

TEST REPORT

Application No.: GZEM2512008149AT
Applicant: Zhuhai SeaPeng Automobile Testing Equipment Co.,Ltd.
Address of Applicant: 302, Building 1, No. 99 Daxue Road, Tangjiawan Town, Zhuhai City, Guangdong Province
Manufacturer: Zhuhai SeaPeng Automobile Testing Equipment Co.,Ltd.
Address of Manufacturer: 302, Building 1, No. 99 Daxue Road, Tangjiawan Town, Zhuhai City, Guangdong Province
Factory: Zhuhai SeaPeng Automobile Testing Equipment Co.,Ltd.
Address of Factory: 302, Building 1, No. 99 Daxue Road, Tangjiawan Town, Zhuhai City, Guangdong Province
Product Name: Automatic tire inflator
Model No.: DP-Q01, DP-Q01L, DP-Q02, DP-Q03, DP-Q04, DP-Q05, DP-Q06, DP-Q07, DP-Q07L, DP-Q08, DP-Q09 ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standard(s) : EN IEC 61326-1: 2021
Date of Receipt: 2025-12-05
Date of Test: 2025-12-10 to 2025-12-17
Date of Issue: 2025-12-23

Test Result:

Pass*

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



Revision Record			
Version	Report No.	Date	Remark
01	GZEM251200814901	2025-12-23	Original

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



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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
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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	EN IEC 61326-1: 2021	EN 55011:2016 +A2:2021	Group 1 Class B	Pass
Radiated Emission (30MHz-1GHz)		EN 55011:2016 +A2:2021	Group 1 Class B	Pass
Harmonic Current Emission		EN IEC 61000-3-2:2019 +A1:2021+A2:2024	Class A	Pass
Voltage Fluctuations and Flicker		EN 61000-3-3:2013 +A1:2019+A2:2021	Clause 5	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN IEC 61326-1: 2021	EN 61000-4-2:2009	4kV Contact Discharge, 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz, 1.4GHz-6GHz)		EN IEC 61000-4-3: 2020	3V/m 80MHz to 1GHz, 3V/m 1.4GHz to 6GHz, Modulation: 1kHz, 80% 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
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)		EN IEC 61000-4-6: 2023	3 Vrms: 0.15MHz - 80MHz, 80%, 1kHz Amp. Mod.	Pass
Surge at AC Mains 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
Voltage Dips and Interruptions		EN IEC 61000-4-11: 2020	0% of UT (Supply Voltage) for 0.5 Cycle; 0% of UT for 1 Cycle; 0% of UT for 250 Cycles; 70% of UT for 25 Cycles;	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.



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Guangzhou Branch, EMC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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Model No.: DP-Q01, DP-Q01L, DP-Q02, DP-Q03, DP-Q04, DP-Q05, DP-Q06, DP-Q07, DP-Q07L, DP-Q08, DP-Q09

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, only different on the model name.

Therefore, only one model DP-Q01 was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 85-230V 50-60Hz

Cable(s): About 1.6m x 3 wires unscreened AC mains cable.

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

Description	Manufacturer	Model No.	Serial No.
Air compressor	Supplied by SGS; OUTSTANDING	Model: ZBM-0.1/8	10182006

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	3.22dB (150kHz to 30MHz)
Radiated Emission (30MHz-1GHz)	5.14dB (30MHz-1GHz):3m; 4.90dB (30MHz-1GHz):10m

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,
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Tel: +86 20 82155555

No tests were sub-contracted.



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Guangzhou Branch EMC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
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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: LED displaying of the EUT.



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Guangzhou Branch EMC Laboratory

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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	BL03-NMMN-6.00M	EMC0107	2025-08-12	2026-08-11
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2025-08-14	2028-08-13
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2025-08-13	2026-08-12
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2025-11-18	2026-11-17
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A

Radiated Emission (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2025-08-13	2028-08-12
Coaxial cable	Mirco-COAX UTIFLEX	311A	EMC0540	2024-08-19	2026-08-18
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2025-11-25	2026-11-24
EMI Test Receiver (9kHz-7GHz)	Rohde & Schwarz	ESR7	EMC2220	2025-11-18	2026-11-17
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess-Elektronik	VULB 9168	EMC2174	2025-04-21	2027-04-20
CMAD	Schaffner	CAMD 10	EMC0532	2025-11-18	2027-11-17

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	2025-11-18	2026-11-17
Programmable multifunctional ac/dc power source	EMTEST	NETWAVE 7-400	EMC2234	2025-11-18	2026-11-17
NET.Control	EMTEST	Ver 3.2.3	GZE100-80	N/A	N/A



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No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Temperature & Humidity	Shanghai Meteorological Instrument Factory Co., Ltd.	ZJ1-2B	EMC0078	2025-06-03	2026-06-02
ESD Ground Plane	SGS-EMC	3m x 3m	EMC0804	N/A	N/A
Aneroid Barometer	Shanghai Meteorological Instrument Factory Co., Ltd.	YM3	EMC2181	2025-10-20	2026-10-19
ESD Simulator-E	EMTEST	NX30	EMC2186	2025-12-05	2026-12-04

Radiated Immunity (80MHz-1GHz,1.4GHz-6GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
743 Compact 3m Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	EMC0525	2025-08-13	2028-08-12
Oscilloscope	Tektronix	TDS3052C	EMC2055	2025-08-11	2026-08-10
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	2025-08-11	2026-08-10
Broadband Amplifier (800MHz-3GHz/110W)	Rohde & Schwarz	BBA150	EMC2092	2025-08-11	2026-08-10
Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	EMC2093	2025-08-11	2026-08-10
Laser Probe	RF Microwave Instrumentation	FL7006	EMC2094	2025-04-23	2026-04-22
NRP-Z91 Power Sensor (9kHz-6GHz)	Rohde & Schwarz	NPR-Z91	EMC2095	2025-08-11	2026-08-10
NRP-Z91 Power Sensor (9kHz-6GHz)	Rohde & Schwarz	NPR-Z91	EMC2096	2025-08-11	2026-08-10
High-Gain Log-preiodic Antenna	Rohde & Schwarz	HL046E	EMC2097	2025-02-14	2028-02-13
RI Cable	Rohde & Schwarz	7m	EMC2098	2025-05-13	2026-05-12
Audio Analyzer	Keysight	U8903B	EMC2180	2025-08-11	2026-08-10
Test Software EMC32	Rohde & Schwarz	Ver. 10.60.10	GZE100-63	N/A	N/A



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中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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Electrical Fast Transients Burst at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2025-08-11	2026-08-10
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2025-11-19	2026-11-18
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

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	2025-11-25	2026-11-24
CDN M2	Schaffner Chase	CDN-M2-16	EMC1107	2024-10-14	2026-10-13
CDN M2/M3	Elektronik-Feinmechanik	L-801:M2/M3	EMC2048	2025-11-25	2026-11-24
Test System for Conducted and Radiated Immunity	TESEQ AG	NSG 4070B-80	EMC2115	2025-08-12	2026-08-11
Audio Analyzer	Keysight	U8903B	EMC2180	2025-08-11	2026-08-10
Test Software NSG4070_Ctrl1	TESEQ AG	Ver.1.3.0.1	GZE100-72	N/A	N/A
Oscilloscope	Tektronix	TDS3052C	EMC2055	2025-08-11	2026-08-10
6dB Attenuator	Shanghai Huaxiang	WDT5150-6-2.5-B	EMC2116	2025-08-12	2026-08-11

