class B	PASS	Note (1)
EN IEC 61000-3-2:2019/A2:2024	Harmonic Current Emissions	Class A	/	/
EN 61000-3-3:2013/A2:2021/AC:2 022-01	Voltage Changes,Voltage Fluctuations & Flicker	/	PASS	/
EMC Immunity				
Standard	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic discharges	B	PASS	/
EN IEC 61000-4-3:2020	Continuous RF electromagnetic field disturbances	A	PASS	/
EN 61000-4-4:2012	Electrical fast transients/burst	B	PASS	/
EN 61000-4-5: 2014/A1:2017	Surges	B	PASS	/
EN 61000-4-6: 2014/AC:2015	Continuous induced RF disturbances	A	PASS	/
EN 61000-4-8:2010	Power frequency magnetic field	A	PASS	/
EN IEC 61000-4-11: 2020/AC:2022-10	Voltage dips and interruptions	B/C/C	PASS	/

Note:

If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.

If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.

(1)

If the highest frequency of the internal sources of the EUT is between 500 MHz and 1GHz, the measurement shall only be made up to 5 GHz.

If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times of the highest frequency or 6 GHz, whichever is less.

(2)

In standard EN55032, this product belongs to the Class B category.

3. GENERAL INFORMATION

3.1. GENERAL DESCRIPTION OF THE EUT

Product Name	Smart phone
Brand Name	Blackview
Model Name	COLOR 6
Series Model	/
Product Differences	/
Test Sample Number	20250206001006
Power Source	Input:DC 3.85V for battery DC 5V/9V/12V for adapter
Highest Working Frequency	5825MHz
Floor Standing Equipment(Yes/No)	No
Adapter	Model :HJ-FC001K7-EU Input:AC 100-240V, 50/60Hz, 0.6A Output:DC 5.0V/3.0A,15W,DC 9.0V/2.0A,18W,DC 12.0V/1.5A,18W
Battery	Model:Li466591PLGY Rated Voltage:DC 3.85V Charge Limit Voltage:4.4V Capacity:5000mAh
Hardware Version Number	M197T_V1
Software Version Number	COLOR6_EEA_M8104A_V1.0

Note:

- This device described above has been tested by ATBL, and the test results show that the
- (1) equipment under test (EUT) is in compliance with the EMC Directive 2014/30/EU requirements. And it is applicable only to the tested sample identified in the report.

3.2. DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For Conducted Emissions on power port		
Pretest Mode	Description	The Worst Mode
Mode 1	Front camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 2	Rear camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 3	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 4	FM 88MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 5	FM 98MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 6	FM 108MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 7	FM 98MHz+ Charging(The battery level <10%)(AC 230V/50Hz)+ flashlight	
Mode 8	Front camera operating + Charging(The battery level <10%)(AC 230V/50Hz)+ Earphone	√
Mode 9	Front camera operating + Charging(The battery level <10%)(AC 110V/60Hz)+ Earphone	
Mode 10	SD Transmitting with PC+Mobile phone Charging	

For Radiated Emissions Below 1GHz		
Pretest Mode	Description	The Worst Mode
Mode 1	Front camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 2	Rear camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 3	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 4	FM 88MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 5	FM 98MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 6	FM 108MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 7	Video plays color bar signal+1KHz	

	audio playing + Charging(The battery level <10%)(AC 230V/50Hz)+ flashlight	
Mode 8	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 230V/50Hz)+ Earphone	
Mode 9	Video plays color bar signal+1KHz audio playing with battery(DC 3.85V)	
Mode 10	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 110V/60Hz)	
Mode 11	SD Transmitting with PC+Mobile phone Charging	√

For Radiated Emissions Above 1GHz		
Pretest Mode	Description	The Worst Mode
Mode 1	Front camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 2	Rear camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 3	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 230V/50Hz)	√
Mode 4	SD Transmitting with PC+Mobile phone charging	

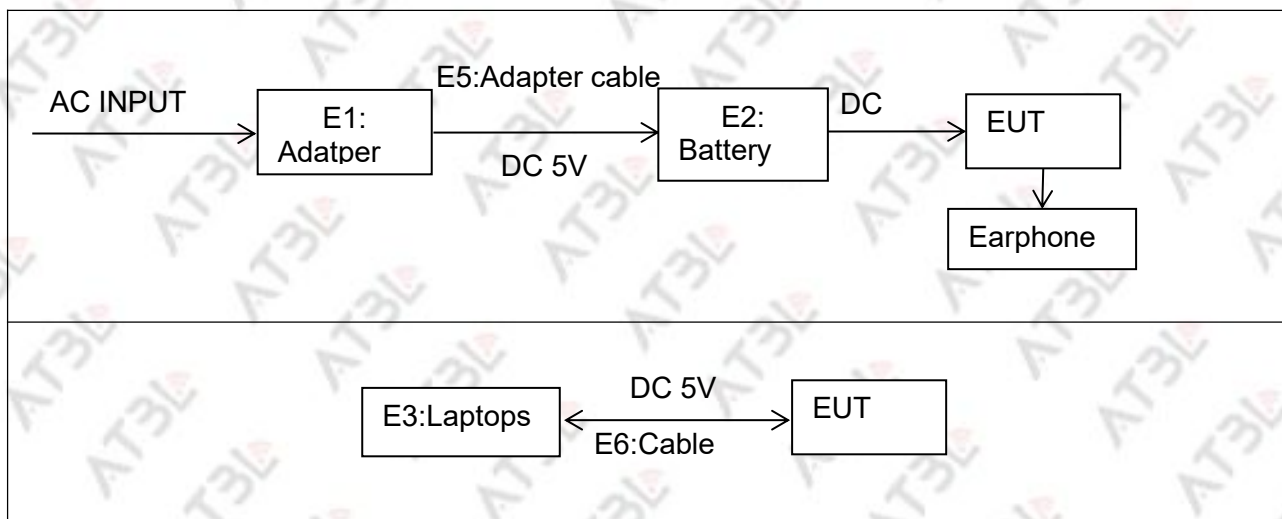
For Harmonic Current Emissions and Voltage Fluctuation and Flicker Susceptibility		
Pretest Mode	Description	The Worst Mode
Mode 1	Front camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	√
Mode 2	Rear camera operating + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 3	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)(AC 230V/50Hz)	
Mode 4	FM 88MHz+ Charging(The battery level <10%)(AC 230V/50Hz)	

For Immunity	
Pretest Mode	Description
Mode 1	Front camera operating + Charging(The battery level <10%)
Mode 2	Rear camera operating + Charging(The battery level <10%)
Mode 3	Video plays color bar signal+1KHz audio playing + Charging(The battery level <10%)
Mode 4	FM 88MHz+ Charging(The battery level <10%)
Mode 5	FM 98MHz+ Charging(The battery level <10%)
Mode 6	FM 108MHz+ Charging(The battery level <10%)
Mode 7	Rear camera operating + Charging(The battery level <10%)+ flashlight
Mode 8	Rear camera operating + Charging(The battery level <10%)+ earphone
Mode 9	Rear camera operating with battery DC 3.85V
Mode 10	SD Transmitting with PC+Mobile phone charging)

Note:

- (1) For Conducted Emissions, the worst case was presented and recorded in this report.
- (2) For Radiated Emissions, the worst case was presented and recorded in this report.
- (3) For Harmonic Current Emissions and Voltage Fluctuation and Flicker Susceptibility, the worst case was presented and recorded in this report.
- (4) For Immunity, all cases were presented and recorded in this report.

3.3. TEST CONFIGURATION DIAGRAM



3.4. DESCRIPTION OF THE SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Item	Equipment	Manufacturer	Model No.	Serial No/Info
E1	Adapter	Shenzhen HuaJin Technology Co., LTD.	HJ-FC001K7-EU	/
E2	Battery	Hunan Gaoyuan Battery Co., Ltd.	Li466591PLGY	/

Auxiliary Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.
E3:DGATBL-EM CAE-053	Laptops	Redmi	JYU4371CN	35170/81SC00254
E4:DGATBL-EM CAE-111	Earphone	/	/	/

Cable Type

Item	Signal Cable Type	Shielded Type	Ferrite Core	Length
E4	USB-A to Type-C Cable	Unshielded	NO	92cm

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

3.5. LABORATORY INFORMATION

Company Name:	Dongguan ATBL Technology Co., Ltd.
Address:	Building 3, China-israel International Industrial Park, No.7 Huanhu Road, Songshan Lake Park, Dongguan City · Guangdong Province
Telephone:	0769-27282887
CNAS Number:	CNAS L21122

3.6. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. For Conducted Emissions on power port:

Test Site	Measurement Frequency Range	U(dB)	Note
DGATBL-E038	9kHz ~ 150kHz	2.47	/
	150kHz ~ 30MHz	2.23	/

B. For Conducted Emissions on wired network port:

Test Site	Measurement Frequency Range	U(dB)	Note
DGATBL-E038	150kHz ~ 30MHz	3.82	CAT6

C. For Radiated Emissions:

Test Site	Measurement Frequency Range	U(dB)	Note
DGATBL-E036	30MHz ~ 1GHz	5.88	/
	1GHz ~ 6GHz	4.84	/

3.7. MEASUREMENT INSTRUMENTS LIST

3.7.1. Conducted Emissions

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
EMI Test Receiver	R&S	ESPI3	101163	DGATBL-E022	2025.08.15
LISN	R&S	ENV216	102282	DGATBL-E024	2025.08.18
LISN	/	NNB-111	13835240	DGATBL-E025	2025.08.18
CE Cable	RUIWEI	RW2350-3.8A-2 M+10dB	/	DGATBL-E047	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E028	2025.08.18
Testing Software	FALA	EZ-EMC(FARAD-3A1+)		DGATBL-E052	/

3.7.2. Radiated Emissions

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
EMI Test Receiver	R&S	ESCI3	101704	DGATBL-E023	2025.08.15
Spectrum Analyzer	Agilent	N9020A	MY51285460	DGATBL-E040	2025.08.18
Bi-log Antenna	SCHWA RZBECK	VULB 9168	1449	DGATBL-E016	2025.04.23
Horn Antenna	SCHWA RZBECK	BBHA 9120D	2659	DGATBL-E018	2025.08.24
Pre-amplifier (25M-1G)	cesheng	DLNA-20-1000	CSKJLNA2308 22B	DGATBL-E042	2025.08.15
Pre-amplifier (1G-18GHz)	cesheng	DLNA-1000-18 000	CSKJLNA2307 11A	DGATBL-E044	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E030	2025.08.18
Testing Software	FALA	EZ-EMC(FARAD-3A1+)		DGATBL-E051	/

3.7.3. Harmonic Current Emissions

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Single phase coupling unit	TESEQ	CCN 1000-1	72294	DGATBL-E009	2025.08.19
Programmable AC and DC power supply	TESEQ	NSG 1007-5-400	7000-474-2	DGATBL-E010	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18
Testing Software	TESEQ	V 4.28.0		DGATBL-E054	/

3.7.4. Voltage Changes, Voltage Fluctuations and Flicker

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Single phase coupling unit	TESEQ	CCN 1000-1	72294	DGATBL-E009	2025.08.19
Programmable AC and DC power supply	TESEQ	NSG 1007-5-400	7000-474-2	DGATBL-E010	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18
Testing Software	TESEQ	V 4.28.0		DGATBL-E054	/

3.7.5. Electrostatic discharges

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
ESD TEST GENERATOR	NoiseKen	ESS-B3011A	ESS22X5313	DGATBL-E001	2025.08.19
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18

3.7.6. Continuous RF electromagnetic field disturbances

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Radio frequency signal source	Agilent	N5181A	MY49060199	DGATBL-E068	2025.07.17
Radio frequency power meter	R&S	NRP-Z11	118066	DGATBL-E069	2025.07.17
Radio frequency power amplifier	MICOTOP	HAP_80M01G-250W	MPA1711489	DGATBL-E060	2025.03.27
Radio frequency power amplifier	MICOTOP	HAP_01g06g-75W	MPA1904132	DGATBL-E066	2025.03.27
Audio conditioner	SKET	PM0083	EMS0058	DGATBL-E059	2025.03.27
Audio analyzer	SKET	ATS-1	EMS0057	DGATBL-E058	2025.03.27
Horn Antenna	SCHWA RZBECK	BBHA 9120D	2659	DGATBL-E017	2025.08.24
Biconic Logarithmic Periodic Antennas (Hybrid)	SCHAFFNER	CBL6112B	2740	DGATBL-E015	/
Field intensity probe	Narde	EP-601	12021	DGATBL-E063	2025.07.27
Temperature & Humidity	JR-609	Parkoo	/	DGATBL-E031	2025.08.18
Testing Software	SKET	EMC-S V2.0.0.7		DGATBL-E067	/

3.7.7. Electrical fast transients/burst

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
EFT surge combination generator	EFTC	ES-4516A	230229	DGATBL-E002	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18

3.7.8. Surges

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
EFT surge combination generator	ETEST	ES-4516A	WS05800 0920006	DGATBL-E002	2025.08.15
Communication wave lightning surge generator	ETEST	ES-506AT	230511	DGATBL-E005	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18

3.7.9. Continuous induced RF disturbances

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Conducted immunity testing	Keleto	LDPA100K230 M100	202307543	DGATBL-E011	2025.08.25

all-in-one machine					
CDN	Keleto	M2/M3-16A	/	DGATBL-E012	2025.08.15
Audio conditioner	SKET	PM0083	EMS0058	DGATBL-E059	2025.03.27
Audio analyzer	SKET	ATS-1	EMS0057	DGATBL-E058	2025.03.27
Attenuator	Keleto	APDCO1G-100 W-N-6dB	191117	DGATBL-E013	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18
Testing Software	Keleto	EMS-S V2.1.3.32		DGATBL-E053	/

3.7.10. Power-frequency magnetic field

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Power frequency magnetic field	ETEST	ES-8100	230420	DGATBL-E008	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18

3.7.11. Voltage dips and interruptions

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
AC voltage drop generator	ETEST	ES-1113A	230515	DGATBL-E004	2025.08.15
Temperature & Humidity	Parkoo	JR-609	/	DGATBL-E029	2025.08.18

3.7.12. Connected Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Equipment No.	Calibrated Until
Vector signal generator	KEYSIGHT	N5182B	MY57301571	DGATBL-W04	2025.08.18

4. EMC EMISSION TEST

4.1. CONDUCTED EMISSIONS

4.1.1. REQUIREMENTS FOR CONDUCTED EMISSIONS FROM THE AC MAINS POWER PORTS OF THE CLASS A EQUIPMENT

FREQUENCY (MHz)	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0.15 - 0.5	AMN	Quasi Peak / 9 kHz	79
0.50 - 30			73
0.15 - 0.5	AMN	Average / 9 kHz	66
0.50 - 30			60

4.1.2. REQUIREMENTS FOR CONDUCTED EMISSIONS FROM THE AC MAINS POWER PORTS OF THE CLASS B EQUIPMENT

FREQUENCY (MHz)	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0.15 - 0.5	AMN	Quasi Peak / 9 kHz	66 - 56*
0.50 - 5			56
5 - 30			60
0.15 - 0.5	AMN	Average / 9 kHz	56 - 46*
0.50 - 5			46
5 - 30			50

Note:

- (1) Asymmetric mode port:Applicable to
 - 1.wired network ports
 - 2.optical fibre ports with metallic shield or tension members
 - 3.antenna ports
- (2) AC mains ports that also have the function of a wired network port should use the limit value corresponding to AC power ports
- (3) Testing is required at only one EUT supply voltage and frequency.
- (4) Applicable to ports listed above and intended to connect to cables longer than 3 m.
- (5) The tighter limit applies at the band edges.
- (6) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (7) The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.
- (8) The current and voltage disturbance limits are derived for use with an impedance stabilization network.

