EMC TEST REPORT

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment	:	LCD MONITOR
Test Model	:	Q27B30
Series Model	:	Q27B30S3,**Q27B30**********,**Q27B35********** (The "*" could be any alphanumeric character including blank for marketing differentiation.)
Brand Name	:	AOC
Date of sample receipt	:	Apr. 30, 2025
Date(s) of test	:	May 16, 2025~ May 19, 2025
Standard	:	**EN 55032, EN 55035, CISPR 32, CISPR 35, AS/NZS CISPR 32, EN IEC 61000-3-2, EN 61000-3-3, BS EN 55032, BS EN 55035, BS EN IEC 61000-3-2, BS EN 61000-3-3**

I HEREBY CERTIFY THAT:

The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Leevin Li / Supervisor

Contents

History of this test report

Version No.	Report No	Date	Description
Rev.01	25030301-DECE01	Apr. 14, 2025	Initial Issue
Rev.02	25040722-DECE01	May 21, 2025	Second edition: 1. Add the panel and the corresponding panel OC 2. Add the motherboard, different from the original motherboard: HDMI / DP port refresh rate support 75Hz, the original 120Hz. 3. Update standards. 4. Add 1.2 m of power cable and photos.

1. Summary of Test Procedure and Test Results

The measurements shown in this test report were made in accordance with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 2014/30/EU**.

The energy emitted by this equipment was passed both Radiated and Conducted Emissions Class **B** limits.

Test Item	Normative References	Test Result
Conducted Emission	EN 55032:2015 EN 55032:2015+A11:2020 EN 55032:2015+A1:2020 CISPR 32:2015 CISPR 32:2015/AMD1:2019 BS EN 55032:2015 BS EN 55032:2015+A11:2020 BS EN 55032:2015+A1:2020 AS/NZS CISPR 32:2015 AS/NZS CISPR 32:2015/AMD1:2020	PASS
Telecom Port Conducted Emissions		N/A
Radiated Emission		PASS
Harmonics	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	PASS
Voltage Fluctuations	EN 61000-3-3:2013/A2:2021/AC:2022-01 BS EN 61000-3-3:2013+A2:2021(2022)	PASS
EN 55035: 2017, CISPR 35: 2016, BS EN 55035: 2017 EN 55035:2017/A11:2020, BS EN 55035:2017+A11:2020		
Electrostatic Discharge Immunity Test (ESD)	IEC 61000-4-2:2025	PASS
Radio Frequency electromagnetic field immunity test (RS)	IEC 61000-4-3:2020	PASS
Electrical Fast Transient/ Burst Immunity Test (EFT)	IEC 61000-4-4:2012	PASS
Surge Immunity Test	IEC 61000-4-5:2014/AMD1:2017	PASS
Conduction Disturbances induced by Radio-Frequency Fields	IEC 61000-4-6:2023	PASS
Power Frequency Magnetic Field Immunity Test	IEC 61000-4-8:2009	PASS
Voltage Dips and Voltage Interruptions Immunity Test	IEC 61000-4-11:2020/COR2:2022	PASS
Note: Deviations Yes ☐ No ■ "N/A" denotes test is not applicable in this test report. *The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement.		

2. Immunity Testing Performance Criteria Definition

Criteria A:	The apparatus shell continues 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 apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the manufacturer does not specify the minimum performance level or the permissible performance loss, 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.
Criteria B:	After test, the apparatus shell continues to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomenon below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. However, no change of operating state if stored data is allowed to persist after the test. If the manufacturer does not specify the minimum performance level or the permissible performance loss, 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.
Criteria C:	Temporary loss of function is allowed, provided the functions is self-recoverable or can be restored by the operation of controls by the user in accordance with the manufacturer instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

3. Test Configuration of Equipment under Test

3.1. Feature of Equipment under Test

Original

Product Name:	LCD MONITOR
Test Model:	Q27B30
Series Model:	Q27B30S3,**Q27B30**********,**Q27B35********** (The "*" could be any alphanumeric character including blank for marketing differentiation.)
Model Discrepancy:	All models are identical except for the name.
EUT Highest Frequency:	483MHz
Power Rating:	100-240V~，50/60Hz，1.5A
AC Power Cord Type:	Non-shielded, 1.8m & 1.5m
HDMI Cable:	Shielded, 1.8m & 1.5m
DP Cable:	Shielded, 1.8m & 1.5m
Adapter Spec.	Model：ADPC1938EX Input：100-240V~ 1.3A 50-60Hz Output：DC 19V/2.0A 38W

Second edition:

Product Name:	LCD MONITOR
Test Model:	Q27B30
Series Model:	Q27B30S3,**Q27B30**********,**Q27B35********** (The "*" could be any alphanumeric character including blank for marketing differentiation.)
Model Discrepancy:	All models are identical except for the name.
EUT Highest Frequency:	302MHz
Power Rating:	100-240V~，50/60Hz，1.5A
AC Power Cord Type:	Non-shielded, 1.8m & 1.5m & 1.2m
HDMI Cable:	Shielded, 1.8m & 1.5m
DP Cable:	Shielded, 1.8m & 1.5m
Adapter Spec.	Model：ADPC1938EX Input：100-240V~ 1.3A 50-60Hz Output：DC 19V/2.0A 38W

Note: For detail information please refer to the user manual.

Serial: Q27B30	--
Test Model: Q27B30	--
Version No.: Q27B30S3	Specific sales territory

I/O PORT

I/O PORT TYPE	Quantity
1) DC Power Port	1
2) DP Port	1
3) HDMI IN Port	1

3.2. Test Manner

Original

a. During testing, the interface cables and equipment positions were varied according to Europe Standard EN55032+EN55035.

b. The test modes of EMC+EMS test as follow:

Conducted Emission for AC main power /Radiated Emissions	
Test Mode 1	Full system (HDMI mode 2560*1440@120Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 2	Full system (HDMI mode 2560*1440@120Hz) Signal from PC with 1.8m HDMI Cable for 230V
Test Mode 3	Full system (HDMI mode 1920*1080@60Hz) Signal from DVD with 1.5m HDMI Cable for 230V
Test Mode 4	Full system (DP mode 2560*1440@120Hz) Signal from PC with 1.5m DP Cable for 230V
Test Mode 5	Full system (DP mode 2560*1440@120Hz) Signal from PC with 1.8m DP Cable for 230V
Test Mode 6	Full system (HDMI mode 1920*1080@120Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 7	Full system (HDMI mode 640*480@120Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 8	Full system (HDMI mode 2560*1440@120Hz) Signal from PC with 1.5m HDMI Cable for 110V
The “Test Mode 1” generated the worst test result; it was reported as final data	
Conducted Emission for telecom port	
N/A	
Harmonics / Flicker Emissions / EMS（ESD/EFT/SURGE/CS/RS）	
Test Mode 1	Full system (HDMI-1 mode 1920*1080@240Hz) Signal from PC with 1.5m HDMI Cable+1.5m Audio Cable+Earphone(230V/50Hz)
The “Test Mode 1” generated the worst test result; it was reported as final data	
DIPS/PMF	
Test Mode 1	Full system (HDMI mode 2560*1440@120Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 8	Full system (HDMI mode 2560*1440@120Hz) Signal from PC with 1.5m HDMI Cable for 110V
The “Test Mode 1,8” generated the worst test result; it was reported as final data	

c. The maximum operating frequency is above 108MHz, the test frequency range is from 30MHz to 6GHz.

Second edition:

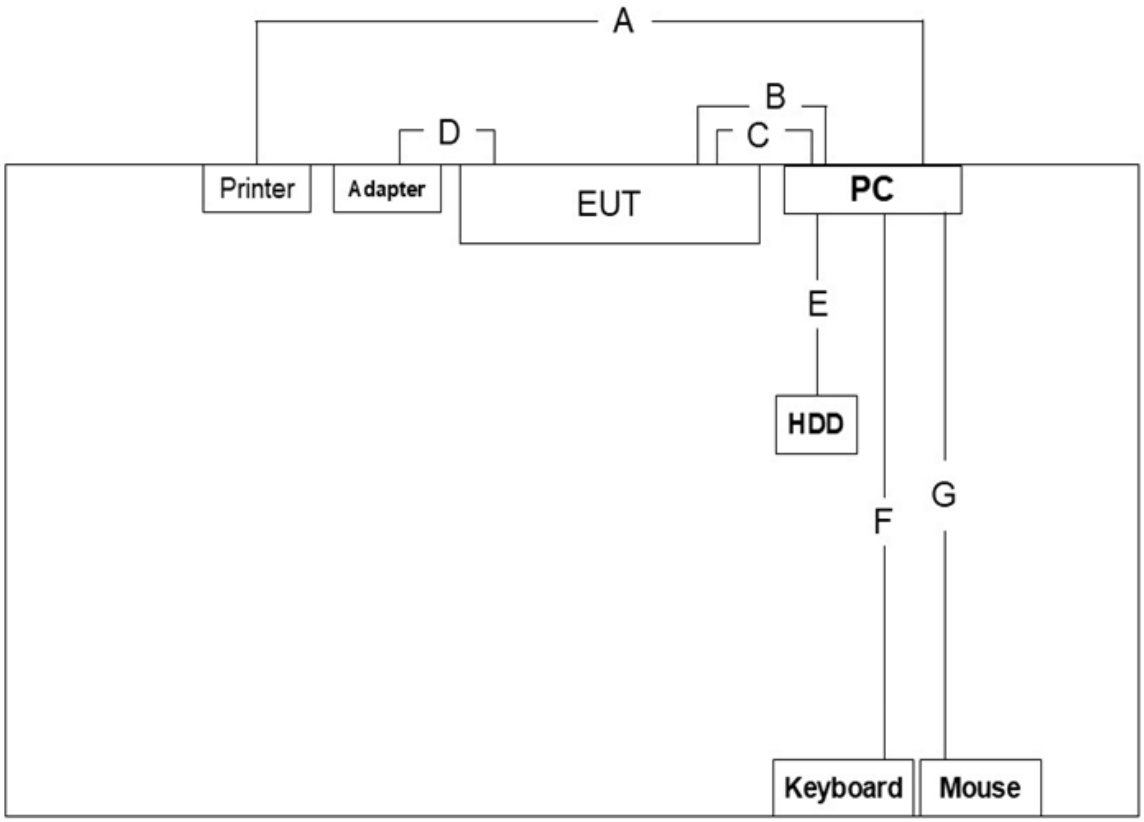
a. During testing, the interface cables and equipment positions were varied according to Europe Standard EN55032+EN55035.

b. The test modes of EMC+EMS test as follow:

Conducted Emission for AC main power /Radiated Emissions	
Test Mode 1	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 2	Full system (DP mode 2560*1440@75Hz) Signal from PC with 1.5m DP Cable 230V
Test Mode 3	Full system (HDMI mode 1920*1080@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 4	Full system (HDMI mode 640*480@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 5	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 110V
The “Test Mode 1” generated the worst test result; it was reported as final data	
Conducted Emission for telecom port	
N/A	
Harmonics / Flicker Emissions / EMS（ESD/EFT/SURGE/CS/RS）	
Test Mode 1	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
The “Test Mode 1” generated the worst test result; it was reported as final data	
DIPS/PMF	
Test Mode 1	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 5	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 110V
The “Test Mode 1, 5” generated the worst test result; it was reported as final data	

c. The maximum operating frequency is above 108MHz, the test frequency range is from 30MHz to 6GHz.

3.3. Description of Support Unit



No.	Device	Manufacturer	Model No.	Description
1	PC	DELL	XPS 8920	1.8m Non Shielding
2	Keyboard	DELL	SK-8115	N/A
3	Mouse	DELL	G0K02XYK	N/A
4	Printer	ZEBRA	ZD422	1.8m Non Shielding
5	HDD	Transcend	TS2TSJ25M3C	N/A
6	Adapter	AOC	ADPC1938EX	N/A

No.	Cable	Quantity	Description
A	USB Printer Cable	1	Shielded, 1.8m
B	HDMI Cable	1	Shielded, 1.5m&1.8m
C	DP Cable	1	Shielded, 1.5m&1.8m
D	DC Cable	1	NonShielded, 1.0m
E	USB HDD Cable	1	Shielded 0.5m
F	USB Keyboard Cable	1	Shielded, 1.8m
G	USB Mouse Cable	1	Shielded, 1.8m

3.4. General Information of Test

Test Site	**Cerpass Technology (Dongguan) Co., Ltd.** Address: Room 102, No. 5, Chang'an Xing'an Road, Dongguan, Guangdong, China Tel: +86-769-8547-1212 Fax: +86-769-8547-1912
Frequency Range Investigated :	Conducted Emission Test: from 150kHz to 30 MHz Radiated Emission Test: from 30 MHz to 1,000 MHz Radiated Emission Test: from 1GHz to 6GHz
Test Distance :	The test distance of radiated emission below 1GHz from antenna to EUT is 10M. The test distance of radiated emission above 1GHz from antenna to EUT is 3 M.

3.5. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Conducted Emission	
The measurement uncertainty is evaluated as ± 2.52dB.	
Conducted Emission(Telecom port)	
The measurement uncertainty is evaluated as ± 3.46dB.	
Radiated Emission	
(30MHz -1000MHz)	The measurement uncertainty is evaluated as ±4.35dB.
(1000MHz-6000MHz)	The measurement uncertainty is evaluated as ±5.56dB.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4. Test of Conducted Emission

4.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in European Standard EN 55032.

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 – 0.5	AMN	Quasi Peak / 9 kHz	79
	0.5 - 30			73
A9.2	0.15 – 0.5	AMN	Average / 9 kHz	66
	0.5 - 30			60
NOTE Apply A9.1 and A9.2 across the entire frequency range.				

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 B limits dB(μV)
A10.1	0.15 – 0.5	AMN	Quasi Peak / 9 kHz	66 – 56
	0.5 - 5			56
	5 - 30			60
A10.2	0.15 – 0.5	AMN	Average / 9 kHz	56 – 46
	0.5 - 30			46
	5 - 30			50
NOTE Apply A10.1 and A10.2 across the entire frequency range.				

Requirements for asymmetric mode conducted emissions from Class A equipment

Table clause	Frequency range MHz	Coupling device (see Table A.8)	Detector type / bandwidth	Class A voltage limits dB(μV)	Class A current limits dB(μA)
A11.1	0.15 – 0.5	AAN	Quasi Peak / 9 kHz	97 – 87	n/a
	0.5 - 30			87	
	0.15 – 0.5	AAN	Average / 9 kHz	84 – 74	
	0.5 - 30			74	
A11.3	0.15 – 0.5	Current Probe	Quasi Peak / 9 kHz	n/a	53 – 43
	0.5 - 30				43
	0.15 – 0.5	Current Probe	Average / 9 kHz		40 - 30
	0.5 - 30				30
NOTE 1 The choice of coupling device and measurement procedure is defined in Annex C. NOTE 2 AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.9. NOTE 3 The measurement shall cover the entire frequency range NOTE 4 The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability. NOTE 5 Testing is required at only one EUT supply voltage and frequency. NOTE 6 Applicable to ports listed above and intended to connect to cables longer than 3 m.					

