

EMC TEST REPORT

For

DexForce Technology Co., Ltd.

Product Name: DexSense 3D industrial camera

Test Model(s): KINGFISHER

Report Reference No. : DACE250911005EC001

Applicant's Name : DexForce Technology Co., Ltd.

Address : 14/F, Venture Capital Tower, 1001 Keyuan Road, Nanshan District, Shenzhen, China

Testing Laboratory : Shenzhen DACE Testing Technology Co., Ltd.

Address : 102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Test Specification Standard :
EN 55032:2015+A1:2020
EN IEC 61000-3-2:2019+A1:2021+A2:2024
EN 61000-3-3:2013+A1:2019+A2:2021
EN 55035:2017+A11:2020

Date of Receipt : September 11, 2025

Date of Test : September 11, 2025 to September 17, 2025

Date of Issue : September 17, 2025

Result : Pass

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen DACE Testing Technology Co., Ltd. This document may be altered or revised by Shenzhen DACE Testing Technology Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample



000008837

Apply for company information

Applicant's Name	:	DexForce Technology Co., Ltd.
Address	:	14/F, Venture Capital Tower, 1001 Keyuan Road, Nanshan District, Shenzhen, China
Product Name	:	DexSense 3D industrial camera
Test Model(s)	:	KINGFISHER
Series Model(s)	:	KINGFISHER-S, KINGFISHER-W
Test Specification Standard(s)	:	EN 55032:2015+A1:2020 EN IEC 61000-3-2:2019+A1:2021+A2:2024 EN 61000-3-3:2013+A1:2019+A2:2021 EN 55035:2017+A11:2020

NOTE1:

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EU Directives.



NOTE2:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

Compiled by:

Amy Zhu / Test Engineer

September 17, 2025

Supervised by:

Stone Yin / Project Engineer

September 17, 2025



Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE250911005EC001	September 17, 2025

CONTENTS

1	TEST SUMMARY	6
1.1	TEST STANDARDS	6
1.2	SUMMARY OF TEST RESULT	6
2	GENERAL INFORMATION	8
2.1	CLIENT INFORMATION	8
2.2	DESCRIPTION OF DEVICE (EUT)	8
2.3	DESCRIPTION OF TEST MODES	8
2.4	DESCRIPTION OF SUPPORT UNITS	8
2.5	EQUIPMENTS USED DURING THE TEST	9
2.6	STATEMENT OF THE MEASUREMENT UNCERTAINTY	13
3	EVALUATION RESULTS (EVALUATION)	14
3.1	HARMONIC CURRENT EMISSION	14
3.1.1	Conclusion:	14
4	EMISSION TEST RESULTS (EMI)	15
4.1	CONDUCTED EMISSIONS FROM AC MAINS POWER PORTS (150kHz-30MHz)	15
4.1.1	E.U.T. Operation:	15
4.1.2	Test Setup Diagram:	15
4.1.3	Test Data:	16
4.2	ASYMMETRIC MODE CONDUCTED EMISSIONS (150kHz-30MHz)	18
4.2.1	E.U.T. Operation:	18
4.2.2	Test Data:	19
4.3	RADIATED EMISSIONS (30MHz-1GHz)	20
4.3.1	E.U.T. Operation:	20
4.3.2	Test Setup Diagram:	20
4.3.3	Test Data:	21
4.4	VOLTAGE FLUCTUATIONS AND FLICKER	23
4.4.1	E.U.T. Operation:	23
4.4.2	Test Setup Diagram:	23
4.4.3	Test Data:	24
5	IMMUNITY TEST RESULTS (EMS)	25
5.1	ELECTROSTATIC DISCHARGES	26
5.1.1	E.U.T. Operation:	26
5.1.2	Test Setup Diagram:	26
5.1.3	Test Data:	27
5.2	RF ELECTROMAGNETIC FIELD DISTURBANCES	28
5.2.1	E.U.T. Operation:	28
5.2.2	Test Setup Diagram:	28
5.2.3	Test Data:	29
5.3	ELECTRICAL FAST TRANSIENTS / BURST FOR AC MAINS POWER PORTS	30
5.3.1	E.U.T. Operation:	30
5.3.2	Test Setup Diagram:	30
5.3.3	Test Data:	30
5.4	ELECTRICAL FAST TRANSIENTS / BURST FOR ANALOGUE/DIGITAL DATA PORTS	31
5.4.1	E.U.T. Operation:	31
5.4.2	Test Setup Diagram:	31

5.4.3	Test Data:	31
5.5	SURGES FOR AC MAINS POWER PORTS	32
5.5.1	E.U.T. Operation:	32
5.5.2	Test Setup Diagram:	32
5.5.3	Test Data:	32
5.6	SURGES FOR ANALOGUE/DIGITAL DATA PORTS	33
5.6.1	E.U.T. Operation:	33
5.6.2	Test Setup Diagram:	33
5.6.3	Test Data:	33
5.7	CONTINUOUS INDUCED RF DISTURBANCES FOR AC MAINS POWER PORTS (150KHZ-80MHZ)	34
5.7.1	E.U.T. Operation:	34
5.7.2	Test Setup Diagram:	34
5.7.3	Test Data:	34
5.8	CONTINUOUS INDUCED RF DISTURBANCES FOR ANALOGUE/DIGITAL DATA PORTS (150KHZ-80MHZ)	35
5.8.1	E.U.T. Operation:	35
5.8.2	Test Setup Diagram:	35
5.8.3	Test Data:	35
5.9	VOLTAGE DIPS AND INTERRUPTIONS	36
5.9.1	E.U.T. Operation:	36
5.9.2	Test Setup Diagram:	36
5.9.3	Test Data:	36
6	TEST SETUP PHOTOS	37
7	PHOTOS OF THE EUT	42

1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

EN 55032:2015+A1:2020: Electromagnetic compatibility of multimedia equipment - Emission requirements
EN IEC 61000-3-2:2019+A1:2021+A2:2024: Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16A per phase)
EN 61000-3-3:2013+A1:2019+A2:2021: Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 16A$ per phase and not subject to conditional connection
EN 55035:2017+A11:2020: Electromagnetic compatibility of multimedia equipment - Immunity requirements.

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Conducted emissions from AC mains power ports (150kHz-30MHz)	EN 55032:2015+A1:2020	Clause 7 of CISPR 16-2-1:2014/AMD1:2017	Class B	Pass
Asymmetric mode conducted emissions (150kHz-30MHz)	EN 55032:2015+A1:2020	Clause 7 of CISPR 16-2-1:2014/AMD1:2017	Class B	Pass
Radiated emissions (30MHz-1GHz)	EN 55032:2015+A1:2020	Clause 7.3 of CISPR 16-2-3:2016	Class B	Pass
Harmonic current emission	EN IEC 61000-3-2:2019+A1:2021+A2:2024	EN IEC 61000-3-2:2019+A1:2021+A2:2024	Class A	Pass
Voltage fluctuations and flicker		EN 61000-3-3:2013+A1:2019+A2:2021		Pass
Electrostatic discharges	EN 55035:2017+A11:2020	EN 61000-4-2: 2009	Contact Discharge: +/- 4kV Air Discharge: +/- 8kV	Pass
RF electromagnetic field disturbances	EN 55035:2017+A11:2020	EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical fast transients / burst for AC mains power ports	EN 55035:2017+A11:2020	EN 61000-4-4: 2012	1kV; 5/50ns Tr/Th; 5kHz Repetition Frequency	Pass
Electrical fast transients / burst for analogue/digital data ports	EN 55035:2017+A11:2020	EN 61000-4-4: 2012	0.5kV; 5/50ns Tr/Th; 5kHz Repetition Frequency	Pass
Surges for AC mains power ports	EN 55035:2017+A11:2020	EN 61000-4-5: 2014 +A1: 2017	1.2/50 μ s Tr/Td; 1kV Line to Line	Pass
Surges for analogue/digital data ports	EN 55035:2017+A11:2020	EN 61000-4-5: 2014 +A1: 2017	1.2/50 μ s Tr/Td; 0.5 kV Shield to Ground	Pass
Continuous induced RF disturbances for AC mains power ports (150kHz-80MHz)	EN 55035:2017+A11:2020	EN 61000-4-6: 2014	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%,1kHz Amp. Mod.	Pass

Continuous induced RF disturbances for analogue/digital data ports (150kHz-80MHz)	EN 55035:2017+A11:2020	EN 61000-4-6: 2014	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%,1kHz Amp. Mod.	Pass
Voltage dips and interruptions	EN 55035:2017+A11:2020	EN IEC 61000-4-11:2020	<5% residual voltage for 0.5 periods: B, 70% residual voltage: 25 periods for 50Hz, 30 periods for 60Hz: C, <5% residual voltage: 250 periods for 50Hz, 300 periods for 60Hz: C	Pass

