Certificate #4312.01

TEST REPORT

Product Name: LCD Monitor

Trade Mark: AOC

Model No.: Q27G40ZE

Add. Model No.: Q27G4ZX,**Q27G4********,**Q27G40ZE********,**Q27G41ZE******** (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', ' '–', '\', '/'or blank, for marketing use only.)

Report Number: 25031916707EMC-1

Test Standards:

EN 55032:2015, EN 55032:2015/A11:2020, EN 55032:2015/A1:2020, CISPR 32:2015+AMD1:2019, BS EN 55032:2015, BS EN 55032:2015+A1:2020, BS EN 55032:2015+A11:2020, AS/NZS CISPR 32:2015+A1:2020, EN 55035:2017, EN 55035:2017/A11:2020, BS EN 55035:2017, BS EN 55035:2017+A11:2020, CISPR 35:2016, EN 61000-3-2:2014, EN IEC 61000-3-2:2019/A1:2021, EN IEC 61000-3-2:2019/A2:2024, BS EN 61000-3-2:2014, BS EN IEC 61000-3-2:2019+A1:2021, BS EN IEC 61000-3-2:2019+A2:2024, EN 61000-3-3:2013, EN 61000-3-3:2013/A1:2019, EN 61000-3-3:2013/A2:2021, BS EN 61000-3-3:2013, BS EN 61000-3-3:2013+A1:2019, BS EN 61000-3-3:2013+A2:2021, (IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020/COR2:2022)

Test Result: PASS

Date of Issue: March 28, 2025

Prepared for:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China

Prepared by:

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Approved by: Kevin Liang, Assistant Manager

Date: March 28, 2025

Version

Version No.	Date	Description
V1.0	March 28, 2025	Original

CONTENTS

1 GENERAL INFORMATION

1.1. CLIENT INFORMATION

Applicant:	TPV Electronics (Fujian) Co., Ltd.
Address of Applicant:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China

1.2. EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	LCD Monitor
Trade Mark:	AOC
Model No.:	Q27G40ZE
Add. Model No.:	Q27G4ZX,**Q27G4********,**Q27G40ZE********,**Q27G41ZE******** (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', ' '–', '\', '/'or blank, for marketing use only.)
DUT Stage:	Production Unit
AC Supply:	100-240V~, 50/60Hz
DC Supply:	N/A
Classification of MME:	Class B
Highest Internal Frequency:	>108MHz
I/O Port:	1 x AC Port; 1 x AUDIO out Port; 2 x HDMI Port; 1 x DP Port
Sample Received Date:	2025-03-17
Sample Tested Date:	2025-03-19 to 2025-03-24
Note: The additional model Q27G4ZX,**Q27G4********,**Q27G40ZE********,**Q27G41ZE******** (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', ' '–', '\', '/'or blank, for marketing use only.) is identical with the test model Q27G40ZE except the model number for marketing purpose.	

Remark: The above EUT's information was provided by customer. Please refer to the specifications or user's manual for more detailed description

1.2.2 Description of Accessories

HDMI Cable	
Description:	HDMI Cable
Cable Type:	Shielded without ferrite
Length:	1.2/1.5/1.8Meter

AC Power Cord	
Description:	AC Power Cord
Cable Type:	Unshielded without ferrite
Length:	1.2/1.5/1.8Meter

DP Cable	
Description:	DP Cable
Cable Type:	Shielded without ferrite
Length:	1.2/1.5/1.8Meter

1.3. GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT according to the specifications of the manufacturers. It complies with the requirements of the following standards:

EN 55032:2015, EN 55032:2015/A11:2020, EN 55032:2015/A1:2020,
CISPR 32:2015+AMD1:2019,
BS EN 55032:2015, BS EN 55032:2015+A1:2020, BS EN 55032:2015+A11:2020,
AS/NZS CISPR 32:2015+A1:2020, EN 55035:2017, EN 55035:2017/A11:2020,
BS EN 55035:2017, BS EN 55035:2017+A11:2020, CISPR 35:2016,
EN 61000-3-2:2014, EN IEC 61000-3-2:2019/A1:2021, EN IEC 61000-3-2:2019/A2:2024
BS EN 61000-3-2:2014, BS EN IEC 61000-3-2:2019+A1:2021, BS EN IEC 61000-3-2:2019/A2:2024
EN 61000-3-3:2013, EN 61000-3-3:2013/A1:2019, EN 61000-3-3:2013/A2:2021,
BS EN 61000-3-3:2013, BS EN 61000-3-3:2013+A1:2019, BS EN 61000-3-3:2013+A2:2021,
(IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012,
IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009,
IEC 61000-4-11:2020/COR2:2022)

All test items have been performed and recorded as per the above standards

1.4. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
PC	DELL	XPS8900	2015AP3055	UnionTrust
keyboard	DELL	KB212-B	CN-0N291F-715	UnionTrust
mouse	DELL	MS111	CN-011D3V-738	UnionTrust
PC work station	DELL	5820	BEC20190001	UnionTrust
Dummy load	N/A	E214887	N/A	UnionTrust
DVD Player	GIEC	BDP-G4305	N/A	UnionTrust
Earphone	N/A	QTER01JY	N/A	UnionTrust
Laptop	DELL	P111G601	CN-81FV05-WSC0 0-8A3-800L-X01	UnionTrust

1.5. TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6th, Baoneng Science and Technology Park, Longhua Street, Longhua District, Shenzhen, China 518109
Telephone: TEL:+86 (0) 755 2823 0888
Fax:E-mail:info@uttlab.com

Tests were sub-contracted. [Radiated Emission (10 m), Power frequency magnetic field]
Centre Testing International Group Co., Ltd.

Address: Building C, Hongwei Industrial Park Block 70, Bao'an District Shenzhen, Guangdong, 518101, People's Republic of China
Telephone: 0755-33682815 Fax: 0755-33683385

1.6. TEST FACILITY

Shenzhen UnionTrust Quality and Technology Co., Ltd.

The test facility is recognized, certified, or accredited by the following organizations:

- **Shenzhen UnionTrust Quality and Technology Co., Ltd.**

CNAS-Lab Code: L9069
The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01
Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories
CAB identifier: CN0032

FCC Accredited Lab.
Designation Number: CN1194
Test Firm Registration Number: 259480

- **Centre Testing International Group Co., Ltd.**

A2LA-Lab Certificate No.: 3061.01
The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

CNAS-Lab Code: L1910

1.7. DEVIATION FROM STANDARDS

None.

1.8. ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.9. OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.10. MEASUREMENT UNCERTAINTY

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 30MHz-1GHz	± 4.6 dB
4	Radiated emission 1GHz-18GHz	± 4.4 dB
5	Harmonic current emissions	±1.4%
6	Voltage fluctuations and flicker	±1.4%
Remark: 95% Confidence Levels, k=2.		

2 TEST SUMMARY

Test Item		Test Requirement	Test Method	Limits	Results
Radiated Emissions	for class A equipment	EN 55032:2015/A11:2020 Clause 5	EN 55032:2015/A11:2020 Clause 6	Table A2, A3	N/A (Note 1, 2)
	for class B equipment			Table A4, A5	PASS
	for FM receivers			Table A6	N/A (Note 1, 3)
	for outdoor units of home satellite receiving systems			Table A7	N/A (Note 1, 4)
Conducted Emissions	for conducted emissions from the AC mains power ports of Class A equipment	EN 55032:2015/A11:2020 Clause 5	EN 55032:2015/A11:2020 Clause 6	Table A9	N/A (Note 1, 2)
	for conducted emissions from the AC mains power ports of Class B equipment			Table A10	PASS
	for asymmetric mode conducted emissions from Class A equipment			Table A11	N/A (Note 1, 2)
	for asymmetric mode conducted emissions from Class B equipment			Table A12	N/A (Note 1, 5)
	for conducted differential voltage emissions from Class B equipment			Table A13	N/A (Note 1, 6)
Harmonic Current Emissions		EN IEC 61000-3-2: 2019/A1:2021 Clause 6	EN IEC 61000-3-2: 2019/A1:2021 Clause 6	EN IEC 61000-3-2: 2019/A1:2021 Clause 7	PASS
Voltage Fluctuations and Flicker		EN 61000-3-3: 2013/A2:2021 Clause 4	EN 61000-3-3: 2013/A2:2021 Clause 4	EN 61000-3-3: 2013/A2:2021 Clause 5	PASS

Note:

1) N/A: In the whole report not application.
2) The EUT is Class B equipment.
3) Applicable only to FM receivers, the EUT does not support FM receivers.
4) The EUT not belong to satellite receiving systems.
5) The cables used in this EUT are all less than 3 meters.
6) The EUT does not support the TV broadcast receiver tuner ports with an accessible connector, RF modulator output ports and FM broadcast receiver tuner ports with an accessible connector.

➢ **For EN 55035:2017/A11:2020**

Part 1: Immunity requirements for enclosure ports			
Test Item	**Test Requirement (EN 55035:2017/A11:2020)**	**Test Method**	**Results**
Power frequency magnetic field	Table Clause 1.1	IEC 61000-4-8:2009	PASS
Continuous RF electromagnetic field disturbances, swept test and spot test	Table Clause 1.2 Table Clause 1.3	IEC 61000-4-3:2020	PASS
Electrostatic Discharge (ESD)	Table Clause 1.4	IEC 61000-4-2:2008	PASS

Part 2: Immunity requirements for AC mains power ports			
Test Item	**Test Requirement (EN 55035:2017/A11:2020)**	**Test Method**	**Results**
Continuous induced RF disturbances	Table Clause 4.1	IEC 61000-4-6:2013	PASS
Voltage dips and Voltage interruptions	Table Clause 4.2 Table Clause 4.3	IEC 61000-4-11:2020/COR2:2022	PASS
Surges	Table Clause 4.4	IEC 61000-4-5:2014+AMD1:2017	PASS
Electrical fast transients/burst	Table Clause 4.5	IEC 61000-4-4:2012	PASS

Part 3: Immunity requirements for DC network power ports			
Test Item	**Test Requirement (EN 55035:2017/A11:2020)**	**Test Method**	**Results**
Continuous induced RF disturbances	Table Clause 3.1	IEC 61000-4-6:2013	N/A (Note 1, 2)
Surges	Table Clause 3.2	IEC 61000-4-5:2014+AMD1:2017	N/A (Note 1, 2)
Electrical fast transients/burst	Table Clause 3.3	IEC 61000-4-4:2012	N/A (Note 1, 2)

Note:

1) N/A: In this whole report not application.
2) This EUT does not support the DC wired network ports capability.

Part 4: Immunity requirements for analogue/digital data ports			
Test Item	**Test Requirement (EN 55035:2017/A11:2020)**	**Test Method**	**Results**
Continuous induced RF disturbances	Table Clause 2.1	IEC 61000-4-6:2013	N/A (Note 1, 3)
Broadband impulse noise disturbances, repetitive	Table Clause 2.2	EN 55035:2017/A11:2020 Clause 4.2.7	N/A (Note 1, 2)
Broadband impulse noise disturbances, isolated	Table Clause 2.3	EN 55035:2017/A11:2020 Clause 4.2.7	N/A (Note 1, 2)
Surges	Table Clause 2.4	IEC 61000-4-5:2014+AMD1:2017	N/A (Note 1, 3)
Electrical fast transients/burst	Table Clause 2.5	IEC 61000-4-4:2012	N/A (Note 1, 3)

Note:

1) N/A: In this whole report not application.
2) Applicable only to CPE xDSL ports, all burst durations. This EUT does not support the ports capability.
3) The cables used in this EUT are all less than 3 meters.

3 EQUIPMENT LIST

Voltage dips and interruptions Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
Voltage dips and variation test system	HTEC	HPFS 161P	161503	2024-10-25	2025-10-24
Temp&Humidity Recorder	RenKE	RS-WS-WIFI-6J	30075387	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

RF common mode 0,15 MHz to 80 MHz Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
Conducted Immunity System	Schloder	CDG6000-75	126B1367	2024-10-25	2025-10-24
EM-Clamp	Schloder	EMCL-20	132A1245	2024-10-25	2025-10-24
6dB Attenuator	Schloder	CDG60100	201411010018	2024-10-25	2025-10-24
Test Software	Dr. Hubert GmbH	IEC/EN61000-4-6	Software Version: 1.2.0(25.03.2013)	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI-6J	30075387	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Radiated Emission Test - 3M Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
3 m SAC	ETS-Lindgren	3 m	Euroshiedpn-CT001270-1317	2023-11-11	2026-11-10
Double-Ridged Waveguide Horn Antenna(Pre-amplifier)	ETS-Lindgren	3117-PA	00201541	2024-04-01	2025-03-31
Pre-amplifier	ETS-Lindgren	00118385	00201874	2024-04-01	2025-03-31
Receiver	ROHDE & SCHWARZ	ESIB26	100114	2024-10-25	2025-10-24
Test Software	Audix	e3	Software Version: 9.160323	--	--
Multi device Controller	ETS-Lindgren	7006-001	00160105	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI-6J	30076573	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Electrostatic Discharge Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
ESD Simulator	TESEQ	NSG 438	634	2024-10-26	2025-10-25
Temp&Humidity Recorder	RenKE	RS-WS-WIFI-6J	30076578	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Harmonic Current Emissions & Voltage Fluctuations and Flicker Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
5KVA AC power source	California instruments	5001iX+CTS -411	56178	2024-03-29	2025-03-28
Flicker & Harmonic Tester	California instruments	PACS-1	72333	2024-03-29	2025-03-28
Test Software	California instruments	CTS 4	Software Version: 4.29.0	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI -6J	30075387	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Fast transients common mode & Surges Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
NSG 3040 EMC test system	TESEQ	NSG 3040	2101	2024-10-25	2025-10-24
Temp&Humidity Recorder	RenKE	RS-WS-WIFI -6J	30075387	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

RF electromagnetic field Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
3 m SAC	ETS-Lindgren	3 m	Euroshiedpn -CT001270-1317	2023-11-11	2026-11-10
Audio Test System	Audio Precision	ATS-1	ATS1-41075	2024-03-29	2025-03-28
Log Periodic Antenna	Schwarzbeck	VUSLP 9111E	00041	2022-04-17	2032-04-16
Stacked Logarithmic-Periodic Broadband Antenna	Schwarzbeck	STLP 9149	00706	2022-04-17	2032-04-16
Electric field probe	Frankonia	EFS-100	711ZX00424	2024-04-02	2025-04-01
RF Amplifier	HTEC	HPA 0810-250	MPA2003056	2024-03-29	2025-03-28
RF Amplifier	HTEC	HPA 1060-75	MPA2003057	2024-03-29	2025-03-28
MXG Analog Signal Generator	Agilent	N5181A	MY47070613	2024-03-29	2025-03-28
EPM-P Series Power Meter	Agilent	E4417A	MY45100705	2024-03-29	2025-03-28
Peak and Avg Power Sensor	Agilent	E9323A	MY44420776	2024-03-29	2025-03-28
Test Software	Suzhou Keleto Electronics Technology Co.,Ltd	EMC-S	Software Version: V1.4.0.57	--	--
Peak And Avg Power	Agilent	E9323A	US40410105	2023-03-29	2025-03-28
Temp&Humidity Recorder	RenKE	RS-WS-WIFI -6J	30076573	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Conducted Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
LISN	R&S	EVN216	3560.6550.12	2024-09-27	2025-09-26
LISN	ETS-Lindgren	3816/2SH	00201088	2024-10-25	2025-10-24
Receiver	R&S	ESCI3	1166.5950.03	2024-10-25	2025-10-24
Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1	--	--
Temp&Humidity Recorder	RenKE	RS-WS-WIFI-6J	30076554	2024-10-28	2025-10-27
Atmospheric pressure gauge	RenKE	RS-QY-WIFI-2-4-OLED	30071346	2024-10-28	2025-10-27

Centre Testing International Group Co., Ltd.