Requirements for asymmetric mode conducted emissions from Class B equipment

Table clause	Frequency range MHz	Coupling device (see Table A.8)	Detector type / bandwidth	Class B voltage limits dB(μV)	Class B current limits dB(μA)
A12.1	0.15 – 0.5	AAN	Quasi Peak / 9 kHz	84 – 74	n/a
	0.5 - 30			74	
	0.15 – 0.5	AAN	Average / 9 kHz	74 – 64	
	0.5 - 30			64	
A12.3	0.15 – 0.5	Current Probe	Quasi Peak / 9 kHz	n/a	40 – 30
	0.5 - 30				30
	0.15 – 0.5	Current Probe	Average / 9 kHz		30 - 20
	0.5 - 30				20

NOTE 1 The choice of coupling device and measurement procedure is defined in Annex C.
NOTE 2 Screened ports including TV broadcast receiver tuner ports are measured with a common-mode impedance of150 Ω. This is typically accomplished with the screen terminated by 150 Ω to earth.
NOTE 3 AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.10.
NOTE 4 The measurement shall cover the entire frequency range.
NOTE 5 The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability.
NOTE 6 Measurement is required at only one EUT supply voltage and frequency.
Applicable to ports listed above and intended to connect to cables longer than 3 m.

Requirements for conducted differential voltage emissions from Class B equipment

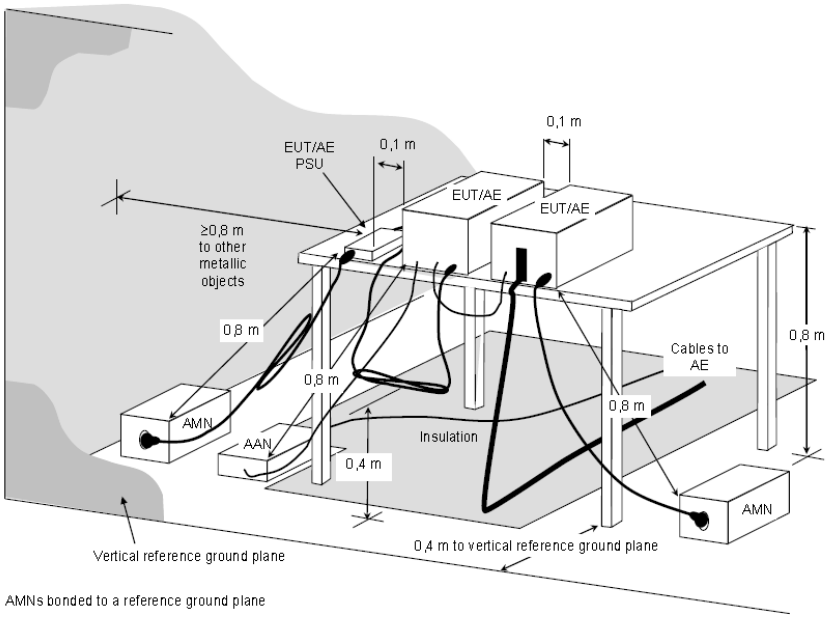
Table clause	Frequency range MHz	Detector type/ bandwidth	Class B limits dB(mV) 75 Ω			Applicability
			Other	Local Oscillator Fundamental	Local Oscillator Harmonics	
A13.1	30 to 950	For frequencies ⩽1 GHz Quasi Peak/ 120 kHz For frequencies ⩾1 GHz Peak/ 1 MHz	46	46	46	See [a]
	950 to 2 150		46	54	54	
A13.2	950 to 2 150		46	54	54	See [b]
A13.3	30 to 950		46	54	50	See [c]
	950 to 2 150				52	
A13.4	30 to 950		46	66	59	See [d]
	950 to 2 150				1	
A13.5	30 to 950		46	76	46	See [e]
	950 to 2 150			n/a	54	

a Television receivers (analogue or digital), video recorders and PC TV broadcast receiver tuner cards working in channels between 30 MHz and 1 GHz, and digital audio receivers.
b Tuner units (not the LNB) for satellite signal reception.
c Frequency modulation audio receivers and PC tuner cards.
d Frequency modulation car radios.
e Applicable to EUTs with RF modulator output ports (for example DVD equipment, video recorders, camcorders and decoders etc.) designed to connect to TV broadcast receiver tuner ports. Limits specified for the LO are for the RF modulator carrier signal and harmonics.
The term 'other' refers to all emissions other than the fundamental and the harmonics of the LO.
The measurement shall cover the entire frequency range.
The EUT shall be tuned in accordance with Table B.3 and clause C.4.2.1.

4.2. Test Procedures

a. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50ohm coupling impedance for the measuring instrument.
e. The CISPR states that a 50ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3. Typical Test Setup



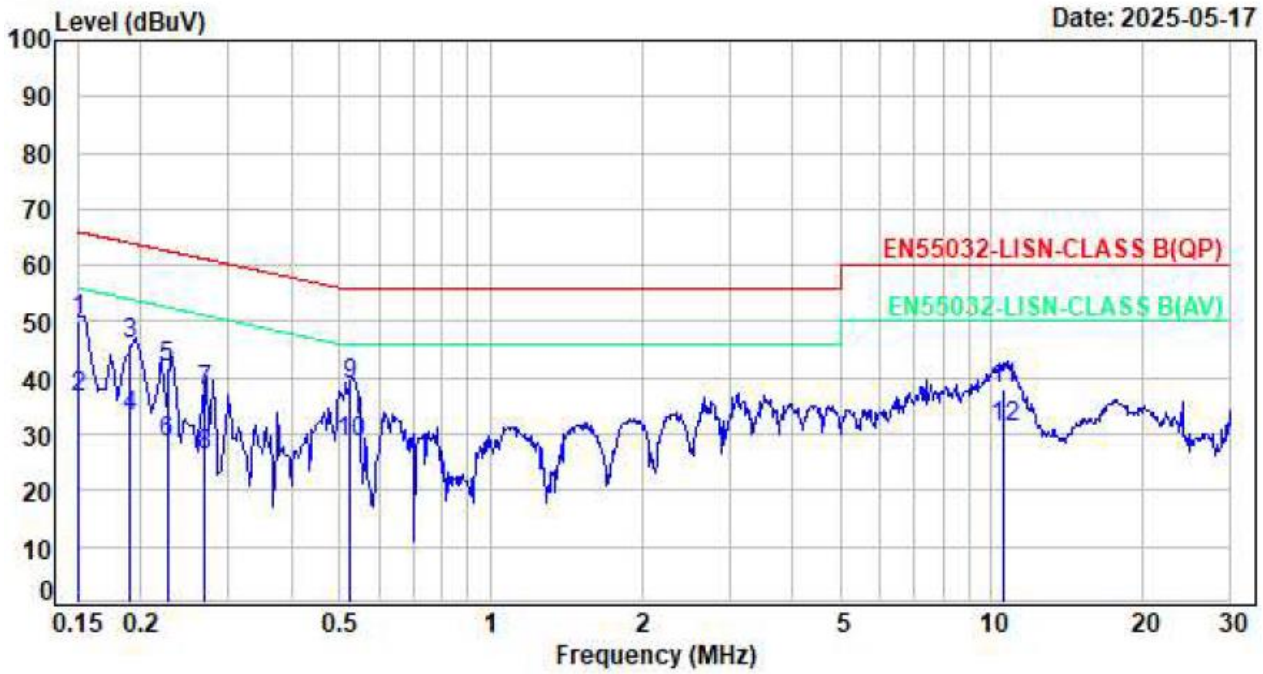
NOTE The 0,8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be ≥0,8 m.

4.4. Test Result and Data

4.4.1 Conducted Emission for Power Port Test Data

Test Mode:	Test Mode 1	Test Engineer	Nunu
Power:	AC 230V	Phase:	LINE
Temperature:	22°C	Humidity:	56%
EUT:	Q27B30		

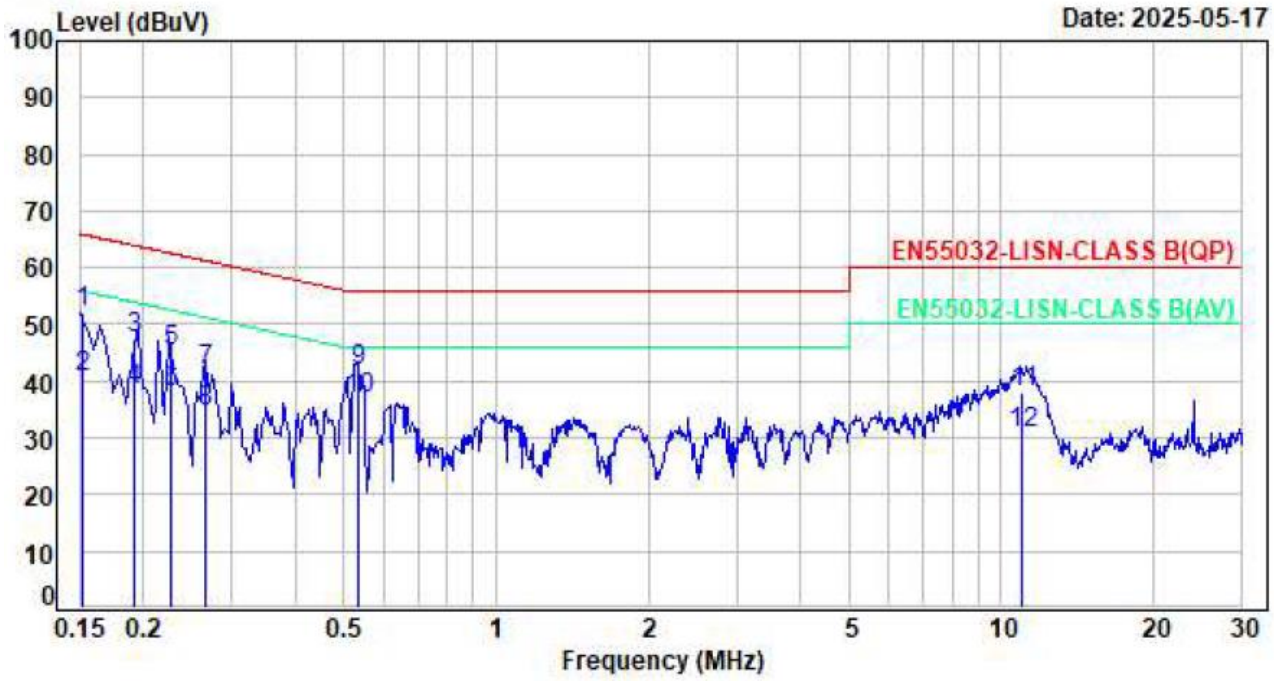
Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	10.38	39.62	50.00	65.97	-15.97	QP	P
2	0.15	10.38	26.07	36.45	55.97	-19.52	Average	P
3	0.19	10.36	35.51	45.87	64.01	-18.14	QP	P
4	0.19	10.36	22.61	32.97	54.01	-21.04	Average	P
5	0.23	10.35	31.39	41.74	62.60	-20.86	QP	P
6	0.23	10.35	18.27	28.62	52.60	-23.98	Average	P
7	0.27	10.35	27.31	37.66	61.15	-23.49	QP	P
8	0.27	10.35	15.74	26.09	51.15	-25.06	Average	P
9	0.52	10.35	28.52	38.87	56.00	-17.13	QP	P
10	0.52	10.35	18.19	28.54	46.00	-17.46	Average	P
11	10.58	10.62	27.40	38.02	60.00	-21.98	QP	P
12	10.58	10.62	20.57	31.19	50.00	-18.81	Average	P

Test Mode:	Test Mode 1	Test Engineer	Nunu
Power:	AC 230V	Phase:	NEUTRAL
Temperature:	22°C	Humidity:	56%
EUT:	Q27B30		

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	10.30	41.69	51.99	65.87	-13.88	QP	P
2	0.15	10.30	30.37	40.67	55.87	-15.20	Average	P
3	0.19	10.29	37.16	47.45	63.93	-16.48	QP	P
4	0.19	10.29	28.01	38.30	53.93	-15.63	Average	P
5	0.23	10.29	34.99	45.28	62.58	-17.30	QP	P
6	0.23	10.29	27.86	38.15	52.58	-14.43	Average	P
7	0.27	10.29	31.43	41.72	61.24	-19.52	QP	P
8	0.27	10.29	24.46	34.75	51.24	-16.49	Average	P
9	0.53	10.30	31.59	41.89	56.00	-14.11	QP	P
10	0.53	10.30	26.49	36.79	46.00	-9.21	Average	P
11	11.03	10.61	27.28	37.89	60.00	-22.11	QP	P
12	11.03	10.61	20.16	30.77	50.00	-19.23	Average	P

4.4.2 Conducted Emission for Telecommunication Port Test Data

Not Applicable

5. Test of Radiated Emission

5.1. Test Limit

The EUT shall meet the limits of below Table when measured at the measuring distance R in accordance with the methods described in European Standard EN 55032. If the reading on the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the highest reading shall be recorded, with the exception of any brief isolated high reading, which shall be ignored.

Required highest frequency for radiated measurement

Highest internal frequency (F_x)	Highest measured frequency
Fx ≤ 108 MHz	1 GHz
108 MHz < F_x ≤ 500 MHz	2 GHz
500 MHz < F_x ≤ 1 GHz	5 GHz
F_x > 1 GHz	5 x F_x up to a maximum of 6 GHz
NOTE 1 For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies. NOTE 2 F_x is defined in 3.1.19. NOTE 3 For outdoor units of home satellite receiving systems highest measured frequency shall be 18GHz.	

Where the F_x is unknown, the radiated emission measurements shall be performed up to 6 GHz.

Requirements for radiated emissions at frequencies up to 1 GHz for Class A equipment

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

Requirements for radiated emissions at frequencies above 1 GHz for Class A equipment

Table clause	Frequency range MHz	Measurement		Class A limits dB(μV/m)
		Distance m	Detector type / bandwidth	FSOATS (see Table A.1)
A3.1	1 000 –6 000	3	Average / 1 MHz	60
A3.2	1 000 –6 000		Peak / 1 MHz	80
Apply A3.1 and A3.2 across the frequency range from 1000 MHz to the highest required frequency of measurement derived from Table 1.				

Requirements for radiated emissions at frequencies up to 1 GHz for Class B equipment

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

Requirements for radiated emissions at frequencies above 1 GHz for Class B equipment

Table clause	Frequency range MHz	Measurement		Class B limits dB(μV/m)
		Distance m	Detector type / bandwidth	FSOATS (see Table A.1)
A5.1	1 000 –6 000	3	Average / 1 MHz	54
A5.2	1 000 –6 000		Peak / 1 MHz	74
Apply A5.1 and A5.2 across the frequency range from 1000 MHz to the highest required frequency of measurement derived from Table 1.				

Requirements for radiated emissions from FM receivers

Table clause	Frequency range MHz	Measurement		Class B limit dB(μV/m)	
		Distance m	Detector type / bandwidth	Fundamental OATS/SAC (see Table A.1)	Harmonics OATS/SAC (see Table A.1)
A6.1	30 – 230	10	Quasi peak / 120 kHz	50	42
	230 – 300				42
	300 – 1 000				46
A6.2	30 – 230	3		60	52
	230 – 300				52
	300 – 1 000				56
Apply only A.6.1 or A.6.2 across the entire frequency range. These relaxed limits apply only to emissions at the fundamental and harmonic frequencies of the LO. Signals at allother frequencies shall be compliant with the limits given in Table A.4.					

Requirements for conducted differential voltage emissions from Class B equipment

Table clause	Frequency Range MHz	Detector type / bandwidth	Class B limits dB(μV)75Ω			Applicability
			Other	Local Oscillator Fundamental	Local Oscillator Harmonics	
A13.1	30 - 950	For frequencies ≤1 GHz	46	46	46	See [a]
	950 – 2 150		46	54	54	
A13.2	950 – 2 150		46	54	54	See [b]
A13.3	30 – 300	Quasi Peak / 120 kHz	46	54	50	See [c]
	300 – 1 000				52	
A13.4	30 - 300	For frequencies ≥ 1 GHz	46	66	59	See [d]
	300 – 1 000				52	
A13.5	30 - 950		46	76	46	See [e]
	950 – 2 150	Peak / 1 MHz		n/a	54	

a Television receivers (analogue or digital), video recorders and PC TV broadcast receiver tuner cards working in channels between 30 MHz and 1 GHz, and digital audio receivers.
b Tuner units (not the LNB) for satellite signal reception.
c Frequency modulation audio receivers and PC tuner cards.
d Frequency modulation car radios.
e Applicable to EUTs with RF modulator output ports (for example DVD equipment, video recorders, camcorders and decoders etc.) designed to connect to TV broadcast receiver tuner ports. Limits specified for the LO are for the RF modulator carrier signal and harmonics.
The term 'other' refers to all emissions other than the fundamental and the harmonics of the LO.
The measurement shall cover the entire frequency range.
The EUT shall be tuned in accordance with Table B.3 and clause C.4.2.1.