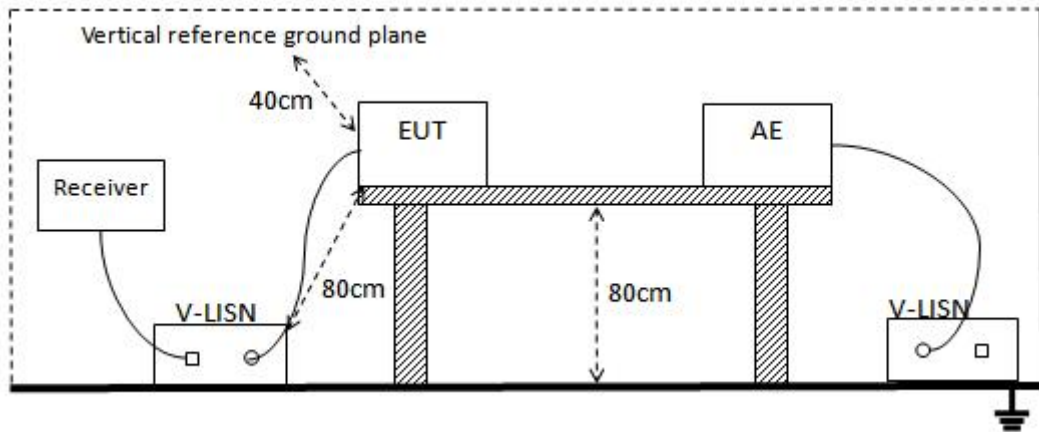
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. POWER LINE CONDUCTED TEST PROCEDURE

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50Ω/ 50μH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4. POWER LINE CONDUCTED TEST SETUP

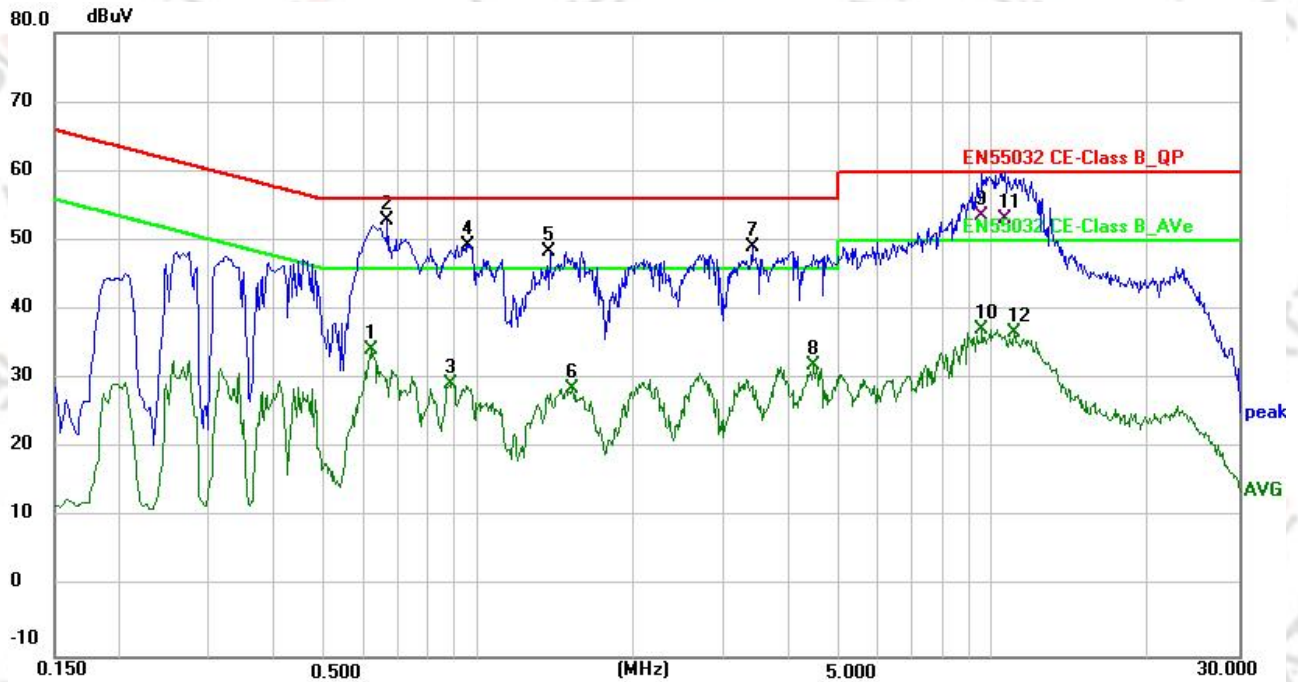


4.1.5. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **3.3** Unless otherwise a special operating condition is specified in the following during the testing.

4.1.6. TEST RESULTS

Temperature:	20°C	Relative Humidity:	57%
Phase:	L	Test Mode:	Mode 8
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.21

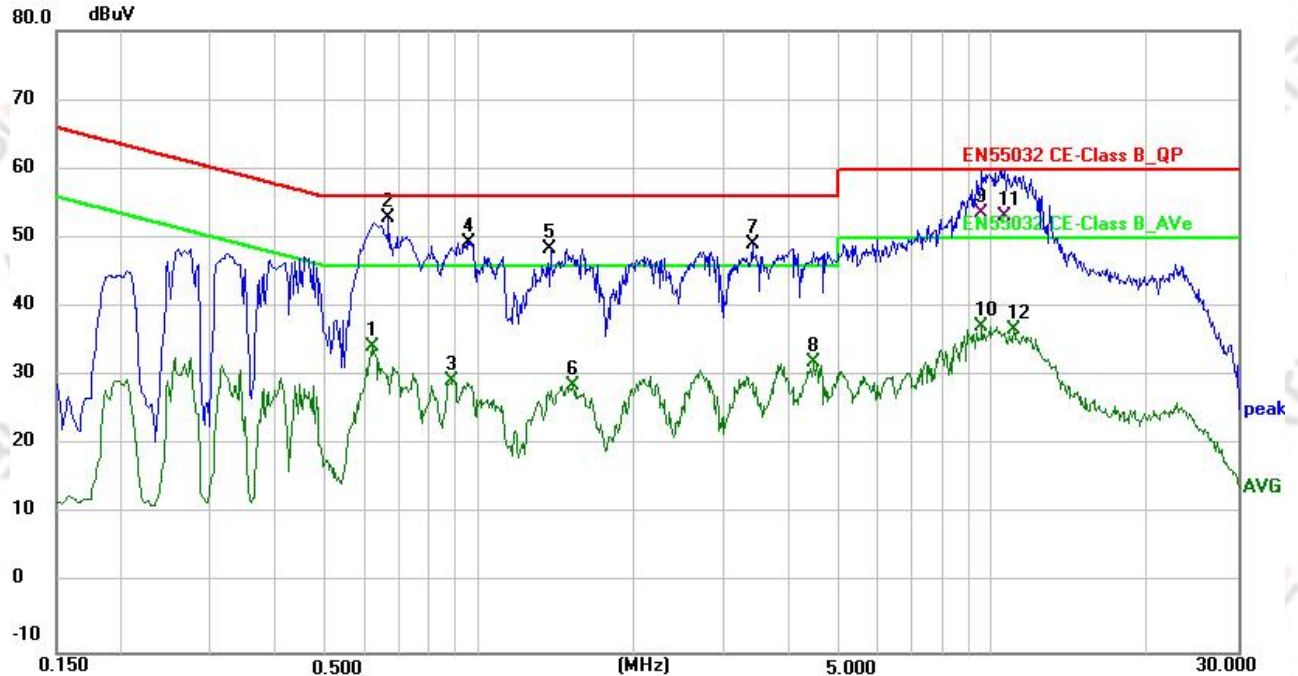


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.6220	14.77	19.52	34.29	46.00	-11.71	AVG
2	0.6660	33.38	19.52	52.90	56.00	-3.10	peak
3	0.8860	9.79	19.54	29.33	46.00	-16.67	AVG
4	0.9580	29.94	19.51	49.45	56.00	-6.55	peak
5	1.3779	28.99	19.56	48.55	56.00	-7.45	peak
6	1.5220	9.23	19.56	28.79	46.00	-17.21	AVG
7	3.4100	29.34	19.70	49.04	56.00	-6.96	peak
8	4.4980	12.22	19.80	32.02	46.00	-13.98	AVG
9	9.5300	33.36	20.26	53.62	60.00	-6.38	QP
10	9.5300	17.07	20.26	37.33	50.00	-12.67	AVG
11	10.5500	32.81	20.38	53.19	60.00	-6.81	QP
12	11.0180	16.45	20.45	36.90	50.00	-13.10	AVG

Remark:

1. When the PEAK value conforms to the limit, the QP value also conforms to the limit
2. The emission level of the six frequencies is marked as the highest level
3. Margin value = Emission level – Limit value
4. Emission Level = Correction Factor + Reading Value
5. Correct Factor = Cable Loss + AMN Factor

Temperature:	20°C	Relative Humidity:	57%
Phase:	N	Test Mode:	Mode 8
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.21



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.6220	14.77	19.52	34.29	46.00	-11.71	AVG
2	0.6660	33.38	19.52	52.90	56.00	-3.10	peak
3	0.8860	9.79	19.54	29.33	46.00	-16.67	AVG
4	0.9580	29.94	19.51	49.45	56.00	-6.55	peak
5	1.3779	28.99	19.56	48.55	56.00	-7.45	peak
6	1.5220	9.23	19.56	28.79	46.00	-17.21	AVG
7	3.4100	29.34	19.70	49.04	56.00	-6.96	peak
8	4.4980	12.22	19.80	32.02	46.00	-13.98	AVG
9	9.5300	33.36	20.26	53.62	60.00	-6.38	QP
10	9.5300	17.07	20.26	37.33	50.00	-12.67	AVG
11	10.5500	32.81	20.38	53.19	60.00	-6.81	QP
12	11.0180	16.45	20.45	36.90	50.00	-13.10	AVG

Remark:

1. When the PEAK value conforms to the limit, the QP value also conforms to the limit
2. The emission level of the six frequencies is marked as the highest level
3. Margin value = Emission level - Limit value
4. Emission Level = Correction Factor + Reading Value
5. Correct Factor = Cable Loss + AMN Factor

4.2. RADIATED EMISSIONS

4.2.1. LIMITS OF THE RADIATED EMISSIONS MEASUREMENT

Frequency (MHz)	Distance (m)	Detector type/ bandwidth	Class A	Class B
			dBuV/m	dBuV/m
30 - 230	3	Quasi peak/120 kHz	50	40
230 - 1000	3	Quasi peak/120 kHz	57	47
1000-3000	3	Peak/1 MHz	76	70
3000-6000	3	Peak/1 MHz	80	74
1000-3000	3	AV/1 MHz	56	50
3000-6000	3	AV/1 MHz	60	54

Notes:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2. TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. EUT as the center to the edge of the auxiliary device, the distance from the maximum edge to the center of the antenna is 3 meters.
- c. The height of antenna is varied from 1 meter to 4 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.
- d. 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.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3. TEST SETUP

(A) Radiated Emissions Test Set-Up Frequency Below 1 GHz

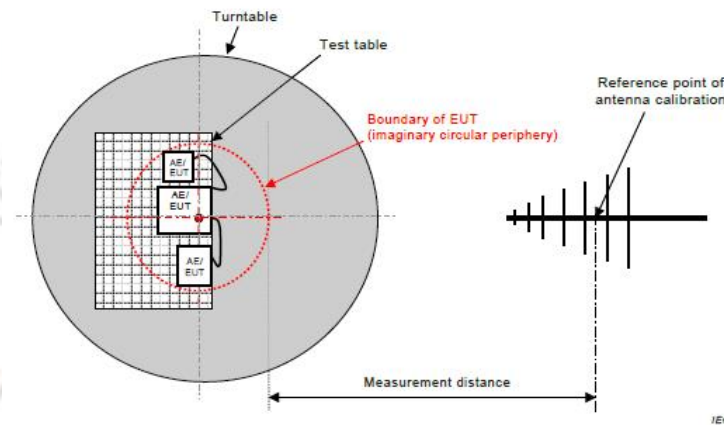


Figure C.1 – Measurement distance

(B) Radiated Emissions Test Set-Up Frequency Above 1GHz

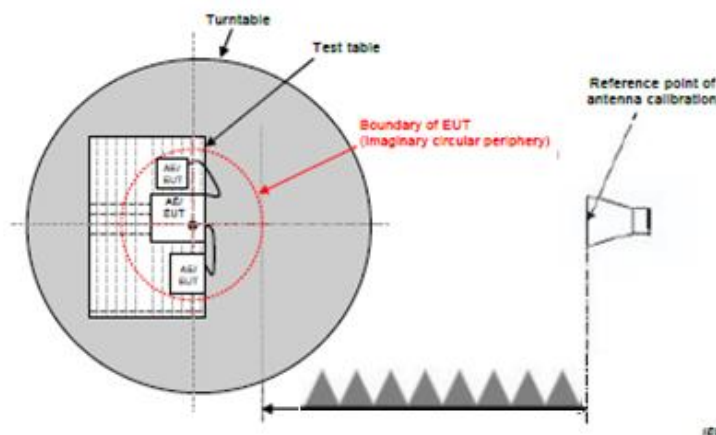


Figure C.1 – Measurement distance

4.2.4. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 3.3 Unless otherwise a special operating condition is specified in the following during the testing.

4.2.5. TEST RESULTS

30MHz - 1000MHz

Temperature:	24℃	Relative Humidity:	51%
Phase:	Horizontal	Test Mode:	Mode 11
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.14



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	63.9827	57.50	-29.77	27.73	40.00	-12.27	peak
2	244.2321	67.99	-30.54	37.45	47.00	-9.55	peak
3	451.1350	50.49	-24.25	26.24	47.00	-20.76	peak
4	480.5276	62.88	-23.95	38.93	47.00	-8.07	peak
5	721.7258	63.01	-19.16	43.85	47.00	-3.15	peak
6	962.1622	48.54	-15.78	32.76	47.00	-14.24	peak

Remark:

1. When the PEAK value conforms to the limit, the QP value also conforms to the limit
2. The emission level of the six frequencies is marked as the highest level
3. Margin value = Emission level - Limit value
4. Emission Level = Correction Factor + Reading Value
5. Correct Factor = Cable Loss + Antenna Factor - Amplifier Gain

Temperature:	24℃	Relative Humidity:	51%
Phase:	Vertical	Test Mode:	Mode 11
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.14



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	64.2074	59.73	-29.83	29.90	40.00	-10.10	QP
2	164.9075	63.87	-29.44	34.43	40.00	-5.57	peak
3	173.2051	63.23	-30.25	32.98	40.00	-7.02	peak
4	239.9874	76.11	-30.71	45.40	47.00	-1.60	QP
5	480.5276	65.22	-23.95	41.27	47.00	-5.73	peak
6	721.7259	59.66	-19.16	40.50	47.00	-6.50	QP

Remark:

1. When the PEAK value conforms to the limit, the QP value also conforms to the limit
2. The emission level of the six frequencies is marked as the highest level
3. Margin value = Emission level – Limit value
4. Emission Level = Correction Factor + Reading Value
5. Correct Factor = Cable Loss + Antenna Factor - Amplifier Gain

1000MHz -6000MHz

Temperature:	23℃	Relative Humidity:	62%
Phase:	Horizontal	Test Mode:	Mode 3
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.13

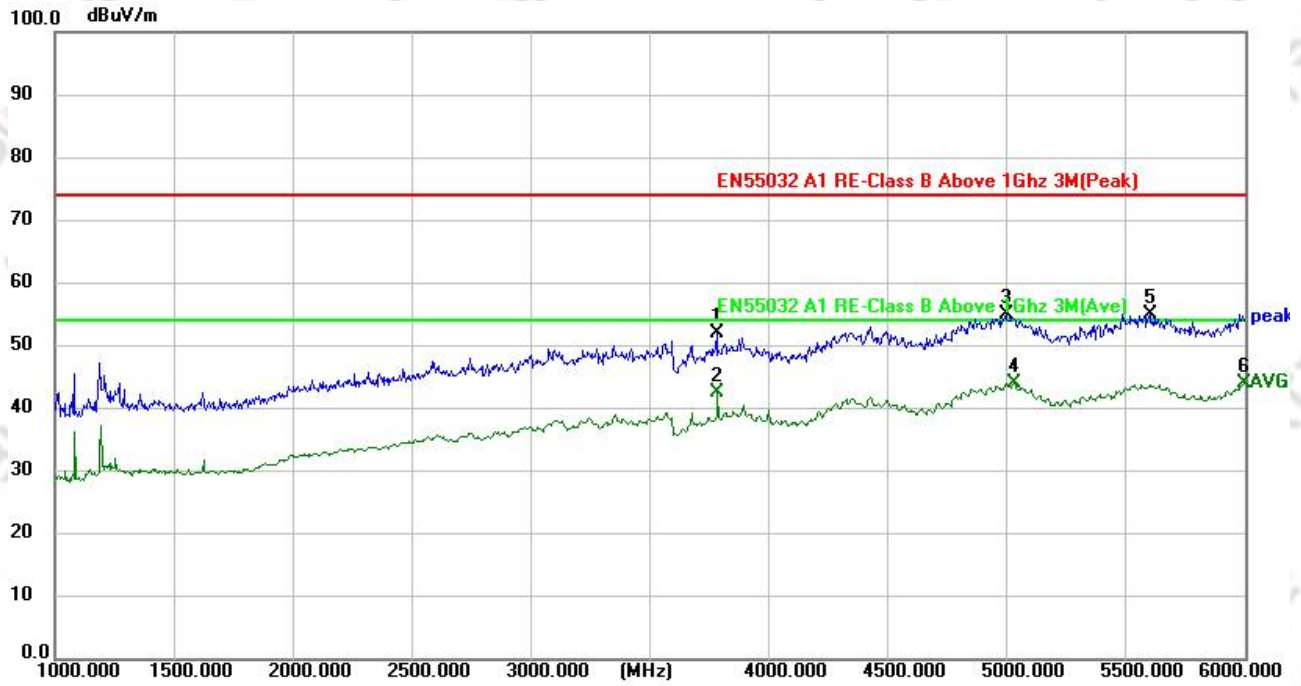


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	3780.000	61.53	-9.56	51.97	74.00	-22.03	peak
2	3785.000	51.84	-9.52	42.32	54.00	-11.68	AVG
3	4870.000	49.93	-5.66	44.27	54.00	-9.73	AVG
4	4915.000	60.60	-5.50	55.10	74.00	-18.90	peak
5	5985.000	57.55	-2.57	54.98	74.00	-19.02	peak
6	6000.000	46.50	-2.50	44.00	54.00	-10.00	AVG

