



TEST REPORT

Application No.: GZEM2204002020LM
Applicant: Blueview Elec-optic Tech Co., Ltd
Address of Applicant: No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Chengdu, Sichuan, China
Manufacturer: Blueview Elec-optic Tech Co., Ltd
Address of Manufacturer: No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Chengdu, Sichuan, China
Factory: Blueview Elec-optic Tech Co., Ltd
Address of Factory: No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Chengdu, Sichuan, China
Equipment Under Test (EUT):
EUT Name: Digital RGB LED Strip
Model No.: DN5050A-36-12-RGB-LB8102, DN5050A-60-12-RGB-LB8102
DX-XX-X-12-RGB-X(X represents any alphabet or number) ♣
♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standard(s) : EN 61000-3-3: 2013+A1: 2019
EN IEC 55015: 2019+A11:2020
EN IEC 61000-3-2: 2019+A1:2021
EN 61547: 2009
Date of Receipt: 2022-04-21
Date of Test: 2022-04-25 to 2022-05-23
Date of Issue: 2022-06-01

Test Result:	Pass*
---------------------	--------------

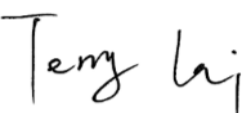
* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. No.198 Kexu Road, Solentech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.ssgsgroup.com.cn
Guangzhou Branch Testing Service EMC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

Revision Record			
Version	Report No.	Date	Remark
01	GZEM220400202001	2022-06-01	Original

Authorized for issue by:			
			
		Damon Guan/Project Engineer	
			
		Terry Lai/Reviewer	

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (9kHz-30MHz)	EN IEC 55015: 2019+A11:2020	EN IEC 55015:2019+A11:2020	Table 1	Pass
CDNE Method (30-300MHz)		EN IEC 55015:2019+A11:2020	Table 10	Pass
Radiated Emissions (Magnetic Field Induced Current)(9kHz-30MHz)		EN IEC 55015:2019+A11:2020	Table 8	Pass
Harmonic Current Emission	EN IEC 61000-3-2: 2019+A1:2021	EN IEC 61000-3-2: 2019+A1:2021	Class C	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3: 2013+A1: 2019	EN 61000-3-3: 2013+A1: 2019	Clause 5	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 61547: 2009	EN 61000-4-2:2009	4kV Contact Discharge, 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)		EN 61000-4-3: 2006 +A1: 2008+A2: 2010	3V/m, 80%, 1kHz Amp. Mod, 1% increment	Pass
Electrical Fast Transients Burst at AC Mains Power Port		EN 61000-4-4:2012	1kV, 5/50ns Tr/Td, 5kHz Repetition Frequency	Pass
Surge at Power Port		EN 61000-4-5:2014+A1:2017	1.2/50μs Tr/Td, 0.5kV Line to Line, 1.0kV Line to Ground	Pass
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)		EN 61000-4-6:2014	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11:2020	0 % UT for 0.5cycle, 70 % UT for 10cycles, 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.: DN5050A-36-12-RGB-LB8102, DN5050A-60-12-RGB-LB8102 DX-XX-X-12-RGB-X(X represents any alphabet or number)

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 temperature.

Therefore, only one model LGT0002718 was tested in this report.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/terms-and-conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

No. 198 Kezhu Road, Sciotech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents.....	4
4 General Information	6
4.1 Details of E.U.T.	6
4.2 Description of Support Units.....	6
4.3 Measurement Uncertainty	6
4.4 Test Location	6
4.5 Test Facility	7
4.6 Deviation from Standards.....	7
4.7 Abnormalities from Standard Conditions	7
4.8 EMS Monitor	7
5 Equipment List	8
6 Emission Test Results.....	12
6.1 Conducted Emissions at Mains Terminals (9kHz-30MHz)	12
6.1.1 E.U.T. Operation	12
6.1.2 Test Mode Description	12
6.1.3 Test Setup Diagram	12
6.1.4 Measurement Procedure and Data	12
6.2 CDNE Method (30-300MHz)	15
6.2.1 E.U.T. Operation	15
6.2.2 Test Mode Description	15
6.2.3 Test Setup Diagram	15
6.2.4 Measurement Procedure and Data	15
6.3 Radiated Emissions (Magnetic Field Induced Current)(9kHz-30MHz)	17
6.3.1 E.U.T. Operation	17
6.3.2 Test Mode Description	17
6.3.3 Test Setup Diagram	17
6.3.4 Measurement Procedure and Data	17
6.4 Harmonic Current Emission.....	21
6.4.1 E.U.T. Operation	21
6.4.2 Test Mode Description	21
6.4.3 Test Setup Diagram	21
6.4.4 Measurement Procedure and Data	21
6.5 Voltage Fluctuations and Flicker	28
6.5.1 E.U.T. Operation	28
6.5.2 Test Mode Description	28
6.5.3 Test Setup Diagram	28
6.5.4 Measurement Procedure and Data	28
7 Immunity Test Results.....	31
7.1 Electrostatic Discharge.....	32
7.1.1 Test Setup Diagram	32



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.1.2	E.U.T. Operation	32
7.1.3	Test Mode Description	32
7.1.4	Test Condition and Results:	32
7.2	Radiated Immunity (80MHz-1GHz)	34
7.2.1	Test Setup Diagram	34
7.2.2	E.U.T. Operation	34
7.2.3	Test Mode Description	34
7.2.4	Test Condition and Results:	34
7.3	Electrical Fast Transients Burst at AC Mains Power Port	35
7.3.1	Test Setup Diagram	35
7.3.2	E.U.T. Operation	35
7.3.3	Test Mode Description	35
7.3.4	Test Condition and Results:	35
7.4	Surge at Power Port	36
7.4.1	Test Setup Diagram	36
7.4.2	E.U.T. Operation	36
7.4.3	Test Mode Description	36
7.4.4	Test Condition and Results:	36
7.5	Conducted Immunity at AC Mains Power Port (150kHz-80MHz)	37
7.5.1	Test Setup Diagram	37
7.5.2	E.U.T. Operation	37
7.5.3	Test Mode Description	37
7.5.4	Test Condition and Results:	37
7.6	Voltage Dips and Interruptions	38
7.6.1	Test Setup Diagram	38
7.6.2	E.U.T. Operation	38
7.6.3	Test Mode Description	38
7.6.4	Test Condition and Results:	38
8	Test Setup Photo	39
9	EUT Constructional Details (EUT Photos)	46



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

4 General Information

4.1 Details of E.U.T.

Power supply: DC 12V
Cable(s): About 0.2m x 2 wires unscreened DC input cable.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC Power Supply	GWINSTEK	GPS-3030DD (Input: AC100-240V, 50/60Hz; Output: DC Max.30V, 3A)	EMC0008
LED Driver	MEAN WELL	LPF-25-12(Input: 100-240V, 50/60Hz; Output: DC 12V, 2.1A)	/
Light strip controller supplied by applicant	/	SP105E (Input: DC 5-24V)	/

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Terminals (9kHz-30MHz)	3.18dB (9kHz to 150kHz), 2.76dB (150kHz to 30MHz)
CDNE Method (30-300MHz)	3.46dB(30MHz-300MHz)
Radiated Emissions (Magnetic Field Induced Current) (9kHz-30MHz)	3.08dB(9kHz to 150kHz), 3.12dB(150kHz to 30MHz)(LLAS)
Remark: The U_{lab} (lab Uncertainty) is less than U_{cisp} (CISPR Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. No. 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
Guangzhou Branch EMC Laboratory 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **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: LED lighting of the EUT.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

5 Equipment List

Conducted Emissions at Mains Terminals (9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2019-10-20	2022-10-19
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2022-05-20	2023-05-19
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A
Conical Metal Housing	SGS-EMC	N/A	EMC0167	2022-04-14	2024-04-13

CDNE Method (30-300MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2019-10-20	2022-10-19
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2022-05-20	2023-05-19
Test Software E3r	Audix	Ver.6.11812	GZE100-77	N/A	N/A
6dB Attenuator	HP	8491A	EMC2062	2022-03-29	2024-03-28
Coupling Decoupling Network M2	SCHWARZBECK	CDNE-M2	EMC2175	2021-06-22	2022-06-21
Coupling Decoupling Network M3	SCHWARZBECK	CDNE-M3	EMC2176	2021-06-22	2022-06-21

Radiated Emissions (Magnetic Field Induced Current)(9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2021-12-17	2022-12-16
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Coaxial Cable (RE 2m Loop)	INFINITE	CC223N-10	EMC0703	2021-06-28	2023-06-27
2m Large Loop Antenna System (ZN3040)	ZHINAN	ZN3040	EMC2187	2022-03-26	2024-03-25

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	2022-04-21	2023-04-20
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2022-04-21	2023-04-20
NET.Control	EMTEST	Ver 3.2.0	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	2022-04-21	2023-04-20
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2022-04-21	2023-04-20
NET.Control	EMTEST	Ver 3.2.0	GZE100-80	N/A	N/A

Electrostatic Discharge					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Temperature & Humidity	Shanghai Meteorological Instrument Factory Co., Ltd.	ZJ1-2B	EMC0078	2021-07-04	2022-07-03
ESD Ground Plane	SGS-EMC	3m x 3m	EMC0804	N/A	N/A
Aneroid Barometer	Shanghai Meteorological Instrument Factory Co., Ltd.	YM3	EMC2181	2021-11-26	2022-11-25
ESD Simulator-E	EMTEST	NX30	EMC2186	2022-02-27	2023-02-26