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name : DexForce Technology Co., Ltd.
Address : 14/F, Venture Capital Tower, 1001 Keyuan Road, Nanshan District, Shenzhen, China

Manufacturer : DexForce Technology Co., Ltd.
Address : 14/F, Venture Capital Tower, 1001 Keyuan Road, Nanshan District, Shenzhen, China

2.2 Description of Device (EUT)

Product Name:	DexSense 3D industrial camera
Model/Type reference:	KINGFISHER
Series Model:	KINGFISHER-S,KINGFISHER-W
Model Difference:	Only the model name and appearance are different, the circuit principle is the same, and all the tests are based on the model KINGFISHER
Trade Mark:	
Power Supply:	Input:100-240V~,50/60Hz Output:DC 54V,0.7A
Highest Internal Frequency:	$f \leq 108\text{MHz}$
Classification of Equipment:	Class B

2.3 Description of Test Modes

No	Title	Description
TM1	Working	AC 230V/50Hz

2.4 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
PC	HP	TPN-Q304	N/A

2.5 Equipments Used During The Test

Conducted emissions from AC mains power ports (150kHz-30MHz)
Asymmetric mode conducted emissions (150kHz-30MHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
loop antenna	EVERFINE	LLA-2	80900L-C	2024-12-19	2025-12-18
Power absorbing clamp	SCHWARZ BECK	MESS-ELEKTRONIK	/	2025-04-23	2026-04-22
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	2025-04-18	2026-04-17
Cable	SCHWARZ BECK	/	/	2025-04-18	2026-04-17
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Attenuation	561-G071	2024-12-06	2025-12-05
50ΩCoaxial Switch	Anritsu	MP59B	M20531	/	/
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	1164.6607K03 -102109-MH	2025-04-25	2026-04-24
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2025-04-18	2026-04-17
L.I.S.N	SCHWARZ BECK	NSLK 8126	05055	2025-04-18	2026-04-17
Pulse Limiter	CYBERTEK	EM5010A	/	2024-09-27	2025-09-26
EMI test software	EZ -EMC	EZ	V1.1.42	/	/

Radiated emissions (30MHz-1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Cable(HF)2	SCHWARZ BECK	50Ω	/	2025-04-18	2026-04-17
Cable(HF)1	SCHWARZ BECK	50Ω	/	2025-04-18	2026-04-17
Cable(LF)2	SCHWARZ BECK	50Ω	/	2025-04-18	2026-04-17
Cable(LF)1	SCHWARZ BECK	50Ω	/	2025-04-18	2026-04-17
Control	MF	MF-7802	MF780208362	2024-12-09	2025-12-08
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	1164.6607K03 -102109-MH	2025-04-25	2026-04-24
EMI Test software	Farad	EZ -EMC	V1.1.42	/	/
Positioning Controller	MF	MF-7802	/	/	/
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2024-04-26	2027-04-25
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2024-04-26	2027-04-25
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2025-04-28	2026-04-27
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2025-04-29	2026-04-28
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2025-04-29	2026-04-28
Test Receiver	R&S	ESCI 3	1166.5950K03 -101431-Jq	2025-04-18	2026-04-17
Horn Antenna	Sunol Sciences	DRH-118	A091114	2025-04-21	2026-04-20
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2024-09-28	2026-09-27

Voltage fluctuations and flicker

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Harmonic current/scintillation analyzer	TTI	AC 2000A	72314	2024-12-06	2025-12-05
PC	/	P2L97	N/A	/	/

Electrostatic discharges

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
ESD Tester	Prima	ESD61002A	144305	2024-12-06	2025-12-05

RF electromagnetic field disturbances

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
PC	/	486DX2	/	/	/
Log-periodic Antenna	AR	AT1080	16812	/	/
Biconic Antenna	EMCO	3108	9507-2534	/	/
Isotropic Field Probe	AR	FP2000	16755	2024-11-27	2025-11-26
Isotropic Field Monitor	AR	FM2000	16829	/	/
Amplifier	AR	100W/1000M1	17028	/	/
Amplifier	AR	500A100	17034	/	/
Signal Generator	HP	8648A	3625U00573	2024-12-12	2025-12-11

Electrical fast transients / burst for AC mains power ports
Electrical fast transients / burst for analogue/digital data ports

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coupling Clamp	HTEC	H3C	147147	2024-12-06	2025-12-05
Burst Tester	HTEC	HEFT 51	144303	2024-12-24	2025-12-23

Surges for AC mains power ports
Surges for analogue/digital data ports

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Surge Tester	Prima	SUG61005TB	PR160351170	2024-12-06	2025-12-05
CDN coupling/decoupling network	Prima	DATA-CDN-8B	PR201254826	/	/

Continuous induced RF disturbances for AC mains power ports (150kHz-80MHz)
Continuous induced RF disturbances for analogue/digital data ports (150kHz-80MHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Attenuator	SCHLODER	DC-1GHz	HA1606	2024-12-06	2025-12-05
Injection Clamp	Rohde & Schwarz	F-2031-23MM	368	2024-12-25	2025-12-24
C/S Test Software	HUBERT	1.5.0	17901493	/	/
CDN	SCHLODER	CDN-M2+M3	17101238-0106/2017	2024-12-06	2025-12-05
Conducted Disturbances Test System	SCHLODER	CDG 6000-25	17901493-0101	2024-12-06	2025-12-05
EM-Clamp	SCHLODER	EMCL-20	20102817-0108	2025-04-23	2026-04-22

Voltage dips and interruptions

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Voltage Dips and Interruptions Test	HTEC	HPFS161P	144304	2024-12-24	2025-12-23

2.6 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Disturbance (0.15~30MHz)	$\pm 3.41\text{dB}$
Radiated Emission (Below 1GHz)	$\pm 5.79\text{dB}$
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.	

3 Evaluation Results (Evaluation)

3.1 Harmonic current emission

Test Requirement:	Class A
Test Limit:	Not specified
Test Method:	EN IEC 61000-3-2:2019+A1:2021+A2:2024

3.1.1 Conclusion:

Refer to EN IEC 61000-3-2 clause 7.1:

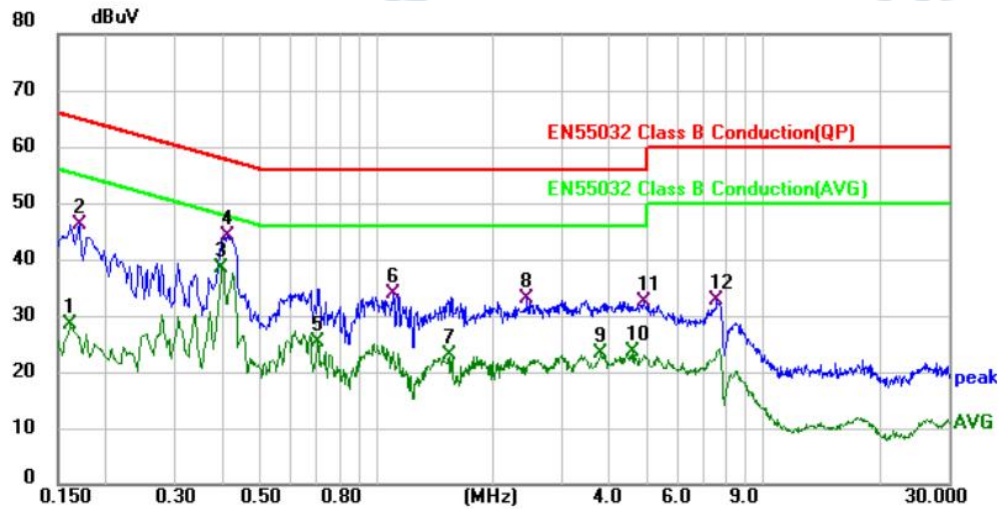
"For the following categories of equipment, limits are not specified in this document:

- lighting equipment with a rated power less than but not equal to 5 W;
- equipment with a rated power of 75 W or less, other than lighting equipment;"

Since the rated power of the EUT is less than above described, it is deemed to comply with the requirement.

