



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..... : CN25IY0C 001
Date of issue : 2025-09-29
Total number of pages..... : 78

Name of Testing Laboratory preparing the Report..... : TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name : xFusion Digital Technologies Co., Ltd.

Address : No. 99, Longhu Inner Ring North Road, Zhengzhou Area of China (Henan) Pilot Free Trade Zone, 450000 Henan, P.R. China

Test specification:

Standard..... : IEC 62368-1:2018

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_1E

Test Report Form(s) Originator : UL(US)

Master TRF : Dated 2022-04-14

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General disclaimer:

The test results presented in this report relate only to the object tested.

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Test item description :	Server	
Trade Mark(s)	xFusion	
Manufacturer :	Same as Applicant	
Model/Type reference :	2258H V8***** , FusionServer 2258H V8***** (where * can be 0-9, a-z, A-Z, - or Blank for marketing purpose)	
Ratings :	For PSU PAC2000S12-T1 ~100-127V; 50/60Hz; 10A or ~200-220V; 50/60Hz; 10A or ~220-230V; 50/60Hz; 10A or ~230-240V; 50/60Hz; 10A or DC 240V; 10A For PSU: PAC2000S12-B1: ~100-127V, 50/60Hz; 10A or ~200-220V, 50/60Hz; 10A or ~220-240V, 50/60Hz; 10A or DC 240V; 10A	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.
Testing location/ address :	1-5F, Block 5, No. 1100, Huanli Road, Yungu Community, Xinhua Street, Guangming District Shenzhen, China	
Tested by (name, function, signature) :		
Approved by (name, function, signature) .. :		
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address :		
Tested by (name, function, signature) :		
Approved by (name, function, signature) .. :		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 2:	Reliability Laboratory of Shenzhen xFusion Technologies Co., Ltd.
Testing location/ address :	Room 101 & 301, Building 1, CIMC Digital Technology Industrial Park, No.1, Yile Road, Songshanhu Science & Technology Industrial Park Dongguan, Guangdong China	
Tested by (name, function, signature)	Qingpu Zeng Test Engineer	Zeng qing pu
Witnessed by (name, function, signature) .. :	Henry Guan Project Handler	Henry Guan
Approved by (name, function, signature) .. :	Allen Wu Authorizer	Allen Wu
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	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) :		

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USE UNTIL 31 Mar 2026

List of Attachments (including a total number of pages in each attachment):																																			
Attachment 1: National Differences (30 pages)																																			
Attachment 2: Photo Documentation (32 pages)																																			
Summary of testing:																																			
<p>Tests performed (name of test and test clause):</p> <p>All applicable tests as described in Test Case and Measurement Sections were performed.</p> <ul style="list-style-type: none"> • Test samples without serial numbers. • Load conditions used during testing see appended table B.2.5 for details. <table border="1"> <tr> <td>5.2</td> <td>Classification of electrical energy sources</td> </tr> <tr> <td>5.3.2</td> <td>Accessibility to electrical energy sources and safeguards (Accessibility test)</td> </tr> <tr> <td>5.4.1.4, 9.3, B.1.5, B.2.6</td> <td>Temperature measurements</td> </tr> <tr> <td>5.4.9</td> <td>Electric Strength test</td> </tr> <tr> <td>5.6.6.2</td> <td>Ground continuity test</td> </tr> <tr> <td>5.7.5</td> <td>Earthed accessible conductive part</td> </tr> <tr> <td>6.2.2</td> <td>Electrical power sources (PS) measurements for classification</td> </tr> <tr> <td>9.2</td> <td>Thermal energy source Classifications</td> </tr> <tr> <td>Annex B.2.5</td> <td>Input Test</td> </tr> <tr> <td>Annex B.3</td> <td>Simulated Abnormal operating condition tests</td> </tr> <tr> <td>Annex B.4</td> <td>Simulated single fault conditions</td> </tr> <tr> <td>Annex F.3.9</td> <td>Durability, legibility and permanence of markings</td> </tr> <tr> <td>Annex M</td> <td>Batteries</td> </tr> <tr> <td>Annex Q.1</td> <td>Limited Power Source</td> </tr> <tr> <td>Annex T.2</td> <td>Steady force test, 10N</td> </tr> <tr> <td>Annex T.5</td> <td>Steady force test, 250N</td> </tr> <tr> <td>Annex T.6</td> <td>Enclosure impact test</td> </tr> </table>	5.2	Classification of electrical energy sources	5.3.2	Accessibility to electrical energy sources and safeguards (Accessibility test)	5.4.1.4, 9.3, B.1.5, B.2.6	Temperature measurements	5.4.9	Electric Strength test	5.6.6.2	Ground continuity test	5.7.5	Earthed accessible conductive part	6.2.2	Electrical power sources (PS) measurements for classification	9.2	Thermal energy source Classifications	Annex B.2.5	Input Test	Annex B.3	Simulated Abnormal operating condition tests	Annex B.4	Simulated single fault conditions	Annex F.3.9	Durability, legibility and permanence of markings	Annex M	Batteries	Annex Q.1	Limited Power Source	Annex T.2	Steady force test, 10N	Annex T.5	Steady force test, 250N	Annex T.6	Enclosure impact test	<p>Testing location:</p> <p>Reliability Laboratory of Shenzhen xFusion Technologies Co., Ltd.</p> <p>Room 101 & 301, Building 1, CIMC Digital Technology Industrial Park, No.1, Yile Road, Songshanhu Science & Technology Industrial Park Dongguan, Guangdong China</p>
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Summary of compliance with National Differences (List of countries addressed):

EU Group Differences, EU Special National Conditions CA, US.

CA=Canada, US= United states of America.

See attachment 1 for details

The product fulfils the requirements of EN 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.

Test item particulars:			
Product group	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
Classification of use by	<input type="checkbox"/> Ordinary person	<input type="checkbox"/> Children likely present	
	<input checked="" type="checkbox"/> Instructed person		
	<input checked="" type="checkbox"/> Skilled person		
Supply connection	<input checked="" type="checkbox"/> AC mains (For AC input)	<input checked="" type="checkbox"/> DC mains (for HVDC)	
	<input type="checkbox"/> External Circuit - not mains connected:		
	<input type="checkbox"/> ES1	<input type="checkbox"/> ES2	<input type="checkbox"/> ES3
Supply tolerance	<input checked="" type="checkbox"/> +10%/-10% for AC input		
	<input type="checkbox"/> +20%/-15%		
	<input checked="" type="checkbox"/> +20%/ -20% for HVDC input		
	<input type="checkbox"/> None		
Supply connection – type	<input checked="" type="checkbox"/> pluggable equipment type A -		
	<input type="checkbox"/> non-detachable supply cord		
	<input checked="" type="checkbox"/> appliance coupler		
	<input type="checkbox"/> direct plug-in		
	<input type="checkbox"/> pluggable equipment type B -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input type="checkbox"/> permanent connection		
	<input type="checkbox"/> mating connector	<input type="checkbox"/> other:	
Considered current rating of protective device	<input checked="" type="checkbox"/> 16A (20 for USA and CANADA)		
	Location:	<input checked="" type="checkbox"/> building	<input type="checkbox"/> equipment
	<input type="checkbox"/> N/A		
Equipment mobility	<input type="checkbox"/> movable	<input type="checkbox"/> hand-held	<input type="checkbox"/> transportable
	<input type="checkbox"/> direct plug-in	<input checked="" type="checkbox"/> stationary	<input checked="" type="checkbox"/> for building-in
	<input type="checkbox"/> wall/ceiling-mounted	<input checked="" type="checkbox"/> SRME/rack-mounted	
	<input type="checkbox"/> other:		
Overvoltage category (OVC)	<input type="checkbox"/> OVC I	<input checked="" type="checkbox"/> OVC II	<input type="checkbox"/> OVC III
	<input type="checkbox"/> OVC IV	<input type="checkbox"/> other:	
Class of equipment	<input checked="" type="checkbox"/> Class I	<input type="checkbox"/> Class II	<input type="checkbox"/> Class III
	<input type="checkbox"/> Not classified	<input type="checkbox"/>	
Special installation location	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> restricted access area	
	<input type="checkbox"/> outdoor location	<input type="checkbox"/>	
Pollution degree (PD)	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
Manufacturer's specified T_{ma}	40 °C	<input type="checkbox"/> Outdoor: minimum	°C
IP protection class	<input type="checkbox"/> IPX0	<input checked="" type="checkbox"/> IP20	
Power systems	<input checked="" type="checkbox"/> TN (for AC input)	<input checked="" type="checkbox"/> TT (for AC input)	<input type="checkbox"/> IT -
	<input type="checkbox"/> V _{L-L}	<input type="checkbox"/> N/A	
	<input checked="" type="checkbox"/> not AC mains (For HVDC)		
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less	<input checked="" type="checkbox"/> 3050 m	
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/>	m
Mass of equipment (kg)	35.5 kg Max		

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.....:	2025-03-24
Date (s) of performance of tests	2025-03-24 to 2025-04-02
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62368-1:	
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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... :	<p>SHENZHEN HUAHAO MECHANICAL & ELECTRICAL CO., LTD. Dongguan Branch company</p> <p>Second Floor No.738 Meijing Middle Road, Changtang Community, Da Lang Town, Dongguan City, 523779 Guangdong, P.R. China</p> <p>DONGGUAN HUARONG COMMUNICATION TECHNOLOGIES CO., LTD</p> <p>No.80 Zhengwei 2nd Road, Dongkeng Town, Dongguan, Guangdong, P.R. China</p> <p>NATIONGATE SOLUTION (M) SDN. BHD.</p> <p>2005 Tingkat Perusahaan Satu, Kawasan Perusahaan Perai, 13600 Perai, Penang, Malaysia</p>
General product information and other remarks:	
<p>FusionServer 2258H V8 (2258H V8 for short) is a new-generation 2U 2-socket rack server designed for the Internet, Internet Data Center (IDC), cloud computing, enterprise business, and telecom. This product is ideal for IT core services, cloud computing, virtualization, high-performance computing, distributed storage, big data processing, enterprise or telecom applications, and other complex workloads. This product features low power consumption, high scalability, high reliability, and easy management and deployment.</p> <p>Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list but not means all the functional boards listed below shall be installed in one unit.</p>	
Functional Boards	

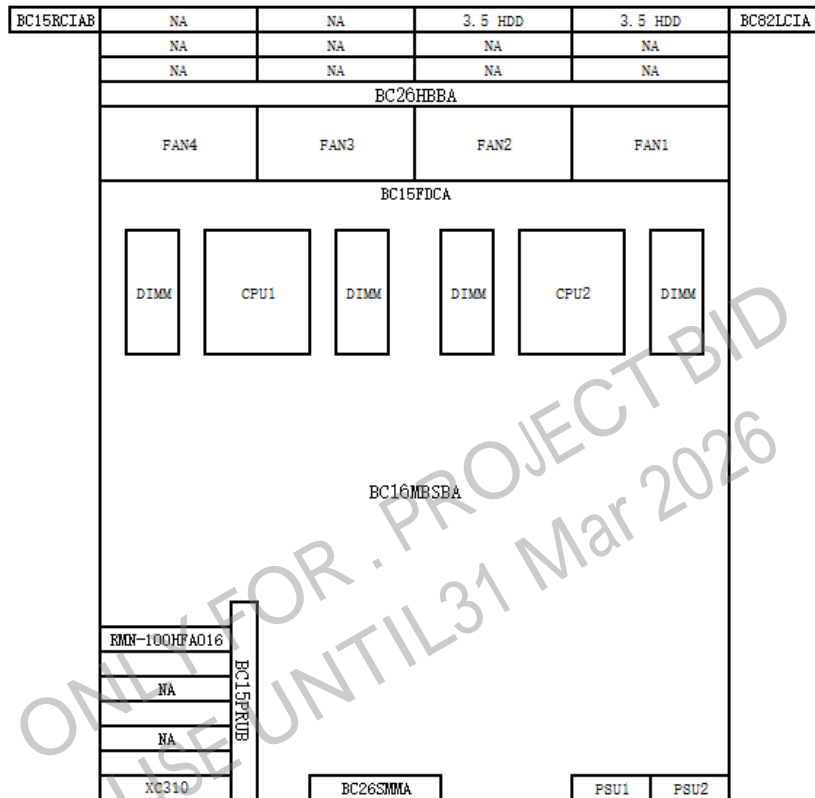
Board full Name	Description	Interfaces
BC16MBSBA	Manufactured Board, BC16MBSBA, AMD Server 2U2P Main Board, 1*1	--
BC26SMMA	Manufactured Board, 2158H V8, BC26SMMA, AMD Server 1711 DC-SCM BMC Card, 2*1	USB, LPS Mgmt, IOIOI, VGA, ES1, PS1
BC15FDCA	Manufactured Board, 2288H V7, BC15FDCA, Fan Board 4*8080+/8038+, 1*3	--
BC15PRUB	Manufactured Board, 2288H V7, BC15PRUB, IO1/IO2 Riser2 1*PCIe5.0 X16+2*PCIe4.0 X8, 1*2	--
BC26HBBA	Manufactured Board, 2158H V8, BC26HBBA, 8*3.5" SAS/SATA/NVME HDD Backplane Board, 1*2	--
BC15RCIAB	Manufactured Board, 2158H V8, BC15RCIAB, AMD Server 2U1P Right Customer Interface Board, 5*2	USB, LPS VGA, Type C, ES1, PS1
BC82LCIA	Manufactured Board, TaiShan 2280 V2, BC82LCIA, Left Customer Interface, 4*2	--
BC16MBSMMC	Manufactured Board, BC16MBSMMC, AMD Server 1711 DC-SCM BMC Card, 1*1	GE, VGA, USB
BC15HBBS	Manufactured Board, 2258 V7, BC15HBBS, IO3 4*NVMe HDD backplane, 1*4	--
BC15NHBS	Manufactured Board, 2258 V7, BC15NHBS, 8*2.5" SAS/SATA/NVMe hard RAID HDD backplane, 1*2	--
BC15HBBK	Manufactured Board, 2288DX V7, BC15HBBK, 8*2.5" SAS/SATA HDD backplane, 1*2	--
BC15PRUI	Manufactured Board, 2288H V7, BC15PRUI, IO3 Riser2 2*PCIe4.0 X8, 1*3	--
BC15PRUC	Manufactured Board, 2288H V7, BC15PRUC, IO1/IO2 Riser3 2*PCIe5.0 X16, 1*1	--
BC15PRUF	Manufactured Board, 2288H V7, BC15PRUF, IO3 Riser1 2*PCIe4.0 X16, 1*2	--
BC15PRUE	Manufactured Board, 2288H V7, BC15PRUE, IO1/IO2 Riser5 1*PCIe4.0 X16, 1*1	--

PCIe cards

Board full Name	Board brief Name	Interfaces
RMN-100HFA016	IB Card, Network Card, Intel(R) Omni-Path Host Fabric Interface Adapter, 100Gbps, 1 Port PCIe x16 Low Profile, NULL	1*100GE Class 1 laser
BC53ETHF(XC310)	Manufactured Board-JDM, Public Module, BC53ETHF, XC310 GE350-T2 OCP3.0 Ethernet Card-2*GE(I350)-Dual Port-RJ45, PCIE 2.1 x4-Vendor ID 8086-Device ID 1521-2-Subvendor ID 1f24-Subdevice ID 200b, 1*4	2*GE Class 1 Copper
MCX623436AN-CDAB	Network Card, 100 Gigabit, 64bit, QSFP28, 2 ports, PCIE 4.0 x16-15b3-101d-1 2 4-Subvendor ID 15b3-Subdevice ID 0006, No Driver CD, without Optical	2*100GE Class 1 laser

	Transceiver, OCP 3.0-Internet Dedicated	
BCM957508-N2100G	Network Card, 100 Gigabit, 64bit, QSFP28, 2 ports, PCIE 4.0 x16-14e4-1750-2, No Driver CD, OCP	2*100GE Class 1 laser
MCX631102AN-ADAT	Network Card, 25 GE, 64bit, SFP28, 2, PCIE 4.0 x8-15b3-101f-2, No Driver CD	2*25GE Class 1 laser
MCX623106AN-CDAT	Network Card, 100GE, 64bit, QSFP56(without Optical Transceiver), 2 Ports, PCIE 4.0 x16-15b3-101d-2, No Driver CD	2*100GE Class 1 laser
X710T2LG1P5 984718	Network Card, 10Gb/s, 64bit, 10GBASE-T, 2 ports, PCIE 3.0 x8-8086-15ff-2, No Driver CD	2*10GE Class 1 laser
E810XXVDA4G2P5 99A2H8	Network Card, 25G(E810XXVDA4G2P5 99A2H8), 64bit, SFP28(without Optical Transceiver), 4 ports, PCIE 4.0 X16-8086-1593 0005-4, No Driver CD	4*25GE Class 1 laser
BCM957414A4142C C	Network Card, 25 Gigabit, 64bit, SFP28 (without Optical Transceiver), 2 Ports, PCIE 3.0 x8-14e4-16d7-2, No Driver CD	2*25GE Class 1 laser
MCX75310AAS-HEAT	IB Card, Infiniband MCX75310AAS-HEAT, 200Gb/s NDR200 IB, single port OSFP, PCIE 5.0 x16-Vendor ID 15B3-Device ID 1021-1-Subvendor ID 15B3-Subdevice ID 0029, English doc, (IB&Ethernet)	1*200GE Class 1 laser
MCX75310AAS-NEAT	IB Card, Infiniband MCX75310AAS-NEAT, NDR/NDR200/HDR100/EDR IB single port OSFP-400Gb/s, PCIE 5.0 x16-Vendor ID 15B3-Device ID 1021-1-Subvendor ID 15B3-Subdevice ID 0023, English doc, (IB&Ethernet)	1*400GE Class 1 laser
LPE36002-AP	Other Cards, HBA Card LPe36002-AP, FC dual Ports-64Gb/s, PCIE 4.0 x8-Vendor ID 10df-Device ID f400-2-Subvendor ID 10df-Subdevice ID f404, Chinese and English doc, half width half length	2*64GE Class 1 laser
LPE35002-AP	Other Cards, HBA Card LPE35002-AP, FC Double Ports--32Gb/s, PCIE 4.0 x8-10df-f400-2, Chinese and English doc, half width half length	2*32GE Class 1 laser
05-50077-00(9560-16i)	Other Cards, PCIE 4.0 X8-Vendor ID 1000-Device ID 10E2-1-Subvendor ID 1000-Subdevice ID 4000-12G SAS RAID card, x8 PCIe 4.0-9560-16i SAS RAID Card, SAS3916, 8G CacheVault, CVPM05-12Gb/s SAS, 6Gb/s SATA, PCIe(NVMe), 9560-16i, English doc	N/A
05-50077-01(9560-8i)	Other Cards, PCIE 4.0 X8-Vendor ID 1000-Device ID 10E2-1-Subvendor ID 1000-Subdevice ID 4010-12G SAS RAID card, x8 PCIe 4.0-9560-8i SAS RAID Card, SAS3908,4G CacheVault, CVPM05-12Gb/s SAS,6Gb/s SATA, PCIe(NVMe), 9560-8i, Chinese and English doc	N/A
BC53ETHI(XC386)	Manufactured Board-JDM, Public Module, BC53ETHI, XC386 OCP3.0 Ethernet Adapter-25GE(BCM57414)-Dual Port-SFP28(without Optical Module)-PCIE 3.0 X8-Vendor ID 14e4-Device ID 16d7-2-Subvendor ID 1f24-Subdevice ID 2013, 1*4	2*25GE Class 1 laser
CN21ITGG1(XP330)	Manufactured Board, Public Module, CN21ITGG1, XP330 Ethernet Adapter, 10Gb Optical Interface(Intel X710), 2-Port, SFP+(without Optical Transceiver), PCIE	2*10GE Class 1 laser