Radiated Emission (10m SAC) Test Equipment List					
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. Due date**
☒	10M Chamber & Access ory Equipment	Rainford	---	---	03/26/2026
☐	Horn Antenna	ETS-LINGREN	3117	57410	04/22/2025
☐	Horn Antenna	A.H.SYSTEMS	SAS-574	374	07/01/2026
☐	Microwave Preamplifier	EM,Compliance	PAP-1G18	14916	12/13/2024
☒	Microwave Preamplifier	HP	HP 8447F	2805A03379	04/01/2025
☐	Microwave Preamplifier	Ce sheng	COP2K1G30	COP20230715	09/19/2025
☐	EMI Receiver	R&S	ESIB40	100116	04/14/2025
☒	EMI Receiver	R&S	ESCI7	100938-003	09/06/2025
☒	TRILOG Broadband Antenna	schwwarzbeck	VULB 9163	9163-617	04/14/2025
☒	Test software	Farad Technology	EZ-EMC	Software Version:FA-03A2 RE	

Power frequency magnetic field Test Equipment List					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date**	**Cal.Due Date**
Power frequency magnetic field generator	LIONCEL	PMF-801CT	PMF801CT-0231001	2024-08-02	2025-08-01
Fieldcoil	LIONCEL	RS-WS-WIFI-6J	30076578	2024-08-02	2025-08-01

4 TEST CONFIGURATION

4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1. Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage	Relative Humidity (%)
TN/VN	+15 to +35	230V~50Hz and 110V ~60Hz	20 to 75 (Except Electrostatic Discharge is 30 to 60)
Remark: 1) NV: Normal Voltage; NT: Normal Temperature			

4.1.2. Record of Normal Environment

Test Item	Sample No.	Temp. (°C)	Relative Humidity (%)	Pressure (kPa)
Harmonic current emissions	S202503175463-ZJA01/1	22.1	49.8	101.2
Voltage changes, voltage fluctuations and flicker	S202503175463-ZJA01/1	22.1	49.8	101.2
Power frequency magnetic field	S202503175463-ZJA01/1	21.3	43.7	101.0
Continuous RF electromagnetic field disturbances	S202503175463-ZJA01/1	23.3	45.1	100.9
Electrostatic Discharge	S202503175463-ZJA01/1	22.2	50.4	101.2
Continuous induced RF disturbances (AC mains power ports)	S202503175463-ZJA01/1	22.1	49.8	101.2
Voltage dips and interruptions (AC mains power ports)	S202503175463-ZJA01/1	22.1	49.8	101.2
Surges (AC mains power ports)	S202503175463-ZJA01/1	22.1	49.8	101.2
Electrical fast transients/burst (AC mains power ports)	S202503175463-ZJA01/1	22.1	49.8	101.2
Radiated emissions(3m)	S202503175463-ZJA01/1	22.8	52.3	101.2
Radiated emissions(10m)	S202503175463-ZJA01/1	21.0	57.0	101.0
Conducted emissions (AC mains power ports)	S202503175463-ZJA01/1	22.1	45.8	101.1

4.2 TEST MODES

Test Modes									
No.	Test Voltage	Input ports	Input source	Cable Length (Meter)	Pattern	Resolution	Rotatio	Stand Positio n	Audio
1.	230V~50Hz	HDMI 1	PC	1.8	BT 471-1	800*600@60Hz	Landscape	UP	With Earphone
2.			PC	1.8	BT 471-1	1920*1080@60Hz	Landscape	UP	With Earphone
3.			PC	1.8	BT 471-1	2560*1440@60Hz	Landscape	UP	With Earphone
4. *			PC	1.8	BT 471-1	2560*1440@144Hz	Landscape	UP	With Earphone
5.			PC	1.8	H Pattern	2560*1440@144Hz	Landscape	UP	With Earphone
6.			PC	1.8	BT 471-1	2560*1440@144Hz	Landscape	UP	Without Earphone
7.			PC	1.5	BT 471-1	2560*1440@144Hz	Landscape	UP	With Earphone
8.			PC	1.2	BT 471-1	2560*1440@144Hz	Landscape	UP	With Earphone
9.			DVD	1.8	BT 471-1	--	Landscape	UP	With Earphone
10.			DVD	1.5	BT 471-1	--	Landscape	UP	With Earphone
11.			DVD	1.2	BT 471-1	--	Landscape	UP	Without Earphone
12.		HDMI 2	Worst case from Test mode 1~11						
13.		DP	PC	1.8	BT 471-1	800*600@60Hz	Landscape	UP	With Earphone
14.			PC	1.8	BT 471-1	1920*1080@60Hz	Landscape	UP	With Earphone
15.			PC	1.8	BT 471-1	2560*1440@60Hz	Landscape	UP	With Earphone
16.			PC	1.8	BT 471-1	2560*1440@240Hz	Landscape	UP	With Earphone
17.			PC	1.5	BT 471-1	2560*1440@240Hz	Landscape	UP	With Earphone
18.			PC	1.2	BT 471-1	2560*1440@240Hz	Landscape	UP	Without Earphone
19.	Worst case from Test mode 1~18 with 1.5m Power Cord						Landscape	UP	With Earphone
20.	Worst case from Test mode 1~18 with 1.2m Power Cord						Landscape	UP	With Earphone
21.	110V~60Hz	Worst case from Test mode 1~20							

Note:
1) "*"Means the worst test mode.
2) All test modes are performed at maximum brightness, contrast, and volume.

5 PERFORMANCE CRITERIA
5.1 FOR EN 55035:2017/A11:2020

<General>

General performance criteria are defined in 8.2, 8.3 and 8.4. These criteria shall be used during the testing of primary functions where no relevant annex is applicable.

When assessing the impact of a disturbance on a function, the assessment should take into consideration the function's performance prior to the application of the disturbance and only identify as failures those changes in performance that are a result of the disturbance.

<Performance 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.

<Performance 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.

<Performance 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.

PERFORMANCE CRITERION FOR OTHERS FUNCTION

Function	Performance criterion
Broadcast reception function	Refer to Annex A.4 of EN 55035:2017/A11:2020
Print function	Refer to Annex B.3 of EN 55035:2017/A11:2020
Scan function	Refer to Annex C.3 of EN 55035:2017/A11:2020
Display and display output functions	Refer to Annex D.3 of EN 55035:2017/A11:2020
Musical tone generating function	Refer to Annex E.3 of EN 55035:2017/A11:2020
Networking functions	Refer to Annex F.3.3 & F.4 of EN 55035:2017/A11:2020
Audio output function	Refer to Annex G.7 of EN 55035:2017/A11:2020
Telephony function	Refer to Annex H.7 of EN 55035:2017/A11:2020

6 EMC REQUIREMENTS SPECIFICATION

6.1. REFERENCE DOCUMENTS FOR TESTING

EN 61000-3-2:2014, EN IEC 61000-3-2:2019/A1:2021, EN IEC 61000-3-2:2019/A2:2024,
BS EN 61000-3-2:2014, BS EN IEC 61000-3-2:2019+A1:2021, BS EN IEC 61000-3-2:2019+A2:2024,
Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

EN 61000-3-3:2013, EN 61000-3-3:2013/A1:2019, EN 61000-3-3:2013/A2:2021,
BS EN 61000-3-3:2013, BS EN 61000-3-3:2013+A1:2019, BS EN 61000-3-3:2013+A2:2021,
Electromagnetic compatibility (EMC) Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

EN 55032:2015, EN 55032:2015/A11:2020, EN 55032:2015/A1:2020,
CISPR 32:2015+AMD1:2019, AS/NZS CISPR 32:2015+A1:2020,
BS EN 55032:2015, BS EN 55032:2015+A1:2020, BS EN 55032:2015+A11:2020
Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035:2017, EN 55035:2017/A11:2020,
BS EN 55035:2017, BS EN 55035:2017+A11:2020, CISPR 35:2016,
Electromagnetic compatibility of multimedia equipment - Immunity requirements

IEC 61000-4-2:2008
Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

IEC 61000-4-3:2020
Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

IEC 61000-4-4:2012
Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test

IEC 61000-4-5:2014+AMD1:2017
Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test

IEC 61000-4-6:2013
Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

IEC 61000-4-8:2009
Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test

IEC 61000-4-11:2020
Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests

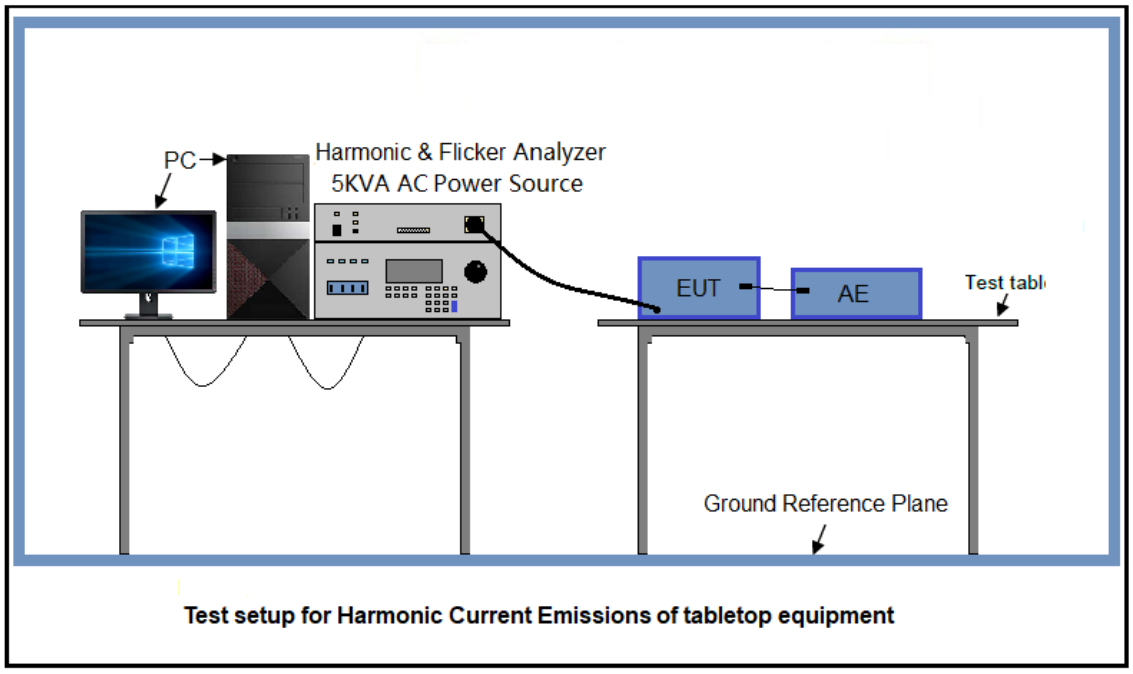
6.2. EMC EMISSION

6.2.1. Harmonic Current Emissions

Test Requirement: EN IEC 61000-3-2:2019/A1:2021,Clause 6

Test Method: EN IEC 61000-3-2:2019/A1:2021,Clause 6

Test Setup:



Test setup for Harmonic Current Emissions of tabletop equipment

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

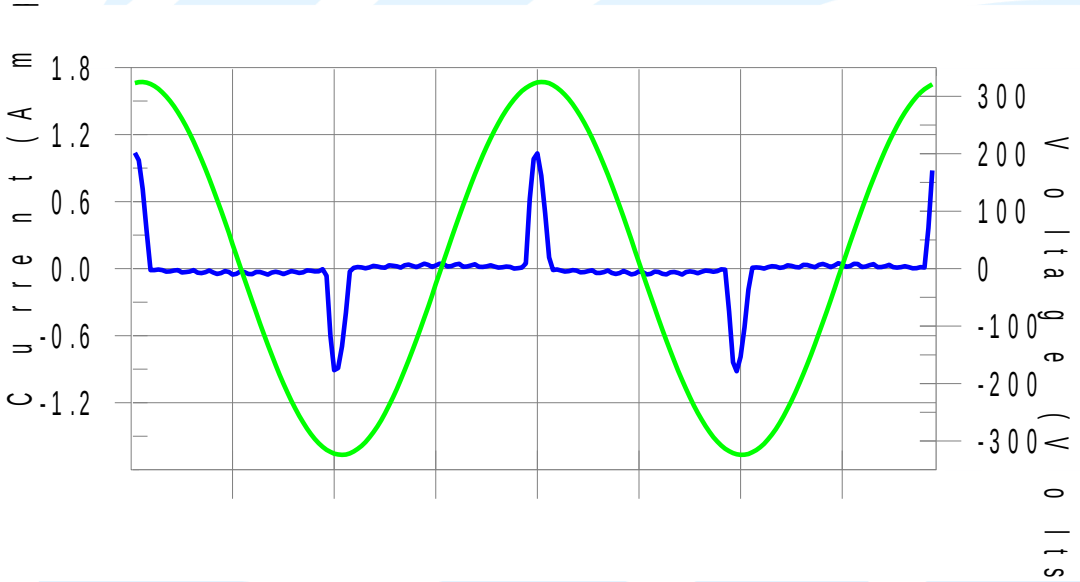
Remark: The EUT's power supply is less than 75W, the test item is not applicable.

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

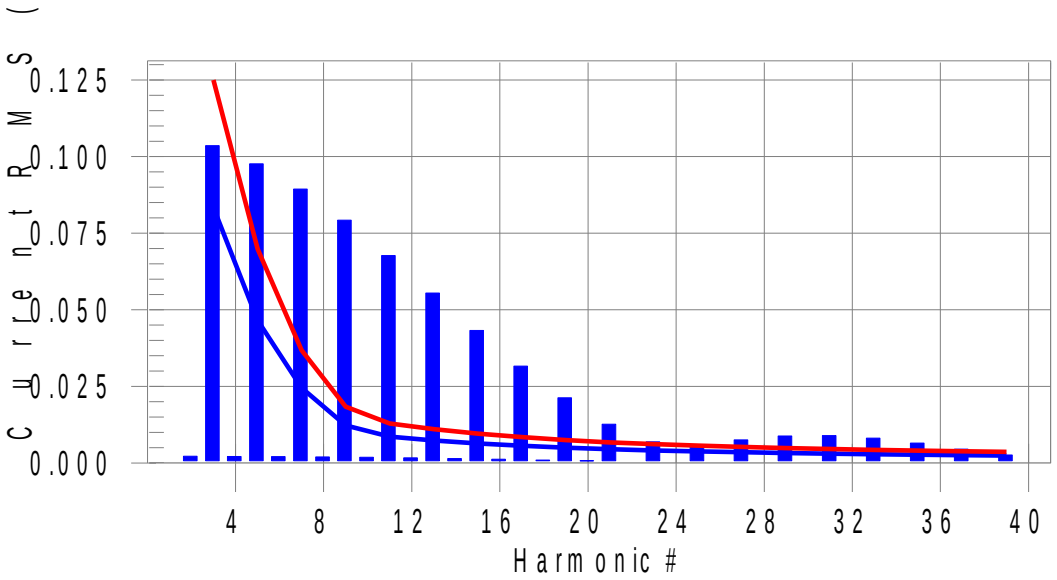
EUT: Q27G40ZE **Tested by: Jackson**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/3/24 **Start time: 11:26:34** **End time: 11:29:16**
Test duration (min): 2.5 **Data file name: H-000443.cts_data**
Comment: Test Mode 4
Customer: 25031916707

Test Result: N/L **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class D limit line **European Limits**



Test result: N/L **Worst harmonics H0-0.0% of 150% limit, H0-0% of 100% limit**

Current Test Result Summary (Run time)

EUT: Q27G40ZE **Tested by: Jackson**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/3/24 **Start time: 11:26:34** **End time: 11:29:16**
Test duration (min): 2.5 **Data file name: H-000443.cts_data**
Comment: Test Mode 4
Customer: 25031916707

Test Result: N/L **Source qualification: Normal**
THC(A): 0.215 **I-THD(%): 192.8** **POHC(A): 0.024** **POHC Limit(A): 0.011**

Highest parameter values during test:

V_RMS (Volts):	229.60	Frequency(Hz):	50.00
I_Peak (Amps):	1.054	I_RMS (Amps):	0.244
I_Fund (Amps):	0.111	Crest Factor:	4.329
Power (Watts):	24.5	Power Factor:	0.449

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	0.000	N/A	0.006	0.000	N/A	N/L
3	0.104	0.083	N/A	0.105	0.125	N/A	N/L
4	0.002	0.000	N/A	0.005	0.000	N/A	N/L
5	0.098	0.047	N/A	0.098	0.070	N/A	N/L
6	0.002	0.000	N/A	0.005	0.000	N/A	N/L
7	0.089	0.025	N/A	0.090	0.037	N/A	N/L
8	0.002	0.000	N/A	0.005	0.000	N/A	N/L
9	0.079	0.012	N/A	0.080	0.018	N/A	N/L
10	0.002	0.000	N/A	0.005	0.000	N/A	N/L
11	0.068	0.009	N/A	0.069	0.013	N/A	N/L
12	0.002	0.000	N/A	0.004	0.000	N/A	N/L
13	0.055	0.007	N/A	0.057	0.011	N/A	N/L
14	0.001	0.000	N/A	0.004	0.000	N/A	N/L
15	0.043	0.006	N/A	0.045	0.010	N/A	N/L
16	0.001	0.000	N/A	0.003	0.000	N/A	N/L
17	0.032	0.006	N/A	0.033	0.008	N/A	N/L
18	0.001	0.000	N/A	0.002	0.000	N/A	N/L
19	0.021	0.005	N/A	0.023	0.007	N/A	N/L
20	0.001	0.000	N/A	0.002	0.000	N/A	N/L
21	0.013	0.004	N/A	0.014	0.007	N/A	N/L
22	0.001	0.000	N/A	0.001	0.000	N/A	N/L
23	0.007	0.004	N/A	0.008	0.006	N/A	N/L
24	0.000	0.000	N/A	0.001	0.000	N/A	N/L
25	0.006	0.004	N/A	0.007	0.006	N/A	N/L

