


Prüfbericht-Nr.: <i>Test report no.:</i>	CN23SUMK 001	Auftrags-Nr.: <i>Order no.:</i>	170336408	Seite 1 von 39 Page 1 of 39
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	2115535	Auftragsdatum: <i>Order date:</i>	2023.02.28	
Auftraggeber: <i>Client:</i>	HUIZHOU FORYOU OPTOELECTRONICS TECHNOLOGY CO., LTD. Foryou Industrial Park District B, NO.1 North Shangxia Road, Dongjiang Hi-tech Industry Park, Huizhou, 516005, Guangdong, P.R. China			
Prüfgegenstand: <i>Test item:</i>	SP2500			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	Potable Power Station			
Auftrags-Inhalt: <i>Order content:</i>	TUV Rheinland-EMC Service			
Prüfgrundlage: <i>Test specification:</i>	EN 55032:2015+A11+A1 EN 55035:2017+A11 EN IEC 61000-3-2:2019+A1 EN 61000-3-3:2013+A1+A2			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2023.02.28			
Prüfmuster-Nr.: <i>Test sample no.:</i>	170336408-001			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	Refer to section 2.1			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	Joe Chen			
Datum: <i>Date:</i>	2023.04.03	Ausstellungsdatum: <i>Issue date:</i>	2023.04.07	
Stellung / Position:	Joe Chen/PE	Stellung / Position:	Webb Luo/Reviewer	
Sonstiges / <i>Other:</i>				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

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Anmerkungen <i>Remarks</i>

1	<p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p>
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3	<p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p>
4	<p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p>

Test Summary

5.1.1 HARMONICS CURRENT EMISSIONS ON AC MAINS

RESULT: Pass

5.1.2 VOLTAGE CHANGES, VOLTAGE FLUCTUATIONS AND FLICKER

RESULT: Pass

5.1.3 MAINS TERMINAL DISTURBANCE VOLTAGE

RESULT: Pass

5.1.4 CONDUCTED EMISSIONS ON WIRED NETWORK PORTS

RESULT: N/A

5.1.5 CONDUCTED EMISSIONS ON OPTICAL FIBRE PORTS

RESULT: N/A

5.1.6 CONDUCTED EMISSIONS ON BROADCAST RECEIVER TUNER PORTS

RESULT: N/A

5.1.7 CONDUCTED EMISSIONS ON ANTENNA PORTS

RESULT: N/A

5.2.1 CONDUCTED EMISSIONS ON TV BROADCAST RECEIVER TUNER PORTS

RESULT: N/A

5.2.2 CONDUCTED EMISSIONS ON RF MODULATOR OUTPUT PORTS

RESULT: N/A

5.2.3 CONDUCTED EMISSIONS ON FM BROADCAST RECEIVER TUNER PORTS

RESULT: N/A

5.2.4 RADIATED EMISSION (30-1000MHZ)

RESULT: Pass

5.2.5 RADIATED EMISSIONS FROM FM RECEIVERS

RESULT: N/A

5.2.6 RADIATED EMISSIONS FROM OUTDOOR UNITS OF HOME SATELLITE RECEIVERS

RESULT: N/A

6.2.1 RADIO-FREQUENCY COMMON MODE / CONDUCTED SUSCEPTIBILITY (CS)

RESULT: Pass

6.2.2 RADIO-FREQUENCY ELECTROMAGNETIC FIELDS (RS)

RESULT: Pass

6.2.3 POWER-FREQUENCY MAGNETIC FIELDS

RESULT: N/A

6.3.1 TRANSIENT DISTURBANCES (EFT)

RESULT: Pass

6.3.2 BROADBAND IMPULSE NOISE DISTURBANCES, REPETITIVE

RESULT: N/A

6.3.3 BROADBAND IMPULSE NOISE DISTURBANCES, ISOLATED

RESULT: N/A

6.3.4 SURGE

RESULT: Pass

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6.3.5 ELECTROSTATIC DISCHARGES (ESD)

RESULT: Pass

6.4.1 VOLTAGE DIPS AND INTERRUPTIONS

RESULT: Pass

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1 General Remarks

When applying the basic standards in this test report, please refer to the applied generic or product family standards for edition information:

For dated basic standards, only the edition cited applies. For undated basic standards, the latest edition (including any amendments) applies.

For all EMI tests (When included in this report), as measurement uncertainties are less than the values UCISPR given in CISPR 16-4-2, compliance with the limits is determined by comparing measurement results directly with corresponding limits without taking into consideration of measurement uncertainties. For all EMS tests (When included in this report), measurement uncertainties are not considered as well according to corresponding test standards.

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result

Appendix 2: List of Test and Measurement Equipment

2 Test Sites

2.1 Test Facilities

1) Dongguan Anci Electronic Technology Co., Ltd.

1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Test items: CS, RS, EFT, Surge

2) Dongguan New Testing Centre Co..Ltd

3F.No.1 the 1st North Industry Road, Songshan Lake Science &Technology Park, Dongguan, Guangdong, China, 523808

Test items: Others

The test at this test site has been conducted under the supervision of a TÜV Rheinland engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Refer to attached Appendix 2.

3 General Product Information

The submitted model **SP2500** is Potable Power Station not used in residential environment, therefore it belong to **Class A equipment**.

Class A equipment shall have the following warning in the instructions for use, to inform the user of the risk of operating this equipment in a residential environment:

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

The EUT cannot charge and discharge at the same time.

According to the above information, all tests were performed on SP2500.

3.1 Product Function and Intended Use

Refer to the Technical Documentation and User Manual for further details.

3.2 Ratings and System Details

Type designation	SP2500
Input	AC 230, 50/60Hz, 1400W, Max
AC output	4x AC 230, 50/60Hz, 2500W, Max
USB output	USB-A Ports: 4x 5Vdc,3A, 9Vdc, 2A, 12Vdc, 1.5A, 18W Max USB-C Ports: 2x 5Vdc,3A, 9Vdc, 3A, 12Vdc, 3A, 15Vdc, 3A, 20Vdc, 5A,100W Max
Cigar lighter port	1x 13Vdc,10A, 130W Max
DC5521 port	2x 13Vdc,3A, 39W Max
Anderson port	1x 13Vdc,15A, 195W Max
Rated output power	2500W
Battery type	48V LiFePO4 battery
Battery capacity	2496Wh
Protection class	I
Port	AC Mains, DC output port(Length of line< 2m), USB ports(Length of line< 2m)

Refer to Technical Documentation for further details.

3.3 Independent Operation Modes

The basic operation modes are:

A: Discharging with following full load:

1. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(5V/3A)+ 2xType-C(20V 3A)+Cigar lighter port+DC5521 port+anderson port
2. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(9V/2A)+ 2xType-C(20V 3A)+Cigar lighter port+DC5521 port+anderson port
3. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(12V/1.5A)+ 2xType-C(20V 3A)+Cigar lighter port+DC5521 port+anderson port
4. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(12V/1.5A)+ 2xType-C(5V 3A)+Cigar lighter port+DC5521 port+anderson port
5. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(12V/1.5A)+ 2xType-C(9V 3A)+Cigar lighter port+DC5521 port+anderson port
6. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(12V/1.5A)+ 2xType-C(12V 3A)+Cigar lighter port+DC5521 port+anderson port
7. 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(12V/1.5A)+ 2xType-C(15V 3A)+Cigar lighter port+DC5521 port+anderson port

The EUTs were terminated with an appropriate load in order to make the output current of the EUTs reach the rated values

B: Discharging with half load: the EUTs were terminated with an appropriate load in order to make the output current of the EUTs reach half of the rated values

C: Charging

D: Battery powered + AC output

Refer to User Manual for further details.

3.4 Noise Generating and Noise Suppressing Parts

Refer to Technical Documentation for further details.

3.5 Submitted Documents

PCB Layout
Circuit Diagram
Rating Label
User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Immunity: The equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to test set-up in chapter 5 and chapter 6.

4.3 Special Accessories and Auxiliary Equipment

None.

4.4 Countermeasures to achieve EMC Compliance

No additional countermeasures to the submitted test sample(s) were employed to achieve compliance.