Surge at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2025-08-11	2026-08-10
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2025-11-19	2026-11-18
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A

Voltage Dips and Interruptions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Oscilloscope	Tektronix	TDS3052C	EMC2055	2025-08-11	2026-08-10
EMC Immunity Test System	TESEQ AG	NSG 3060&CDN306 1&INA 6502 CIB	EMC2072	2025-11-19	2026-11-18
Test Software WIN 3000	TESEQ AG	Ver 1.3.2	GZE100-68	N/A	N/A



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

EMC-TRF-01 Rev 2.1

Report No.: GZEM251200814901

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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2025-06-03	2026-06-02
DMM	Fluke	73	EMC0007	2025-06-03	2026-06-02



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6 Emission Test Results

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

Test Requirement:	EN IEC 61326-1: 2021
Test Method:	EN 55011:2016+A2:2021
Test Engineer:	Sunny Yang
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(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

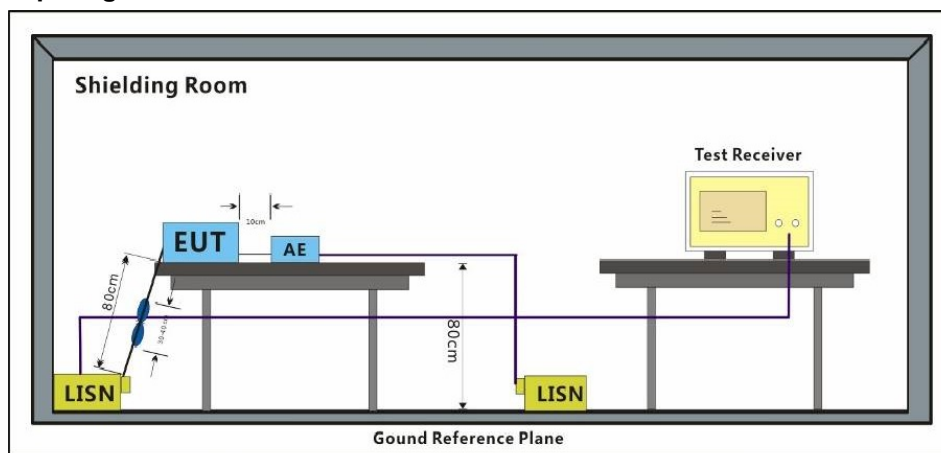
Operating Environment:

Temperature: 24.8 °C Humidity: 47.9 % RH Atmospheric Pressure: 1020 mbar

6.1.1 Test Mode Description

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

6.1.2 Test Setup Diagram



6.1.3 Measurement Procedure and Data

Frequency range: 150kHz-30MHz

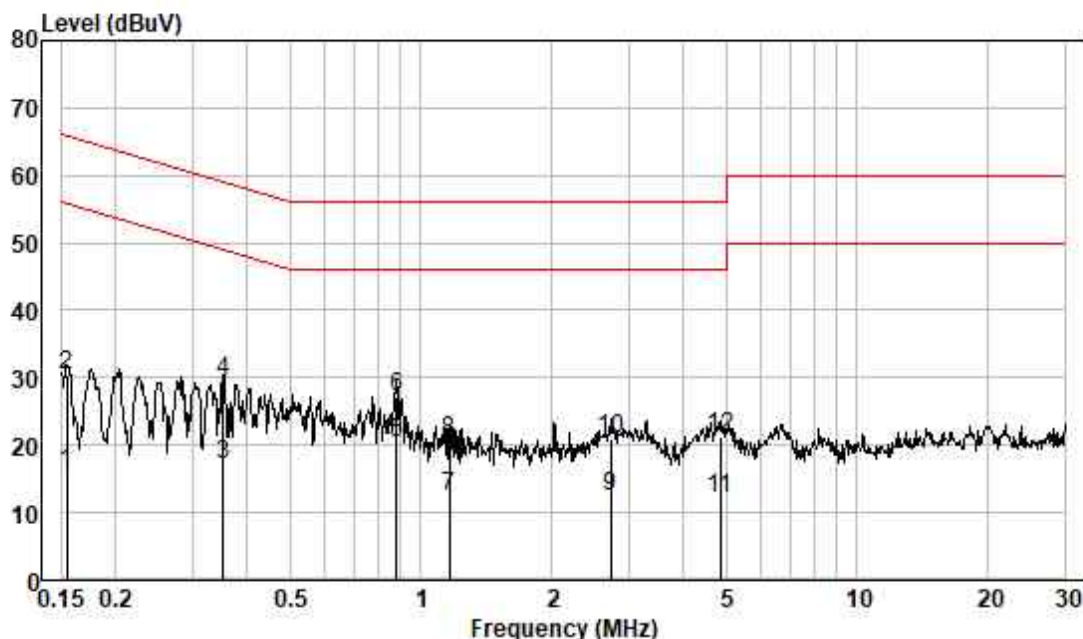
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

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: 00; Line: Live line

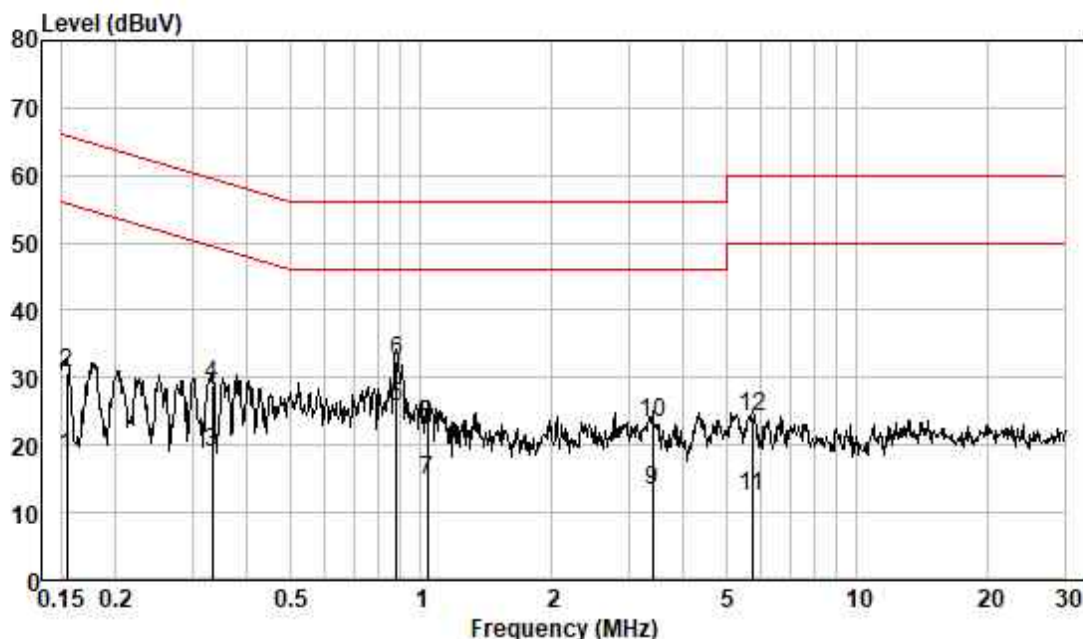


Pol : LINE
Mode :
Model :
Power :

