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 ..... :	SHES210500909107-M3
Date of issue ..... :	2021-05-26; Amendment 1: 2023-05-22; Amendment 2: 2024-04-16 Amendment 3: 2024-10-30
Total number of pages ..... :	26 pages
Name of Testing Laboratory preparing the Report ..... :	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Applicant's name ..... :	Hangzhou Hikvision Digital Technology Co., Ltd.
Address ..... :	No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Test specification:	
Standard ..... :	IEC 62368-1:2014
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1D
Test Report Form(s) Originator .. :	UL(US)
Master TRF ..... :	Dated 2022-04-14

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 ..... :		WIRELESS CONTROL PANEL (Product name: AX PRO)	
Trade Mark(s) ..... :		HIKVISION	
Manufacturer..... :		Same as applicant	
Model/Type reference ..... :		See page 8	
Ratings ..... :		See page 8	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.	
Testing location/ address ..... :		588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.	
Tested by (name, function, signature) ..... :		Emilien Li Project Engineer	
Approved by (name, function, signature) ..... :		Leo Wang 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 - 1 pages of Photo documentation.

Summary of testing:

N/A

Tests performed (name of test and test clause):

☒ 4. General requirements
☐ 5. Electrically-caused injury
☐ 6. Electrically-caused fire
☒ 7. Injury caused by hazardous substances
☐ 8. Mechanically-caused injury
☐ 9. Thermal burn injury
☐10. Radiation
☒ Annex B. Normal operating condition tests, abnormal operating condition tests and single fault condition tests
☐ Annex F.3.9. Performance of Marking test
☒ Annex M Equipment containing batteries and their protection circuits
☐ Annex Q. Limited Power Source
☐ Annex T. Mechanical strength tests
☐ Annex V. Determination of accessible parts

Testing location:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

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

1. EU Group Differences (EN 62368-1:2014+A11:2017)
2. EU Special National Conditions, EU A-deviations: DE, DK, FI, GB, IE, NO, SE
   Explanation of used codes: DE=Germany, DK=Denmark, FI=Finland, GB= United Kingdom, IE=Ireland, NO=Norway, SE=Sweden

The product fulfils the above requirements. which have been considered in original CB test report Ref. SHES210500909101, dated on 2021-05-26, SHES210500909103-M1, dated on 2023-05-22 ,SHES210500909105-M2 dated on 2024-04-16 and this report.

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 artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective National Certification Body that own these marks.

Marking for DS-PWA96-M-WE

Marking for DS-PWA64-L-WB

Remark:

1) The Height of CE logo shall not be less than 5 mm; Height of WEEE logo shall not be less than 7 mm.

2) The marking plates for other models are of the same pattern except for model name.

3) 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.

TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☒ Instructed person ☒ Skilled person ☐ Children likely to be present
Supply Connection .....:	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ 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 ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation.....:	___16___ A; Installation location: ☒ building; ☐ equipment
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment .....:	☐ Class I ☒ Class II ☐ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access location ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient .....:	55°C
IP protection class .....:	☒ IPX0 ☐ IP___
Power Systems .....:	☒ TN ☒ TT ☐ IT - ____ $V_{L-L;}$ ☐ dc mains ☐ N/A
Altitude during operation (m) .....:	☐ 2000 m or less ☒ __5000____ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) .....:	☒ approximately 0,57Kg

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.....:	2024-10-18
Date (s) of performance of tests .....:	2024-10-18 to 2024-10-22

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.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

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** Factory declaration letter. pdf, dated on 2022-12-12.

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

Name and address of factory (ies).....:	1. Hangzhou Hikvision Technology Co., Ltd. No. 700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China 2. Hangzhou Hikvision Electronics Co., Ltd. No. 299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 311500, China 3. Chongqing Hikvision technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China

General product information and other remarks:

Product Description –

Product name	WIRELESS CONTROL PANEL (Product name: AX PRO)
Functions	The product is a class II WIRELESS CONTROL PANEL (Product name: AX PRO) with built-in SMPS and battery pack.
Power source	1× AC mains, 2 × Serial Ports, 1 × Network Interface, 1 × SD slot, 2 × SIM card slot.
Material of enclosure	Plastic enclosure. Top enclosure and bottom enclosure are secured together by screws
Model difference	The main difference for the different models is the radio frequency. The suffix - WE is the 868 wireless frequency band, the suffix - WB is the 433 wireless frequency band, the 48 model is 433+WiFi, the L model is 433/868+WiFi+2G, and the M model is the L model is 433/868+WiFi+4G+card swiping.

