EMC TEST REPORT

Applicant……	:	SDAPO Communication Co., Ltd.
Address……....	:	5F, W2, Chengxin Building, Tian An Shen Chuang Valley Industrial Center, Fenggang Town, Dongguan City, Guangdong Province, China
Manufacturer……..	:	SDAPO Communication Co., Ltd.
Address……....	:	5F, W2, Chengxin Building, Tian An Shen Chuang Valley Industrial Center, Fenggang Town, Dongguan City, Guangdong Province, China
Factory……	:	SDAPO Communication Co., Ltd.
Address……..	:	5F, W2, Chengxin Building, Tian An Shen Chuang Valley Industrial Center, Fenggang Town, Dongguan City, Guangdong Province, China
Product Name……	:	POE Driver
Brand Name……...	:	SDAPO
Model No. ……..….	:	P2C5V, PD2CAT, PD2CAT-20V, PD2CBT-20V, GP2C5V, GPD2CAT-20V, GPD2CBT-20V (For model difference refer to section 2)
Measurement Standard……..:		EN 55032: 2015+A1: 2020; EN 55035: 2017+A11: 2020
Receipt Date of Samples….	:	November 30, 2023
Date of Tested……	:	December 01, 2024 to April 07, 2024
Date of Report……	:	April 13, 2024

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.

Prepared by

Julie Xiao / Project Engineer

Approved by

Iori Fan / Authorized Signatory

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Revision History

Report Number	Description	Issued Date
NTC2311457EV00	Initial Issue	2024-04-13

1. Summary of Test Result

EMISSION			
Standard	**Test Item**	**Result**	**Remarks**
EN 55032: 2015+A1: 2020	Conducted Emission	PASS	---
	Conducted Disturbance at the telecommunication ports	PASS	---
	Radiated Emission	PASS	---
EN IEC 61000-3-2: 2019+A1: 2021	Harmonic Current Emission	N/A	---
EN 61000-3-3: 2013+A2: 2021	Voltage Fluctuations & Flicker	N/A	---

IMMUNITY(EN 55035: 2017+A11: 2020)			
Standard	**Test Item**	**Result**	**Remarks**
IEC 61000-4-2: 2008	Electrostatic Discharges (ESD)	PASS	---
IEC 61000-4-3: 2006+A1: 2007+A2: 2010	Continuous RF Electromagnetic Field Disturbances	PASS	---
IEC 61000-4-4: 2012	Electrical Fast Transients/Burst (EFT/B)	PASS	---
IEC 61000-4-5: 2005	Surges	N/A	---
IEC 61000-4-6: 2008	Continuous Induced RF Disturbances	PASS	---
IEC 61000-4-8: 2009	Power Frequency Magnetic Field	N/A	The EUT does not Contain Magnetic Field Sensitive Components.
IEC 61000-4-11: 2004	Voltage Dips and Interruptions	N/A	---
Note: N/A means not applicable.			

2. General Description of EUT

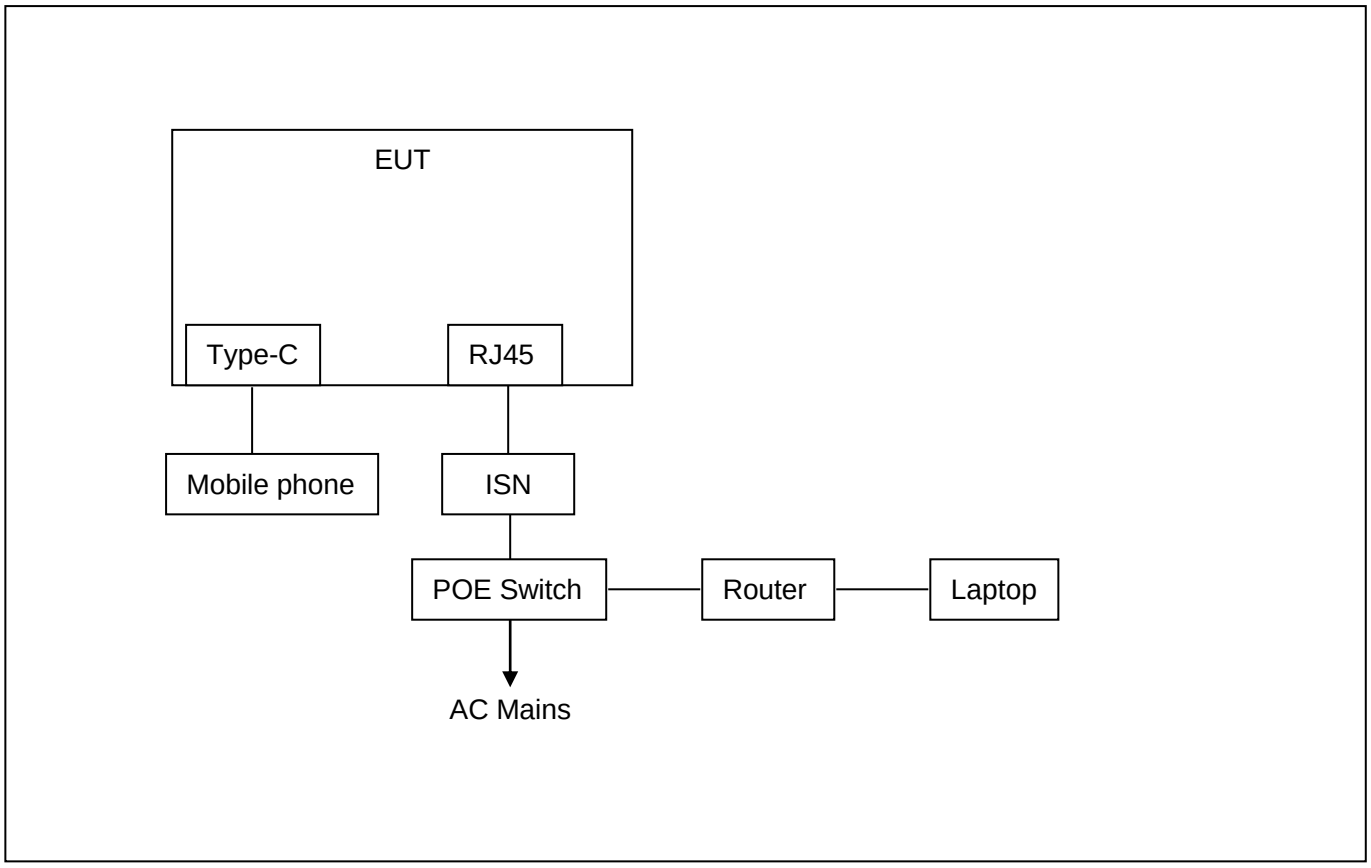
Product Information	
Product name:	POE Driver
Main Model Name:	P2C5V
Additional Model Name:	PD2CAT, PD2CAT-20V, PD2CBT-20V, GP2C5V, GPD2CAT-20V, GPD2CBT-20V
Model Difference:	These models have the same circuit schematic, construction, PCB Layout and critical components. The differences are model number, appearance color, size and transmission speed due to trading purpose.
S/N:	0124P2C5V0696
Brand Name:	SDAPO
EUT Type:	Class B
Operation Frequency:	Below 108MHz
Hardware Version:	Not stated
Software Version:	Not stated
Rating:	DC 5V come from Type-C
I/O Port:	Refer to user's manual
Accessories Information	
Adapter:	N/A
Cable:	Shielded cable: 0.27m, shielded, undetachable
Other:	N/A
Additional Information	
Note:	1. According to these model differences and the requirements of manufacturer, all tests were performed on model P2C5V. 2. The Network cable could be extended to more than 3m but less than 30m.
Remark:	All the information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.

3. Configuration of EUT

Description of Test Modes

Test Mode		Description
1.	Charging+ connect to network	Turn on the EUT and connect the EUT as below diagram, then make EUT charge for mobile phone and laptop exchange data.

Block Diagram of Configuration



Note:

a. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

b. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use, if necessary.

4. Description of Support Device

No.	Equipment	Brand	M/N	S/N	Cable Specification	Remarks
1.	Laptop	HUAWEI	HBL-W19	M3VPM19C05000965	---	Provided by the Lab.
2.	Mobile phone	HUAWEI	HUAWEI Mate 20	HJS5T18A27011455	---	Provided by the Lab.
3.	POE Switch	---	PSE604EX	---	---	Provided by the manufacturer
4.	Router	TP-LINK	TL-WR885N	114B345000329	---	Provided by the Lab.

5. Test Facility

Test Site	:	Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)
Accreditations and Authorizations	:	The Laboratory has been assessed and proved to be in compliance with CNAS/CL01 Listed by CNAS, August 13, 2018 The Certificate Registration Number is L5795. The Certificate is valid until August 13, 2024 The Laboratory has been assessed and proved to be in compliance with ISO17025 Listed by A2LA, November 01, 2017 The Certificate Registration Number is 4429.01 The Certificate is valid until December 31, 2025 Listed by FCC, November 06, 2017 Test Firm Registration Number: 907417 Listed by Industry Canada, June 08, 2017 The Certificate Registration Number. Is 46405-9743A
Test Site Location	:	Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, China

6. Test Conditions

No.	Test Item	Test Mode	Test Voltage	Tested by	Remarks
1.	Conducted Emission	1	AC 230V / 50Hz	Desn	See note 1
2.	Conducted Emission (Asymmetric mode) Wired network Port	1	AC 230V / 50Hz	Karthus	See note 1
3.	Conducted Emission (Asymmetric mode) -Antenna Port	---	---	---	---
4.	Conducted Differential Voltage Emissions	---	---	---	---
5.	Radiated Emission	1	AC 230V / 50Hz	Park	See note 1
6.	Harmonic Current Emission	---	---	---	---
7.	Voltage Fluctuations & Flicker	---	---	---	---
8.	Electrostatic Discharges (ESD)	1	AC 230V / 50Hz	Leon	See note 2
9.	Continuous RF Electromagnetic Field Disturbances	1	AC 230V / 50Hz	Leon	See note 1
10.	Electrical Fast Transients/Burst (EFT/B)	1	AC 230V / 50Hz	Park	See note 1
11.	Surges	---	---	---	---
12.	Continuous Induced RF Disturbances	1	AC 230V / 50Hz	Leon	See note 1
13.	Power Frequency Magnetic Field	---	---	---	---
14.	Voltage Dips and Interruptions	---	---	---	---

Note:

1. The testing climatic conditions for temperature, humidity, and atmospheric pressure are within: 15~35℃, 30~70%, 86~106kPa.
2. The testing climatic conditions for temperature, humidity, and atmospheric pressure are within: 15~35℃, 30~60%, 86~106kPa.
3. AC 230V 50Hz come from POE Switch.

7. Measurement Uncertainty

No.	Test Item	Frequency	Uncertainty	Remarks
1.	Conducted Emission (AC mains)	9KHz ~ 150KHz	± 3.04 dB	---
		150KHz ~ 30MHz	± 2.52 dB	---
2.	Conducted Emission (Asymmetric mode) Wired network Port	150KHz ~ 30MHz	± 2.52 dB	---
3.	Conducted Emission (Asymmetric mode) Antenna Port	150KHz ~ 30MHz	± 2.52 dB	---
4.	Conducted Differential Voltage Emissions	30 ~ 2150MHz	± 2.52 dB	---
5.	Radiated Emission	30MHz ~ 1GHz	± 5.66 dB	---
		1GHz ~ 6GHz	± 5.19 dB	---

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The measurement uncertainly levels above are estimated and calculated according to CISPR 16-4-2.

8. Measurement Bandwidths

No.	Frequency Range (MHz)	Peak Level (kHz)	Quasi-Peak Level (kHz)	Average Level (kHz)
1.	0.01 ~ 0.15	1.0	0.2	0.2
2.	0.15 ~ 30.0	10.0	9.0	9.0
3.	30 ~ 1000	100.0	120.0	120.0
4.	Above 1000	1000.0	N/A	1000.0

Note: Measurements were made using the bandwidths and detectors specified by the standard. No video filter was used.

9. Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

10. Sample Calculations

Conducted Emission						
Freq. (MHz)	**Reading Level (dBuV)**	**Correct Factor (dB)**	**Measurement (dBuV)**	**Limit (dBuV)**	**Over (dB)**	**Detector**
0.2379	22.00	20.60	42.60	62.17	-19.57	QP

Where,

Freq.	= Emission frequency in MHz
Reading Level	= Spectrum Analyzer/Receiver Reading
Corrector Factor	= Insertion loss of LISN + Cable Loss + RF Switching Unit attenuation
Measurement	= Reading + Corrector Factor
Limit	= Limit stated in standard
Margin	= Measurement - Limit
Detector	= Reading for Quasi-Peak / Average / Peak

Radiated Emission						
Freq. (MHz)	**Reading Level (dBuV)**	**Correct Factor (dB/m)**	**Measurement (dBuV/m)**	**Limit (dBuV/m)**	**Over (dB)**	**Detector**
44.5500	29.41	-7.61	21.80	40.00	-18.20	QP

Where,

Freq.	= Emission frequency in MHz
Reading Level	= Spectrum Analyzer/Receiver Reading
Corrector Factor	= Antenna Factor + Cable Loss - Pre-amplifier
Measurement	= Reading + Corrector Factor
Limit	= Limit stated in standard
Over	= Margin, which calculated by Measurement - Limit
Detector	= Reading for Quasi-Peak / Average / Peak

11. Conducted Emission Measurement

LIMITS

Limits for conducted disturbance for the AC mains power ports:

Frequency (MHz)	☐Class A (dBuV)		☒Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.5	79	66	66 to 56	56 to 46
0.5 to 5	73	60	56	46
5 to 30	73	60	60	50

Note:
1. If the limits for the average detector are met when using the quasi-peak detector, then the limits for the measurements with the average detector are considered to be met.
2. The higher value measured with and without the outer conductor screen of the antenna terminal connected to earth is considered.
3. Television receivers with teletext facilities should be tested in teletext mode with teletext Picture.
4. The lower limit shall apply at the transition frequencies.
5. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5MHz.

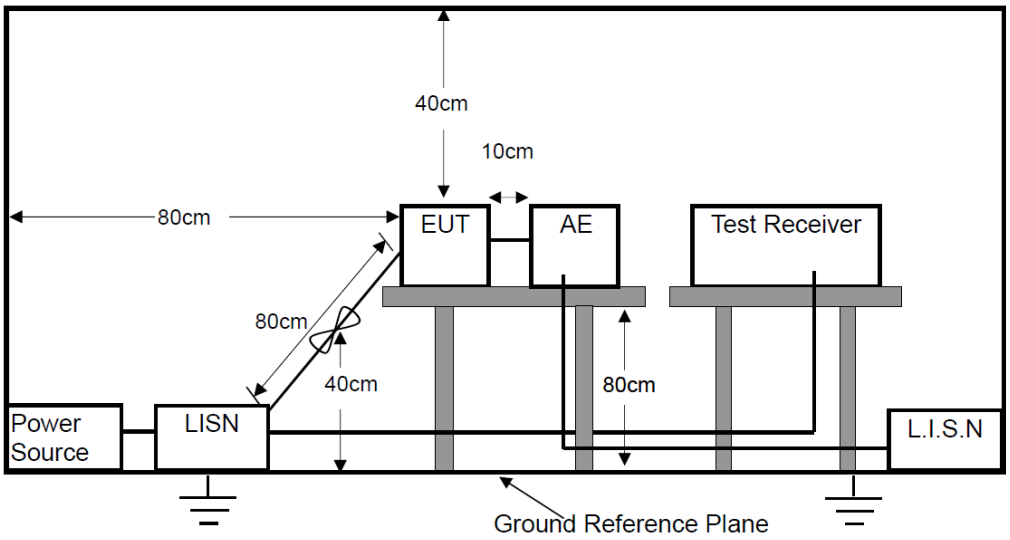
Limits for conducted disturbance for asymmetric mode:

Frequency (MHz)	Voltage limits ☐Class A (dB(uV))		Current limits ☐Class A (dBuA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.5	97 to 87	84 to 74	53 to 43	40 to 30
0.5 to 30	87	74	43	30
Frequency (MHz)	Voltage limits ☒Class B (dBuV)		Current limits ☐Class B (dBuA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.5	84 to 74	74 to 64	40 to 30	30 to 20
0.5 to 30	74	64	30	20

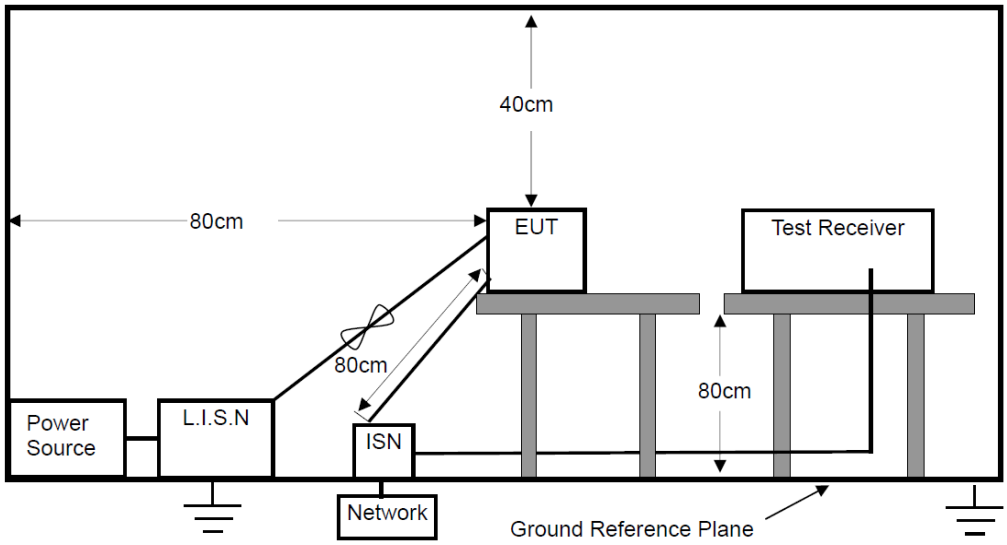
Note:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5MHz.