Radiated Immunity (80MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
743 Compact 3m Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	EMC0525	2019-10-20	2022-10-19
Monitor System	Mitsubish Corp.	M-0552AB	EMC0909	N/A	N/A
Oscilloscope	Tektronix	TDS3052C	EMC2055	2021-11-23	2022-11-22
Laser Probe Interface	RF Microwave Instrumentation	FI7000	EMC2089	N/A	N/A
Open Switch And Control Unit	Rohde & Schwarz	OSP130	EMC2090	N/A	N/A
Broadband Amplifier (80MHz~1GHz/250W)	Rohde & Schwarz	BBA150	EMC2091	2021-12-17	2022-12-16
Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	EMC2093	2021-12-17	2022-12-16
Laser Probe	RF Microwave Instrumentation	FL7006	EMC2094	2022-03-03	2023-03-02
NRP-Z91 Power Sensor (9kHz-6GHz)	Rohde & Schwarz	NPR-Z91	EMC2095	2021-12-17	2022-12-16
NRP-Z91 Power Sensor (9kHz-6GHz)	Rohde & Schwarz	NPR-Z91	EMC2096	2021-12-17	2022-12-16
High-Gain Log-periodic Antenna	Rohde & Schwarz	HL046E	EMC2097	2022-02-14	2025-02-13
RI Cable	Rohde & Schwarz	7m	EMC2098	2022-05-20	2023-05-19
Test Software EMC32	Rohde & Schwarz	Ver. 9.26.00	GZE100-63	N/A	N/A

Electrical Fast Transients Burst at AC Mains Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2021-11-23	2022-11-22
TRANSIENT-2000 test system	EMC-PARTNER	TRA1Z191N	EMC2192	2022-05-16	2023-05-15
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Surge at Power Port					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2021-11-23	2022-11-22
TRANSIENT-2000 test system	EMC-PARTNER	TRA1Z191N	EMC2192	2022-05-16	2023-05-15
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/terms-and-conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Conducted Immunity at AC Mains Power Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Dual Directional coupler	Werlatone Inc.	C1795	EMC1105	2022-05-16	2023-05-15
CDN M2	Schaffner Chase	CDN-M2-16	EMC1107	2020-10-23	2023-10-22
CDN M2/M3	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2020-08-21	2022-08-20
Test System for Conducted and Radiated Immunity	TESEQ AG	NSG 4070B-80	EMC2115	2021-11-23	2022-11-22
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
Oscilloscope	Tektronix	TDS3052C	EMC2055	2021-11-23	2022-11-22

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2021-11-23	2022-11-22
TRANSIENT-2000 test system	EMC-PARTNER	TRA1Z191N	EMC2192	2022-05-16	2023-05-15
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	2021-07-05	2022-07-05
DMM	Fluke	73	EMC0007	2021-07-05	2022-07-05



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (9kHz-30MHz)

Test Requirement:	EN IEC 55015: 2019+A11:2020
Test Method:	EN IEC 55015:2019+A11:2020
Limit:	
0.009MHz – 0.05MHz	110dB(μV) quasi-peak
0.05MHz – 0.15MHz	90dB(μV)-80dB(μV) quasi-peak
0.15MHz – 0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5MHz – 5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5MHz – 30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (200Hz resolution bandwidth) 0.009M to 0.15MHz Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

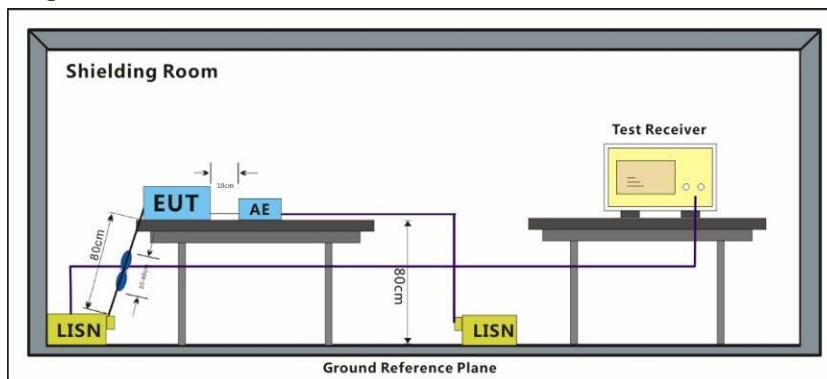
6.1.1 E.U.T. Operation

Operating Environment:					
Temperature:	23.0 °C	Humidity:	52.9 % RH	Atmospheric Pressure:	1020 mbar

6.1.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

6.1.3 Test Setup Diagram



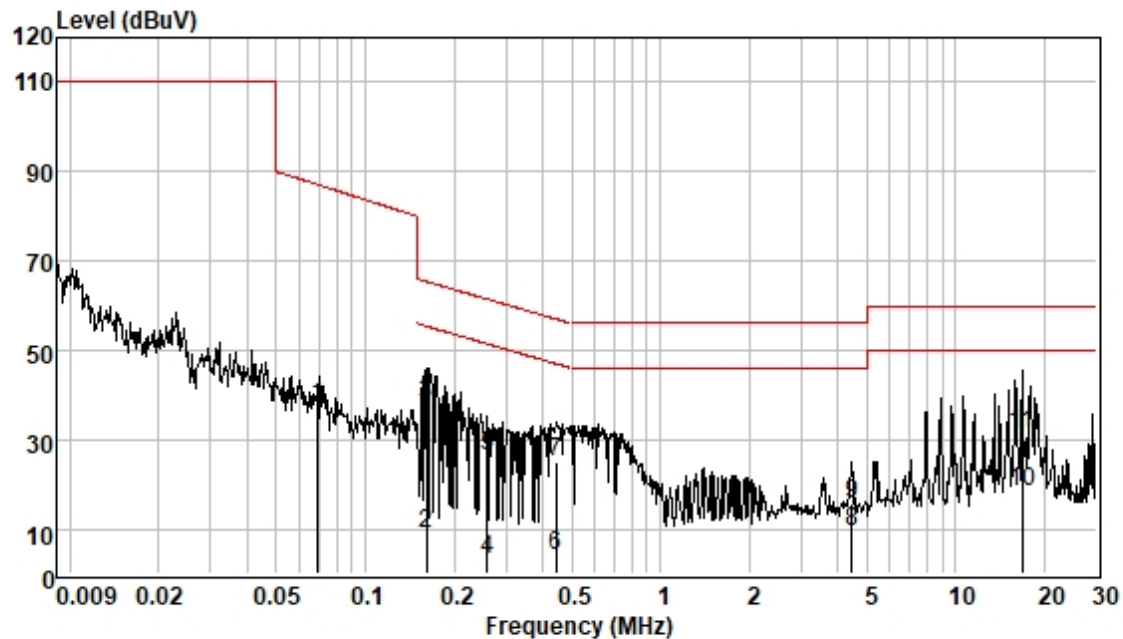
6.1.4 Measurement Procedure and Data

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.

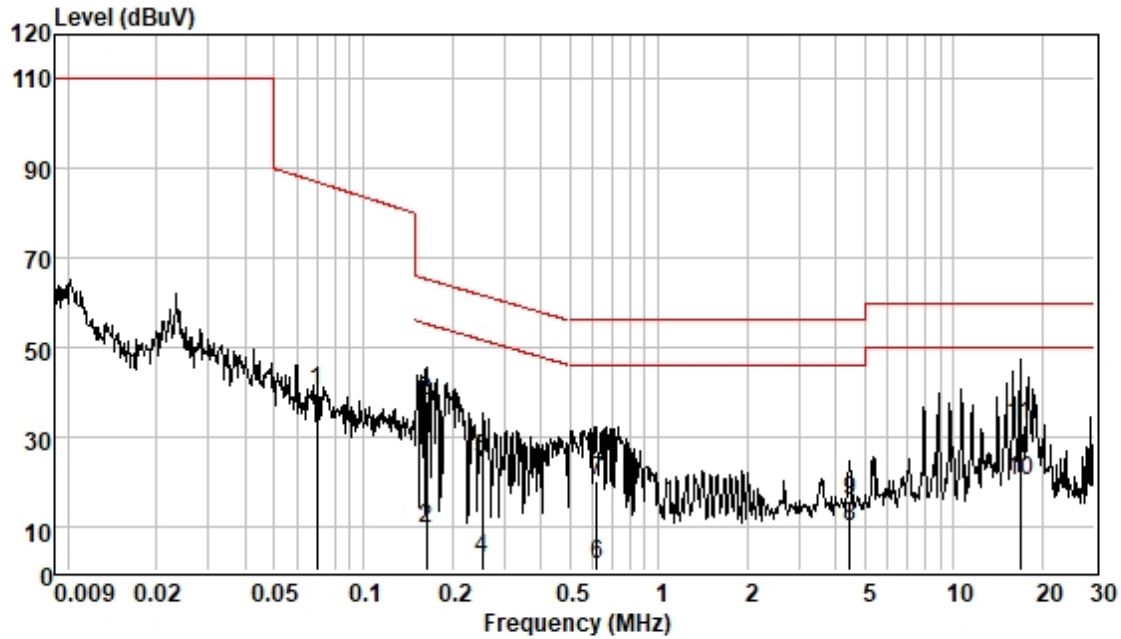
Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line

Pol : LINE
Mode :
Model :

