

TEST REPORT

Application No.: GZCR2505000681HS
Applicant: BAUF HOME GmbH
Address of Applicant: Frankfurter Straße 16, 74072 Heilbronn, Germany
Manufacturer: BAUF HOME GmbH
Address of Manufacturer: Frankfurter Straße 16, 74072 Heilbronn, Germany
Factory: TCL Air Conditioner (Zhong Shan) Co., Ltd.
Address of Factory: 59 Nantou Road West, Nantou, Zhongshan, Guangdong, China
Product Name: Air conditioner
Model No.: BRAC-SP-INE2-12-R3
 (Indoor unit: BRAC-SP-INE2-12-R3-I, Outdoor unit: BRAC-SP-INE2-12-R3-O) ♣

♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Trade Mark: **BAUF**

Standard(s) : EN IEC 55014-1: 2021
 EN IEC 55014-2: 2021
 EN IEC 61000-3-2: 2019+A1:2021+A2:2024
 EN 61000-3-3: 2013+ A1:2019+A2:2021

Date of Receipt: 2024-11-12
Date of Test: 2024-11-20 to 2024-11-25
Date of Issue: 2025-07-03

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Jerry Chan
Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch (CSTC) EMC Laboratory

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Revision Record			
Version	Report No.	Date	Remark
01	GZCR241100134701	2024-12-24	Original
C01	GZCR241100134701C01	2025-07-03	Amendment report: Changed applicant, manufacturer, product name, model No. & trademark; updated standard.

Authorized for issue by:			
		Pank Feng	
		Pank Feng/Project Engineer	
		Vico Cui	
		Vico Cui/Reviewer	



2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	EN IEC 55014-1: 2021	CISPR 16-2-1: 2014+A1:2017	Table 5	Pass
Conducted Emissions at Load Terminals and Additional Terminals		CISPR 16-2-1: 2014+A1:2017	Table 5	Pass
Discontinuous Disturbance (150kHz-30MHz)		EN IEC 55014-1: 2021	Clause 4.4.2	Pass
Disturbance Power		CISPR 16-2-2:2010	Table 7 & 8	Pass
Harmonic Current Emission	EN IEC 61000-3-2: 2019+A1:2021 +A2:2024	EN IEC 61000-3-2: 2019+A1:2021	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3: 2013+ A1:2019+A2:2021	EN 61000-3-3: 2013+ A1:2019+A2:2021	Clause 5	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN IEC 55014-2: 2021	EN 61000-4-2:2009	4kV Contact Discharge, 8kV Air Discharge	Pass
Electrical Fast Transients Burst at AC Mains Power Port		EN 61000-4-4:2012	1kV, 5/50ns Tr/Td, 5kHz Repetition Frequency	Pass
Electrical Fast Transients Burst at Signal Port		EN 61000-4-4:2012	0.5kV, 5/50ns Tr/Td, 5kHz Repetition Frequency	Pass
Surge at AC Mains Power Port		EN 61000-4-5: 2014+A1:2017	1.2/50µs Tr/Td, 1kV Line to Line, 2kV Line to Ground	Pass
Conducted Immunity at AC Mains Power Port (150kHz-230MHz)		EN 61000-4-6: 2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port (150kHz-230MHz)		EN 61000-4-6: 2014	1Vrms (emf),80%,1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11: 2020	For 50Hz: 0 % UT for 0.5cycle, 40 % UT for 10cycles, 70 % UT for 25cycles, UT is Supply Voltage	Pass



Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ Declaration of EUT Family Grouping:

Model No.:

TAC-12CHSD(043977)/I (Series * = Z, HA, IA, KA, HC, JC, KC, HD, KD, JE, KE, WE, LF, IF, KF, VA, VB, VC, VD, VE, VF, XA11, XA21, XA31, XA41, XA51, XA61, XA71, XA72, XA81, XA82, XA91, XAA1, XAB1, XAC1, XAD1, XAE1, YA11, YA21, YA31, TP11, TP21, TP31, TP41, TP51, TP61, TP71, TP72, TP81, TP91, TPA1, TPB1, TPG11, TPH21, TPG21, TPG31, UA11, UA12, UG11, UG21, UG31, UA21, TPH11, TPH21, DWA, LGA), S12P9S1 (Indoor unit: SN12P9S1, Outdoor unit: ST12P3),

TAC-12CHSD/UG11V3A

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the color of panel.

Therefore, only one model TAC-12CHSD(043977)/UA11I was tested in this report.

Remark:

All models are with removeable RF module, each model can be with RF module or without RF module. Main test model TAC-12CHSD(043977)/UA11I with RF module.

♣ Remark for the report GZCR241100134701C01:

This report GZCR241100134701C01 is based on original report GZCR241100134701, with the following changes:

1. Changed applicant and manufacturer.
2. Changed product name.
3. Changed model No. to BRAC-SP-INE2-12-R3 (Indoor unit: BRAC-SP-INE2-12-R3-I, Outdoor unit: BRAC-SP-INE2-12-R3-O).

According to the declaration from the applicant, the model BRAC-SP-INE2-12-R3 (Indoor unit: BRAC-SP-INE2-12-R3-I, Outdoor unit: BRAC-SP-INE2-12-R3-O) in this report and model TAC-12CHSD(043977)/UA11I in original report are totally same in the electrical circuit design, layout, components used and internal wiring, only being different in the model name and trade mark.

4. Changed trademark to **BAUF**.

5. Updated below standard:

Standard in original report	Standard in report
EN IEC 61000-3-2: 2019+A1:2021	EN IEC 61000-3-2: 2019+A1:2021+A2:2024

Reviewed the updated standards, all the technical requirements for the product between original and the newest standards' versions are identical, therefore it's acceptable to update standard without further testing.

Therefore, test data in GZCR241100134701 was kept in this report GZCR241100134701C01.



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 220-240V 50Hz
Test voltage: AC 230V 50Hz
Clock frequency:<15MHz
Cable(s): AC mains cable:3 wires 2.0m unshielded
signal cable:5.0m unscreened

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	3.22dB (150kHz to 30MHz)
Conducted Emissions at Load Terminals and Additional Terminals	2.50dB (150kHz to 30MHz):CVP; 2.04dB (150kHz to 30MHz):CP
Disturbance Power	3.60dB (30MHz-300MHz)
Remark: The U_{lab} (lab Uncertainty) is less than U_{cisp} (CISPR Uncertainty) or U_{ETSI} (ETSI Uncertainty). Emission decision rule: – Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report. – Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report. Immunity decision rule: – Pass means the observation meets the Performance Criterion requirement. – Fail means the observation doesn't meet the Performance Criterion requirement.	

4.4 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,
Guangdong, China 510663
Tel: +86 20 82155555
No tests were sub-contracted.



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4.5 Test Facility

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

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 EMS Monitor

Visual: Monitor the motor running statue of the EUT



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5 Equipment List

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-24	2025-08-23
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2024-09-02	2025-09-01
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-05-13	2025-05-12
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A
Artificial Mains Network (LISN)	AFJ Instruments	LT32C	EMC2046	2024-10-14	2025-10-13

Conducted Emissions at Load Terminals and Additional Terminals					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-24	2025-08-23
Voltage Probe (10kHz-30MHz)	SCHWARZBECK MESS-ELEKTRONIK	TK 9421	EMC0106	2024-05-13	2025-05-12
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2024-09-02	2025-09-01
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-05-13	2025-05-12
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A
Current Probe (10kHz-200MHz)	TESEQ GmbH	CSP 9160A	EMC2106	2022-12-20	2024-12-19

Discontinuous Disturbance (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Click Analyzer (PMM CA0010)	Narda Safety Test Solutions	PMM CA0010	EMC2182	2024-09-02	2025-09-01
EMI Receiver (10Hz-30MHz)	Narda Safety Test Solutions	PMM 9010F	EMC2183	2024-09-02	2025-09-01
Test Software PMM Click Analysis	Narda Safety Test Solutions	Ver 1.06	GZE100-76	N/A	N/A



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Disturbance Power					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-05-13	2025-05-12
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A
Slide Bar RP (KMS560)	HD-GmbH	KMS560	EMC0103	N/A	N/A
Slide Bar Controller (HD50)	HD-GmbH	HD50	EMC0305	N/A	N/A
Absorbing Clamp-AUX	Beijing Dazhe Co. Ltd.	ZN23201	EMC2040	2023-12-04	2024-12-03
Absorbing Clamp-Main	Rohde & Schwarz	MDS-21	EMC2184	2024-02-20	2025-02-19
6 dB Attenuator with 8m length cable	Rohde & Schwarz	MDS-21	EMC2185	2024-02-19	2025-02-18

Harmonic Current Emission					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Digital power analyzer for harmonics & flicker testing	EMTEST	DPA 500N	EMC2235	2024-04-19	2025-04-18
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2024-04-19	2025-04-18
NET.Control	EMTEST	Ver 3.2.3	GZE100-80	N/A	N/A

Voltage Fluctuations and Flicker					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Digital power analyzer for harmonics & flicker testing	EMTEST	DPA 500N	EMC2235	2024-04-19	2025-04-18
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2024-04-19	2025-04-18
NET.Control	EMTEST	Ver 3.2.3	GZE100-80	N/A	N/A



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Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
ESD Ground Plane	SGS-EMC	3m x 3m	EMC0804	N/A	N/A
Aneroid Barometer	Shanghai Meteorological Instrument Factory Co., Ltd.	YM3	EMC2181	2024-10-31	2025-10-30
ESD Simulator-E	EMTEST	NX30	EMC2186	2024-02-20	2025-02-19

Electrical Fast Transients Burst at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2023-12-15	2024-12-14
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Electrical Fast Transients Burst at Signal Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
EFT/burst capacitive coupling clamp	TESEQ AG	CDN3425	EMC2072-AE1	2023-12-15	2024-12-14
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2023-12-15	2024-12-14
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Surge at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2023-12-15	2024-12-14
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A