BLOCK DIAGRAM OF TEST SETUP

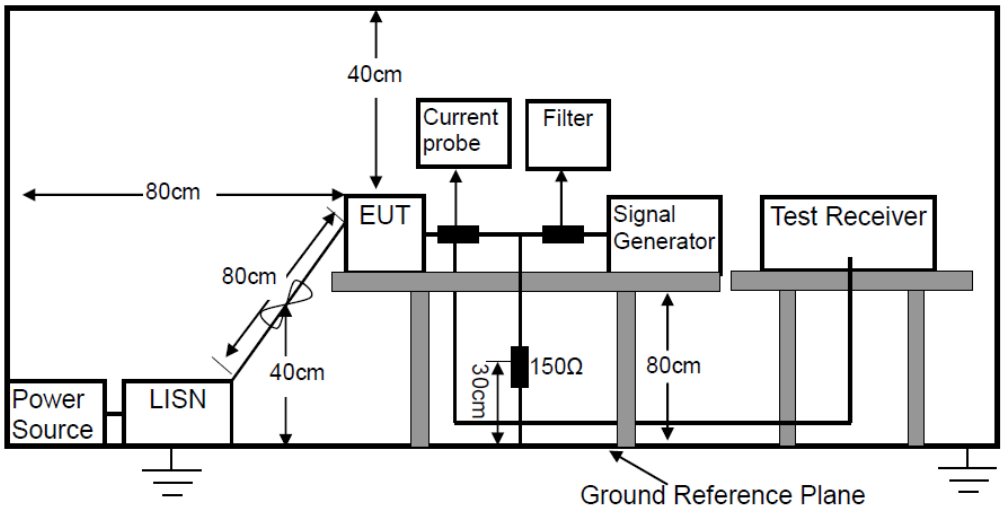
Conducted Disturbance at the Mains power Ports



Conducted Disturbance for asymmetric mode at the wired network ports



Conducted Disturbance for asymmetric mode at the antenna ports



TEST PROCEDURES

a. The EUT was placed on a wooden table 0.8m height from the metal ground plan and 0.4m from the conducting wall of the shielding room and it was kept at 0.8m from any other grounded conducting surface.

b. Configure the EUT and support devices as per section 3.

c. All I/O cables and support devices were positioned as per EN 55032.

d. Connect mains power port of the EUT to a line impedance stabilization network (LISN) and wired network port to Asymmetric Artificial Network (AAN).

e. Connect all support devices to the other LISN and AAN, if needed.

f. Turn on the EUT and all support devices, and make it run stably.

g. Set the detector and measurement bandwidth of test-receiver system as per EN 55032.

h. Scan the frequency range from 150KHz to 30MHz at both sides of AC line for conducted interference checking

i. Repeat the above scans in each mode and record the test data.

TEST RESULTS

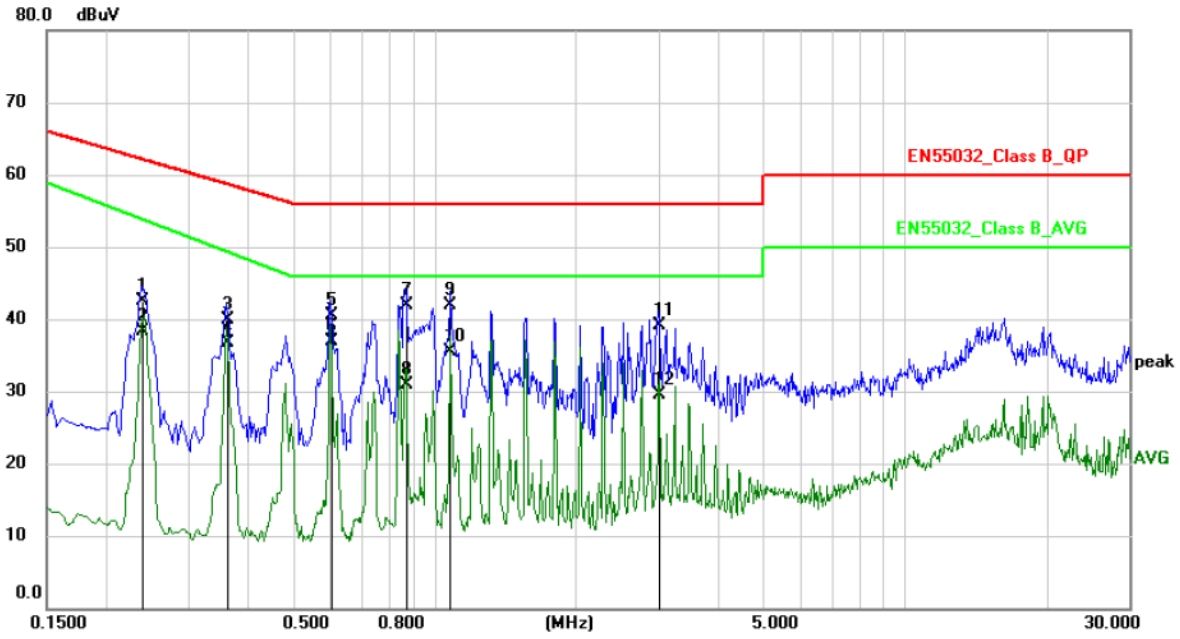
PASS

Please refer to the following pages.

M/N: P2C5V	Testing Voltage: AC 230V / 50Hz
Phase: L1	Detector: QP & AVG
Test Mode: 1	

Conducted Emission Measurement

Date: 2024/4/2 Time: 16:37:59

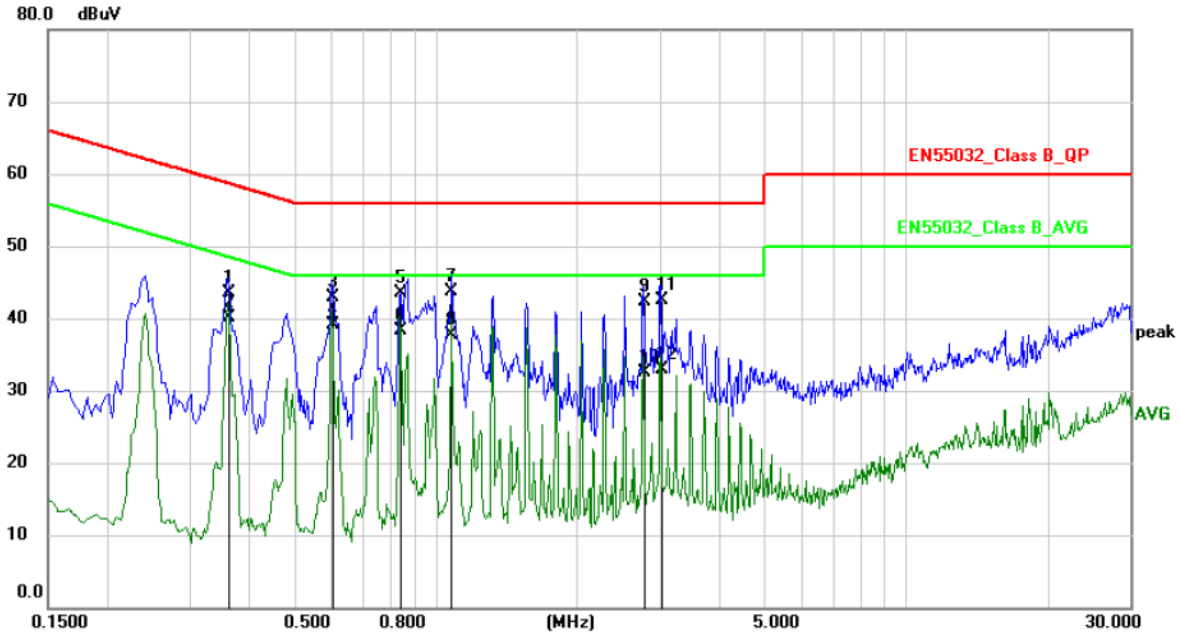


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2379	22.00	20.60	42.60	62.17	-19.57	QP	
2		0.2379	17.80	20.60	38.40	54.02	-15.62	AVG	
3		0.3619	19.38	20.62	40.00	58.68	-18.68	QP	
4		0.3619	16.18	20.62	36.80	49.49	-12.69	AVG	
5		0.6019	20.00	20.60	40.60	56.00	-15.40	QP	
6	*	0.6019	16.40	20.60	37.00	46.00	-9.00	AVG	
7		0.8700	21.39	20.61	42.00	56.00	-14.00	QP	
8		0.8700	10.39	20.61	31.00	46.00	-15.00	AVG	
9		1.0820	21.29	20.61	41.90	56.00	-14.10	QP	
10		1.0820	14.99	20.61	35.60	46.00	-10.40	AVG	
11		3.0059	18.57	20.63	39.20	56.00	-16.80	QP	
12		3.0059	8.97	20.63	29.60	46.00	-16.40	AVG	

M/N: P2C5V	Testing Voltage: AC 230V / 50Hz
Phase: N	Detector: QP & AVG
Test Mode: 1	

Conducted Emission Measurement

Date: 2024/4/2 Time: 16:43:35

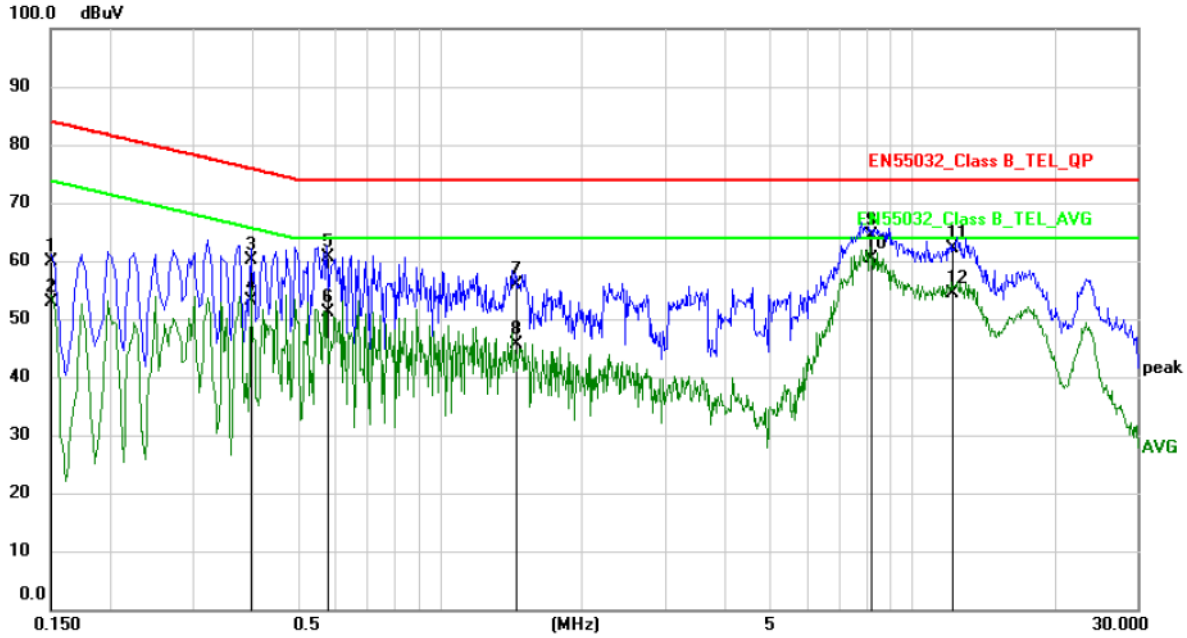


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3619	23.02	20.58	43.60	58.68	-15.08	QP	
2		0.3619	19.52	20.58	40.10	48.68	-8.58	AVG	
3		0.6020	22.43	20.57	43.00	56.00	-13.00	QP	
4	*	0.6020	18.53	20.57	39.10	46.00	-6.90	AVG	
5		0.8420	22.93	20.57	43.50	56.00	-12.50	QP	
6		0.8420	17.73	20.57	38.30	46.00	-7.70	AVG	
7		1.0820	23.23	20.57	43.80	56.00	-12.20	QP	
8		1.0820	17.23	20.57	37.80	46.00	-8.20	AVG	
9		2.7700	21.82	20.58	42.40	56.00	-13.60	QP	
10		2.7700	12.02	20.58	32.60	46.00	-13.40	AVG	
11		3.0100	22.02	20.58	42.60	56.00	-13.40	QP	
12		3.0100	12.32	20.58	32.90	46.00	-13.10	AVG	

M/N: P2C5V	Testing Voltage: AC 230V / 50Hz
Phase: TEL	Detector: QP & AVG
Test Mode: 1	

Conducted Emission Measurement

Date: 2024/4/3 Time: 18:16:21



No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	49.60	10.30	59.90	84.00	-24.10	QP	
2	0.1500	42.70	10.30	53.00	74.00	-21.00	AVG	
3	0.3980	49.82	10.38	60.20	75.90	-15.70	QP	
4	0.3980	42.82	10.38	53.20	65.90	-12.70	AVG	
5	0.5779	50.33	10.37	60.70	74.00	-13.30	QP	
6	0.5779	40.73	10.37	51.10	64.00	-12.90	AVG	
7	1.4419	45.66	10.34	56.00	74.00	-18.00	QP	
8	1.4419	35.26	10.34	45.60	64.00	-18.40	AVG	
9	8.1740	53.89	10.41	64.30	74.00	-9.70	QP	
10 *	8.1740	50.09	10.41	60.50	64.00	-3.50	AVG	
11	12.1618	51.66	10.44	62.10	74.00	-11.90	QP	
12	12.1618	43.86	10.44	54.30	64.00	-9.70	AVG	

