TEST REPORT

Product Name	:	**Three phase Hybrid inverter**
Model Number	:	**Trip-HB-EU 6K, Trip-HB-EU 8K, Trip-HB-EU 10K, Trip-HB-EU 12K, Trip-HB-EU 15K, Trip-HB-EU 20K**

Prepared for	:	Shenzhen Lux Power Technology Co., LTD
Address	:	5th Floor, Building 11, Phase 3 of Yangbei Industrial Park, Huangtian Community, Hangcheng Street, Bao'an District, Shenzhen, China
Prepared by	:	EMTEK (SHENZHEN) CO., LTD.
Address	:	Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China Tel: (0755) 26954280 Fax: (0755) 26954282

Report Number	:	ENS2402180047E00101R
Date of Test	:	March 15, 2024 to April 10, 2024
Date of issue	:	April 10, 2024

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APPENDIX (Photos of the EUT)

TEST REPORT DESCRIPTION

Applicant	:	Shenzhen Lux Power Technology Co., LTD
Manufacturer	:	Shenzhen Lux Power Technology Co., LTD
Trade Mark	:	Luxpowertek
EUT	:	Three phase Hybrid inverter
Model Number	:	Trip-HB-EU 6K, Trip-HB-EU 8K, Trip-HB-EU 10K, Trip-HB-EU 12K, Trip-HB-EU 15K, Trip-HB-EU 20K
Rating	:	AC 400V/50Hz PV: DC 800V/400V BAT: DC 400V

Measurement Procedure Used:

EN 62920:2017+A1:2021
CISPR 11:2015+A1:2016
EN 61000-3-12:2011
EN IEC 61000-3-11:2019
(IEC 61000-4-2:2008, IEC 61000-4-3:2006+A1:2007+A2:2010, IEC 61000-4-4:2012,
IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-11:2004, IEC 61000-4-34:2005+A1:2009)

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (SHENZHEN) CO., LTD.

Date of Test : March 15, 2024 to April 10, 2024

Prepared by : Kangtao Zhang/Editor

Reviewer : Kaimin Guo/Supervisor

Approved & Authorized Signer : Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2402180047E00101R	/	Original Report

1. DESCRIPTION OF STANDARDS AND RESULTS (EUT)

EMISSION				
Description of Test Item		Standard	Limits	Results
Disturbance Voltage at the AC Power Port		EN 62920:2017+A1:2021	Class B	Pass
Disturbance Voltage at the DC Power Port		EN 62920:2017+A1:2021	Class B	Pass
Disturbance Voltage at the Wired Network Port and the Signal and Control Port		EN 62920:2017+A1:2021	Class B	N/A
Radiated emissions		EN 62920:2017+A1:2021	Class B	Pass
Harmonic Current Emissions		EN 61000-3-12:2011	Table 3	Pass
Voltage Fluctuation and Flicker		EN IEC 61000-3-11:2019	--	Pass
IMMUNITY				
Description of Test Item		Basic Standard	Performance Criteria	Results
Electrostatic Discharge	Enclosure ports	IEC 61000-4-2:2008	B	Pass
Continuous RF electromagnetic field disturbances	Enclosure ports	IEC 61000-4-3:2006+ A1:2007+A2:2010	A	Pass
Electrical fast transients/burst	AC mains power ports	IEC61000-4-4:2012	B	Pass
	Wired Network Port and the Signal and Control Port		B	N/A
	DC network power ports		B	Pass
Surges	AC mains power ports	IEC 61000-4-5:2014	B	Pass
	Wired Network Port and the Signal and Control Port		B	N/A
	DC network power ports		B	Pass
Continuous induced RF disturbances	AC mains power ports	IEC 61000-4-6:2013	A	Pass
	Wired Network Port and the Signal and Control Port		A	N/A
	DC network power ports		A	Pass
Voltage dips and interruptions	AC mains power ports	IEC 61000-4-11:2004 IEC 61000-4-34:2005 +A1:2009	B,C	Pass
Note: N/A is an abbreviation for Not Applicable.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	Three phase Hybrid inverter
Model Number	:	Trip-HB-EU 6K, Trip-HB-EU 8K, Trip-HB-EU 10K, Trip-HB-EU 12K, Trip-HB-EU 15K, Trip-HB-EU 20K (Note: These models are identical in circuitry and electrical, mechanical and physical construction; the only difference is the power. We prepare Trip-HB-EU 20K for test.)
Applicant	:	Shenzhen Lux Power Technology Co., LTD
Address	:	5th Floor, Building 11, Phase 3 of Yangbei Industrial Park, Huangtian Community, Hangcheng Street, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Lux Power Technology Co., LTD
Address	:	5th Floor, Building 11, Phase 3 of Yangbei Industrial Park, Huangtian Community, Hangcheng Street, Bao'an District, Shenzhen, China
Factory	:	KAGA(SHENZHEN)ELECTRONICS LIMITED
Address	:	NO.13, Xin Xin Tian Industrial Zone, Xin Sha Road, Sha Jing Street, Baoan district Shenzhen, China
Date of Received	:	March 15, 2024
Date of Test	:	March 15, 2024 to April 10, 2024

2.2. Operating modes

A. On
   1. PV IN & AC On Grid(Highest DC voltage at rated power)
   2. PV IN & AC On Grid(Lowest DC voltage at rated power)
   3. Battery discharging & AC On Grid & AC Back Up
   4. AC Charge Mode

B. Standby

2.3. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Disturbance Voltage at the AC Power Port	AC 400V/50Hz&DC 800V AC 400V/50Hz&DC 400V AC 400V/50Hz	Mode A Mode B	Mode A.4 (AC 400V/50Hz)
Disturbance Voltage at the DC Power Port	DC 800V DC 400V	Mode A.1 Mode A.2	Mode A.1(DC 800V)
Radiated emissions	AC 400V/50Hz&DC 800V AC 400V/50Hz&DC 400V AC 400V/50Hz	Mode A Mode B	Mode A.3 (AC 400V/50Hz&DC 400V)
Harmonic Current Emissions	AC 400V/50Hz	Mode A.1	\
Voltage Fluctuation and Flicker	AC 400V/50Hz	Mode A.1	\
EMS	AC 400V/50Hz&DC 800V AC 400V/50Hz&DC 400V AC 400V/50Hz	Mode A Mode B	\

2.4. Description of Support Device

N/A

2.5. Description of Test Facility

Site Description

EMC Lab. : **Accredited by CNAS**
The Certificate Registration Number is L2291.
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC
Designation Number: CN1204
Test Firm Registration Number: 882943

Accredited by A2LA
The Certificate Number is 4321.01.

Accredited by Industry Canada
The Conformity Assessment Body Identifier is CN0008

Name of Firm : EMTEK (SHENZHEN) CO., LTD.
Site Location : Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2.6. Measurement Uncertainty

Test Item		Uncertainty
Conducted Emission Uncertainty	:	3.16dB(9k~150kHz Conduction 2#) 2.90dB(150k-30MHz Conduction 2#)
Radiated Emission Uncertainty (3m 3# Chamber)	:	3.78dB (30M~1GHz Polarize: H) 4.42dB (30M~1GHz Polarize: V)
Uncertainty for Flicker test	:	0.314%
Uncertainty for Harmonic test	:	3.68%
Uncertainty for C/S Test	:	0.94dB(Using CDN Test) 2.37dB(Using EM Clamp Test)
Uncertainty for R/S Test	:	1.95dB(80MHz-6000MHz)
Uncertainty for test site temperature and humidity	:	0.6℃ 4%

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Disturbance Voltage at the AC Power Port

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	EMI Test Receiver	Rohde & Schwarz	ESCI	101045	May 13, 2023	1 Year
☑	PULSE LIMITER	Rohde & Schwarz	ESH3-Z2	100107	May 13, 2023	1 Year
☑	AMN	Schwarzbeck	NNLK 8129	8129203	May 13, 2023	1 Year

3.2. For Disturbance Voltage at the DC Power Port

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	EMI Test Receiver	Rohde & Schwarz	ESCI	101045	May 13, 2023	1 Year
☑	PULSE LIMITER	Rohde & Schwarz	ESH3-Z2	100107	May 13, 2023	1 Year
☑	V-Network	Rohde & Schwarz	ESH3-Z6	100011	May 11, 2023	1 Year
☑	V-Network	Rohde & Schwarz	ESH3-Z6	100253	May 11, 2023	1 Year
☑	DC LISN	Schwarzbeck	PVDC 8301	00075	May 10, 2023	1Year

3.3. For Radiated Emission Measurement (3m)

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	EMI Test Receiver	Rohde & Schwarz	ESU 26	100154	May 13, 2023	1 Year
☑	Pre-Amplifie	Lunar EM	LNA30M3G-25	J10100000070	May 13, 2023	1 Year
☑	Bilog Antenna	Schwarzbeck	VULB9163	661	June 02, 2023	2 Year

3.4. For Harmonic Current / Flicker Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	45KVA AC Power source	Teseq	NSG 1007-45/45KVA	1305A02873	May 13, 2023	1 Year
☑	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	May 13, 2023	1 Year
☑	Impedance network	Teseq	INA2197/37A	1305A02873	May 13, 2023	1 Year
☑	Impedance network	Teseq	INA 2196/75A	1305A02874	May 13, 2023	1 Year
☐	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	May 13, 2023	1 Year

3.5. For Electrostatic Discharge Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	ESD Tester	EMTEST	Dito	P2220263883	Oct. 20, 2023	1 Year

3.6. For Continuous RF Electromagnetic Field Disturbances Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Power Amplifier	MILMEGA	AS0102-55	1018770	May 13, 2023	1 Year
☑	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 13, 2023	1 Year
☑	Log.-Per. Antenna	SCHWARZBECK	STLP 9129-7/16	3050	N/A	N/A
☑	Signal Generator	Agilent	N5181A	MY50145187	May 13, 2023	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 13, 2023	1 Year
☑	Field Strength Meter	DARE	RSS1006A	10I00037SNO 22	May 19, 2023	1 Year
☑	Multi-function interface system	DARE	CTR1009B	12I00250SNO 72	N/A	N/A
☑	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A
☑	Power Amplifier	MILMEGA	AS1860-50	1059346	May 13, 2023	1 Year
☑	Power Amplifier	Vectawave	VBA 1000-600C	133627	Oct. 23, 2023	1 Year
☑	Directional Coupler	BONN	BDC 0810-50/1500	2229689	Oct. 23, 2023	1 Year

3.7. For Electrical Fast Transient / Burst Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Burst Tester	Partner	IMU-MGS	109938-1635	Oct. 23, 2023	1Year
☑	Coupling Clamp	HAEFELY	IP-4A	147147	May 11, 2023	1 Year
☑	Three phase CDN	Teseq	CDN 163	202	May 13, 2023	1 Year

3.8. For Surges Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Controller	HAEFELY	Psurge 8000	174031	May 10, 2023	1 Year
☑	Impulse Module	HAEFELY	PIM 100	174124	May 10, 2023	1 Year
☑	Coupling Decoupling	HAEFELY	PCD 130	172181	May 10, 2023	1 Year
☑	Coupling Module	HAEFELY	PCD122	174354	May 10, 2023	1 Year
☑	Impulse Module	HAEFELY	PIM 120	174435	May 10, 2023	1 Year
☑	Coupling Module	HAEFELY	PCD 126A	174387	May 10, 2023	1 Year
☑	Impulse Module	HAEFELY	PIM 110	174391	May 10, 2023	1 Year
☑	Impulse Module	HAEFELY	PIM 150	178707	Aug. 26, 2023	1 Year
☑	Impulse Module	PMI	PCDN8	190422	May 10, 2023	1 Year

3.9. For Continuous Induced RF Disturbances Immunity

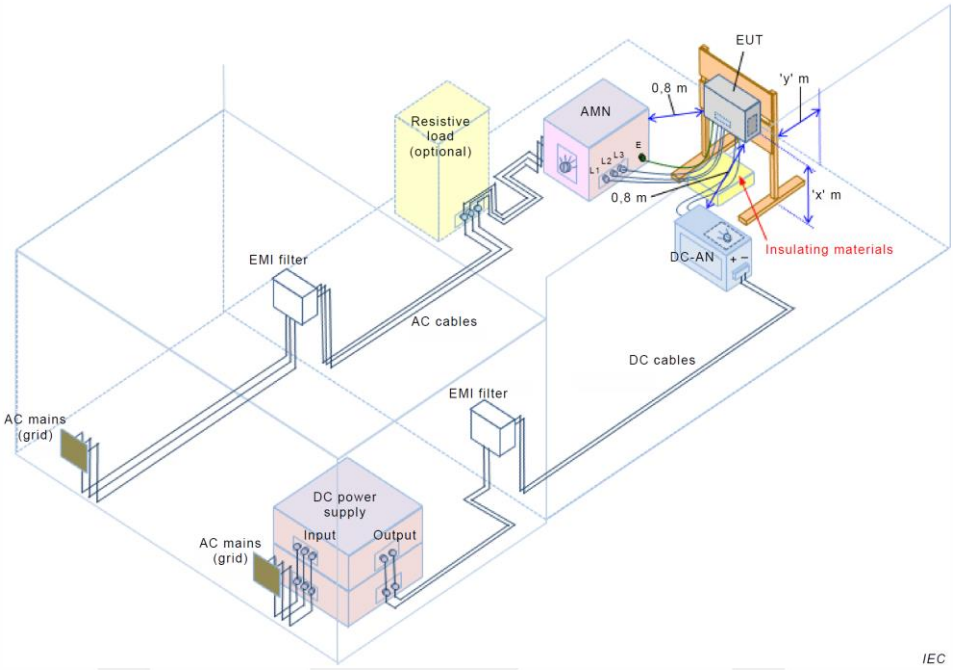
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Continuous Wave Simulator	EMTEST	CWS500C	0900-12	May 11, 2023	1 Year
☑	EM Injection Clamp	EMTEST	F-2031-23MM	368	May 10, 2023	1 Year
☑	Attenuator	EMTEST	100W 6dB DC-3G	/	May 11, 2023	1 Year
☑	Signal Generator	R&S	SMB100A	103041	May 11, 2023	1 Year
☑	Three phase CDN	TESEQ	CDN M532S	33799	May 10, 2023	1 Year
☑	Power meter	AGILENT	E4418B	MY45102886	May 11, 2023	1 Year
☑	Directional coupler	SKET	DC_0110000 M-100W	SK2018080301	May 11, 2023	1 Year

3.10. For Voltage Dips and Interruptions Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	45KVA AC Power source	Teseq	NSG 1007-45/45KVA	1305A02873	May 13, 2023	1 Year
☐	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	May 13, 2023	1 Year
☐	Impedance network	Teseq	INA2197/37A	1305A02873	May 13, 2023	1 Year
☐	Impedance network	Teseq	INA 2196/75A	1305A02874	May 13, 2023	1 Year
☑	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	May 13, 2023	1 Year

4. DISTURBANCE VOLTAGE AT THE AC POWER PORT

4.1. Block Diagram of Test Setup



4.2. Limits

EN 62920:2017+A1:2021

CISPR 11:2015+A1:2016

Class B

Frequency range MHz	Quasi-peak dB(μV)	Aversge dB(μV)
0.15 to 0.50	66 Decreasing linearly with logarithm of frequency to 56	56 Decreasing linearly with logarithm of frequency to 56
0.50 to 5	56	46
5 to 30	60	50
At the transition frequency, the more stringent limit shall apply.		

4.3. Test Procedure

The EUT was placed on an insulating support 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a artificial mains network (AMN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The AMN provides 50 ohm coupling impedance for the measuring instrument.