	3.0 X8-Vendor ID 8086-Device ID 1572-2-Subvendor ID 1f24-Subdevice ID 2003, 1*2	
CN21ITGC1(XP212)	Manufactured Board, Public Module, CN21ITGC1, XP212 I350 4*GE PCIE Card, PCIE 2.0 X4-Vendor ID 8086-Device ID 1521-4-Subvendor ID 1f24-Subdevice ID 2001, 1*2	4*GE Class 1 laser



Test Configuration

Model Difference:

All models are same entirely except the model's name. All the tests are performed with model 2258H V8.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Input circuits and internal circuits in the PSU	Instructed/skilled	N/A	N/A	Approved PSU use
ES1: Interfaces	Instructed/skilled	N/A	N/A	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: input circuit and internal circuits	Enclosure and Internal combustible material	Equipment safeguards (no ignition)	See clause 6.4.6	N/A
PS1: Interfaces	Enclosure and Internal combustible material	N/A	N/A	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners of enclosure	Instructed/skilled	N/A	N/A	N/A
MS3: DC fan	Instructed/skilled	Warning label	Metal enclosure	N/A
MS3: Mass of unit	Instructed/skilled	Stationary equipment	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: All accessible parts	Instructed/skilled	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
Laser class 1: Laser module	Instructed/skilled	N/A	N/A	N/A
Exempt Group: LEDs for Indicating	Instructed/skilled	N/A	N/A	N/A

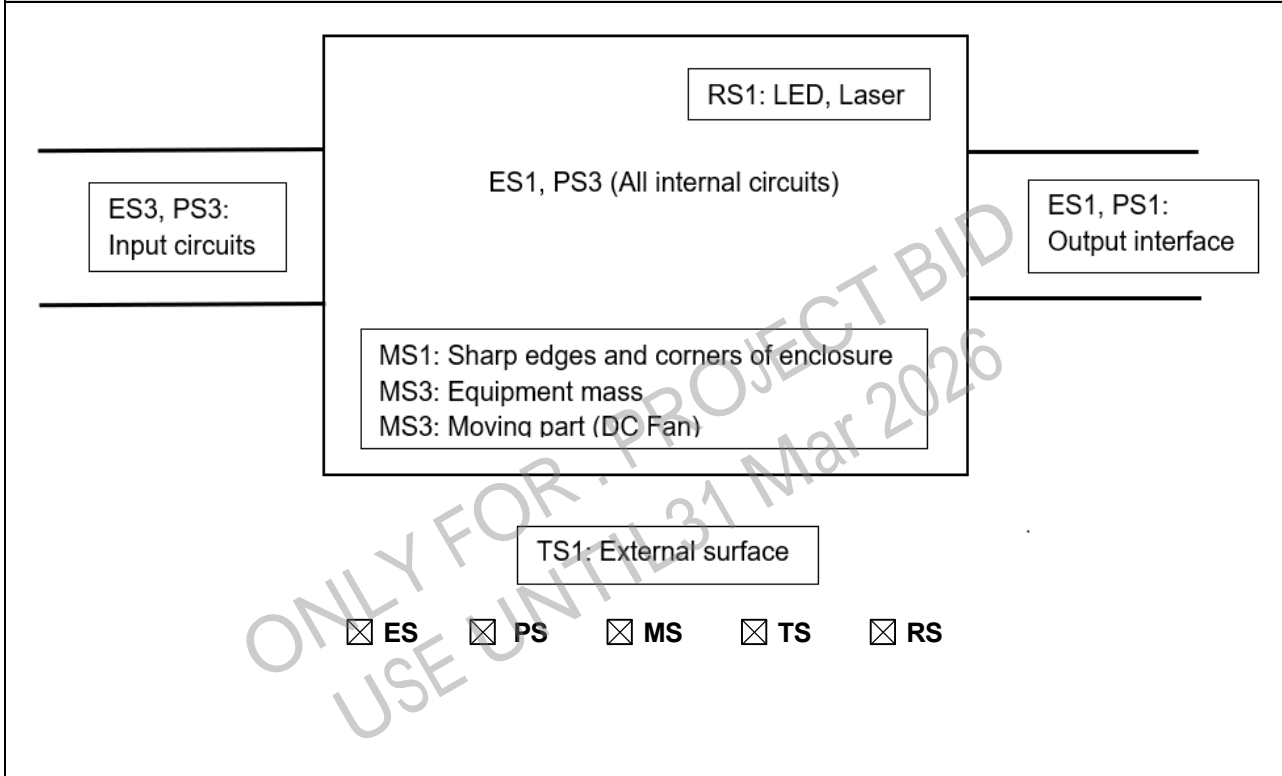
Supplementary Information:

“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



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	Refer to summary of testing and appended table 4.1.2.	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, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1.	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C)	Not outdoor use product	N/A
4.1.5	Constructions and components not specifically covered	No such constructions and components	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		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.5)	P
4.4.3.3	Drop tests		N/A
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 glass.	N/A
4.4.3.7	Glass fixation tests	No glass.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard	Considered.	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	After tests of 4.4.3.2, 4.4.3.4, no safeguard damaged.	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks		N/A
4.5	Explosion		
4.5.1	General	No explosion occurs during normal/abnormal operation	P


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Clause	Requirement + Test	Result - Remark	Verdict
		and single fault conditions.	
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	Internal wires are routed and secured so that adequate insulations are maintained. For the internal wires connected by pluggable connectors or soldered and glued. Wires fixed such that a loosening of the terminal connection is unlikely.	P
	Compliance is checked by test..... :	See Annex T.	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		P
4.8.1	General	Professional equipment for use in locations where it is unlikely that children will be present;	P
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
5.2.2.3	Capacitance limits		N/A
5.2.2.4	Single pulse limits.....		N/A
5.2.2.5	Limits for repetitive pulses.....		N/A
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals		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	Only ES1 circuit and metal enclosure is accessible for ordinary person for this product.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	No access with test probe to any ES3 circuit or parts separated by Basic safeguard only from ES3 via openings on enclosure.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit and metal enclosure is accessible for ordinary person for this product.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	No access with test probe to any ES3 circuit or parts separated by Basic safeguard only from ES3 via openings on enclosure.	P
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V).....		N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.3	Material is non-hygroscopic		P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees	2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied.	N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	Approved PSU used.	N/A
5.4.1.9	Insulating surfaces	No such accessible surfaces within the equipment.	N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test.....		N/A
5.4.2	Clearances	Approved PSU used.	N/A
5.4.2.1	General requirements		N/A
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage	Pollution degree 2 is applied. No insulating compound applied.	N/A
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage		N/A
5.4.2.3.2.3	d.c. mains transient voltage		N/A
5.4.2.3.2.4	External circuit transient voltage.....	Approved PSU used.	N/A
5.4.2.3.2.5	Transient voltage determined by measurement	No such accessible surfaces within the equipment.	N/A
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement		N/A
5.4.3	Creepage distances		N/A
5.4.3.1	General		N/A
5.4.3.3	Material group	IIIb	—

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.3.4	Creepage distances measurement..... :	Approved PSU used.	N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation :		N/A
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) :		N/A
5.4.4.6.3	Non-separable thin sheet material		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		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)..... :		N/A
	Alternative by electric strength test, tested voltage (V), K_R :		N/A
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 ($M\Omega$)..... :		N/A
	Electric strength test..... :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Approved PSU used	N/A
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)..... :		—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation..... :		N/A
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		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		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		N/A
5.5.1	General	Approved PSU used.	N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPDs		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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	All insulated protective earth conductors are coloured green and yellow.	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm 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	See below	P
5.6.4.1	Protective bonding conductors	Metal enclosure as a protective connection conductor	P
	Protective bonding conductor size (mm ²).....	Comply with 5.6.6.2	—
5.6.4.2	Protective current rating (A)	Comply with 5.6.6.2	P
5.6.5	Terminals for protective conductors	Symbol  used on the PSU.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm).....		P
	Terminal size for connecting protective bonding conductors (mm)		N/A
5.6.5.2	Corrosion	The metal screw, star washer and metal parts are all made of mild steel. The combined electrochemical potential is lower than 0.45V.	P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method		P
5.6.6.3	Resistance (Ω) or voltage drop	See appended table 5.6.6.2	P
5.6.7	Reliable connection of a protective earthing conductor		P
5.6.8	Functional earthing		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	Figure 4 and figure 5 of IEC 60990 was used in determining of the limit of ES1 and ES2.	P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
5.7.4	Unearthed accessible parts..... :	Approved PSU used.	N/A
5.7.5	Earthed accessible conductive parts :	(See appended table 5.7.5)	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 :		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 :	(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
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 5.4.1.4, 6.3.2, 9.0, B.2.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Combustible materials outside fire enclosure :		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method by control of fire spread applied, metal fire 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		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		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	<p>Components other than PCB and wires are:</p> <ul style="list-style-type: none"> - Printed board: rated min. V-1 - All other components: at least V- 2 except for mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard. - Other plastic material: V-2 or better, except directly contact PS3 conductor made of V-1 <p>(See appended tables 4.1.2 and Annex G)</p>	P
6.4.6	Control of fire spread in PS3 circuits	Metal fire enclosure used.	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		N/A
6.4.8	Fire enclosures and fire barriers	See below	P
6.4.8.2	Fire enclosure and fire barrier material properties	Metal fire enclosure used.	P
6.4.8.2.1	Requirements for a fire barrier	No such fire barrier as control of fire spread.	N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties	All openings less than 5mm in any dimension	P
	Openings dimensions (mm)	See above	N/A
6.4.8.3.4	Bottom openings and properties	No bottom openings	N/A
	Openings dimensions (mm)		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)	All openings less than 5mm in any dimension	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.....	Metal Enclosure used.	P
6.4.9	Flammability of insulating liquid.....		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Lead wire complies with VW-1. See details on table 4.1.2	P
6.5.2	Requirements for interconnection to building wiring		P
6.5.3	Internal wiring size (mm ²) for socket-outlets		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
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		P

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.1	Safeguards	MS1	P
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	The fan is mechanically protected, and contact is not likely.	P
	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
	- 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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Explosion test..... :		N/A
8.5.5.3	Glass particles dimensions (mm) :		N/A
8.6	Stability of equipment		N/A
8.6.1	General	fixed equipment.	N/A
	Instructional safeguard :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test..... :		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) :		—
	Tilt test		N/A
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) :		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions :		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)..... :		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Force applied (N)		—
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).....		—

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	The accessible surfaces are classified as TS1.	P
9.3.2	Test method and compliance	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6.	P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	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		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance	(See appended table 9.6)	N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	Indicating LED considered as	P


IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
		Exempt Group, and Optical transceiver is low power application classified as Laser class 1.	
	Lasers		—
	Lamps and lamp systems		—
	Image projectors.....		—
	X-Ray		—
	Personal music player.....		—
10.3	Safeguards against laser radiation		P
	The standard(s) equipment containing laser(s) comply	RS1 IEC 60825-1, IEC 60825-2	P
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements		P
	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		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		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
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

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Clause	Requirement + Test	Result - Remark	Verdict
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL \geq 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 B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements		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
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
	Instructional safeguard.....		N/A
B.3.3	DC mains polarity test		P
B.3.4	Setting of voltage selector	No voltage selector	N/A
B.3.5	Maximum load at output terminals	No output terminal	N/A
B.3.6	Reverse battery polarity	No replaceable battery used	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

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.1	General	(See appended table B.3, B.4)	P
B.4.2	Temperature controlling device	No such device used.	N/A
B.4.3	Blocked motor test	(See appended table B.3, B.4)	P
B.4.4	Functional insulation	See below.	P
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
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		N/A
B.4.6	Short circuit or disconnection of passive components		N/A
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 :		N/A
B.4.9	Battery charging and discharging under single fault conditions		N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		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
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) :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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.	P
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	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification.....:	See copy of marking plate	P
F.3.2.2	Model identification.....:	See copy of marking plate	P
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage.....:	See copy of marking plate	P
F.3.3.4	Rated voltage.....:	See copy of marking plate	P
F.3.3.5	Rated frequency.....:	See copy of marking plate	P
F.3.3.6	Rated current or rated power.....:	See copy of marking plate	P
F.3.3.7	Equipment with multiple supply connections	See copy of marking plate.	P
F.3.4	Voltage setting device	No voltage setting device.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings :	No outlet used.	N/A
F.3.5.2	Switch position identification marking :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		N/A
	Instructional safeguards for neutral fuse :		N/A
F.3.5.4	Replacement battery identification marking :	No such battery on the equipment.	N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I equipment	See below.	P
F.3.6.1.1	Protective earthing conductor terminal :	The symbol which complied with IEC 60417-5019  is marked near protective earthing conductor terminal of AC inlet.	P
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :	Class I equipment	N/A
F.3.6.3	Functional earthing terminal marking..... :		N/A
F.3.7	Equipment IP rating marking :	IP20	N/A
F.3.8	External power supply output marking..... :		N/A
F.3.9	Durability, legibility and permanence of marking	Marking is considered as legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard	The product power connection should be connected to an output socket with a ground connection.	P
	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		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
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
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	Overcurrent protection devices	See table 4.1.2 for details.	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	(See appended table B.4)	N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
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		N/A
G.5	Wound components		P
G.5.1	Wire insulation in wound components		N/A
G.5.1.2	Protection against mechanical stress		N/A
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		N/A
G.5.3.1	Compliance method		N/A
	Position.....		N/A
	Method of protection		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
G.5.4.1	General requirements	Approved DC fan used	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		P
	Maximum Temperature	See table B.3, B.4	P
G.5.4.6.3	Alternative method		N/A
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :		N/A
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, D (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		N/A
G.8.1	General requirements	Approved PSU used	N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	Approved IC used.	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics	Approved PSU used	N/A
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P
G.13.1	General requirements		N/A
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 of 5.4.2 and 5.4.3.	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)		—
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
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	No 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):..... :		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard..... :		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	Appliance inlet is considered as disconnect device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	When appliance inlet is disconnected no hazardous voltage in the equipment.	P
L.4	Single-phase equipment	The appliance inlet disconnects both poles simultaneously.	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		P
	Instructional safeguard..... :	Instructional safeguard used	P
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.1	Batteries and their cells comply with relevant IEC standards..... :	Approved button cell battery used, see also appended table 4.1.2.	P
M.3	Protection circuits for batteries provided within the equipment		P
M.3.1	Requirements		P
M.3.2	Test method		P
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		P
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :		N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
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		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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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		P
	Instructional safeguard..... :		P
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used..... :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :		—
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		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm)..... :	Openings that do not exceed 5 mm in any dimension.	—

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	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		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		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		N/A
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		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		P
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		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test		—

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Clause	Requirement + Test	Result - Remark	Verdict
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
	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.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test		N/A
T.8	Stress relief test.....		N/A
T.9	Glass Impact Test.....		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
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	No access with test probes to any hazardous parts	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A
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		P
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		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
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.....		N/A

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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⁾	
264 Vac/ 288 Vdc	Input circuit and internal circuit	Normal	264 Vac/ 288 Vdc	--	--	SS	ES3
264 Vac/ 288 Vdc	Interfaces	Normal	--	--	--	SS	ES1
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.							

5.4.1.8	TABLE: Working voltage measurement				N/A
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Supplementary information:					

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:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Supplementary information:								
1) Only for frequency above 30 kHz								
2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

5.4.4.2	TABLE: Minimum distance through insulation				N/A
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Supplementary information:					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_p	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
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	
AC/HVDC input to PE	DC	2500	No	
AC/HVDC input to output	DC	4000	No	
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

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)	
Test with PSU PAC2000S12-T1					
Main PE to the furthest part of metal enclosure	40	2	--	0.006	
Test with PSU PAC2000S12-B1					
Main PE to the furthest part of metal enclosure	40	2	-	0.007	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					N/A
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)	
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
Considered in the approved PSU.						

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V).....:	264Vac/ 60Hz			—
Phase(s)	[x] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[x] TN [x] TT [] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	

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Clause	Requirement + Test	Result - Remark	Verdict
Earthed metal Enclosure (264 Vac)	1	2.0mA	--
	2	0.1 mA	--
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
Input and internal circuit	Normal	--	--	--	--	PS3 (Declared)
Interfaces	Normal	--	--	--	--	*PS1
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.						
(*) Approved current limiter used.						