12. Conducted Differential Voltage Emissions Measurement

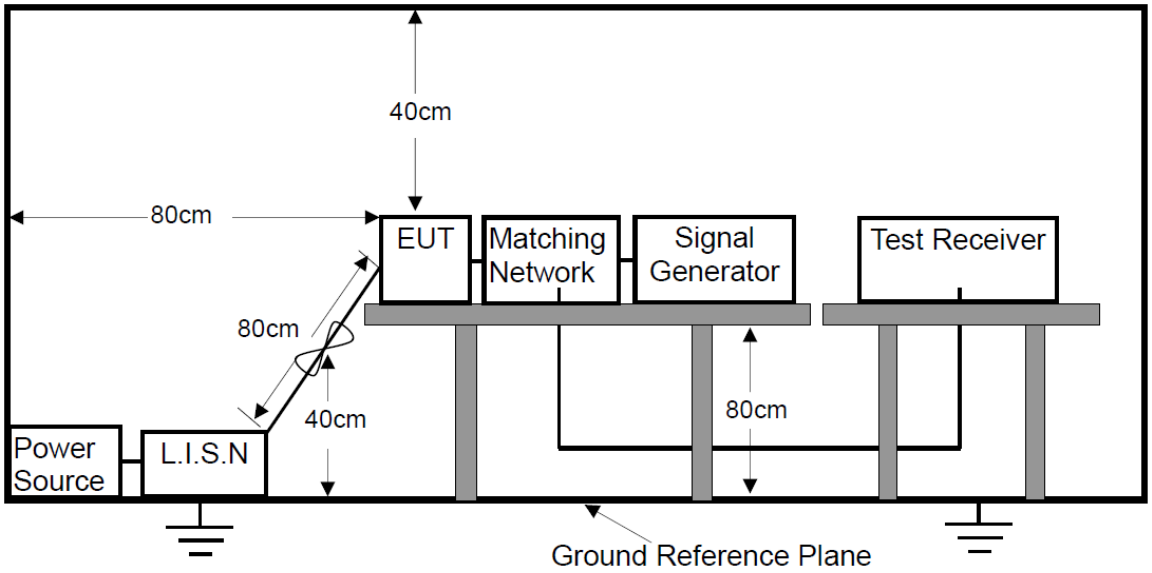
LIMITS

Limits for conducted differential voltage emissions from Class B equipment:

Applicability	Frequency Range (MHz)	Detector Type/ Bandwidth	Class B Limits dB(uV) 75Ω		
			Other*	Local Oscillator Fundamental	Local Oscillator Harmonics
See Note 1	30 to 950	For frequencies ≤1GHz Quasi Peak/ 120kHz	46	46	46
	950 to 2150		46	54	54
Tuner units (not the LNB) for satellite signal reception.	950 to 2150		46	54	54
Frequency modulation audio receivers and PC tuner cards.	30 to 300		46	54	50
	300 to 1000				52
Frequency modulation car radios.	30 to 300	For frequencies ≥1 GHz Peak/1 MHz	46	66	59
	300 to 1000				52
See Note 2	30 to 950		46	76	46
	950 to 2150			N/A	54

Note
1. 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.
2. 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.
3. The term 'other' refers to all emissions other than the fundamental and the harmonics of the LO.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on a wooden table 0.8m height from the metal ground plan and 0.4m from the conducting wall of the shielding room and it was kept at 0.8m from any other grounded conducting surface.

b. Configure the EUT and support devices as per section 3.

c. All I/O cables and support devices were positioned as per EN 55032.

d. Connect mains power port of the EUT to a line impedance stabilization network (LISN).

e. Connect wired network port of the EUT and necessary support device to 75~50Ω matching network.

f. Connect all support devices to the other LISN and AAN, if needed.

g. Set the output level of the auxiliary signal generator shall be set to give at the antenna input terminal of the receiver the value of 60 dB(μV) for frequency modulation receivers and 70dB(μV) for television receivers, on 75Ω impedance.

h. Turn on the EUT and all support devices, and make it run stably.

i. Set the detector and measurement bandwidth of test-receiver system as per EN 55032.

j. Scan the frequency range from 30MHz to 2150MHz for differential voltage emissions checking.

k. Repeat the above scans in each specified mode and channel and record the test data.

TEST RESULTS

Not applicable.

13. Radiated Emission Measurement

LIMITS

Below 1GHz:

Frequency (MHz)	☐ Class A		☒ Class B	
	Quasi-peak dB(uV/m)		Quasi-peak dB(uV/m)	
	At 3m	At 10m	At 3m	At 10m
30 to 230	50	40	40	30
230 to 1000	57	47	47	37
Note 1. The lower limit shall apply at the transition frequency.				
2. Additional provisions may be required for cases where interference occurs.				

Above 1GHz:

Frequency (GHz)	☐ Class A at 3m		☐ Class B at 3m	
	Peak dB(uV/m)	Average dB(uV/m)	Peak dB(uV/m)	Average dB(uV/m)
1 ~ 6	80	60	74	54

For FM Receiver:

	Quasi-peak dB(uV/m)			
	☐ Class B At 3m		☐ Class B At 10m	
	Fundamental	Harmonics	Fundamental	Harmonics
30 to 230	60	52	50	42
230 to 300		52		42
300 to 1000		56		46

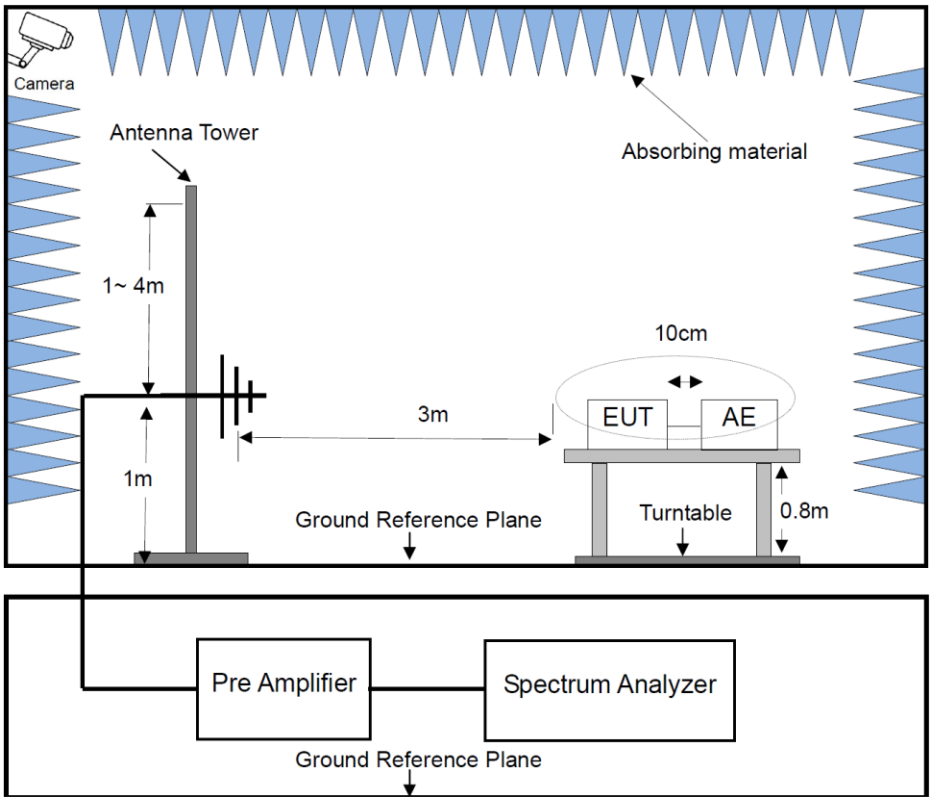
Required highest frequency for radiated measurement

Highest internal frequency* (F_x)	Highest measured frequency
$F_x \leq 108$ MHz	1 GHz
108 MHz < $F_x \leq$ 500 MHz	2 GHz
500 MHz < $F_x \leq$ 1 GHz	5 GHz
F_x > 1 GHz	5 × F_x up to a maximum of 6 GHz

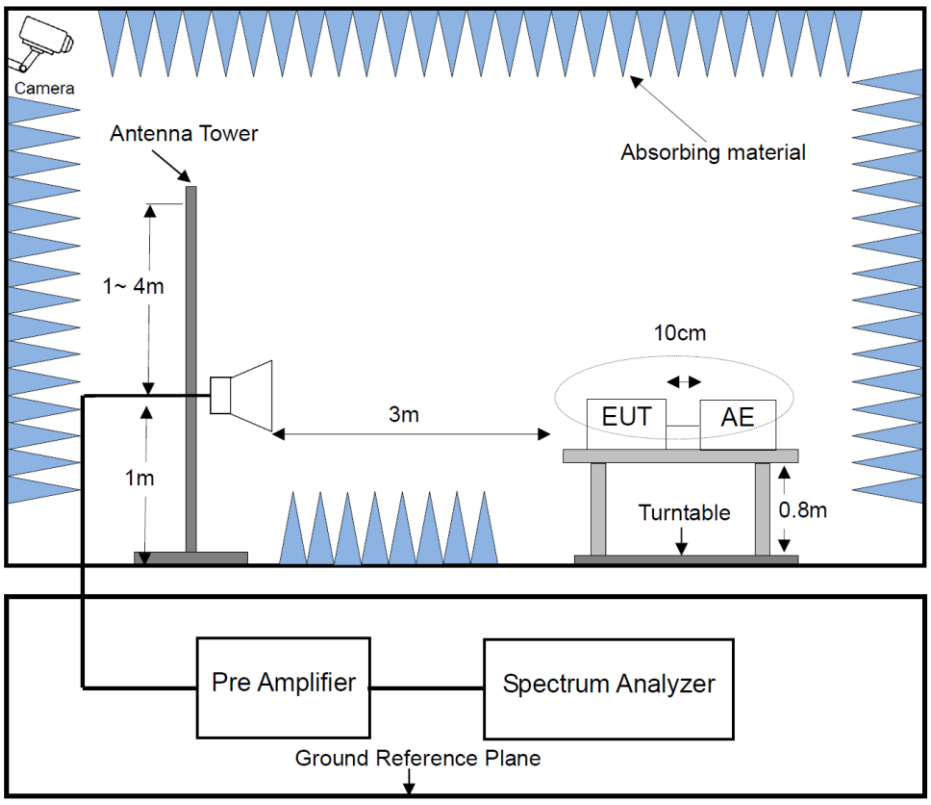
Note
1. Highest fundamental frequency generated or used within the EUT or highest frequency at which it operates.
2. For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.
3. For outdoor units of home satellite receiving systems highest measured frequency shall be 18GHz.
4. Where F_x is unknown, the radiated emission measurements shall be performed up to 6 GHz.

BLOCKDIAGRAM OF TEST SETUP

Below 1GHz:



Above 1GHz



TEST PROCEDURES

a. The EUT was placed on a rotatable wooden table top 0.8m above ground.

b. The EUT was set 3m away from the receiving antenna which was mounted on the top of a variable height antenna tower.

c. Configure the EUT and support devices as per section 3.

d. All I/O cables and support devices were positioned as per EN 55032.

e. Connect mains power port of the EUT to the outlet socket under the turntable and connect all other support devices to other outlet socket under the turntable.

f. Turn on the EUT and all support devices, and make it run stably.

g. Set the detector and measurement bandwidth of test-receiver system as per EN 55032.

h. Scan the frequency range from 30MHz to 6000MHz for radiation emissions checking.

i. Emissions were scanned and measured rotating the EUT from 0 to 360 degrees and positioning the antenna from 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

j. Repeat the above scans in each mode and channel and record the test data.

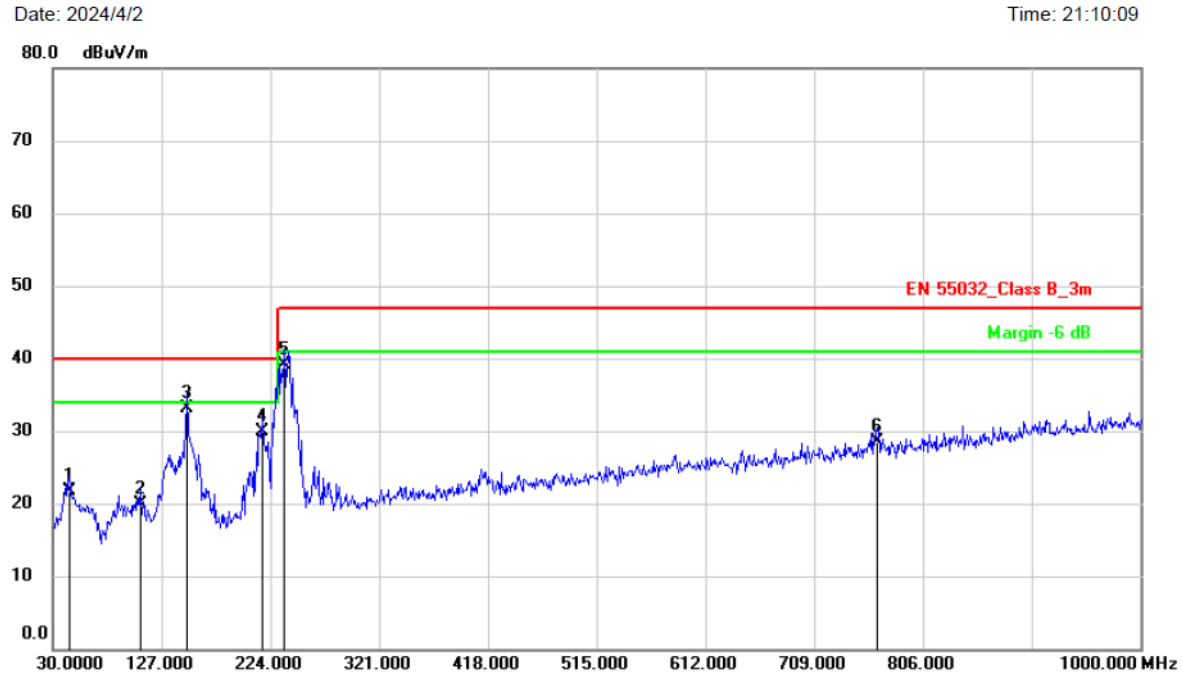
TEST RESULTS

PASS

Please refer to the following pages.