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Conducted Immunity at AC Mains Power Port (150kHz-230MHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Dual Directional coupler	Werlatone Inc.	C1795	EMC1105	2024-05-13	2025-05-12
CDN M2	Schaffner Chase	CDN-M2-16	EMC1107	2024-10-14	2026-10-13
CDN M2/M3	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2024-06-17	2025-06-16
Test System for Conducted and Radiated Immunity	TESEQ AG	NSG 4070B-80	EMC2115	2024-10-14	2025-10-13
Audio Analyzer	Keysight	U8903B	EMC2180	2024-08-30	2025-08-29
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
6dB Attenuator	Shanghai Huaxiang	WDTS150-6-2.5-B	EMC2116	2024-06-17	2025-06-16

Conducted Immunity at Signal Port (150kHz-230MHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Dual Directional coupler	Werlatone Inc.	C1795	EMC1105	2024-05-13	2025-05-12
EM Clamp(10k-1000MHz)	TESEQ	KEMZ801B	EMC2255	2024-08-19	2025-08-18
RF Attenuation Clamp(150k-1000MHz)	TESEQ	KEMA801B	EMC2256	2024-08-19	2025-08-18
CDN M2/M3	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2024-06-17	2025-06-16
COUPLING AND DECOUPLING NETWORK (150kHz-230MHz)	TESEQ AG	CDN ST08A	EMC2112	2023-07-04	2025-07-03
CDN S502A	TESEQ AG	CDN S502A	EMC2113	2023-07-04	2025-07-03
Coupling Decoupling Network (150kHz-230MHz)	TESEQ AG	CDN USB3.0	EMC2114	2023-07-04	2025-07-03
Test System for Conducted and Radiated Immunity	TESEQ AG	NSG 4070B-80	EMC2115	2024-10-14	2025-10-13
Audio Analyzer	Keysight	U8903B	EMC2180	2024-08-30	2025-08-29
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
6dB Attenuator	Shanghai Huaxiang	WDTS150-6-2.5-B	EMC2116	2024-06-17	2025-06-16



Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2024-10-14	2025-10-13
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2023-12-15	2024-12-14
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2024-06-13	2025-06-12
DMM	Fluke	73	EMC0007	2024-06-13	2025-06-12



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6 Emission Test Results

6.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement:	EN IEC 55014-1: 2021
Test Method:	CISPR 16-2-1:2014+A1:2017
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 59dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

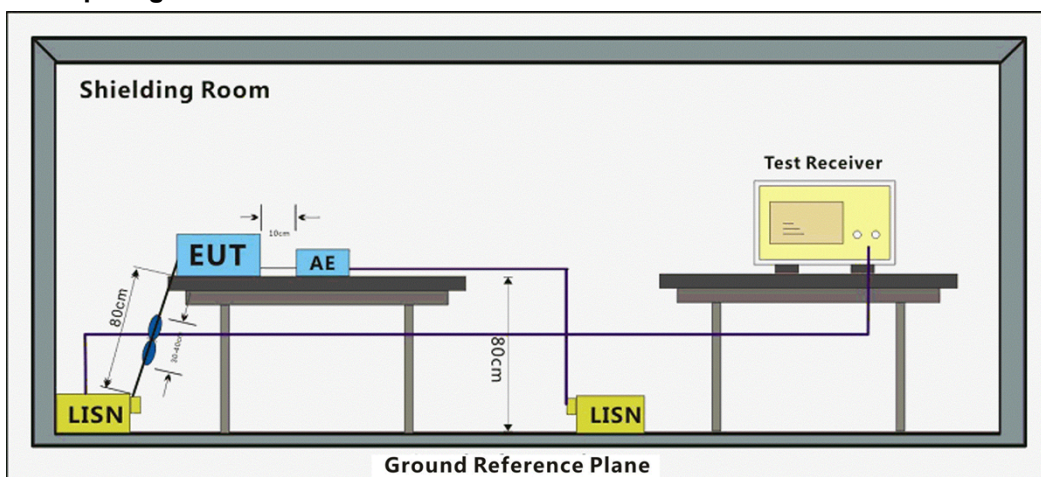
6.1.1 E.U.T. Operation

Operating Environment:			
Temperature:	24.5 °C	Humidity:	56.2 % RH
		Atmospheric Pressure:	1013 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.

6.1.3 Test Setup Diagram



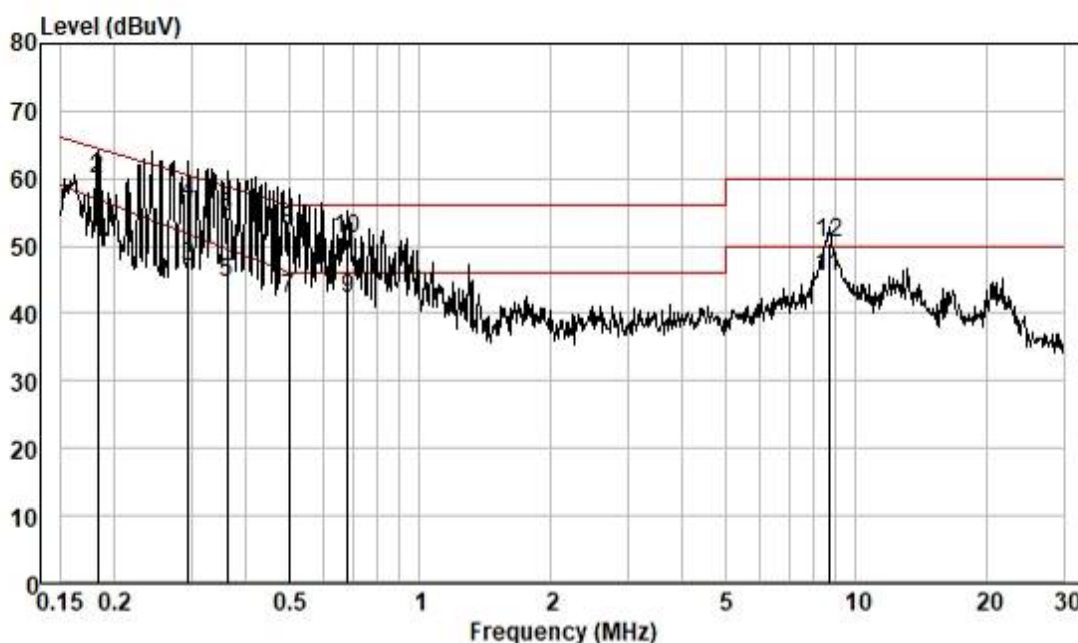
6.1.4 Measurement Procedure and Data

Frequency Range: 150kHz to 30MHz

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. The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + LISN Factor

Test Mode: 04; Line: Live line

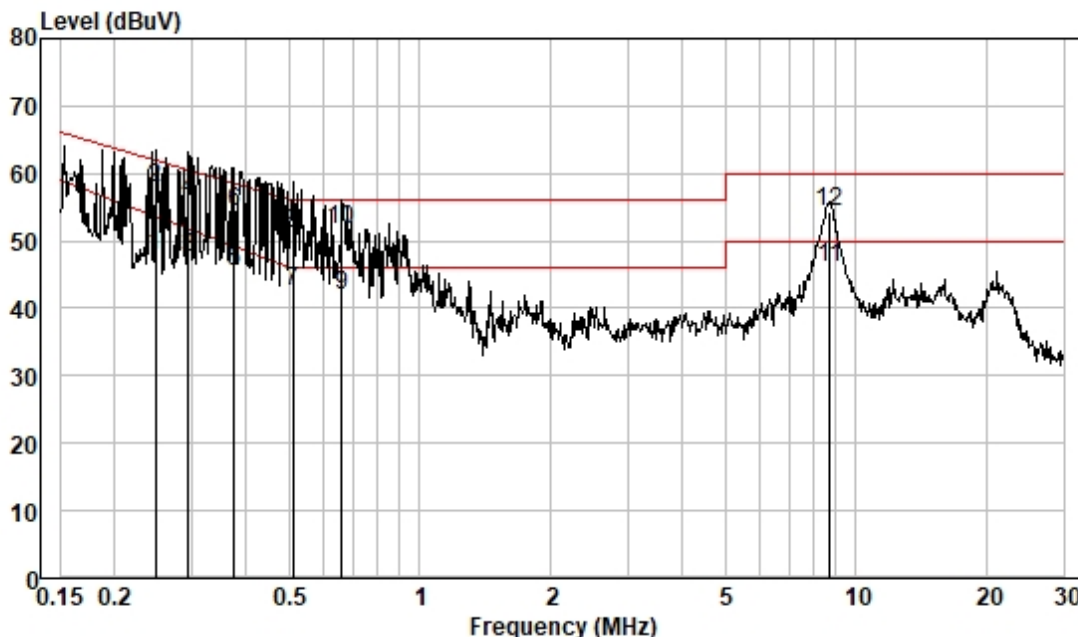


Pol : LINE
Mode :
Model :
Power :

	Freque	Read	Cable	LISN	Measured	Limit	Over	
	nc	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.182	41.06	0.04	9.54	50.64	56.88	-6.24	Average
2	0.182	50.49	0.04	9.54	60.07	64.37	-4.30	QP
3	0.294	37.49	0.04	9.55	47.08	51.73	-4.65	Average
4	0.294	46.69	0.04	9.55	56.28	60.41	-4.13	QP
5	0.361	35.04	0.05	9.58	44.67	49.50	-4.83	Average
6	0.361	44.72	0.05	9.58	54.35	58.69	-4.34	QP
7	0.502	32.47	0.05	9.59	42.11	46.00	-3.89	Average
8	0.502	42.76	0.05	9.59	52.40	56.00	-3.60	QP
9	0.683	32.63	0.06	9.59	42.28	46.00	-3.72	Average
10	0.683	41.42	0.06	9.59	51.07	56.00	-4.93	QP
11	8.637	35.47	0.24	9.69	45.40	50.00	-4.60	Average
12	8.637	40.62	0.24	9.69	50.55	60.00	-9.45	QP



Test Mode: 04; Line: Neutral Line



Pol : NEUTRAL
Mode :
Model :
Power :

