

Safety Test Report

Report No.: AGC04094190506ES01

PRODUCT DESIGNATION	:	Aluminium 10.000 mAh Wireless Powerbank
BRAND NAME	:	N/A
MODEL NAME		P3224.39
CLIENT	6	Xindao B.V.
DATE OF ISSUE	:	Jun. 12, 2019
STANDARD(S)	Ģ	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd.

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	TEST REPORT	
	EN 60950-1	
Inform	nation technology equipr Part 1: General requiren	
Report Reference No:	AGC04094190506ES01	
Tested by (+ signature):	Richie Fan	Richie Fan
Reviewed by (+ signature):	Byron Wang	Richie Fan Byrom Way
Approved by (+signature):	Matte He (Authorized Officer)	mette He
Date of issue:	Jun. 12, 2019	
Contents:	Total 51 pages.	
Testing laboratory		
Name:	Attestation of Global Complian	nce (Shenzhen) Co., Ltd.
Address:		dustrial Park, Chongqing Road, Heping oʻan District, Shenzhen, Guangdong, China
Testing location:	Same as above.	
Applicant		
Name:	Xindao B.V.	
Address:	P.O. Box 3082, 2280 GB, Rijsv	vijk, The Netherlands
Manufacturer		Non Ro
Name:	Xindao B.V.	
Address	P.O. Box 3082, 2280 GB, Rijsv	vijk, The Netherlands
Factory	cC o V	
Name:	Xindao B.V.	
Address	P.O. Box 3082, 2280 GB, Rijsv	vijk, The Netherlands
Test specification		
Standard:	EN 60950-1:2006+A11:2009+	A1:2010+A12:2011+A2:2013
Test procedure:	Type test	
Procedure deviation:	N/A	
Non-standard test method:	N/A	
Test Report Form/blank test report		de d'a la
Test Report Form No:	AGC60950A9	





Test Report Form(s) Originator	.: AGC				
Master TRF	.: Dated 2018-09				
Test item				C aC	
Product designation	.: Aluminium 10.0	00 mAh po	cket powerbank		
Brand name	.: N/A				
Test model	.: P324.39				
Series model	.: N/A				
Rating(s)	input. 5V === 2.	0A 2.1A , Wirel	, 18.5W ess output: 5V/1A		
Particulars		(
Equipment mobility	:		e hand-held ry for building-in	⊠transportable	
Connection to the mains		□pluggab □perman □detacha □non-det ⊠not dire	le equipment in typent connection ble power supply control to the power supply control to the supply control to the supply connected to the supply con	be Atype B ord by cord	
Operating condition	:	Continue	ous perating/ resting time		
Access location		⊠operato	r accessible access location		
Over voltage category(OVC)	<u> </u>			OVC IV Sother	
Mains supply tolerance(%) or absolu values		N/A			
Tested for IT power systems	:	Yes	No		
IT testing, phase-phase voltage(V)					
Class of Equipment	:	Class I	Class II sified	Class III	
Considered current rating of protect of the building installation (A)		N/A			
Pollution degree(PD)	:	PD 1	⊠PD2	PD3	
Protection against ingress of water	:	IPX0			
Altitude during operation (m)		2000m			
Altitude of test laboratory (m)	:	<500m			
Mass of equipment (kg)		<1Kg	S	a C	
Test case verdicts					
Test case does not apply to the test of	-	N (/A)			
Test item does meet the requirement	t:	P (ass)			
Test item does not meet the requirem	nent:	F (ail)			





Testing	
Date of receipt of test item	.: May 23, 2019
Date(s) of performance of test	.: May 24 – May 31, 2019
Attachment	
Attachment A	.: Photos of product
General remarks This report shall not be reproduced except in full with The test results presented in this report relate only to "(See remark #)" refers to a remark appended to the r	the item tested.

"(See appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator.

Report Revise Record:				
Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0		Jun. 12, 2019	Valid	Initial release

General product information

The product supplied by built-in Li-ion battery cell, and charged by Micro-B port, which is considered as transportable and Class III (supplied by SELV).

Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

The product was submitted and tested for use at the manufacturer's recommended ambient temperature (Tma) of 40°C.

Summary of testing

The test item passed.





Copy of marking plates

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

Aluminium 10.000 mAh pocket powerbank Model: P324.39 Capacity: 10000mAh, 3.7V, 18.5W Input: 5V = 2.0A Total output 10.5W Output: 5V = 2.1A, Wireless output: 5V/1A Xindao B.V. P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands Importer: XXXXXXXX Address: XXXXXXXX

Remark:

1) The CE marking and WEEE symbol (if any) should be at least 5mm and 7mm respectively in height.

2) The markings and instructions are the minimum requirements required by safety standard. For final production samples, the additional markings which do not give rise to misunderstanding may be added.

3) As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or mark and the postal address will be marked on the products before being place on the market.

4) Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.