	Frequency MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.154	6.40	0.04	9.56	16.00	55.78	-39.78	Average
2	0.154	20.80	0.04	9.56	30.40	65.78	-35.38	QP
3	0.352	7.57	0.05	9.59	17.21	48.91	-31.70	Average
4	0.352	19.88	0.05	9.59	29.52	58.91	-29.39	QP
5	0.880	10.54	0.07	9.61	20.22	46.00	-25.78	Average
6	0.880	17.62	0.07	9.61	27.30	56.00	-28.70	QP
7	1.160	2.83	0.08	9.53	12.44	46.00	-33.56	Average
8	1.160	11.00	0.08	9.53	20.61	56.00	-35.39	QP
9	2.721	2.78	0.15	9.54	12.47	46.00	-33.53	Average
10	2.721	11.37	0.15	9.54	21.06	56.00	-34.94	QP
11	4.848	2.41	0.19	9.61	12.21	46.00	-33.79	Average
12	4.848	11.48	0.19	9.61	21.28	56.00	-34.72	QP



Test Mode: 00; Line: Neutral Line



Pol : NEUTRAL
Mode :
Model :
Power :

	Frequency MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.154	8.82	0.04	9.52	18.38	55.78	-37.40	Average
2	0.154	21.25	0.04	9.52	30.81	65.78	-34.97	QP
3	0.332	9.44	0.04	9.52	19.00	49.40	-30.40	Average
4	0.332	19.42	0.04	9.52	28.98	59.40	-30.42	QP
5	0.880	16.01	0.07	9.54	25.62	46.00	-20.38	Average
6	0.880	23.01	0.07	9.54	32.62	56.00	-23.38	QP
7	1.037	5.21	0.07	9.56	14.84	46.00	-31.16	Average
8	1.037	13.54	0.07	9.56	23.17	56.00	-32.83	QP
9	3.399	3.47	0.17	9.57	13.21	46.00	-32.79	Average
10	3.399	13.48	0.17	9.57	23.22	56.00	-32.78	QP
11	5.744	2.56	0.21	9.66	12.43	50.00	-37.57	Average
12	5.744	14.24	0.21	9.66	24.11	60.00	-35.89	QP



6.2 Radiated Emission (30MHz-1GHz)

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN 55011:2016+A2:2021
 Test Engineer: Bob Qu
 Limit:
 Test Distance: 10m
 30MHz-230MHz 30 dB(μV/m) quasi-peak
 230MHz-1GHz 37 dB(μV/m) quasi-peak
 Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

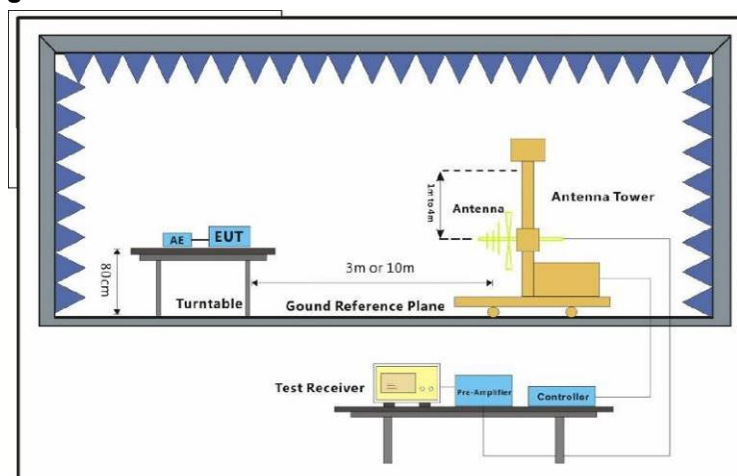
6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.7 °C Humidity: 58.9 % RH Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

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

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

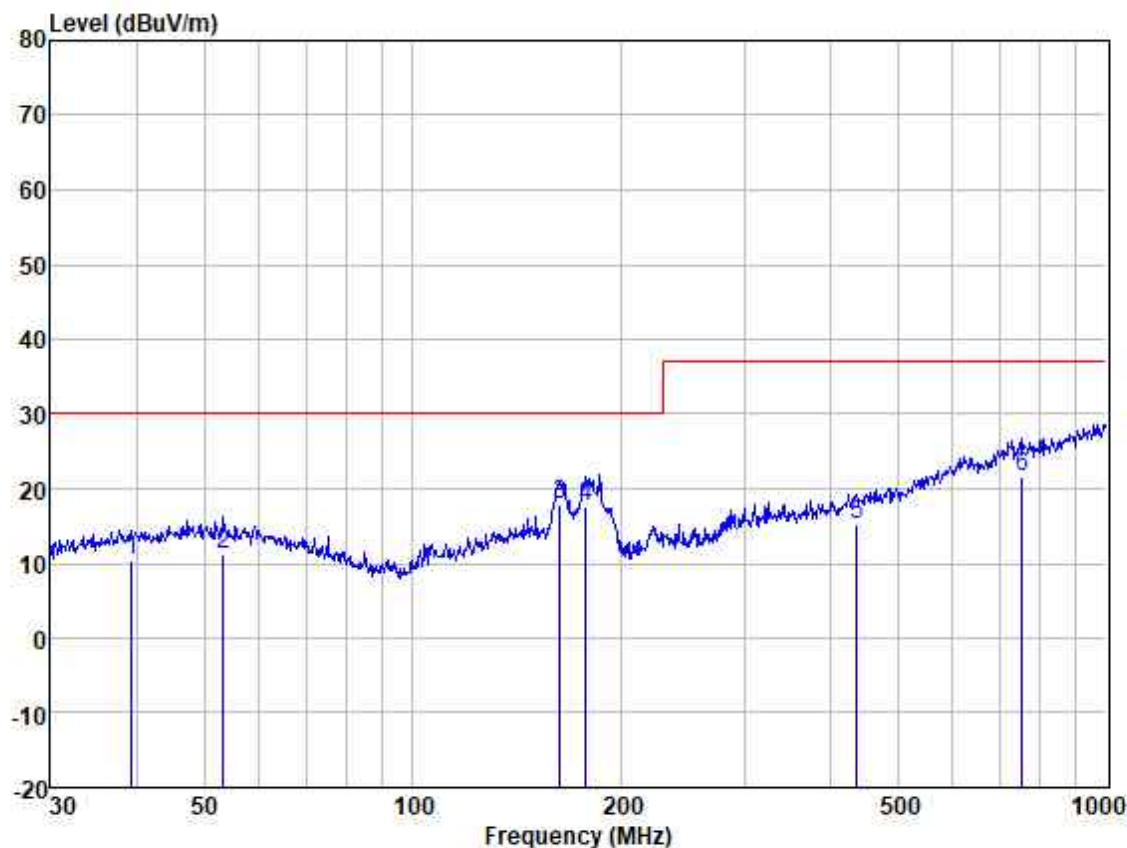
Frequency range: 30MHz-1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

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

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test Mode: 00; Polarity: Horizontal