Model / Type Ref.		Ratings and principal characteristics
DS-PWA96-M-WE	DS-PWA96-M-WEUHK	100 - 240 V a.c.; 50 / 60 Hz; 0,15 - 0,07 A; Class II
DS-PWA96-M-WECKV	DS-PWA96-M-WEUVS	
DS-PWA96-M-WEKVO	DS-PWA96-M-WEHUN	
DS-PWA64-L-WE	DS-PWA64-L-WEUHK	
DS-PWA64-L-WECKV	DS-PWA64-L-WEUVS	
DS-PWA64-L-WEKVO	DS-PWA64-L-WEHUN	
DS-PWA96-M-WB	DS-PWA96-M-WBUHK	
DS-PWA96-M-WBCKV	DS-PWA96-M-WBUVS	
DS-PWA96-M-WBKVO	DS-PWA96-M-WBHUN	
DS-PWA48-E-WB	DS-PWA48-E-WBUHK	
DS-PWA48-E-WBCKV	DS-PWA48-E-WBUVS	
DS-PWA48-E-WBKVO	DS-PWA48-E-WBHUN	
DS-PA103-96P-WE	DS-PA102-64P-WE	
DS-PICP128-WE	--	
DS-PWA64-L-WB	DS-PWA64-L-WBUHK	100 - 240 V a.c.; 50 / 60 Hz; 0,2 - 0,09 A; Class II
DS-PWA64-L-WBCKV	DS-PWA64-L-WBUVS	
DS-PWA64-L-WBKVO	DS-PWA64-L-WBHUN	

Amendment 1 Report:

The original Test Report Ref. No. SHES210500909101, dated on 2021-05-26 was modified to include following:

- Add models DS-PA103-96P-WE which has no impact for safety.
- Add an alternative front appearance photo, please see attachment 1 for details.
- Update the marking plate and revised the rated parameters for model DS-PWA96-M-WE, please see page 4 and page 22 for details.

After comparison, no additional test was considered necessary.

Amendment 2 Report:

The original Test Report Ref. No. SHES210500909101, dated on 2021-05-26 and SHES210500909103-M1, dated on 2023-05-22 was modified to include following:

- Change the Wifi module, 2G/4G module, add a power storage capacitor on 2G module for DS-PWA64-L series, change the charging circuit on main board, please see attachment 1 for details.

After comparison, following test were considered necessary.

For model DS-PWA64-L-WB:

B.2.5 Input test

For model DS-PWA96-M-WE:

B.2.5 Input test

5.4.1.4, 6.3.2, 9.0, B.2.6 Temperature measurements

Amendment 3 Report:

The original Test Report Ref. No. SHES210500909101, dated on 2021-05-26, SHES210500909103-M1, dated on 2023-05-22 and SHES210500909105-M2 dated on 2024-04-16 was modified to include following:

- Add an alternative Lithium battery pack.

- Add a model DS-PICP128-WE which is identical to previous model (DS-PWA96-M-WE series) except for model name which have no impact for safety.

After comparison, following test were considered necessary.

For model DS-PWA64-M-WE:

B.2.5 Input test; 5.4.1.4, 6.3.2, 9.0, B.2.6 Temperature measurements; M.3 Tests for protection circuits for batteries provided within the equipment; M.4.2 Charging safeguards for equipment containing a secondary lithium battery.

This test report is not valid without the original CB Test Report Ref. No. SHES210500909101, dated on 2021-05-26, SHES210500909103-M1, dated on 2023-05-22 and SHES210500909105-M2, dated on 2024-04-16.

