



EMC TEST REPORT

Product Name: 5G Smart phone

Model Name: TANK3, Titan P30000 Ultra 5G

Issued For : Shenzhen OBLUE Communication Technology Co., Ltd.

Room 702, Hepingdayou industrial and trade industrial park, No. 41,
Yonghe Road, Heping Community, Fuhai Street, Baoan District,
Shenzhen City, China

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177,
Renmin West Road, Jinsha, Kengzi Street, Pingshan District,
Shenzhen, Guangdong, China.

Report Number: LGT23I086EM03

Sample Received Date: Sep. 27, 2023

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Date of Issue: Nov. 08, 2023

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Revision History

Rev.	Issue Date	Contents
00	Nov. 08, 2023	Initial Issue



TEST REPORT CERTIFICATION

Applicant: Shenzhen OBLUE Communication Technology Co., Ltd.
Room 702, Hepingdayou industrial and trade industrial park, No.
Address: 41, Yonghe Road, Heping Community, Fuhai Street, Baoan District,
Shenzhen City, China

Manufacture: Shenzhen OBLUE Communication Technology Co., Ltd.
Room 702, Hepingdayou industrial and trade industrial park, No.
Address: 41, Yonghe Road, Heping Community, Fuhai Street, Baoan District,
Shenzhen City, China

Product Name: 5G Smart phone

Trademark: 8849,Unihertz, iHunt

Model Name: TANK3, Titan P30000 Ultra 5G

Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
EN 55032:2015/A11:2020 EN 55035:2017/A11:2020 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A1:2019+A2:2021	PASS

Prepared by:

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Approved by:

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Technical Director



- (1) The test report is effective only with both signature and specialized stamp.
- (2) This report shall not be reproduced except in full without the written approval of the Laboratory.
- (3) The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.



1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032: 2015/A11:2020	Conducted Emissions From The AC Mains Power Ports	Class B	PASS	
	Conducted Emissions From Asymmetric Mode	Class B	N/A	NOTE (5)
	Conducted Differential Voltage Emissions	Class B	N/A	NOTE (5)
	Radiated Emissions	Class B	PASS	NOTE (1)
EN IEC 61000-3-2:2019+A1:2021	Harmonic Current Emission	-----	PASS	
EN 61000-3-3:2013+A1:2019+A2:2021	Voltage Fluctuations & Flicker	-----	PASS	
EMC Immunity				
Section EN 55035: 2017/A11:2020	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2	Electrostatic Discharge	B	PASS	
EN 61000-4-3	RF Electromagnetic Field	A	PASS	
EN 61000-4-4	Fast Transients	B	PASS	
EN 61000-4-5	Surges	B	PASS	
EN 61000-4-6	Radio-frequency Common Mode / Conducted Susceptibility	A	PASS	
EN 61000-4-8	Power Frequency Magnetic Field	A	N/A	NOTE (5)
EN 61000-4-11	Volt. Interruptions Volt. Dips	B / C / C	PASS	NOTE (3)

- Note:** (1) 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.
 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) The power consumption of EUT is less than 75W and no Limits apply.
 (3) Voltage Dip: 100% reduction – Performance Criteria **B**
 Voltage Dip: 30% reduction – Performance Criteria **C**
 Voltage Interruption: 100% Interruption – Performance Criteria **C**
 (4) For client's request and manual description, the test will not be executed.
 (5) "N/A" denotes test is not applicable in this Test Report



1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

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

Test Item	Measurement Frequency Range	Uncertainty
Conducted Emissions	0.009MHz ~ 0.15MHz	3.18
Conducted Emissions	0.15MHz ~ 30MHz	2.70
Radiated Emissions	9KHz ~ 30MHz	2.50
Radiated Emissions	30MHz ~ 1000MHz	4.40
Radiated Emissions	1GHz ~ 6 GHz	5.10
Radiated Emissions	6GHz ~ 18GHz	5.49
Note: The measurement uncertainty is not included in the test result.		



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	5G Smart phone
Trademark:	8849,Unihertz, iHunt
Model Name:	TANK3
Series Name:	Titan P30000 Ultra 5G
Product Differences:	Different make and model.
Adapter:	Model: HJ-PD120W-EU Input: 100-240V, 50/60Hz, 1.8A Output: 5V, 3A, OR 9V,3A, OR 12V, 3A, OR 15V, 3A, OR 20V, 5A PPS: 3.6V-20V, 6A 120W MAX
Battery:	Capacity: 23000mAh, 89Wh Rated Voltage: 3.87V
Hardware Version:	G91_V2.0
Software Version:	TANK3_EEA_20231008



2.2 DESCRIPTION OF THE TEST MODES

Test Item	Test setup and operating modes
Radiated Emission	30MHz-6GHz frequency range: Mode 28: GSM900 idle mode+ GPRS + Camera Mode Mode 29: GSM1800 idle mode+ GPRS+ GLONASS Mode 30: WCDMA BAND I idle mode+ Galileo Mode 31: WCDMA BAND VIII idle mode+ GPS Mode 32: LTE band 1 idle mode+ BDS Mode 33: LTE band 3 idle mode+ BT Mode 34: LTE band 7 idle mode+2.4G WLAN Mode 35: LTE band 8 idle mode+5G WLAN Mode 36: LTE band 20 idle mode+5.8G WLAN Mode 37: LTE band 28 idle mode+BLE Mode 38: LTE band 34 idle mode+2.4G WLAN Mode 39: LTE band 38 idle mode+5G WLAN Mode 40: LTE band 40 idle mode+5.8G WLAN Mode 41: LTE band 42 idle mode+BLE Mode 42: NR N1 idle mode+ BDS Mode 43: NR N3 idle mode+ BT Mode 44: NR N7 idle mode+2.4G WLAN Mode 45: NR N8 idle mode+5G WLAN Mode 46: NR N20 idle mode+5.8G WLAN Mode 47: NR N28 idle mode+BLE Mode 48: NR N38 idle mode+2.4G WLAN Mode 49: NR N40 idle mode+5G WLAN Mode 50: NR N41 idle mode+5.8G WLAN Mode 51: NR N77 idle mode+BLE Mode 52: NR N78 idle mode+ BT Mode 53: NSA B1+N78 idle mode+ BT Mode 54: NSA B3+N78 idle mode+ BT Mode 55: Data Link mode Mode 56: FM mode
Conducted Emission	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN



	Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT
Voltage Fluctuation and Flicker	Mode 1: GSM900 traffic mode+ GPRS + Camera
RF Electromagnetic Field(80Mhz To 6000Mhz)	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN



	Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT Mode 55: Data Link mode Mode 56: FM mode
Electrostatic Discharge	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT



	Mode 55: Data Link mode Mode 56: FM mode
Fast Transients Common Mode	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT
RF Common Mode 0.15MHz-80MHz	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE



	Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT
Surges, Line To Line And Line To Ground	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN



	Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT
Voltage Dips And Interruptions	Mode 1: GSM900 traffic mode+ GPRS + Camera Mode 2: GSM1800 traffic mode+ GPRS+ GLONASS Mode 3: WCDMA BAND I traffic mode+ Galileo Mode 4: WCDMA BAND VIII traffic mode+ GPS Mode 5: LTE band 1 traffic mode+ BDS Mode 6: LTE band 3 traffic mode+ BT Mode 7: LTE band 7 traffic mode+2.4G WLAN Mode 8: LTE band 8 traffic mode+5G WLAN Mode 9: LTE band 20 traffic mode+5.8G WLAN Mode 10: LTE band 28 traffic mode+BLE Mode 11: LTE band 34 traffic mode+2.4G WLAN Mode 12: LTE band 38 traffic mode+5G WLAN Mode 13: LTE band 40 traffic mode+5.8G WLAN Mode 14: LTE band 42 traffic mode+BLE Mode 15: NR N1 traffic mode+ BDS Mode 16: NR N3 traffic mode+ BT Mode 17: NR N7 traffic mode+2.4G WLAN Mode 18: NR N8 traffic mode+5G WLAN Mode 19: NR N20 traffic mode+5.8G WLAN Mode 20: NR N28 traffic mode+BLE Mode 21: NR N38 traffic mode+2.4G WLAN Mode 22: NR N40 traffic mode+5G WLAN Mode 23: NR N41 traffic mode+5.8G WLAN Mode 24: NR N77 traffic mode+BLE Mode 25: NR N78 traffic mode+ BT Mode 26: NSA B1+N78 traffic mode+ BT Mode 27: NSA B3+N78 traffic mode+ BT

Note:

1. For conducted emission test, Only show the worst case in this report.
2. For radiated emission test, Only show the worst case in this report.



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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

Description	Manufacturer	Model	S/N	Rating
Adapter	Shenzhen Huajin Electronics Co.,Ltd	HJ-PD120W-EU	N/A	Input: 100-240V ~ 50/60Hz 1.8A Output: 5V, 3A, OR 9V,3A, OR 12V,3A, OR 15V,3A, OR 20V,5A, PPS:3.6V-20V,6A 120W MAX
USB-C to USB-C Cable	N/A	N/A	N/A	1m, shielded, without ferrite core

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	HKF-16	N/A	N/A
Earphone	VESAFE	39630078	N/A	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.



2.4 MEASUREMENT INSTRUMENTS LIST

Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2023.04.13	2024.04.12
LISN	COM-POWER	LI-115	02032	2023.04.07	2024.04.06
LISN	SCHWARZBECK	NNLK 8122	00160	2023.04.07	2024.04.06
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2023.04.07	2024.04.06
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Testing Software	EMC-I_V1.4.0.3_SKET				
Radiated Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2023.04.13	2024.04.12
Spectrum Analyzer	Keysight	N9020A	MY50530994	2022.12.09	2023.12.08
Spectrum Analyzer	Keysight	N9010B	MY60242508	2023.04.10	2024.04.09
Active loop Antenna	ETS	6502	00049544	2022.06.02	2025.06.01
Bilog Antenna	SCHWARZBECK	VULB 9168	01447	2022.12.12	2025.12.11
Horn Antenna	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Pre-amplifier (9kHz-1GHz)	EMtrace	RP01A	02017	2023.04.07	2024.04.06
Pre-amplifier (1-26.5G)	Agilent	8449B	3008A4722	2023.04.07	2024.04.06
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Testing Software	EMC-I_V1.4.0.3_SKET				
Harmonic & Flick					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Harmonic Voltage & Flicker	AMETEK	100-CTS-230	2229A00121	2022.12.09	2023.12.08
AC Power Source	AMETEK	3001iX-208-413	2236A00794	2022.12.09	2023.12.08
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Electrostatic Discharge (ESD)					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
ESD TEST GENERATOR	EMTEST	ESD-30N	V1051108174	2023.05.24	2024.05.23



Temperature & Humidity	SuWei	ST-W2318	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12

Radio Frequency Electromagnetic Fields (RS)

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Power Sensor	R&S	Z11	116655	2022.12.09	2023.12.08
Power Sensor	R&S	Z11	121896	2022.12.09	2023.12.08
Signal Generator	Agilent	N5181A	MY47070409	2022.12.09	2023.12.08
Power Amplifier	SKET	HAP_80M01G-250 W	S202211402	2022.12.09	2023.12.08
Power Amplifier	SKET	HAP_010G060G-8 0W	S202211403	2022.12.09	2023.12.08
RS Test Antenna	SKET	STLP 9129 Plus	SK202210120 06	N.A	N.A
audio analyzer	R&S	UPL	100689	2022.12.09	2023.12.08
Audio Breakthrough Shielding Box	SKET	SB_ABT/C35	N/A	2023.04.28	2024.04.27
1KHz Standard Source	SKET	MSC_ABT/C35	N/A	2023.04.28	2024.04.27
Audio conditioner	SKET	PM_ABT/C35	N/A	2023.04.28	2024.04.27
Mouth Simulator	SKET	AM_ABT/C35	N/A	2023.04.28	2024.04.27
Ear Simulator	SKET	AE_ABT/C35	N/A	2023.04.28	2024.04.27
Free field microphone	SKET	MP_ABT/C35	N/A	2023.04.28	2024.04.27
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Testing Software	EMC-S_V2.1.2.28_SKET				

Radio Frequency Continuous Conducted (CS)

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Conducted Radio-frequency Test System	PRIMA	CRF61006A	PR211281052	2023.04.28	2024.04.27
CDN	PRIMA	CRF-CDN-M216	PR220281070	2023.04.07	2024.04.06
CDN	PRIMA	CRF-CDN-M316	PR220281074	2023.04.07	2024.04.06
Attenuator	PRIMA	ATT-6DB-100	W2198770001	2023.04.07	2024.04.06
Electromagnetic Injection Clamp	ZHINAN	ZN23203	PR211281055	2023.04.07	2024.04.06
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
audio analyzer	R&S	UPL	100689	2022.12.09	2023.12.08
Audio Breakthrough Shielding Box	SKET	SB_ABT/C35	N/A	2023.04.28	2024.04.27
1KHz Standard Source	SKET	MSC_ABT/C35	N/A	2023.04.28	2024.04.27
Audio conditioner	SKET	PM_ABT/C35	N/A	2023.04.28	2024.04.27
Mouth Simulator	SKET	AM_ABT/C35	N/A	2023.04.28	2024.04.27