M/N: P2C5V	Testing Voltage: AC 230V / 50Hz
Polarization: Horizontal	Detector: QP
Test Mode: 1	Distance: 3m

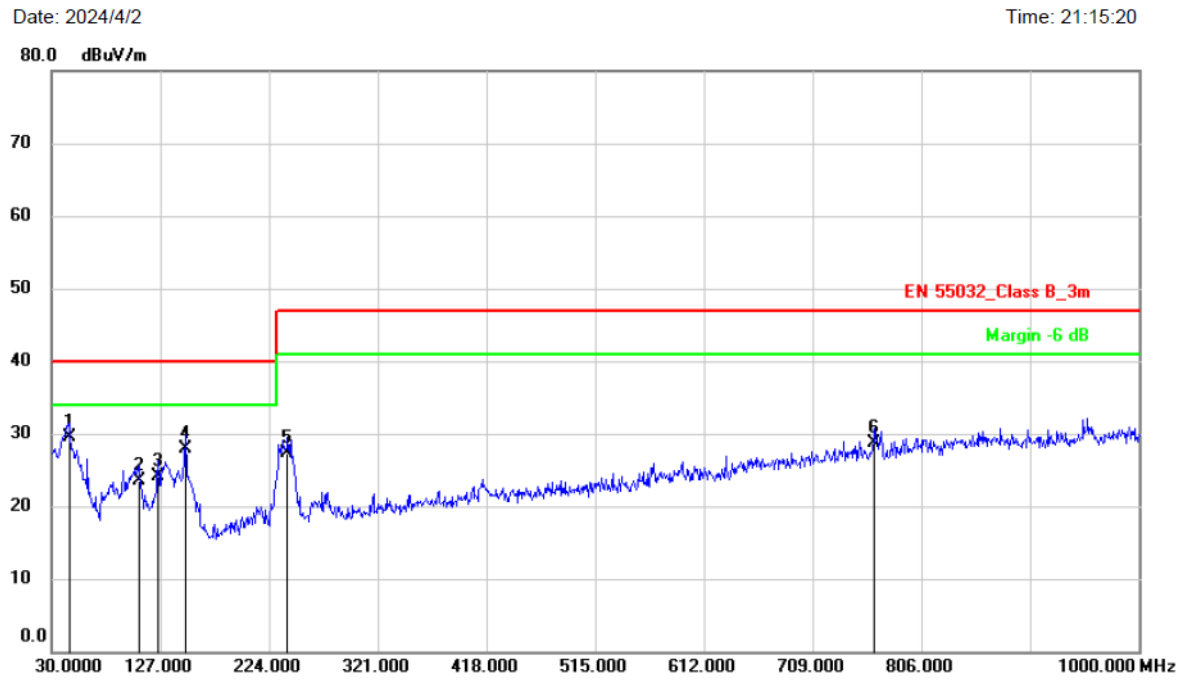
Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.5500	29.41	-7.61	21.80	40.00	-18.20	QP	
2		107.6000	27.54	-7.54	20.00	40.00	-20.00	QP	
3	*	149.3100	44.09	-10.89	33.20	40.00	-6.80	QP	
4		216.2400	37.39	-7.49	29.90	40.00	-10.10	QP	
5		236.6100	45.93	-6.73	39.20	47.00	-7.80	QP	
6		765.2600	25.18	3.32	28.50	47.00	-18.50	QP	

M/N: P2C5V	Testing Voltage: AC 230V / 50Hz
Polarization: Vertical	Detector: QP
Test Mode: 1	Distance: 3m

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	45.5200	37.06	-7.56	29.50	40.00	-10.50	QP	
2		107.6000	33.57	-9.97	23.60	40.00	-16.40	QP	
3		125.0600	35.43	-11.23	24.20	40.00	-15.80	QP	
4		149.3100	39.85	-11.85	28.00	40.00	-12.00	QP	
5		240.4900	35.01	-7.61	27.40	47.00	-19.60	QP	
6		764.2900	25.39	3.31	28.70	47.00	-18.30	QP	

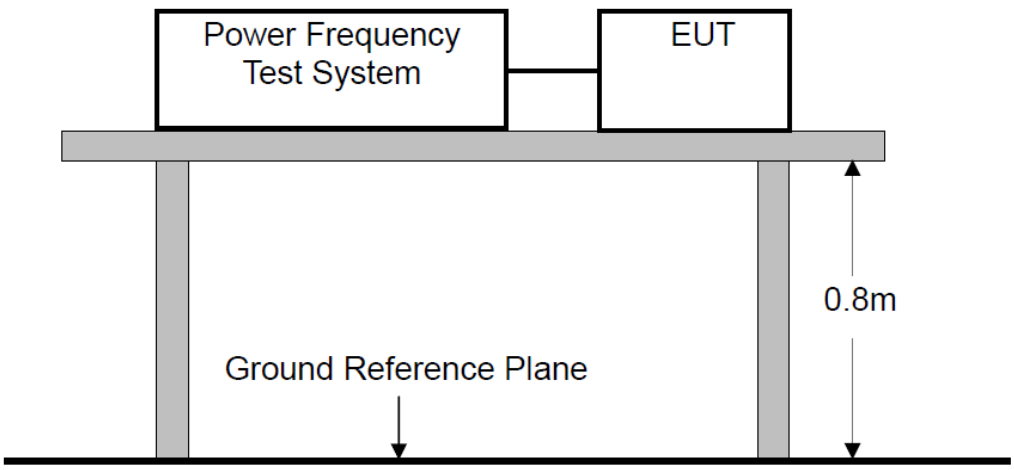
14. Harmonic Current Emission Measurement

LIMITS

Limit of Harmonic Current Emission

Limits for Class A equipment		Limits for Class D equipment		
Harmonics order h	Maximum permissible harmonics Current A	Harmonics order h	Maximum permissible harmonics current per watt mA/W	Maximum permissible harmonics current A
Odd harmonics		-	-	-
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	15≤h≤39 (odd harmonics only)	3.85/h	0.15×15/h
15≤h≤39	0.15×15/h			
Even harmonics		-	-	-
2	1.08	-	-	-
4	0.43	-	-	-
6	0.30	-	-	-
8≤h≤40	0.23×8/h	-	-	-
Note: The limits above are not specified for equipment with a rated input power of 75W or less (other than lighting equipment).				

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on a wooden table 0.8m above ground.

b. Configure the EUT and support devices as per section 3.

c. Turn on the EUT and all support devices, and make it run stably.

d. Set the EUT to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

e. Classify the EUT as follows:

Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.

Class B: Portable tools; Arc welding equipment which is not professional equipment.

Class C: Lighting equipment.

Class D: Equipment having a specified power less than or equal to 600W of the Personal computers and personal computer monitors and television receivers

f. Set correspondent test program and measurement time of the test system to measure the current harmonics emanated from EUT, and then record the test data.

TEST RESULTS

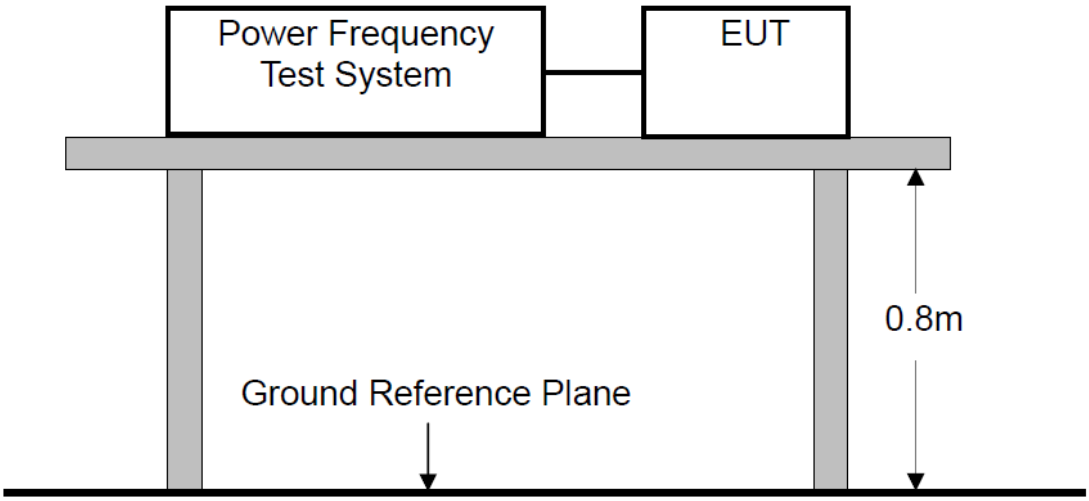
Not applicable.

15. Voltage Fluctuations & Flicker Measurement

LIMITS

Test Item	Limit	Remarks
P_{st}	1.0	P_{st} = Short-term flicker indicator
P_{lt}	0.65	P_{lt} = Long-term flicker indicator
T_{dt}	500ms	T_{dt} = Maximum accumulated time that dt with a deviation exceeding 3,3 %
d_{max}(%)	4%	d_{max} = Maximum relative voltage change
d_c(%)	3.3%	d_c = Maximum relative steady-state voltage change

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURE

a. The EUT was placed on a wooden table 0.8m above ground.

b. Configure the EUT and support devices as per section 3.

c. Turn on the EUT and all support devices, and make it run stably.

d. Set the EUT to produce the most unfavorable sequence of voltage changes under normal operating conditions.

e. Set correspondent test program and measurement time of the test system to measure the most unfavorable sequence of voltage changes from EUT, and then record the test data.

TEST RESULTS

Not applicable.

16. Performance Criteria for Immunity

The performance criteria are referred to the test standard: **EN 55035**

Performance Criteria 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 Criteria 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 Criteria 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.

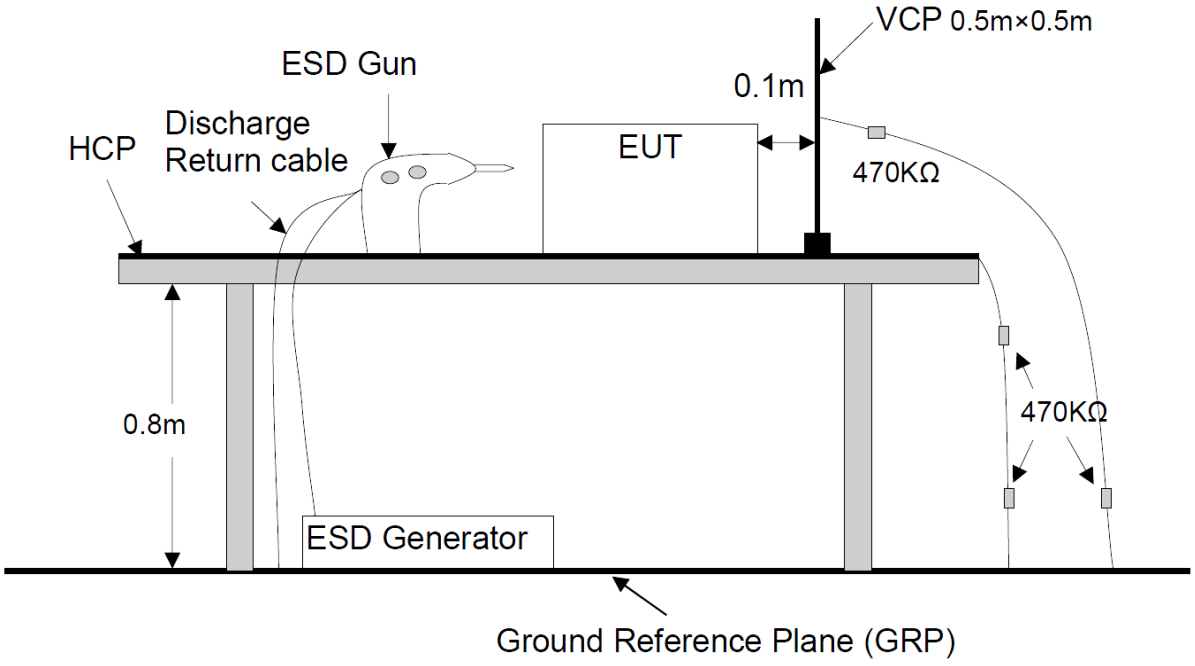
Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

17. Electrostatic Discharge Measurement

TEST LEVEL

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	±2.0	±2.0
2	±4.0	±4.0
3	±6.0	±8.0
4	±8.0	±15.0
X	Special	Special
Note:	"x" is an open level.	

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

Air Discharge:

Air discharges at slots and apertures and insulating surfaces. On those parts of the EUT where it is not possible to perform contact discharge testing, the equipment should be investigated to identify user accessible points where breakdown may occur. Such points are tested using the air discharge method. This investigation should be restricted to those area normally handled by the user. A minimum of 10 single air discharges shall be applied to the selected test point for each such area.

Contact Discharge:

Contact discharges to the conductive surfaces and coupling planes. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 20 indirect discharges to the center of the front edge of the Horizontal Coupling Plane (HCP). The remaining three test points shall each receive at least 20 direct contact discharges. If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.

a. The EUT was placed on a wooden table 0.8m height from the ground.

b. The EUT was located 0.1m minimum from all side of the HCP (dimensions 1.6m x0.8m).

c. Configure the EUT and support devices as per section 3.

d. The support units were located 30cm away from the EUT, but direct support unit was/were located at same location as EUT on the HCP and keep at a distance of 10cm with EUT.

e. Turn on the EUT and all support devices, and make it run stably.

f. The time interval between two successive single discharges was at least 1 second. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.

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

h. At least ten single discharges (in the most sensitive polarity) were applied at the front edge of each HCP opposite the center point of each unit of the EUT and 0.1 meters from the front of the EUT. The long axis of the discharge electrode was in the plane of the HCP and perpendicular to its front edge during the discharges.

i. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane (VCP) in sufficiently different positions that the four faces of the EUT were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the EUT.

j. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT:

Description	Level	Performance Criterion
Contact Discharge	±4.0KV	B
Air Discharge	±8.0KV	B

TEST RESUSLT

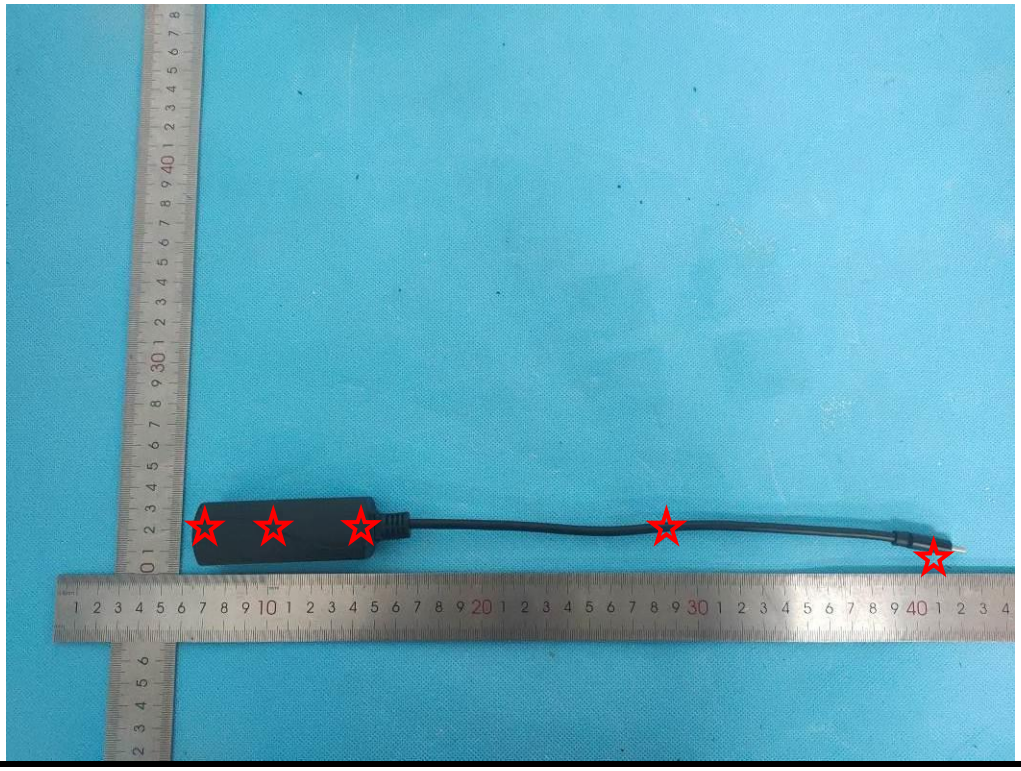
PASS

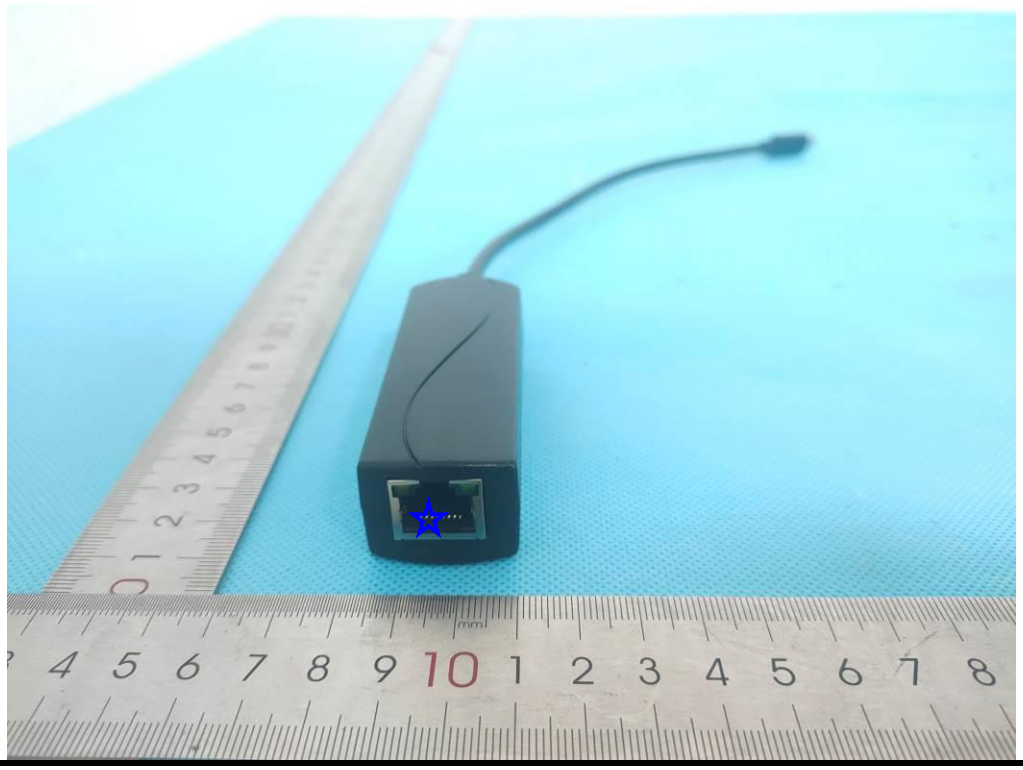
Please refer to the following pages.

