



EMC Test Report

Report No.: STS2512317E01

Issued for

HONG KONG LELEGAO TECHNOLOGY CO.,LIMITED

19H Maxgrand Plaza, No.3 Tai Yau Street, San Po Kong,
Kowloon, HongKong

Product Name: 4G Smart phone

Brand Name: Blackview

Model Name: WAVE 10

Series Model(s): N/A

ETSI EN 301 489-1 V2.2.3 (2019-11)

ETSI EN 301 489-3 V2.3.2 (2023-01)

Test Standards: ETSI EN 301 489-17 V3.3.1 (2024-09)

ETSI EN 301 489-19 V2.2.1 (2022-09)

ETSI EN 301 489-52 V1.3.1 (2024-11)

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.



TEST REPORT

Applicant's name.....: HONG KONG LELEGAO TECHNOLOGY CO.,LIMITED
Address.....: 19H Maxgrand Plaza, No.3 Tai Yau Street, San Po Kong, Kowloon, HongKong
Manufacturer's Name.....: Shenzhen Doke Electronic Co., LTD
Address.....: 801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China

Product description

Product Name.....: 4G Smart phone
Brand Name.....: Blackview
Model Name.....: WAVE 10
Series Model(s): N/A

Test Standards: ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.3.2 (2023-01)
ETSI EN 301 489-17 V3.3.1 (2024-09)
ETSI EN 301 489-19 V2.2.1 (2022-09)
ETSI EN 301 489-52 V1.3.1 (2024-11)

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test.....:

Date of Receipt of Test Item.....: 10 Dec. 2025
Date (s) of Performance of Tests: 10 Dec. 2025 ~ 19 Dec. 2025
Date of Issue: 19 Dec. 2025
Test Result: **Pass**

Testing Engineer :

Star Deng

(Star Deng)

Technical Manager :

Brave Wu

(Brave Wu)

Authorized Signatory :

Bovey Yang

(Bovey Yang)



**TABLE OF CONTENTS**

1. TEST SUMMARY	5
1.1 TEST FACTORY	6
1.2 MEASUREMENT UNCERTAINTY	6
2. GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	9
2.3 DESCRIPTION OF TEST SETUP	13
2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	13
2.5 MEASUREMENT INSTRUMENTS LIST	14
3. EMC EMISSION TEST	17
3.1 CONDUCTED EMISSION MEASUREMENT	17
3.2 RADIATED EMISSION MEASUREMENT	21
3.3 VOLTAGE FLUCTUATION AND FLICKERS	27
4. EMC IMMUNITY TEST	29
4.1 GENERAL PERFORMANCE CRITERIA	29
4.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)	34
4.3 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)	40
4.4 ELECTRICAL FAST TRANSIENT (EFT)	47
4.5 SURGE TESTING	51
4.6 CONDUCTED RADIO FREQUENCY DISTURBANCES (CS)	54
4.7 VOLTAGE INTERRUPTION/DIPS TESTING (DIPS)	60
APPENDIX 1-PHOTO TEST OF EUT	62



Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	19 Dec. 2025	STS2512317E01	ALL	Initial Issue



1. TEST SUMMARY

Test procedures according to the technical standards:

ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.3.2 (2023-01)
ETSI EN 301 489-17 V3.3.1 (2024-10)
ETSI EN 301 489-19 V2.2.1 (2022-09)
ETSI EN 301 489-52 V1.3.1 (2024-11)

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032:2015+A11:2020	Conducted Emission on AC And Telecom Port 150kHz to 30MHz	Class B	PASS	
	Radiated Emission	Class B	PASS	NOTE (1)
EN IEC 61000-3-2:2019+A2:2024	Harmonic Current Emission	Class A	N/A	NOTE (2)
EN 61000-3-3:2013+A2:2021+AC:2022	Voltage Fluctuations & Flicker	-----	PASS	
EMC Immunity				
Section	Test Item	Performance Criteria	Judgment	Remark
EN IEC 61000-4-2:2025	Electrostatic Discharge	B	PASS	
EN IEC 61000-4-3:2020	RF Electromagnetic Field	A	PASS	
EN 61000-4-4:2012	Electrical fast transients/burst	B	PASS	
EN 61000-4-5:2014+A1:2017	Surges	B	PASS	
EN IEC 61000-4-6:2023	Continuous induced RF disturbances	A	PASS	
EN IEC 61000-4-11:2020	Voltage dips and interruptions	B / B / C / C	PASS	

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) "N/A" denotes test is not applicable in this Test Report.



1.1 TEST FACTORY

Company Name:	Shenzhen STS Test Services Co. Ltd.
Address:	101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China
Telephone:	+86-755 3688 6288
Fax:	+86-755 3688 6277
Registration No.:	IC Registration No.: 12108A
	FCC test Firm Registration Number: 625569
	A2LA Certificate No.: 4338.01

1.2 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. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
STSC01	CISPR 16-4-2	9KHz-150KHz	2.14	
		150 KHz ~ 30MHz	3.02	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
STSC02	CISPR 16-4-2	30MHz ~ 1000MHz	3.87	
		1GHz ~ 6GHz	4.82	



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	4G Smart phone	
Brand Name	Blackview	
Model Name	WAVE 10	
Series Model(s)	N/A	
Model Difference	N/A	
Frequency Bands	Bluetooth	2402~2480 MHz
	2.4G WLAN	802.11b/g/n (20MHz): 2412~2472MHz 802.11n (40MHz):2422~2462MHz
	5.2G WLAN	802.11a/n/ac (20MHz): 5180~5240MHz 802.11n /ac(40MHz):5190~5230MHz 802.11ac (80MHz):5210MHz
	5.8G WLAN	802.11a/n/ac (20MHz): 5745~5825MHz 802.11n /ac(40MHz):5755~5795MHz 802.11ac (80MHz):5775MHz
	GPS	1575.42MHz
	GLONASS	1602 MHz
	GALILEO	1575.42 MHz
	BDS	1561.098MHz
	FM	87.5-108MHZ
	GSM	GSM 900: 880 ~ 915 MHz GSM 1800:1710 ~ 1785 MHz
	WCDMA	WCDMA2100:1920-1980 MHz WCDMA900:880-915 MHz
	LTE	LTE Band 1: 1920-1980 MHz LTE Band 3: 1710-1785 MHz LTE Band 7: 2500-2570 MHz LTE Band 8: 880-915 MHz LTE Band 20: 832-862 MHz
	BT	BT(1Mbps): GFSK BT EDR(2Mbps): $\pi/4$ -DQPSK BT EDR(3Mbps): 8DPSK
Modulation Mode	BLE	GFSK
	2.4G WLAN	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
	5G WLAN	802.11a(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM):BPSK,QPSK,16-QAM, 64-QAM,256-QAM
	GPS	BPSK
	GLONASS	FDMA



	GALILEO	CBOC
	BDS	QPSK
	FM	FM
	GSM	GMSK for GSM/GPRS; GMSK and 8PSK for EDGE
	WCDMA	WCDMA: QPSK; HSDPA:QPSK/16QAM; HSUPA:BPSK
	LTE	QPSK/16QAM
SIM Card	SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested.	
Rating	Input: DC 5.0V 2.0A	
Battery	Model: FHPV466495PNJ Rated Voltage: 3.85 V Charge Limit Voltage:4.4V Capacity: 5000mAh	
Adapter	Model: QZ-01004EA00 Input: 100-240V~50/60Hz 0.3A Output: 5.0V 2.0A(10.0W)	
Hardware version number	J567F_9230SMB_D4UFU_V1.0	
Software version number	WAVE10_EEA_J567F_V1.0_A16	



2.2 DESCRIPTION OF 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.

Pretest Mode	Description
Mode 1	Adapter+USB cable+Earphone +GSM900 Link+BT Link+WLAN Link+GPS RX
Mode 2	Adapter+USB cable+Earphone +DCS1800 Link+BT Link+WLAN Link+GPS RX
Mode 3	Adapter+USB cable+Earphone+WCDMA B1 Link+BT Link+WLAN Link+GPS RX
Mode 4	Adapter+USB cable+Earphone +WCDMA B8 Link+BT Link+WLAN Link+GPS RX
Mode 5	Adapter+USB cable+Earphone +LTE B1 Link +BT Link+WLAN Link+GPS RX
Mode 6	Adapter+USB cable+Earphone +LTE B3 Link +BT Link+WLAN Link+GPS RX
Mode 7	Adapter+USB cable+Earphone +LTE B7 Link+BT Link+WLAN Link+GPS RX
Mode 8	Adapter+USB cable+Earphone +LTE B8 Link+BT Link+WLAN Link+GPS RX
Mode 9	Adapter+USB cable+Earphone +LTE B20 Link+BT Link+WLAN Link+GPS RX
Mode 10	Adapter+USB cable+Earphone +GSM900 Idle+BT Link+WLAN Link+GPS RX
Mode 11	Adapter+USB cable+Earphone +DCS1800 Idle+BT Link+WLAN Link+GPS RX
Mode 12	Adapter+USB cable+Earphone+WCDMA B1 Idle+BT Link+WLAN Link+GPS RX
Mode 13	Adapter+USB cable+Earphone +WCDMA B8 Idle+BT Link+WLAN Link+GPS RX
Mode 14	Adapter+USB cable+Earphone +LTE B1 Idle+BT Link+WLAN Link+GPS RX
Mode 15	Adapter+USB cable+Earphone +LTE B3 Idle+BT Link+WLAN Link+GPS RX
Mode 16	Adapter+USB cable+Earphone +LTE B7 Idle+BT Link+WLAN Link+GPS RX
Mode 17	Adapter+USB cable+Earphone +LTE B8 Idle+BT Link+WLAN Link+GPS RX
Mode 18	Adapter+USB cable+Earphone +LTE B20 Idle+BT Link+WLAN Link+GPS RX
Mode 19	Adapter+USB cable+Earphone +GSM900 Link+BT Standby +WLAN Standby +GPS RX
Mode 20	Adapter+USB cable+Earphone +DCS1800 Link+BT Standby +WLAN Standby +GPS RX
Mode 21	Adapter+USB cable+Earphone+WCDMA B1 Link+BT Standby +WLAN Standby +GPS RX
Mode 22	Adapter+USB cable+Earphone +WCDMA B8 Link+BT Standby+WLAN Standby+GPS RX



Mode 23	Adapter+USB cable+Earphone +LTE B1 Link +BT Standby+WLAN Standby+GPS RX
Mode 24	Adapter+USB cable+Earphone +LTE B3 Link +BT Standby+WLAN Standby+GPS RX
Mode 25	Adapter+USB cable+Earphone +LTE B7 Link+BT Standby+WLAN Standby +GPS RX
Mode 26	Adapter+USB cable+Earphone +LTE B8 Link+BT Standby+WLAN Standby+GPS RX
Mode 27	Adapter+USB cable+Earphone +LTE B20 Link+BT Standby+WLAN Standby+GPS RX
Mode 28	Adapter+USB cable+Earphone +GSM900 Idle+BT Standby+WLAN Standby+GPS RX
Mode 29	Adapter+USB cable+Earphone +DCS1800 Idle+BT Standby+WLAN Standby+GPS RX
Mode 30	Adapter+USB cable+Earphone+WCDMA B1 Idle+BT Standby+WLAN Standby+GPS RX
Mode 31	Adapter+USB cable+Earphone +WCDMA B8 Idle+BT Standby+WLAN Standby+GPS RX
Mode 32	Adapter+USB cable+Earphone +LTE B1 Idle+BT Standby+WLAN Standby+GPS RX
Mode 33	Adapter+USB cable+Earphone +LTE B3 Idle+BT Standby+WLAN Standby+GPS RX
Mode 34	Adapter+USB cable+Earphone +LTE B7 Idle+BT Standby+WLAN Standby+GPS RX
Mode 35	Adapter+USB cable+Earphone +LTE B8 Idle+BT Standby+WLAN Standby+GPS RX
Mode 36	Adapter+USB cable+Earphone +LTE B20 Idle+BT Standby+WLAN Standby+GPS RX
Mode 37	Charging +FM

For Conducted Test	
Final Test Mode	Description
Mode 1	Adapter+USB cable+Earphone +GSM900 Link+BT Link+WLAN Link+GPS RX

For Radiated Test	
Final Test Mode	Description
Mode 1	Adapter+USB cable+Earphone +GSM900 Link+BT Link+WLAN Link+GPS RX

For EMS Test	
Final Test Mode	Description
Mode 1	Adapter+USB cable+Earphone +GSM900 Link+BT Link+WLAN Link+GPS RX
Mode 2	Adapter+USB cable+Earphone +DCS1800 Link+BT Link+WLAN Link+GPS RX



Mode 3	Adapter+USB cable+Earphone+WCDMA B1 Link+BT Link+WLAN Link+GPS RX
Mode 4	Adapter+USB cable+Earphone +WCDMA B8 Link+BT Link+WLAN Link+GPS RX
Mode 5	Adapter+USB cable+Earphone +LTE B1 Link +BT Link+WLAN Link+GPS RX
Mode 6	Adapter+USB cable+Earphone +LTE B3 Link +BT Link+WLAN Link+GPS RX
Mode 7	Adapter+USB cable+Earphone +LTE B7 Link+BT Link+WLAN Link+GPS RX
Mode 8	Adapter+USB cable+Earphone +LTE B8 Link+BT Link+WLAN Link+GPS RX
Mode 9	Adapter+USB cable+Earphone +LTE B20 Link+BT Link+WLAN Link+GPS RX
Mode 10	Adapter+USB cable+Earphone +GSM900 Idle+BT Link+WLAN Link+GPS RX
Mode 11	Adapter+USB cable+Earphone +DCS1800 Idle+BT Link+WLAN Link+GPS RX
Mode 12	Adapter+USB cable+Earphone+WCDMA B1 Idle+BT Link+WLAN Link+GPS RX
Mode 13	Adapter+USB cable+Earphone +WCDMA B8 Idle+BT Link+WLAN Link+GPS RX
Mode 14	Adapter+USB cable+Earphone +LTE B1 Idle+BT Link+WLAN Link+GPS RX
Mode 15	Adapter+USB cable+Earphone +LTE B3 Idle+BT Link+WLAN Link+GPS RX
Mode 16	Adapter+USB cable+Earphone +LTE B7 Idle+BT Link+WLAN Link+GPS RX
Mode 17	Adapter+USB cable+Earphone +LTE B8 Idle+BT Link+WLAN Link+GPS RX
Mode 18	Adapter+USB cable+Earphone +LTE B20 Idle+BT Link+WLAN Link+GPS RX
Mode 19	Adapter+USB cable+Earphone +GSM900 Link+BT Standby +WLAN Standby +GPS RX
Mode 20	Adapter+USB cable+Earphone +DCS1800 Link+BT Standby +WLAN Standby +GPS RX
Mode 21	Adapter+USB cable+Earphone+WCDMA B1 Link+BT Standby +WLAN Standby +GPS RX
Mode 22	Adapter+USB cable+Earphone +WCDMA B8 Link+BT Standby+WLAN Standby+GPS RX
Mode 23	Adapter+USB cable+Earphone +LTE B1 Link +BT Standby+WLAN Standby+GPS RX
Mode 24	Adapter+USB cable+Earphone +LTE B3 Link +BT Standby+WLAN Standby+GPS RX
Mode 25	Adapter+USB cable+Earphone +LTE B7 Link+BT Standby+WLAN Standby +GPS RX
Mode 26	Adapter+USB cable+Earphone +LTE B8 Link+BT Standby+WLAN Standby+GPS RX
Mode 27	Adapter+USB cable+Earphone +LTE B20 Link+BT Standby+WLAN Standby+GPS RX
Mode 28	Adapter+USB cable+Earphone +GSM900 Idle+BT Standby+WLAN Standby+GPS RX
Mode 29	Adapter+USB cable+Earphone +DCS1800 Idle+BT Standby+WLAN Standby+GPS RX
Mode 30	Adapter+USB cable+Earphone+WCDMA B1 Idle+BT

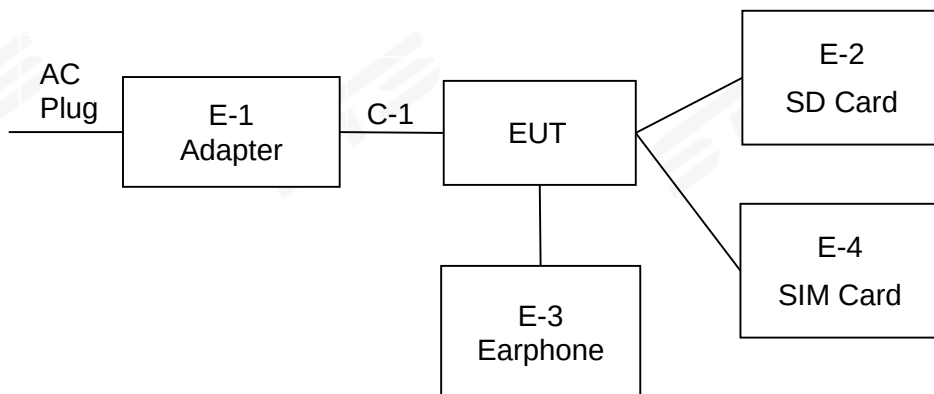


	Standby+WLAN Standby+GPS RX
Mode 31	Adapter+USB cable+Earphone +WCDMA B8 Idle+BT Standby+WLAN Standby+GPS RX
Mode 32	Adapter+USB cable+Earphone +LTE B1 Idle+BT Standby+WLAN Standby+GPS RX
Mode 33	Adapter+USB cable+Earphone +LTE B3 Idle+BT Standby+WLAN Standby+GPS RX
Mode 34	Adapter+USB cable+Earphone +LTE B7 Idle+BT Standby+WLAN Standby+GPS RX
Mode 35	Adapter+USB cable+Earphone +LTE B8 Idle+BT Standby+WLAN Standby+GPS RX
Mode 36	Adapter+USB cable+Earphone +LTE B20 Idle+BT Standby+WLAN Standby+GPS RX
Mode 37	Charging +FM

Note:

1. In the conducted disturbance test, Mode 1 is the minimum margin mode, and this report only shows the minimum margin mode test data.
2. In the radiation disturbance test, Mode 1 is the minimum margin mode, and this report only shows the minimum margin mode test data.