Ear Simulator	SKET	AE_ABT/C35	N/A	2023.04.28	2024.04.27
Free field microphone	SKET	MP_ABT/C35	N/A	2023.04.28	2024.04.27
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Testing Software	EMC-S_V2.1.2.28_SKET				
Fast Transients Common Mode (EFT)					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Fast Transient Burst Simulator	PRIMA	EFT61004TA	PR220243451	2023.04.13	2024.04.12
EFT CAPACITIVE COUPLING CLAMP	PRIMA	EFT-CLAMP	457	2023.04.07	2024.04.06
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Surge					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Lightning Surge Generator (1.2us.50us)	PRIMA	SUG61005TAX	PR211155290	2023.04.07	2024.04.06
Lightning Surge Generator (10us.700us)	PRIMA	SUG10/700TA	PR211255516	2023.04.13	2024.04.12
Signal line decoupling network	PRIMA	DATA-CDN-8B	PR211255479	2022.12.26	2023.12.25
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Cycle Sag Simulator	PRIMA	DRP61011TA	PR21126644	2023.04.08	2024.04.07
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12
PFMF					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
Power Frequency Magnetic Field Generator	PRIMA	PFM61008TG	PR211281444	2023.04.13	2024.04.12
Temperature &	KTJ	TA218B	N.A	2023.04.24	2024.04.23



Humidity					
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Base Station	Anritsu	MT8000A	6272498373	2023.04.13	2024.04.12
Base Station	Anritsu	MT8821C	6272524676	2023.04.13	2024.04.12



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 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(μ V)
0.15 - 0.5	AMN	Quasi Peak / 9 kHz	79
0.50 - 30			63
0.15 - 0.5	AMN	Average / 9 kHz	66
0.50 - 30			60

3.1.2 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(μ V)
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) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

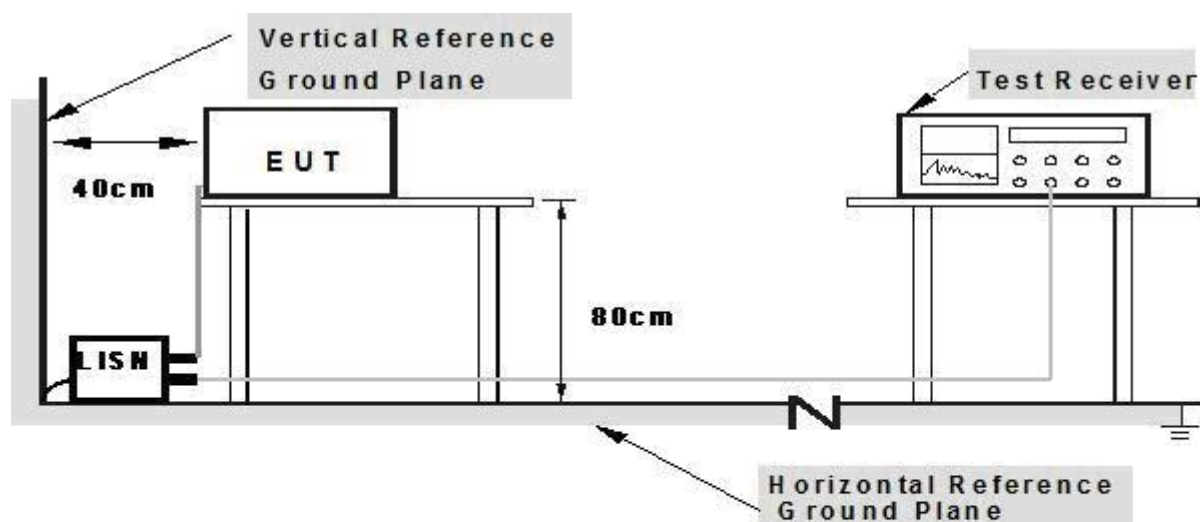
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



3.1.3 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH 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.

3.1.4 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISN s (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 TELECOMMUNICATIONS/NETWORK PORT TEST PROCEDURE

Selecting ISN for unscreened cable or a current probe for screened cable to take measurement. The port of the EUT was connected to the remote side support equipment through the ISN/Current Probe and communication in normal condition.

Making a overall range scan by using the test receiver controlled by controller and record at least six highest emissions for showing in the test report.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

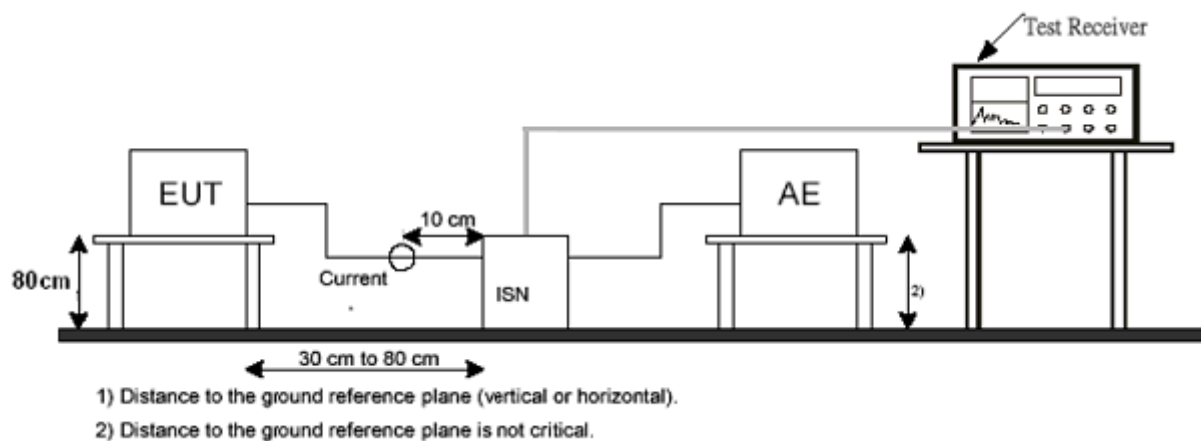
In case of measuring on the screened cable, the current limit shall be applied; otherwise the voltage limit should be applied.

The test mode(s) described in Item 4.1 were scanned during the preliminary test.

After the preliminary scan, we found the test mode described in Item 4.1 producing the highest emission level.

The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

3.1.6 TEST SETUP

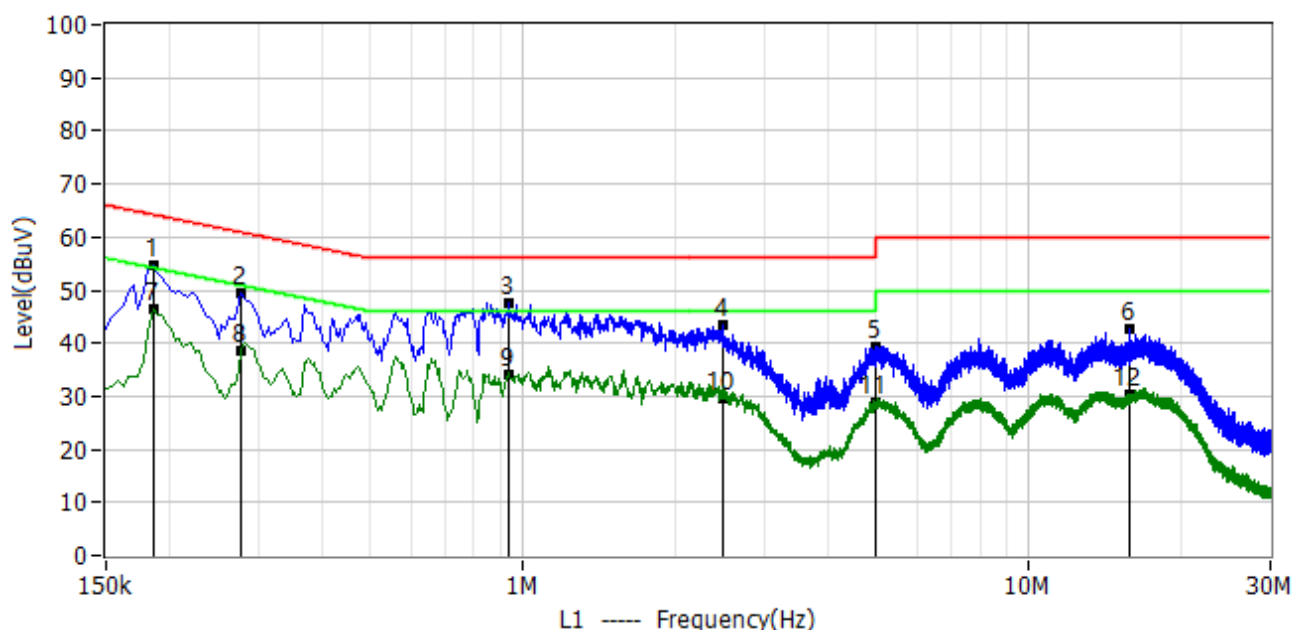


For the actual test configuration, please refer to the related item – Photographs of The Test Configuration.



3.1.6 TEST RESULTS

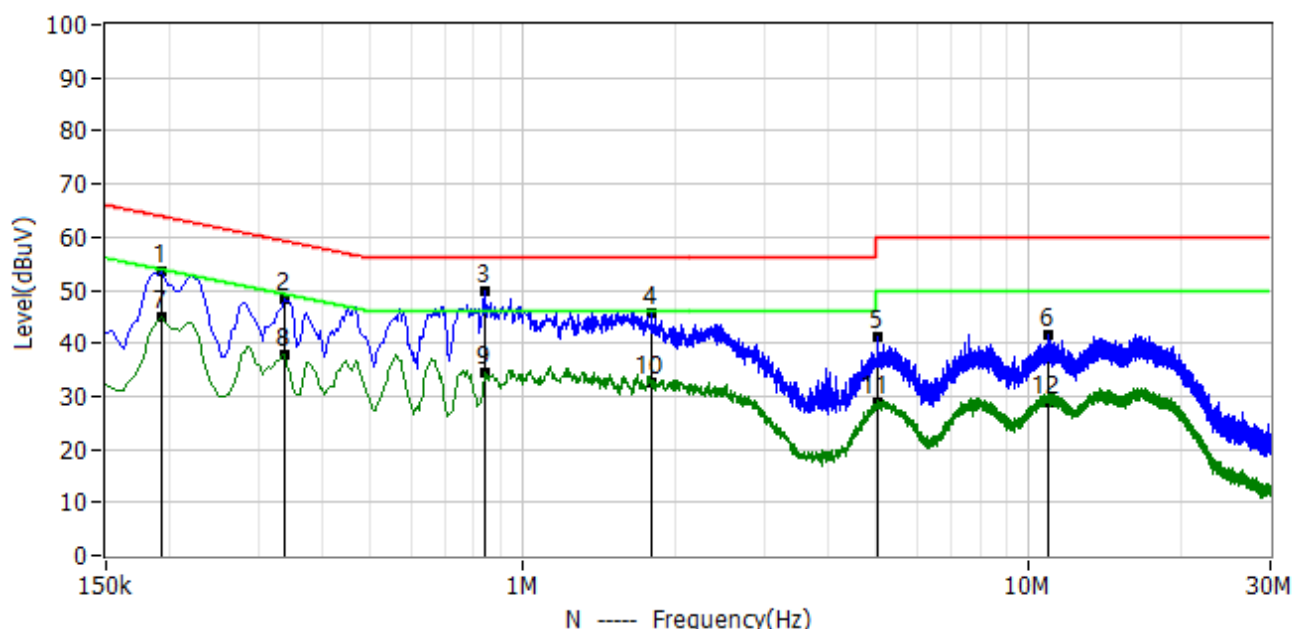
Project: LGT23I086	Test Engineer: LiuH
EUT: 5G Smart phone	Temperature: 27.1°C
M/N: TANK3	Humidity: 55%RH
Test Voltage: AC 230V/50Hz	Test Data: 2023-10-08
Test Mode: Mode 37	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.186	44.08	10.59	54.67	64.21	-9.54	QP	L1
2*	0.278	38.68	10.59	49.27	60.88	-11.60	QP	L1
3*	0.938	37.02	10.59	47.61	56.00	-8.39	QP	L1
4*	2.486	32.81	10.74	43.55	56.00	-12.45	QP	L1
5*	4.962	28.67	10.70	39.37	56.00	-16.63	QP	L1
6*	15.862	31.52	11.13	42.65	60.00	-17.35	QP	L1
7*	0.186	35.71	10.59	46.30	54.20	-7.90	AV	L1
8*	0.278	28.11	10.59	38.70	50.90	-12.20	AV	L1
9*	0.938	23.51	10.59	34.10	46.00	-11.90	AV	L1
10*	2.486	18.76	10.74	29.50	46.00	-16.50	AV	L1
11*	4.962	18.20	10.70	28.90	46.00	-17.10	AV	L1
12*	15.862	19.07	11.13	30.20	50.00	-19.80	AV	L1



Project: LGT23I086	Test Engineer: LiuH
EUT: 5G Smart phone	Temperature: 27.1°C
M/N: TANK3	Humidity: 55%RH
Test Voltage: AC 230V/50Hz	Test Data: 2023-10-08
Test Mode: Mode 37	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.194	42.98	10.59	53.57	63.86	-10.30	QP	N
2*	0.338	37.91	10.59	48.50	59.25	-10.75	QP	N
3*	0.842	39.05	10.58	49.63	56.00	-6.37	QP	N
4*	1.798	35.15	10.72	45.87	56.00	-10.13	QP	N
5*	5.026	30.31	10.71	41.02	60.00	-18.98	QP	N
6*	10.942	30.82	10.90	41.72	60.00	-18.28	QP	N
7*	0.194	34.21	10.59	44.80	53.90	-9.10	AV	N
8*	0.338	27.11	10.59	37.70	49.30	-11.60	AV	N
9*	0.842	23.72	10.58	34.30	46.00	-11.70	AV	N
10*	1.798	21.98	10.72	32.70	46.00	-13.30	AV	N
11*	5.026	18.29	10.71	29.00	50.00	-21.00	AV	N
12*	10.942	18.10	10.90	29.00	50.00	-21.00	AV	N



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF THE RADIATED EMISSION 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).