	Freque MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.069	27.75	0.05	9.48	37.28	87.04	-49.76	QP
2	0.162	-0.84	0.06	9.55	8.77	55.38	-46.61	Average
3	0.162	28.14	0.06	9.55	37.75	65.38	-27.63	QP
4	0.259	-6.61	0.06	9.57	3.02	51.47	-48.45	Average
5	0.259	16.75	0.06	9.57	26.38	61.47	-35.09	QP
6	0.442	-5.84	0.06	9.58	3.80	47.02	-43.22	Average
7	0.442	15.43	0.06	9.58	25.07	57.02	-31.95	QP
8	4.454	-0.27	0.17	9.65	9.55	46.00	-36.45	Average
9	4.454	5.80	0.17	9.65	15.62	56.00	-40.38	QP
10	16.839	7.93	0.33	9.83	18.09	50.00	-31.91	Average
11	16.839	20.89	0.33	9.83	31.05	60.00	-28.95	QP

Test Mode: 00; Line: Neutral Line

Pol : NEUTRAL
Mode :
Model :

	Freque	Read	Cable	LISN	Measured	Limit	Over	Remark
	nc	Level	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.070	30.54	0.05	9.46	40.05	86.97	-46.92	QP
2	0.164	-0.39	0.06	9.54	9.21	55.25	-46.04	Average
3	0.164	28.30	0.06	9.54	37.90	65.25	-27.35	QP
4	0.253	-7.14	0.06	9.56	2.48	51.64	-49.16	Average
5	0.253	15.33	0.06	9.56	24.95	61.64	-36.69	QP
6	0.621	-8.13	0.07	9.58	1.52	46.00	-44.48	Average
7	0.621	10.59	0.07	9.58	20.24	56.00	-35.76	QP
8	4.454	-0.13	0.17	9.64	9.68	46.00	-36.32	Average
9	4.454	5.85	0.17	9.64	15.66	56.00	-40.34	QP
10	16.839	9.91	0.33	9.88	20.12	50.00	-29.88	Average
11	16.839	22.57	0.33	9.88	32.78	60.00	-27.22	QP



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

6.2 CDNE Method (30-300MHz)

Test Requirement:	EN IEC 55015: 2019+A11:2020
Test Method:	EN IEC 55015:2019+A11:2020
Limit:	
30MHz-100MHz	64dB(μV)-54dB(μV) quasi-peak
100MHz-230MHz	54dB(μV) quasi-peak
230MHz-300MHz	54-51dB(μV) quasi-peak
Detector:	Peak for pre-scan Quasi-Peak for final test (120 kHz resolution bandwidth)

6.2.1 E.U.T. Operation

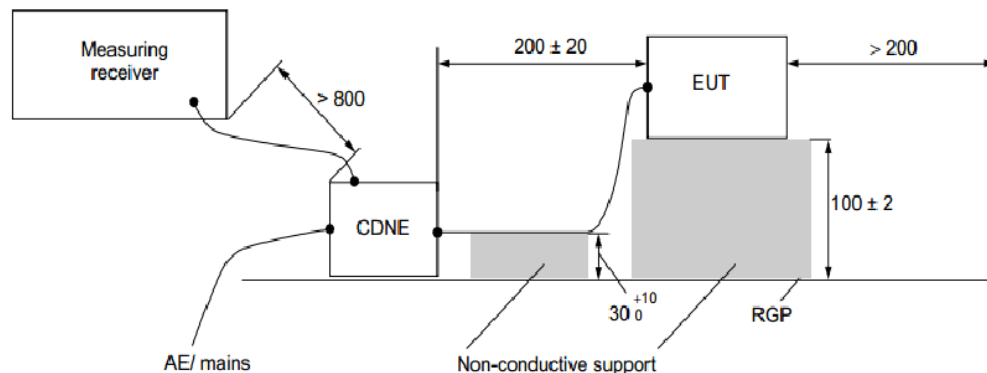
Operating Environment:

Temperature: 23.7 °C Humidity: 52.3 % RH Atmospheric Pressure: 1005 mbar

6.2.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

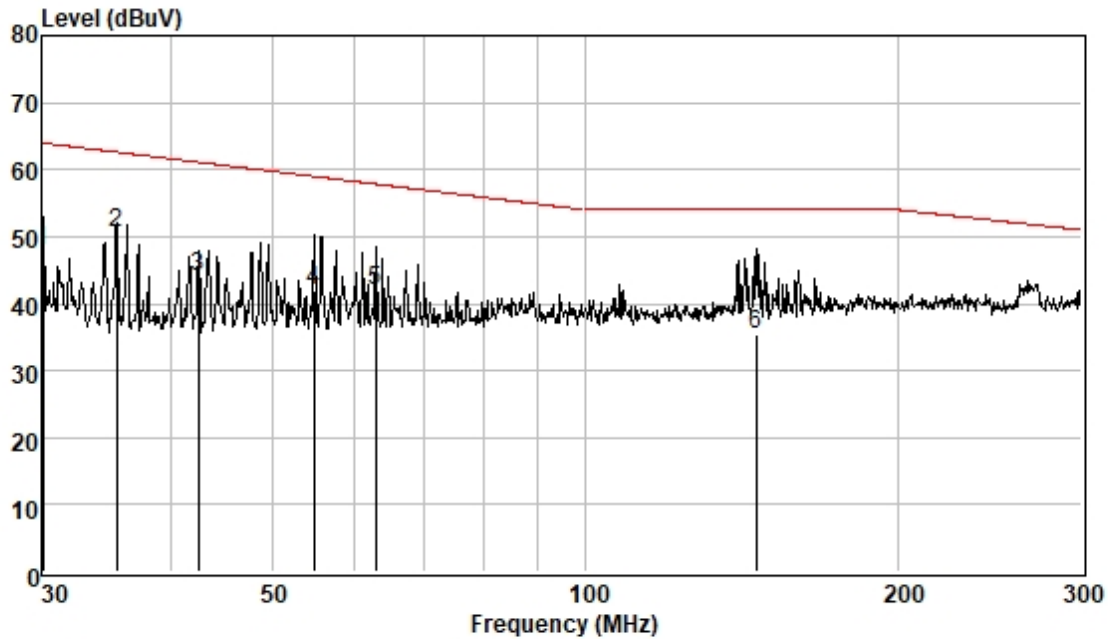
Frequency range: 30MHz-300MHz

An initial pre-scan was performed with peak detector. Quasi-Peak 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.

Remark: Level= Read Level+ Cable Loss+ CDNE Factor

Test Mode: 00



Pol :
Mode :
Model :

	Freque ncy MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	30.069	27.91	0.44	19.53	47.88	63.98	-16.10	QP
2	35.410	30.52	0.47	19.53	50.52	62.62	-12.10	QP
3	42.474	24.05	0.51	19.53	44.09	61.11	-17.02	QP
4	54.843	21.88	0.57	19.53	41.98	58.99	-17.01	QP
5	62.823	21.88	0.61	19.52	42.01	57.86	-15.85	QP
6	145.922	14.75	0.96	19.57	35.28	54.00	-18.72	QP

6.3 Radiated Emissions (Magnetic Field Induced Current)(9kHz-30MHz)

Test Requirement:	EN IEC 55015: 2019+A11:2020
Test Method:	EN IEC 55015:2019+A11:2020
Limit:	
0.009MHz-0.07MHz	88dB(μA) quasi-peak
0.07MHz-0.15MHz	88dB(μA)-58dB(μA) quasi-peak
0.15MHz-3MHz	58dB(μA)-22dB(μA) quasi-peak
3MHz-30MHz	22dB(μA) quasi-peak
Detector:	Peak for pre-scan (200Hz resolution bandwidth) 0.009M to 0.15MHz
	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

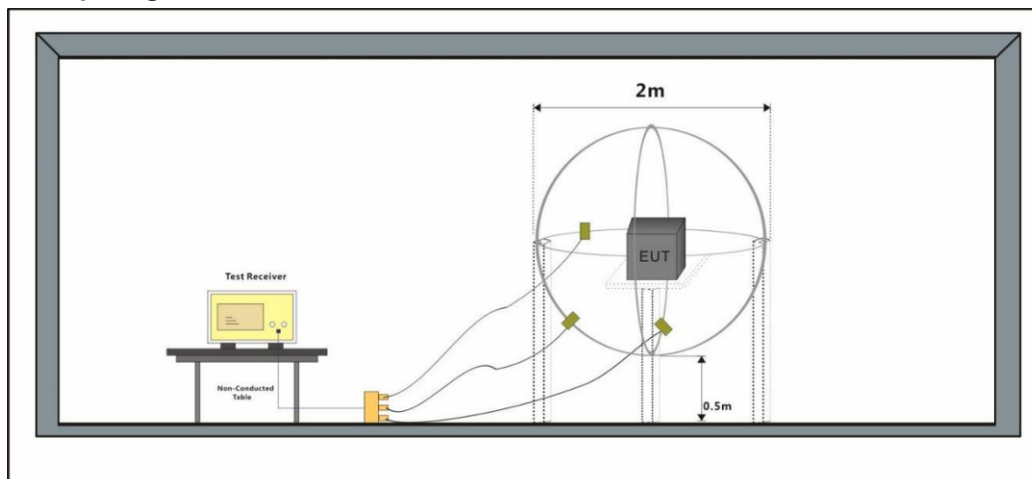
6.3.1 E.U.T. Operation

Operating Environment:					
Temperature:	22.0 °C	Humidity:	62.6 % RH	Atmospheric Pressure:	1020 mbar