	Freque	Read	Cable	LISN	Measured	Limit	Over	
	nc	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.248	38.36	0.04	9.53	47.93	53.57	-5.64	Average
2	0.248	48.18	0.04	9.53	57.75	61.82	-4.07	QP
3	0.294	38.05	0.04	9.54	47.63	51.73	-4.10	Average
4	0.294	46.38	0.04	9.54	55.96	60.41	-4.45	QP
5	0.375	35.75	0.05	9.53	45.33	49.10	-3.77	Average
6	0.375	44.59	0.05	9.53	54.17	58.39	-4.22	QP
7	0.513	32.80	0.05	9.58	42.43	46.00	-3.57	Average
8	0.513	41.43	0.05	9.58	51.06	56.00	-4.94	QP
9	0.661	32.44	0.06	9.55	42.05	46.00	-3.95	Average
10	0.661	42.18	0.06	9.55	51.79	56.00	-4.21	QP
11	8.683	36.05	0.24	9.72	46.01	50.00	-3.99	Average
12	8.683	44.32	0.24	9.72	54.28	60.00	-5.72	QP



6.2 Conducted Emissions at Load Terminals and Additional Terminals

Test Requirement: EN IEC 55014-1: 2021
 Test Method: CISPR 16-2-1:2014+A1:2017
 Limit:
 Disturbance current limits
 0.15MHz – 0.5MHz 40dB(μA)-30dB(μA) quasi-peak
 30dB(μA)-20dB(μA) average
 0.5MHz – 30MHz 30dB(μA) quasi-peak, 20dB(μA) average
 Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15MHz to 30MHz

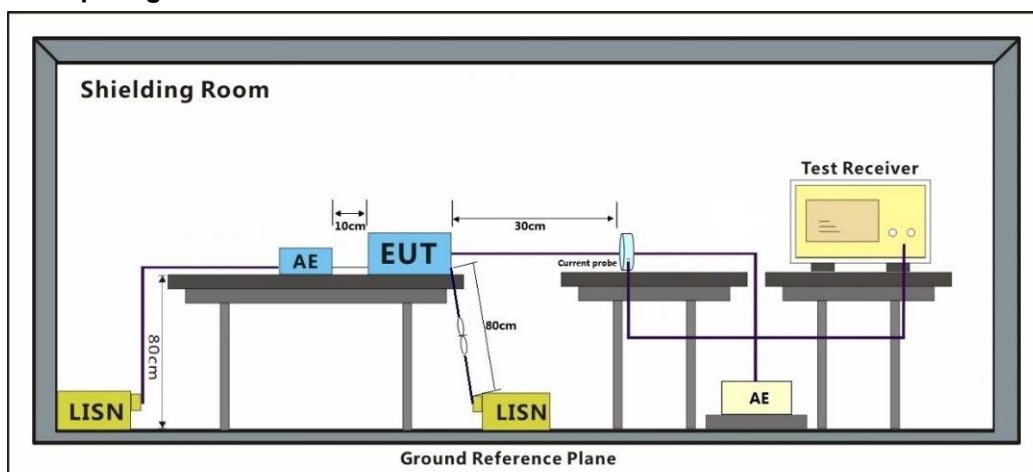
6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 24.5 °C Humidity: 56.1 % RH Atmospheric Pressure: 1013 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.

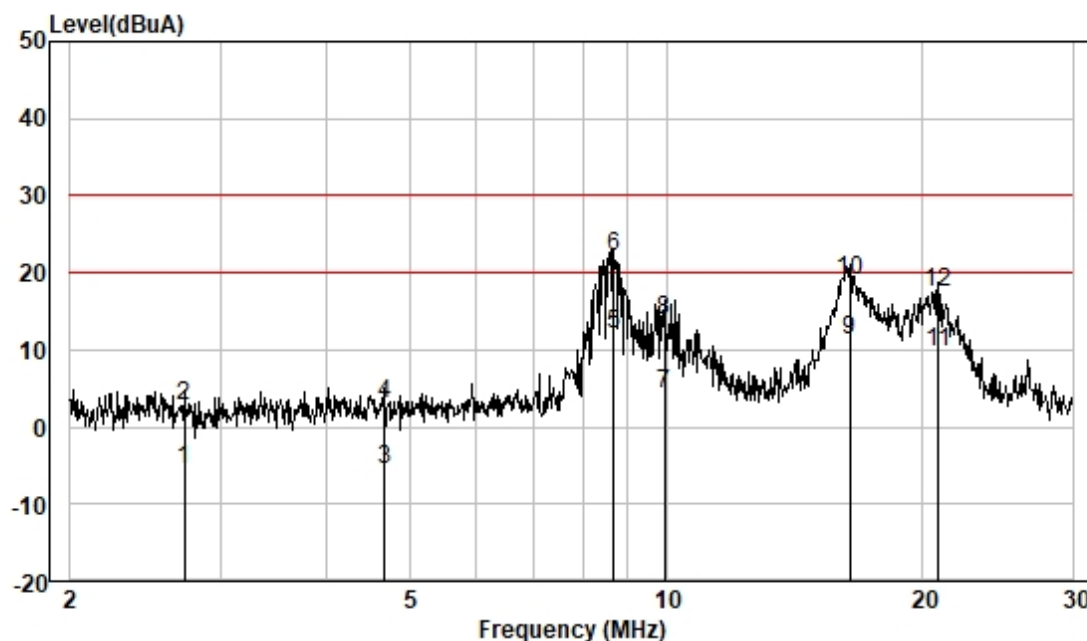
6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Frequency Range: 150kHz to 30MHz
 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. The red line show in graphic is the limit in standard used in this section.
 Measured Level = Read level + Cable Loss + Probe Factor

Test Mode: 04



Mode :EUT 1

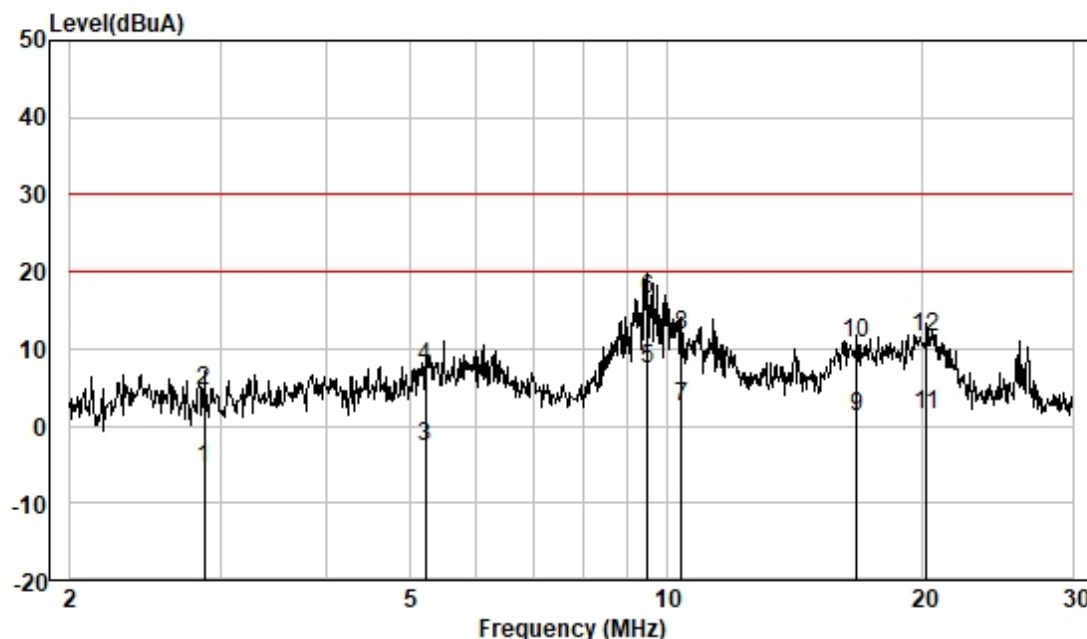
Model :

Power :

	Freque MHz	Read Level dBuV	Cable Loss dB	Probe Factor dB	Measured Level dBuA	Limit Line dBuA	Over Limit dB	Remark
1	2.723	-5.94	0.15	0.30	-5.49	20.00	-25.49	Average
2	2.723	2.32	0.15	0.30	2.77	30.00	-27.23	QP
3	4.681	-6.04	0.19	0.30	-5.55	20.00	-25.55	Average
4	4.681	2.37	0.19	0.30	2.86	30.00	-27.14	QP
5	8.679	11.46	0.24	0.30	12.00	20.00	-8.00	Average
6	8.679	21.69	0.24	0.30	22.23	30.00	-7.77	QP
7	9.964	3.67	0.25	0.30	4.22	20.00	-15.78	Average
8	9.964	13.26	0.25	0.30	13.81	30.00	-16.19	QP
9	16.400	10.65	0.34	0.30	11.29	20.00	-8.71	Average
10	16.400	18.34	0.34	0.30	18.98	30.00	-11.02	QP
11	20.870	8.97	0.39	0.29	9.65	20.00	-10.35	Average
12	20.870	16.79	0.39	0.29	17.47	30.00	-12.53	QP



Test Mode: 04



Mode : EUT 2

Model :

Power :

	Freque	Read	Cable	Probe	Measured	Limit	Over	
	ncy	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dB	dBuA	dBuA	dB	
1	2.875	-6.02	0.15	0.30	-5.57	20.00	-25.57	Average
2	2.875	4.10	0.15	0.30	4.55	30.00	-25.45	QP
3	5.230	-3.10	0.20	0.30	-2.60	20.00	-22.60	Average
4	5.230	7.18	0.20	0.30	7.68	30.00	-22.32	QP
5	9.516	6.79	0.25	0.30	7.34	20.00	-12.66	Average
6	9.516	15.93	0.25	0.30	16.48	30.00	-13.52	QP
7	10.434	1.81	0.26	0.30	2.37	20.00	-17.63	Average
8	10.434	11.30	0.26	0.30	11.86	30.00	-18.14	QP
9	16.714	0.56	0.35	0.30	1.21	20.00	-18.79	Average
10	16.714	10.01	0.35	0.30	10.66	30.00	-19.34	QP
11	20.203	0.81	0.38	0.30	1.49	20.00	-18.51	Average
12	20.203	10.84	0.38	0.30	11.52	30.00	-18.48	QP



6.3 Discontinuous Disturbance (150kHz-30MHz)

Test Requirement: EN IEC 55014-1: 2021

Test Method: EN IEC 55014-1: 2021

Limit:

Provision	Click Rate (N)		
1	All clicks ≤ 20 ms	90 % click ≤ 10 ms	$N \leq 5$
2	$N < 0,2$	$L_q^b = L^a + 44$	Clicks $^c \leq 25\%$ exceed L_q^b
3	$30 > N \geq 0,2$	$L_q^b = L^a + 20 \lg(30/N)$	Clicks $^c \leq 25\%$ exceed L_q^b

^a The limits L of Conducted Emissions apply also to discontinuous disturbances from all equipment which produce:

- 1) disturbances other than clicks, or
- 2) clicks with a click rate N equal to or greater than 30

^b The click limit L_q is calculated by increasing the relevant quasi-peak limit L for continuous disturbances by certain value.