3.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter 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 meter.
- c. The height of antenna is varied from 1 meter to 4 meter 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 meter and the rotatable table was turned from 0 degrees to 360 degree 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.

3.2.4 TEST SETUP

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

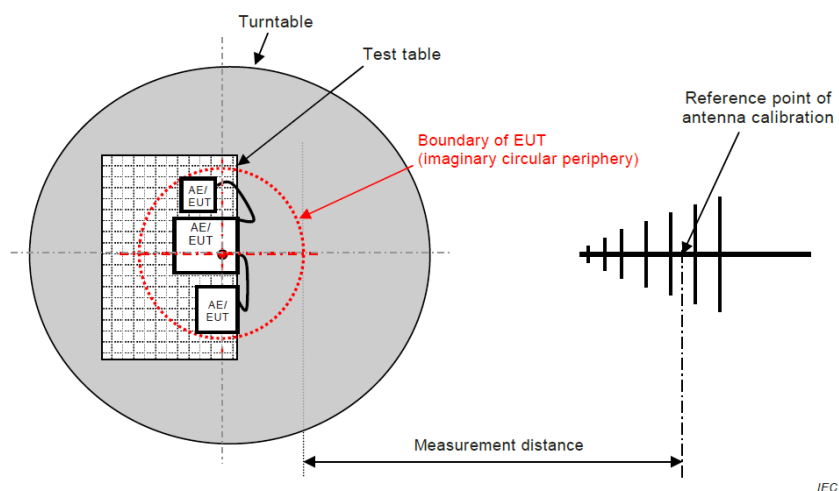


Figure C.1 – Measurement distance

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

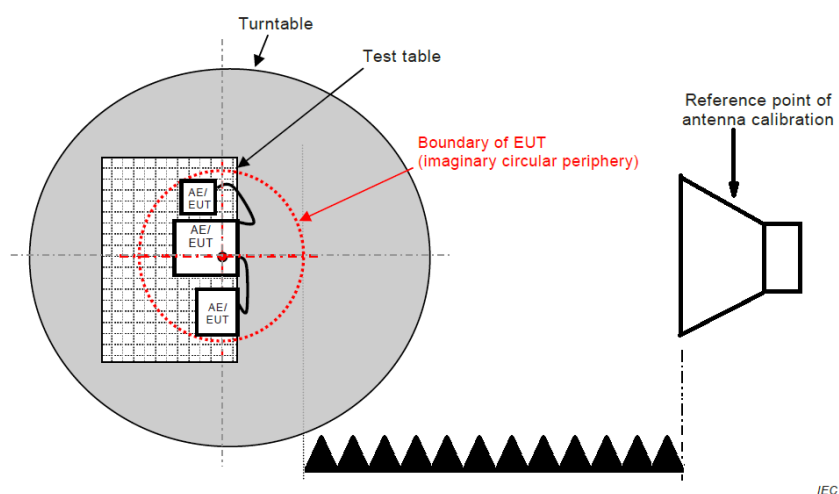


Figure C.1 – Measurement distance

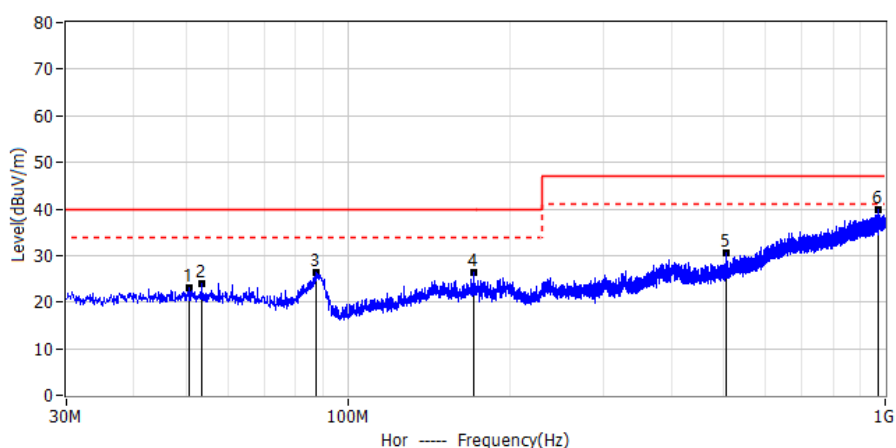
3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** described unless otherwise a special operating condition is specified in the following during the testing.

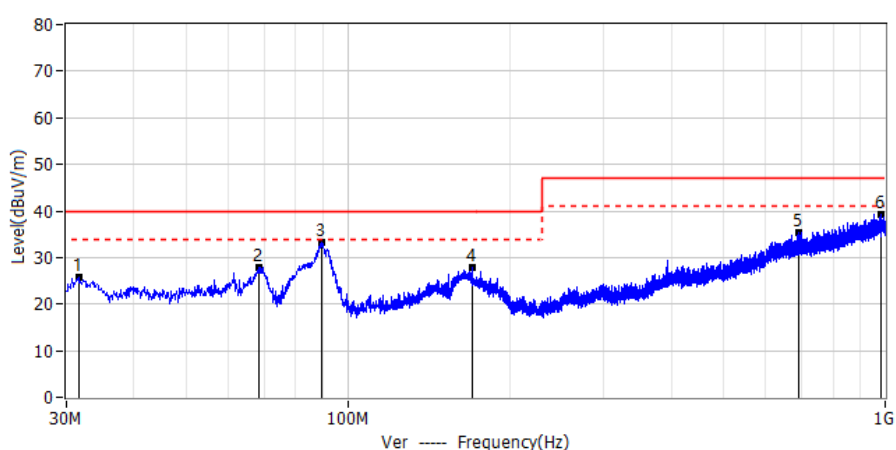


3.2.6 TEST RESULTS (30 - 1000 MHz)

Project: LGT23I086	Test Engineer: Xiangdong Ma
EUT: 5G Smart phone	Temperature: 28°C
M/N: TANK3	Humidity: 57%RH
Test Voltage: AC 230V/50Hz	Test Data: 2023-10-08
Test Mode: Mode 17	
Note:	



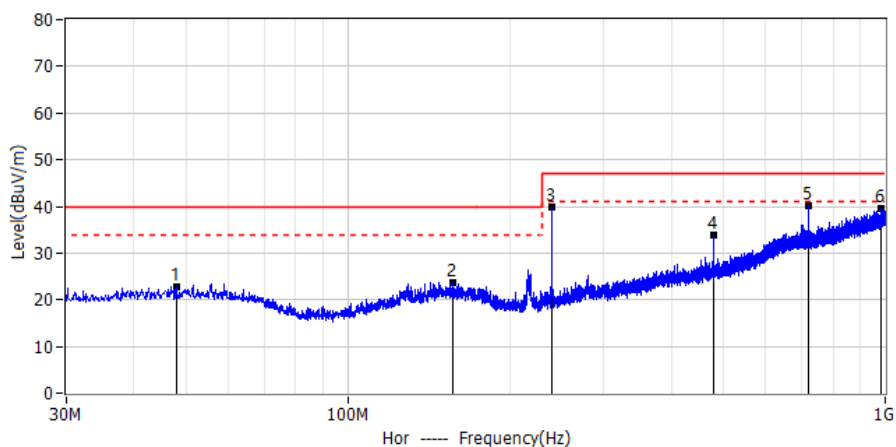
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	50.855MHz	3.77	19.30	23.07	40.00	-16.90	PK	Hor
2*	53.401MHz	4.83	19.12	23.95	40.00	-16.10	PK	Hor
3*	87.351MHz	11.30	15.10	26.40	40.00	-13.60	PK	Hor
4*	171.863MHz	6.79	19.61	26.40	40.00	-13.60	PK	Hor
5*	507.604MHz	5.37	25.05	30.42	47.00	-16.60	PK	Hor
6*	971.870MHz	5.61	34.38	39.99	47.00	-7.00	PK	Hor



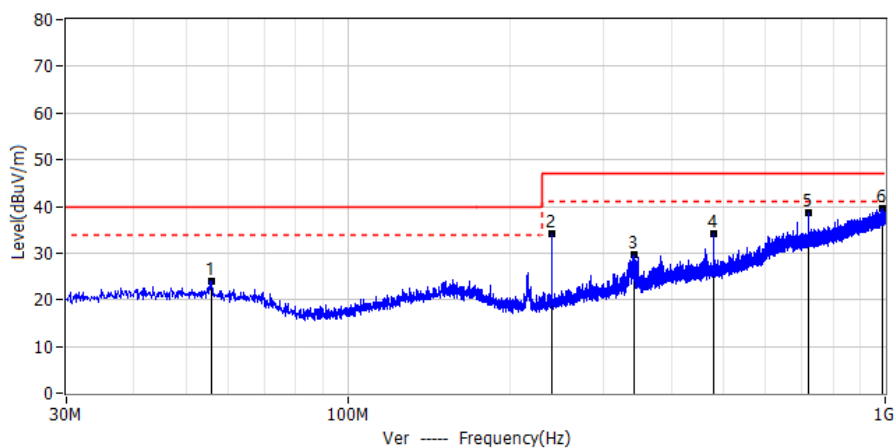
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	31.698MHz	7.49	18.32	25.81	40.00	-14.20	PK	Ver
2*	68.558MHz	9.74	18.11	27.85	40.00	-12.10	PK	Ver
3*	89.291MHz	18.05	15.07	33.12	40.00	-6.90	PK	Ver
4*	170.771MHz	8.16	19.71	27.87	40.00	-12.10	PK	Ver
5*	689.358MHz	5.70	29.72	35.42	47.00	-11.60	PK	Ver
6*	984.844MHz	4.87	34.50	39.37	47.00	-7.60	PK	Ver



Project: LGT23I086	Test Engineer: Xiangdong Ma
EUT: 5G Smart phone	Temperature: 28°C
M/N: TANK3	Humidity: 57%RH
Test Voltage: Battery	Test Data: 2023-10-09
Test Mode: Mode 21	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	48.066MHz	3.45	19.31	22.76	40.00	-17.24	PK	Hor
2*	156.949MHz	3.81	19.88	23.69	40.00	-16.31	PK	Hor
3*	240.005MHz	22.25	17.68	39.93	47.00	-7.07	PK	Hor
4*	479.959MHz	9.35	24.55	33.90	47.00	-13.10	PK	Hor
5*	720.034MHz	10.18	30.02	40.20	47.00	-6.80	PK	Hor
6*	981.085MHz	4.95	34.48	39.43	47.00	-7.57	PK	Hor