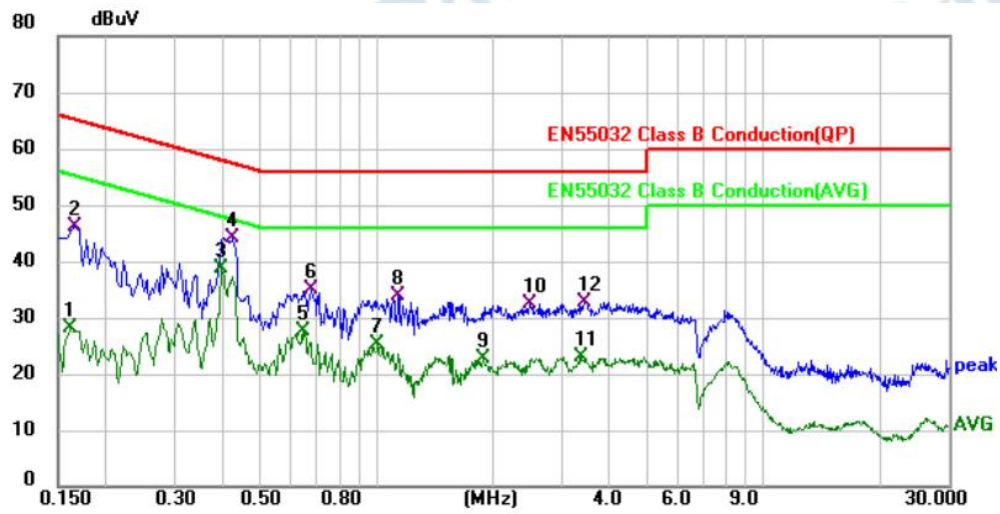
4.1.3 Test Data:

TM1 / Line: Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1620	18.37	10.08	28.45	55.36	-26.91	AVG	
2		0.1700	36.01	10.08	46.09	64.96	-18.87	QP	
3	*	0.3980	28.26	10.07	38.33	47.90	-9.57	AVG	
4		0.4100	34.02	10.08	44.10	57.65	-13.55	QP	
5		0.7060	15.26	10.09	25.35	46.00	-20.65	AVG	
6		1.1060	23.74	10.08	33.82	56.00	-22.18	QP	
7		1.5380	12.81	10.05	22.86	46.00	-23.14	AVG	
8		2.4500	22.85	10.03	32.88	56.00	-23.12	QP	
9		3.8180	13.10	10.15	23.25	46.00	-22.75	AVG	
10		4.5939	13.38	10.18	23.56	46.00	-22.44	AVG	
11		4.9100	22.36	10.19	32.55	56.00	-23.45	QP	
12		7.5980	22.38	10.24	32.62	60.00	-27.38	QP	

TM1 / Line: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1620	18.08	10.10	28.18	55.36	-27.18	AVG	
2		0.1660	36.15	10.10	46.25	65.16	-18.91	QP	
3	*	0.3980	28.65	10.09	38.74	47.90	-9.16	AVG	
4		0.4220	33.92	10.10	44.02	57.41	-13.39	QP	
5		0.6500	17.61	10.10	27.71	46.00	-18.29	AVG	
6		0.6820	24.93	10.11	35.04	56.00	-20.96	QP	
7		1.0100	15.19	10.11	25.30	46.00	-20.70	AVG	
8		1.1380	23.68	10.10	33.78	56.00	-22.22	QP	
9		1.8900	12.80	10.01	22.81	46.00	-23.19	AVG	
10		2.4780	22.50	10.03	32.53	56.00	-23.47	QP	
11		3.3740	12.95	10.10	23.05	46.00	-22.95	AVG	
12		3.4380	22.54	10.11	32.65	56.00	-23.35	QP	

4.2 Asymmetric mode conducted emissions (150kHz-30MHz)

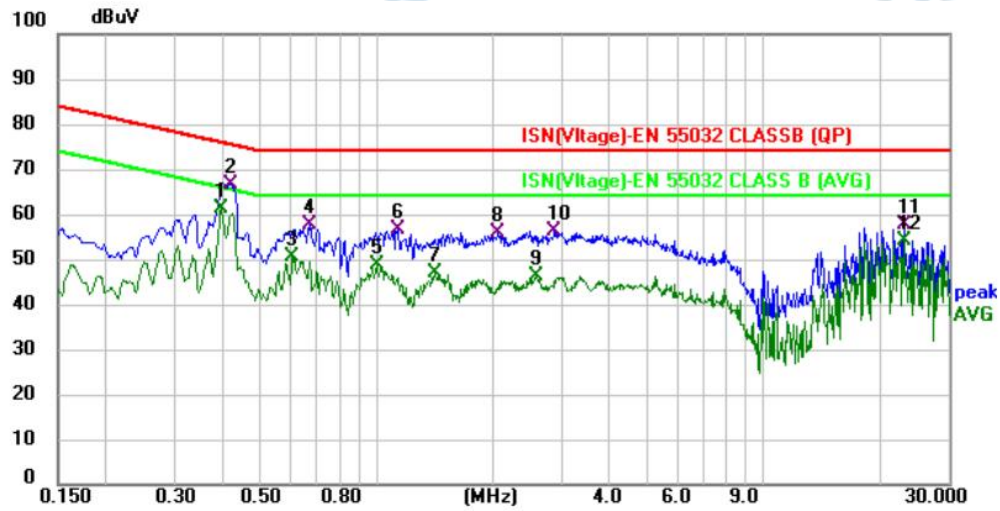
Test Requirement:	Class B		
Test Limit:	ISN:		
	Frequency Range	Limit (Quasi-Peak)	Limit (Average)
	0.15MHz to 0.5MHz	84dB(μV) to 74dB(μV)	74dB(μV) to 64dB(μV)
	0.5MHz to 30MHz	74dB(μV)	64dB(μV)
	Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz	
Test Method:	Clause 7 of CISPR 16-2-1:2014/AMD1:2017		
Procedure:	An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor		

4.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24 °C	Humidity:	52 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.2.2 Test Data:

TM1



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.3980	41.50	19.64	61.14	65.90	-4.76	AVG	
2		0.4180	47.03	19.62	66.65	75.49	-8.84	QP	
3		0.6060	31.08	19.50	50.58	64.00	-13.42	AVG	
4		0.6740	38.14	19.49	57.63	74.00	-16.37	QP	
5		1.0020	29.21	19.40	48.61	64.00	-15.39	AVG	
6		1.1300	37.32	19.37	56.69	74.00	-17.31	QP	
7		1.4180	27.54	19.32	46.86	64.00	-17.14	AVG	
8		2.0620	36.65	19.23	55.88	74.00	-18.12	QP	
9		2.5860	27.05	19.29	46.34	64.00	-17.66	AVG	
10		2.8820	36.88	19.31	56.19	74.00	-17.81	QP	
11		23.1299	37.39	20.15	57.54	74.00	-16.46	QP	
12		23.1299	33.91	20.15	54.06	64.00	-9.94	AVG	

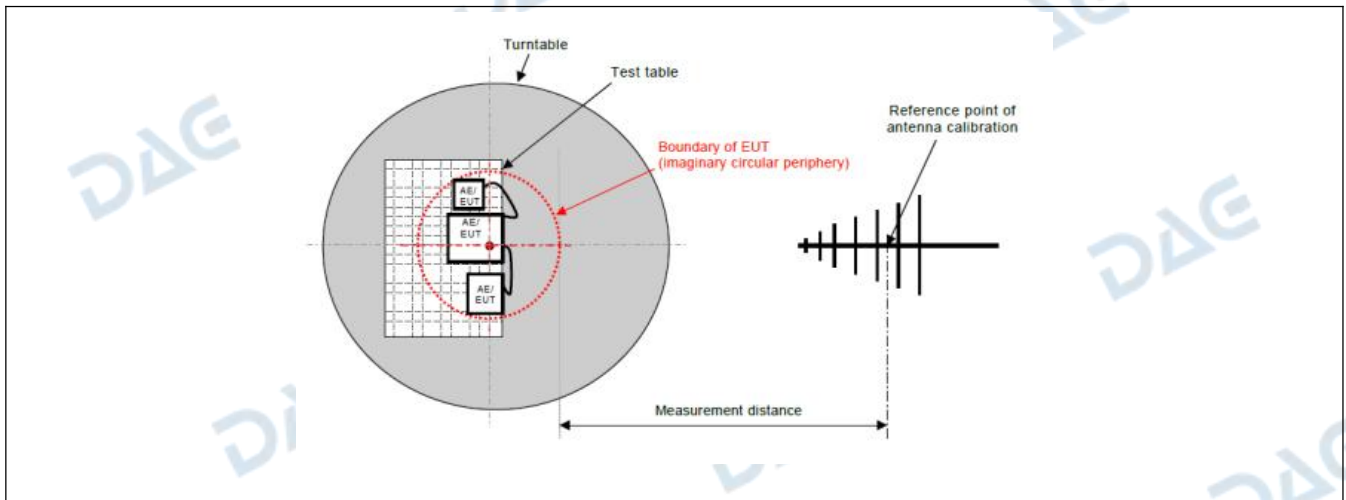
4.3 Radiated emissions (30MHz-1GHz)