26	0.000	0.000	N/A	0.001	0.000	N/A	N/L
27	0.008	0.004	N/A	0.008	0.005	N/A	N/L
28	0.001	0.000	N/A	0.001	0.000	N/A	N/L
29	0.009	0.003	N/A	0.009	0.005	N/A	N/L
30	0.001	0.000	N/A	0.001	0.000	N/A	N/L
31	0.009	0.003	N/A	0.009	0.005	N/A	N/L
32	0.001	0.000	N/A	0.001	0.000	N/A	N/L
33	0.008	0.003	N/A	0.008	0.004	N/A	N/L
34	0.001	0.000	N/A	0.001	0.000	N/A	N/L
35	0.006	0.003	N/A	0.007	0.004	N/A	N/L
36	0.000	0.000	N/A	0.001	0.000	N/A	N/L
37	0.005	0.003	N/A	0.005	0.004	N/A	N/L
38	0.000	0.000	N/A	0.001	0.000	N/A	N/L
39	0.003	0.002	N/A	0.003	0.004	N/A	N/L
40	0.000	0.000	N/A	0.001	0.000	N/A	N/L

Note: The EUT power level is below 75.0 Watts and therefore has no defined limits

Voltage Source Verification Data (Run time)

EUT: Q27G40ZE **Tested by: Jackson**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/3/24 **Start time: 11:26:34** **End time: 11:29:16**
Test duration (min): 2.5 **Data file name: H-000443.cts_data**
Comment: Test Mode 4
Customer: 25031916707

Test Result: N/L **Source qualification: Normal**

Highest parameter values during test:

Voltage (Vrms):	**229.60**	**Frequency(Hz):**	**50.00**
I_Peak (Amps):	**1.054**	**I_RMS (Amps):**	**0.244**
I_Fund (Amps):	**0.111**	**Crest Factor:**	**4.329**
Power (Watts):	**24.5**	**Power Factor:**	**0.449**

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.169	0.459	36.73	OK
3	0.524	2.066	25.34	OK
4	0.118	0.459	25.67	OK
5	0.022	0.918	2.40	OK
6	0.135	0.459	29.49	OK
7	0.052	0.689	7.60	OK
8	0.060	0.459	12.98	OK
9	0.021	0.459	4.58	OK
10	0.033	0.459	7.11	OK
11	0.046	0.230	20.04	OK
12	0.021	0.230	9.03	OK
13	0.032	0.230	14.13	OK
14	0.013	0.230	5.65	OK
15	0.034	0.230	14.85	OK
16	0.016	0.230	6.98	OK
17	0.019	0.230	8.42	OK
18	0.017	0.230	7.55	OK
19	0.022	0.230	9.70	OK
20	0.021	0.230	9.33	OK
21	0.007	0.230	3.15	OK
22	0.010	0.230	4.48	OK
23	0.013	0.230	5.75	OK
24	0.006	0.230	2.66	OK
25	0.011	0.230	4.93	OK
26	0.009	0.230	3.87	OK

27	0.010	0.230	4.29	OK
28	0.008	0.230	3.35	OK
29	0.016	0.230	6.91	OK
30	0.006	0.230	2.74	OK
31	0.011	0.230	4.82	OK
32	0.007	0.230	2.91	OK
33	0.016	0.230	6.77	OK
34	0.003	0.230	1.33	OK
35	0.009	0.230	3.90	OK
36	0.003	0.230	1.51	OK
37	0.011	0.230	4.64	OK
38	0.003	0.230	1.46	OK
39	0.003	0.230	1.51	OK
40	0.013	0.230	5.48	OK

Voltage Fluctuations and Flicker

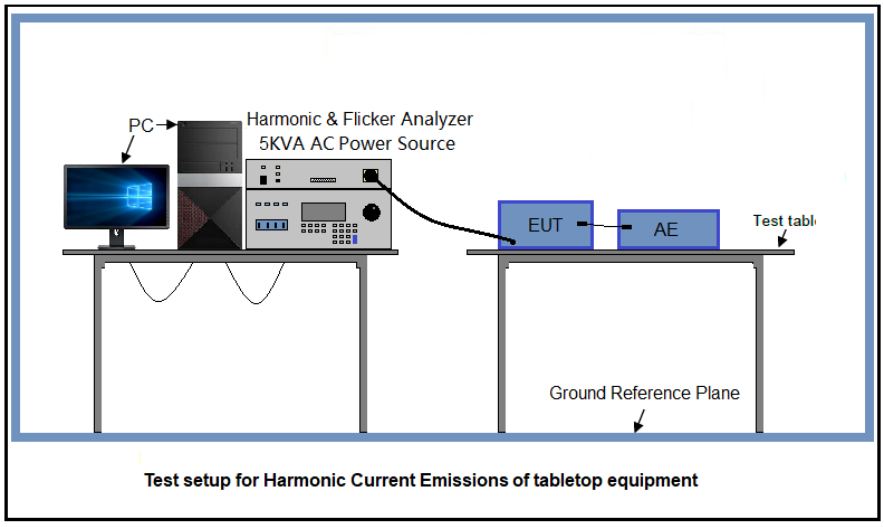
Test Requirement: EN 61000-3-3:2013/A1:2019/A2:2021,Clause 4

Test Method: EN 61000-3-3:2013/A1:2019/A2:2021,Clause 4

Limit:

The following limits apply	
dt > 3.3 % (ms)	shall not exceed 500 ms
d_c (%)	shall not exceed 3.3 %
d_{max} (%)	shall not exceed 4 %
P_{st} (10 min. period)	shall not be greater than 1.0
P_{it} (2 hr. period)	shall not be greater than 0.65

Test Setup:



Test setup for Harmonic Current Emissions of tabletop equipment

Test Procedures:

Refer to clause 4 of IEC 61000-3-3

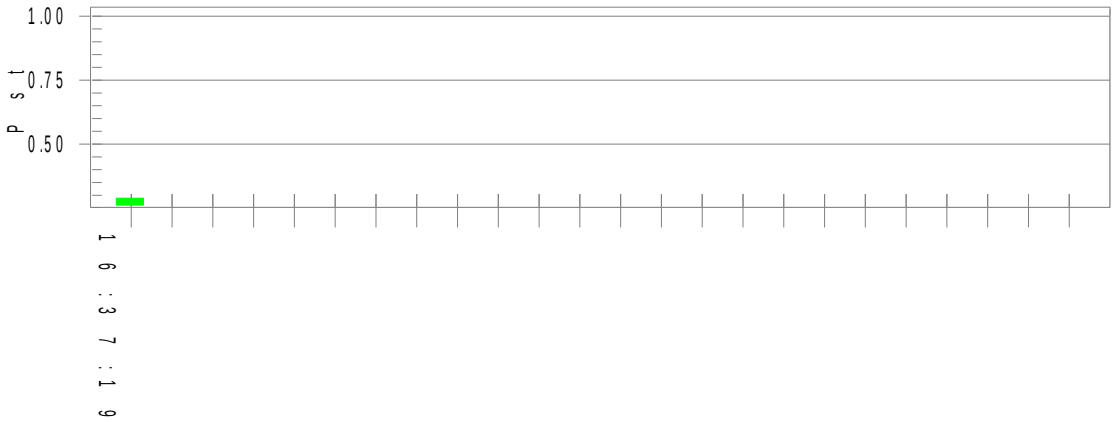
Equipment Used: Refer to section 3 for details.

Test Result: Pass

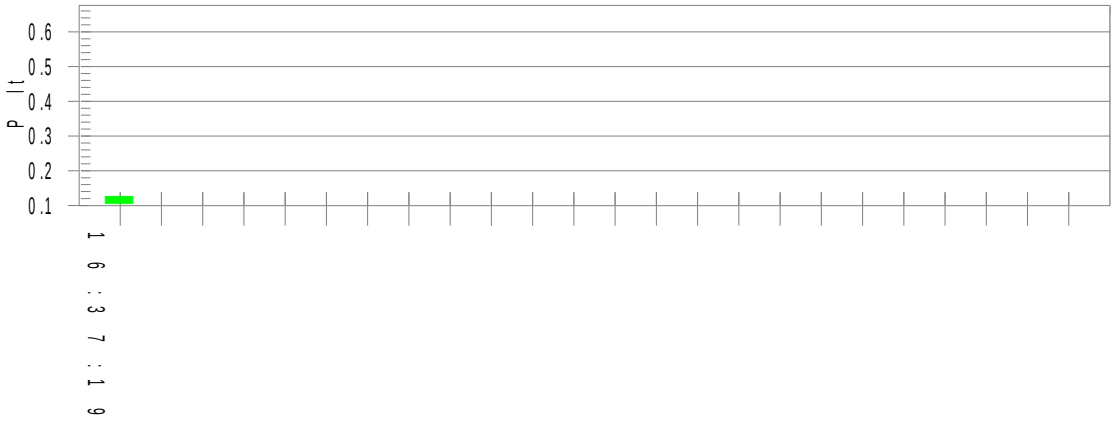
The worst measurement data as follows:

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.54**			
Highest dt (%):		**Test limit (%):**		
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.288**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.126**	**Test limit:**	**0.650**	**Pass**

6.2.2. Radiated Emission

Test Requirement: EN 55032:2015/A11:2020,Clause 5

Test Method: EN 55032:2015/A11:2020,Clause 6

Receiver Setup:

Frequency: (f) (MHz)	Detector type	Measurement receiver bandwidth	
		RBW	VBW
30 ≤ f ≤ 1 000	Quasi Peak	120 kHz	300 kHz
f ≥1000	Peak	1 MHz	3 MHz
	Average	1 MHz	3 MHz

Measured frequency range

Table 1 – Required highest frequency for radiated measurement	
Highest internal frequency (Fx)	**Highest measured frequency**
Fx ≤ 108 MHz	1 GHz
108 MHz < Fx ≤ 500 MHz	2 GHz
500 MHz < Fx ≤ 1 GHz	5 GHz
Fx > 1 GHz	5 × Fx up to a maximum of 6 GHz
NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies. NOTE 2 Fx is defined in 3.1.18. NOTE 3 For outdoor units of home satellite receiving systems highest measured frequency shall be 18 GHz.	

Limit:

Class A

Table A.2 – Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Table clause	Frequency range (MHz)	Measurement receiver bandwidth			Class A limits dB(μV/m)
		Facility (see Table A.1)	Distance (m)	Detector type / bandwidth	
A2.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	40
	230 to 1 000				47
A2.2	30 to 230	OATS/SAC	3		50
	230 to 1 000				57
A2.3	30 to 230	FAR	10	Quasi Peak / 120 kHz	42 to 35
	230 to 1 000				42
A2.4	30 to 230	FAR	3		52 to 45
	230 to 1 000				52
Apply only A2.1 or A2.2 or A2.3 or A2.4 across the entire frequency range.					

Table A.3 – Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Table clause	Frequency range (MHz)	Measurement receiver bandwidth			Class A limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A3.1	1 000 to 3 000	FSOATS	3	Average / 1 MHz	56
	3 000 to 6 000				60
A3.2	1 000 to 3 000			Peak / 1 MHz	76
	3 000 to 6 000				80
Apply A3.1 and A3.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.					

Class B

Table A.4 – Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

Table clause	Frequency range (MHz)	Measurement receiver bandwidth			Class B limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A4.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	30
	230 to 1 000				37
A4.2	30 to 230	OATS/SAC	3		40
	230 to 1 000				47
A4.3	30 to 230	FAR	10	Quasi Peak / 120 kHz	32 to 25
	230 to 1 000				32
A4.4	30 to 230	FAR	3		42 to 35
	230 to 1 000				42
Apply only table clause A4.1 or A4.2 or A4.3 or A4.4 across the entire frequency range. These requirements are not applicable to the local oscillator and harmonics frequencies of equipment covered by Table A.6.					

Table A.5 – Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

Table clause	Frequency range (MHz)	Measurement receiver bandwidth			Class B limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A5.1	1 000 to 3 000	FSOATS	3	Average / 1 MHz	50
	3 000 to 6 000				54
A5.2	1 000 to 3 000			Peak / 1 MHz	70
	3 000 to 6 000				74
Apply A5.1 and A5.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.					

Test Setup:

Test setup for radiated emissions of tabletop equipment

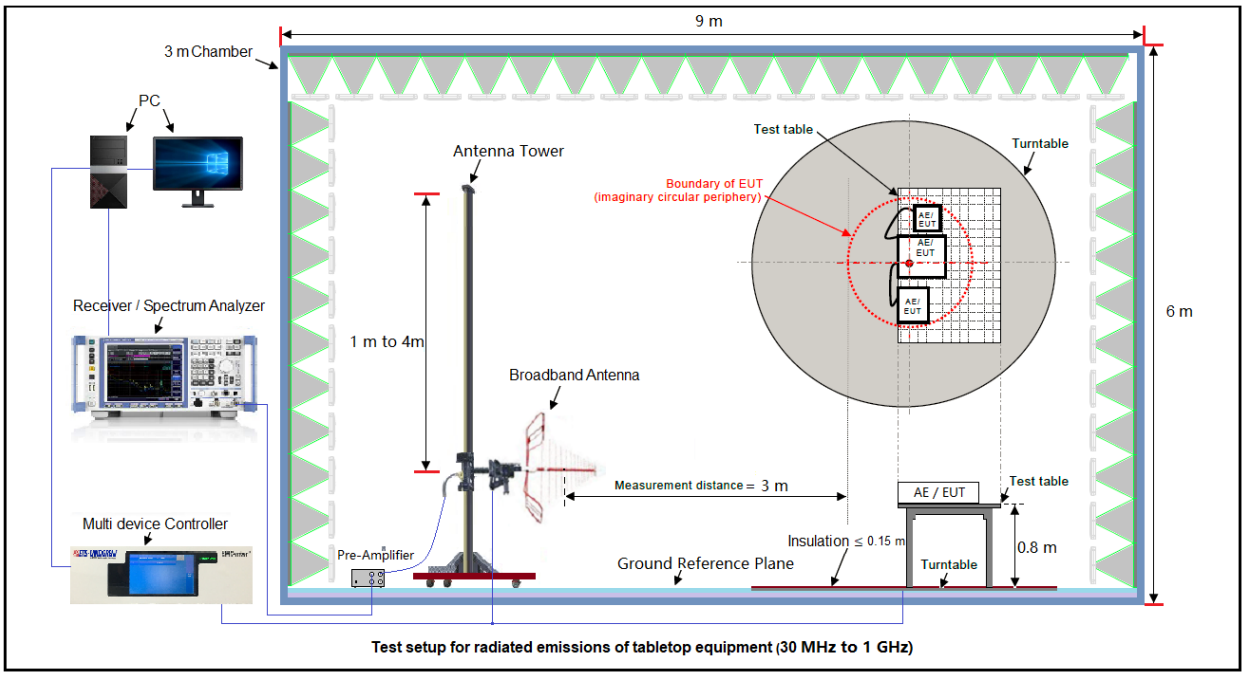


Figure 1. 30 MHz to 1 GHz @3 Meter test distance

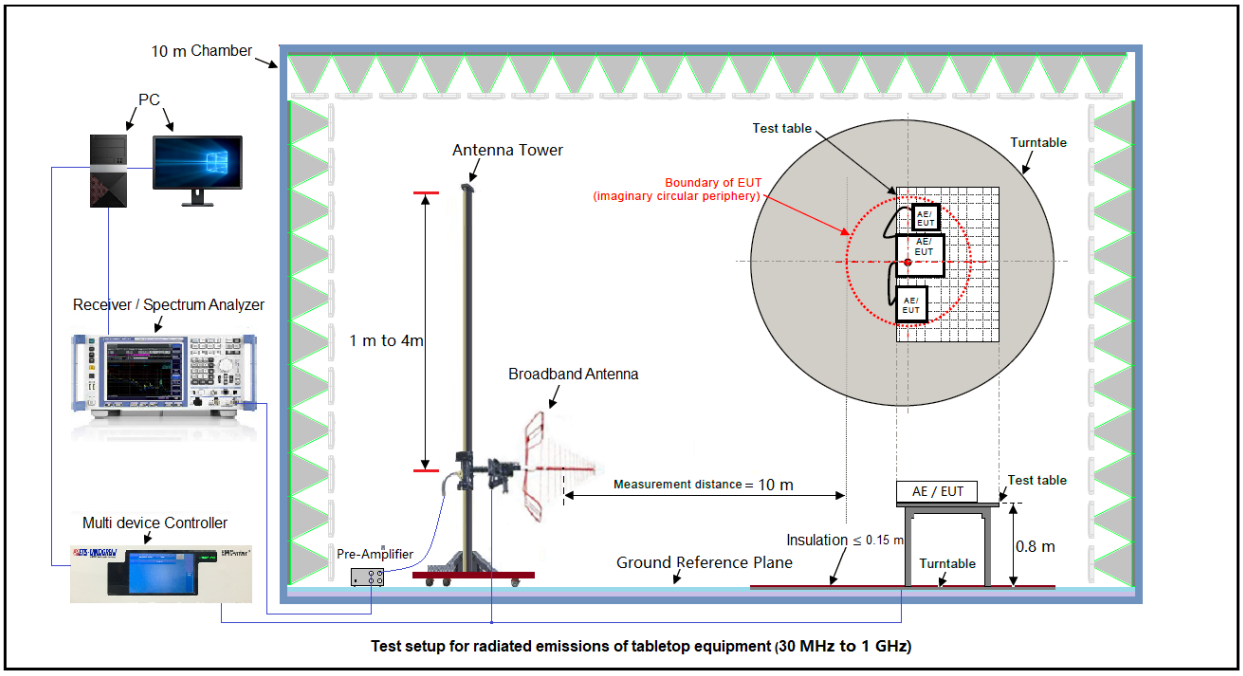


Figure 1. 30 MHz to 1 GHz @10 Meter test distance

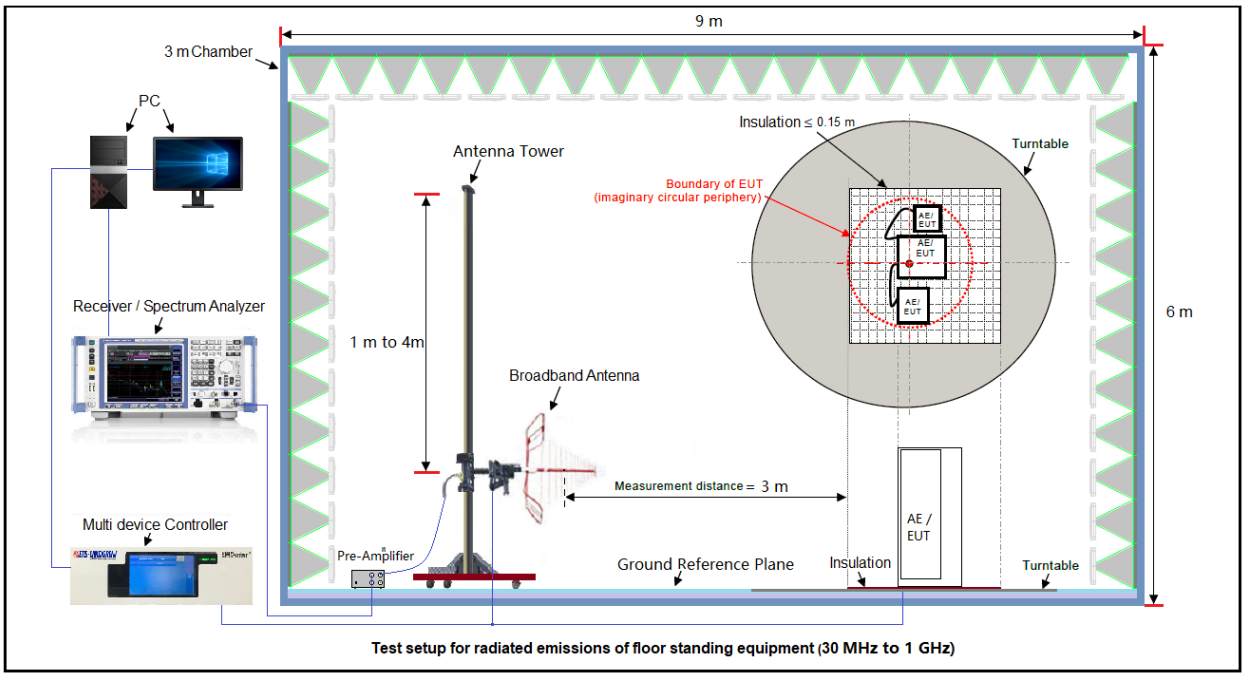


Figure 3. Above 1 GHz

Test Procedures:

1. From 30 MHz to 1GHz test procedure as below:

1) The radiated emissions were tested in a semi-anechoic chamber.
2) The Product was placed on the non-conductive turntable 0.8 m above the ground at a chamber.
3) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
4) For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector

and specified bandwidth with Maximum Hold Mode, and record the maximum value.

2. Above 1GHz test procedure as below:

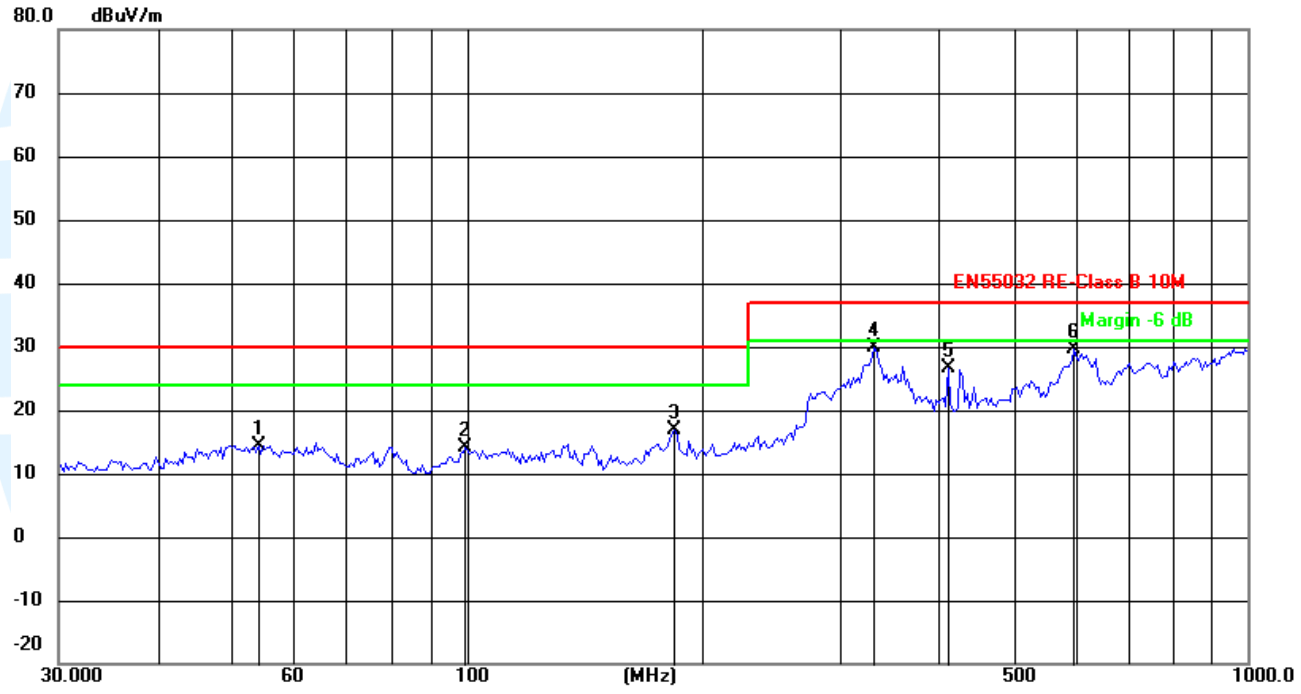
1) The radiated emissions were tested in a fully Anechoic Chamber.
2) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
3) For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

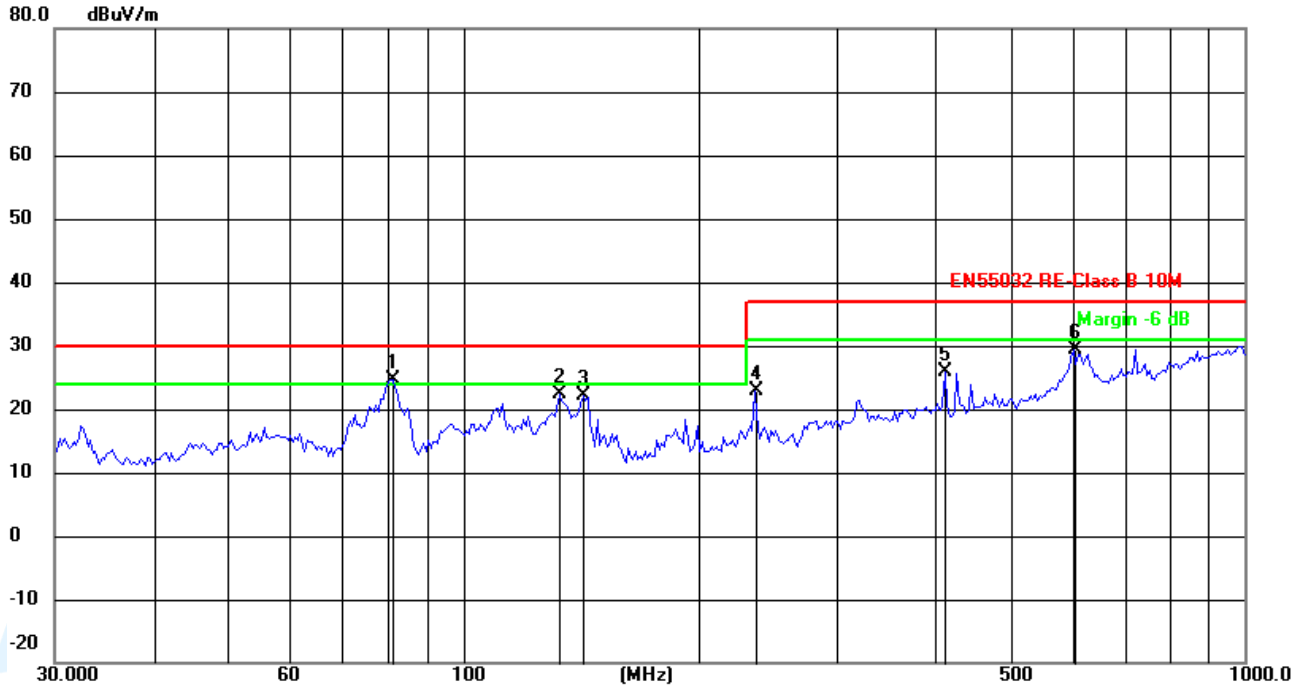
The worst measurement data as follows:

Below 1GHz(Quasi Peak): 10 Meter test distance
Test Mode 4
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		54.0710	27.07	-12.57	14.50	30.00	-15.50	peak	100	77	
2		99.5281	27.71	-13.56	14.15	30.00	-15.85	peak	100	145	
3		184.4898	31.12	-14.26	16.86	30.00	-13.14	peak	200	120	
4	*	332.5187	38.74	-8.97	29.77	37.00	-7.23	peak	200	120	
5		413.2706	34.40	-7.86	26.54	37.00	-10.46	peak	200	360	
6		599.3212	32.75	-3.08	29.67	37.00	-7.33	peak	100	359	

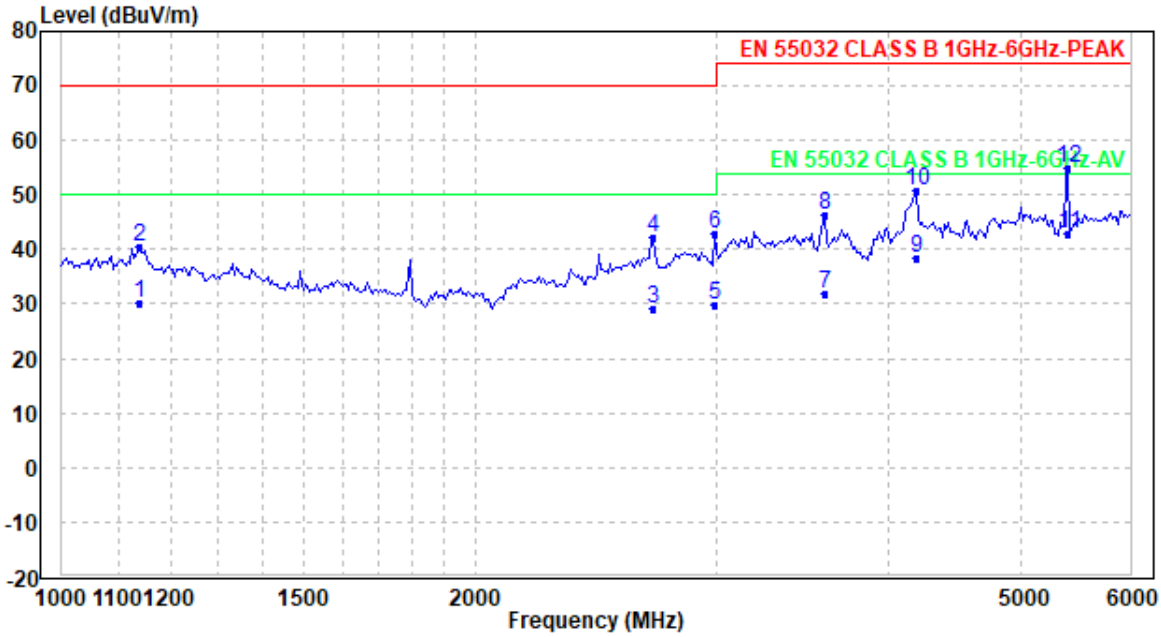
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1	*	80.6442	40.95	-16.24	24.71	30.00	-5.29	peak	100	75	
2		132.6850	37.75	-15.47	22.28	30.00	-7.72	peak	100	360	
3		142.3243	37.74	-15.52	22.22	30.00	-7.78	peak	100	2	
4		235.8164	35.05	-12.08	22.97	37.00	-14.03	peak	100	239	
5		413.2706	33.79	-7.86	25.93	37.00	-11.07	peak	100	84	
6		603.5392	33.11	-3.67	29.44	37.00	-7.56	peak	200	360	

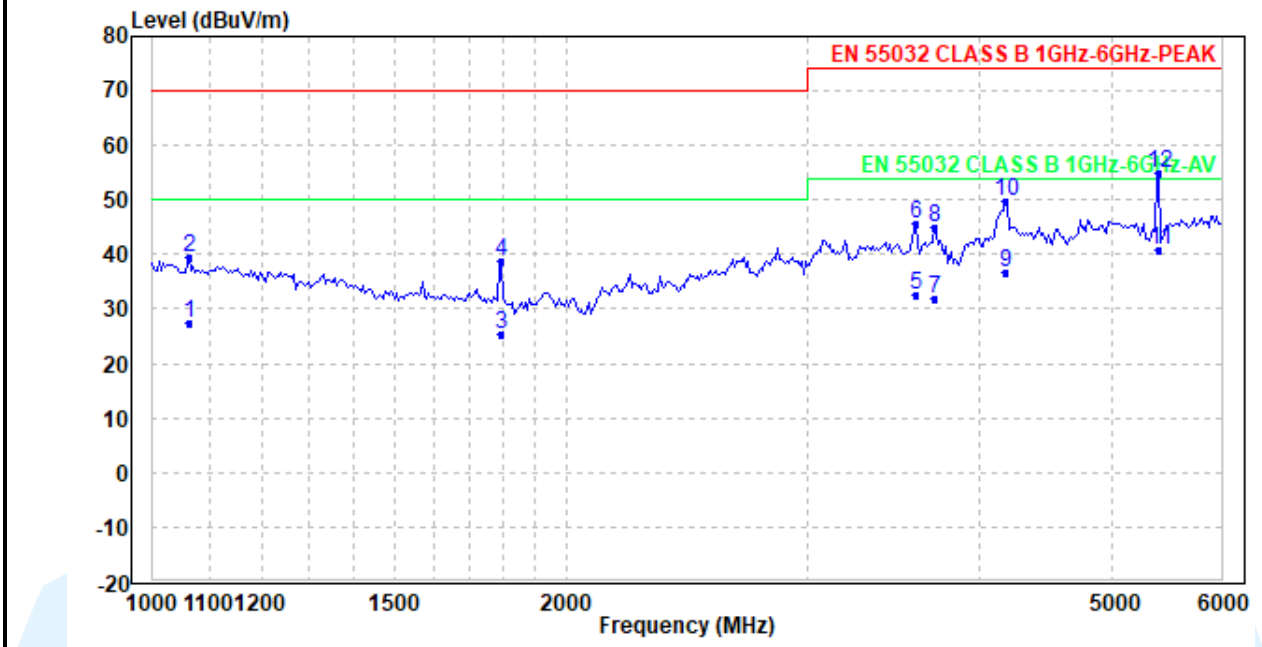
Remark: The testing of Radiated Emissions @10 Meter test distance was performed in Centre Testing International Group Co., Ltd.