5.2. Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

5.3. Typical Test Setup

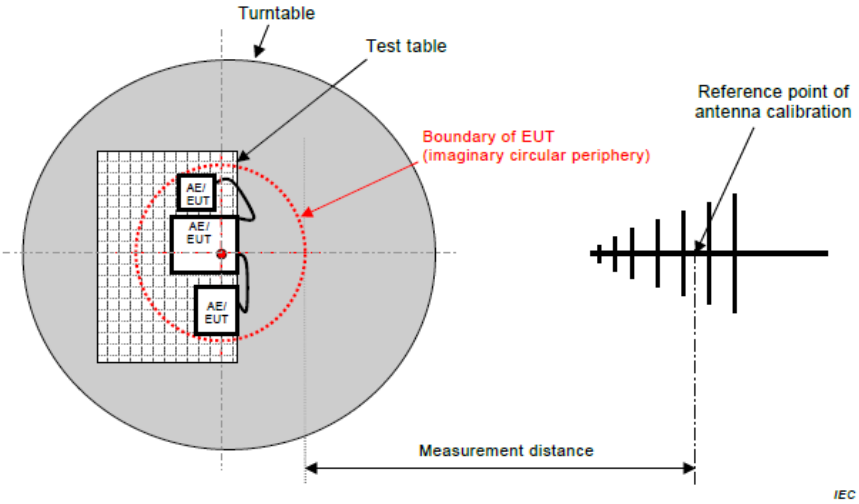
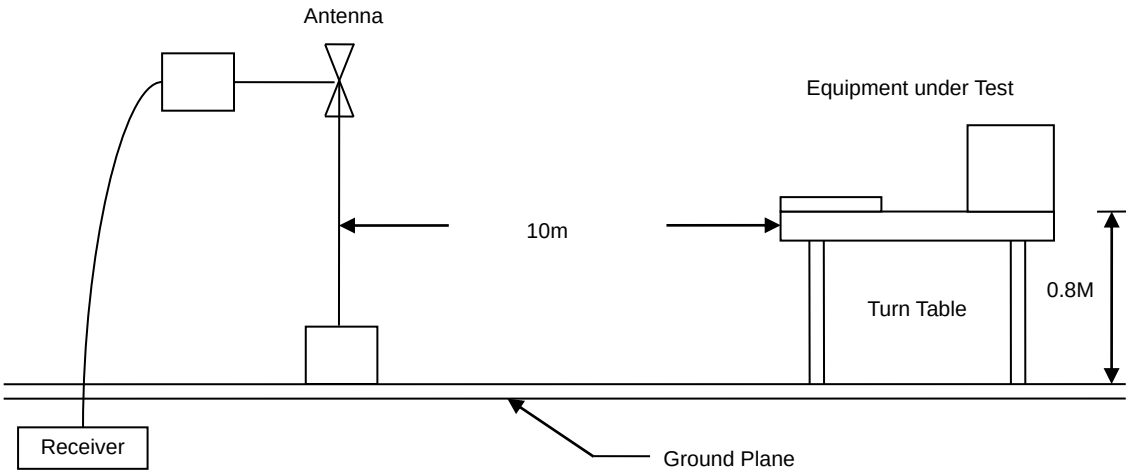
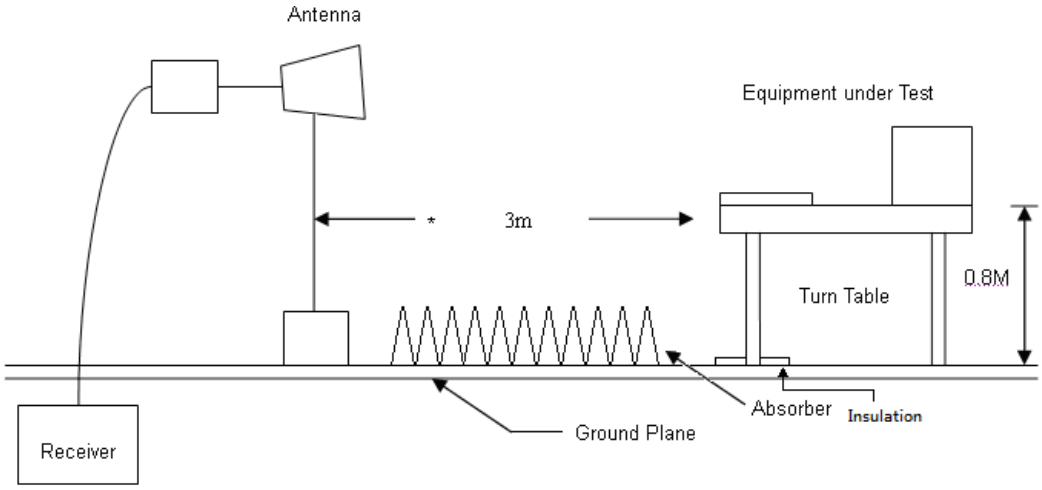


Figure C.1 – Measurement distance

Below 1GHz Test Setup



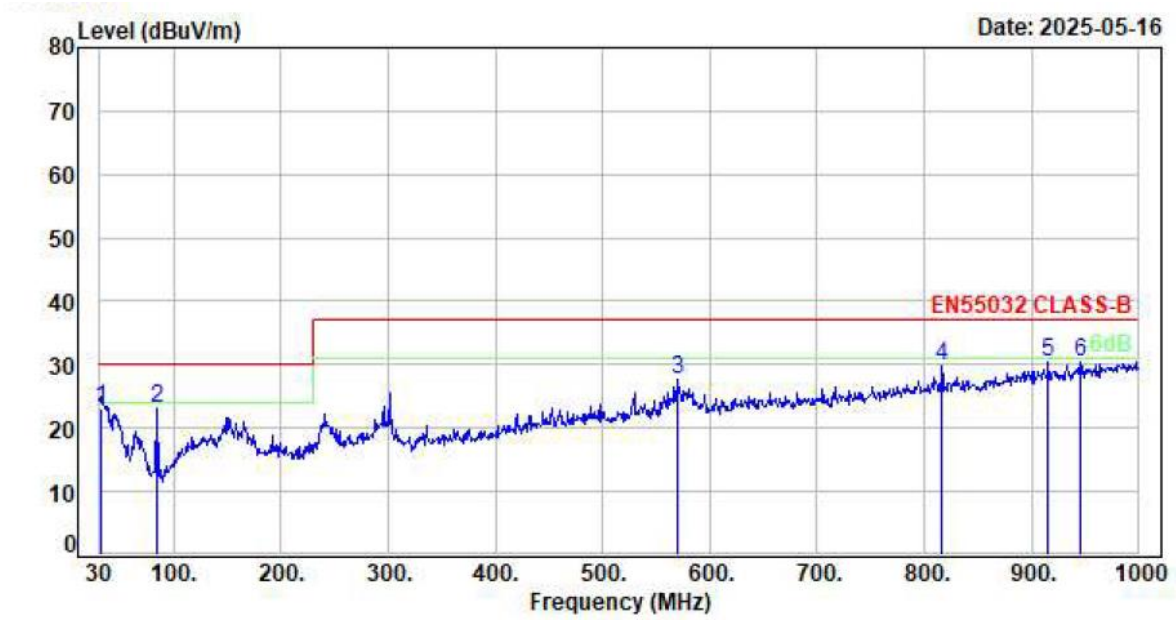
Above 1GHz Test Setup



5.4. Test Result and Data (30MHz ~ 1GHz)

Test Mode:	Test Mode1	Test Engineer	Amos
Power:	AC 230V	Phase:	VERTICAL
Temperature:	24°C	Humidity:	54%
EUT:	Q27B30		

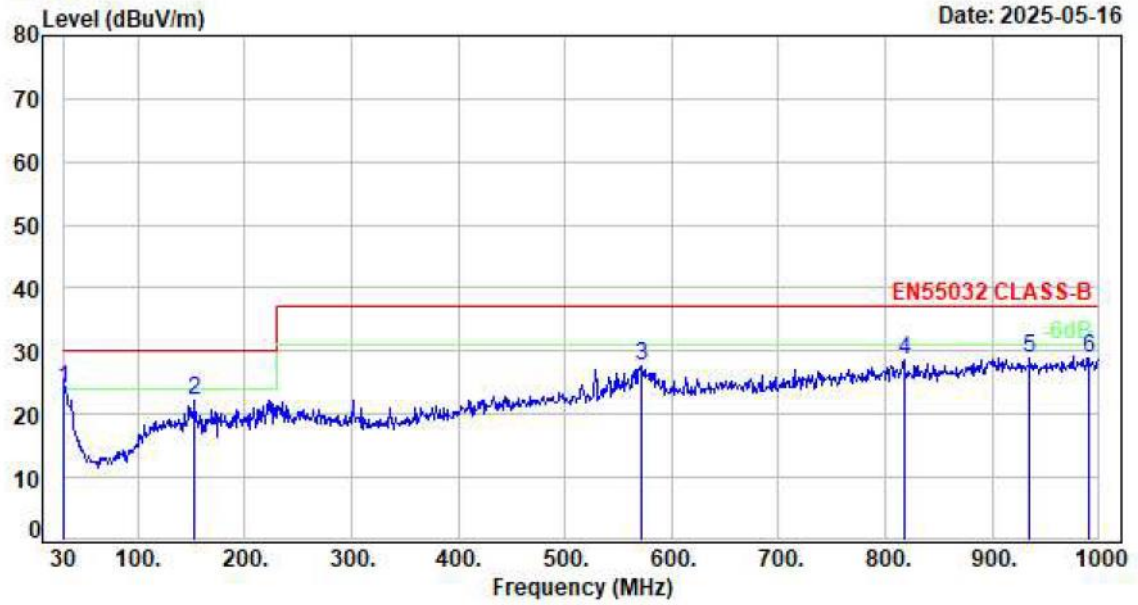
Note: Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	31.94	-5.43	28.50	23.07	30.00	-6.93	QP	200	262	P
2	84.32	-16.73	39.96	23.23	30.00	-6.77	Peak	400	119	P
3	570.29	-3.95	31.61	27.66	37.00	-9.34	Peak	200	18	P
4	816.67	-0.13	29.81	29.68	37.00	-7.32	Peak	400	349	P
5	915.61	1.09	29.25	30.34	37.00	-6.66	Peak	300	201	P
6	945.68	1.53	28.92	30.45	37.00	-6.55	Peak	200	269	P

Test Mode:	Test Mode1	Test Engineer	Amos
Power:	AC 230V	Phase:	HORIZONTAL
Temperature:	24°C	Humidity:	54%
EUT:	Q27B30		

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor

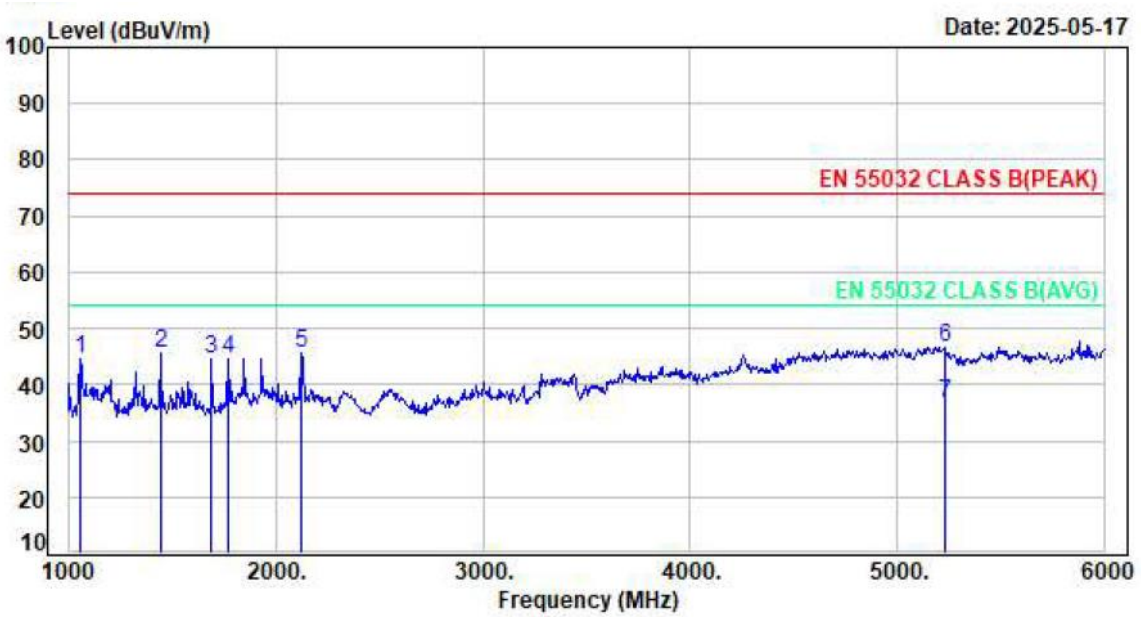


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	30.00	-3.42	27.50	24.08	30.00	-5.92	QP	300	44	P
2	153.19	-11.20	33.28	22.08	30.00	-7.92	Peak	400	16	P
3	571.26	-3.10	30.81	27.71	37.00	-9.29	Peak	100	311	P
4	817.64	0.13	28.56	28.69	37.00	-8.31	Peak	100	21	P
5	935.01	1.63	27.30	28.93	37.00	-8.07	Peak	100	115	P
6	990.30	2.26	26.74	29.00	37.00	-8.00	Peak	300	133	P

5.5. Test Result and Data (Above 1GHz)

Test Mode:	Test Mode1	Test Engineer	Amos
Power:	AC 230V	Phase:	VERTICAL
Temperature:	23°C	Humidity:	51%
EUT:	Q27B30		