Test Requirement:	Class B		
Test Limit:	Frequency (MHz)	Limit [dB(uV/m) at 10m]	Limit [dB(uV/m) at 3m]
	30 to 230	30	40
	230 to 1000	37	47
	Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz	
Test Method:	Clause 7.3 of CISPR 16-2-3:2016		
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor		

4.3.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.9 °C	Humidity:	53 %
Atmospheric Pressure:	101.6 kPa		
Pretest mode:	TM1		
Final test mode:	TM1		

4.3.2 Test Setup Diagram:



4.3.3 Test Data:

TM1 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	68.8721	37.59	-13.00	24.59	40.00	-15.41	QP	100		P	
2 *	148.9625	34.40	-7.73	26.67	40.00	-13.33	QP	100		P	
3	213.7634	33.99	-10.16	23.83	40.00	-16.17	QP	100		P	
4	250.3012	37.16	-10.30	26.86	47.00	-20.14	QP	100		P	
5	375.9385	29.10	-6.57	22.53	47.00	-24.47	QP	100		P	
6	584.7895	25.68	-1.86	23.82	47.00	-23.18	QP	100		P	

TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	47.4918	42.25	-11.85	30.40	40.00	-9.60	QP	100		P	
2 !	57.9993	49.09	-13.82	35.27	40.00	-4.73	QP	100		P	
3 *	67.4382	49.63	-13.15	36.48	40.00	-3.52	QP	100		P	
4 !	103.0800	42.80	-8.31	34.49	40.00	-5.51	QP	100		P	
5	154.2786	39.44	-8.25	31.19	40.00	-8.81	QP	100		P	
6	187.7530	38.19	-9.41	28.78	40.00	-11.22	QP	100		P	

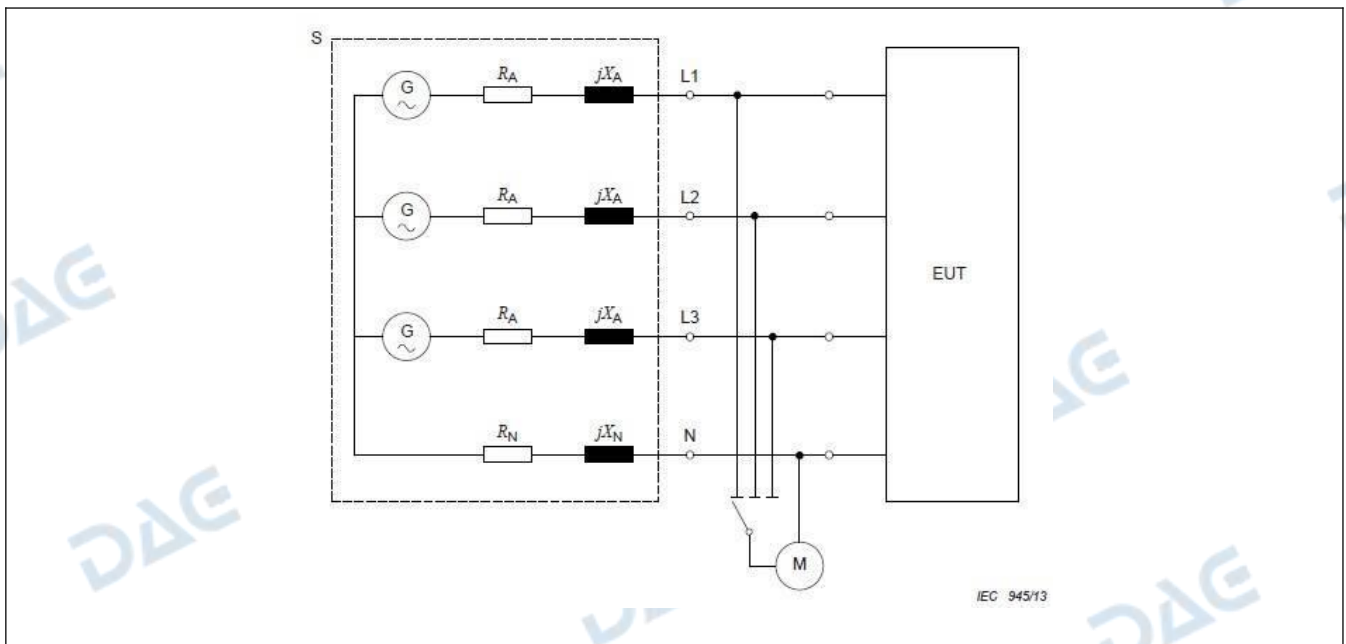
4.4 Voltage fluctuations and flicker

Test Limit:	EN 61000-3-3, Clause 5
Test Method:	EN 61000-3-3:2013+A1:2019+A2:2021

4.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.9 °C	Humidity:	54 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.4.2 Test Setup Diagram:



4.4.3 Test Data:

TM1



Test Site:

Address:

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT:

Operator:

Test category: IEC 61000-3-3 Ed3.1:2017

Model/Type:

Measurement standard: IEC 61000-4-15 Ed2.0:2010

Serial number:

Test date:2025-09-12

Start time: 16:17:11

End time: 16:27:21

Test duration (sec):600

Describe:

Load Power : 7.300 W

Power Factor:0.370

Load Current : 89.610 mArms

Crest Factor:4.629

Nominal Voltage : 219.95 Vrms

Test Result: Pass

Status: Test Completed

Psti and limit line

European Limits

Pst

16:27:21

Result:

T-max (ms):	0.00	Test limit (ms):	500.00	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.00	Test limit:	1.00	Pass
Highest Plt (2 hr. period):	0.00	Test limit:	0.65	Pass

5 Immunity Test Results (EMS)

General Performance Criteria

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.

