



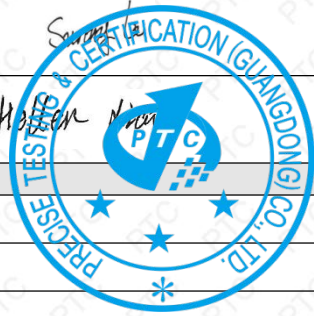
中国认可
国际互认
检测
TESTING
CNAS L5772

Test Report issued under the responsibility of:



TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number.....:	PTC25101500301S-LD01
Date of issue.....:	2026-01-07
Total number of pages.....:	58
Name of Testing Laboratory preparing the Report.....:	Precise Testing & Certification (Guangdong) Co., Ltd.
Applicant's name.....:	Nanjing Lestar Welding Science and Technology Co.,Ltd.
Address.....:	NO.12 Plant, Technology Industry Park,Qingshuiting West Road,Moling Street Jiangning Area, Nanjing City
Test specification:	
Standard.....:	IEC 62368-1:2018
Test procedure.....:	PTC
Non-standard test method.....:	N/A
TRF template used.....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC62368_1E
Test Report Form(s) Originator.....:	UL(US)
Master TRF.....:	Dated 2022-04-14
Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	



Test item description..... :	Industrial Portable Power Station	
Trade Mark(s) :	N/A	
Manufacturer..... :	Same as Applicant	
Model/Type reference..... :	PS-0510, PS-0505, PS-5800T, PS-5800PRO	
Ratings..... :	AC Input: AC 220V 50Hz 10A AC Output 1: AC 220V 50Hz 10A AC Output 2: AC 220V 50Hz 16A AC Output 3: AC 220V 50Hz 16A DC Input: DC57.6V/30A Maximum output power: 5000W DC Output: DC40V-57.6≤80A	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ Testing Laboratory:	Precise Testing & Certification (Guangdong) Co., Ltd.	
Testing location/ address..... :	Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China	
Tested by (name, function, signature)..... :	Sunny Li Project Engineer	
Approved by (name, function, signature)... :	Hellen Xiao Reviewer	
☐ Testing procedure: CTF Stage 1:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Approved by (name, function, signature)... :		
☐ Testing procedure: CTF Stage 2:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature)... :		
Approved by (name, function, signature)... :		
☐ Testing procedure: CTF Stage 3:		
☐ Testing procedure: CTF Stage 4:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature)... :		
Approved by (name, function, signature)... :		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

ATTACHMENT 1: EN IEC 62368-1:2020+A11:2020 (20 pages).

ATTACHMENT 2: Photos Documentation (20 pages).

Summary of testing:

The sample tested complies with the requirements of EN IEC 62368-1:2020+A11:2020.

Tests performed (name of test and test clause):

Conduct thorough testing in the harshest of conditions.

Testing location:

Precise Testing & Certification (Guangdong) Co., Ltd.

Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China.

Summary of compliance with National Differences (List of countries addressed):

For National Differences see end of this test report.

EU

☒ **The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020.****Use of uncertainty of measurement for decisions on conformity (decision rule):**☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").☐ Other: (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)**Information on uncertainty of measurement:**

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

The below marking is only for representative.

Product name: Industrial Portable Power Station

Model: PS-0510

IAC Input: AC 220V 50Hz 10A

AC Output 1: AC 220V 50Hz 10A

AC Output 2: AC 220V 50Hz 16A

AC Output 3: AC 220V 50Hz 16A

DC Input: DC 57.6V/30A

Maximum output power: 5000W

DC Output: DC 40V-57.6V ≤ 80A

IP54



Nanjing Lestar Welding Science and Technology Co., Ltd.
Made in China

- As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being placed on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

- The above markings are the minimum requirements required by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.

- The height of "CE" and "WEEE" at least 5mm and 7mm.

- The Markings are attached on external enclosure and visible during normal use.

Test item particulars:

Product group	☒ end product	☐ built-in component
Classification of use by	☒ Ordinary person	☐ Children likely present
	☐ Instructed person	
	☐ Skilled person	
Supply connection	☒ AC mains	☒ DC mains
	☒ not mains connected:	
	☒ ES1 (DC input)	☐ ES2 ☐ ES3
Supply tolerance	☒ +10%/-10%	
	☐ +20%/-15%	
	☐ + %/ - %	
	☐ None	
Supply connection – type	☒ pluggable equipment type A -	
	☐ non-detachable supply cord	
	☒ appliance coupler	
	☐ direct plug-in	
	☐ pluggable equipment type B -	
	☐ non-detachable supply cord	
	☐ appliance coupler	
	☐ permanent connection	
	☐ mating connector	☐ other:
Considered current rating of protective device	☒ 16A	
	Location:	☒ building ☐ equipment
	☐ N/A	
Equipment mobility	☒ movable	☐ hand-held ☒ transportable
	☐ direct plug-in	☐ stationary ☐ for building-in
	☐ wall/ceiling-mounted	☐ SRME/rack-mounted
	☐ other:	
Overvoltage category (OVC)	☐ OVC I	☒ OVC II ☐ OVC III
	☐ OVC IV	☐ other:
Class of equipment	☒ Class I	☐ Class II ☐ Class III
	☐ Not classified	
Special installation location	☒ N/A	☐ restricted access area
	☐ outdoor location	
Pollution degree (PD)	☐ PD 1	☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}	25 °C	☐ Outdoor: minimum °C
IP protection class	☐ IPX0	☒ IP54
Power systems	☒ TN ☐ TT ☐ IT -	V _{L-L}
	☐ not AC mains	
Altitude during operation (m)	☒ 2000 m or less	☐ m
Altitude of test laboratory (m)	☒ 2000 m or less	☐ m
Mass of equipment (kg)	Approx. 114kg	

Possible test case verdicts:

- test case does not apply to the test object.... : N/A
- test object does meet the requirement..... : P (Pass)
- test object does not meet the requirement.... : F (Fail)

Testing:

Date of receipt of test item..... : 2025-10-15

Date (s) of performance of tests..... : 2025-10-15 to 2026-01-07

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law."

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC62368-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

☐ **Yes**

☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... : Same as Applicant

1. The equipment is Class I Industrial Portable Power Station used for Audio, Video and similar electronic equipment.
2. Specified maximum ambient temperature is 25°C.
3. The equipment was evaluated for a maximum operating altitude of 2000m.
4. The product being applied for is only for indoor use.
5. All models are identical each other except for model name.
6. All test performer on model PS-0510 which cover other models.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Body Part (e.g. Ordinary)	Class and Energy Source (e.g. ES3: Primary circuit)	Safeguards		
		B	S	R
ES3: AC input port, AC output circuit	Ordinary	N/A	N/A	Transformer, optocoupler, Y-capacitor, Enclosure Clearances and creepage distances
Ordinary	ES2: DC input port, DC output port	N/A	Equipped with DC input and DC output ports	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: AC and DC input circuit	PCB, Metal shell	See 6.3	See 6.4.6	N/A
PS3: internal wire	internal wire	See 6.3	See 6.5	N/A
PS3: AC and DC output	PCB, Metal shell	See 6.3	See 6.4.5	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
Lithium battery	Ordinary	N/A	N/A	See Annex M
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Edges and corners	Ordinary	N/A	N/A	N/A
MS3: Mass of the unit	Ordinary	See 8.7	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED light	Ordinary	N/A	N/A	N/A
RS1: Display screens (<104cd/m ²) are exempted	Ordinary	N/A	N/A	N/A
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced				

Safeguard

ENERGY SOURCE DIAGRAM				
Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems. Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings				
☐ ES	☐ PS	☐ MS	☐ TS	☐ RS

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury. However, the equipment is a building-in type and evaluation is also to be made during the final system approval.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.3, T.4, T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	No such glass used.	N/A
4.4.3.7	Glass fixation tests	No such glass used.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	N/A
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	After tests of 4.4.3.2, 4.4.3.3, 4.4.3.8, no safeguard damaged.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No this insulating liquid.	N/A
4.4.5	Safety interlocks	No this safety interlocks.	N/A
4.5	Explosion		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard	The internal lead wires are soldered to PCB and additional fixed by glue or wire terminal.	P
	Compliance is checked by test..... :	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard... :		N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	(See Annex G)	P
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current limits..... :	(See appended table 5.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.3	Capacitance limits..... :	(See appended table 5.2)	P
5.2.2.4	Single pulse limits..... :	No such single pulse with the equipment.	N/A
5.2.2.5	Limits for repetitive pulses..... :	No such repetitive pulses with the equipment.	N/A
5.2.2.6	Ringing signals	No such ringing signals with the equipment.	N/A
5.2.2.7	Audio signals	No such audio signals with the equipment.	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See only 4.3 and 5.3 to 5.5 which applies to protection between the accessible parts and hazardous parts of other circuits.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 could be accessible to ordinary person.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	—
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :		P
5.3.2.2 b)	Air gap – distance (mm) :	(See appended table 5.4.9)	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Material is non-hygroscopic	No hygroscopic material used.	N/A
5.4.1.4	Maximum operating temperature for insulating materials..... :	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
5.4.1.5	Pollution degrees..... :	PD2	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied.	N/A
5.4.1.5.3	Thermal cycling test	See above.	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage..... :	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See only 5.4.1.10.3 below.	P
5.4.1.10.2	Vicat test..... :		N/A
5.4.1.10.3	Ball pressure test..... :	See appended table 5.4.1.10.3 for the test results.	N/A
5.4.2	Clearances	The highest value of 5.4.2.2 and 5.4.2.3 be used.	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage..... :		—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage..... :	No connections to external circuit with transient voltage.	—
5.4.2.3.2.5	Transient voltage determined by measurement..... :	Transient voltages from an AC mains	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	1.0	P
5.4.2.6	Clearance measurement..... :	(See appended table 5.4.2)	P
5.4.3	Creepage distances	(See appended table 5.4.2 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group..... :	IIIa/IIIb	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.2, 5.4.3)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4	Solid insulation	See below.	P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	See table 4.1.2 for details.	N/A
5.4.4.5	Insulating compound forming cemented joints	(See appended table 5.4.4.2)	N/A
5.4.4.6	Thin sheet material	See below.	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	Reinforced insulation consisting of two layers of tape, each layer shall pass the electric strength test for reinforced insulation. Basic insulation consisting of one layers of tape, pass the electric strength test for basic insulation.	P
	Number of layers (pcs) :	Min. 2 layers	P
5.4.4.6.3	Non-separable thin sheet material	No such insulation used within the EUT.	N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See G.5.3 and G.6.1 only.	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)..... :	(See appended table 5.4.4.9)	P
	Alternative by electric strength test, tested voltage (V), K_R :		P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M Ω)..... :		N/A
	Electric strength test..... :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	Humidity conditioning	Test was performed on product with each source of transformer listed in table 4.1.2	P
	Relative humidity (%), temperature (°C), duration (h)..... :	95%, 30°C, 48hrs	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation..... :	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N/A
5.4.11	Separation between external circuits and earth	No such external circuit.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
5.4.11.3	Test method and compliance..... :		N/A
5.4.12	Insulating liquid	No such insulating liquid.	N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid..... :		N/A
5.4.12.3	Compatibility of an insulating liquid..... :		N/A
5.4.12.4	Container for insulating liquid..... :		N/A
5.5	Components as safeguards		P
5.5.1	General	See the following details.	P
5.5.2	Capacitors and RC units	Approved X capacitor and Y capacitor provided. (See appended table 4.1.2)	P
5.5.2.1	General requirement		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Clause G.12)	P
5.5.5	Relays	(See Clause G.2)	P
5.5.6	Resistors	No such resistor used	P
5.5.7	SPDs	No such component provided	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :	No such external circuits.	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)..... :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Yellow-green two-color line	P
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :	(See appended table 4.1.2)	—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm ²)..... :	2.5	—
5.6.4.2	Protective current rating (A)..... :	16	P
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing	No functional earthing.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current		P
5.7.2.2	Measurement of voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts..... :		P
5.7.5	Earthed accessible conductive parts..... :		P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)..... :		N/A
	b) Equipment connected to unearthed external circuits, current (mA)..... :		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES..... :	(See appended table 5.8)	N/A
	Air gap (mm)..... :		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications..... :	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits. (See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS :	(See appended table 6.2.3.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	No ignition and no such temperature attained within the equipment. (See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure.....:	No such materials	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method by control of fire spread applied, metal enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	See sub-clauses 6.4.4, 6.4.5 and 6.4.6.	N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions.....:		N/A
	Special conditions for temperature limited by fuse	No such consideration.	N/A
6.4.4	Control of fire spread in PS1 circuits	PS3 circuits inside.	N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards		P
6.4.6	Control of fire spread in PS3 circuits	Compliance detailed as follows: – Printed board: rated min. V-1 – Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for tubing used). – All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material. – Isolating transformer: complying with G.5.3. – Fire enclosure provided. (See appended tables 4.1.2 and Annex G).	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	No specific barrier provided.	N/A
6.4.8	Fire enclosures and fire barriers	See below.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.2	Fire enclosure and fire barrier material properties	The enclosure was evaluated according to client's requirement.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Equipment enclosure was evaluated as a fire enclosure	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below.	P
6.4.8.3.1	Fire enclosure and fire barrier openings	Metal chassis.	P
6.4.8.3.2	Fire barrier dimensions	No fire barrier.	N/A
6.4.8.3.3	Top openings and properties	No top opening.	N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :	No bottom opening.	N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	No PIS within 5° angle range	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :	Fire enclosure provided. (See appended tables 4.1.2 and Annex G).	P
6.4.9	Flammability of insulating liquid..... :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	The material of VW-1 on internal wiring were considered compliance equal to equivalent to IEC/TS 60695-11-21 relevant standards.	P
6.5.2	Requirements for interconnection to building wiring :	See below and table 4.1.2.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to the connection to additional equipment		P
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		P
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits	(See Annex M)	P

