



# ISED - TEST REPORT

**Type / Model Name** : SPZ 10.24KWh-WM

**Product Description** : SPZ 10.24KWh-WM

**Applicant** : SPITZER ENERGY COMPANY

**Address** : 4295 East Jurupa Street, Suite 103A Ontario,  
California 91761 United States

**Factory** : Flextronics Electronics Technology (ShenZhen)Co.,  
Ltd.

**Address** : No. 89 YongFu Road,Heping Community, FuHai Sub-  
District Baoan District, Shenzhen 518000 Guangdong  
P.R. China

<b>Test Result</b> according to the standards listed in clause 1 test standards:	<b>PASS</b>
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<b>Test Report No. :</b>	<b>80222712-2</b>	2024-08-16 Date of issue
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# 1 TEST STANDARDS

The tests were performed according to following standards:

- ICES-003, Issue 7  Class A  Class B  
 ANSI C63.4: 2014

Radiated emission test was performed according to the procedures in ANSI C63.4:2014. Test results are in compliance with the requirements of ICES-003, Issue 7.

# 2 SUMMARY

## 2.1 General remarks

This report is the co-license of the original report 80204892-2. This report is issued because of below reasons:

1. The applicant is changed from “Shenzhen UZ Energy Limited” to “SPITZER ENERGY COMPANY”;
2. The Product Description is changed from “Power Lite Plus” to “SPZ 10.24KWh-WM”;
3. The model no. is changed from “PLPA-L1-10K2-U” to “SPZ 10.24KWh-WM”, the two models are totally same except model no. and product logo.

Based on above statement, no need to perform test on new model, the original data was kept in this report.

The product is rechargeable lithium battery systems for used in energy storage system.

Detailed Specifications:

Key Item	Specification
Rated Capacity	200 Ah
Rated Voltage	51.2 V
Rated Current	120 A
Working Voltage Range	44.8-58.4 V
Rated Energy	10.24 kWh
Rated Charging Current	120A
Max. Charging Continuous Current	120A
Rated Discharge Current	120A
Max. Discharging Continuous Current	120A

## 2.2 Summary for all tests

Type of test	Test result
Conducted emission (AC mains power / DC power)	N/A <sup>1)</sup>
Radiated emission (<1 GHz)	Pass
Radiated emission (>1 GHz)	Pass <sup>2)</sup>

Note:

1. The device will not directly connected to the power grid, so conducted emission test was not performed.
2. The highest of frequency generated or used in the device is 2462 MHz(Wifi module), so the upper frequency of measurement range is 13GHz.

## 2.3 Final assessment

The equipment under test **fulfills** the ISED requirements cited in clause 1 test standards.

Date of receipt of test sample : 2024-03-19

Testing commenced on : 2024-03-26

Testing concluded on : 2024-03-27

Issued by:

Reviewed by:

Helen Ma

Name: Helen Ma  
Position: Certifier  
Date: 2024-08-16

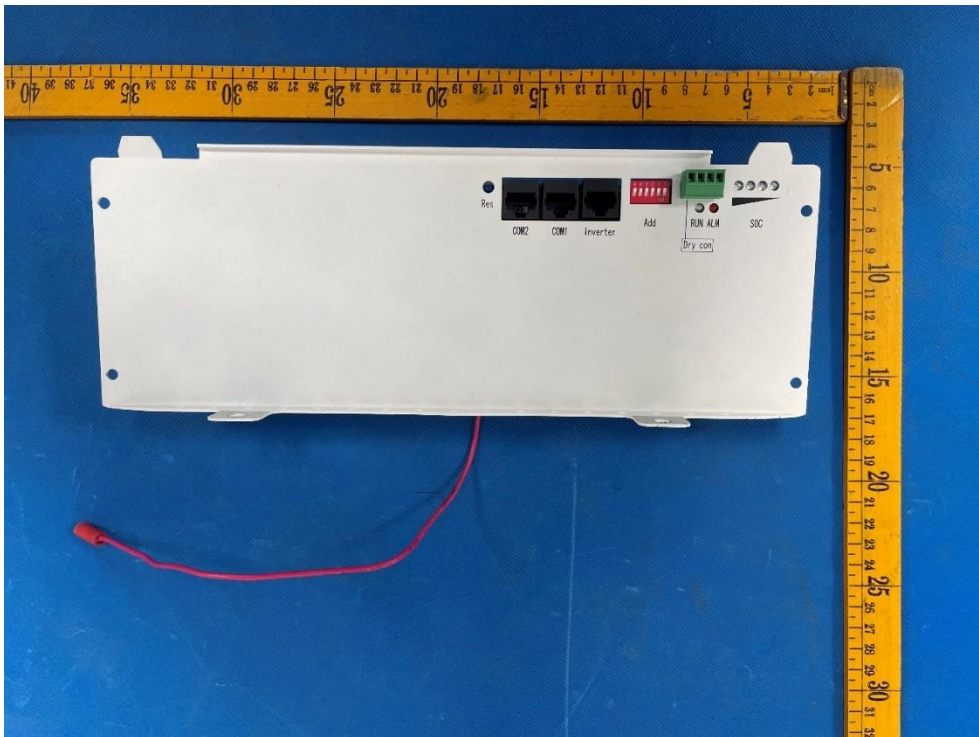
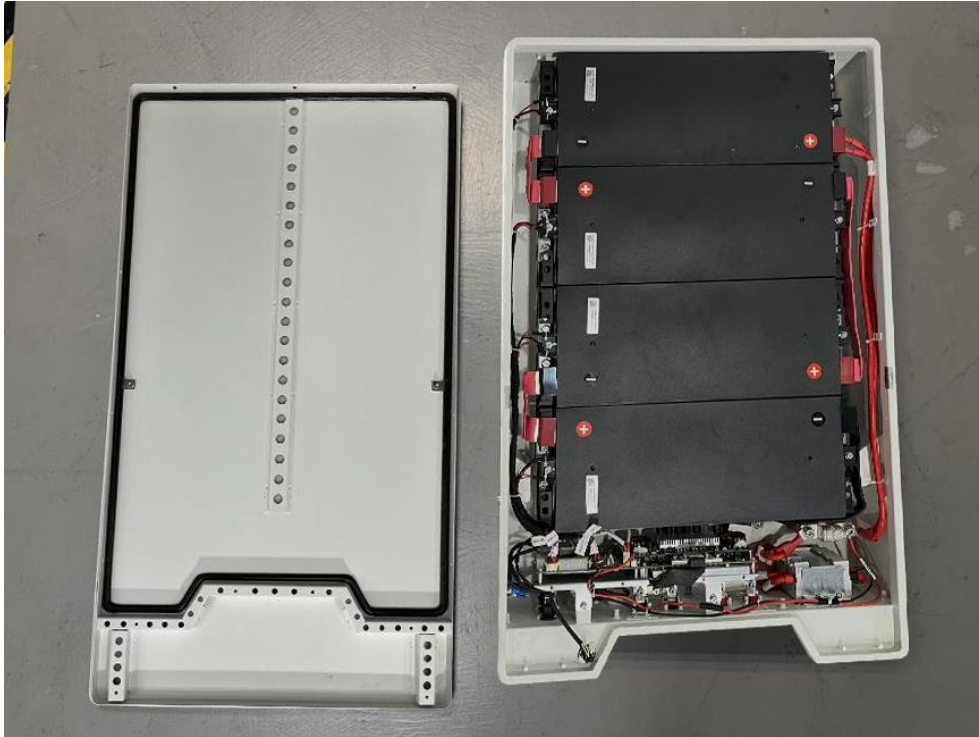
Boro Li