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	
All circuit	--	--	--	Yes	
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 circuit	--	--		Yes
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				

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Clause	Requirement + Test	Result - Remark	Verdict

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:								

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-T1					P
Supply voltage (V)..... :		90 V a.c. /50 Hz	139.7 V a.c. / 50 Hz	90 V a.c. /50 Hz	139.7 V a.c. / 50 Hz	—	
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
1.Ambient		23.4	23.3	40.0	40.0	--	
2.Battery surface on BC16MBSBA board		41.1	39.6	57.7	56.3	100	
3.Heat sink of CPU1 on BC16MBSBA board		40.7	40.4	57.3	57.1	130	
4.Heat sink of CPU2 on BC16MBSBA board		41.3	40.9	57.9	57.6	130	
5.Heat sink of U7 on XC310 board		39.2	38.8	55.8	55.5	130	
6.Heat sink of U104 on BC26SMMA board		35.4	34.3	52.0	51.0	130	
7.Heat sink of U15 on CN-100HFA board		43.4	43.1	60.0	59.8	130	
8.Heat sink of J21 on BC26HBBA board		26.6	26.2	43.2	42.9	130	
9.FAN enclosure		25.4	25.0	42.0	41.7	Ref.	
10.AC input connector of PSU		38.8	36.9	55.4	53.6	70	
11.T1.1Core Transformer EN31PWRFB of PSU		37.8	39.0	54.4	55.7	130	
12.T1.1Winding Transformer EN31PWRFB of PSU		42.1	43.8	58.7	60.5	130	
13.T1.2Core Transformer EN31PWRFB of PSU		39.7	41.1	56.3	57.8	130	
14.T1.2Winding Transformer EN31PWRFB of PSU		42.1	43.6	58.7	60.3	130	
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)		37.1	37.2	53.7	53.9	Ref.	
16.Metal enclosure of EUT near openings ventilation		25.7	25.2	42.3	41.9	Ref.	
Accessible part temperature:							
1.Ambient		23.4	23.3	25.0	25.0	--	
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)		37.1	37.2	38.7	38.9	77	
16.Metal enclosure of EUT near openings ventilation		25.7	25.2	27.3	26.9	60	
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
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Supplementary information:							

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

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-T1				P	
Supply voltage (V)..... :	180 V a.c. /50 Hz	242 V a.c. /50 Hz	180 V a.c. /50 Hz	242 V a.c. /50 Hz	—		
Ambient temperature during test T_{amb} (°C) :	See below	See below	See below	See below	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)		
1.Ambient	23.3	23.1	40.0	40.0	--		
2.Battery surface on BC16MBSBA board	40.2	39.4	56.9	56.3	100		
3.Heat sink of CPU1 on BC16MBSBA board	40.7	40.1	57.4	57.0	130		
4.Heat sink of CPU2 on BC16MBSBA board	41.2	41.1	57.9	58.0	130		
5.Heat sink of U7 on XC310 board	39.1	38.4	55.8	55.3	130		
6.Heat sink of U104 on BC26SMMA board	34.7	34.1	51.4	51.0	130		
7.Heat sink of U15 on CN-100HFA board	43.5	43.0	60.2	59.9	130		
8.Heat sink of J21 on BC26HBBA board	26.5	26.1	43.2	43.0	130		
9.FAN enclosure	25.2	24.9	41.9	41.8	Ref.		
10.AC input connector of PSU	41.4	36.1	58.1	53.0	70		
11.T1.1Core Transformer EN31PWRFB of PSU	41.2	42.7	57.9	59.6	130		
12.T1.1Winding Transformer EN31PWRFB of PSU	53.3	55.6	70.0	72.5	130		
13.T1.2Core Transformer EN31PWRFB of PSU	46.2	48.0	62.9	64.9	130		
14.T1.2Winding Transformer EN31PWRFB of PSU	53.6	55.8	70.3	72.7	130		
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)	40.7	40.6	57.4	57.5	Ref.		
16.Metal enclosure of EUT near openings ventilation	25.5	25.1	42.2	42.0	Ref.		
Accessible part temperature:							
1.Ambient	23.3	23.1	25.0	25.0	--		
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)	40.7	40.6	42.4	42.5	77		
16.Metal enclosure of EUT near openings ventilation	25.5	25.1	27.2	27.0	60		
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
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Supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict

Note 1: T_{ma} should be considered as directed by applicable requirement

Note 2: T_{ma} is not included in assessment of Touch Temperatures (Clause 9)

The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (T_{ma}) of 40°C.

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P	
Supply voltage (V)..... :	207 V a.c. /50 Hz	264 V a.c. /50 Hz	207 V a.c. /50 Hz	264 V a.c. /50 Hz	—		
Ambient temperature during test T _{amb} (°C) :	See below	See below	See below	See below	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)		
1.Ambient	24.0	23.2	40.0	40.0	--		
2.Battery surface on BC16MBSBA board	40.8	39.4	56.5	56.2	100		
3.Heat sink of CPU1 on BC16MBSBA board	41.6	40.2	57.3	57.1	130		
4.Heat sink of CPU2 on BC16MBSBA board	42.5	41.2	57.8	58.0	130		
5.Heat sink of U7 on XC310 board	39.8	38.6	55.6	55.4	130		
6.Heat sink of U104 on BC26SMMA board	35.5	34.2	51.2	50.9	130		
7.Heat sink of U15 on CN-100HFA board	44.5	43.2	60.0	60.1	130		
8.Heat sink of J21 on BC26HBBA board	27.5	26.1	43.2	42.9	130		
9.FAN enclosure	26.4	25.0	41.9	41.7	Ref.		
10.AC input connector of PSU	39.1	35.8	60.7	52.7	70		
11.T1.1Core Transformer EN31PWRFB of PSU	44.2	42.8	58.9	59.7	130		
12.T1.1Winding Transformer EN31PWRFB of PSU	57.3	55.6	71.6	72.5	130		
13.T1.2Core Transformer EN31PWRFB of PSU	49.7	48.1	64.2	64.9	130		
14.T1.2Winding Transformer EN31PWRFB of PSU	57.5	55.8	71.9	72.7	130		
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)	42.7	40.7	58.0	57.3	Ref.		
16.Metal enclosure of EUT near openings ventilation	26.5	25.2	42.2	41.9	Ref.		
Accessible part temperature:							
1.Ambient	24.0	23.2	25.0	25.0	--		
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)	42.7	40.7	43.7	42.5	77		
16.Metal enclosure of EUT near openings ventilation	26.5	25.2	27.5	27.0	60		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed	Insulation

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Clause	Requirement + Test	Result - Remark	Verdict

						T_{max} (°C)	class
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Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-T1					P
Supply voltage (V)..... :		192 V d.c.	288 V d.c.	192 V d.c.	288 V d.c.	—	
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
1.Ambient		23.2	23.2	40.0	40.0	--	
2.Battery surface on BC16MBSBA board		40.1	39.5	56.8	56.2	100	
3.Heat sink of CPU1 on BC16MBSBA board		40.7	40.3	57.6	57.0	130	
4.Heat sink of CPU2 on BC16MBSBA board		41.7	41.1	58.5	58.0	130	
5.Heat sink of U7 on XC310 board		39.0	38.7	55.8	55.4	130	
6.Heat sink of U104 on BC26SMMA board		34.8	34.2	51.5	51.0	130	
7.Heat sink of U15 on CN-100HFA board		43.7	43.3	60.5	60.0	130	
8.Heat sink of J21 on BC26HBBA board		26.7	26.1	43.5	42.9	130	
9.FAN enclosure		25.5	24.9	42.4	41.8	Ref.	
10.AC input connector of PSU		37.0	34.8	55.1	52.6	70	
11.T1.1Core Transformer EN31PWRFB of PSU		42.4	42.8	60.2	59.6	130	
12.T1.1Winding Transformer EN31PWRFB of PSU		54.8	55.8	73.3	72.4	130	
13.T1.2Core Transformer EN31PWRFB of PSU		47.6	48.2	65.7	64.9	130	
14.T1.2Winding Transformer EN31PWRFB of PSU		55.3	56.2	73.5	72.6	130	
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)		42.1	40.5	58.7	57.5	Ref.	
16.Metal enclosure of EUT near openings ventilation		25.8	25.3	42.5	42.0	Ref.	
Accessible part temperature:							
1.Ambient		23.2	23.2	25.0	25.0	--	
15.Plastic handle of PAC2000S12-T1 (>1s~ <10s)		42.1	40.5	43.9	42.3	77	
16.Metal enclosure of EUT near openings ventilation		25.8	25.3	27.6	27.1	60	
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
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Supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-B1					P
Supply voltage (V)..... :		90 V a.c. /50 Hz	139.7 V a.c. / 50 Hz	90 V a.c. /50 Hz	139.7 V a.c. / 50 Hz	—	
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
1.Ambient		24.8	25.0	40.0	40.0	--	
2.Battery surface on BC16MBSBA board		44.2	43.9	59.4	58.9	100	
3.Heat sink of CPU1 on BC16MBSBA board		43.2	42.9	58.4	57.9	130	
4.Heat sink of CPU2 on BC16MBSBA board		43.2	43.2	58.4	58.2	130	
5.Heat sink of U7 on XC330 board		40.6	40.2	55.8	55.2	130	
6.Heat sink of U6162 on BC26SMMA board		41.6	41.3	56.8	56.3	130	
7.Heat sink of HS1 on XP330 board		40.8	40.5	56.0	55.5	130	
8.Heat sink of HS1 on E810XXVDA4G2P5 board		37.7	37.4	52.9	52.4	130	
9.Heat sink of HS1 on X710T2LG1P5 board		36.7	36.5	51.9	51.5	100	
10.Heat sink of HS1 on XP380 board		35.9	35.7	51.1	50.7	130	
11.Heat sink of J21 on BC26HBBA board		26.9	27.1	42.1	42.1	130	
12.FAN enclosure		27.1	27.0	42.3	42.0	Ref	
13.AC input connector of PSU		46.3	39.0	61.5	54.0	70	
14.Core Transformer T7000 of PSU		44.0	43.9	59.2	58.9	130	
15.Winding Transformer T7000 of PSU		46.8	46.7	62.0	61.7	130	
16.Core Transformer T8000 of PSU		48.0	47.8	63.2	62.8	130	
17.Winding Transformer T8000 of PSU		50.0	49.8	65.2	64.8	130	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		33.6	32.2	48.8	47.2	Ref	
19.Metal enclosure of EUT near openings ventilation		31.6	31.3	46.8	46.3	Ref	
Accessible part temperature:							
1.Ambient		24.8	25.0	25	25	--	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		33.6	32.2	33.8	32.2	77	
19.Metal enclosure of EUT near openings ventilation		31.6	31.3	31.8	31.3	60	
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

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Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.							

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5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-B1					P
Supply voltage (V)..... :		180 V a.c. /50 Hz	242 V a.c. /50 Hz	180 V a.c. /50 Hz	242 V a.c. /50 Hz	—	
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
1.Ambient		24.1	24.5	40.0	40.0	--	
2.Battery surface on BC16MBSBA board		43.4	43.5	59.3	59.0	100	
3.Heat sink of CPU1 on BC16MBSBA board		42.6	42.8	58.5	58.3	130	
4.Heat sink of CPU2 on BC16MBSBA board		42.5	42.7	58.4	58.2	130	
5.Heat sink of U7 on XC330 board		39.7	39.8	55.6	55.3	130	
6.Heat sink of U6162 on BC26SMMA board		40.8	40.9	56.7	56.4	130	
7.Heat sink of HS1 on XP330 board		40.0	40.1	55.9	55.6	130	
8.Heat sink of HS1 on E810XXVDA4G2P5 board		36.8	37.0	52.7	52.5	130	
9.Heat sink of HS1 on X710T2LG1P5 board		35.8	36.0	51.7	51.5	100	
10.Heat sink of HS1 on XP380 board		35.1	35.3	51.0	50.8	130	
11.Heat sink of J21 on BC26HBBA board		26.4	26.5	42.3	42.0	130	
12.FAN enclosure		26.3	26.5	42.2	42.0	Ref	
13.AC input connector of PSU		43.8	39.5	59.7	55.0	70	
14.Core Transformer T7000 of PSU		49.7	49.8	65.6	65.3	130	
15.Winding Transformer T7000 of PSU		61.2	61.2	77.1	76.7	130	
16.Core Transformer T8000 of PSU		57.0	57.0	72.9	72.5	130	
17.Winding Transformer T8000 of PSU		66.5	66.5	82.4	82.0	130	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		30.7	30.2	46.6	45.7	Ref	
19.Metal enclosure of EUT near openings ventilation		30.7	31.0	46.6	46.5	Ref	
Accessible part temperature:							
1.Ambient		24.1	24.5	25	25	--	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		30.7	30.2	31.6	30.7	77	
19.Metal enclosure of EUT near openings ventilation		30.7	31.0	31.6	31.5	60	
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

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Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements Test with PSU PAC2000S12-B1				P	
Supply voltage (V)..... :		198 V a.c. /50 Hz	264 V a.c. /50 Hz	198 V a.c. /50 Hz	264 V a.c. /50 Hz	—	
Ambient temperature during test T_{amb} (°C) :		See below	See below	See below	See below	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)	
1.Ambient		24.1	24.4	40.0	40.0	--	
2.Battery surface on BC16MBSBA board		43.5	43.4	59.4	59.0	100	
3.Heat sink of CPU1 on BC16MBSBA board		42.6	42.5	58.5	58.1	130	
4.Heat sink of CPU2 on BC16MBSBA board		42.6	42.5	58.5	58.1	130	
5.Heat sink of U7 on XC330 board		39.7	39.6	55.6	55.2	130	
6.Heat sink of U6162 on BC26SMMA board		40.8	40.7	56.7	56.3	130	
7.Heat sink of HS1 on XP330 board		40.0	39.8	55.9	55.4	130	
8.Heat sink of HS1 on E810XXVDA4G2P5 board		36.9	36.8	52.8	52.4	130	
9.Heat sink of HS1 on X710T2LG1P5 board		35.9	35.8	51.8	51.4	100	
10.Heat sink of HS1 on XP380 board		35.2	35.1	51.1	50.7	130	
11.Heat sink of J21 on BC26HBBA board		26.5	26.6	42.4	42.2	130	
12.FAN enclosure		26.3	26.5	42.2	42.1	Ref	
13.AC input connector of PSU		41.8	38.3	57.7	53.9	70	
14.Core Transformer T7000 of PSU		49.8	49.6	65.7	65.2	130	
15.Winding Transformer T7000 of PSU		61.1	60.8	77.0	76.4	130	
16.Core Transformer T8000 of PSU		57.0	56.6	72.9	72.2	130	
17.Winding Transformer T8000 of PSU		66.4	66.0	82.3	81.6	130	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		30.5	29.4	46.4	45.0	Ref	
19.Metal enclosure of EUT near openings ventilation		30.9	30.7	46.8	46.3	Ref	
Accessible part temperature:							
1.Ambient		24.1	24.4	25	25	--	
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)		30.5	29.4	31.4	30.0	77	
19.Metal enclosure of EUT near openings ventilation		30.9	30.7	31.8	31.3	60	
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

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Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.							

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5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements Test with PSU PAC2000S12-B1				P		
Supply voltage (V)..... :	192 V d.c.	288 V d.c.	192 V d.c.	288 V d.c.	—		
Ambient temperature during test T_{amb} (°C).... :	See below	See below	See below	See below	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)		
1.Ambient	24.3	25.0	40.0	40.0	--		
2.Battery surface on BC16MBSBA board	43.6	43.6	59.3	58.6	100		
3.Heat sink of CPU1 on BC16MBSBA board	42.6	42.8	58.3	57.8	130		
4.Heat sink of CPU2 on BC16MBSBA board	42.7	43.0	58.4	58.0	130		
5.Heat sink of U7 on XC330 board	39.9	39.9	55.6	54.9	130		
6.Heat sink of U6162 on BC26SMMA board	41.0	41.0	56.7	56.0	130		
7.Heat sink of HS1 on XP330 board	40.2	40.2	55.9	55.2	130		
8.Heat sink of HS1 on E810XXVDA4G2P5 board	37.1	37.2	52.8	52.2	130		
9.Heat sink of HS1 on X710T2LG1P5 board	36.0	36.2	51.7	51.2	100		
10.Heat sink of HS1 on XP380 board	35.4	35.6	51.1	50.6	130		
11.Heat sink of J21 on BC26HBBA board	26.6	26.9	42.3	41.9	130		
12.FAN enclosure	26.5	26.8	42.2	41.8	Ref		
13.AC input connector of PSU	42.1	38.0	57.8	53.0	70		
14.Core Transformer T7000 of PSU	49.2	49.3	64.9	64.3	130		
15.Winding Transformer T7000 of PSU	61.4	61.4	77.1	76.4	130		
16.Core Transformer T8000 of PSU	57.1	57.1	72.8	72.1	130		
17.Winding Transformer T8000 of PSU	66.6	66.6	82.3	81.6	130		
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)	30.8	29.9	46.5	44.9	Ref		
19.Metal enclosure of EUT near openings ventilation	31.0	31.2	46.7	46.2	Ref		
Accessible part temperature:							
1.Ambient	24.3	25.0	25	25	--		
18.Plastic handle of PAC2000S12-B1 (>1s~ <10s)	30.8	29.9	31.5	29.9	77		
19.Metal enclosure of EUT near openings ventilation	31.0	31.2	31.7	31.2	60		
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
Note 1: Tma should be considered as directed by applicable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (Tma) of 40°C.