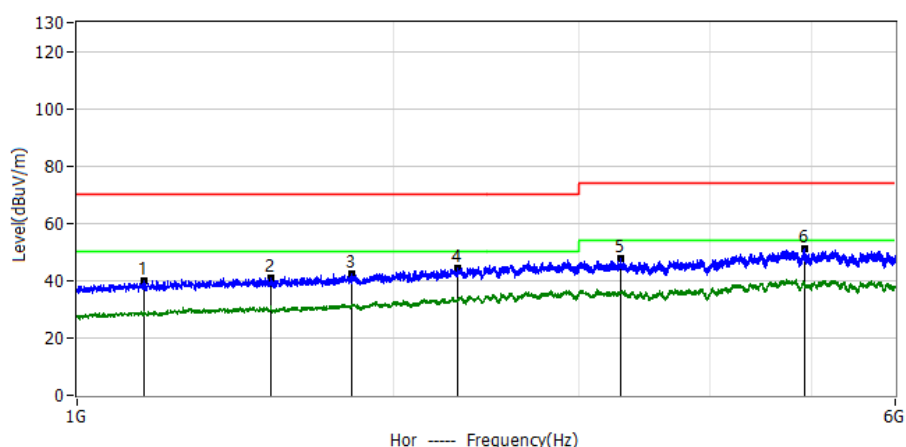


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	55.948MHz	5.05	18.93	23.98	40.00	-16.02	PK	Ver
2*	240.005MHz	16.39	17.68	34.07	47.00	-12.93	PK	Ver
3*	341.370MHz	8.73	21.02	29.75	47.00	-17.25	PK	Ver
4*	479.959MHz	9.75	24.55	34.30	47.00	-12.70	PK	Ver
5*	720.034MHz	8.64	30.02	38.66	47.00	-8.34	PK	Ver
6*	990.058MHz	4.88	34.53	39.41	47.00	-7.59	PK	Ver

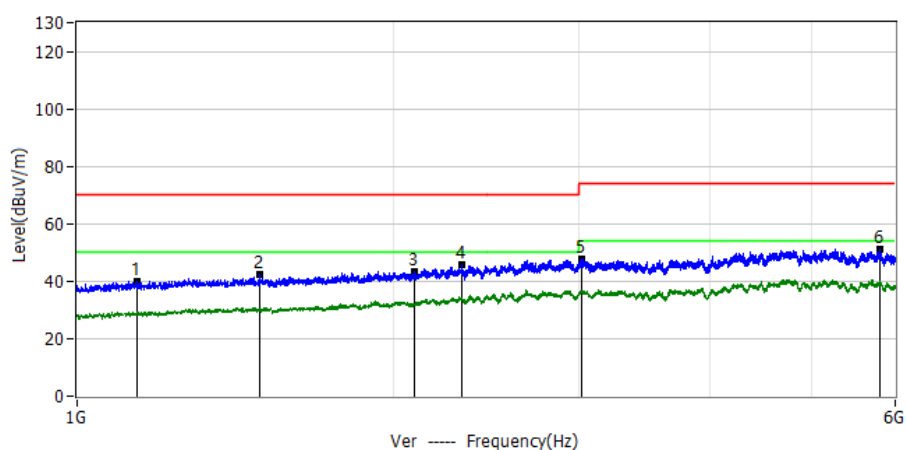


3.2.7 TEST RESULT (1000 - 6000 MHz)

Project: LGT23I086	Test Engineer: Xiangdong Ma
EUT: 5G Smart phone	Temperature: 28°C
M/N: TANK3	Humidity: 57%RH
Test Voltage: AC 230V/50Hz	Test Data: 2023-10-08
Test Mode: Mode 17	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.159GHz	63.29	-23.33	39.96	70.00	-30.04	PK	Hor
2*	1.529GHz	61.75	-20.65	41.10	70.00	-28.90	PK	Hor
3*	1.826GHz	60.15	-17.99	42.16	70.00	-27.84	PK	Hor
4*	2.298GHz	57.55	-13.10	44.45	70.00	-25.55	PK	Hor
5*	3.286GHz	56.17	-8.43	47.74	74.00	-26.26	PK	Hor
6*	4.919GHz	56.99	-6.08	50.91	74.00	-23.09	PK	Hor



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.140GHz	63.46	-23.50	39.96	70.00	-30.04	PK	Ver
2*	1.491GHz	63.02	-20.89	42.13	70.00	-27.87	PK	Ver
3*	2.092GHz	58.77	-15.27	43.50	70.00	-26.50	PK	Ver
4*	2.320GHz	58.60	-12.87	45.73	70.00	-24.27	PK	Ver
5*	3.018GHz	56.10	-8.35	47.75	74.00	-26.25	PK	Ver
6*	5.798GHz	58.70	-7.62	51.08	74.00	-22.92	PK	Ver



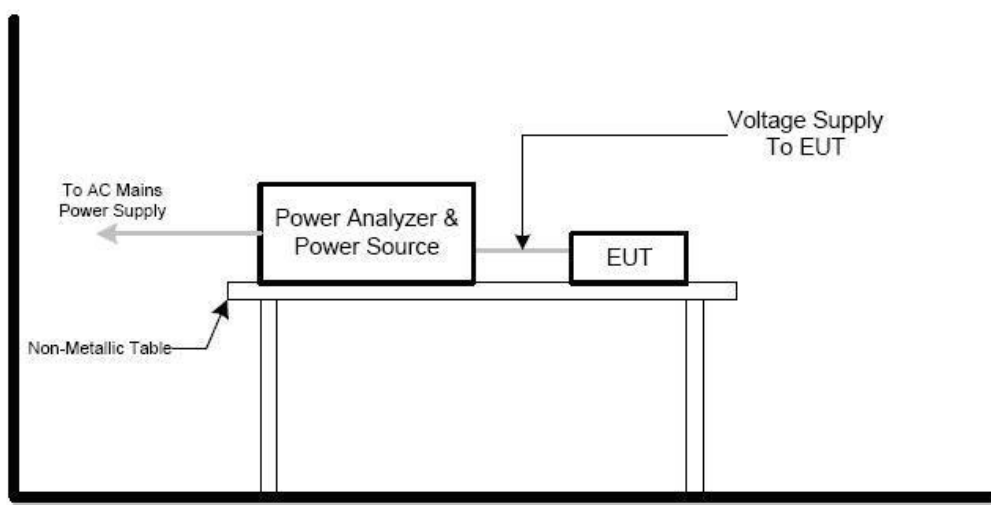
3.3.2 TEST PROCEDURE

- a. The EUT was placed on the top of a wooden table 0.8 meter above the ground and operated to produce the maximum harmonic components under normal operating conditions.
- b. The classification of EUT is according to section 5 of EN IEC 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. 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.
- c. 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.

3.3.3 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** described unless otherwise a special operating condition is specified in the following during the testing.

3.3.4 TEST SETUP





3.3.5 TEST RESULTS

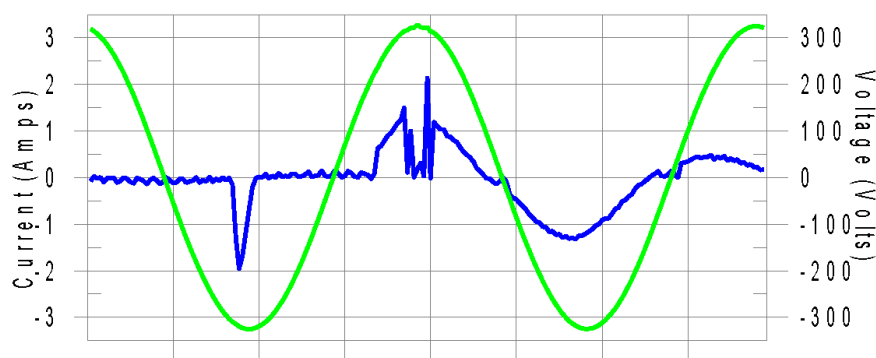
Harmonics – Class-A per IEC 61000-3-2:2018/AMD1:2020(Run time)

EUT: Smart phone
Test category: Class-A (European limits)
Test date: 2023/10/18
Test duration (min): 3
Comment: TANK3
Customer: LGT23I086

Tested by: Cheng li
Test Margin: 100
Start time: 16:04:57
End time: 16:08:08
Data file name: H-000535.cts_data

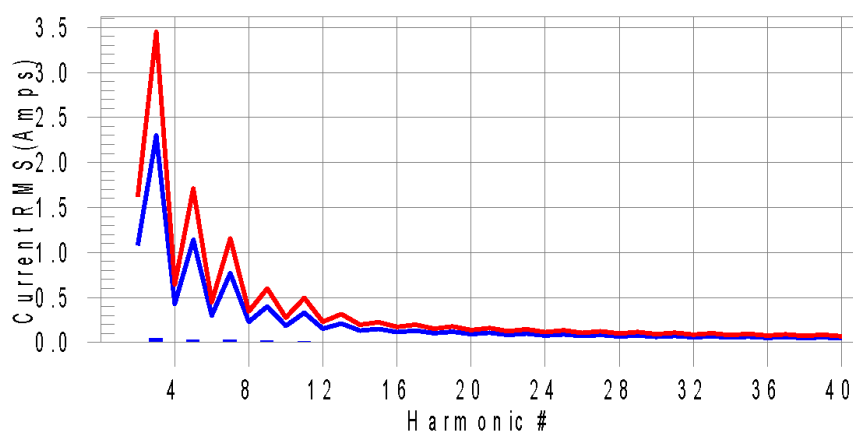
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonics H15-33.9% of 150% limit, H19-6.6% of 100% limit



Current Test Result Summary (Run time)

EUT: Smart phone
 Test category: Class-A (European limits)
 Test date: 2023/10/18
 Test duration (min): 3
 Comment: TANK3
 Customer: LGT23I086

Tested by: Cheng li
 Test Margin: 100
 Start time: 16:04:57
 End time: 16:08:08
 Data file name: H-000535.cts_data

Test Result: Pass Source qualification: Normal
 THC(A): 0.071 I-THD(%): 13.3 POHC(A): 0.015 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts): 230.02
 I_Peak (Amps): 2.481
 I_Fund (Amps): 0.531
 Power (Watts): 115.1

Frequency(Hz): 50.00
 I_RMS (Amps): 0.540
 Crest Factor: 6.662
 Power Factor: 0.934

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.003	1.620	N/A	Pass
3	0.049	2.300	2.1	0.159	3.450	4.6	Pass
4	0.001	0.430	N/A	0.003	0.645	N/A	Pass
5	0.029	1.140	2.6	0.151	1.710	8.9	Pass
6	0.000	0.300	N/A	0.003	0.450	N/A	Pass
7	0.025	0.770	3.3	0.140	1.155	12.1	Pass
8	0.000	0.230	N/A	0.003	0.345	N/A	Pass
9	0.019	0.400	4.8	0.126	0.600	21.0	Pass
10	0.000	0.184	N/A	0.002	0.276	N/A	Pass
11	0.014	0.330	4.3	0.110	0.495	22.2	Pass
12	0.000	0.153	N/A	0.002	0.230	N/A	Pass
13	0.010	0.210	4.9	0.093	0.315	29.5	Pass
14	0.000	0.131	N/A	0.002	0.197	N/A	Pass
15	0.008	0.150	5.4	0.076	0.225	33.9	Pass
16	0.000	0.115	N/A	0.001	0.173	N/A	Pass
17	0.008	0.132	5.9	0.060	0.198	30.4	Pass
18	0.000	0.102	N/A	0.001	0.153	N/A	Pass
19	0.008	0.118	6.6	0.046	0.178	26.0	Pass
20	0.000	0.092	N/A	0.001	0.138	N/A	Pass
21	0.007	0.107	6.6	0.035	0.161	21.6	Pass
22	0.000	0.084	N/A	0.001	0.125	N/A	Pass
23	0.006	0.098	6.1	0.026	0.147	17.9	Pass
24	0.000	0.077	N/A	0.001	0.115	N/A	Pass
25	0.005	0.090	N/A	0.021	0.135	N/A	Pass
26	0.001	0.071	N/A	0.001	0.107	N/A	Pass
27	0.004	0.083	N/A	0.018	0.125	N/A	Pass
28	0.002	0.066	N/A	0.002	0.099	N/A	Pass
29	0.004	0.078	N/A	0.017	0.116	N/A	Pass
30	0.001	0.061	N/A	0.001	0.092	N/A	Pass
31	0.004	0.073	N/A	0.016	0.109	N/A	Pass
32	0.002	0.058	N/A	0.002	0.086	N/A	Pass
33	0.004	0.068	N/A	0.014	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.004	0.064	N/A	0.012	0.096	N/A	Pass
36	0.000	0.051	N/A	0.001	0.077	N/A	Pass
37	0.004	0.061	N/A	0.010	0.091	N/A	Pass
38	0.000	0.048	N/A	0.001	0.073	N/A	Pass
39	0.003	0.058	N/A	0.008	0.087	N/A	Pass
40	0.000	0.046	N/A	0.001	0.069	N/A	Pass



Voltage Source Verification Data (Run time)