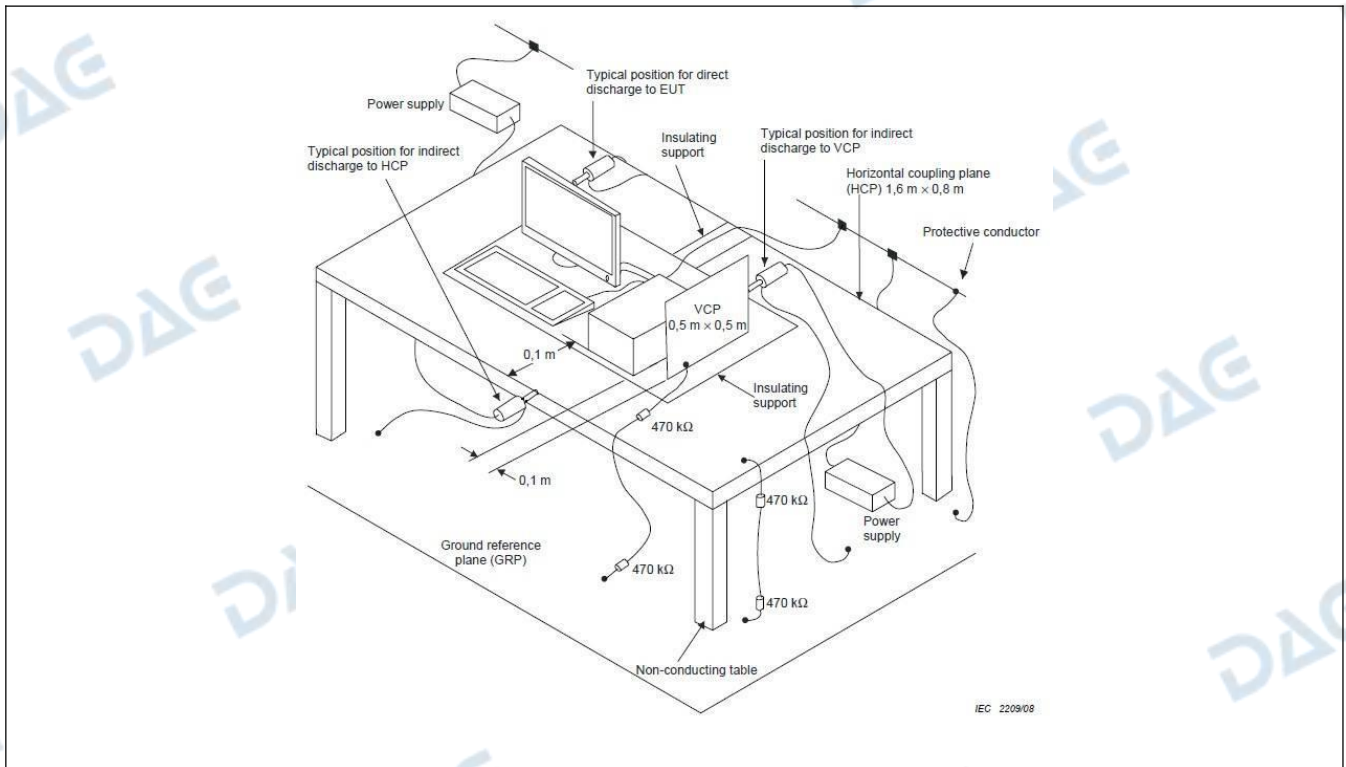
5.1 Electrostatic discharges

Test Requirement:	Contact Discharge: +/- 4kV Air Discharge: +/- 8kV
Test Method:	EN 61000-4-2: 2009
Procedure:	Discharge Impedance: 330Ω/150pF Number of Discharge: Minimum 10 times at each test point Discharge Mode: Single Discharge Discharge Period: 1 second minimum
Performance Criteria:	B

5.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.2 °C	Humidity:	51 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

5.1.2 Test Setup Diagram:



5.1.3 Test Data:

Discharge type	Volt (kV)	Polarity	Test Point	Result/ Observations
Air discharge	2,4,8	+	1	B
Air discharge	2,4,8	-	1	B
Contact discharge	4	+	2	B
Contact discharge	4	-	2	B
Horizontal Coupling	4	+	3	B
Horizontal Coupling	4	-	3	B
Vertical Coupling	4	+	3	B
Vertical Coupling	4	-	3	B

Test Point: 1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side.

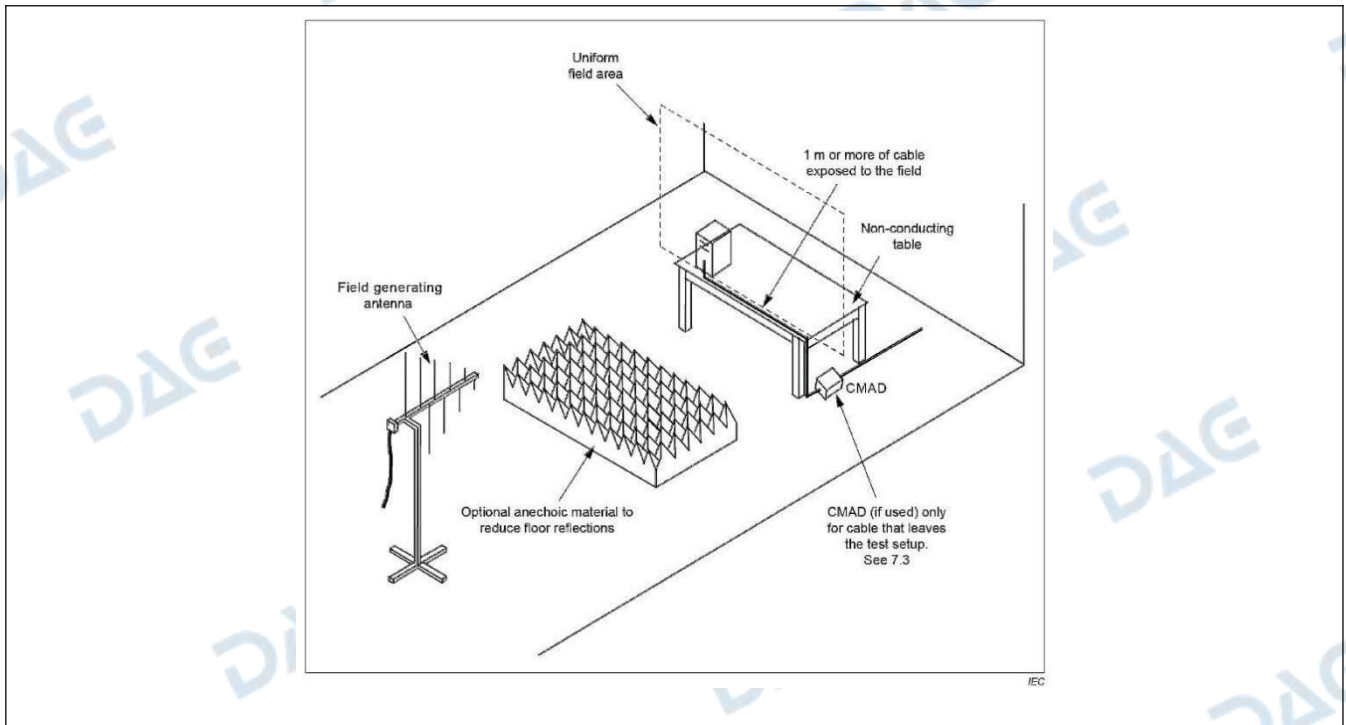
5.2 RF electromagnetic field disturbances

Test Requirement:	3V/m, 80%, 1kHz Amp. Mod.
Test Method:	EN IEC 61000-4-3: 2020
Procedure:	Frequency Range: 80MHz to 1GHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz Antenna Polarisation: Vertical and Horizontal Modulation: 1kHz, 80% Amp. Mod, 1% increment
Performance Criteria:	A

5.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23 °C	Humidity:	53 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

5.2.2 Test Setup Diagram:



5.2.3 Test Data:

Frequency	Field Strength (V/m)	EUT face	Dwell time	Result/ Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Bottom	3s	A
1800MHz	3	Front	3s	A
1800MHz	3	Back	3s	A
1800MHz	3	Left	3s	A
1800MHz	3	Right	3s	A
1800MHz	3	Top	3s	A
1800MHz	3	Bottom	3s	A
2600MHz	3	Front	3s	A
2600MHz	3	Back	3s	A
2600MHz	3	Left	3s	A
2600MHz	3	Right	3s	A
2600MHz	3	Top	3s	A
2600MHz	3	Bottom	3s	A
3500MHz	3	Front	3s	A
3500MHz	3	Back	3s	A
3500MHz	3	Left	3s	A
3500MHz	3	Right	3s	A
3500MHz	3	Top	3s	A
3500MHz	3	Bottom	3s	A
5000MHz	3	Front	3s	A
5000MHz	3	Back	3s	A
5000MHz	3	Left	3s	A
5000MHz	3	Right	3s	A
5000MHz	3	Top	3s	A
5000MHz	3	Bottom	3s	A

A: No degradation in the performance of the EUT was observed.

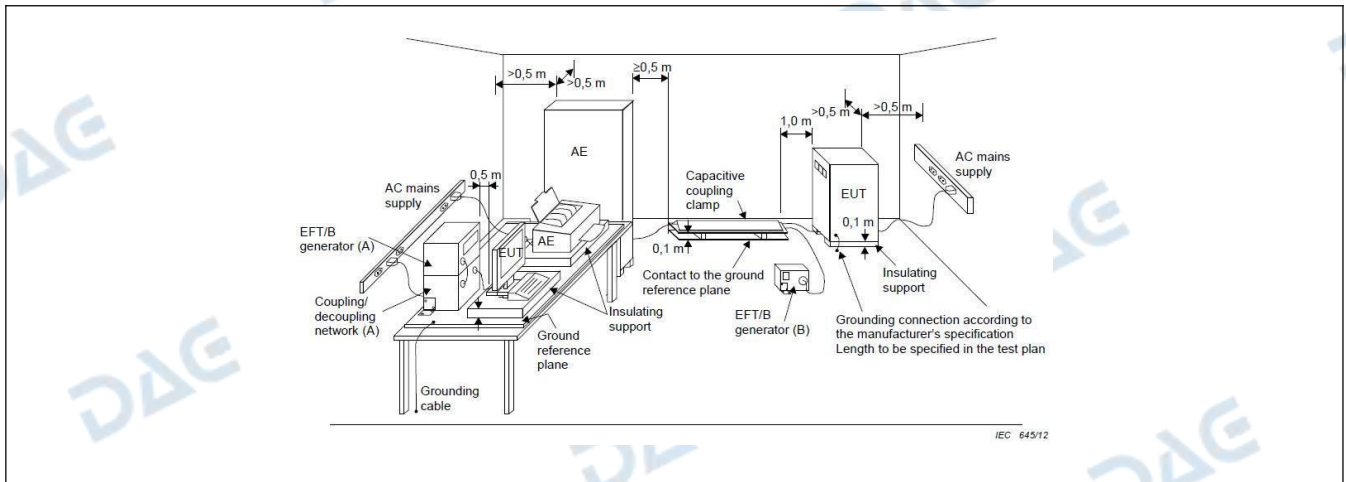
5.3 Electrical fast transients / burst for AC mains power ports