Report No.: AGC04094190506ES01 Page 6 of 51

EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
20				
1	GENERAL		Р	
- 0				
1.5	Components		Р	
1.5.1	General		Р	
	Comply with IEC 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards. (see appended table 1.5.1)	P	
1.5.2	Evaluation and testing of components	Components which are certified to IEC/EN and/or national standards are used correctly within their ratings. Components not covered by IEC/EN standards are tested under the conditions present in the equipment.	P	
1.5.3	Thermal controls	No any thermal controls.	N	
1.5.4	Transformers	No transformers	N	
1.5.5	Interconnecting cables		N	
1.5.6	Capacitors bridging insulation	No such capacitor.	Ν	
1.5.7	Resistors bridging insulation	No such components.	N	
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N	
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N	
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains antenna or coaxial cable	NO 200 0	Ν	
1.5.8	Components in equipment for IT power systems		N	
1.5.9	Surge suppressors	No such parts.	N	
1.5.9.1	General		Ν	
1.5.9.2	Protection of VDRs		N	
1.5.9.3	Bridging of functional insulation by a VDR	0	N	
1.5.9.4	Bridging of basic insulation by a VDR		N	
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		G N	

1.6	Power interface		Р
1.6.1	AC power distribution systems	No direct mains connection.	N



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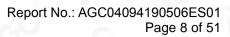


	EN 6	0950-1	
Clause	Requirement – Test	Result – Remark	Verdict
1.6.2	Input current	(See appended table 1.6.2)	Р
1.6.3	Voltage limit of hand-held equipment		N
1.6.4	Neutral conductor	Class III equipment, no neutral conductor.	Ν

1.7	Marking and instructions		
1.7.1	Power rating	See below	P
	Rated voltage(s) or voltage range(s) (V):	See marking plate.	
0	Symbol for nature of supply, for d.c. only:	See marking plate.	
	Rated frequency or rated frequency range (Hz) .:		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Rated current (mA or A):	See marking plate.	
1.7.1.2	Identification markings		Р
. GÖ	Manufacturer's name or trademark or identification mark:	See marking plate.	
	Type/model or type reference:	See marking plate.	
0	Symbol for Class II equipment only:	Class III equipment	
-,	Other marking and symbols:	See marking plate.	
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking	Provided	Р
1.7.2.1	General	See below.	Р
1.7.2.2	Disconnect devices	No such devices	N
1.7.2.3	Overcurrent protective device		<b>N</b>
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone		N
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N
1.7.4	Supply voltage adjustment:	No such devices used	N
0	Methods and means of adjustment; reference to installation instructions:	· · · · ·	N
1.7.5	Power outlets on the equipment:		N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference):	Nov Nov	C N
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals:	Class III equipment, no protective earthing	N
1.7.7.2	Terminal for a.c. mains supply conductors		N



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	EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict		
1.7.7.3	Terminals for d.c. mains supply conductors		N		
1.7.8	Controls and indicators		Р		
1.7.8.1	Identification, location and marking:	It is obviously unnecessary.	N		
1.7.8.2	Colours:	The colours used for LED are indicating function. No safety consideration.	P		
1.7.8.3	Symbols according to IEC 60417:		N		
1.7.8.4	Markings using figures:	Not applicable.	Ν		
1.7.9	Isolation of multiple power sources:	No direct connection to mains supply	G N		
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices used inside battery pack are not adjustable during normal use.	N		
1.7.11	Durability	The marking withstands required tests.	Р		
1.7.12	Removable parts	No such parts.	Ν		
1.7.13	Replaceable batteries	Non-replaceable battery	N		
0	Language(s):				
1.7.14	Equipment for restricted access locations:		N		

2	PROTECTION FROM HAZARDS		Р
2.1	Protection from electric shock and energy hazards	No hazardous parts in operator access areas.	Р
2.1.1	Protection in operator access areas		Р
2.1.1.1	Access to energized parts	No energized parts.	Р
	Test by inspection:		
	Test with test finger(Figure 2A):	Nº GU C	
<u>©</u>	Test with test pin (Figure 2B):	G AN AG	
0	Test with test probe (Figure 2C):	- Cu o F	
2.1.1.2	Battery compartments:		N
2.1.1.3	Access to ELV wiring		Ν
5	Working voltage (Vpeak or Vrms); minimum distance (mm) through insulation		
2.1.1.4	Access to hazardous voltage circuit wiring		N
2.1.1.5	Energy hazards:		Р
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment	No primary circuit.	N
	Time-constant (s); measured voltage (V):		



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## Report No.: AGC04094190506ES01 Page 9 of 51

	EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict	
2.1.1.8	Energy hazards – d.c. mains supply	Not directly connect to mains supply	N	
6	a)Capacitor connected to the d.c. mains supply		N	
<u>_</u> GC	b)Internal battery connected to the d.c. mains supply:		N	
2.1.1.9	Audio amplifiers:	No any amplifiers	N	
2.1.2	Protection in service access areas		N	
2.1.3	Protection in restricted access locations	GY G	N	

2.2	SELV circuits		Р
2.2.1	General requirements	42.4V peak or 60VDC are not exceeded in SELV circuit under normal operation or single fault condition.	Р
2.2.2	Voltages under normal conditions (V)	Within SELV limits.	Р
2.2.3	Voltages under fault conditions (V):	Within SELV limits.	Р
2.2.4	Connection of SELV circuits to other circuits:		N

2.3	TNV circuits		N
2.3.1	Limits	No TNV circuits.	N
0	Type of TNV circuits:		N
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions:		N
2.3.3	Separation from hazardous voltages		N
-,0	Insulation employed	C ·	N
2.3.4	Connection of TNV circuits to other circuits		N
0	Insulation employed		N
2.3.5	Test for operating voltages generated externally	C o F	N

2.4	Limited current circuits		N
2.4.1	General requirements	No limited current circuits to be evaluated.	Ν
2.4.2	Limit values		Ν
	Frequency (Hz)		Ν





EN 60950-1			
Clause	Requirement – Test Result – Remark		Verdict
1	Measured current (mA):	Nº se	N
	Measured voltage (V):		N
- 0	Measured capacitance (nF or µF):	- G	Ν
2.4.3	Connection of limited current circuits to other circuits	No so so	N