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards	MS1: No sharp edges or corners	N/A
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard..... :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)..... :		N/A
	Space between end point and nearest fixed mechanical part (mm)..... :		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Cable assembly.....:		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts..... :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)..... :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps	No such lamp used.	N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A
8.6	Stability of equipment		P
8.6.1	General	MS3: Non-floor mounted equipment	P
	Instructional safeguard..... :	Instructional safeguard is not required.	N/A
8.6.2	Static stability		P
8.6.2.2	Static stability test.....:		P
8.6.2.3	Downward force test		P
8.6.3	Relocation stability		P
	Wheels diameter (mm)..... :	98.6mm	—
	Tilt test		P
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type.....:		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N)..... :		N/A
	Test 2, number of attachment points and test force (N).....:		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm)..... :		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N).....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.9	Wheels or casters attachment requirements		P
8.9.2	Pull test		P
8.10	Carts, stands and similar carriers		P
8.10.1	General		P
8.10.2	Marking and instructions.....:		P
8.10.3	Cart, stand or carrier loading test		P
	Loading force applied (N).....:	220N	P
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		P
	Force applied (N).....:	100N	—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm).....:	No such parts.	—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts.....:	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard		P
9.5.2	Instructional safeguard.....:	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitters.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance.....:		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1 (only used for indicating light)	P
	Lasers.....:		—
	Lamps and lamp systems.....:		—
	Image projectors.....:		—
	X-Ray.....:		—
	Personal music player.....:		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply.....:		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location.....:		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure.....:		N/A
10.4.3	Instructional safeguard.....:		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No such x-radiation generated from the equipment	N/A
	Instructional safeguard for skilled persons.....:		—
10.5.3	Maximum radiation (pA/kg).....:		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not such equipment.	N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30).....:		N/A
	Warning for MEL ≥ 100 dB(A).....:		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards..... :		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....:		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
B.2	Normal operating conditions		P
B.2.1	General requirements..... :	(See summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3, B.4)	P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard..... :		N/A
B.3.3	DC mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector	No voltage selector was used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.5	Maximum load at output terminals	(See appended table B.3, B.4)	P
B.3.6	Reverse battery polarity	(See appended table B.3, B.4)	N/A
B.3.7	Audio amplifier abnormal operating conditions	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions..... :	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such device used.	N/A
B.4.3	Blocked motor test	DC fan	P
B.4.4	Functional insulation	(See appended table B.3, B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4 for faults on electronic components)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3, B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Compliance during and after single fault conditions :	(See appended table B.3, B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	No UV generated from the equipment.	N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A

IEC 62368-1			
Clause	Requirement + Test		Verdict
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω) :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard..... :		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type..... :		—
	Audio output power (W)..... :		—
	Audio output voltage (V)..... :		—
	Rated load impedance (Ω) :		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language :	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	N/A
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification :	See copy of marking plate.	—
F.3.2.2	Model identification :	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	For ac input	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.2	Equipment without direct connection to mains	For dc input	P
F.3.3.3	Nature of the supply voltage..... :	See copy of marking plate.	—
F.3.3.4	Rated voltage..... :	See copy of marking plate.	—
F.3.3.5	Rated frequency..... :	See copy of marking plate	—
F.3.3.6	Rated current or rated power..... :	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	No such device on the equipment.	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings :		P
F.3.5.2	Switch position identification marking..... :	No such switch on the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings :		P
	Instructional safeguards for neutral fuse..... :		N/A
F.3.5.4	Replacement battery identification marking..... :		N/A
F.3.5.5	Neutral conductor terminal	No such terminals.	N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See the following details.	P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal..... :		N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking..... :		P
F.3.6.3	Functional earthing terminal marking..... :		N/A
F.3.7	Equipment IP rating marking..... :	IP54	N/A
F.3.8	External power supply output marking..... :		P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.4	Instructions		P
	a) Information prior to installation and initial use	The accessibility of equipment was evaluated by using test probe of Figure V.1.	P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection	Not such equipment.	N/A
	d) Equipment intended for use only in restricted access area	Not such equipment.	N/A
	e) Equipment intended to be fastened in place	No such terminals provided.	N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		P
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No switch used.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		P
G.2.1	Requirements		P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links	No thermal link used.	N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors	No PTC thermistor used.	N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :		N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration..... :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No risk of mis-insertion	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components		P
G.5.1.2	Protection against mechanical stress		P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position..... :	T1	P
	Method of protection..... :	See G.5.3.2 and G.5.3.3.	P
G.5.3.2	Insulation	Primary windings and secondary windings are separated by reinforced insulation. (See appended table G.5.3)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings..... :	By insulation tape	—
G.5.3.3	Transformer overload tests	(See appended table B.3&B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment as an SMPS.	P
G.5.3.3.2	Winding temperatures		P
G.5.3.3.3	Winding temperatures – alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter..... :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	DC motor used in approved DC fan.	P
G.5.4.1	General requirements		P
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		P
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature :		N/A
G.5.4.6.3	Alternative method		P
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage :		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type..... :		—
G.7.2	Cross sectional area (mm ² or AWG)..... :		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :		—
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm)..... :		—
	Radius of curvature after test (mm)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements		P
G.8.2	Safeguards against fire		P
G.8.2.1	General		P
G.8.2.2	Varistor overload test	See appended table B.3, B.4	P
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No IC current limiter provided within the equipment.	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		P
G.10.1	General		P
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	The X-Capacitor and Y-Capacitor are used as safeguard and complied with IEC/EN 60384-14:2013. (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	(See appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors	The selection following with table G.12	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	The optocouplers used in the equipment are complied with IEC 60747-5-5. (See appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$:	See above.	—
	Routine test voltage, $V_{ini,b}$:	See above.	—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation..... :		N/A
	Number of insulation layers (pcs) :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements : (See Clause G.13)		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....:		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
J.1	General		N/A
	Winding wire insulation.....:		—
	Solid round winding wire, diameter (mm).....:		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²).....:		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard.....:	No safety interlock provided.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance.....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....:		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm).....:		N/A
	Electric strength test before and after the test of K.7.2.....:	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A).....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Batteries and their cells comply with relevant IEC standards..... :	The battery and cell complied with IEC 62133	P
M.3	Protection circuits for batteries provided within the equipment		P
M.3.1	Requirements		P
M.3.2	Test method	(See appended table Annex M)	P
	Overcharging of a rechargeable battery	See clause B.3	P
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery	Rechargeable battery cannot reverse charging.	N/A
	Reverse charging of a rechargeable battery	See clause B.3	N/A
M.3.3	Compliance	See below	P
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Requirements		P
M.4.2.2	Compliance..... :		P
M.4.3	Fire enclosure..... :	The fire enclosure is the lithium battery itself, rated V-0 tape wrapped whole battery pack	P
M.4.4	Drop test of equipment containing a secondary lithium battery	Three impacts at the height of 1000mm. The voltage difference not exceed 5% after test	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.2	Preparation and procedure for the drop test	After drop, the charge circuit function (charge-control voltage, charging control current and temperature control) are effective	P
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%)::	After drop, the discharge circuit function (charge-control voltage, charging control current and temperature control) are effective	P
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		P
M.4.4.6	Compliance		P
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance	Not explode or emit molten material	N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate.....:		N/A
M.7.2	Test method and compliance	Not such battery	N/A
	Minimum air flow rate, Q (m ³ /h).....:		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)......:		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate.....:		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)......:		N/A
M.7.4	Marking.....:		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage	Sealed metallic enclosure of battery considered the tray	N/A
M.10	Instructions to prevent reasonably foreseeable misuse	Mentioned in instruction manual.	P
	Instructional safeguard..... :		P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used..... :	No risk of corrosion.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General	Complies with P.2.3	P
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm) :		—
P.2.3	Safeguards against the consequences of entry of a foreign object		P
P.2.3.1	Safeguard requirements	There are no exposed conductive parts of the ES3 or PS3 circuits within the projected volume shown in Figure P.3.	P
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		P
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General	No such liquids.	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General	No such construction.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.4.2	Tests		N/A
	Conditioning, T _c (°C).....:		—
	Duration (weeks).....:		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance.....:	See appended table Q.1	P
	Current rating of overcurrent protective device (A):		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		N/A
	Current limiting method.....:		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General	No such consideration.	N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....:		—
R.3	Test method		N/A
	Cord/cable used for test.....:		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples :		—
	Wall thickness (mm)..... :		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.2, T.3, T.4, T.5)	P
T.6	Enclosure impact test	(See appended table T.6, T9)	P
	Fall test		P
	Swing test		P
T.7	Drop test	(See appended table T.7)	N/A
T.8	Stress relief test.....	(See appended table T.8)	N/A
T.9	Glass Impact Test.....	No such glass is provided within the equipment.	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted..... :		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		N/A
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance..... :	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	No outdoor equipment.	N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure..... :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods..... :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3..... :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test..... :	(See Table T.6)	N/A

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
242Va.c. 50Hz	AC Input	Normal:	242Vrms	--	SS	50Hz	ES3
57.6V	DC input	Normal	57.6VDC max	--	SS	DC	ES1
242Vac (50Hz)	Output (DC57.6V 40A)	Normal:	242VDC	--	SS	DC	ES1
		Abnormal:	57.6VDC	--	SS		
242Va.c. 50Hz	AC output	Normal	242Vrms	--	SS	50Hz	ES3
		Abnormal:	--	--	--		
		Single fault:	--	--	--		
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							
3) SC = Short-circuited, OC = Open-circuited, OL =Output overload							

5.4.1.8	TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
The following is the power supply board					
T1 pin 1-6		320	446	15.32k	Max. Vrms
T1 pin 1-10		247	437	29.50k	--
T1 pin 2-6		248	436	20.55k	--
T1 pin 2-10		257	427	26.82k	--
T1 pin 3-6		238	457	25.36k	--
T1 pin 3-10		236	416	26.57k	--
T1 pin 5-6		234	416	28.52k	--
T1 pin 5-10		242	470	24.53k	Max. Vpk
T2 pin 1-2		246	434	20.44k	
T2 pin 1-3		234	418	26.49k	
T2 pin 1-8		236	418	28.60k	
T2 pin 1-9		232	418	28.51k	
T2 pin 10-2		256	424	26.39k	Max. Vrms
T2 pin 10-3		240	432	20.42k	
T2 pin 10-8		234	456	25.21k	Max. Vpk
T2 pin 10-9		234	418	26.20k	
Supplementary information:					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method..... :			ISO 306 / B50	—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	
--	--	--	--	
Supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm)..... :		≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
Supplementary information:				

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (kHz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Check the power board								
CY1 between the feet (BI)	420	250	<30	1.5	6.6	--	2.5	6.6
UA3 primary to secondary (RI)	420	250	<30	3.0	7.2	--	5.0	7.2
T1 primary to secondary trace on PCB (RI)	470	320	29.50	3.0	8.9	--	6.4	8.9
T2 primary to secondary trace on PCB (RI)	450	256	28.60	3.0	8.8	--	5.2	8.8
Check the transformer (On the power supply board)								
T1 primary windings/pins to secondary windings/pins (RI)	470	320	29.50	3.0	8.6	--	6.4	8.6
T1 core to secondary windings/pins (RI)	470	320	29.50	3.0	7.2	--	6.4	7.2
T2 primary windings/pins to secondary windings/pins (RI)	450	256	28.60	3.0	8.5	--	5.2	8.5
T2 core to secondary windings/pins (RI)	450	256	28.60	3.0	7.1	--	5.2	7.1
Supplementary information:								

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
FI=Functional insulation, BI=Basic insulation, SI=Supplementary insulation, DI=Double insulation, RI=Reinforced insulation 1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) 4) Unless otherwise specified, the worst conditions of Cl. & Cr. in above mentioned locations have been considered and listed.			

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Bobbin of T1	470	RI	Min. 0.4	1)	
Bobbin of T2	450	RI	Min. 0.4	1)	
Supplementary information:					
1). See appended table 4.1.2. Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Insulation tape of T1	27kV/mm	29.50	0.57	0.05	RI	470	
Bobbin of T1	17kV/mm	29.50	0.82	0.75	RI	470	
Insulation tape of T2	27kV/mm	28.60	0.57	0.05	RI	450	
Bobbin of T2	17kV/mm	28.60	0.82	0.75	RI	450	
Supplementary information:							

5.4.9	TABLE: Electric strength tests				P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Between the two poles of the power supply (L/N) (F1 is disconnected)		DC	2500	No	
Between the two poles (positive pole/negative pole) of the power supply and the metal casing (grounding component)		DC	2500	No	
Between the two poles of the power supply (L/N) and the output terminals		DC	4000	No	
Check the transformer (On the power supply board)					
T1 primary windings/pins to secondary windings/pins (RI)		DC	4000	No	
T1 core to secondary windings/pins (RI)		DC	4000	No	
T2 primary windings/pins to secondary windings/pins (RI)		DC	4000	No	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T2 core to secondary windings/pins (RI)	DC	4000	No
Insulation sheet	DC	4000	No
Supplementary information:			
Core of transformer was considered as primary. Test after humidity treatment, heating test, and for unit primary to secondary, primary to plastic enclosure electric strength after each fault condition test. Tests were performed on product with each source listed in table 4.1.2. The DC voltage source was performed on all testing once in forward and once in reverse.			

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
/	/	/	/	/	/	
Supplementary information:						
X-capacitors installed for testing:						
[√] bleeding resistor rating:						
[] ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Input ground to the farthest end		32	2	--	0.078
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
Output	Operating	242V (50Hz)	--	0.088 mApk	50	ES1
	fault conditions: D16 SC	242V (50Hz)	--	0.088 mApk	50	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V).....:	242V(50Hz)			—
Phase(s)	[√] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[√] TN [] TT [] IT			

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment
Output	E Disconnect	0.104mA _{pk}	ES1
Supplementary Information:			

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
AC output	Operating	--	--	--	5	PS3 (Declaration)
DC output (DC57.6V 40A)	Operating	--	--	--	5	PS3 (Declaration)
AC output (220VAC)	Operating	220V	--	--	5	PS3 (Declaration)
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						
2) Note: The worst case is considered at the power measurement for worst-case fault.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location		Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
AC Output circuits		--	--	--	Yes (Declaration)
Supplementary information:					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All internal circuits/components		--	--	Yes (Declaration)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit			
Considered resistive PIS in all primary and secondary circuit.			
A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.			
If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.			
A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.			