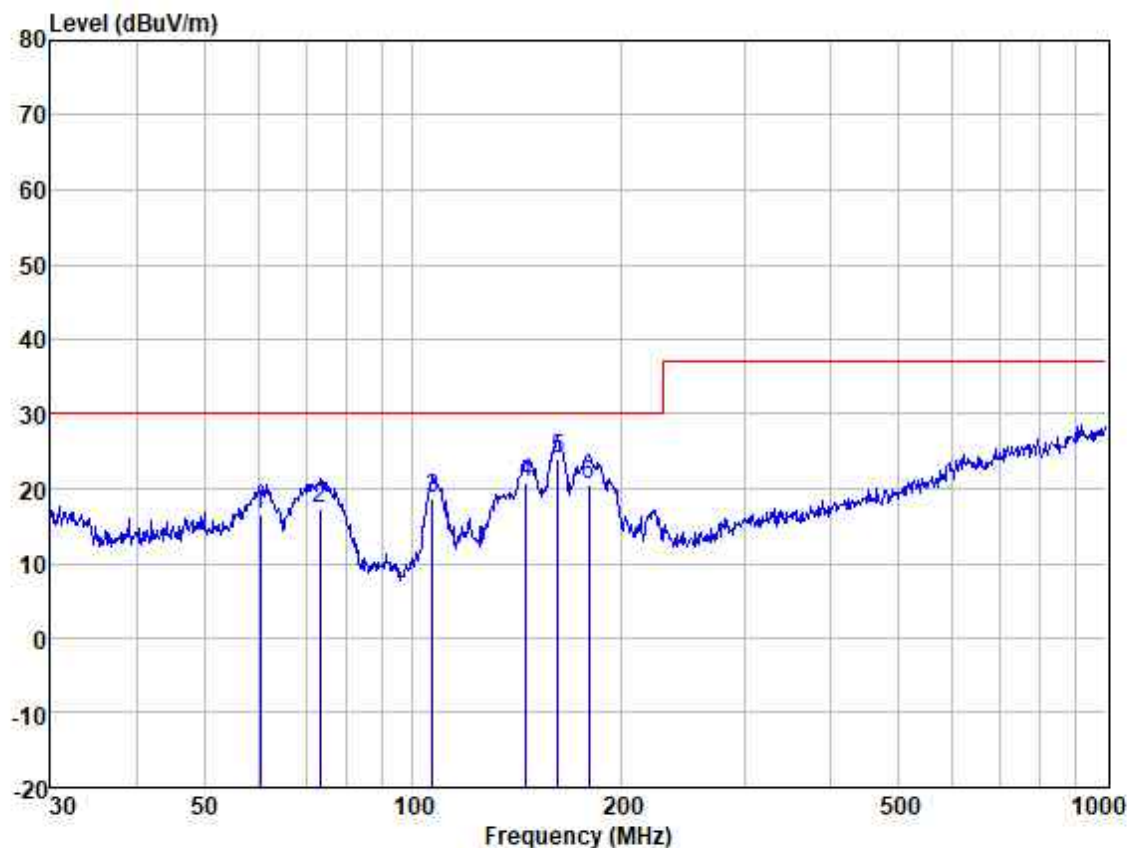


Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	39.299	24.16	13.55	0.68	27.98	10.41	30.00	-19.59	HORIZONTAL	QP
2	53.318	24.53	13.83	0.76	27.95	11.17	30.00	-18.83	HORIZONTAL	QP
3	163.182	31.25	13.39	1.03	27.69	17.98	30.00	-12.02	HORIZONTAL	QP
4	177.509	31.05	12.98	1.09	27.65	17.47	30.00	-12.53	HORIZONTAL	QP
5	437.120	24.78	16.93	1.85	28.27	15.29	37.00	-21.71	HORIZONTAL	QP
6	755.387	24.91	22.49	2.45	28.31	21.54	37.00	-15.46	HORIZONTAL	QP



Test Mode: 00; Polarity: Vertical



Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	60.280	30.49	13.24	0.78	27.93	16.58	30.00	-13.42	VERTICAL	QP
2	73.359	33.59	10.85	0.81	27.86	17.39	30.00	-12.61	VERTICAL	QP
3	106.759	35.53	10.00	0.86	27.79	18.60	30.00	-11.40	VERTICAL	QP
4	145.351	34.22	13.35	0.97	27.73	20.81	30.00	-9.19	VERTICAL	QP
5	162.041	37.27	13.40	1.03	27.70	24.00	30.00	-6.00	VERTICAL	QP
6	179.386	34.26	12.92	1.09	27.64	20.63	30.00	-9.37	VERTICAL	QP



6.3 Harmonic Current Emission

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN IEC 61000-3-2:2019+A1:2021+A2:2024
 Test Engineer: Zink Liang

6.3.1 Conclusion

Remark:

Since the EUT was belong to exception of clause 7 and Annex B, according to EN IEC 61000-3-2 figure 1, it was deemed to conform to the requirements of this standard without further testing.

7 Harmonic current limits

The procedure for applying the limits and assessing the results is shown in Figure 1.

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

NOTE 1 Limits may be defined in a future amendment or revision of the standard.

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

NOTE 2 This value may be reduced from 75 W to 50 W in the future, subject to approval by National Committees at that time.

- professional equipment with a total rated power greater than 1 kW;
- symmetrically controlled heating elements with a rated power less than or equal to 200 W;
- independent phase control dimmers
- with a rated power less than or equal to 1 kW when operating incandescent lamps;
- with a rated power less than or equal to 200 W for trailing edge dimmers, and universal phase control dimmers with the default mode set to trailing edge, when operating lighting equipment other than incandescent lamps;
- with a rated power less than or equal to 100 W for leading edge dimmers, and universal phase control dimmers without default mode set to trailing edge, when operating lighting equipment other than incandescent lamps.

and

Kitchen machines as listed in the scope of IEC 60335-2-14 are deemed to conform to the harmonic current limits of this standard without further testing.

Please read clause 7 & Annex B of this standard for reference.



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6.4 Voltage Fluctuations and Flicker

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN 61000-3-3:2013+A1:2019+A2:2021
 Test Engineer: Zink Liang

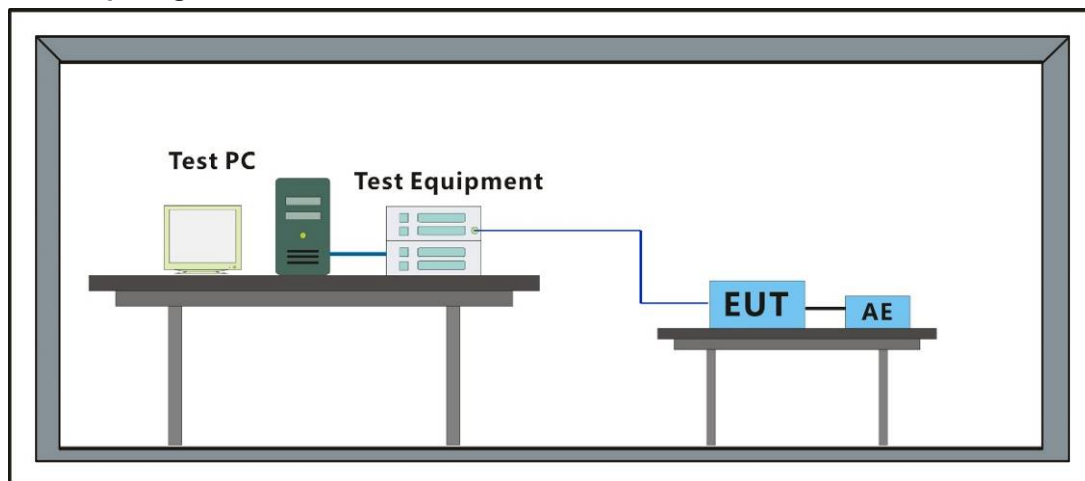
6.4.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.5 °C Humidity: 50.0 % 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 measuring mode.