Test Mode 4_1000-6000MHz_Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1137.992	43.22	-12.97	30.25	50.00	-19.75	Average
2	1137.992	53.34	-12.97	40.37	70.00	-29.63	Peak
3	2694.017	36.45	-7.37	29.08	50.00	-20.92	Average
4	2694.017	49.59	-7.37	42.22	70.00	-27.78	Peak
5	2989.672	35.88	-6.10	29.78	50.00	-20.22	Average
6	2989.672	49.01	-6.10	42.91	70.00	-27.09	Peak
7	3590.492	36.84	-4.81	32.03	54.00	-21.97	Average
8	3590.492	50.99	-4.81	46.18	74.00	-27.82	Peak
9	4189.953	41.17	-2.63	38.54	54.00	-15.46	Average
10	4189.953	53.30	-2.63	50.67	74.00	-23.33	Peak
11	5406.647	43.93	-1.09	42.84	54.00	-11.16	Average
12	5406.647	56.05	-1.09	54.96	74.00	-19.04	Peak

Test Mode 4_1000-6000MHz_Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1062.943	40.42	-12.94	27.48	50.00	-22.52	Average
2	1062.943	52.54	-12.94	39.60	70.00	-30.40	Peak
3	1795.501	36.47	-11.00	25.47	50.00	-24.53	Average
4	1795.501	49.61	-11.00	38.61	70.00	-31.39	Peak
5	3590.492	37.46	-4.81	32.65	54.00	-21.35	Average
6	3590.492	50.59	-4.81	45.78	74.00	-28.22	Peak
7	3708.419	36.07	-4.25	31.82	54.00	-22.18	Average
8	3708.419	49.20	-4.25	44.95	74.00	-29.05	Peak
9	4174.935	39.31	-2.64	36.67	54.00	-17.33	Average
10	4174.935	52.45	-2.64	49.81	74.00	-24.19	Peak
11	5406.647	42.03	-1.09	40.94	54.00	-13.06	Average
12	5406.647	56.18	-1.09	55.09	74.00	-18.91	Peak

Remark:
1. Correct Factor = Antenna Factor + Cable Loss - Amplifier, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits.
5. All possible modes of operation were investigated. Only the worst-case emissions reported.

6.2.3. Conducted Emission (AC mains power ports)

Test Requirement: EN 55032:2015/A11:2020,Clause 5

Test Method: EN 55032:2015/A11:2020,Clause 6

Limit:

Class A

Table A.9 – Requirements for conducted emissions from the AC mains power ports of Class A equipment

Table clause	Frequency range (MHz)	Coupling device (see Table A.8)	Detector type / bandwidth	Class A limits dB(μV)
A9.1	0.15 to 0.5	AMN	Quasi Peak / 9 kHz	79
	0.5 to 30			73
A9.1	0.15 to 0.5	AMN	Average / 9 kHz	66
	0.5 to 30			60
Apply A9.1 and A9.2 across the entire frequency range.				

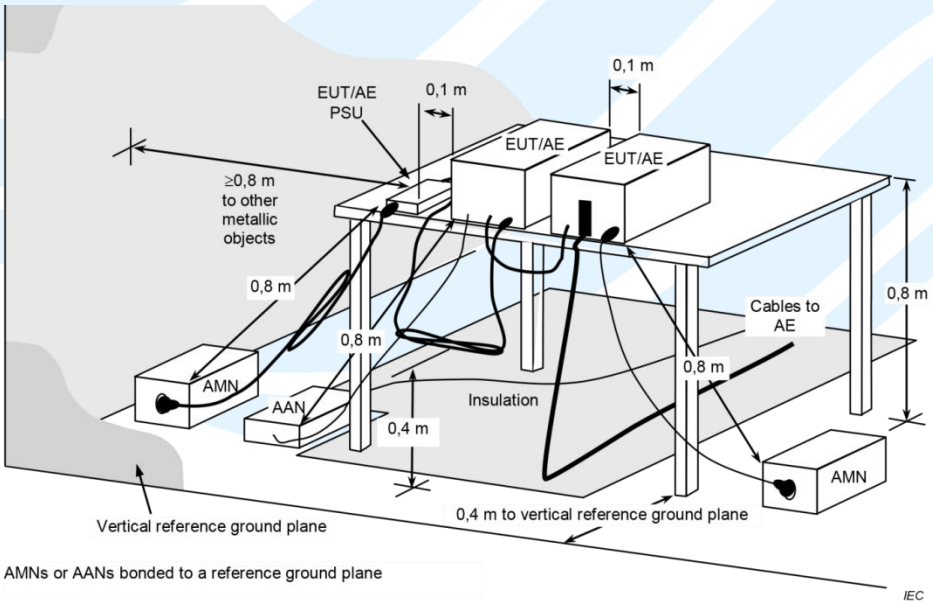
Class B

Table A.10 – Requirements for conducted emissions from the AC mains power ports of Class B equipment

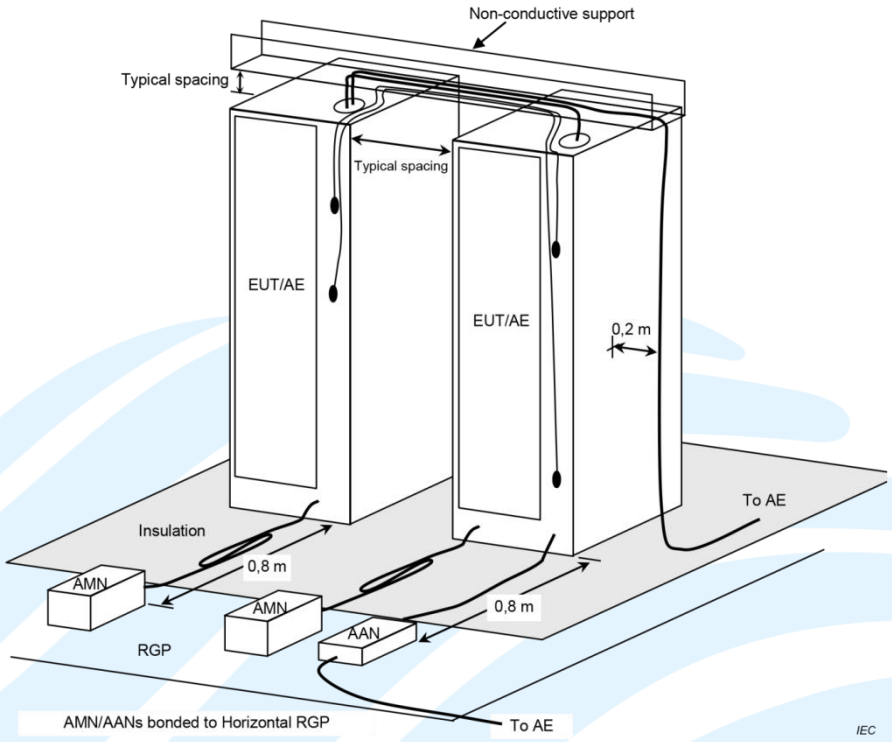
Table clause	Frequency range (MHz)	Coupling device (see Table A.8)	Detector type / bandwidth	Class A limits dB(μV)
A10.1	0.15 to 0.5	AMN	Quasi Peak / 9 kHz	66 to 56
	0.5 to 5			56
	5 to 30			60
A10.1	0.15 to 0.5	AMN	Average / 9 kHz	56 to 46
	0.5 to 5			46
	5 to 30			50
Apply A10.1 and A10.2 across the entire frequency range.				

Test Setup:

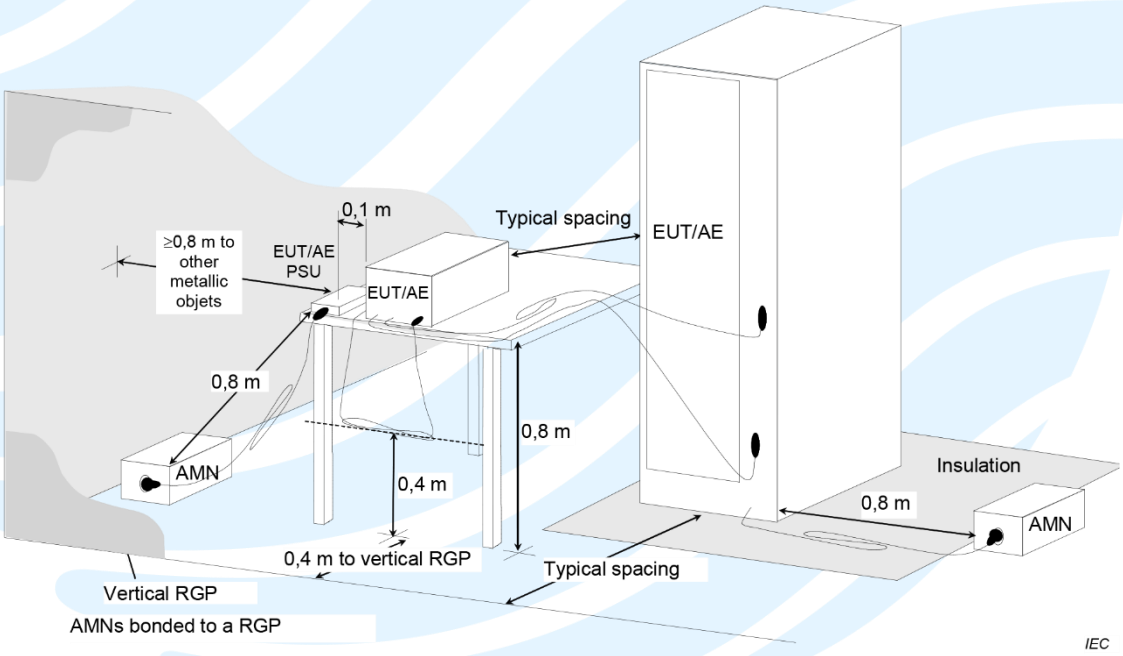
Test setup for conducted emissions of tabletop equipment



Test setup for conducted emissions of floor standing equipment



Test setup for conducted emissions of combinations equipment



Test Procedures:

1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The table top EUT was placed upon a non-metallic table 0.8 m or 0.1 m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from

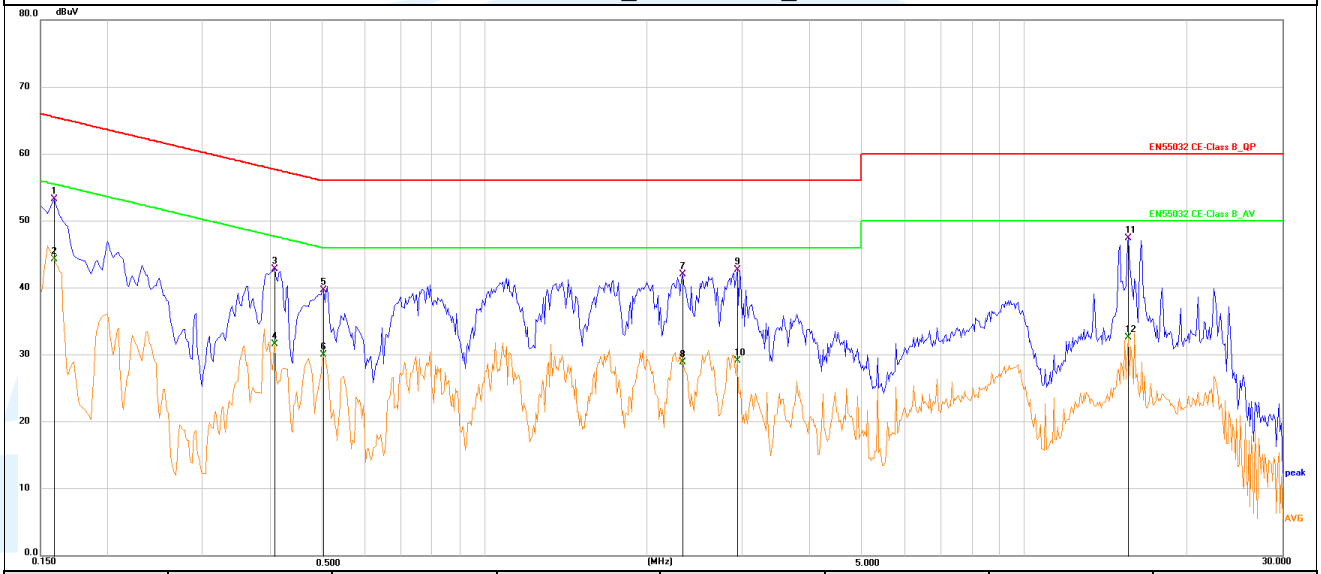
the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m or 0.1 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

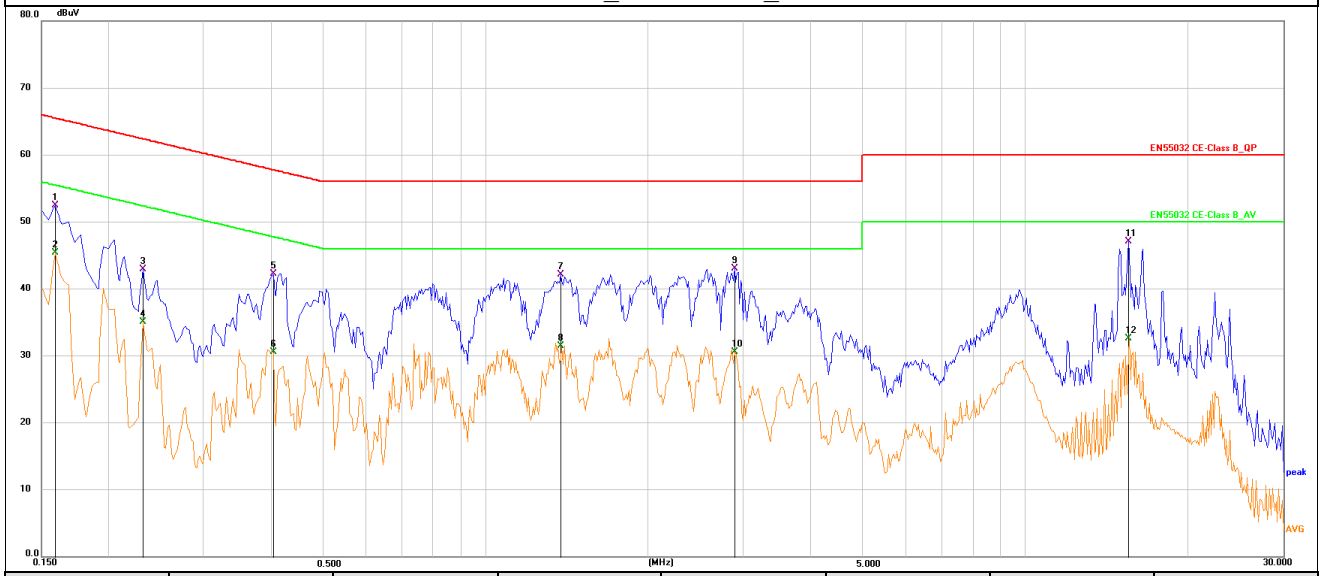
The worst measurement data as follows:

Test Mode 4_0.15-30MHz_Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1590	43.36	9.83	53.19	65.52	-12.33	QP
2	0.1590	34.45	9.83	44.28	55.52	-11.24	AVG
3	0.4063	33.02	9.79	42.81	57.72	-14.91	QP
4	0.4063	21.77	9.79	31.56	47.72	-16.16	AVG
5	0.5010	29.82	9.79	39.61	56.00	-16.39	QP
6	0.5010	20.25	9.79	30.04	46.00	-15.96	AVG
7	2.3235	32.28	9.72	42.00	56.00	-14.00	QP
8	2.3235	19.22	9.72	28.94	46.00	-17.06	AVG
9	2.9310	33.01	9.73	42.74	56.00	-13.26	QP
10	2.9310	19.36	9.73	29.09	46.00	-16.91	AVG
11	15.6030	37.63	9.82	47.45	60.00	-12.55	QP
12	15.6030	22.79	9.82	32.61	50.00	-17.39	AVG

Test Mode 4_0.15-30MHz_Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1590	42.69	9.82	52.51	65.52	-13.01	QP
2	0.1590	35.56	9.82	45.38	55.52	-10.14	AVG
3	0.2310	33.13	9.78	42.91	62.41	-19.50	QP
4	0.2310	25.33	9.78	35.11	52.41	-17.30	AVG
5	0.4020	32.40	9.79	42.19	57.81	-15.62	QP
6	0.4020	20.73	9.79	30.52	47.81	-17.29	AVG
7	1.3785	32.39	9.75	42.14	56.00	-13.86	QP
8	1.3785	21.71	9.75	31.46	46.00	-14.54	AVG
9	2.8950	33.33	9.75	43.08	56.00	-12.92	QP
10	2.8950	20.77	9.75	30.52	46.00	-15.48	AVG
11	15.5490	37.31	9.78	47.09	60.00	-12.91	QP
12	15.5490	22.79	9.78	32.57	50.00	-17.43	AVG

Remark:
1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.
5. All possible modes of operation were investigated. Only the worst-case emissions reported.