2.5	Limited power sources		Р
	a)Inherently limited output		Р
0	b)Impedance limited output		N N
	c)Regulating network limited output under normal operating and single fault condition	See appended table 2.5.	Р
	d)Overcurrent protective device limited output		N
~	Max. output voltage (V), max. output current (A), max. apparent power (VA):	See appended table 2.5.	
20	Current rating of overcurrent protective device (A)		N
	Use of integrated circuit (IC) current limited		N

2.6	Provisions for earthing and bonding		Ν
2.6.1	Protective earthing	Class III equipment.	N
2.6.2	Functional earthing	C · · · ·	N N
. 6	Use of symbol for functional earthing:		N
2.6.3	Protective earthing and protective bonding conductors	No co	C N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
0	Rated current (A), cross-sectional area (mm2), AWG:	A A A	N
2.6.3.3	Size of protective bonding conductors	cG c	N
	Rated current (A), cross-sectional area (mm2), AWG:	NO NO	N
2.6.3.4	Resistance of earthing conductors and their terminations, resistance( $\Omega$ ), voltage drop(V),test current (A), duration(min):		N N
2.6.3.5	Colour of insulation:		<b>N</b>
2.6.4	Terminals		Ν
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N





	EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict		
P.C	Rated current (A), type and nominal thread diameter (mm):	A BO SO	C N		
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N		
2.6.5	Integrity of protective earthing		N		
2.6.5.1	Interconnection of equipment		N		
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N		
2.6.5.3	Disconnection of protective earth		Ν		
2.6.5.4	Parts that can be removed by an operator		N		
2.6.5.5	Parts removed during servicing		N		
2.6.5.6	Corrosion resistance		N		
2.6.5.7	Screws for protective bonding		N		
2.6.5.8	Reliance on telecommunication network or cable distribution system		N		

2.7	Overcurrent and earth fault protection in primary circuits		N
2.7.1	Basic requirements	Class III equipment.	N
0	Instructions when protection relies on building installation	· > > >0	N
2.7.2	Faults not covered in 5.3.7	.C	N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices:		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel:		N

2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation	C	N
< <u>C</u>	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding	C. · · ·	N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm)		N
2.8.7.2	Overload test		N





## Report No.: AGC04094190506ES01 Page 12 of 51

	EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict		
2.8.7.3	Endurance test		N		
2.8.7.4	Electric strength test		N		
2.8.8	Mechanical actuators		N		

2.9	Electrical insulation		Ν
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	N
2.9.2	Humidity conditioning		Ν
0	Humidity (%),temperature (°C):		N
2.9.3	Grade of insulation	G a la	N
2.9.4	Separation from hazardous voltages		N
	Method(s) used:		N

2.10	Clearances, creepage distances and distances	through insulation	Ν
2.10.1	General	Functional insulation only.	N
0	Frequency		N
.0	Pollution degrees		N
~ ~	Reduced values for functional insulation		N
0	Intervening unconnected conductive parts		N
	Insulation with varying dimensions	U C	N
10	Special separation requirements		N
	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Mains transient voltages		N
.0	a)AC mains supply	GG C	N
	b)Earthed d.c. mains supplies		N
0	c)Unearthed d.c. main supplies		N
1	d)Battery operation	G · F	N
2.10.3.3	Clearances in primary circuits		N
2.10.3.4	Clearances in secondary circuits		<b>N</b>
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply		N
2.10.3.7	Transients from d.c. mains supply:		N





EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.3.8	Transients from telecommunication networks and cable distribution systems	AC NOV	C N
2.10.3.9	Measurement of transient voltage levels		N
200	a)Transients from a mains supply		N
	For a.c. mains supply		N
0	For d.c. mains supply		N
30	b)Transients from	G G O	N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and comparative tracking index		N
S	CTI tests		N
2.10.4.3	Minimum creepage distances		N
2.10.5	Solid insulation		N
2.10.5.1	General		N
2.10.5.2	Distances through insulation		N
2.10.5.3	Insulation compound as solid insulation		N
2.10.5.4	Semiconductor device	G a a	N
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material - General		N
2.10.5.7	Separable thin sheet material	C	N
0	Number or layers(pcs):	No c	N
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test	- 6 ² C	Ν
2.10.5.10	Thin sheet material – alternative test procedure		N
-	Electric strength test		N
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		Ν
0	Working voltage:	• F N	N
-	a)Basic insulation not under stress:	O a la	N
0	b)Basic, supplementary, reinforced insulation:		N
	c)Compliance with Annex U:		N
20	Two wires in contact inside wound component; angle between 45° and 90°:		N
2.10.5.13	Wire with solvent-based enamel in wound components	A NO NO	N





	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
2	Electric strength test		N
	Rountine test		N
2.10.5.14	Additional insulation in wound components		Ν
NO.	Working voltage	No co	N
	-basic insulation not under stress:		N
- 61	-Supplementary, reinforced insulation:		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards		Ν
2.10.6.2	Coated printed boards	0 0 0	N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	N
2.10.6.4	Insulation between conductors on different layers of a printed board	- AN AC	N
	Distance through insulation		Ν
	Number of insulation layers(pcs)		N
2.10.7	Component external terminations		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning	C • F · · ·	N N
2.10.8.3	Electric strength test		Ν
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound	200 - C	Ν
2.10.11	Test for semiconductor devices and cemented joints	AN ROTING	N
2.10.12	Enclosed and sealed parts		N

3	WIRING, CONNECTIONS AND SUPPLY		Р
3.1	General	C · · · ·	Р
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring. No internal wire for primary power distribution.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges that could damage the insulation and cause hazard.	Р
3.1.3	Securing of internal wiring	Internal wiring is reliable secured	Р





	EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict		
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	P		
3.1.5	Beads and ceramic insulators		Ν		
3.1.6	Screws for electrical contact pressure		N		
3.1.7	Insulating materials in electrical connections		N		
3.1.8	Self-tapping and spaced thread screws		N		
3.1.9	Termination of conductors		Р		
	10 N pull test		Р		
3.1.10	Sleeving on wiring	No sleeving used to provide supplementary insulation	N		

3.2	Connection to a mains supply		N
3.2.1	Means of connection:	Class III equipment	N
3.2.1.1	Connection to an a.c. mains supply		N
3.2.1.2	Connection to a d.c. mains supply	N 10 20	Ν
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment	de é .	N
	Number of conductors, diameter (mm) of cable and conduits	No you	
3.2.4	Appliance inlets	G S S	N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
0	Туре:		
SC	Rated current (A), cross-sectional area (mm ² ), AWG:	200 - C	
3.2.5.2	DC power supply cords	Non all	N
3.2.6	Cord anchorages and strain relief		N
30	Mass of equipment (kg), pull (N)	GU G O	
	Longitudinal displacement (mm):		
3.2.7	Protection against mechanical damage		Ν
3.2.8	Cord guards		N
20	D (mm); test mass (g):		
	Radius of curvature of cord (mm):		
3.2.9	Supply wiring space		N

3.3

Wiring terminals for connection of external conductors

N





	EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict		
3.3.1	Wiring terminals		N		
3.3.2	Connection of non-detachable power supply cords		N		
3.3.3	Screw terminals		N		
3.3.4	Conductor sizes to be connected	No all	N		
C	Rated current (A), cord/cable type, cross-sectional area (mm ² )	20			
3.3.5	Wiring terminal sizes		N		
8	Rated current (A), type and nominal thread diameter (mm):				
3.3.6	Wiring terminals design		N		
3.3.7	Grouping of wiring terminals		N		
3.3.8	Stranded wire		N		

3.4	Disconnection from the mains supply		N
3.4.1	General requirement	Class III equipment	N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords	C. · · · ·	N
3.4.6	Single-phase equipment and d.c. equipment		N
3.4.7	Three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N

3.5	Interconnection of equipment		Р
3.5.1	General requirements		Р
3.5.2	Types of interconnection circuits	SELV circuit only.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N
3.5.4	Data ports for additional equipment		N

4	PHYSICAL REQUIREMENTS	60 .0	P
4.1	Stability		N
	Angle of 10°	C °	N



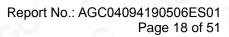


## Report No.: AGC04094190506ES01 Page 17 of 51

EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
20	Test: force (N)	Nº . Gº	N	
			6	
4.2	Mechanical strength		Р	
4.2.1	General	See below	Р	
	Rack-mounted equipment.		N	
4.2.2	Steady force test, 10 N		N	
4.2.3	Steady force test, 30 N		N	
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. No energy or other hazards.	Р	
4.2.5	Impact test	G C I	N	
<u>.</u> C	Fall test		N	
	Swing test		N	
4.2.6	Drop test; height(m):	1m; No damage of the enclosure, no energy hazards or damage to enclosure integration after the test.	Р	
4.2.7	Stress relief test	76℃, 7hours, no hazard.	Р	
4.2.8	Cathode ray tubes	No cathode ray tube.	N	
3	Picture tube separately certified:		N	
4.2.9	High pressure lamps	No high pressure lamp	Ν	
4.2.10	Wall or ceiling mounted equipment; force (N):		N	

4.3	Design and construction		Р
4.3.1	Edges and corners	Edges and corners are rounded.	Р
4.3.2	Handles and manual controls; force (N)		N
4.3.3	Adjustable controls	No such adjustable control.	Ν
4.3.4	Securing of parts	No loosening of parts is likely to occur.	Р
4.3.5	Connection of plugs and sockets	IEC60083 and IEC60320 connectors are not used in equipment.	P
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N
- (	Torque:		Ν
	Compliance with the relevant mains plug standard		G N
4.3.7	Heating elements in earthed equipment	No heating elements.	N
4.3.8	Batteries		Р
F	-Overcharging of a rechargeable battery	(see appended table 4.3.8)	Р





EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
Nº	-Unintentional charging of a non-rechargeable battery	Rechargeable li-ion cell	C N
روث	-Reverse charging of a rechargeable battery	Cell polarity cannot be reversed according to the design of enclosure and connecter	N
	-Excessive discharging rate for any battery	(see appended table 4.3.8)	Р
4.3.9	Oil and grease	No Oil and grease.	N
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N
4.3.11	Containers for liquids or gases	No containers for liquids or gases	Ν
4.3.12	Flammable liquids:	The equipment does not contain flammable liquid.	N
- C	Quantity of liquid (I):		N
	Flash point (°C):		N
4.3.13	Radiation; type of radiation:		P
4.3.13.1	General		Р
4.3.13.2	Ionizing radiation	No ionizing radiation	N
8	Measured radiation (pA/kg):		
-,0	Measured high-voltage (kV)		
	Measured focus voltage (kV):		
0	CRT markings		
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet radiation	N
NO	Part, property, retention after test, flammability classification	De co	N
4.3.13.4	Human exposure to ultraviolet (UV) radiation:		N
4.3.13.5	Lasers (including laser diodes) and LEDs	LEDs for indicator only	Р
4.3.13.5.1	Lasers (including laser diodes)		Ν
ē.	Laser class:		
4.3.13.5.2	Light emitting diodes (LEDs)	G	
4.3.13.6	Other types:		N

4.4	Protection against hazardous moving parts		N
4.4.1	General	No hazardous moving parts.         on in operator access areas         old and home/office document/media         ors         on in restricted access locations	N
4.4.2	Protection in operator access areas		N
-	Household and home/office document/media shredders		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N