2.3 DESCRIPTION OF TEST SETUP



2.4 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	Adapter	N/A	QZ-01004EA00	N/A
E-2	SD Card	Sandisk	840XKT-FB	N/A
E-3	Earphone	Micromax	EPX1i	N/A
E-4	SIM Card	Verizon	QPE	N/A

Item	Equipment	Ferrite Core	Length	Note
C-1	USB Cable	NO	100cm	N/A

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.



2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 CONDUCTED TEST SITE

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2025.9.25	2026.9.24
LISN	R&S	ENV216	101242	2025.9.25	2026.9.24
LISN	R&S	3810/2NM	00023625	2025.9.25	2026.9.24
Limiter	CYBERTEK	EM5010	N/A	2025.9.25	2026.9.24
Absorbing Clamp	R&S	MDS-21	100668	2025.2.24	2026.2.23
CE Cable	N/A	C01	N/A	2025.9.24	2026.9.23
Clamp Cable	N/A	C02	N/A	2025.9.24	2026.9.23
Loops Cable	N/A	C03	N/A	2025.9.24	2026.9.23
ISN	SCHWARZBECK	CAT 6	NTFM 8158#153	2025.9.25	2026.9.24
Temperature & Humidity	topris	TP502V4-P	6900000422137	2025.8.26	2026.8.25
Testing Software	EZ-EMC(Ver.STSLAB-03A1 CE)				

2.5.2 RADIATED TEST SITE

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2025.9.25	2026.9.24
Bi-log Antenna	TESEQ	CBL6111D	45873	2025.9.21	2026.9.20
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1343	2025.9.27	2026.9.26
Pre-amplifier(1G-26.5G)	Agilent	HP8449B	3008A02383	2025.2.22	2026.2.21
Pre-amplifier(0.1M-3GHz)	EM	EM330	060665	2025.2.22	2026.2.21
Spectrum Analyzer	Agilent	N9020A	MY49100060	2025.9.24	2026.9.23
RE Cable (9K-1G)	N/A	R01	N/A	2025.9.24	2026.9.23
RE Cable (1G-26G)	N/A	R02	N/A	2025.9.24	2026.9.23
Temperature & Humidity	topris	TP502V4-P	6900000422328	2025.8.26	2026.8.25
SAC	ChengYu	9*6*6	N/A	2025.8.13	2028.8.12
Testing Software	EZ-EMC(Ver.STSLAB-03A1 RE)				

**2.5.3 HARMONICS AND FLICKER**

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Harmonic Voltage & Flicker	LAPLACE	AC 2000A	311217	2025.11.5	2026.11.4
AC Power Source	MTONI	PHF-5010	631169	2025.9.25	2026.9.24
Temperature & Humidity	Anymetre	JR900	240686	2025.10.9	2026.10.8
Testing Software	HA-PC Link Version 3.03				

2.5.4 ESD

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
ESD TEST GENERATOR	TESEQ	NSG438	1175	2025.10.27	2026.10.26
Temperature & Humidity	N/A	WS1066	N/A	2025.2.25	2026.2.24

2.5.5 SURGE, EFT/BURST, VOLTAGE INTERRUPTION/DIPS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Surger Generator	HTEC	HCWG 100	225202	2025.2.22	2026.2.21
Surger Generator	HTEC	HTW	152104	2025.11.5	2026.11.4
VOLTAGE DIPS & INTERRUPTIONS Generator	HTEC	HPFS 161P	143803	2025.2.22	2026.2.21
EFT/B Generator	HTEC	HEFT 51	1920001	2025.9.25	2026.9.24
Temperature & Humidity	Anymetre	JR900	240686	2025.10.9	2026.10.8

2.5.6 RS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Power Meter	Agilent	E4419B	QB43312265	2025.9.25	2026.9.24
Power Sensor	hp	E9300A	US39210170	2025.9.25	2026.9.24
Power Sensor	hp	E9300A	US39210476	2025.9.25	2026.9.24
Signal Generator	Agilent	N5181A	MY56144718	2025.9.26	2026.9.25
Power Amplifier	MICOTOP	MPA-80-1000-250	MPA1711489	2025.9.26	2026.9.25
Power Amplifier	MICOTOP	MPA-1000-6000-100	MPA1904132	2025.9.26	2026.9.25
RS Test Antenna (80-1GHz)	SCHWARZBECK	VULP 9118E	000999	N/A	N/A
RS Test Antenna (1G-10GHz)	SCHWARZBECK	STLP 9149	000648	N/A	N/A



Universal Radio Communication Tester	R&S	CMU200	116337	2025.2.22	2026.2.21
Audio Analyzer	R&S	UPL	100689	2025.2.22	2026.2.21
Audio Breakthrough Shielding Box	SKET	SB_ABT/C35	N/A	N/A	N/A
Ear Simulator	SKET	AE_ABT/C35	N/A	N/A	N/A
Mouth Simulator	SKET	AM_ABT/C35	N/A	N/A	N/A
1KHz Standard Source	SKET	MSC_ABT/C35	N/A	2025.9.24	2026.9.23
Field Probe	Narda	EP601	611WX80261	2025.2.26	2026.2.25
Temperature & Humidity	topris	TP502V4-P	6900000421895	2025.10.9	2026.10.8
Testing Software	EMC-S V1.4.0.53				

2.5.7 INJECTION CURRENT

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
CS	SCHLODER	CDG-6000-25	126A1280/2014	2025.9.29	2026.9.28
CDN	SCHLODER	CDN-M2+3	A2210275/2014	2025.9.25	2026.9.24
EM Clamp	FISCHER	F-203I-23MM	445	2025.2.22	2026.2.21
Attenuator	Nemtest	ATT-6DB-100	A100W224	2025.9.25	2026.9.24
Universal Radio Communication Tester	R&S	CMU200	116337	2025.2.22	2026.2.21
Audio Analyzer	R&S	UPL	100689	2025.2.22	2026.2.21
Audio Breakthrough Shielding Box	SKET	SB_ABT/C35	N/A	N/A	N/A
Ear Simulator	SKET	AE_ABT/C35	N/A	N/A	N/A
Mouth Simulator	SKET	AM_ABT/C35	N/A	N/A	N/A
1KHz Standard Source	SKET	MSC_ABT/C35	N/A	2025.9.24	2026.9.23
Temperature & Humidity	Anymetre	JR900	240686	2025.10.9	2026.10.8



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION

(Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.5 ~ 5	73.00	60.00	56.00	46.00
5 ~ 30	73.00	60.00	60.00	50.00

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.

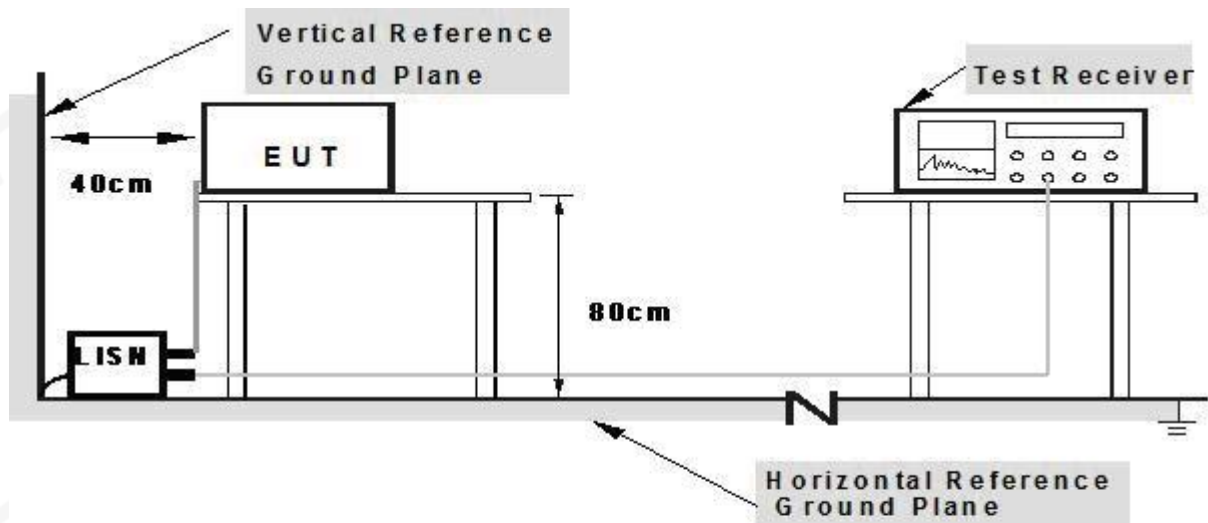
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

- a. 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 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

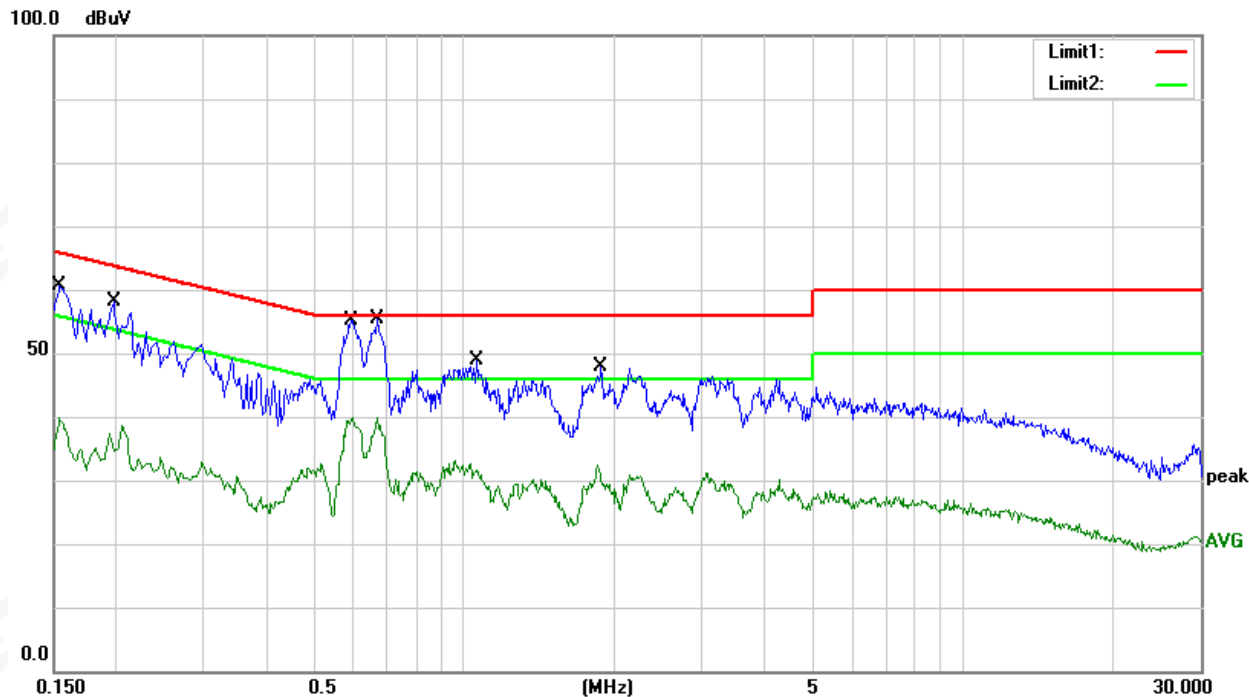


3.1.5 TEST RESULTS

Temperature:	25.1℃	Relative Humidity:	59%
Phase:	L	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.12
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	40.72	19.87	60.59	65.78	-5.19	QP
2	0.1540	19.91	19.87	39.78	55.78	-16.00	AVG
3	0.1980	38.23	19.90	58.13	63.69	-5.56	QP
4	0.1980	18.62	19.90	38.52	53.69	-15.17	AVG
5	0.5940	30.91	19.81	50.72	56.00	-5.28	QP
6	0.5940	20.05	19.81	39.86	46.00	-6.14	AVG
7	0.6700	30.70	19.80	50.50	56.00	-5.50	QP
8	0.6700	19.97	19.80	39.77	46.00	-6.23	AVG
9	1.0620	29.01	19.81	48.82	56.00	-7.18	QP
10	1.0620	13.21	19.81	33.02	46.00	-12.98	AVG
11	1.8780	27.98	19.80	47.78	56.00	-8.22	QP
12	1.8780	12.50	19.80	32.30	46.00	-13.70	AVG

- Remark:
1. All readings are Quasi-Peak and Average values.
 2. Margin = Result (Result =Reading + Factor)–Limit.
 3. Factor = Insertion loss + Cable loss.