6.3. IMMUNITY

6.3.1. Power frequency magnetic field

Test Requirement: EN 55035:2017/A11:2020,Table Clause 1.1

Test Method: IEC 61000-4-8:2009,Table Clause 1.1

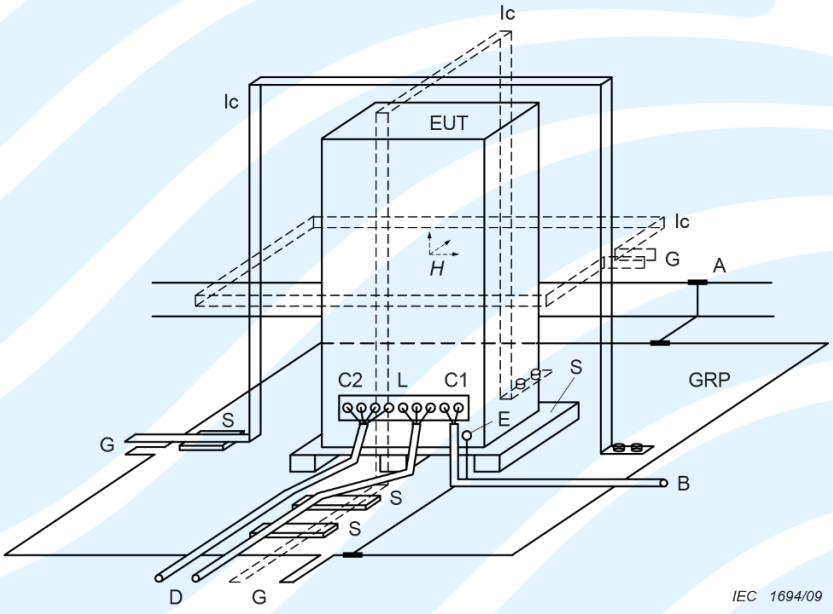
Criterion Required: Performance criteria A

Frequency Field Strength: Level 2: 1 A/m (rms)

Frequency 50Hz or 60Hz

Test Setup:

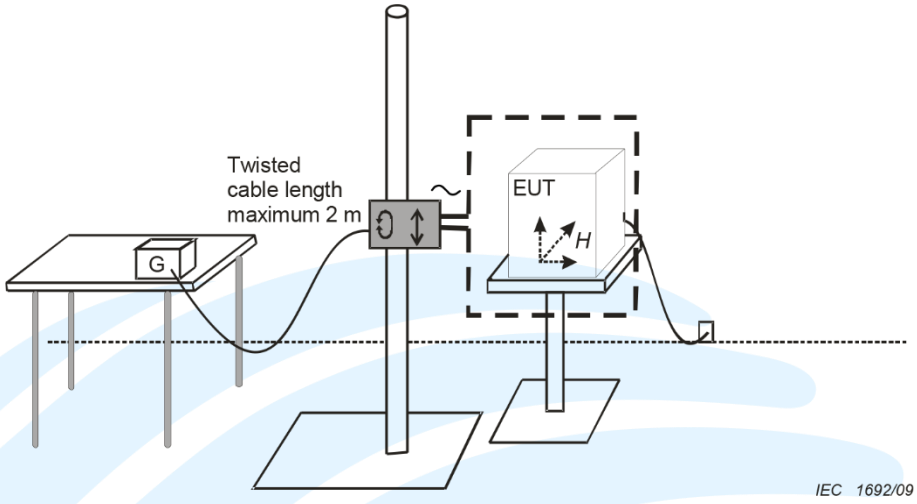
Test setup for floor-standing equipment



Components

GRP	Ground plane	C1	Power supply circuit
A	Safety earth	C2	Signal circuit
S	Insulating support	L	Communication line
EUT	Equipment under test	B	To power supply source
Ic	Inductive coil	D	To signal source, simulator
E	Earth terminal	G	To the test generator

Test set-up for table-top equipment



Test Procedures:

The Product and support units were located on a table, 0.8m away from ground floor.

The Product is configured and connected to satisfy its functional requirements. It shall be place on the GRP with the interposition of a 0.1m thickness insulating support (e.g. dry wood)

Setting the parameter of tests and then perform the test software of test simulator.

The induction coil shall enclose the Product placed at its centre.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

Test Level	Testing Duration	Coil Orientation	Result (Pursuant to EN55035 Criterion A)
1A/m	1min/coil	X	A
1A/m	1min/coil	Y	A
1A/m	1min/coil	Z	A

Observation:

☒ No observable change.

☐ During the experiment, the following phenomena occurred:

Conclusion: The EUT met the requirements of the standard

Remark: The testing of Power frequency magnetic field was performed in Centre Testing International Group Co., Ltd.

6.3.2. Continuous RF electromagnetic field disturbances

Test Requirement: EN 55035:2017/A11:2020,Table Clause 1.2,Table Clause 1.3

Test Method: IEC 61000-4-3:2006+AMD2:2010,Table Clause 1.2, Table Clause 1.3

Criterion Required: performance criteria A

Frequency range: swept test: 80 MHz to 1 000 MHz
spot test: 1 800 MHz, 2 600 MHz, 3 500 MHz, 5 000 MHz

Test Level: Level 2: 3 V/m(measured unmodulated)

Modulation: 1 kHz Sine wave, 80 % Amp. Modulation, audio signal of 400 Hz

Frequency Step: 1 % increment

Dwell time: 1 seconds

Polarity Antenna: Horizontal and vertical

Test Setup:

Test setup for Continuous RF electromagnetic field disturbances, swept test and spot test of tabletop equipment

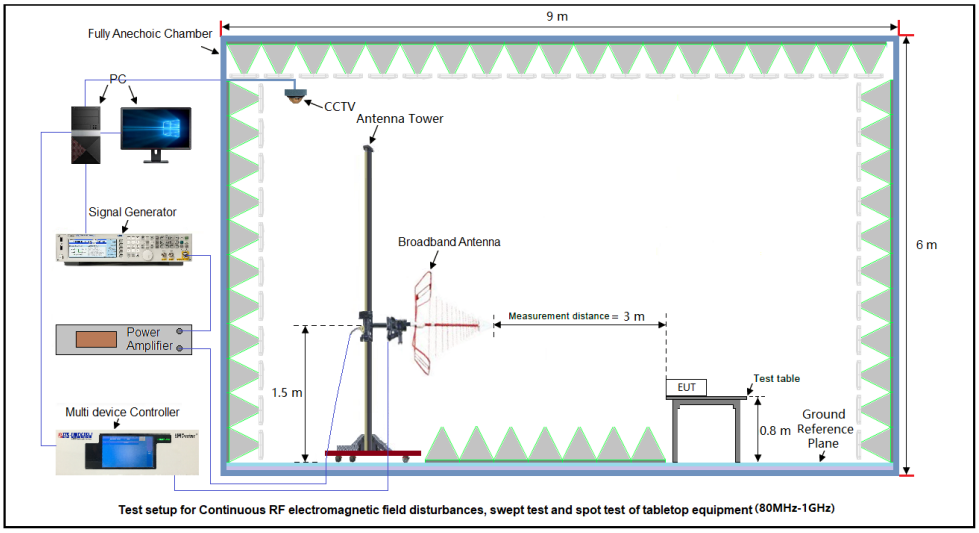


Figure 1. 80 MHz to 1 GHz

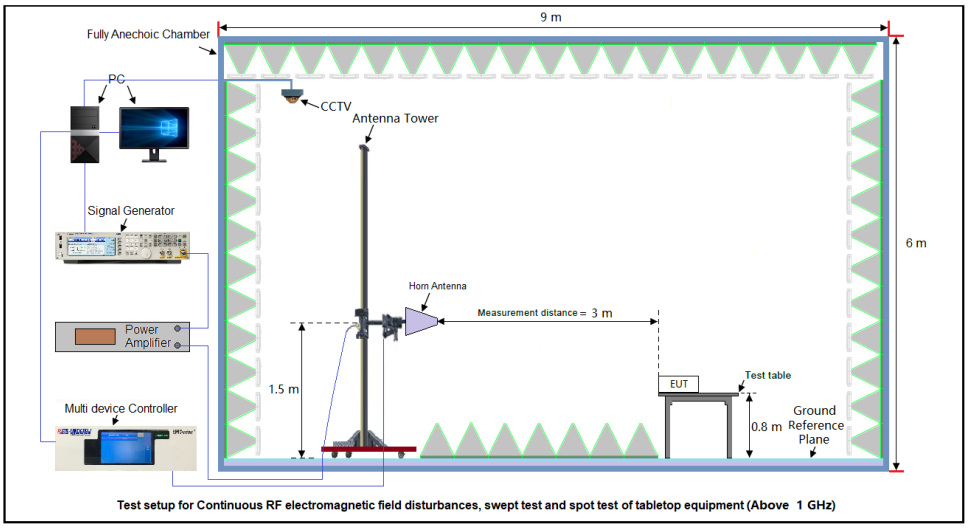
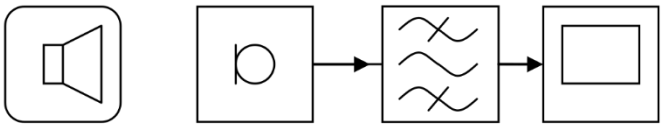


Figure 2. Above 1 GHz

Test setup for acoustic measurements



IEC

Test Procedures:

1) For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items.
2) If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate center of the cable to form a bundle 30 cm to 40 cm in length.
3) The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area).
4) The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary. Where the frequency range was swept incrementally, the step size was not exceed 10 % of the preceding frequency value.
5) The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0.5 s.
6) The test normally was performed with the generating antenna facing each side of the EUT.
7) The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally.
8) The EUT was performed in a configuration to actual installation conditions, a video camera and/or an audio monitor were used to monitor the performance of the EUT.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

EUT Face	Frequency	Level	Result (Pursuant to EN 55035 Criterion A)
Front	Swept test: 80 MHz to 1 000 MHz Spot test: 1.8 GHz, 2.6 GHz, 3.5 GHz, 5.0 GHz	3 V/m	A
Back			A
Left			A
Right			A
Top			A
Under			A

Observation:

☐ No observable change.

☒ The audio output signal level was monitored during test and was found to be at least 20dB less than the reference level recorded before the start of the test.

☐ During the experiment, the following phenomena occurred:

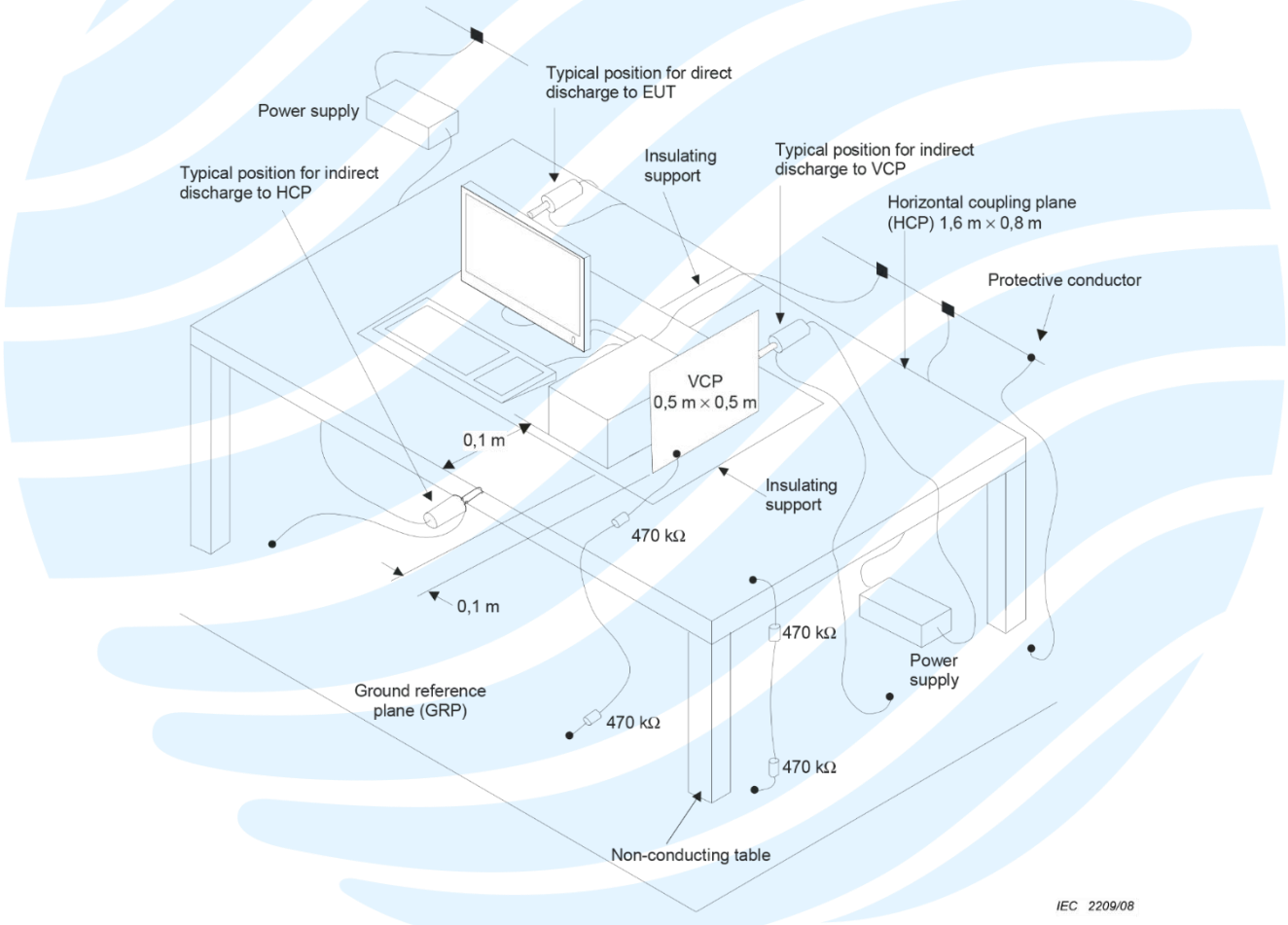
Conclusion: The EUT met the requirements of the standard.

6.3.3. Electrostatic Discharge

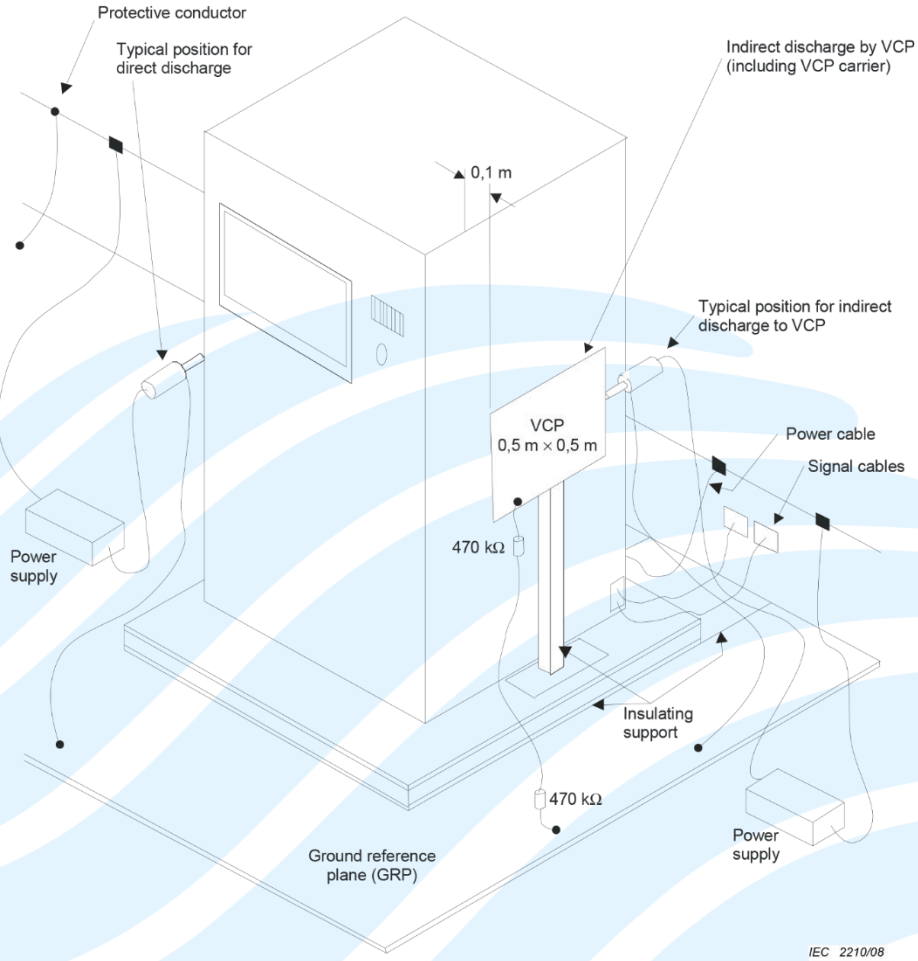
Test Requirement:	EN 55035:2017/A11:2020,Table Clause 1.4
Test Method:	IEC 61000-4-2:2008,Table Clause 2.1
Criterion Required:	Performance criteria B
Discharge Impedance:	330 Ω / 150 pF
Polarity:	Positive & Negative
Number of Discharge:	Minimum 10 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Test Level:	Contact discharge: Level 2, ±4 kV Air discharge: Level 3, ±8 kV

Test Setup:

Test set-up for table-top equipment



Test setup for floor-standing equipment



Test Procedures:

1) Electrostatic discharges shall be applied only to points and surfaces of the EUT which are expected to be touched during normal operation, including user access operations specified in the user manual, for example cleaning or adding consumables when the EUT is powered. The application of discharges to the contacts of open connectors is not required.