Name: Boro Li  
Position: Certifier  
Date: 2024-08-16

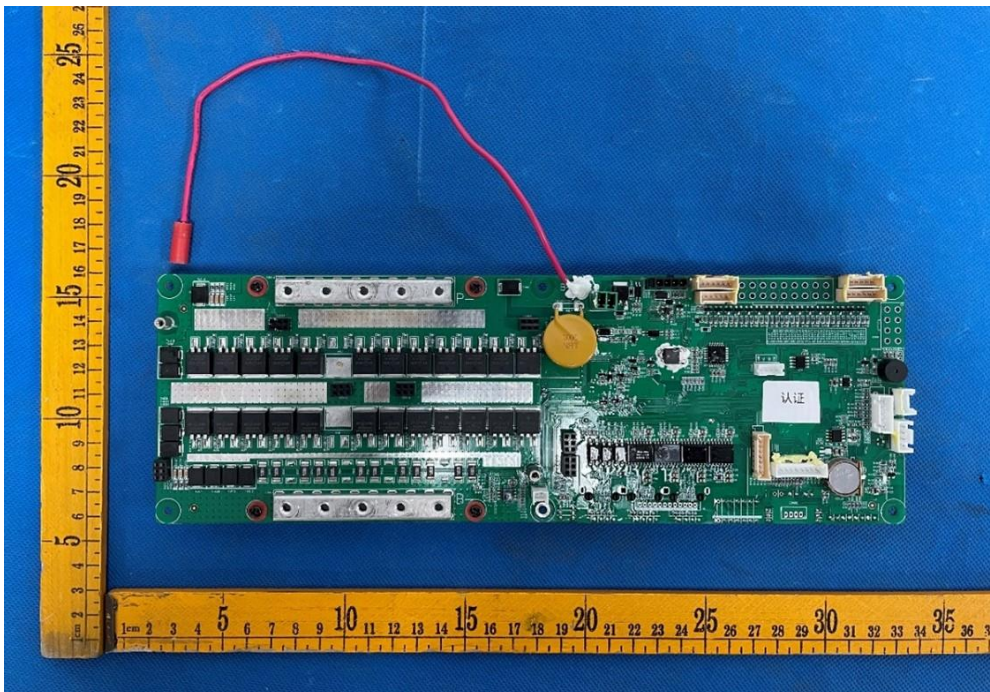
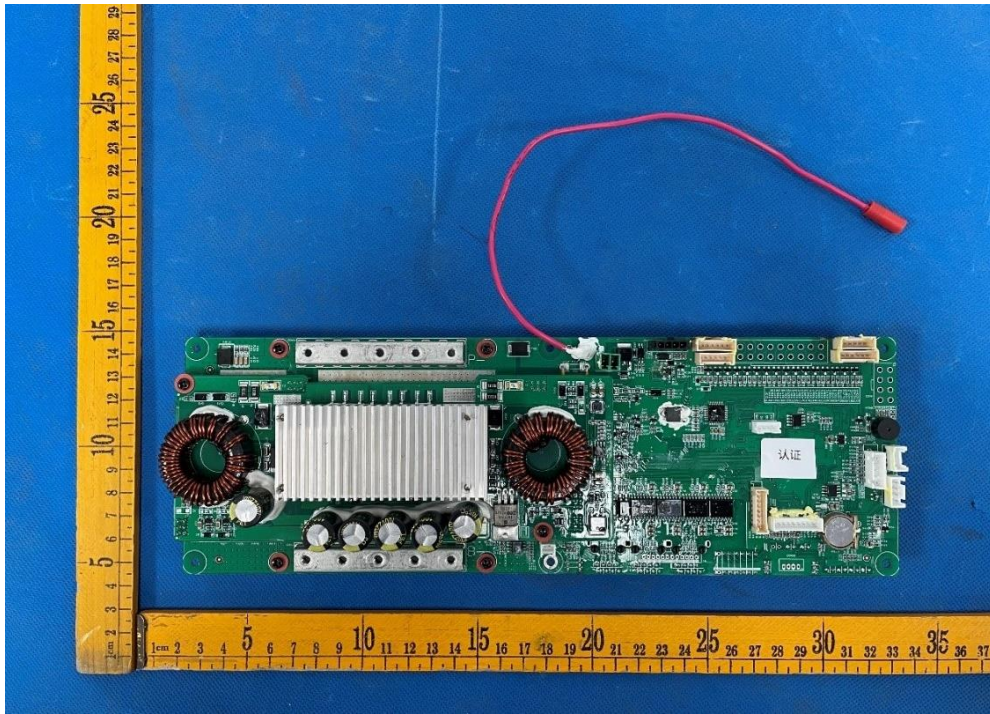
### 3 EQUIPMENT UNDER TEST