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Test Mode: 00

Flicker Results

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

Standard Group: Industry

Standard Name: IEC 61000-3-3 (Edition 3)

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

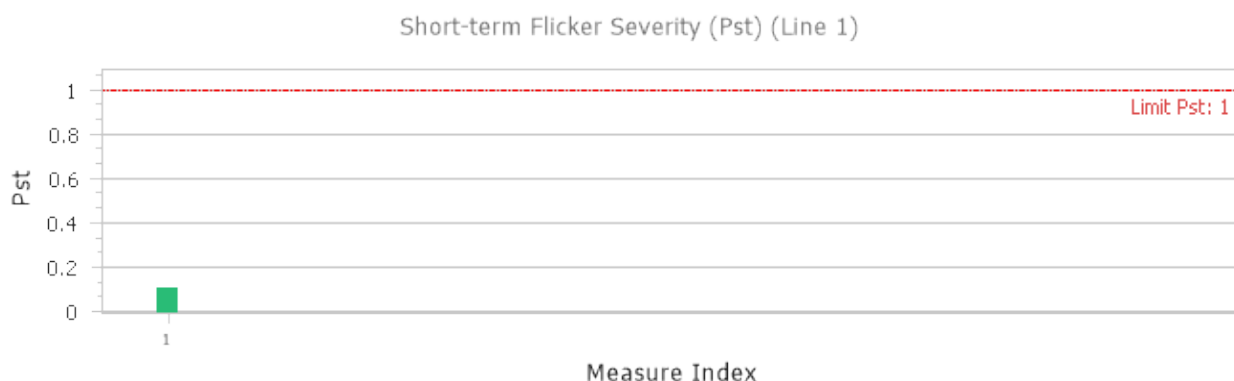
	P _{It}	Max P _{st}	Max d _c	Max d _{max}	Max T _{max}
Line 1:	0.048	0.108	0	< 0.2	0
Limits:	0.65	1	3.3	4	0.5
Results:	PASS	PASS	PASS	PASS	PASS

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 IEC 61326-1

Criterion A

The equipment shall continue to operate as intended during and after the test. No DEGRADATION OF PERFORMANCE or LOSS OF FUNCTION is allowed below a PERFORMANCE LEVEL specified in the user documentation, when the equipment is used as intended. In the case of applying immunity tests with continuous electromagnetic phenomena, the PERFORMANCE LEVEL may be replaced by a permissible LOSS OF PERFORMANCE which shall recover, without user intervention. A permissible LOSS OF PERFORMANCE is allowed within the PERFORMANCE LEVEL only when this information is clearly provided to the end user via documentation, such as the product user manual. No change in the operating state is allowed nor is loss of data.

Criterion B

The equipment shall continue to operate as intended after the test. No DEGRADATION OF PERFORMANCE or LOSS OF FUNCTION is allowed below a PERFORMANCE LEVEL specified in the user documentation, when the equipment is used as intended. During the test, the equipment PERFORMANCE LEVEL may be replaced by a permissible LOSS OF PERFORMANCE if such LOSS OF PERFORMANCE is detailed in the EMC test plan. A permissible LOSS OF PERFORMANCE is allowed within the PERFORMANCE LEVEL only when this information is clearly provided to the end user via documentation, such as the product user manual. An unintended change of the operating state is allowed if self-recoverable. No loss of stored data is allowed.

Criterion C

LOSS OF FUNCTION is allowed, provided the function is self-recoverable or can be restored by the operation of the controls. Recovery procedure shall be included in the user documentation. No permanent damage to the equipment is allowed.



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	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	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



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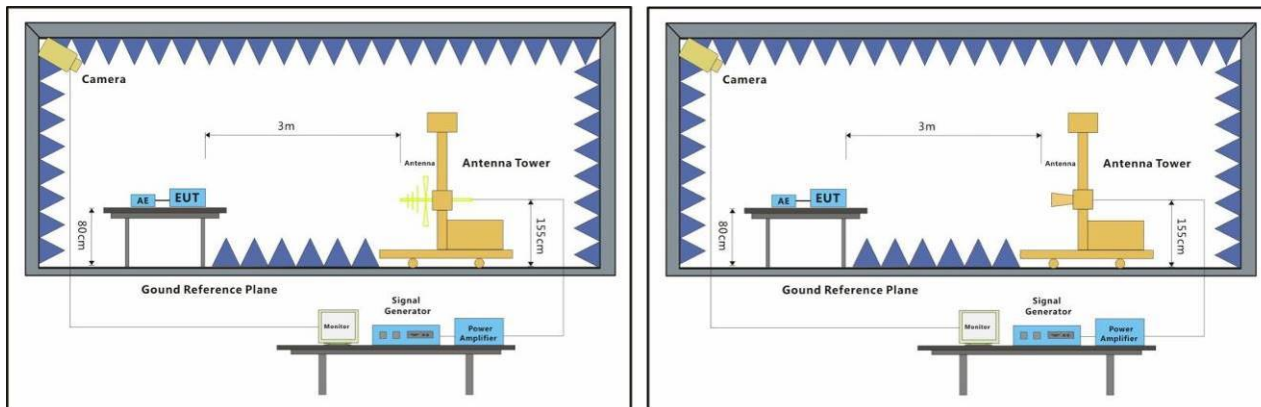
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7.2 Radiated Immunity (80MHz-1GHz,1.4GHz-6GHz)

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN IEC 61000-4-3: 2020
 Test Engineer: Bob Qu

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 24.3 °C

Humidity: 56.3 % 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 measuring mode.
Final test	01	Test the EUT in idle mode.



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7.2.4 Test Condition and Results

Performance Criterion:A

Frequency Range:80MHz to 1GHz, 1.4GHz to 6GHz.

Antenna Polarisation:Vertical and Horizontal

Modulation:1kHz,80% Amp. Mod,1% increment

Test Distance:3m

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	Underside	3s	A
1.4GHz-6GHz	3	Front	3s	A
1.4GHz-6GHz	3	Back	3s	A
1.4GHz-6GHz	3	Left	3s	A
1.4GHz-6GHz	3	Right	3s	A
1.4GHz-6GHz	3	Top	3s	A
1.4GHz-6GHz	3	Underside	3s	A

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



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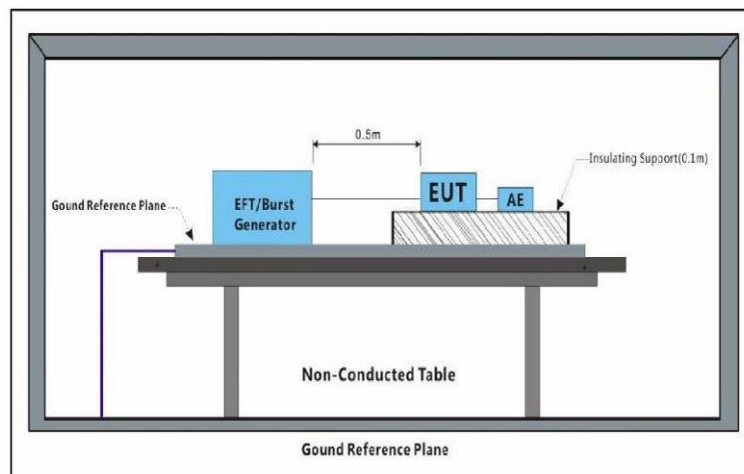
7.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN IEC 61326-1: 2021

Test Method: EN 61000-4-4:2012

Test Engineer: Andy Long

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 23.1 °C

Humidity: 50.2 % RH

Atmospheric Pressure: 1020 mbar

7.3.3 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in measuring mode.
Final test 01	Test the EUT in idle 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: $\pm 1.0\text{kV}$ for equipment

intended to be used in a BASIC or a CONTROLLED ELECTROMAGNETIC ENVIRONMENT;

$\pm 2.0\text{kV}$ for equipment intended

to be used in an INDUSTRIAL ELECTROMAGNETIC ENVIRONMENT.