Test Requirement:	1kV; 5/50ns Tr/Th; 5kHz Repetition Frequency
Test Method:	EN 61000-4-4: 2012
Procedure:	Repetition Frequency: 5kHz Burst Period: 300ms Test Duration: 2 minute per level & polarity
Performance Criteria:	B

5.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.4 °C	Humidity:	47 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.3.2 Test Setup Diagram:



5.3.3 Test Data:

Port	Volt (kV)	Polarity	CDN/ Clamp	Result/ Observations
AC power port	1	+	CDN	B
AC power port	1	-	CDN	B

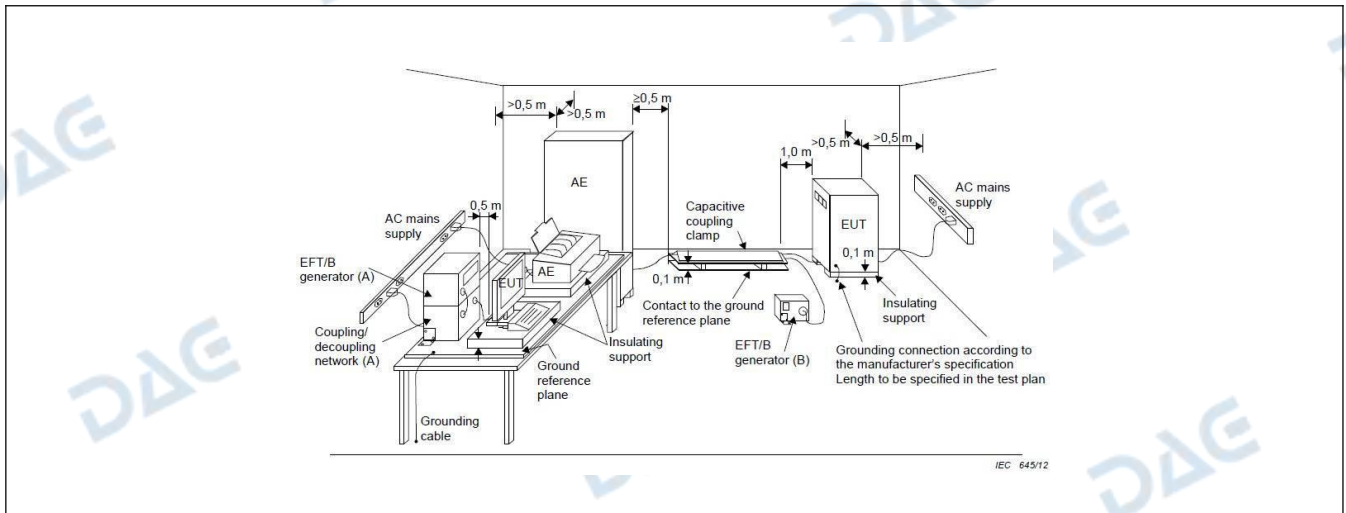
5.4 Electrical fast transients / burst for analogue/digital data ports

Test Requirement:	0.5kV; 5/50ns Tr/Th; 5kHz Repetition Frequency
Test Method:	EN 61000-4-4: 2012
Procedure:	Repetition Frequency: 5kHz Burst Period: 300ms Test Duration: 2 minute per level & polarity
Performance Criteria:	B

5.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.6 °C	Humidity:	54 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.4.2 Test Setup Diagram:



5.4.3 Test Data:

Port	Volt (kV)	Polarity	CDN/ Clamp	Result/ Observations
Signal port	0.5	+	Clamp	B
Signal port	0.5	-	Clamp	B

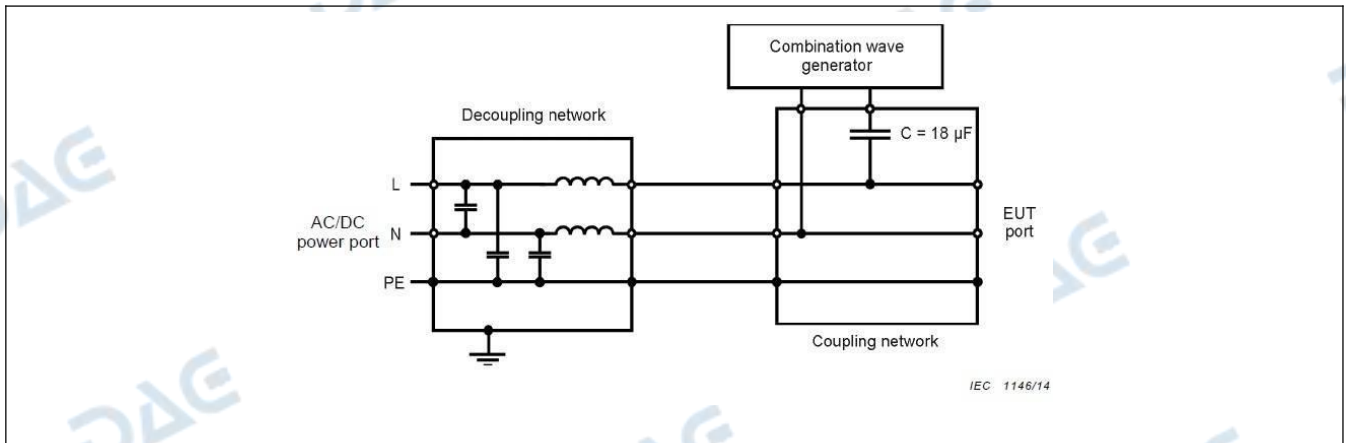
5.5 Surges for AC mains power ports

Test Requirement:	1.2/50 μ s Tr/Td; 1kV Line to Line
Test Method:	EN 61000-4-5: 2014 +A1: 2017
Procedure:	Interval: 60s between each surge No. of surges: 5 positive, 5 negative at 90°, 270°
Performance Criteria:	B

5.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.1 °C	Humidity:	48 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.5.2 Test Setup Diagram:



5.5.3 Test Data:

Port	Volt (kV)	Polarity	Phase(degree)	Result/ Observations
L-N	1	+	90°	B
L-N	1	-	270°	B

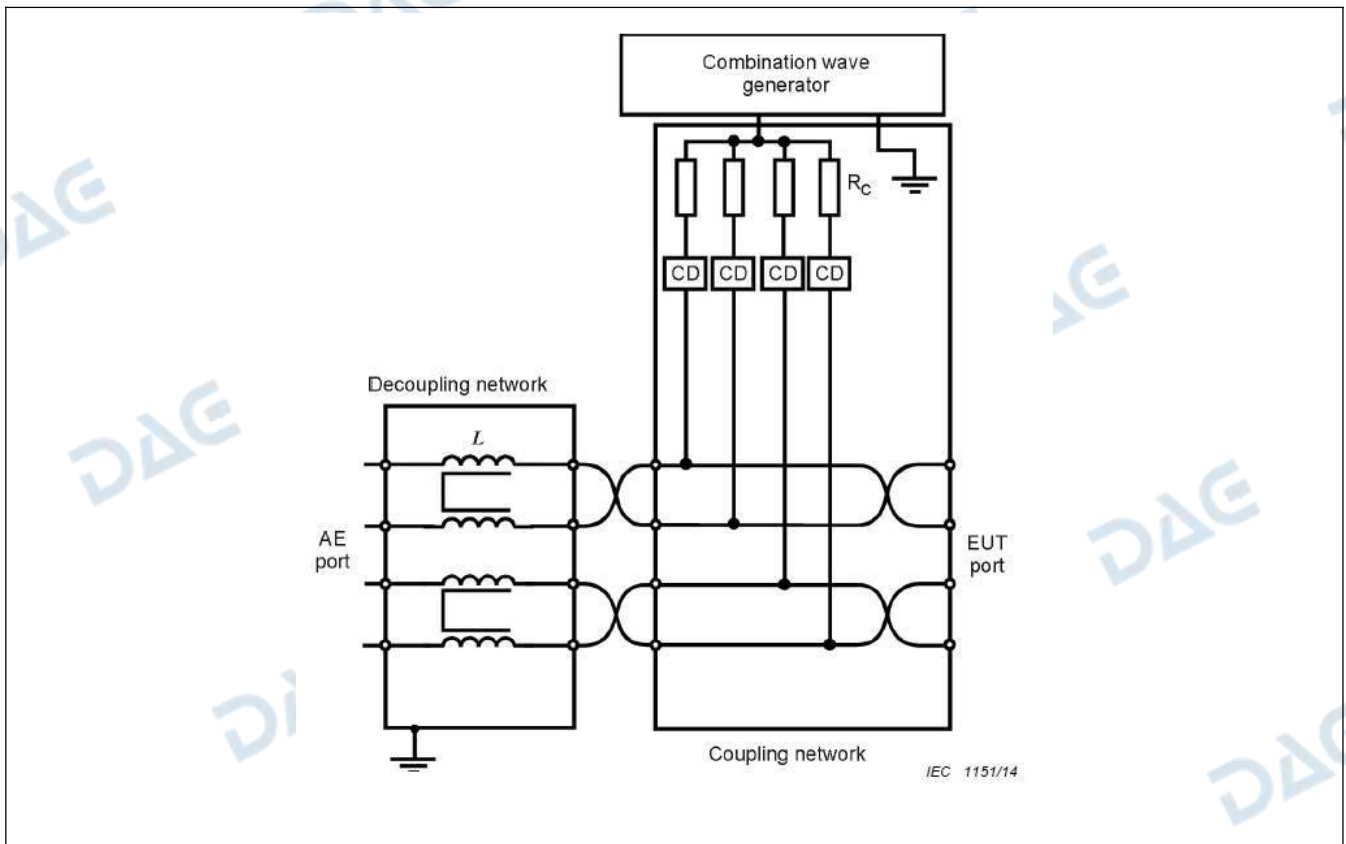
5.6 Surges for analogue/digital data ports