6.3.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

6.3.3 Test Setup Diagram

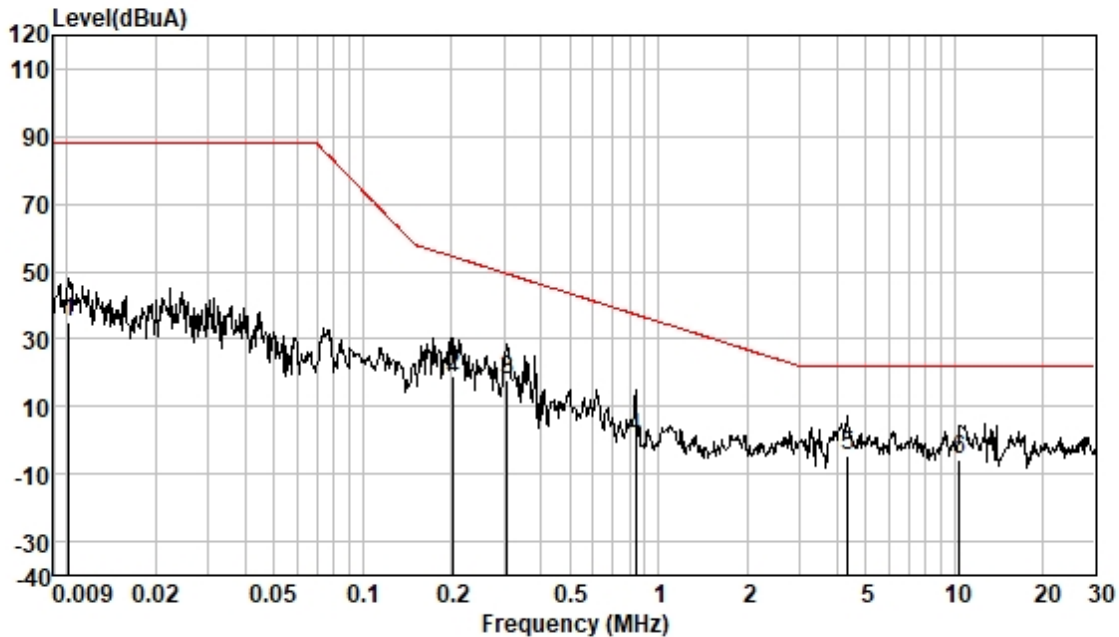


6.3.4 Measurement Procedure and Data

An initial pre-scan was performed in the 2m loop antenna using the spectrum analyser in peak detection mode. The EUT was measured for X(A), Y(B), Z(C) polarities.

Remark: Level= Read Level+ Cable Loss

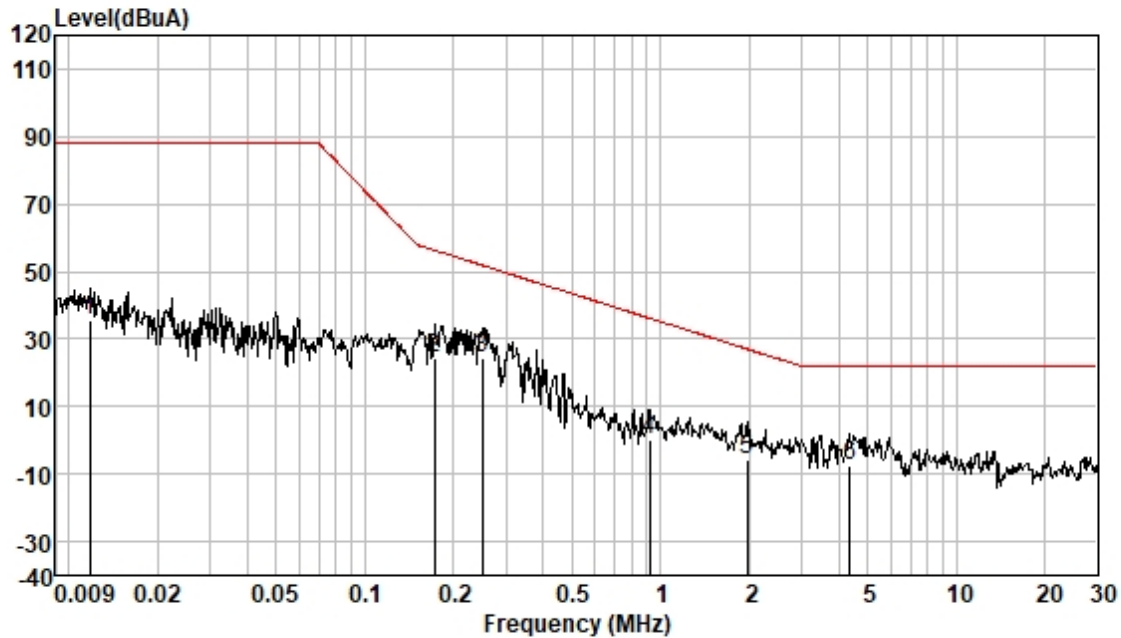
Test Mode: 00



loop : X
Test Mode:
Model :

Frequency MHz	Read level dBuV	Cable Loss dB	Antenna Factor dB	Measured level dBuA	Limit Line dBuA	Over limit dB	Remark
0.01	35.28	0.00	-0.20	35.08	88.00	-52.92	QP
0.20	19.28	0.10	-0.20	19.18	54.38	-35.20	QP
0.31	17.53	0.10	-0.06	17.57	49.41	-31.84	QP
0.84	0.70	0.10	0.00	0.80	37.32	-36.52	QP
4.35	-5.78	0.40	0.58	-4.80	22.00	-26.80	QP
10.45	-7.07	0.60	0.91	-5.56	22.00	-27.56	QP

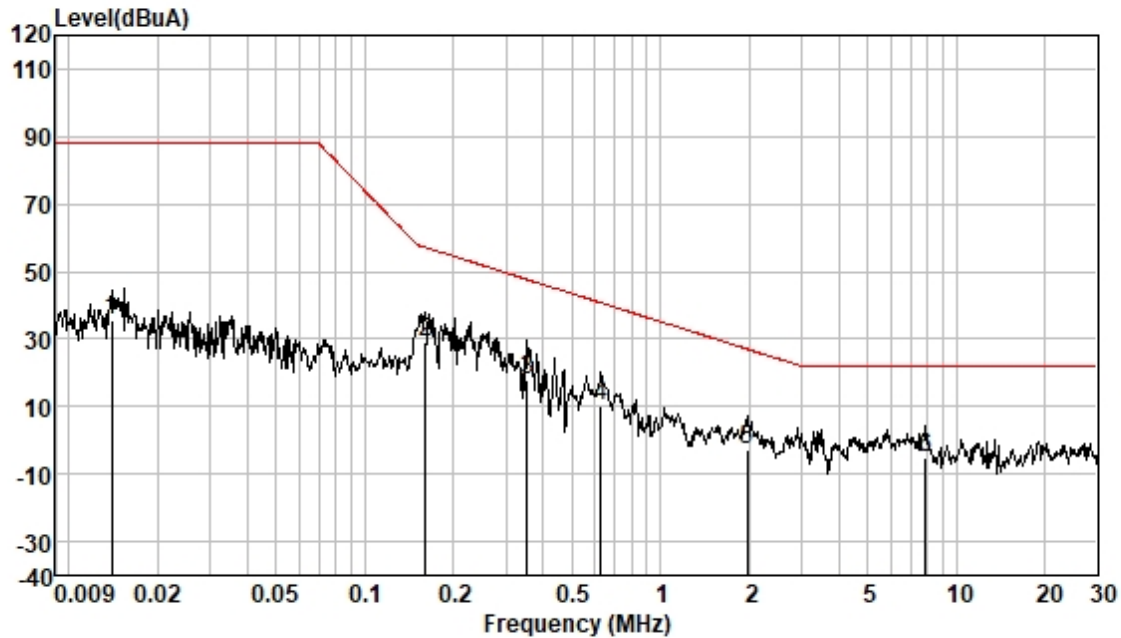
Test Mode: 00



loop : Y
Test Mode:
Model :

Frequency MHz	Read level dBuV	Cable Loss dB	Antenna Factor dB	Measured level dBuA	Limit Line dBuA	Over limit dB	Remark
0.01	36.05	0.00	-0.74	35.31	88.00	-52.69	QP
0.17	24.22	0.10	-0.21	24.11	56.33	-32.22	QP
0.25	24.53	0.10	-0.15	24.48	51.84	-27.36	QP
0.92	0.31	0.10	-0.20	0.21	36.25	-36.04	QP
1.97	-5.92	0.20	0.00	-5.72	27.08	-32.80	QP
4.35	-8.54	0.40	0.34	-7.80	22.00	-29.80	QP

Test Mode: 00



loop : Z
Test Mode:
Model :

Frequency MHz	Read level dBuV	Cable Loss dB	Antenna Factor dB	Measured level dBuA	Limit Line dBuA	Over limit dB	Remark
0.01	35.31	0.00	-0.01	35.30	88.00	-52.70	QP
0.16	29.11	0.10	-0.31	28.90	57.20	-28.30	QP
0.35	17.67	0.10	-0.02	17.75	47.65	-29.90	QP
0.63	10.22	0.10	-0.29	10.03	40.83	-30.80	QP
1.97	-3.12	0.20	0.20	-2.72	27.08	-29.80	QP
7.87	-6.65	0.50	0.69	-5.46	22.00	-27.46	QP