   When applying direct discharges to a portable or handheld battery- powered EUT with a display screen, it may not be possible to observe the screen for a given EUT orientation. If observation of the screen is necessary during this test, the EUT may be mounted vertically using non - metallic supports.
2) The EUT was put on a 0.8m high wooden table for table-top equipment or 0.1m high for floor standing equipment standing on the ground reference plane (GRP).
3) A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size & HCP were constructed from the same material type & think mess as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end. The distance between EUT and any of the other metallic surface excepted the GRP, HCP and VCP was greater than 1m.
4) During the contact discharges, the tip of the discharge electrode was touch the EUT before the discharge switch is operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT.
5) After each discharge, the ESD generator was removed from the EUT, the generator was then retriggered for a new single discharge. For ungrounded product, a discharge cable with two resistances was used after each discharge to remove remnant electrostatic voltage. 10 times of each polarity single discharge were applied to HCP and VCP.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

Discharge Type	Applied Voltage	Pulse No.	Result (Pursuant to performance criteria B)
Contact Discharge	± 4 kV	10 for every level	B
Air Discharge	± 8 kV		B
Indirect HCP Discharge	± 4 kV		A
Indirect VCP Discharge			A

Observation:

☐ No observable change.

☒ During the experiment, the following phenomena occurred:

During the test, Contact Discharge on the HDMI Ports and DP Port, the EUT screen flashes. After the test is automatically restored.

During the test, Air Discharge on the Screen edge, the EUT screen flashes. After the test is automatically restored.

Conclusion: The EUT met the requirements of the standard

6.3.4. Continuous induced RF disturbances (AC mains power ports)

Test Requirement: EN 55035:2017/A11:2020,Table Clause 4.1

Test Method: IEC 61000-4-6:2008,Table Clause 4.1

Criterion Required: Performance criteria A

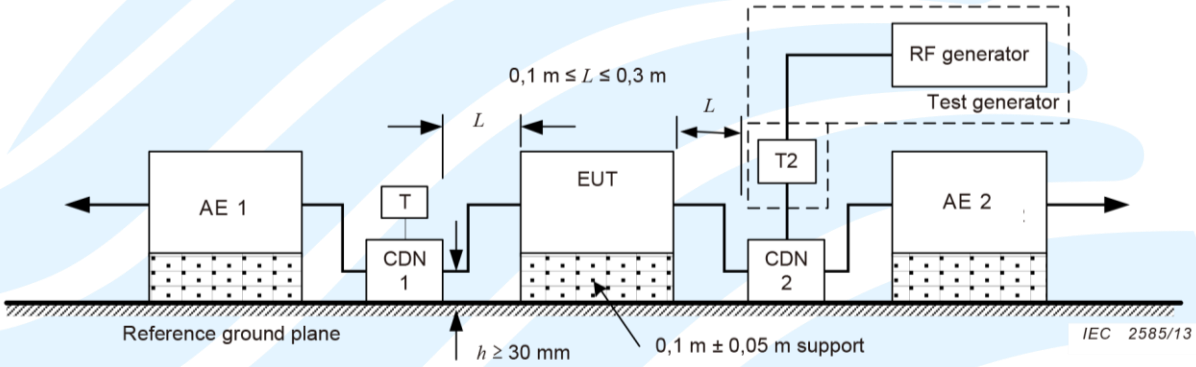
Test Level: 0.15 MHz to 10 MHz: 3 V (r.m.s)
10 MHz to 30 MHz: 3 to 1 V (r.m.s)
30 MHz to 80 MHz: 1 V (r.m.s)

Modulation: 80%, 1kHz Amplitude Modulation

Step Size: 1% increment

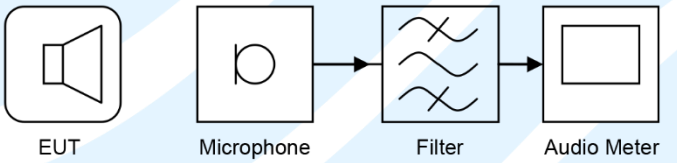
Dwell Time: 1s

Test Setup:



Schematic setup for immunity test used for CDN

Test setup for acoustic measurements



Test Procedures:

1) The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
2) The frequency range is swept from 150 kHz to 80MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5 x 10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
1) The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

Test Ports	Frequency	Test Level	Result (Pursuant to performance criteria A)
AC mains power ports	0.15 MHz to 10 MHz	3 V	A
	10 MHz to 30 MHz	3 to 1 V	A
	30 MHz to 80 MHz	1 V	A

Observation:

☐ No observable change.

☒ The audio output signal level was monitored during test and was found to be at least 20dB less than the reference level recorded before the start of the test.

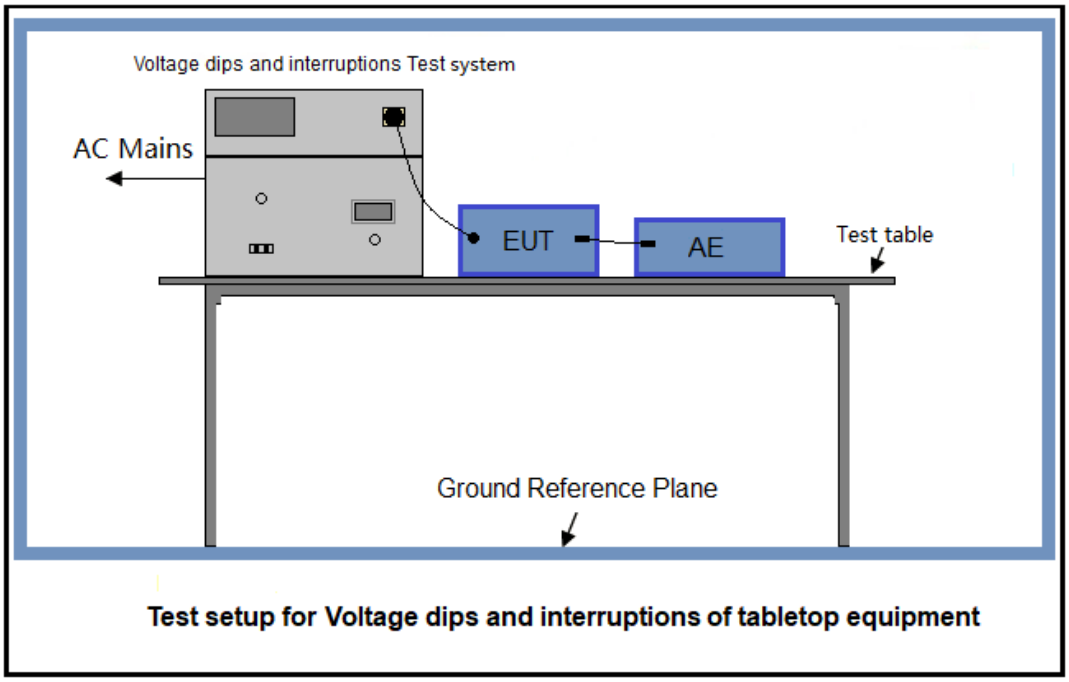
☐ During the experiment, the following phenomena occurred:

Conclusion: The EUT met the requirements of the standard.

6.3.5. Voltage dips and Voltage interruptions (AC mains power ports)

Test Requirement:	EN 55035:2017/A11:2020,Table Clause 4.2,Table Clause 4.3
Test Method:	The test method shall be in accordance with EN 61000-4-11
Criterion Required:	Voltage dips: performance criteria B or C Interruptions: performance criteria C
Test Port :	AC mains power port
Test Level:	>95 % reduction: 0,5 period >30 % reduction: 25 period for 50Hz / 30 period for 60Hz >95 % reduction: 250 period for 50Hz / 300 period for 60Hz
No. of Dips / Interruptions:	3 per Level
Interval between Event:	Minimum 10 seconds
Phase Angle:	0°/45°/90°/135°/180°/225°/270°/315°

Test Setup:



Test setup for Voltage dips and interruptions of tabletop equipment

Test Procedures:

1) The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2) The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer.
3) The EUT was tested for each selected combination of test level and duration with a sequence of three dips /interruptions with intervals of 10 s minimum. Each representative mode of operation was tested.
4) For EUT with more than one power cord, each power cord was tested individually.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

Test Level in %UT	Period	Result (Pursuant to performance criteria B)
0	0.5	A
Test Level in %UT	**Period**	**Result (Pursuant to performance criteria C)**
70	25 for 50 Hz 30 for 60 Hz	A
0	250 for 50 Hz 300 for 60 Hz	B

Observation:

☐ No observable change.

☒ During the experiment, the following phenomena occurred:
EUT turned off at 0%UT test level with 250/300 cycles (at 50/60Hz) duration and it could resume to normal after the test.

Conclusion: The EUT met the requirements of the standard

6.3.6. Surges (AC mains power ports)

Test Requirement: EN 55035:2017/A11:2020,Table Clause 4.4

Test Method: The test method shall be in accordance with EN 61000-4-5

Criterion Required: Performance criteria B

Wave Shape: For AC mains power and DC network power ports 1.2/50 (8/20) μs

Test Level: For AC mains power ports: 2 kV line to ground, and 1 kV line to line

Polarity: Positive & Negative

Interval: 60s between each surge

No. of Surges: 5 positive at 90°, 5 negative at 270°

Test Setup:

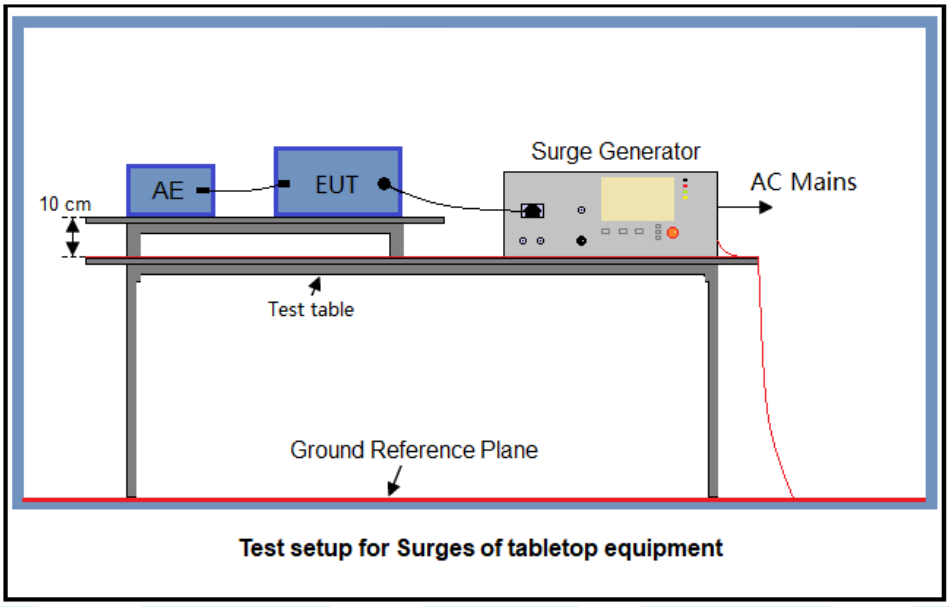


Figure 1. For AC port

Test Procedures:

Test Procedure:

1) The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2) The 1.2/50 μs surge was to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks were 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 so that the specified wave may be applied on the lines under test.
3) The power cord between the EUT and the coupling/decoupling network was not exceed 2 m in length. The interconnection line between the EUT and the coupling/ decoupling network shall not exceed 2 m in length.
4) The EUT was conducted 0.5 kV and 1 kV test voltage for line to line and line to neutral and conducted 0.5 kV, 1 kV and 2 kV test voltage for line to earth and neutral to earth, five positive pulses and five negative pulses each at 90°, 270° for a.c. power ports and five positive pulses and five negative surge pulses for d.c. power ports, The test levels were applied on the EUT with a 2 Ω generator source impedance for power supply terminals and 12Ω output impedance for interconnection lines. The tests were done at repetition rate one per minute.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The worst measurement data as follows:

Test Ports	Test Level	Result (Pursuant to performance criteria B)
Between Phase and Neutral	± 1.0 kV	A
Between Phase and Earth	± 2.0 kV	A

Observation:

☒ No observable change.

☐ During the experiment, the following phenomena occurred:

Conclusion: The EUT met the requirements of the standard

6.3.7. Electrical fast transients/burst (AC mains power ports)

Test Requirement: EN 55035:2017/A11:2020,Table Clause 4.5

Test Method: The test method shall be in accordance with EN 61000-4-4

Criterion Required: Performance criteria B

Test Port : AC mains power port

Polarity: Positive & Negative

Test Level and Repetition Frequency:

- The test level for AC mains power input ports shall be 1 kV (Test Level: 2) open circuit voltage at a repetition rate of 5 kHz as given EN 61000-4-4.