#### 3.1 Photo documentation of the EuT

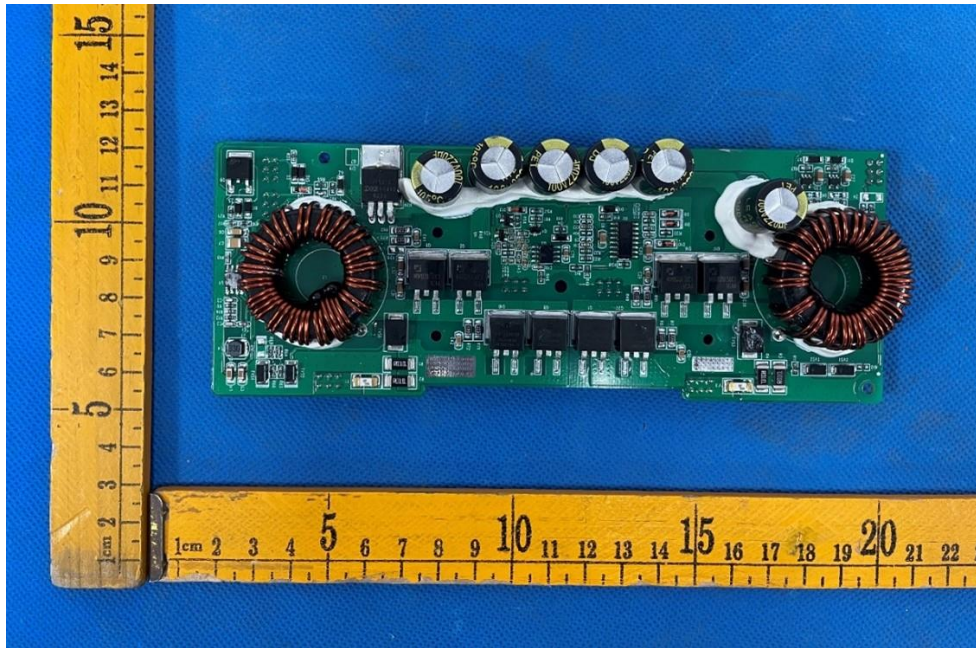
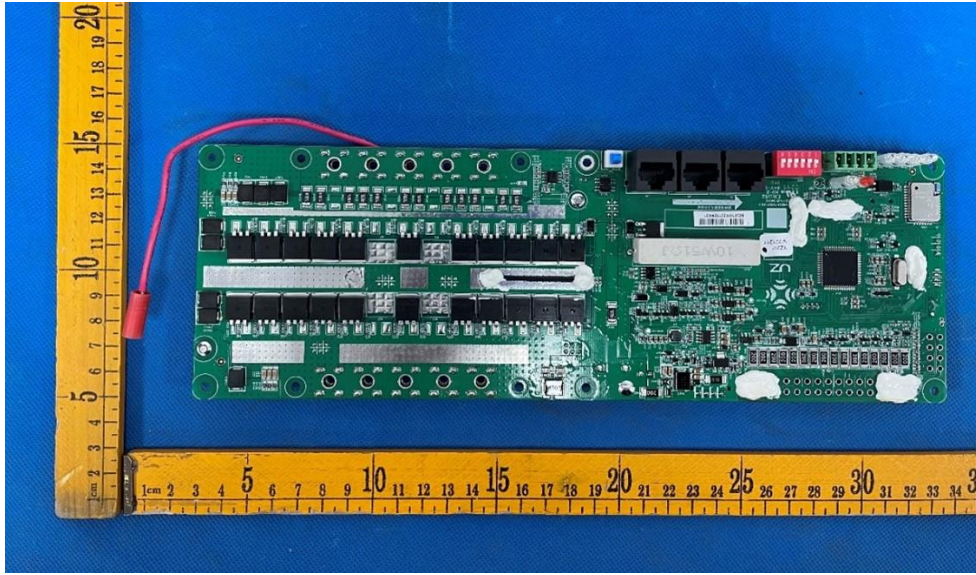




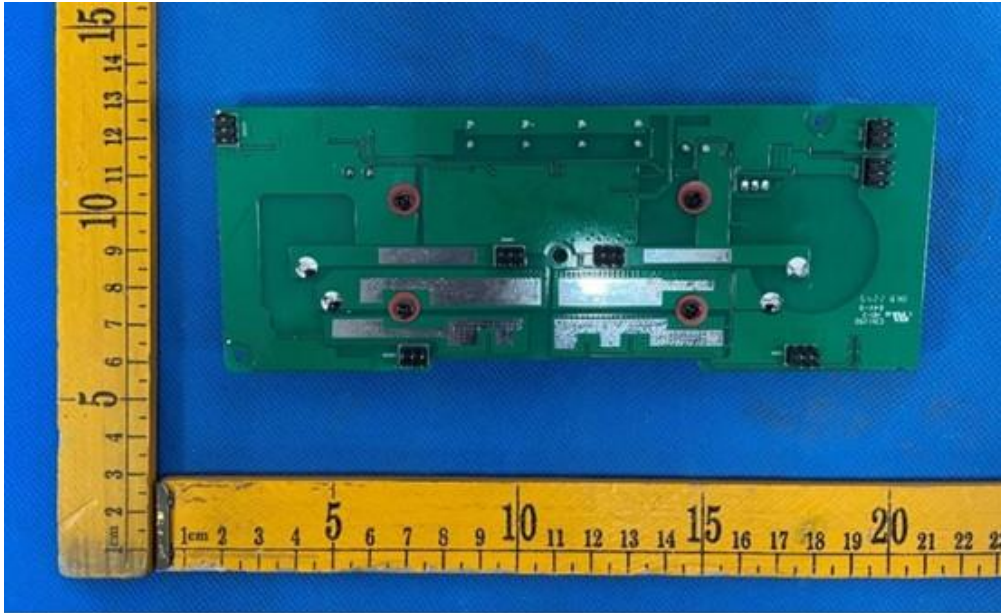












### 3.2 Information provided by the Client

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

### 3.3 Sampling

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according to his/her instructions.

### 3.4 Power supply system utilised

During test:

Power supply voltage : Charging: 51.2Vdc, 120A dc; Discharging: 51.2Vdc, 120A dc

### 3.5 Highest internal frequency

Highest internal frequency : 2462 MHz (WIFI module)

### 3.6 Short description of the Equipment under Test (EUT)

Number of tested samples : 1  
Serial number : N/A

### 3.7 EUT Operation Mode

The equipment under test was operated during the measurement under the following conditions:

The EUT was tested in two working modes: discharging mode and charging mode, both are with full load.

### 3.8 EUT configuration

The following peripheral devices and interface cables were connected during the measurements:

During charging mode, the product's input port was connected with DC power source, during  
discharging mode, the output port was connected with electronic resistors as load.

Port	Cable	Screening	Transmission	Status	Length
1	DC input power line	unshielded	DC power	active	1.2m
2	DC output power line	unshielded	DC power	active	1.2m
3	RS485 line	unshielded	Control signal	active	1.2m
4	RJ45 line	shielded	Control signal	active	1.2m

## **4 TEST ENVIRONMENT**

### **4.1 Address of the test laboratory**

Shenzhen Chengxin Technology Service Co., Ltd.

Dafu Factory, No.13, Aiqun Road North, Shangwu, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China

### **4.2 Statement regarding the usage of logos in test reports**

This report does not permit the use of CSA mark of conformity.

### **4.3 Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 °C

Humidity: 30-60 %

Atmospheric pressure: 86-106 kPa

### **4.4 Statement of the measurement uncertainty**

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor  $k = 2$ . The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 / 2011 + A1 / 2014 Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements and is documented in the quality system acc. to DIN EN ISO/IEC 17025. For all measurements shown in this report, the measurement uncertainty of the test laboratory, is below the measurement uncertainty as defined by CISPR. Therefore, no special measures must be taken into consideration with regard to the limits according to CISPR. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 5 TEST CONDITIONS AND RESULTS

### 5.1 Radiated emission (electric field)

#### 5.1.1 Test Setup and Procedure

The radiated disturbance test was carried out in a semi-anechoic chamber(<1GHz) and full-anechoic chamber(>1GHz). The test distance from the receiving antenna to the EUT is 3 m. The normalized site attenuation and VSWR of the anechoic chamber are regularly calibrated to ensure the radiated disturbance test results are valid. During the test, the EUT was placed on an insulation table which is 80 cm high above the turn table. The turn table was rotated 360° around and the antenna was varied from 1 m to 4 m to find the maximum disturbance. The test was performed with the antenna both in its horizontal and vertical polarizations.