B.2.5	TABLE: Input test Test with PSU PAC2000S12-T1								P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
90 V a.c	50	10.65	--	953	--	--	--	Max. normal load with input 1	
90 V a.c	50	9.68	-	865	--	--	--	Max. normal load with input 2	
100 V a.c	50	9.54	Per input: 10	939	--	--	--	Max. normal load with input 1	
100 V a.c	50	8.69	Per input: 10	851	--	--	--	Max. normal load with input 2	
127 V a.c	50	7.31	Per input: 10	916	--	--	--	Max. normal load with input 1	
127 V a.c	50	6.65	Per input: 10	838	--	--	--	Max. normal load with input 2	
139.7 V a.c.	50	6.60	--	913	--	--	--	Max. normal load with input 1	
139.7 V a.c.	50	6.02	--	834	--	--	--	Max. normal load with input 2	
180 V a.c.	50	9.79	--	1762	--	--	--	Max. normal load	
198 V a.c.	50	8.92	--	1754	--	--	--	Max. normal load	
200 V a.c.	50	8.90	Per input: 10	1753	--	--	--	Max. normal load	
207 V a.c.	50	8.49	--	1748	--	--	--	Max. normal load	
220 V a.c.	50	8.02	Per input: 10	1758	--	--	--	Max. normal load	
230 V a.c.	50	7.64	Per input: 10	1757	--	--	--	Max. normal load	
240 V a.c.	50	7.28	Per input: 10	1751	--	--	--	Max. normal load	
242 V a.c.	50	7.26	--	1755	--	--	--	Max. normal load	
253 V a.c.	50	7.08	--	1752	--	--	--	Max. normal load	
264 V a.c.	50	6.81	--	1742	--	--	--	Max. normal load	
90 V a.c	60	10.65	--	943	--	--	--	Max. normal load	
90 V a.c	60	9.68	--	855	--	--	--	Max. normal load	

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Clause	Requirement + Test		Result - Remark	Verdict

100 V a.c	60	9.54	Per input: 10	929	--	--	--	Max. normal load
100 V a.c	60	8.69	Per input: 10	841	--	--	--	Max. normal load with input 2
127 V a.c	60	7.31	Per input: 10	906	--	--	--	Max. normal load with input 1
127 V a.c	60	6.65	Per input: 10	828	--	--	--	Max. normal load with input 2
139.7 V a.c.	60	6.60	--	903	--	--	--	Max. normal load with input 1
139.7 V a.c.	60	6.02	--	824	--	--	--	Max. normal load with input 2
180 V a.c.	60	9.79	--	1752	--	--	--	Max. normal load
198 V a.c.	60	8.92	--	1744	--	--	--	Max. normal load
200 V a.c.	60	8.90	Per input: 10	1743	--	--	--	Max. normal load
207 V a.c.	60	8.49	--	1738	--	--	--	Max. normal load
220 V a.c.	60	8.02	Per input: 10	1748	--	--	--	Max. normal load
230 V a.c.	60	7.64	Per input: 10	1747	--	--	--	Max. normal load
240 V a.c.	60	7.28	Per input: 10	1741	--	--	--	Max. normal load
242 V a.c.	60	7.26	--	1745	--	--	--	Max. normal load
253 V a.c.	60	7.08	--	1742	--	--	--	Max. normal load
264 V a.c.	60	6.81	--	1732	--	--	--	Max. normal load
192 V d.c.	DC	9.28	--	1778	--	--	--	Max. normal load
240 V d.c.	DC	7.39	Per input: 10	1762	--	--	--	Max. normal load
288 V d.c.	DC	6.08	--	1746	--	--	--	Max. normal load

Supplementary information:

Equipment may be have rated current or rated power or both. Both should be measured

B.2.5		TABLE: Input test							P
		Test with PSU PAC2000S12-B1							
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
90 V a.c	50	10.42	--	932	--	--	--	Max. normal load with input 1	
90 V a.c	50	10.61	--	948	--	--	--	Max. normal load with input 2	
100 V a.c	50	9.24	Per input: 10	915	--	--	--	Max. normal load with input 1	

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Clause	Requirement + Test				Result - Remark			Verdict
100 V a.c	50	9.31	Per input: 10	929	--	--	--	Max. normal load with input 2
127 V a.c	50	7.08	Per input: 10	893	--	--	--	Max. normal load with input 1
127 V a.c	50	7.16	Per input: 10	907	--	--	--	Max. normal load with input 2
139.7 V a.c.	50	6.36	--	887	--	--	--	Max. normal load with input 1
139.7 V a.c.	50	6.48	--	894	--	--	--	Max. normal load with input 2
180 V a.c.	50	10.19	--	1827	--	--	--	Max. normal load
198 V a.c.	50	9.18	--	1817	--	--	--	Max. normal load
200 V a.c.	50	9.11	Per input: 10	1815	--	--	--	Max. normal load
220 V a.c.	50	8.19	Per input: 10	1801	--	--	--	Max. normal load
240 V a.c.	50	7.47	Per input: 10	1791	--	--	--	Max. normal load
242 V a.c.	50	7.41	--	1790	--	--	--	Max. normal load
264 V a.c.	50	6.76	--	1782	--	--	--	Max. normal load
90 V a.c	60	10.42	--	922	--	--	--	Max. normal load with input 1
90 V a.c	60	10.61	--	938	--	--	--	Max. normal load with input 2
100 V a.c	60	9.24	Per input: 10	905	--	--	--	Max. normal load with input 1
100 V a.c	60	9.31	Per input: 10	919	--	--	--	Max. normal load with input 2
127 V a.c	60	7.08	Per input: 10	883	--	--	--	Max. normal load with input 1
127 V a.c	60	7.16	Per input: 10	900	--	--	--	Max. normal load with input 2
139.7 V a.c.	60	6.36	--	877	--	--	--	Max. normal load with input 1
139.7 V a.c.	60	6.48	--	884	--	--	--	Max. normal load with input 2
180 V a.c.	60	10.19	--	1817	--	--	--	Max. normal load
198 V a.c.	60	9.18	--	1807	--	--	--	Max. normal load
200 V a.c.	60	9.11	Per input: 10	1805	--	--	--	Max. normal load
220 V a.c.	60	8.19	Per input: 10	1800	--	--	--	Max. normal load
240 V a.c.	60	7.47	Per input: 10	1781	--	--	--	Max. normal load
242 V a.c.	60	7.41	--	1780	--	--	--	Max. normal load

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Clause	Requirement + Test				Result - Remark			Verdict
264 V a.c.	60	6.76	--	1772	--	--	--	Max. normal load
192 V d.c.	DC	9.48	--	1814	--	--	--	Max. normal load
240 V d.c.	DC	7.51	Per input: 10	1792	--	--	--	Max. normal load
288 V d.c.	DC	6.19	--	1771	--	--	--	Max. normal load
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

B.3, B.4	TABLE: Abnormal operating and fault condition tests						P
Ambient temperature T_{amb} (°C)..... :						25	—
Power source for EUT: Manufacturer, model/type, outputrating .. :						--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Test with PSU PAC2000S12-T1							
All openings	Blocked	264V a.c/ 50Hz	181min s	--	18.45 to 18.87 to 0.5	When monitoring temperature of EUT reached highest, EUT was protected. The temperature reduce until thermal equilibrium. No hazards. NC,NB, NT T1.1Core Transformer EN31PWRFB of PSU: 103.4° C T1.1Winding Transformer EN31PWRFB of PSU: 116.5°C T1.2Core Transformer EN31PWRFB of PSU: 105.9°C T1.2Winding Transformer EN31PWRFB of PSU: 117.0°C Plastic handle: 76.3°C Metal enclosure of EUT near openings ventilation: 48.0°C Ambient: 25.0°C	
All openings	Blocked	288 V d.c	144 mins			When monitoring temperature of EUT reached highest, EUT was protected. The temperature reduce until thermal equilibrium. No hazards. NC, NB, NT T1.1Core Transformer EN31PWRFB of PSU: 106.3°C T1.1Winding Transformer	

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Clause	Requirement + Test			Result - Remark		Verdict
						EN31PWRFB of PSU: 117.3°C T1.2Core Transformer EN31PWRFB of PSU: 108.5°C T1.2Winding Transformer EN31PWRFB of PSU: 118.1°C Plastic handle: 77.3°C Metal enclosure of EUT near openings ventilation: 50.5°C Ambient: 25.0°C
DC input polarity	Reversed	288Vd.c	15 mins	--	--	EUT can normally work. No hazards. NC, NT, NB.
Fan	Disconnected	264V a.c/50Hz	71mins	--	--	The temperature was stable, No hazards, NC, NT, NB T1.1Core Transformer EN31PWRFB of PSU: 69.0°C T1.1Winding Transformer EN31PWRFB of PSU: 83.2°C T1.2Core Transformer EN31PWRFB of PSU: 75.6°C T1.2Winding Transformer EN31PWRFB of PSU: 83.7°C Plastic handle: 46.4°C Metal enclosure of EUT near openings ventilation: 29.4°C Ambient: 25.0°C
Fans	Disconnected	288 V d.c	87 mins			The temperature was stable, No hazards, NC, NT, NB T1.1 Core Transformer EN31PWRFB of PSU: 68.9°C T1.1 Winding Transformer EN31PWRFB of PSU: 83.2°C T1.2 Core Transformer EN31PWRFB of PSU: 75.6°C T1.2 Winding Transformer EN31PWRFB of PSU: 83.9°C Plastic handle:46.4°C Metal enclosure of EUT near openings ventilation: 29.3°C Ambient: 25.0°C
Test with PSU PAC2000S12-B1						
All openings	Blocked	264 V a.c	131	-	6.74	When monitoring temperature of

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Clause	Requirement + Test			Result - Remark	Verdict	
			mins		to 7.45 to 5.85 to 0.34	EUT reached highest, EUT was protected. The temperature reduces until thermal equilibrium. No hazards. NC, NB, NT Core Transformer T7000 of PSU: 107.3°C Winding Transformer T7000 of PSU: 121.2°C Core Transformer T8000 of PSU: 118.3°C Winding Transformer T8000 of PSU: 122.9°C Plastic handle: 60.5°C Metal enclosure of EUT near openings ventilation: 51.7°C Ambient: 25.0°C
All openings	Blocked	288 V d.c	143 mins	-	6.19 to 6.78 to 5.64	The temperature was stable, No hazards, NC, NT, NB. Core Transformer T7000 of PSU: 106.6°C Winding Transformer T7000 of PSU: 122.9°C Core Transformer T8000 of PSU: 119.3°C Winding Transformer T8000 of PSU: 124.8°C Plastic handle: 68.6°C Metal enclosure of EUT near openings ventilation: 50.8°C Ambient: 25.0°C
Fan	Disconnected	264 V a.c	81 mins	-	6.76 to 6.48	The temperature was stable, No hazards, NC, NT, NB. Core Transformer T7000 of PSU: 68.3°C Winding Transformer T7000 of PSU: 82.0°C Core Transformer T8000 of PSU: 79.3°C Winding Transformer T8000 of PSU: 88.7°C Plastic handle: 32.9°C

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Clause	Requirement + Test	Result - Remark	Verdict

						Metal enclosure of EUT near openings ventilation: 33.2°C Ambient: 25.0°C
Fan	Disconnected	288 V d.c	89 mins	-	6.19 to 5.98	The temperature was stable, No hazards, NC, NT, NB. Core Transformer T7000 of PSU: 68.8°C Winding Transformer T7000 of PSU: 82.7°C Core Transformer T8000 of PSU: 79.6°C Winding Transformer T8000 of PSU: 89.1°C Plastic handle: 33.3°C Metal enclosure of EUT near openings ventilation: 33.4°C Ambient: 25.0°C
DC input polarity	Reversed	288 Vd.c	15 mins	--	--	EUT can normally work. No hazards. NC, NT, NB.
Supplementary information:						
NC Cheesecloth remained intact.						
NT Tissue paper remained intact.						
NB No indication of dielectric breakdown after 60 seconds						
Touch Temperature Limited: 80°C						

M.3	TABLE: Protection circuits for batteries provided within the equipment					P
Is it possible to install the battery in a reverse polarity position?.....:	No					—
Equipment Specification	Charging					
	Voltage (V)			Current (A)		
	--			--		
Manufacturer/type	Battery specification					
	Non-rechargeable batteries			Rechargeable batteries		
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
			Voltage (V)	Current (A)		
	See table 4.1.2	--	0	--	--	--
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.						

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Clause	Requirement + Test	Result - Remark	Verdict

Specified battery temperature (°C)						See table 4.1.2		
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation	
D7 pin1-pin3	SC	Unintentional Charging	--	--	0 to 3 mA	--	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						N/A	
Maximum specified charging voltage (V)						---		
Maximum specified charging current (A)						---		
Highest specified charging temperature (°C)								
Lowest specified charging temperature (°C)								
Battery manufacturer/type	Operating and fault condition	Measurement			Observation			
		Charging voltage (V)	Charging current (A)	Temp. (°C)				
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)						P	
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)		
				Meas.	Limit	Meas.	Limit	
USB of BC26SMMA	Normal	5.02	5	1.28	8	5.72	100	
USB of BC15RCIAB	Normal	5.03	5	1.29	8	5.41	100	
Supplementary Information:								
Approved current limiter used (Comply with Annex G.9 of IEC/EN 62368-1.								

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Clause	Requirement + Test	Result - Remark	Verdict

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	
Top enclosure of EUT near AC input part	Metal	Min.1.0	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3 were not accessible after test. No insulation breakdown.	
Bottom enclosure of EUT near AC input part	Metal	Min.1.0	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3 were not accessible after test. No insulation breakdown.	
Right side enclosure of EUT near AC input part	Metal	Min.1.0	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3 were not accessible after test. No insulation breakdown.	
Supplementary information:							

T.6, T.9		TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation		
Top enclosure of EUT near AC input part	Metal	Min.1.0	1300	All safeguards remain effective		
Bottom enclosure of EUT near AC input part	Metal	Min.1.0	1300	All safeguards remain effective		
Right side enclosure of EUT near AC input part	Metal	Min.1.0	1300	All safeguards remain effective		
Supplementary information:						

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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:						

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:					

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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	Interchangeable	Interchangeable	86.1mm(H) by 447mm(W) by 798mm(D); min 1.0 mm thickness; Max dimensions of openings: 5 mm	IEC 62368-1	Tested with appliance	
PCB	Interchangeable	Interchangeable	V-0, 130 °C.	UL 796 UL 94	UL	
Hard disk	Interchangeable	Interchangeable	Rating: 12 V, 2.45A Max or 5V, 2A Max	UL 62368-1	cTUVus, cULus	
Laser module (optional)	Interchangeable	Interchangeable	Class 1 laser	IEC/EN 62368-1 IEC/EN 60825-1 IEC/EN 60825-2	TUV or UL	
Internal wire	Interchangeable	Interchangeable	VW-1	UL 758 UL 2556	UL	
IC 39070055-001	TI	TPS2553	Rated: 2.5-6.5 V d.c., Current Limit Rating: 1.7 A	ANSI/UL 2367 IEC/EN 62368-1	UL E169910 Certif. No. US- 2406-MET	
(Alternative)	RichTek	RTQ9728W	Rated: 4.5-5.5 V d.c., Current Limit Rating: 2.5 A		Nemko, 399989 Nemko Certif. No. NO112836	
(Alternative)	Joulwatt	JW87102DFNB #TRPBF	V _{in} : 2.7 V d.c.-5.5 Vd.c., V _{out} : 2.7 V d.c.-5.5 Vd.c., I _{out} : 1.547-1.853 A with R _{LIM} =15 kohm I _{out} : 1.164-1.426 A with R _{LIM} =20 kohm I _{out} : 0.449-0.591 A with R _{LIM} =50 kohm	IEC/EN/UL 62368-1	UL E497605 UL Certif. No. DK-141903-UL	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Battery 24010067	PANASONIC	BR2032	Rated: 3 V, 0.20 Ah. Max abnormal charge current: 5 mA	UL 1642 IEC 60086-4	UL, MH12210 DEKRA, NL- 59041
(Alternative)	EVE ENERGY CO LTD	CR2032HT	Rated: 3 V, 0.2 Ah. Max abnormal charge current: 10 mA (UL), 1 mA (IEC)	UL 1642 IEC 60086-4	UL MH28717 TUV, JPTUV- 112280
Fan 3203Y002	AVC	DFFG0856B2U YD031	12.0VDC, 10.7A, Min 122.87CFM	UL 507 EN IEC 62368-1	UL E158191 TUV B0257300972
(Alternative)	Huntkey	FAB8056U12- PF02	12.0VDC, 8.3A, Min 111.1CFM	UL 507 EN 62368-1	UL E333267 TUV B0721120083
(Alternative)	NIDEC	R80W12BS5N9- 07ZB7	12.0VDC, 6.1A, Min108.7CFM	UL 507 EN 62368-1	UL E132003 TUV B0357350371
AC/DC power supply unit	xFusion Digital Technologies Co., Limited	PAC2000S12- T1	Input: ~230-240V, 50/60Hz, 10A or DC Input: DC 240V, 10A Output: DC 12.3V, 175A Max Total Output Power: 2148W Max. Or Input: ~220-230V, 50/60Hz, 10A Output: DC 12.3V, 163A Max Total Output Power: 2000W Max. Or Input: ~200-220V, 50/60Hz, 10A Output: DC 12.3V, 146A Max Total Output Power: 1800W Max. Or Input: ~100-127V, 50/60Hz, 10A Output: DC 12.3V, 73A Max Total Output Power: 900W Max.	IEC 62368-1 EN 62368-1	TÜV Rheinland CB Report No.: CN225TZT 002 Cert. No.: JPTUV- 143810-M1

IEC 62368-1					
Clause	Requirement + Test		Result - Remark	Verdict	
AC/DC power supply unit	xFusion Digital Technologies Co., Limited	PAC2000S12-B1	AC Input: ~220-240V; 50/60Hz; 10A or DC Input: DC 240V; 10A DC output: DC 12V; 167 A Max. Total Output Power: 2000W Max. Or AC Input: ~200-220V; 50/60Hz; 10A DC output: DC 12V; 150 A Max Total Output Power: 1800W Max. AC Input: ~100-127V; 50/60Hz; 10A DC output: DC 12V; 75 A Max. Total Output Power: 900W Max.	IEC 62368-1 EN 62368-1	TÜV Rheinland CB Report No.: CN21LECS 001 Cert. No.: JPTUV-129914
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. Licenses are available upon requested					

List of test equipment used:

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
5.2	Classification of electrical energy sources	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Low difference Voltage probe	0-40V	2025/4/27	2026/4/26
		Digital Scope	500Mhz	2024/5/10	2025/5/09
5.4.1.4, 6.3.2, 9.0, B.2.6	Temperature measurements	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Temperature Rise Recorder	200°C	2024/11/14	2025/11/13
5.4.9	Electric Strength test	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		Electrical Strength Tester	AC 10 kV, 50mA, 70 s DC 10 kV, 5 mA, 70 s	2025/1/20	2026/1/19
5.6.6.2	Ground continuity test	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		Earthing continuity tester	12 V, 60 A	2025/1/20	2026/1/19
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
5.7.5	Earthed accessible conductive part	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Digital Scope	500Mhz	2024/5/10	2025/5/09
		Touch current network	IEC 60990 Fig5	2024/11/13	2025/11/12
		Digital Multimeter	750 V a.c., 10 A; 1000 V d.c., 10 A	2024/11/13	2025/11/12
6.2.2	Electrical power sources (PS) measurements for classification	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		Stopwatch	7h	2024/11/13	2025/11/12
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		DC Load	100 V, 60 A, 300W	2024/11/12	2025/11/11
Annex B.2.5	Input Test	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Power Meter	600 V, 20 A	2024/11/12	2025/11/11
Annex B.3 & B.4	Simulated Abnormal operating condition tests & simulated single fault conditions	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Temperature Rise Recorder	200°C	2024/11/14	2025/11/13
Annex M	Batteries	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19
		Digital Multimeter	750 V a.c., 10 A; 1000 V d.c., 10 A	2024/11/13	2025/11/12
Annex Q.1	Limited Power Source	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		AC & DC Power Supply	300 V a.c., 17 A; 400 V d.c., 30 A	2025/1/20	2026/1/19

		DC Load	100 V, 60 A, 300W	2024/11/12	2025/11/11
		Stop watch	7h	2024/11/13	2025/11/12
Annex T.5	Steady force test, 250N	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		Push-Pull Scale	500N	2024/11/13	2025/11/12
		Stopwatch	7h	2024/11/13	2025/11/12
Annex T.6	Enclosure impact test	Thermometer and Hygrometer	35°C, 75% RH	2024/11/15	2025/11/14
		Steel Tape	5M	2024/11/23	2025/11/22
		Steel Ball	0.5 kg, Φ 50 mm	2025/5/27	2026/5/26

ONLY FOR . PROJECT BID
USE UNTIL 31 Mar 2026

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			
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	CENELEC COMMON MODIFICATIONS (EN)		
	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 .		
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A


IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	<p>momentary exposure level, MEL</p> <p>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.</p> <p>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.</p>		N/A
3.3.19.3	<p>sound exposure, E</p> <p>A-weighted sound pressure (p) squared and integrated over a stated period of time, T</p> <p>Note 1 to entry: The SI unit is Pa² s.</p> $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	<p>sound exposure level, SEL</p> <p>logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans.</p> <p>Note 1 to entry: SEL is measured as A-weighted levels in dB.</p> $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ <p>Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.</p>		N/A
3.3.19.5	<p>digital signal level relative to full scale, dBFS</p> <p>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</p> <p>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.</p>		N/A
2	Modification to Clause 10		N/A
10.6	<p>Safeguards against acoustic energy sources</p> <p>Replace 10.6 of IEC 62368-1 with the following:</p>		N/A
10.6.1.1	<p>Introduction</p> <p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered.</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – 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.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> – professional equipment; <p>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.</p> <ul style="list-style-type: none"> – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <p>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.</p> <ul style="list-style-type: none"> – a player while connected to an external amplifier that does not allow the user to walk around while in use. <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>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.</p>	Added. To be evaluated for national requirement.	N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	<p>General</p> <p>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.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>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.</p> <p>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.</p>		N/A
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – 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 		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>output shall be ≤ 85 dB when playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>– 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.</p> <p>– The RS1 limits will be updated for all devices as per 10.6.3.2.</p>		
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <p>– 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 $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1.</p> <p>– 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.</p>		N/A
10.6.2.4	<p>RS3 limits</p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	<p>General</p> <p>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 below.</p>		N/A
10.6.3.2	<p>RS1 limits (new)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <p>– 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</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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 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:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>– element 1a: the symbol , IEC 60417-6044 (2011-01)</p> <p>– element 2: “High sound pressure” or equivalent wording</p> <p>– element 3: “Hearing damage risk” or equivalent wording</p> <p>– element 4: “Do not listen at high volume levels for long periods.” or equivalent wording</p> <p>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.</p> <p>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.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>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.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	<p>General requirements</p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>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.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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	<p>Dose-based warning and requirements</p> <p>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.</p> <p>The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.</p>		N/A
10.6.5.3	<p>Exposure-based requirements</p> <p>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.</p> <p>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.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to 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.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>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.</p> <p>NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.</p>		N/A
10.6.6.2	<p>Corded listening devices with digital input</p> <p>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.</p>		N/A
10.6.6.3	<p>Cordless listening devices</p> <p>In cordless mode,</p> <ul style="list-style-type: none"> – 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	<p>Measurement method</p> <p><i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i></p>		N/A
3	Modification to the whole document		

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

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Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		P
4.Z1	<p>Add the following new subclause after 4.9:</p> <p>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):</p> <p>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;</p> <p>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;</p> <p>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.</p> <p>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>		P
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>		N/A
7	Modification to 10.2.1		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>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.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>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.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>	Added	N/A
9	Modification to G.7.1		N/A
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	Added	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		P
	<p>Add the following notes for the standards indicated:</p> <p>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>		P
11	ADDITION OF ANNEXES		P
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>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>		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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</p>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>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>		N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • 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. <p>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</p> <ul style="list-style-type: none"> • 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), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>the following conditions:</p> <ul style="list-style-type: none"> 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; <p>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.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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>		P
5.6.1	<p>Denmark</p> <p>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>		N/A
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>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>		P
5.6.4.2.1	<p>France</p> <p>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.</p>		P

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Clause	Requirement + Test	Result - Remark	Verdict
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.		P
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.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p>Denmark</p> <p>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>		N/A
5.7.7.1	<p>Norway and Sweden</p> <p>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.</p> <p>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.</p> <p>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:</p> <p>“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)”</p> <p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er kopleet til beskyttelsesjord via nettplugg og/eller via annet jordtilkopleet utstyr – og er tilkopleet 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 nettet.”</p> <p>Translation to Swedish:</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	"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	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>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.</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>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>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>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</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>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.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>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</p>		N/A
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>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.</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>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.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de</p>		N/A

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IEC62368_1E - ATTACHMENT																																																								
Clause	Requirement + Test	Result - Remark	Verdict																																																					
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A																																																					
	<table border="1"> <thead> <tr> <th rowspan="2">Type of flexible cord</th> <th colspan="2">Code designations</th> </tr> <tr> <th>IEC</th> <th>CENELEC</th> </tr> </thead> <tbody> <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> </tbody> </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
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IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA/UL 62368-1:2019			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : US_CA_ND_IEC62368_1E			
Attachment Originator : UL(US)			
Master Attachment : Dated 2022-03-04			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	To be evaluated during national approval	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		P
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.		N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 1: External view



Bild / Picture 2: External view

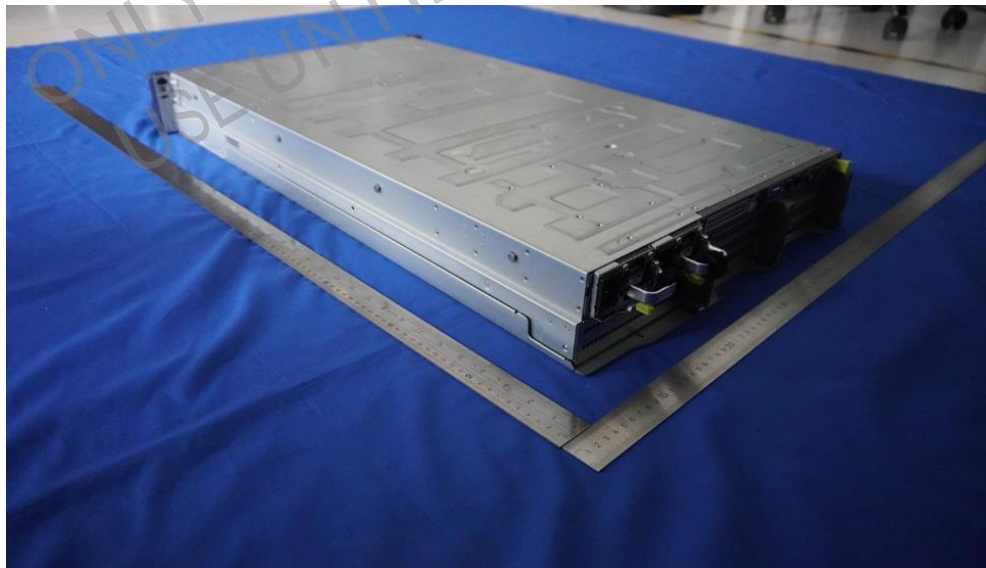


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PHOTO-DOCUMENTATION

Bild / Picture 3: label



Bild / Picture 4: Internal view



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 5: FAN



Bild / Picture 6: BC16MBSBA top view



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 7: BC16MBSBA bottom view



Bild / Picture 8: BC26SMMA top view

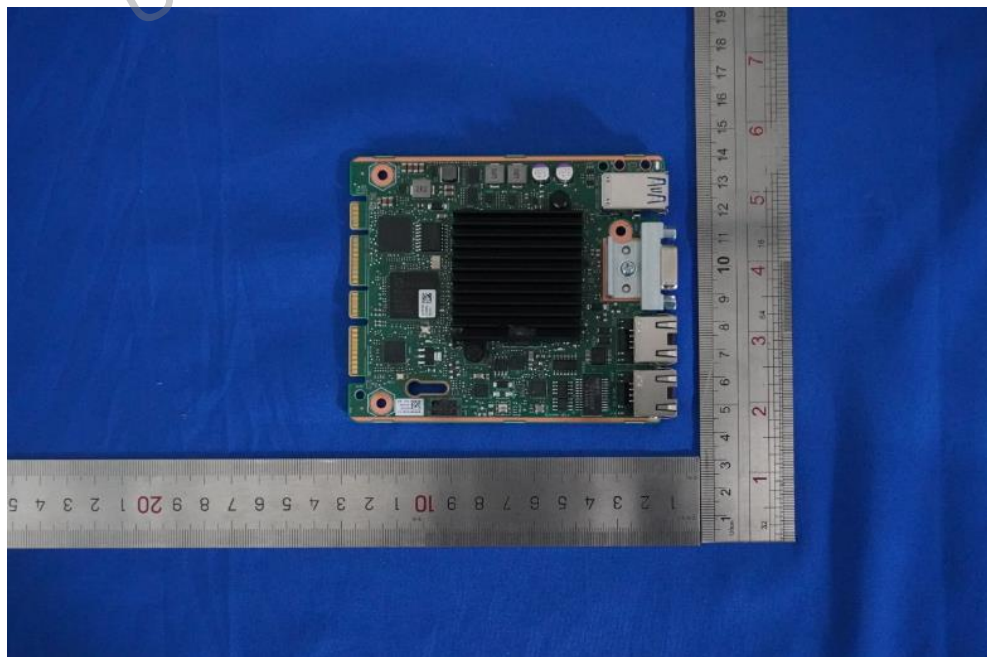


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PHOTO-DOCUMENTATION

Bild / Picture 9: BC26SMMA bottom view

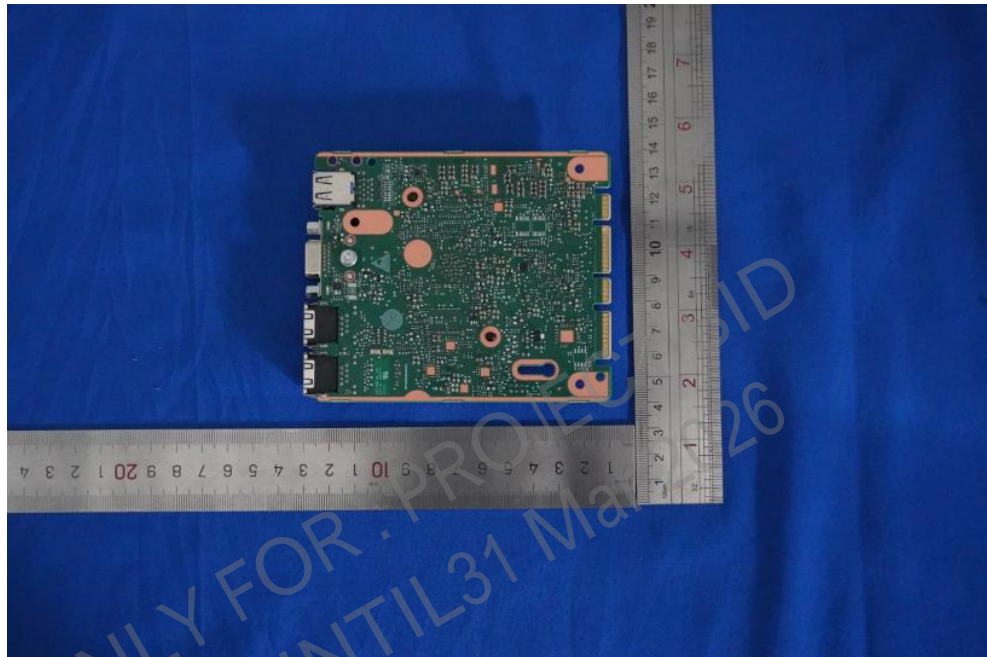


Bild / Picture 10: BC15FDCA top view

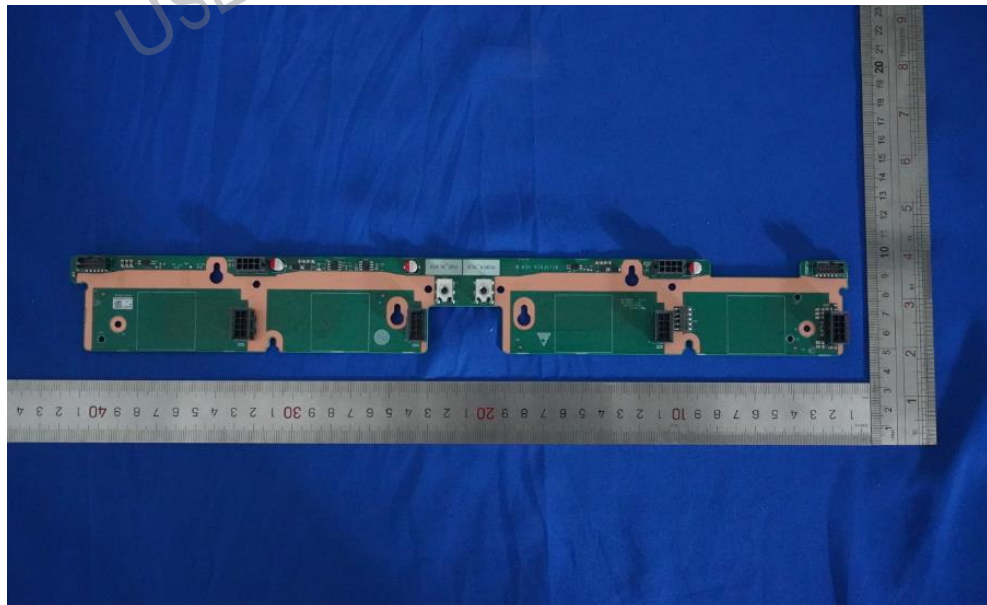


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Bild / Picture 11: BC15FDCA bottom view