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## Report No.: AGC04094190506ES01 Page 19 of 51

EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
- 0	Not considered to cause pain or injury. a):	G C	N
0	Is considered to cause pain, not injury. b):		N
	Considered to cause injury. c):		N
4.4.5.2	Protection for users	- C	N
2	Use of symbol or warning:		N
4.4.5.3	Protection for service persons		N
6	Use of symbol or warning:		N

4.5	Thermal requirements		Р
4.5.1	General		Р
4.5.2		Р	
20	Normal load condition per Annex L	Nº GU C	
4.5.3	Temperature limits for materials	(see appended table 4.5)	Р
4.5.4	Touch temperature limits	(see appended table 4.5)	Р
4.5.5	Resistance to abnormal heat	No thermoplastic parts on which parts at hazardous voltage are directly mounted.	N

4.6	Openings in enclosures		Ν
4.6.1	Top and side openings		N
0	Dimensions (mm):		
4.6.2	Bottoms of fire enclosures	C F	N
No.	Construction of the bottom:		
4.6.3	Doors or covers in fire enclosures	No doors and covers	Ν
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions(mm):		N
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		Ν
4.6.5	Adhesives for constructional purposes	No adhesives for constructional purpose.	N
	Conditioning temperature (°C), time (weeks):		

4.7 Resistance to fire



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Ρ



EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.1	Reducing the risk of ignition and spread of flame	Use of plastic with the required flammability classes.	P
	Method 1, selection and application of components wiring and materials	Method 1 used	Р
20-	Method 2, application of all of simulated fault condition tests	No No No	N
4.7.2	Conditions for a fire enclosure	See appended table 1.5.1	Р
4.7.2.1	Parts requiring a fire enclosure	Fire enclosure used	Р
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		Р
4.7.3.1	General		Р
4.7.3.2	Materials for fire enclosures	See appended table 1.5.1	P
4.7.3.3	Materials for components and other parts outside fire enclosures	- AV NG	N
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2 or better.	Р
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N
4.7.3.6	Materials used in high-voltage components	No high voltage components.	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMA	L CONDITIONS P
5.1	Touch current and protective conductor current	N
5.1.1	General	C N
5.1.2	Equipment under test (EUT)	N
5.1.2.1	Single connection to an a.c. mains supply	N
5.1.2.2	Redundant multiple connections to an a.c. mains supply	N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	N
5.1.3	Test circuit	N
5.1.4	Application of measuring instrument	N
5.1.5	Test procedure	S N
5.1.6	Test measurements	N
<u></u>	Test voltage (V):	N
	Measured touch current (mA):	C N
C	Max. allowed touch current (mA):	N
~~C	Measured protective conductor current (mA):	N
	Max. allowed protective conductor current (mA) .:	N
5.1.7	Equipment with touch current exceeding 3.5 mA :	N



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EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.1.7.1	General		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	NOC SC L	N
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	GO TO PO	N
	Test voltage (V):		N
0	Measured touch current (mA):		N N
1	Max. allowed touch current (mA):		N
5.1.8.2	Summation of touch currents from telecommunication networks	NOT SC	N
0	a)EUT with earthed telecommunication ports:		N
NOC N	b)EUT whose telecommunication ports have no reference to protective earth	NO	N

5.2	Electric strength		N
5.2.1	General	Class III equipment	N
5.2.2	Test procedure		N

5.3	Abnormal operating and fault conditions		Р
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	С Р
5.3.2	Motors		N
5.3.3	Transformers	No transformers	N
5.3.4	Functional insulation:	See appended table 5.3. Complies with c)	Р
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE:		N
5.3.7	Simulation of faults	Result see appended table 5.3.	Р
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions	No flame emitted, no molten material emitted, no deformation of enclosure	Р
5.3.9.1	During the tests	No hazards.	Р
5.3.9.2	After the tests	No fire, no danger.	Р

6

# CONNECTION TO TELECOMMUNICATION NETWORKS

Ν



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## Report No.: AGC04094190506ES01 Page 22 of 51

EN 60950-1				
Clause	ause Requirement – Test Result – Remark		Verdict	
6.1	Protection of telecommunication network serve equipment connected to the network, from has		O N	
6.1.1	.1 Protection from hazardous voltages		N	
6.1.2	Separation of the telecommunication network from earth		N	
6.1.2.1	Requirements		N	
0	Test voltage (V)			
30	Current in the test circuit (mA)	G - G ·		
6.1.2.2	Exclusions		N	

6.2	Protection of equipment users from over	ervoltages on telecommunication networks	N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test	No insulation breakdown	Ν
6.2.2.3	Compliance criteria	Compliance	Ν

6.3	Protection of the telecommunication wiring system from overheating	
	Max. output current (A):	- 20
0	Current limiting method	

7	CONNECTION TO CABLE DISTRIBUTION SYST	EMS	○ N
7.1	General		O N
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	NOC SC LC	N
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		<b>N</b>
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N





EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
Α	ANNEX A, TESTS FOR RESISTANCE TO HEAT	AND FIRE	N	
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)			
A.1.1	Samples:			
Ø	Wall thickness (mm):			
A.1.2	Conditioning of samples; temperature (°C)::		N	
A.1.3	Mounting of samples:		N	
A.1.4	Test flame (see IEC 60695-11-3)	•	N	
1	Flame A, B, C or D:	G		
A.1.5	Test procedure		◎ N	
A.1.6	Compliance criteria		O N	
6	Sample 1 burning time (s):			
60	Sample 2 burning time (s):			
	Sample 3 burning time (s):			
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)			
A.2.1	Samples, material:			
8	Wall thickness (mm):			
4.2.2	Conditioning of samples		N	
A.2.3	Mounting of samples:	Nº cG	N	
A.2.4	Test flame (see IEC 60695-11-4)		₩ N	
- 0	Flame A, B or C:			
A.2.5	Test procedure		N	
A.2.6	Compliance criteria		N	
Č.	Sample 1 burning time (s):			
3	Sample 2 burning time (s):	G C O		
	Sample 3 burning time (s):			
A.2.7	Alternative test acc. To IEC 60695-2-2, cl. 4 and 8	G S S	C N	
N.C	Sample 1 burning time (s):			
	Sample 2 burning time (s):			
6	Sample 3 burning time (s):			
4.3	Hot flaming oil test (see 4.6.2)		N	
A.3.1	Mounting of samples		N	





# Report No.: AGC04094190506ES01 Page 24 of 51

	EN 60950-	1	
Clause	Requirement – Test	Result – Remark	Verdict
A.3.2	Test procedure		Ν
A.3.3	Compliance criterion		N
-0			
В	ANNEX B, MOTOR TESTS UNDER ABNORMAL 5.3.2)	CONDITIONS (see 4.7.2.2 and	N
B.1	General requirements		Ň
3	Position:	S C	
	Manufacturer:		
0	Туре:		
	Rated values:		
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days):		
~	Electric strength test: test voltage (V):		
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		Ν
B.6.2	Test procedure	C c i	N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V)		N
B.7	Locked-rotor overload test for d.c. motors in secon	ndary circuits	Ν
B.7.1	Test procedure		N
B.7.2	Alternative test procedure; test time (h):	N 10 - 0	Ν
B.7.3	Electric strength test		N
B.8	Test for motors with capacitors	G S	N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
1	Operating voltage (V):	C o F i	

С	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position:	No transformers	
	Manufacturer:		
N.	Туре:	N 10 10	
0	Rated values:		





## Report No.: AGC04094190506ES01 Page 25 of 51

Ν

	EN 60950-1		
Clause	Requirement – Test Result – Remark		Verdict
N	Method of protection:		
C.1	Overload test		Ν
C.2	Insulation	- G	Ν
20-	Protection from displacement of windings:		Ν

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)	N
D.1	Measuring instrument	Ν
D.2	Alternative measuring instrument	Ν

E	ANNEX E, TEM	PERATURE RIS	SE OF A V	VINDING (s	ee 1.4.13)		N	
No.	~GU	- 6	8			~GU	- 6	

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES
	(see 2.10)

G	ANNEX G, ALTERNATIVE METHOD FOR DETER	MINING MINIMUM CLEARANCES	Ν
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V):	C a l	N
G.2.1	AC mains supply		N
G.2.2	DC mains supply	Pr NOV	N
G.2.3	Unearthed DC mains supply:		Ν
G.2.4	Battery operation:		N
G.3	Determination of telecommunication network transient voltage (V)	NO NO NO	N
G.4	Determination of required withstand voltage (V):		N
G.4.1	Mains transients and internal repetitive peaks:		N
G.4.2	Transients from telecommunication networks:		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient levels (V)		N
	a) Transients from a mains supply		N
- 0	For an a.c. mains supply		N
200	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N





## Report No.: AGC04094190506ES01 Page 26 of 51

	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
G.6	Determination of minimum clearances		N
0			5 1
H _C	ANNEX H, IONIZING RADIATION (see 4.3.13)		Ν
NO.	do c · · ·	No co	
J	ANNEX J, TABLE OF ELECTROCHEMICAL POT	ENTIALS (see 2.6.5.6)	N
. C.	Metal used:		
9			0
к	ANNEX K, THERMAL CONTROLS (see 1.5.3 and	1 5.3.7)	Ν
K.1	Making and breaking capacity	C ····································	N
K.2	Thermostat reliability; operating voltage (V):		Ν
K.3	Thermostat endurance test; operating voltage (V)	AN NOUN	N
K.4	Temperature limiter endurance; operating voltage (V)	C C	N
K.5	Thermal cut-out reliability		N
K.6 💿	Stability of operation		N

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		Р
L.1	Typewriters	C · F	() N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		Р

М	ANNEX M, CRITERIA FOR TELEPHONE RINGIN	G SIGNALS (see 2.3.1)	N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (Hz):		
M.3.1.2	Voltage (V):	- C. • F	
M.3.1.3	Cadence; time (s), voltage (V):		
M.3.1.4	Single fault current (mA):		





	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
M.3.2	Tripping device and monitoring voltage:		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		Ν
M.3.2.3	Monitoring voltage (V):		Ν

N	ANNEX N, IMPULSE TEST GENERATORS clause G.5)	s (see 2.10.3.4, 6.2.2.1, 7.3.2 and	N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N

Ρ

#### ANNEX P, NORMATIVE REFERENCES

 Q
 ANNEX Q, Voltage dependent resistors (VDRS) (see 1.5.9.1)
 N

 -Preferred climatic categories
 N

 -Maximum continuous voltage
 N

 -Combination pulse current
 N

 Body of the VDR Test according to IEC 60695-11-5
 N

 Body of the VDR. Flammability class of material (min V-1)
 N

R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES	N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)	N
R.2	Reduced clearances (see 2.10.3)	N

S	ANNEX S, PROCEDURE FOR IMPULSE TESTI	NG (see 6.2.2.3)	N
S.1	Test equipment		N
S.2	Test procedure		O N
S.3	Examples of waveforms during impulse testing	C a C	N

Т

ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)

10

Ν

Ρ



ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)