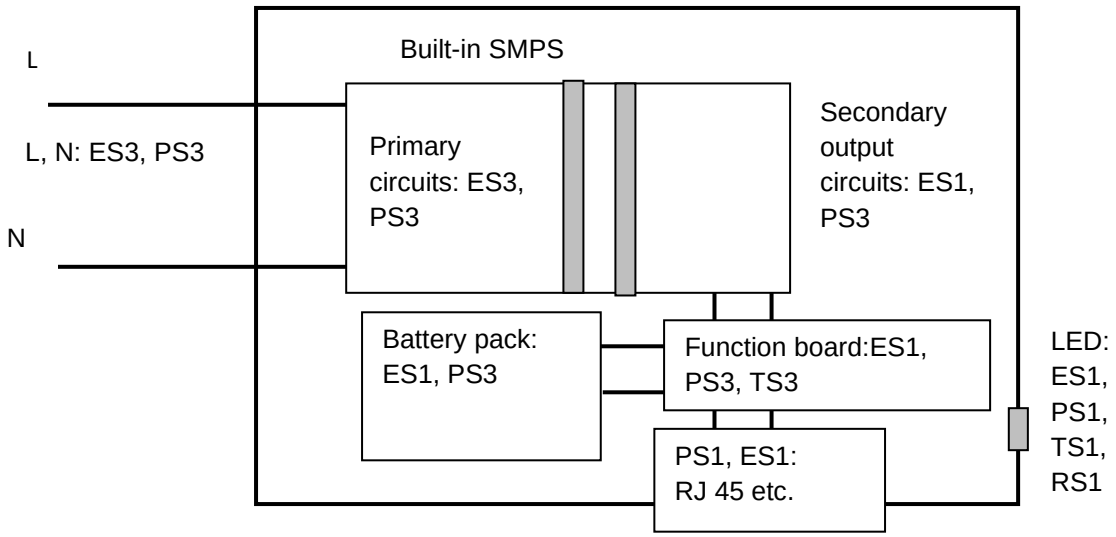
Additional application considerations – (Considerations used to test a component or sub-assembly) –

N/A

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
Primary circuit	ES3
Plastic enclosure	ES1
Circuits after T101 of SMPS board	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
Primary circuit	PS3
Circuits after T101	PS3
Output terminals	PS1
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
Battery(RTC battery and battery pack)	Li-ion material used in battery
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
EUT edge and corner	MS1
Equipment mass	MS1 (Approximately 0,57kg)
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Accessible parts	TS1
All parts inside of Enclosure	TS3
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
Low power application LED light	RS1

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below



Mass of EUT: MS1, EUT edge and corner:MS1, All accessible part: TS1

☑ ES ☑ PS ☑ MS ☑ TS ☑ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary (Include children)	ES3: Primary circuit	N/A	N/A	Enclosure; Reinforced insulation on SMPS board;
Ordinary (Include children)	ES1: Plastic enclosure	N/A	N/A	N/A
Ordinary (Include children)	ES1: Circuits after T101	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Internal combustible materials	PS3: Primary circuits, Circuits after T101	1, No ignition occurred. 2, No parts exceeding 90% of its spontaneous ignition temperature.	1, PCB is complied with V-1 material. 2, All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material. 3, fire enclosure provided.	N/A
Output terminals	PS1: Output terminals	N/A	N/A	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary (Include children)	Li-ion material used in battery	N/A	N/A	Complied with annex M
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary	MS1: Equipment mass	N/A	N/A	N/A

9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible parts	N/A	N/A	N/A
Ordinary	TS3: All parts inside of Enclosure	N/A	N/A	Enclosure
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Low power application LED light	RS1	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

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Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of this standard and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of this standard.	P
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:	(See Annex M)	P
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	TS1 for accessible part.	P
9.3	Safeguard against thermal energy sources	The parts inside of EUT was considered as TS3, enclosure provided.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard .....:	Not used.	N/A
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :		N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P

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

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	Requirements		P
M.2.2	Compliance and test method (identify method) .. :	Approved battery used.	P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery	Impossible	N/A
	- Excessive discharging rate for any battery		P
M.3.3	Compliance .....:	(See appended Tables and Annex M and M.4)	P
M.4	Additional safeguards for equipment containing secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits		P
M.4.2.2a)	Charging voltage, current and temperature .....:	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry .....:	(See Annex B.4)	—
M.4.3	Fire Enclosure		P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits		P