The CISPR states that the AMN with 50 ohm and 50 microhenry should be used.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

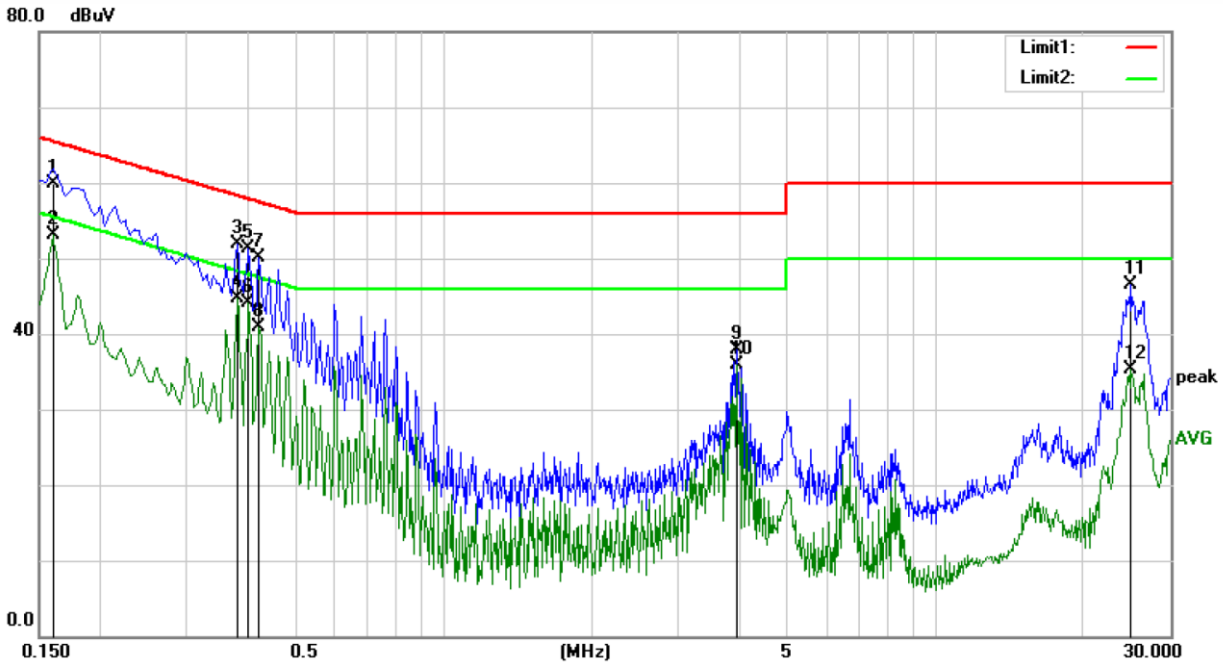
Test results were obtained from the following equation:
Emission Level (dBμV) = AMN Factor (dB) + Cable Loss (dB) + Reading (dBμV)
Margin (dB) = Emission Level (dBμV) - Limit (dBμV)

4.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.

Temperature	:	25.1°C
Humidity	:	45%
Atmospheric Pressure	:	101kpa
Test Engineer	:	Jie Li
Test Date	:	2024-03-19



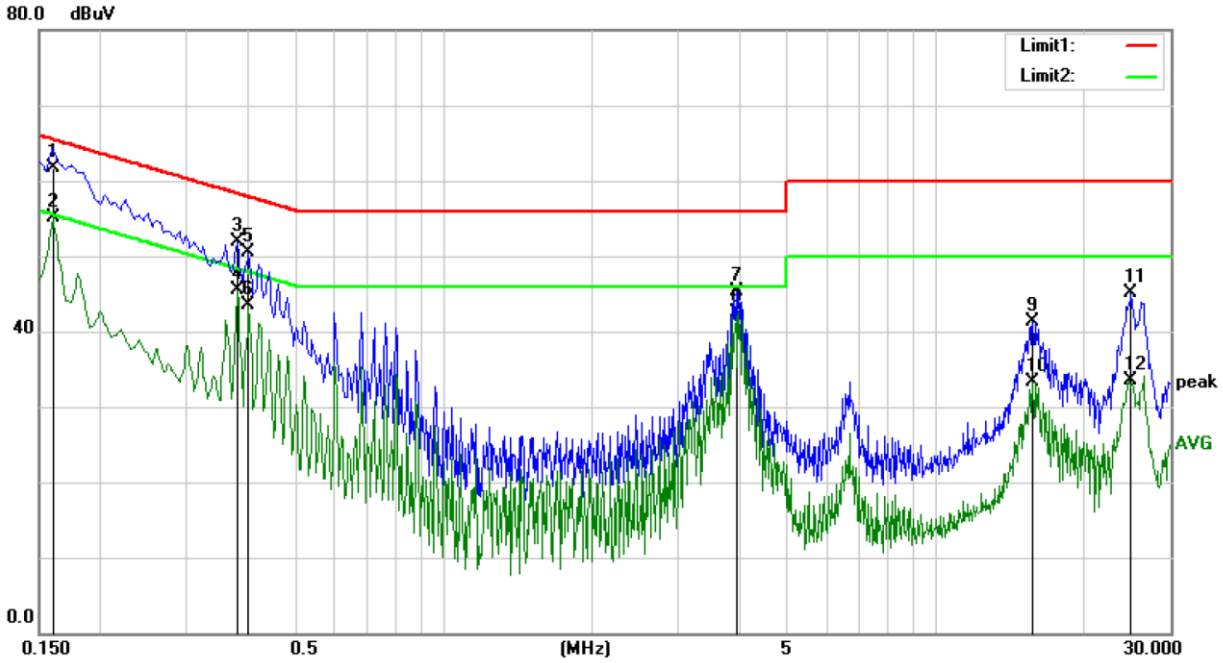
Site Conduction #2 Phase: *L1* Temperature: 25.1

Limit: (CE)EN 62920 Class B_QP Power: AC 400V/50Hz Humidity: 45 %

Mode:AC Charge Mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	49.76	10.14	59.90	65.46	-5.56	QP	
2	*	0.1600	42.97	10.14	53.11	55.46	-2.35	AVG	
3		0.3800	41.81	10.09	51.90	58.28	-6.38	QP	
4		0.3800	34.61	10.09	44.70	48.28	-3.58	AVG	
5		0.4000	41.16	10.09	51.25	57.85	-6.60	QP	
6		0.4000	33.98	10.09	44.07	47.85	-3.78	AVG	
7		0.4200	40.06	10.11	50.17	57.45	-7.28	QP	
8		0.4200	30.71	10.11	40.82	47.45	-6.63	AVG	
9		3.9400	27.57	10.27	37.84	56.00	-18.16	QP	
10		3.9400	25.59	10.27	35.86	46.00	-10.14	AVG	
11		24.9800	36.21	10.37	46.58	60.00	-13.42	QP	
12		24.9800	24.96	10.37	35.33	50.00	-14.67	AVG	



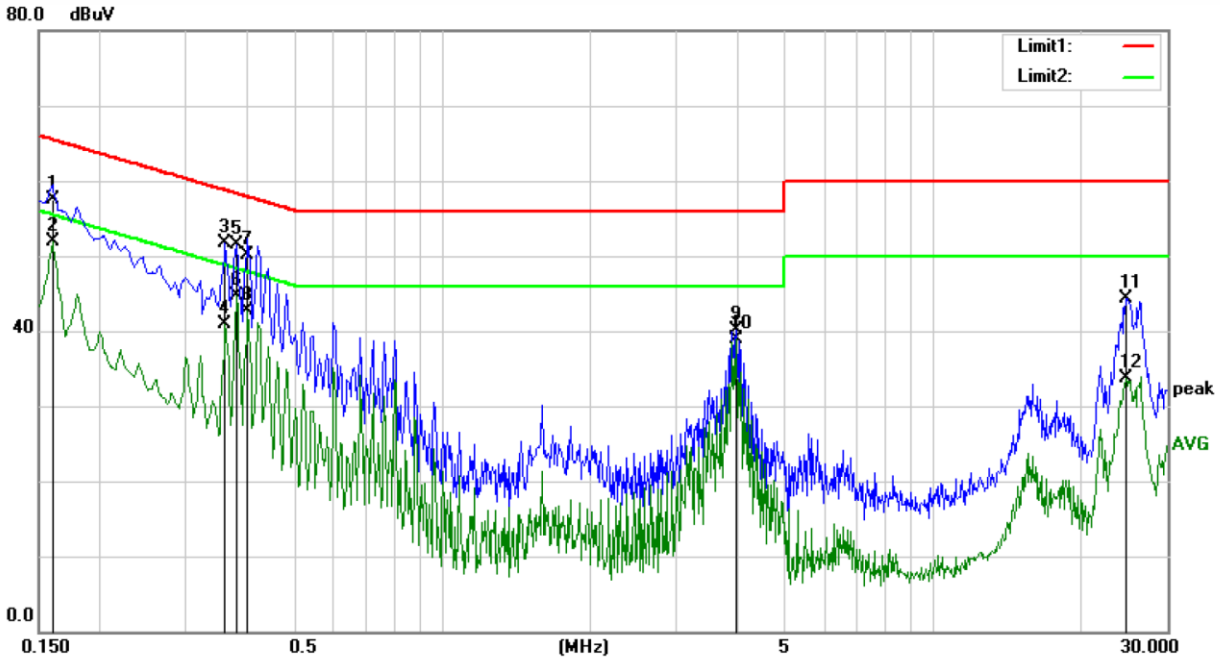
Site Conduction #2 Phase: L2 Temperature: 25.1

Limit: (CE)EN 62920 Class B_QP Power: AC 400V/50Hz Humidity: 45 %

Mode:AC Charge Mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	51.56	10.14	61.70	65.46	-3.76	QP	
2	*	0.1600	45.01	10.14	55.15	55.46	-0.31	AVG	
3		0.3800	41.75	10.09	51.84	58.28	-6.44	QP	
4		0.3800	35.32	10.09	45.41	48.28	-2.87	AVG	
5		0.4000	40.33	10.09	50.42	57.85	-7.43	QP	
6		0.4000	33.47	10.09	43.56	47.85	-4.29	AVG	
7		3.9400	35.12	10.27	45.39	56.00	-10.61	QP	
8		3.9400	32.15	10.27	42.42	46.00	-3.58	AVG	
9		15.7800	30.84	10.48	41.32	60.00	-18.68	QP	
10		15.7800	22.88	10.48	33.36	50.00	-16.64	AVG	
11		24.9800	34.74	10.37	45.11	60.00	-14.89	QP	
12		24.9800	23.06	10.37	33.43	50.00	-16.57	AVG	



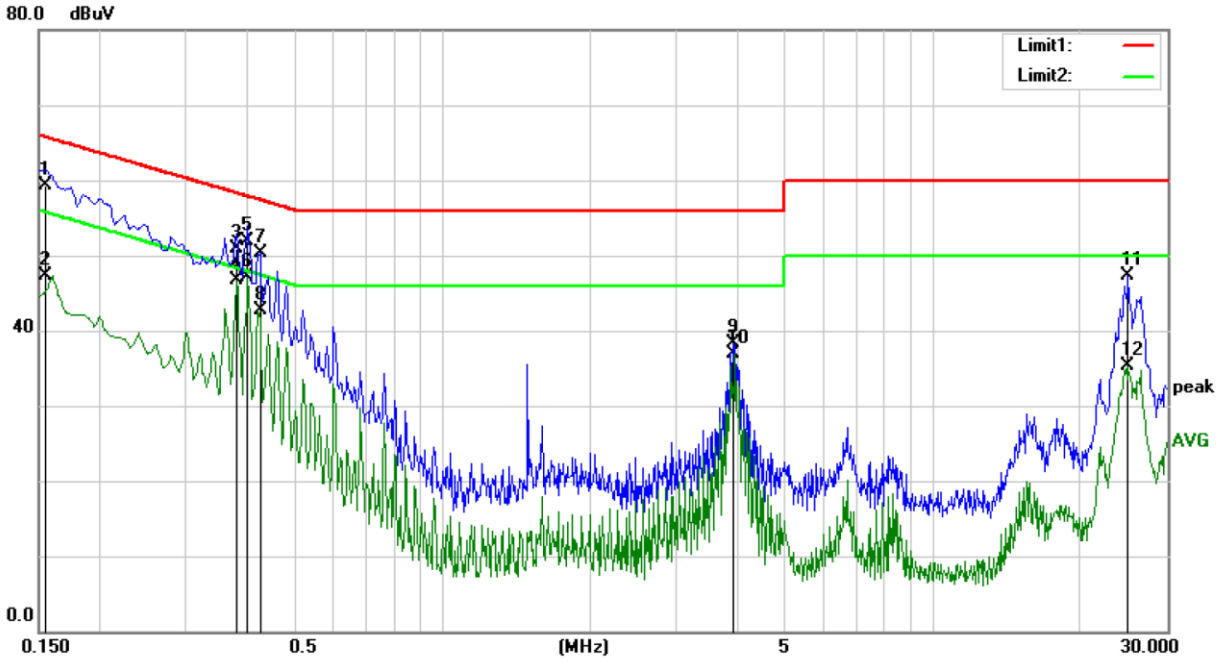
Site Conduction #2 Phase: *L3* Temperature: 25.1

Limit: (CE)EN 62920 Class B_QP Power: AC 400V/50Hz Humidity: 45 %

Mode:AC Charge Mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	47.36	10.14	57.50	65.46	-7.96	QP	
2	*	0.1600	41.84	10.14	51.98	55.46	-3.48	AVG	
3		0.3600	41.52	10.10	51.62	58.73	-7.11	QP	
4		0.3600	30.87	10.10	40.97	48.73	-7.76	AVG	
5		0.3800	41.35	10.09	51.44	58.28	-6.84	QP	
6		0.3800	34.57	10.09	44.66	48.28	-3.62	AVG	
7		0.4000	40.11	10.09	50.20	57.85	-7.65	QP	
8		0.4000	32.52	10.09	42.61	47.85	-5.24	AVG	
9		3.9800	29.82	10.27	40.09	56.00	-15.91	QP	
10		3.9800	28.70	10.27	38.97	46.00	-7.03	AVG	
11		24.7300	33.87	10.37	44.24	60.00	-15.76	QP	
12		24.7300	23.35	10.37	33.72	50.00	-16.28	AVG	



Site Conduction #2 Phase: N Temperature: 25.1

Limit: (CE)EN 62920 Class B_QP Power: AC 400V/50Hz Humidity: 45 %

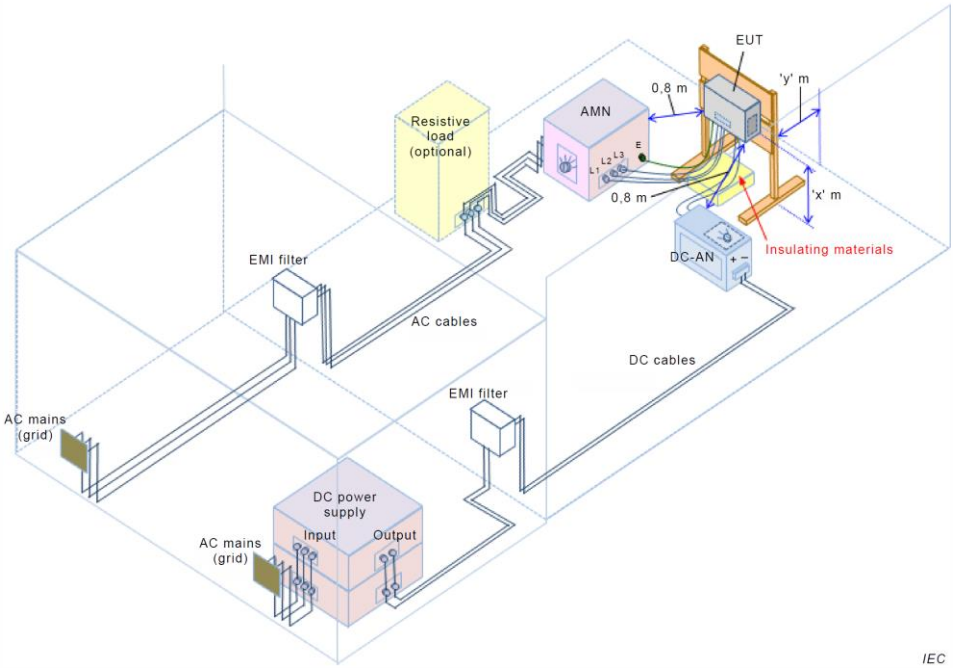
Mode:AC Charge Mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	49.25	10.15	59.40	65.73	-6.33	QP	
2		0.1550	37.12	10.15	47.27	55.73	-8.46	AVG	
3		0.3800	40.81	10.09	50.90	58.28	-7.38	QP	
4		0.3800	36.68	10.09	46.77	48.28	-1.51	AVG	
5		0.4000	41.81	10.09	51.90	57.85	-5.95	QP	
6	*	0.4000	36.96	10.09	47.05	47.85	-0.80	AVG	
7		0.4250	40.16	10.11	50.27	57.35	-7.08	QP	
8		0.4250	32.60	10.11	42.71	47.35	-4.64	AVG	
9		3.9200	28.00	10.27	38.27	56.00	-17.73	QP	
10		3.9200	26.58	10.27	36.85	46.00	-9.15	AVG	
11		24.9800	36.90	10.37	47.27	60.00	-12.73	QP	
12		24.9800	24.94	10.37	35.31	50.00	-14.69	AVG	

5. DISTURBANCE VOLTAGE AT THE DC POWER PORT

5.1. Block Diagram of Test Setup



5.2. Limits

EN 62920:2017+A1:2021, Class B

Frequency range MHz	Quasi-peak dB(μV)	Aversge dB(μV)
0.15 to 0.50	84 Decreasing linearly with logarithm of frequency to 74	74 Decreasing linearly with logarithm of frequency to 64
0.50 to 30	74	64
The limits in this table may be subject to change in the next edition of this document when further experience has been gathered and investigations in modelling are conclude.		

5.3. Test Procedure

The EUT was placed on an insulating support 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals

and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the through a DC artificial network (DC-AN). Where the DC cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The DC-AN provides 150 ohm coupling impedance for the measuring instrument.