Electrostatic Discharge Test Results			
Ambient Condition:	Temp.: 24℃	R.H.: 50%	Air Pressure : 101 kPa
Test Specifications	Test Level:	±2, 4 KV for Contact Discharge ±2, 4, 8 KV for Air Discharge	
	Discharge Impedance:	330ohm / 150pF	
	NO. Of Discharges:	10 times at each test point for each polarity at least	
	Polarity:	Positive / Negative	
	Discharge Mode:	Single	
	Interval Time of Discharges:	≥1s	
Required Performance Criterion	B		
Tested Mode	1		

Test Point	Kind A-Air Discharge C-Contact Discharge	Result (Performance Criterion)
Surface of EUT	A	A
Network port	C	B
Type-C port	A	B
Indirect Discharge (VCP)	C	A
Indirect Discharge (HCP)	C	A
Note: B: The network port will be disconnected when the contact discharge was performed on it, and it can recover by itself after the test.		

ESD TEST POINT
(☆ Air Discharge;☆Contact Discharge)





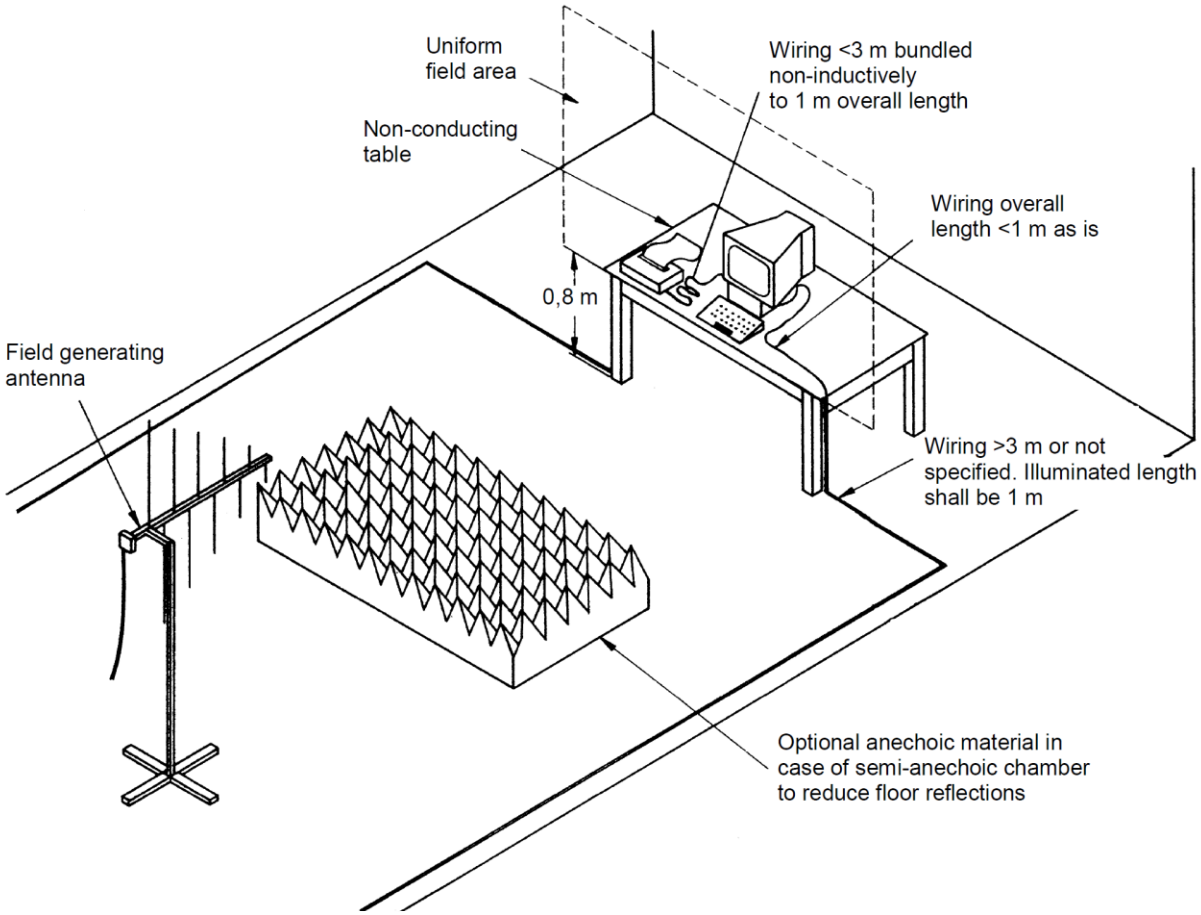
18. Continuous RF Electromagnetic Field Disturbances Measurement

TEST LEVEL

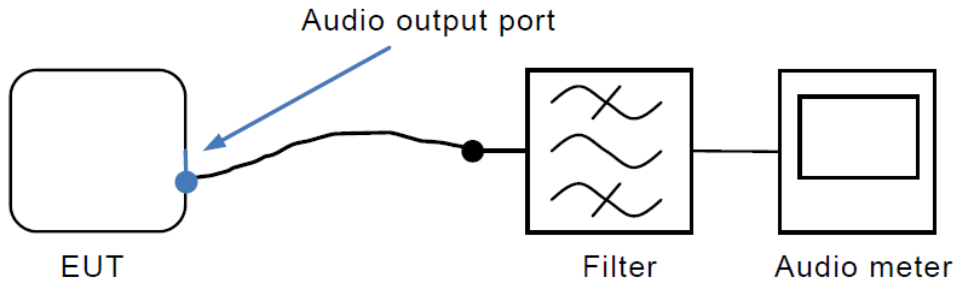
Level	Field Strength V/m
1	1
2	3
3	10
X*	Special
Note: “x” is an open test level and the associated field strength may be any value.	

BLOCK DIAGRAM OF TEST SETUP

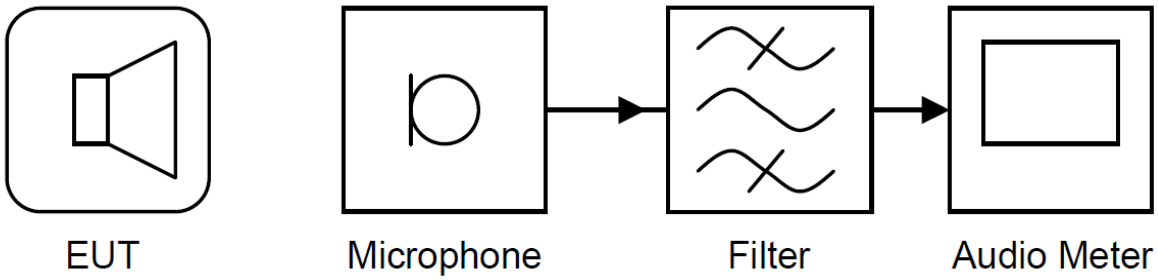
Normal Test:



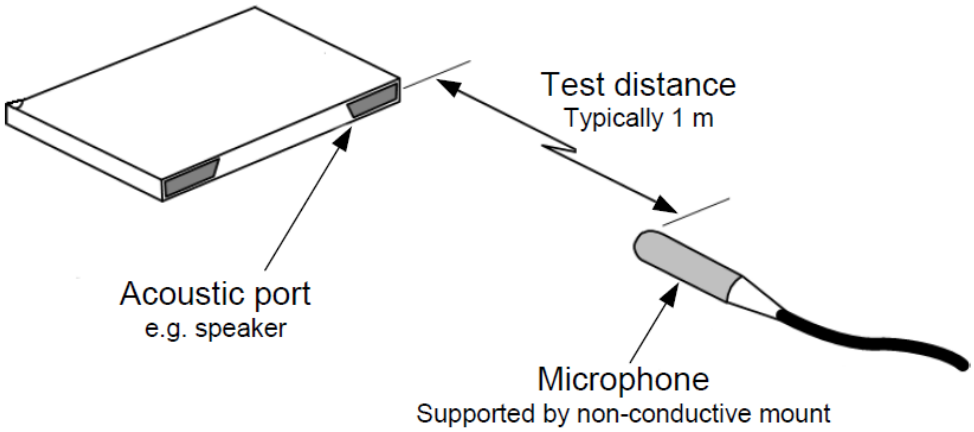
Test setup for electrical measurements (direct connection to EUT):



Test setup for acoustic measurements:



Test setup for acoustic measurements on loudspeakers



TEST PROCEDURES

a. The testing was performed in a fully anechoic chamber.

b. The EUT and necessary support devices were placed on a turn table which is 0.8 meter above ground.

c. EUT was set 3 meters away from the transmitting antenna which is mounted on an antenna tower.

d. Configure the EUT and support devices as per section 3.

e. Turn on the EUT and all support devices, and make it run stably.

f. Set horizontal and vertical polarization of the antenna to test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

g. All the scanning conditions are as follows:

h. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

Description	Level	Frequency	Performance Criterion
RF Field Strength Susceptibility	3V/m	80~1000MHz	A
	3V/m	1800MHz	A
	3V/m	2600MHz	A
	3V/m	3500MHz	A
	3V/m	5000MHz	A

TEST RESULTS

PASS

Please refer to the following pages.

RF Field Strength Susceptibility Test Results				
Ambient Condition	Temp.: 24℃		R.H.: 50%	Air Pressure: 101 kPa
Test Specifications	Fielded Strength:		3V/m	
	Modulation:		1kHz sine wave, 80%AM	
	Frequency Size:		1% of preceding frequency value	
	Dwell Time:		1s	
	Mode:		Swept test	
Required Performance Criterion	A			
Tested Mode	1			
Frequency (MHz)	Level (V/m)	Antenna polarity	Side	Result (Performance Criterion)
80-1000, 1800, 2600, 3500, 5000	3	Horizontal	Front	A
			Left	A
			Right	A
			Back	A
		Vertical	Front	A
			Left	A
			Right	A
			Back	A
Note: A: During the test, the EUT did not show any abnormality.				

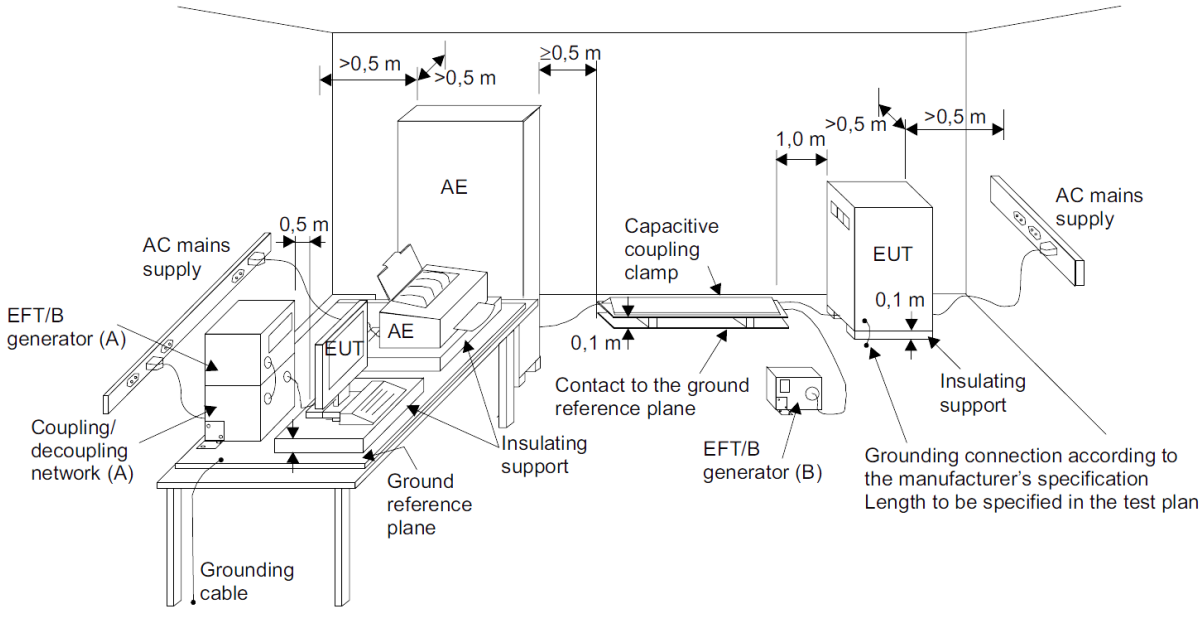
19. Electrical Fast Transient/Burst Measurement

TEST LEVEL

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, Earth port (PE)		Signal and control ports	
	Voltage peak (KV)	Repetition rate (KHz)	Voltage peak (KV)	Repetition rate (KHz)
1	0.5	5 or 100	0.25	5 or 100
2	1	5 or 100	0.5	5 or 100
3	2	5 or 100	1	5 or 100
4	4	5 or 100	2	5 or 100
X	Special	Special	Special	Special

Note
1. The use of 5 KHz repetition rates is traditional; however, 100 KHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types.
2. With some products, there may be no clear distinction, between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes.
3. “X” is an open level. The level has to be specified in the dedicated equipment specification.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on the insulating support 0.8m above the reference ground plane.

b. Configure the EUT and support devices as per section 3.

c. Turn on the EUT and all support devices, and make it run stably.

d. For input and output AC power port of the EUT, the EUT was connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. The coaxial output of the EFT generator to the terminals on the EUT should not exceed 0.5 meter. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

e. For signal ports of the EUT, the EUT was connected to the power mains, and the signal line through a coupling device which couples the EUT interference signal to signal line. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

f. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

Description	AC Mains power ports	Analogue/digital data ports
Test Level	1.0KV	0.5KV
Repetition frequency	5kHz	5kHz
Impulse Wave-shape	5/50ns (Tr/Th)	5/50ns (Tr/Th)
Performance Criterion	B	B

TEST RESULTS

PASS

Please refer to the following page.

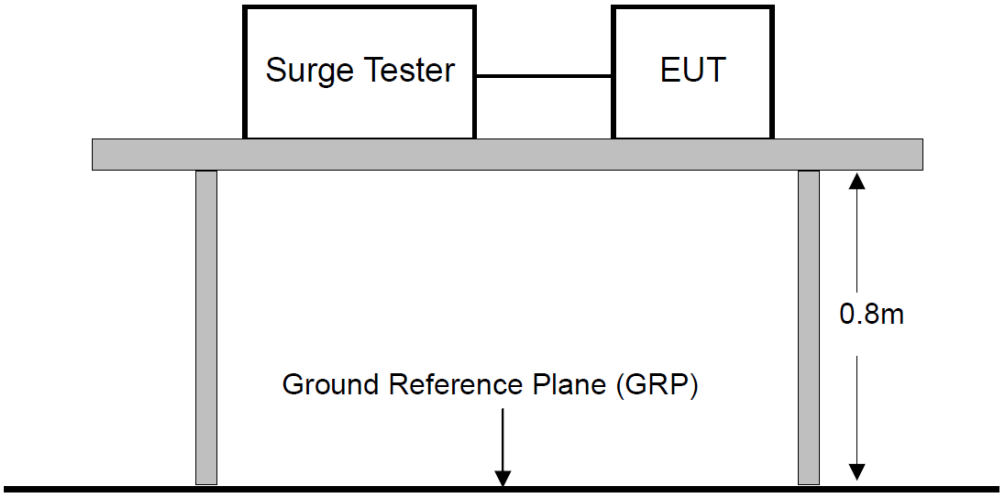
Electrical Fast Transient/Burst Test Results			
Ambient Condition	Temp.: 24℃	R.H.: 50%	Air Pressure: 101 kPa
Test Specifications	Test Level:	1.0 kV for power port 0.5 kV for signal port	
	Repetition Frequency:	5kHz	
	Duration:	15ms	
	Period:	300ms	
	Impulse Wave Shape:	5/50ns (Tr/Th)	
	Test Duration:	≥1min	
Required Performance Criterion	B		
Tested Mode	1		
Coupling Mode And Port	☐ AC Mains ☐ Direct Coupling ☒ Signal line ☒ Capacitive ☐ DC line		
Test Line	Test Voltage	Result (Performance Criterion)	
L	--	--	
N	--	--	
PE	--	--	
L、N	--	--	
L、PE	--	--	
N、PE	--	--	
L、N、PE	--	--	
Signal line	±0.5KV	A	
Note : A: During the test, the EUT did not show any abnormality.			