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Clause	Requirement + Test	Result - Remark	Verdict
M.6.1.1	General requirements	Approved battery pack used.	P
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....:		N/A
M.6.2	Leakage current (mA) .....:		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
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
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		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....:	Sufficient information used.	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Enclosure	COVESTRO DEUTSCHLAND AG [PC RESINS]	6487 + (z)(f1)	V-0, Min, thickness 1,5 mm, 115°C	UL94 CSA-C22.2 No. 0.17 UL 62368-1:2014, CAN/CSA C22.2 No. 62368-1-14	UL E41613 Tested with appliance
Alternative	KUMHO-SUNNY	PC2502NH	V-0 Min, thickness 1.5mm, 110°C	UL 94	UL E254819
Alternative	KINGFA	JH860 UV	V-0 Min, thickness 1.5mm, 120°C	UL 94	UL E484599
PCB	SUNTAK MULTILAYER PCB CO LTD	STM-5	V-0, 130 °C	UL 796	UL E207844
Alternative	Interchangeable	Interchangeable	Min V-1, 130 °C	UL 796	UL
Lithium battery pack	Li-Fun Technology Co., Ltd	765965	3,8Vdc, 4520mAh, 17,176Wh	IEC 62133-2:2017	CB by TUV-Rh JPTUV-089405
Alternative Lithium battery pack	**Li-Fun Technology Co., Ltd**	**115965-1S1P**	**3,7V d.c.; 4950mAH**	**IEC 62133-2:2017**	**CB by TUV-SUD SG PSB-BT-05235 Report: 211-282240674-000**
Coin battery	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Max Charging Current (Ic):300 mA, Max Charging Voltage: 3,4 V dc	UL 1642	UL MH15628
AC inlet	Zhe Jiang Bei Er Jia Electronic Co Ltd	ST-A03-005	AC 250 V, 2,5A	IEC/EN 60320-1 UL 498	VDE 40014833 UL E225980
Alternative	Steady Electronics Corporation	2123	AC 250 V, 2,5A	IEC/EN 60320-1UL 498	VDE 40036613 UL E217193

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Clause	Requirement + Test	Result - Remark	Verdict

Alternative	Zhejiang Le Ci Electronics Co.,Ltd.	DB-8	AC 250 V, 2,5A	IEC/EN 60320-1 UL 498	VDE 40032028 UL E302229
Alternative	Yueqing Yanhui Electronic Co Ltd	DB-14-T-1	AC 250 V, 2,5A	IEC/EN 60320-1 UL 498	VDE 40035411 UL E334847
Alternative	Yueqing Yanhui Electronic Co Ltd	DB-14-T-1M	AC 250 V, 2,5A	IEC/EN 60320-1 UL 498	VDE 40035411 UL E334847
Alternative	DongGuan Yuankai Plastic CO.,Ltd.	XHL-052C13	AC 250 V, 2,5A	IEC/EN 60320-1 UL 498	ENEC UL E496145
Fuse (F101)	Conquer Electronic.,Ltd.	MST	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alternative	Shenzhen Lanson Electronics Co Ltd	SMT	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alternative	Suzhou Walter ElectronicCo. Ltd.	2010	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E56092
Alternative	HonghuBluelight Electronic Co.,Ltd	6ET	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40034107 UL E324232
Alternative	XC Electronics (Shen Zhen) Corp. Ltd.	5TE	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40029550 UL E249609
Alternative	Smart Electronics Inc.	SPT250TE	T2AL, 250Va.c.	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1 UL 248-14	VDE 40014285 UL E238986

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Clause	Requirement + Test	Result - Remark	Verdict