Both sides of DC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

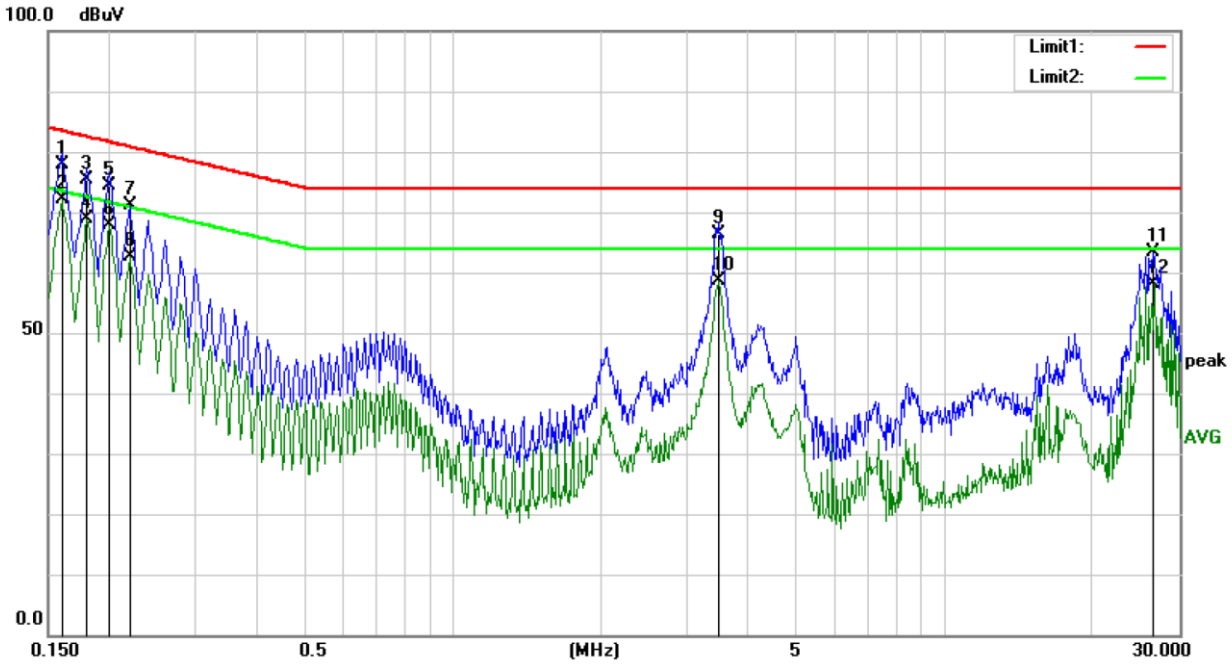
Test results were obtained from the following equation:
Emission Level (dBµV) = AMN Factor (dB) + Cable Loss (dB) + Reading (dBµV)
Margin (dB) = Emission Level (dBµV) - Limit (dBµV)

5.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.

Temperature	:	25.1 °C
Humidity	:	45%
Atmospheric Pressure	:	101kpa
Test Engineer	:	Jie Li
Test Date	:	2024-03-19



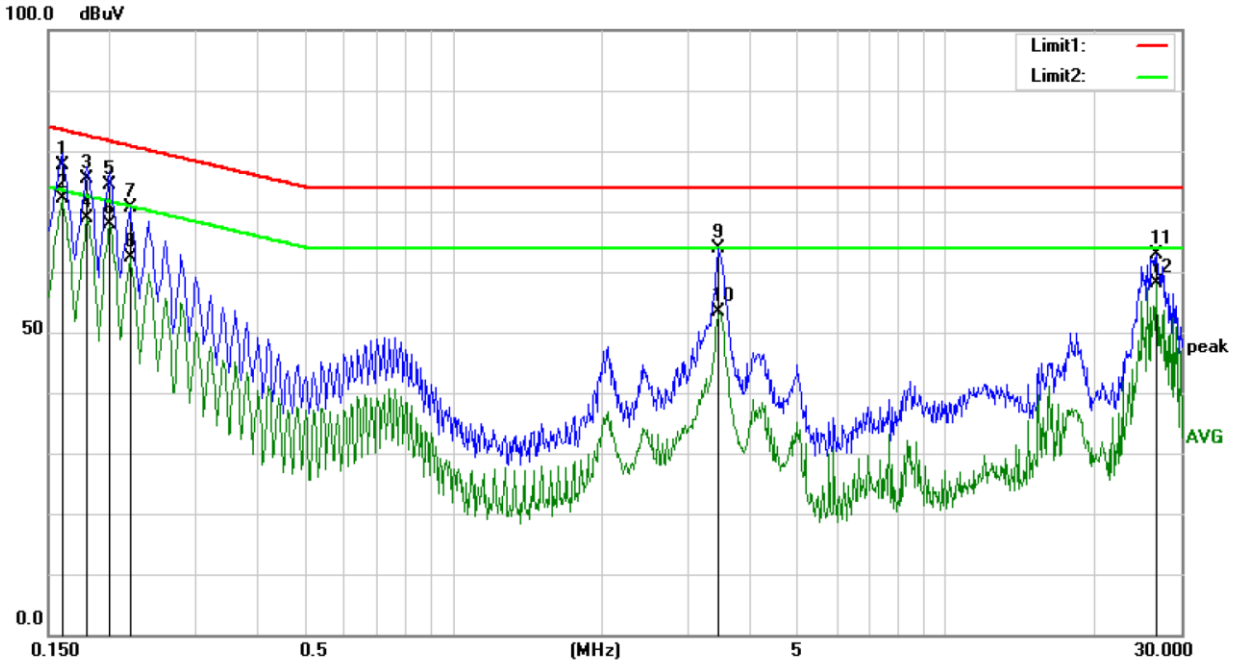
Site Conduction #2 Phase: + Temperature: 25.1

Limit: (CE)EN 62920 Class B_DC PORT_QP Power: DC 800V Humidity: 45 %

Mode: PV IN&AC ON Grid（Highest DC voltage at rated power)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	57.40	20.40	77.80	83.46	-5.66	QP	
2	*	0.1600	51.62	20.40	72.02	73.46	-1.44	AVG	
3		0.1800	55.03	20.37	75.40	82.49	-7.09	QP	
4		0.1800	48.51	20.37	68.88	72.49	-3.61	AVG	
5		0.2000	54.22	20.28	74.50	81.61	-7.11	QP	
6		0.2000	47.52	20.28	67.80	71.61	-3.81	AVG	
7		0.2200	50.91	20.24	71.15	80.82	-9.67	QP	
8		0.2200	42.46	20.24	62.70	70.82	-8.12	AVG	
9		3.4550	45.81	20.59	66.40	74.00	-7.60	QP	
10		3.4550	38.11	20.59	58.70	64.00	-5.30	AVG	
11		26.4800	43.44	19.95	63.39	74.00	-10.61	QP	
12		26.4800	38.23	19.95	58.18	64.00	-5.82	AVG	



Site Conduction #2 Phase: - Temperature: 25.1

Limit: (CE)EN 62920 Class B_DC PORT_QP Power: DC 800V Humidity: 45 %

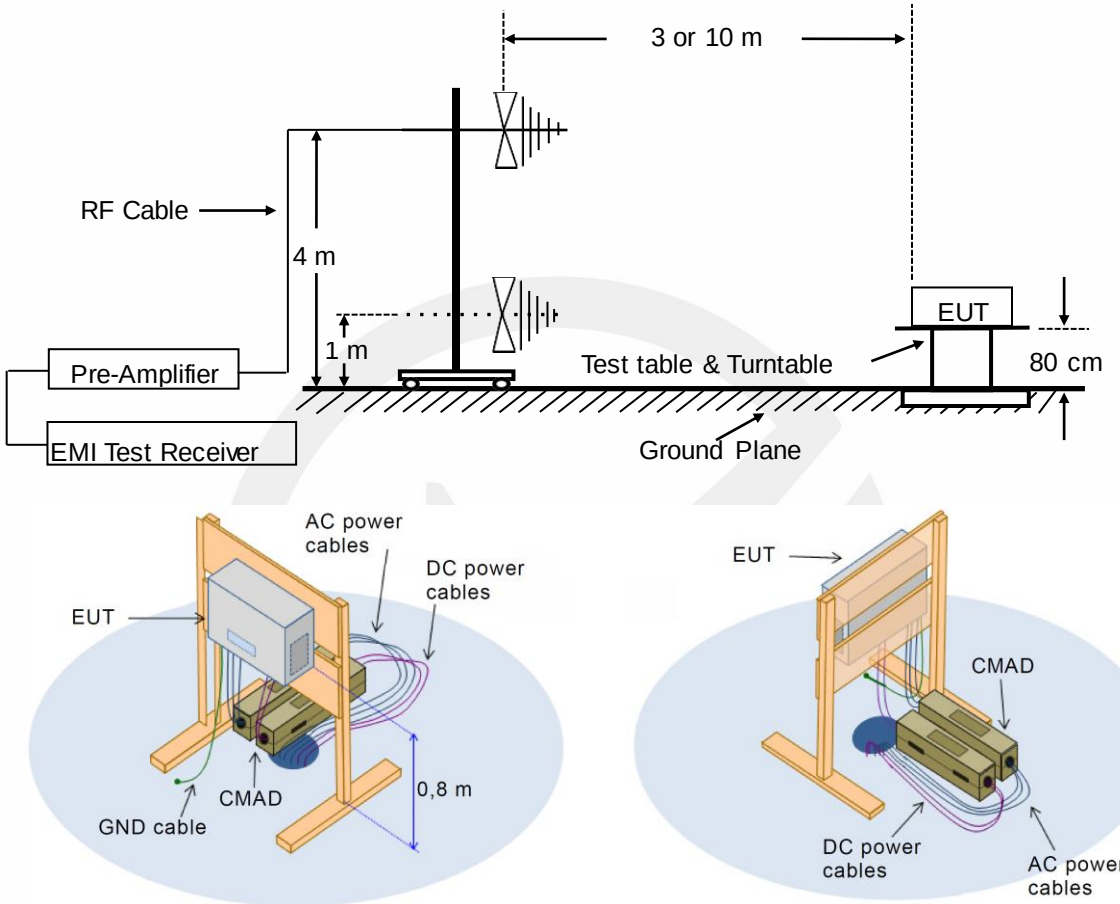
Mode: PV IN&AC ON Grid（Highest DC voltage at rated power)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1600	57.30	20.40	77.70	83.46	-5.76	QP	
2	*	0.1600	51.63	20.40	72.03	73.46	-1.43	AVG	
3		0.1800	54.93	20.37	75.30	82.49	-7.19	QP	
4		0.1800	48.56	20.37	68.93	72.49	-3.56	AVG	
5		0.2000	54.22	20.28	74.50	81.61	-7.11	QP	
6		0.2000	47.65	20.28	67.93	71.61	-3.68	AVG	
7		0.2200	50.51	20.24	70.75	80.82	-10.07	QP	
8		0.2200	42.13	20.24	62.37	70.82	-8.45	AVG	
9		3.4450	43.20	20.59	63.79	74.00	-10.21	QP	
10		3.4450	32.74	20.59	53.33	64.00	-10.67	AVG	
11		26.7300	43.04	19.96	63.00	74.00	-11.00	QP	
12		26.7300	38.05	19.96	58.01	64.00	-5.99	AVG	

6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup



6.2. Radiated Limit

EN 62920:2017+A1:2021
CISPR 11:2015+A1:2016
Class B

Frequency range MHz	10 m measuring distance	3 m measuring distance [a]
	Quasi-peak dB(μV/m)	Quasi-peak dB(μV/m)
30 to 230 230 to 1000	30 37	40 47
On a test site, class B equipment can be measuring at a nominal distance of 3 m or 10 m. At the transition frequency, the more stringent limit shall apply.		
[a] The 3 m separation distance applies only to small equipment meeting the size criterion defined in 3.16.		

6.3. Test Procedure

The EUT was placed on an insulating support whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters (or 10 meters) away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

Test results were obtained from the following equation:
Emission level (dBμV/m) = Antenna Factor -Amp Factor +Cable Loss + Reading
Margin (dB) = Emission Level (dBμV/m) - Limit (dBμV/m)

6.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.

Temperature	:	23.7°C
Humidity	:	59%
Atmospheric Pressure	:	101kpa
Test Engineer	:	Jack Chen
Test Date	:	2024-03-15

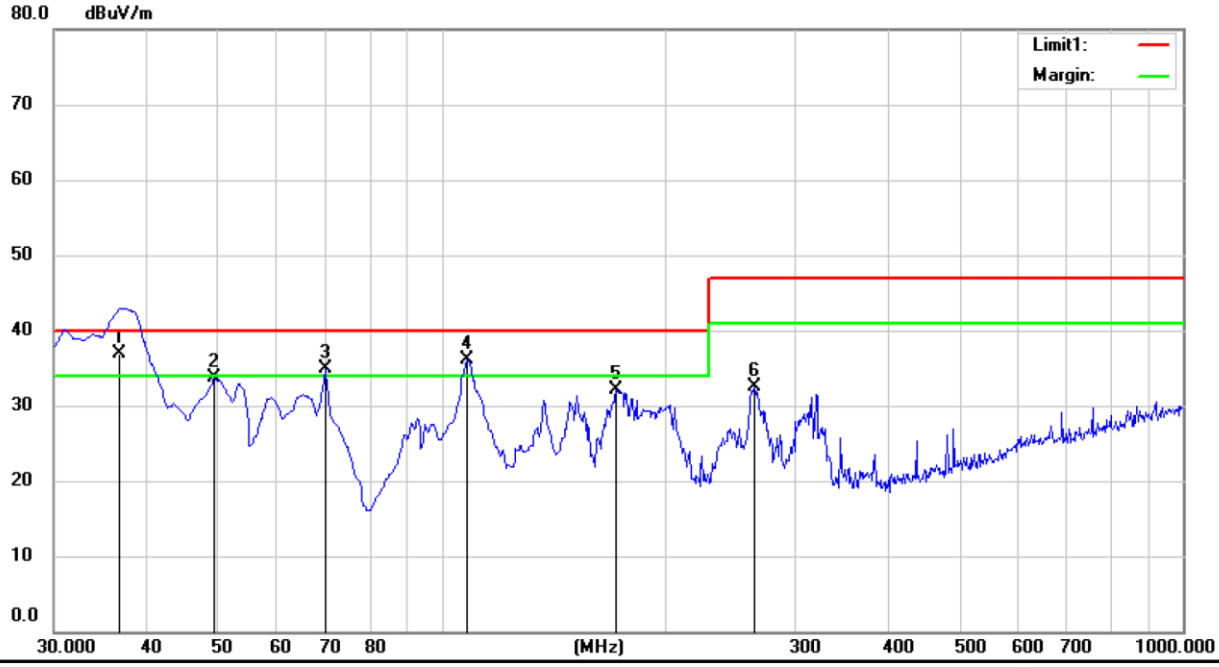
Site 3m Chamber #3 Polarization: *Horizontal* Temperature: 25.7 C

Limit: (RE)EN62920 class B Power: AC 400V/50Hz&DC 400V Humidity: 55 %

Mode:Battery discharge&AC On Grid&AC Back UP

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.8800	48.33	-18.27	30.06	40.00	-9.94	QP			
2		69.7700	48.65	-21.01	27.64	40.00	-12.36	QP			
3		106.6300	42.54	-16.28	26.26	40.00	-13.74	QP			
4	*	175.5000	53.60	-18.60	35.00	40.00	-5.00	QP			
5		264.7400	48.24	-14.86	33.38	47.00	-13.62	QP			
6		305.4800	45.34	-14.06	31.28	47.00	-15.72	QP			



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 25.7 C

Limit: (RE)EN62920 class B Power: AC 400V/50Hz&DC 400V Humidity: 55 %

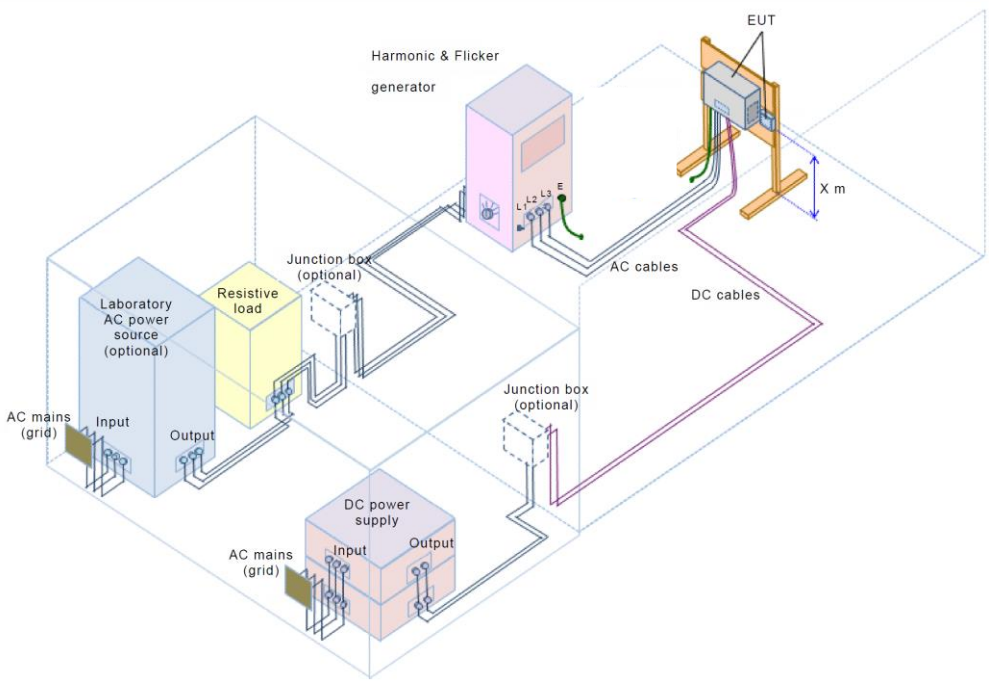
Mode: Battery discharge&AC On Grid&AC Back UP

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	36.7900	55.01	-18.11	36.90	40.00	-3.10	QP			
2		49.4000	50.96	-17.32	33.64	40.00	-6.36	QP			
3	!	69.7700	55.97	-21.01	34.96	40.00	-5.04	QP			
4	!	108.5700	52.34	-16.21	36.13	40.00	-3.87	QP			
5		172.5900	50.87	-18.77	32.10	40.00	-7.90	QP			
6		264.7400	47.28	-14.86	32.42	47.00	-14.58	QP			

7. HARMONIC CURRENT EMISSION MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Standard Limits

EN 61000-3-12

Harmonic current emissions evaluate the potential for the EUT to cause distortion on the AC power lines. It is applicable to electrical and electronic equipment having an input current >16 A and ≤75 A per phase, and intended to be connected to public low-voltage distribution systems.