From 30MHz to 1000MHz, the levels are quasi peak value readings.  
From 1GHz to 13GHz, the levels are PK and AV value readings.

The EUT setup configuration please refers to the photo of test configuration in item.

#### 5.1.2 Radiated Emission Limits (Class B)

Frequency (MHz)	Level (dB $\mu$ V/m) @ 3m
30 - 88	40.0
88 - 216	43.5
216 - 230	46.0
230 - 960	47.0
960 - 1000	54.0

Frequency (GHz)	Peak Level (dB $\mu$ V/m) @ 3m	AV Level (dB $\mu$ V/m) @ 3m
1 - 13	74.0	54.0

#### 5.1.3 Description of the test location

Test location: Anechoic Chamber

Test distance: 3 metres

#### 5.1.4 Environmental conditions

Temperature: 22.5 °C

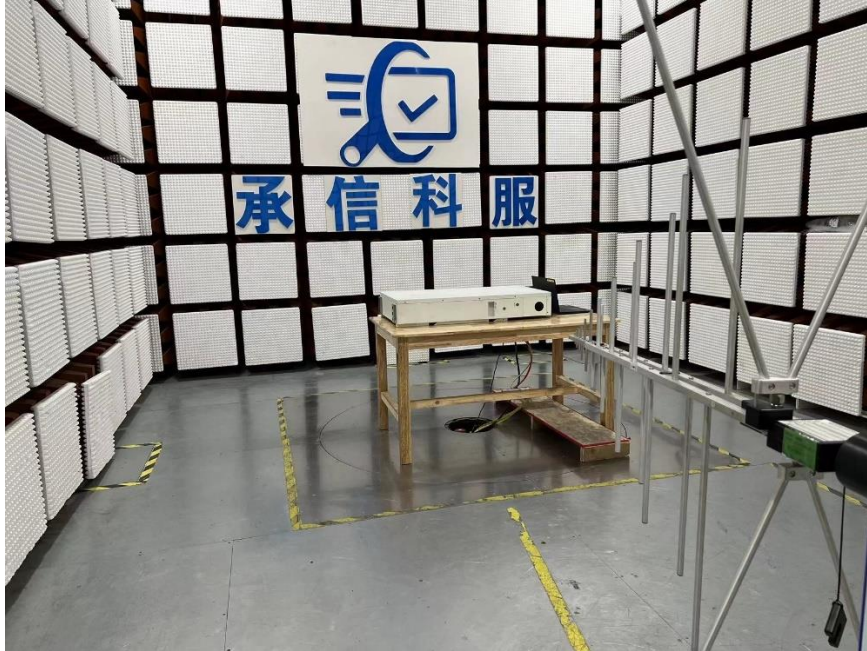
Humidity: 56 %

Atmospheric pressure: 101.6 kPa

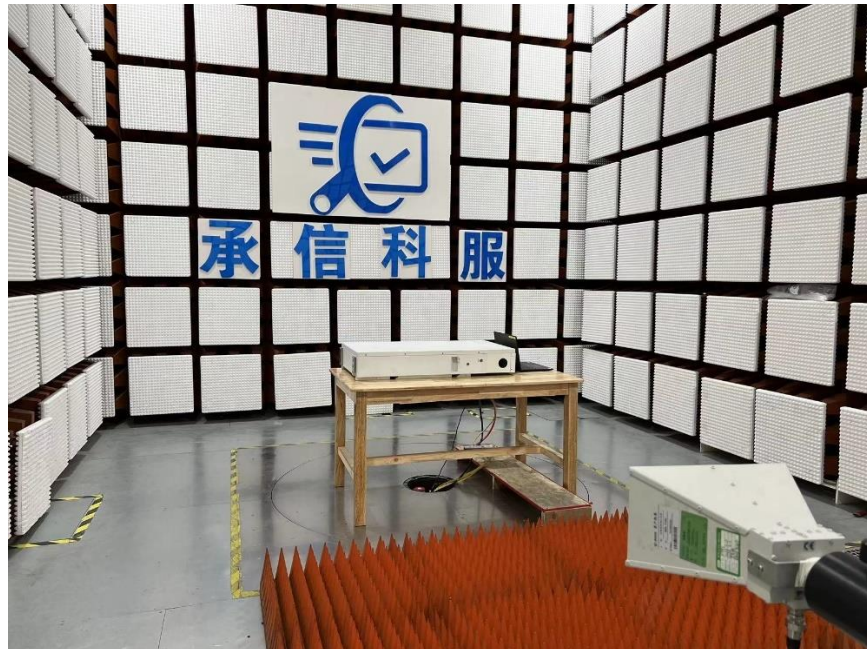


5.1.5 Photo documentation of the test setup

30 MHz – 1 GHz



1 – 13 GHz



### 5.1.6 Test result

Frequency range: 30 MHz - 1000 MHz, 1 GHz – 13 GHz

Min. limit margin 4.7 dB

The requirements are **FULFILLED**.

**Remarks:** For detailed results, please see the following page(s).

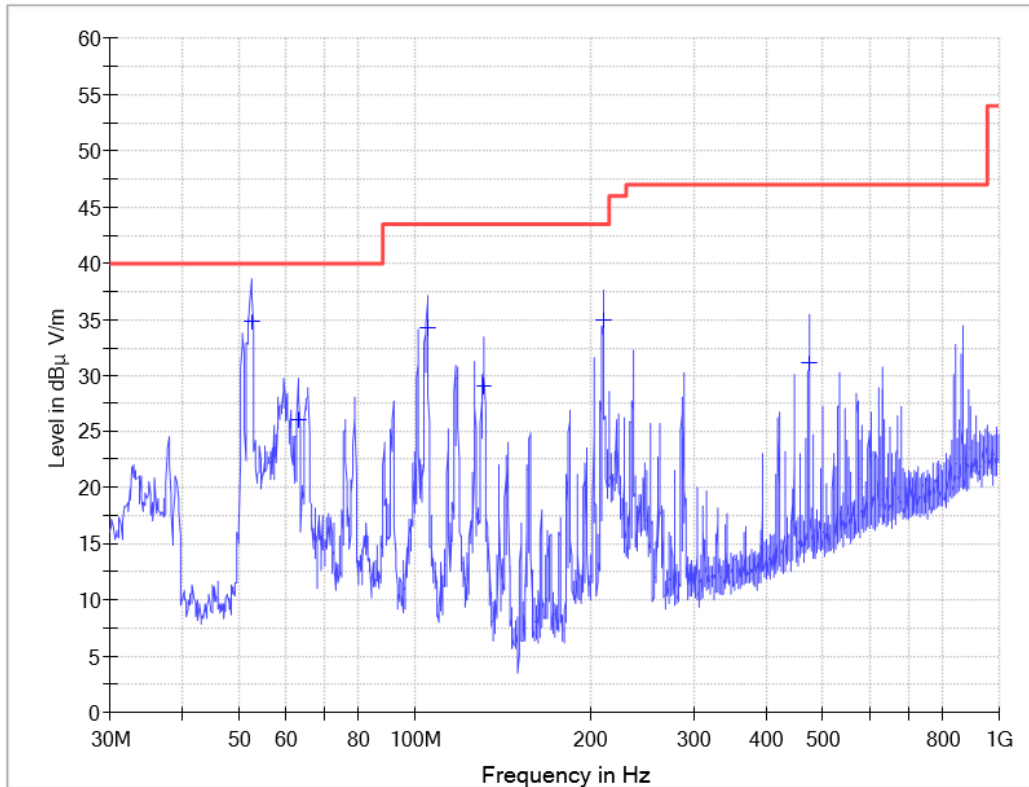
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### 5.1.7 Test protocol