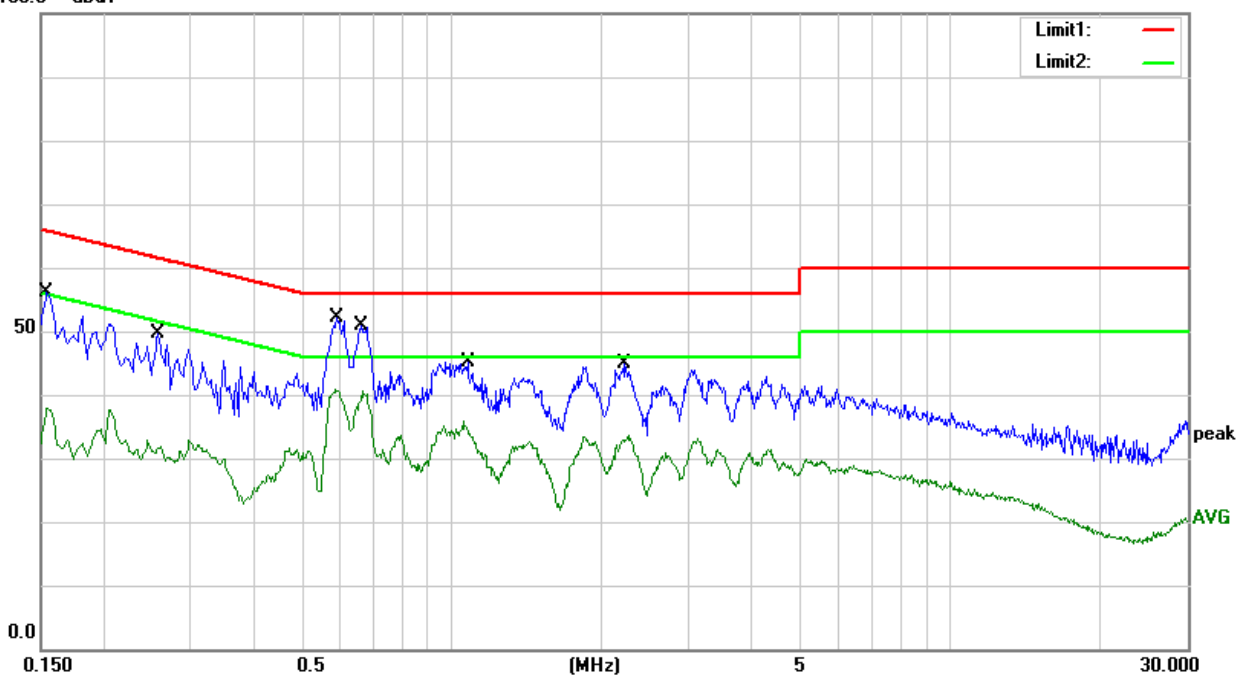
Temperature:	25.1 °C	Relative Humidity:	59%
Phase:	N	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.12
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	36.73	19.41	56.14	65.78	-9.64	QP
2	0.1540	18.59	19.41	38.00	55.78	-17.78	AVG
3	0.2580	30.36	19.37	49.73	61.50	-11.77	QP
4	0.2580	18.32	19.37	37.69	51.50	-13.81	AVG
5	0.5900	32.74	19.37	52.11	56.00	-3.89	QP
6	0.5900	21.40	19.37	40.77	46.00	-5.23	AVG
7	0.6580	31.50	19.40	50.90	56.00	-5.10	QP
8	0.6580	21.25	19.40	40.65	46.00	-5.35	AVG
9	1.0780	25.72	19.39	45.11	56.00	-10.89	QP
10	1.0780	16.38	19.39	35.77	46.00	-10.23	AVG
11	2.2260	25.45	19.39	44.84	56.00	-11.16	QP
12	2.2260	14.13	19.39	33.52	46.00	-12.48	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = Insertion loss + Cable loss.

100.0 dBuV



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF THE RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY (MHz)	Class A		Class B	
	At 10m	At 3m	At 10m	At 3m
	dBuV/m	dBuV/m	dBuV/m	dBuV/m
30 ~ 230	40	50	30	40
230 ~ 1000	47	57	37	47

3.2.2 LIMITS OF THE RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (at 3m) dBuV/m		Class B (at 3m) dBuV/m	
	Peak	Avg	Peak	Avg
1000 ~ 3000	76	56	70	50
3000 ~ 6000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed in the following: CISPR 32.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.3 TEST PROCEDURE

- 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.
- 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.
- 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.
- 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.
- 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.
- 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

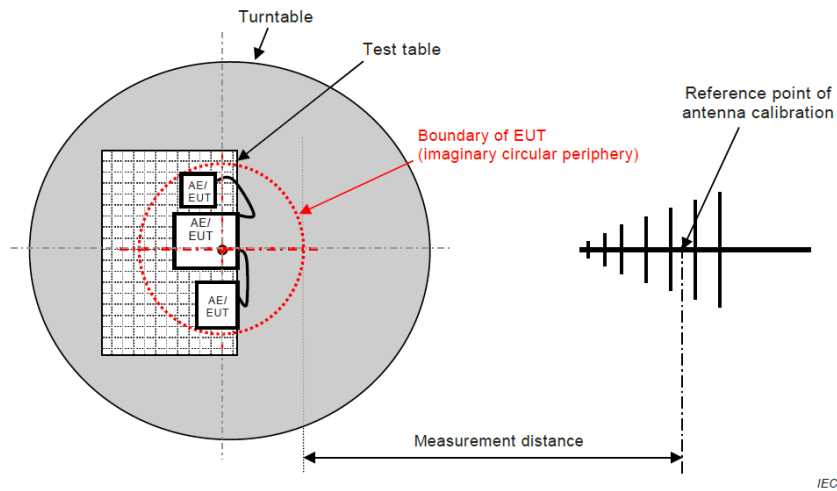


Figure C.1 – Measurement distance

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

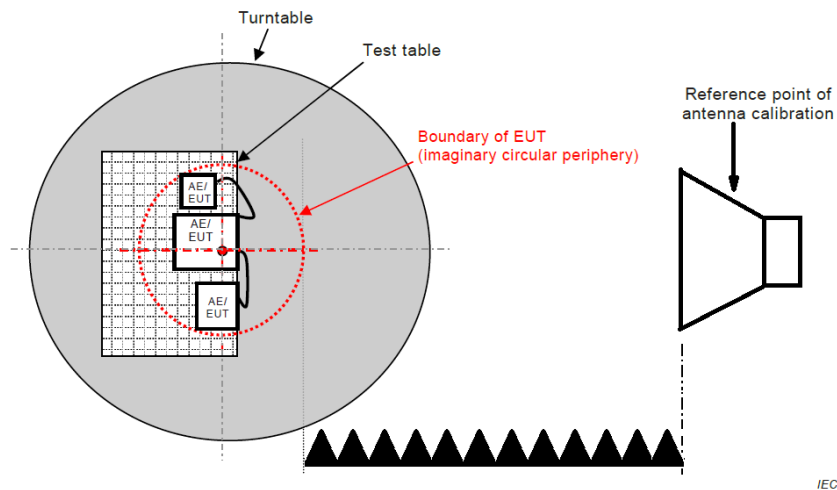


Figure C.1 – Measurement distance

3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.2.6 TEST RESULTS (30MHz-1000MHz)**

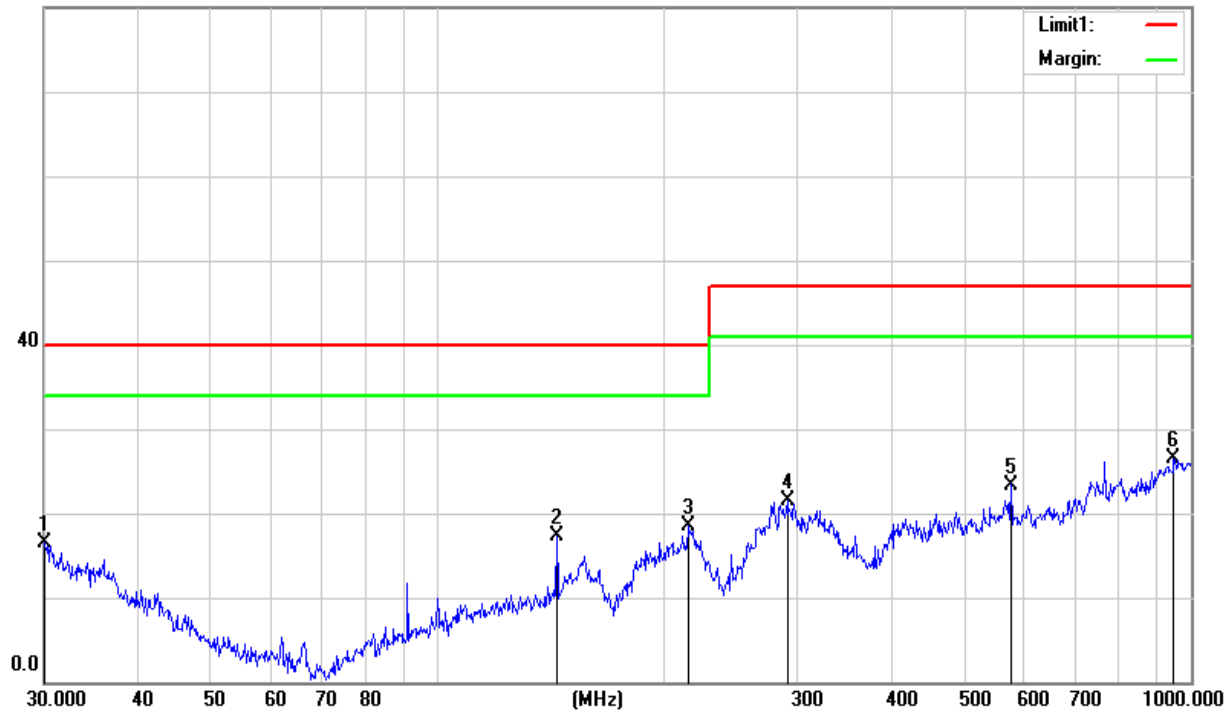
Temperature:	25.3°C	Relative Humidity:	43%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.11
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.1054	27.50	-11.09	16.41	40.00	-23.59	QP
2	143.8295	35.78	-18.48	17.30	40.00	-22.70	QP
3	215.2678	38.93	-20.50	18.43	40.00	-21.57	QP
4	291.0360	38.27	-16.70	21.57	47.00	-25.43	QP
5	576.6443	32.16	-8.76	23.40	47.00	-23.60	QP
6	948.7610	28.61	-2.18	26.43	47.00	-20.57	QP

Remark:

1. All readings are Quasi-Peak.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = Cable Loss + Antenna Factor – Amplifier Gain.

80.0 dBuV/m





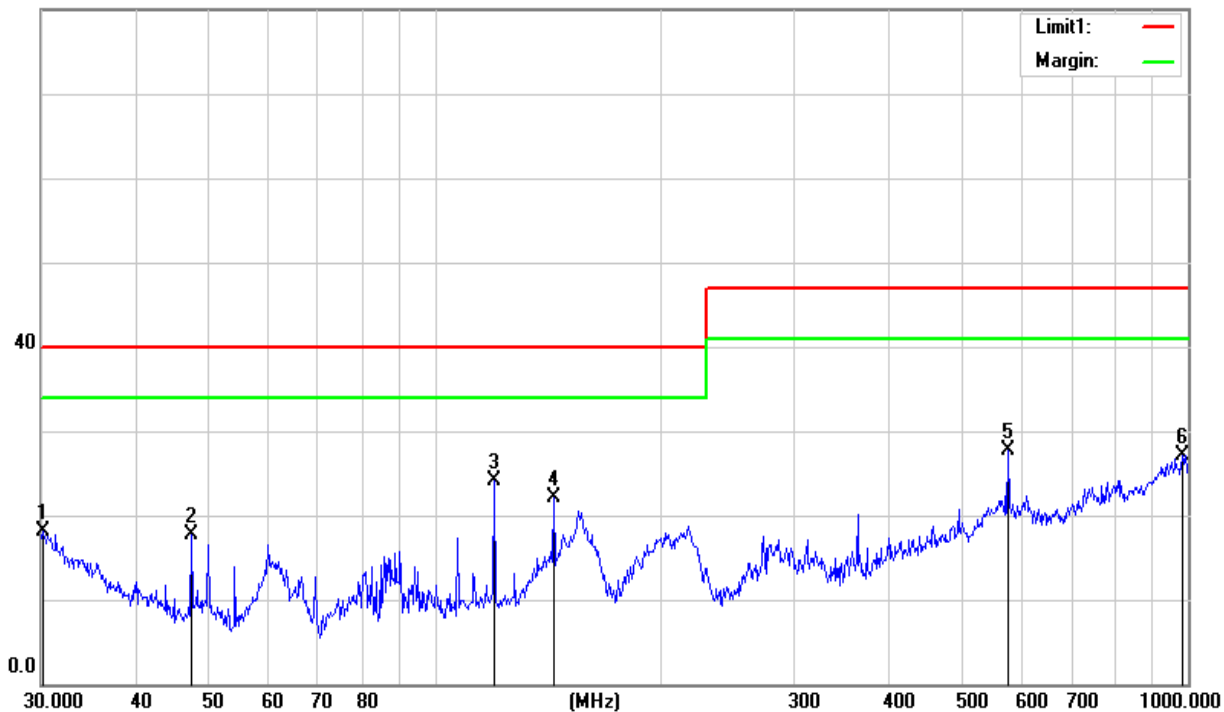
Temperature:	25.3°C	Relative Humidity:	43%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.11
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.2111	29.22	-11.15	18.07	40.00	-21.93	QP
2	47.4918	38.00	-20.39	17.61	40.00	-22.39	QP
3	119.8556	42.42	-18.26	24.16	40.00	-15.84	QP
4	143.8295	40.66	-18.48	22.18	40.00	-17.82	QP
5	576.6443	36.53	-8.76	27.77	47.00	-19.23	QP
6	982.6200	29.27	-2.11	27.16	47.00	-19.84	QP

Remark:

1. All readings are Quasi-Peak.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = Cable Loss + Antenna Factor – Amplifier Gain.

80.0 dBuV/m



**3.2.7 TEST RESULT (1000 - 6000 MHz)**

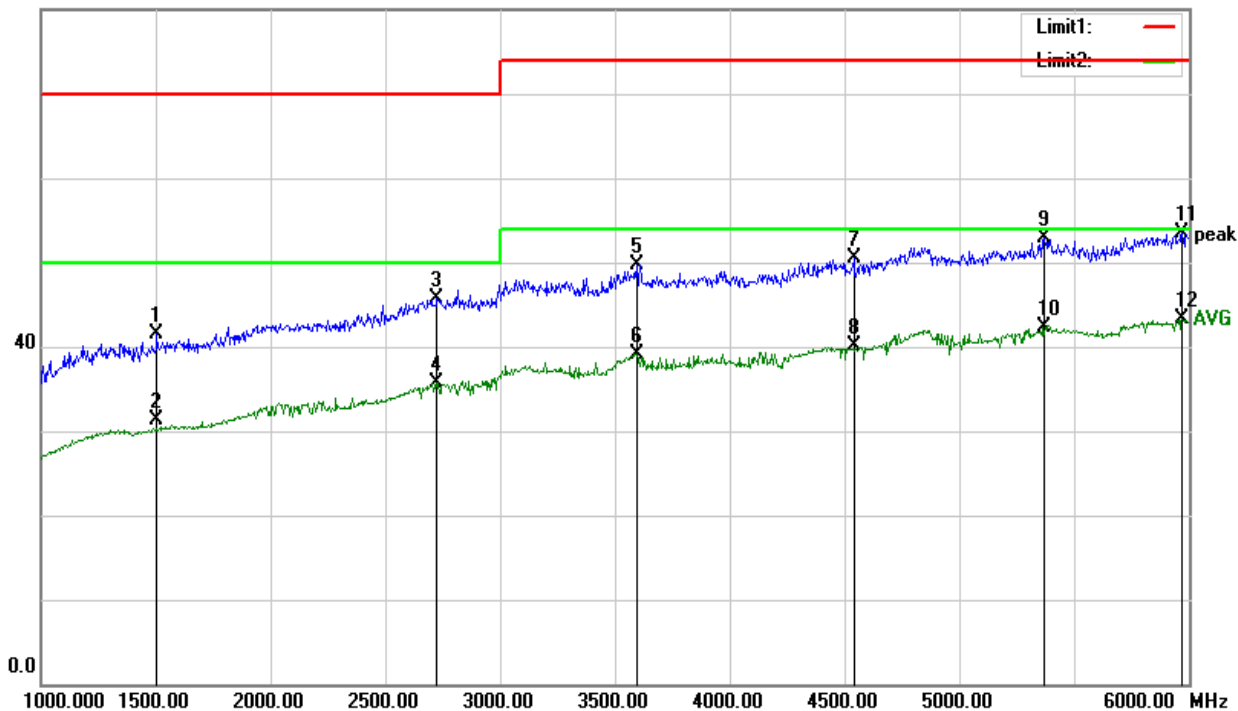
Temperature:	25.3°C	Relative Humidity:	43%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.11
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	1505.000	44.10	-2.57	41.53	70.00	-28.47	peak
2	1505.000	33.80	-2.57	31.23	50.00	-18.77	AVG
3	2725.000	44.91	0.76	45.67	70.00	-24.33	peak
4	2725.000	35.00	0.76	35.76	50.00	-14.24	AVG
5	3595.000	46.80	2.96	49.76	74.00	-24.24	peak
6	3595.000	36.19	2.96	39.15	54.00	-14.85	AVG
7	4540.000	45.99	4.56	50.55	74.00	-23.45	peak
8	4540.000	35.60	4.56	40.16	54.00	-13.84	AVG
9	5370.000	45.73	7.09	52.82	74.00	-21.18	peak
10	5370.000	35.29	7.09	42.38	54.00	-11.62	AVG
11	5970.000	45.93	7.56	53.49	74.00	-20.51	peak
12	5970.000	35.70	7.56	43.26	54.00	-10.74	AVG

Remark:

1. All readings are Quasi-Peak.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = Cable Loss + Antenna Factor – Amplifier Gain.