Polarity:Positive & Negative

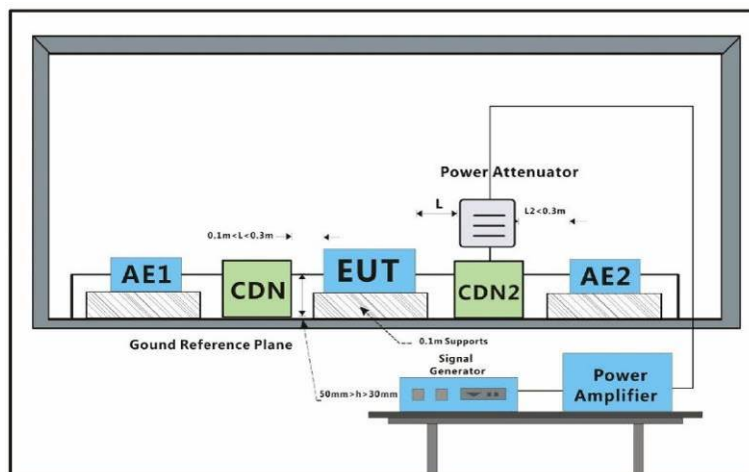
Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	1	+	CDN	A
AC power port	1	-	CDN	A
A: No degradation in the performance of the EUT was observed				



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

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN IEC 61000-4-6: 2023
 Test Engineer: Andy Long

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.1 °C Humidity: 50.2 % RH Atmospheric Pressure: 1020 mbar

7.4.3 Test Mode Description

Pre-scan / Mode	Code	Description
Final test	00	Test the EUT in measuring mode.
Final test	01	Test the EUT in idle mode.

7.4.4 Test Condition and Results

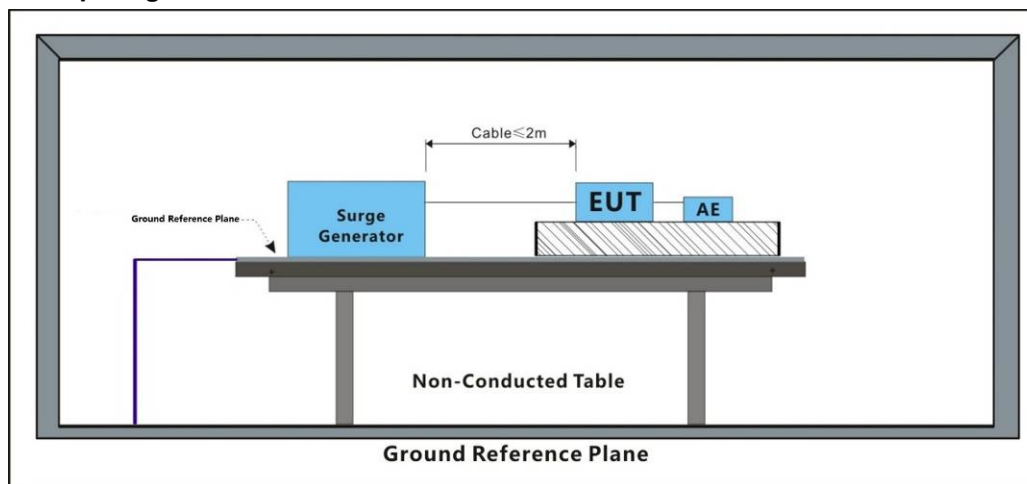
Performance Criterion: A
 Frequency Range: 0.15MHz to 80MHz
 Modulation: 80%, 1kHz Amplitude Modulation
 Step Size: 1%

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3(0.15MHz-80MHz)	CDN	3s	A
A: No degradation in the performance of the EUT was observed				

7.5 Surge at AC Mains Power Port

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN 61000-4-5:2014 +A1:2017
 Test Engineer: Andy Long

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.1 °C Humidity: 50.2 % RH Atmospheric Pressure: 1020 mbar

7.5.3 Test Mode Description

Pre-scan / Mode	Code	Description
Final test	00	Test the EUT in measuring mode.
Final test	01	Test the EUT in idle mode.

7.5.4 Test Condition and Results

Performance Criterion:B

Interval:60s between each surge

Polarity:Positive & Negative

Generator source impedance:2Ω

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

Trigger Mode:Internal

No. of surges:5 positive at 0°,90°,180°,270° 5 negative at 0°,90°,180°,270°.

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5	+	0°	A
L-N	0.5	-	0°	A
L-N	0.5	+	90°	A
L-N	0.5	-	90°	A
L-N	0.5	+	180°	A
L-N	0.5	-	180°	A
L-N	0.5	+	270°	A
L-N	0.5	-	270°	A
L-PE	1	+	0°	A
L-PE	1	-	0°	A
L-PE	1	+	90°	A
L-PE	1	-	90°	A
L-PE	1	+	180°	A
L-PE	1	-	180°	A
L-PE	1	+	270°	A
L-PE	1	-	270°	A
N-PE	1	+	0°	A
N-PE	1	-	0°	A
N-PE	1	+	90°	A
N-PE	1	-	90°	A
N-PE	1	+	180°	A
N-PE	1	-	180°	A

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



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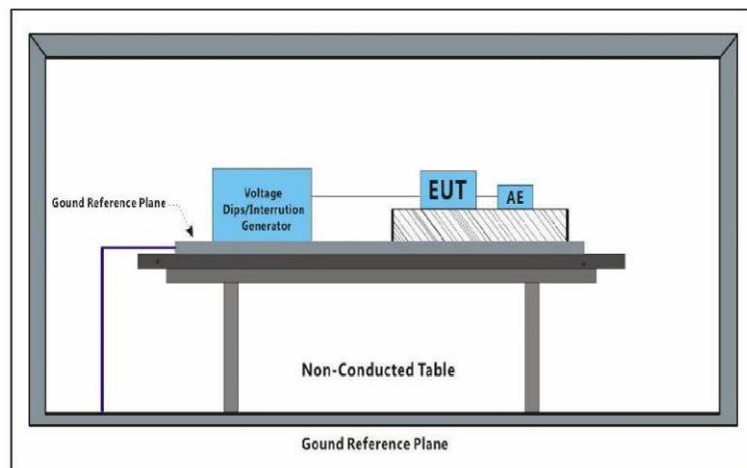
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中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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7.6 Voltage Dips and Interruptions

Test Requirement: EN IEC 61326-1: 2021
 Test Method: EN IEC 61000-4-11: 2020
 Test Engineer: Andy Long

7.6.1 Test Setup Diagram



7.6.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.1 °C Humidity: 50.2 % RH Atmospheric Pressure: 1020 mbar

7.6.3 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in measuring mode.
Final test 01	Test the EUT in idle mode.