EUT: Smart phone
Test category: Class-A (European limits)
Test date: 2023/10/18
Test duration (min): 3
Comment: TANK3
Customer: LGT23I086

Tested by: Cheng li
Test Margin: 100
Start time: 16:04:57
End time: 16:08:08
Data file name: H-000535.cts_data

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.02	Frequency(Hz):	50.00
I _{Peak} (Amps):	2.481	I _{RMS} (Amps):	0.540
I _{Fund} (Amps):	0.531	Crest Factor:	6.662
Power (Watts):	115.1	Power Factor:	0.934

Harm#	Harmonics	V-rms	Limit V-rms	% of Limit	Status
2		0.089	0.460	19.28	OK
3		0.610	2.070	29.48	OK
4		0.078	0.460	16.95	OK
5		0.115	0.920	12.52	OK
6		0.045	0.460	9.82	OK
7		0.109	0.690	15.73	OK
8		0.065	0.460	14.05	OK
9		0.072	0.460	15.62	OK
10		0.050	0.460	10.92	OK
11		0.064	0.230	27.74	OK
12		0.024	0.230	10.23	OK
13		0.048	0.230	20.69	OK
14		0.013	0.230	5.76	OK
15		0.047	0.230	20.44	OK
16		0.008	0.230	3.65	OK
17		0.031	0.230	13.44	OK
18		0.009	0.230	3.76	OK
19		0.036	0.230	15.44	OK
20		0.009	0.230	3.85	OK
21		0.026	0.230	11.48	OK
22		0.008	0.230	3.62	OK
23		0.022	0.230	9.67	OK
24		0.004	0.230	1.84	OK
25		0.021	0.230	9.24	OK
26		0.007	0.230	3.17	OK
27		0.025	0.230	11.09	OK
28		0.005	0.230	2.25	OK
29		0.017	0.230	7.48	OK
30		0.007	0.230	3.05	OK
31		0.021	0.230	8.97	OK
32		0.005	0.230	2.26	OK
33		0.019	0.230	8.33	OK
34		0.005	0.230	2.32	OK
35		0.017	0.230	7.18	OK
36		0.004	0.230	1.74	OK
37		0.014	0.230	6.25	OK
38		0.004	0.230	1.92	OK
39		0.014	0.230	6.19	OK
40		0.006	0.230	2.63	OK



3.4 VOLTAGE FLUCTUATION AND FLICKERS

3.4.1 LIMITS OF THE VOLTAGE FLUCTUATION AND FLICKERS

Tests	Measurement Value	Limit	Descriptions
	IEC555-3	IEC/EN 61000-3-3	
P_{st}	$\leq 1.0, T_p = 10 \text{ min.}$	$\leq 1.0, T_p = 10 \text{ min.}$	Short Term Flicker Indicator
P_{lt}	N/A	$\leq 0.65, T_p = 2 \text{ hr.}$	Long Term Flicker Indicator
$T_{dt(s)}$	$\leq 3\%$	$\leq 3.3\%$	Relative Steady-State V-Chang
$d_{max}(\%)$	$\leq 4\%$	$\leq 4\%$	Maximum Relative V-Chang
$d_c(\%)$	N/A	$\leq 3.3\% \text{ for } > 500\text{ms}$	Relative V-change Characteristic

3.4.2 TEST PROCEDURE

a. Fluctuation and Flickers Test:

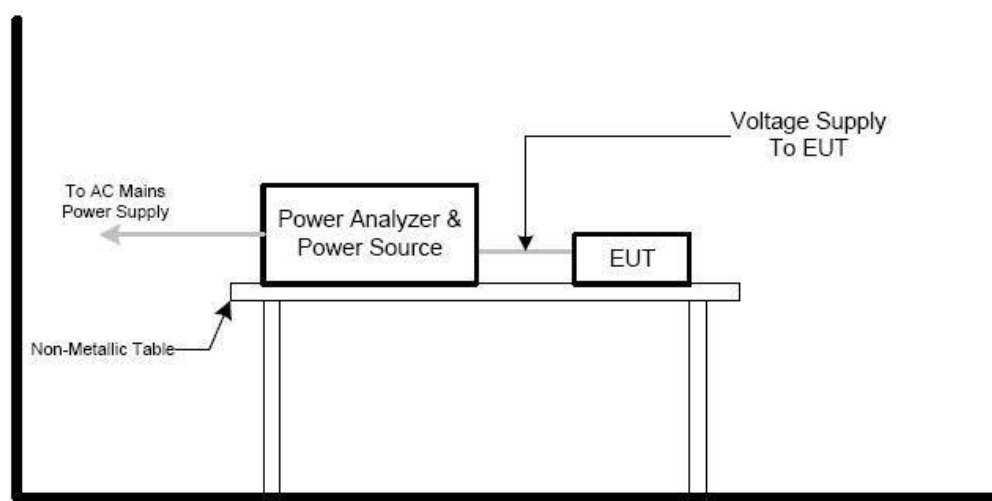
Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 5.0/6.0 of IEC555-3 and/or Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.

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

3.4.3 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** described unless otherwise a special operating condition is specified in the following during the testing.

3.4.4 TEST SETUP





3.4.5 TEST RESULTS

Flicker Test Summary per IEC61000-3-3:2013/AMD1:2017 (Run time)

EUT: Smart phone
Test category: All parameters (European limits)
Test date: 2023/10/18
Test duration (min): 10
Comment: TANK3
Customer: LGT23I086

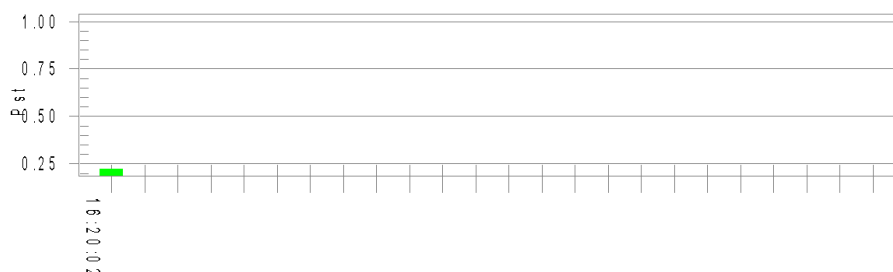
Tested by: Cheng li
Test Margin: 100
Start time: 16:09:41
End time: 16:20:08
Data file name: F-000536.cts_data

Test Result: Pass

Status: Test Completed

Pst_t and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 229.70

Highest dt (%):

T-max (mS): 0

Highest dc (%): 0.00

Highest dmax (%): 0.00

Highest Pst (10 min. period): 0.224

Highest Plt (2 hr. period): 0.098

Test limit (%):

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass

Test limit: 0.650 Pass



4. EMC IMMUNITY TEST

4.1 STANDARD COMPLIANCE/SERVIRITY LEVEL/CRITERIA

Tests Standard No.	TEST SPECIFICATION	Test Mode Test Ports	Perform. Criteria
1. ESD IEC/EN 61000-4-2	8KV air discharge 4KV contact discharge	Direct Mode	B
	4KV HCP discharge 4KV VCP discharge	Indirect Mode	B
2. RS IEC/EN 61000-4-3	80 MHz - 1000 MHz,1800MHz,2600MHz,3500MHz,5000MHz, 1000Hz, 80%, AM modulated	Enclosure	A
3. EFT/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	L-N	B
	1.2/50(8/20) Tr/Th us	L-PE N-PE	B
5. Injected Current IEC/EN 61000-4-6	0.15 MHz to 80 MHz, 1000Hz 80 % , AM Modulated 150Ω source impedance	CTL/Signal Port	A
	0.15 MHz to 80 MHz, 1000Hz 80 % , AM Modulated 150Ω source impedance	AC Power Port	A
	0.15 MHz to 80 MHz, 1000Hz 80 % , AM Modulated 150Ω source impedance	DC Power Port	A
6. Volt. Interruptions Volt. Dips IEC/EN 61000-4-11	Voltage dip 100%	AC Power Port	B
	Voltage dip 30%		C
	Interruption 100%		C



4.2 GENERAL PERFORMANCE CRITERIA

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

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. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

4.2.1 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **2.2** or **2.3** unless otherwise a special operating condition is specified in the following during the testing.



4.3 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

4.3.1 TEST SPECIFICATION

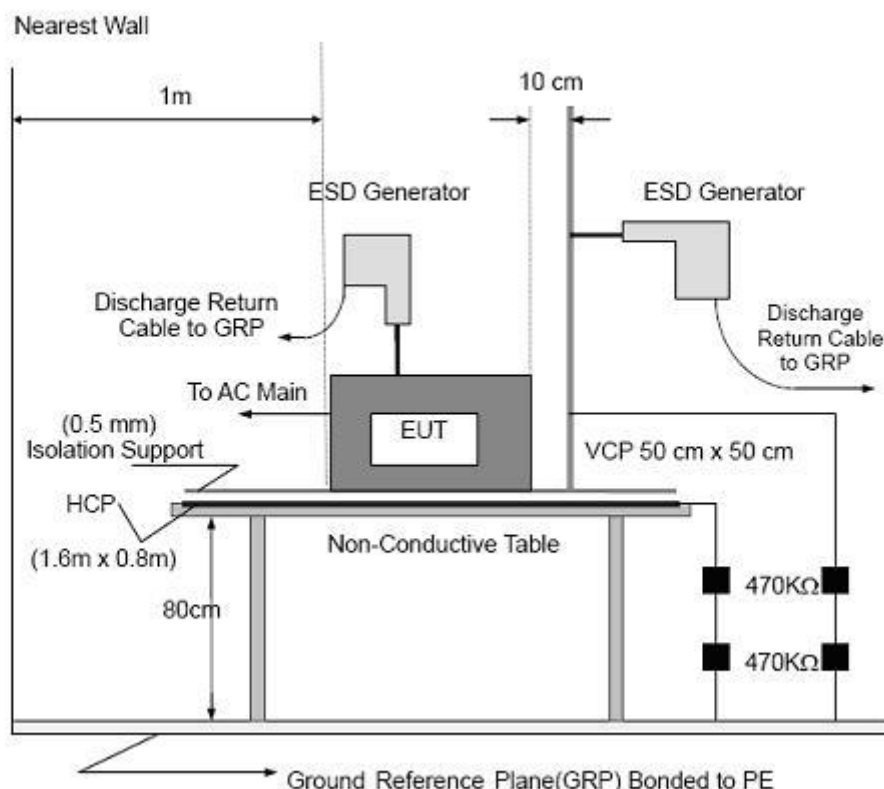
Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance:	B
Discharge Voltage:	Air Discharge : 2KV/4KV/8KV (Direct) Contact Discharge : 4KV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: at least 10 times on each point Contact Discharge: at least 10 times on each point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

4.3.2 TEST PROCEDURE

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

- a. 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 meter 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.
- b. Air discharges at insulation surfaces of the EUT.
It was at least ten single discharges with positive and negative at the same selected point.

4.3.3 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meter 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 meter from the EUT on all sides.



4.3.4 TEST RESULTS

Temperature:	27.1 °C	Relative Humidity:	52%
Pressure:	1017.8hPa	Test Date:	2023.10.19

Discharge times	Contact discharge: minimum 10 times (+/-respectively) at each point Air discharge: minimum 10 times (+/- respectively) at each point					
Discharge Level/KV	Polarity	Test Points	Contact Discharge	Air Discharge	Criterion	Test Result
2,4	+/-	HCP/VCP	A	N/A	B	Pass
2,4	+/-	Green Dot	A	N/A	B	Pass
2,4,8	+/-	Red Dot	N/A	A	B	Pass
Note 1: EUT operate as intended during the test Normal performance within limits specified by the manufacturer, request or purchaser.						
Note 2: ● Red Dot_Air Discharged, ● Green Dot_Contact Discharged						

The Photo for Discharge Points of EUT







4.4 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)

4.4.1 TEST SPECIFICATION

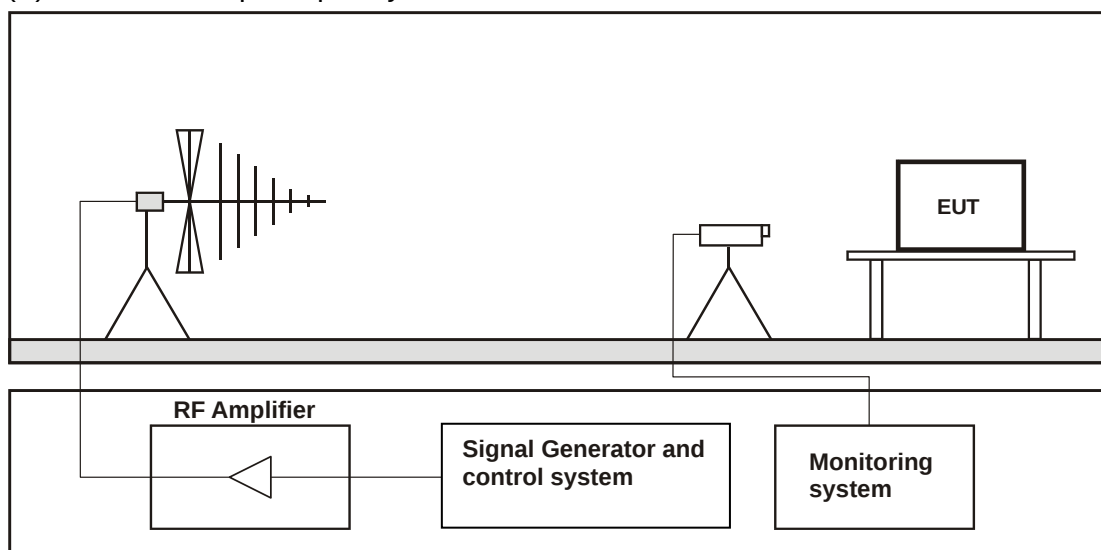
Basic Standard:	IEC/EN 61000-4-3
Required Performance:	A
Test Frequency Range:	80 MHz-1000 MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz
Primary Function Of Telephony Test Frequencies:	80 MHz; 120 MHz; 160 MHz; 230 MHz; 434 MHz; 460 MHz; 600 MHz; 863 MHz and 900 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine 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:	The dwell time of the amplitude modulated carrier at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0,5 s.