Bild / Picture 12: BC15PRUB top view



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PHOTO-DOCUMENTATION

Bild / Picture 13: BC15PRUB bottom view

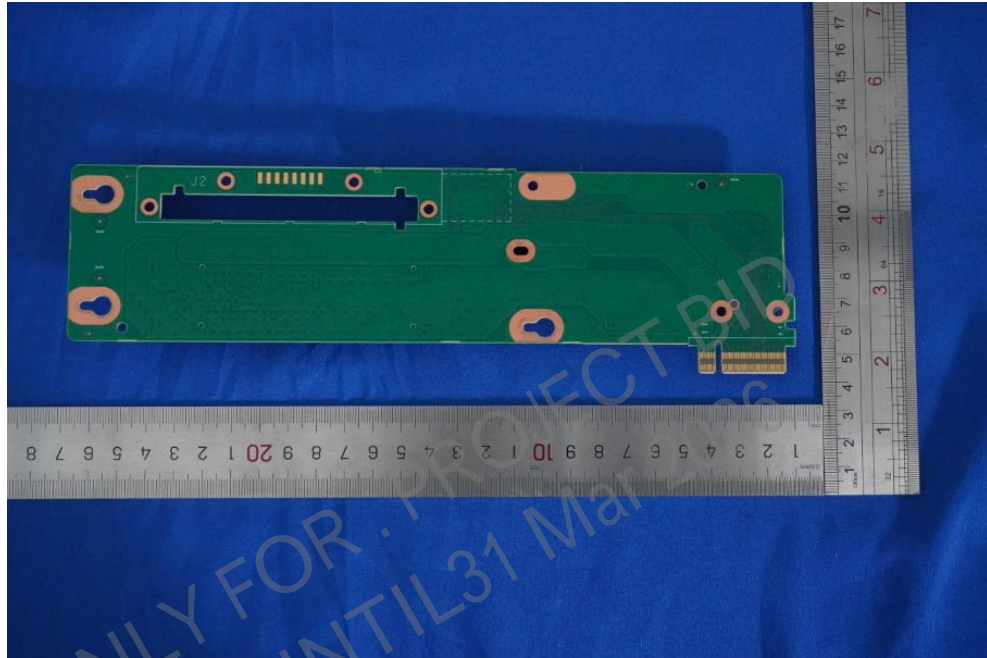


Bild / Picture 14: BC26HBBA top view

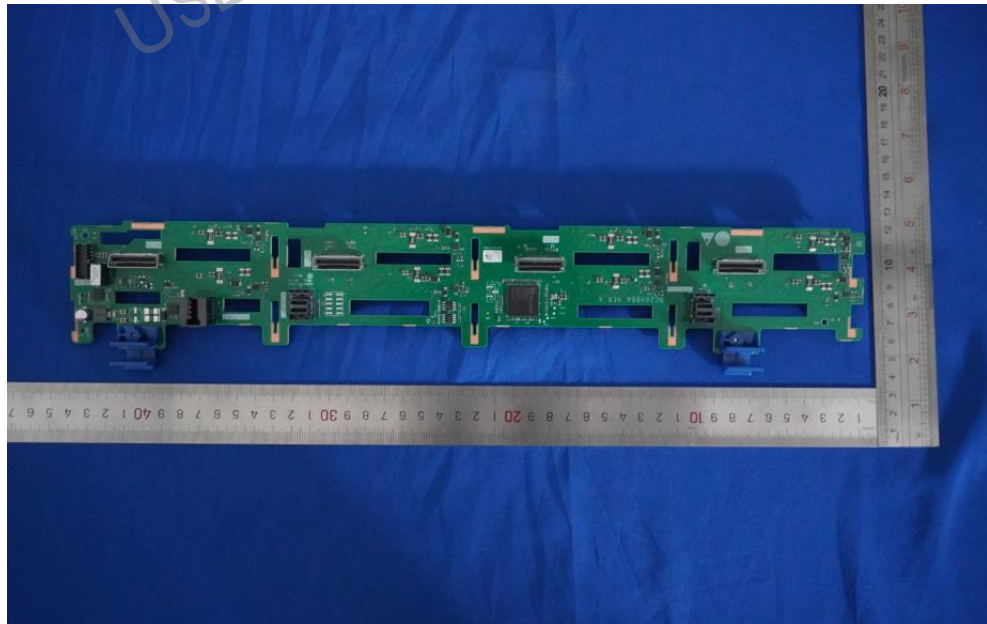


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 15: BC26HBBA bottom view

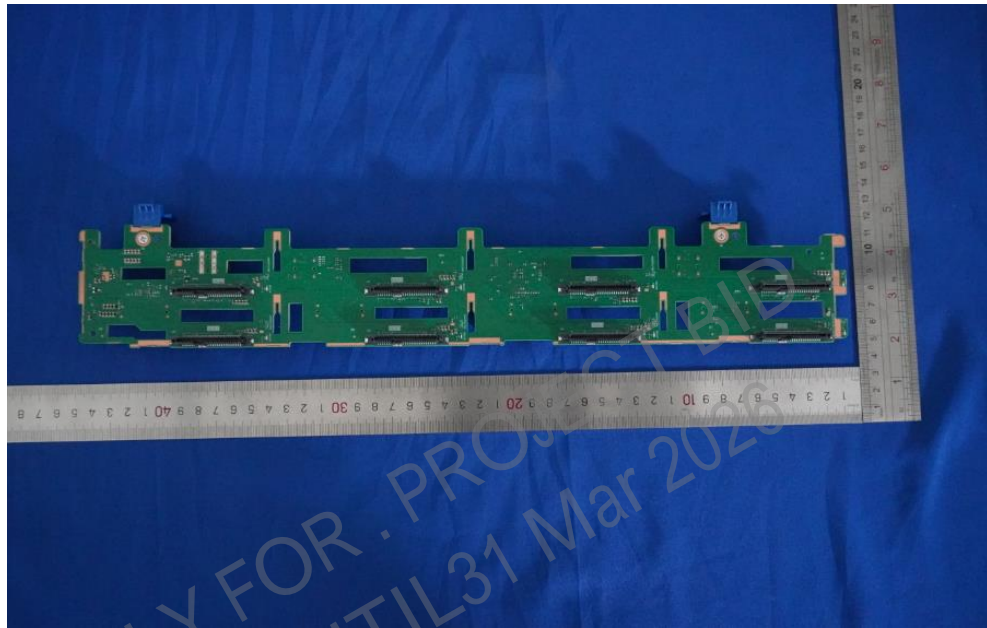


Bild / Picture 16: BC82LCIA top view

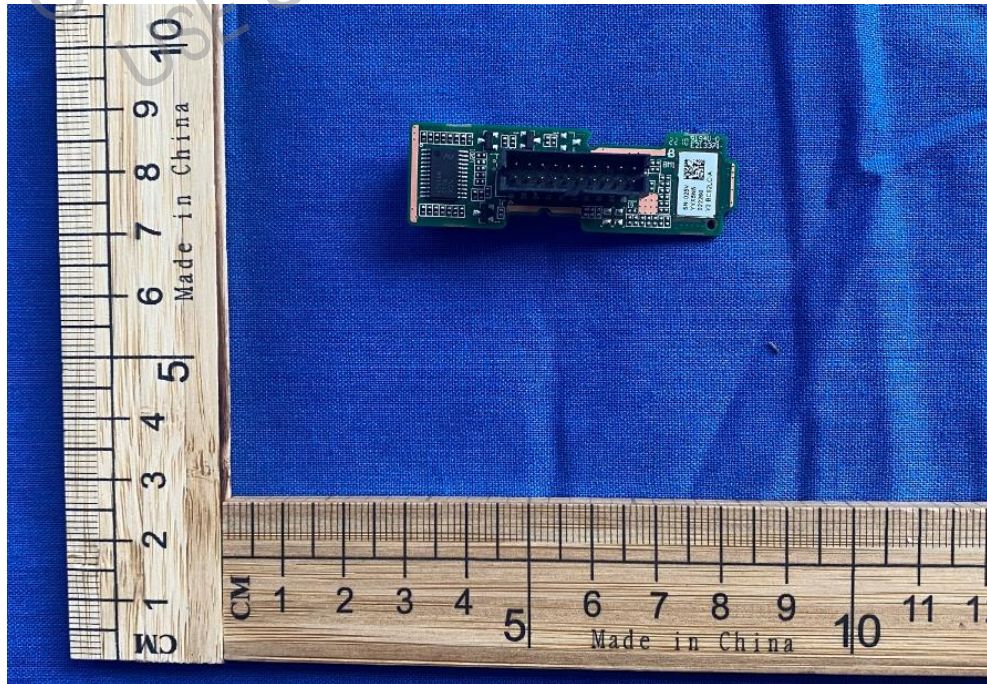


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 17: BC82LCIA bottom view



Bild / Picture 18: BC15RCIAB top view

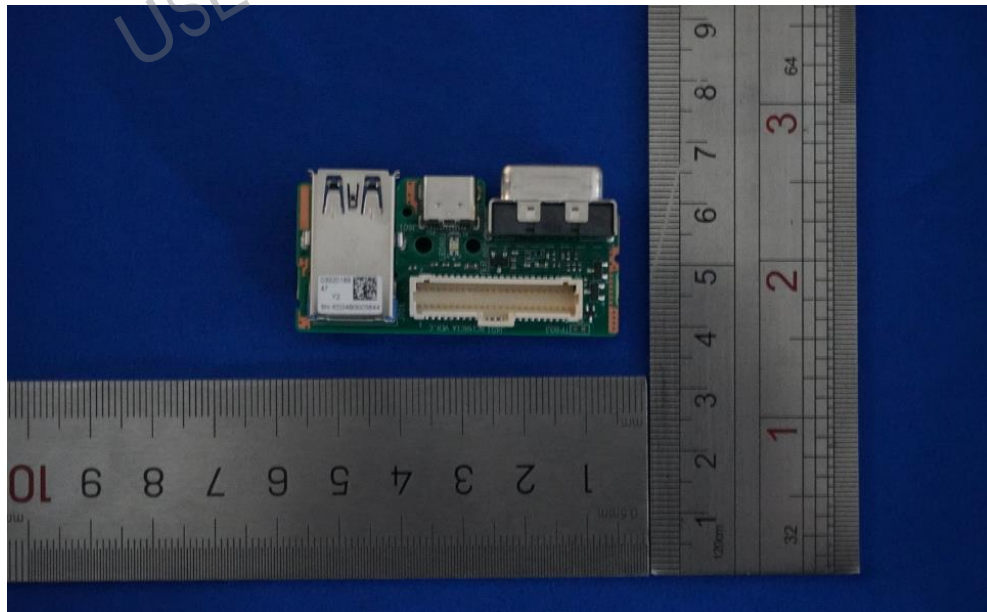


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 19: BC15RCIAB bottom view

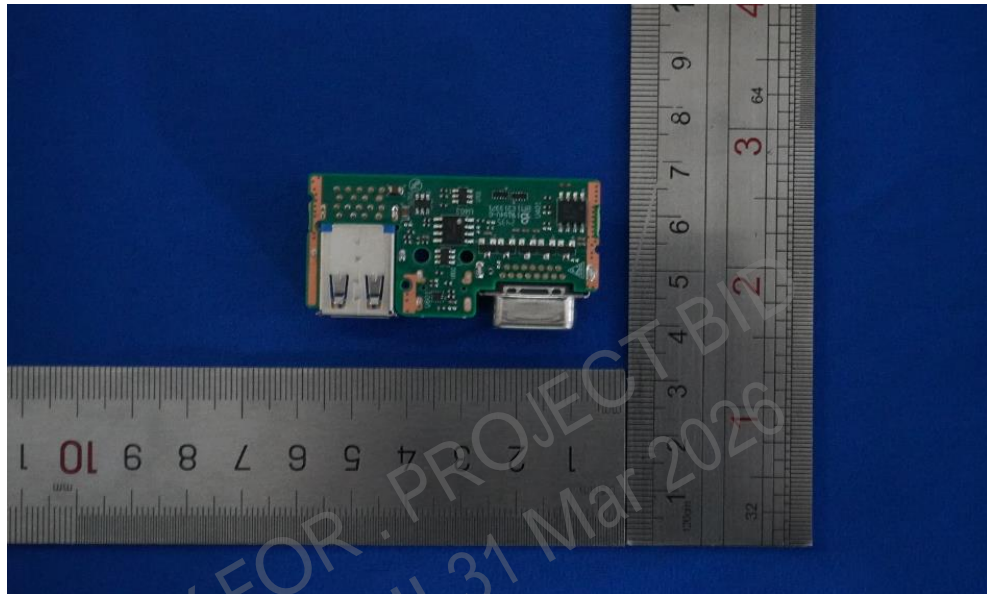


Bild / Picture 20: RMN-100HFA016 top view

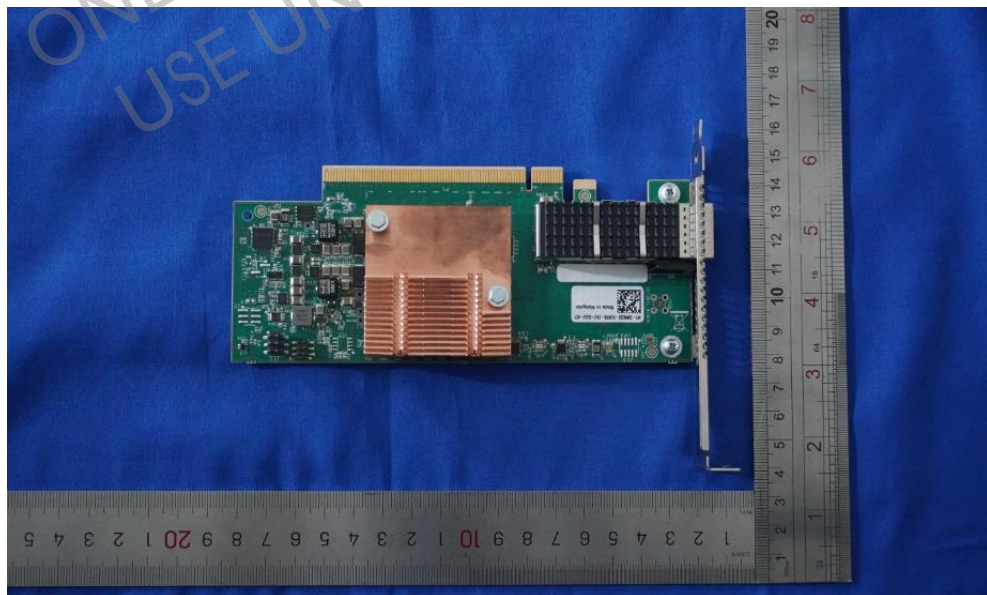


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 21: RMN-100HFA016 bottom view



Bild / Picture 22: XC310 top view



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 23: XC310 bottom view



Bild / Picture 24: 05-50077-00(9560-16j)

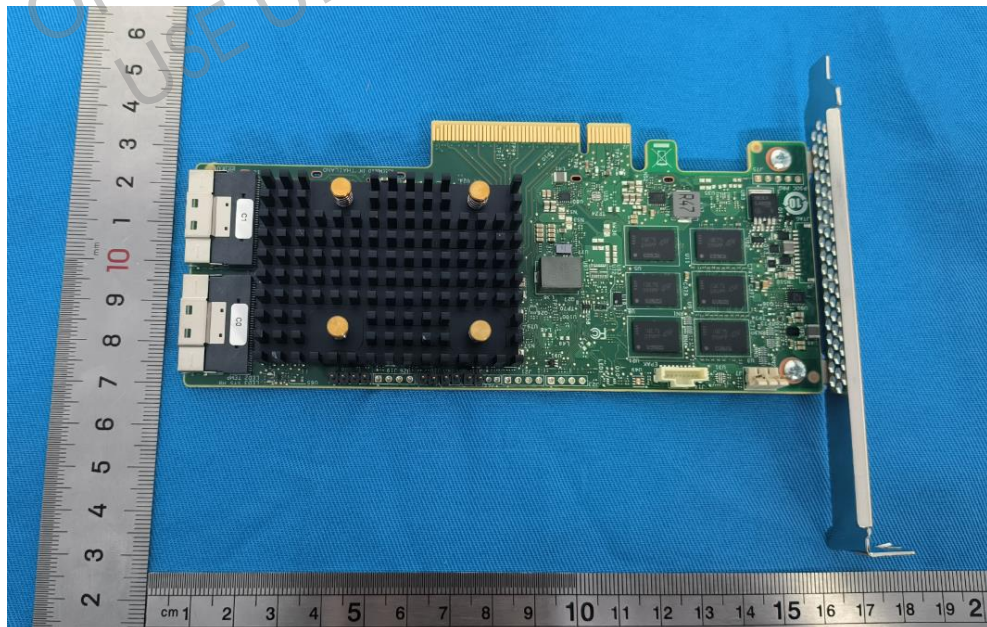


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 25: 05-50077-00(9560-16i)



Bild / Picture 26: 05-50077-01(9560-8i)



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 27: 05-50077-01(9560-8i)