5 Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Harmonics Current Emissions on AC Mains

RESULT: **Pass**

Test Specification

Basic standard	:	EN IEC 61000-3-2:2019+A1
Measurement equipment requirement	:	IEC 61000-4-7
Measured harmonics	:	1 – 40
Equipment class	:	A
Limits	:	EN IEC 61000-3-2:2019+A1, Clause 7.2 Table 1

Test Setup

Date of testing	:	Refer to appendix 1
Input voltage	:	Refer to appendix 1
Operation mode	:	C
Test observation period	:	2.5min
Temperature	:	23°C
Humidity	:	50%
Air pressure	:	101kPA

Photograph 1: Set-up for Harmonics Current Emission on AC Mains



Test Result

For the measurement, refer to the appendix 1.

5.1.2 Voltage Changes, Voltage Fluctuations and Flicker

RESULT:**Pass**

Test Specification

Basic standard : EN 61000-3-3:2013+A1+A2
Measurement equipment requirement : IEC 61000-4-15
Limits : EN 61000-3-3:2013+A1+A2, Clause 5

Test Setup

Date of testing : 2023.03.28
Input voltage : AC 230V, 50Hz
Operation mode : 24 time on-off-om
Test observation period : 24 min
Temperature : 23°C
Humidity : 50%
Air pressure : 101kPA

Photograph 2: Set-up for Voltage Changes, Voltage Fluctuations and Flicker

Test Result
Table 2: Voltage Changes, Voltage Fluctuations and Flicker

Parameter	Pst	Plt	Tmax (ms)	dc%	dmax%
Limit	1	0.65	500	3.3	6
SP2500	/	/	0.0	1.42	2.60

Pst and Plt requirements shall not be applied to voltage changes caused by manual switching.

5.1.3 Mains Terminal Disturbance Voltage

RESULT:**Pass****Test Specification**

Test procedure	: EN 55032:2015+A11+A1, Class A
Port	: AC Mains
Frequency range of Mains	: 150 kHz-30MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.9

Test Setup

Date of testing	: Refer to appendix 1
Input voltage	: Refer to appendix 1
Operation mode	: C
Artificial hand	: N/A
Test configuration	: Table-top
Temperature	: Refer to appendix 1
Humidity	: Refer to appendix 1
Air pressure	: Refer to appendix 1

Photograph 3: Set-up for Mains Terminal Disturbance Voltage**Test Result**

Measurement uncertainty: 3.20 dB ($k=2$, $\sigma=95\%$)

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector has been omitted.

Disturbances other than those mentioned are small or not detectable.

For test results, please refer to the attached appendix 1. The test data in appendix 1 is the worst result after the EUTs were tested with full load, half load and empty load.

5.1.4 Conducted Emissions on Wired Network Ports

RESULT: N/A

Test Specification

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: Telecom and network ports
Frequency range	: 150kHz-30MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.12

According to electrical character and usage of EUT, there is no telecommunication and network port incorporated. Therefore this test is not applicable for this EUT.

5.1.5 Conducted Emissions on Optical Fibre Ports

RESULT: N/A

Test Specification

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: Optical Fibre ports
Frequency range	: 150kHz-30MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.12

According to electrical character and usage of EUT, there is no Optical Fibre Ports with metallic shield or tension members incorporated. Therefore this test is not applicable for this EUT.

5.1.6 Conducted Emissions on Broadcast Receiver Tuner Ports

RESULT:**N/A****Test Specification**

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: Broadcast Receiver Tuner ports
Frequency range	: 150kHz-30MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.12

According to electrical character and usage of EUT, there is no Broadcast Receiver Tuner Ports incorporated. Therefore this test is not applicable for this EUT.

5.1.7 Conducted Emissions on Antenna Ports

RESULT:**N/A****Test Specification**

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: Antenna ports
Frequency range	: 150kHz-30MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.12

According to electrical character and usage of EUT, there is no antenna ports incorporated. Therefore this test is not applicable for this EUT.

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Conducted Emissions on TV Broadcast Receiver Tuner Ports

RESULT:**N/A****Test Specification**

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: TV Broadcast Receiver Tuner Ports
Frequency range	: 30MHz-2150MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.13

According to electrical character and usage of EUT, there is no TV Broadcast Receiver Tuner Ports with an accessible connector incorporated. Therefore this test is not applicable for this EUT.

5.2.2 Conducted Emissions on RF Modulator Output Ports

RESULT:**N/A****Test Specification**

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: RF modulator output ports
Frequency range	: 30MHz-2150MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.13

According to electrical character and usage of EUT, there is no RF modulator output ports incorporated. Therefore this test is not applicable for this EUT.

5.2.3 Conducted Emissions on FM Broadcast Receiver Tuner Ports

RESULT:**N/A****Test Specification**

Test procedure	: EN 55032:2015+A11+A1
Equipment Class	: Class A
Port	: FM Broadcast Receiver Tuner Ports
Frequency range	: 30MHz-2150MHz
Test site	: Shielded Room
Limits	: EN 55032:2015+A11+A1, table A.13

According to electrical character and usage of EUT, there is no FM Broadcast Receiver Tuner Ports with an accessible connector incorporated. Therefore this test is not applicable for this EUT.

5.2.4 Radiated Emission (30-1000MHz)

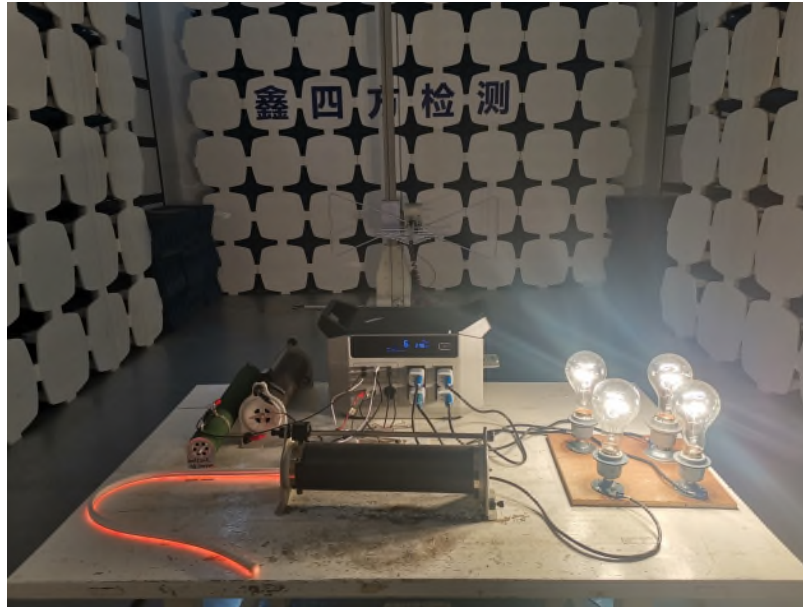
RESULT:**Pass****Test Specification**

Test procedure	: EN 55032:2015+A11+A1, class A
Port	: Enclosure
Frequency range	: 30MHz-1000MHz *
Test site	: SAC
Limits	: EN 55032:2015+A11+A1, Table A.2

Test Setup

Date of testing	: Refer to appendix 1
Input voltage	: Refer to appendix 1
Operation mode	: A.1 (Worst case) & C
Temperature	: Refer to appendix 1
Humidity	: Refer to appendix 1
Air pressure	: Refer to appendix 1

*Note: According to EN 55032:2015+A11+A1 Table 1, The highest frequency of the internal sources of the EUT is less than 108MHz, The measurement shall only be made up to 1000MHz.

Photograph 4: Set-up for Radiated Emission**Test Result**

Measurement uncertainty: 4.60 dB ($k=2$, $\sigma=95\%$)

Disturbances other than those mentioned are small or not detectable.

Refer to the attached appendix 1. The test data in appendix 1 is the worst result after the EUTs were tested with full load, half load and empty load.

5.2.5 Radiated emissions from FM receivers

RESULT: N/A

Test Specification

Test procedure : EN 55032:2015+A11+A1, Annex C
Port : Enclosure
Frequency range : 30MHz-1000MHz
Test site : SAC
Limits : EN 55032:2015+A11+A1, table A.6

According to electrical character and usage of EUT, there is no FM receivers incorporated. Therefore this test is not applicable for this EUT.

5.2.6 Radiated emissions from Outdoor units of home Satellite Receivers

RESULT: N/A

Test Specification

Test procedure : EN 55032:2015+A11+A1, Annex H
Port : Enclosure
Frequency range : 30MHz-18000MHz
Test site : SAC
Limits : EN 55032:2015+A11+A1, table A.7

According to electrical character and usage of EUT, there is no Outdoor units of home Satellite Receivers incorporated. Therefore this test is not applicable for this EUT.