Operation mode: Charging mode (100% Load)  
 Remarks: DC Input 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Vertical polarization



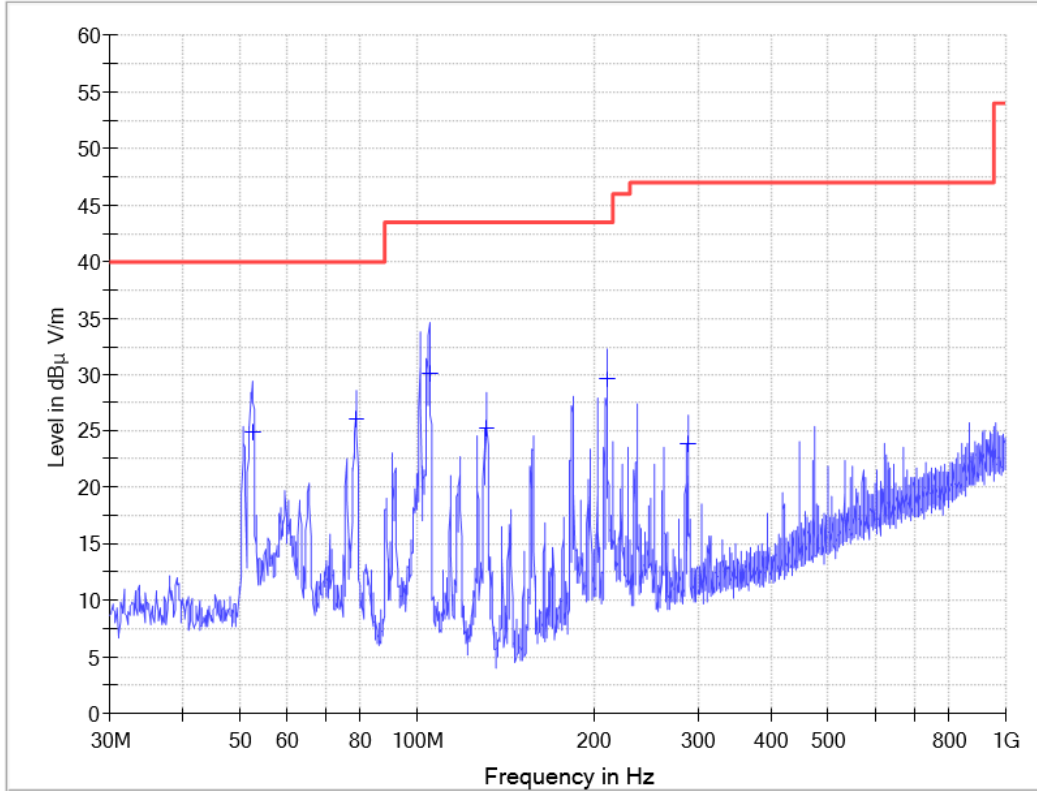
Final measurement results:

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	ANT	Verdict
1	52.440000	34.8	-16.0	40.0	5.2	QP	Vertical	Pass
2	63.120000	26.1	-17.2	40.0	13.9	QP	Vertical	Pass
3	105.040000	34.3	-16.7	43.5	9.2	QP	Vertical	Pass
4	131.360000	29.1	-19.0	43.5	14.4	QP	Vertical	Pass
5	210.560000	35.0	-15.3	43.5	8.5	QP	Vertical	Pass
6	473.760000	31.1	-10.0	47.0	15.9	QP	Vertical	Pass

Operation mode: Charging mode (100% Load)  
 Remarks: DC Input 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Horizontal polarization



Final measurement results:

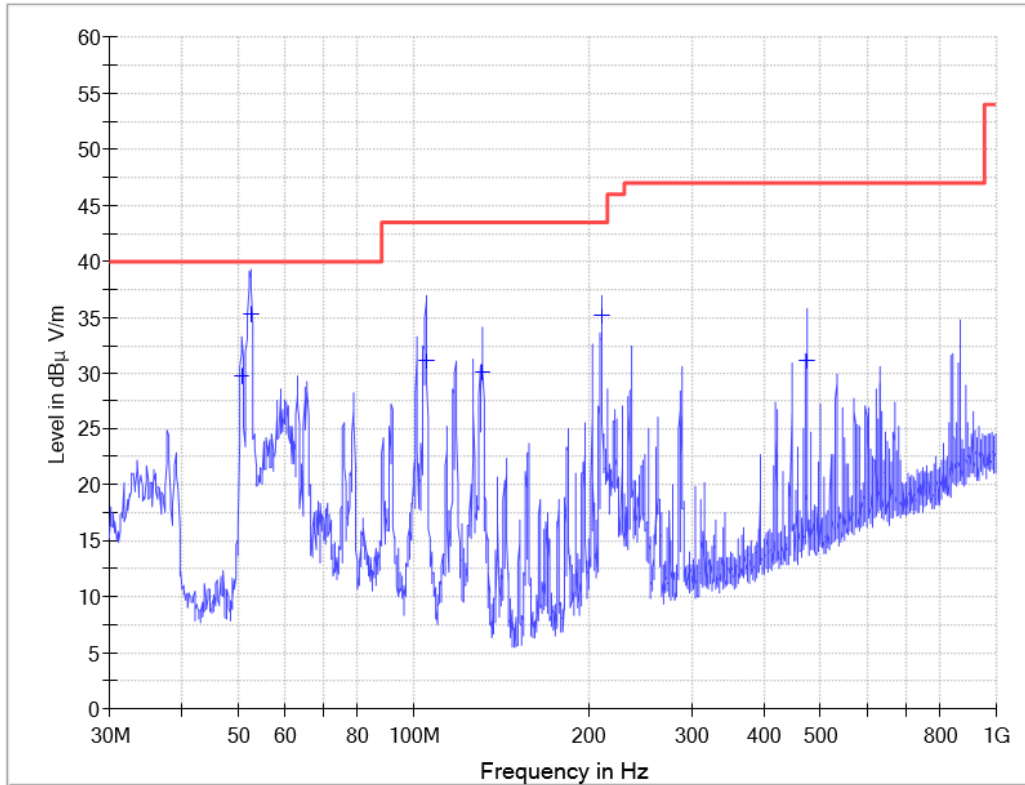
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	ANT	Verdict
1	52.440000	24.9	-16.0	40.0	15.1	QP	Horizontal	Pass
2	78.760000	26.1	-19.4	40.0	13.9	QP	Horizontal	Pass
3	104.920000	30.1	-16.7	43.5	13.4	QP	Horizontal	Pass
4	131.240000	25.2	-19.0	43.5	18.3	QP	Horizontal	Pass
5	210.560000	29.7	-15.3	43.5	13.8	QP	Horizontal	Pass
6	288.640000	24.0	-12.8	47.0	23.0	QP	Horizontal	Pass