20. Surge Measurement

TEST LEVEL

Level	Open-Circuit Test Voltage (kV)	
	Line to Line	Line to Earth
1	-	0.5
2	0.5	1
3	1	2
4	2	4
X	Special	Special
Note: "X" can be any level, above, below or in between the others. The level shall be specified in the dedicated equipment specification.		

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on the wooden table 0.8m above the ground.

b. Configure the EUT and support devices as per section 3.

c. Turn on the EUT and all support devices, and make it run stably.

d. The surge is applied to the EUT power supply terminals via the capacitive coupling network Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

e. For test applied to unshielded un-symmetrically operated interconnection lines of EUT, the surge was applied to the lines via the capacitive coupling. The coupling / decoupling networks didn't influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

f. For test applied to unshielded symmetrically operated interconnection / telecommunication lines of EUT, the surge was applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor were not specified. The interconnection line between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

g. Five positive and five negative (polarity) pulses at specified phase angles with a 1min repetition rate are conducted during test.

h. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

Description	AC Mains power ports		Analogue/digital data ports	
	Line to Line	Line to Earth	Unshielded Symmetrical	Coaxial or Shielded
Test Level	1.0kV	2.0kV	1.0 and 4.0Kv*	0.5kV
Wave-Shape	1.2/50(8/20)us	1.2/50(8/20)us	10/700 (5/320)us	1.2/50(8/20)us
Performance Criterion	B	B	C	B
Note: *: Surges are applied with primary protection fitted. Where possible, use the actual primary protector intended to be used in the installation. Where the surge coupling network for the 10/700 (5/320)μs waveform affects the functioning of high speed data ports, the test shall be carried out using a 1,2/50 (8/20)us waveform and appropriate coupling network.				

TEST RESULTS

Not applicable.

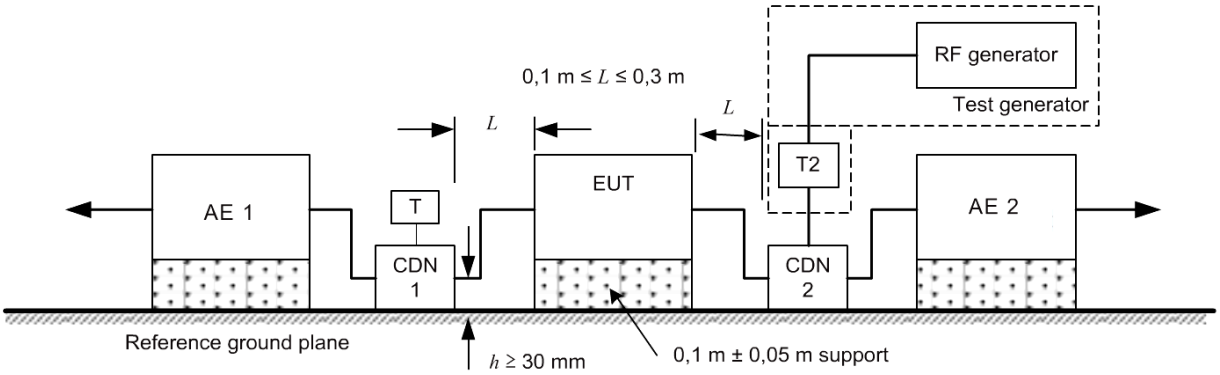
21. Continuous Induced RF Disturbances Measurement

TEST LEVEL

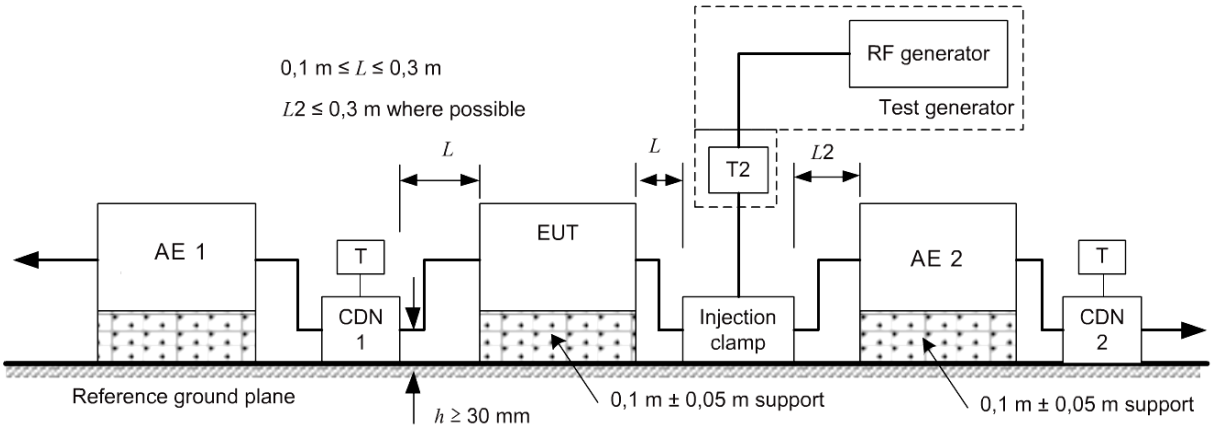
Level	Field Strength V
1	1
2	3
3	10
X	Special
Note*: Where the amplitude of a test level varies over a given frequency range, it changes linearly with respect to the logarithm of the frequency.	

BLOCK DIAGRAM OF TEST SETUP

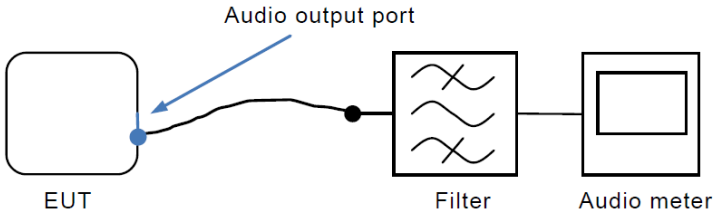
CDN Test:



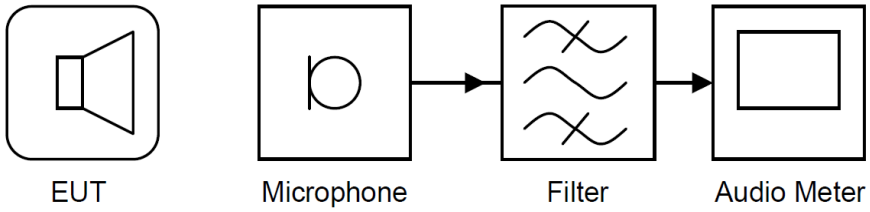
Clamp Test:



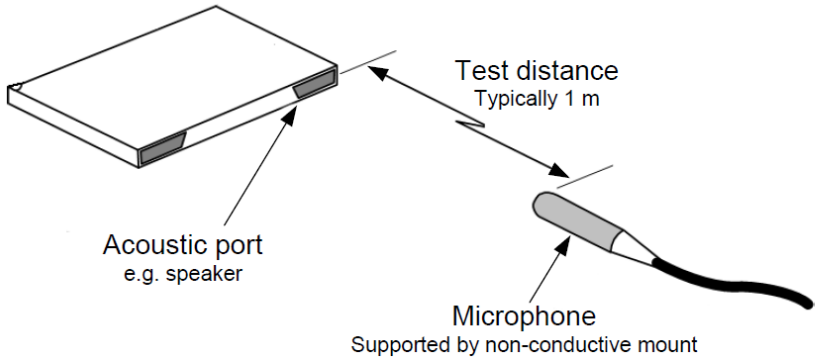
Test setup for electrical measurements (direct connection to EUT):



Test setup for acoustic measurements:



Test setup for acoustic measurements on loudspeakers



TEST PROCEDURES

a. The EUT was placed on the insulating support 0.1m above the ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

b. Configure the EUT and support devices as per section 3.

c. Turn on the EUT and all support devices, and make it run stably.

d. The disturbance signal described below is injected to EUT through CDN.

e. The frequency range is swept from 150 KHz to 80 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

f. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

AC Mains power ports			Analogue/digital data ports		
Frequency ranges (MHz)	Test Level V(r.m.s)	Performance Criterion	Frequency ranges (MHz)	Test Level V(r.m.s)	Performance Criterion
0.15 to10	3	A	0.15 to10	3	A
10 to 30	3 to 1	A	10 to 30	3 to 1	A
30 to 80	1	A	30 to 80	1	A

TEST RESULTS

PASS

Please refer to the following pages.

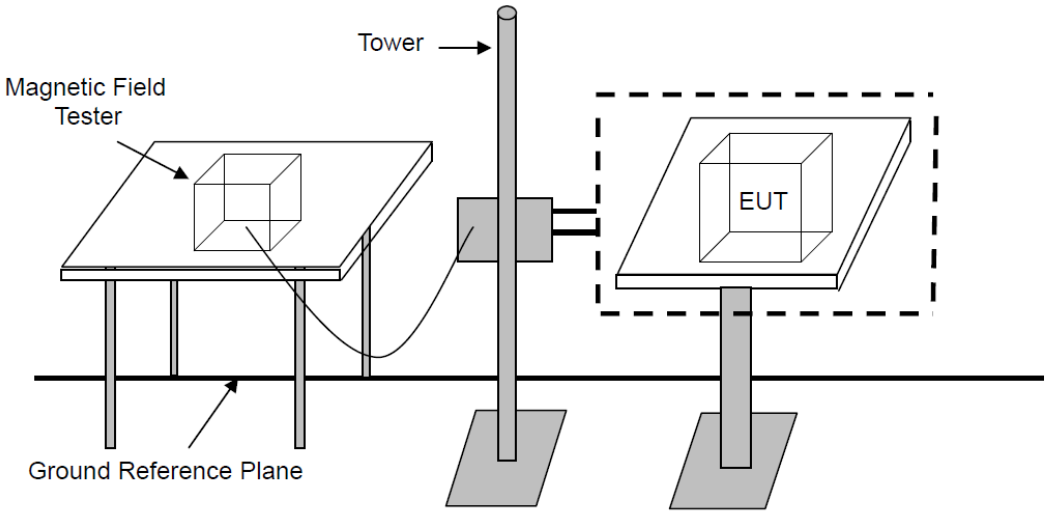
Injected Currents Susceptibility Test Results			
Ambient Condition	Temp.: 24℃	R.H.:50%	Air Pressure:101 kPa
Test Specifications	Test Level:	3V (r.m.s), 3 to 1V (r.m.s), 1V (r.m.s)	
	Modulation:	1kHz sine wave, 80%AM	
	Step Size:	1% of preceding frequency value	
	Dwell Time:	1s	
	Mode:	Swept test	
Required Performance Criterion	A		
Tested Mode	1		
Test Port	Frequency (MHz)	Level(V)	Result (Performance Criterion)
Signal line	0.15~10	3	A
Signal line	10~30	3 to 1	A
Signal line	30~80	1	A
Note : A : During the test, the EUT did not show any abnormality.			

22. Power Frequency Magnetic Field Measurement

TEST LEVEL

Level	Magnetic field strength A/m
1	1
2	3
3	10
4	30
5	100
X*	Special
Note*: “x” can be any level, above, below or in-between the other levels. This level can be given in the product specification.	

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on the middle of an induction coil(1*1m), under which is a 0.8m-thick insulating support.

b. Configure the EUT and support devices as per section 3.

c. All cables of the EUT were exposed to the magnetic field for 1m of their length.

d. X, Y and Z polarization of the induction coil are set on test, so that each side of the E.U.T. is affected by the magnetic field. If not possible as the EUT size, change the position of the EUT is permitted.

e. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

Fielded Strength	1A/m
Frequency	50Hz or 60Hz
Performance Criterion	A

TEST RESULTS

Not applicable.

23. Voltage Dips and Interruptions Measurement

TEST LEVEL

Class	Test level and durations for voltage dips (t_s)(50Hz/60Hz)				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0 % during ½ cycle	0 % during 1 cycle	70 % during 25/30[b] cycles		
Class 3	0 % during ½ cycle	0 % during 1 cycle	40 % during 10/12[b] cycles	70 % during 25/30[b] cycles	80 % during 250/300[c] cycles
Class X[a]	X	X	X	X	X

Note: a. To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

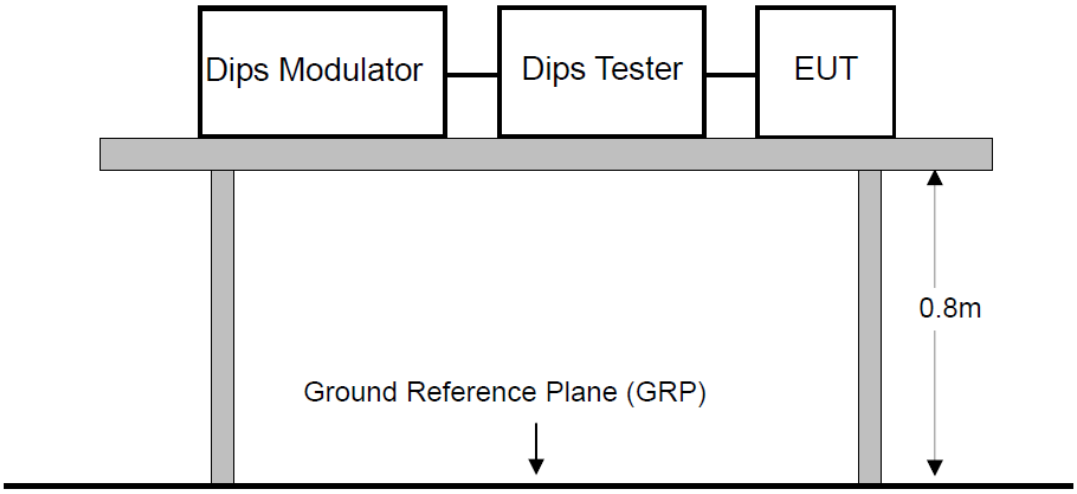
b. "25/30 cycles" means "25 cycles for 50 Hz test" and "30 cycles for 60 Hz test".

Class	Test level and durations for short interruptions (t_s) (50 Hz/60 Hz)				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0 % during 250/300b cycles				
Class 3	0 % during 250/300b cycles				
Class X[a]	X	X	X	X	X

Note: a. To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

b. "250/300 cycles" means "250 cycles for 50 Hz test" and "300 cycles for 60 Hz test".

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. The EUT was placed on the wooded table 0.8m above the ground.

b. Configure the EUT and support devices as per section 3.

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

d. Conditions changes to occur at 0 and 180 degree crossover point of the voltage waveform.

e. Repeat the above steps in each mode and record the test result.

MINIMUM REQUIREMENT

Description	Level	Cycle	Performance Criterion
Voltage Dips	Residual voltage <5%	0.5	B
Voltage Dips	Residual voltage 70%	25 for 50Hz	B
Voltage Dips	Residual voltage 70%	30 for 60Hz	B
Voltage Interruptions	Residual voltage <5%	250 for 50Hz	C
Voltage Interruptions	Residual voltage <5%	300 for 60Hz	C

TEST RESULTS

Not applicable.