Table 3 – Current emission limits for balanced three-phase equipment

Minimum R_{sce}	Admissible individual harmonic current I_h/I_{ref} [a] %				Admissible harmonic parameters %	
	I_5	I_7	I_{11}	I_{13}	THC/I_{ref}	$PWHC/I_{ref}$
33	10,7	7,2	3,1	2	13	22
66	14	9	5	3	16	25
120	19	12	7	4	22	28
250	31	20	12	7	37	38
≥350	40	25	15	10	48	46
The relative values of even harmonics up to order 12 shall not exceed 16/h %. Even harmonics above order 12 are taken into account in THC and $PWHC$ in the same way as odd order harmonics. Linear interpolation between successive R_{sce} values is permitted.						
[a] I_{ref} = reference current; I_h = harmonic current component.						

7.3. Test Results

PASS.

Please see the attached page.

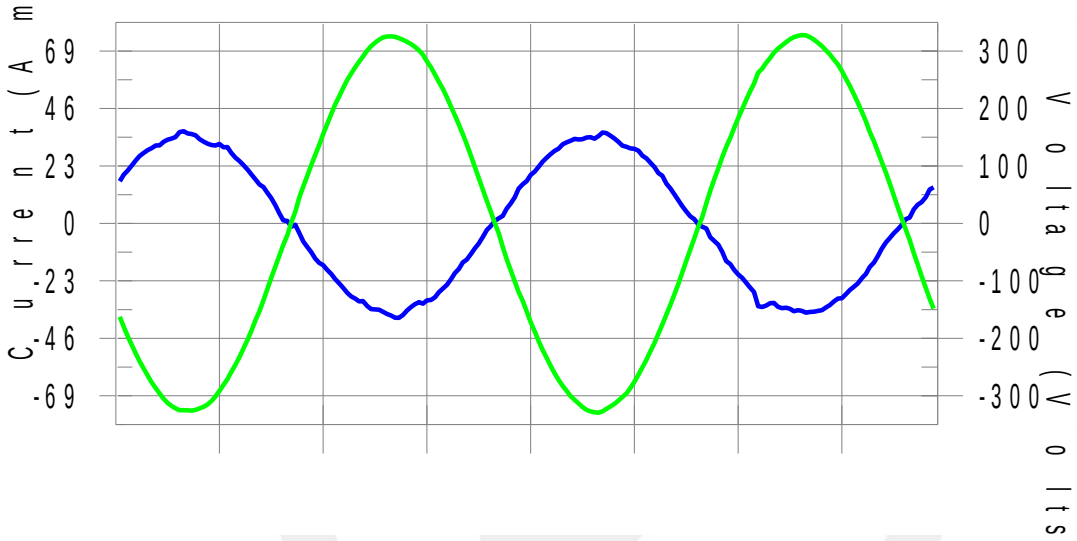
Temperature	:	22.1 °C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	PV IN & AC On Grid(Highest DC voltage at rated power)

Harmonics – Per EN/IEC61000-3-12, Ed. 2.0(Phase A-Run time)

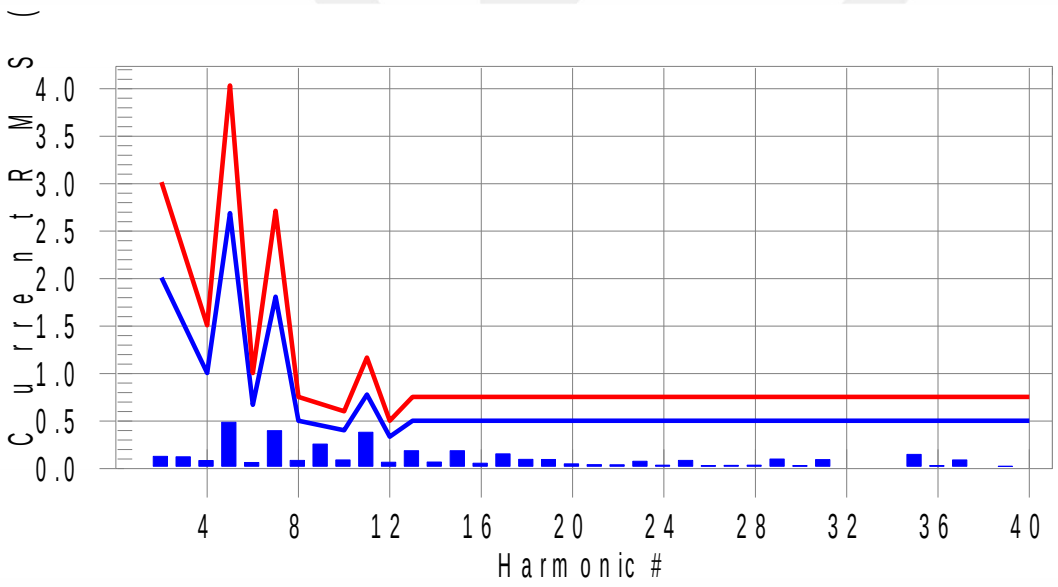
EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: Table:3, Rsce=33, Inter-Harm,) **Test Margin: 100**
Test date: 2024/04/03 **Start time: 10:49:34** **End time: 10:52:34**
Test duration (min): 2.5 **Data file name: CTSMXH_H-000586.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class 3 limit line **European Limits**



Test result: Pass **Worst harmonics H11-34.6% of 150% limit, H11-49% of 100% limit.**

Current Test Result Summary (Phase A-Run time)

EUT: Three phase Hybrid inverter — Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) — Test Margin: 100
Test date: 2024/04/03 — Start time: 10:49:34 — End time: 10:52:34
Test duration (min): 2.5 — Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass — Measured Iref: 25.137(Amps) — Source: Normal
THC/Iref (%): 3.1 — Limit (%): 13.0 — PWHC/Iref (%): 0.0 — PWHC Limit(%): 22.0

Highest parameter values during test:

V_RMS (Volts):	231.07	Frequency (Hz):	50.00
I_Peak (Amps):	40.429	I_RMS (Amps):	25.155
I_Fund (Amps):	25.117(avg)	Crest Factor:	1.607
Power (Watts):	-5819	Power Factor:	-0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.128	2.011	6.4	0.139	3.016	4.6	Pass
3	0.123	N/A	N/A	0.134	N/A	N/A	N/A
4	0.084	1.005	8.3	0.093	1.508	6.1	Pass
5	0.488	2.690	18.2	0.506	4.034	12.5	Pass
6	0.064	0.670	9.5	0.074	1.005	7.3	Pass
7	0.399	1.810	22.1	0.415	2.715	15.3	Pass
8	0.086	0.503	17.2	0.115	0.754	15.3	Pass
9	0.259	N/A	N/A	0.328	N/A	N/A	N/A
10	0.090	0.402	22.4	0.101	0.603	16.7	Pass
11	0.382	0.779	49.0	0.404	1.169	34.6	Pass
12	0.066	0.335	19.6	0.077	0.503	15.2	Pass
13	0.186	0.503	36.9	0.196	0.754	26.0	Pass
14	0.068	N/A	N/A	0.091	N/A	N/A	N/A
15	0.186	N/A	N/A	0.195	N/A	N/A	N/A
16	0.056	N/A	N/A	0.064	N/A	N/A	N/A
17	0.153	N/A	N/A	0.167	N/A	N/A	N/A
18	0.097	N/A	N/A	0.127	N/A	N/A	N/A
19	0.095	N/A	N/A	0.106	N/A	N/A	N/A
20	0.048	N/A	N/A	0.054	N/A	N/A	N/A
21	0.041	N/A	N/A	0.050	N/A	N/A	N/A
22	0.040	N/A	N/A	0.056	N/A	N/A	N/A
23	0.077	N/A	N/A	0.087	N/A	N/A	N/A
24	0.036	N/A	N/A	0.049	N/A	N/A	N/A
25	0.085	N/A	N/A	0.133	N/A	N/A	N/A
26	0.031	N/A	N/A	0.035	N/A	N/A	N/A
27	0.033	N/A	N/A	0.047	N/A	N/A	N/A
28	0.036	N/A	N/A	0.041	N/A	N/A	N/A
29	0.100	N/A	N/A	0.112	N/A	N/A	N/A
30	0.031	N/A	N/A	0.037	N/A	N/A	N/A
31	0.094	N/A	N/A	0.099	N/A	N/A	N/A
32	0.020	N/A	N/A	0.028	N/A	N/A	N/A
33	0.021	N/A	N/A	0.026	N/A	N/A	N/A
34	0.020	N/A	N/A	0.030	N/A	N/A	N/A
35	0.149	N/A	N/A	0.157	N/A	N/A	N/A
36	0.031	N/A	N/A	0.051	N/A	N/A	N/A
37	0.091	N/A	N/A	0.099	N/A	N/A	N/A
38	0.016	N/A	N/A	0.026	N/A	N/A	N/A
39	0.024	N/A	N/A	0.026	N/A	N/A	N/A
40	0.021	N/A	N/A	0.028	N/A	N/A	N/A

Note: Measured I-ref was applied for this test.

Voltage Source Verification Data (Phase A-Run time)

EUT: Three phase Hybrid inverter — Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) — Test Margin: 100
Test date: 2024/04/03 — Start time: 10:49:34 — End time: 10:52:34
Test duration (min): 2.5 — Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass — Source qualification: Normal
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-12 Ed. 2.0 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	231.07	Frequency (Hz):	50.00
I_Peak (Amps):	40.429	I_RMS (Amps):	25.155
I_Fund (Amps):	25.117(avg)	Crest Factor:	1.607
Power (Watts):	-5819	Power Factor:	-0.999

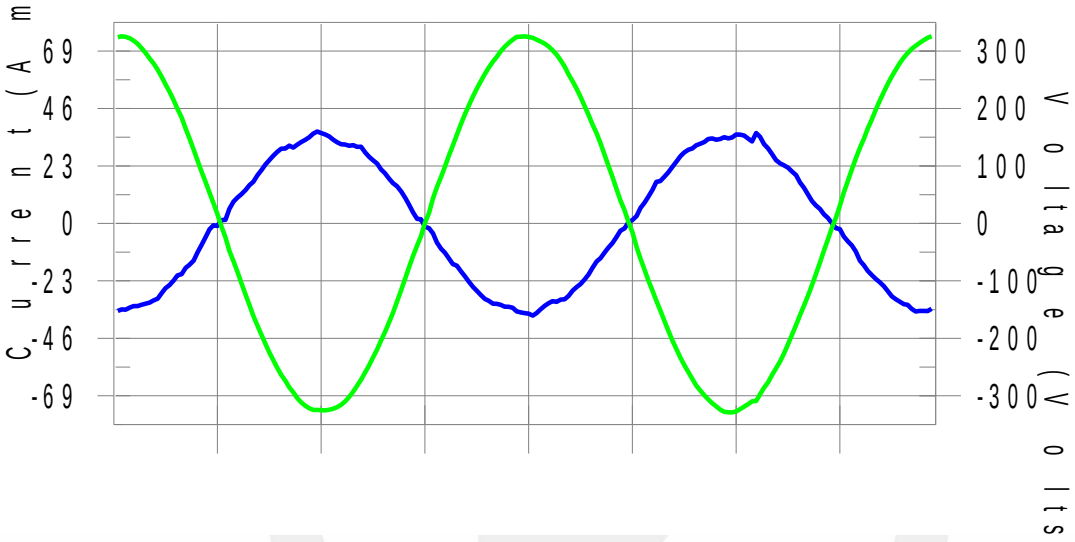
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.322	0.924	34.88	OK
3	0.189	2.888	6.53	OK
4	0.046	0.924	5.01	OK
5	0.228	3.465	6.59	OK
6	0.037	0.924	3.97	OK
7	0.289	2.888	10.02	OK
8	0.055	0.924	5.97	OK
9	0.184	1.386	13.30	OK
10	0.064	0.924	6.94	OK
11	0.293	1.617	18.13	OK
12	0.065	0.693	9.35	OK
13	0.237	1.386	17.13	OK
14	0.067	0.693	9.62	OK
15	0.145	0.693	20.90	OK
16	0.069	0.693	9.99	OK
17	0.182	0.693	26.23	OK
18	0.109	0.693	15.71	OK
19	0.164	0.693	23.65	OK
20	0.074	0.693	10.72	OK
21	0.104	0.693	15.02	OK
22	0.084	0.693	12.06	OK
23	0.166	0.693	23.97	OK
24	0.077	0.693	11.09	OK
25	0.154	0.693	22.17	OK
26	0.055	0.693	7.95	OK
27	0.101	0.693	14.53	OK
28	0.063	0.693	9.16	OK
29	0.162	0.693	23.43	OK
30	0.052	0.693	7.54	OK
31	0.163	0.693	23.51	OK
32	0.046	0.693	6.69	OK
33	0.072	0.693	10.37	OK
34	0.059	0.693	8.56	OK
35	0.251	0.693	36.23	OK
36	0.063	0.693	9.09	OK
37	0.173	0.693	25.00	OK
38	0.046	0.693	6.61	OK
39	0.082	0.693	11.85	OK
40	0.064	0.693	9.18	OK

Harmonics – Per EN/IEC61000-3-12, Ed. 2.0(Phase B-Run time)

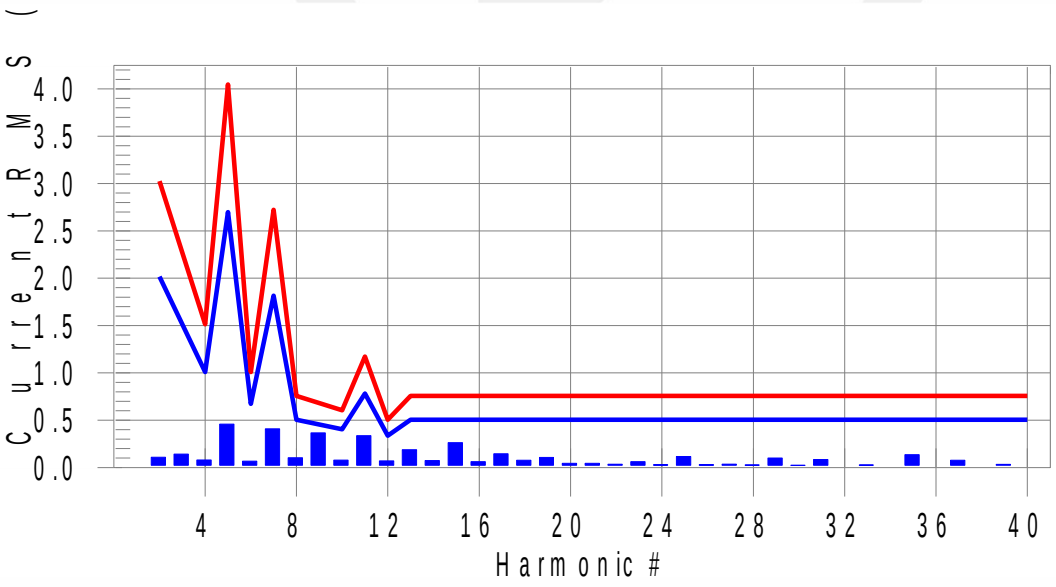
EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: Table:3, Rsce=33, Inter-Harm,) **Test Margin: 100**
Test date: 2024/04/03 **Start time: 10:49:34** **End time: 10:52:34**
Test duration (min): 2.5 **Data file name: CTSMXH_H-000586.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class 3 limit line **European Limits**



Test result: PassWorst harmonics H11-31.1% of 150% limit, H11-43.2% of 100% limit.