Ν



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## Report No.: AGC04094190506ES01 Page 28 of 51

	EN 60950	)-1	
Clause	Requirement – Test	Result – Remark	Verdict
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	GU C O F	No. 60	- Č.
V	ANNEX V, AC POWER DISTRIBUTION SYSTE	MS (see 1.6.1)	N
V.1	Introduction		N
V.2	TN power distribution systems	Nº . cº	N
			6 20
W	ANNEX W, SUMMATION OF TOUCH CURREN	TS	N
W.1	Touch current from electronic circuits	0.0	N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
	Common return, connected to protective earth		N

x	ANNEX X, MAXIMUM HEATING EFFECT IN TRA C.1)	NSFORMER TESTS (see clause	N
X.1	Determination of maximum input current		N
X.2	Overload test procedure	G G	Ν

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)	N
Y.1	Test apparatus:	N
Y.2	Mounting of test samples:	N
Y.3	Carbon-arc light-exposure apparatus:	N
Y.4	Xenon-arc light exposure apparatus:	N

Z	ANNEX Z, OVERVOLTAGE CATEGORIES(see2.10.3.2 and Clause G.2)	N
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)	N
BB	ANNEX BB, CHANGES IN THE SECOND EDITION	<u> </u>

CC	ANNEX CC, Evaluation of integrated circuit (IC) circuit lim	iters	Ν
CC.1	General		Ν
CC.2	Test program 1		Ν
CC.3	Test program 2		Ν
CC.4	Test program 3:		Ν





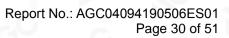
Report No.: AGC04094190506ES01 Page 29 of 51

	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
CC.5	Compliance		Ν

DD	ANNEX DD, requirements for the mounting means of rack-mounted equipment	nt N
DD.1	General	N
DD.2	Mechanical strength test, variable N:	N
DD.3	Mechanical strength test, 250N, including end stops:	N
DD.4	Compliance:	N

EE	ANNEX EE, Household and home/office document/media shredders	N
EE.1	General	N
EE.2	Marking and instructions	N
·	Use of markings or symbols:	• N
P.C.	Information of user instructions, maintenance and/or servicing instructions:	N
EE.3	Compliance:	N
EE.4	Disconnection of power to hazardous moving parts:	N
	Use of markings or symbols:	N
EE.5	Protection against hazardous moving parts	N
. 6	Test with test finger (figure 2A):	N
	Test with wedge probe (figure EE1 and EE2):	N

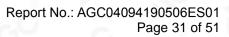




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				EN 60950-1			
Clause	Requirem	nent – Test			Re	sult – Remark	Verdict
EN						OMMON MODIFICAT	IONS
-Č		subclauses, no)-1 and it's ame		nd figures which a prefixed "Z"	are additional	to those in	
Contents	Add the fo	ollowing annexe	es: o			al c	Р
A2:2013)	Annex ZA			erences to intern g European publi		ations with their	~GC
	Annex ZB	3 (normative)	Special natio	nal conditions			
	Annex ZD	0 (informative)	IEC and CEN	ELEC code des	ignations for f	lexible cords	0
General		the —countryll to the following		reference docum	nent (IEC 609	50-1:2005)	Р
	1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note	
	1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6	
	2.2.3	Note	2.2.4	Note	2.3.2	Note	0
	2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3	
	2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3	
	3.2.1.1	Note	3.2.4	Note 3	2.5.1	Note 2	
	4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note	0
	4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1	
	6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note	0
	6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note	O.
	7.1	Note 3	7.2	Note	7.3	Note 1 & 2	
	G.2.1	Note 2	Annex H	Note 2			0
General A1:2010)		the "country" n to the following		ference docume	nt (IEC 60950)-1:2005/A1:2010)	P
	1.5.7.1	Note		6.1.2.1	Note 2		
	6.2.2.1	Note 2		EE.3	Note		
General (A2:2013)Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013)according to the following list:			Р				
	2.7.1 6.2.2. * Note of	Note * Note secretary: Text	of Common	2.10.3.1 Modification rem	Note 2 ains unchang	ed.	
.1.1 A1:2010)	Replace t NOTE 3 TI multimedia	the text of NOT he requirements	E 3 by the fol of EN 60065 m IEC Guide 11	lowing. nay also be used to	o meet safety re	-0-	CC.



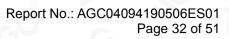




	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure	200	N
	The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.	NGC NGC	
	NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		
(A12:2011)	In EN 60950-1:2006/A12:2011		
6	Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	AN ACC	N
1.5.1	Add the following NOTE:		
(Added info*)	NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	GC 2GC	N
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	CC	N
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N
0	Zx Protection against excessive sound pressure from person	nal music players	
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.	GC AGC	N
	 A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; allows the user to walk around while in use. 	C ACC A	



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EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
	NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.	AGO N	N	
	A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.	NOC SC		
	The requirements in this sub-clause are valid for music or video mode only.		Por	
	 The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. 	C NGC	CC .	
	 The requirements do not apply to: hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. 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. 		ACC ACC	
	For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.	200 V	O O	
	 Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is 			



Report No.: AGC04094190506ES01 Page 33 of 51



Clause	Requirement – Test	Result – Remark	Verdict
	All other equipment shall:	Robert Roman	N
	 a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those 		
	mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and	NOC IN	
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any		P.C.C
	means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The	Con Poc	UC C
	acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals.	C CC	
	Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.		
	 d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its 	200 200	60
	listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and	0° .c	
	2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be \leq 150 mV measured as described in EN 50332- 2, while playing the fixed "programme simulation noise"		NGC .
	described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than	200	dů j
	the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.		
	In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to	Par Po	200
	analyse the song 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 is below the basic limit of 85 dBA.	SO NOC	JOC
	For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, 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 dBA.	C ROC N	ç C