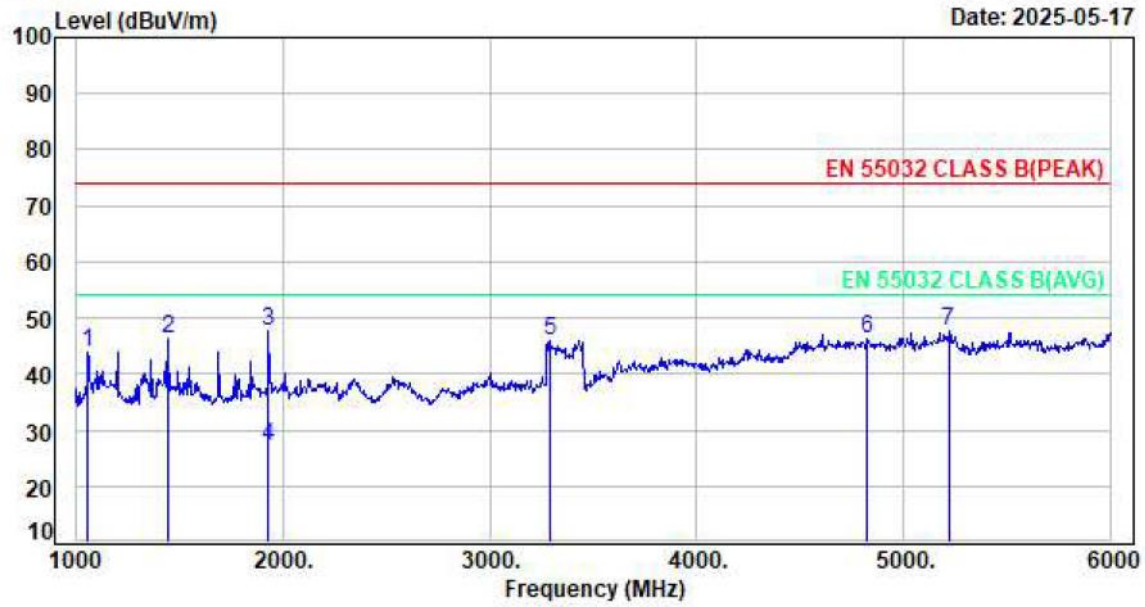
Note: Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1060.00	-7.70	52.31	44.61	74.00	-29.39	Peak	100	210	P
2	1445.00	-6.48	51.99	45.51	74.00	-28.49	Peak	100	334	P
3	1690.00	-5.82	50.36	44.54	74.00	-29.46	Peak	200	8	P
4	1770.00	-5.76	50.38	44.62	74.00	-29.38	Peak	200	133	P
5	2125.00	-4.28	49.75	45.47	74.00	-28.53	Peak	100	127	P
6	5230.00	3.35	43.32	46.67	74.00	-27.33	Peak	200	21	P
7	5230.00	3.35	33.20	36.55	54.00	-17.45	Average	200	21	P

Test Mode:	Test Mode1	Test Engineer	Amos
Power:	AC 230V	Phase:	HORIZONTAL
Temperature:	23°C	Humidity:	51%
EUT:	Q27B30		

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	1060.00	-7.70	51.58	43.88	74.00	-30.12	Peak	200	346	P
2	1445.00	-6.48	52.73	46.25	74.00	-27.75	Peak	200	88	P
3	1930.00	-5.44	53.15	47.71	74.00	-26.29	Peak	100	142	P
4	1930.00	-5.44	32.45	27.01	54.00	-26.99	Average	100	142	P
5	3295.00	-2.67	48.70	46.03	74.00	-27.97	Peak	200	98	P
6	4820.00	2.74	43.56	46.30	74.00	-27.70	Peak	100	120	P
7	5215.00	3.37	44.24	47.61	74.00	-26.39	Peak	100	322	P

6. Harmonics Test

6.1. Limits of Harmonics Current Measurement

Limits for Class A equipment

Harmonics Order n	Max. permissible harmonics current A	Harmonics Order n	Max. permissible harmonics current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8<=n<=40	0.23x8/n
11	0.33		
13	0.21		
15<=n<=39	0.15x15/n		

(b) Limits for Class B equipment

For Class B equipment, the harmonics of the input current shall not exceed the values given in Table that is the limit of Class A multiplied by a factor of 1,5.

(c) Limits for Class C equipment

Harmonics Order n	Maximum permissible harmonic current expressed as a percentage of the input current at the fundamental frequency %
2	2
3	$30 \cdot \lambda^*$
5	10
7	7
9	5
11<n<39 (odd harmonics only)	3
* λ is the circuit power factor	

(d) Limits for Class D equipment

Harmonics Order n	Maximum permissible harmonic current per watt mA/W	Maximum permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
11 < n < 39 (odd harmonics only)	3.85/n	See limit of Class A

NOTE: The above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with an active input power up to and including 75 W.

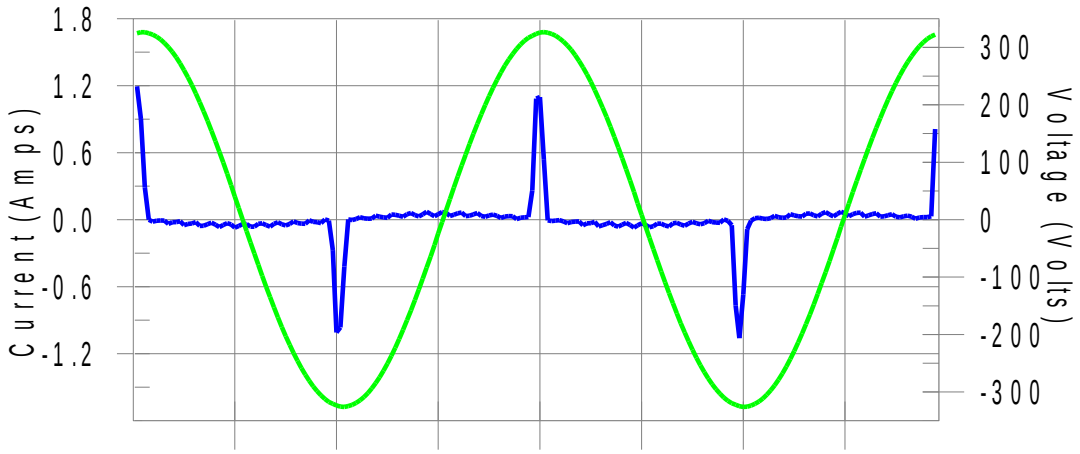
6.2. Test Result and Data

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

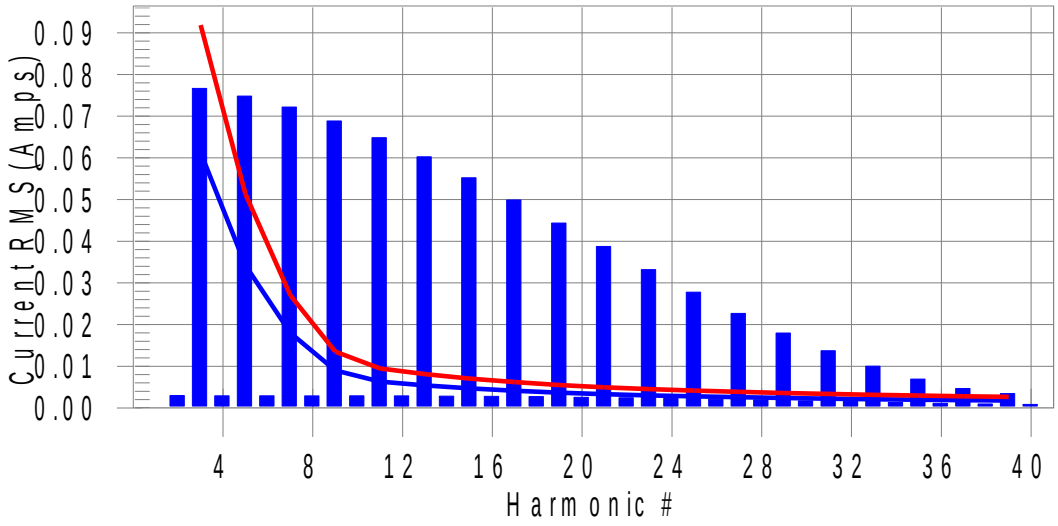
EUT: Q27B30 **Tested by: Lan**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/5/19 **Start time: 13:23:14** **End time: 13:26:26**
Test duration (min): 3 **Data file name: H-000524.cts_data**

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: Q27B30 **Tested by: Lan**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/5/19 **Start time: 13:23:14** **End time: 13:26:26**
Test duration (min): 3 **Data file name: H-000524.cts_data**

Test Result: N/L **Source qualification: Normal**
THC(A): 0.204 **I-THD(%): 232.3** **POHC(A): 0.068** **POHC Limit(A): 0.008**

Highest parameter values during test:

V_RMS (Volts):	230.59	Frequency(Hz):	50.00
I_Peak (Amps):	1.207	I_RMS (Amps):	0.223
I_Fund (Amps):	0.088	Crest Factor:	5.457
Power (Watts):	18.0	Power Factor:	0.352

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.003	0.000	N/A	0.004	0.000	N/A	N/L
3	0.077	0.061	N/A	0.078	0.092	N/A	N/L
4	0.003	0.000	N/A	0.004	0.000	N/A	N/L
5	0.075	0.034	N/A	0.075	0.051	N/A	N/L
6	0.003	0.000	N/A	0.004	0.000	N/A	N/L
7	0.072	0.018	N/A	0.073	0.027	N/A	N/L
8	0.003	0.000	N/A	0.003	0.000	N/A	N/L
9	0.069	0.009	N/A	0.069	0.014	N/A	N/L
10	0.003	0.000	N/A	0.003	0.000	N/A	N/L
11	0.065	0.006	N/A	0.065	0.009	N/A	N/L
12	0.003	0.000	N/A	0.003	0.000	N/A	N/L
13	0.060	0.005	N/A	0.060	0.008	N/A	N/L
14	0.003	0.000	N/A	0.003	0.000	N/A	N/L
15	0.055	0.005	N/A	0.055	0.007	N/A	N/L
16	0.003	0.000	N/A	0.003	0.000	N/A	N/L
17	0.050	0.004	N/A	0.050	0.006	N/A	N/L
18	0.003	0.000	N/A	0.003	0.000	N/A	N/L
19	0.044	0.004	N/A	0.045	0.005	N/A	N/L
20	0.003	0.000	N/A	0.003	0.000	N/A	N/L
21	0.039	0.003	N/A	0.039	0.005	N/A	N/L
22	0.002	0.000	N/A	0.003	0.000	N/A	N/L
23	0.033	0.003	N/A	0.033	0.005	N/A	N/L
24	0.002	0.000	N/A	0.003	0.000	N/A	N/L
25	0.028	0.003	N/A	0.028	0.004	N/A	N/L
26	0.002	0.000	N/A	0.003	0.000	N/A	N/L
27	0.023	0.003	N/A	0.023	0.004	N/A	N/L
28	0.002	0.000	N/A	0.002	0.000	N/A	N/L
29	0.018	0.002	N/A	0.018	0.004	N/A	N/L
30	0.002	0.000	N/A	0.002	0.000	N/A	N/L
31	0.014	0.002	N/A	0.014	0.003	N/A	N/L
32	0.002	0.000	N/A	0.002	0.000	N/A	N/L
33	0.010	0.002	N/A	0.010	0.003	N/A	N/L
34	0.001	0.000	N/A	0.002	0.000	N/A	N/L
35	0.007	0.002	N/A	0.007	0.003	N/A	N/L
36	0.001	0.000	N/A	0.001	0.000	N/A	N/L
37	0.005	0.002	N/A	0.005	0.003	N/A	N/L
38	0.001	0.000	N/A	0.001	0.000	N/A	N/L
39	0.003	0.002	N/A	0.004	0.003	N/A	N/L
40	0.001	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: Q27B30 **Tested by: Lan**
Test category: Class-D (European limits) **Test Margin: 100**
Test date: 2025/5/19 **Start time: 13:23:14** **End time: 13:26:26**
Test duration (min): 3 **Data file name: H-000524.cts_data**

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

Highest parameter values during test:

Voltage (Vrms):	**230.59**	**Frequency(Hz):**	**50.00**
I_Peak (Amps):	**1.207**	**I_RMS (Amps):**	**0.223**
I_Fund (Amps):	**0.088**	**Crest Factor:**	**5.457**
Power (Watts):	**18.0**	**Power Factor:**	**0.352**

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.077	0.461	16.72	OK
3	0.398	2.075	19.19	OK
4	0.054	0.461	11.81	OK
5	0.025	0.922	2.72	OK
6	0.030	0.461	6.59	OK
7	0.069	0.692	10.03	OK
8	0.025	0.461	5.34	OK
9	0.046	0.461	9.93	OK
10	0.014	0.461	3.14	OK
11	0.045	0.231	19.65	OK
12	0.011	0.231	4.68	OK
13	0.037	0.231	15.93	OK
14	0.011	0.231	4.98	OK
15	0.036	0.231	15.75	OK
16	0.011	0.231	4.71	OK
17	0.039	0.231	16.88	OK
18	0.012	0.231	5.40	OK
19	0.040	0.231	17.52	OK
20	0.010	0.231	4.25	OK
21	0.039	0.231	16.93	OK
22	0.005	0.231	2.33	OK
23	0.036	0.231	15.48	OK
24	0.007	0.231	2.87	OK
25	0.032	0.231	13.72	OK
26	0.004	0.231	1.88	OK
27	0.025	0.231	10.75	OK
28	0.005	0.231	2.24	OK
29	0.025	0.231	11.03	OK
30	0.005	0.231	1.96	OK
31	0.019	0.231	8.20	OK
32	0.005	0.231	2.25	OK
33	0.018	0.231	7.74	OK
34	0.003	0.231	1.43	OK
35	0.013	0.231	5.62	OK
36	0.004	0.231	1.68	OK
37	0.010	0.231	4.29	OK
38	0.002	0.231	0.88	OK
39	0.006	0.231	2.73	OK
40	0.006	0.231	2.64	OK

7. Voltage Fluctuations Test

7.1. Test Procedure

The equipment shall be tested under the conditions of **Clause 5.**
The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance.
The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of ±8% is achieved during the whole assessment procedure.

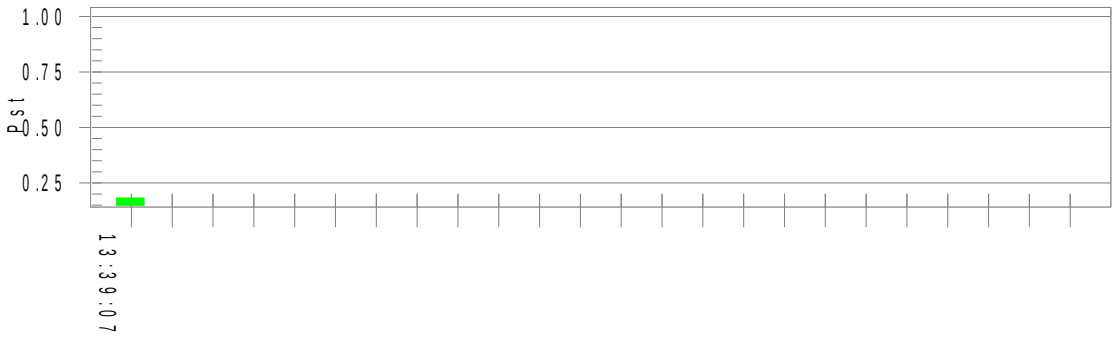
7.2. Test Result and Data

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

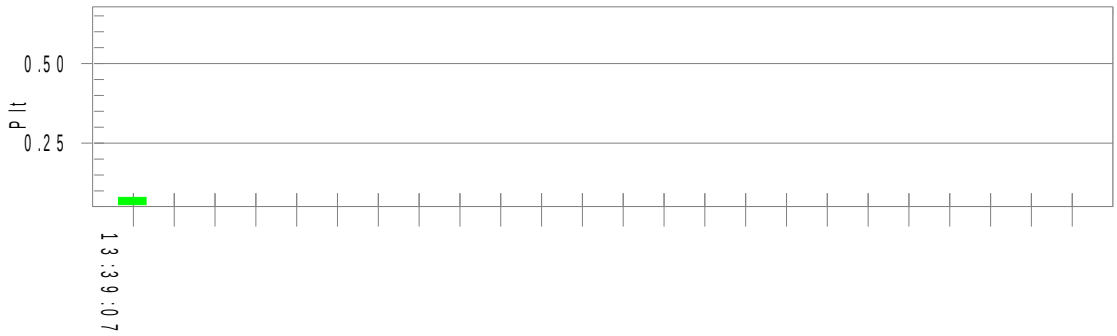
EUT: Q27B30 **Tested by: Lan**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2025/5/19 **Start time: 13:28:46** **End time: 13:39:13**
Test duration (min): 10 **Data file name: F-000525.cts_data**
Comment: Comment
Customer: Customer information

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):	**230.50**			
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):	**0.182**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.079**	**Test limit:**	**0.650**	**Pass**

8. Electrostatic Discharge Immunity Test

8.1. Test Procedure

a. In the case of air discharge testing the climatic conditions shall be within the following ranges:
- ambient temperature: 15℃ to 35℃;
- relative humidity : 30% to 60%;
- atmospheric pressure: 86 KPa (860 mbar) to 106 KPa (1060 mbar).

b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.

c. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final severity level should not exceed the product specification value in order to avoid damage to the equipment.

d. The test shall be performed with both air discharge and contact discharge. On reselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on air discharge. On reselected points at least 25 single discharges (in the most sensitive polarity) shall be applied on contact discharge.