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
--	--	--	--	--	
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters								N/A
Supply voltage (V).....:								—	
Max. transmit power of transmitter (W).....:								—	
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Supplementary information:									

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V).....:	1)198V50 Hz	2)242V50 Hz	3)57.6V	4)57.6V	—
Ambient temperature during test T_{amb} (°C).....:	--	--	--	--	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
Resistive pressure (RV1)	29.8	37.8	38.5	28.7	85
X Capacitor (CX1)	31.1	58.8	56.4	29.3	100
Relay (RLY2)	32.4	46.8	46.3	30.5	85
Inductor winding (L2)	31.4	67.6	56.2	30.4	120
Inductor winding (FL1)	32.7	59.7	56.7	30.4	120

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Inductor winding (L1)	30.8	66.6	54.3	29.5	120		
Electrolytic Capacitor (C3)	30.5	44.6	45.8	29.4	105		
Inverter (T1) winding	33.7	58.8	57.4	29.2	110		
Inverter (T1) frame	32.7	55.7	55.6	29.1	120		
PCB is close to Q2	31.7	43.7	42.4	30.5	130		
PCB is close to Q7	34.3	29.3	31	29.9	130		
Electrolytic Capacitors (C20)	30.6	34.4	36.4	30.1	105		
Inductor winding (FL2)	33.7	46.6	43.3	30.5	120		
Plate transformer (T1) winding	33.7	46.7	46.3	31.4	120		
Platelet Induction (L1)	39.8	30.7	31.3	36.2	120		
Platelet light coupling (IC4)	34.1	43.1	42.4	30.5	100		
Platelet Y capacitance (CY1)	33.7	38.7	38.3	30.4	125		
Platelet capacitance (C13)	35.6	41.8	39.8	30.6	105		
Platelet PCB proximity (IC1)	35.4	36.3	37.2	32.2	130		
Platelet PCB near the transistor (Q3)	29.7	45.4	43.4	29.6	130		
Y Capacitor (CY5)	31.8	34.7	34.2	35.2	125		
Backside of the main control board light coupling (IC2)	33.7	40.6	41.3	30.5	100		
PCB close to chip (IC2)	35.4	37.3	38.5	34.1	130		
Screen control board (PCB near IC18)	39.1	34	34.1	41.5	130		
Screen control panel inductor (L9)	45.1	38.7	39.4	49.5	120		
Screen control board PCB close (IC7)	37.3	35.3	36.3	48.3	130		
Screen control board inductor (FL1)	39.4	30.8	32.7	79.5	120		
Internal lines	30.6	40.4	39.4	28.7	70		
Battery body	37.6	32.4	32.1	29.5	--		
Fan winding	29.1	31.2	31.2	31.1	70		
screen	30.3	29.5	30.7	35.2	77		
push-button	30.6	30.4	30.4	44.5	77		
Tma	25.0	25.0	25.0	25.0	--		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
# Considered the uncertainty for the worst case. * Temperature limit for TS1 of accessible enclosure outside according to Table 38. (External surfaces of enclosure will be touched occasionally for very short periods (>1 s and <10 s), so temperature limit 77°C considered.) Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 25°C. Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1. Note 3: Temperature limits are calculated as follows: Winding components providing safety isolation: Class B → Tmax = 120 – 10=110°C 1)198Vac, 50Hz : Charger 2)242Vac, 50Hz : Charger 3)57.6Vdc, DC Input: Charger 4)57.6Vdc, DC charging and discharging combined output			

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V).....:	230VAC(AC charging and discharging combined output)	--	--	--	—
Ambient temperature during test T_{amb} (°C).....:	25.0	--	--	--	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
Resistive pressure (RV1)	39.1	--	--	--	85
X Capacitor (CX1)	50.3	--	--	--	100
Relay (RLY2)	45.5	--	--	--	--
Inductor winding (L2)	58.7	--	--	--	120
Inductor winding (FL1)	53.3	--	--	--	120
Inductor winding (L1)	52.2	--	--	--	120
Electrolytic Capacitor (C3)	48.8	--	--	--	105
Inverter (T1) winding	63.6	--	--	--	110
Inverter (T1) frame	62.4	--	--	--	120
PCB is close to Q2	42.1	--	--	--	130
PCB is close to Q7	58.3	--	--	--	130
Electrolytic Capacitors (C20)	45.2	--	--	--	105
Inductor winding (FL2)	62.1	--	--	--	120
Plate transformer (T1) winding	50.4	--	--	--	120

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Platelet Induction (L1)	52.2	--	--	--	--	--	--	120
Platelet light coupling (IC4)	48.2	--	--	--	--	--	--	100
Platelet Y capacitance (CY1)	47.6	--	--	--	--	--	--	125
Platelet capacitance (C13)	51.1	--	--	--	--	--	--	105
Platelet PCB proximity (IC1)	48.7	--	--	--	--	--	--	130
Platelet PCB near the transistor (Q3)	42.9	--	--	--	--	--	--	130
Y Capacitor (CY5)	43.4	--	--	--	--	--	--	125
Backside of the main control board light coupling (IC2)	50.1	--	--	--	--	--	--	100
PCB close to chip (IC2)	48.6	--	--	--	--	--	--	130
Screen control board (PCB near IC18)	50.3	--	--	--	--	--	--	130
Screen control panel inductor (L9)	51.7	--	--	--	--	--	--	120
Screen control board PCB close (IC7)	48.2	--	--	--	--	--	--	130
Screen control board inductor (FL1)	62.9	--	--	--	--	--	--	120
Internal lines	41.1	--	--	--	--	--	--	70
Battery body	51.4	--	--	--	--	--	--	--
Fan winding	38.3	--	--	--	--	--	--	70
screen	33.9	--	--	--	--	--	--	77
push-button	40.3	--	--	--	--	--	--	77
Tma	25.0	--	--	--	--	--	--	--
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class	
--	--	--	--	--	--	--	--	--
# Considered the uncertainty for the worst case. * Temperature limit for TS1 of accessible enclosure outside according to Table 38. (External surfaces of enclosure will be touched occasionally for very short periods (>1 s and <10 s), so temperature limit 77°C considered.) Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 25°C. Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1. Note 3: Temperature limits are calculated as follows: Winding components providing safety isolation: Class B → Tmax = 120 – 10=110°C								

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
198	50	9.32	--	7742.07	--	F1	0.642	Normal operation	
240	50	9.08	10	7413.41	--	F1	0.509		
264	50	8.89	--	7402.36	--	F1	0.498		

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
57.6	--	37.2	40	2142.72	--	--	--	DC charging
Supplementary information:								
The maximum measured current under rated voltage did not exceed 110% of the rated current.								

B.3, B.4 TABLE: Abnormal operating and fault condition tests							P
Ambient temperature T_{amb} (°C)..... :					25°C, if not specified		—
Power source for EUT: Manufacturer, model/type, output rating.... :					--		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
EUT	Cover	57.6Vdc	2h44mins	F1	37.2	Unit working normally, no overheating, no danger. Transformer T1 winding: 106.3°C Transformer T1 core: 101.7°C Metal enclosure outside: 63.5°C Ambient: 25.0°C	
AC output	OL	57.6Vdc	3h32mins	--	37.2	Unit working normally, no overheating, no danger. Transformer T1 winding: 96.7°C Transformer T1 core: 90.3°C Metal enclosure outside: 58.4°C Ambient: 25.0°C	
DC output	OL	57.6Vdc	2h07mins	--	37.2	Unit working normally, no overheating, no danger. Transformer T1 winding: 98.5°C Transformer T1 core: 94.4°C Metal enclosure outside: 58.3°C Ambient: 25.0°C	
DC fan	Locked	57.6Vdc	7h	--	37.2	Unit working normally, no overheating, no danger. Transformer T1 winding: 112.4°C Transformer T1 core: 106.9°C Metal enclosure outside: 66.7°C Ambient: 25.0°C	

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
AC output	SC	57.6Vdc	10min	--	0	Unit shutdown immediately, recoverable, no hazards, no damage.
DC output	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T1(1-2)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T1(3-5)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T1(6-10)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T2(2-3)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T2(8-9)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
T2(1-10)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
DA1	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
JQ1	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
UA3(1-2)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
UA3(3-4)	SC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
UA3(1)	OC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
UA3(3)	OC	57.6Vdc	10min	--	37.2	Unit shutdown immediately, recoverable, no hazards, no damage.
Supplementary information:						
SC=short circuit, OL=overload Test table is provided to record abnormal for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test. Specify if test condition by indicating "Single Fault" then the condition for Clause B.4. V) The overloaded condition is applied according to annex G.5.3.3.						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Winding Limit for Transformers: 175-10=165°C. Enclosure and cable outside: TS2=87°C. Transformer overload is same as output overload. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 4) For component with fusible resistor damaged have been repeated nine (ten tests total) with same result.			

M.3	TABLE: Protection circuits for batteries provided within the equipment						P
Is it possible to install the battery in a reverse polarity position?.....:				--		—	
Equipment Specification		Charging					
		Voltage (V)			Current (A)		
		57.6			40		
Manufacturer/type		Battery specification					
		Non-rechargeable batteries		Rechargeable batteries			
				Charging		Discharging current (A)	Reverse charging current (A)
		Discharging current (A)	Unintentional charging current (A)	Voltage (V)	Current (A)		
Dongguan LongTTech Company Ltd./PS-0510	--			--	57.6	100	100
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....:				--		--	
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
U4 pin 3-8	SC	discharge mode	7hours	--	0.020mA	--	NL,NS,NE,NF
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				P
Maximum specified charging voltage (V)..... :			25.6		—
Maximum specified charging current (A):			10		—
Highest specified charging temperature (°C):			45		
Lowest specified charging temperature (°C):			0		
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Dongguan LongTtech Company Ltd./PS-0510	Normal	57.6	87.98	53.6	No explosion, no leak, no hazards.
	Single fault: B- and P- SC	57.6	99.83	54.4	No explosion, no leak, no hazards.
	Abnormal condition: -10°C	--	--	--	No explosion, no leak, no hazards.
	Abnormal condition: 60°C	--	--	--	The charging of the battery shall stop when the temperature of the battery exceeds the highest specified charging temperature.
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	--
Supplementary Information:							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Enclosure top	Metal	1.4	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Enclosure side	Metal	1.4	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Enclosure bottom	Metal	1.4	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Internal components and internal wire near the gap between primary and secondary (T.2)	--	--	--	10	5	No reduction the clearances and creepage distances
Supplementary information:						
*Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.						

T.6, T.9	TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure top	Metal	1.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure side	Metal	1.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure bottom	Metal	1.4	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:					
*Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T.7	TABLE: Drop test				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.8	TABLE: Stress relief test					N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
--	--	--	--	--	--	
Supplementary information:						
*Tests were performed on product with each source listed in table 4.1.2.						

X	TABLE: Alternative method for determining minimum clearances distances				N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)		
--	--	--	--		
Supplementary information:					

4.1.2	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
AC input and output cables	GUANGDONG JMT CABLE INDUSTRIAL CO.,LTD	60227 IEC 02(RV)450/75 0V 2.5mm²	60227 IEC 02(RV)450/750V 2.5mm²	IEC/EN 62368-1	Tested with appliance
Switch	Yueqing City Jinding Electronic Technology Co.,Ltd	JD03-A1	AC250V,25A	EN61058-1	TUV SUD B130864512 022
Internal wiring	GUANGDONG JMT CABLE INDUSTRIAL CO.,LTD	60227 IEC 06(RV) 300/500V 1.0mm²	60227 IEC 06(RV) 300/500V 1.0mm²	IEC/EN 62368-1	Tested with appliance
	GUANGDONG JMT CABLE INDUSTRIAL CO.,LTD	60227 IEC 06(RV) 300/500V 2.5mm²	60227 IEC 06(RV) 300/500V 2.5mm²	IEC/EN 62368-1	Tested with appliance
	GUANGDONG JMT CABLE INDUSTRIAL CO.,LTD	AVR 300/300V 0.3 mm²	AVR 300/300V 0.3 mm²	IEC/EN 62368-1	Tested with appliance
AC output socket	ZHEJIANG SUOBEN ELECTRIC CO., LTD	11031601	16A/250V	DIN VDE 0620- 1/A1 (VDE 0620- 1/A1):2017-09 DIN VDE 0620-1 (VDE 0620- 1):2016-01 IEC 60884- 1:2002 IEC 60884- 1:2002/AMD1:2 006 IEC 60884- 1:2002/AMD2:2 013	VDE 82796
Rechargeable LiFePO4 Cell	HEFEI GOTION HIGH-TECH POWER ENERGY Co.,Ltd	IFP72175207- 314Ah	3.2V, 314Ah	IEC 62133- 2:2017 IEC 62133- 2:2017/AMD1:2 021	Tested with appliance
Battery pack	Nanjing Lestar Welding Science and Technology Co.,Ltd	DC76.8V/314 Ah/24115Wh	Rated voltage: 51.2V Capacity: 202Ah Maximum Charging Current: 50A Maximum discharge current: 101A	IEC/EN 62368-1	Tested with appliance
Inverter board	Nanjing Lestar Welding Science and Technology Co.,Ltd	5000W inverter board	Size:246MM*W10 3MM*1.6MM AC220V,50Hz	IEC/EN 62368-1	Tested with appliance

4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Fuse(F1, F2, F3)	LITTELFUSE INC	0297030.WXN V	30A, 32V	UL 248-1, SA-C22.2 No. 248.1 (2011)	UL E71611	
Transformer(T1)	TAIZHOU BAIRUI ELECTRONIC TECHNOLOGY CO.,LTD	BR25EE- 1204A	Class B	Applicable parts of IEC/EN 62368-1 and according to IEC 60085	Tested with appliance	
-BOBBIN	CHANG CHUN PLASTICS CO., LTD	T-357,T-375J	V-0,150°C,	UL 94	E59481	
-WIRE (Alternative)	ZHEJIANG HONGBO TECHNOLOGY CO LTD	MW 79-C	155°C Wire diameter: 0.1mm	UL 1446	E221719	
	HUZHOU SANXING CABLE CO LTD	MW 79-C	155°C Wire diameter: 0.1mm	UL 1446	E327855	
-TAPE	JINGJIANG JINGYI ADHESIVE PRODUCT CO., LTD.	JY25-A	180°C, Thickness: 0.025mm, Withstand voltage: 5200V/layer	UL 510	E246950	
-TUBE	DONGGUAN CHANG HARDWARE PLASTIC PRODUCTS CO., LTD	CJ-TT-L 24L	200°C	UL 224	E338209	
PCB	ANHUI WENDE ELECTRONIC CO., LTD	WB-200000	V-0, 130°C	UL 796	UL E360487	
DC fan	Shenzhen Yingtian Mechatronics Equipment Co.,Ltd	YTD249225B0 M	DC24V 0.29A 92*92*25mm 4000r/min	IEC/EN 62368-1	Tested with appliance	
Insulation sheet	Zhejiang Nanyang Technology Co., LTD	NYS220	PET, V-1, 130°C,Min thickness 0.3mm	UL 94, UL 746	UL	
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance.						