Impulse Wave shape: 5/50 ns

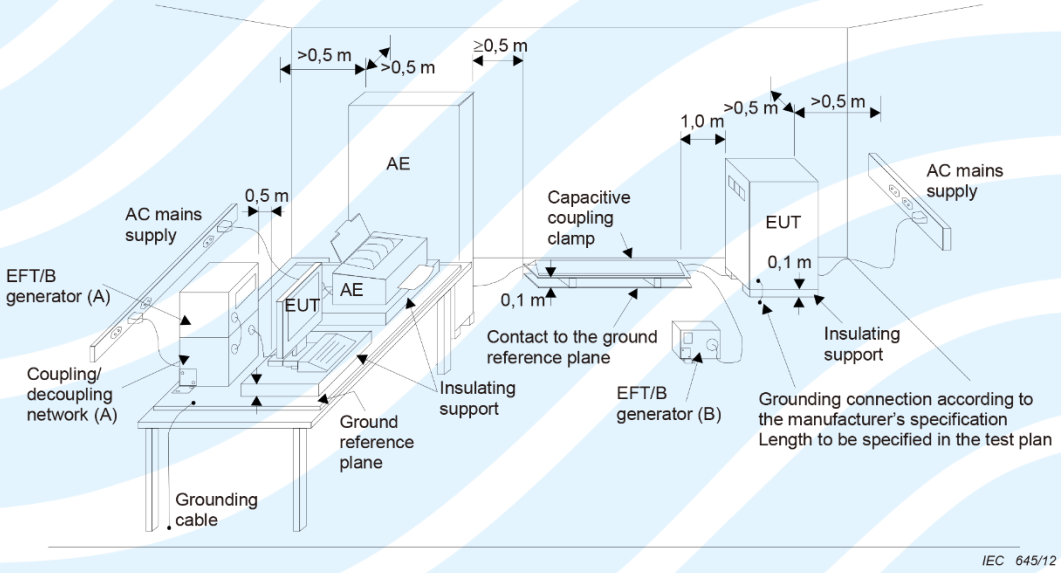
Burst Duration: 15ms

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Setup:

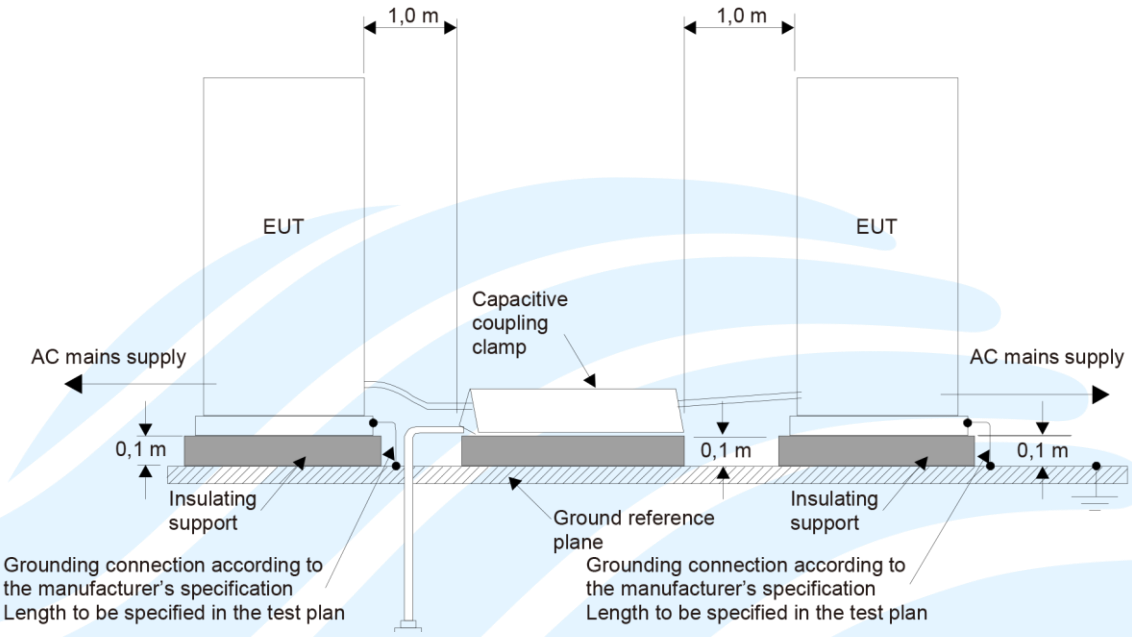
Test set-up for table-top equipment



(A) location for supply line coupling

(B) location for signal lines coupling

Test setup for floor-standing equipment



Test Procedures:

1) The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0.1m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2) The GRP shall project beyond the EUT and the clamp by at least 0.1m on all sides. The distance between the EUT and any other of the metallic surface except the GRP was greater than 0.5m. All cables to the EUT was placed on the insulation support 0.1m above GRP. A cable not subject to EFT was routed as far as possible from cable under test to minimize the coupling between the cables.
3) The length of signal and power cable between the EUT and EFT generator was 0.5m. If the cable is a non-detachable supply cable more than 0.5m, the excess length of this cable shall be folded to avoid a flat coil and situated at a distance of 0.1m above the GRP.
4) The EUT was conducted the below specified test voltages for line and neutral or line, neutral and earth simultaneously (for Wired network, single, control and DC port line with capacitive coupling clamp), 120 seconds duration. If the equipment contains identical ports, only one was tested; multicomputer cables, such as a 50-pair Wired network cable, were tested as a single cable. Cables did not be split or divided into groups of conductors for this test; interface ports, which were intended by the manufacturer to be connected to data cables not longer than 3 m, did not be tested.

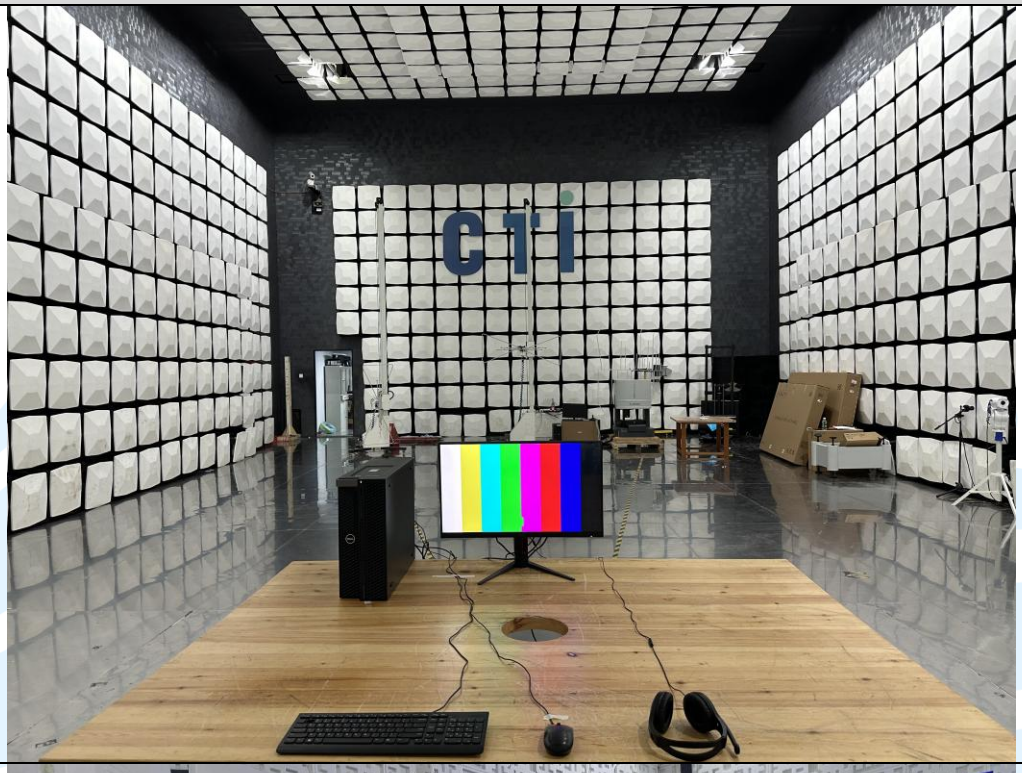
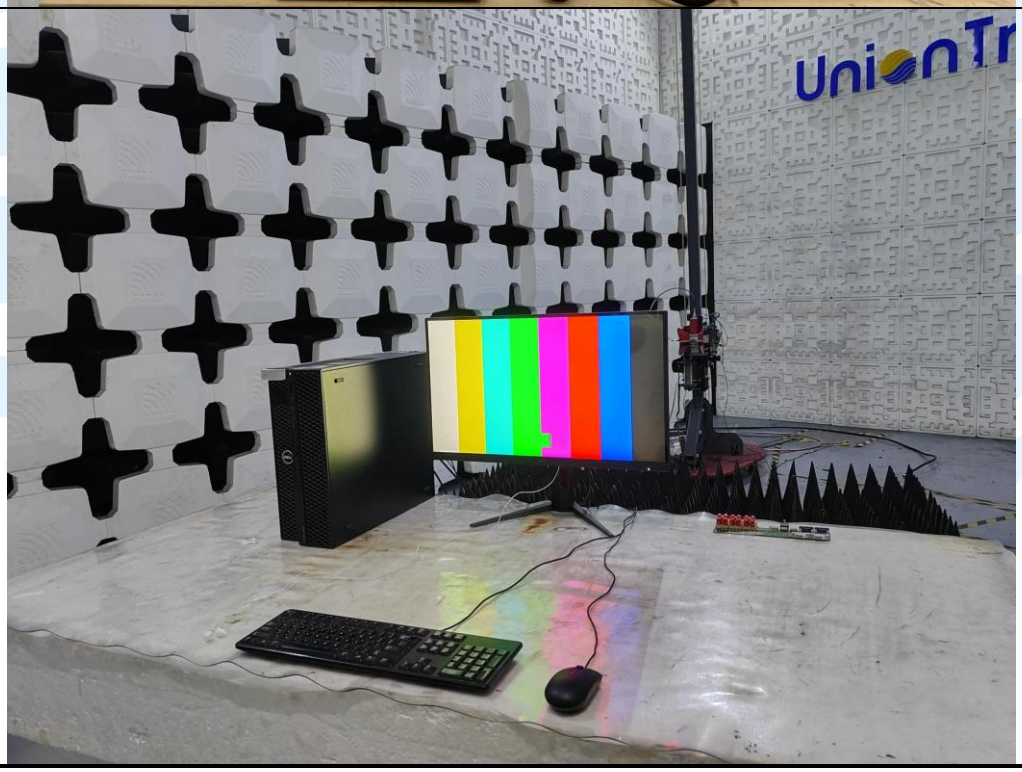
Equipment Used: Refer to section 3 for details.

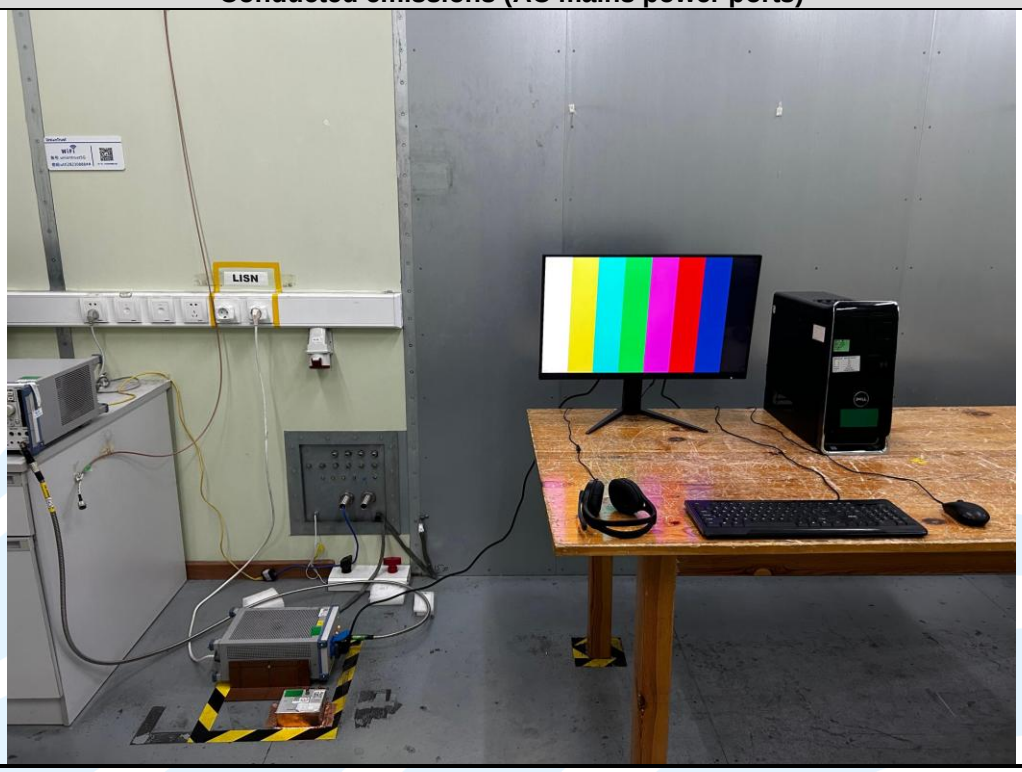
Test Result: Pass

The worst measurement data as follows:

Test Ports	Test Level	Result (Pursuant to performance criteria B)
AC mains power ports	± 0.5 kV, ± 1.0 kV	A
Observation: ☒ No observable change. ☐ During the experiment, the following phenomena occurred: **Conclusion:** The EUT met the requirements of the standard		

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

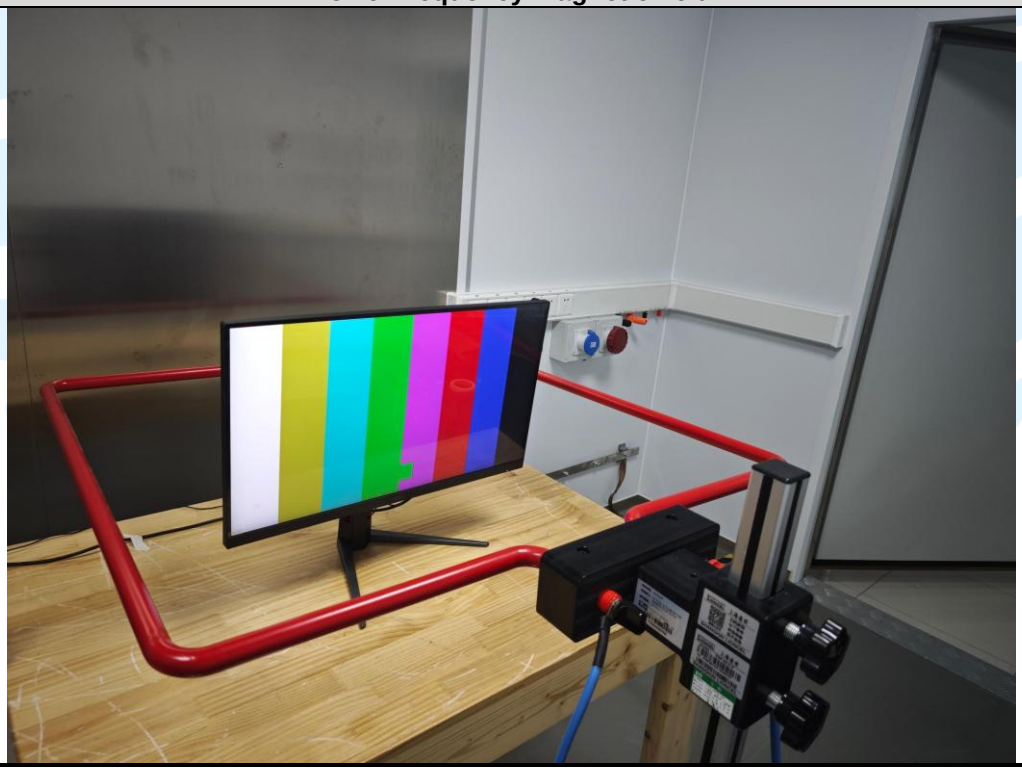
Radiated emissions



Conducted emissions (AC mains power ports)


Harmonic current emissions& Voltage changes, voltage fluctuations and flicker

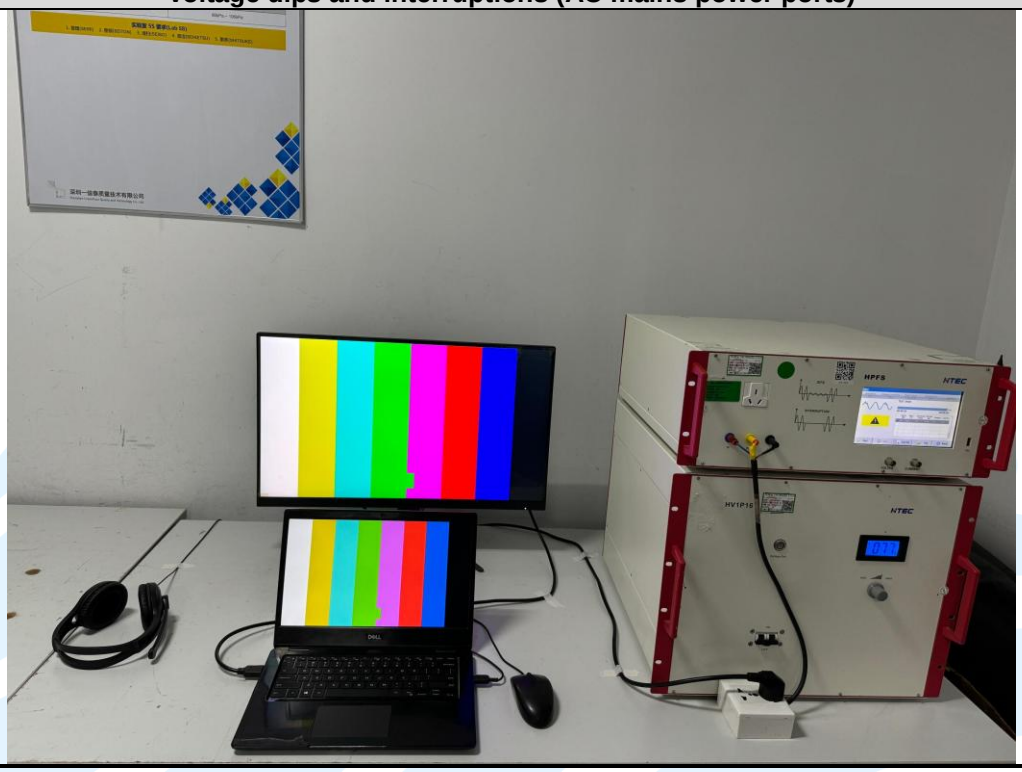

Continuous RF electromagnetic field disturbances

Electrostatic Discharge


Power frequency magnetic field


Continuous induced RF disturbances (AC mains power ports)


Electrical fast transients/burst &Surges (AC mains power ports)


Voltage dips and interruptions (AC mains power ports)


APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix for EUT external and internal photos.

********** End of Report **********