Varistor (MOV101)	Thinking Electronic Industrial Co., Ltd	TVR14561-V TVR14621-V TVR14681-V TVR14511-V TVR14561, TVR14681, TVR14621. TVR14511	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0,	IEC/EN 61051-1 IEC/EN 61051-2 UL 1449	VDE 005944 UL E314979
Alternative	Success Electronics Co Ltd	SVR14D511K, SVR14D561K, SVR14D681K	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0,	IEC/EN 61051-1 IEC/EN 61051-2 UL 1449	VDE 40030401 VDE 123677 UL E330256
Alternative	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	14D471K, 14D511K, 14D561K, 14D621K, 14D681K	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0,	IEC/EN 61051-1 IEC/EN 61051-2 UL 1449	VDE 40023049 UL E330837
Alternative	XI'AN XIWUER ELECTRONIC & INFORMATION CO LTD	MYG3-14K325, MYG3-14K360, MYG3-14K385, MYG3-14K420, MYG3-14K460	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0,	IEC/EN 61051-1 IEC/EN 61051-2 UL 1449	VDE 40008528 UL E321175
Alternative	CERGLASS MFG INC	14D471K, 14D511K, 14D561K, 14D621K, 14D681K	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0,	IEC/EN 61051-1 IEC/EN 61051-2 UL 1449	VDE 40028836 UL E317616
Alternative	THERMISTOR-MOV ELECTRONICS CO LTD	HVR14D471-HJ HVR14D511-HJ HVR14D561-HJ, HVR14D621-HJ, HVR14D681-HJ	Min, 300Vac, 85°C, (tested by UL for 6KV/3KA combination pulse), Coating rated V-0.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40028836
NTC101	Thinking Electronic Industrial Co., Ltd	SCK-05101	5Ω at 25°C, 1A, 240V	IEC/EN/UL 60730-1 UL 1434	UL E138827 CE by TUV-Rh R 50050155
X-capacitor (CX101)	Dongguan Easy-Gather Electronic Co Ltd	MKP-X2	Max. 0,15μF±10%, min, 250Vac, 105°C, X2 type	IEC/EN/UL 60384-14	VDE 40022258 UL E252221

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Clause	Requirement + Test	Result - Remark	Verdict

Alternative	SHENZHEN SURONG CAPACITORS CO LTD	MPX, MKP	Max. 0,15µF±10%, min, 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40008924 UL E314875
Alternative	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Max. 0,15µF±10%, min, 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40018690 UL E252286
Alternative	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0,15µF±10%, min. 250Vac, 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40028680 UL E200596
Alternative	NANJING TENGEN RONG GUANG DA ELECTRONIC SALES CO LTD	MKP	Max. 0,15µF±10%, min. 250Vac, 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40049725 UL E502081
Alternative	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Max. 0,15µF±10%, min, 275Vac, 100°C, X2 type	IEC/EN/UL 60384-14	UL E208107 VDE 40034679
Alternative	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0,15µF±10%, min, 275Vac, 105°C, X2 type	IEC/EN/UL 60384-14	VDE 40026078 UL E327138
Alternative	EUROPTRONIC (TAIWAN) INDUSTRIAL CORP	MPX2	Max. 0,15µF±10%, min, 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40025981
Alternative	EUROPTRONIC (TAIWAN) INDUSTRIAL CORP	MPX	Max, 0,15µF±10%, min, 250Vac, 105°C, X2 type	IEC/EN/UL 60384-14	VDE 40018238
Alternative	ANHUI FEIDA ELECTRICAL TECHNOLOGY CO LTD	MKP	Max, 0,15µF±10%, min, 250Vac, 110°C, X2 type	IEC/EN/UL 60384-14	VDE 40045744
Bleeder resistors (R101, R102)	Shenzhen Honor Electronic Co., Ltd	RC0805	2,4MΩ, 1/8W	IEC 62368-1	CB by TUV-Rh JPTUV-088430
Inductor (LF101)	SHENZHEN WANZHIYU TECHNOLOGY CO LTD	ADS-10KA-06 5V/1.5A	130°C	IEC/EN 62368-1	Test with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823	Min, thickness: 0,70 mm, V-0, 150°C	UL94	UL E41429
-Magnet wire	SHENZHEN CHENGWEI INDUSTRIAL CO LTD	2UEW	130°C	UL 1446	UL E227475
-Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (b)(g), PZ* (b)	VW-1, 130°C	UL 510A	UL E165111
Rectifier (BD101)	Interchangeable	Interchangeable	1A Min., 1000VAC	IEC/EN 62368-1	Test with appliance
Electrolytic capacitor (C101)	Interchangeable	Interchangeable	45µF, 400VAC, 105℃	UL 62368-1:2014, CAN/CSA C22.2 No. 62368-1-14	Test with appliance
Bridging capacitor (CY101)	Guangdong South Hongming Electronic Science & Technology Co., Ltd	F	Max,1000pF, Min, 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 40036393 UL E154899
Alternative	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	Max.1000pF, Min. 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 40025754 UL E208107
Alternative	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	DCF	Max.1000pF, Min. 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 40022942 UL E25222
Alternative	SUCCESS ELECTRONICS CO LTD	SE	Max.1000pF, Min. 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 40020002 UL E114280
Alternative	YINAN DON'S ELECTRONIC COMPONENT CO LTD	CT81	Max.1000pF, Min. 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 135256