ATTACHMENT 1

Page 1 of 23

Report No.: PTC25101500301S-LD01

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment - Part 1: Safety requirements)			
Differences according to.....: EN IEC 62368-1:2020+A11:2020			
Attachment Form No.....: EU_GD_IEC62368_1E			
Attachment Originator.....: UL(Demko)			
Master Attachment.....: 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	CENELEC COMMON MODIFICATIONS (EN)		P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".		P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
1	Modification to Clause 3 .		N/A
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
10.6.1.1	Introduction Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $LA_{eq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $LA_{eq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	below.		
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows:  – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		P

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
	Delete all the “country” notes in the reference document according to the following list:					P
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note
	Y.4.5	Note				
4	Modification to Clause 1					P
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	Modification to 4.Z1		P
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		N/A
7	Modification to 10.2.1		N/A
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

8	Modification to 10.5.1		N/A
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
9	Modification to G.7.1		N/A
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

10	Modification to Bibliography		P
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		P
11	ADDITION OF ANNEXES		--
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark : "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway : "Apparatet må tilkoples jordet stikkontakt" In Sweden : "Apparaten skall anslutas till jordat uttag"	P	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		P
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		P
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		P
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A, the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		P
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.		P
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)" NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A																																																				
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr><tr><td colspan="3">PVC insulated cords</td></tr><tr><td>Flat twin tinsel cord</td><td>60227 IEC 41</td><td>H03VH-Y</td></tr><tr><td>Light polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 52</td><td>H03VV-F H03VVH2-F</td></tr><tr><td>Ordinary polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 53</td><td>H05VV-F H05VVH2-F</td></tr><tr><td colspan="3">Rubber insulated cords</td></tr><tr><td>Braided cord</td><td>60245 IEC 51</td><td>H03RT-F</td></tr><tr><td>Ordinary tough rubber sheathed flexible cord</td><td>60245 IEC 53</td><td>H05RR-F</td></tr><tr><td>Ordinary polychloroprene sheathed flexible cord</td><td>60245 IEC 57</td><td>H05RN-F</td></tr><tr><td>Heavy polychloroprene sheathed flexible cord</td><td>60245 IEC 66</td><td>H07RN-F</td></tr><tr><td colspan="3">Cords having high flexibility</td></tr><tr><td>Rubber insulated and sheathed cord</td><td>60245 IEC 86</td><td>H03RR-H</td></tr><tr><td>Rubber insulated, crosslinked PVC sheathed cord</td><td>60245 IEC 87</td><td>H03RV4-H</td></tr><tr><td>Crosslinked PVC insulated and sheathed cord</td><td>60245 IEC 88</td><td>H03V4V4-H</td></tr><tr><td colspan="3">Cords insulated and sheathed with halogen-free thermoplastic compounds</td></tr><tr><td>Light halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H03Z1Z1-F H03Z1Z1H2-F</td></tr><tr><td>Ordinary halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H05Z1Z1-F H05Z1Z1H2-F</td></tr></table>	Type of flexible cord	Code designations		IEC	CENELEC	PVC insulated cords			Flat twin tinsel cord	60227 IEC 41	H03VH-Y	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F	Rubber insulated cords			Braided cord	60245 IEC 51	H03RT-F	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F	Cords having high flexibility			Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H	Cords insulated and sheathed with halogen-free thermoplastic compounds			Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F	Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F	N/A
Type of flexible cord	Code designations																																																						
	IEC	CENELEC																																																					
PVC insulated cords																																																							
Flat twin tinsel cord	60227 IEC 41	H03VH-Y																																																					
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F																																																					
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F																																																					
Rubber insulated cords																																																							
Braided cord	60245 IEC 51	H03RT-F																																																					
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F																																																					
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F																																																					
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F																																																					
Cords having high flexibility																																																							
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H																																																					
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H																																																					
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H																																																					
Cords insulated and sheathed with halogen-free thermoplastic compounds																																																							
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F																																																					
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F																																																					

ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 1



Picture 2

ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 3



Picture 4

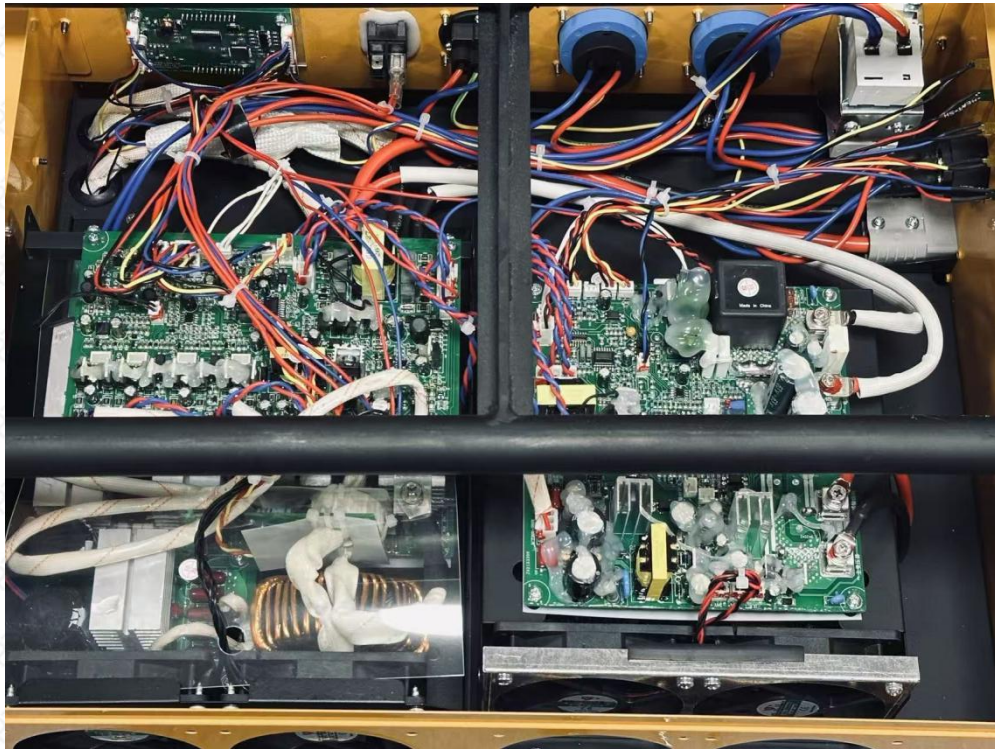
ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 5



Picture 6

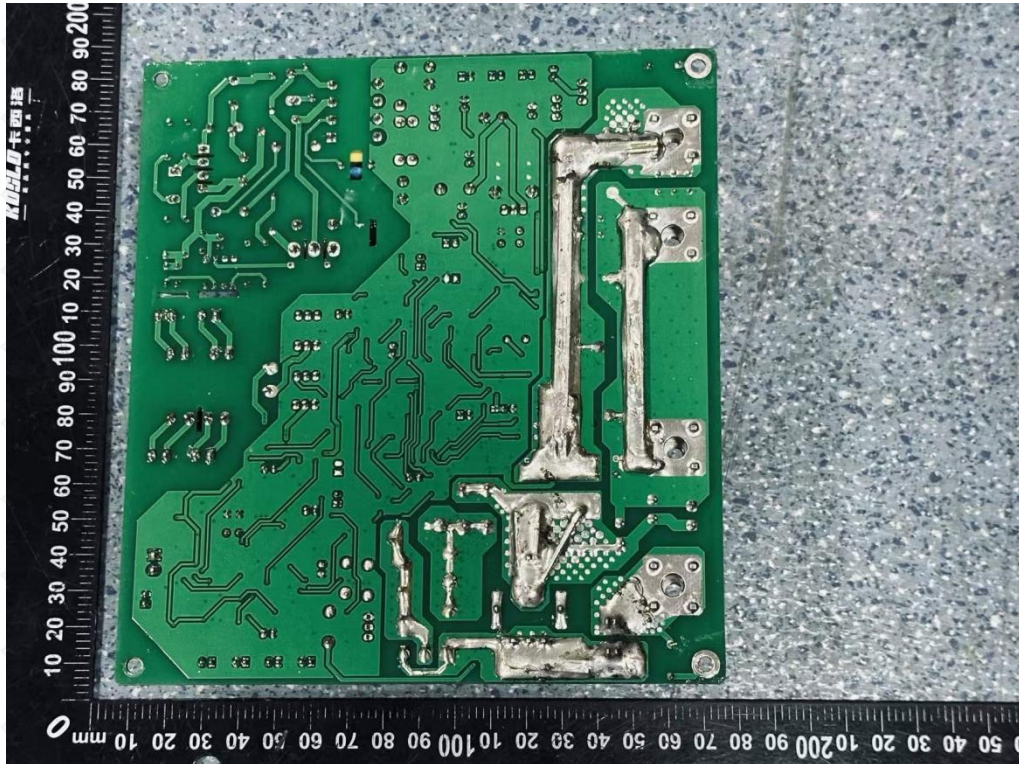
ATTACHMENT 2

Photo Documentation

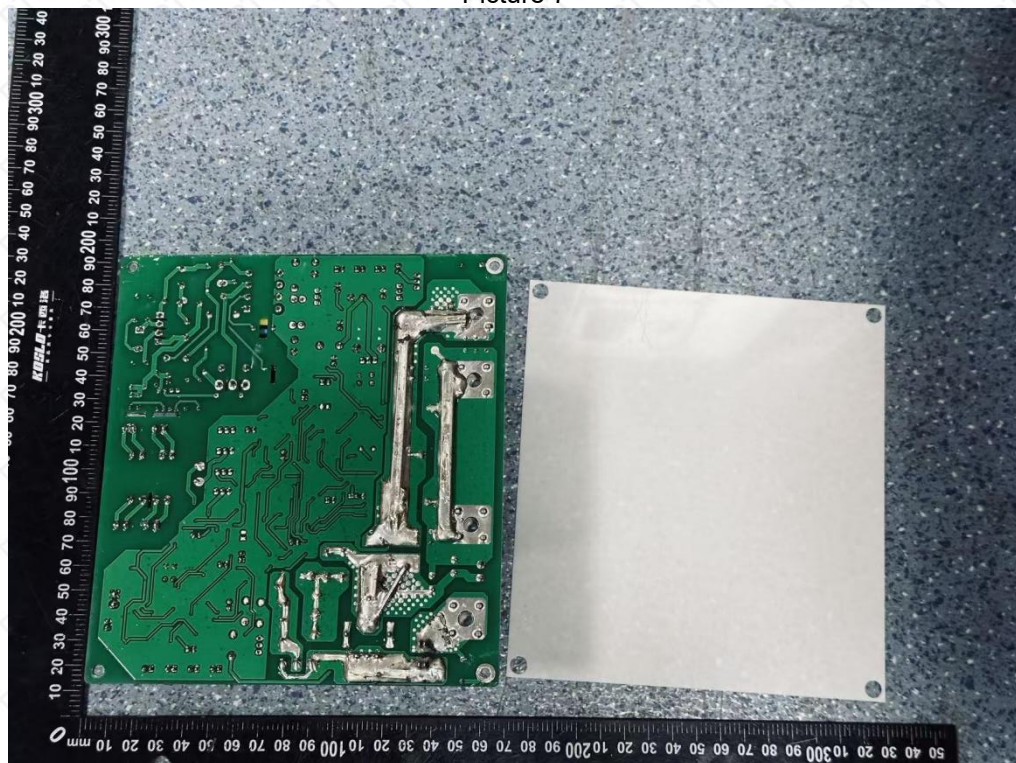
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 7



Picture 8

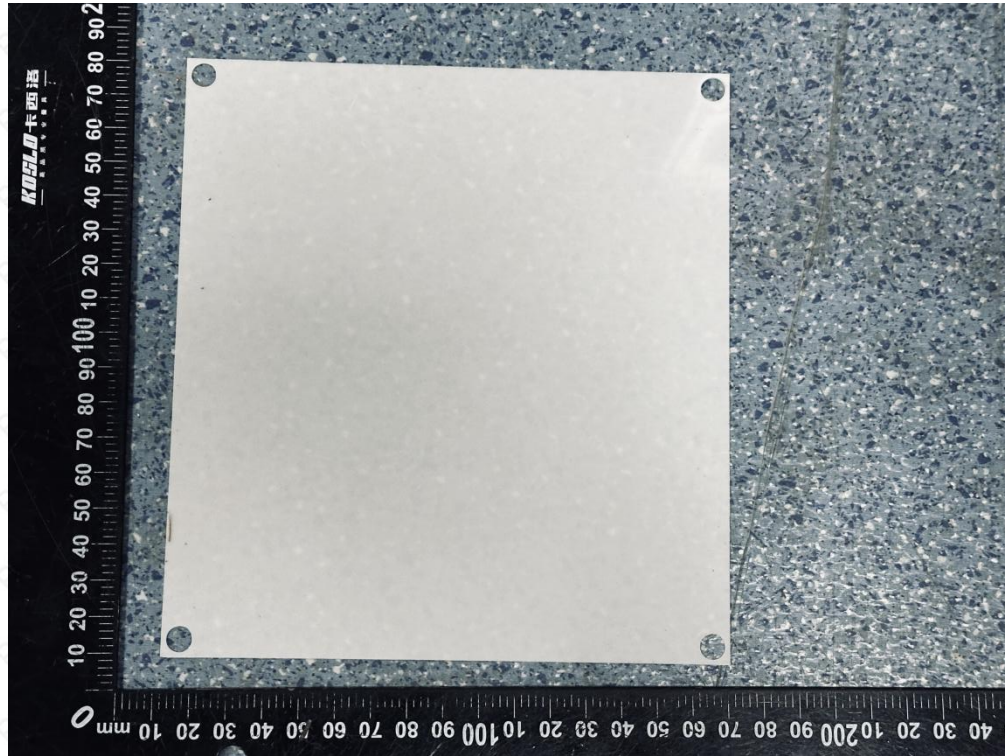
ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 9