Operation mode: Discharging mode (100% Load)  
 Remarks: DC Output 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Vertical polarization



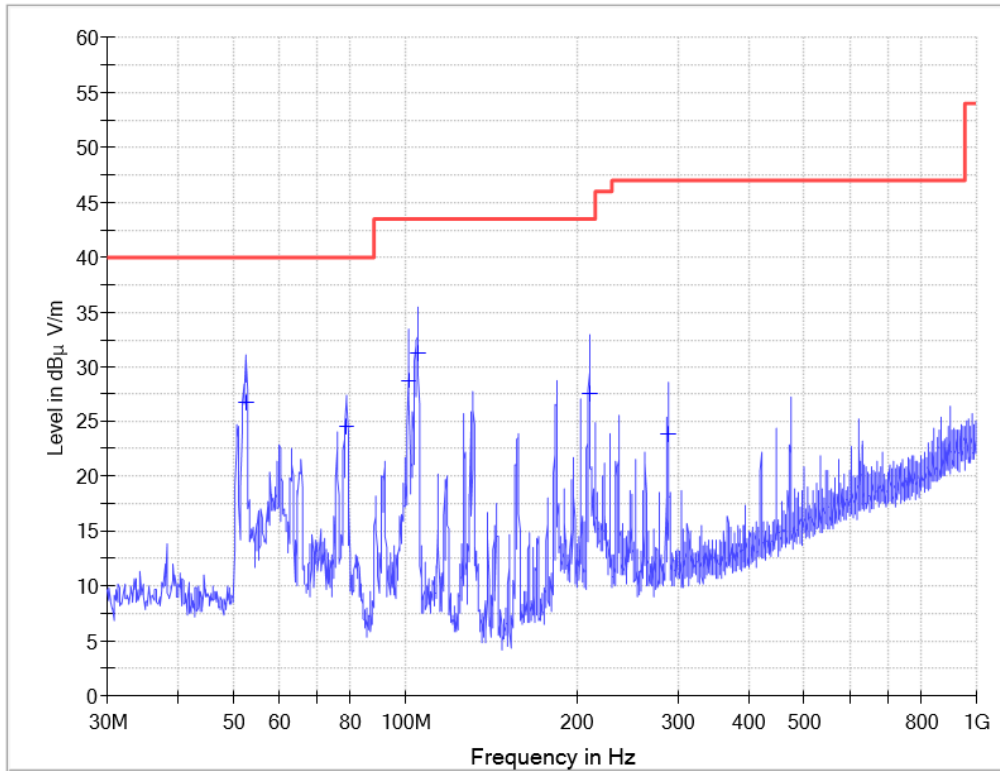
Final measurement results:

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	ANT	Verdict
1	50.720000	29.8	-15.9	40.0	10.3	QP	Vertical	Pass
2	52.560000	35.3	-16.0	40.0	4.7	QP	Vertical	Pass
3	105.040000	31.1	-16.7	43.5	12.4	QP	Vertical	Pass
4	131.120000	30.2	-19.0	43.5	13.3	QP	Vertical	Pass
5	210.560000	35.1	-15.3	43.5	8.4	QP	Vertical	Pass
6	473.760000	31.1	-10.0	47.0	15.9	QP	Vertical	Pass

Operation mode: Discharging mode (100% Load)  
 Remarks: DC Output 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Horizontal polarization



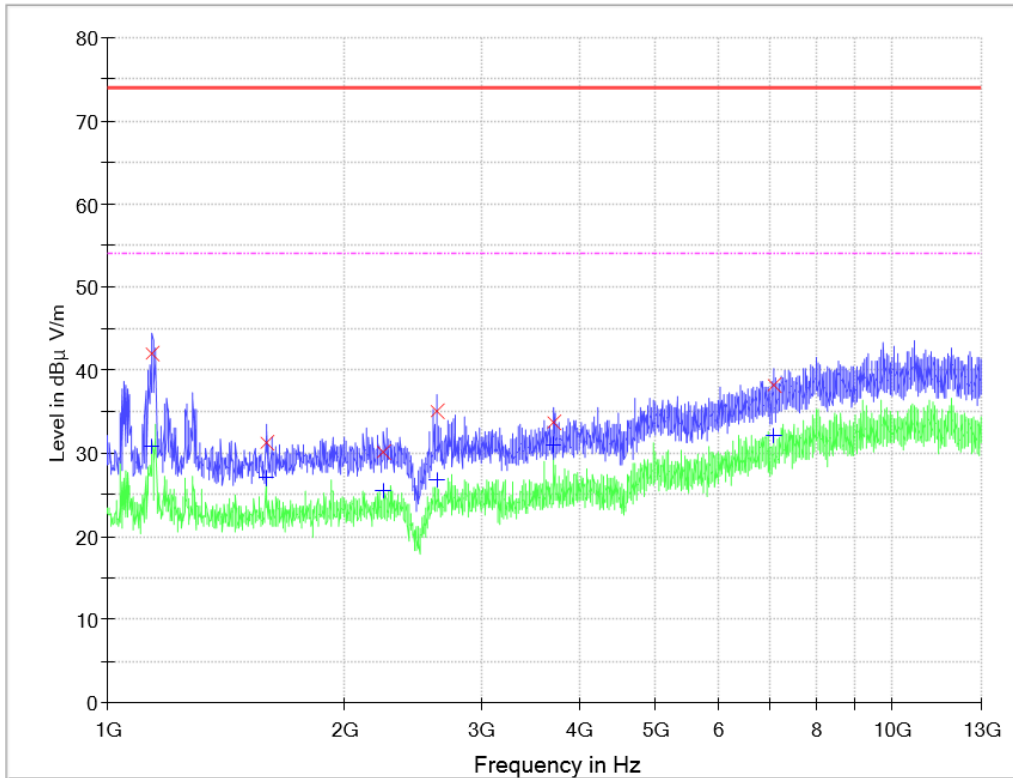
Final measurement results:

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	ANT	Verdict
1	52.440000	26.8	-16.0	40.0	13.2	QP	Horizontal	Pass
2	79.000000	24.6	-19.4	40.0	15.4	QP	Horizontal	Pass
3	101.400000	28.8	-16.8	43.5	14.7	QP	Horizontal	Pass
4	105.040000	31.2	-16.7	43.5	12.3	QP	Horizontal	Pass
5	210.800000	27.7	-15.3	43.5	15.8	QP	Horizontal	Pass
6	288.760000	23.9	-12.8	47.0	23.1	QP	Horizontal	Pass