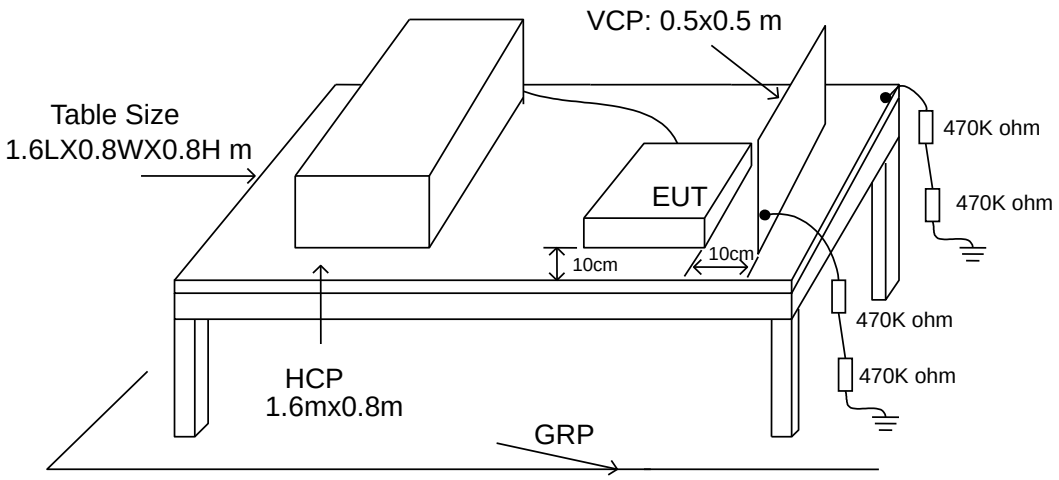
e. For the time interval between successive single discharges an initial value of one second is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.

f. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

g. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted:
- If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
- Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
- The contact discharge test shall not be applied to such surfaces.

h. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

8.2. Test Setup for Tests Performed in Laboratory



The test setup consists of the test generator, EUT and auxiliary instrumentation necessary to perform DIRECT and INDIRECT application of discharges to the EUT as applicable, in the follow manner:

a. Contact Discharge to the conductive surfaces and to coupling plane;
b. Air Discharge at insulating surfaces.

The preferred test method is that of type tests performed in laboratories and the only accepted method of demonstrating conformance with this standard. The EUT was arranged as closely as possible to arrangement in final installed conditions.

A ground reference plane was provided on the floor of the test site. It was a metallic sheet (copper or aluminum) of 0.25 mm, minimum thickness; other metallic may be used but they shall have at least 0.65 mm thickness. In the Cerpass Technology Corp., we provided 1 mm thickness stainless steel ground reference plane. The minimum size of the ground reference plane is 2.5 m x 2.5 m, the exact size depending on the dimensions of the EUT. It was connected to the protective grounding system.

The EUT was arranged and connected according to its functional requirements. A distance of 1m minimum was provided between the EUT and the wall of the lab. and any other metallic structure. In cases where this length exceeds the length necessary to apply the discharges to the selected points, the excess length shall, where possible, be placed non-inductively off the ground reference plane and shall not come closer than 0.2m to other conductive parts in the test setup.

Where the EUT is installed on a metal table, the table was connected to the reference plane via a cable with a 470k ohm resister located at each end, to prevent a build-up of charge. The test setup was consist a wooden table, 0.8m high, standing on the ground reference plane. A HCP, 1.6 m x 0.8 m, was placed on the table. The EUT and cables was isolated from the HCP by an insulating support 0.5 mm thick. The VCP size, 0.5 m x 0.5 m.

8.3. Test Severity Levels

Contact Discharge		Air Discharge	
Level	Test Voltage (KV) of Contact discharge	Level	Test Voltage (KV) of Air Discharge
1	±2	1	±2
2	±4	2	±4
3	±6	3	±8
4	±8	4	±15
X	Specified	X	Specified
Remark: “X” is an open level.			

8.4. Test Result and Data

Final Test Result	:	**PASS**
Required performance criteria	:	B
Basic Standard	:	IEC 61000-4-2
Product Standard	:	EN 55035
Model No.	:	Q27B30
Test Voltage	:	±2 / ±4 / ±8 kV for air discharge, ±2 / ±4 kV for contact discharge
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V

	Contact Discharge								Air Discharge							
	10 times / each								10 times / each							
Voltage	2 kV		4 kV		6 kV		8 kV		2kV		4 kV		8kV		15kV	
Point\Polarity	+	—	+	—	+	—	+	—	+	—	+	—	+	—	+	—
VCP Front	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
VCP Right	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
VCP Left	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
VCP Rear	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
HCP Front	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
HCP Right	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
HCP Left	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
HCP Rear	A	A	A	A	---	---	---	---	---	---	---	---	---	--	---	---
Case	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
Panel	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
HDMI Port	A	A	A	A	---	---	---	---	A	A	A	A	A	A	---	---
DP Port	A	A	A	A	---	---	---	---	A	A	A	A	A	A	---	---
DC Power Port	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
Button	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
LED Light	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

Note: “A” means the EUT function is normal working during the test.

Test engineer: Nancy

9. Radio Frequency electromagnetic field immunity test

9.1. Test Procedure

a. The equipment to be tested is placed in the center of the enclosure on a wooden table. The equipment is then connected to power and signal leads according to pertinent installation instructions.
b. The antenna which is enabling the complete frequency range of 80-6000 MHz is placed 3m away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the applicable antennae.
c. The test is normally performed with the antenna facing the most sensitive side of the EUT. The polarization of the field generated by the bucolical antenna necessitates testing each position twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. The circular polarization of the field from the log-spiral antenna makes a change of position of the antenna unnecessary.
d. At each of the above conditions, the frequency range is swept 80-6000 MHz, pausing to adjust the R.F. signal level or to switch oscillators and antenna. The rate of sweep is in the order of 1.5*10-3 decades/s. The sensitive frequencies or frequencies of dominant interest may be discretely analyzed.

9.2. Test Severity Levels

Frequency Band : 80-5000 MHz	
Level	Test field strength (V/m)
1	1
2	3
3	10
X	Specified
Remark: “X” is an open class.	

Audio port Reference level					
Type of immunity test	Frequency Range MHZ	Acoustic or electrical Interference ratio	Equivalent direct measurement		
			dB(SPL)	Digital dBm	Analogue dBm
Radiated	80 to 1000	0db	75	-30	-30

L0	Input the appropriate signal to the EUT, adjust the EUT output to achieve "Reference level", and record the set value.
L1	When the L0 is set, the EUT output is closed to ensure that the impedance of its input is kept unchanged and the RF test is started. At this time the value of the record is L1, and the corresponding L1 changes are recorded according to the test frequency.

9.3. Test Result and Data

Final Test Result	:	**PASS**
Required performance criteria	:	A
Basic Standard	:	IEC 61000-4-3
Model No.	:	Q27B30
Product Standard	:	EN 55035
Frequency Range	:	80~1000, 1800, 2600, 3500, 5000MHz
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V

Modulation : AM 80% , 1KHz sine wave, Dwell time: 3 S
Frequency Step Size : 1 % of preceding frequency value

Frequency (MHz)	Antenna Polarization	face	Field strength (V/m)	Result
80~1000	Vertical	Front	3	A
80~1000	Vertical	Rear	3	A
80~1000	Vertical	Left	3	A
80~1000	Vertical	Right	3	A
80~1000	Horizontal	Front	3	A
80~1000	Horizontal	Rear	3	A
80~1000	Horizontal	Left	3	A
80~1000	Horizontal	Right	3	A

Modulation : AM 80% , 1KHz sine wave, Dwell time: 3 S
Frequency Step Size : 1 % of preceding frequency value

Frequency (MHz)	Antenna Polarization	face	Field strength (V/m)	Result
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Front	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Rear	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Left	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Right	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Front	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Rear	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Left	3	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Right	3	A

Note: “A” means the EUT function is normal working during the test.

Test engineer: Nancy

10. Electrical Fast Transient/ Burst Immunity Test

10.1. Test Procedure

a. In order to minimize the effect of environmental parameters on test results, the climatic conditions when test is carrying out shall comply with the following requirements:
- ambient temperature: 15℃ to 35℃;
- relative humidity : 45% to 75%;
- Atmospheric pressure: 86 Kpa (860 mbar) to 106 Kpa (1060 mbar).

b. In order to minimize the effect of environmental parameters on test results, the electromagnetic environment of the laboratory shall not influence the test results.

c. The variety and diversity of equipment and systems to be tested make it difficult to establish general criteria for the evaluation of the effects of fast transients/bursts on equipment and systems.

d. Test on Power Line:
- The EFT/B-generator was located on the GRP.
  For floor standing equipment 1,0 m
  For table top equipment 0,5 m
- The EFT/B-generator provides the ability to apply the test voltage in a non-symmetrical condition to the power supply input terminals of the EUT.

e. Test on Communication Lines
- The coupling clamp is composed of a clamp unit for housing the cable (length more than 3 m), and was placed on the GRP.
- The coupling clamp provides the ability of coupling the fast transient/bursts to the cable under test.

f. The test results may be classified on the basic of the operating conditions and the functional specification of the equipment under test, according to the following performance criteria :
- Normal performance within the specification limits.
- Temporary degradation or loss of function or performance which is self-recoverable.
- Temporary degradation or loss of function or performance which requires operator intervention or system reset.
- Degradation or loss of function which is not recoverable due to damage of equipment (components).

10.2. Test Severity Levels

The following test severity levels are recommended for the fast transient/burst test :

Open circuit output test voltage ± 10%		
Level	On Power Supply	On I/O signal, data and control line
1	0.5 KV	0.25 KV
2	1.0 KV	0.50 KV
3	2.0 KV	1.00 KV
4	4.0 KV	2.00 KV
X	Specified	Specified

Remark: " X " is an open level. The level is subject to negotiation between the user and manufacturer or is specified by the manufacturer.

10.3. Test Result and Data

Final Test Result	:	**PASS**
Required performance criteria	:	B
Basic Standard	:	IEC 61000-4-4
Product Standard	:	EN 55035
Model No.	:	Q27B30
Test Voltage	:	On Power Supply -- ±0.5 kV /±1.0 kV On I/O signal, data and control line -- ±0.5 kV
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V

Pulse: 5/50 ns Burst :15m/300ms Test time: 1 min/each condition		5kHz:except for xDSL equipment 100kHz:Only for single lines of xDSL equipment			
Voltage/ Mode/ Polarity/ Result/ Phase		0.5 kV		1.0 kV	
		+	—	+	—
Power Line	L	---	---	A	A
	N	---	---	A	A
	L-N	---	---	A	A
	PE	---	---	---	---
	L-PE	---	---	---	---
	N-PE	---	---	---	---
	L-N-PE	---	---	---	---

Note: “A” means the EUT function is normal working during the test.

Test engineer: Nuny

11. Surge Immunity Test

11.1. Test Procedure

a. Climatic conditions
The climatic conditions shall comply with the following requirements:
- ambient temperature: 15 ℃ to 35 ℃
- relative humidity: 10 % to 75 %
- atmospheric pressure: 86 kPa to 106 kPa (860 mbar to 1060 mbar)

b. Electromagnetic conditions
the electromagnetic environment of the laboratory shall not influence the test results.

c. The test shall be performed according the test plan that shall specify the test set-up with
- generator and other equipment utilized;
- test level (voltage/current);
- generator source impedance;
- internal or external generator trigger;
- number of tests: at least five positive and five negative at the selected points;
- repetition rate: maximum 1/min.
- inputs and outputs to be tested;
- representative operating conditions of the EUT;
- sequence of application of the surge to the circuit;
- phase angle in the case of AC. power supply;
- actual installation conditions, for example:
  AC: neutral earthed,
  DC: (+) or (-) earthed to simulated the actual earthing conditions.

d. If not otherwise specified the surges have to be applied synchronized to the voltage phase at the zero-crossing and the peak value of the AC. voltage wave (positive and negative).

e. The surges have to be applied line to line and line(s) and earth. When testing line to earth, the test voltage has to be applied successively between each of the lines and earth, if there is no other specification.

f. The test procedure shall also consider the non-linear current-voltage characteristics of the equipment under test. Therefore the test voltage has to be increased by steps up to the test level specified in the product standard or test plan.

g. All lower levels including the selected test level shall be satisfied. For testing the secondary protection, the output voltage of the generator shall be increased up to the worst-case voltage breakdown level (let-through level) of the primary protection.

h. If the actual operating signal sources are not available, that may be simulated. Under no circumstances may the test level exceed the product specification. The test shall be carried out according to a test plan.

i. To find all critical points of the duty cycle of the equipment, a sufficient number of positive and negative test pulses shall be applied. For acceptance test previously unstressed equipment shall be used to the protection devices shall be replaced.

11.2. Test Severity Level

Level	Open-circuit test voltage (kV)	
	Line-to-line	Line-to-ground [b]
1	---	0.5
2	0.5	1.0
3	1.0	2.0
4	2.0	4.0
X [a]	Special	Special

[a] “X” and be any level, above, below or in between the others. The level shall be specified in the dedicated equipment specification.
[b] For symmetrical interconnection lines the test can be applied to multiple lines simultaneously with respect to ground, i.e. “lines to ground”.

11.3. Test Result and Data

Final Test Result	:	PASS
Required performance criteria	:	B for Power Port; B/C for Telecommunication Port
Basic Standard	:	IEC 61000-4-5
Product Standard	:	EN 55035
Model No.	:	Q27B30
Test Voltage	:	Input AC Power Port -- ±0.5/1.0 kV for Line to Line ±0.5/1.0/2.0 kV for Line to Ground
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V

For input power port

Waveform : 1.2/50μs(8/20μs) Repetition rate : 60 sec Time : 5 time/each condition				
/Phase Voltage / Mode / Polarity / Result			90°	270°
0.5/1.0kV	L-N	+	A	---
		—	---	A
0.5/1.0/2.0kV	L-PE	+	---	---
		—	---	---
	N-PE	+	---	---
		—	---	---

Note: “A” means the EUT function is normal working during the test.

Test engineer: Nuny

12. Conduction Disturbances induced by Radio-Frequency Fields

12.1. Test Procedure

a. The EUT shall be operated within its intended climatic conditions. The temperature and relative humidity should be recorded.
b. This test method test can be performed without using a sell shielded enclosure. This is because the disturbance levels applied and the geometry of the setups are not likely to radiated a high amount of energy, especially at the lower frequencies. If under certain circumstances the radiated energy is too high, a shielded enclosure has to be used.
c. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF-input ports of the coupling devices are terminated by a 50ohm load resistor.
d. The frequency range is swept from 150 KHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1KHz sign wave, pausing to adjust the RF-signal level or to switch coupling devices as necessary. The rate of sweep shall no exceed 1.5 x 10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall no exceed 1% of the start and thereafter 1% of the preceding frequency value.
e. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies e.g. clock frequency (ies) and harmonics or frequencies of dominant interest shall be analyzed separately.
f. An alternative test procedure may be adopted, wherein the frequency range is swept incrementally, with a step size not exceeding 4% of the start and thereafter 4% of the preceding frequency value. The test level should be at least twice the value of the specified test level.
g. In cases of dispute, the test procedure using a step size not exceeding 1% of the start and thereafter 1% of preceding frequency value shall take precedence.
h. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.
i. The use of special exercising programs is recommended.
j. Testing shall be performed according to a Test Plan, which shall be included in the test report.
k. It may be necessary to carry out some investigatory testing in order to establish some aspects of the test plan.