Current Test Result Summary (Phase B-Run time)

EUT: Three phase Hybrid inverter — Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) — Test Margin: 100
Test date: 2024/04/03 — Start time: 10:49:34 — End time: 10:52:34
Test duration (min): 2.5 — Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass — Measured Iref: 25.215(Amps) — Source: Normal
THC/Iref (%): 3.3 — Limit (%): 13.0 — PWHC/Iref (%): 4.0 — PWHC Limit (%): 22.0

Highest parameter values during test:

V_RMS (Volts):	231.08	Frequency (Hz):	50.00
I_Peak (Amps):	42.401	I_RMS (Amps):	25.236
I_Fund (Amps):	25.195(avg)	Crest Factor:	1.683
Power (Watts):	-5839	Power Factor:	-0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.110	2.017	5.4	0.122	3.026	4.0	Pass
3	0.123	N/A	N/A	0.155	N/A	N/A	N/A
4	0.080	1.009	7.9	0.090	1.513	5.9	Pass
5	0.460	2.698	17.0	0.482	4.047	11.9	Pass
6	0.068	0.672	10.1	0.076	1.009	7.6	Pass
7	0.410	1.816	22.6	0.425	2.723	15.6	Pass
8	0.103	0.504	20.5	0.118	0.756	15.5	Pass
9	0.259	N/A	N/A	0.391	N/A	N/A	N/A
10	0.078	0.403	19.2	0.095	0.605	15.8	Pass
11	0.338	0.782	43.2	0.364	1.173	31.1	Pass
12	0.070	0.336	20.7	0.082	0.504	16.2	Pass
13	0.188	0.504	37.3	0.198	0.756	26.2	Pass
14	0.074	N/A	N/A	0.088	N/A	N/A	N/A
15	0.262	N/A	N/A	0.269	N/A	N/A	N/A
16	0.061	N/A	N/A	0.076	N/A	N/A	N/A
17	0.145	N/A	N/A	0.160	N/A	N/A	N/A
18	0.077	N/A	N/A	0.105	N/A	N/A	N/A
19	0.107	N/A	N/A	0.121	N/A	N/A	N/A
20	0.044	N/A	N/A	0.055	N/A	N/A	N/A
21	0.044	N/A	N/A	0.051	N/A	N/A	N/A
22	0.035	N/A	N/A	0.050	N/A	N/A	N/A
23	0.061	N/A	N/A	0.079	N/A	N/A	N/A
24	0.030	N/A	N/A	0.038	N/A	N/A	N/A
25	0.115	N/A	N/A	0.159	N/A	N/A	N/A
26	0.030	N/A	N/A	0.034	N/A	N/A	N/A
27	0.036	N/A	N/A	0.051	N/A	N/A	N/A
28	0.027	N/A	N/A	0.031	N/A	N/A	N/A
29	0.100	N/A	N/A	0.112	N/A	N/A	N/A
30	0.024	N/A	N/A	0.027	N/A	N/A	N/A
31	0.085	N/A	N/A	0.097	N/A	N/A	N/A
32	0.020	N/A	N/A	0.028	N/A	N/A	N/A
33	0.027	N/A	N/A	0.033	N/A	N/A	N/A
34	0.017	N/A	N/A	0.020	N/A	N/A	N/A
35	0.136	N/A	N/A	0.141	N/A	N/A	N/A
36	0.021	N/A	N/A	0.030	N/A	N/A	N/A
37	0.076	N/A	N/A	0.088	N/A	N/A	N/A
38	0.019	N/A	N/A	0.025	N/A	N/A	N/A
39	0.034	N/A	N/A	0.042	N/A	N/A	N/A
40	0.015	N/A	N/A	0.018	N/A	N/A	N/A

Note: Measured I-ref was applied for this test.

Voltage Source Verification Data (Phase B-Run time)

EUT: Three phase Hybrid inverter Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) Test Margin: 100
Test date: 2024/04/03 Start time: 10:49:34 End time: 10:52:34
Test duration (min): 2.5 Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass Source qualification: Normal
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-12 Ed. 2.0 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	231.08	Frequency (Hz):	50.00
I_Peak (Amps):	42.401	I_RMS (Amps):	25.236
I_Fund (Amps):	25.195(avg)	Crest Factor:	1.683
Power (Watts):	-5839	Power Factor:	-0.999

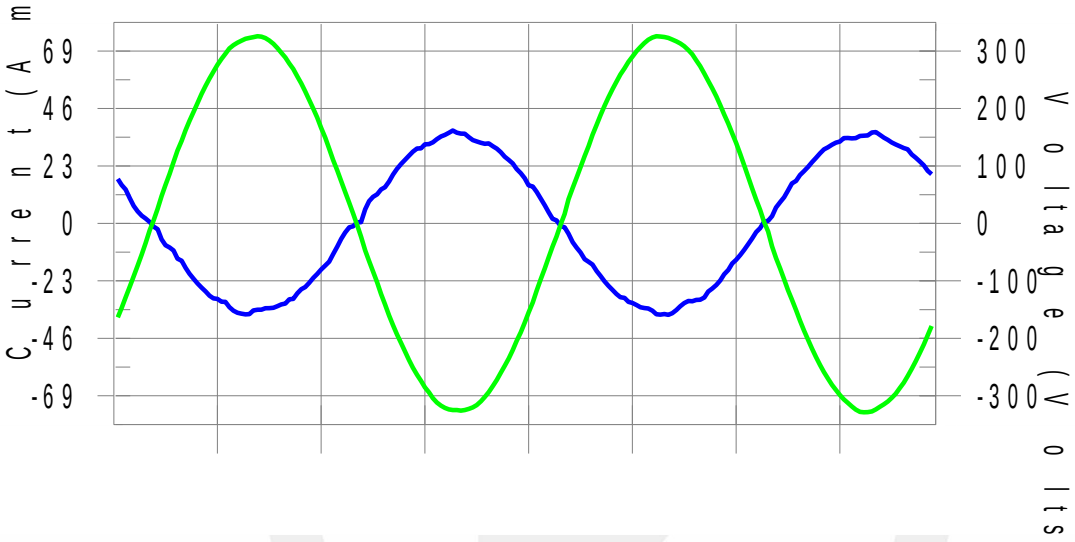
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.312	0.924	33.81	OK
3	0.175	2.888	6.07	OK
4	0.045	0.924	4.90	OK
5	0.210	3.465	6.06	OK
6	0.030	0.924	3.24	OK
7	0.292	2.888	10.12	OK
8	0.050	0.924	5.37	OK
9	0.175	1.386	12.61	OK
10	0.049	0.924	5.28	OK
11	0.292	1.617	18.04	OK
12	0.052	0.693	7.56	OK
13	0.244	1.386	17.59	OK
14	0.061	0.693	8.86	OK
15	0.174	0.693	25.16	OK
16	0.053	0.693	7.60	OK
17	0.194	0.693	27.97	OK
18	0.082	0.693	11.83	OK
19	0.183	0.693	26.33	OK
20	0.046	0.693	6.60	OK
21	0.111	0.693	16.06	OK
22	0.050	0.693	7.18	OK
23	0.146	0.693	21.06	OK
24	0.044	0.693	6.40	OK
25	0.197	0.693	28.39	OK
26	0.040	0.693	5.72	OK
27	0.109	0.693	15.76	OK
28	0.048	0.693	6.99	OK
29	0.177	0.693	25.58	OK
30	0.037	0.693	5.31	OK
31	0.177	0.693	25.53	OK
32	0.032	0.693	4.64	OK
33	0.101	0.693	14.50	OK
34	0.030	0.693	4.38	OK
35	0.236	0.693	34.08	OK
36	0.038	0.693	5.51	OK
37	0.165	0.693	23.81	OK
38	0.040	0.693	5.75	OK
39	0.061	0.693	8.79	OK
40	0.038	0.693	5.42	OK

Harmonics – Per EN/IEC61000-3-12, Ed. 2.0(Phase C-Run time)

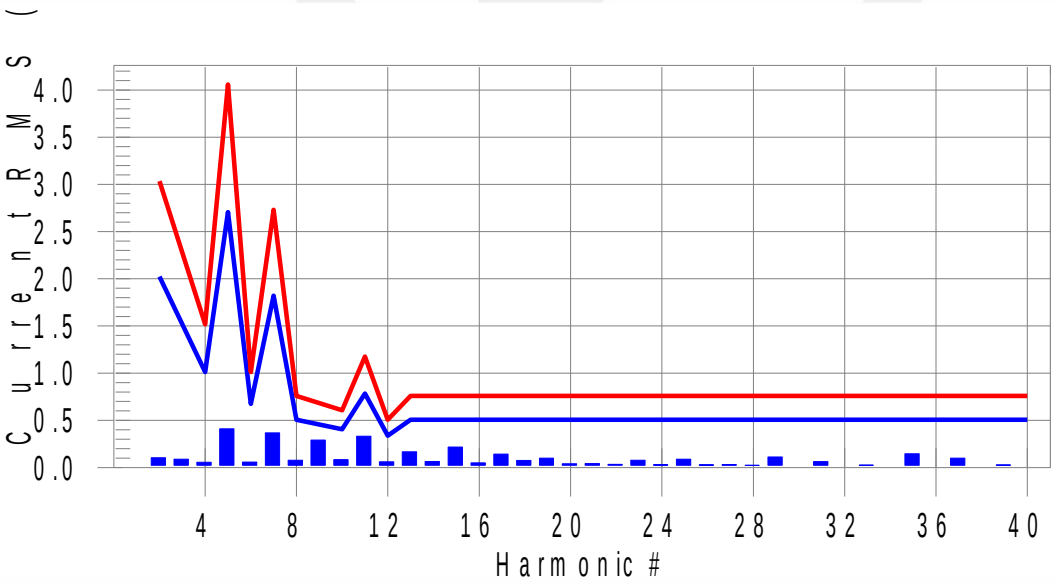
EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: Table:3, Rsce=33, Inter-Harm,) **Test Margin: 100**
Test date: 2024/04/03 **Start time: 10:49:34** **End time: 10:52:34**
Test duration (min): 2.5 **Data file name: CTSMXH_H-000586.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class 3 limit line **European Limits**



Test result: PassWorst harmonics H11-30.6% of 150% limit, H11-42.2% of 100% limit.

Current Test Result Summary (Phase C-Run time)

EUT: Three phase Hybrid inverter — Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) — Test Margin: 100
Test date: 2024/04/03 — Start time: 10:49:34 — End time: 10:52:34
Test duration (min): 2.5 — Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass — Measured Iref: 25.287(Amps) — Source: Normal
THC/Iref (%): 2.8 — Limit (%): 13.0 — PWHC/Iref (%): 0.0 — PWHC Limit (%): 22.0

Highest parameter values during test:

V_RMS (Volts):	231.34	Frequency (Hz):	50.00
I_Peak (Amps):	38.971	I_RMS (Amps):	25.308
I_Fund (Amps):	25.270(avg)	Crest Factor:	1.537
Power (Watts):	-5861	Power Factor:	-0.999

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.105	2.023	5.2	0.113	3.034	3.7	Pass
3	0.123	N/A	N/A	0.104	N/A	N/A	N/A
4	0.056	1.011	5.5	0.062	1.517	4.1	Pass
5	0.411	2.706	15.2	0.425	4.059	10.5	Pass
6	0.058	0.674	8.6	0.066	1.011	6.6	Pass
7	0.367	1.821	20.1	0.382	2.731	14.0	Pass
8	0.078	0.506	15.4	0.087	0.759	11.5	Pass
9	0.259	N/A	N/A	0.326	N/A	N/A	N/A
10	0.084	0.405	20.7	0.117	0.607	19.2	Pass
11	0.331	0.784	42.2	0.359	1.176	30.6	Pass
12	0.060	0.337	17.8	0.069	0.506	13.7	Pass
13	0.166	0.506	32.9	0.174	0.759	22.9	Pass
14	0.064	N/A	N/A	0.072	N/A	N/A	N/A
15	0.216	N/A	N/A	0.224	N/A	N/A	N/A
16	0.048	N/A	N/A	0.056	N/A	N/A	N/A
17	0.143	N/A	N/A	0.156	N/A	N/A	N/A
18	0.075	N/A	N/A	0.094	N/A	N/A	N/A
19	0.100	N/A	N/A	0.112	N/A	N/A	N/A
20	0.040	N/A	N/A	0.053	N/A	N/A	N/A
21	0.043	N/A	N/A	0.049	N/A	N/A	N/A
22	0.033	N/A	N/A	0.037	N/A	N/A	N/A
23	0.076	N/A	N/A	0.091	N/A	N/A	N/A
24	0.030	N/A	N/A	0.033	N/A	N/A	N/A
25	0.089	N/A	N/A	0.132	N/A	N/A	N/A
26	0.029	N/A	N/A	0.032	N/A	N/A	N/A
27	0.031	N/A	N/A	0.040	N/A	N/A	N/A
28	0.024	N/A	N/A	0.027	N/A	N/A	N/A
29	0.112	N/A	N/A	0.119	N/A	N/A	N/A
30	0.023	N/A	N/A	0.026	N/A	N/A	N/A
31	0.063	N/A	N/A	0.070	N/A	N/A	N/A
32	0.016	N/A	N/A	0.021	N/A	N/A	N/A
33	0.025	N/A	N/A	0.029	N/A	N/A	N/A
34	0.019	N/A	N/A	0.024	N/A	N/A	N/A
35	0.146	N/A	N/A	0.149	N/A	N/A	N/A
36	0.022	N/A	N/A	0.034	N/A	N/A	N/A
37	0.100	N/A	N/A	0.110	N/A	N/A	N/A
38	0.017	N/A	N/A	0.022	N/A	N/A	N/A
39	0.028	N/A	N/A	0.042	N/A	N/A	N/A
40	0.015	N/A	N/A	0.021	N/A	N/A	N/A

Note: Measured I-ref was applied for this test.

Voltage Source Verification Data (Phase C-Run time)

EUT: Three phase Hybrid inverter Tested by: YXL
Test category: Table:3, Rsce=33, Inter-Harm,) Test Margin: 100
Test date: 2024/04/03 Start time: 10:49:34 End time: 10:52:34
Test duration (min): 2.5 Data file name: CTSMXH_H-000586.cts_data
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD

Test Result: Pass Source qualification: Normal
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-12 Ed. 2.0 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	231.34	Frequency (Hz):	50.00
I_Peak (Amps):	38.971	I_RMS (Amps):	25.308
I_Fund (Amps):	25.270(avg)	Crest Factor:	1.537
Power (Watts):	-5861	Power Factor:	-0.999

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.288	0.925	31.11	OK
3	0.205	2.890	7.08	OK
4	0.041	0.925	4.42	OK
5	0.203	3.466	5.87	OK
6	0.024	0.925	2.65	OK
7	0.273	2.888	9.46	OK
8	0.045	0.925	4.92	OK
9	0.193	1.386	13.93	OK
10	0.053	0.925	5.71	OK
11	0.273	1.619	16.84	OK
12	0.046	0.694	6.65	OK
13	0.218	1.386	15.71	OK
14	0.044	0.694	6.34	OK
15	0.174	0.694	25.06	OK
16	0.051	0.693	7.35	OK
17	0.185	0.694	26.69	OK
18	0.089	0.694	12.87	OK
19	0.152	0.694	21.84	OK
20	0.032	0.694	4.60	OK
21	0.132	0.694	18.99	OK
22	0.044	0.694	6.31	OK
23	0.164	0.693	23.61	OK
24	0.057	0.693	8.16	OK
25	0.170	0.694	24.46	OK
26	0.046	0.694	6.57	OK
27	0.092	0.694	13.24	OK
28	0.039	0.694	5.61	OK
29	0.176	0.693	25.41	OK
30	0.033	0.694	4.74	OK
31	0.140	0.693	20.17	OK
32	0.034	0.694	4.94	OK
33	0.077	0.694	11.06	OK
34	0.036	0.694	5.19	OK
35	0.243	0.694	35.06	OK
36	0.037	0.693	5.39	OK
37	0.191	0.693	27.62	OK
38	0.035	0.694	5.03	OK
39	0.099	0.693	14.31	OK
40	0.042	0.694	6.08	OK