Remark:

- 1.The emission level of the six frequencies is marked as the highest level
- 2.Margin value = Emission level – Limit value
- 3.Emission Level = Correction Factor + Reading Value
- 4.Correct Factor= Cable Loss +Antenna Factor-Amplifier Gain

Temperature:	23℃	Relative Humidity:	62%
Phase:	Vertical	Test Mode:	Mode 3
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.13



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	3780.000	61.65	-9.56	52.09	74.00	-21.91	peak
2	3785.000	52.02	-9.52	42.50	54.00	-11.50	AVG
3	4995.000	60.21	-5.22	54.99	74.00	-19.01	peak
4	5030.000	49.09	-5.14	43.95	54.00	-10.05	AVG
5	5600.000	59.41	-4.50	54.91	74.00	-19.09	peak
6	5995.000	46.62	-2.52	44.10	54.00	-9.90	AVG

Remark:

- 1.The emission level of the six frequencies is marked as the highest level
- 2.Margin value = Emission level – Limit value
- 3.Emission Level = Correction Factor + Reading Value
- 4.Correct Factor= Cable Loss +Antenna Factor-Amplifier Gain

4.3. HARMONIC CURRENT EMISSIONS

4.3.1. LIMITS OF THE HARMONICS CURRENT EMISSIONS

Limits for Class A equipment		Limits for Class D equipment		
Harmonic Order h	Max. permissible harmonics current A	Harmonic Order h	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd harmonics		Odd Harmonics only		
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	13≤h≤39	3.85/h	0.15x15/h
15≤h≤39	0.15x15/h			
Even harmonics				
2	1.08			
4	0.43			
6	0.30			
8≤h≤40	0.23x8/h			

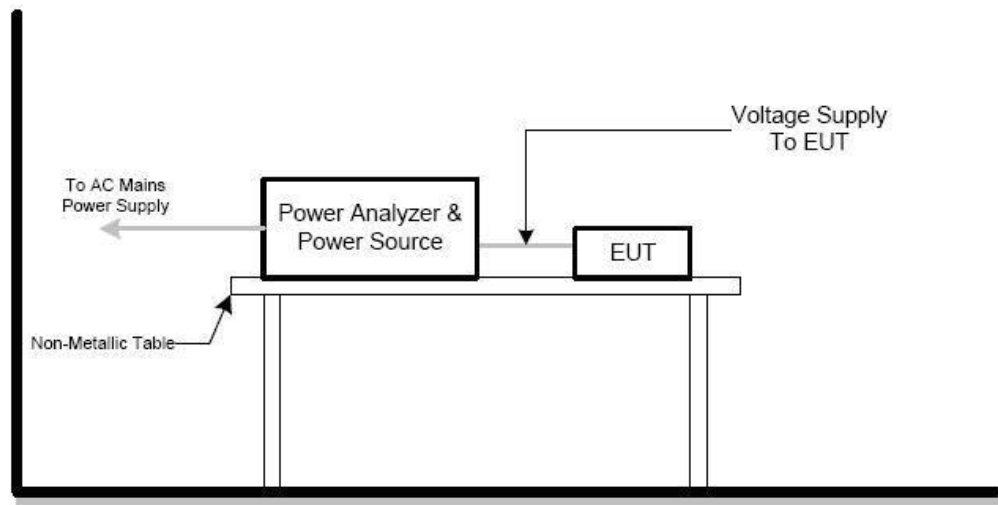
4.3.2. TEST PROCEDURE

- The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated To produce the maximum harmonic components under normal operating conditions.
- The classification of EUT is according to section 5 of EN 61000-3-2.The EUT is classified as follows:
Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.
Class B: Portable tools; Arc welding equipment which is not professional Equipment.
Class C: Lighting equipment.
Class D: Equipment having a specified power less than or equal to 600W of the following types: Personal computers and personal computer monitors and television Receivers.
- The correspondent test program of test instrument to measure the current harmonics Emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

4.3.3. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **3.3** Unless otherwise a special operating condition is specified in the following during the testing.

4.3.4. TEST SETUP



4.3.5. TEST RESULTS

☒ This product is not defined as lighting equipment, and has rated power less than 75W, therefore, no limit apply according to EN 61000-3-2. It is deem to full fit the requirements of the standards.

☐ Measure according to EN 61000-3-2.

Temperature:	/	Relative Humidity:	/
Test Voltage:	/	Test Date:	/
Test Mode:	/		

Test Protocol and Wave form: /

4.4. VOLTAGE CHANGES,VOLTAGE FLUCTUATION AND FLICKER

4.4.1. LIMITS OF THE VOLTAGE CHANGES, VOLTAGE FLUCTUATION AND FLICKER

Tests	Limit	Descriptions
	IEC/EN 61000-3-3	
P_{st}	$\leq 1.0, T_p=10 \text{ min.}$	Short Term Flicker Indicator
P_{lt}	$\leq 0.65, T_p=2 \text{ hr.}$	Long Term Flicker Indicator
$T_{dt(s)}$	$\leq 0.5s$	The Accumulated Time Value Of $d(t)$ With a Deviation Exceeding 3.3 % During a Single V-Change
$d_{max}(\%)$	$\leq 4\%$	Maximum Absolute V-Change
$d_c(\%)$	$\leq 3.3\% \text{ for } > 500ms$	Maximum Steady State V-Change

4.4.2. TEST PROCEDURE

a. Fluctuation and Flickers Test:

Tests was performed according to the Test Conditions/Assessment of IEC/EN 61000-3-3 depend

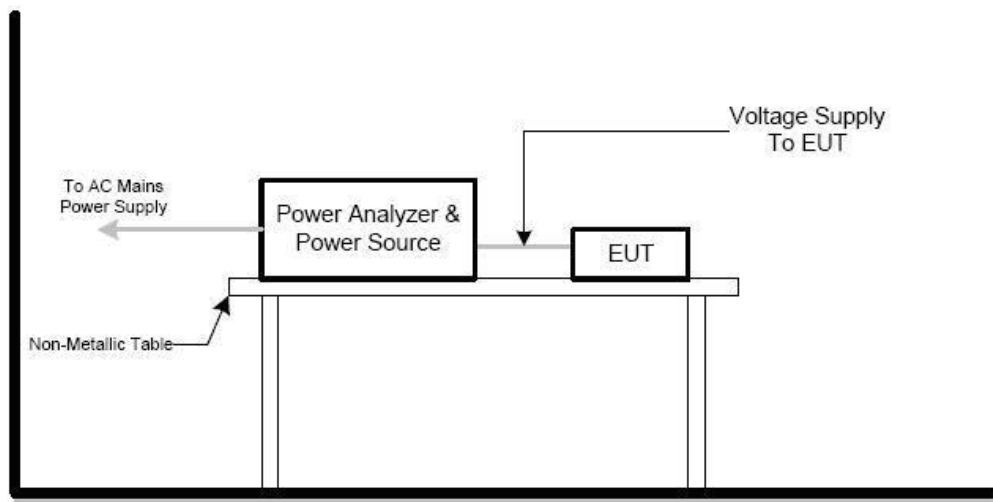
On which standard adopted for compliance measurement.

b. All types of voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

4.4.3. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **3.3** Unless otherwise a special operating condition is specified in the following during the testing.

4.4.4. TEST SETUP



4.4.5. TEST RESULTS

Temperature:	21℃	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz	Test Date:	2025.03.18
Test Mode:	Mode 1		

Test Parameter	Measurement Value	Limit	Remarks
P _{st}	0.064	1.0	Pass
P _{lt}	/	0.65	/
T _{dt(s)}	0	0.5	Pass
d _{max} (%)	0.21	4%	Pass
d _c (%)	0	3.3%	Pass

5. EMC IMMUNITY TEST

5.1. STANDARD COMPLIANCE/SERVIRITY LEVEL/CRITERIA

Tests Standard No.	TEST SPECIFICATION	Test Mode Test Ports	Perform. Criteria
1. Electrostatic discharges IEC/EN 61000-4-2	8kV air discharge 4kV contact discharge	Direct Mode	B
	4kV HCP discharge 4kV VCP discharge	Indirect Mode	B
2. Continuous RF electromagnetic field disturbances IEC/EN 61000-4-3	80 MHz - 1000 MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz, 1000Hz,3V/m 80%AM modulated	Enclosure	A
3. Electrical fast transients/burst IEC/EN 61000-4-4	5/50ns Tr/Th 5kHz Repetition Freq.	Power Supply Port	B
	5/50ns Tr/Th 5kHz Repetition Freq.	CTL/Signal Data Line Port	B
4. Surges IEC/EN 61000-4-5	1.2/50(8/20) Tr/Th us $\pm 1KV$	L-N	B
	1.2/50(8/20) Tr/Th us $\pm 2KV$	L-PE N-PE	B
	1.2/50(8/20) Tr/Th us $\pm 1KV$	DC Power Port	B
	10/700(5/320) Tr/Th us $\pm 1KV$ and $\pm 4KV$	Unshielded symmetrical ports(Apply where primary protection is intended)	C
	10/700(5/320) Tr/Th us $\pm 1KV$	Unshielded symmetrical ports(Apply where primary protection is not intended)	C
	1.2/50(8/20) Tr/Th us $\pm 0.5KV$	coaxial or shieldedl port	B
5. Continuous induced RF disturbances IEC/EN 61000-4-6	0.15 MHz to 80 MHz, 3V 1000Hz 80%, AM Modulated 150 Ω source impedance	CTL/Signal Port	A
	0.15 MHz to 80 MHz, 3V-1V 1000Hz 80%, AM Modulated 150 Ω source impedance	AC Power Port	A
	0.15 MHz to 80 MHz, 1V 1000Hz 80%, AM Modulated 150 Ω source impedance	DC Power Port	A
6. Power Frequency Magnetic Field Test IEC/EN 61000-4-8	50 or 60Hz 1A/m	Enclosure	A
7. Voltage dips and interruptions IEC/EN 61000-4-11	Voltage dip 100%	AC Power Port	B
	Voltage dip 30%		C
	Interruption 100%		C

5.2. GENERAL PERFORMANCE CRITERIA

According to **EN 55035** standard, the general performance criteria as following:

Criterion A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion B	During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion C	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Are boot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

5.2.1. GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **3.3** Unless otherwise a special operating condition is specified in the following during the testing.

5.3. ELECTROSTATIC DISCHARGES

5.3.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance:	B
Discharge Voltage:	Air Discharge : 2kV/4kV/8kV (Direct) Contact Discharge : 2kV/4kV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: min. 20 times at each test point Contact Discharge: min. 200 times in total 20 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

5.3.2. TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manners:

- Electrostatic discharges were applied only to those points and surfaces of the EUT 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 EUT.

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 EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator was removed from the EUT and re-triggered for a new single discharge. The test was repeated until all discharges were complete.

Vertical Coupling Plane (VCP):

The coupling plane of dimensions 0.5m x 0.5m, is placed parallel to and positioned at a distance 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

Horizontal Coupling Plane (HCP):

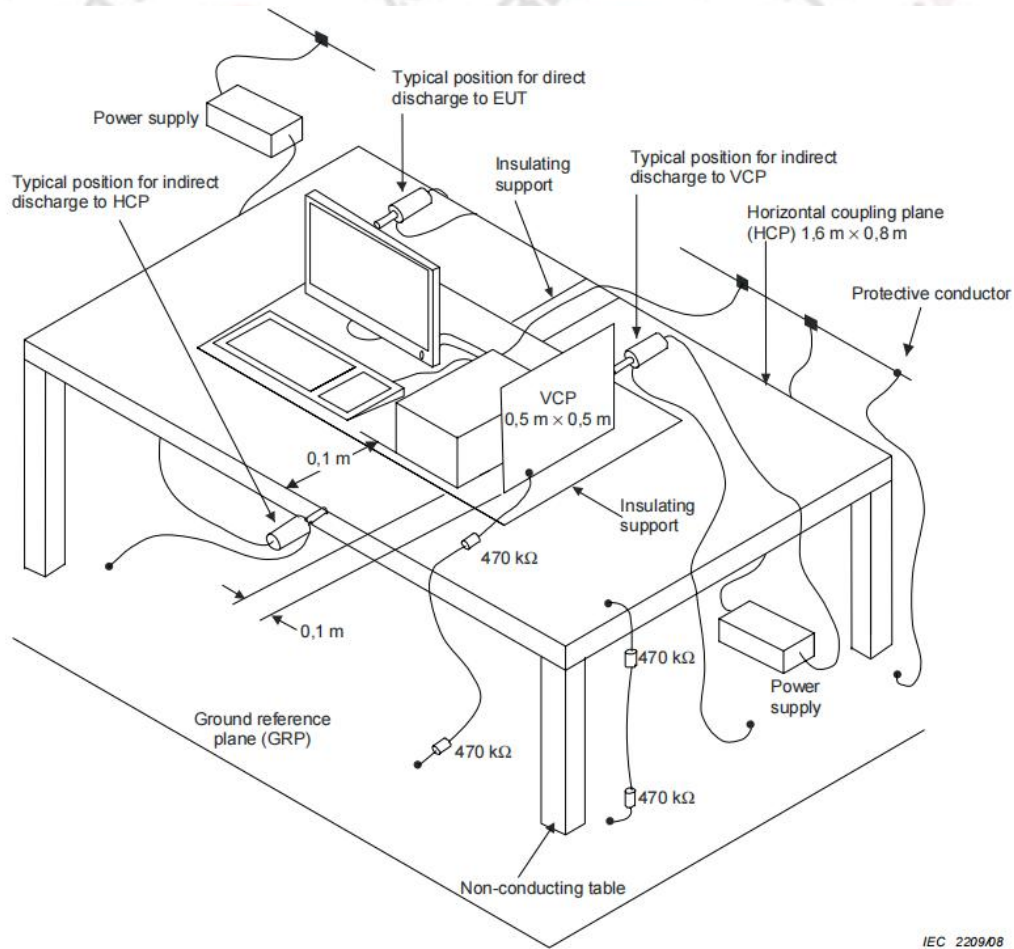
The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

- Air discharges at insulation surfaces of the EUT.

It was at least ten single discharges with positive and negative at the same selected point.

5.3.3. TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940kΩ total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 0.8-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP was consisted of a sheet of aluminum that is at least 0.25mm thick, and extended at least 0.5 meters from the EUT on all sides.