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Clause	Requirement + Test	Result - Remark	Verdict

Alternative	HAOHUA ELECTRONIC CO	CT7	Max.1000pF, Min. 250Vac, 125°C, Y1 type,	IEC/EN/UL 60384-14	VDE 40003902 UL E233106
Optocoupler (U102)	COSMO ELECTRONICS CORP	K1010, KPC817	Dti, =min. 0,4mm; Ext,dcr, =min, 6,0mm; min. 100°C	UL 1577 IEC/EN 60747-5-5 IEC/EN 60950-1	VDE 101347 UL E169586
Alternative	LITE-ON TECHNOLOGY CORP	LTV-817	Dti, =min. 0,4mm; Ext,dcr, =min. 6,0mm; min. 100°C	UL 1577 IEC/EN 60747-5-5 IEC/EN 60950-1	VDE 40015248 UL E113898
Alternative	EVERLIGHT ELECTRONICS CO LTD	EL817	Dti, =min. 0,4mm; Ext,dcr, =min. 6,0mm; min. 100°C	UL 1577 IEC/EN 60747-5-5 IEC/EN 60950-1	VDE 132249 UL E214129
Alternative	Ct Microelectronics FarEast Led	CT817	Dti, =min. 0,4mm; Ext,dcr, =min. 6,0mm; min. 100°C	UL 1577 IEC/EN 60747-5-5 IEC/EN 60950-1	VDE 40039590 UL E364000
Alternative	SHENZHEN ORIENT COMPONENTS CO LTD	ORPC-817x	Dti, =min. 0,4mm; Ext,dcr, =min. 6,0mm; min. 100°C	UL 1577 IEC/EN 60747-5-5 EC/EN 60950-1	VDE 40029733
Alternative	China Resources Semiconductor (ShenZhen) Ltd.,	PC817C	Dti, =min. 0,4mm; Ext,dcr, =min. 6,0mm; min. 100°C	IEC/EN 60747-5-5 IEC/EN 60950-1	VDE 40042139 UL E465130
Transformer (T101) 2)	SHENZHEN TOHO ELECTRONIC TECHNOLOGY CO LTD	PQ2011-005015	Class B	IEC/EN 62368-1	Test with appliance
Alternative	SHENZHEN LIKEWEI TECHNOLOGY CO LTD	PQ2011-005015	Class B	IEC/EN 62368-1	Test with appliance
Alternative	SUNYCORE ELECTRONICS (FUZHOU)CO LTD	PQ2011-005015	Class B	IEC/EN 62368-1	Test with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

-Electrical insulation systems	SHENZHEN TOHO ELECTRONIC TECHNOLOGY CO LTD	TOHO	Class B	UL 1446	UL E493533
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823	Min. thickness: 0,70 mm, V-0, 150°C	UL94	UL E41429
- Magnet winding	Dongguan YIDA Industrial Co., Ltd	MW75-C	Min.130°C	UL 1446	UL E344055
Alternative	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
- TIW used at secondary winding	FURUKAWA ELECTRIC CO LTD	TEX-E	Class B	UL 2353 UL 60950-1 Annex Q IEC/EN 62368-1	UL E206440 VDE 006735
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (b)(g), PZ* (b)	VW-1, 130°C	UL 510A	UL E165111

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) All transformers from different manufacturers have the same construction

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**					P
	Supply voltage (V) ..... :	Battery discharge	Battery Charging	--	--	—
	Ambient T_{min} (°C) ..... :	20,4	20,3	--	--	—
	Ambient T_{max} (°C) ..... :	21,6	21,5	--	--	—
	Tma (°C) ..... :	55°C	55°C	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Model: DS-PWA96-M-WE						
Battery		64	63,6	--	--	Ref.
Supplementary information:						