6 Test Results IMMUNITY

6.1 Classification of Apparatus

According to EN 55035:2017+A11 the appliance shall fulfill the requirements of:

Continuous Disturbances

Power-frequency magnetic field Criterion A

Radio-frequency Electromagnetic Fields (RS) Criterion A

Radio-Frequency Common Mode / Conducted Susceptibility (CS) Criterion A

Transient Disturbances

Electrical Fast Transients (EFT) Criterion B

Broadband Impulse Noise Disturbances, Repetitive Criterion A

Broadband Impulse Noise Disturbances, Isolated Criterion B

Surge Criterion B

Electrostatic Discharges (ESD) Criterion B

Power Supply Alterations

Voltage Dips and Interruptions Criterion B + C

For all test: The charging mode can be observed through the display panel.

For RS/ESD test: The output port is monitored by oscillograph or digit multimeter.

6.2 Continuous Disturbances

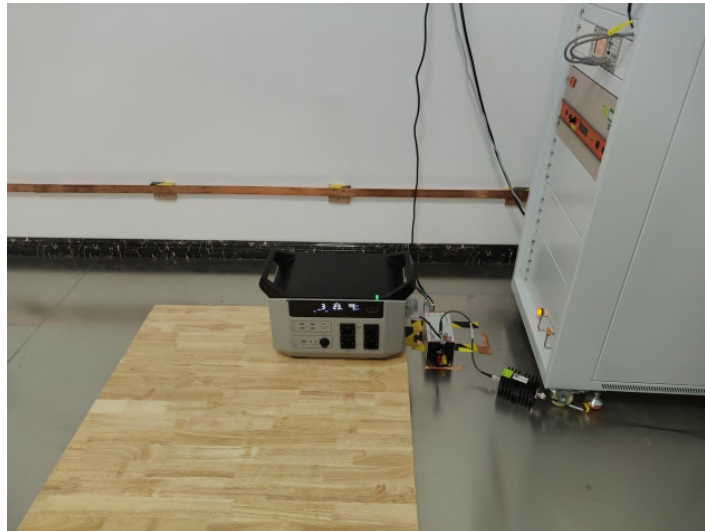
6.2.1 Radio-frequency Common Mode / Conducted Susceptibility (CS)

RESULT:**Pass****Test Specification**

Family standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-6
Characteristics of the test generator:		
Output impedance		50 Ω
Harmonics and distortion		Any spurious spectral line at least 15 dB below the carrier level
Amplitude modulation		80 % \pm 5 % in depth, 1 kHz \pm 10 % sine wave
Frequency bandwidth	:	150 kHz to 80 MHz
Frequency step	:	1% with 1 s dwell time
Performance criterion	:	A

Test Setup

Date of testing	:	17 Mar, 2023
Input voltage	:	AC 230V, 50Hz
Operation mode	:	C
Artificial hand	:	N/A
Signal lines and control lines	:	N/A
DC network power ports	:	N/A
Input ac power ports	:	0.15MHz-10MHz, 3V(rms) 10MHz-30MHz, 3V-1V(rms) 30MHz-80MHz, 1V(rms)
Temperature	:	23°C
Humidity	:	53%
Air pressure	:	101kPA

Photograph 5: Set-up for Radio-frequency Common Mode / Conducted Susceptibility (CS)

Test Result
Table 3: Immunity against Radio-frequency Common Mode / Conducted Susceptibility (CS)

Coupling point	Application	Level (V(r.m.s))	Frequency (MHz)	Remark
Power ports				
AC mains	CDN-M3	3	0.15-10	Applied, *)
		3 to 1	10-30	
		1	30-80	
AC output port	CDN-M3	3	0.15-10	N/A
		3 to 1	10-30	
		1	30-80	
DC power port	EM clamp	3 to 1		N/A
		3 to 1		N/A
Signal lines				
Ethernet Lines	CDN-T8	3	0.15-10	N/A
		3 to 1	10-30	
		1	30-80	
USB Lines	Current Clamp	3 to 1		N/A
Parallel Lines	Current Clamp	3 to 1		N/A
Serial Lines	Current Clamp	3 to 1		N/A
Other Signal/Control lines (<3m)				
	Current Clamp	3 to 1		N/A
	EM clamp	3 to 1		N/A

*) Remark: No degradation was observed during and after the tests.

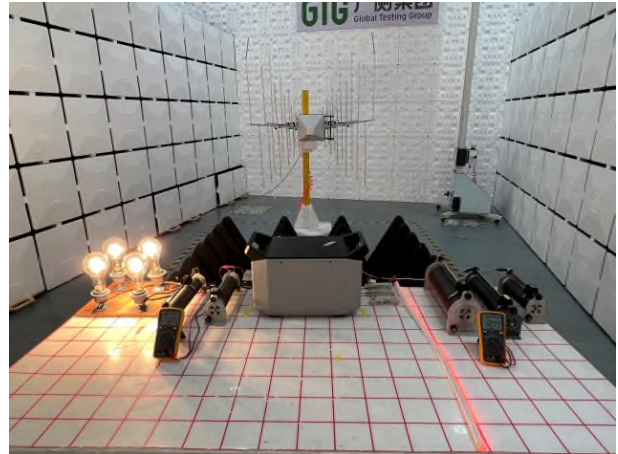
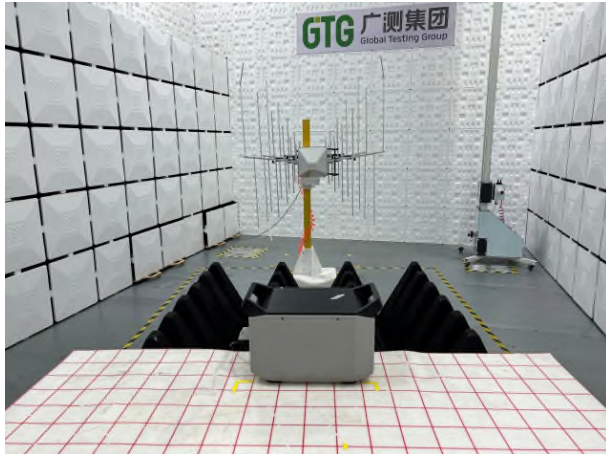
6.2.2 Radio-frequency Electromagnetic Fields (RS)

RESULT:**Pass****Test Specification**

Family standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-3
Test site	:	FAC
Uniform field area (UFA)	:	1.5 m x 1.5 m, 16 points with a minimum UFA size 0.5 m x 0.5 m, 75 % of calibration points within specifications if UFA is larger than 0.5 m x 0.5 m . 100 % (all 4 points) in the specifications for 0.5 x 0.5 m UFA
Amplitude modulation	:	80 % ± 5 % in depth, 1 kHz ± 10 % sine wave
Frequency bandwidth	:	80MHz to 1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz
Level	:	3 V/m(un-modulated)
Frequency step	:	1% with 1 s dwell time
Performance criterion	:	A

Test Setup

Date of testing	:	17 Mar, 2023
Input voltage	:	AC 230V, 50Hz
Operation mode	:	A.1& C
Temperature	:	23°C
Humidity	:	54%
Air pressure	:	101kPA

Photograph 6: Set-up for Radio-frequency Electromagnetic Fields (RS)

Test Result
Table 4: Immunity against Radio-frequency Electromagnetic Fields (RS)

Side of the equipment under test	Frequency (MHz)	Antenna polarization (Vertical/Horizontal)	Remark
Front	80-1000	V and H	Applied, *)
Rear		V and H	Applied, *)
Right		V and H	Applied, *)
Left		V and H	Applied, *)
Front	1800	V and H	Applied, *)
Rear		V and H	Applied, *)
Right		V and H	Applied, *)
Left		V and H	Applied, *)
Front	2600	V and H	Applied, *)
Rear		V and H	Applied, *)
Right		V and H	Applied, *)
Left		V and H	Applied, *)
Front	3500	V and H	Applied, *)
Rear		V and H	Applied, *)
Right		V and H	Applied, *)
Left		V and H	Applied, *)
Front	5000	V and H	Applied, *)
Rear		V and H	Applied, *)
Right		V and H	Applied, *)
Left		V and H	Applied, *)

*) Remark: No degradation was observed during and after the tests.