12.2.Test Severity Levels

Level	Voltage Level (e.m.f.)
1	1 V
2	3 V
3	10 V
x	Specified
NOTE - x is an open class. This level can be specified in the product specification.	

Audio port Reference level					
Type of immunity test	Frequency Range MHZ	Acoustic or electrical Interference ratio	Equivalent direct measurement		
			dB (SPL)	Digital dBm0	Analogue dBm
Conducted	0.15 to 30	-20dB	55	-50	-50
	30 to 80	-10dB	65	-40	-40

L0	Input the appropriate signal to the EUT, adjust the EUT output to achieve "Reference level", and record the set value.
L1	When the L0 is set, the EUT output is closed to ensure that the impedance of its input is kept unchanged and the RF test is started. At this time the value of the record is L1, and the corresponding L1 changes are recorded according to the test frequency.

12.3. Test Result and Data

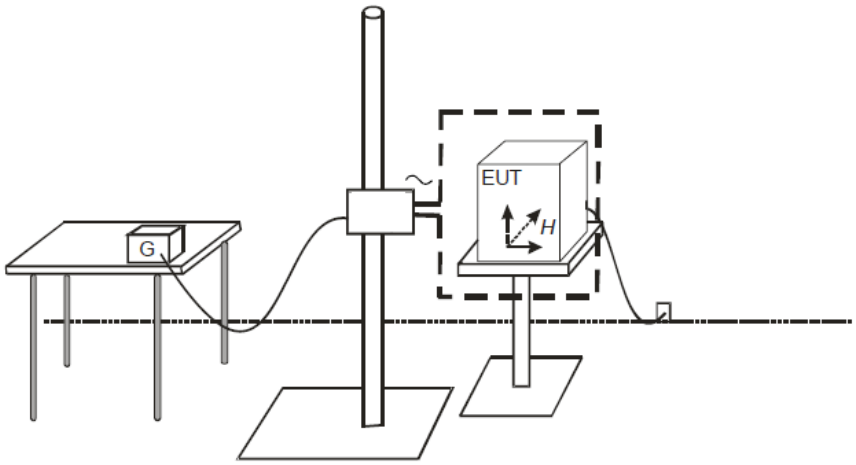
Final Test Result	:	**PASS**
Required performance criteria	:	A
Basic Standard	:	IEC 61000-4-6
Product Standard	:	EN 55035
Model No.	:	Q27B30
Coupling mode	:	CDN-(M2+M3) for AC power ports EM-Clamp for signal ports
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V

Frequency: 0.15~80MHz,Modulation: AM 80%,1KHz sine wave, Dwell time: 3s Frequency Step Size: 1 % of preceding frequency value			
Frequency	Test mode	Voltage(V)	Result
0.15 ~ 10MHz,	Power(M2)	3	A
10 ~ 30MHz,		3-1	A
30 ~ 80MHz		1	A

Test engineer: Nuny

13. Power Frequency Magnetic Field Immunity Test

13.1. Test Setup



13.2. Test Severity Levels

Level	Magnetic field strength (A/m)
1	1
2	3
3	10
4	30
5	100
X[1)]	special
NOTE 1 “X” is an open level. This level can be given in the product specification.	

13.3. Test Result and Data

Final Test Result	:	**PASS**
Required performance criteria	:	A
Basic Standard	:	IEC 61000-4-8
Product Standard	:	EN 55035
Model No.	:	Q27B30
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 5	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 110V

Power Frequency Magnetic Field : 50/60 Hz, 1 A/m		
Coil Orientation	Testing duration	Results
X-axis	1.0 Min	A
Y-axis	1.0 Min	A
Z-axis	1.0 Min	A

Note: “A” Mean the EUT function is normal working during the test.

Test engineer: Nuny

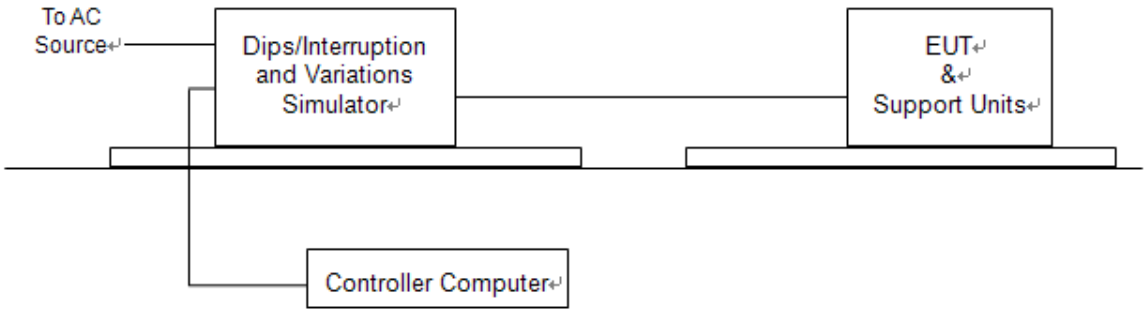
14. Voltage Dips and Voltage Interruptions Immunity Test Setup

14.1. Test Conditions

1. Source voltage and frequency: AC 230V / 50 Hz, 110V / 60 Hz, Single phase.
2. Test of interval: 10 sec.
3. Level and duration: Sequence of 3 dips/interrupts.
4. Voltage rise (and fall) time: 1 ~ 5 μs.
5. Test severity:

Voltage dips and Interrupt reduction (%)	Test Duration (period)	Required performance criteria
>95%	250	C
30%	25	C
>95%	0.5	B

14.2. TEST SETUP



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

14.3. Test Result and Data

Final Test Result	:	**PASS**
Required performance Criteria	:	Voltage dips: (B)Residual voltage<5% 0.5period (C) Residual voltage 70% 25period(50Hz),30period(60Hz) Voltage interruptions: (C)Residual voltage <5% 250period(50Hz),300period(60Hz)
Basic Standard	:	IEC 61000-4-11
Product Standard	:	EN 55035
Model No.	:	Q27B30
Temperature	:	25°C
Relative Humidity	:	54 %
Atmospheric Pressure	:	1008hPa
Test Date	:	May 19, 2025
Test Mode 1	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 230V
Test Mode 5	:	Full system (HDMI mode 2560*1440@75Hz) Signal from PC with 1.5m HDMI Cable for 110V

Voltage(UT): AC 230V 50Hz Interval(s): 10s Times: 3

Test mode	Test level UT %	Durations (period)	Phase / Result	
			0°	180°
Voltage interruptions	>95%	250	C	C
Voltage dips	30%	25	A	A
	>95%	0.5	A	A

Voltage(UT): AC 110V/60Hz Interval(s): 10s Times: 3

Test mode	Test level UT %	Durations (period)	Phase / Result	
			0°	180°
Voltage interruptions	>95%	300	C	C
Voltage dips	30%	30	A	A
	>95%	0.5	A	A

Note: "A" means the EUT function is normal working during the test.

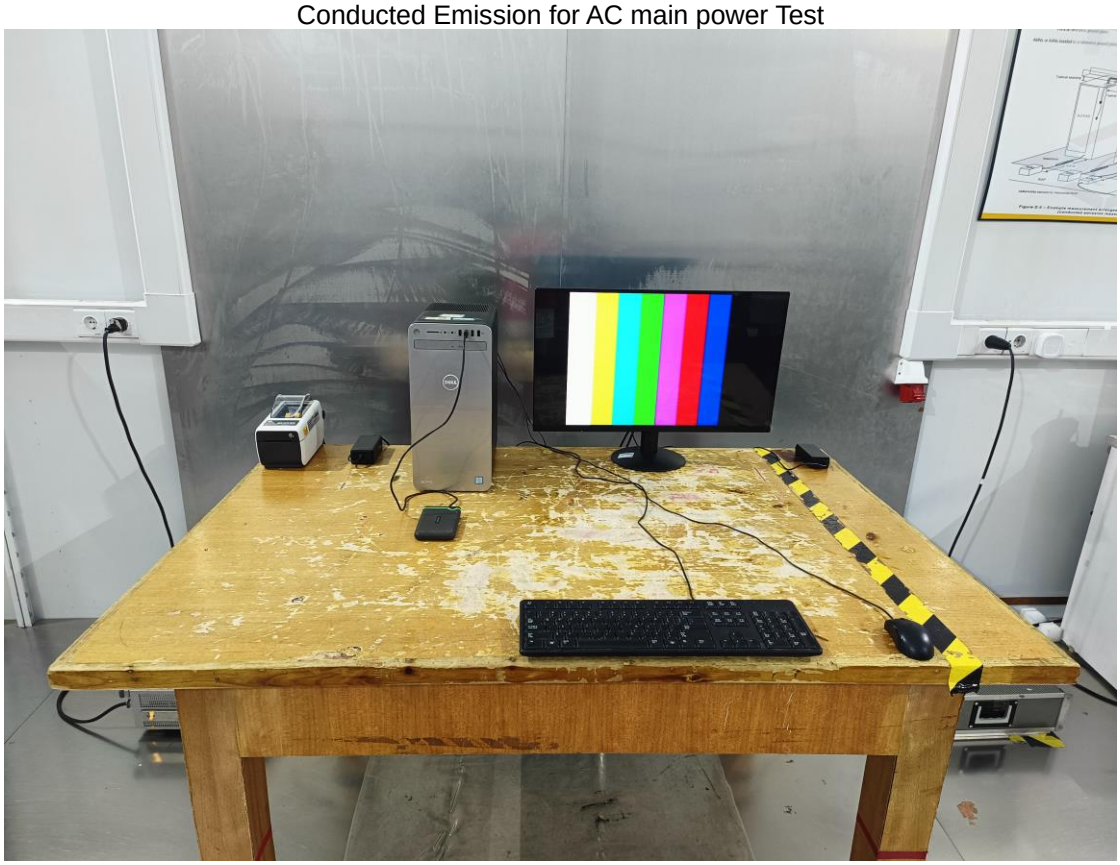
"B" means the EUT function is affected during the test, and it can be recovered by auto resetting.

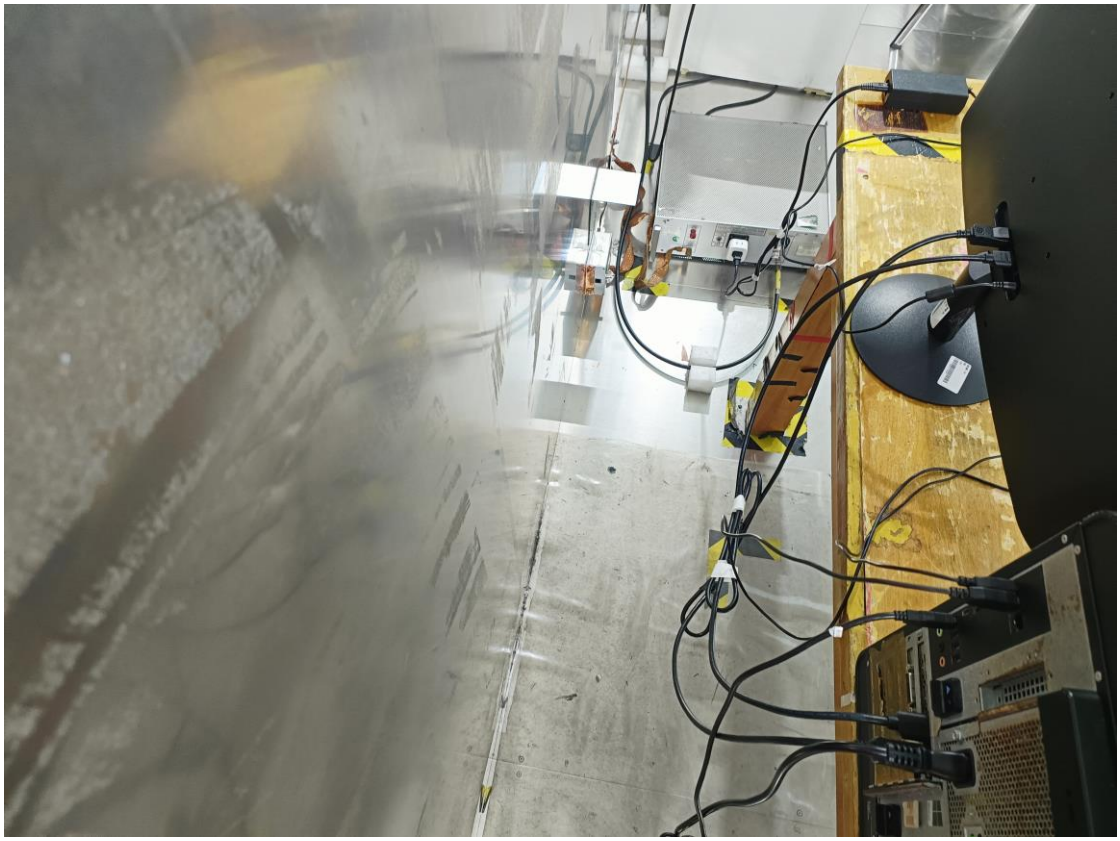
"C" means the EUT function is affected during the test, and it can be recovered by manual resetting.