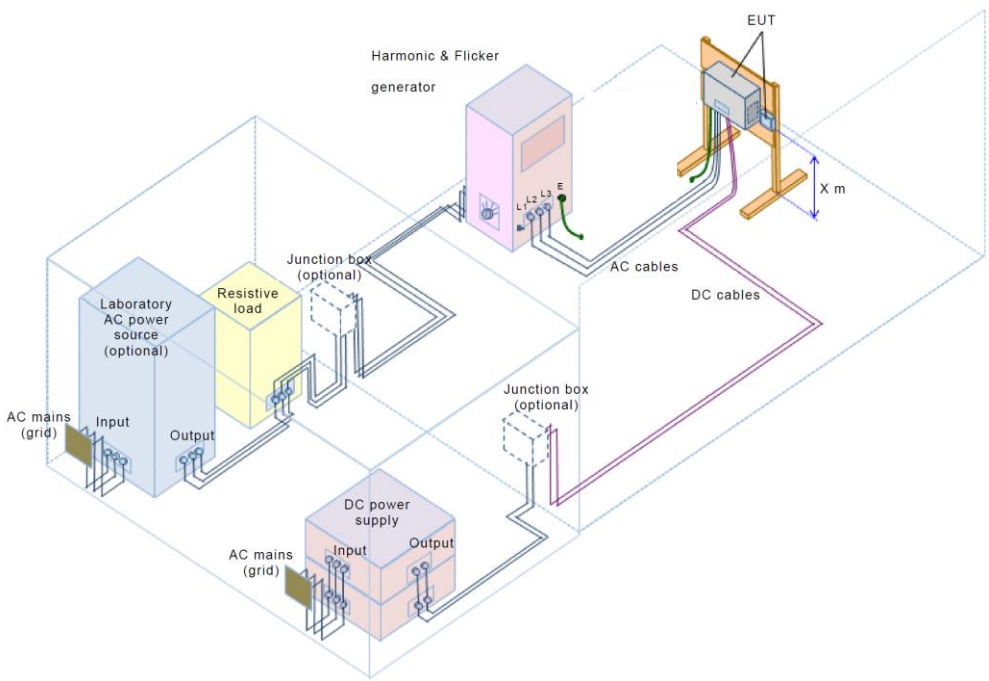
5th Harmonic Phase Angle and Magnitude for Phase A:
H-5_min_phase: 328.9 Degree (Leading)
H-5_max_phase: 346.6 Degree (Leading)
H-5_ave_phase: 339.0 Degree (Leading)

H-5_ave_vector_magnitude: 0.430 Amp
H-5_standard_ave_magnitude: 0.488 Amp
H-5_standard_max_magnitude: 0.506 Amp
Ratio of H-5_ave_vector / H-5_standard_ave: 0.880

Phase A = 49.041% of tested Rsce = 33.000, Rsce = 16.183
Phase B = 43.247% of tested Rsce = 33.000, Rsce = 14.271
Phase C = 42.177% of tested Rsce = 33.000, Rsce = 13.919
Minimum Rsce required: Rsce = 16.183

8. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

8.1. Block Diagram of Test Setup



8.2. Standard Limits

EN IEC 61000-3-11 Limits

The limits shall be applicable to voltage fluctuations and flicker at the supply terminals of the equipment under test, measured or calculated according to clause 4 under test conditions described in clause 6. Tests made to prove the compliance with the limits are considered to be type tests.

The following limits apply:

– the value of the short-term flicker indicator, P_{st} shall not be greater than 1,0;

– the value of the long-term flicker indicator, P_{lt} shall not be greater than 0,65;

– the value of d(t) during a voltage change shall not exceed 3,3 % for more than 500 ms;

– the relative steady-state voltage change, d_c, shall not exceed 3,3 %;

– the maximum relative voltage change d_{max}, shall not exceed:

8.3. Test Procedure

The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance. The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of 8% is achieved during the whole assessment procedure.

8.4. Test Results

PASS.

Please see the attached page.

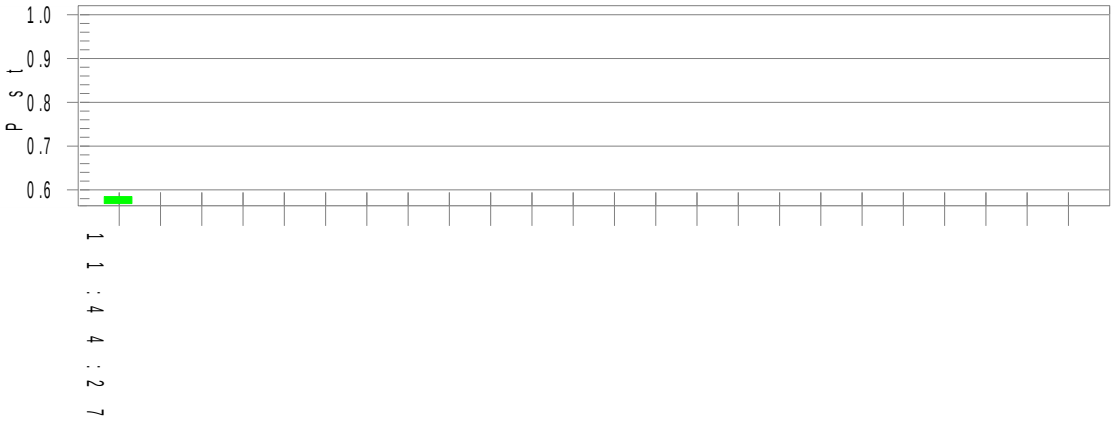
Temperature	:	22.1 °C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	PV IN & AC On Grid(Highest DC voltage at rated power)

Flicker Test Summary Per EN/IEC61000-3-11, Ed. 2.0(2017) (Phase A-Run time)

EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: All parameters **Test Margin: 100**
Test date: 2024/04/03 **Start time: 11:34:04** **End time: 11:44:33**
Test duration (min): 10 **Data file name: WIN2106_F-000355.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD
Z-test Phase = (0.150 + j 0.150 Ohm) Neutral = (0.100 + j 0.100 Ohm)

Test Result: Pass
Status: Test Completed

Pst_i and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.59

T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.10**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.584**	**Test limit:**	**1.000**	**Pass**

Calculated dmax(%): 0.000
Calculated dc(%): 0.000
Calculated Pst : 0.780
Calculated Plt : 0.341

The maximum permissible system impedance Zsys:

Z-phase A = 0.348 Ohm + j 0.218 Ohm (0.348 Ohm + 693 μH)
Z-neutral A = 0.232 Ohm + j 0.145 Ohm (0.232 Ohm + 462 μH)

Flicker Test Summary Per EN/IEC61000-3-11, Ed. 2.0(2017) (Phase B-Run time)

EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: All parameters **Test Margin: 100**
Test date: 2024/04/03 **Start time: 11:34:04** **End time: 11:44:33**
Test duration (min): 10 **Data file name: WIN2106_F-000355.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD
Z-test Phase = (0.150 + j 0.150 Ohm) Neutral = (0.100 + j 0.100 Ohm)

Test Result: Pass
Status: Test Completed

Pst_i and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.20

Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.30**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.294**	**Test limit:**	**1.000**	**Pass**

Calculated dmax(%): 0.402
Calculated dc(%): 0.000
Calculated Pst : 0.392
Calculated Plt : 0.171

The maximum permissible system impedance Zsys :

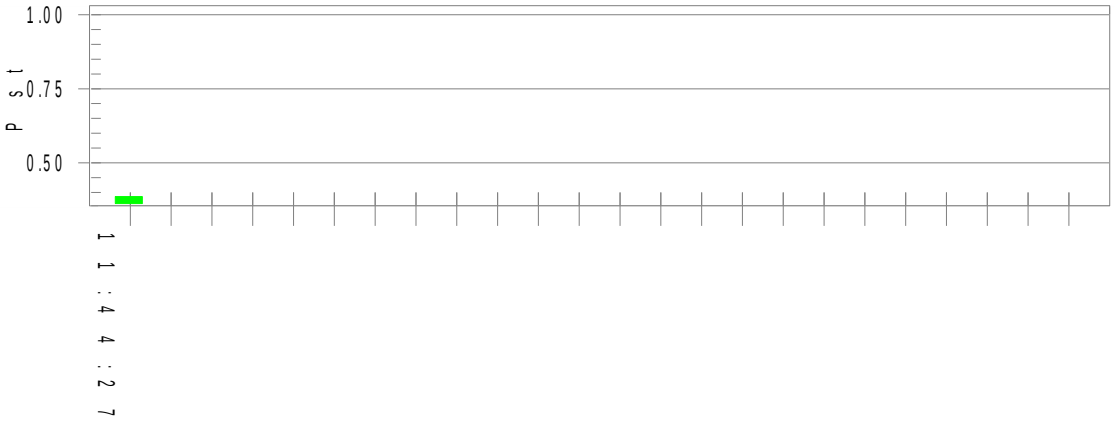
Z-phase B = 0.977 Ohm + j 0.611 Ohm (0.977 Ohm + 1944 μH)
Z-neutral B = 0.651 Ohm + j 0.407 Ohm (0.651 Ohm + 1296 μH)

Flicker Test Summary Per EN/IEC61000-3-11, Ed. 2.0(2017) (Phase C-Run time)

EUT: Three phase Hybrid inverter **Tested by: YXL**
Test category: All parameters **Test Margin: 100**
Test date: 2024/04/03 **Start time: 11:34:04** **End time: 11:44:33**
Test duration (min): 10 **Data file name: WIN2106_F-000355.cts_data**
Comment: PV IN & AC On Grid(Highest DC voltage at rated power)
Customer: Shenzhen Lux Power Technology Co., LTD
Z-test Phase = (0.150 + j 0.150 Ohm) Neutral = (0.100 + j 0.100 Ohm)

Test Result: Pass
Status: Test Completed

Pst_i and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.27

Time(mS) > dt:	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.13**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.386**	**Test limit:**	**1.000**	**Pass**

Calculated dmax(%): 0.178
Calculated dc(%): 0.000
Calculated Pst : 0.515
Calculated Plt : 0.225

The maximum permissible system impedance Zsys :

Z-phase C = 0.650 Ohm + j 0.406 Ohm (0.650 Ohm + 1292 μH)
Z-neutral C = 0.433 Ohm + j 0.271 Ohm (0.433 Ohm + 861 μH)

9. IMMUNITY GENERAL PERFORMANCE CRITERIA DESCRIPTION

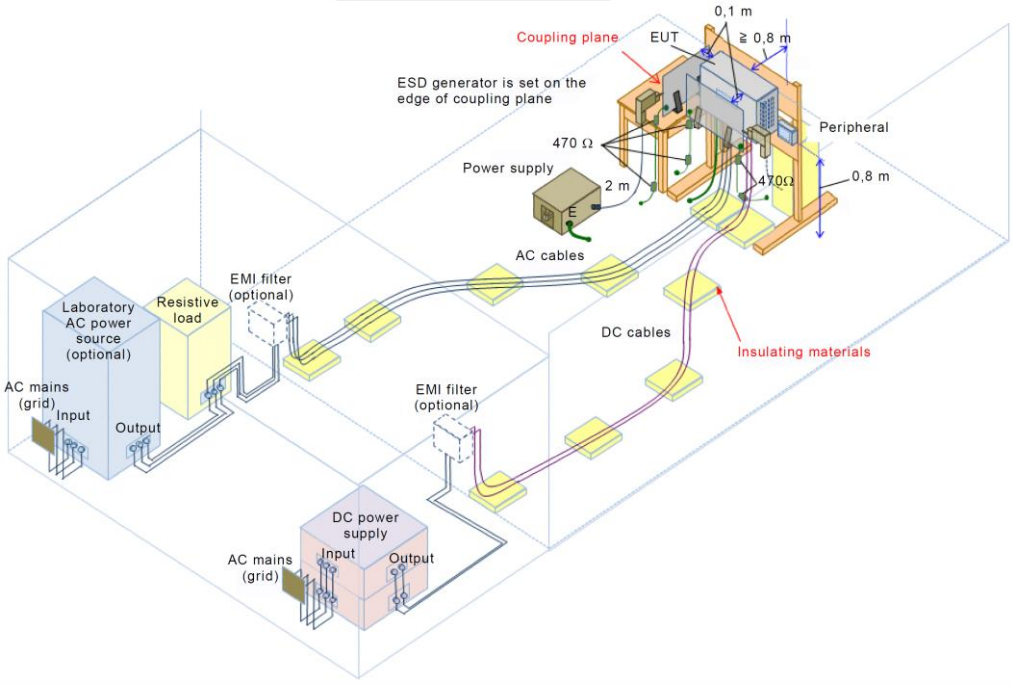
Item	Criterion A	Criterion B	Criterion C
Operating status	No noticeable change of the operating atatus. Operating as intended.	Noticeable changes of the operating characteristic. Self-recoverable	Shutdown, changes in operating status. Triggering of protective devices. Not self-recoverable
Power output	Power output permitted to vary only within ±25%.	Power output permitted to temporarily vary outside ±25% Self-recoverable	Loss of power output. Not self-recoverable
External and internal Indications and metering	No noticeable change of the operating atatus.	Changes only during test	Shutdown, triggering of protective devices. Not self-recoverable
Control signal to external devices	Undisturbed Communication and data exchange to external devices	Temporarily disturbed communication, but no error reports of the internal or external devices which could cause shut-down	Errors in communication, loss of data and information. No loss of stored program, no loss of user program. Not self-recoverable

10.ELECTROSTATIC DISCHARGE

10.1.Test Specification

Test standard	:	EN 62920
Basic standard	:	IEC 61000-4-2
Performance criterion	:	B
Test level	:	±8.0kV (Air discharge) ±4.0kV (Contact discharge)

10.2.Block Diagram of Test Setup



10.3.Test Procedure

a. In the case of air discharge testing, the climatic conditions shall be within the following ranges:
- ambient temperature: 15°C to 35°C;
- relative humidity : 30% to 60%;
- atmospheric pressure : 86 kPa (860 mbar) to 106 kPa (1060 mbar)

b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.

c. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

d. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted : - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate. - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge. - The contact discharge test shall not be applied to such surfaces.

e. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.
f. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final test level should not exceed the product specification value in order to avoid damage to the equipment.
g. The test shall be performed with both air discharge and contact discharge. The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied. For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.
h. Ensure that the applied charge on the EUT has been dis-charged before next ESD pulse.

10.4.Test Results

PASS

Temperature	:	23.3°C
Humidity	:	49%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A, Mode B

Air Discharge:

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
± 8 kV	SLOT/SCREEN	A	B	Pass

Contact Discharge

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
± 4kV	METAL/SCREW	A	B	Pass

Indirect Discharge

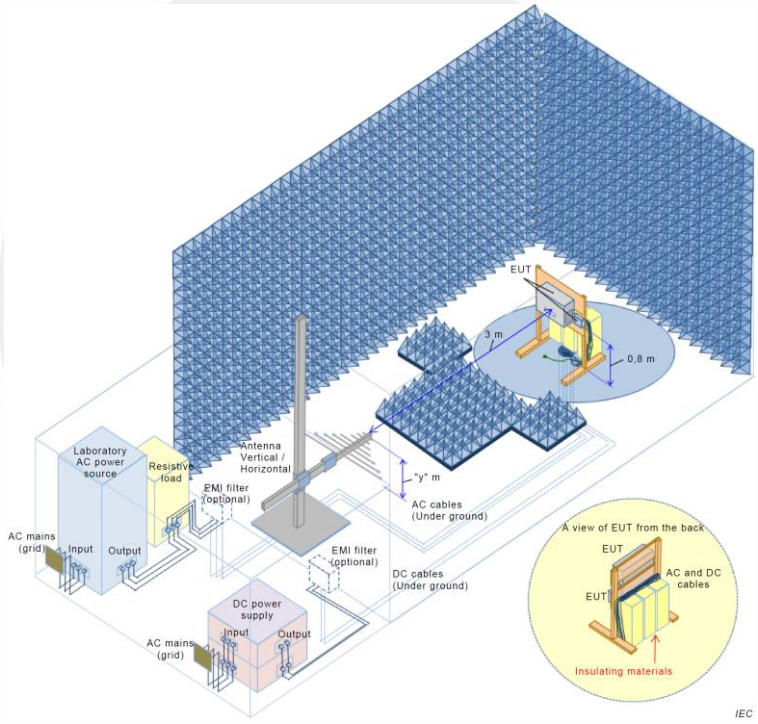
Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
± 4kV	HCP	A	B	Pass
± 4kV	VCP	A	B	Pass

11.CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES

11.1.Test Specification

Test standard	:	EN 62920	
Basic standard	:	IEC 61000-4-3	
Performance criterion	:	A	
Frequency range & Test level	:	☒80M-1000MHz, 1400M-6000MHz	3V/m
Modulation	:	AM, 80%, 1kHz sine-wave	

11.2.Block Diagram of Test Setup



11.3.Test procedure

The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

a. The antenna which is enabling the complete frequency range of 80-6000 MHz is placed 3m (or 1m) away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the antenna.
b. The test is performed with the antenna facing the front and back sides of the EUT with. Both vertical and horizontal polarizations from antenna are tested.