6.2.3 Power-frequency Magnetic Fields

RESULT:**N/A****Test Specification**

Family Standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-8
Test Level (A/m)	:	1A/m
Frequency	:	50 or 60 Hz
Performance criterion		A

The EUT does not contain devices susceptible to magnetic fields, such as CRT monitors, Hall elements, electrodynamic microphones, magnetic field sensors, etc. Therefore, this test is not applicable and skipped.

6.3 Transient Disturbances

6.3.1 Transient Disturbances (EFT)

RESULT:**Pass****Test Specification**

Family standard	: EN 55035:2017+A11
Basic standard	: IEC 61000-4-4
Wave shape of the pulse in 50 Ω load	:
Rise time	: 5 ns \pm 30 %
Duration	: 50 ns \pm 30 %
Wave shape into 1 k Ω load	:
Rise time:	: 5 ns \pm 30 %
Duration	: 50 ns with a tolerance of -15 ns to + 100 ns
Burst duration	: 15 ms \pm 20 % at 5 kHz
Burst period	: 300 ms \pm 20 %
Repetition frequency:	: 5 kHz
Polarity	: Positive and negative
Time of application:	: 2 minutes
Performance criterion	: B

Test Setup

Date of testing	: 20 Mar, 2023
Input voltage	: AC 230V, 50Hz
Operation mode	: C
Artificial hand	: N/A
DC network power ports	: N/A
Input ac power ports	: 1KV
Temperature	: 26°C
Humidity	: 55%
Air pressure	: 102kPA

Photograph 7: Set-up for Electrical Fast Transient (EFT)

Test Result
Table 5: Immunity against Electrical Fast Transients (EFT)

Coupling point	Application	Level (kV)	Polarity	Remark
Power ports				
AC mains	Coupling network	1	+	Applied, *)
		1	-	Applied, *)
AC output port	Coupling network	1	+	N/A
		1	-	N/A
DC power port	Coupling network	1	+	N/A
		1	-	N/A
Signal lines				
	Coupling clamp	0.5	+/-	N/A
Control lines				
	Coupling clamp	0.5	+/-	N/A

*) Remark: The LED display blinks during the EUT test, and the EUT works normally after the test.

6.3.2 Broadband Impulse Noise Disturbances, Repetitive

RESULT:**N/A****Test Specification**

Family standard	: EN 55035:2017+A11
Basic standard	: Clause 4.2.7
Impulse frequency	: 0.15-0.5MHz; 0.5-10MHz; 10-30MHz
Test level	: 107dB μ V; 107-36dB μ V; 36-30dB μ V
Burst duration	: 0.70 ms
Burst period	: 8.3 ms (60Hz), 10 ms (50Hz)
Performance criterion	: A

According to electrical character and usage of EUT, there is no CPE xDSL ports incorporated. Therefore this test is not applicable for this EUT.

6.3.3 Broadband Impulse Noise Disturbances, Isolated

RESULT:**N/A****Test Specification**

Family standard	: EN 55035:2017+A11
Basic standard	: Clause 4.2.7
Impulse frequency	: 0.15-30MHz
Test level	: 110dB μ V
Burst duration	: 0.24 ms, 10ms, 300ms
Performance criterion	: B

According to electrical character and usage of EUT, there is no CPE xDSL ports incorporated. Therefore this test is not applicable for this EUT.

6.3.4 Surge

RESULT:**Pass****Test Specification**

Family standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-5
Definitions of the waveform parameters	:	
Front time	:	1.2 μ s \pm 30 %
Time to half value	:	50 μ s \pm 20 %
Source impedance	:	
Power line symmetrical	:	2 Ω + 18 μ F
Power line unsymmetrical	:	12 Ω + 9 μ F
Polarity	:	Positive and negative
Number of surges / polarity /phase angle:	:	5
Phase angles	:	90°and 270 °
Repetition rate	:	60 s
Performance criterion	:	B

Test Setup

Date of testing	:	20 Mar, 2023
Input voltage	:	AC 230V, 50Hz
Operation mode	:	C
Temperature	:	26°C
Humidity	:	55%
Air pressure	:	102kPA

Photograph 8: Set-up for Surge on AC Power Supply

Test Result
Table 6: Surge Immunity Tests, AC Power Supply

Coupling point	Application	Level (kV)	Polarity	Remark
AC mains	Between phase and neutral	0.5/1	+	Applied, *)
		0.5/1	-	Applied, *)
AC mains	Between phase and protective earth	0.5/1/2	+	Applied, *)
		0.5/1/2	-	Applied, *)
AC mains	Between neutral and protective earth	0.5/1/2	+	Applied, *)
		0.5/1/2	-	Applied, *)

*) Remark: No degradation was observed during and after the tests.

6.3.5 Electrostatic Discharges (ESD)

RESULT:**Pass****Test Specification**

Family standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-2
Discharge impedance	:	330 Ω / 150 pF
No. of discharges	:	Contact discharge: ≥ 10 Air discharge: ≥ 10
Type of discharge	:	
Direct discharge	:	Air discharge, $\pm 2, 4, 8$ kV Contact discharge, ± 4 kV
Indirect discharge	:	Contact discharge, ± 4 kV
Polarity	:	Positive and negative
Discharge location	:	See photo documentation of the test set-up All external locations accessible by hand Horizontal coupling plate (HCP) Vertical coupling plate (VCP)
Performance criterion	:	B

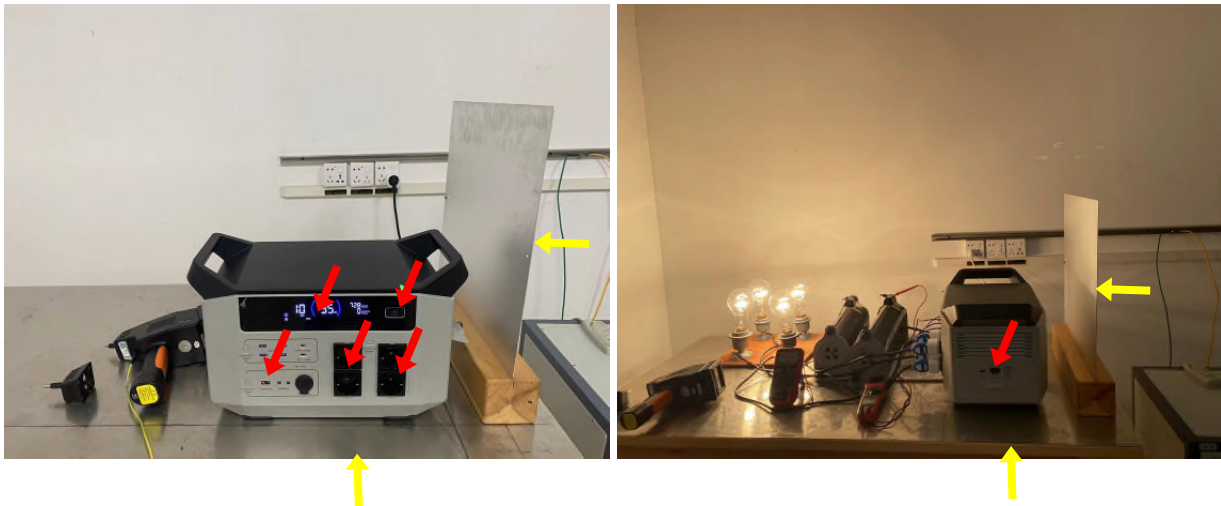
Test Setup

Date of testing	:	10 Mar, 2023
Input voltage	:	AC 230V, 50Hz
Operation mode	:	A.1& C
Temperature	:	24.6°C
Humidity	:	54.5%
Air pressure	:	100.1kPA

Photograph 9: Set-up for Electrostatic Discharge

⚡ Contact Discharge ±4kV

⚡ Air Discharge ±2, 4, 8kV


Test Result
Table 7: Electrostatic Discharge

Direct discharges			
Air discharges Discharge location	Air discharge voltage (kV)	Polarity	Remark
Refer to Photograph of ESD	2, 4, 8	±	Applied, *)
Non-conducted parts	2, 4, 8	±	Applied, *)
Contact discharges Discharge location	Contact discharge voltage (kV)	Polarity	Remark
Refer to Photograph of ESD	4	±	Applied, *)
Conducted parts	4	±	Applied, *)
Indirect discharges			
Contact discharges Discharge location	Contact discharge voltage (kV)	Polarity	Remark
VCP	4	±	Applied, *)
HCP	4	±	Applied, *)

*) Remark: No degradation was observed during and after the tests.