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

Supplementary information:
Supplementary information: Note 1: Tma should be considered as directed by appliable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) * The test results of touchable surface temperature were considered base on ambient temperature 25°C. Other temperture point list in this table has shifted to 55 Tma

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
Model: DS-PWA96-M-WE								
90V	50Hz	0,128	--	6,35	--	--	--	EUT was working under max normal load condition and exhausted battery charging.
100V	50Hz	0,116	0,15	6,36	--	--	--	
240V	50Hz	0,071	0,07	6,61	--	--	--	
264V	50Hz	0,064	--	6,43	--	--	--	
90V	60Hz	0,130	--	6,46	--	--	--	
100V	60Hz	0,118	0,15	6,34	--	--	--	
240V	60Hz	0,069	0,07	6,35	--	--	--	
264V	60Hz	0,063	--	6,36	--	--	--	
3,7V	--	0,685	--	2,53	--	--	--	Battery discharge
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

Annex M.3	**TABLE: Batteries**									P
The tests of Annex M are applicable only when appropriate battery data is not available										P
Is it possible to install the battery in a reverse polarity position?..... :							Impossible			N/A
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Battery pack										
Max. current during normal condition	-	-	-	0,663A	1A	0,685A	1A	-	-	
Max. current during fault condition	-	-	-	0A UV1 Pin 1-13 SC	1A	0A C196 SC	1A	-	-	

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

Test results:		Verdict
- Chemical leaks	No	P
- Explosion of the battery	No	P
- Emission of flame or expulsion of molten metal	No	P
- Electric strength tests of equipment after completion of tests	--	N/A
Supplementary information:		

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**	P

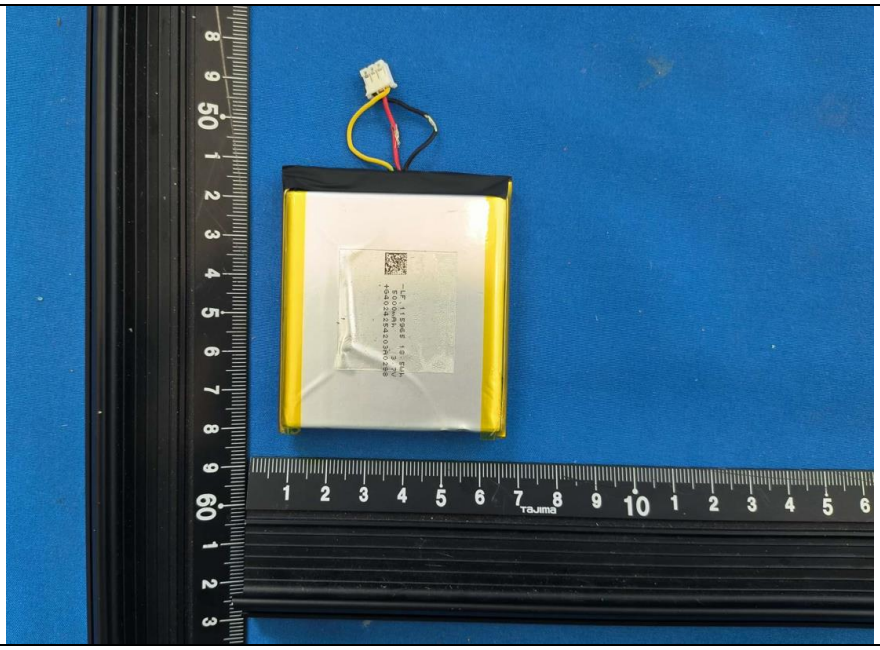
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
Battery back (115965-1S1P)	Normal	3,6	0,663	63,6	No damage, no hazard
Battery back (115965-1S1P)	Single fault –SC UV1 Pin 1-13	0	0	26,4	No damage, no hazard
Battery back (115965-1S1P)	Single fault – SC CV4	3,4	0	26,1	No damage, no hazard
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
115965-1S1P	-9,8	Stop charging	59,5	Stop charging
Supplementary Information:				

---End of Report---

Details of: Battery view for 11595-1S1P

Details of: Battery view for 11595-1S1P



*******End of Attachment 1*******