The click limit applies to the disturbance assessed according to the upper quartile method

^c a quarter of the number of the clicks registered during the observation time T is allowed to exceed the click limit L_q

6.3.1 E.U.T. Operation

Operating Environment:

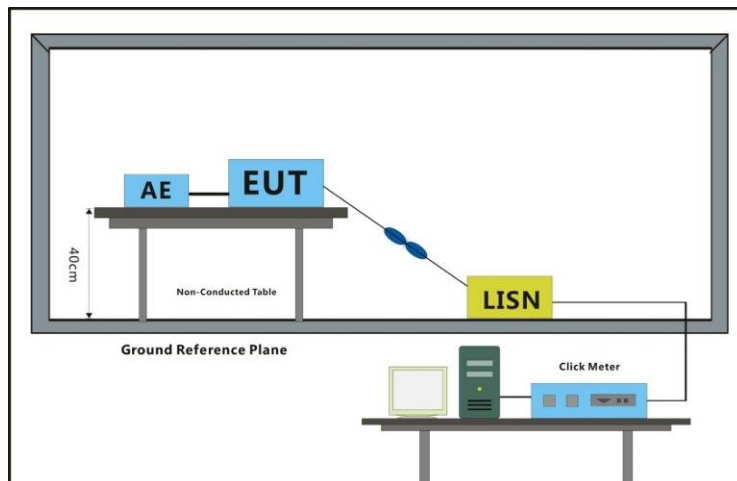
Temperature: 22.3 °C Humidity: 53.2 % RH Atmospheric Pressure: 1013 mbar

6.3.2 Test Mode Description

Pre-scan / Mode	Code	Description
Final test		
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.



6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

Frequency Range: 150kHz to 30MHz

Test Mode: 04

Lq Calculation										
Frequency MHz	Limit dBuV	<=10ms	<=20ms	<=0.2s	From Exception E4	Other than click ms	Total Clicks	Time min.	N rate	+Lq dB
0.15	66.0	0	0	0	0	0	0	120.0	0.0	PASS
0.50	56.0	0	0	0	0	0	0	120.0	0.0	PASS
1.40	56.0	0	0	0	0	0	0	120.0	0.0	PASS
30.00	60.0	0	0	0	0	0	0	120.0	0.0	PASS

6.4 Disturbance Power

Test Requirement:	EN IEC 55014-1: 2021
Test Method:	CISPR 16-2-2:2010
Limit:	
30MHz- 300MHz:	45dB(pW)-55dB(pW) quasi-peak, 35dB(pW)-45dB(pW) average
200MHz- 300MHz:	0dB(pW)-10dB(pW) quasi-peak (reduction limit)
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 300MHz

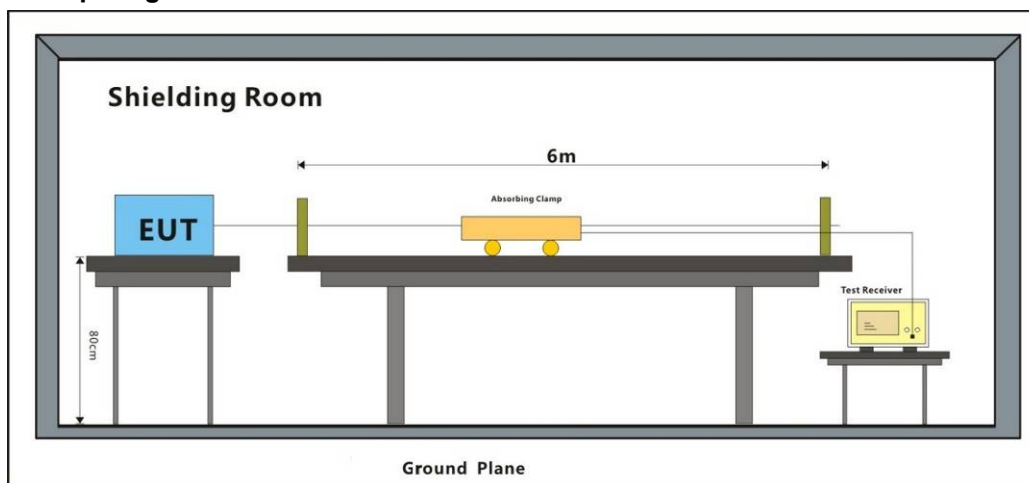
6.4.1 E.U.T. Operation

Operating Environment:			
Temperature:	24.5 °C	Humidity:	56.1 % RH
		Atmospheric Pressure:	1013 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.

6.4.3 Test Setup Diagram



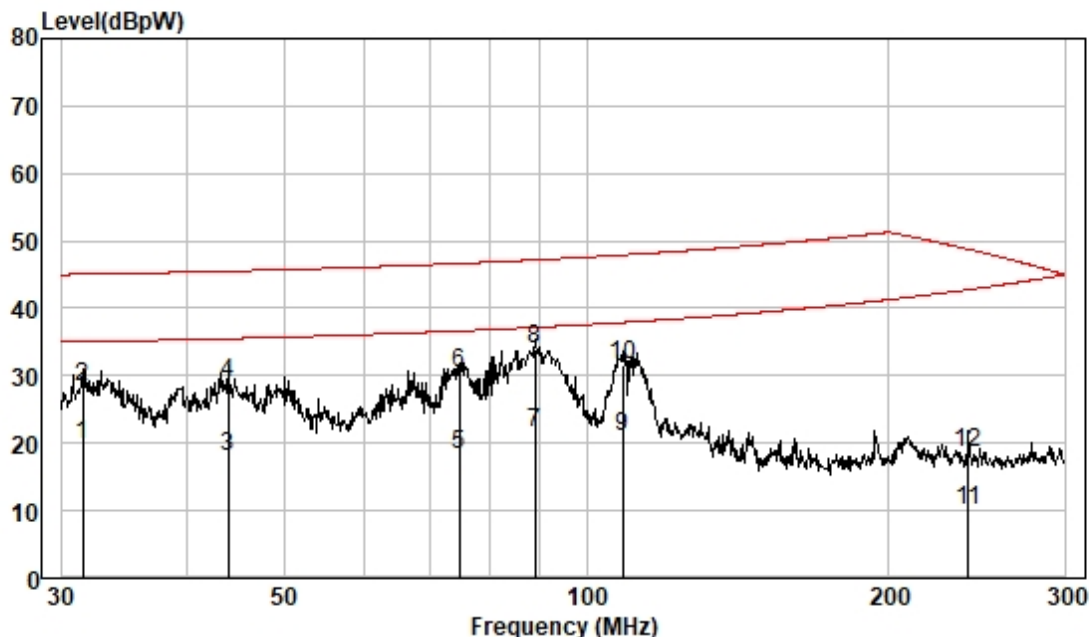
6.4.4 Measurement Procedure and Data

Frequency Range: 30MHz to 300MHz

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. The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + Clamp Factor

Test Mode: 04

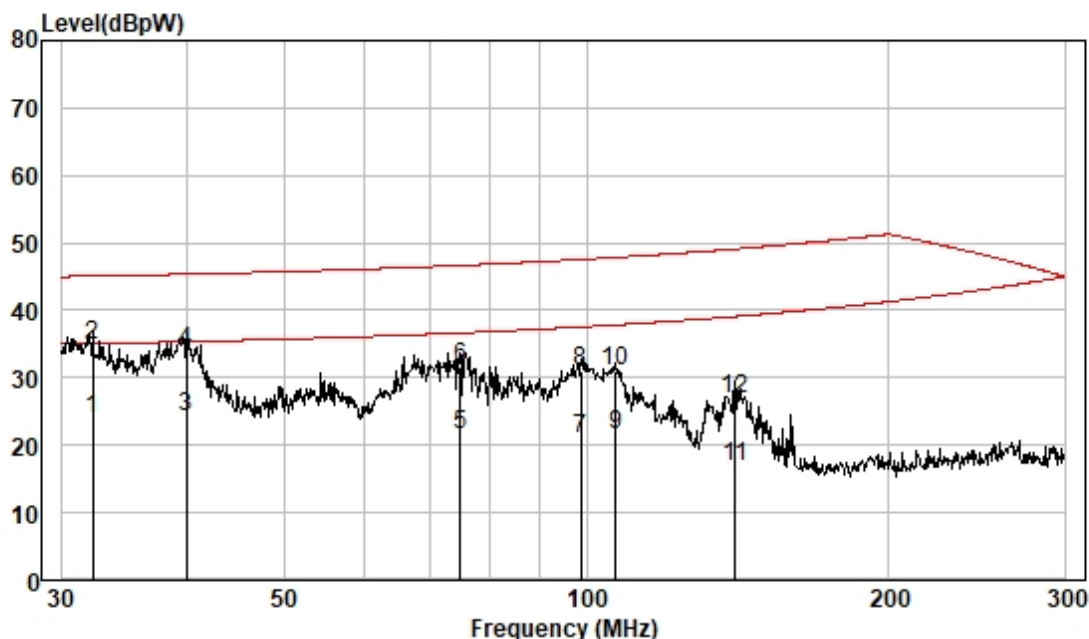


Mode : AC
Model :
Power :

	Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dB	Measured level dBpW	Limit Line dBpW	Over limit dB	Remark
1	31.486	11.68	6.63	1.52	19.83	35.06	-15.23	Average
2	31.486	20.20	6.63	1.52	28.35	45.06	-16.71	QP
3	43.966	11.05	6.76	0.18	17.99	35.52	-17.53	Average
4	43.966	21.98	6.76	0.18	28.92	45.52	-16.60	QP
5	74.666	11.87	7.00	-0.60	18.27	36.65	-18.38	Average
6	74.666	24.14	7.00	-0.60	30.54	46.66	-16.12	QP
7	88.945	16.84	7.09	-2.24	21.69	37.18	-15.49	Average
8	88.945	29.17	7.09	-2.24	34.02	47.18	-13.16	QP
9	108.673	16.09	7.22	-2.22	21.09	37.91	-16.82	Average
10	108.673	26.61	7.22	-2.22	31.61	47.92	-16.31	QP
11	239.950	6.39	7.87	-4.30	9.96	42.78	-32.82	Average
12	239.950	15.15	7.87	-4.30	18.72	48.78	-30.06	QP



Test Mode: 04



Mode : LINK IN

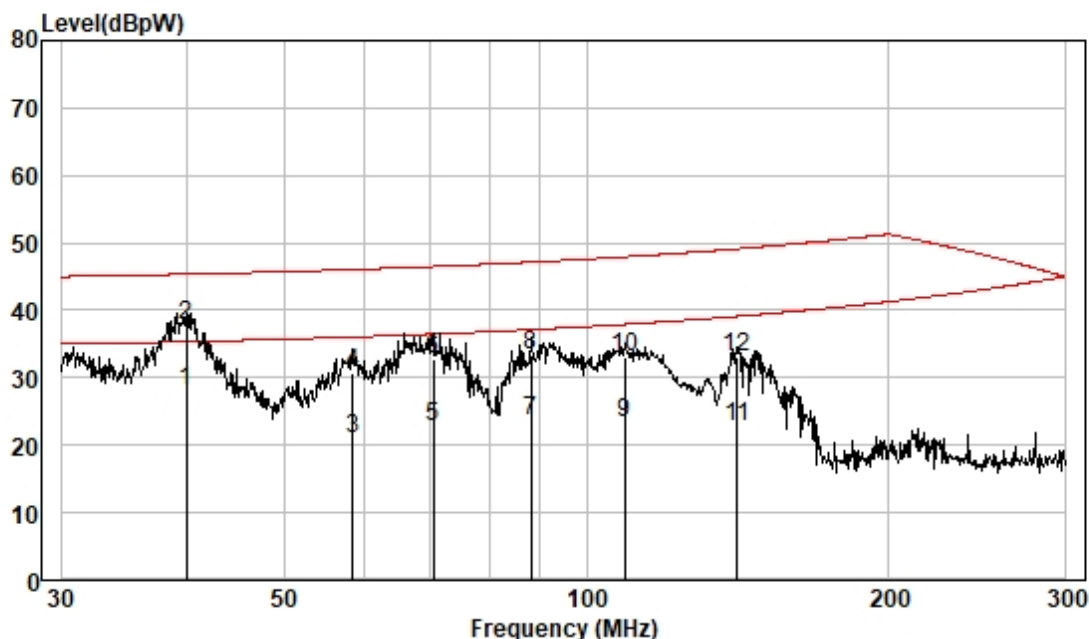
Model :

Power :

	Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dB	Measured level dBpW	Limit Line dBpW	Over limit dB	Remark
1	32.220	15.87	6.63	1.52	24.02	35.08	-11.06	Average
2	32.220	26.64	6.63	1.52	34.79	45.08	-10.29	QP
3	39.914	17.30	6.71	0.10	24.11	35.37	-11.26	Average
4	39.914	27.28	6.71	0.10	34.09	45.37	-11.28	QP
5	74.838	15.00	7.00	-0.60	21.40	36.66	-15.26	Average
6	74.838	25.23	7.00	-0.60	31.63	46.66	-15.03	QP
7	98.655	16.28	7.16	-2.60	20.84	37.54	-16.70	Average
8	98.655	26.52	7.16	-2.60	31.08	47.54	-16.46	QP
9	106.935	16.47	7.21	-2.26	21.42	37.85	-16.43	Average
10	106.935	25.98	7.21	-2.26	30.93	47.85	-16.92	QP
11	140.644	13.23	7.42	-3.78	16.87	39.10	-22.23	Average
12	140.644	23.27	7.42	-3.78	26.91	49.10	-22.19	QP



Test Mode: 04



Mode : LINK OUT
Model :
Power :

	Frequency MHz	Read level dBuV	Cable Loss dB	Clamp Factor dB	Measured level dBpW	Limit Line dBpW	Over limit dB	Remark
1	39.914	21.11	6.71	0.10	27.92	35.37	-7.45	Average
2	39.914	31.07	6.71	0.10	37.88	45.37	-7.49	QP
3	58.495	15.21	6.87	-1.16	20.92	36.06	-15.14	Average
4	58.495	25.10	6.87	-1.16	30.81	46.06	-15.25	QP
5	70.327	16.65	6.97	-0.92	22.70	36.49	-13.79	Average
6	70.327	26.84	6.97	-0.92	32.89	46.49	-13.60	QP
7	88.129	18.55	7.09	-2.08	23.56	37.15	-13.59	Average
8	88.129	28.43	7.09	-2.08	33.44	47.15	-13.71	QP
9	109.175	18.28	7.23	-2.20	23.31	37.93	-14.62	Average
10	109.175	27.93	7.23	-2.20	32.96	47.93	-14.97	QP
11	141.293	19.18	7.42	-3.77	22.83	39.12	-16.29	Average
12	141.293	29.42	7.42	-3.77	33.07	49.12	-16.05	QP



6.5 Harmonic Current Emission

Test Requirement: EN IEC 61000-3-2: 2019+A1:2021

Test Method: EN IEC 61000-3-2: 2019+A1:2021

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22.3 °C

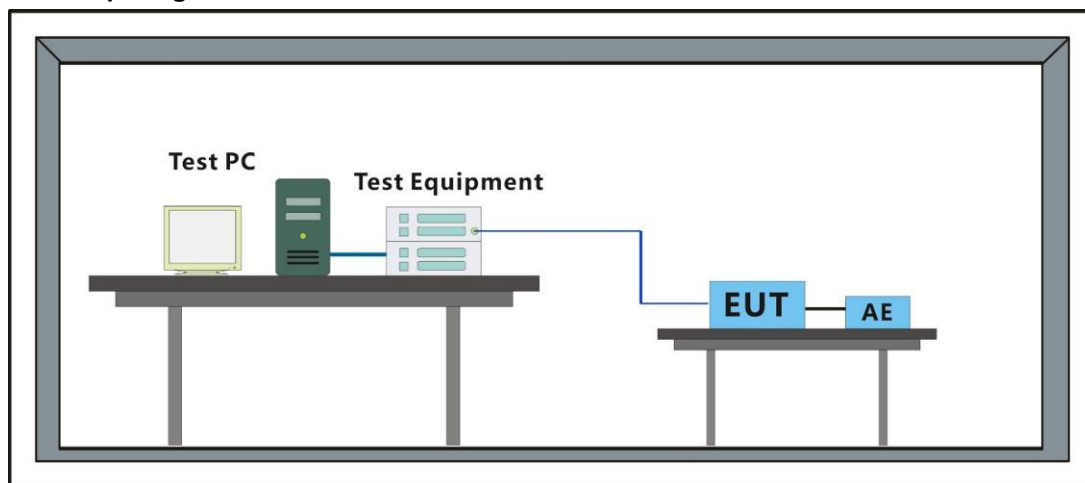
Humidity: 53.3 % RH

Atmospheric Pressure: 1013 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

Frequency Range: 100Hz to 2kHz

Test Mode: 04

Standard Specific Results for IEC 61000-3-2 (Edition 5.1)

Standard Group: Industry
Standard Name: IEC 61000-3-2 (Edition 5.1)
Limits for harmonic current emissions (equipment input current < 16 A per phase)
Device Under Test: **PASS**
Power Source: **PASS**
Connection Type: L - N
Main Line: 230 V, 50 Hz
Classification: Class A
Appli. of Limits: less than or equal to 150 % (Without POHC Enhancement)
Test Duration: **2 min 30 s**

Check Harmonics 2..40

First detected harmonic order > 150 %

Line 1: **None**

Harmonics orders > 150 %

Line 1: **None**

Harmonics orders with average > 100 %

Line 1: **None**

Measured values

Fundamental Current

Line 1: 3.439 A

Active input Power

Line 1: 780.291 W *

Circuit power factor

Line 1: 0.958 *

* Absolute value.

Prerequisite for simplified method

First time window with THD(I) > 15 %

Line 1: **None**

Time window with max THD(I) > 15 %

Line 1: **None**

Current emission below 60 % of the applicable limits

Line 1: **No**

Active Input Power

Line 1: 780 W *

* Absolute value.