80.0 dBuV/m





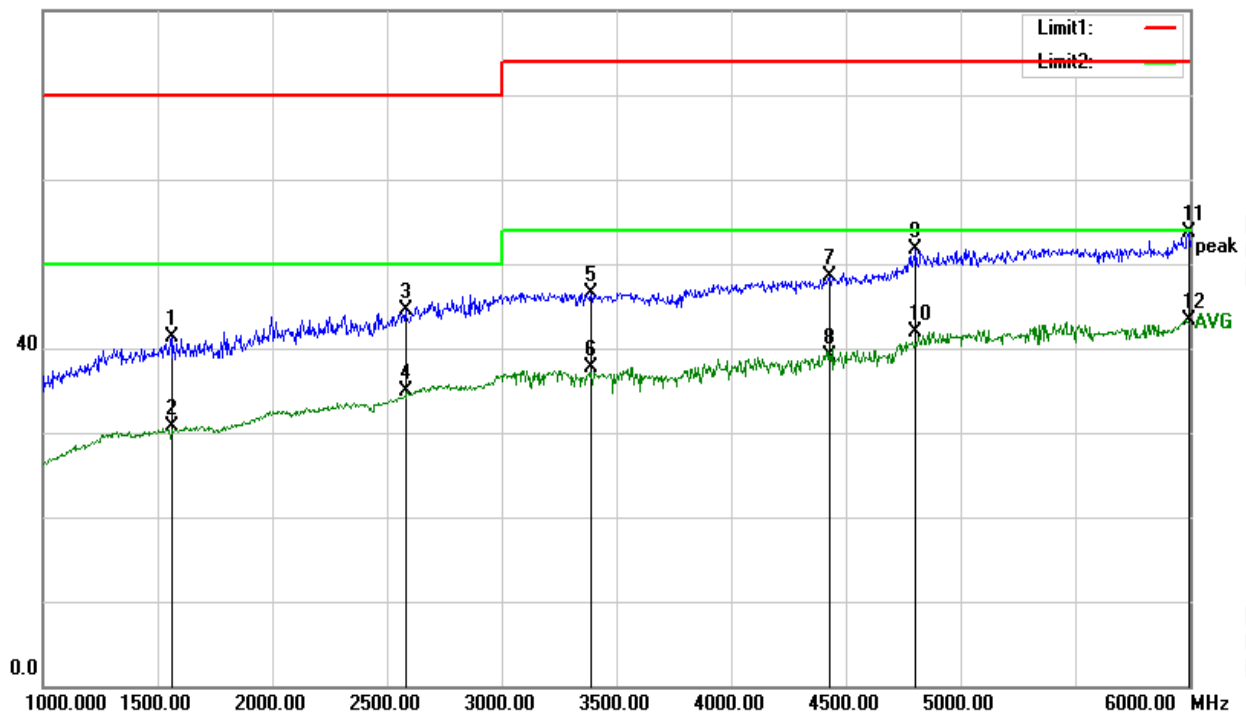
Temperature:	25.3℃	Relative Humidity:	43%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	DC 5V from Adapter	Test Date:	2025.12.11
Description:	Adapter Input voltage: AC 230V/50Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	1560.000	43.77	-2.48	41.29	70.00	-28.71	peak
2	1560.000	33.27	-2.48	30.79	50.00	-19.21	AVG
3	2580.000	44.74	-0.22	44.52	70.00	-25.48	peak
4	2580.000	35.04	-0.22	34.82	50.00	-15.18	AVG
5	3390.000	44.22	2.28	46.50	74.00	-27.50	peak
6	3390.000	35.43	2.28	37.71	54.00	-16.29	AVG
7	4430.000	43.96	4.52	48.48	74.00	-25.52	peak
8	4430.000	34.63	4.52	39.15	54.00	-14.85	AVG
9	4805.000	46.13	5.50	51.63	74.00	-22.37	peak
10	4805.000	36.43	5.50	41.93	54.00	-12.07	AVG
11	5995.000	46.19	7.57	53.76	74.00	-20.24	peak
12	5995.000	35.67	7.57	43.24	54.00	-10.76	AVG

Remark:

1. All readings are Quasi-Peak.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = Cable Loss + Antenna Factor – Amplifier Gain.

80.0 dBuV/m



3.3 VOLTAGE FLUCTUATION AND FLICKERS

3.3.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKERS

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
$T_{dt(s)}$	$\leq 3.3\%$	Relative Steady-State V-Chang
$d_{max}(\%)$	$\leq 4\%$	Maximum Relative V-Chang
$d_c(\%)$	$\leq 3.3\%$ for $> 500 \text{ ms}$	Relative V-change Characteristic

3.3.2 TEST PROCEDURE

a. Fluctuation and Flickers Test:

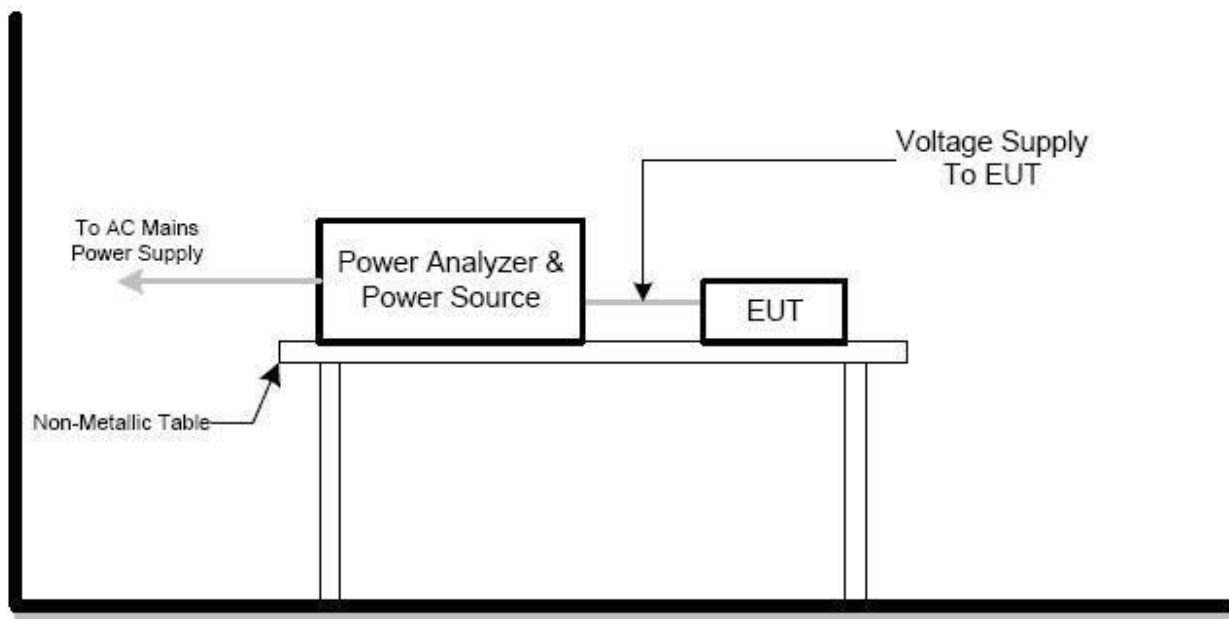
Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 6.0/4.0 of EN 61000-3-3 depend.

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

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

EUT: 4G Smart phone

Test category: IEC 61000-3-3 Ed3.2:2021

Measurement standard: IEC 61000-15 Ed2.0:2010

Test date:2025-12-16

Start time: 20:48:33

Test duration (sec):600

Describe:

Operator: Star

Model/Type:WAVE 10

Serial number:

End time: 20:58:33

Load Power : 12.160 W

Load Current :138.900 mArms

Nominal Voltage : 231.03 Vrms

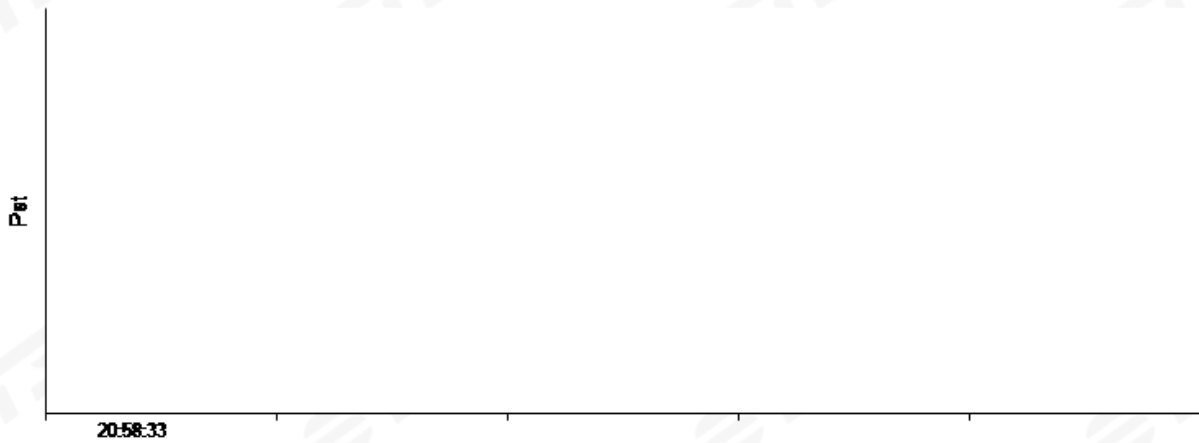
Power Factor:0.377

Crest Factor:4.503

Test Result: pass

Status: Test Completed

Psti and limit line European Limits



Result:

T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.06	Test limit (%):	3.30	Pass
Highest dmax (%):	0.16	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass



4. EMC IMMUNITY TEST

4.1 GENERAL PERFORMANCE CRITERIA

4.1.1 PERFORMANCE CRITERIA

According to **ETSI EN 301 489-3** standard, the general performance criteria are as follows:

Continuous and non-continuous operation

Latency is the time delay between the initiation and the completion of operation of the EUT. Correct functioning requires completing the relevant operation within the maximum latency time.

Where the maximum latency is specified in the applicable harmonised radio standard (in the wanted performance criterion, or an acknowledge requirement), that value shall be used.

Where this is not the case, then the maximum latency is that required by the intended use of the EUT.

Operating modes

Where the EUT has more than one mode of operation (see clause 4.4.1), an unplanned transition from one mode to another is considered as an unintentional response. The EUT shall be tested in all modes to confirm there are no such unintentional responses.

The provisions of ETSI EN 301 489-1 [1] clause 6 shall apply, together with ETSI EN 301489-3 clauses 6.2 and 6.3 of the present document.

Performance criteria for continuous phenomena

During the test, the equipment shall:

- continue to operate as intended;
- not unintentionally transmit;
- not unintentionally change its operating state;
- not unintentionally change critical stored data.

Performance criteria for transient phenomena

For all ports and transient phenomena with the exception described below, the following applies:

- The application of the transient phenomena shall not result in a change of the mode of operation (e.g. unintended transmission) or the loss of critical stored data.
- After application of the transient phenomena, the equipment shall operate as intended.

For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies:

- For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be otherwise restored. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.
- For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

4.1.2 PERFORMANCE CRITERIA (GPS)

According to **ETSI EN 301 489-19** standard, the general performance criteria are as follows:

Performance criteria for Continuous phenomena

During the test, the equipment shall operate as intended, e.g. not unintentionally change its operating state and not unintentionally change critical stored data.

After the test, the equipment shall operate as intended, e.g. have no loss of function and have no loss of critical stored data

Performance criteria for Transient phenomena

After the test, functions shall be self-recoverable and the equipment shall operate as intended and the equipment shall have no loss of critical stored data.



4.1.3 PERFORMANCE CRITERIA (GSM/ WCDMA/LTE)

According to ETSI EN 301 489-52 standard, the general performance criteria are as follows:

Performance criteria for Continuous phenomena applied to Transmitters (CT)

With a link established, during the test, the uplink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check).

NOTE: When there is a high-level background noise present, the filter bandwidth may be reduced to a minimum of 40 Hz.

In idle mode, the transmitter shall not operate unintentionally.

At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or critical stored data, and the communication link shall have been maintained.

Performance criteria for Continuous phenomena applied to Receivers (CR)

During the test, the RXQUAL of the downlink shall not exceed the value of three, measured during each individual exposure in the test sequence.

In the case of narrow-band responses, the procedure in clause 4.4.1 shall be followed.

During the test, the downlink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check).

NOTE: When there is a high-level background noise present, the filter bandwidth may be reduced to a minimum of 40 Hz.

At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or critical stored data, and the communication link shall have been maintained.

UTRA

In the data transfer mode, the performance criteria can be one of the following:

if the BER (as referred to in clause 5.3.1 of ETSI TS 134 109 [4]) is used, it shall not exceed 0,001 during the test sequence;

if the BLER (as referred to in ETSI TS 134 109 [4]) is used, it shall not exceed 0,01 during the test sequence.

The BLER calculation shall be based on evaluating the CRC on each transport block. Details are specified in annex C.

In the case of narrow-band responses, the procedure in clause 4.4.2.1 shall be followed.

When testing a voice call, the performance criteria in clause 6.1.1 shall apply.

E-UTRA, E-UTRA with LAA, inband or guard band NB-IoT, Standalone NB-IoT

In data transfer mode, the data throughput of the EUT shall not fall below 95 % of the maximum data throughput. Details are specified in annex C.

In the case of narrow-band responses, the procedure in clause 4.2.2 shall be followed.

When testing a voice call, the performance criteria in clause 6.1.1 shall apply.

NR

In the data transfer mode of both FR1 and FR2, the data throughput of the EUT shall not fall below 95 % of the maximum data throughput. Details are specified in annex C.

In the case of narrow-band responses, the procedure in clause 4.3.1 shall be followed.

When testing a voice call, the performance criteria in clause 6.1.1 shall apply.

Performance criteria for Transient phenomena

At the conclusion of each exposure of the transient phenomena, the EUT shall operate without loss of the communication link.

At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended without loss of user control functions or critical stored data.

In addition, where the EUT supports idle mode, it should be verified that the transmitter shall not unintentionally operate when transient phenomena are applied.

4.1.4 PERFORMANCE CRITERIA

According to **ETSI EN 301 489-17** standard, the general performance criteria are as follows:

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

Minimum performance level

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

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

Performance criteria for Continuous phenomena

The performance criteria A shall apply.

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur during the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur during the test.

Performance criteria for Transient phenomena

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

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur as a result of the application of the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.