6.4 Harmonic Current Emission

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

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

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

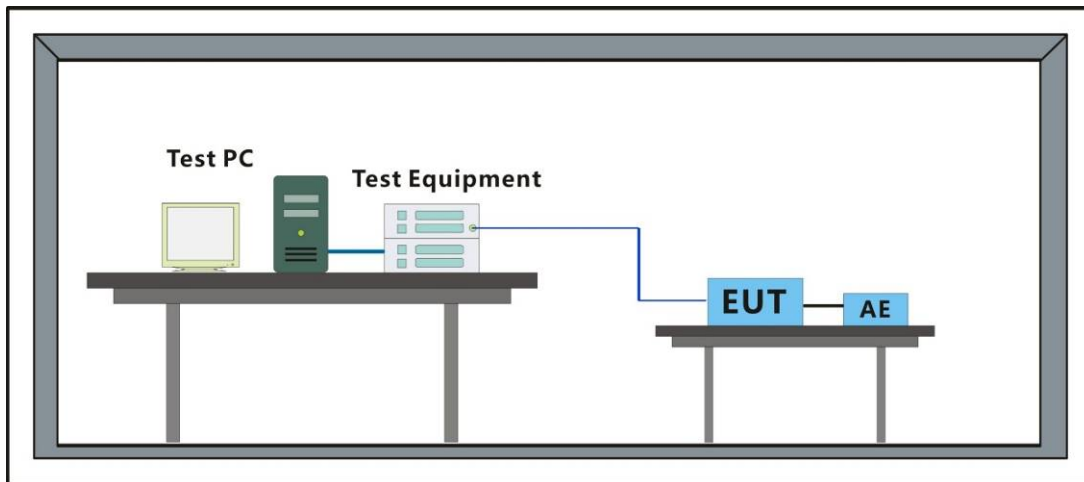
Humidity: 66.4 % RH

Atmospheric Pressure: 1020 mbar

6.4.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Frequency Range: 100Hz to 2kHz

Test Mode: 00

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

Classification: Class C (Rated power ≥ 5 W and ≤ 25 W, THD shall not exceed 70%)

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: 0.037 A

Active input Power

Line 1: 6.585 W *

Circuit power factor

Line 1: 0.767 *

* Absolute value.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Current Test Result

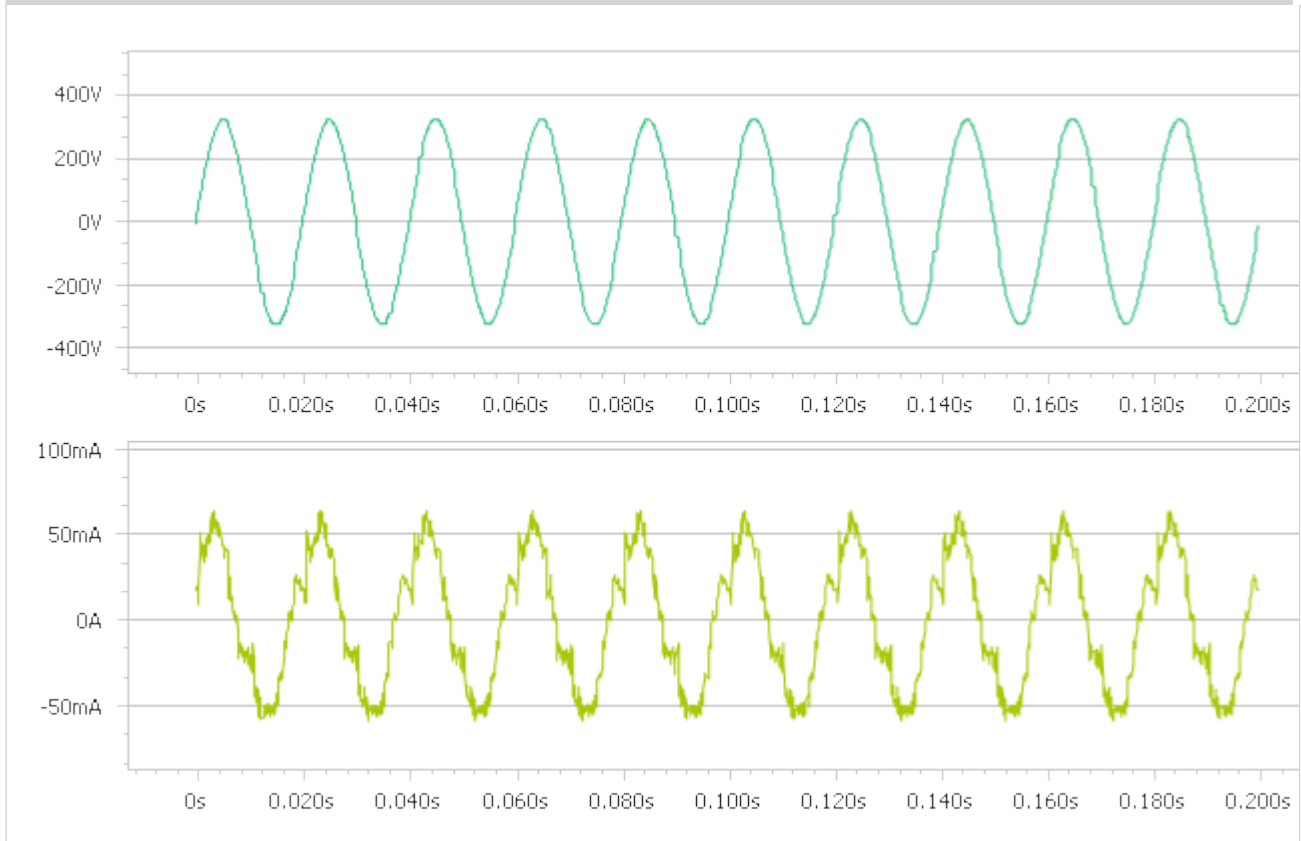
Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	Ieff [%]	of Limit [%]	Limit [%]	Result	Ieff [%]	of Limit [%]	Limit [%]	Result	
1	98.700				100.00				
2	1.696	33.930	5.000	n/a	2.021	26.946	7.500	n/a	PASS
3	11.646	33.273	35.000	n/a	13.253	25.243	52.500	n/a	PASS
4	2.298				2.820				
5	5.069	20.274	25.000	n/a	6.015	16.039	37.500	n/a	PASS
6	1.843				2.493				
7	3.636	12.120	30.000	n/a	4.019	8.932	45.000	n/a	PASS
8	2.451				2.869				
9	6.597	32.987	20.000	n/a	6.995	23.318	30.000	n/a	PASS
10	3.162				3.411				
11	2.843	14.217	20.000	n/a	3.151	10.505	30.000	n/a	PASS
12	1.807				2.340				
13	2.261				2.545				
14	1.752				1.996				
15	2.617				2.907				
16	2.990				3.221				
17	2.727				2.909				
18	2.446				2.770				
19	3.035				3.306				
20	1.796				2.265				
21	2.013				2.261				
22	1.908				2.272				
23	1.995				2.262				
24	1.615				1.852				
25	2.240				2.490				
26	1.620				1.796				
27	1.882				2.093				
28	1.615				1.778				
29	1.702				1.888				
30	1.616				1.791				
31	1.908				2.208				
32	1.543				1.706				
33	1.660				1.801				
34	1.466				1.614				
35	1.741				1.935				
36	1.560				1.826				
37	1.632				1.781				

38	1.568				1.721				
39	1.625				1.782				
40	1.638				1.855				

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.

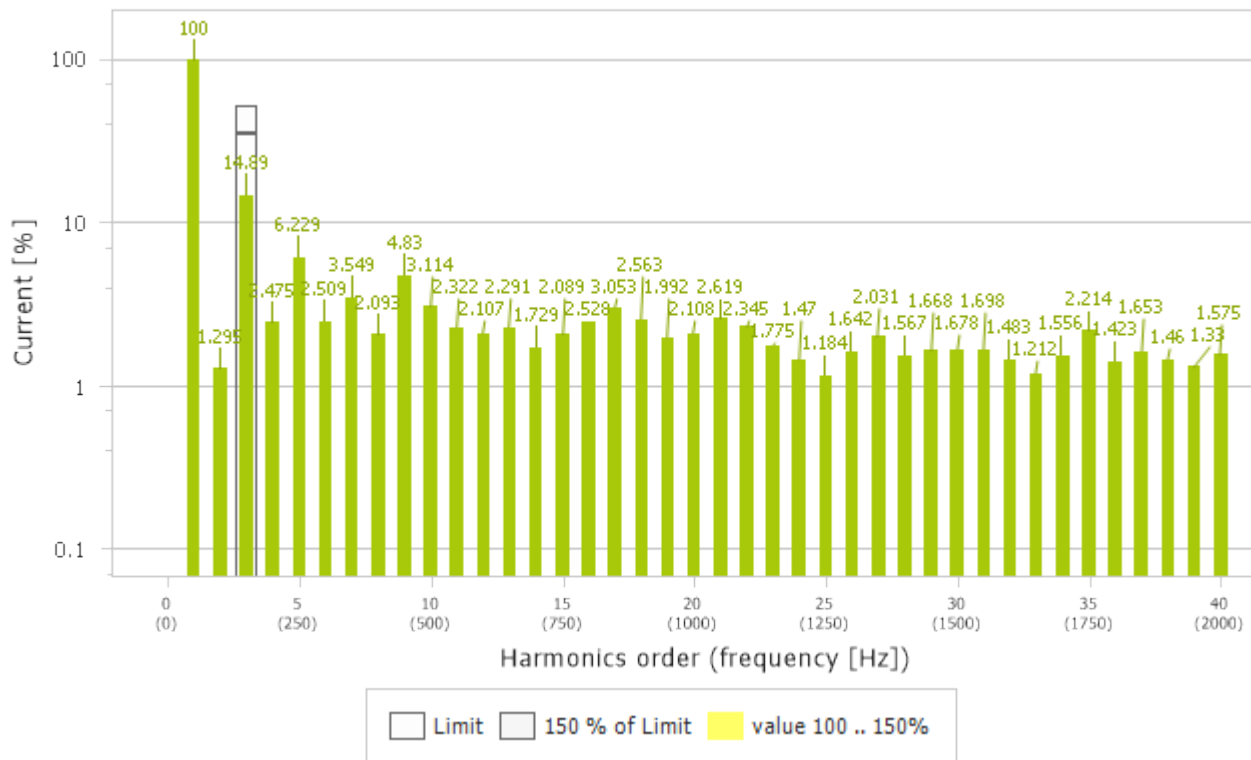
Time Window 1

Time Domain of Time Window 1



Harmonics of Time Window 1 (Line 1)