Test Requirement:	1.2/50 μ s Tr/Td; 0,5 kV Shield to Ground
Test Method:	EN 61000-4-5: 2014 +A1: 2017
Procedure:	Interval: 60s between each surge
Performance Criteria:	B

5.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.1 °C	Humidity:	49 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

5.6.2 Test Setup Diagram:



5.6.3 Test Data:

Port	Line	Waveform(μ s)	Volt (kV)	Polarity	Result/ Observations
Signal port	Shield-Ground	1,2/50 (8/20)	0.5	+	B
Signal port	Shield-Ground	1,2/50 (8/20)	0.5	-	B

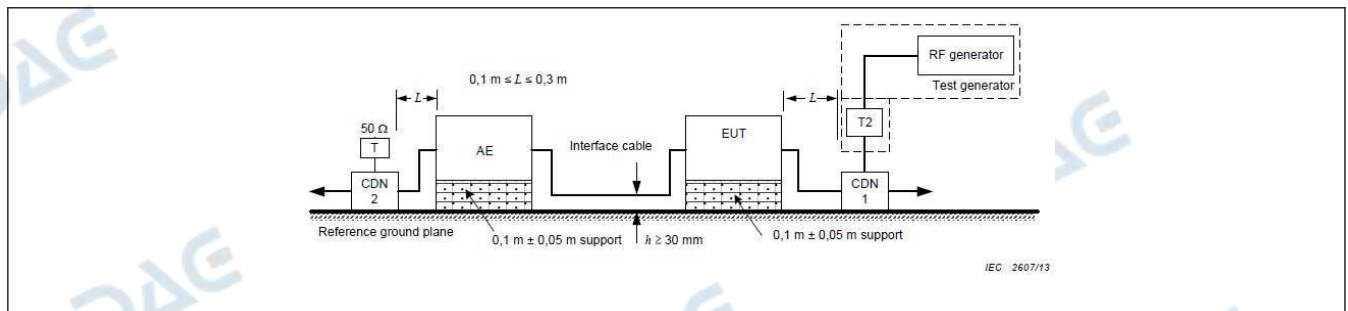
5.7 Continuous induced RF disturbances for AC mains power ports (150kHz-80MHz)

Test Requirement:	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%,1kHz Amp. Mod.
Test Method:	EN 61000-4-6: 2014
Procedure:	Frequency Range: 0.15MHz to 80MHz Modulation: 80%, 1kHz Amplitude Modulation Step Size: 1%
Performance Criteria:	A

5.7.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	51 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.7.2 Test Setup Diagram:



5.7.3 Test Data:

Port	Strength (Vrms)	CDN/Clamp	Dwell time	Result/ Observations
AC power port	3(0.15MHz-10MHz)	CDN	3s	A
AC power port	3 to 1(10MHz-30MHz, Lines)	CDN	3s	A
AC power port	1(30MHz-80MHz)	CDN	3s	A

A: No degradation in the performance of the EUT was observed.

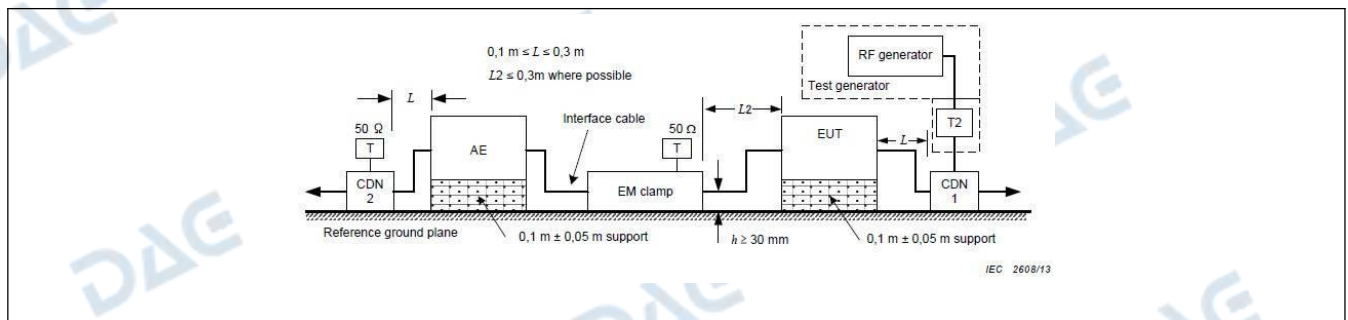
5.8 Continuous induced RF disturbances for analogue/digital data ports (150kHz-80MHz)

Test Requirement:	0,15 to 10MHz 3Vrms (emf), 10 to 30MHz 3V to 1Vrms(emf), 30 to 80MHz 1Vrms(emf), 80%,1kHz Amp. Mod.
Test Method:	EN 61000-4-6: 2014
Procedure:	Frequency Range: 0.15MHz to 80MHz Modulation: 80%, 1kHz Amplitude Modulation Step Size: 1%
Performance Criteria:	A

5.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.6 °C	Humidity:	54 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.8.2 Test Setup Diagram:



5.8.3 Test Data:

Port	Strength (Vrms)	CDN/ Clamp	Dwell time	Result/ Observations
Signal port	3(0.15MHz-10MHz)	Clamp	3s	A
Signal port	3 to 1(10MHz-30MHz, Lines)	Clamp	3s	A
Signal port	1(30MHz-80MHz)	Clamp	3s	A

A: No degradation in the performance of the EUT was observed.