7.6.4 Test Condition and Results

Performance Criterion:

For 50Hz:

0% of UT (Supply Voltage) for 1 Cycle:B;

40% of UT for 10 Cycles:C;

70% of UT for 25 Cycles:C;

0% of UT for 250 Cycles:C;

For 60Hz:

0% of UT (Supply Voltage) for 1 Cycle:B;

40% of UT for 12 Cycles:C;

70% of UT for 30 Cycles:C;

0% of UT for 300 Cycles:C;

No. of Dips / Interruptions:3 per Level

Time between dropout:10s

Frequency	Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
50 Hz	0	0°	0.5 Cycle	3	A
50 Hz	0	180°	0.5 Cycle	3	A
50 Hz	0	0°	1 Cycle	3	A
50 Hz	0	180°	1 Cycle	3	A
50 Hz	70	0°	25 Cycles	3	A
50 Hz	70	180°	25 Cycles	3	A
50 Hz	0	0°	250 Cycles	3	C
50 Hz	0	180°	250 Cycles	3	C

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

C: During test, the EUT stop working, after test it could recover to normal manually.



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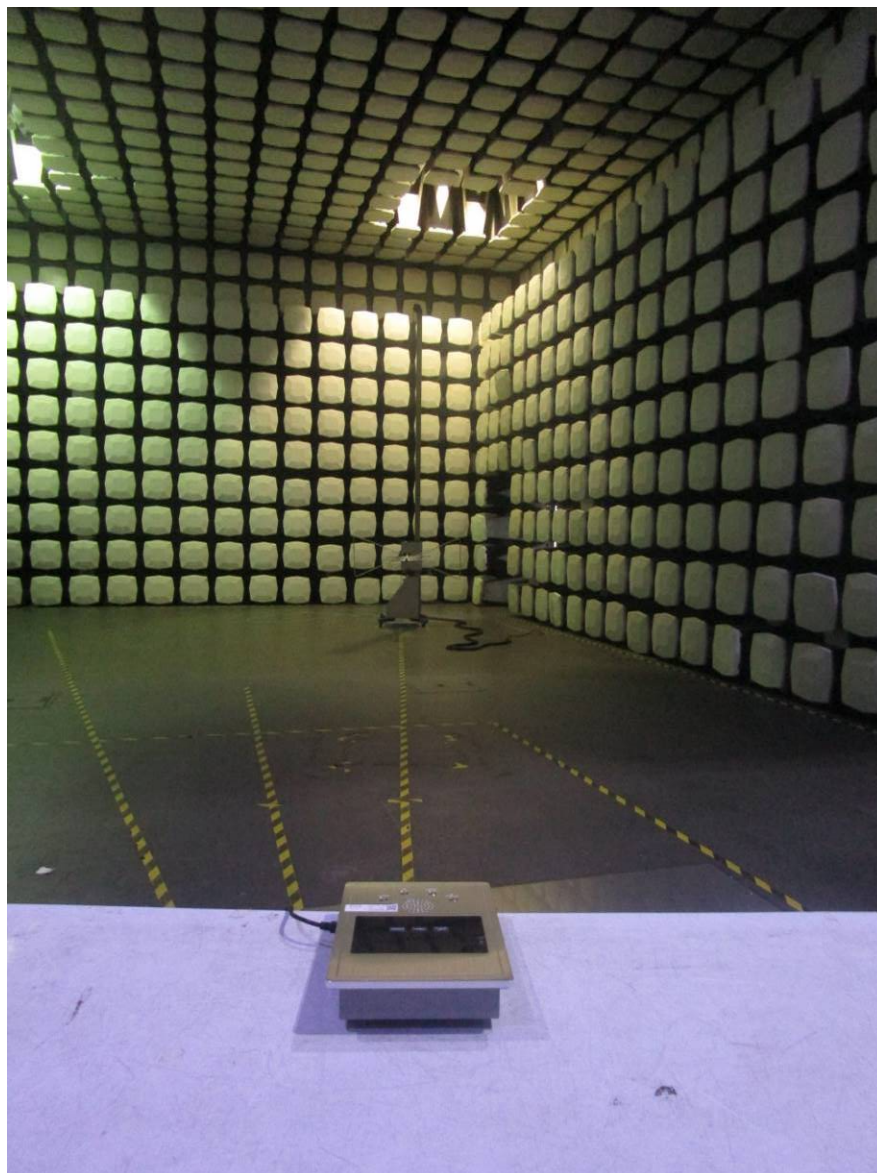
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8 Test Setup Photo

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



Radiated Emission (30MHz-1GHz)



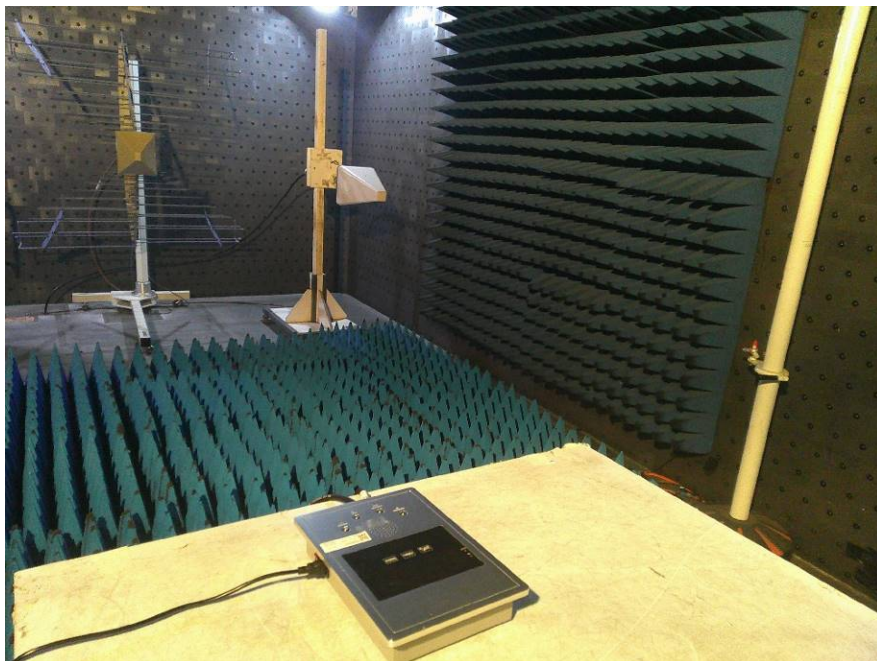
Voltage Fluctuations and Flicker



Electrostatic Discharge



Radiated Immunity (80MHz-1GHz,1.4GHz-6GHz)



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Electrical Fast Transients Burst at AC Mains Power Port