Harmonics of Time Window 1



Maximum / Average Values

		Line 1
<i>Maximum Values</i>		
Frequency		50 Hz
Voltage RMS		230.6 V
Current RMS		0.03737 A
Peak Current		0.07294 A
Fundamental Current		0.03721 A
Current Crest Factor		1.970
Active Power P		6.654 W
Power Factor		0.7711
Total Harmonic Current (THC)		7.380e-3 A
Instantaneous Partial Odd Harmonic Current (Inst. POHC)		2.650e-3 A
Total Harmonic Distortion Current (THDC)		0.1999
<i>Average Values</i>		
Total Harmonic Current (THC)		7.080e-3 A
Instantaneous Partial Odd Harmonic Current (Inst. POHC)		2.183e-3 A
Total Harmonic Distortion Current (THDC)		0.1918



6.5 Voltage Fluctuations and Flicker

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

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

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

Humidity: 65.8 % RH

Atmospheric Pressure: 1020 mbar

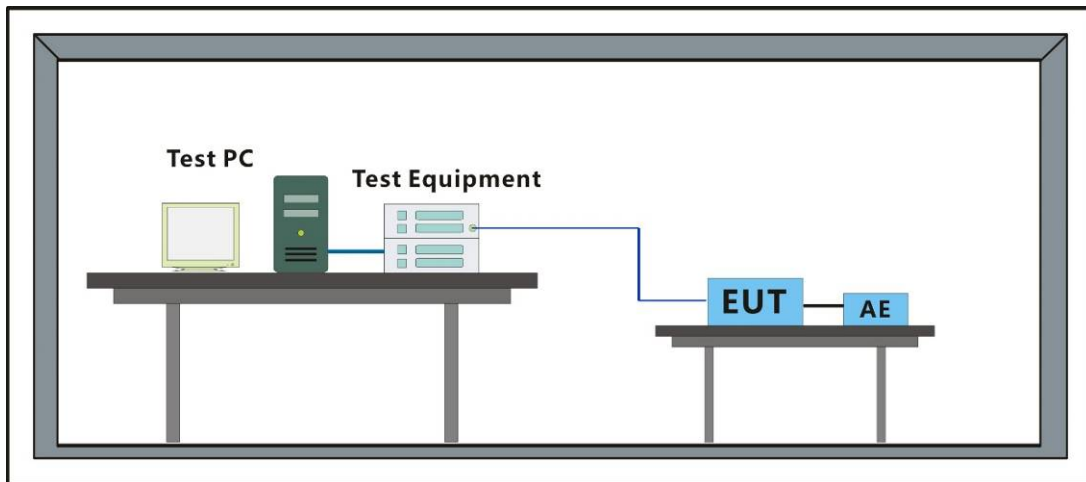
6.5.2 Test Mode Description

Pre-scan / Mode Description

Final test Code

Final test 00 Test the EUT in LED lighting mode.

6.5.3 Test Setup Diagram



6.5.4 Measurement Procedure and Data

Test Mode: 00

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: General Test Conditions

Analysis Status: PASS

Flicker Measurements Settings

Main Line:	230V, 50Hz
Flicker Meter:	230V / 50Hz
Flicker Impedance:	Zref
Observation Time:	1 × 10 min
Measurements:	1

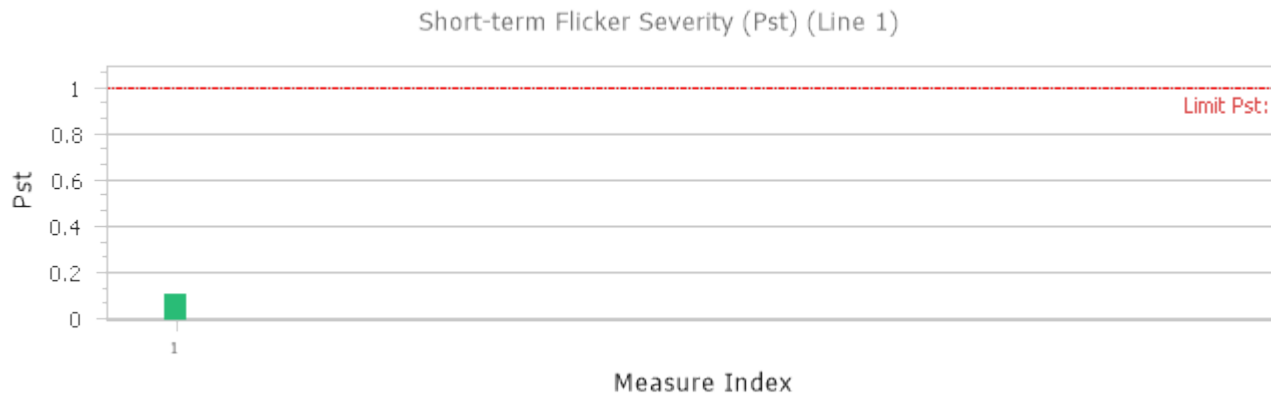
Flicker Measurements

	P _{It}	Max P _{st}	Max d _c	Max d _{max}	Max T _{max}
Line 1:	0.047	0.108	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

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	0.00	3.30	PASS	< 0.2	4.00	PASS	0.00	0.50	PASS

Pst Data



7 Immunity Test Results

Performance Criteria Description in EN 61547: 2009

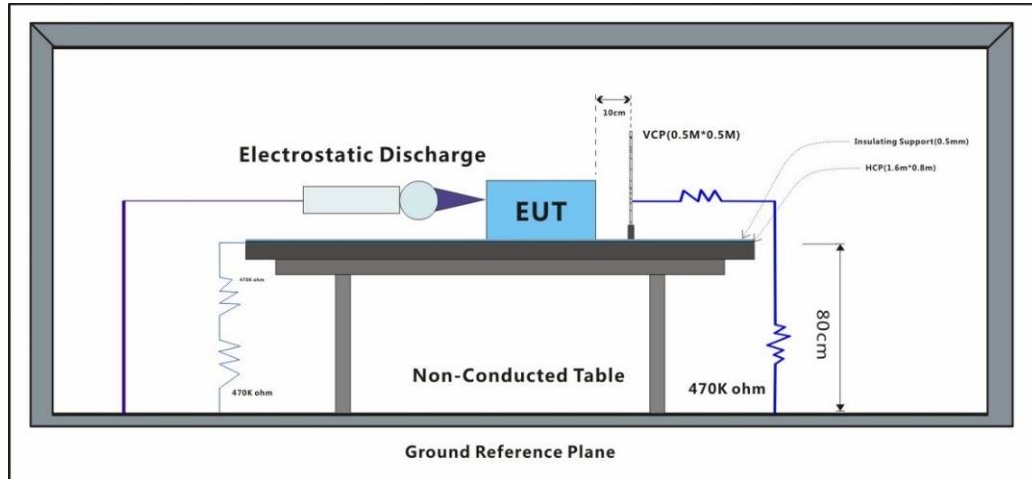
- Criterion A:** During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.
- Criterion B:** During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall be restored to its initial value within 1 min. Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.
- Criterion C:** During and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and/or operating the regulating control.

7.1 Electrostatic Discharge

Test Requirement: EN 61547: 2009

Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 26.3 °C

Humidity: 45.8 % RH

Atmospheric Pressure: 1020 mbar

7.1.3 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

7.1.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330 Ω / 150 pF

Discharge Voltage: Air Discharge: 2,4,8 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.

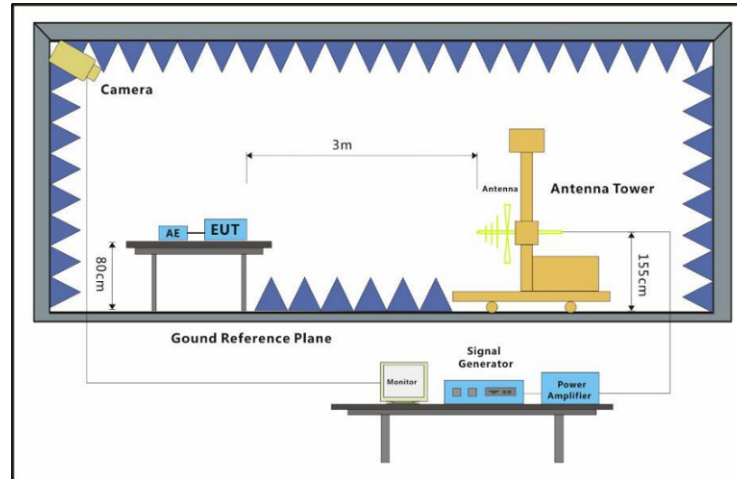
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	N/A
Contact Discharge	4	-	2	N/A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

A: No degradation in the performance of the EUT was observed
N/A: Not applicable.