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Current Test Result

Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	Ieff [A]	of Limit [%]	Limit [A]	Result	Ieff [A]	of Limit [%]	Limit [A]	Result	
1	3.423				3.439				
2	0.020	1.862	1.080	n/a	0.020	1.263	1.620	n/a	PASS
3	0.832	36.155	2.300	PASS	0.834	24.182	3.450	PASS	PASS
4	0.007	1.550	0.430	n/a	0.007	1.081	0.645	n/a	PASS
5	0.096	8.385	1.140	PASS	0.100	5.849	1.710	PASS	PASS
6	0.006	1.926	0.300	n/a	0.006	1.347	0.450	n/a	PASS
7	0.159	20.621	0.770	PASS	0.160	13.861	1.155	PASS	PASS
8	0.005	1.957	0.230	n/a	0.005	1.382	0.345	n/a	PASS
9	0.138	34.559	0.400	PASS	0.142	23.593	0.600	PASS	PASS
10	0.005	2.881	0.184	n/a	0.006	2.024	0.276	n/a	PASS
11	0.161	48.930	0.330	PASS	0.163	32.892	0.495	PASS	PASS
12	0.004	2.636	0.153	n/a	0.004	1.909	0.230	n/a	PASS
13	0.053	25.266	0.210	PASS	0.054	17.203	0.315	PASS	PASS
14	0.004	3.241	0.131	n/a	0.004	2.280	0.197	n/a	PASS
15	0.023	15.288	0.150	PASS	0.033	14.814	0.225	PASS	PASS
16	0.003	2.939	0.115	n/a	0.004	2.272	0.173	n/a	PASS
17	0.043	32.799	0.132	PASS	0.065	32.839	0.199	PASS	PASS
18	0.003	2.933	0.102	n/a	0.004	2.519	0.153	n/a	PASS
19	0.037	31.254	0.118	PASS	0.053	29.893	0.178	PASS	PASS
20	0.002	2.474	0.092	n/a	0.003	2.047	0.138	n/a	PASS
21	0.021	20.026	0.107	PASS	0.031	19.300	0.161	PASS	PASS
22	0.002	2.297	0.084	n/a	0.002	1.945	0.125	n/a	PASS
23	0.018	18.049	0.098	n/a	0.026	18.001	0.147	PASS	PASS
24	0.001	1.880	0.077	n/a	0.002	1.478	0.115	n/a	PASS
25	0.007	8.081	0.090	n/a	0.011	8.256	0.135	n/a	PASS
26	0.001	1.778	0.071	n/a	0.001	1.316	0.106	n/a	PASS
27	0.004	5.257	0.083	n/a	0.006	4.985	0.125	n/a	PASS
28	0.001	1.953	0.066	n/a	0.001	1.457	0.099	n/a	PASS
29	0.013	17.092	0.078	n/a	0.014	12.067	0.116	n/a	PASS
30	0.001	1.839	0.061	n/a	0.001	1.406	0.092	n/a	PASS
31	0.003	4.323	0.073	n/a	0.004	3.916	0.109	n/a	PASS
32	0.001	1.896	0.058	n/a	0.001	1.416	0.086	n/a	PASS
33	0.006	9.506	0.068	n/a	0.007	7.237	0.102	n/a	PASS
34	0.001	1.823	0.054	n/a	0.001	1.385	0.081	n/a	PASS
35	0.008	12.350	0.064	n/a	0.010	10.344	0.096	n/a	PASS
36	0.001	2.113	0.051	n/a	0.001	1.559	0.077	n/a	PASS
37	0.006	9.155	0.061	n/a	0.009	9.492	0.091	n/a	PASS
38	0.001	2.035	0.048	n/a	0.001	1.579	0.073	n/a	PASS
39	0.004	6.731	0.058	n/a	0.005	6.228	0.087	n/a	PASS
40	0.001	2.262	0.046	n/a	0.001	1.687	0.069	n/a	PASS

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.



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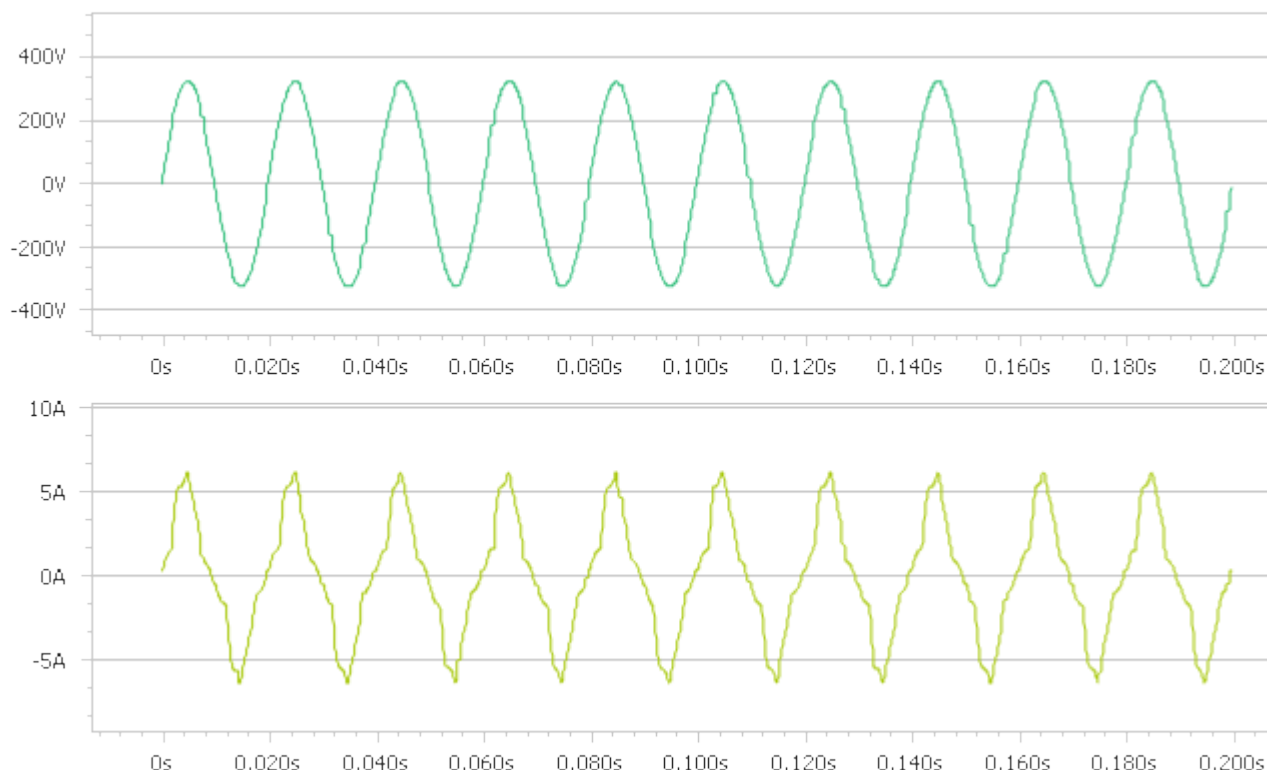
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Time Window 1

Time Domain of Time Window 1

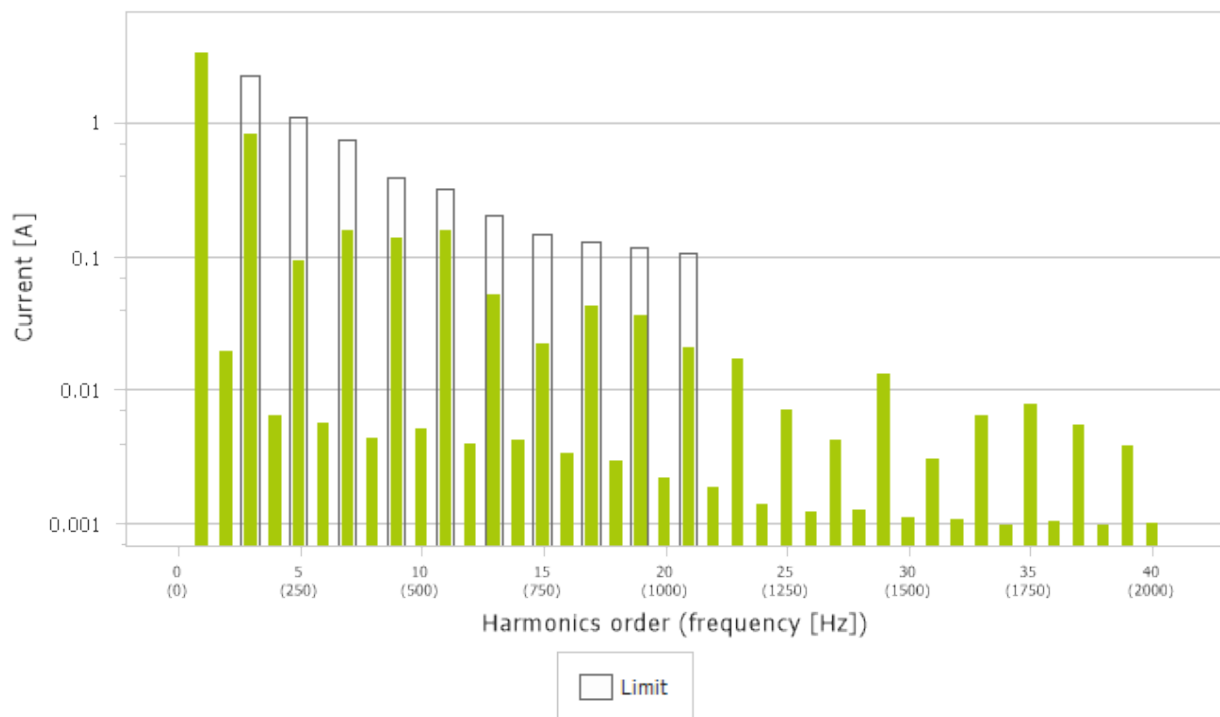


Maximum / Average Values

		Line 1
<i>Maximum Values</i>		
Frequency		50 Hz
Voltage RMS		229.3 V
Current RMS		3.557 A
Peak Current		6.313 A
Fundamental Current		3.459 A
Current Crest Factor		1.783
Active Power P		784.9 W
Power Factor		0.9585
Total Harmonic Current (THC)		0.8858 A
Instantaneous Partial Odd Harmonic Current (Inst. POHC)		0.04153 A
Total Harmonic Distortion Current (THDC)		0.2576
<i>Average Values</i>		
Total Harmonic Current (THC)		0.8832 A
Instantaneous Partial Odd Harmonic Current (Inst. POHC)		0.03605 A
Total Harmonic Distortion Current (THDC)		0.2568

Average Harmonics (Line 1)





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6.6 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3: 2013+ A1:2019+A2:2021