Test engineer: Nuny

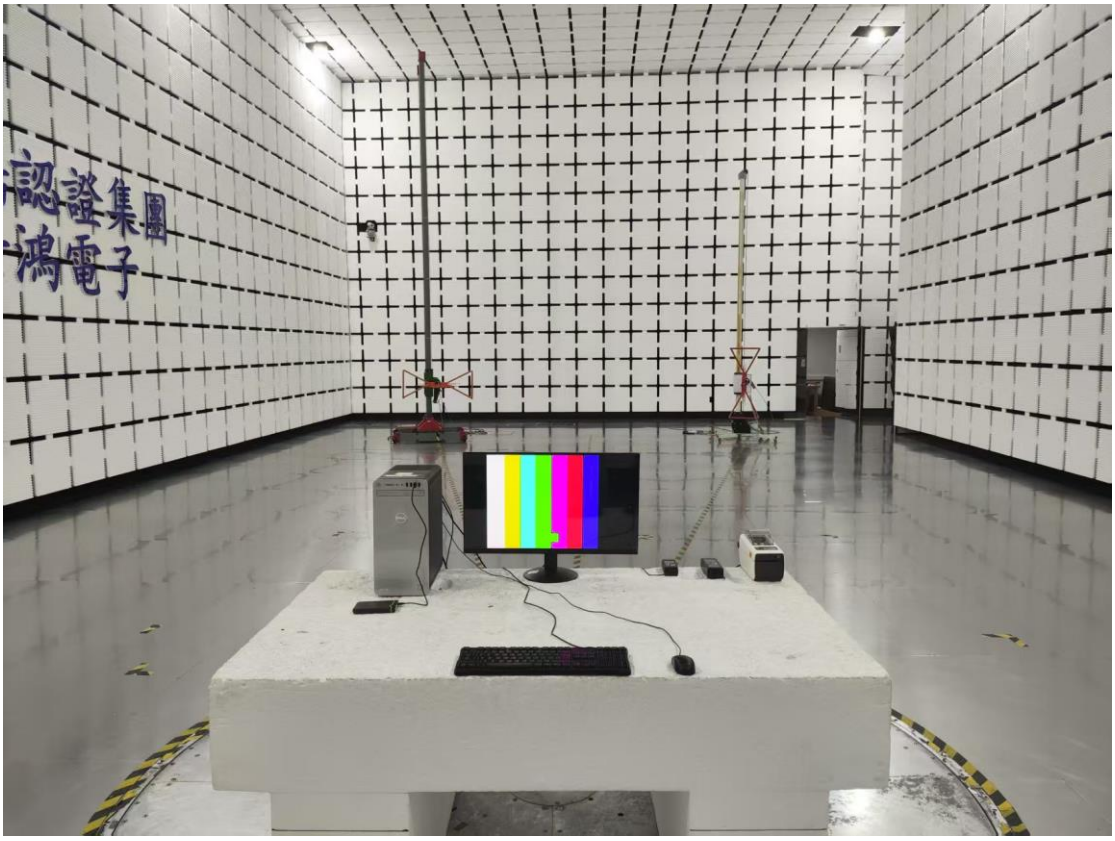
15. Photographs of the test configuration

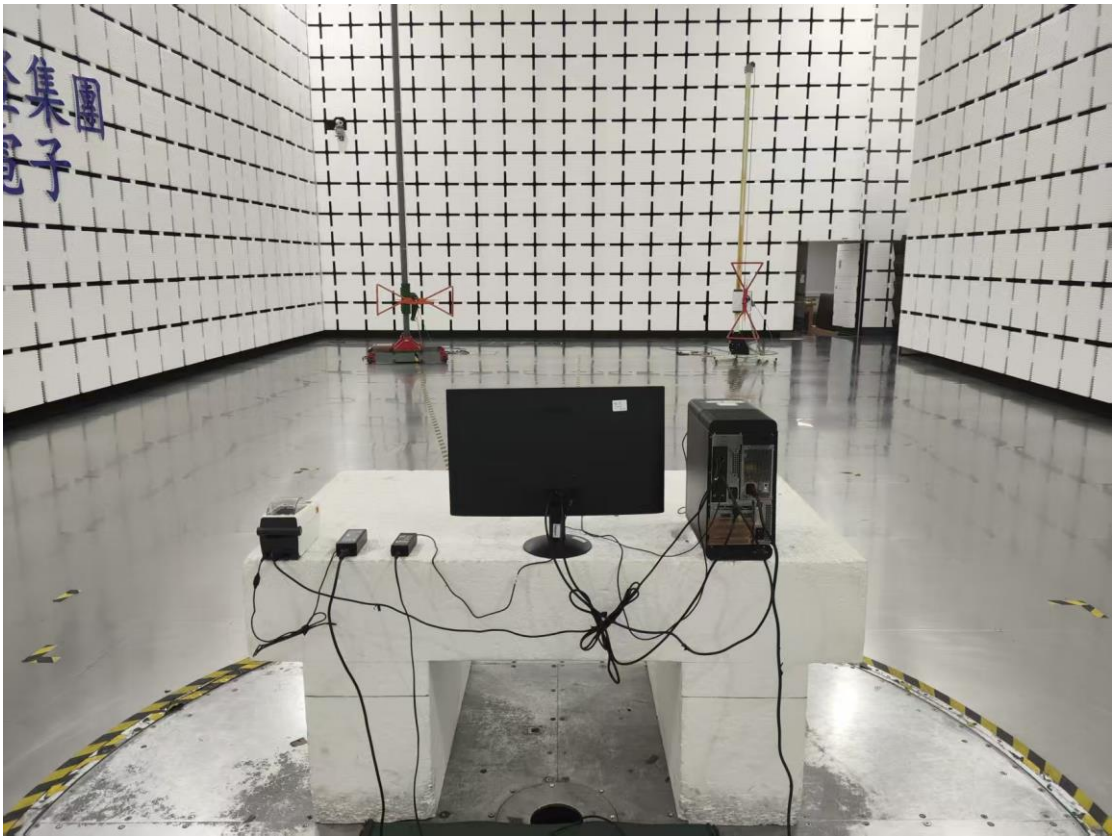
Conducted Emission for AC main power Test



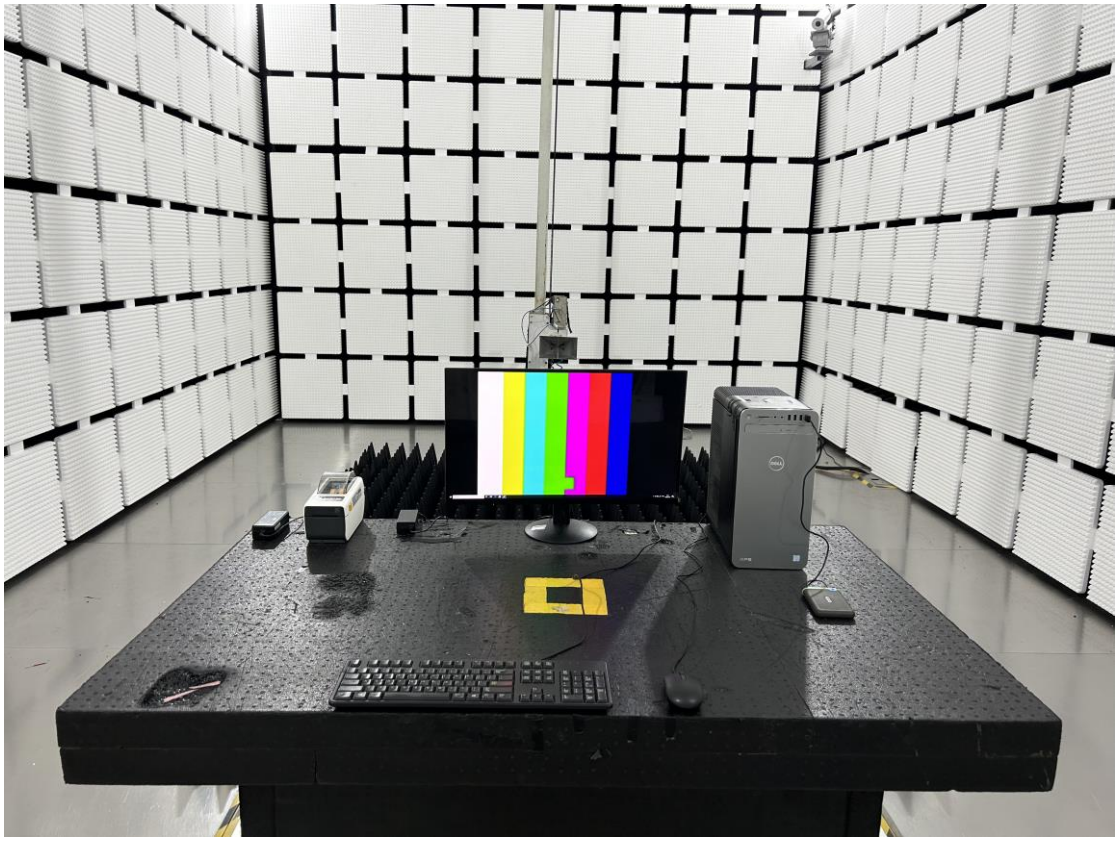


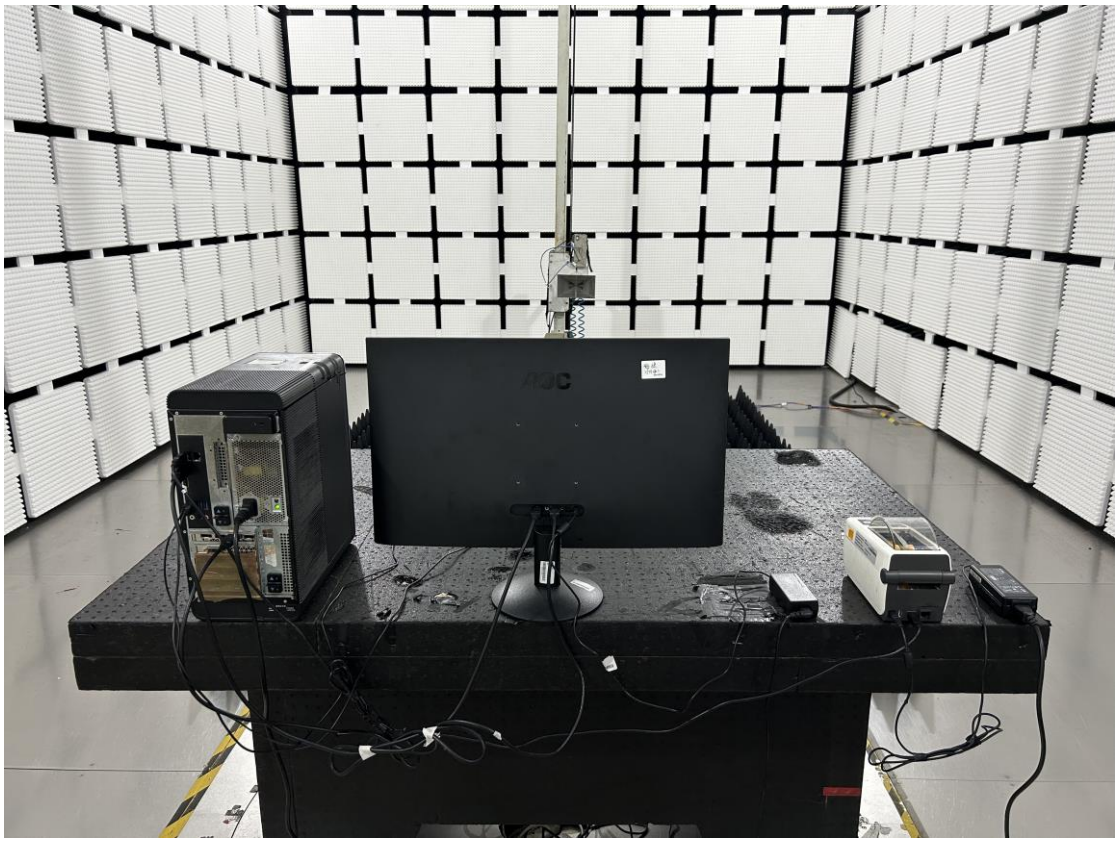
Radiated Emission Test (30MHz~1GHz)





Radiated Emission Test (1GHz~6GHz)