5.3.4. TEST RESULTS

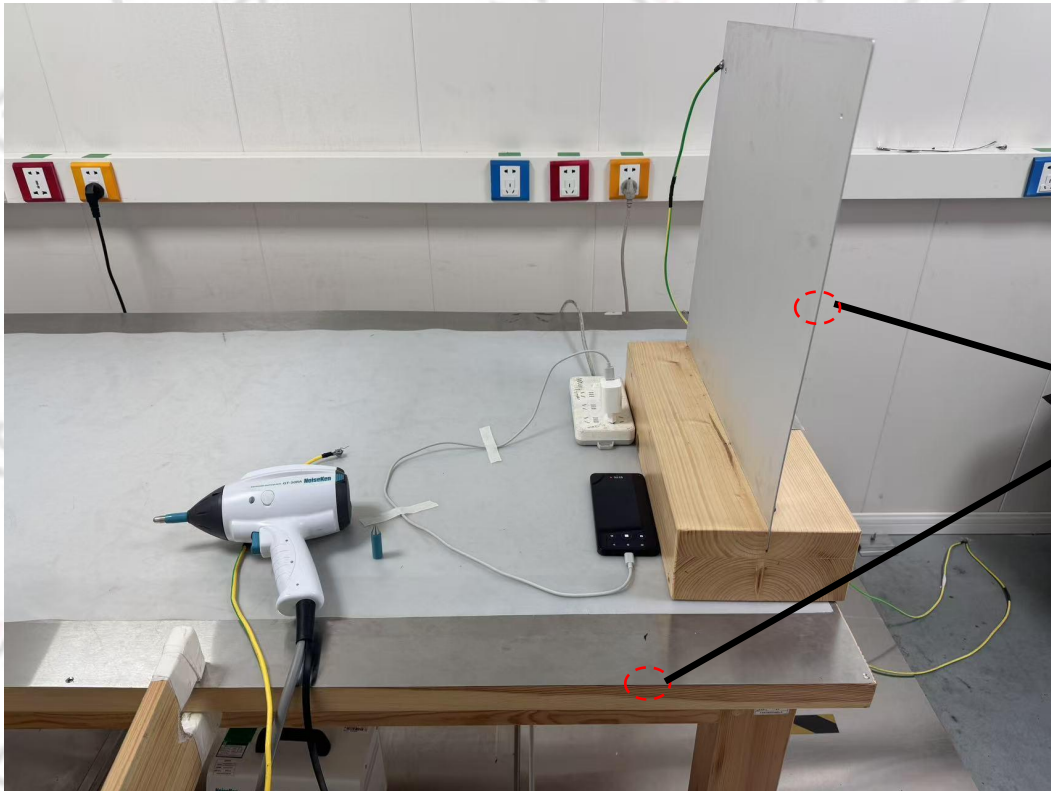
Temperature:	20°C	Relative Humidity:	47%
Pressure:	101.6kPa	Test Voltage:	AC 230V/50Hz or AC 110V/60Hz or DC 3.85V
Test Mode:	See Section 3.2	Test Date:	2025.03.19

Discharge Level	Polarity	Test Points	Perform. Criteria	Results	Judgment
4kV	±	VCP/HCP	B	A	PASS
4kV	±	Contact Discharged	B	/	/
8kV	±	Air Discharged	B	A	PASS

Note:

1. Test Result of **A**: that was no change compared with initial operation during the test.
2. The "/" section represents that the test is not applicable.

The Photo for Discharge Points of EUT





Note: ▽ ----- Contact Discharge

○ ----- Air Discharge

5.4. CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES

5.4.1. TEST SPECIFICATION

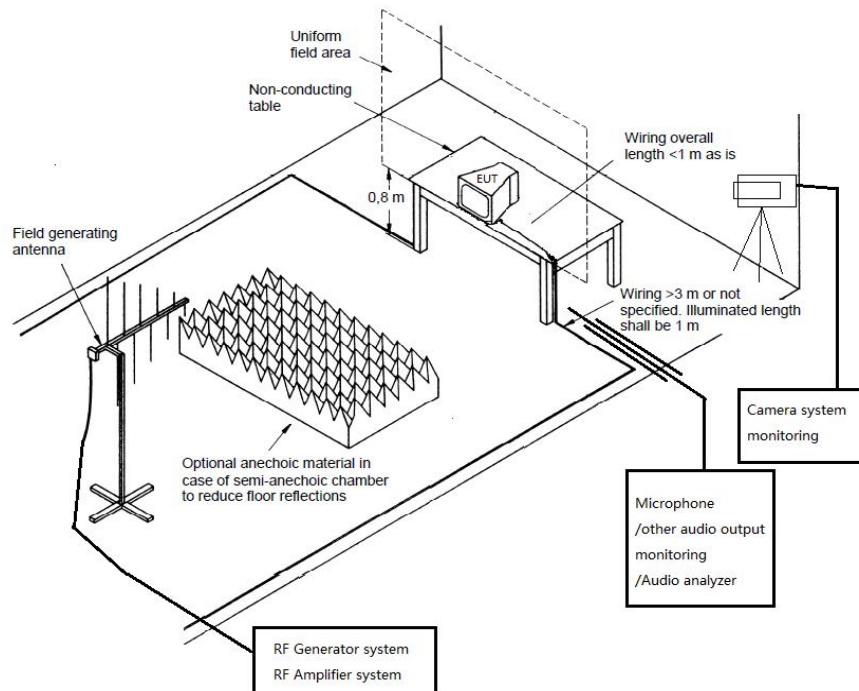
Basic Standard:	IEC/EN 61000-4-3
Required Performance:	A
Test Frequency Range:	80MHz-1000MHz, 1800MHz, 2600 MHz, 3500MHz, 5000MHz
Additional Comprehensive Functional Test Frequencies:	80 MHz; 120 MHz; 160 MHz; 230 MHz; 434 MHz; 460 MHz; 600 MHz; 863 MHz and 900 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	1.5×10^{-3} decade/s

5.4.2. TEST PROCEDURE

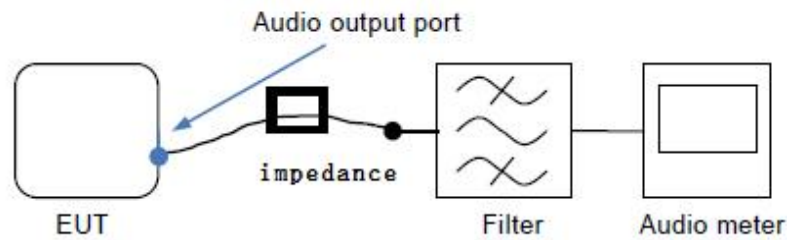
- The testing was performed in a fully an echoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
- The frequency range is swept from 80 MHz; 120 MHz; 160 MHz; 230 MHz; 434 MHz; 460 MHz; 600 MHz; 863 MHz and 900 MHz, with the signal 80% amplitude modulated with a 1kHz sine-wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s, where the frequency range is swept incrementally, the step size was 1% of preceding frequency value.
- The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

5.4.3. TEST SETUP

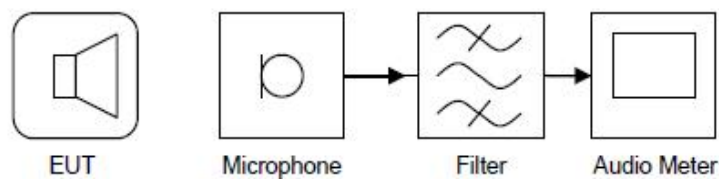
(A)RS Test Set-Up: Picture monitoring



(B)RS Test Set-Up: Electrical measurements



(C)RS Test Set-Up: Electrical measurements



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

5.4.4. TEST RESULTS

Temperature:	20℃	Relative Humidity:	49%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz or DC 3.85V	Test Date:	2025.03.19
Test Mode:	See Section 3.2		

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgment
80MHz - 1000MHz	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front Rear Left Right	A	A	PASS
1800MHz					A	PASS
2600MHz					A	PASS
3500MHz					A	PASS
5000MHz					A	PASS

Note:

Test Result of A: that was no change compared with initial operation during the test.

EN55035 Audio

Field Strength (V/m)	Test Frequency (MHz)	Antenna Polarization (Horizontal / Vertical)	EUT direction to Antenna	Test method	Audio output	Interference Ratio (dB)
3	80-1000 1800 2600 3500 5000	H&V	Front Back Left Right	Acoustic	Speaker	-40.38
Reference Level(dBV)		0				
Limit(dB)		≤ -20				
Test Result		Pass				

Note:

1.Worst-case scenarios are presented and documented in this report.

5.5. ELECTRICAL FAST TRANSIENTS/BURST

5.5.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-4
Required Performance:	B
Test Voltage:	Power Line: 1kV Signal/Control Line: 0.5kV DC network power port:0.5kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Wave shape :	5/50 ns
Burst Duration:	15ms
Burst Period:	300ms
Test Duration:	Not less than 1 min.

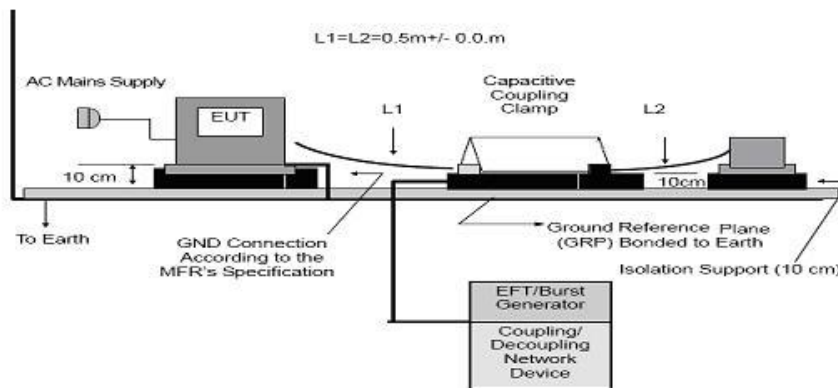
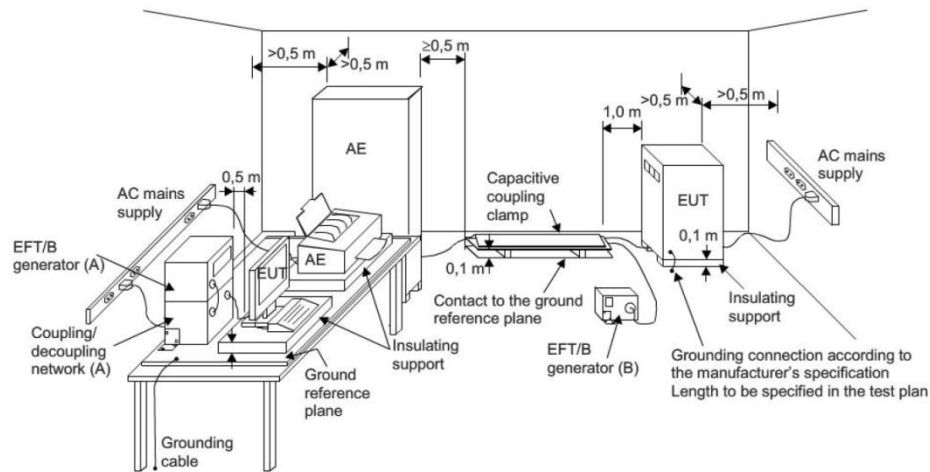
5.5.2. TEST PROCEDURE

The ground reference plane shall be a metallic sheet (copper or aluminum) of 0.25mm minimum thickness; other metallic materials may be used, but they shall have at least 0.65mm minimum thickness.

The other condition need as following manners:

- The length of power cord between the coupling device and the EUT should not exceed 1 meter.
- Both positive and negative polarity discharges were applied.
- The duration time of each test sequential was 1 minute.

5.5.3. TEST SETUP



Note:

TABLE-TOP EQUIPMENT

Table-top equipment and equipment normally mounted on ceilings or walls as well as built-in equipment shall be tested with the EUT located (0.1 ± 0.01) m above the ground reference plane. Testing of large table-top equipment or multiple systems can be performed on the floor; maintaining the same distances as for the test setup of table-top equipment. The test generator and the coupling/decoupling network shall be bonded to the ground reference plane. The ground reference plane shall be a metallic sheet (copper or aluminum) of 0.25mm minimum thickness; other metallic materials may be used, but they shall have at least 0.65mm minimum thickness. The minimum size of the ground reference plane is 0.8m x 1m. The actual size depends on the dimensions of the EUT. The ground reference plane shall project beyond the EUT by at least 0.1m on all sides. The ground reference plane shall be connected to the earth (PE) for safety reasons. The EUT shall be arranged and connected to satisfy its functional requirements, according to the equipment installation specifications. The minimum distance between the EUT and all other conductive structures (including the generator, AE and the walls of a shielded room), except the ground reference plane, shall be more than 0.5m. All cables to the EUT shall be placed on the insulation support 0.1m above the ground reference plane. Cables not subject to electrical fast transients shall be routed as far as possible from the cable under test to minimize the coupling between the cables. The EUT shall be connected to the earth system in accordance with the manufacturer's installation specifications; no additional earth connections are allowed. The connection impedance of the coupling/decoupling network earth cables to the ground reference plane and all connectors shall provide a low inductance. Either a direct coupling network or a capacitive clamp shall be used for the application of the test voltages. The test voltages shall be coupled to all of the EUT ports in turn including those between two units of equipment involved in the test, unless the length of the interconnecting cable makes it impossible to test.

FLOOR-STANDING EQUIPMENT

When using the coupling clamp, the minimum distance between the coupling plates and all other conductive surfaces (including the generator), except the ground reference plane beneath the coupling clamp and beneath the EUT, shall be at least 0.5m. The distance between any coupling devices and the EUT shall be (0.5 - 0/+0.1) m for tabletop equipment testing, and (1.0 ± 0.1) m for floor standing equipment, unless otherwise specified in product standards. When it is not physically possible to apply the distances mentioned above, other distances can be used and shall be recorded in the test report. The cable between the EUT and the coupling device, if detachable, shall be as short as possible to comply with the requirements of this clause. If the manufacturer provides a cable exceeding the distance between the coupling device and the point of entry of the EUT, the excess length of this cable shall be bundled and situated at a distance of 0, 1m above the ground reference plane. When a capacitive clamp is used as a coupling device, the excess cable length shall be bundled at the AE side. Parts of the EUT with interconnecting cables of a length less than 3m, which are not tested, shall be placed on the insulating support. The parts of the EUT shall have a distance of 0, 5m between them. Excess cable length shall be bundled.

5.5.4. TEST RESULTS

Temperature:	21℃	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz	Test Date:	2025.03.18
Test Mode:	See Section 3.2		

Coupling Line		Test level	Perform. Criteria	Results	Judgment
AC line	L	$\pm 1\text{kV}$	B	A	PASS
	N	$\pm 1\text{kV}$		A	PASS
	PE	$\pm 1\text{kV}$		A	PASS
	L+N	$\pm 1\text{kV}$		A	PASS
	L+PE	$\pm 1\text{kV}$		A	PASS
	N+PE	$\pm 1\text{kV}$		A	PASS
	L+N+PE	$\pm 1\text{kV}$		A	PASS

Note:

1. Test Result of **A**: that was no change compared with initial operation during the test.
2. Only Mode 9 involves testing the PE line.

5.6. SURGE

5.6.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-5
Required Performance:	B
Wave-Shape:	Combination Wave 1.2/50 us
Test Voltage:	Power line ~ line to line: 1kV line to ground: 2kV Telecommunication line: 0.5kV DC network power port:0.5kV
Surge Input/Output:	L-N, L-PE, N-PE
Generator Source:	(L-N)2 ohm between networks
Impedance:	(L-PE, N-PE)12 ohm between network and ground
Polarity:	Positive/Negative
Phase Angle:	0°/90°/180°/270°
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

5.6.2. TEST PROCEDURE

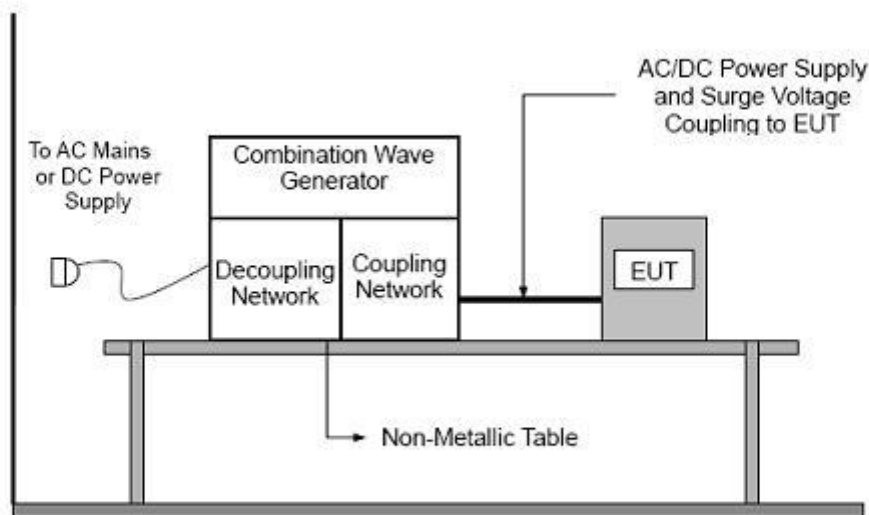
a. For EUT power supply:

The surge is to be applied to the EUT 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 EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

b. For test applied to unshielded unsymmetrical operated interconnection lines of EUT:

The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

5.6.3. TEST SETUP



5.6.4. TEST RESULTS

Temperature:	21℃	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz	Test Date:	2025.03.18
Test Mode:	See Section 3.2		

Coupling Line		Test level	Perform. Criteria	Results				Judgment
				0°	90°	180°	270°	
AC line	L-N	+ 1KV	B	/	A	/	/	PASS
		- 1KV		/	/	/	A	PASS
	L-PE	+ 2KV		/	A	/	/	PASS
		- 2KV		/	/	/	A	PASS
	N-PE	+ 2KV		/	A	/	/	PASS
		- 2KV		/	/	/	A	PASS

Note:

- 1.Test Result of **A**: that was no change compared with initial operation during the test.
- 2.Only Mode 9 involves testing the PE line.