11.4.Test results

PASS

Temperature	:	23.6°C
Humidity	:	50%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A

☒ 80M-1000MHz:

Freq. Range (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
80-1000	3V/m	AM, 80%	H / V	0, 90,180, 270	A	A	Pass
1400-6000	3V/m	AM, 80%	H / V	0, 90,180, 270	A	A	Pass

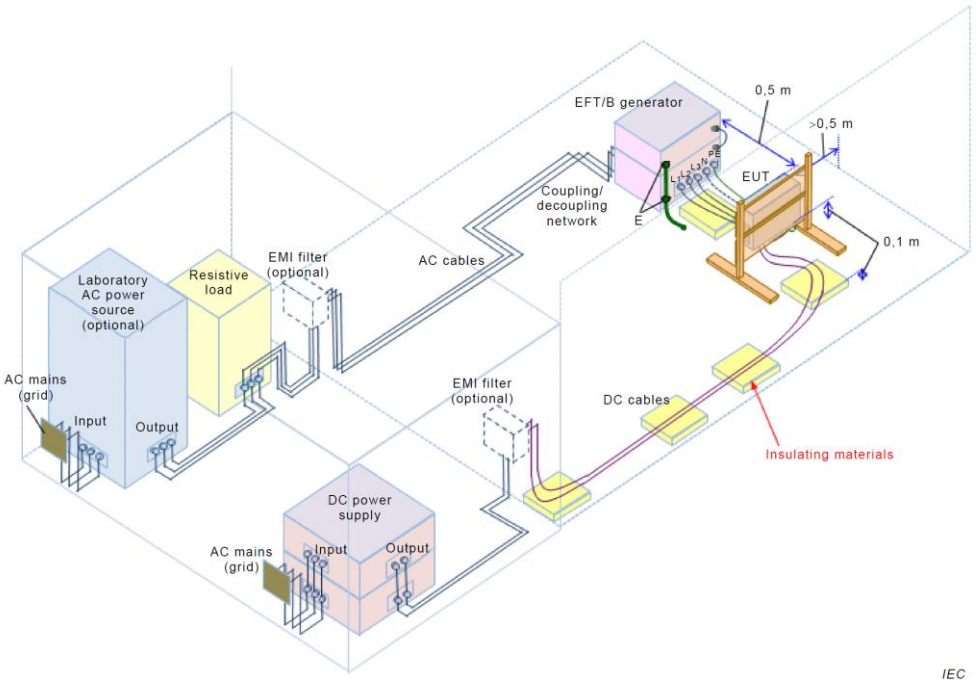
12.ELECTRICAL FAST TRANSIENTS/BURST

12.1.Test Specification

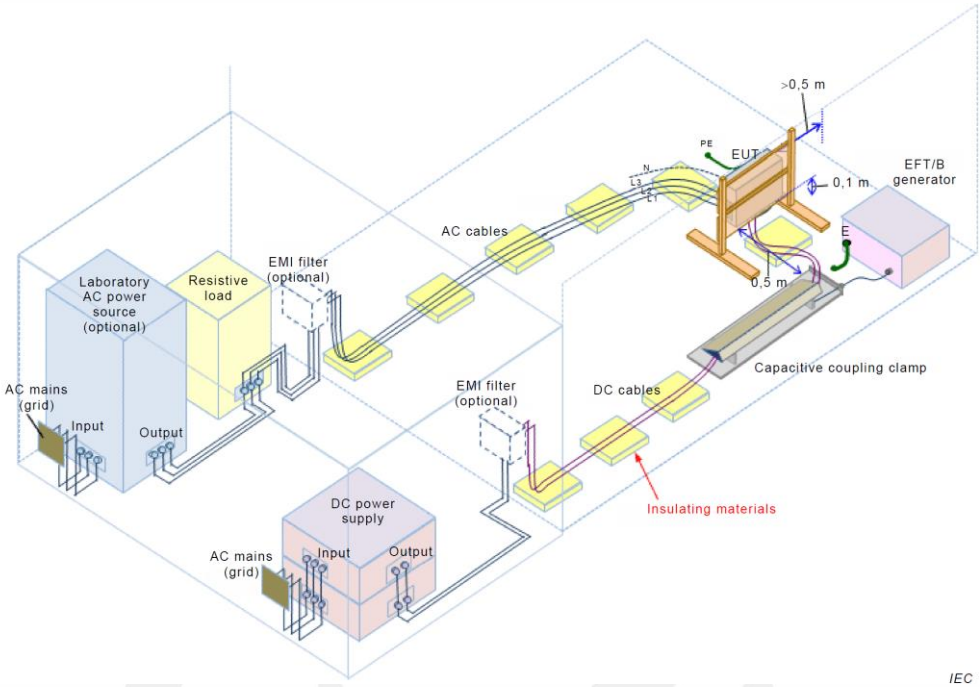
Test standard	:	EN 62920
Basic standard	:	IEC 61000-4-4
Performance criterion	:	B
Test level	:	☒1kV, AC mains power ports ☒0.5kV, DC network power ports ☐0.5kV, Signal and control (wired network) ports
Repetition frequency	:	☒5kHz, ☒100kHz
Tr/Th:	:	5/50ns
Burst period	:	300ms
Test time :	:	120s

12.2.Block Diagram of Test Setup

AC Lines:



DC lines:



12.3. Test Procedure

The EUT is put on the insulating support that is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

12.4. Test Results

PASS

Temperature	:	22.1°C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A

Injection Line	Voltage (kV)	Injected Method	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ AC mains power ports	± 1	☒ CDN ☐ Direct injection ☐ Capacitive coupling clamp	A	B	Pass
☒ DC network power ports	± 0.5	☐ CDN ☐ Direct injection ☒ Capacitive coupling clamp	A	B	Pass
☐ Signal and control (wired network) ports	± 0.5	☐ CDN ☐ Direct injection ☒ Capacitive coupling clamp	N/A	N/A	N/A

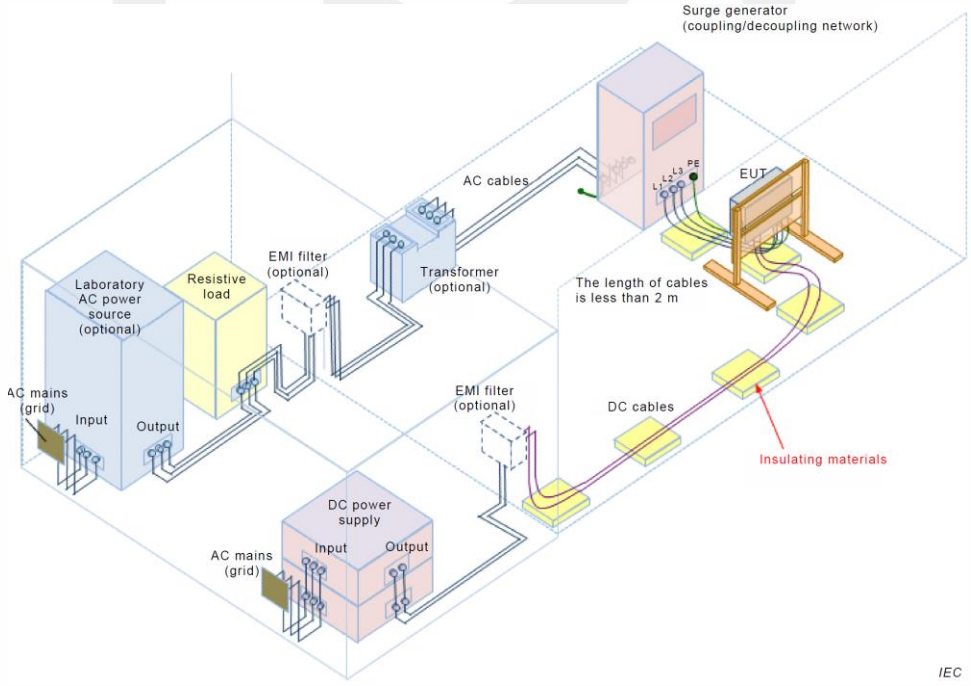
13.SURGES

13.1.Test Specification

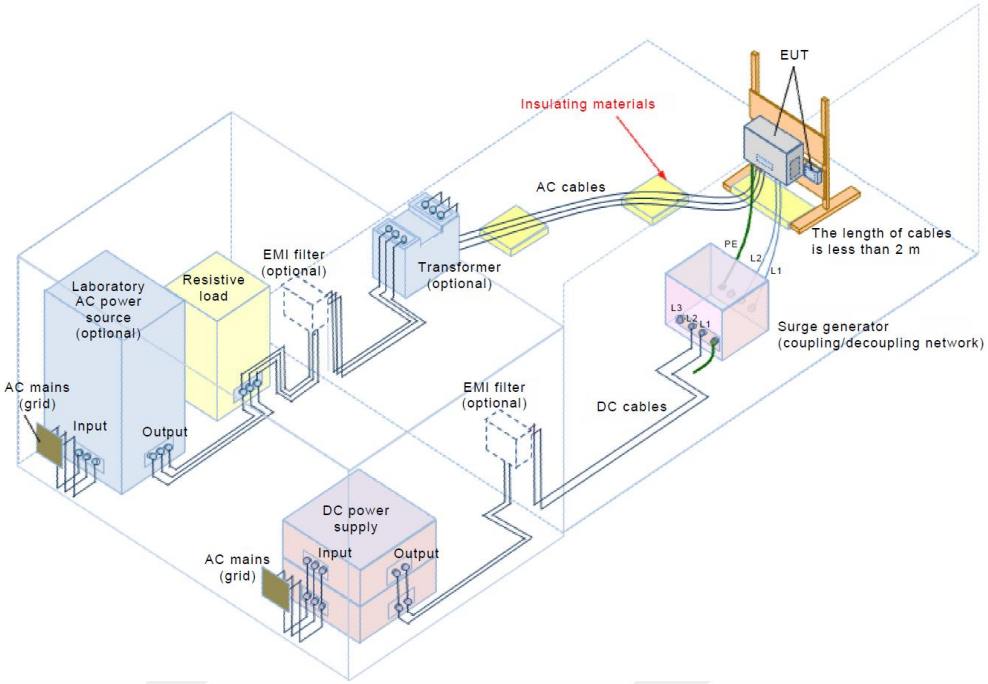
Test standard	:	EN 62920
Basic standard	:	IEC 61000-4-5
Test level	:	☒1kV, Line to Line, AC mains power ports, Criterion B ☒2kV, Line to Earth, AC mains power ports, Criterion B ☒0.5kV, Line to Reference Line, DC network power ports, Criterion B ☒1kV, Line to Reference ground, DC network power ports, Criterion B ☐0.5kV, Lines to Ground, Signal and control (wired network) ports, Criterion B
Number of surges	:	5 (for each combination of parameters)
Repetition rate	:	1 minute / time
Polarity:	:	Positive / Negative
Phase angle:	:	0º, 90º, 180º, 270º (Only AC mains power ports)

13.2.Block Diagram of Test Setup

AC Lines:



DC Lines:



13.3. Test Procedure

This test simulates a lightning event by inducing transients onto the AC/DC power supply lines in common mode (Line to Ground) and differential mode (Line to Line). Each device was tested in a total of two surge configurations: Line to Ground (L-G): Combination Wave, Line to Protective Earth with 9uF and 10Ohm and Neutral to Protective Earth with 9uF and 10Ohm, common mode, generator earthed.
Line to Line (L-L): Combination Wave,
Line to Neutral with 18uF, differential mode, generator floated.
2 ohm : the source impedance of the low-voltage power supply network.
12 ohm : the source impedance of the low-voltage power supply network and ground.

a. If not otherwise specified the surges have to be applied synchronized to the voltage phase at the zero-crossing and the peak value of the a.c. voltage wave (positive and negative).
b. The surges have to be applied line to line and line to earth. When testing line to earth, the test voltage has to be applied successively between each of the lines and earth, if there is no other specification.
c. The test procedure shall also consider the non-linear current-voltage characteristics of the equipment under test. Therefore the test voltage has to be increased by steps up to the test level specified in the product standard or test plan. All lower levels including the selected test level shall be satisfied.
d. For testing the secondary protection, the output voltage of the generator shall be increased up to the worst-case voltage breakdown level (let-through level) of the primary protection.
e. Testing shall be performed according to a Test Plan, which shall be included in the test report.
f. To find all critical points of the duty cycle of the equipment, a sufficient number of positive and negative test pulses shall be applied.

13.4.Test results

PASS

Temperature	:	22.1°C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A.1, Mode B

☒ AC mains power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ Line to line	1	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass
☒ Line to earth	2	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass

☒ DC network power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ Line to Reference line	0.5	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass
☒ Line to Reference ground	1	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass

☐ Signal and control (wired network) ports:

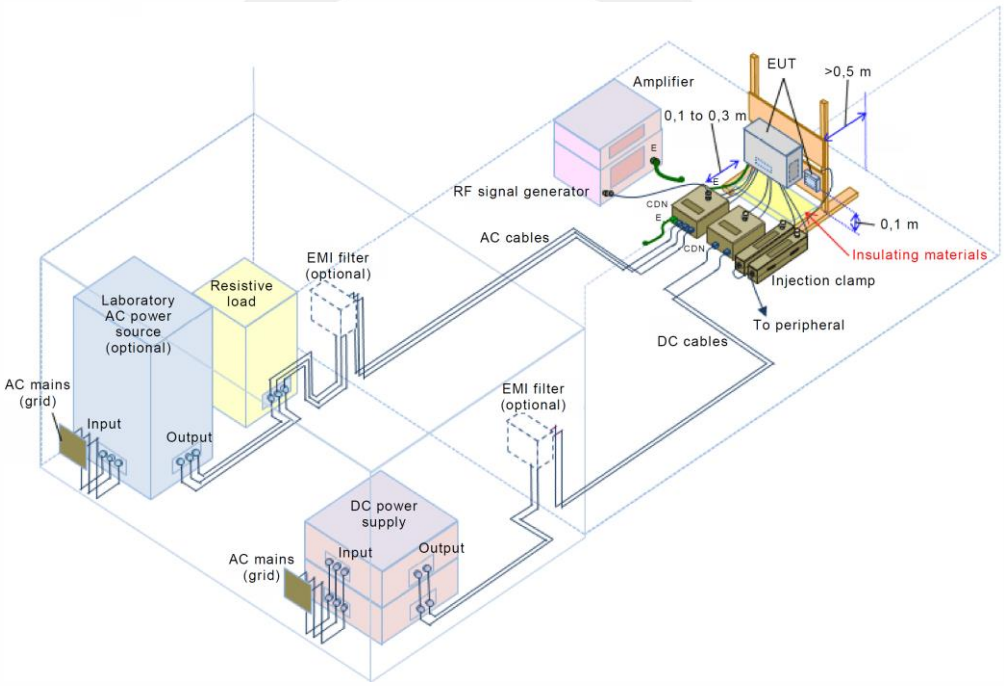
Port type	Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☐ Signal and control (wired network) ports	Lines to ground	1	10/700 (5/320)	Pos./ Neg.	N/A	B	N/A

14.CONTINUOUS INDUCED RF DISTURBANCES

14.1.Test Specification

Test standard	:	EN 62920
Basic standard	:	IEC 61000-4-6
Performance criterion	:	A
Frequency range & Test level	:	0.15M to 80MHz, 3V
Modulation	:	AM 80%, 1kHz sine-wave
Frequency Step	:	1% of fundamental

14.2.Block Diagram of Test Setup



14.3.Test Procedure

a. The EUT shall be operated within its intended climatic conditions. The temperature and relative humidity should be recorded.
b. The EUT is placed on a 0.1m high insulating support, and a well grounded cable is connected to metallic plane above the test table.
c. All cables/wires must be laid out on test plate (3cm in thickness),and the EUT is set up on test plate (10 cm in thickness) as shown in test setup photo. Ensure that the EUT is properly connected to the accessory equipment. d. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF-input ports of the coupling devices are terminated by a 50 ohm load resistor.
e. The frequency range is swept from 150 kHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF-signal level or to switch coupling devices as necessary. The rate of sweep shall

no exceed 1.5 x 10-3 decades/s. Where the frequency is swept incrementally, the step size shall no exceed 1% of the start and thereafter 1% of the preceding frequency value.
f. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies e.g. clock frequency (ies) and harmonics or frequencies of dominant interest shall be analyzed separately.
g. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility
h. Testing shall be performed according to a Test Plan, which shall be included in the test report.