Picture 10

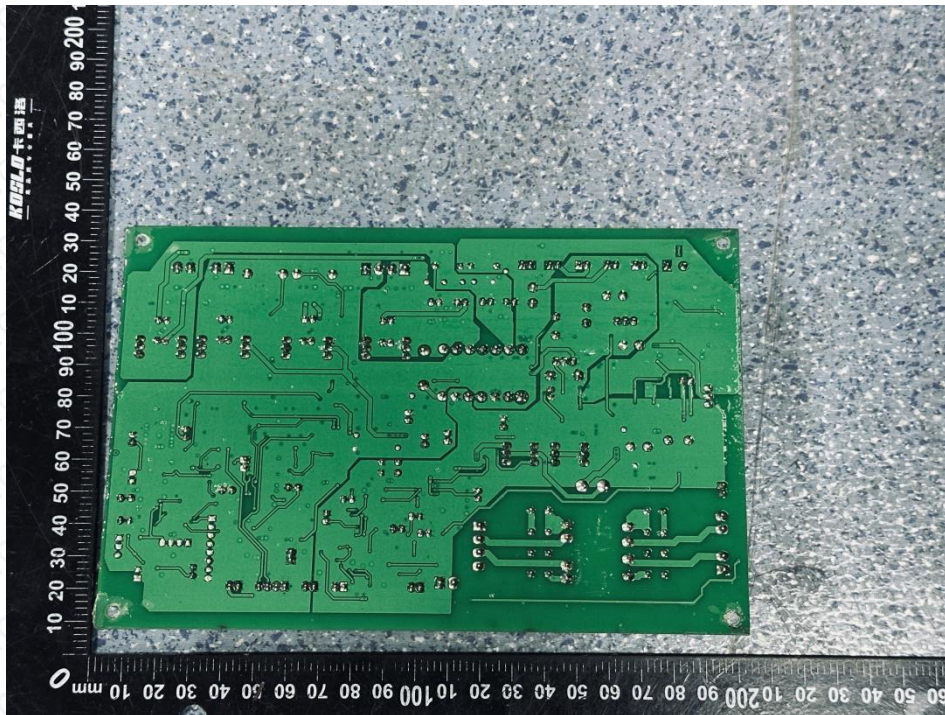
ATTACHMENT 2

Photo Documentation

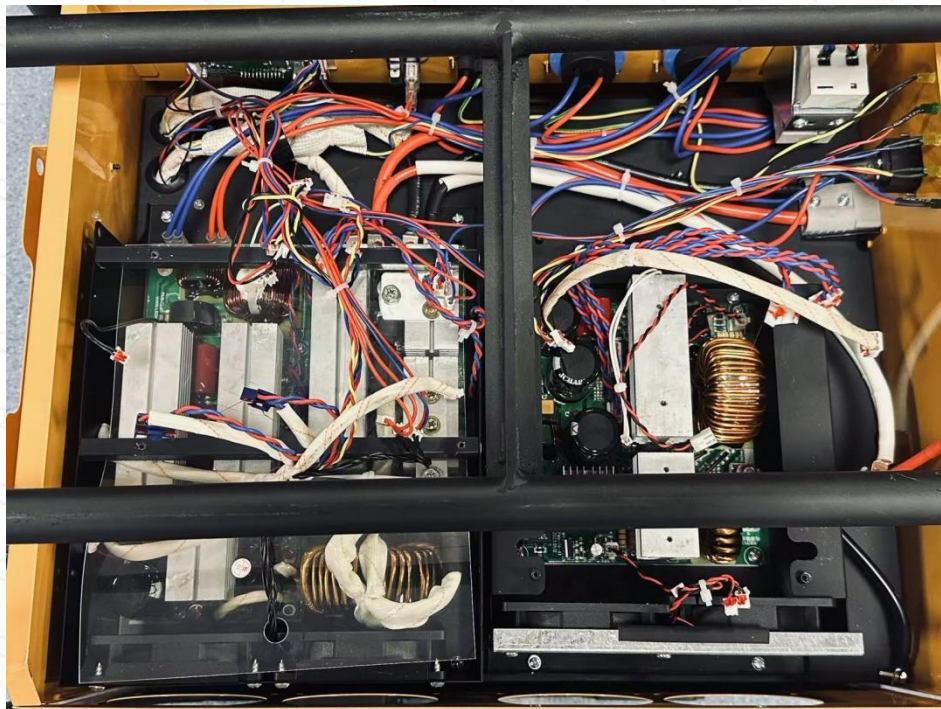
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 11



Picture 12

ATTACHMENT 2

Photo Documentation

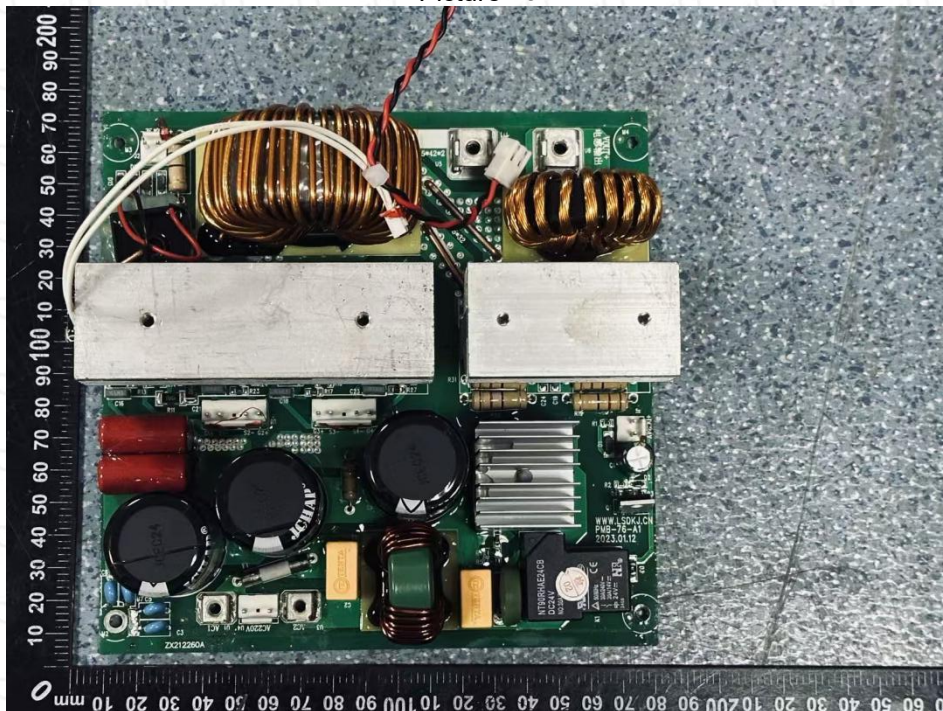
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 13



Picture 14

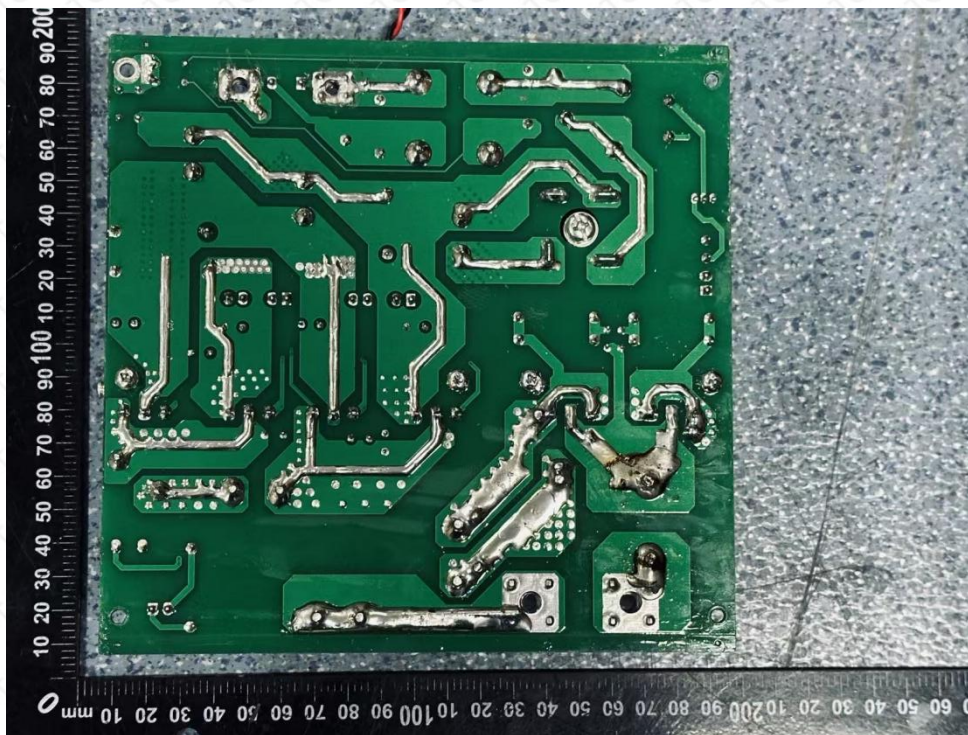
ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 15



Picture 16

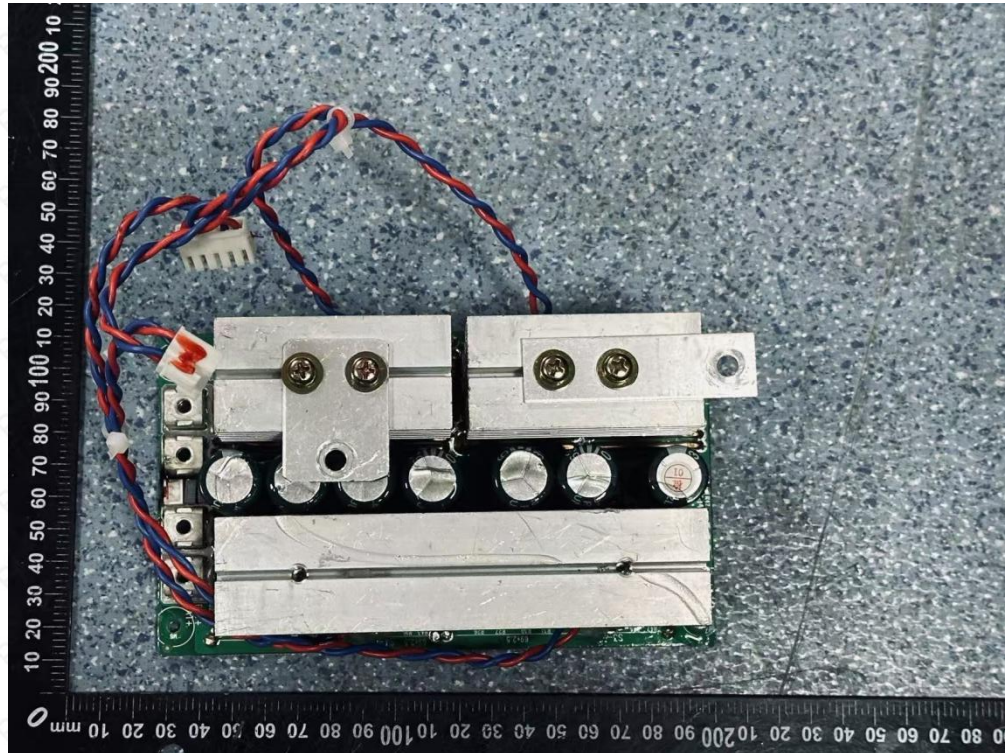
ATTACHMENT 2

Photo Documentation

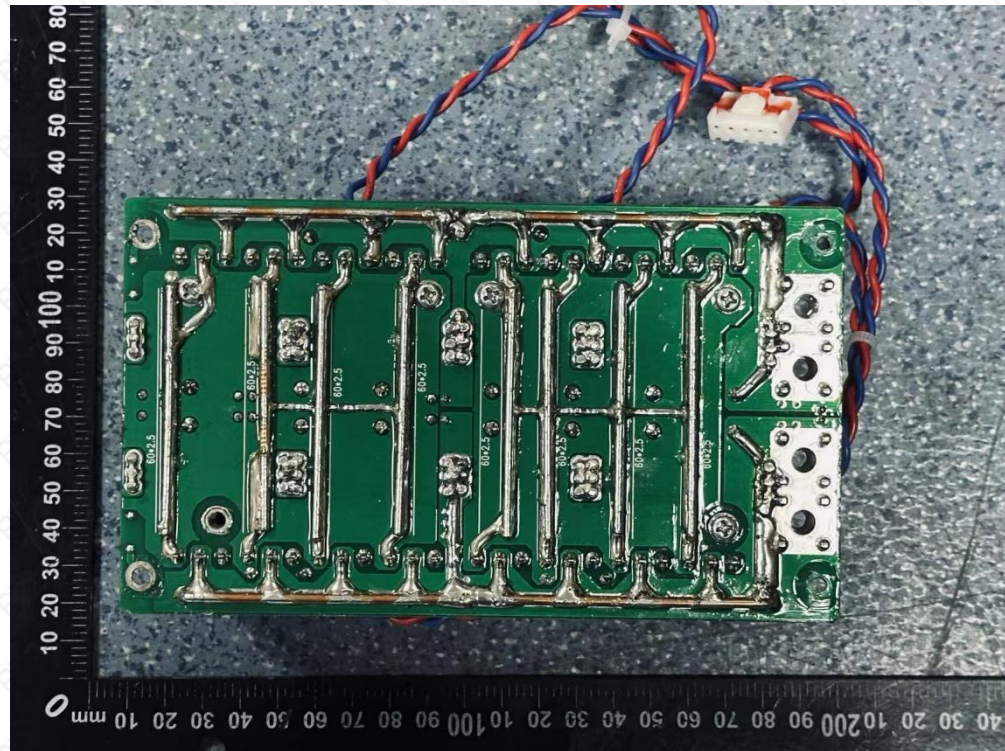
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 17



Picture 18

ATTACHMENT 2

Photo Documentation

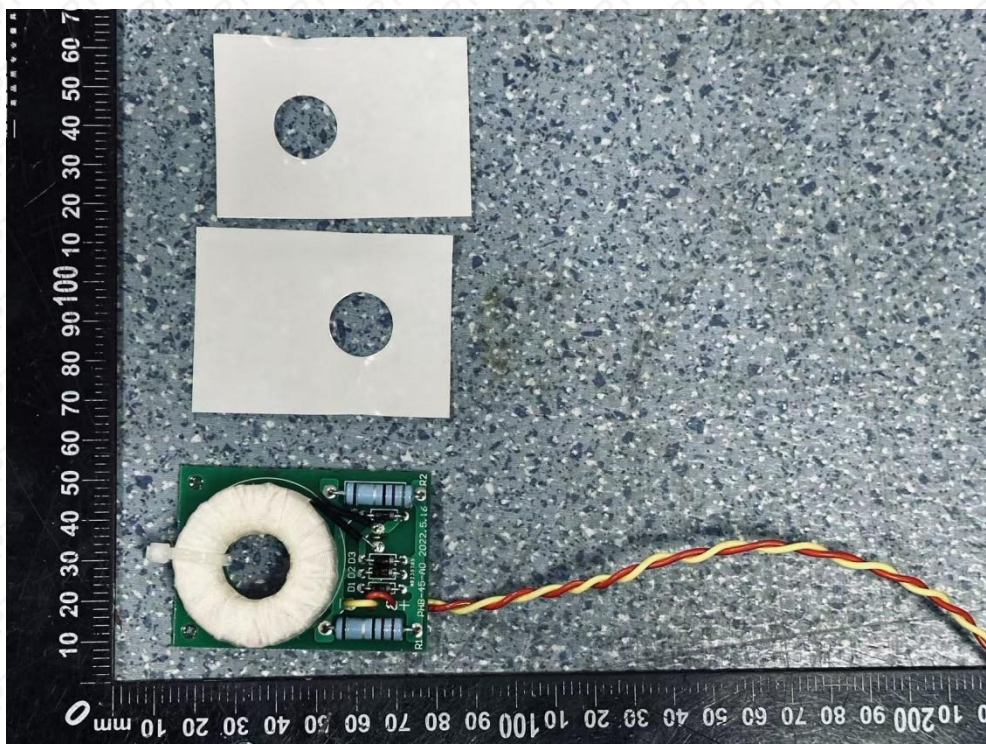
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 19