5.7. CONTINUOUS INDUCED RF DISTURBANCES

5.7.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-6
Required Performance:	A
Test Frequency Range:	0.15 MHz-80 MHz
Additional Comprehensive Functional Test Frequencies:	0,2 MHz; 1 MHz; 7,1 MHz; 13,56 MHz; 21 MHz; 27,12 MHz and 40,68 MHz
Field Strength:	0.15 MHz - 10 MHz,3V 10MHz - 30 MHz,3V to 1V 30MHz - 80 MHz,1V
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	1.5×10^{-3} decade/s

5.7.2. TEST PROCEDURE

The EUT shall be tested within its intended operating and climatic conditions.

The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50-ohm load resistor.

The frequency range was swept from 150 kHz to 10 MHz, 10 MHz to 30 MHz, 30 MHz to 80 MHz using the signal level established during the setting process and with a disturbance signal of 80 %amplitude. The signal was modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. The sweep rate was 1.5×10^{-3} decades/s. Where the frequency range is swept incrementally, the step size was 1 % of preceding frequency value from 150 kHz to 80MHz.

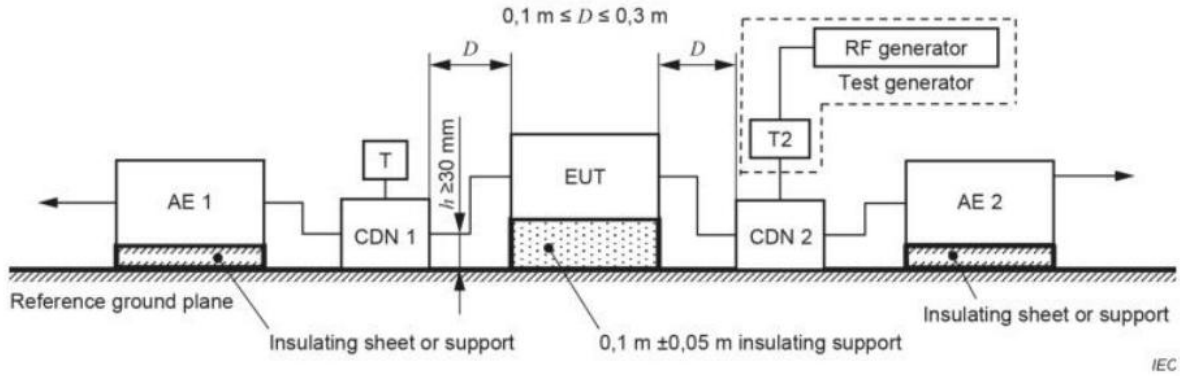
The dwell time at each frequency was less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies such as clock frequency(ies) and harmonics or frequencies of dominant interest, was analyzed separately.

Attempts were made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.

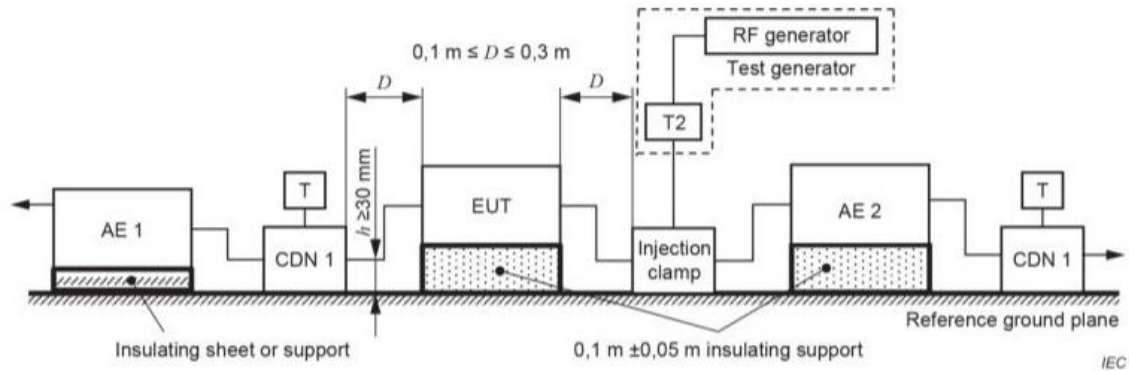
Floor-standing equipment:The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

5.7.3. TEST SETUP

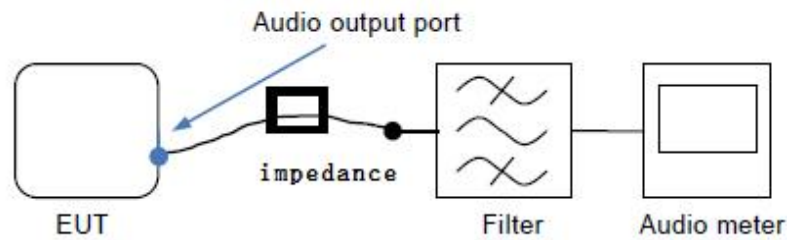
(A) RF conducted disturbances measurements Test Set-Up



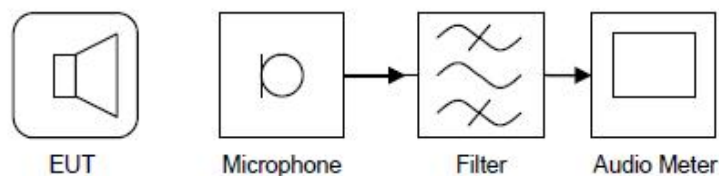
(B) Coupling and decoupling according to the clamp injection Test Set-Up



(C) Electrical measurements Test Set-Up



(D) Acoustic measurements Test Set-Up



5.7.4. TEST RESULTS

Temperature:	21°C	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz	Test Date:	2025.03.18
Test Mode:	See Section 3.2		

Test Ports (Mode)	Freq. Range (MHz)	Field Strength	Perform. Criteria	Results	Judgment
Input/ Output AC. Power Port	0.15 - 10	<u>3</u> V(rms) AM Modulated 1kHz, 80%	A	A	Pass
	10 - 30	<u>3 to 1</u> V(rms) AM Modulated 1kHz, 80%			
	30 - 80	<u>1</u> V(rms) AM Modulated 1kHz, 80%			

Note:

Test Result of A: that was no change compared with initial operation during the test.

EN 55035 Audio

Voltage (V)	Test Frequency (MHz)	Tested Line & Injection Method.	Test method	Audio output	Interference Ratio (dB)
3 3-1 1	0.15 –10 MHz 10 –30 MHz 30 –80 MHz	AC Line& CDN-M2	Electrical	Speaker	-41.17dB
Reference Level(dBV)		0			
Limit (dB)		≤ -20			
Test Result		Pass			
Note: Limit (dB)= Worst-case Audio Level(dBV)- Reference Level(dBV)					

Note:

1.Worst-case scenarios are presented and documented in this report.

5.8. POWER FREQUENCY MAGNETIC FIELD

5.8.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-8
Required Performance:	A
Field Strength:	50Hz
Frequency Field:	3 A/m
Polarity:	1 minute

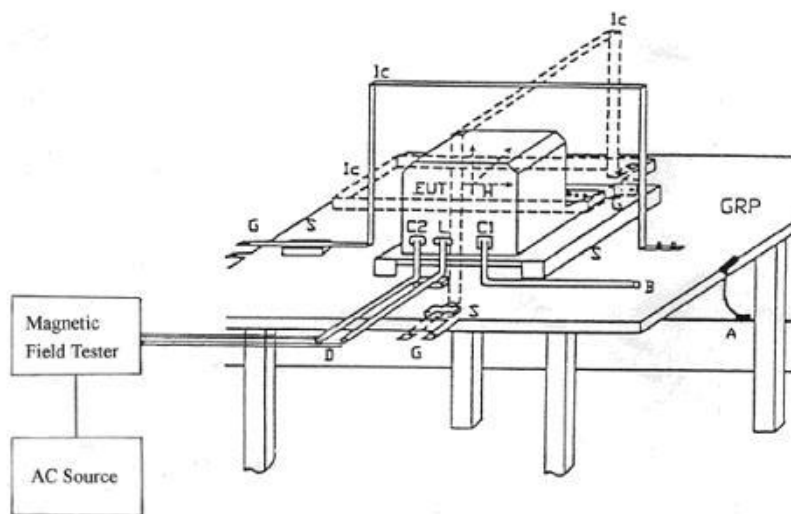
5.8.2. TEST PROCEDURE

The equipment cabinets shall be connected to the safety earth directly on the GRP via the earth terminal of the EUT.

The cables supplied or recommended by the equipment manufacturer shall be used 1 meter of all cables used shall be exposed to the magnetic field.

Power frequency magnetic field tests shall be carried out according to IEC 61000-4-8:2009, with test levels as given in Table 3 and need only to be applied to equipment containing components susceptible to magnetic fields, such as Hall elements or magnetic field sensors.

5.8.3. TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

FLOOR-STANDING EQUIPMENT

The equipment shall be subjected to the test magnetic field by using induction coils of suitable dimensions. The test shall be repeated by moving and shifting the induction coils, in order to test the whole volume of the EUT for each orthogonal direction. The test shall be repeated with the coil shifted to different positions along the side of the EUT, in steps corresponding to 50 % of the shortest side of the coil. The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

5.8.4. TEST RESULTS

Temperature:	21°C	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz or DC 3.85V	Test Date:	2025.03.18
Test Mode:	See Section 3.2		

Test Mode	Test Level	Polarity	Duration	Perform. Criteria	Results	Judgment
Enclosure	1A/m	X	300s	A	A	PASS
Enclosure	1A/m	Y	300s	A	A	PASS
Enclosure	1A/m	Z	300s	A	A	PASS

Note:

Test Result of **A**: that was no change compared with initial operation during the test.

5.9. VOLTAGE DIPS AND INTERRUPTIONS

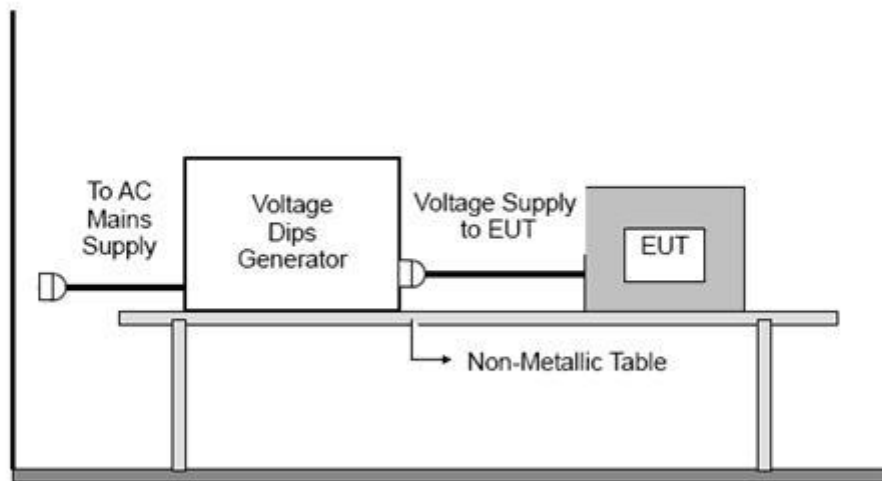
5.9.1. TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-11
Required Performance:	B (For 100% Voltage Dips, 0.5 Cycle) C (For 30% Voltage Dips, 25 Cycles) C (For 100% Voltage Interruptions, 250 Cycles)
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0°/45°/90°/135°/180°/225°/270°/315°/360°
Test Cycle:	3 times

5.9.2. TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

5.9.3. TEST SETUP



5.9.4. TEST RESULTS

Temperature:	21℃	Relative Humidity:	44%
Test Voltage:	AC 230V/50Hz or AC 110V/60Hz	Test Date:	2025.03.18
Test Mode:	See Section 3.2		

Voltage Reduction	Duration (cycle)	Perform. Criteria	Results	Judgment
Voltage Dips 100%	0.5	B	A	PASS
Voltage Dips 30%	25/30	B	A	PASS
Voltage Interruptions 100%	250/300	C	B	PASS

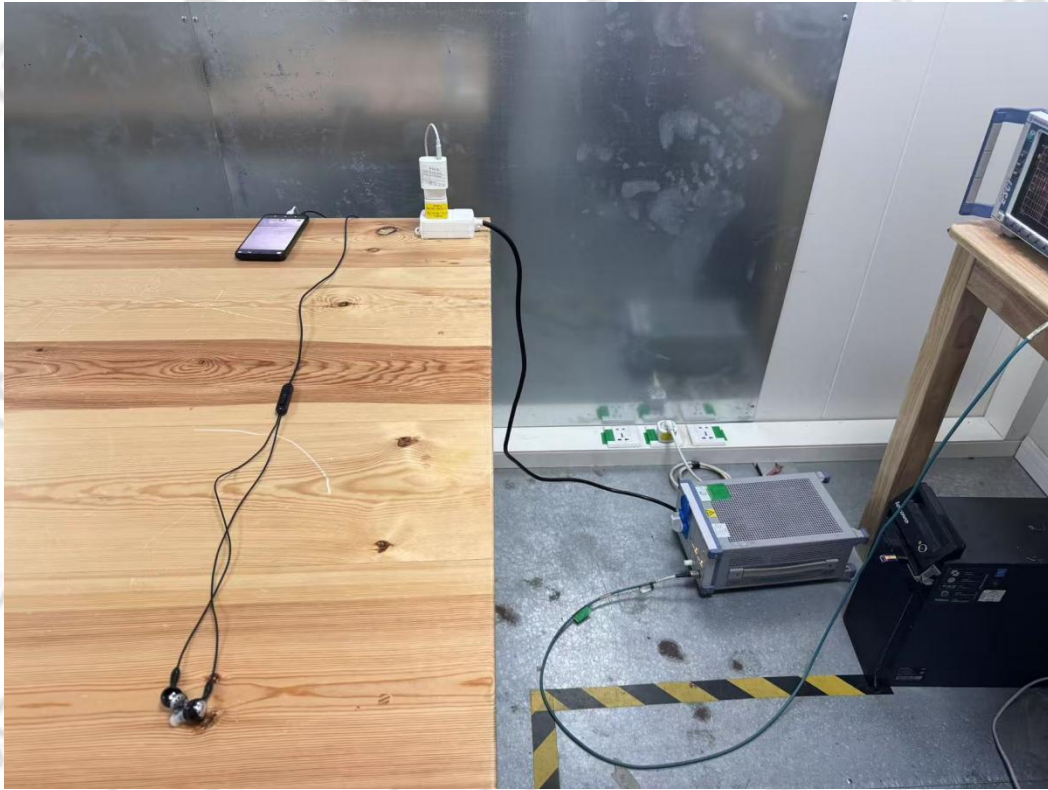
Note:

Test Result of **A**: that was no change compared with initial operation during the test.