24. Measuring Devices and Test Equipment

☒ For Conducted Emission Measurement (AC Mains)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2024	1 Year
2.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2024	1 Year
3.	L.I.S.N	Rohde & Schwarz	ESH2-Z5	893606/014	Mar. 13, 2024	1 Year
4.	ISN CAT6	Rohde & Schwarz	NTFM 8158	8158-0009	Mar. 13, 2024	1 Year
5.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar. 13, 2024	1 Year
6.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

☒ For Conducted Emission Measurement (Asymmetric Mode, Wired Network Port)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2024	1 Year
2.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2024	1 Year
3.	AAN	Schwarzbeck	NTFM 8158	CAT5-8158-0006	Mar. 13, 2024	1 Year
4.	AAN	Schwarzbeck	NTFM 8158	CAT6-8158-0009	Mar. 13, 2024	1 Year
5.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar. 13, 2024	1 Year
6.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

☐ For Conducted Emission Measurement (Asymmetric Mode, Antenna Port)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2024	1 Year
2.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2024	1 Year
3.	Current probe	Schwarzbeck	SW9605	9605-221	Mar. 13, 2024	1 Year
4.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar. 13, 2024	1 Year
5.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

☐ For Conducted Differential Voltage Emissions Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2024	1 Year
2.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2024	1 Year
3.	Matching and Combining network	Inrnet	6007	N/A	Mar. 13, 2024	1 Year
4.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

☒ For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 13, 2024	1 Year
2.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 13, 2024	1 Year
3.	Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 23, 2024	2 Year
4.	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	Mar. 23, 2024	2 Year
5.	Horn Antenna	COM-Power	AH-118	071078	Mar. 23, 2024	2 Year
6.	Pre-Amplifier	HP	HP 8447D	1145A00203	Mar. 13, 2024	1 Year
7.	Pre-Amplifier	HP	HP 8449B	3008A00964	Mar. 13, 2024	1 Year
8.	Chamber	SAEMC	9*7*7m	N/A	Apr. 21, 2023	2 Year
9.	Test Software	EZ	EZ_EMC, NTC-3A1.1	N/A	N/A	N/A

☐ For Harmonic / Flicker Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Power Frequency Analyzer	California Instruments	PACS-1	72846	Mar. 13, 2024	1 Year
2.	5KVA AC Power Source	California Instruments	5001iX	60137	Mar. 13, 2024	1 Year
3.	Software	AMETEK	CTS 4, V4.31.0	N/A	N/A	N/A

☒ For Electrostatic Discharge Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Tester	TESEQ	NSG 437	432	Mar. 23, 2024	1 Year

☒ For RF Electromagnetic Field Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	Agilent	N5181A	MY47070160	Mar. 13, 2024	1 Year
2.	RF Switch	SKET	N/A	N/A	N/A	N/A
3.	Power Amplifier	SKET	HAP801000M_250W	201804008	N/A	N/A
4.	Power Amplifier	SKET	HAP0103G_75W	201804009	N/A	N/A
5.	Power Amplifier	SKET	HAP0306G_50W	201804010	N/A	N/A
6.	Power Meter	Agilent	E4419B	GB40201469	Mar. 13, 2024	1 Year
7.	Power Sensor	Agilent	E9304A	MY41498919	Mar. 13, 2024	1 Year
8.	Power Sensor	Agilent	E9300A	US39211259	Mar. 13, 2024	1 Year
9.	E-Field Probe	Narda	EP-601	N/A	Mar. 23, 2024	1 Year
10.	Antenna	Schwarzbeck	STLP 9129	9129071	N/A	N/A
11.	Audio Analyzer	Rohde & Schwarz	UPV	100894	Mar. 13, 2024	1 Year
12.	Chamber	Chengyu	7*5*3.5m	N/A	Apr. 25, 2021	3 Year
13.	Test Software	SKET	EMC-S, V1.5.0.1	N/A	N/A	N/A

☒ For Electrical Fast Transient /Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Burst Tester	EM TEST	UCS 500N7	V1104108683	Mar. 13, 2024	1 Year
2.	Coupling Clamp	EM TEST	HFK	0311-94	Mar. 13, 2024	1 Year
3.	Test Soft	EM TEST	Iec. Control, V5.1.5.0	N/A	N/A	N/A

☐ For Surge Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Tester	EM TEST	UCS 500N7	V1104108683	Mar. 13, 2024	1 Year
2.	Test Soft	EM TEST	Iec. Control, V5.1.5.0	N/A	N/A	N/A

☒ For Injected Currents Immunity Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal generator	IFR	2023A	2023051280	Mar. 13, 2024	1 Year
2.	Power Amplifier	SCHAFFNER	CBA9425	1022	Mar. 13, 2024	1 Year
3.	6dB 50Watt Attenuator	SCHAFFNER	ATN6025	N/A	Mar. 13, 2024	1 Year
4.	CDN	Lioncel	CDN-M3-16	0170703	Mar. 13, 2024	1 Year
5.	CDN	Lioncel	CDN-M2-16	0170708	Mar. 13, 2024	1 Year
6.	CDN	CDSI	ADN-M5/AF5	8105001	Mar. 13, 2024	1 Year
7.	EM Clamp	CDSI	EMCL-22	8192007	Mar. 13, 2024	1 Year
8.	Directional Coupler	SCHAFFNER	255	19184	Mar. 13, 2024	1 Year
9.	Audio Analyzer	Rohde & Schwarz	UPV	100894	Mar. 13, 2024	1 Year
10.	Test Software	EZ	EMC-CS, B-3.1	N/A	N/A	N/A

☐ For Power Frequency magnetic field immunity Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	EVERFINE	EMS61000-8K _V200	N/A	Mar. 13, 2024	1 Year
2.	Adjustable Magnetic field Coil	EVERFINE	MFC-4	N/A	Mar. 13, 2024	1 Year
3.	Test Software	EVER FINE	Emcsuite, V2.00.142	N/A	N/A	N/A

☐ For Voltage Dips and Interruptions Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Dips Tester	EM TEST	UCS500N	V1104108683	Mar. 13, 2024	1 Year
2.	Dips Modulator	EM TEST	V4780S2	0111-11	Mar. 13, 2024	1 Year
3.	Test Soft	EM TEST	Iec. Control, V5.1.5.0	N/A	N/A	N/A

25. Photographs of Test Configuration

Photo of Conducted Emission Measurement

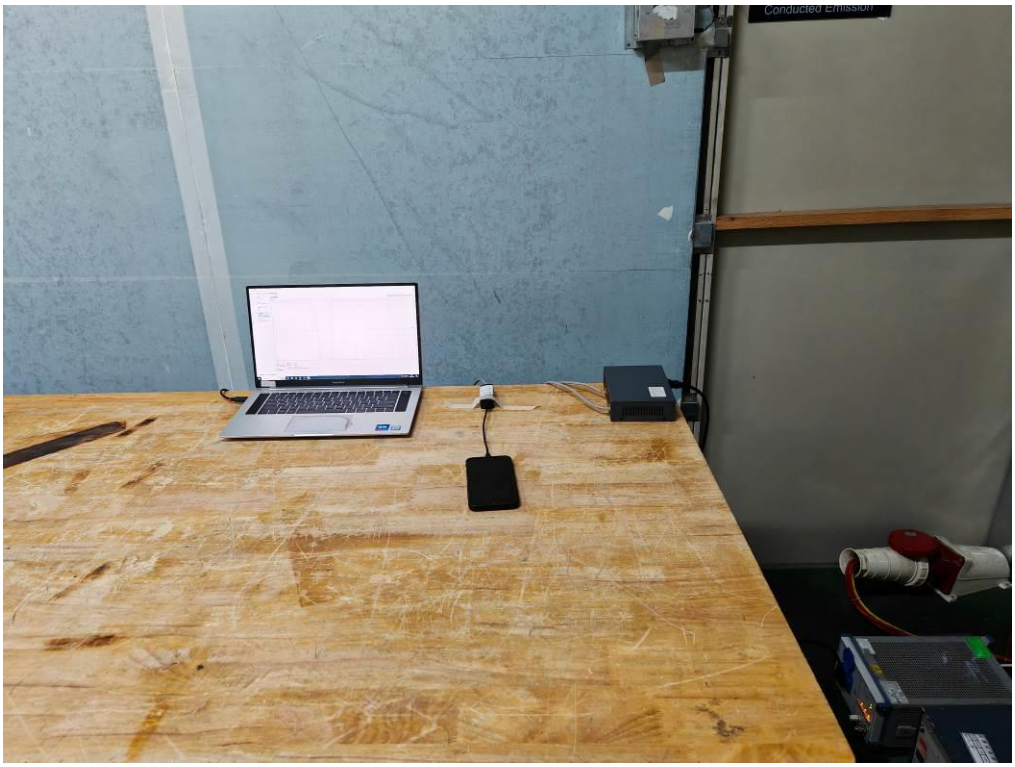


Photo of Radiated Emission Measurement

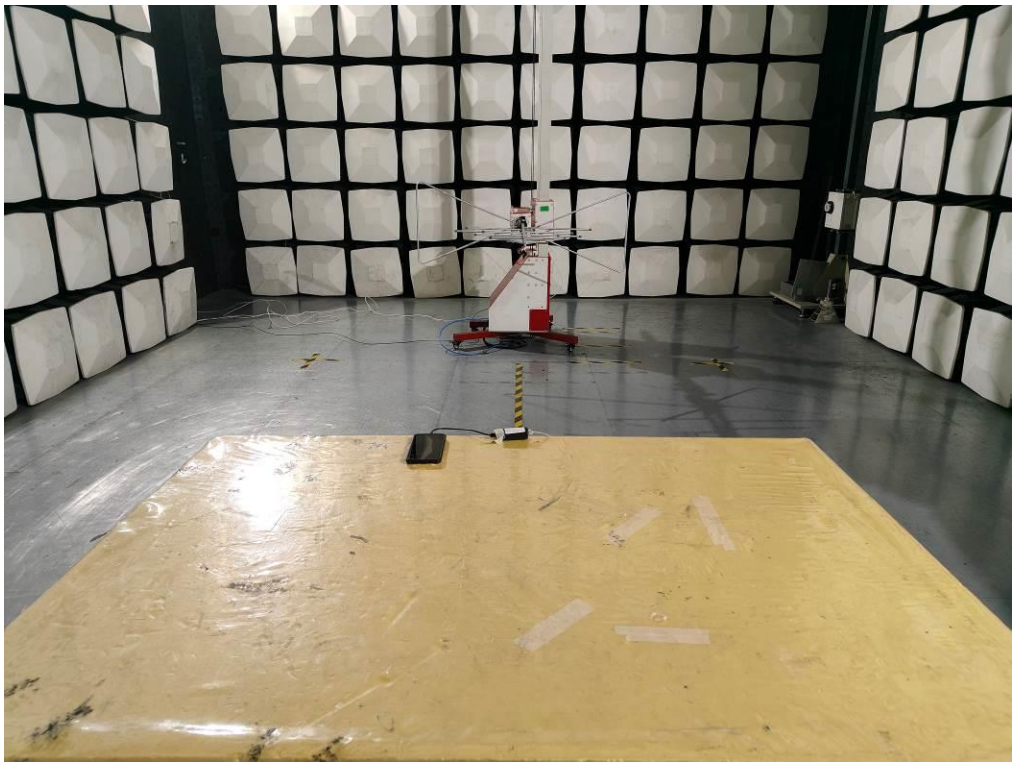


Photo of Electrostatic Discharge Measurement



Photo of Continuous RF Electromagnetic Field Disturbances Measurement

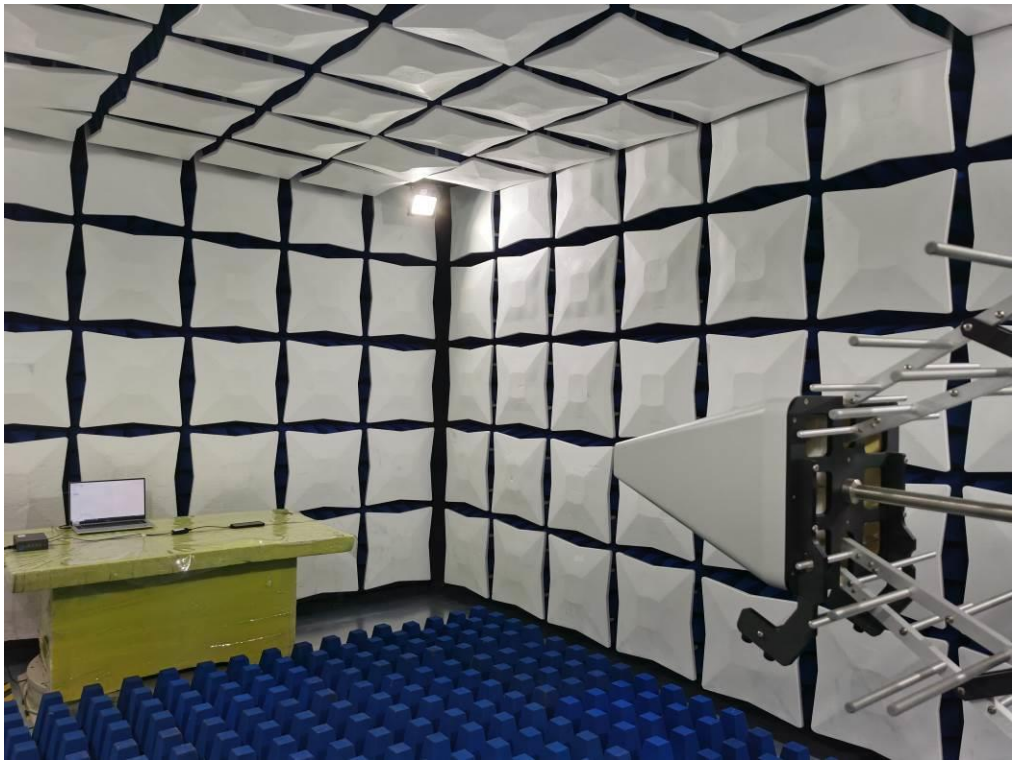
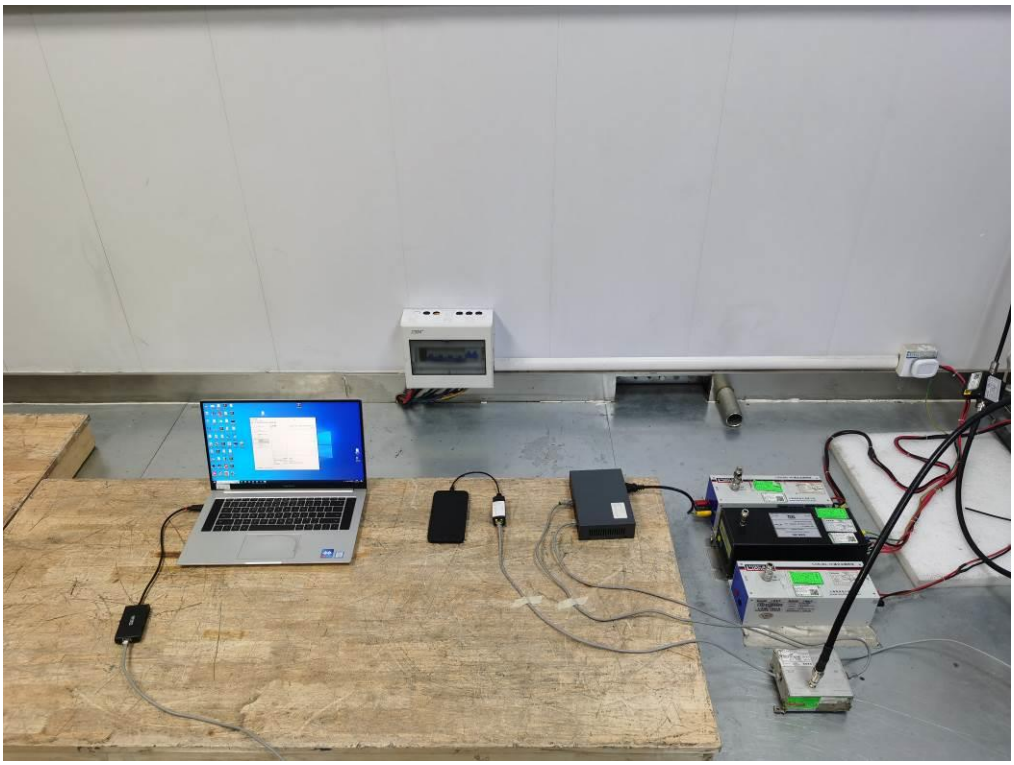