Picture 20

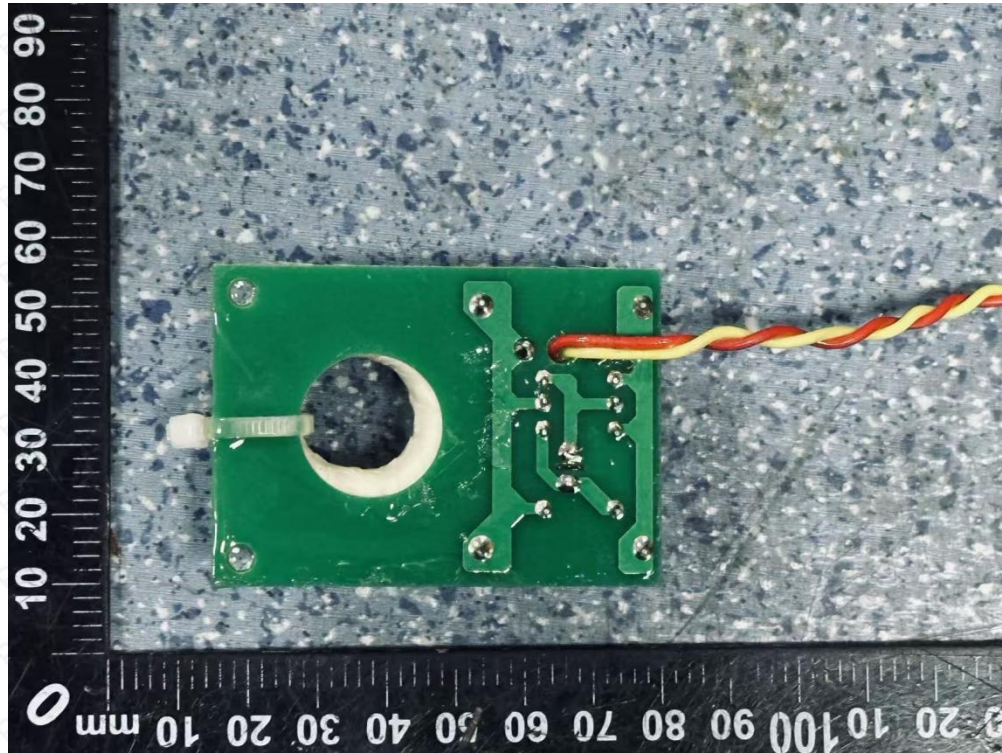
ATTACHMENT 2

Photo Documentation

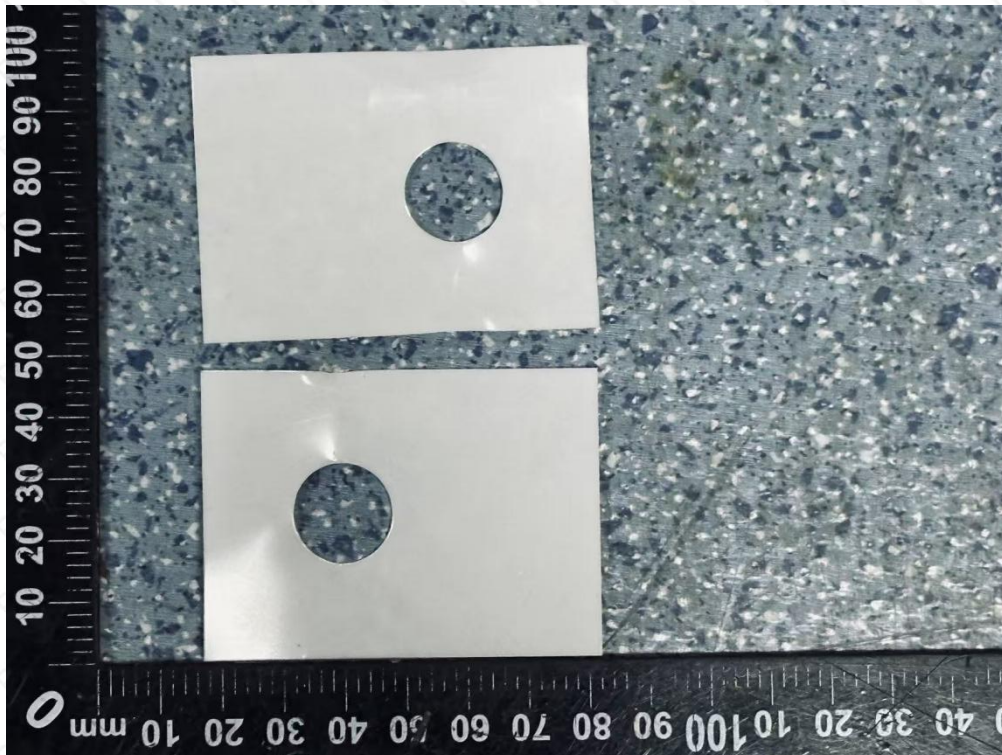
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 21



Picture 22

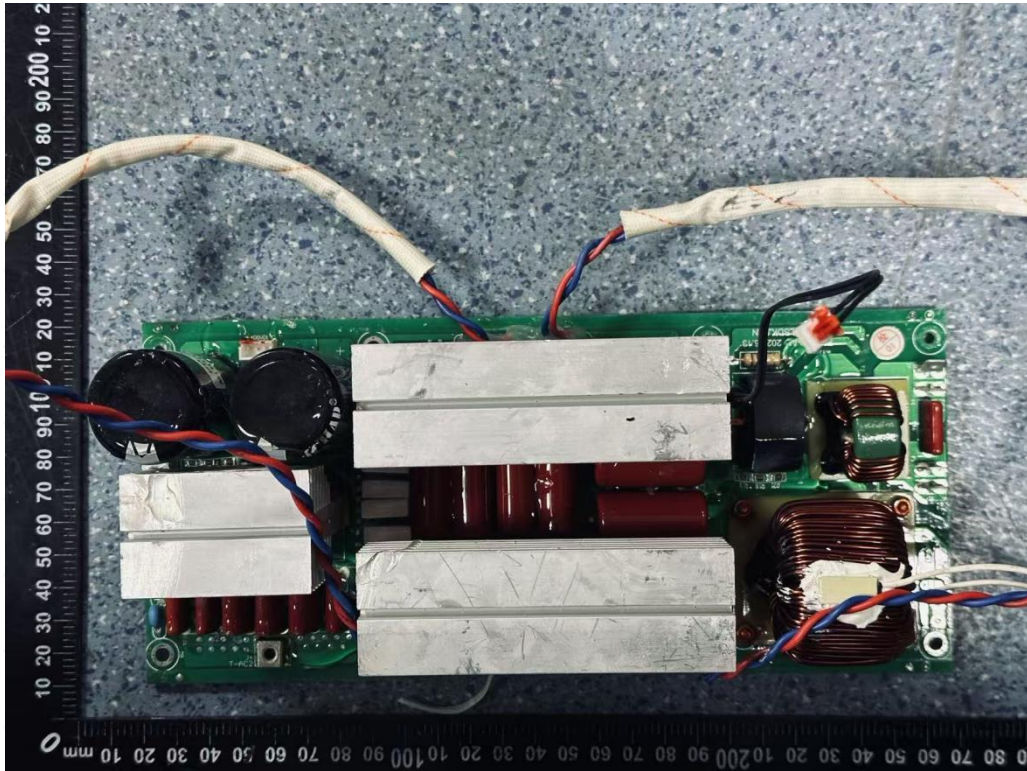
ATTACHMENT 2

Photo Documentation

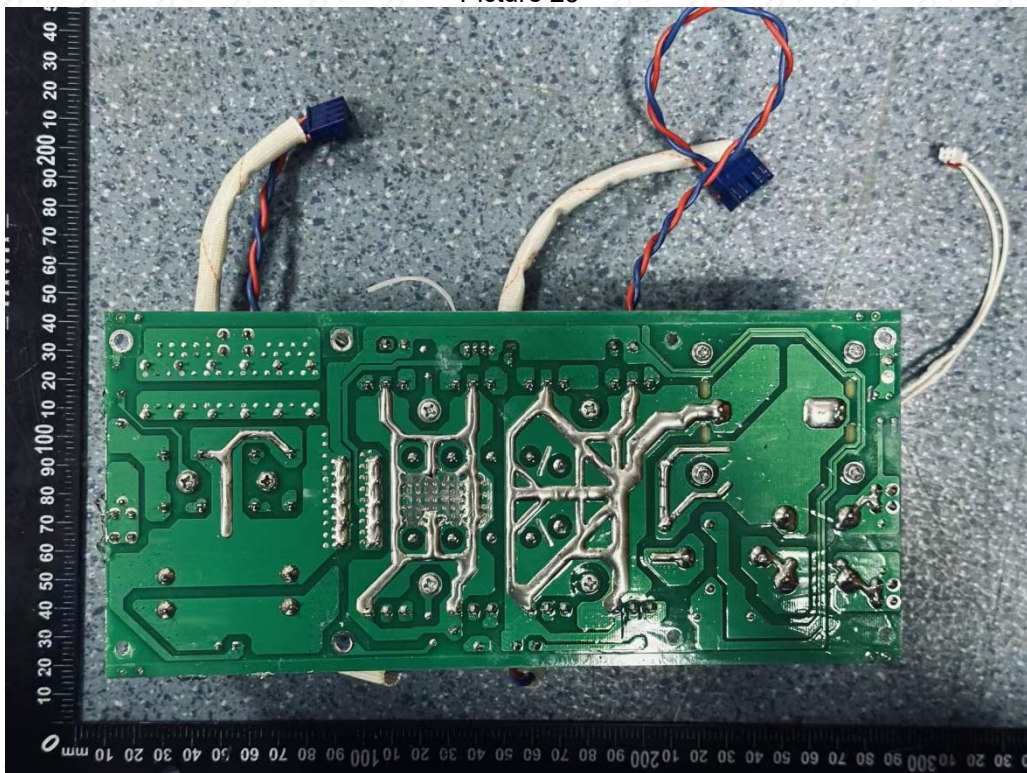
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 23



Picture 24

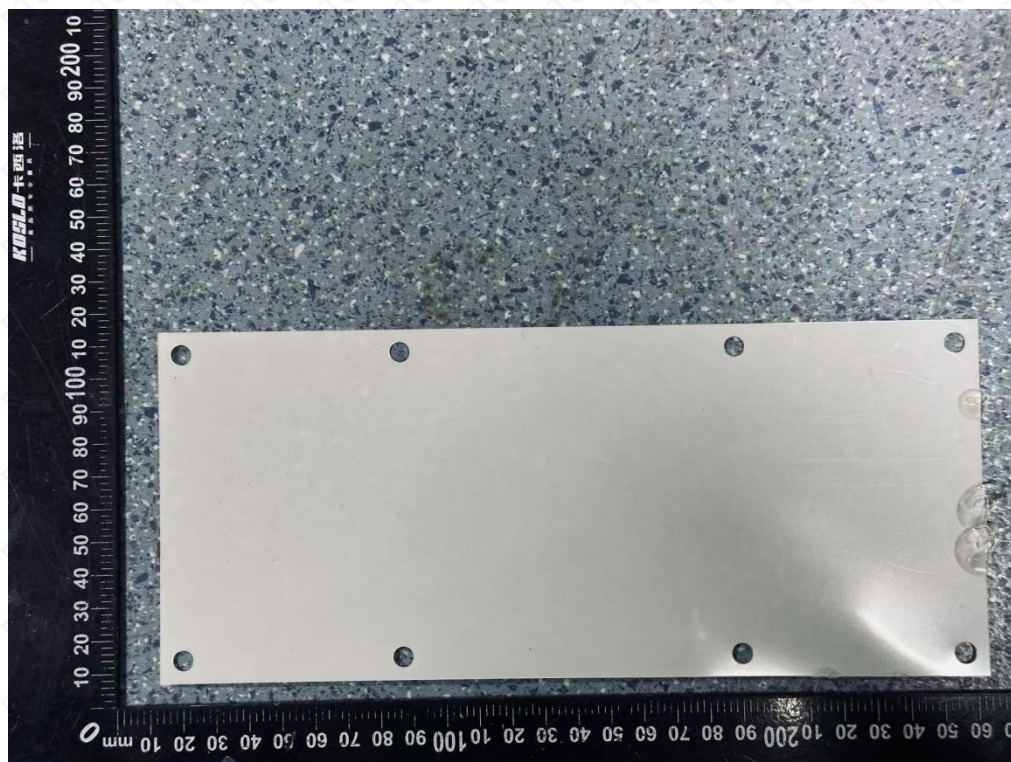
ATTACHMENT 2

Photo Documentation

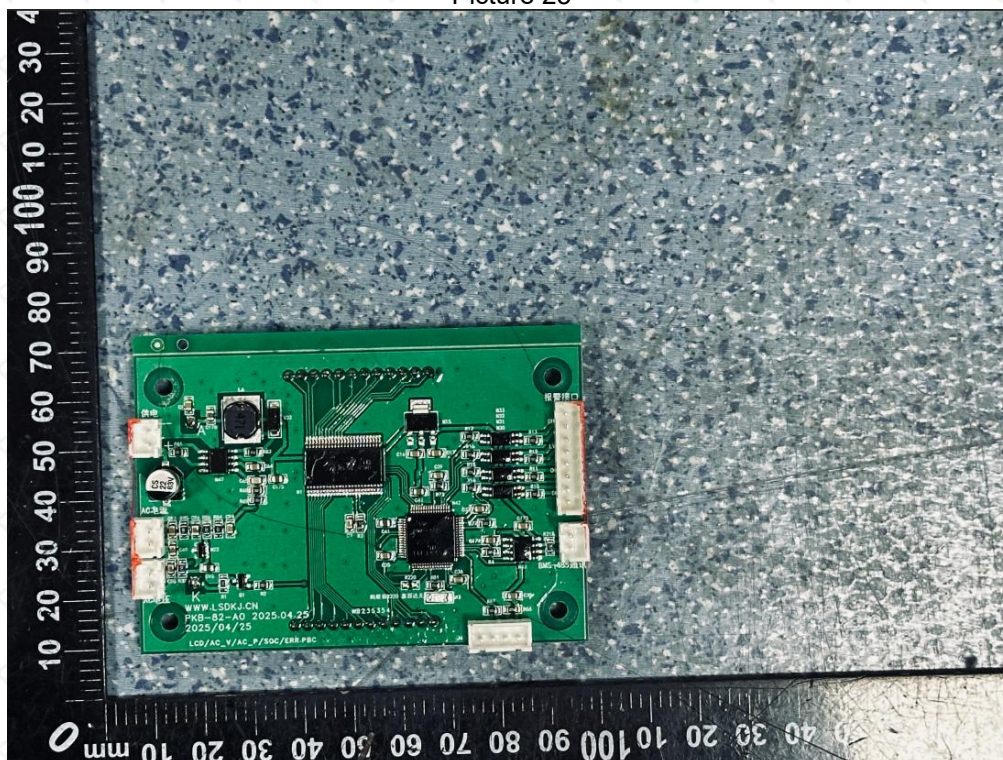
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 25