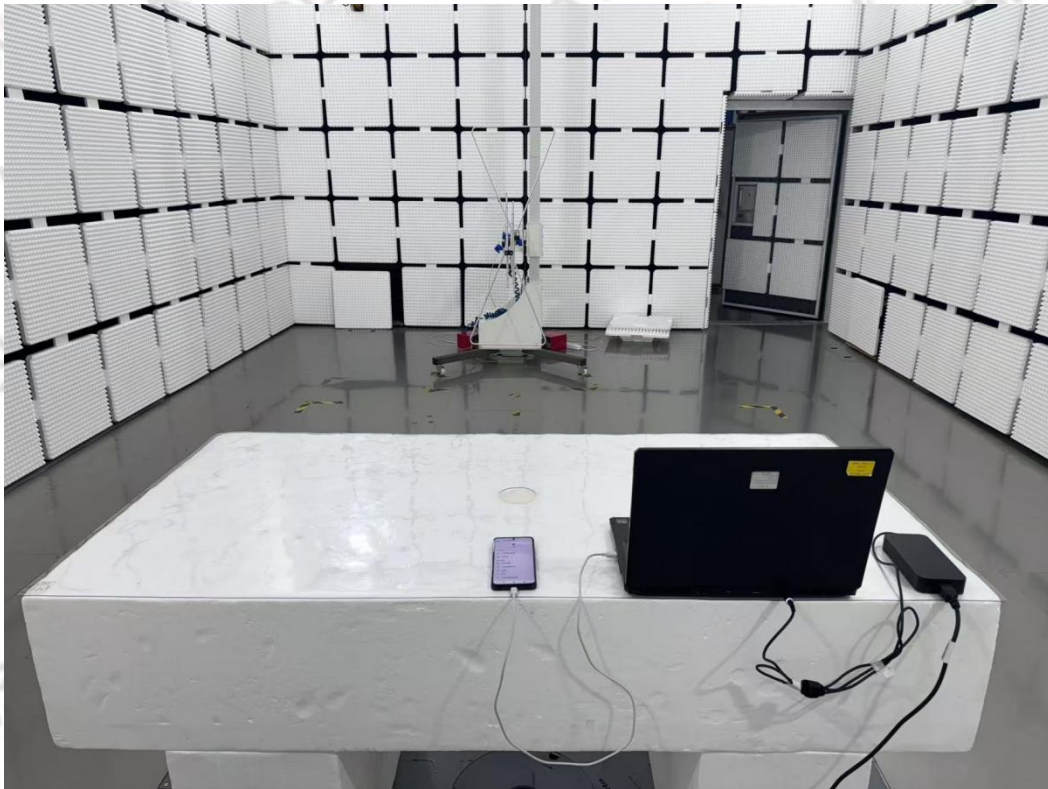
Test Result of **C**: When the EUT is tested by > 95% , 250/300 Cycles drop test, the EUT stops charging and automatically returns to normal after the test

6. PHOTOS OF THE TEST SETUP

Conducted Emissions from the AC mains power ports



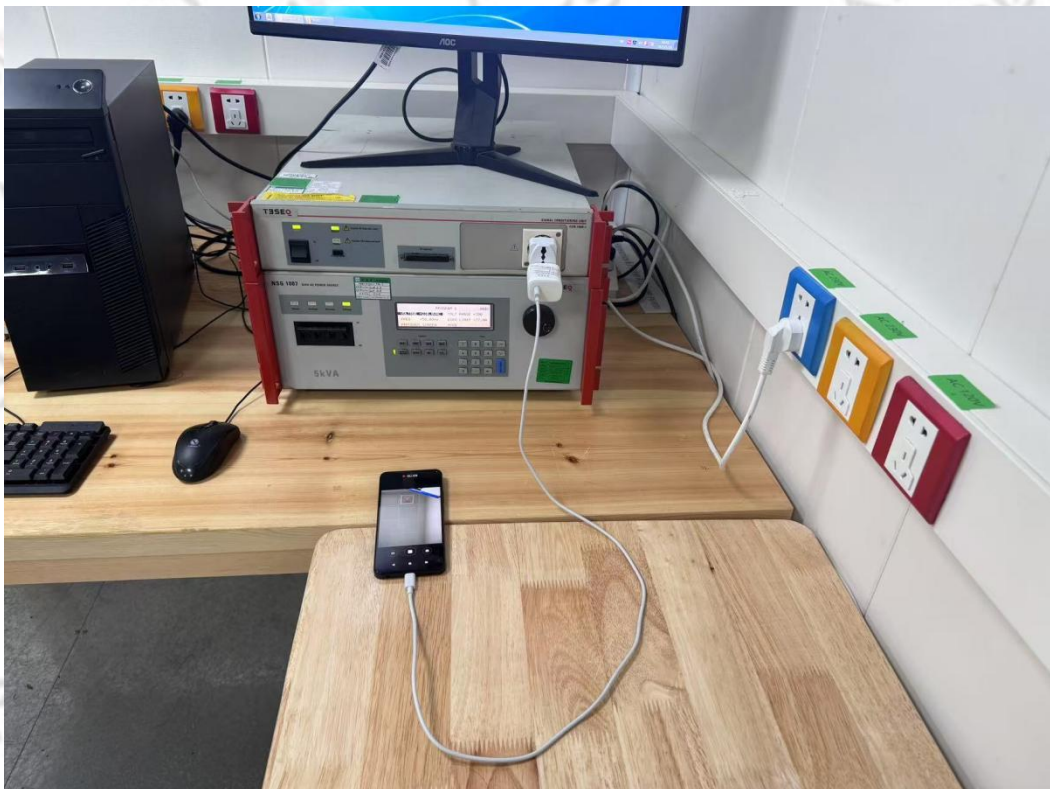
Radiated Emissions (30 - 1000MHz)



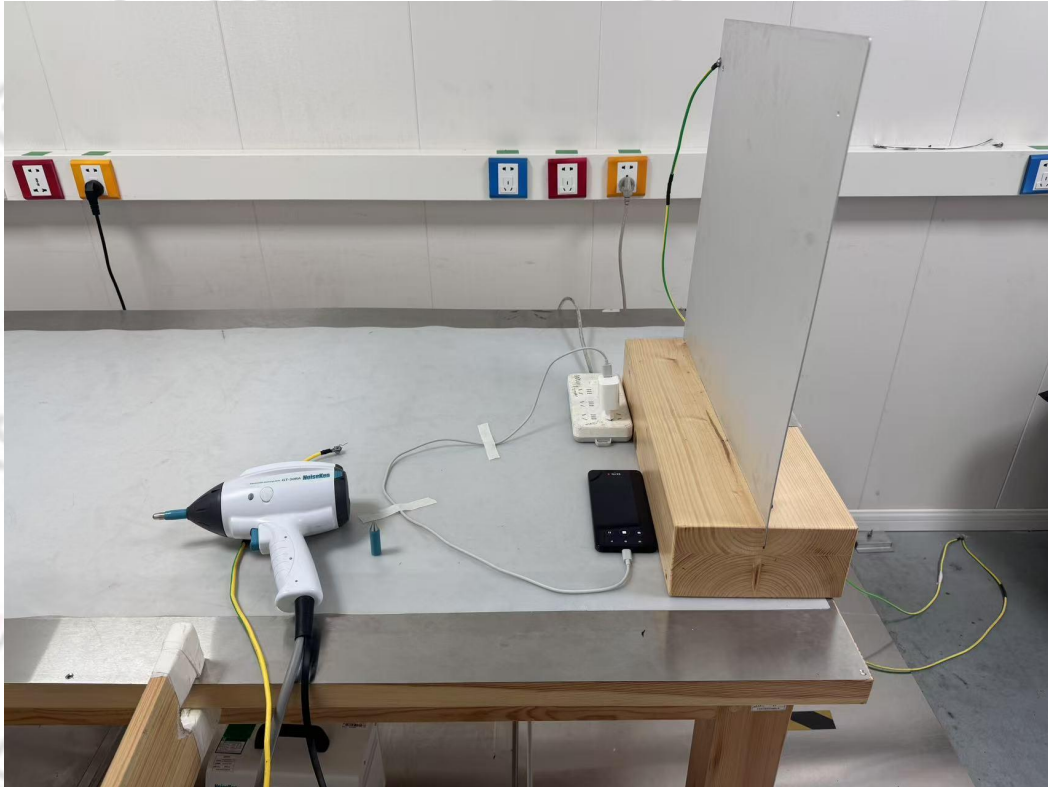
Radiated Emissions (1000 - 6000MHz)



Harmonic Current Emissions &
Voltage Changes, Voltage Fluctuations and Flicker



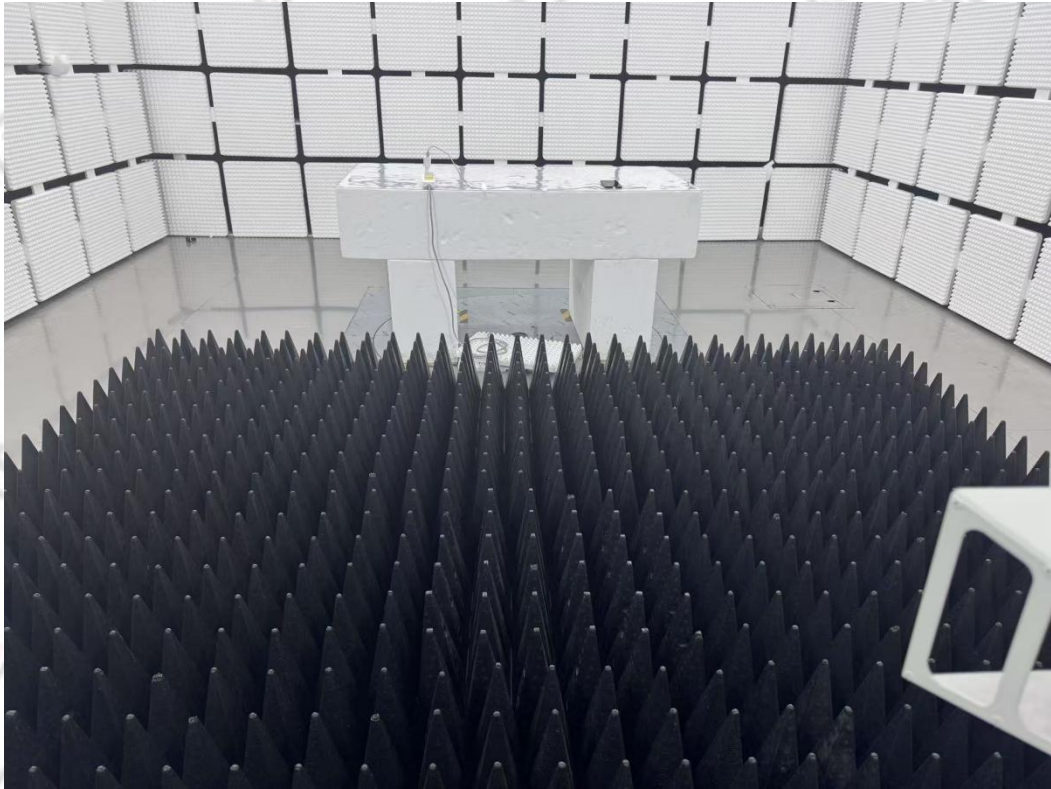
Electrostatic discharges



Continuous RF electromagnetic field disturbances(80MHz-1GHz)



Continuous RF electromagnetic field disturbances(1GHz-6GHz)