6.4 Power Supply Alterations

6.4.1 Voltage Dips and Interruptions

RESULT:**Pass****Test Specification**

Family standard	:	EN 55035:2017+A11
Basic standard	:	IEC 61000-4-11
Test voltage generator characteristics for interruptions	:	
Rise time		Between 1 μ s and 5 μ s
Fall time		Between 1 μ s and 5 μ s
Output impedance of the test voltage generator	:	<(0.4 + j 0.25 Ω)
Phase angle	:	0°
Nominal mains voltage (Ut)	:	AC 100-240V
Rated frequency	:	50Hz / 60Hz
Test level:		
Test level in % Ut		Duration (cycle)
0		0.5, 250/300
70		25/30
No. of interruptions	:	3
No. of voltage dips	:	3
Interval	:	>10s
Performance criterion	:	B + C

Test Setup

Date of testing	:	10 Mar, 2023
Input voltage	:	AC 230V, 50Hz
Operation mode	:	C
Temperature	:	24.2°C
Humidity	:	54.5%
Air pressure	:	100.1kP

Photograph 10: Set-up for Voltage Dips and Interruptions

Test Result
Table 8: Voltage Dip and Interruptions Immunity

Interruptions			
Test level (% Ut)	Duration (in periods)	Number of interruptions	Result
0	250/300	3	Applied, *)
Voltage dips			
Test level (% Ut)	Duration (in periods)	Number of voltage dips	Result
0	0.5	3	Applied, *)
70	25/30	3	Applied, *)

*) Remark: EUT will stop work and can recover by itself after test.

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Harmonics – Class-Aper IEC 61000-3-2 Edition 5.0_2019(Run time)

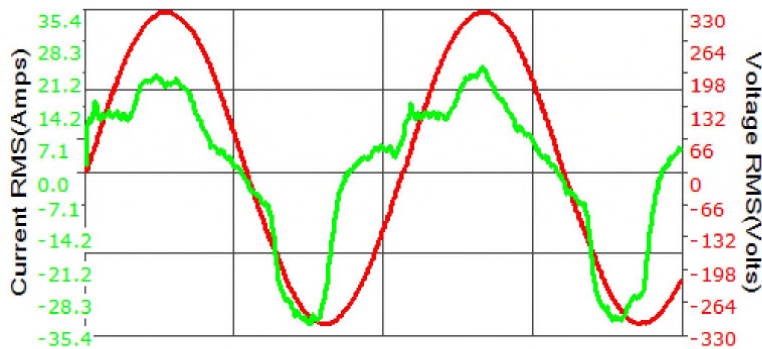
EUT: SP2500
Test category: Class-A(European limits)
Test date: 2023/03/27
Test duration (min): 3.0
Comment: Comment
Customer: Customer

Tested by: Tester
Test Margin: 100
End time: 10:45:54

Test Result: Pass

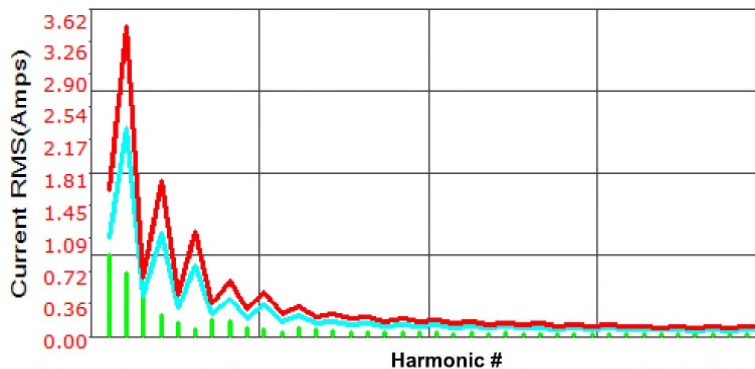
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class-A limit line

European Limits



Test Result: Pass Worst harmonics H2-63.74 of 100% limit, H2-82.76 of 150% limit

Taylor Chen

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Current Test Result Summary (Run time)

EUT: SP2500
Test category: Class-A(European limits)
Test date: 2023/03/27
Test duration (min): 3.0
Comment: Comment
Customer: Customer

Tested by: Tester
Test Margin: 100
End time: 10:45:54

Start time: 10:42:42
Data file name:

Test Result: Pass
THC(A): 1.3621 I-THD(%): 45.64 POHC(A): 0.0458 POHC Limit(A): 0.2514

Source qualification: Normal

Highest parameter values during test:

V_RMS (Volts): 229.66
I_Peak (Amps): 10.752
I_Fund (Amps): 5.928
Power (Watts): 1353.9

Frequency(Hz): 50.00
I_RMS (Amps): 5.977
Crest Factor: 1.804
Power Factor: 0.988

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.8938	1.0800	82.76	1.0326	1.6200	63.74	Pass
3	0.6851	2.3000	29.79	0.8120	3.4500	23.54	Pass
4	0.3110	0.4300	72.20	0.322	0.6450	50.00	Pass
5	0.2193	1.1400	19.24	0.2911	1.7100	17.02	Pass
6	0.1330	0.3000	44.35	0.2926	0.4500	65.02	Pass
7	0.0646	0.7700	8.40	0.1693	1.1550	14.66	Pass
8	0.1708	0.2300	74.25	0.2804	0.3450	81.28	Pass
9	0.1422	0.4000	35.55	0.2391	0.6000	39.85	Pass
10	0.0725	0.1840	39.40	0.1352	0.2760	48.99	Pass
11	0.0625	0.3300	18.94	0.1257	0.4950	25.39	Pass
12	0.0336	0.1533	21.93	0.0816	0.2300	35.48	Pass
13	0.0691	0.2100	32.91	0.1550	0.3150	49.21	Pass
14	0.0560	0.1314	42.62	0.1088	0.1971	55.19	Pass
15	0.0350	0.1500	23.35	0.0894	0.2250	39.73	Pass
16	0.0304	0.1150	26.46	0.0649	0.1725	37.62	Pass
17	0.0198	0.1324	14.96	0.0550	0.1985	27.70	Pass
18	0.0315	0.1022	30.80	0.0622	0.1533	40.57	Pass
19	0.0251	0.1184	21.18	0.0670	0.1776	37.72	Pass
20	0.0254	0.0920	27.60	0.0555	0.1380	40.22	Pass
21	0.0238	0.1071	22.25	0.0479	0.1607	29.80	Pass
22	0.0168	0.0836	20.10	0.0450	0.1255	35.87	Pass
23	0.0196	0.0978	20.07	0.0399	0.1467	27.19	Pass
24	0.0136	0.0767	17.72	0.0368	0.1150	32.00	Pass
25	0.0184	0.0900	20.49	0.0377	0.1350	27.93	Pass
26	0.0122	0.0708	17.18	0.0289	0.1062	27.22	Pass
27	0.0151	0.0833	18.17	0.0458	0.1250	36.64	Pass
28	0.0104	0.0657	15.88	0.0260	0.0986	26.38	Pass
29	0.0110	0.0776	14.13	0.0302	0.1164	25.95	Pass
30	0.0109	0.0613	17.85	0.0298	0.0920	32.39	Pass
31	0.0085	0.0726	11.69	0.0251	0.1089	23.05	Pass
32	0.0114	0.0575	19.76	0.0265	0.0863	30.72	Pass
33	0.0095	0.0682	13.95	0.0287	0.1023	28.06	Pass
34	0.0112	0.0541	20.72	0.0284	0.0812	34.99	Pass
35	0.0092	0.0643	14.26	0.0234	0.0964	24.27	Pass
36	0.0188	0.0511	36.80	0.0347	0.0767	45.26	Pass
37	0.0097	0.0608	15.99	0.0286	0.0912	31.35	Pass
38	0.0146	0.0484	30.17	0.0316	0.0726	43.51	Pass
39	0.0107	0.0577	18.62	0.0269	0.0865	31.08	Pass
40	0.0117	0.0460	25.43	0.0255	0.0690	36.96	Pass

Note: Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio

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Voltage Source Verification Data (Run time)