14.4. Test results

PASS

Temperature	:	22.1°C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A

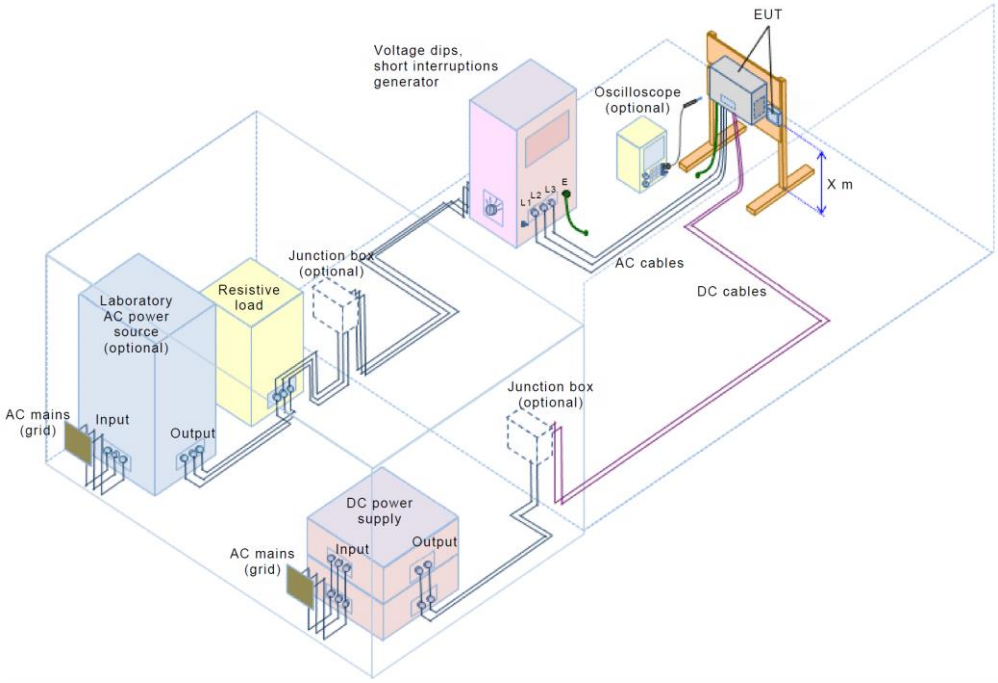
Range (MHz)	Levers (V)	Injection port	Coupling type	Actual criterion	Required performance criterion	Result (Pass/Fail)
0.15-80	3	☒AC mains power ports	☒CDN ☐EM Clamp ☐Current Clamp ☐Direct injection	A	A	Pass
0.15-80	3	☒DC network power ports	☐CDN ☒EM Clamp ☐Current Clamp ☐Direct injection	A	A	Pass
0.15-80	3	☐Signal and control (wired network) ports	☐CDN ☒EM Clamp ☐Current Clamp ☐Direct injection	N/A	N/A	N/A

15. VOLTAGE DIPS AND INTERRUPTIONS

15.1. Test Specification

Test standard	:	EN 62920
Basic standard	:	IEC 61000-4-11 IEC 61000-4-34
Test level	:	☒0%, 0.5 and 1 period, Criterion B ☒70%, 25 periods for 50Hz, Criterion C ☐70%, 30 periods for 60Hz, Criterion C ☒0%, 250 periods for 50Hz, Criterion C ☐0%, 300 periods for 60Hz, Criterion C

15.2. Block Diagram of Test Setup



15.3. Test Procedure

a. Where the equipment has a rated voltage the following shall apply - If the voltage range does not exceed 20% of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification.
- In all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range.

b. Test Conditions
- Select operated voltage and frequency of EUT - Test of interval : 10 sec.
- Level and duration : Sequence of 3 dips/interrupts.
- Voltage rise (and fall) time : 1.5 μs.

15.4. Test results

PASS

Temperature	:	22.1°C
Humidity	:	48%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YXL
Test Date	:	2024-04-03
Test Mode	:	Mode A

	Test Level (% UT)	Phase angle (°)	Input Voltage (V)	Freq (Hz)	Duration (periods)	Actual criterion	Required performance criterion	Result (Pass /Fail)
☒Voltage dips	0%	0°~315°	AC 400V	50	0.5	A	B	Pass
☒Voltage dips	0%	0°~315°	AC 400V	50	1	A	B	Pass
☒Voltage dips	70%	0°~315°	AC 400V	50	25	A	C	Pass
☒Voltage interruptions	0%	0°~315°	AC 400V	50	250	C	C	Pass

Note: When the sample drops to 0%, 250P, the power is off, the test is over, and the sample needs to be restored to normal manually.

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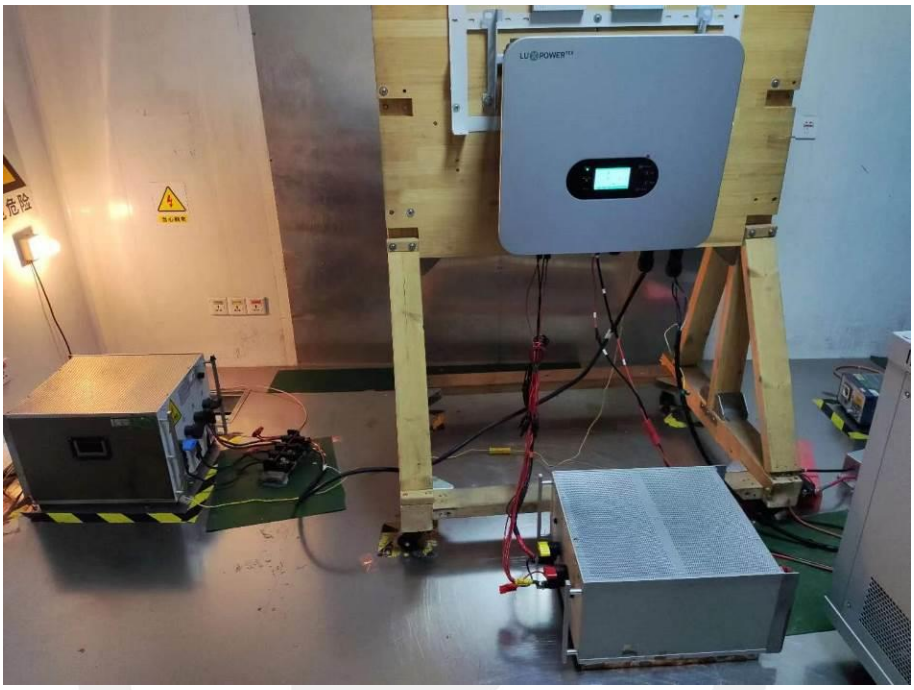
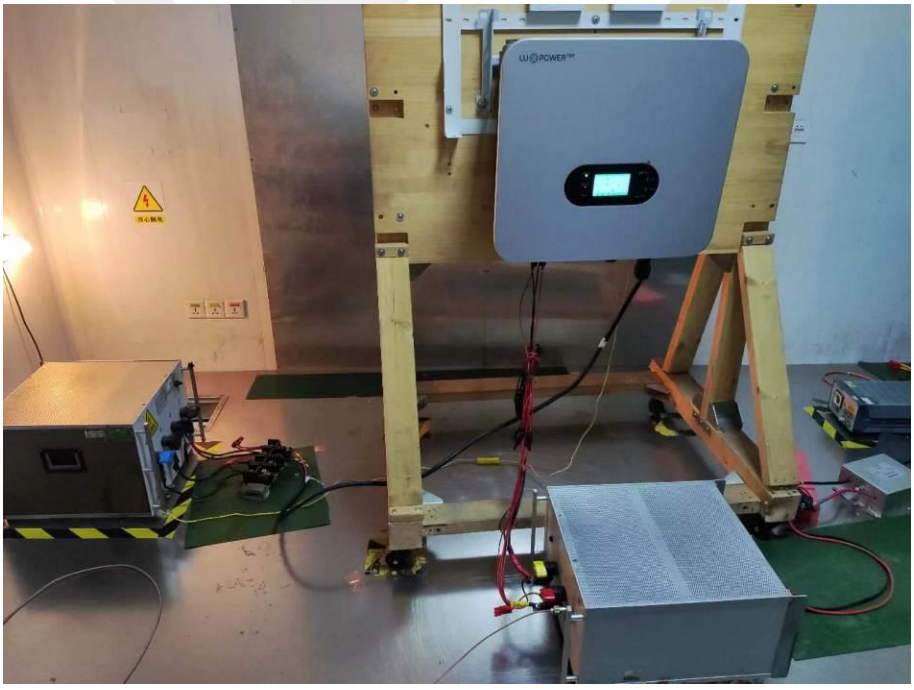
16.PHOTOGRAPHS

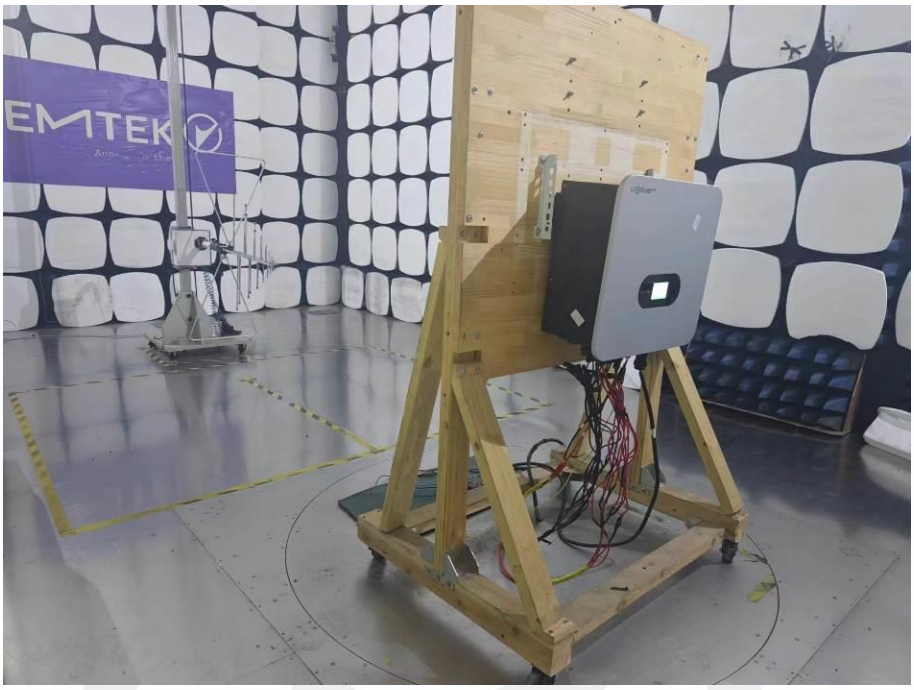
16.1.Photos of Disturbance Voltage at the AC Power Port

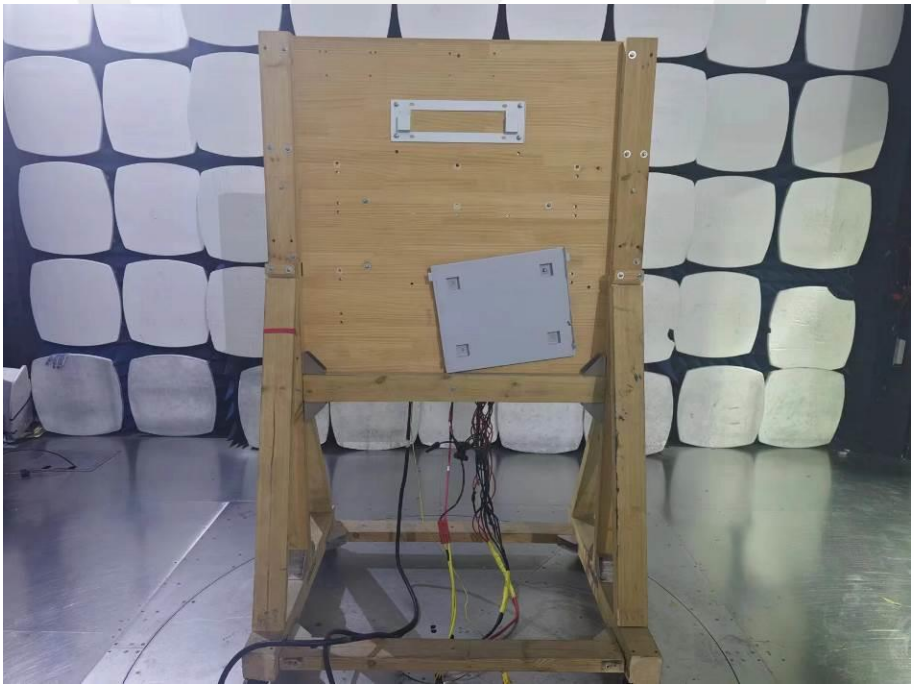


16.2.Photos of Disturbance Voltage at the DC Power Port



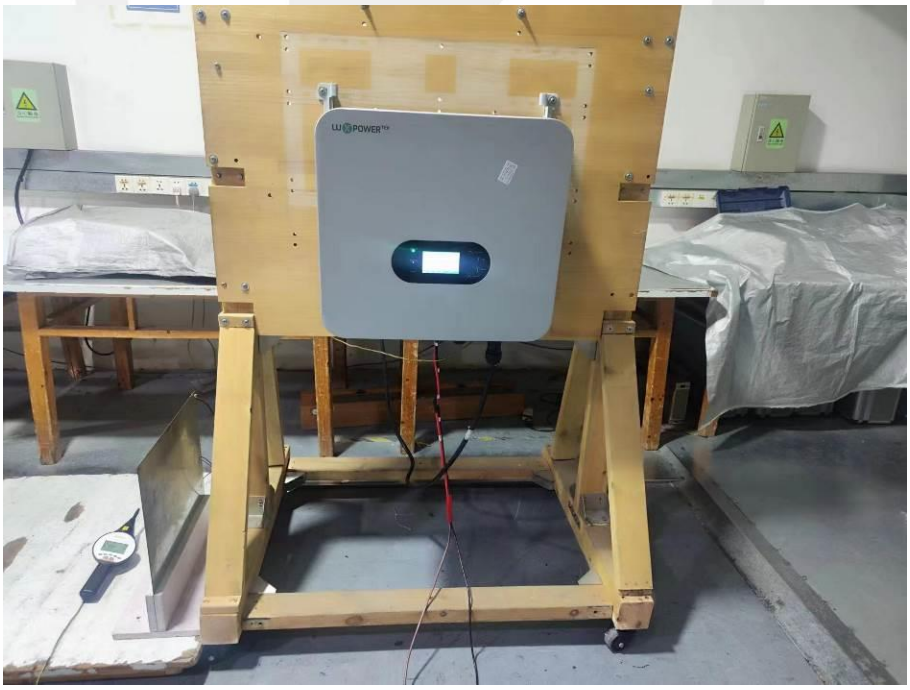
16.3.Photos of Radiation Emission Measurement





16.4.Photo of Harmonic / Flicker Measurement

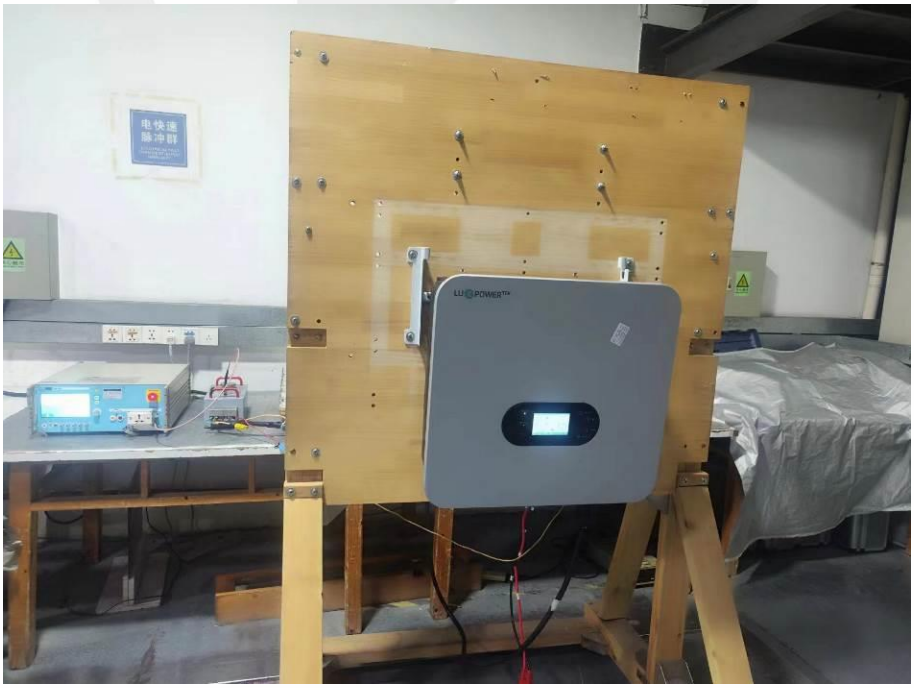
16.5.Photo of Electrostatic Discharges



16.6.Photo of Continuous RF Electromagnetic Field Disturbances

16.7.Photos of Electrical Fast Transients/Burst

AC Mains:



DC Line

16.8.Photos of Surges

AC Mains:

DC Line

16.9.Photos of Continuous Induced RF Disturbances

AC Mains:

DC Line

16.10. Photo of Voltage Dips and Interruptions

APPENDIX (PHOTOS OF EUT)

*** End of Report ***

Statement

1 . This report is invalid without the signature of the authorized approver and "special seal for testing".

2 . This report shall not be copied partly without authorization.

3 . The test results or observations are applicable only to tested sample. Client shall be responsible for representativeness of the sample and authenticity of the material.

4 . The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.

5 . The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.

6 . Objections shall be raised within 20 days from the date receiving the report.