4.4.2 TEST PROCEDURE

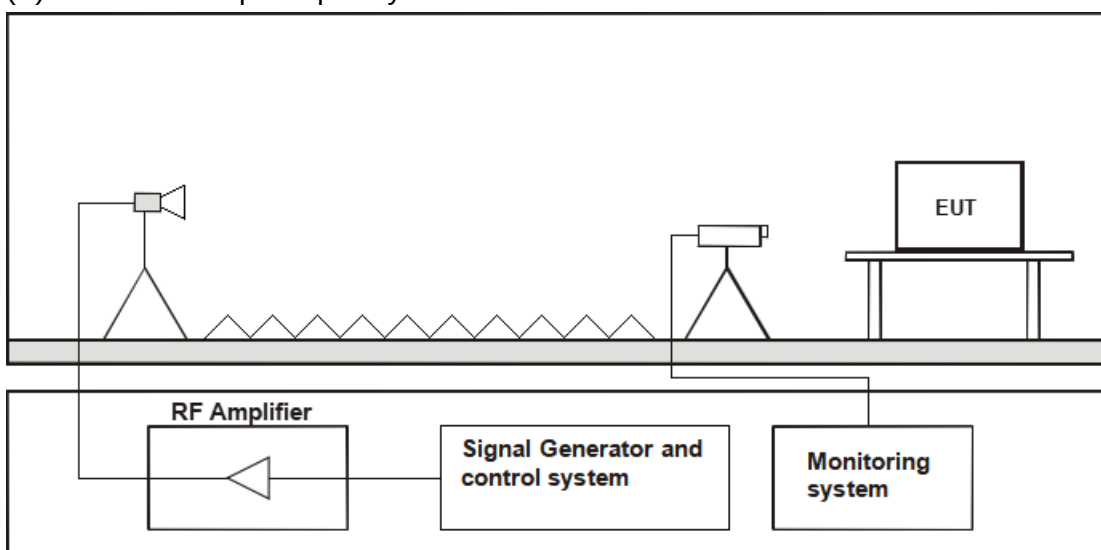
- a. The testing was performed in a fully anechoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
- b. The frequency range is swept from 80 MHz to 1000 MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz, with the signal 80% amplitude modulated with a 1kHz sine-wave. The rate of 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.
- c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- e. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

4.4.3 TEST SETUP

(A) RS Test Set-Up Frequency Below 1GHz



(B) RS Test Set-Up Frequency Above 1GHz



Note:

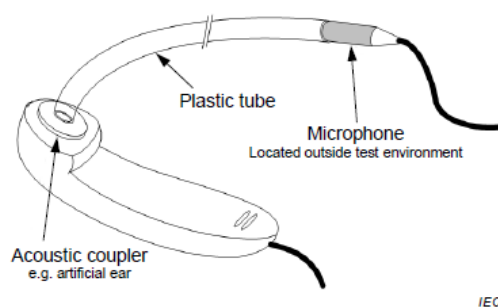
TABLE-TOP EQUIPMENT

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 meter in height. The system under test was connected to the power and signal wire according to the 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 meter in height. The system under test was connected to the power and signal wire according to the relevant installation instructions.

For Audio output function use below setting



NOTE 1 The microphone is connected via the cable to a suitable amplifier.

NOTE 2 This setup is suitable for radiated immunity testing. See G.6.3

Figure G.5 – Example test setup for on-ear acoustic measurements, microphone located away from earpiece transducer



4.4.4 TEST RESULTS

Temperature:	27.1 °C	Relative Humidity:	52%
Test Power:	AC 230V/50Hz	Test Date:	2023.10.19

Frequency Range (MHz)	Antenna polarity	Modulation	EUT position	Criterion	Result
80MHz-1000MHz	Horizontal Vertical	3 V/m 1KHz, 80% AM	Front	A	A
			Rear	A	A
			Left	A	A
			Right	A	A
1000MHz-6000MHz	Horizontal Vertical	3 V/m 1KHz, 80% AM	Front	A	A
			Rear	A	A
			Left	A	A
			Right	A	A

Note: EUT operate as intended during the test Normal performance within limits specified by the manufacturer, request or purchaser.

For the acoustic level of the demodulated audio limits

Frequency(MHz)	dB(SPL)
80 to 1 000	75

Note: According to EN 55035, Annex A, A.2 Applicability, the EUT belongs to Group 2. And then according to EN 55035, Annex A, A.4 Modified test levels and performance criteria, Table A.2 – Modified test levels for performance criterion A for the broadcast reception function, no test requirements apply to this EUT.



4.5 ELECTRICAL FAST TRANSIENT (EFT)

4.5.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-4
Required Performance:	B
Test Voltage:	Power Line: 1 KV Signal/Control Line: 0.5 KV DC network power port: 0.5 KV
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

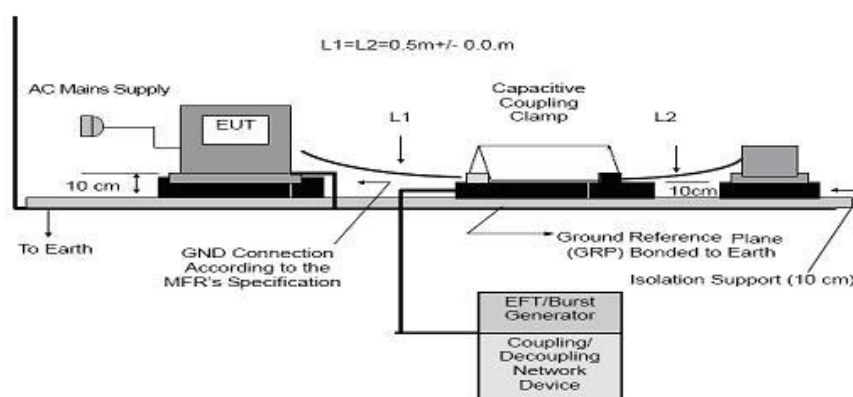
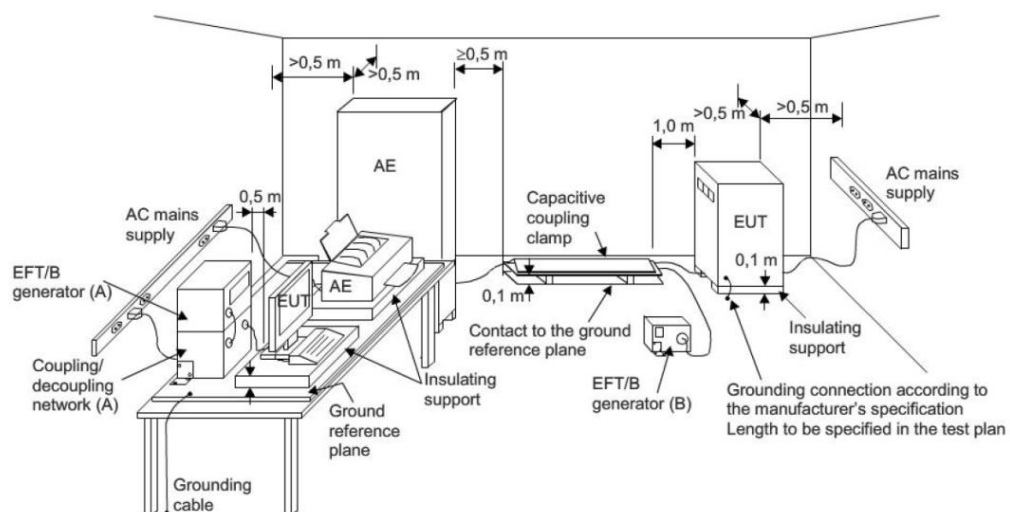
4.5.2 TEST PROCEDURE

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

The other conditions required in the 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 minutes.

4.5.3 TEST SETUP





Note:

TABLE-TOP EQUIPMENT

- a. 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.
- b. 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.
- c. The test generator and the coupling/decoupling network shall be bonded to the ground reference plane.
- d. 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 0.65 mm minimum thickness.
- e. The minimum size of the ground reference plane is 0.8m x 1m. The actual size depends on the dimension of the EUT.
- f. The ground reference plane shall project beyond the EUT by at least 0.1m on all sides.
- g. The ground reference plane shall be connected to the earth (PE) for safety reasons.
- h. The EUT shall be arranged and connected to satisfy its functional requirements according to the equipment installation specifications.
- i. 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.
- j. 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.
- k. The EUT shall be connected to the earth system in accordance with the manufacturer's installation specifications; no additional earth connections are allowed.
- l. The connection impedance of the coupling/decoupling network earth cables to the ground reference plane and all connectors shall provide a low inductance.
- m. 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.



4.5.4 TEST RESULTS

Temperature:	27.1 °C	Relative Humidity:	52%
Test Power:	AC 230V/50Hz	Test Date:	2023.10.19

Coupling Line		Test level (kV)								Performance Criterion	Result
		0.5		1		2		4			
		+	-	+	-	+	-	+	-		
I/O AC power ports	L	/	/	B	B	/	/	/	/	B	PASS
	N	/	/	B	B	/	/	/	/		PASS
	PE	/	/	/	/	/	/	/	/		N/A
	L+N	/	/	B	B	/	/	/	/		PASS
	L+PE	/	/	/	/	/	/	/	/		N/A
	N+PE	/	/	/	/	/	/	/	/		N/A
	L+N+PE	/	/	/	/	/	/	/	/		N/A
I/O DC Power ports		/	/	/	/	/	/	/	/	B	N/A
analogue/digital data ports		/	/	/	/	/	/	/	/	B	N/A
B: EUT There is abnormal sound in the headphones during the test, which will automatically resume after the test.											
B: EUT During the test, there is an abnormal sound in the headset, which is automatically recovered after the test.											



4.6 SURGE TESTING

4.6.1 TEST SPECIFICATION

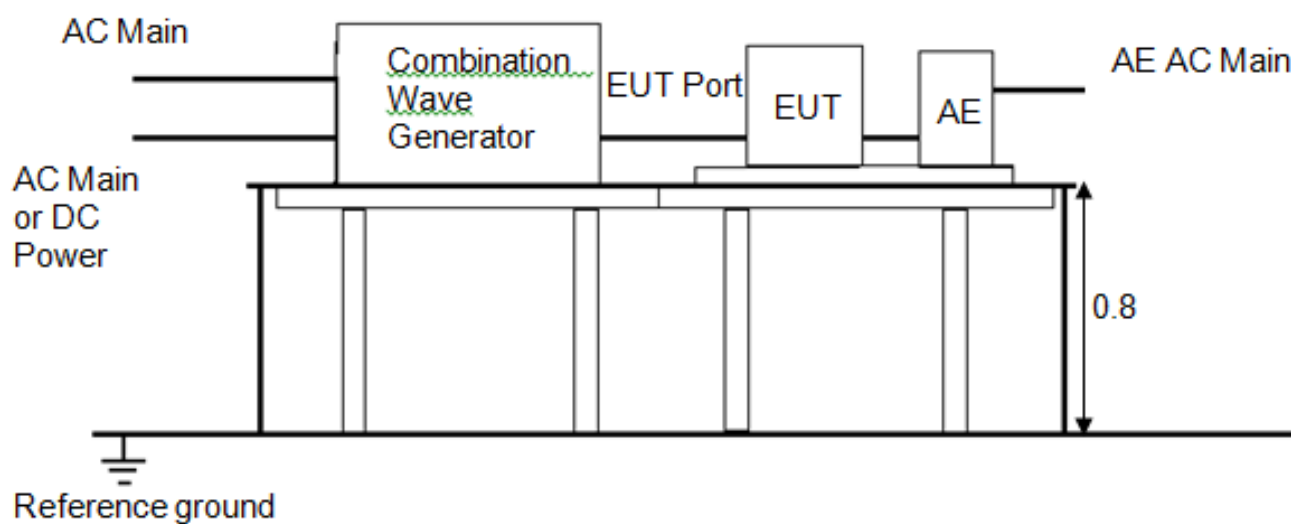
Basic Standard:	IEC/EN 61000-4-5
Required Performance:	B
Wave-Shape:	Combination Wave 1.2/50us Open Circuit Voltage
Test Voltage:	Power line ~ line to line: 1 KV line to ground: 2 KV Telecommunication line: 0.5 KV DC network power port: 0.5 KV
Surge Input/Output:	L-N, L-PE, N-PE
Generator Source:	(L-N)2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

4.6.2 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 2meter 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 meter in length (or shorter).