Test Method: EN 61000-3-3: 2013+ A1:2019+A2:2021

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22.3 °C

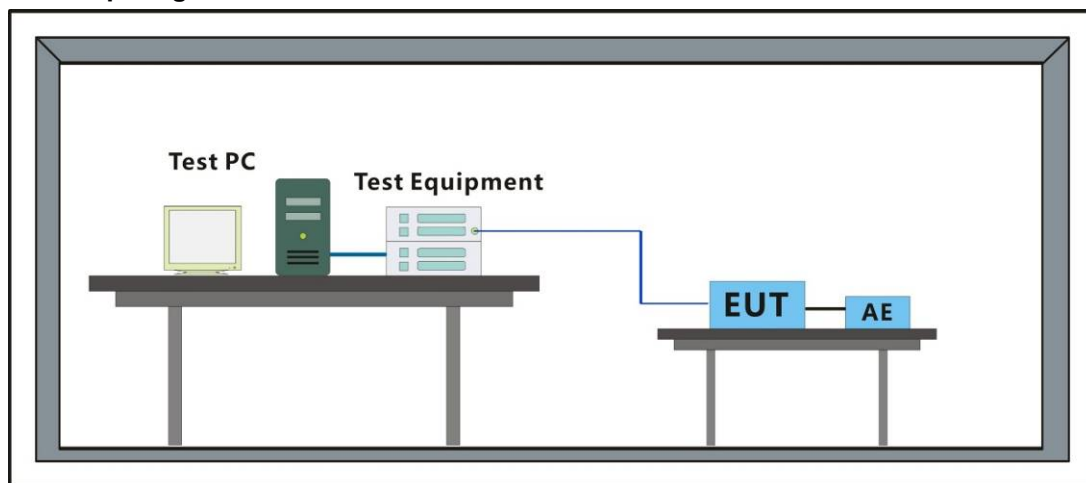
Humidity: 52.8 % RH

Atmospheric Pressure: 1013 mbar

6.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Pre-scan	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.

6.6.3 Test Setup Diagram



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6.6.4 Measurement Procedure and Data

Test Mode: 04

Flicker Results

Standard Specific Results for IEC 61000-3-3 (Edition 3.2)

Standard Group:	Industry
Standard Name:	IEC 61000-3-3 (Edition 3.2) Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
Test Condition:	Tumbler dryers
Analysis Status:	PASS

Flicker Measurements Settings

Main Line:	230V, 50Hz
Flicker Meter:	230V / 50Hz
Flicker Impedance:	Zref
Observation Time:	12 × 10 min
Measurements:	12

Flicker Measurements

	P _{It}	Max P _{st}	Max d _c	Max d _{max}	Max T _{max}
Line 1:	0.11	0.11	0.311	0.412	0
Limits:	0.65	1	3.3	6	0.5
Results:	PASS	PASS	PASS	PASS	PASS



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Flicker Individual Measurements												
Measurement	P _{st} []			d _c [%]			d _{max} [%]			T _{max} [s]		
	Value	Limit	Result	Value	Limit	Result	Value	Limit	Result	Value	Limit	Result
#1	0.11	1.00	PASS	0.13	3.30	PASS	0.28	6.00	PASS	0.00	0.50	PASS
#2	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#3	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#4	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#5	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#6	0.11	1.00	PASS	0.31	3.30	PASS	0.41	6.00	PASS	0.00	0.50	PASS
#7	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#8	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#9	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#10	0.11	1.00	PASS	0.00	3.30	PASS	0.16	6.00	PASS	0.00	0.50	PASS
#11	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS
#12	0.11	1.00	PASS	0.00	3.30	PASS	0.17	6.00	PASS	0.00	0.50	PASS



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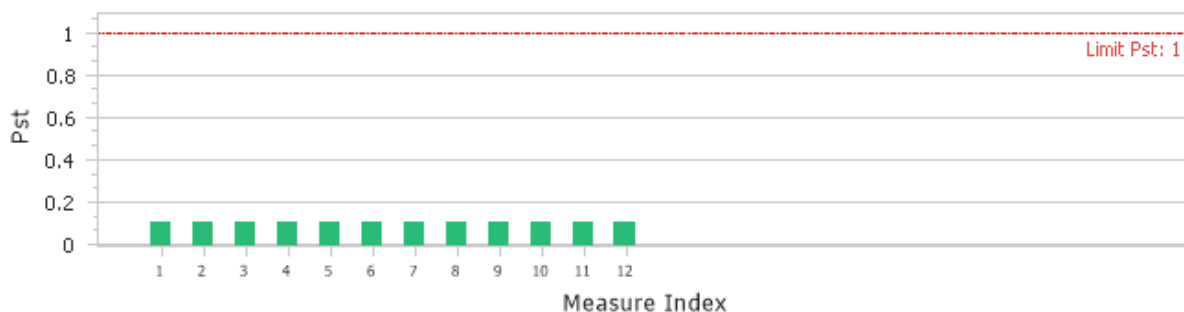
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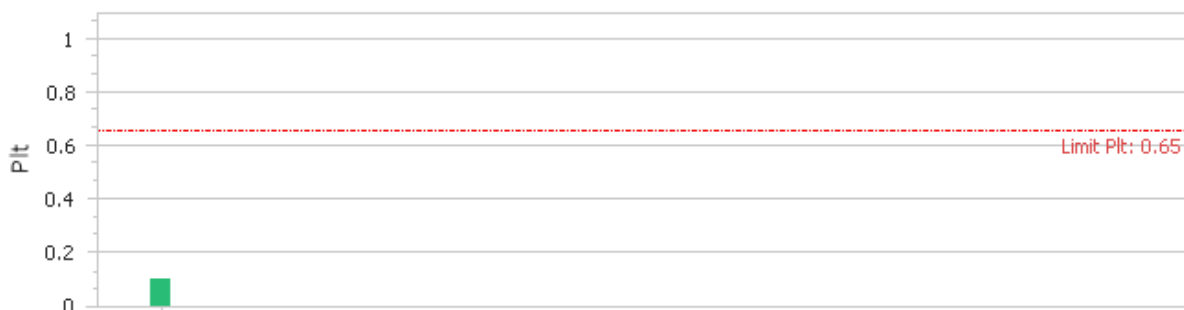
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Pst Data

Short-term Flicker Severity (Pst) (Line 1)



Long-term Flicker Severity (Plt) (Line 1)



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7 Immunity Test Results

Performance Criteria Description

- Criterion A:** The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. 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 from what the user may reasonably expect from the apparatus if used as intended.
- Criterion B:** The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. 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 from what the user may reasonably expect from the apparatus if used as intended.
- Criterion C:** Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.



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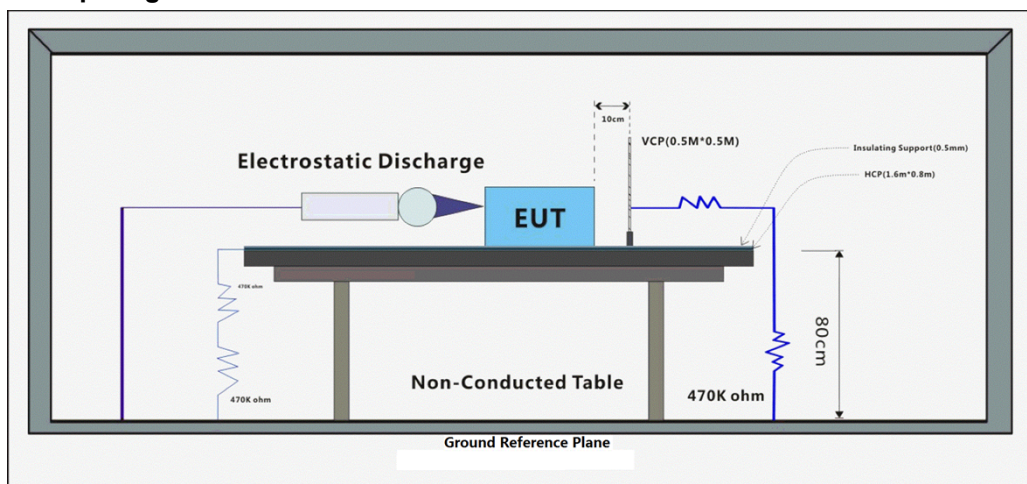
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7.1 Electrostatic Discharge

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 22.3 °C

Humidity: 52.7 % RH

Atmospheric Pressure: 1013 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.



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7.1.4 Test Condition and Results

Performance Criterion: B

Discharge Impedance: 330 Ω / 150 pF

Discharge Voltage: Air Discharge: 8 kV; Contact Discharge: 4 kV; VCP/HCP: 4 kV.

Polarity: Positive & Negative

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point 1: All insulated enclosure & seams.

Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	N/A
Horizontal Coupling	4	-	3	N/A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

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

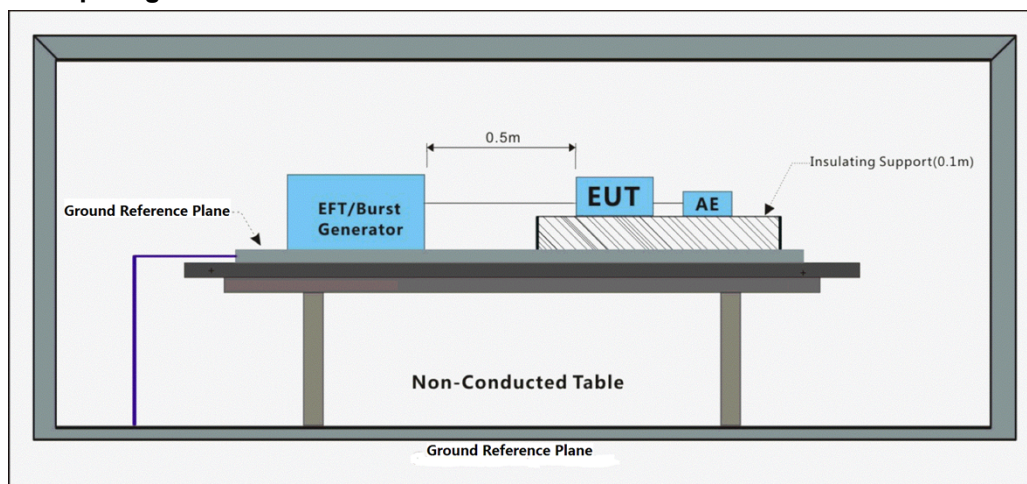


7.2 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-4:2012

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

Humidity: 70.0 % RH

Atmospheric Pressure: 1013 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.