Operation mode: Charging mode (100% Load)  
 Remarks: DC Input 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Vertical polarization



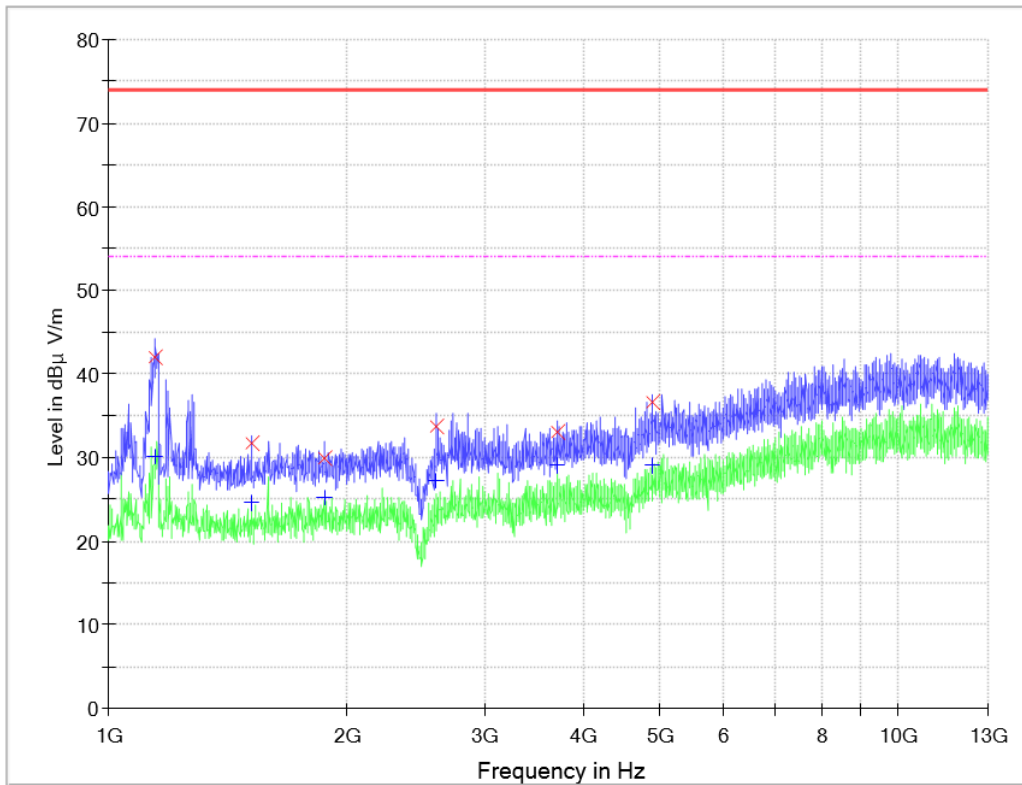
Final measurement results:

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Factor (dB)	Margin - PK+ (dB)	Limit - PK+ (dB µ V/m)	Margin - AVG (dB)	Limit - AVG (dB µ V/m)	Verdict
1141.000000	42.1	30.9	-13.7	31.9	74.0	23.1	54.0	Pass
1598.500000	31.3	27.0	-12.5	42.7	74.0	27.0	54.0	Pass
2252.500000	30.1	25.4	-10.1	43.9	74.0	28.6	54.0	Pass
2629.000000	35.1	26.9	-8.8	38.9	74.0	27.1	54.0	Pass
3713.500000	33.7	31.1	-5.6	40.4	74.0	22.9	54.0	Pass
7070.500000	38.1	32.1	7.8	35.9	74.0	21.9	54.0	Pass

Operation mode: Charging mode (100% Load)  
 Remarks: DC Input 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Horizontal polarization



Final measurement results:

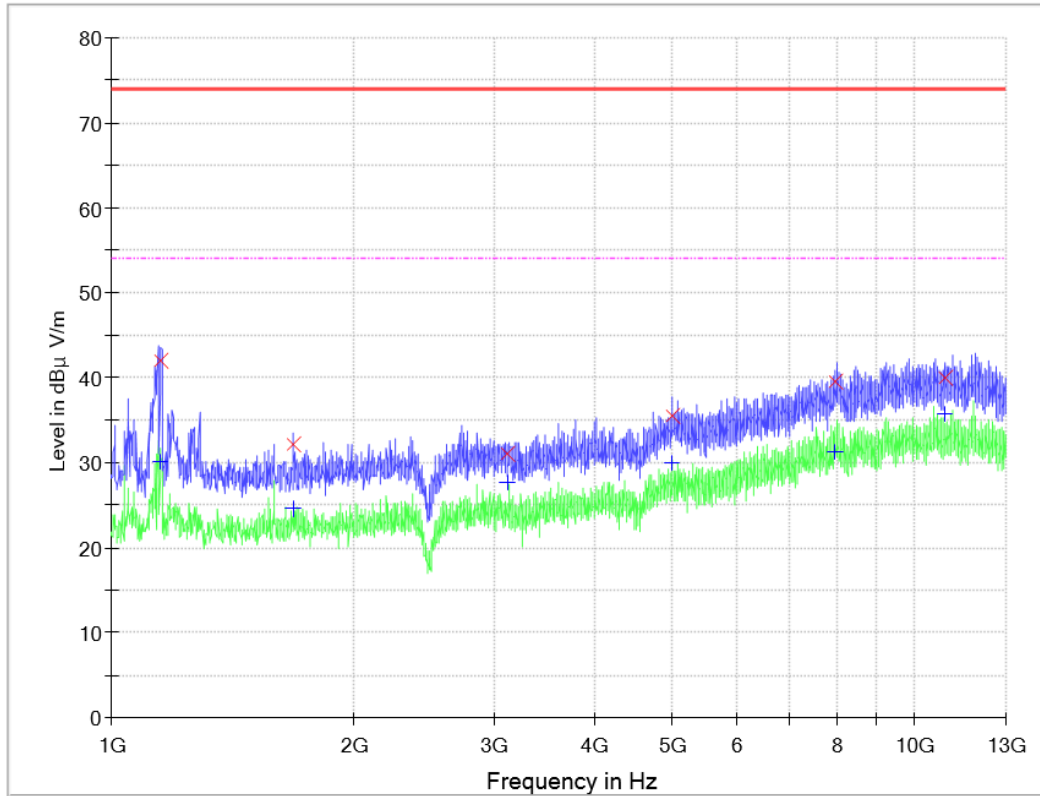
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Factor (dB)	Margin - PK+ (dB)	Limit - PK+ (dB µ V/m)	Margin - AVG (dB)	Limit - AVG (dB µ V/m)	Verdict
1147.000000	42.1	30.1	-13.7	31.9	74.0	23.9	54.0	Pass
1520.500000	31.7	24.6	-12.8	42.3	74.0	29.4	54.0	Pass
1877.500000	30.0	25.2	-11.5	44.0	74.0	28.9	54.0	Pass
2600.500000	33.7	27.3	-8.9	40.4	74.0	26.7	54.0	Pass
3712.000000	33.1	29.0	-5.6	40.9	74.0	25.0	54.0	Pass
4886.500000	36.6	29.2	-0.7	37.4	74.0	24.9	54.0	Pass