4.1.5 GENERAL PERFORMANCE CRITERIA TEST SETUP

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



4.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

4.2.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance:	B
Discharge Voltage:	Air Discharge : 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

4.2.2 TEST PROCEDURE

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

- 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):

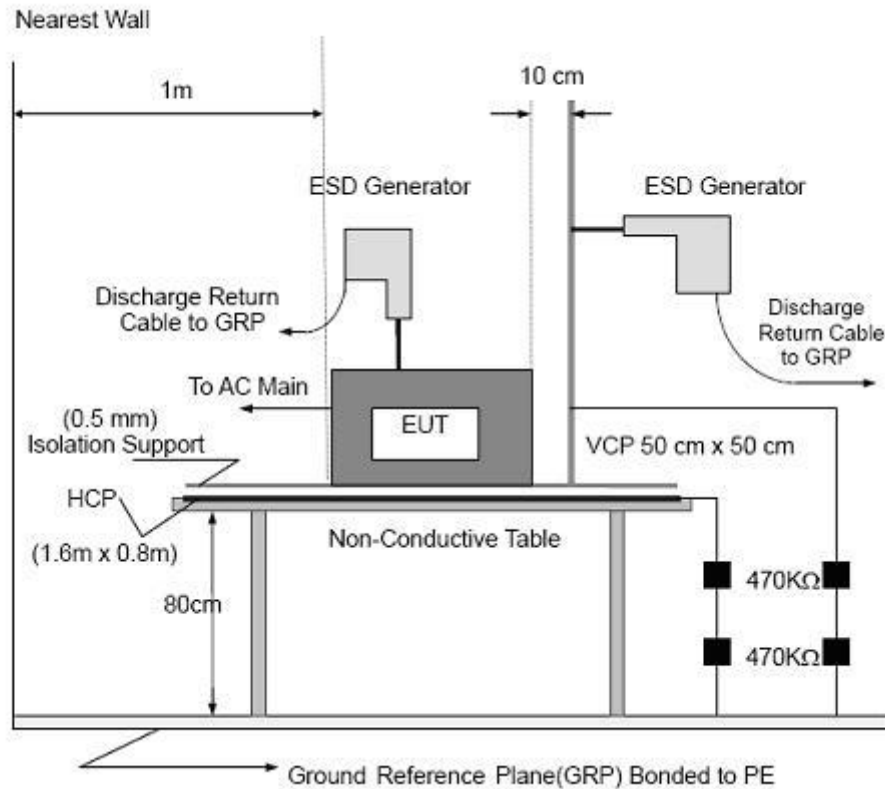
The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

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.

4.2.3 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.

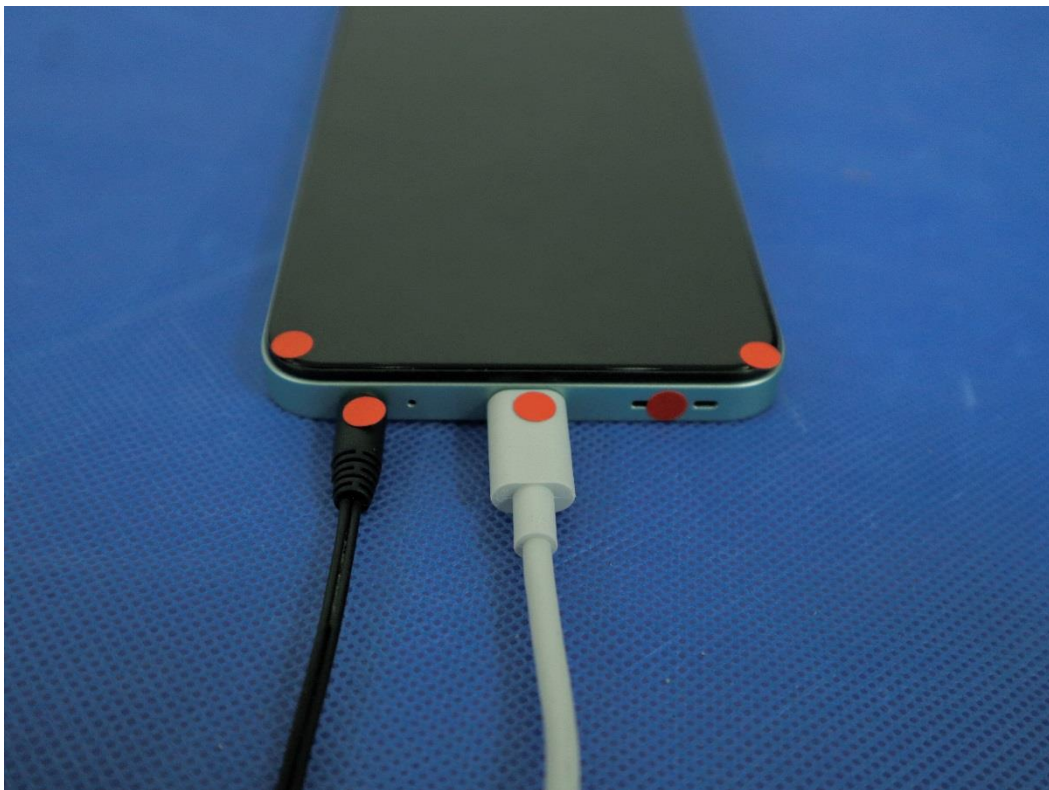
**4.2.4 TEST RESULTS**

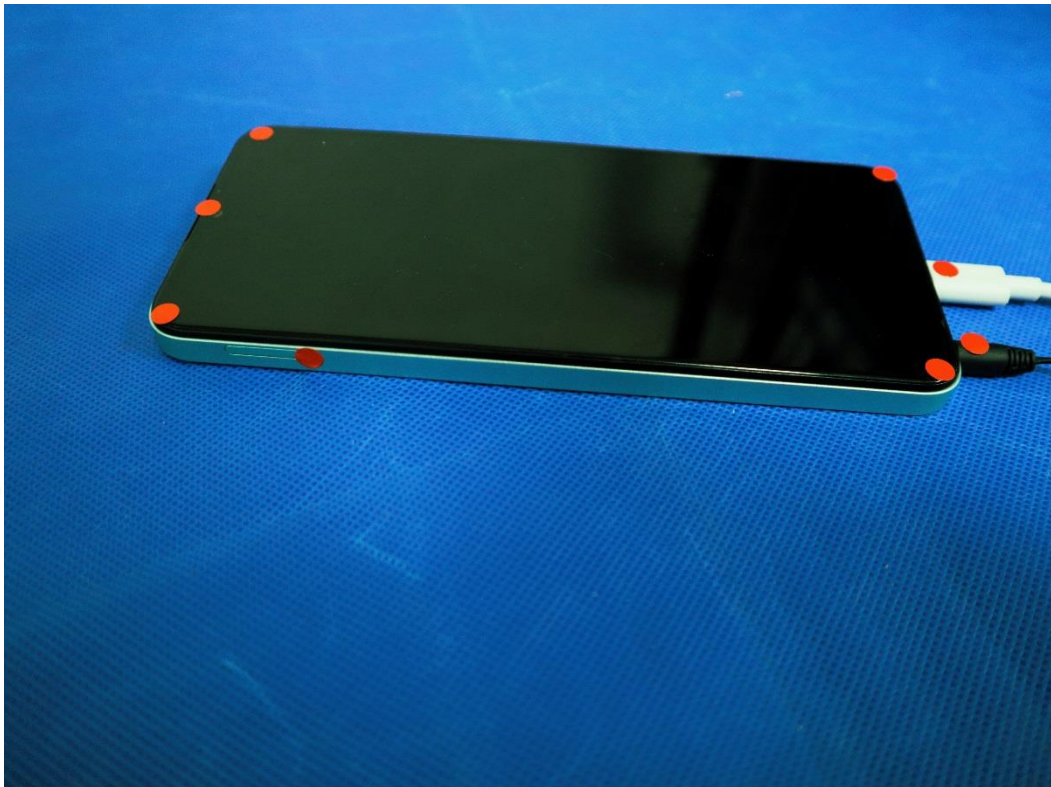
Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36/37
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Discharge Level	Polarity	Test Points	Contact Discharge	Air Discharge	Criterion	Test Result
4	+/-	VCP/HCP	Note	N/A	B	A
8	+/-	Red Dot	N/A	Note	B	A

Note: The EUT function was correct during the test
Red Dot —Air Discharged
Green Dot —Contact Discharged

The Photo for Discharge Points of EUT







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

4.3.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-3
Required Performance:	A
Frequency Range:	80 MHz - 6000 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:	at least 3 seconds

4.3.2 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

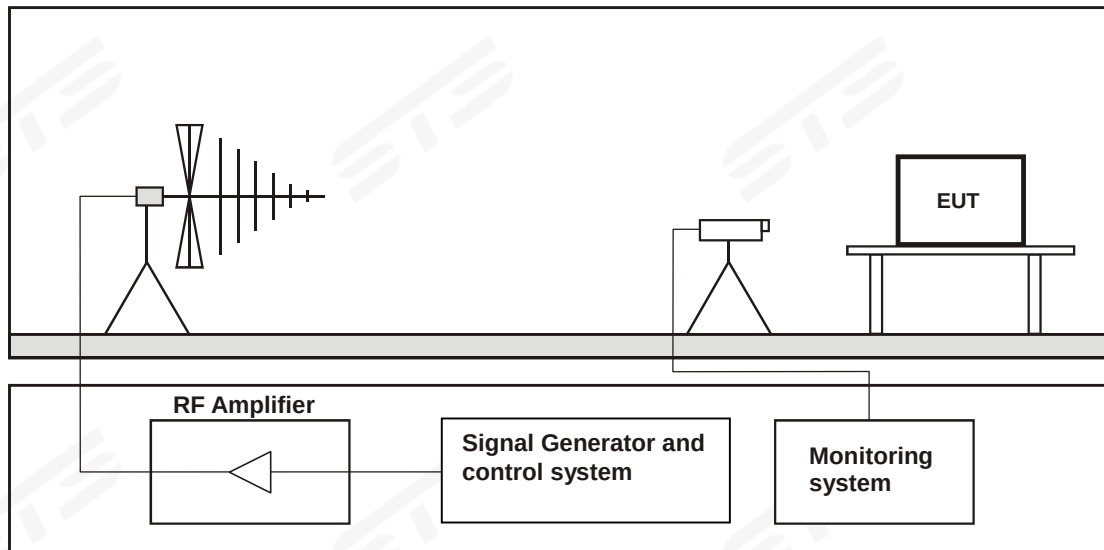
The testing distance from antenna to the EUT was 3 meter.

The other conditions required in the following manners:

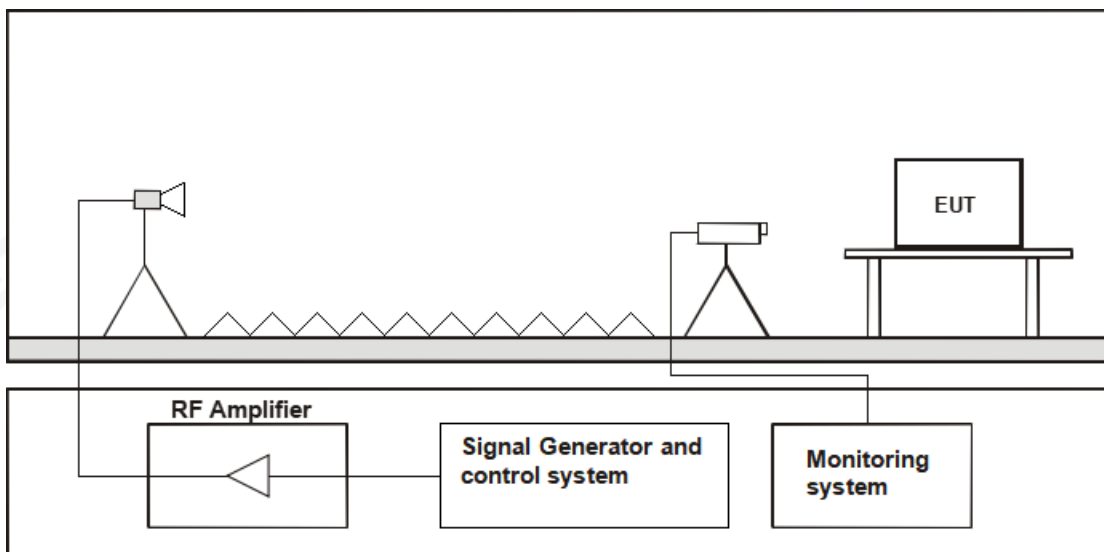
- The frequency range is swept from 80 MHz to 6000 MHz with the signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 3s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the 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.

4.3.3 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 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.



4.3.4 TEST RESULTS

Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Observation	Perform. Criteria	Results	Judgement
80 - 6000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	CT,CR	A	A	PASS
			Rear				
			Left				
			Right				

Note: "A" stand for, during test, operated as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

Spot frequency test:

A spot frequency test shall additionally be performed at:

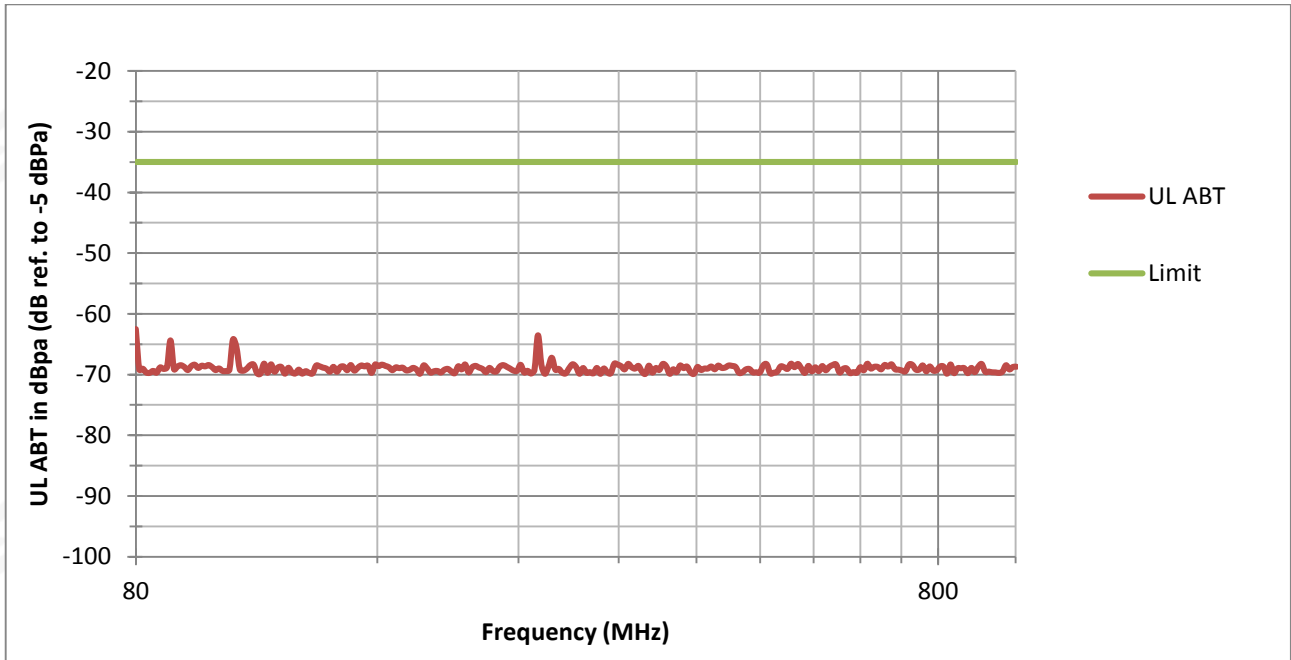
- 80 MHz;
- 104 MHz;
- 136 MHz;
- 165 MHz;
- 200 MHz;
- 260 MHz;
- 330 MHz;
- 430 MHz;
- 560 MHz;
- 715 MHz $\pm$ 1 MHz;
- a spot frequency test shall be performed at 920 MHz $\pm$ 1 MHz using a test level of 3 V/m (measured unmodulated) 100 % modulated by 200 Hz pulses of equal mark to space ratio.

Note:

- 1) N/A - denotes test is not applicable in this test report.
- 2) Criteria A: There was no change operated with initial operating during the test.
- 3) Criteria B: The EUT function loss during the test, but self-recoverable after the test.
- 4) Criteria C: The system shut down during the test.