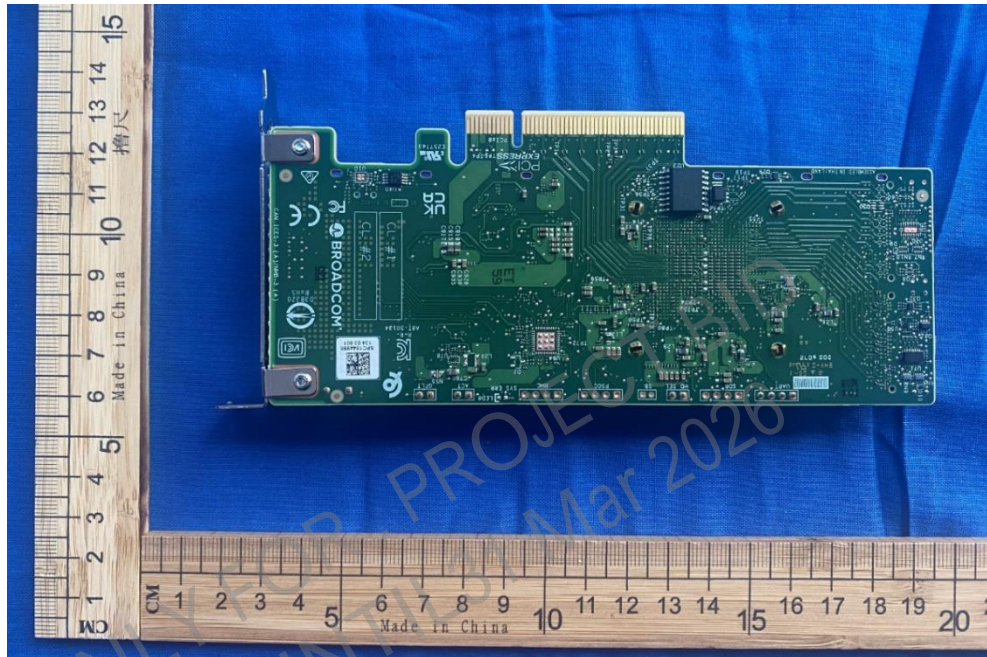


Bild / Picture 28: BC15HBBS

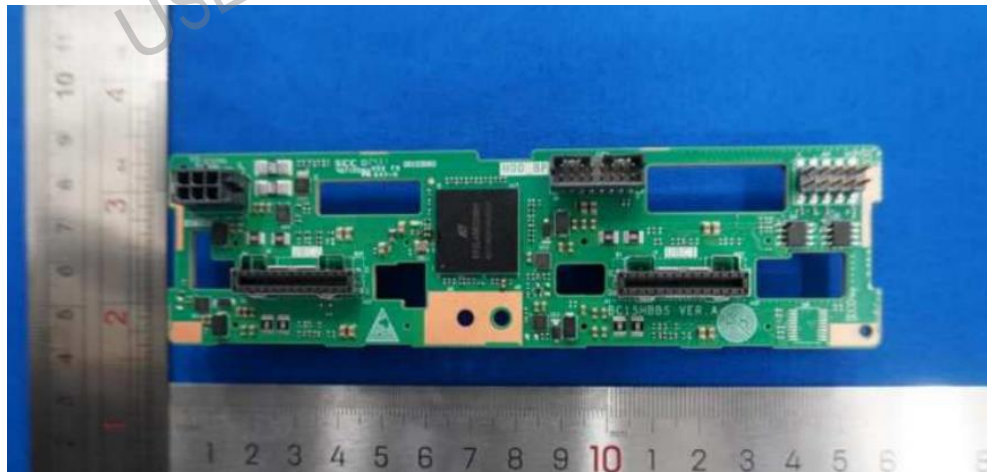


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 29: BC15HBBS

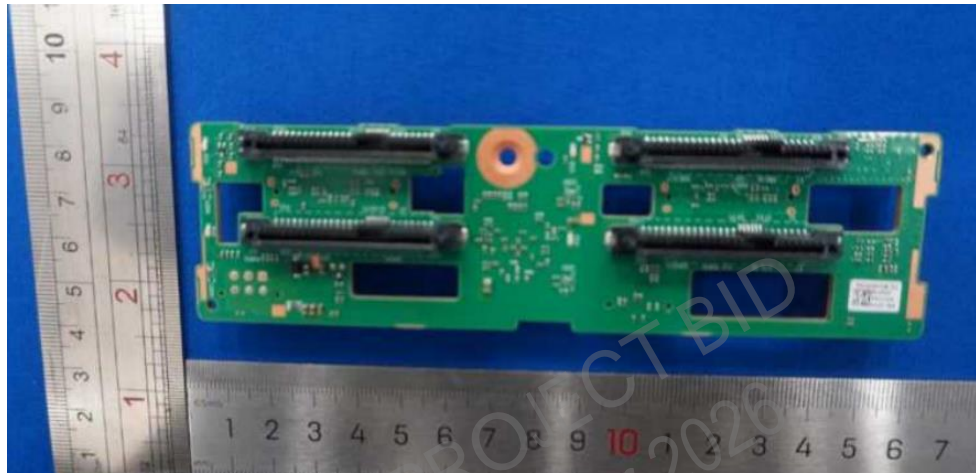


Bild / Picture 30: BC15NHBS

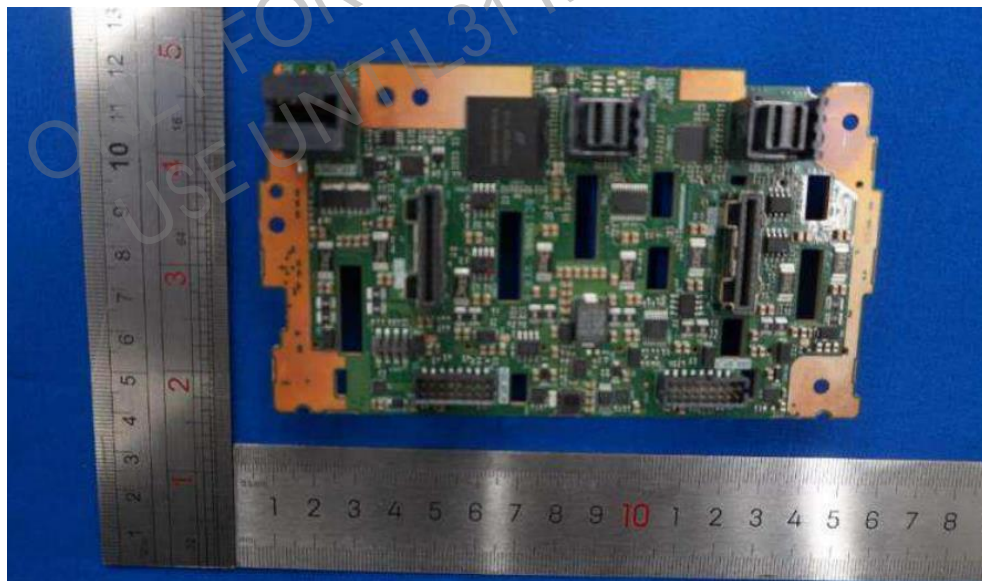


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 31: BC15NHBS

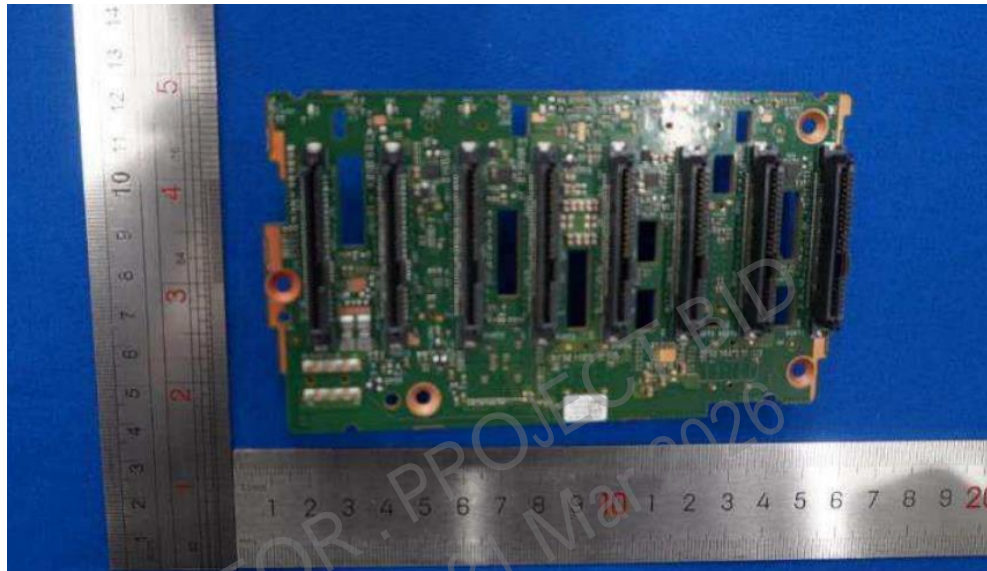


Bild / Picture 32: BC15PRUC

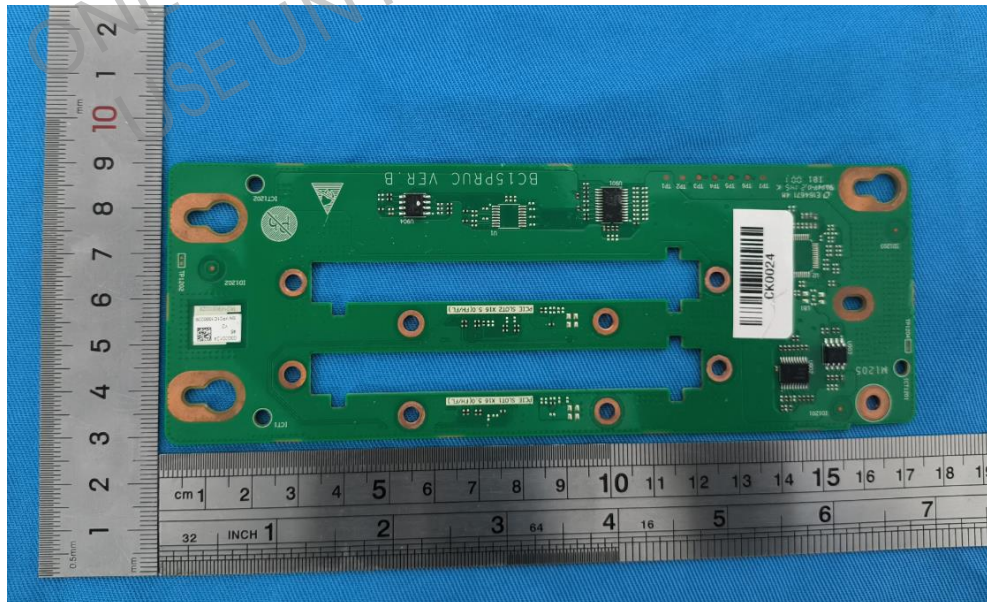


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 33: BC15PRUC

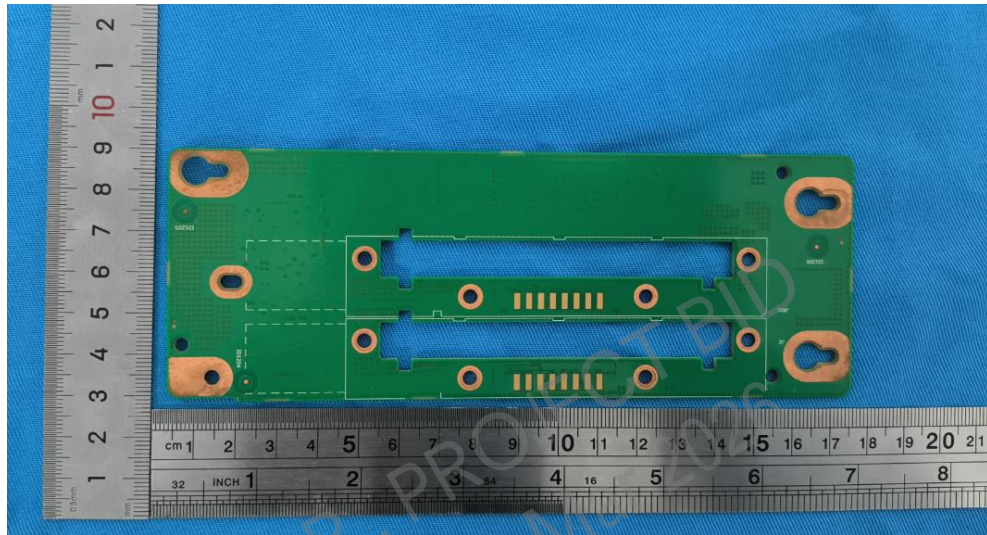


Bild / Picture 34: BC15PRUE

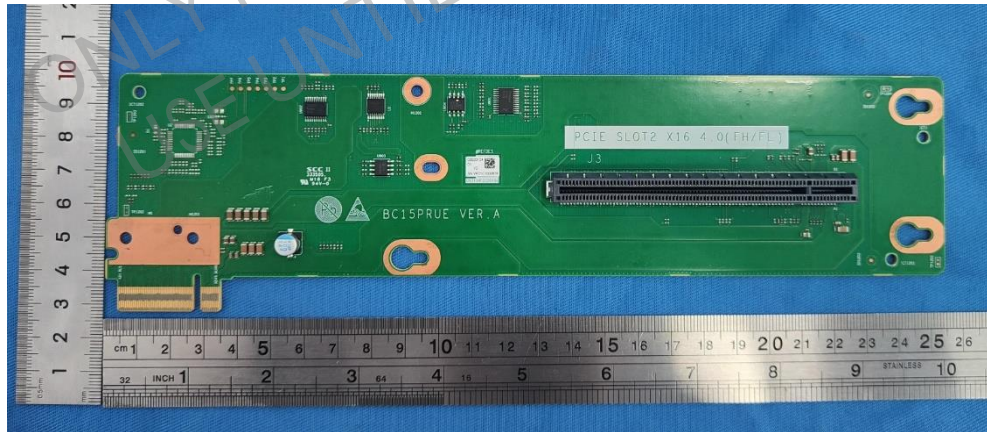


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 35: BC15PRUE

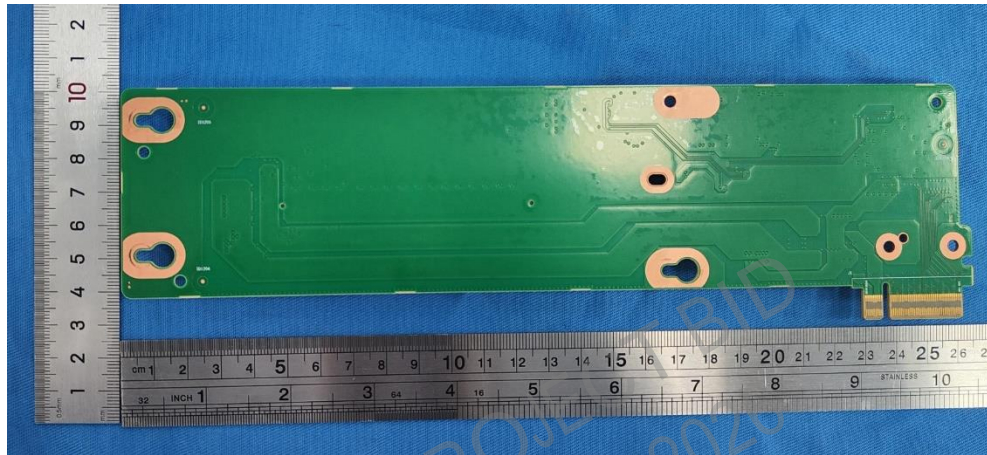


Bild / Picture 36: BC15PRUF

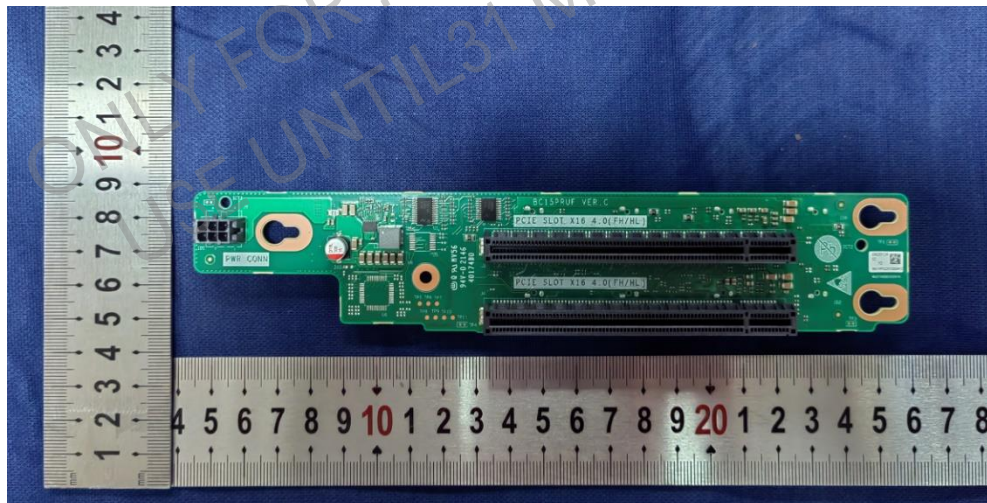


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 37: BC15PRUF

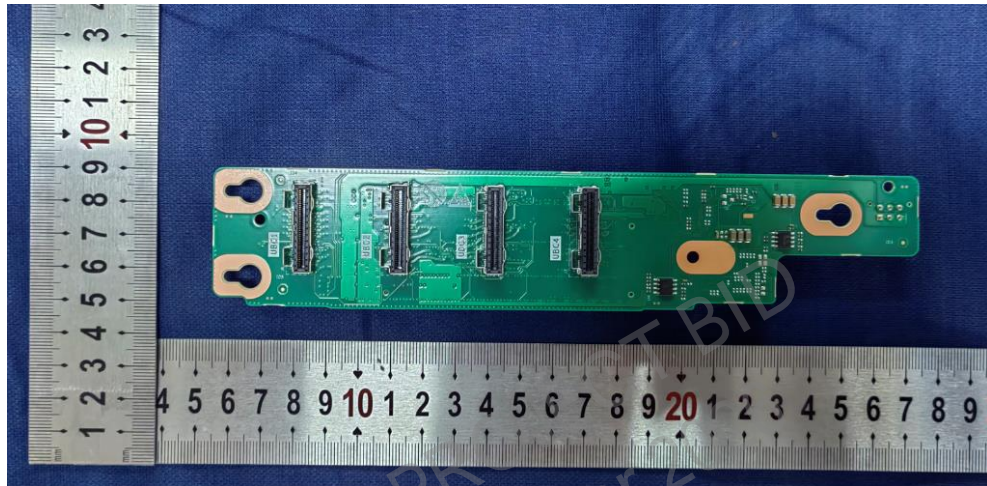


Bild / Picture 38: BC15PRUI



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 39: BC15PRUI

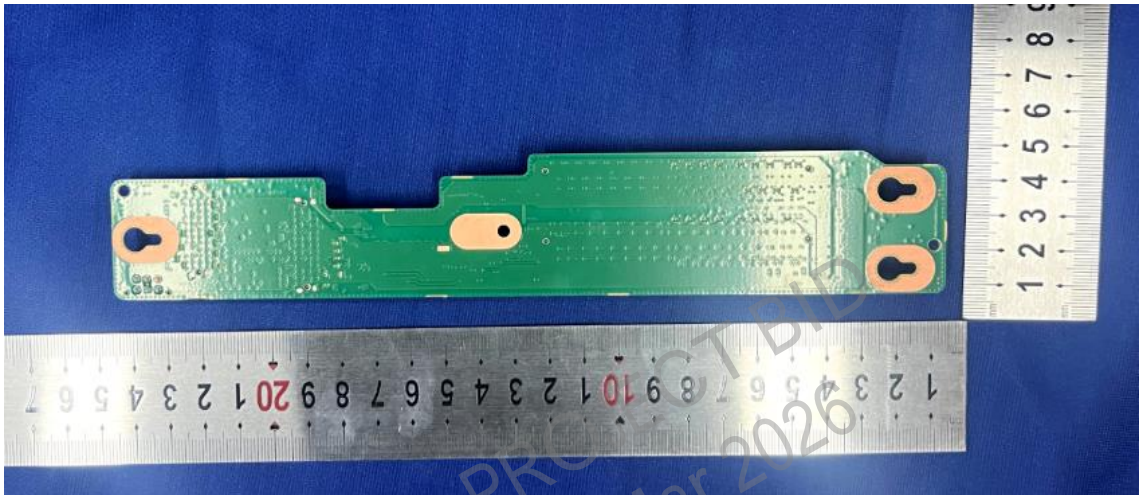


Bild / Picture 40: BC16MBSMMC



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 41: BC16MBSMMC



Bild / Picture 42: BC53ETHI(XC386)

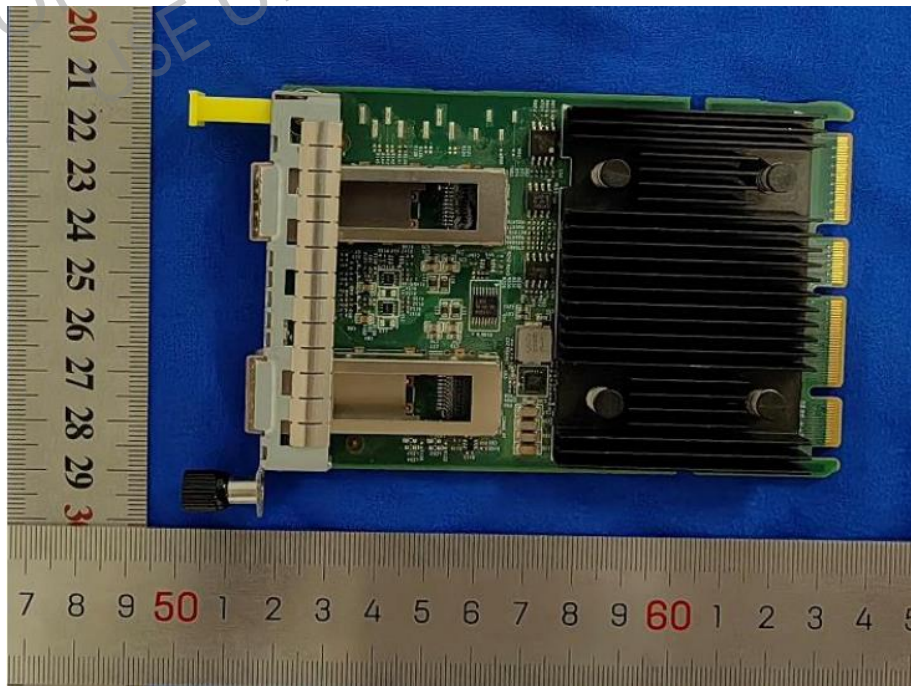


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 43: BC53ETHI(XC386)



Bild / Picture 44: BCM957414A4142CC

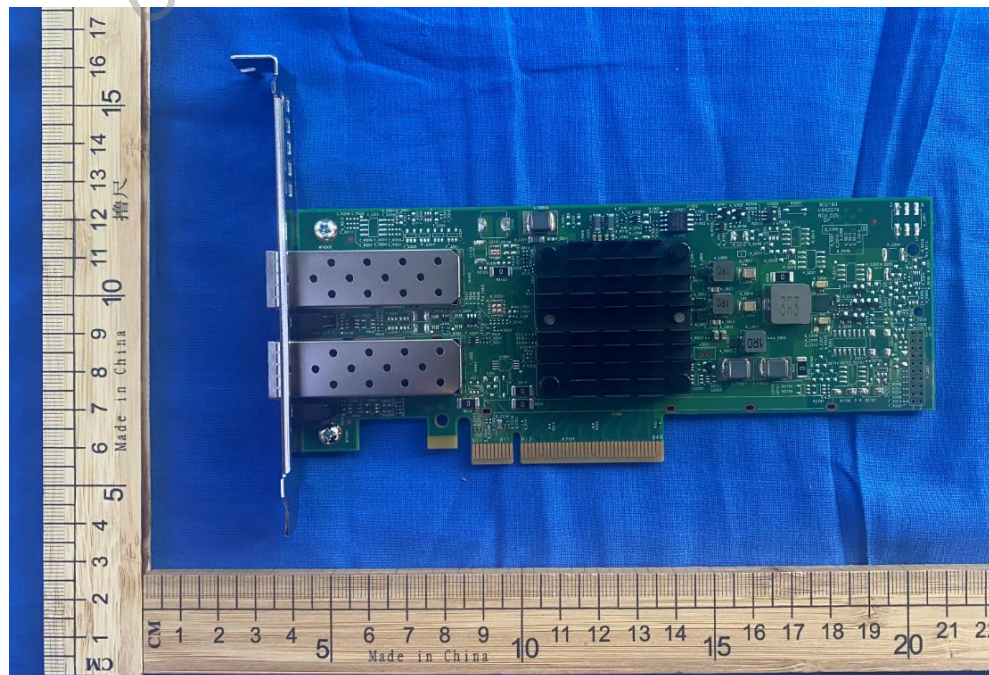


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 45: BCM957414A4142CC



Bild / Picture 46: CN211TGC1(XP212)

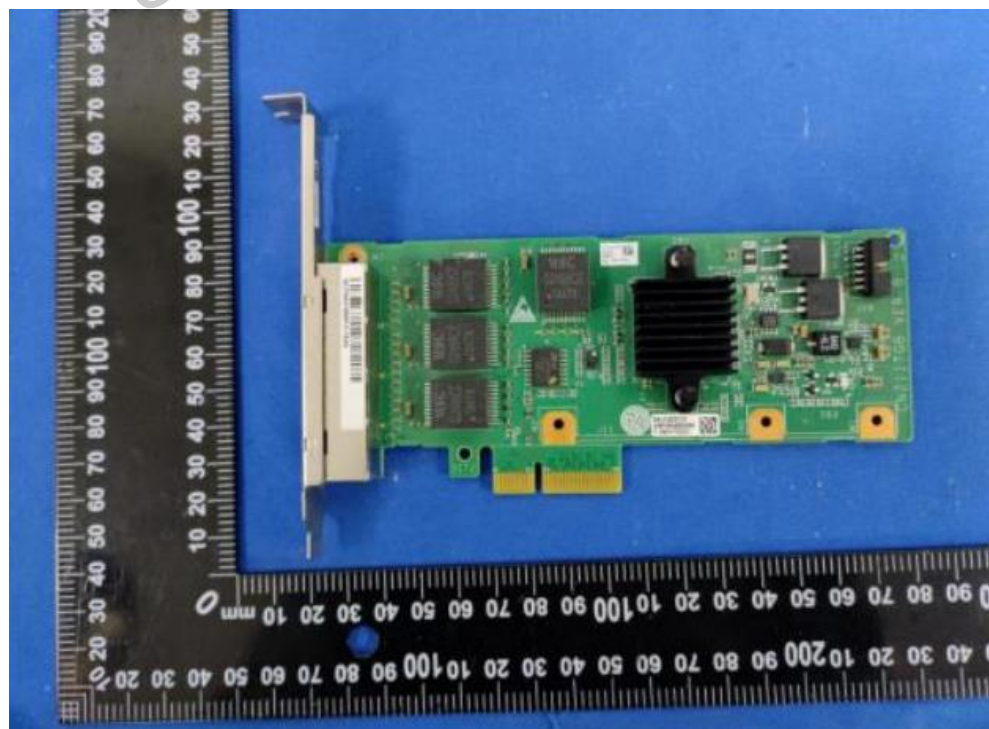


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 47: CN21ITGC1(XP212)