Picture 26

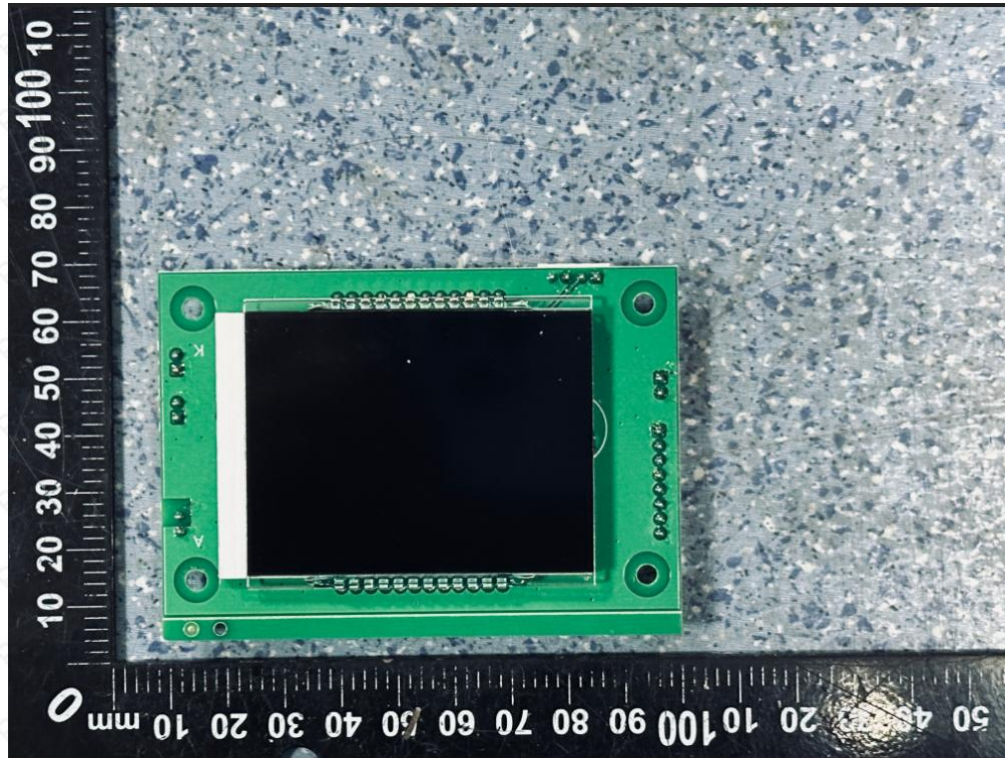
ATTACHMENT 2

Photo Documentation

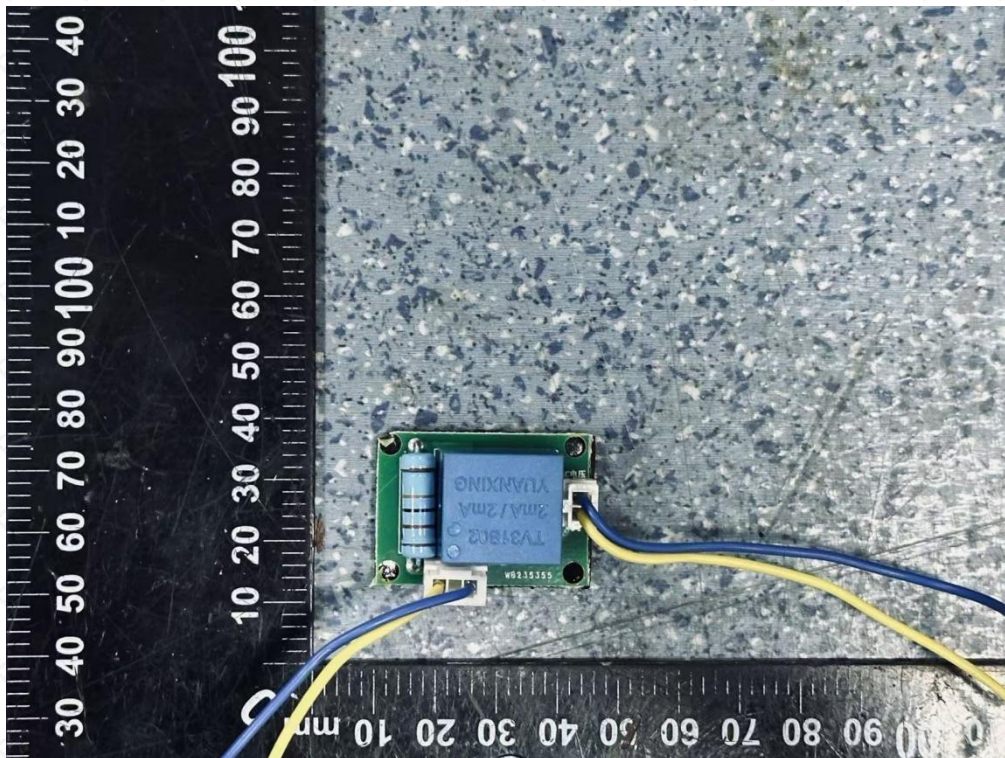
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 27



Picture 28

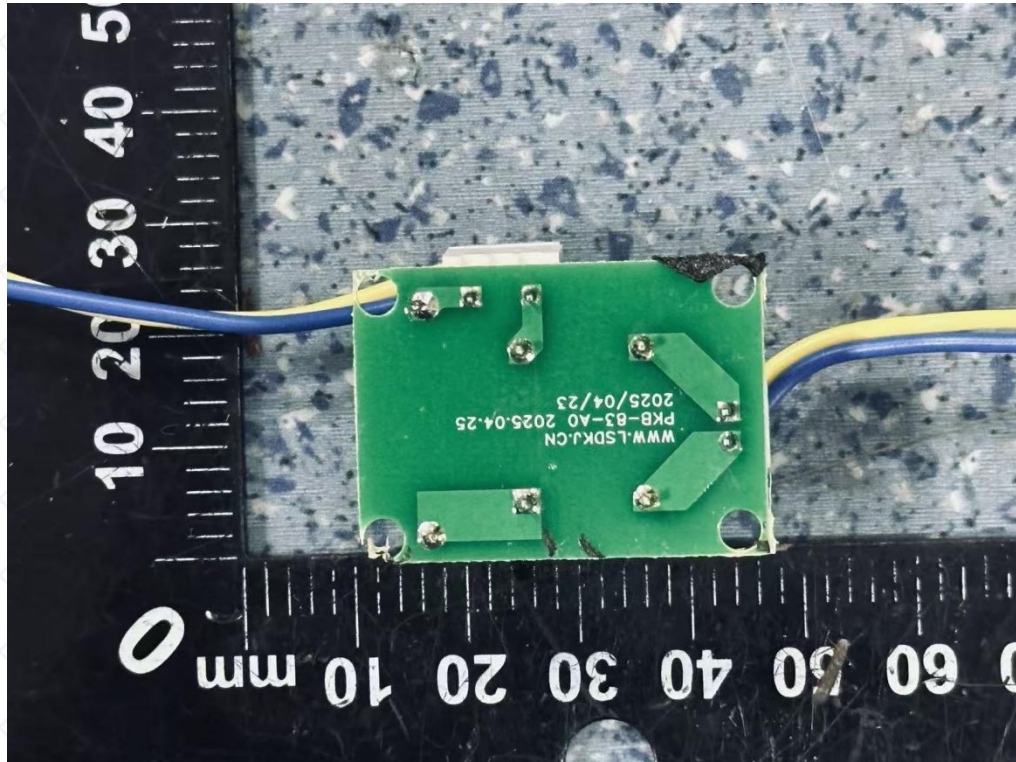
ATTACHMENT 2

Photo Documentation

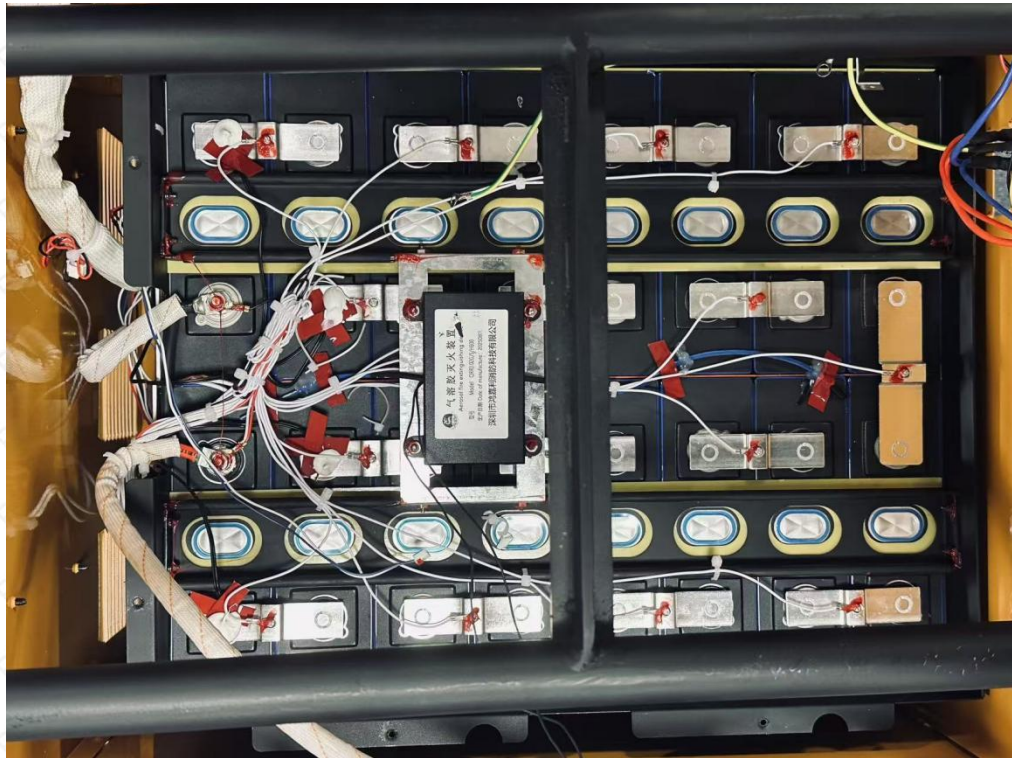
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 29



Picture 30

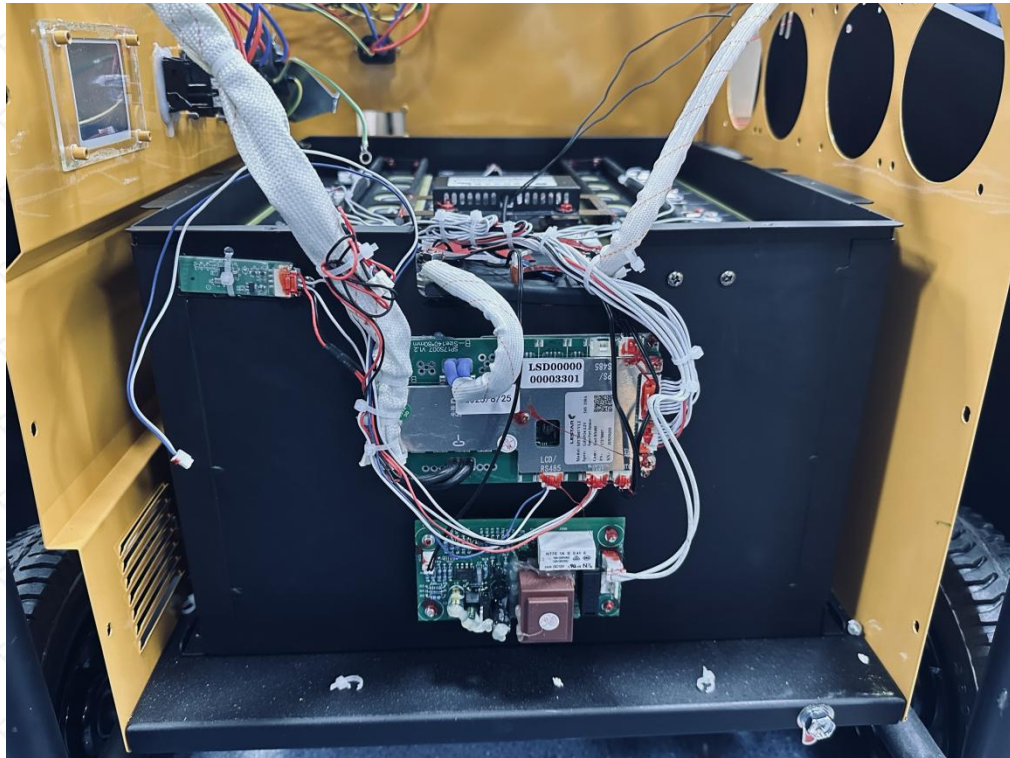
ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 31