EUT: SP2500
 Test category: Class-A(European limits)
 Test date: 2023/03/27
 Test duration (min): 3.0
 Comment: Comment
 Customer: Customer

Tested by: Tester
 Test Margin: 100
 Start time: 10:42:42
 End time: 10:45:54
 Data file name:

Test Result: Pass
 Source qualification: Normal
 Highest parameter values during test:

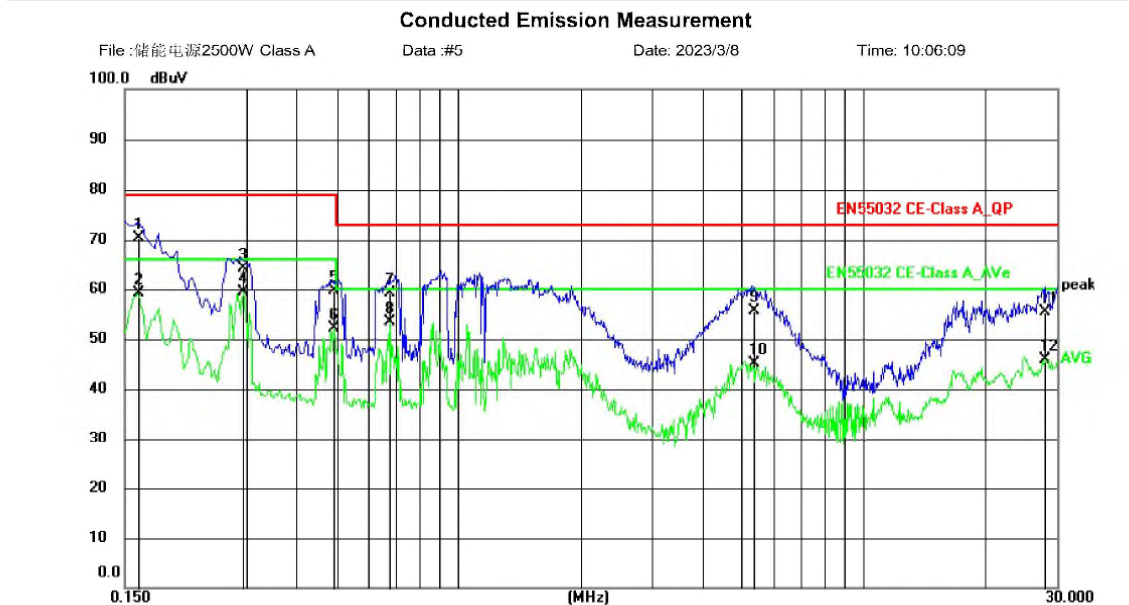
V_RMS (Volts): 229.66	Frequency(Hz): 50.00
I_Peak (Amps): 10.752	I_RMS (Amps): 5.977
I_Fund (Amps): 5.928	Crest Factor: 1.804
Power (Watts): 1353.9	Power Factor: 0.988

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.502	0.759	0.661	Pass
3	0.906	2.068	43.84	Pass
4	0.086	0.459	18.68	Pass
5	0.584	0.919	63.60	Pass
6	0.072	0.459	15.63	Pass
7	0.474	0.689	68.78	Pass
8	0.360	0.459	78.40	Pass
9	0.238	0.459	51.88	Pass
10	0.119	0.459	25.87	Pass
11	0.220	0.230	95.81	Pass
12	0.174	0.230	75.80	Pass
13	0.174	0.230	75.95	Pass
14	0.186	0.230	81.13	Pass
15	0.125	0.230	54.20	Pass
16	0.143	0.230	62.33	Pass
17	0.090	0.230	39.13	Pass
18	0.151	0.230	65.80	Pass
19	0.128	0.230	55.66	Pass
20	0.091	0.230	39.49	Pass
21	0.092	0.230	39.86	Pass
22	0.064	0.230	27.94	Pass
23	0.077	0.230	33.32	Pass
24	0.095	0.230	41.44	Pass
25	0.097	0.230	42.29	Pass
26	0.089	0.230	38.93	Pass
27	0.064	0.230	27.99	Pass
28	0.045	0.230	19.45	Pass
29	0.047	0.230	20.55	Pass
30	0.052	0.230	22.54	Pass
31	0.046	0.230	20.09	Pass
32	0.060	0.230	26.14	Pass
33	0.049	0.230	21.23	Pass
34	0.098	0.230	42.70	Pass
35	0.050	0.230	21.93	Pass
36	0.187	0.230	81.39	Pass
37	0.059	0.230	25.49	Pass
38	0.108	0.230	47.01	Pass
39	0.068	0.230	29.57	Pass
40	0.108	0.230	46.91	Pass

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Site	Phase: N	Temperature: 25
Limit: EN55032 CE-Class A_QP	Power: AC230V/50Hz	Humidity: 64 %
EUT: SP2500 Potable Power Station		
M/N: SP2500		
Mode: Charging		
Note: Charging(AC input)		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1620	59.14	11.14	70.28	79.00	-8.72	QP	
2		0.1620	47.92	11.14	59.06	66.00	-6.94	AVG	
3		0.2940	52.95	11.16	64.11	79.00	-14.89	QP	
4	*	0.2940	48.23	11.16	59.39	66.00	-6.61	AVG	
5		0.4939	48.42	11.20	59.62	79.00	-19.38	QP	
6		0.4939	41.00	11.20	52.20	66.00	-13.80	AVG	
7		0.6780	48.02	11.23	59.25	73.00	-13.75	QP	
8		0.6780	42.15	11.23	53.38	60.00	-6.62	AVG	
9		5.3258	44.41	11.17	55.58	73.00	-17.42	QP	
10		5.3258	33.93	11.17	45.10	60.00	-14.90	AVG	
11		28.0259	43.93	11.49	55.42	73.00	-17.58	QP	
12		28.0259	34.37	11.49	45.86	60.00	-14.14	AVG	

*:Maximum data x:Over limit !:over margin

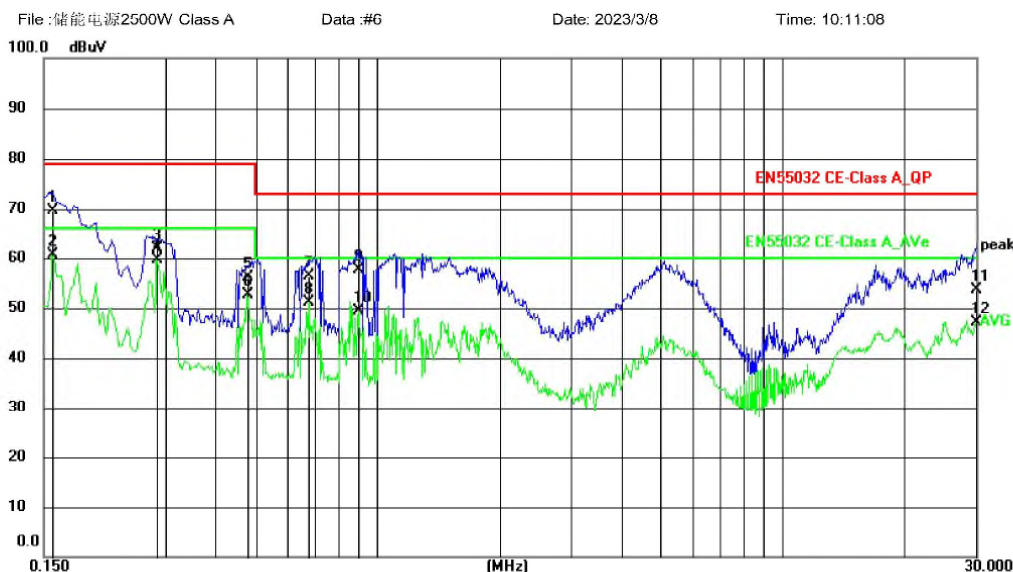
⟨Reference Only

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Conducted Emission Measurement