4.6.3 TEST SETUP





4.6.4 TEST RESULTS

Temperature:	27.1 °C	Relative Humidity:	52%
Test Power:	AC 230V/50Hz	Test Date:	2023.10.19

Coupling Line			Test level								Criterion	Result
			0.5 kV		1 kV		2 kV		4 kV			
			+	-	+	-	+	-	+	-		
Input AC power ports	L-N	0°	/	/	/	/	/	/	/	/	B	N/A
		90°	A	/	A	/	/	/	/	/		PASS
		180°	/	/	/	/	/	/	/	/		N/A
		270°	/	A	/	A	/	/	/	/		PASS
	L-PE	0°	/	/	/	/	/	/	/	/		N/A
		90°	/	/	/	/	/	/	/	/		N/A
		180°	/	/	/	/	/	/	/	/		N/A
		270°	/	/	/	/	/	/	/	/		N/A
	N-PE	0°	/	/	/	/	/	/	/	/		N/A
		90°	/	/	/	/	/	/	/	/		N/A
		180°	/	/	/	/	/	/	/	/		N/A
		270°	/	/	/	/	/	/	/	/		N/A
Input DC power ports			/	/	/	/	/	/	/	/	/	N/A
Analogue/digital data ports	lines to PE	unshielded symmetrical	/	/	/	/	/	/	/	/	C	N/A
Analogue/digital data ports	lines to PE	coaxial or shielded	/	/	/	/	/	/	/	/	B	N/A
Note: EUT operate as intended during the test Normal performance within limits specified by the manufacturer, request or purchaser.												



4.7 CONDUCTED RADIO FREQUENCY DISTURBANCES (CS)

4.7.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-6
Required Performance:	A
Test Frequency Range:	0.15 MHz-80 MHz
Primary Function Of Telephony 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 10 MHz - 30 MHz, 3V to 1V 30 MHz - 80 MHz, 1V
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	The dwell time of the amplitude modulated carrier at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0,5 s.

4.7.2 TEST PROCEDURE

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

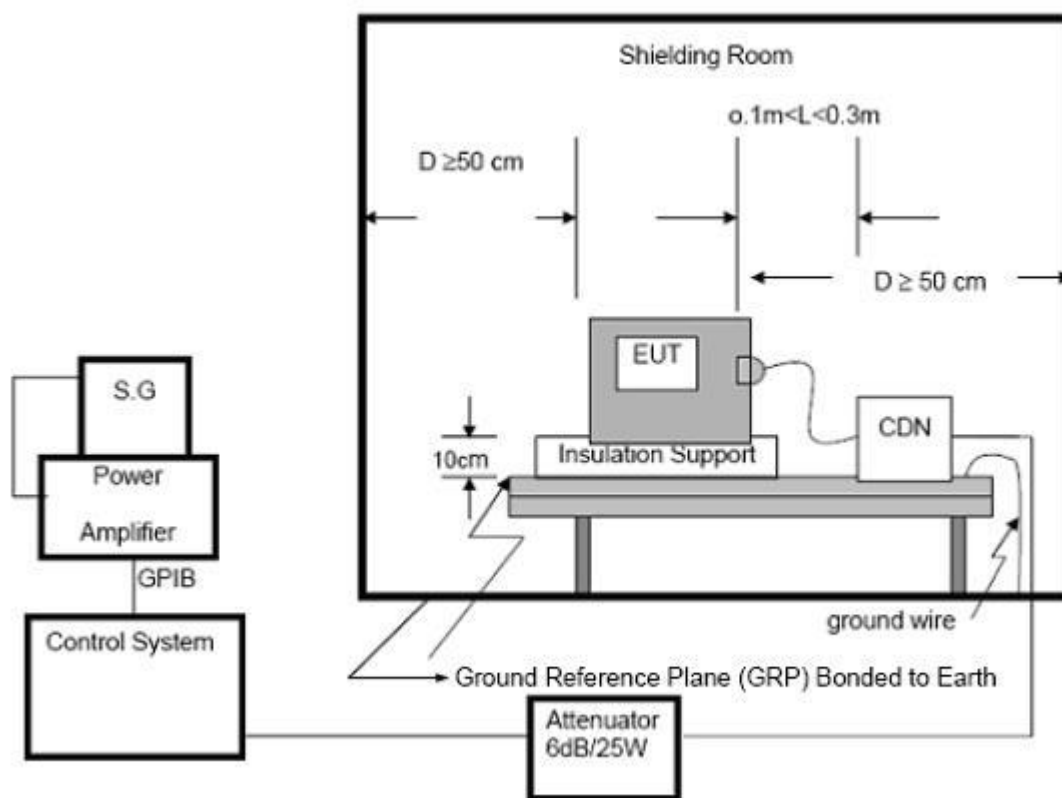
The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50-ohm load resistor.

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.

4.7.3 TEST SETUP

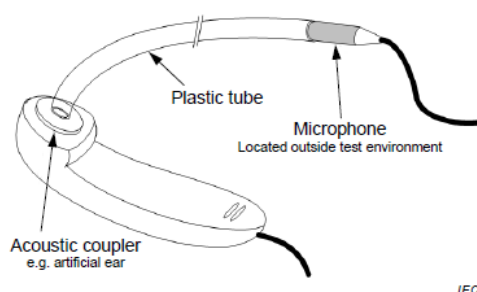


NOTE:

FLOOR-STANDING EQUIPMENT

The equipment to be tested is placed on an insulating support of 0.1 meter 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 meter and 0.3 meter from the projected geometry of the EUT on the ground reference plane.

For Audio output function use below setting



NOTE 1 The microphone is connected via the cable to a suitable amplifier.

NOTE 2 This setup is suitable for radiated immunity testing. See G.6.3

Figure G.5 – Example test setup for on-ear acoustic measurements, microphone located away from earpiece transducer



4.7.4 TEST RESULTS

Temperature:	27.1°C	Relative Humidity:	52%
Test Power:	AC 230V/50Hz	Test Date:	2023.10.19

Frequency Step:	1%		Dwell Time:	2000 ms	
Test Ports (Mode)	Freq. Range (MHz)	Field Strength	Perform. Criteria	Results	Result
Input / Output AC Power Port	0.15~10	3V r.m.s.	A	A	PASS
	10~30	3~1V r.m.s.		A	PASS
	30~80	1V r.m.s.		A	PASS
Input / Output DC Power Port	0.15~10	3V r.m.s.	A	N/A	N/A
	10~30	3~1V r.m.s.		N/A	N/A
	30~80	1V r.m.s.		N/A	N/A
Analogue/digital data ports	0.15~10	3V r.m.s.	A	N/A	N/A
	10~30	3~1V r.m.s.		N/A	N/A
	30~80	1V r.m.s.		N/A	N/A

Note: EUT operate as intended during the test Normal performance within limits specified by the manufacturer, request or purchaser.

For the acoustic level of the demodulated audio limits

Frequency(MHz)	dB(SPL)
0,15 to 30	55
30 to 80	65

Note: According to EN 55035, Annex A, A.2 Applicability, the EUT belongs to Group 2. And then according to EN 55035, Annex A, A.4 Modified test levels and performance criteria, Table A.2 – Modified test levels for performance criterion A for the broadcast reception function, no test requirements apply to this EUT.



4.8 VOLTAGE INTERRUPTION/DIPS TESTING (DIPS)

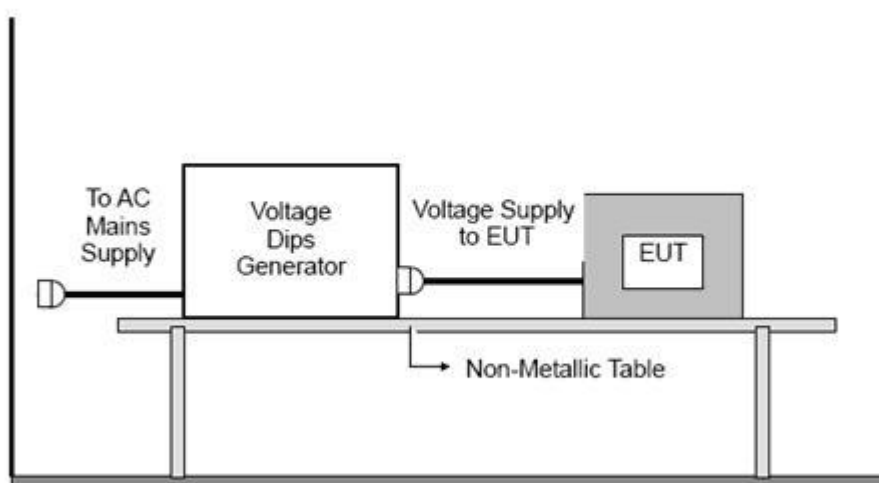
4.8.1 TEST SPECIFICATION

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 3 test events in sequence
Interval between Event:	Minimum 10 seconds
Phase Angle:	0°/45°/90°/135°/180°/225°/270°/315°/360°
Test Cycle:	3 times

4.8.2 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 10 s 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.

4.8.3 TEST SETUP





4.8.4 TEST RESULTS

Temperature:	27.1 °C	Relative Humidity:	50%
Test Power:	AC 230V/50Hz	Test Date:	2023.10.19

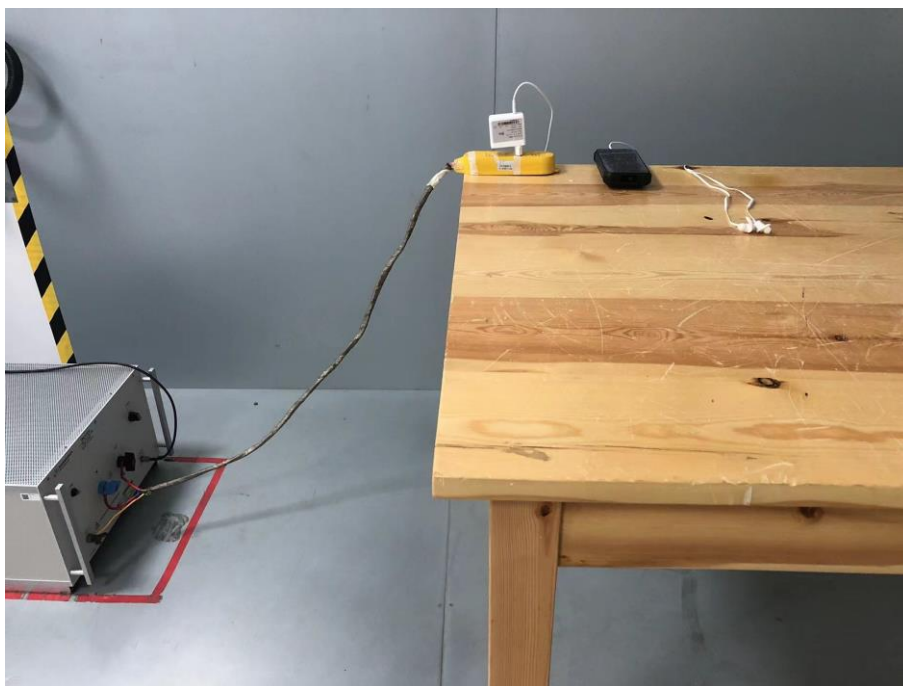
Interruption & Dips	Duration (T)	Perform Criteria	Results	Judgment
Voltage dip 70%	25	C	A	PASS
Voltage dip 0%	0.5	B	A	PASS
Interruption 0%	250	C	C	PASS

C: EUT The charging was interrupted during the test and resumed automatically after the test.