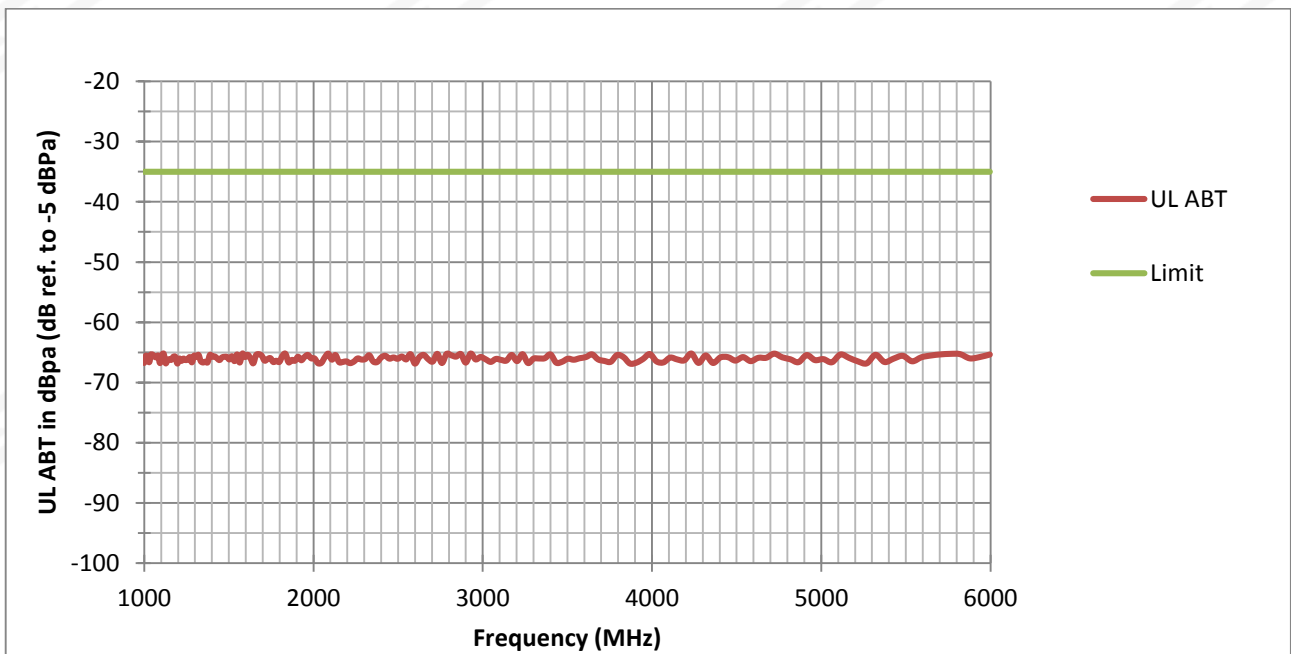


Audio Breakthrough Measurement Result (GSM)



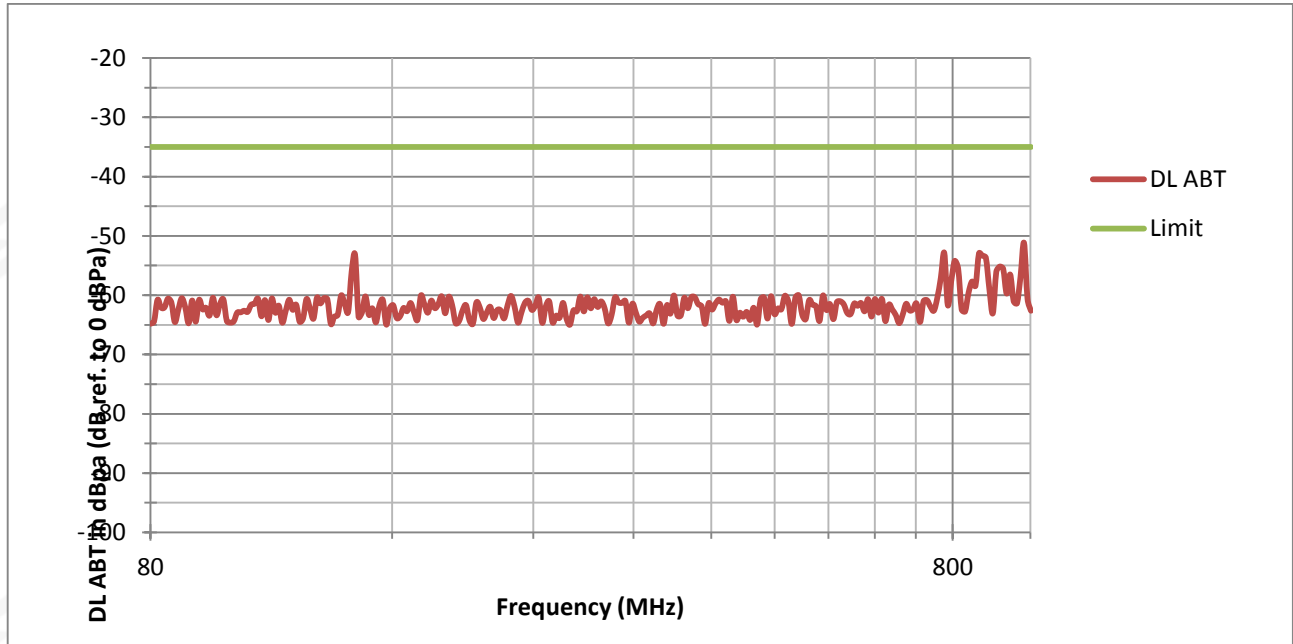
Uplink Audio Break-through Test PASS

Worst. Value is -62.49 Audio level (dB ref. to -5dBPa) at 80MHz (Margin 27.49 Audio level (dB ref. to -5dBPa))



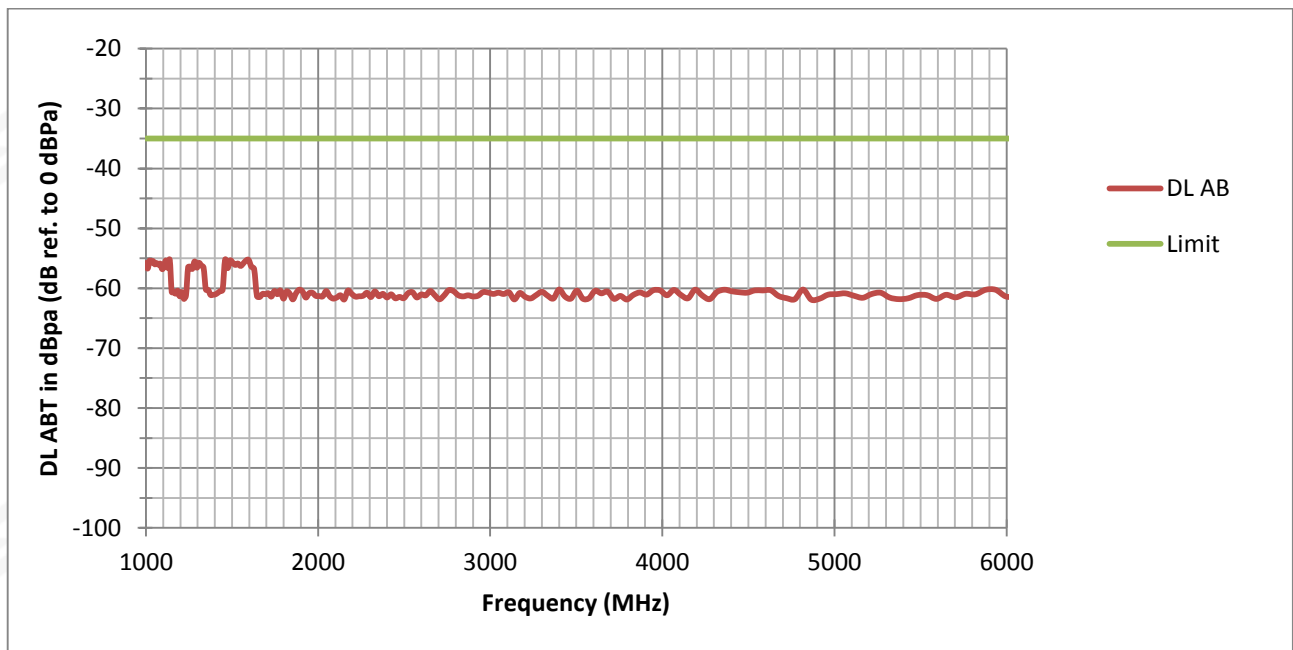
Uplink Audio Break-through Test PASS

Worst. Value is -65.2 Audio level (dB ref. to -5dBPa) at 4232.52MHz (Margin 30.2 Audio level (dB ref. to -5dBPa))



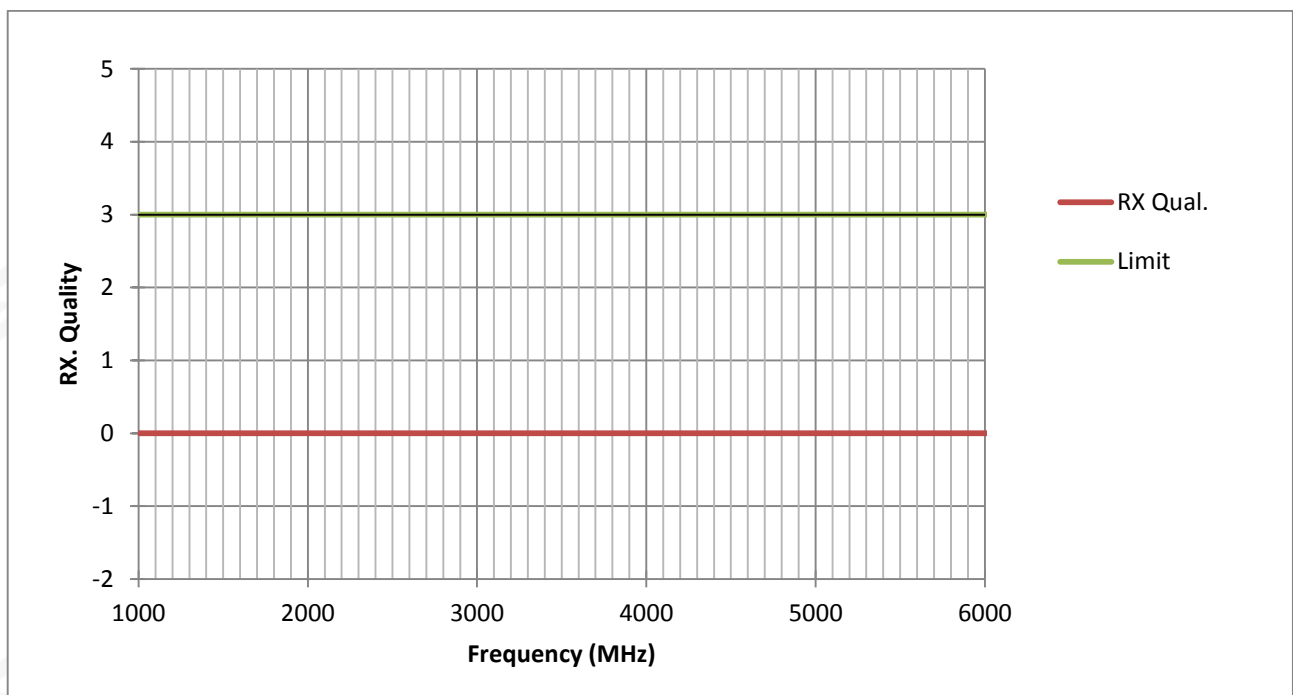
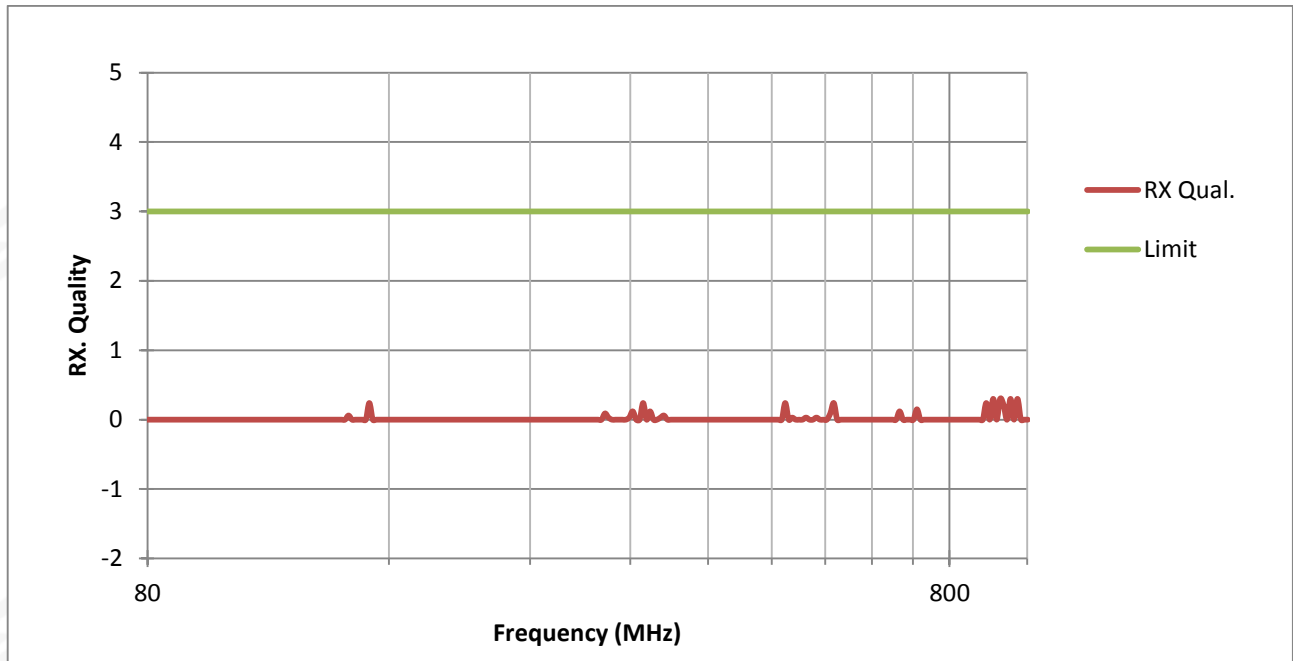
Downlink Audio Break-through Test PASS

Worst. Value is -51.16 Audio level (dB ref. to 0dBPa) at 981.92MHz (Margin 16.16 Audio level (dB ref. to 0dBPa))



Downlink Audio Break-through Test PASS

Worst. Value is -55.26 Audio level (dB ref. to 0dBPa) at 1596.26MHz (Margin 20.26 Audio level (dB ref. to 0dBPa))





BER Measurement Result (WCDMA)

Type	Antenna Polar	Observation item	Test Result	Limit	Result
WCDMA Band I	VERT/HOTRI	BER	0	<0.001	Pass
WCDMA Band VIII	VERT/HOTRI	BER	0	<0.001	Pass

Throughput Measurement Result (LTE)

Type	Antenna Polar	Observation item	Test Result	Limit	Result
LTE BAND 1	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 3	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 7	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 8	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 20	VERT/HOTRI	Throughput	100	>95	Pass