7.2 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN 61547: 2009

Test Method: EN 61000-4-3: 2006 +A1: 2008+A2: 2010

7.2.1 Test Setup Diagram**7.2.2 E.U.T. Operation**

Operating Environment:

Temperature: 22.0 °C

Humidity: 64.8 % RH

Atmospheric Pressure: 1020 mbar

7.2.3 Test Mode Description

Pre-scan / Mode Description

Final test Code

Final test 00 Test the EUT in LED lighting mode.

7.2.4 Test Condition and Results:

Performance Criterion:A

Frequency Range:80MHz to 1GHz

Test Distance:3m

Antenna Polarisation:Vertical and Horizontal

Modulation1kHz,80% Amp. Mod,1% increment

Frequency	Level (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

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



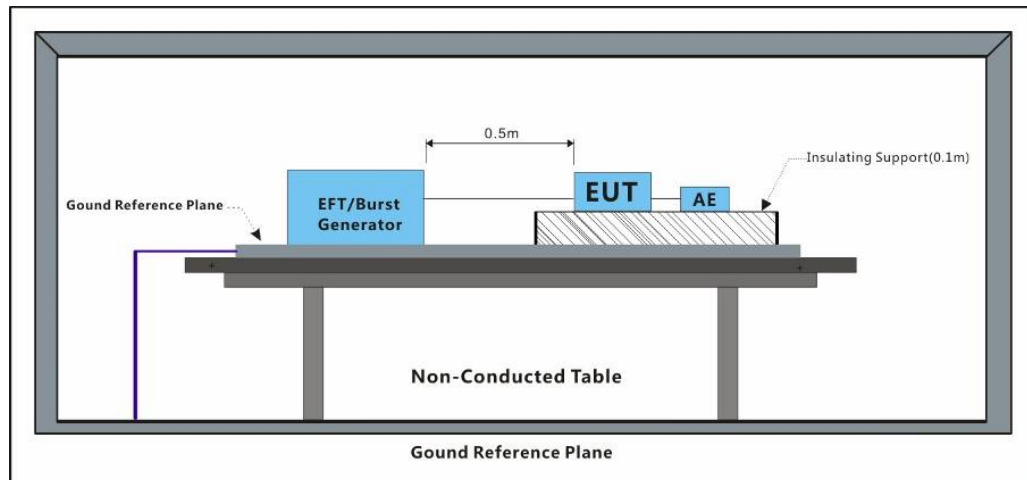
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

7.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN 61547: 2009
Test Method: EN 61000-4-4:2012

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 24.1 °C Humidity: 61.5 % RH Atmospheric Pressure: 1005 mbar

7.3.3 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

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: 1.0kV
Polarity: Positive & Negative

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A

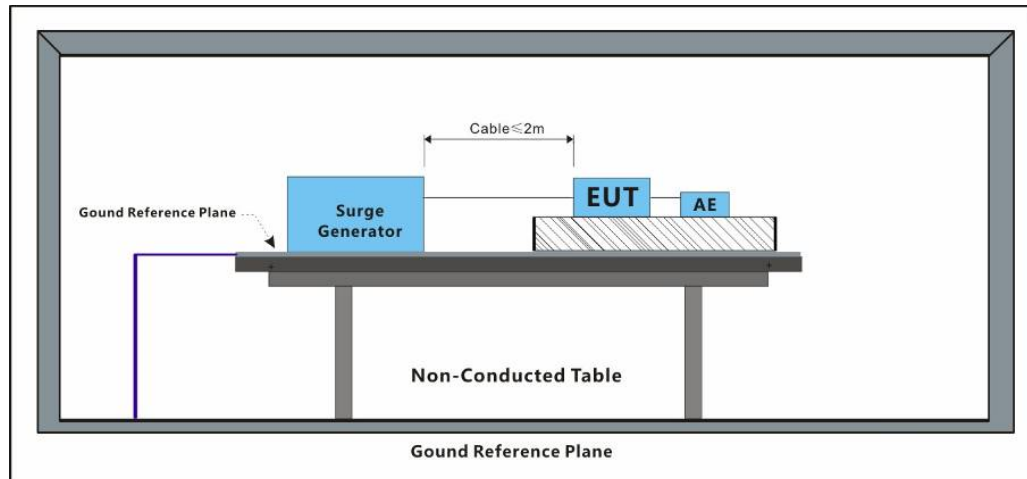
A: No degradation in the performance of the EUT was observed

7.4 Surge at Power Port

Test Requirement: EN 61547: 2009

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: 24.1 °C

Humidity: 61.5 % RH

Atmospheric Pressure: 1005 mbar

7.4.3 Test Mode Description

Pre-scan / Mode

Final test Code Description

Final test 00 Test the EUT in LED lighting mode.

7.4.4 Test Condition and Results:

Performance Criterion: B (Luminaire for emergency lighting),

Performance Criterion: C (for others lighting equipment).

Interval: 60s between each surge

Test Level: $\pm 0.5\text{kV}$, $\pm 1\text{kV}$ Live to Neutral; $\pm 1\text{kV}$, $\pm 2\text{kV}$ 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° .

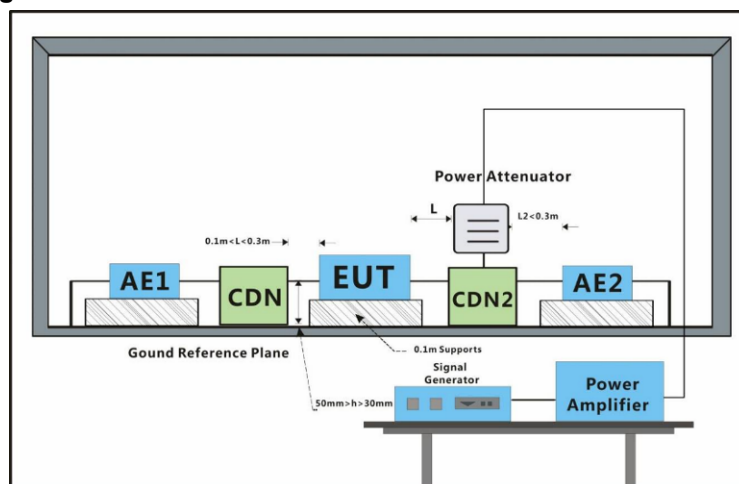
Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5	+	90°	A
L-N	0.5	-	270°	A
L-PE	1.0	+	90°	A
L-PE	1.0	-	270°	A
N-PE	1.0	+	90°	A
N-PE	1.0	-	270°	A

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

7.5 Conducted Immunity at AC Mains Power Port (150kHz-80MHz)

Test Requirement: EN 61547: 2009
Test Method: EN 61000-4-6:2014

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:
Temperature: 24.1 °C Humidity: 61.5 % RH Atmospheric Pressure: 1005 mbar

7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Test the EUT in LED lighting mode.

7.5.4 Test Condition and Results:

Performance Criterion:A
Step Size 1%
Frequency Range:0.15MHz to 80MHz
Modulation:80%, 1kHz Amplitude Modulation

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	3s	A

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

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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed over and available on request at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

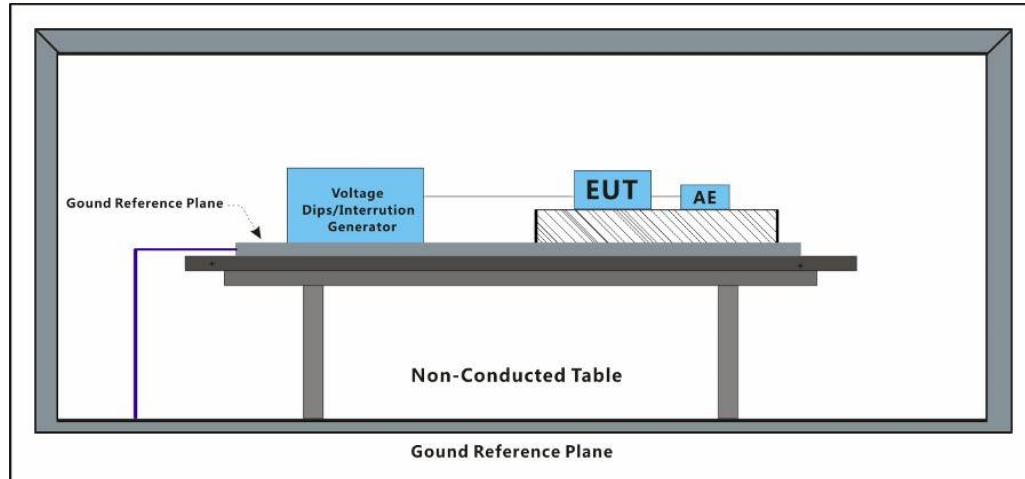
SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory.

or email: CN.Doccheck@sgs.com
No.198 Kexu Road, SciencePark Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

7.6 Voltage Dips and Interruptions

Test Requirement: EN 61547: 2009
Test Method: EN IEC 61000-4-11:2020

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:
Temperature: 24.1 °C Humidity: 61.5 % RH Atmospheric Pressure: 1005 mbar

7.6.3 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in LED lighting mode.