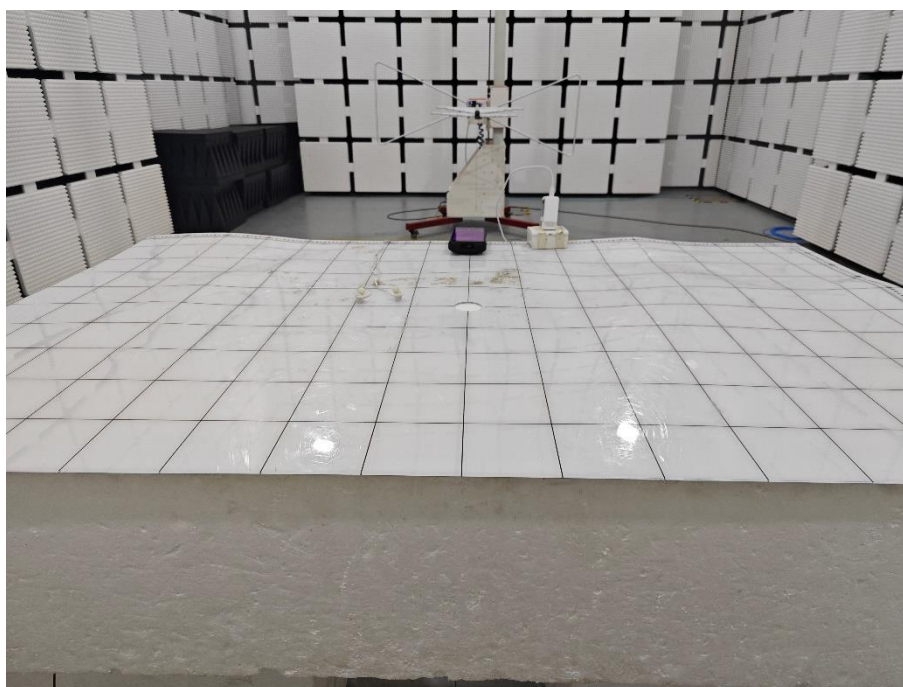


APPENDIX I - TEST SETUP

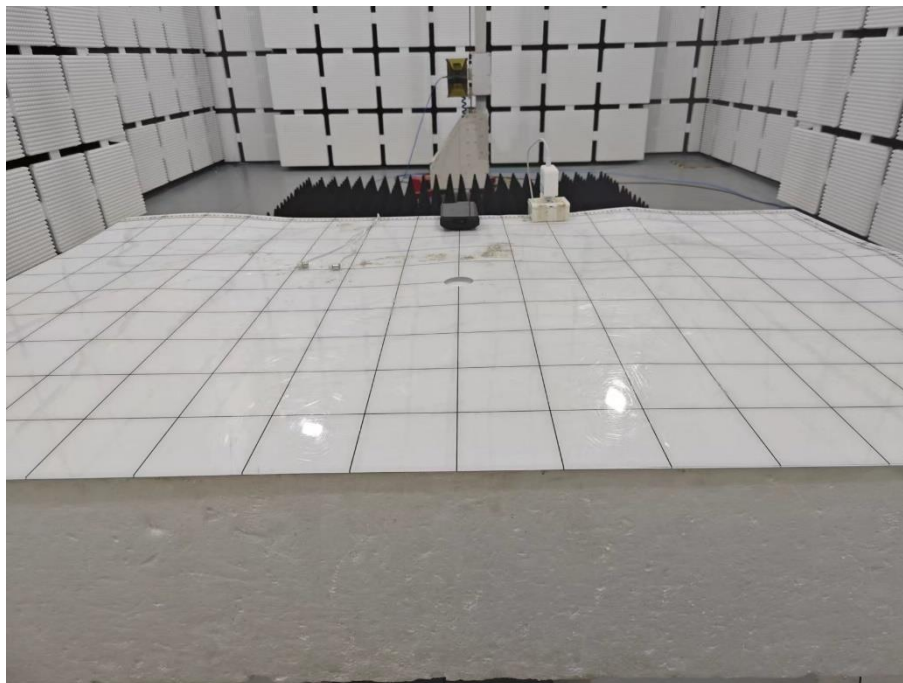
Set-up for Conducted Emission on AC Mains (CE)



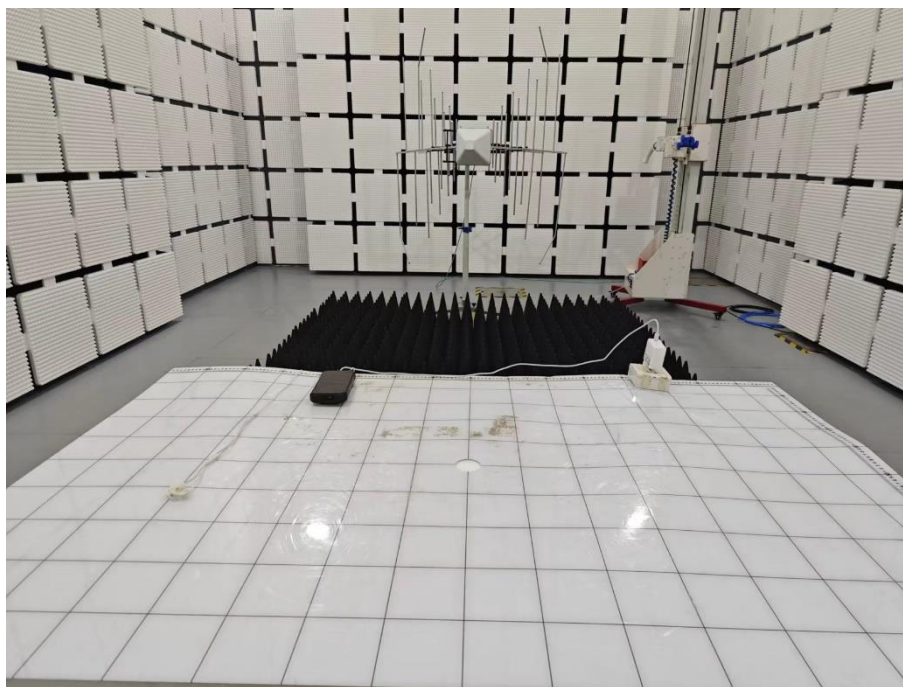
Set-up for Radiated Emission (RE), Below 1GHz



Set-up for Radiated Emission (RE), Above 1GHz

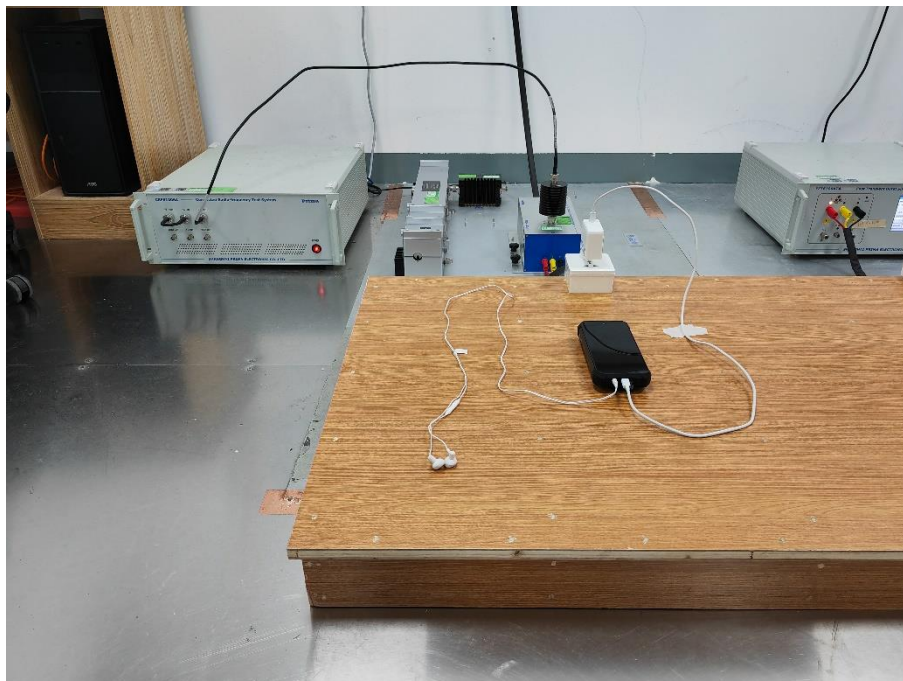


Set-up for Radio Frequency Electromagnetic Fields (RS)





Set-up for Radio Frequency Continuous Conducted (CS)

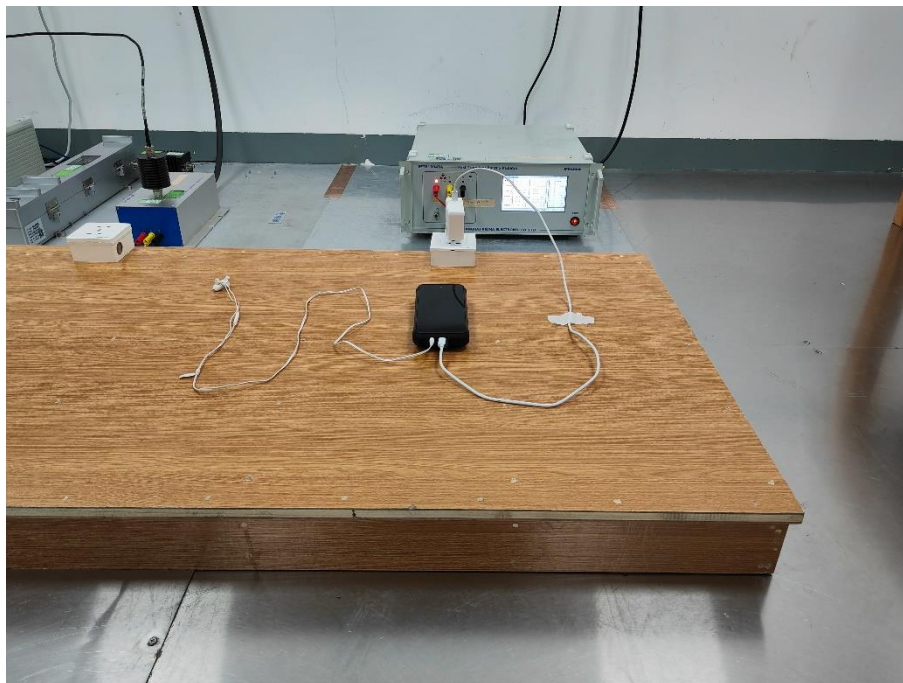


Set-up for Electrostatic Discharges (ESD)

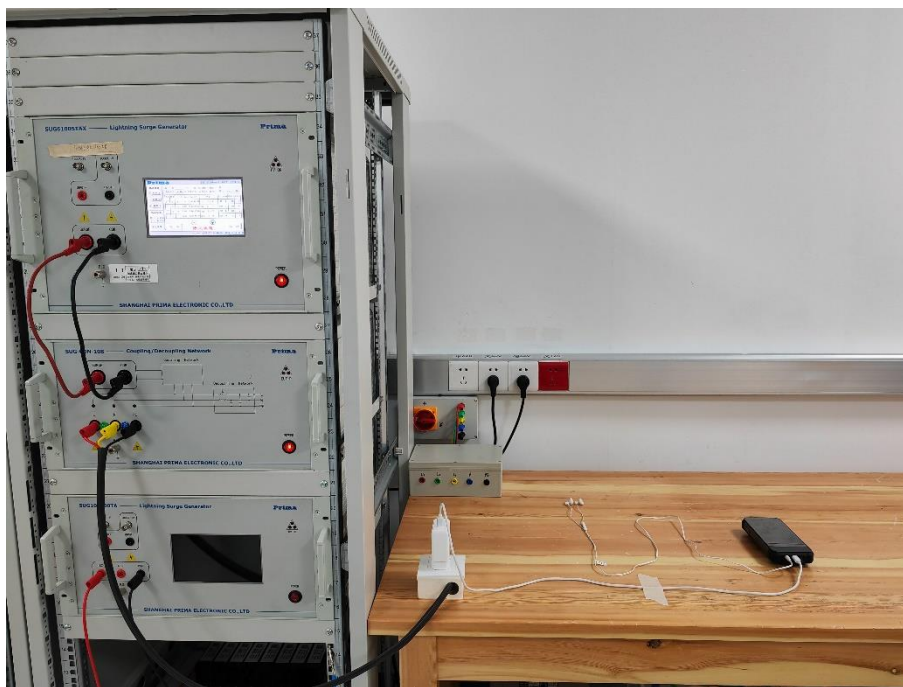




Set-up for Electrical Fast Transients (EFT)



Set-up for Surge





Set-up for Voltage Dips and Interruptions



Set-up for Harmonic Current & Voltage Fluctuations and Flicker (HF)



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