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



Surge at AC Mains Power Port

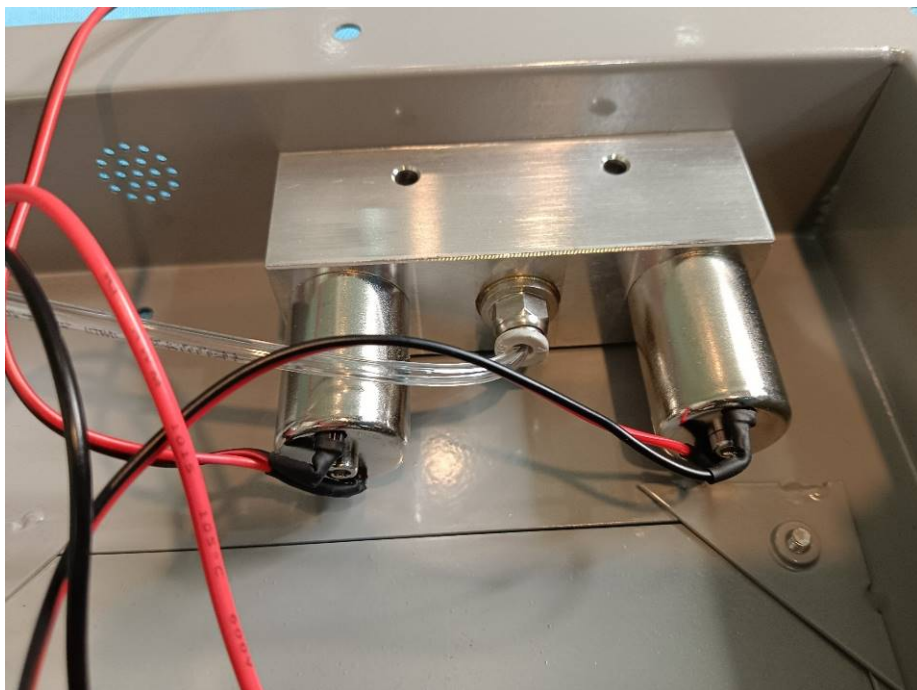
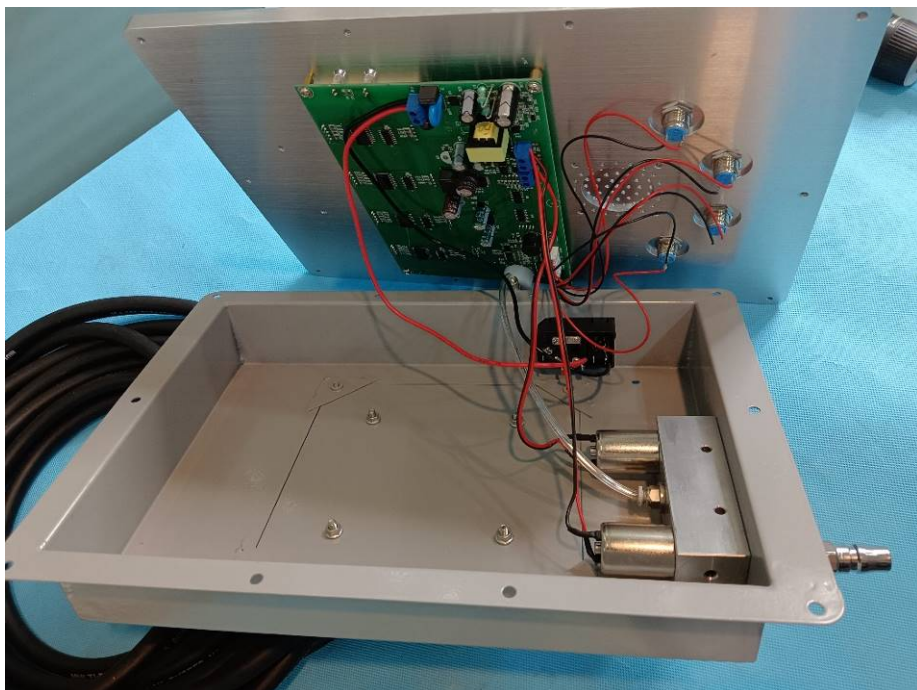


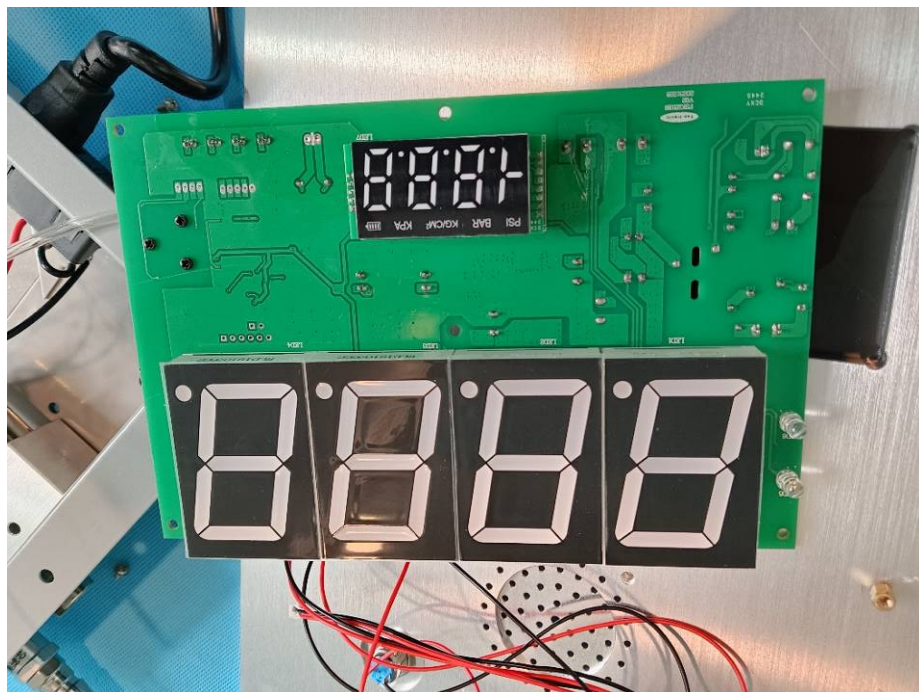
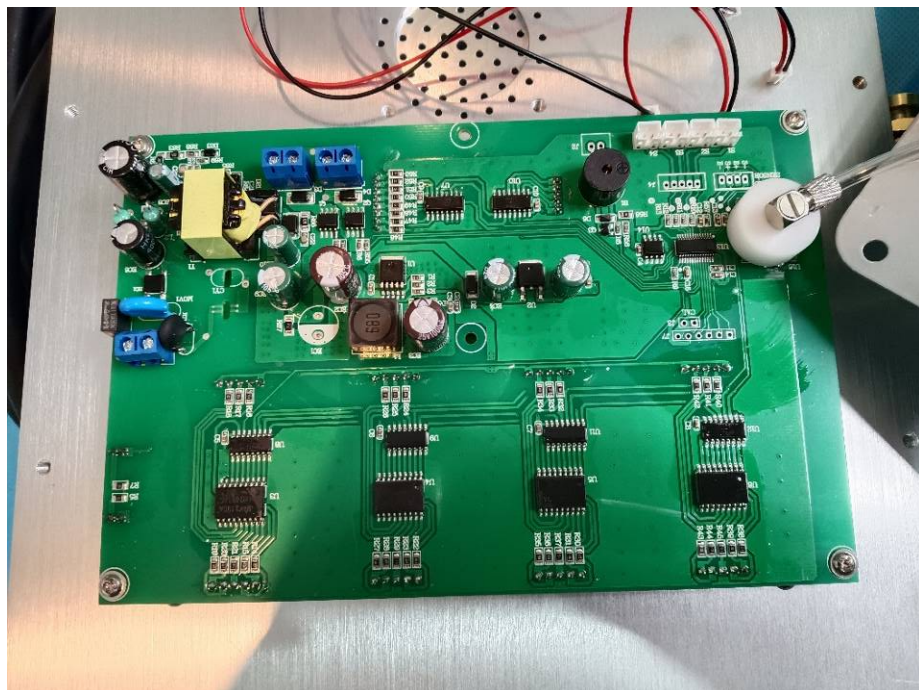
Voltage Dips and Interruptions



9 EUT Constructional Details (EUT Photos)







- End of the Report -