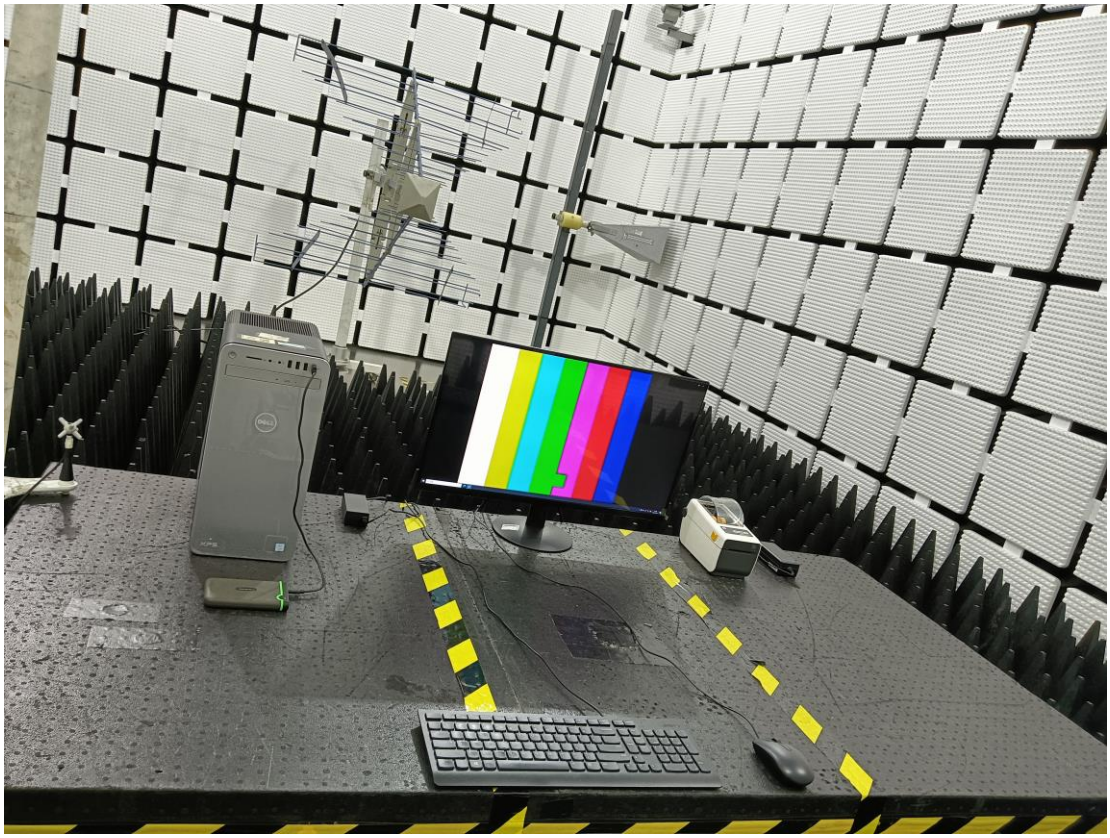




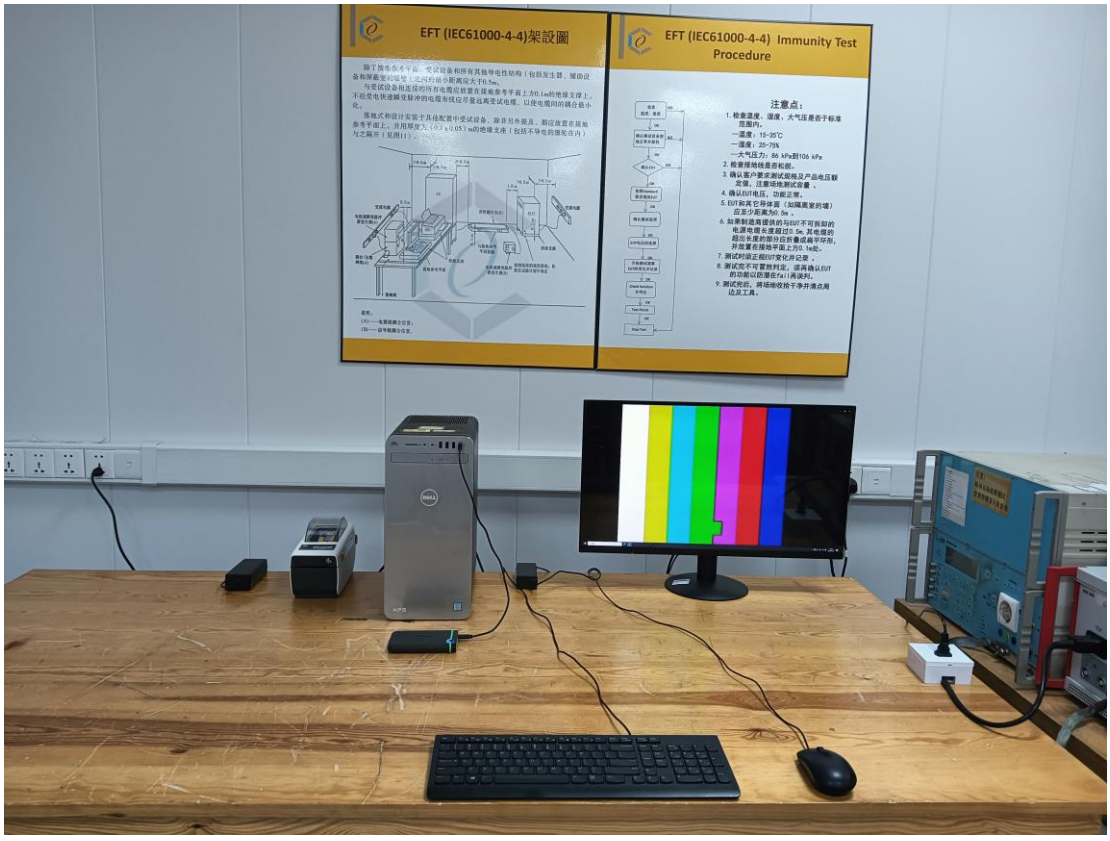
Harmonics & Voltage Fluctuations

ESD Test

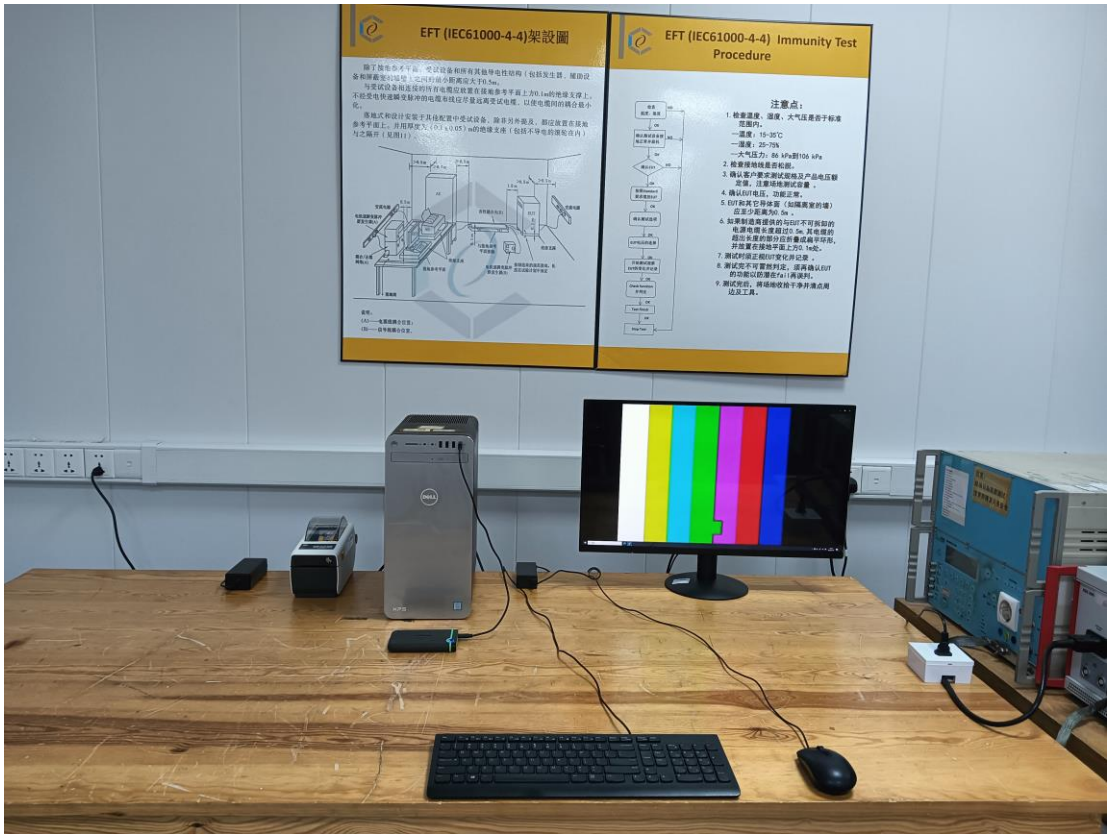
RS Test



EFT Test for power port

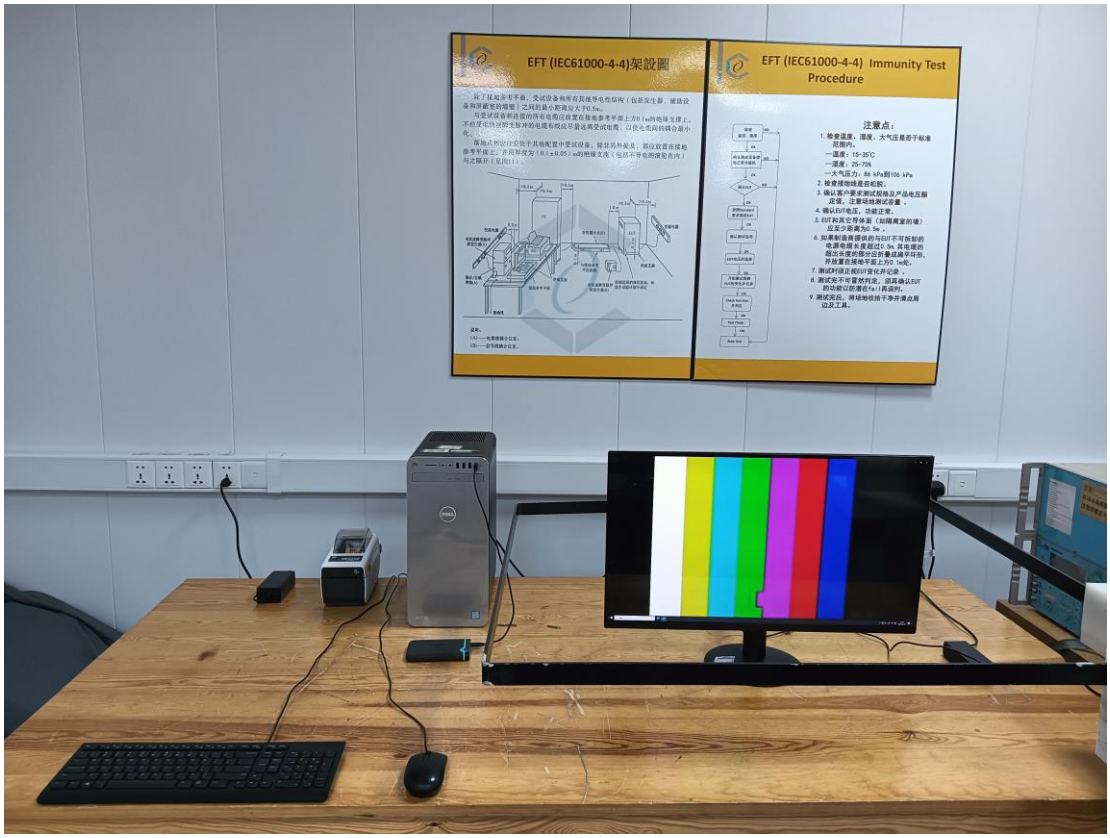


Surge Test

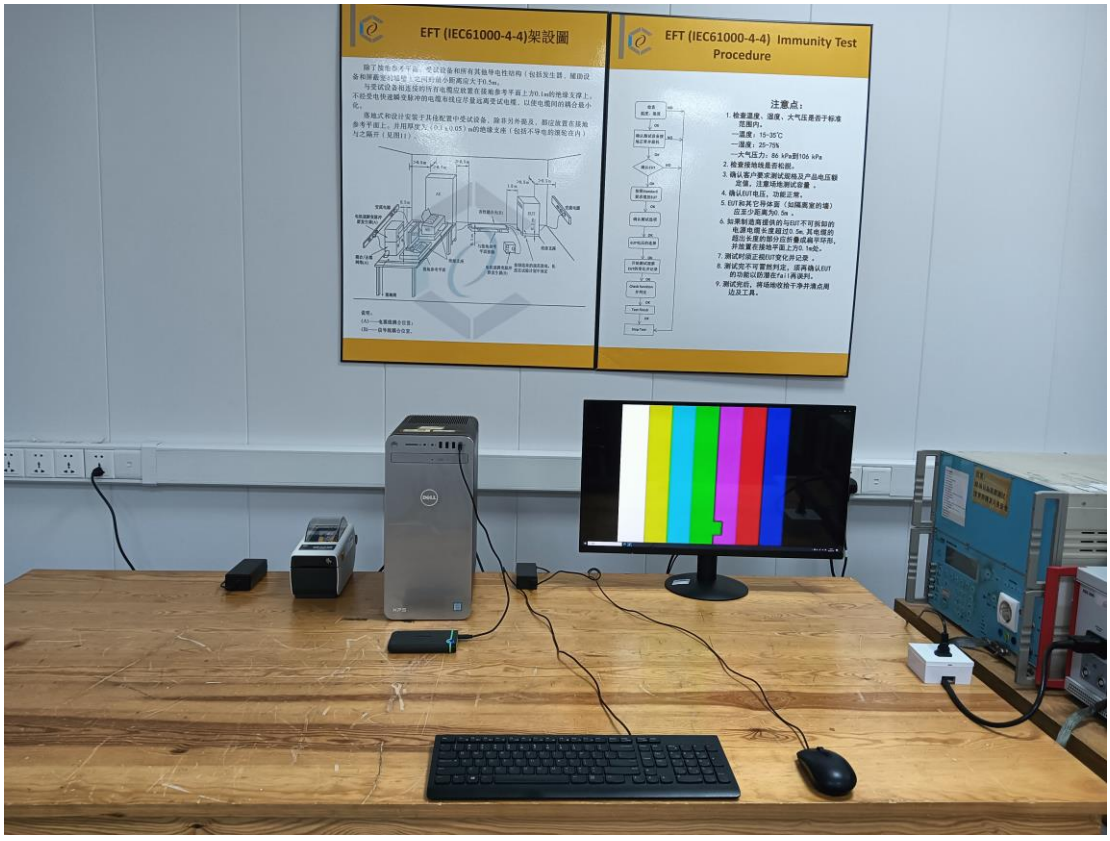


CS Test for power port

PFMF Test



Dips Test



16. List of Measuring Equipment

Conducted Emission					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration	Valid Date.
Test Receiver	R&S	ESCI	100564	2024/12/30	2025/12/29
LISN	SCHWARZBECK	NSLK 8127	8127748	2024/12/30	2025/12/29
LISN	R&S	ENV216	100024	2024/12/30	2025/12/29
Pulse Limiter with 10dB Attenuation	SCHWARZBECK	VTSD 9561-F	9561-F106	2024/12/30	2025/12/29
Cable	Aoda	RG214	Cable-06	2024/12/30	2025/12/29
Temperature/ Humidity Meter	GEMLEAD	STH200A	N/A	2024/08/02	2025/08/01
Software	AUDIX	E3	Version: 8.14806b	N/A	N/A
Test Site	Yiheng	AC-DG-005	N/A	2023/5/6	2026/5/5

Radiated Emission below 1GHz					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Vertical					
EMI Test Receiver	R&S	ESCI	100565	2024/08/01	2025/07/31
Preamplifier	Mini-Circuits	ZKL-2+	S1773911904	2024/08/01	2025/07/31
Bilog Antenna	Sunol Science	JB1	A072414-2	2024/06/12	2026/06/11
Cable	CH-CoDesigh	CCXA81-SMAMNM-9M	21070881	2024/08/01	2025/07/31
Cable	CH-CoDesigh	CCXA81-SMAMNM-7M-L	21070884	2024/08/01	2025/07/31
Horizontal					
EMI Test Receiver	R&S	ESCI7	100968	2024/12/30	2025/12/29
Preamplifier	EMCI	EMCI 030-00-3230	SN016723	2024/12/30	2025/12/29
Bilog Antenna	Sunol Science	JB6	A111218	2025/01/16	2027/01/15
Cable	CH-CoDesigh	CCXA81-SMAMNM-9M	21070878	2024/12/30	2025/12/29
Cable	CH-CoDesigh	CCXA81-SMAMNM-10M-L	21070887	2024/12/30	2025/12/29
Temperature/ Humidity Meter	GEMLEAD	STH200A	N/A	2024/08/02	2025/08/01
Software	AUDIX	E3	Version: 8.14806b	N/A	N/A
Test Site	Yiheng	AC-DG-007	N/A	2024/4/12	2027/4/11

Radiated Emission Above1GHz					
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Preamplifier	Agilent	8449B	3008A02342	2024/08/01	2025/07/31
Horn Antenna	Sunol	DRH-118	A072913	2024/08/02	2026/08/01
FSQ Signal Analyzer	R&S	FSQ40	200012	2024/12/31	2025/12/30
Cable	Jiuzhoubona	T-SMA	SMA48AL-0500	2024/08/01	2025/07/31
Cable	EMCI	EM104-NMSM-7	Cable-01	2024/08/01	2025/07/31

		M			
Temperature/ Humidity Meter	GEMLEAD	STH200A	N/A	2024/08/02	2025/08/01
Software	AUDIX	E3	Version: 8.14806b	N/A	N/A
Test Site	Yiheng	AC-DG-004	N/A	2023/5/10	2026/5/9

Harmonic and Flicker Emissions					
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Power Source	TESEQ	NSG 1007-3	1330A03972	2024/08/01	2025/07/31
Harmonic & Flicker Tester	TESEQ	CCN 1000-1	1330A03972	2024/08/01	2025/07/31
Software	TESEQ	CTS4	4.29.00	N/A	N/A
Temperature/ Humidity Meter	mingle	ETH529	N/A	2025/01/02	2026/01/01
Test Site	Yiheng	AC-DG-002	N/A	2023/5/6	2026/5/5

ESD					
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
ESD Simulator	TESEQ	NSG437	575	2024/08/02	2025/08/01
Temperature/ Humidity Meter	mingle	ETH529	N/A	2025/01/02	2026/01/01

RS					
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Signal Generator	R&S	SML03	103287	2024/08/01	2025/07/31
Signal Generator	R&S	SMR30	100049	2024/08/01	2025/07/31
Power Sensor	R&S	NRP-Z11	106374	2025/01/02	2026/01/01
Power Amplifer	BONN	BLWA0830-160 /100/40D	76659	2024/08/01	2025/07/31
Preamplifier	MILMEGA	AS1860-30	10040456	2024/08/01	2025/07/31
Electric field probe	NARDA	EP601	811ZX30896	2025/01/02	2026/01/01
EMS Antenna	R&S	HL046E	100028	N/A	N/A
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120 E	475	2025/01/12	2027/01/11
Software	AUDIX	I2	5.0.0.0	N/A	N/A
Temperature/ Humidity Meter	mingle	ETH529	N/A	2025/01/02	2026/01/01
Test Site	Yiheng	AC-DG-006	N/A	2023/5/9	2026/5/8

EFT; SURGE; PFMF; DIPS					
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Integrated Generator	TESEQ	NSG 3040	2032	2024/08/01	2025/07/31
voltage regulator	TESEQ	VAR 3005-S16	850	2024/08/01	2025/07/31
TRANSIENT	EMCPARTNER	TRA2000IN6	901	2024/08/01	2025/07/31
Coupling clamp	EMCPARTNER	CN-EFT1000	547	2024/08/01	2025/07/31
H-Filed-Loop	EMCPARTNER	MF1000-1	144	2024/08/01	2025/07/31

CDN	EMTEST	CNV508T5	P 1546167499	2024/08/01	2025/07/31
Temperature/ Humidity Meter	mingle	ETH529	N/A	2025/01/02	2026/01/01
Test Site	Yiheng	AC-DG-002	N/A	2023/5/6	2026/5/5

CS					
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Conducted immunity test system	TESEQ	NSG 4070	35902	2024/08/01	2025/07/31
EM Injection clamp	TESEQ	KEMZ 801A	33492	2024/08/01	2025/07/31
CDN	TESEQ	CDN M016	35841	2024/08/01	2025/07/31
6 dB Attenuator	TESEQ	ANT 6050	34864	2024/08/01	2025/07/31
Software	SKET	EMS-C	1.2.0.42	N/A	N/A
Temperature/ Humidity Meter	mingle	ETH529	N/A	2025/01/02	2026/01/01
Test Site	Yiheng	AC-DG-002	N/A	2023/5/6	2026/5/5

---------- End of the report ----------