Site: Phase: **L1** Temperature: 25
 Limit: EN55032 CE-Class A_QP Power: AC230V/50Hz Humidity: 64 %
 EUT: SP2500 Potable Power Station
 M/N: SP2500
 Mode: Charging
 Note: Charging(AC input)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1580	58.49	11.14	69.63	79.00	-9.37	QP	
2	*	0.1580	49.38	11.14	60.52	66.00	-5.48	AVG	
3		0.2859	50.70	11.16	61.86	79.00	-17.14	QP	
4		0.2859	48.36	11.16	59.52	66.00	-6.48	AVG	
5		0.4780	44.81	11.20	56.01	79.00	-22.99	QP	
6		0.4780	41.47	11.20	52.67	66.00	-13.33	AVG	
7		0.6780	45.19	11.23	56.42	73.00	-16.58	QP	
8		0.6780	40.01	11.23	51.24	60.00	-8.76	AVG	
9		0.8980	46.31	11.24	57.55	73.00	-15.45	QP	
10		0.8980	38.04	11.24	49.28	60.00	-10.72	AVG	
11		29.9179	42.18	11.48	53.66	73.00	-19.34	QP	
12		29.9179	35.58	11.48	47.06	60.00	-12.94	AVG	

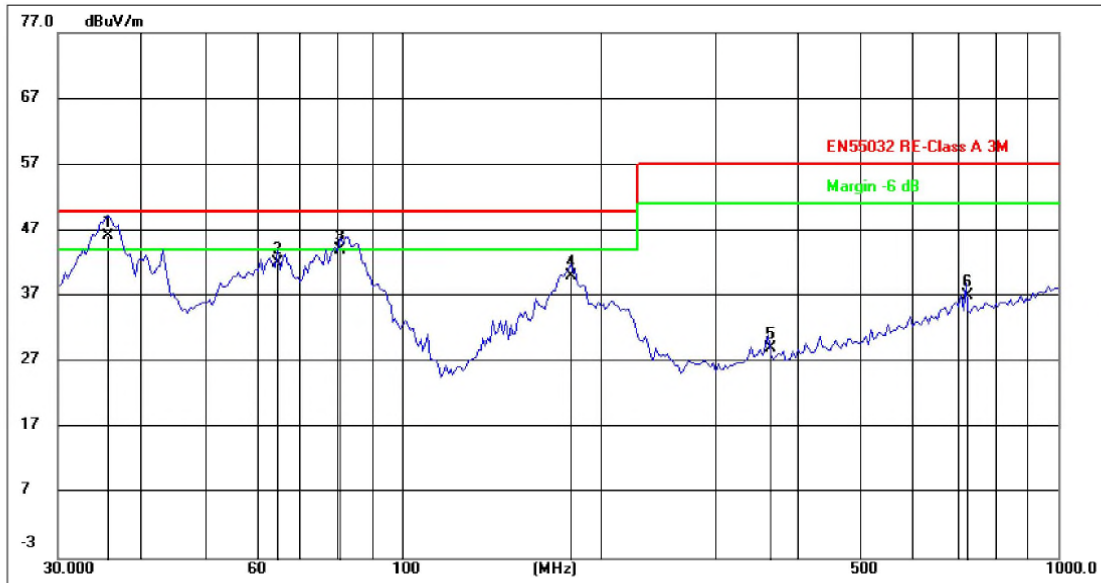
*:Maximum data x:Over limit !:over margin

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Site:	EN55032 RE-Class A 3M	Antenna::Vertical	Temperature(C):24(C)
Limit:	SP2500 Potable Power Station	Test Time:	Humidity(%):60%
EUT:	SP2500	Power Rating:	2023/3/16 14:45:44
M/N.:	Charging	Test Engineer:	AC 230V/50Hz
Note:			Taylor Chen

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	35.7490	32.05	14.09	46.14	50.00	-3.86	QP	200	181	
2	64.8865	29.35	12.61	41.96	50.00	-8.04	QP	200	356	
3 †	80.7857	33.80	10.22	44.02	50.00	-5.98	QP	200	356	
4	180.9658	27.02	12.94	39.96	50.00	-10.04	QP	100	149	
5	361.7139	13.17	15.92	29.09	57.00	-27.91	QP	200	308	
6	722.9924	14.10	22.81	36.91	57.00	-20.09	QP	100	149	

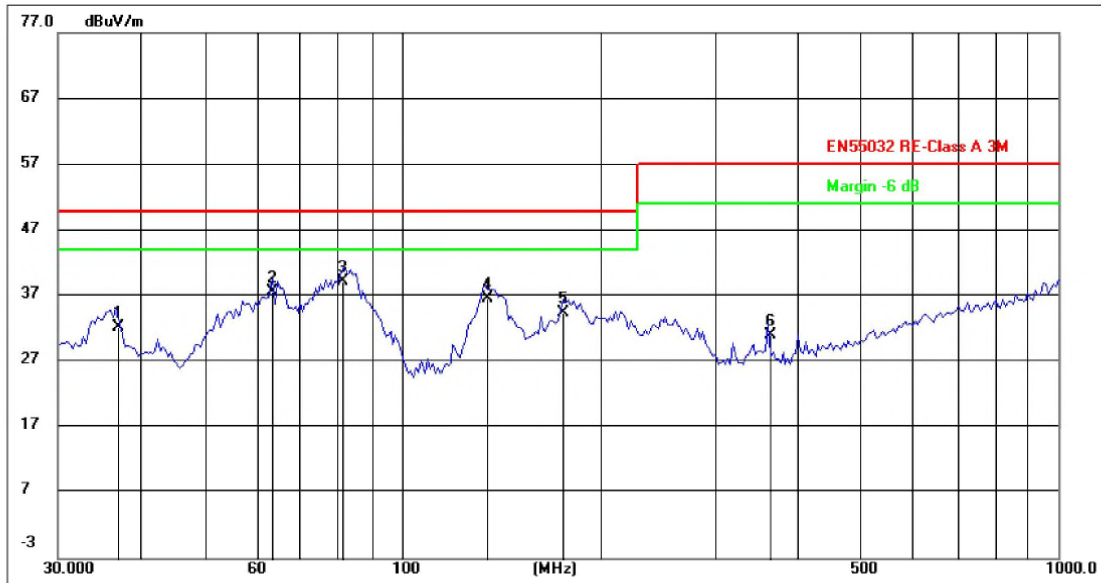
*:Maximum data x:Over limit †:over margin

Note:Level = Reading Level + Factor, Margin= Level-Limit

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Site:		Antenna::Horizontal	Temperature(C):24(C)
Limit:	EN55032 RE-Class A 3M		Humidity(%):60%
EUT:	SP2500 Potable Power Station	Test Time:	2023/3/16 14:50:06
M/N.:	SP2500	Power Rating:	AC 230V/50Hz
Mode:	Charging	Test Engineer:	Taylor Chen
Note:			<i>Taylor Chen</i>

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	36.7018	18.37	13.81	32.18	50.00	-17.82	QP	200	258	
2	63.7588	25.28	12.22	37.50	50.00	-12.50	QP	200	191	
3*	81.4970	29.84	9.39	39.23	50.00	-10.77	QP	200	324	
4	134.3235	22.74	13.85	36.59	50.00	-13.41	QP	200	160	
5	176.2686	20.87	13.56	34.43	50.00	-15.57	QP	200	191	
6	361.7139	15.10	15.92	31.02	57.00	-25.98	QP	200	163	

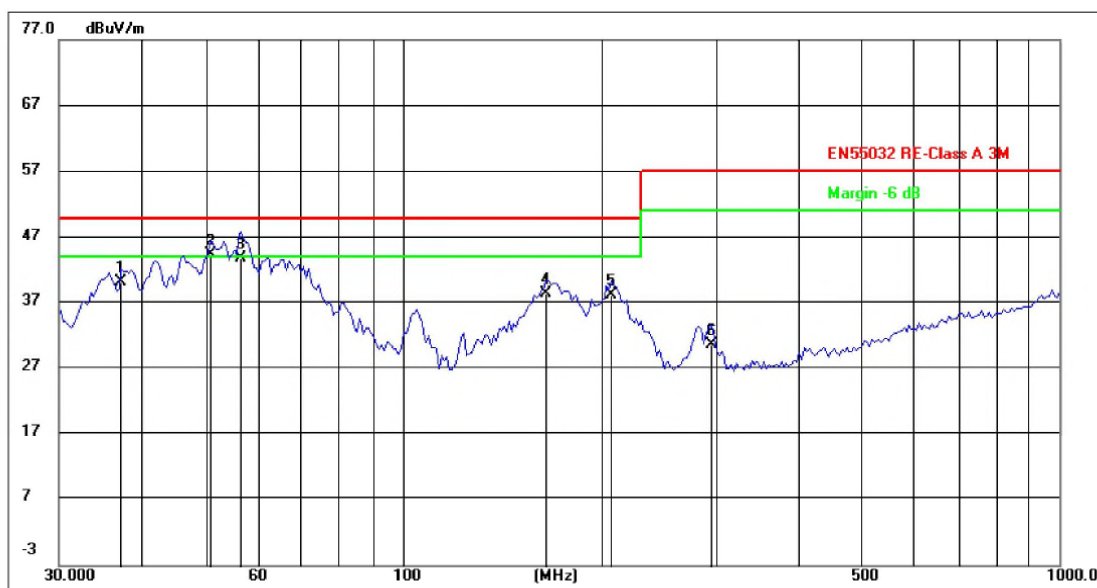
*:Maximum data x:Over limit !:over margin