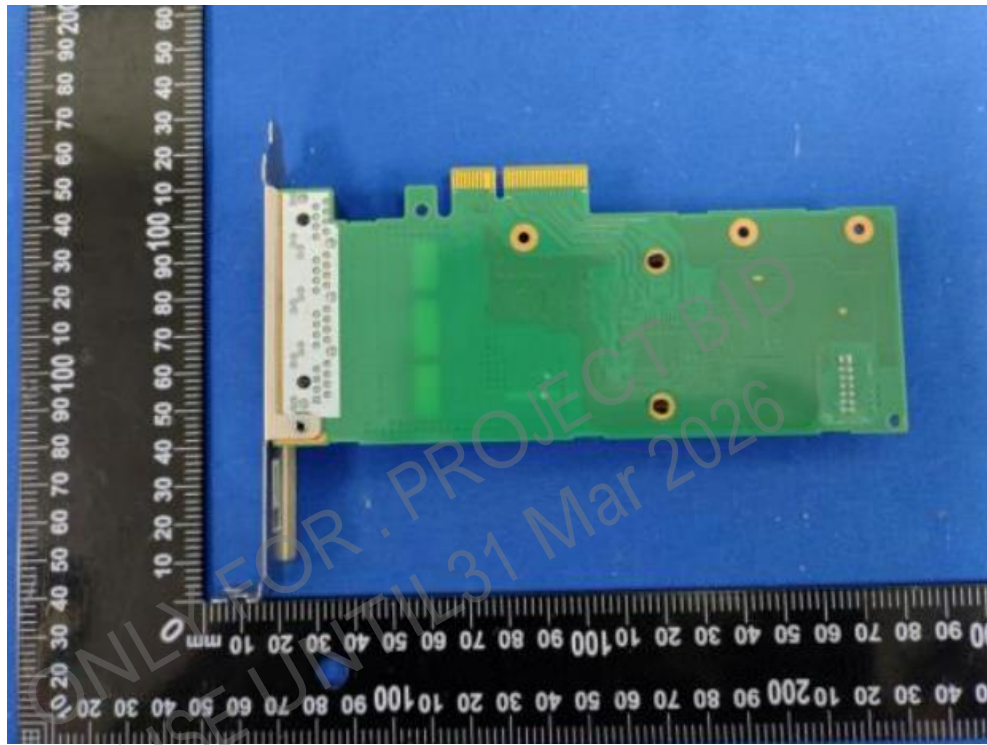


Bild / Picture 48: CN21ITGG1(XP330)

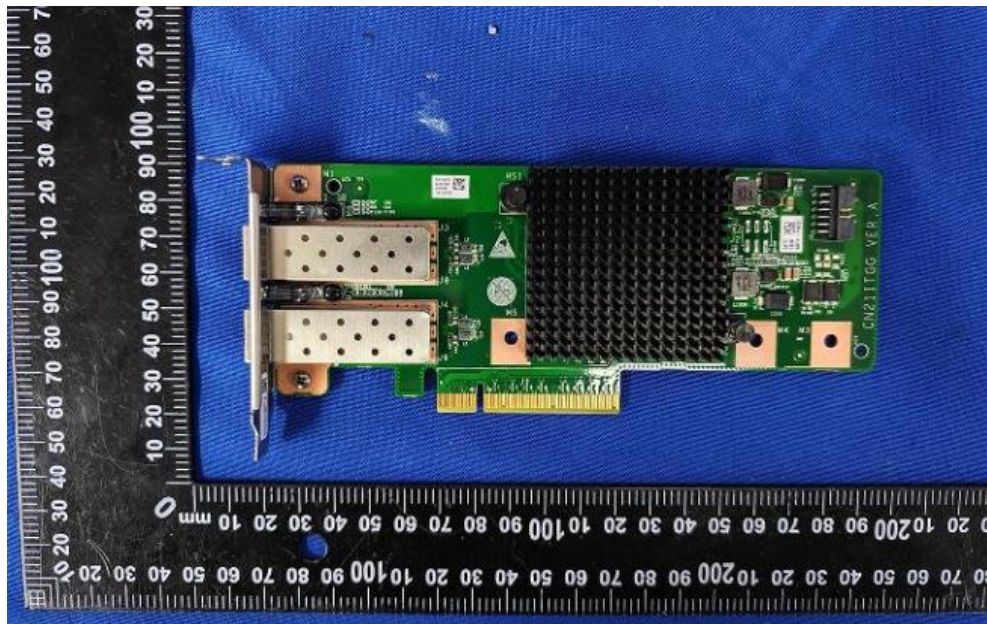


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 49: CN21ITGG1(XP330)

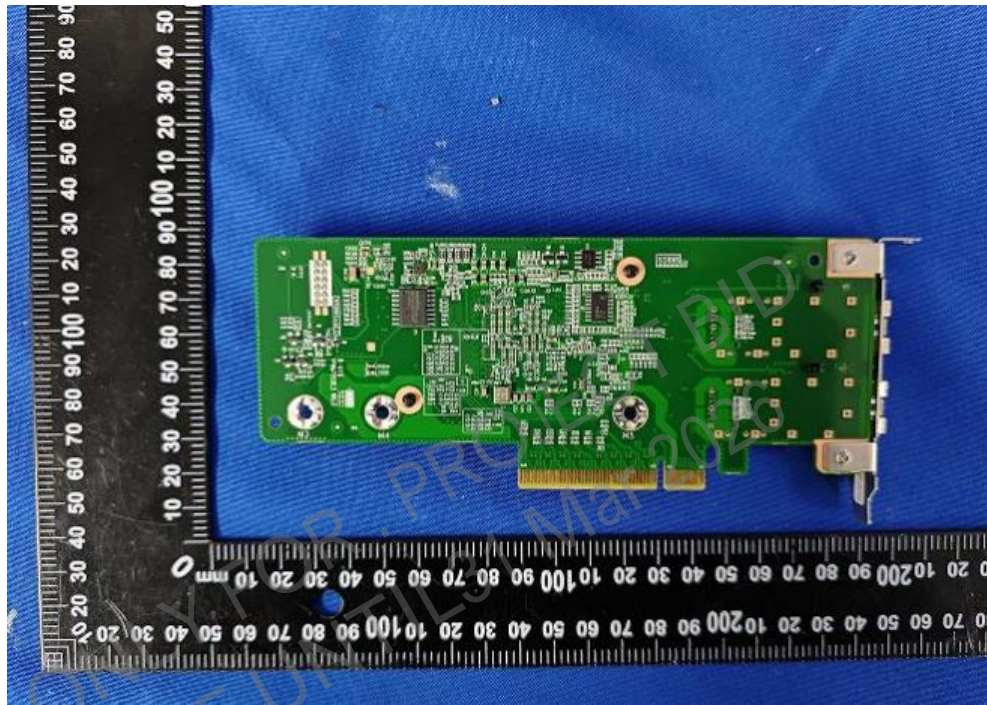


Bild / Picture 50: E810XXVDA4G2P5 99A2H8



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 51: E810XXVDA4G2P5 99A2H8

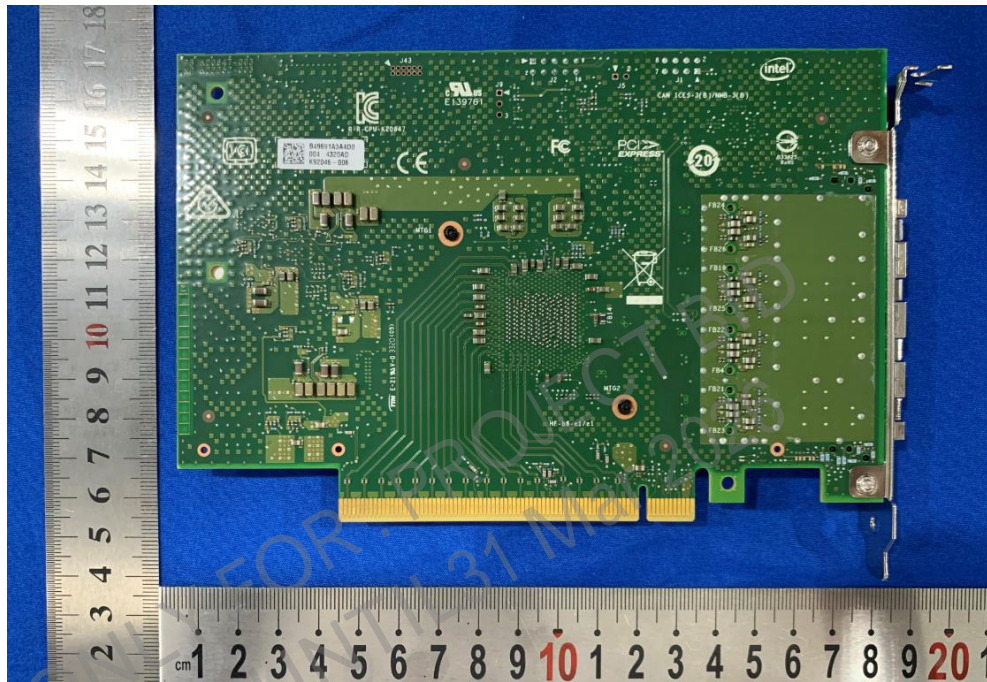


Bild / Picture 52: MCX75310AAS-NEAT

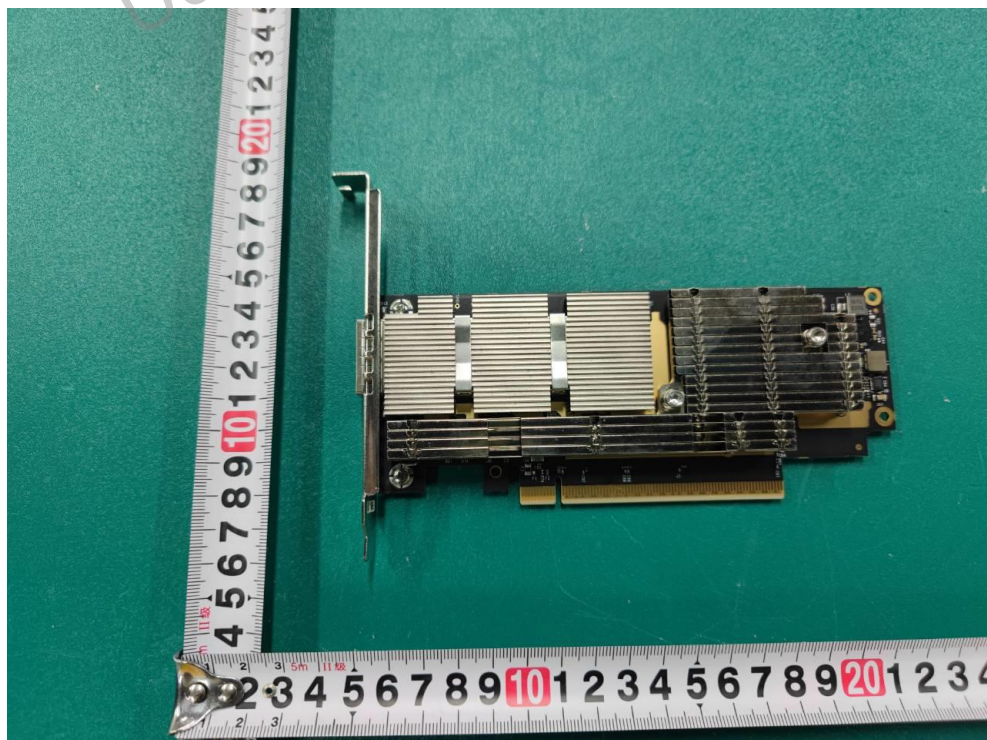


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 53: MCX75310AAS-NEAT



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 54: MCX623436AN-CDAB

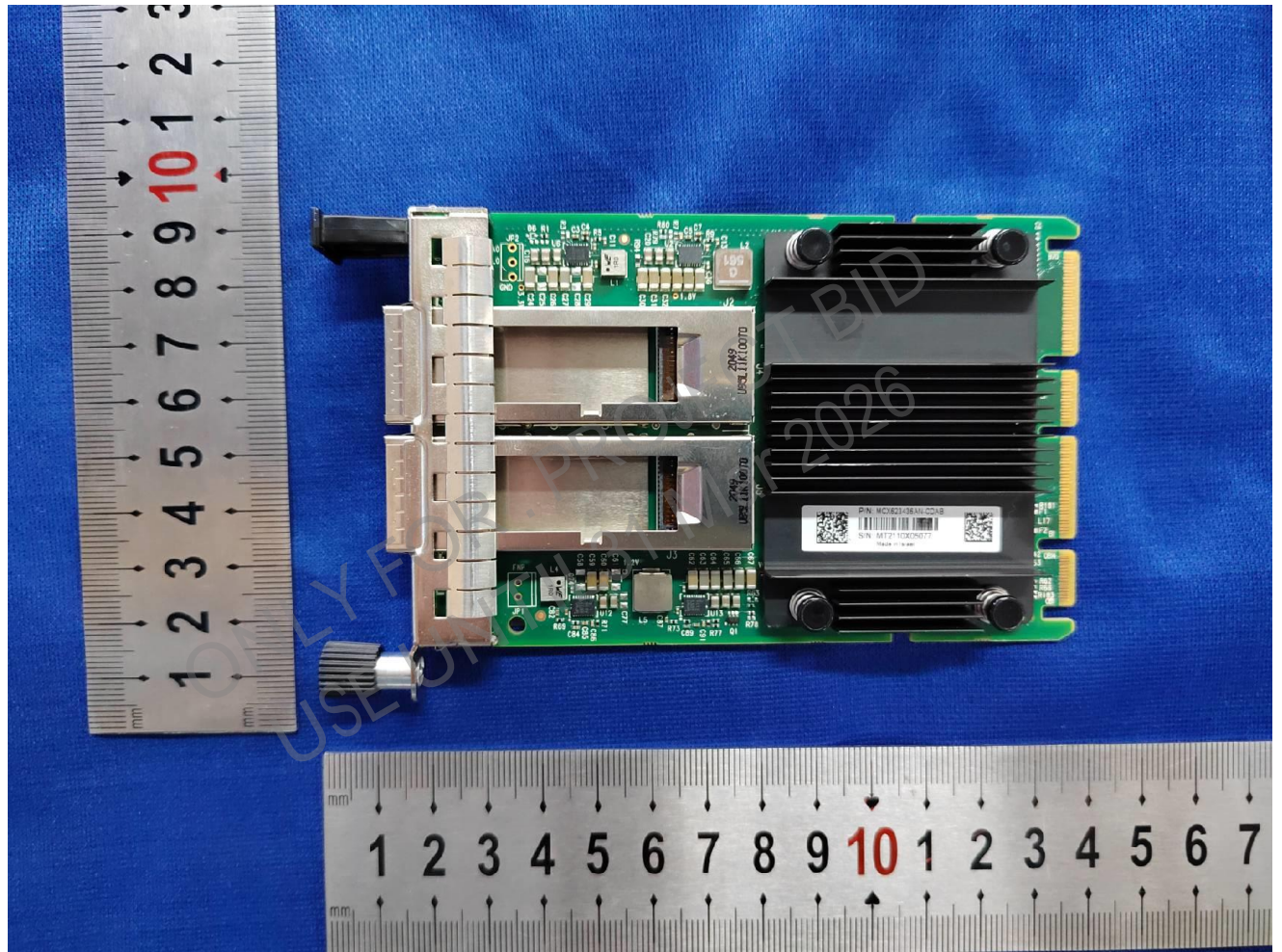


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 57: X710T2LG1P5 984718



Bild / Picture 58: PAC2000S12-T1 top view



FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 59: PAC2000S12-T1 bottom view



Bild / Picture 60: PAC2000S12-B1 top view

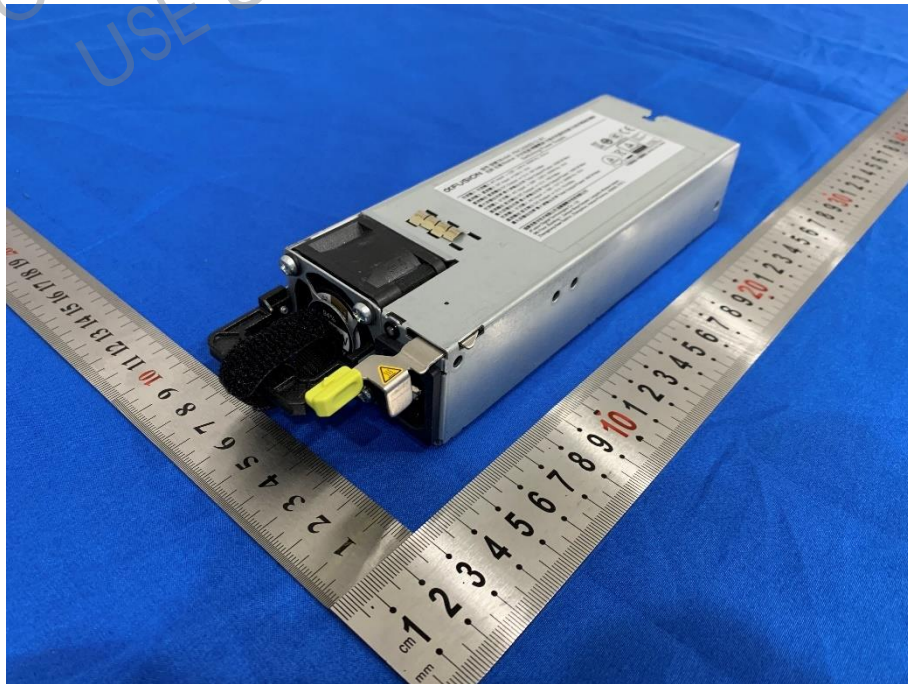


FOTO-DOKUMENTATION
PHOTO-DOCUMENTATION

Bild / Picture 61: PAC2000S12-B1 bottom view