Picture 32

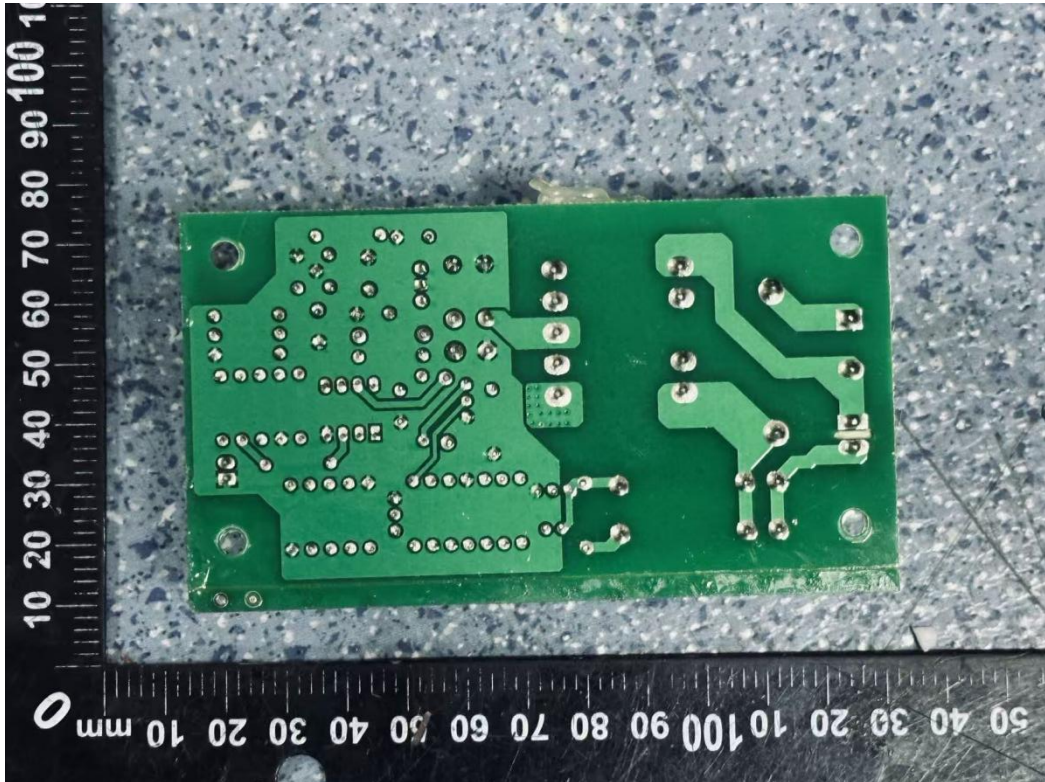
ATTACHMENT 2

Photo Documentation

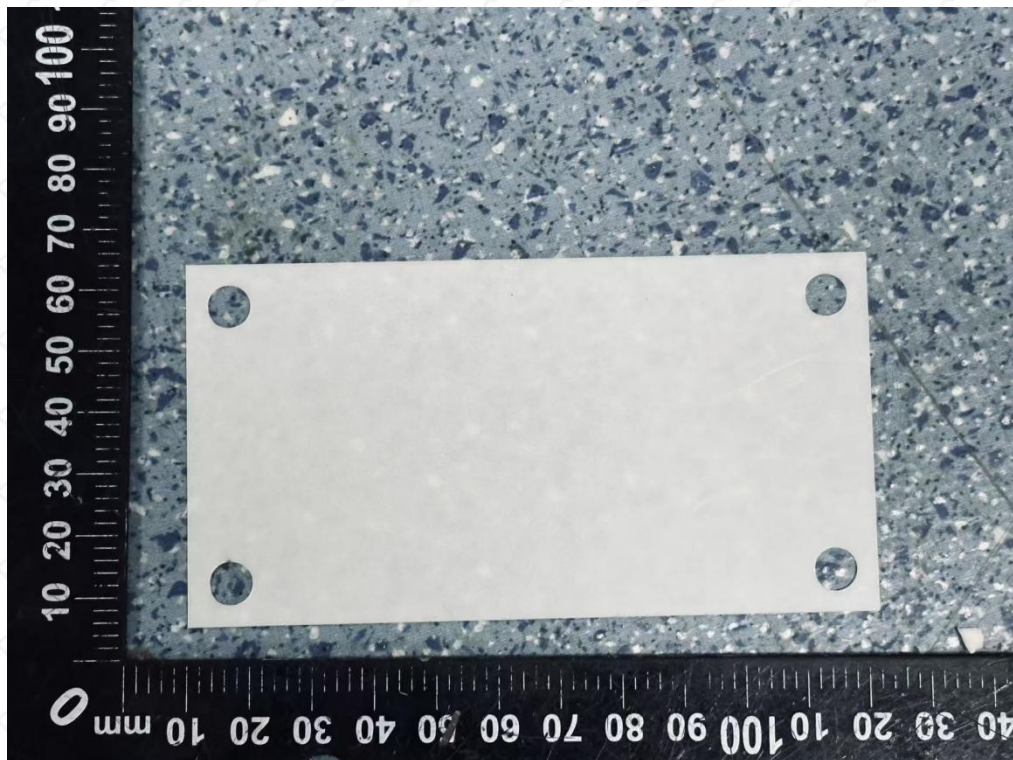
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 33



Picture 34

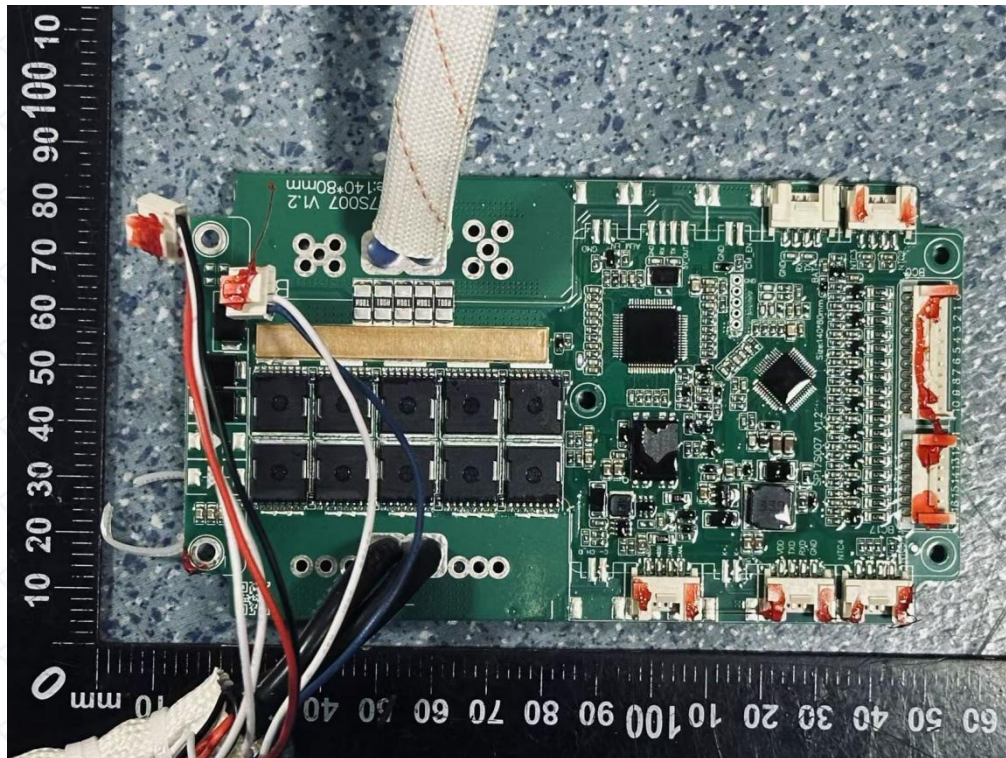
ATTACHMENT 2

Photo Documentation

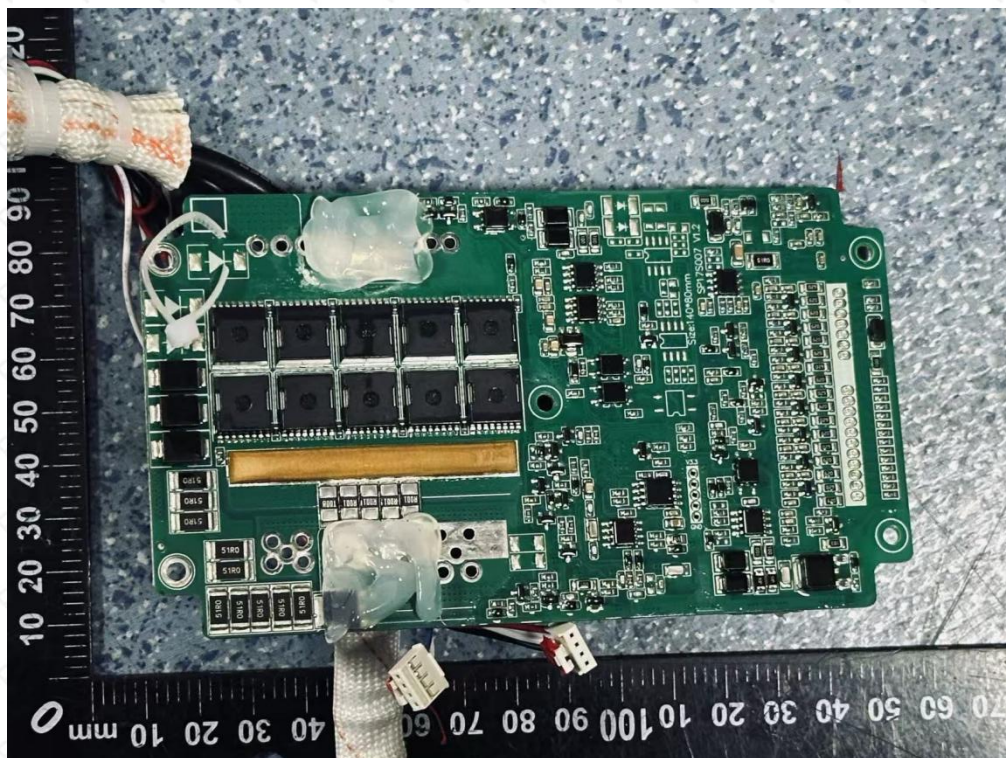
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 35



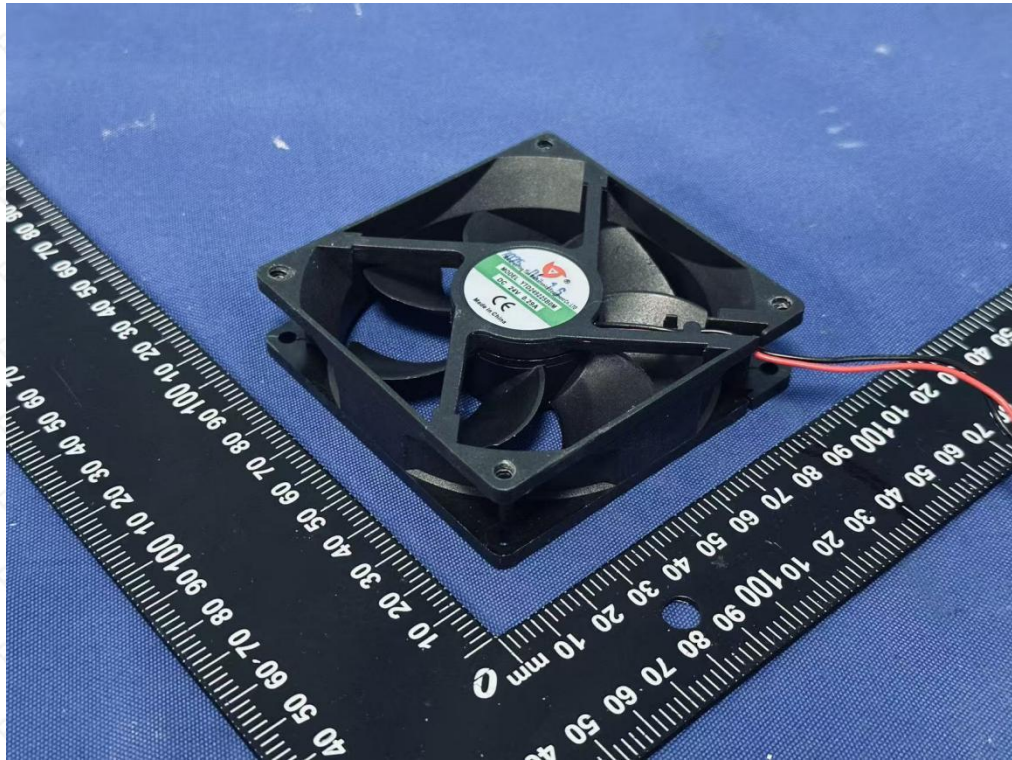
Picture 36

Photo Documentation

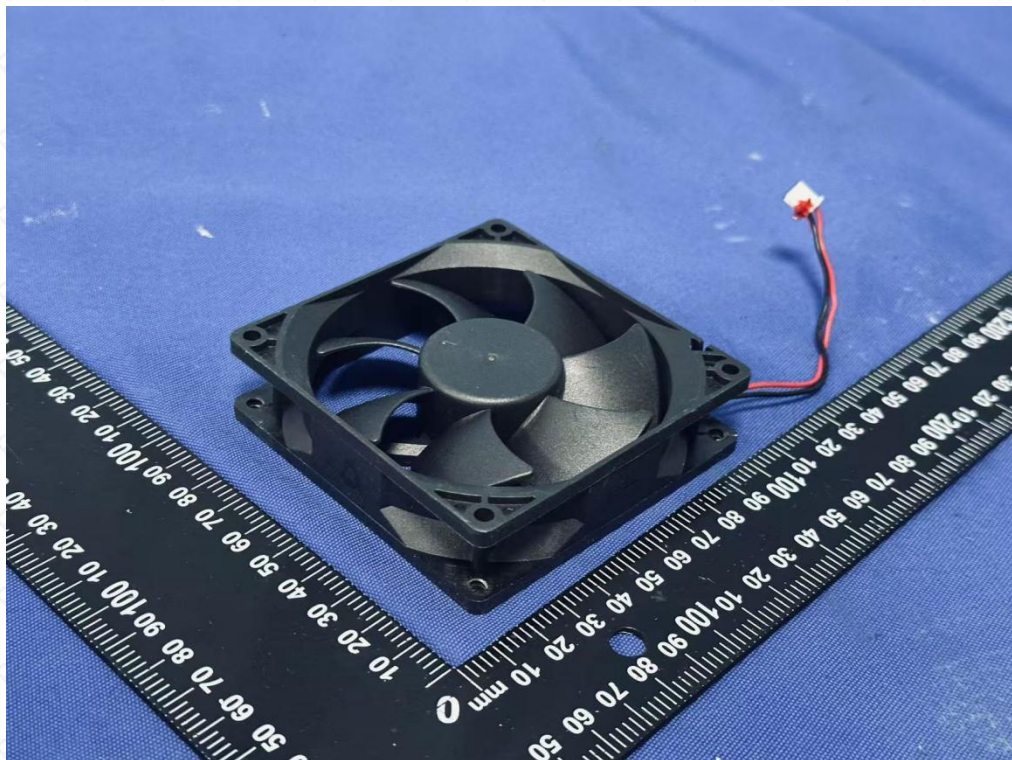
Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 37



Picture 38

ATTACHMENT 2

Photo Documentation

Report No.: PTC25101500301S-LD01

Product: Industrial Portable Power Station

Type Designation: PS-0510, PS-0505, PS-5800T, PS-5800PRO



Picture 39