4.4 ELECTRICAL FAST TRANSIENT (EFT)

4.4.1 TEST SPECIFICATION

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

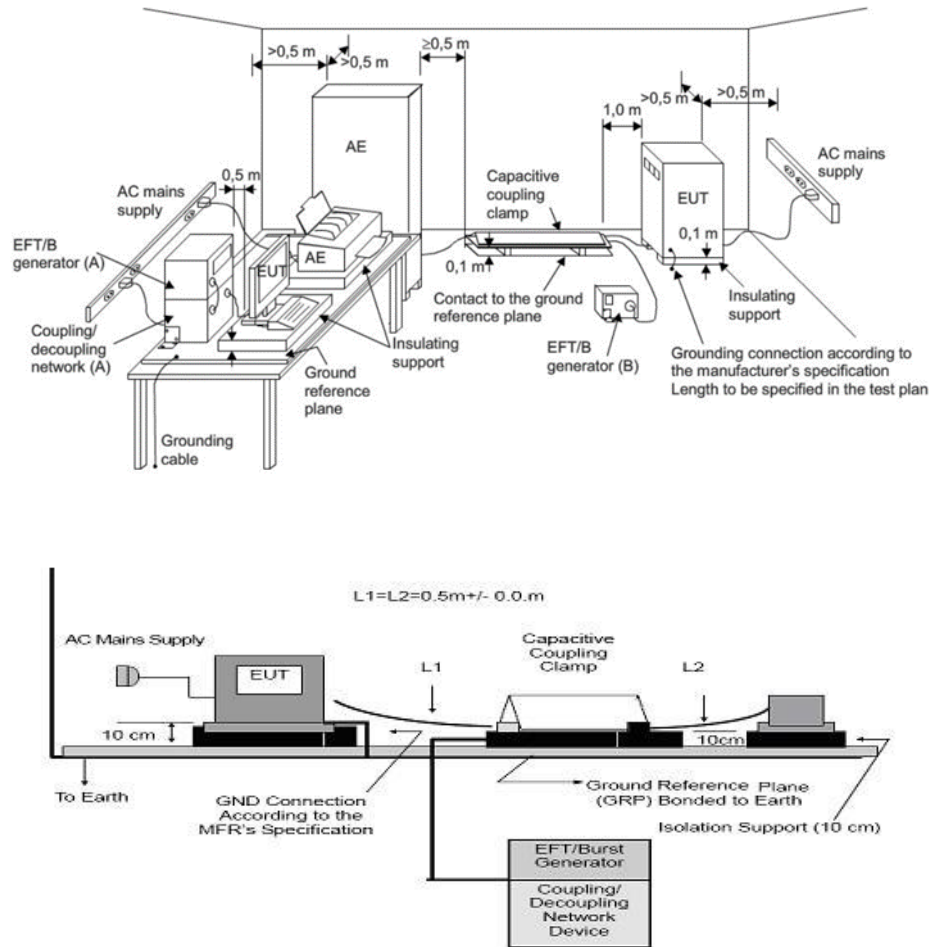
4.4.2 TEST PROCEDURE

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 minute

4.4.3 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 0.65 mm minimum thickness.
- The minimum size of the ground reference plane is 0.8m x 1m. The actual size depends on the dimension of the EUT.
- 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 $\pm$ 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.

**4.4.4 TEST RESULTS**

Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36/37
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Coupling Line		Test level (KV)								Observation	Criterion	Result
		0.5		1		2		4				
		+	-	+	-	+	-	+	-			
AC line	L			A	A					TT,TR	B	PASS
	N			A	A							PASS
	PE											
	L+N			A	A							PASS
	L+PE											
	N+PE											
	L+N+PE											
DC Line												
Signal Line												

4.5 SURGE TESTING

4.5.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-5
Required Performance:	B
Wave-Shape:	Combination Wave 1.2/50 μ s Open Circuit Voltage
Test Voltage:	Power line ~ line to line: 1 KV line to ground: 2 KV Telecommunication line: 1 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:	0°/90°/180°/270°
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

4.5.2 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

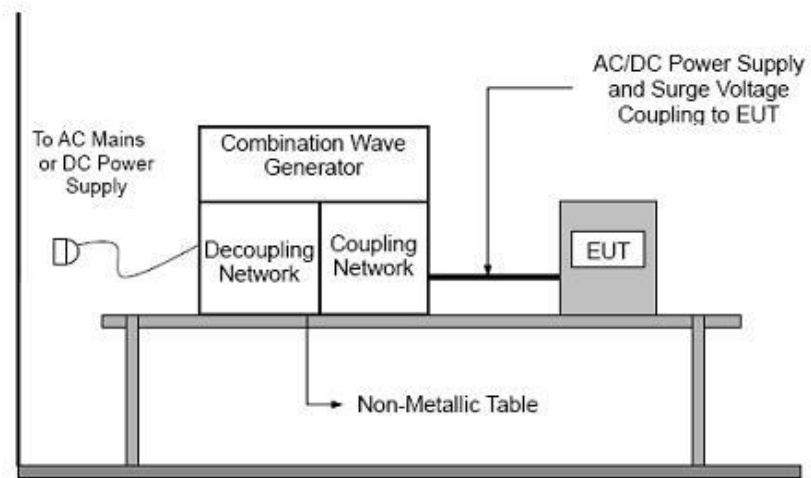
b. equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).

c. For test applied to unshielded unsymmetrically 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

d. interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

4.5.3 TEST SETUP





4.5.4 TEST RESULTS

Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36/37
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Coupling Line			Test level								Observation	Criterion	Result
			0.5 KV		1 KV		2 KV		4 KV				
			+	-	+	-	+	-	+	-			
AC line	L-N	0°			A	A					TT,TR	B	PASS
		90°			A	A							PASS
		180°			A	A							PASS
		270°			A	A							PASS
	L-PE	0°											
		90°											
		180°											
		270°											
	N-PE	0°											
		90°											
		180°											
		270°											
Signal Line	Line-Line												
	Line-Ground												
DC Line													

Note: 1) N/A - denotes test is not applicable in this test report.



4.6 CONDUCTED RADIO FREQUENCY DISTURBANCES (CS)

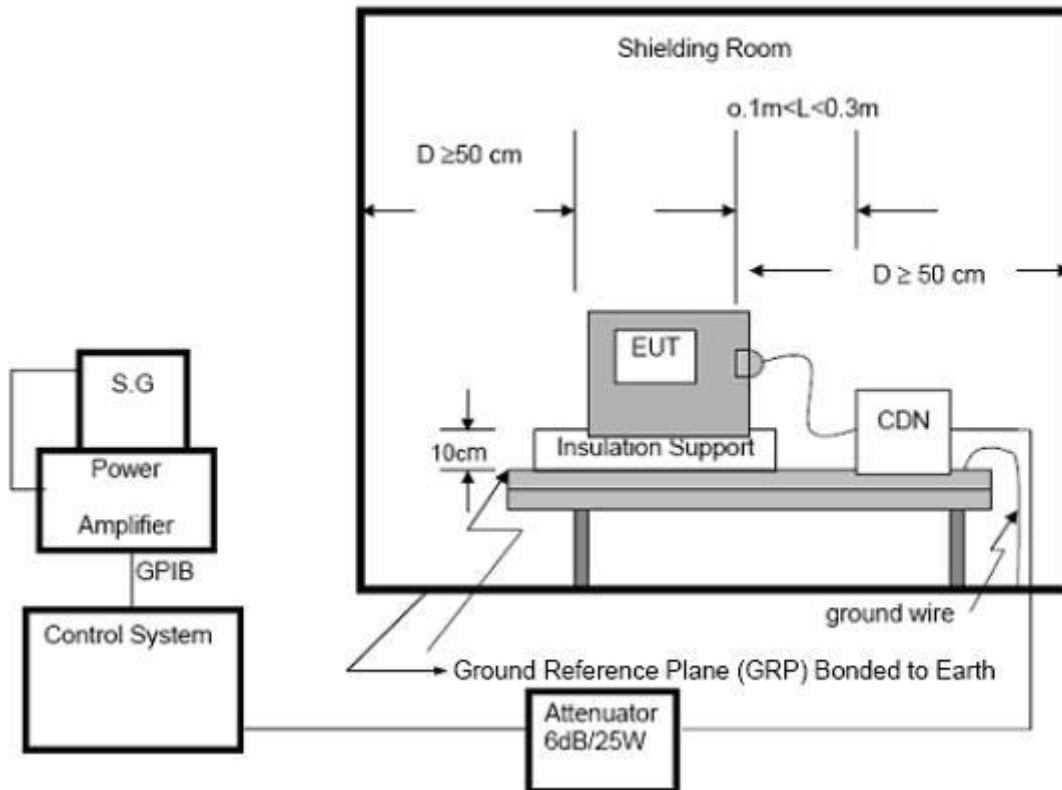
4.6.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-6
Required Performance:	A
Frequency Range:	0.15 MHz - 80 MHz
Field Strength:	3Vr.m.s.
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	at least 3 seconds

4.6.2 TEST PROCEDURE

- The EUT shall be tested within its intended operating and climatic conditions.
- An artificial hand was placed on the hand-held accessory and connected to the ground reference plane.
- One of the CDNs not used for injection was terminated with 50Ω, providing only one return path. All other CDNs were coupled as decoupling networks.
- The frequency range is swept from 150 kHz to 80 MHz, using the signal level established during the setting process and with a disturbance signal of 80 % amplitude. The signal is modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. Where the frequency is swept incrementally, the step size shall not exceed 1% of the preceding frequency value.
- 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. The sensitive frequencies (e.g. clock frequencies) shall be analyzed separately.
- Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.

4.6.3 TEST SETUP



NOTE:

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.

**4.6.4 TEST RESULTS**

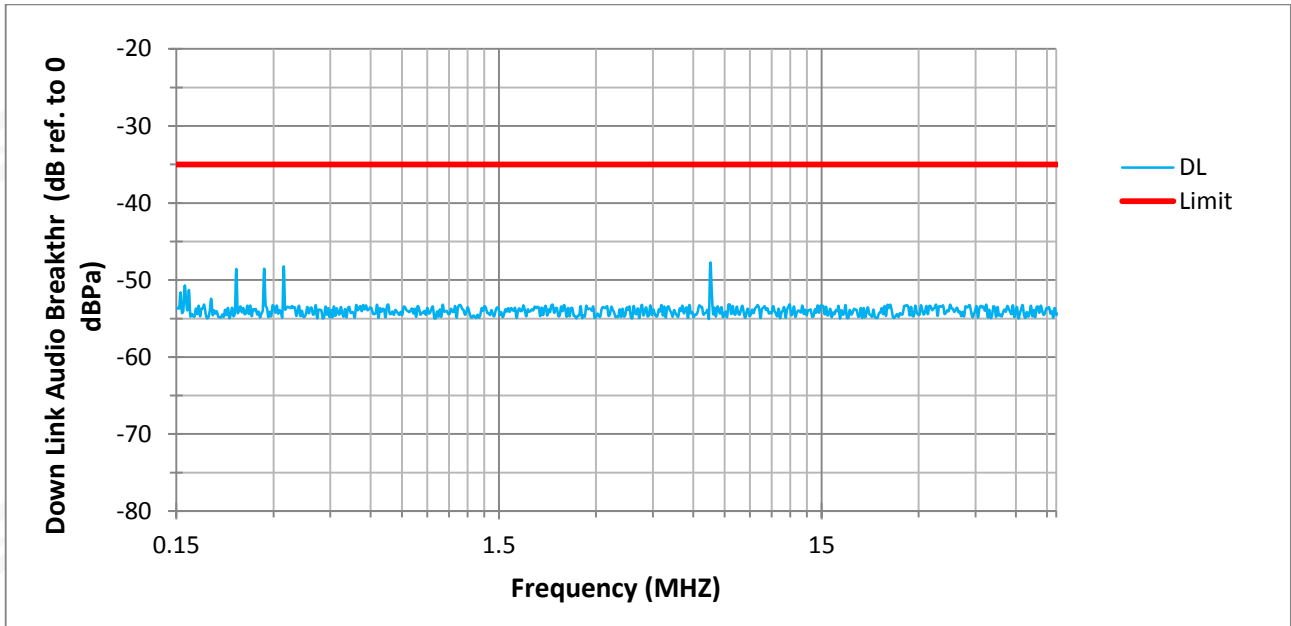
Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Test Ports (Mode)	Freq. Range MHz)	Field Strength	Observation	Perform. Criteria	Results	Judgement
Input/ Output AC. Power Port	0.15 --- 80	3V(rms)	CT, CR	A	A	PASS
Input/ Output DC. Power Port	0.15 --- 80	AM Modulated	N/A	N/A	N/A	N/A
Signal Line	0.15 --- 80	1000Hz, 80%	N/A	N/A	N/A	N/A

Note: "A" stand for, during test, operated as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

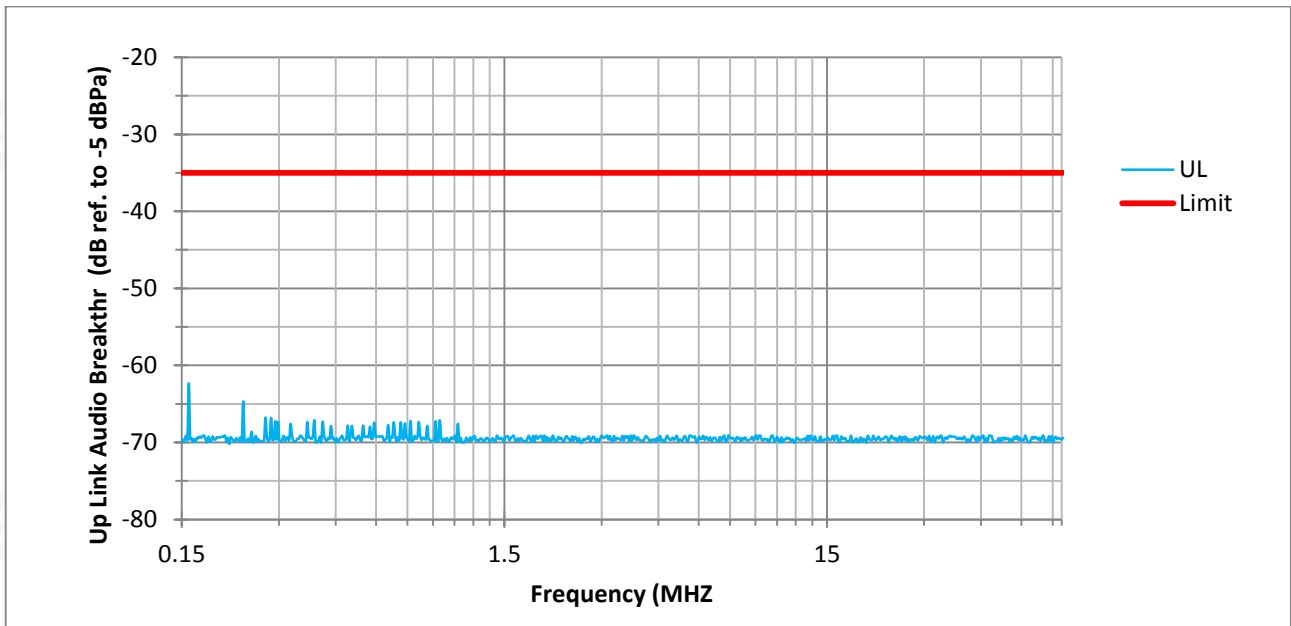


Audio Breakthrough Measurement Result (GSM)