Operation mode: Discharging mode (100% Load)  
 Remarks: DC Output 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Vertical polarization



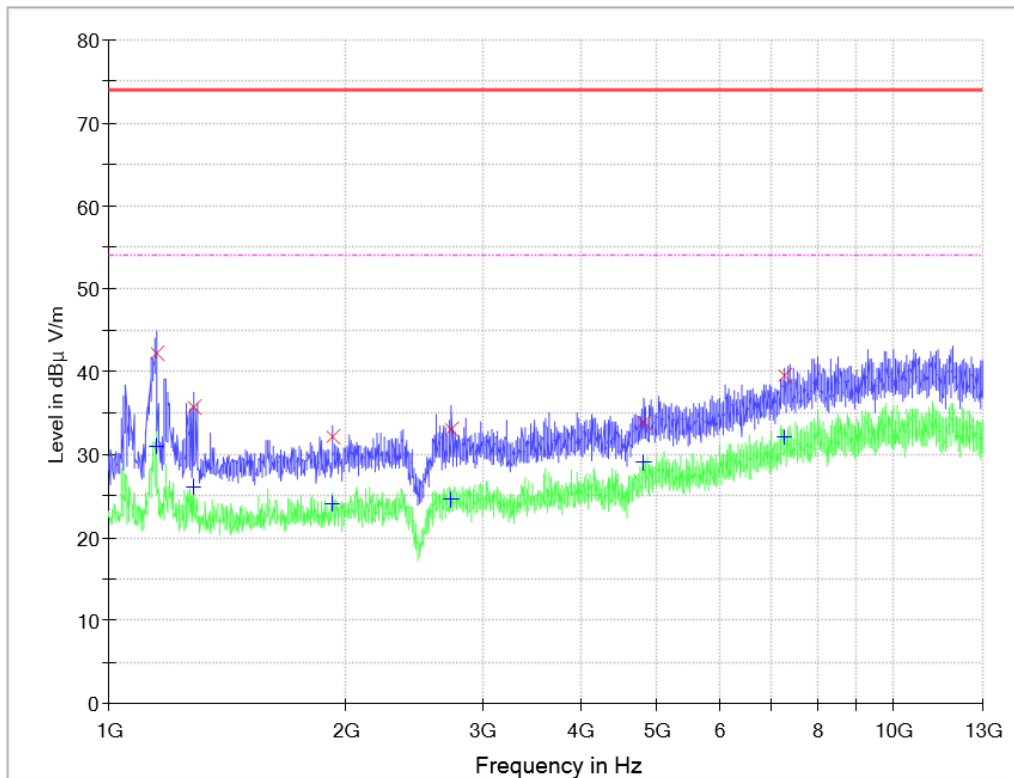
Final measurement results:

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Factor (dB)	Margin - PK+ (dB)	Limit - PK+ (dB µ V/m)	Margin - AVG (dB)	Limit - AVG (dB µ V/m)	Verdict
1154.500000	42.0	30.2	-13.7	32.0	74.0	23.9	54.0	Pass
1684.000000	32.2	24.7	-12.2	41.9	74.0	29.4	54.0	Pass
3119.500000	31.1	27.7	-7.4	42.9	74.0	26.3	54.0	Pass
4991.500000	35.6	29.9	-0.2	38.4	74.0	24.1	54.0	Pass
7969.000000	39.6	31.3	11.0	34.4	74.0	22.7	54.0	Pass
10895.500000	40.1	35.7	25.9	33.9	74.0	18.3	54.0	Pass

Operation mode: Discharging mode (100% Load)  
 Remarks: DC Output 51.2V 120A  
 Date: 2024-03-26

Result: passed

Spectral Diagrams and measurement results, Horizontal polarization



Final measurement results:

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Factor (dB)	Margin - PK+ (dB)	Limit - PK+ (dB µ V/m)	Margin - AVG (dB)	Limit - AVG (dB µ V/m)	Verdict
1153.000000	42.3	31.1	-13.7	31.7	74.0	22.9	54.0	Pass
1285.000000	35.7	26.1	-13.4	38.3	74.0	27.9	54.0	Pass
1930.000000	32.1	24.1	-11.3	41.9	74.0	29.9	54.0	Pass
2729.500000	33.1	24.6	-8.5	40.9	74.0	29.4	54.0	Pass
4822.000000	34.0	29.1	-1.0	40.0	74.0	24.9	54.0	Pass
7267.000000	39.7	32.1	8.5	34.3	74.0	21.9	54.0	Pass

## 6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
<b>Radiated Disturbance (3m Chamber) (30MHz-13000MHz)</b>				
3m Chamber	EMC-united	9mx6mx6m	TE21100001	2024.11.19
Test Receiver	ROHDE&SCHWARZ	ESCI 7	TE18080002	2024.04.05
Test Receiver	R&S	CMW500	TE22060005	2024.06.18
Broadband Antenna	SCHWARZBECK	VULB 9162	TE18080009	2025.03.18
Horn Antenna	SCHWARZBECK	BBHA 9120D	TE18080004	2025.03.11
Preset Amplifier	HP	8447F	TE23020001	2025.02.22
Preset Amplifier	HZEMC	HPA-081843	TE23060001	2024.06.18

## 7 Measurement uncertainty

Measurement	$U_{lab}$ [dB]
<b>Radiated disturbance (electric field)</b>	
3 m test distance	
- Frequency range: 30 MHz – 1 GHz	± 4.5 dB
- Frequency range: Above 1 GHz	± 5.0 dB

## 8 Label and User manual requirements

The requirements specified in ICES-Gen shall apply. An example ISED compliance label, to be placed on each unit of an equipment model (or in the user manual, if allowed), is given below:

CAN ICES-003(\*) / NMB-003(\*)

\*Insert either "A" or "B", but not both, to identify the applicable Class of the device used for compliance verification.

As indicated in RSS-Gen: if a certified module is installed in a host product, the ISED certification label of a module shall be clearly visible at all times when installed in the host product; otherwise, the host product must be labelled to display the ISED certification number for the module, preceded by the word "contains" or similar wording expressing the same meaning, as follows:

Contains IC: XXXXXX-YYYYYYYYYYY

In this case, XXXXXX-YYYYYYYYYYY is the module's certification number.

Sample:

Contains IC: XXXXX-YYYYYYYY

CAN ICES-003(B)/NMB-003(B)

The above label is only an example. The specific format is left to the manufacturer to decide, as long as the label includes the required information, in accordance with ICES-Gen.

----- *The end* -----