Note:Level = Reading Level + Factor, Margin= Level-Limit

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Site:		Antenna::Vertical	Temperature(C):24(C)
Limit:	EN55032 RE-Class A 3M		Humidity(%):60%
EUT:	SP2500 Potable Power Station	Test Time:	2023/3/16 15:09:24
M/N.:	SP2500	Power Rating:	Battery powered
Mode:	Discharging	Test Engineer:	Taylor Chen
Note:	Battery powered + 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(5V/3A) + 2xType-C(20V 3A)+Cigar lighter port+DC5521 port+anderson port		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	37.3509	25.83	14.32	40.15	50.00	-9.85	QP	200	308	
2*	51.2106	30.24	14.20	44.44	50.00	-5.56	QP	100	94	
3	56.8914	29.97	13.78	43.75	50.00	-6.25	QP	100	22	
4	165.7771	23.41	14.93	38.34	50.00	-11.66	QP	100	52	
5	208.2148	26.77	11.51	38.28	50.00	-11.72	QP	100	74	
6	295.6648	16.13	14.44	30.57	57.00	-26.43	QP	200	332	

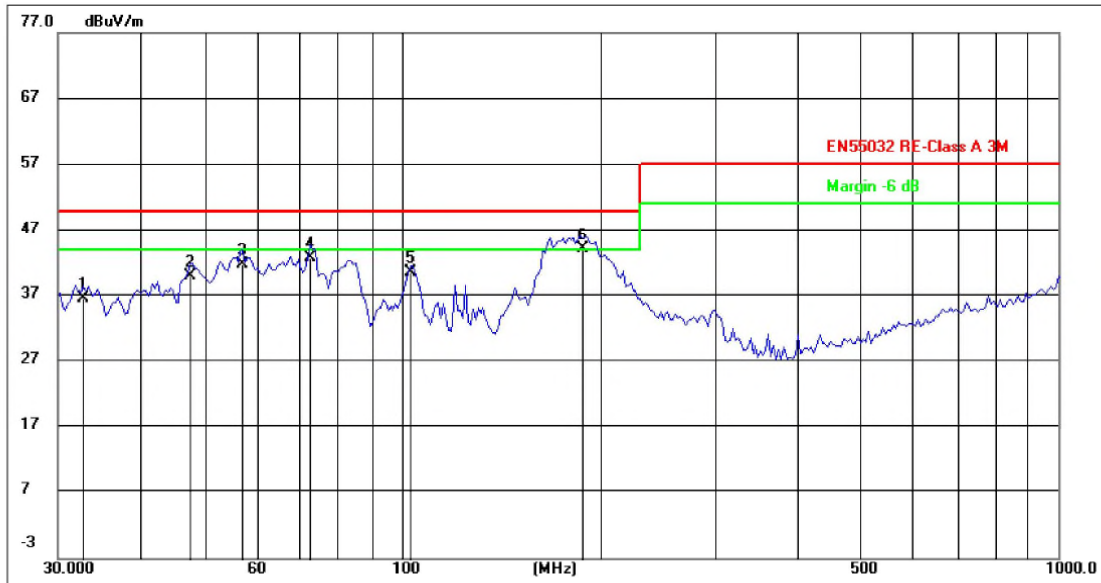
*:Maximum data x:Over limit !:over margin

Note:Level = Reading Level + Factor, Margin= Level-Limit

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Site:	EN55032 RE-Class A 3M	Antenna::Horizontal	Temperature(C):24(C)
Limit:	EN55032 RE-Class A 3M		Humidity(%):60%
EUT:	SP2500 Potable Power Station	Test Time:	2023/3/16 15:13:42
M/N.:	SP2500	Power Rating:	Battery powered
Mode:	Discharging	Test Engineer:	Taylor Chen
Note:	Battery powered + 4x AC output port(AC 230V/50Hz)+ 4xUSB-A(5V/3A) + 2xType-C(20V 3A)+Cigar lighter port+DC5521 port+anderson port		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	32.7486	23.39	13.26	36.65	50.00	-13.35	QP	200	345	
2	47.7422	25.77	14.24	40.01	50.00	-9.99	QP	200	325	
3	57.3923	28.64	13.22	41.86	50.00	-8.14	QP	200	315	
4	72.7190	32.06	10.66	42.72	50.00	-7.28	QP	200	323	
5	103.2609	29.33	11.15	40.48	50.00	-9.52	QP	200	134	
6*	187.4241	32.00	12.16	44.16	50.00	-5.84	QP	200	336	

*:Maximum data x:Over limit !:over margin

Note:Level = Reading Level + Factor, Margin= Level-Limit

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Test Equipment	Manufacturer	Model	Serial No.	Cal Until
Dongguan New Testing Centre Co.,Ltd				
Conducted Emission				
Test Receiver	R&S	ESPI	100146	2023-05-20
LISN	R&S	ENV216	3650.6550.06	2023-05-20
Radiated emission test				
EMI TEST RECEIVER	R&S	ESR	7250-304067528	2023-05-20
TRILOG BROADBAND ANTENNA	Schwarzbeck	VULB9168	00969	2023-05-10
PRE-AMPLIFIER	Agilent	8449B	3008A04721	2023-05-20
Electrostatic discharge immunity				
ESD Generator	TEST	EDS-20H	ES0101909	2023-05-20
Harmonic& flicker				
Power Analyzer	DUCC	DC6100	D210929003	2023-05-20
Voltage Source	Chroma	6530	653000007115	N/A
Voltage dips and short interruptions immunity				
Multifunction Generator	3ctest	CCS 500	ES0851918	2023-05-20

Test Equipment	Manufacturer	Model	Serial No.	Cal Until
Guangdong Global Testing Technology Co., Ltd.				
Radio frequency electromagnetic field immunity (RS)				
Stacked Log.-Per.- Broadband Antenna	Schwarzbeck	STLP 9129	170	2023-12-7
Power amplifier	MiCOTOP	MPA-80-1000-500	MPA2209336	2023-10-8
Power amplifier	MiCOTOP	MPA-1000-6000-100	MPA2209337	2023-10-8
EPM Series Power Meter	Keysight	N1914A	MY53240003	2023-10-8
Average Power Sensor	Keysight	E9304A	MY41498925	2023-10-8
Average Power Sensor	Keysight	E9304A	MY41497454	2023-10-8

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EXG Analog Signal Generator	Keysight	N5171B	MY61252624	2023-10-8
Field Probe	Narda	EP 601	811ZX11137	2023-10-29
RF Switch Unit	HzEMC	HSW06	HSW2218C04	N/A
Chamber 2	ETS	9*6*6	Q2149	2025-8-30
Conducted Susceptibility(150 kHz-230 MHz)				
EXG Analog Signal Generator	KEYSIGHT	N5171B	MY61252670	2023-10-8
EPM Series Power Meter	KEYSIGHT	N1914A	MY50000188	2023-10-8
Power Sensor	KEYSIGHT	E9304A	MY51180004	2023-10-8
Power Sensor	KEYSIGHT	E9304A	MY51120019	2023-10-8
Power Amplifier	AR	AR/100A 400M	305558	2023-10-8
COUPLING AND DECOUPLING NETWORK	TESEQ	CDN M016	N/A	2023-10-8
Electrical Fast Transient(EFT)				
Electrical Intelligent Transient Generator	Everfine	EMS61000-4B	G114921CA1341115	2023-10-28
Surge				
Immunity Teat System	EMC PARTNER	IMU3000 S-T	105684-2060	2023-10-28
Signal line coupled decoupling network	EMC PARTNER	CDN-UTP8 ED3	1558	2023-10-28