Electrical fast transients/burst & Surge



Continuous induced RF disturbances



Power frequency magnetic field



Voltage dips and interruptions



7. EUT EXTERNAL PHOTOGRAPHS

Photo 1



Photo 2

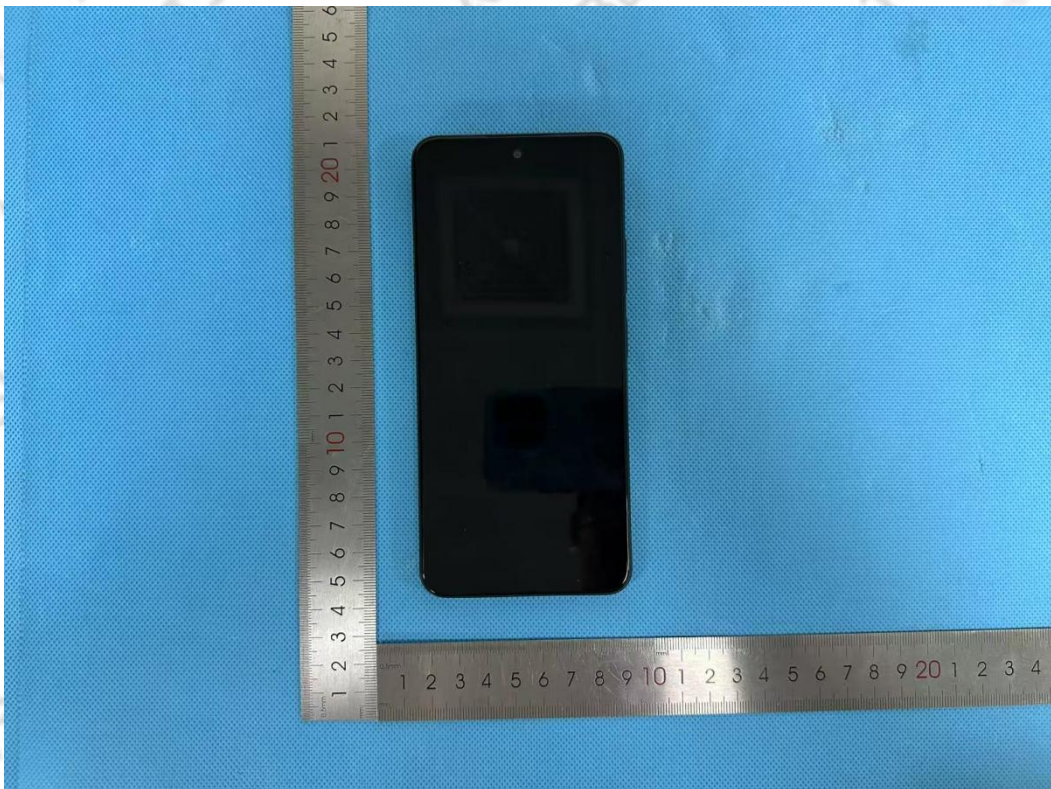


Photo 3



Photo 4

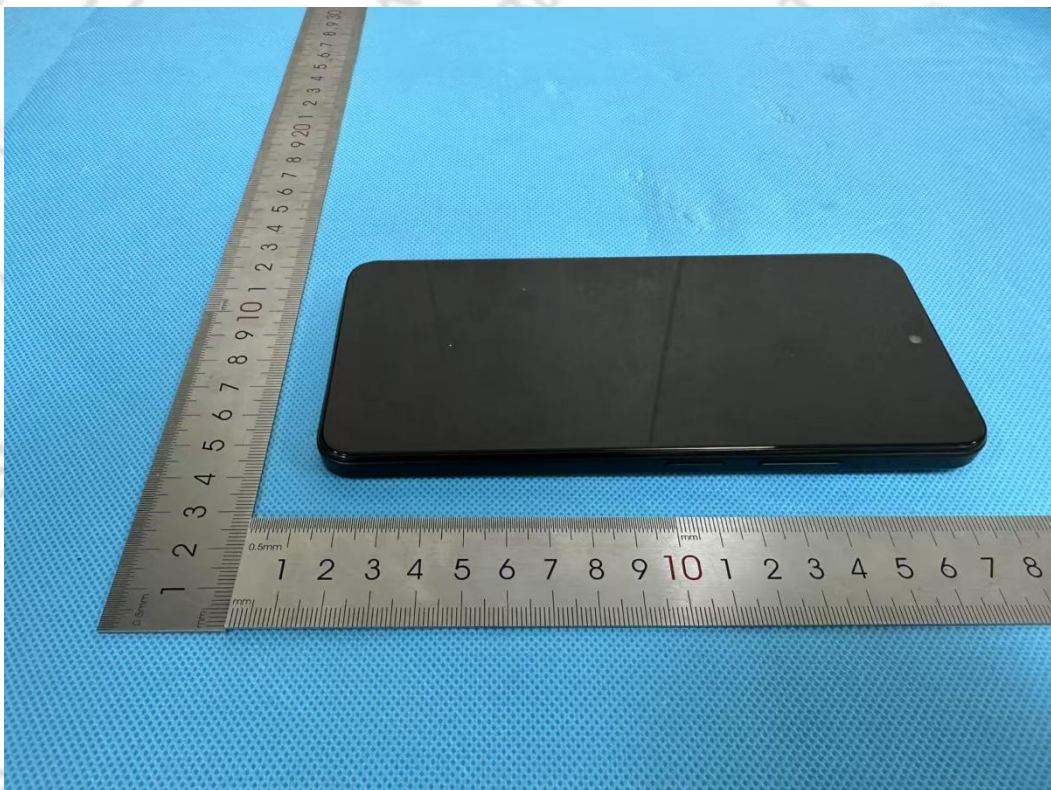


Photo 5



Photo 6



Photo 7

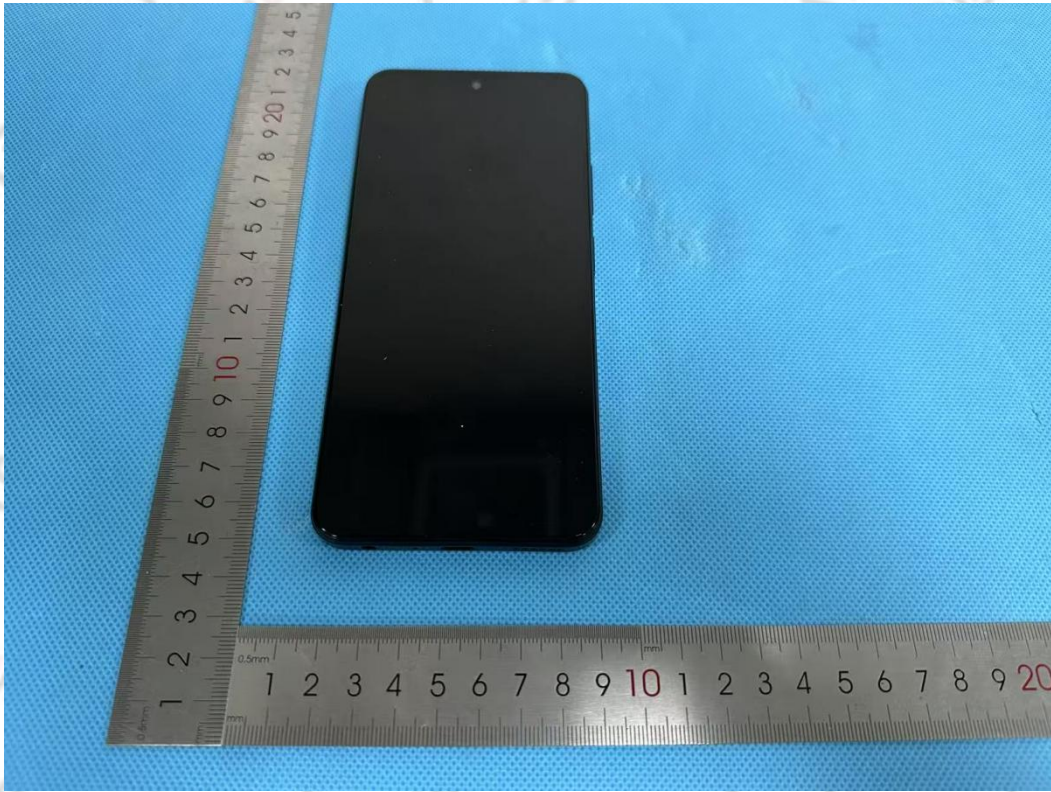


Photo 8

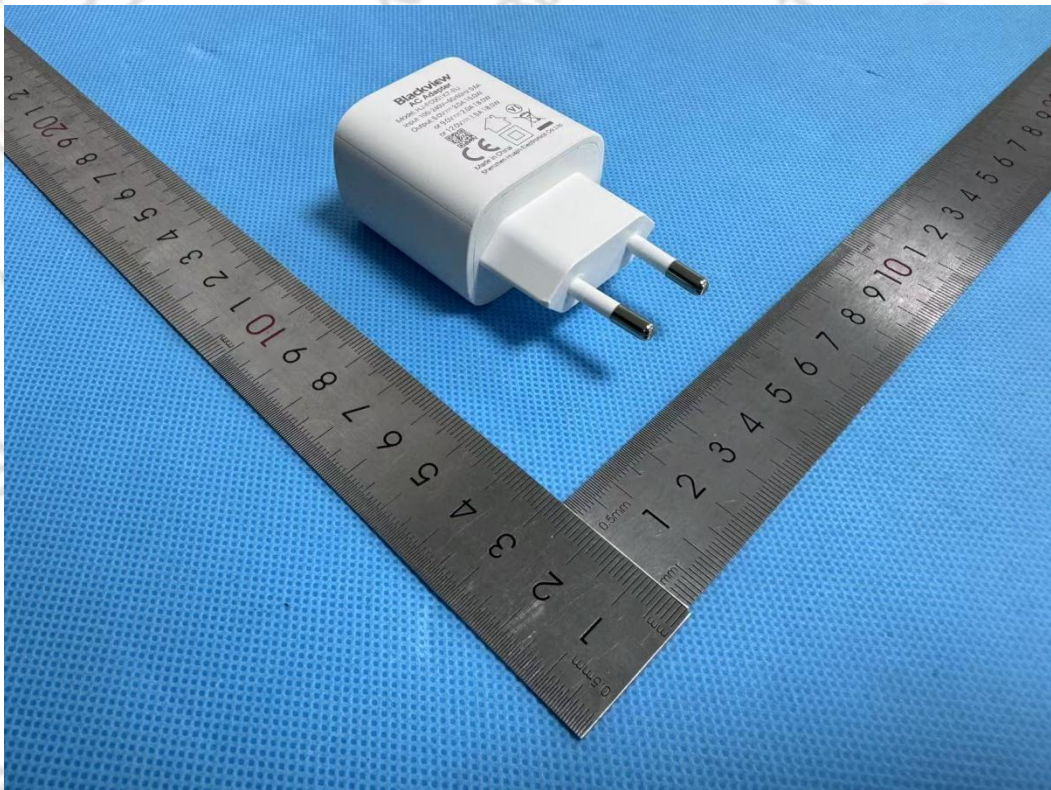


Photo 9

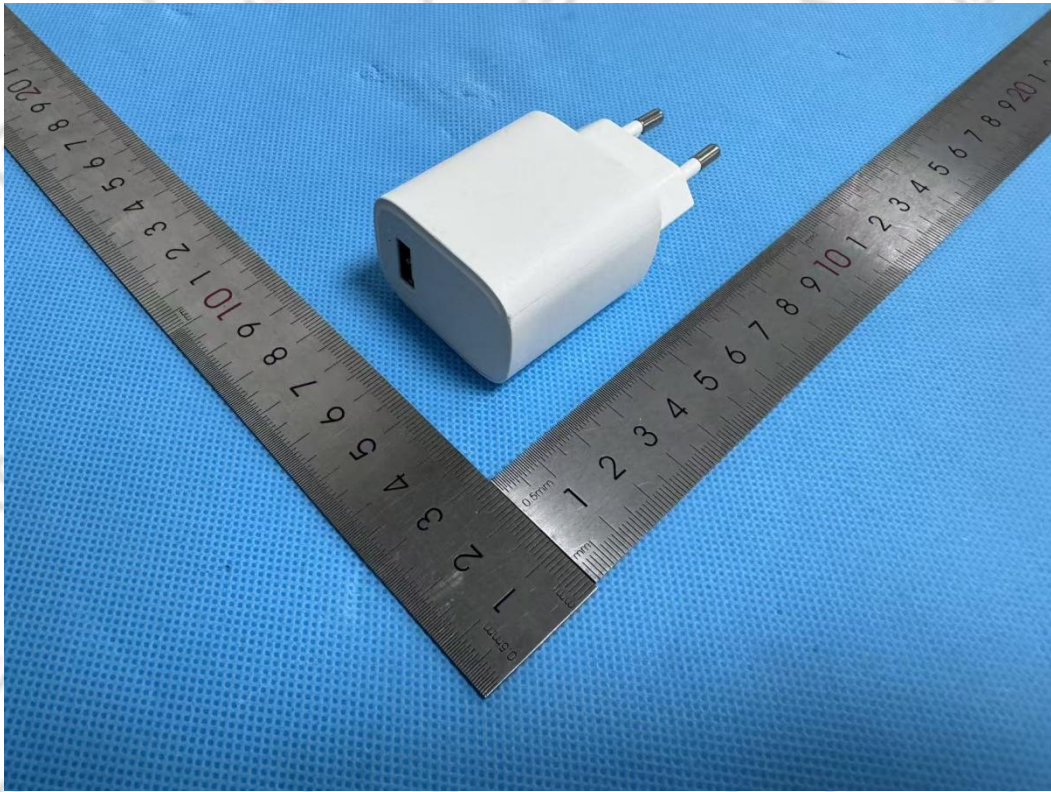


Photo 10



8. EUT INTERNAL PHOTOGRAPHS

Photo 1



Photo 2



Photo 3



Photo 4