7.6.4 Test Condition and Results:

Performance Criterion: 0% of UT (Rated Voltage) for 0.5 Cycle: B; 70% of UT for 10 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	3	A
0	180°	0.5 Cycle	3	A
70	0°	10 Cycles	3	A
70	180°	10 Cycles	3	A

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

8 Test Setup Photo

Conducted Emissions at Mains Terminals (9kHz-30MHz)



CDNE Method (30-300MHz)



Radiated Emissions (Magnetic Field Induced Current)(9kHz-30MHz)



Harmonic Current Emission



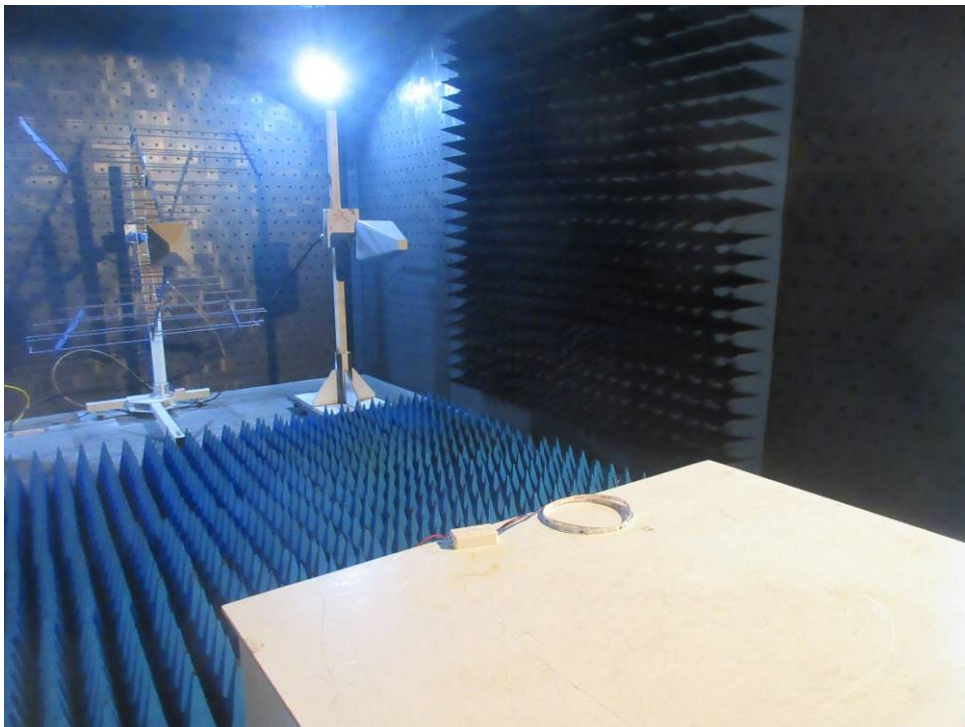
Voltage Fluctuations and Flicker



Electrostatic Discharge



Radiated Immunity (80MHz-1GHz)



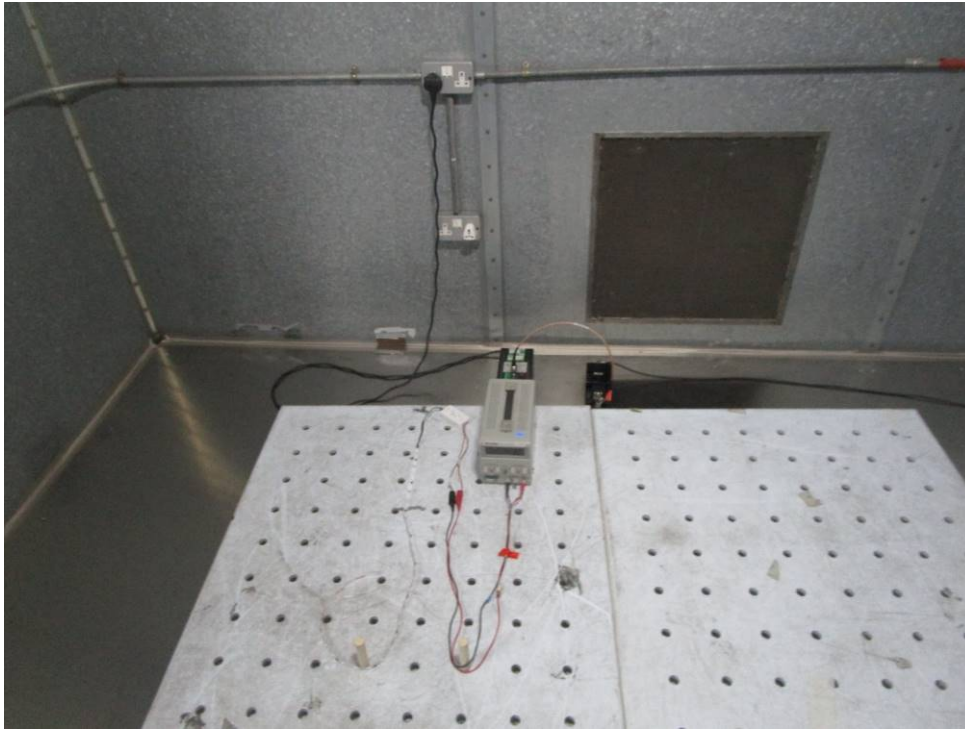
Electrical Fast Transients Burst at AC Mains Power Port



Surge at Power Port



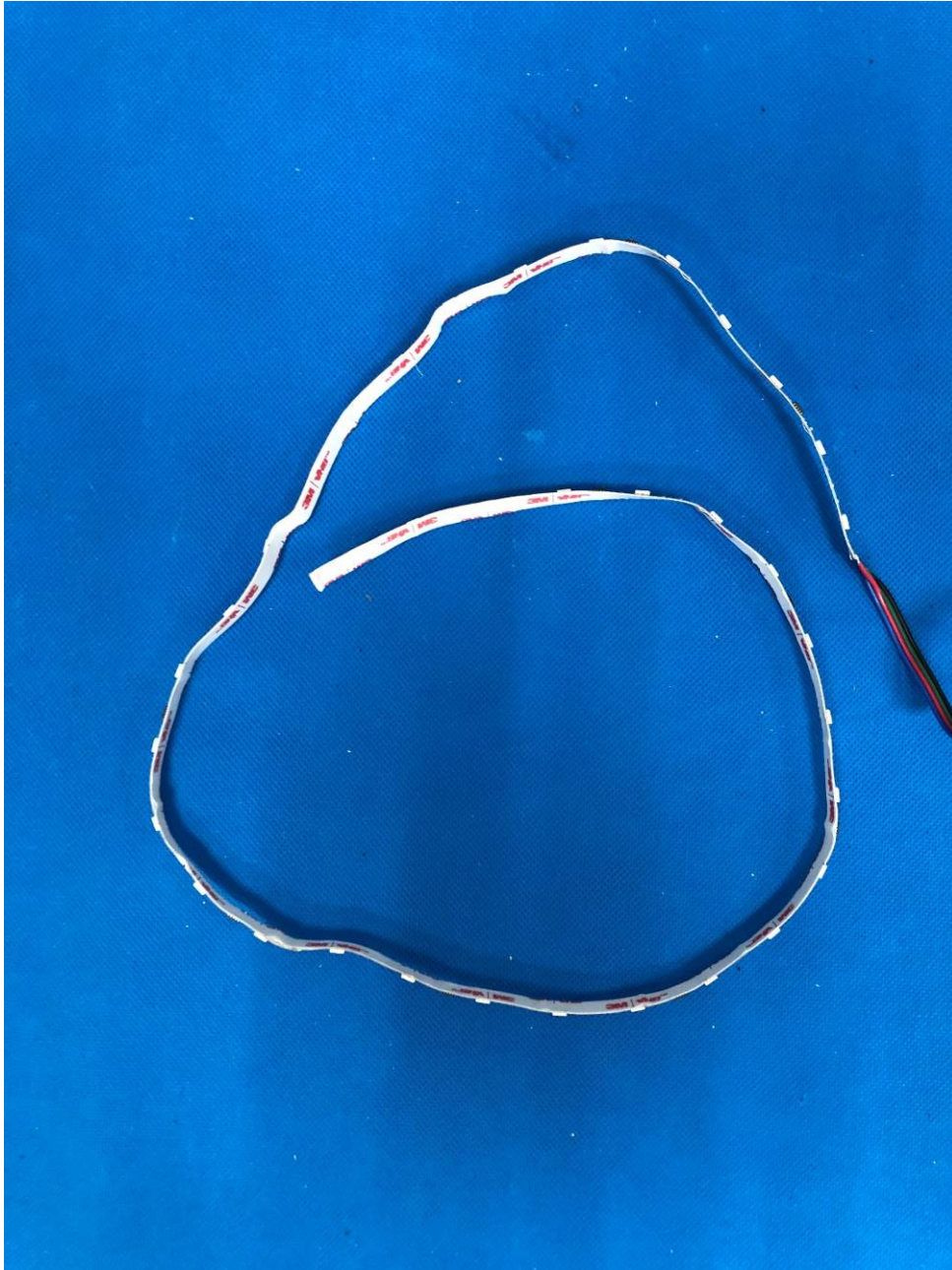
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)



Voltage Dips and Interruptions



9 EUT Constructional Details (EUT Photos)





- End of the Report -



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>, and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory.

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com