7.2.4 Test Condition and Results

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Level: 1.0kV

Polarity: Positive & Negative

Port	Level (kV)	Polarity	Repetition Frequency:	CDN/Clamp	Result / Observations
AC power port	1	+	5kHz	CDN	A
AC power port	1	-	5kHz	CDN	A
A: No degradation in the performance of the EUT was observed					

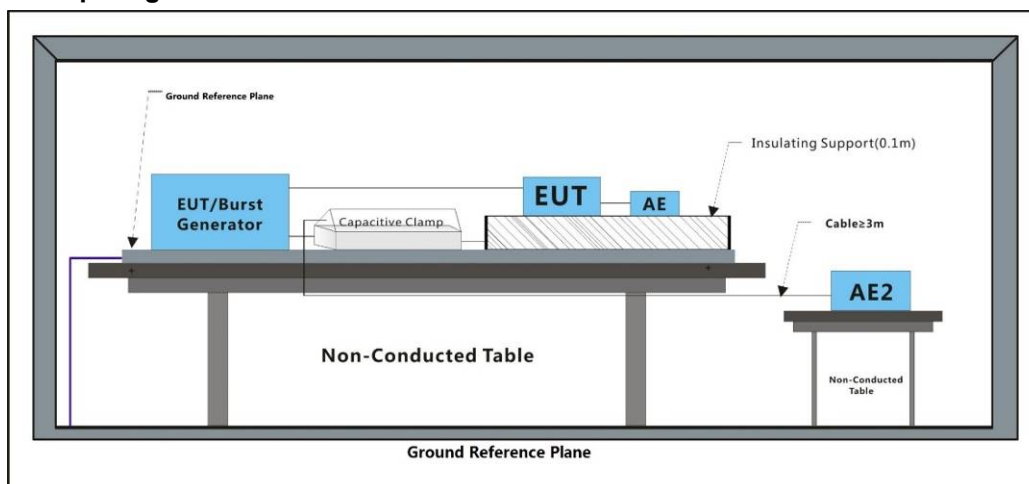


7.3 Electrical Fast Transients Burst at Signal Port

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-4:2012

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

Humidity: 70.0 % RH

Atmospheric Pressure: 1013 mbar

7.3.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.



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7.3.4 Test Condition and Results

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Duration: 2 minute per level & polarity

Test Level: 0.5kV

Polarity: Positive & Negative

Port	Level (kV)	Polarity	Repetition Frequency:	CDN/Clamp	Result / Observations
Signal	0.5	+	5kHz	Clamp	A
Signal	0.5	-	5kHz	Clamp	A

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



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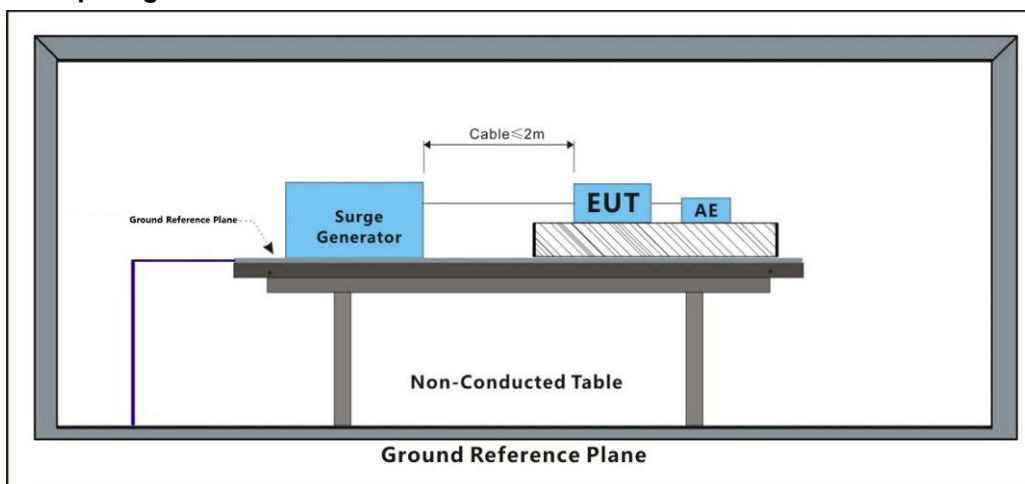
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7.4 Surge at AC Mains Power Port

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-5:2014+A1:2017

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

Humidity: 70.0 % RH

Atmospheric Pressure: 1013 mbar

7.4.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.

7.4.4 Test Condition and Results

Performance Criterion: B

Interval: 60s between each surge

Test Level: $\pm 1\text{kV}$ Live to Neutral; $\pm 2\text{kV}$ Live, Neutral to Earth

Polarity: Positive & Negative

Generator source impedance: 2Ω

CDN coupling impedance(Line-to-ground): 10Ω

Trigger Mode: Internal

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

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A
L-PE	2	+	90°	A
L-PE	2	-	270°	A
N-PE	2	+	90°	A
N-PE	2	-	270°	A

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



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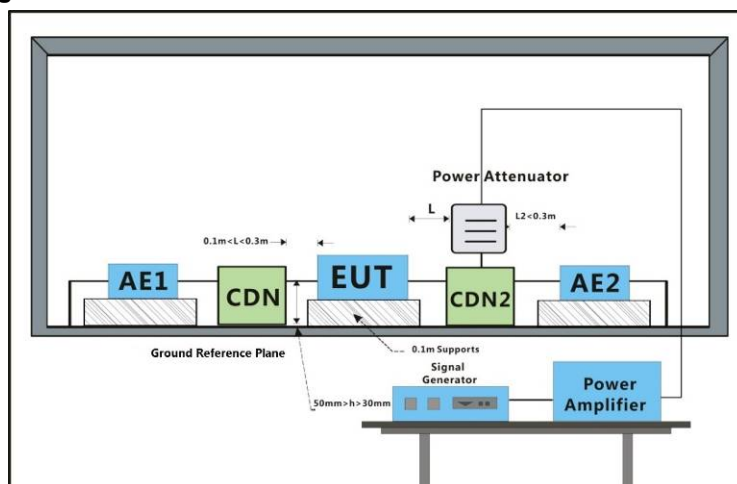
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7.5 Conducted Immunity at AC Mains Power Port (150kHz-230MHz)

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-6: 2014

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

Humidity: 70.0 % RH

Atmospheric Pressure: 1013 mbar

7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.

7.5.4 Test Condition and Results

Performance Criterion: A

Step Size: 1%

Frequency Range: 0.15MHz to 230MHz

Modulation: 80%, 1kHz Amplitude Modulation

Cable Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A
A: No degradation in the performance of the EUT was observed				



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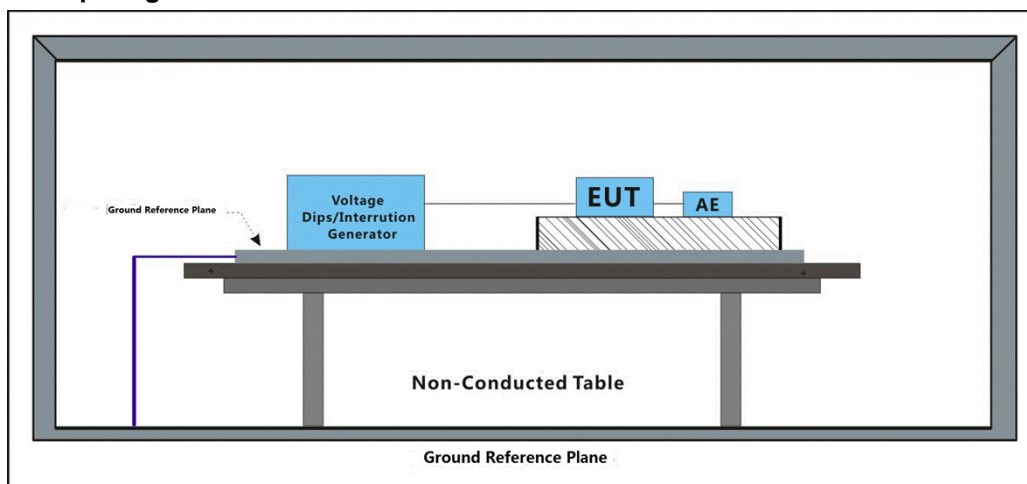
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7.7 Voltage Dips and Interruptions

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN IEC 61000-4-11: 2020

7.7.1 Test Setup Diagram



7.7.2 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

Humidity: 70.0 % RH

Atmospheric Pressure: 1013 mbar

7.7.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Test the EUT in cooling mode, and adjust the EUT temperature at the lowest temperature position.
Final test	05	Test the EUT in heating mode, and adjust the EUT temperature at the highest temperature position.
Final test	06	Test the EUT in idle mode.

7.7.4 Test Condition and Results

Performance Criterion:

For 50Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 10 Cycles: C; 70% of UT for 25 Cycles: C.

For 60Hz: 0% of UT (Rated Voltage) for 0.5 Cycle: C; 40% of UT for 12 Cycles: C; 70% of UT for 30 Cycles: C.

No. of Dips / Interruptions: 3 per Level

Time between dropout: 10s

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycle for 50Hz	3	A
0	180°	0.5 Cycle for 50Hz	3	A
40	0°	10 Cycles for 50Hz	3	A
40	180°	10 Cycles for 50Hz	3	A
70	0°	25 Cycles for 50Hz	3	A
70	180°	25 Cycles for 50Hz	3	A

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



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8 Test Setup Photo

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)



Conducted Emissions at Load Terminals and Additional Terminals



Discontinuous Disturbance (150kHz-30MHz)



Disturbance Power



Harmonic Current Emission



Voltage Fluctuations and Flicker



Electrostatic Discharge



Electrical Fast Transients Burst at AC Mains Power Port



Electrical Fast Transients Burst at Signal Port



Surge at AC Mains Power Port



Conducted Immunity at AC Mains Power Port (150kHz-230MHz)



Conducted Immunity at Signal Port (150kHz-230MHz)



Voltage Dips and Interruptions



9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for GZCR2411001347HS

- End of the Report -