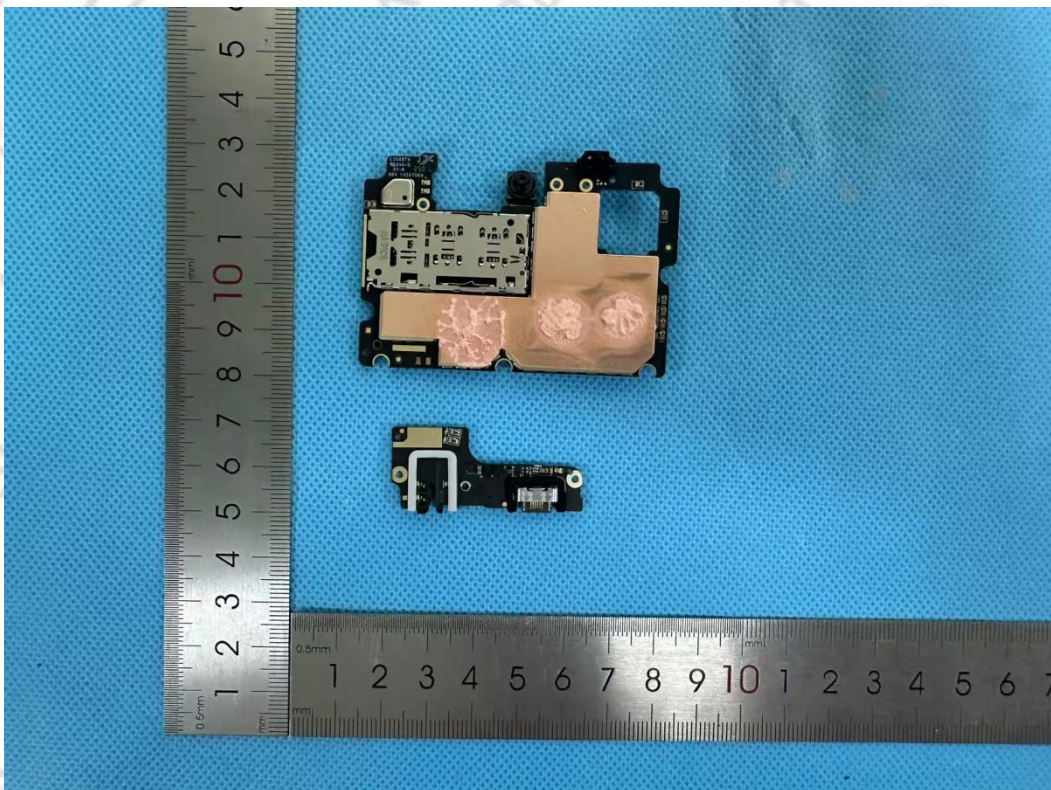


Photo 5

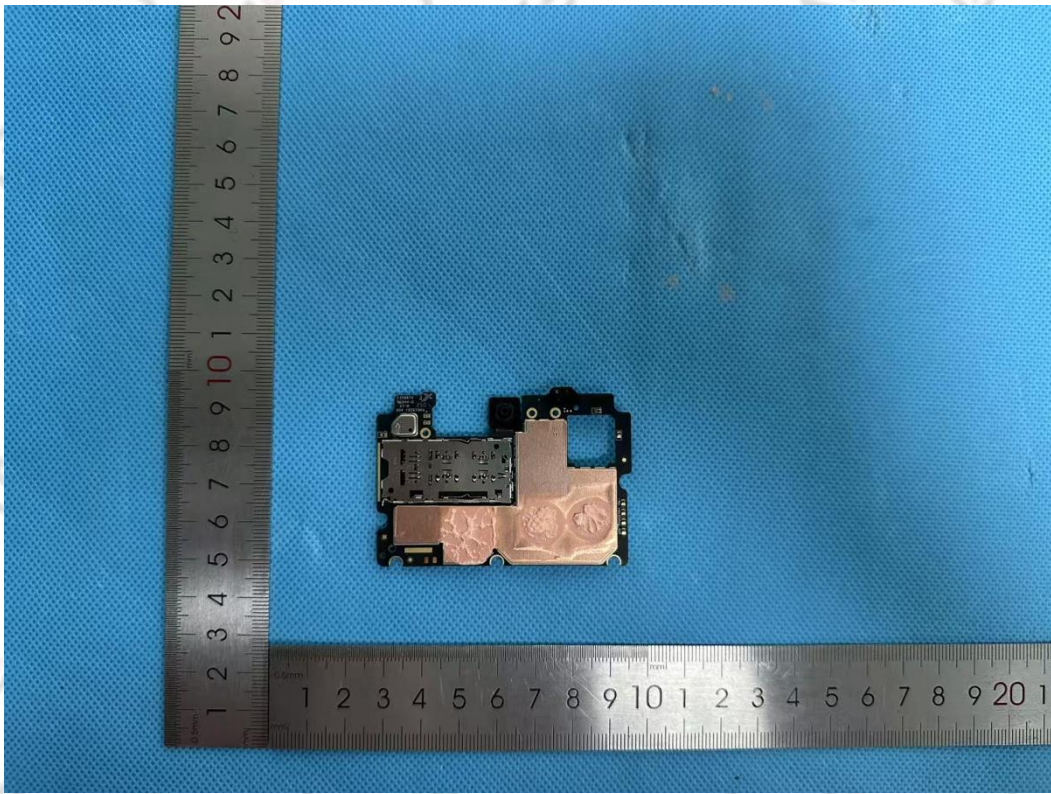


Photo 6

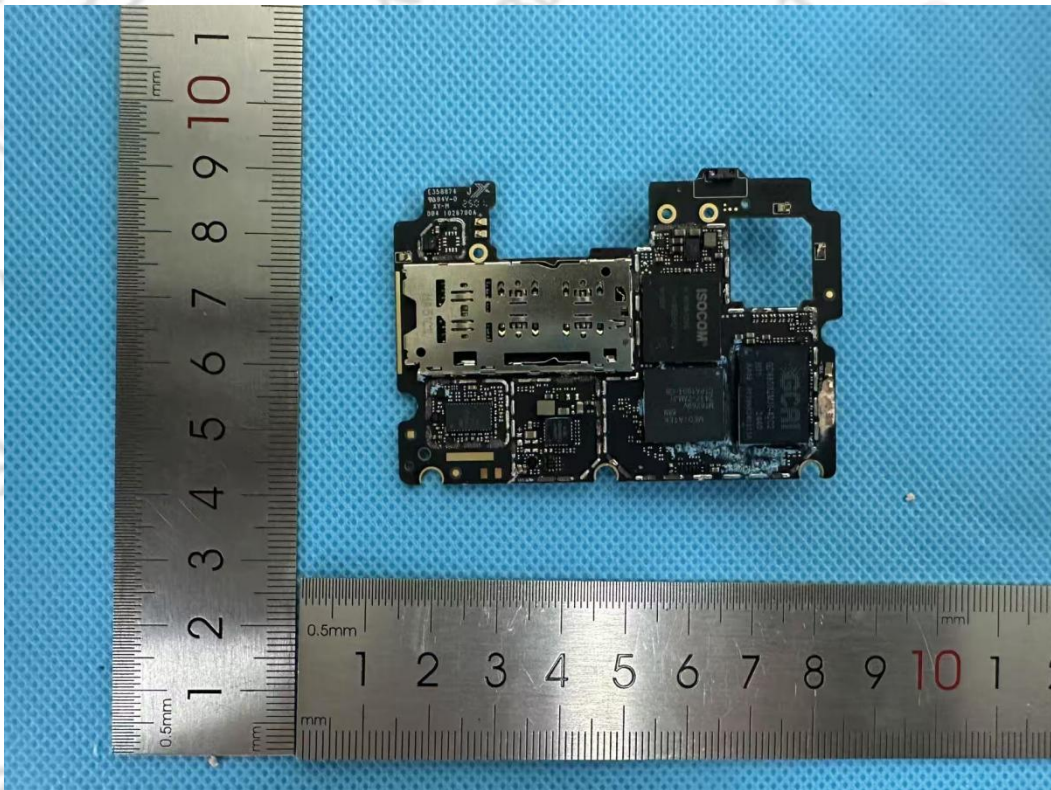


Photo 7

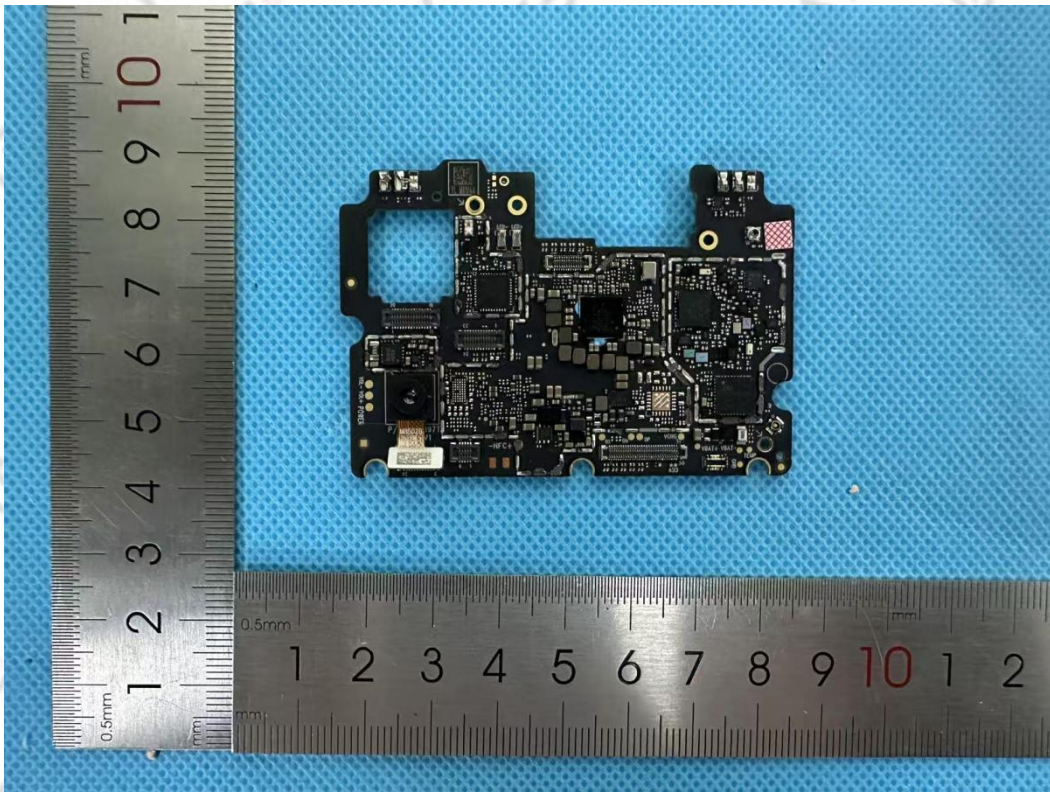


Photo 8



Photo 9

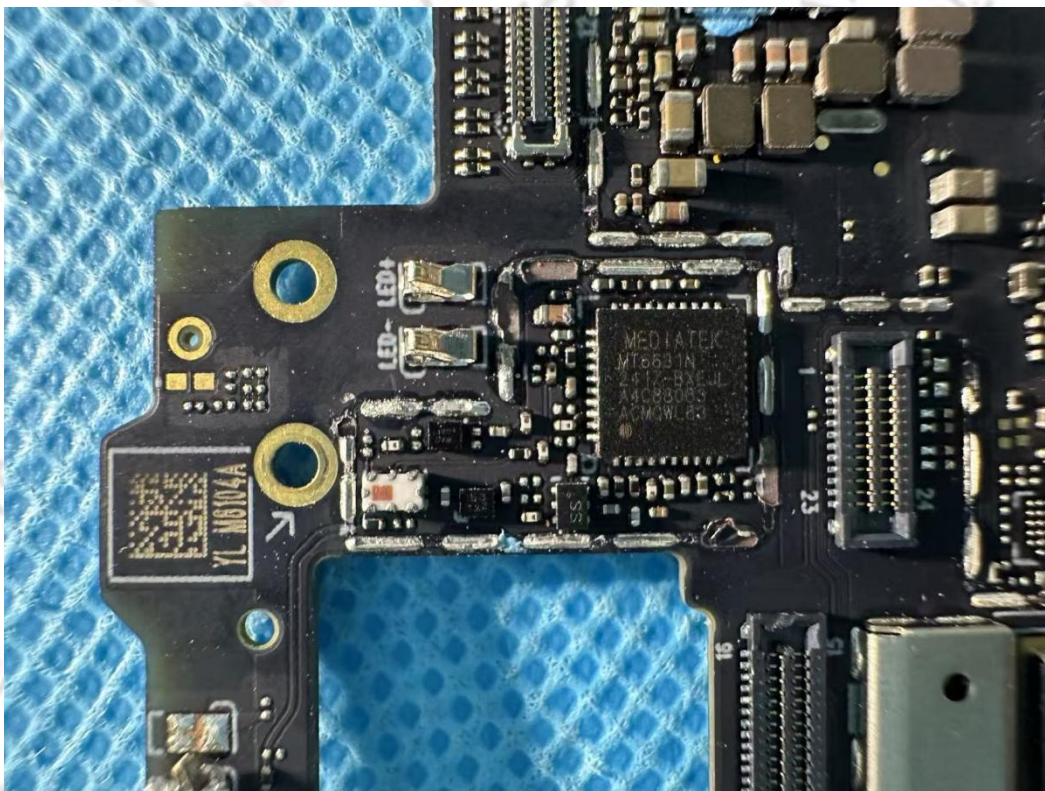


Photo 10

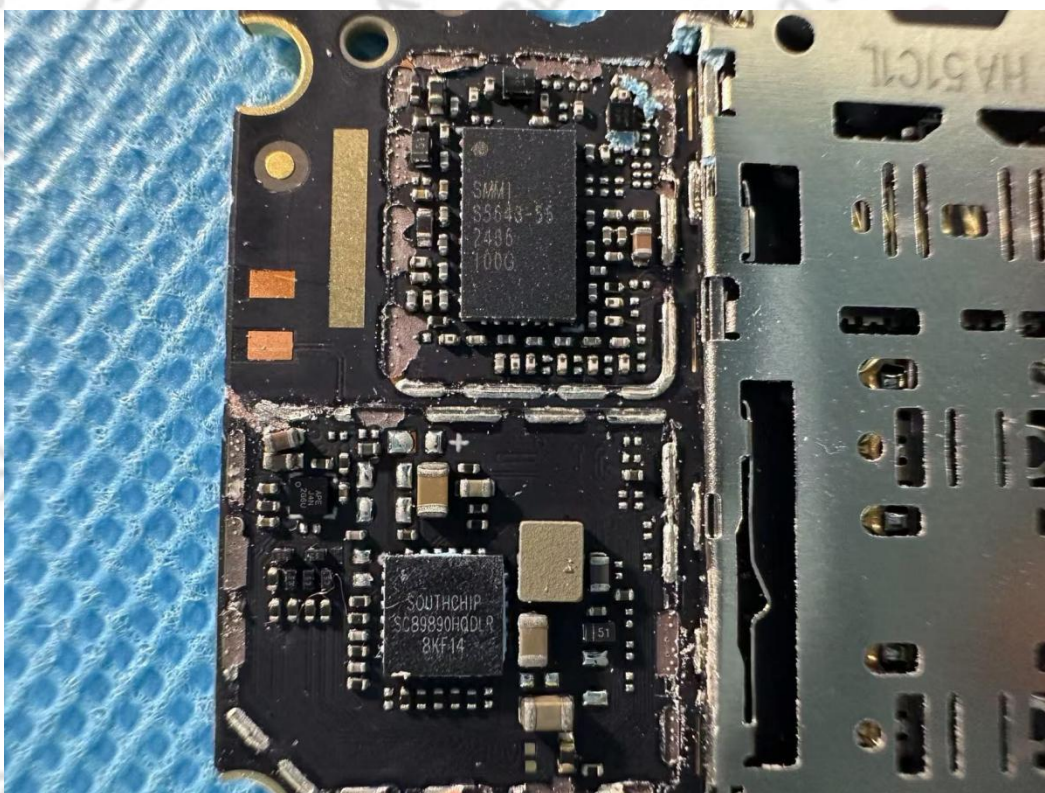


Photo 11

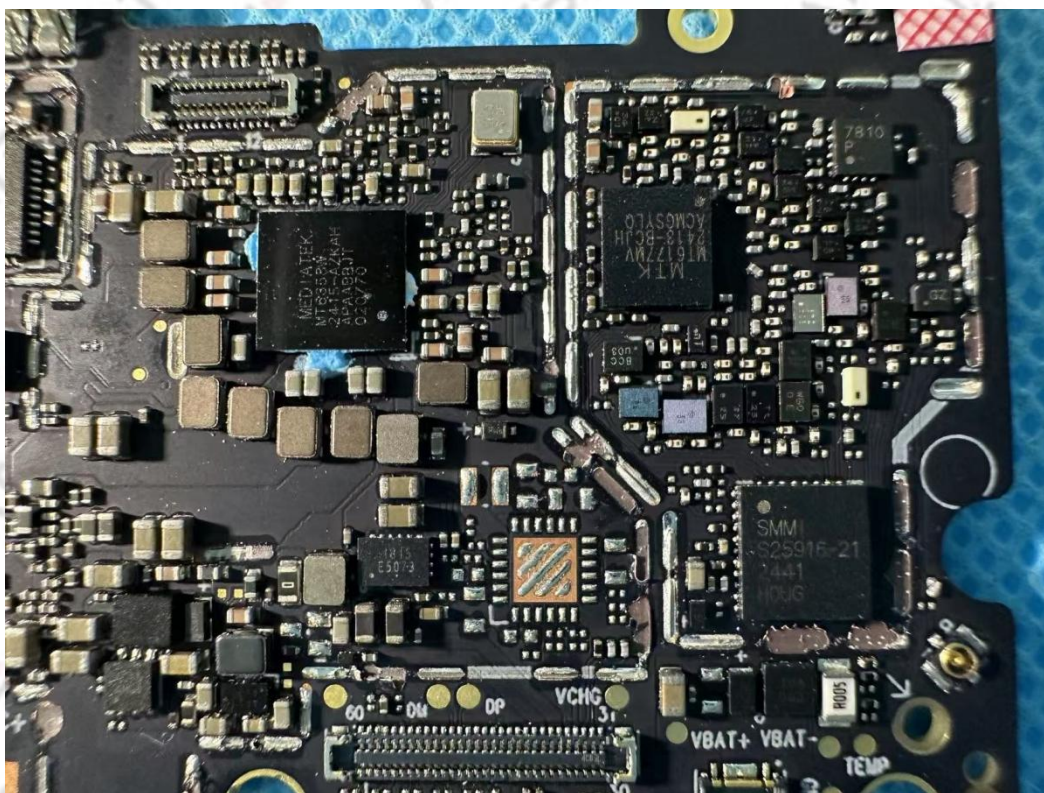


Photo 12



Photo 13



Photo 14

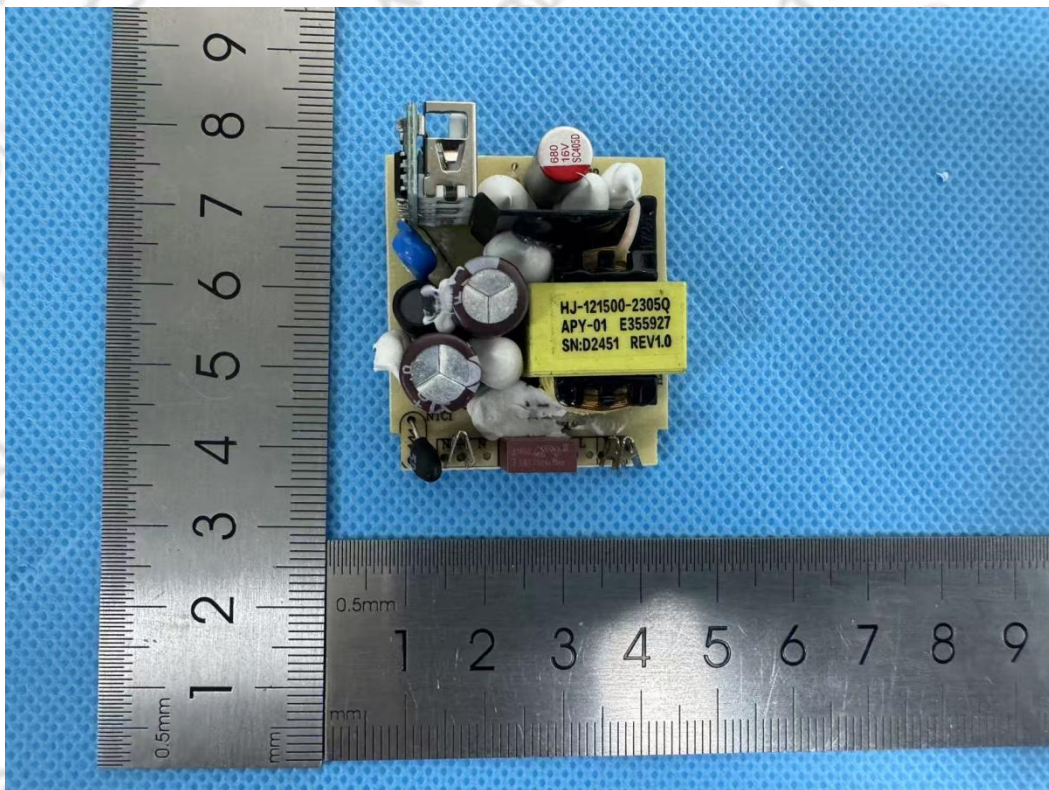


Photo 15

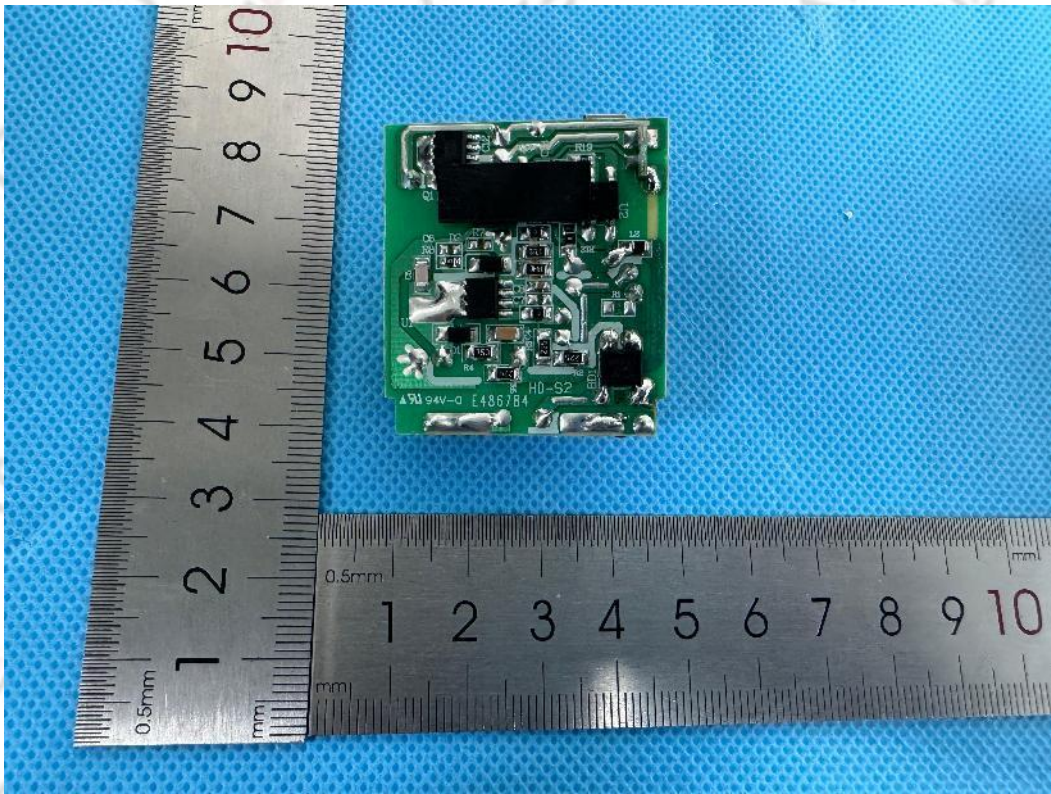


Photo 16



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