Photo of Electrical Fast Transients / Burst Measurement



Photo of Continuous Induced RF Disturbances Measurement



26. Photographs of the EUT

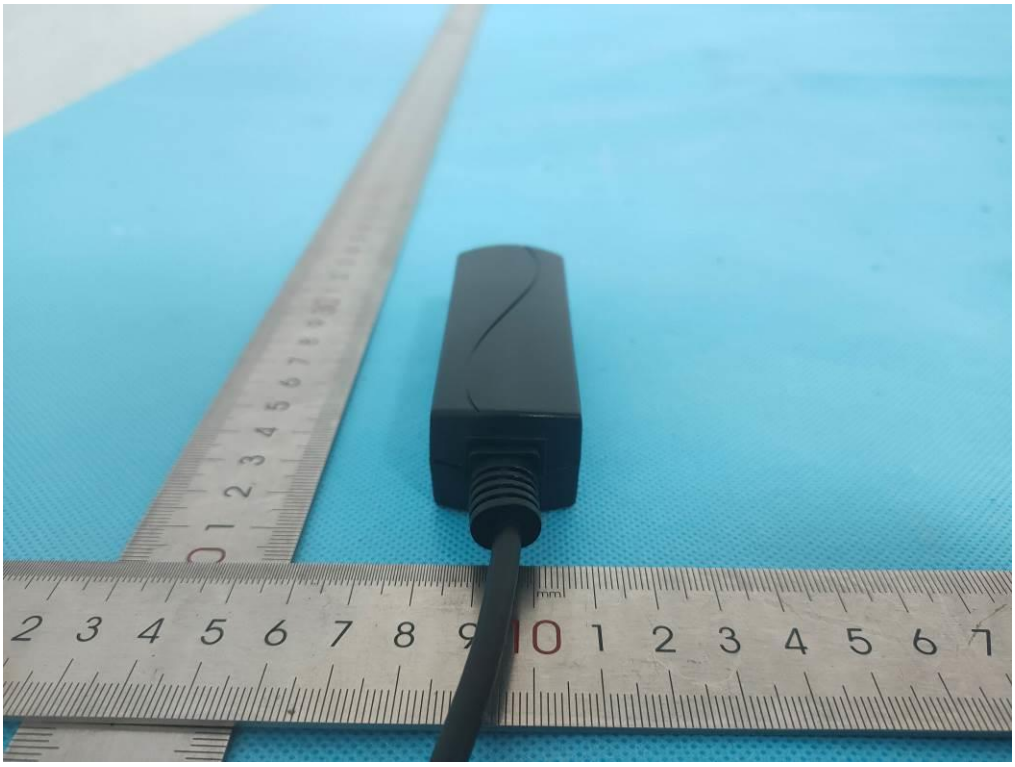


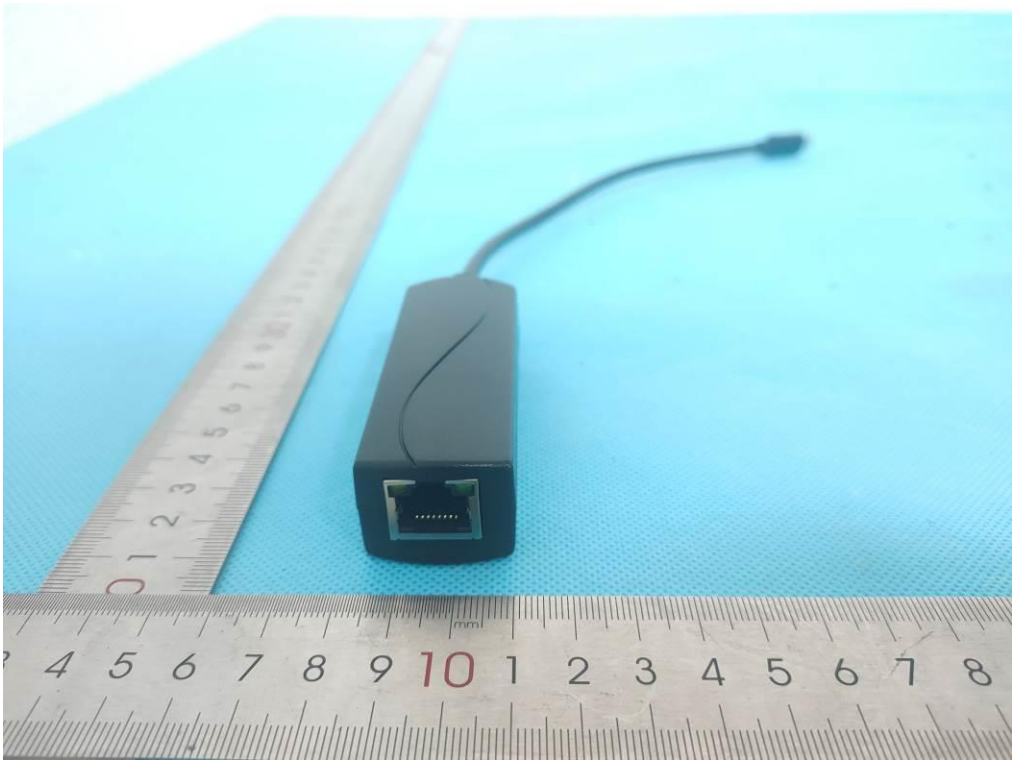



P2C5V POE To USB-C Driver
INPUT:DC37-57V ;IEEE802.3af Standard
Data Speed:10/100Mbps USB2.0
OUTPUT: Type-C 5V/2A PD2.0
SN: 0124P2C5V0696
MADE IN CHINA

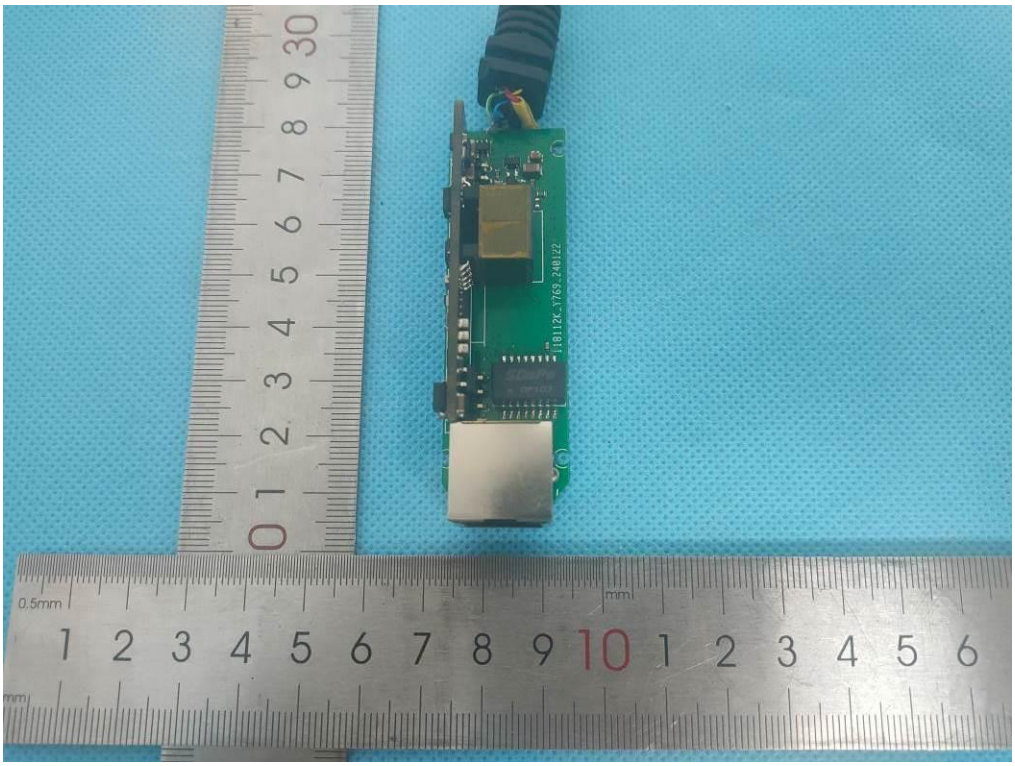


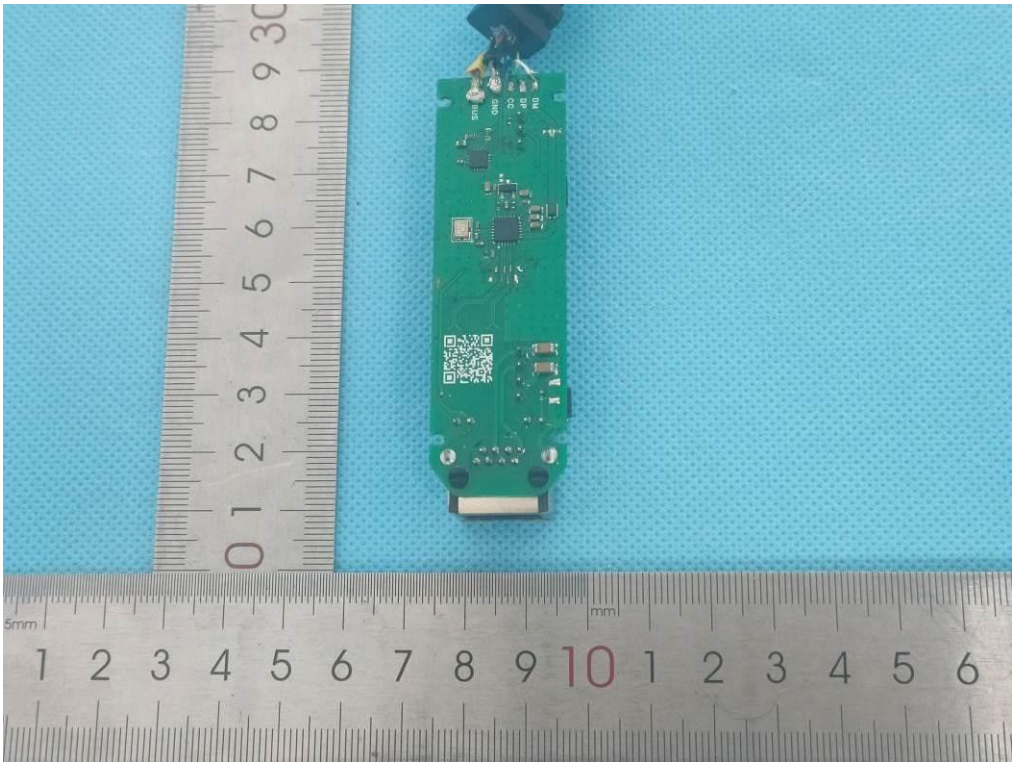


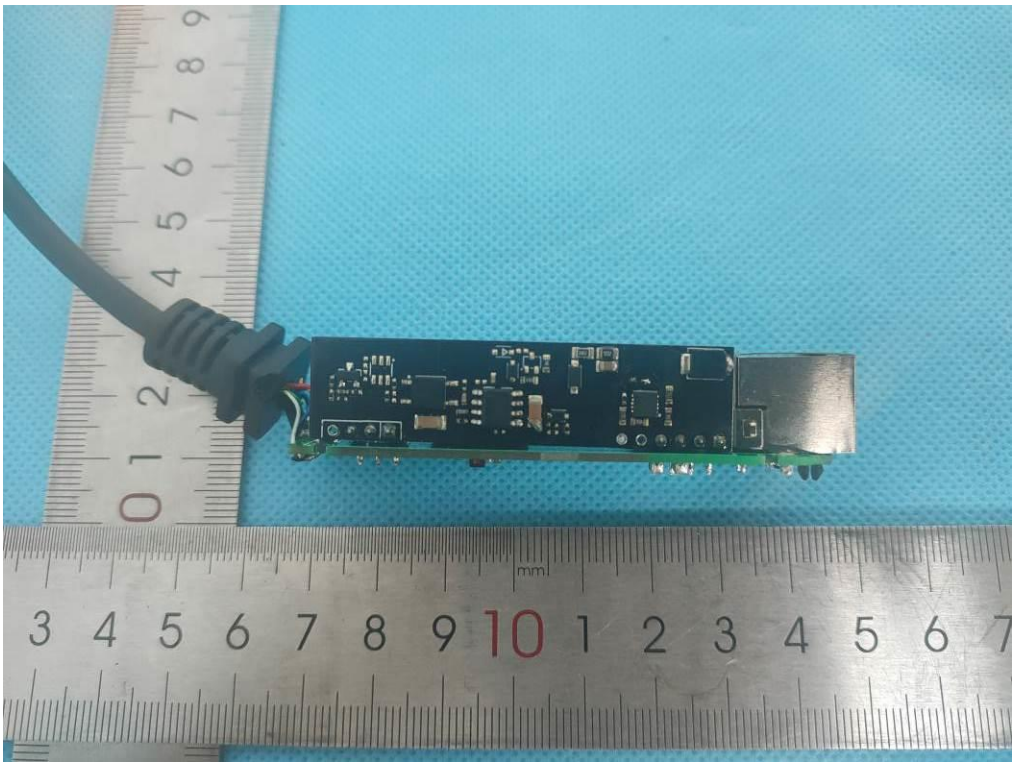


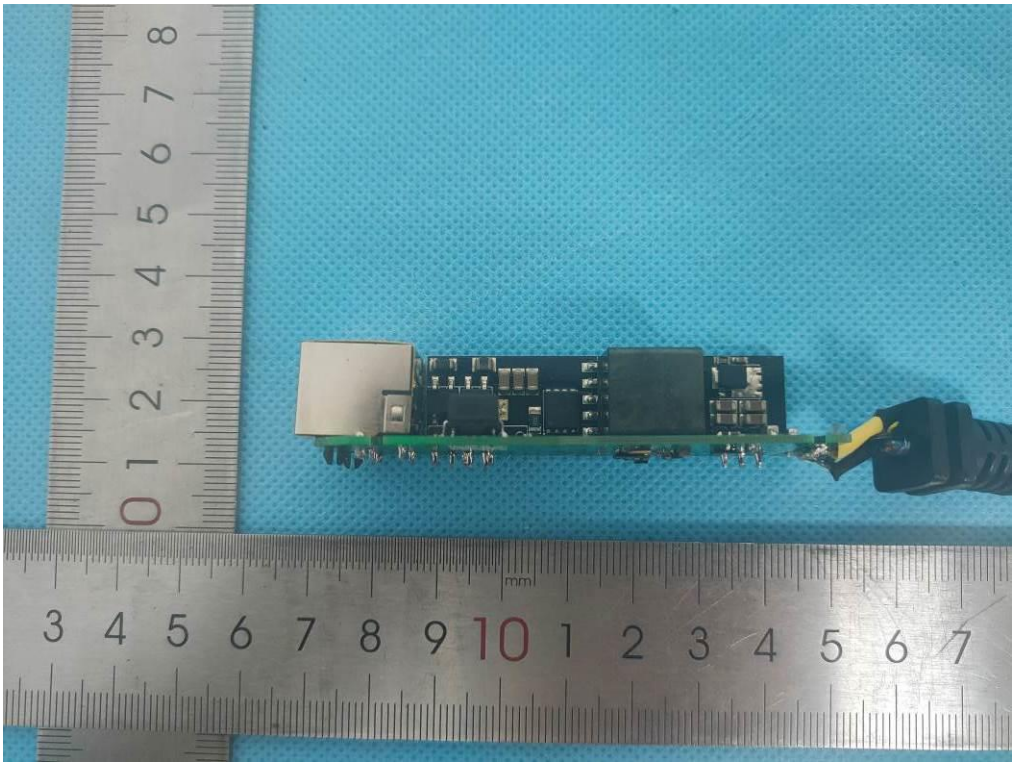












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