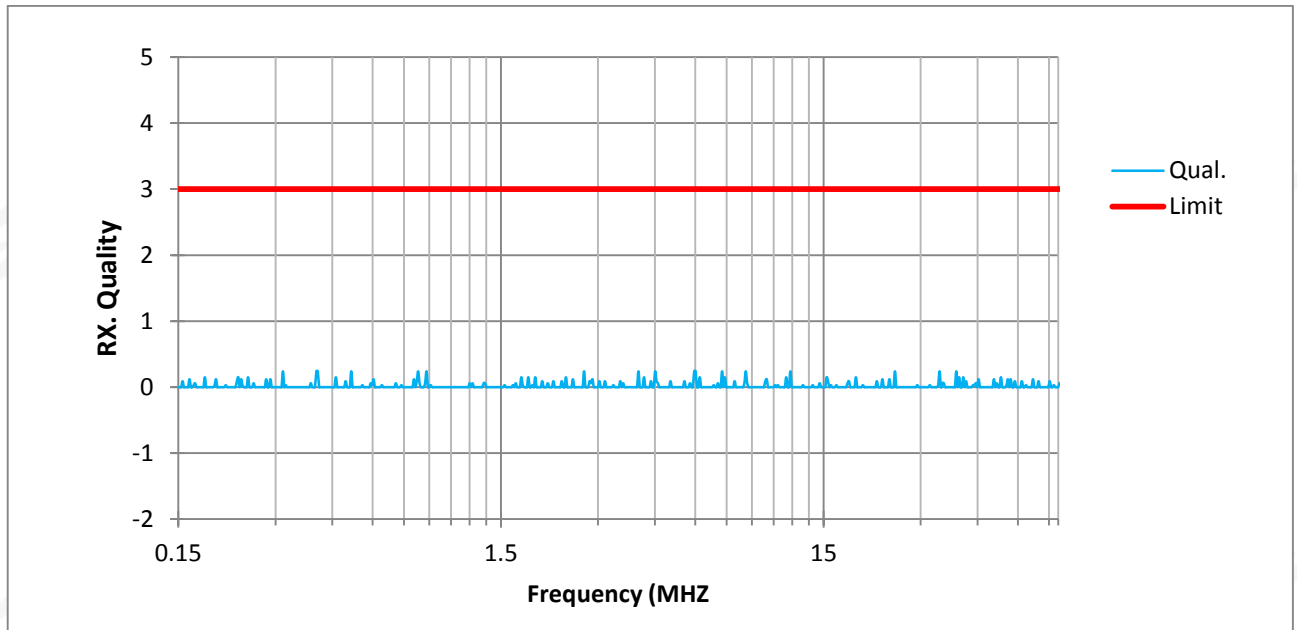
Downlink Audio Break-through Test PASS

Worst. Value is -47.81 Audio level (dB ref. to 0dBPa) at 6.78MHz (Margin 12.81 Audio level (dB ref. to 0dBPa))



Uplink Audio Break-through Test PASS

Worst. Value is -62.33 Audio level (dB ref. to -5dBPa) at 0.16MHz (Margin 27.33 Audio level (dB ref. to -5dBPa))





BER Measurement Result (WCDMA)

Type	Antenna Polar	Observation item	Test Result	Limit	Result
WCDMA Band I	VERT/HOTRI	BER	0	<0.001	Pass
WCDMA Band VIII	VERT/HOTRI	BER	0	<0.001	Pass

Throughput Measurement Result (LTE)

Type	Antenna Polar	Observation item	Test Result	Limit	Result
LTE BAND 1	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 3	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 7	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 8	VERT/HOTRI	Throughput	100	>95	Pass
LTE BAND 20	VERT/HOTRI	Throughput	100	>95	Pass

4.7 VOLTAGE INTERRUPTION/DIPS TESTING (DIPS)

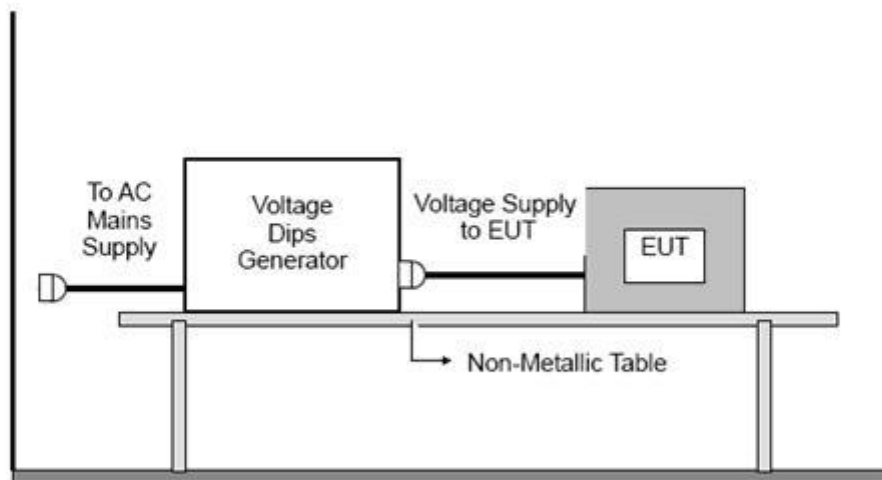
4.7.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-11
Required Performance:	B (For 100% Voltage Dips, 0.5 Cycles) B (For 100% Voltage Dips, 1 Cycles) 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

4.7.2 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.

4.7.3 TEST SETUP



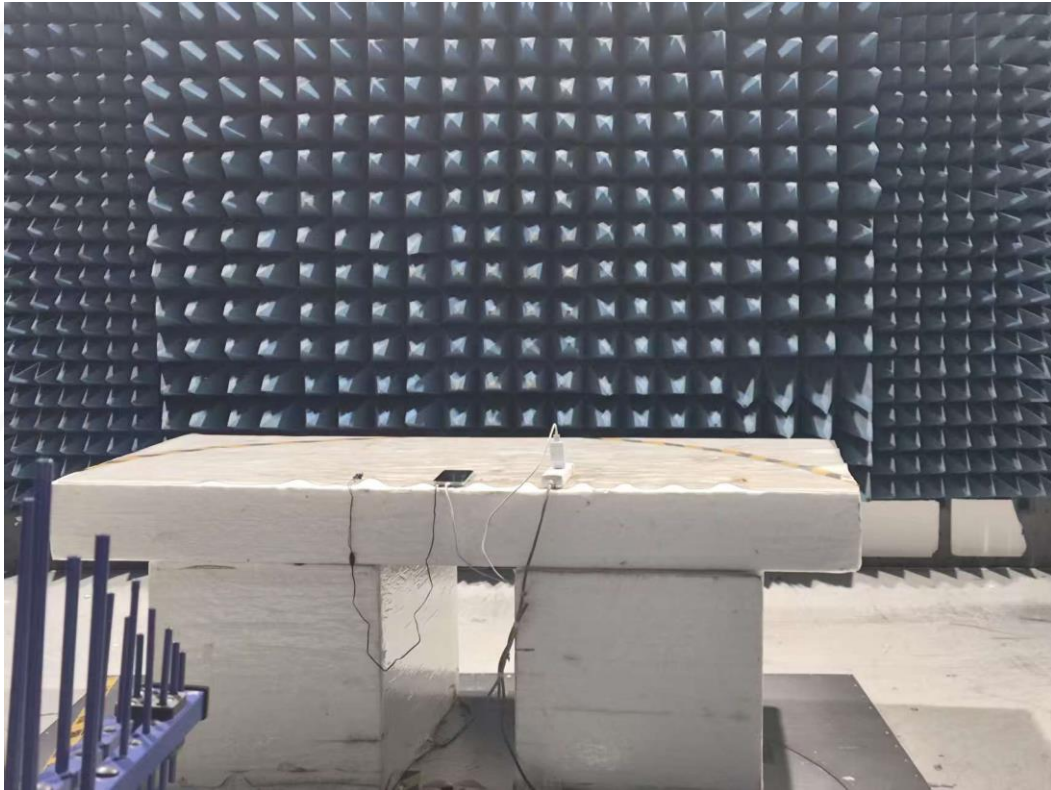
**4.7.4 TEST RESULTS**

Temperature:	24.6℃	Relative Humidity:	43%
Test Date:	2025.12.17	Test Mode:	Mode1/2/3/4/5/6/7/8/9/10/ 11/12/13/14/15/16/17/18/ 19/20/21/22/23/24/25/26/ 27/28/29/30/31/32/33/34/ 35/36/37
Test Voltage:	DC 5V from Adapter		
Description:	Adapter Input voltage: AC 230V/50Hz		

Interruption & Dips	Duration (T)	Observation	Perform Criteria	Results	Judgement
Voltage dip 100%	0.5	TT, TR	B	A	PASS
Voltage dip 100%	1	TT, TR	B	A	PASS
Voltage dip 30%	25	TT, TR	C	A	PASS
Voltage interruptions 100%	250	TT, TR	C	B	PASS

APPENDIX 1-PHOTO TEST OF EUT

RE (30 - 1000 MHz)



RE (1000 - 6000 MHz)



CE



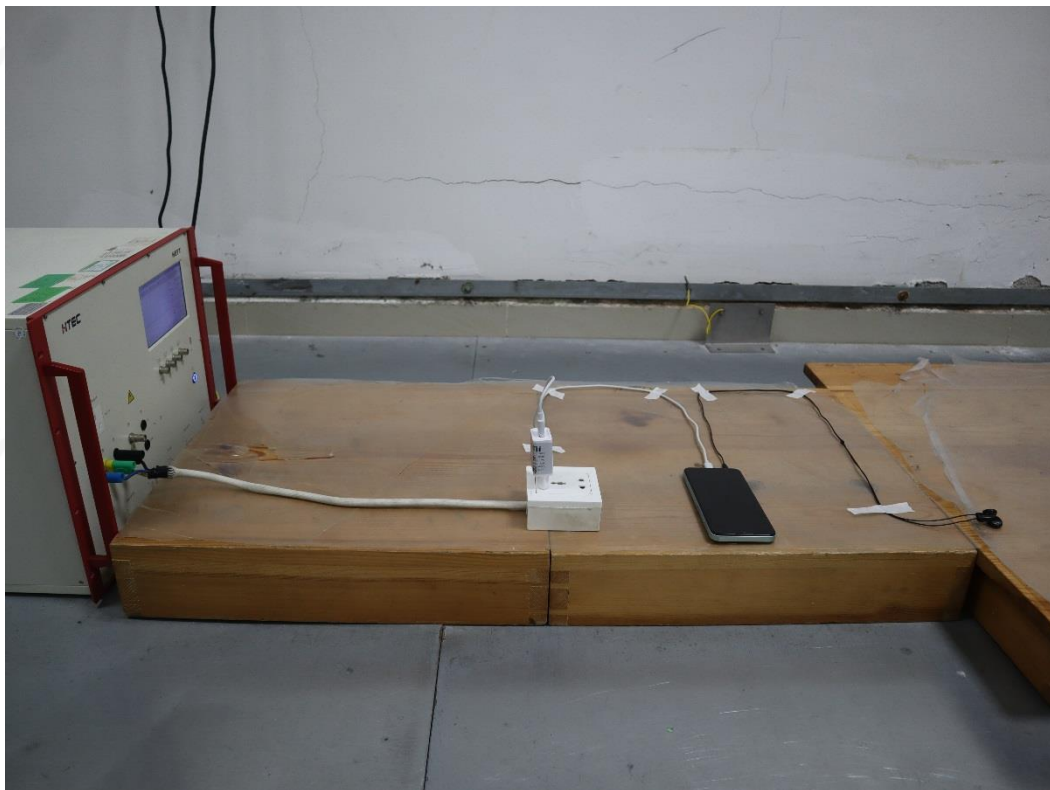
FLICKER



SURGE



EFT



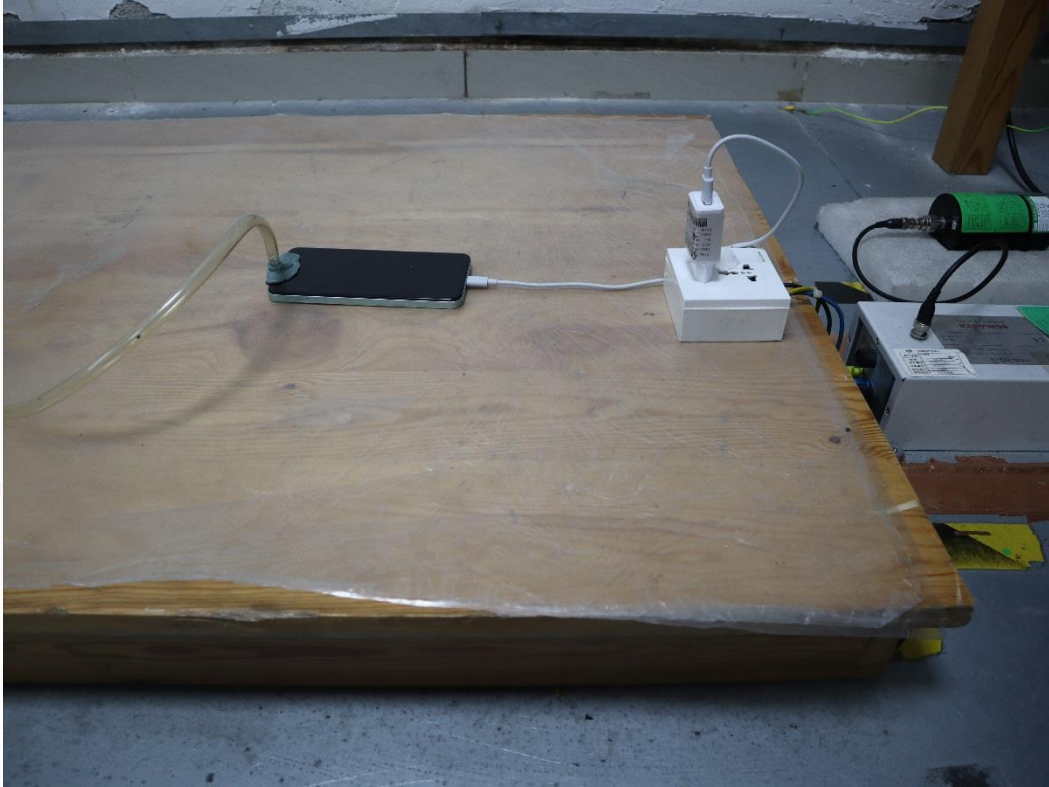
DIPS



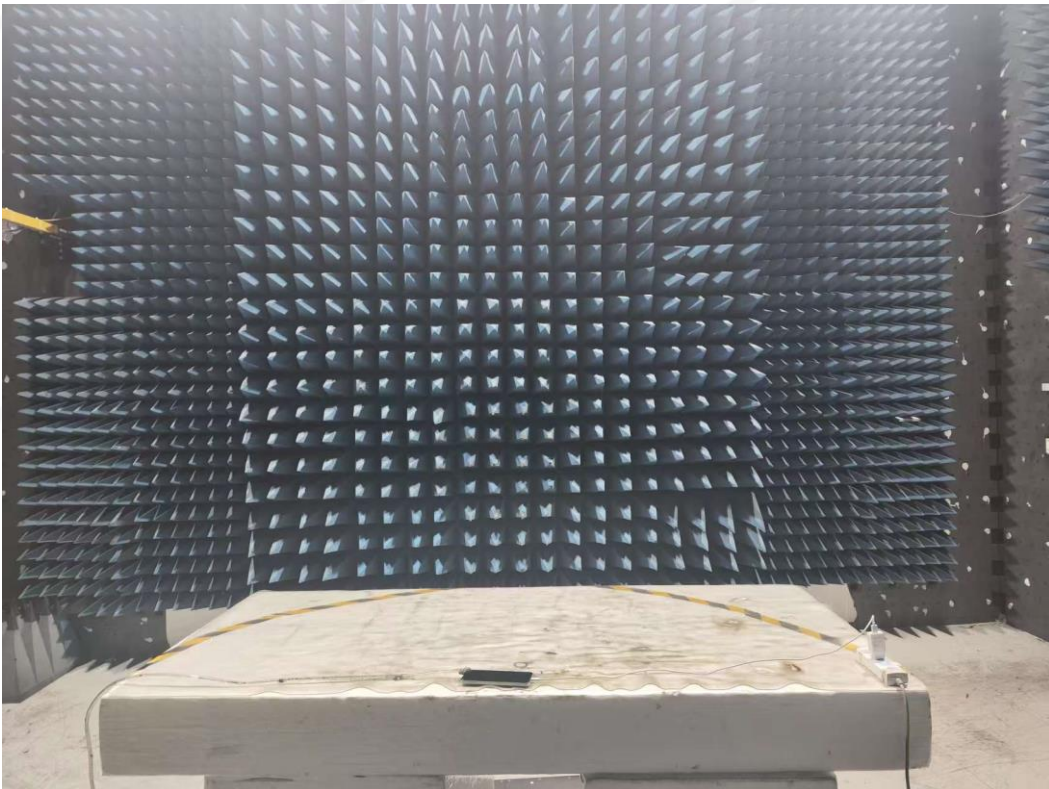
ESD



CS



RS (80 - 6000 MHz)



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