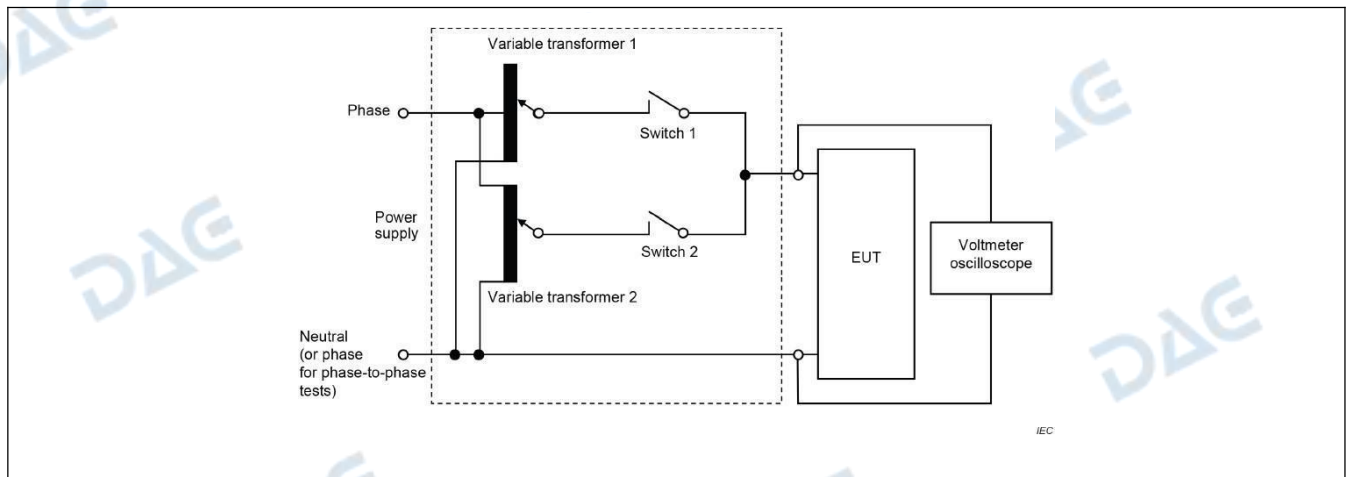
5.9 Voltage dips and interruptions

Test Requirement:	<5% residual voltage for 0.5 periods 70% residual voltage: 25 periods for 50Hz, 30 periods for 60Hz <5% residual voltage: 250 periods for 50Hz, 300 periods for 60Hz
Test Method:	EN IEC 61000-4-11:2020
Procedure:	<5% residual voltage for 0.5 period 70% residual voltage: 25 periods for 50Hz, 30 periods for 60Hz <5% residual voltage: 250 periods for 50Hz, 300 periods for 60Hz No. of Dips / Interruptions: 3 per Level Time between dropout: 10s
Performance Criteria:	B, C, C

5.9.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.2 °C	Humidity:	55 %	Atmospheric Pressure:	101.6 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

5.9.2 Test Setup Diagram:



5.9.3 Test Data:

Level %UT	Phase (degree)	Duration	No. of Dips/ Interruptions	Result/ Observations
0	0°	0.5 Cycles	3	B
0	0°	250 Cycles	3	C
70	0°	25 Cycles	3	C

6 TEST SETUP PHOTOS

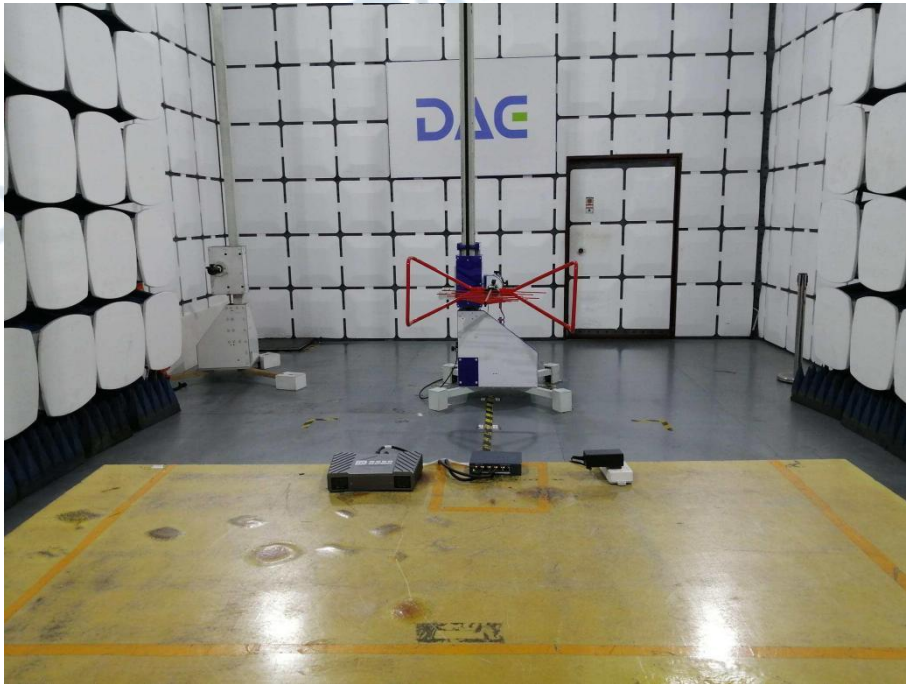
Conducted emissions from AC mains power ports (150kHz-30MHz)



Asymmetric mode conducted emissions (150kHz-30MHz)



Radiated emissions (30MHz-1GHz)



Voltage fluctuations and flicker



Electrostatic discharges



Electrical fast transients / burst for AC mains power ports



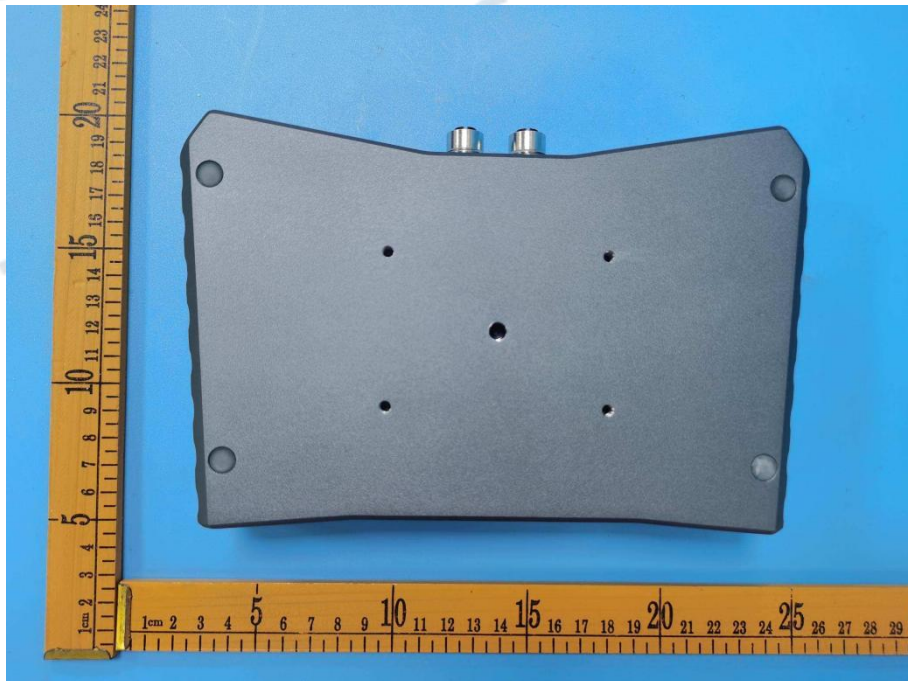
Surges for AC mains power ports**Continuous induced RF disturbances for AC mains power ports (150kHz-80MHz)**

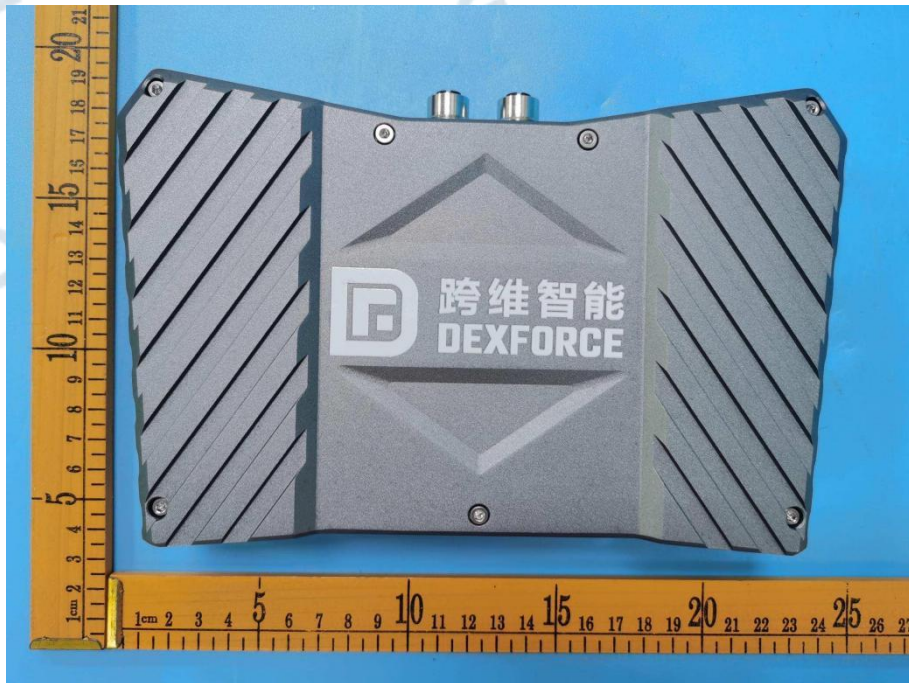
Voltage dips and interruptions



7 PHOTOS OF THE EUT

External









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