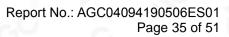






EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
	 Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: 	NOC N		
	"To prevent possible hearing damage, do not listen at high volume levels for long periods."	G ^C .C	Por	
	Figure 1 – Warning label (IEC 60417-6044)		SCC.	
NO	Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.	C SC	.0	
	Zx.4 Requirements for listening devices (headphones and e	earphones)	N	
, CO	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be \ge 75 mV.	AGC NGC	N	
	This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).	o ^c oc		
	NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		No.	
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.	ACC A	° O M	
	This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).	NO NO	200	
	NOTE An example of a wired listening device with digital input is a USB headphone.		e C	







EN 60950-1					
Clause	Requirement – Test	Result – Remark	Verdict		
	 Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. 	ACC ACC			
	NOTE An example of a wireless listening device is a Bluetooth headphone.	C d	0		
CC CC	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.		N		
	NOTE Test method for wireless equipment provided without listening device should be defined.	200 200			
2.7.1	Replace the subclause as follows: Basic requirements		20		
	To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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):	C AGO	N		
P.C	a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;	NOC .	Ċ		
SCC SC	 b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. 		N		
	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.	C ROC N	Ċ		
2.7.2	This subclause has been declared 'void'.	0	N		
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N		



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EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".	200 20	C C	
	In Table 3B, replace the first four lines by the following: Up to and including 6 0,75 ^{a)}	- G		
	Over 6 up to and including 10 (0,75) ^{b)} 1,0	NO SC	Ν	
	Over 10 up to and including 16 $ (1,0)^{c} $ 1,5 $ $ In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)} .		No.	
	In NOTE 1, applicable to Table 3B, delete the second sentence.		c,Û	
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N	
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:			
	Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A		SO	
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and	200 200	N	
	2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	CU PCC	ÖJ	
No	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N	
Annex H	Replace the last paragraph of this annex by:			
	At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 μ Sv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.	. 6°	N	
	Replace the notes as follows:		C.C	
	NOTE These values appear in Directive 96/29/Euratom.	6	N	
Dibliggrosby	Delete NOTE 2. Additional EN standards.			
Bibliography	Auditional EN Standards.			

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NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS



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	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
	ZB ANNEX (normative) SPECIAL NATIONAL CONE	DITIONS (EN)	30
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N
1.2.13.14	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.	Pro Por	N
1.5.7.1	In Finland, Norway and Sweden , resisters bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resister is used, the resister must withstand the resister test in 1.5.7.2.	GC LCC	N
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	200 1	N
1.5.9.4	In Finland , Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N
1.7.2.1	In Finland , Norway and Sweden , CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt"		
1.7.2.1 (A11:2009)	In Sweden: "Apparaten skall anslutas till jordat uttag" In Norway and Sweden , the screen of the cable 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 need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. 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:	C LOC LOC	

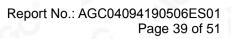




Report No.: AGC04094190506ES01 Page 38 of 51

	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
N	ZB ANNEX (normative) SPECIAL NATIONAL CONE	DITIONS (EN)	Č.
	"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." <i>NOTE In Norway, due to regulation for installations of cable</i>		N CO
	distribution systems, 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.		GC P
	Translation to Norwegian (the Swedish text will also be accepted in Norway):	200 - 0	0
	"Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet."	200 .00	
	Translation to Swedish:		0
	"Utrustning 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 medfőra risk főr brand. Főr att undvika detta skall vid anslutning av utrustningen till kabel-TV nät alvanisk isolator finnas mellan utrustningen och kabel-TV nätet."	GC RGC	oC .
1.7.2.1 (A2:2013)	In Denmark , CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket- outlet. The marking text in Denmark shall be as follows: In Denmark : "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		N
1.7.5	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	C AGC AC	C N







	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
N	ZB ANNEX (normative) SPECIAL NATIONAL CONI	DITIONS (EN)	. 6
1.7.5 (A2:2013)	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2- D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884- 2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		N
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N
2.3.2	In Finland , Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	200 200	N
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		Ň
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	60 .0	N
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	C AC X	C N
2.10.5.13	In Finland , Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	10° 20	N
3.2.1.1	In Switzerland , supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A		N
200	In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A	AGC AG	



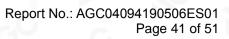


Report No.: AGC04094190506ES01 Page 40 of 51

	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
N	ZB ANNEX (normative) SPECIAL NATIONAL CONE	DITIONS (EN)	. Č
3.2.1.1	In Denmark , supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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	AGC AGC	N
	standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		CC R
3.2.1.1	In Spain , supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.	7.0° X	N
	Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.	NOC SC	
	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 UNE 20315:1994.	o ^c oc	
	If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Ċ	P. C.
3.2.1.1	In the United Kingdom , apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.	NOC N	N
	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.O.
3.2.1.1	In Ireland , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		C N
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		Ν
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	NOC - CA	N



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	EN 60950-1		
Clause	Requirement – Test	Result – Remark	Verdict
2	ZB ANNEX (normative) SPECIAL NATIONAL CONE	DITIONS (EN)	C.
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.		NG
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	200 20	O N
5.1.7.1	 In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and 		N
	 has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; STATIONARY PLUGGABLE EQUIPMENT TYPE B; STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	C AGC A	
6.1.2.1 (A1:2010)	In Finland , Norway and Sweden , add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements 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	C AGC AGC	N







EN 60950-1				
Clause	Requirement – Test	Result – Remark	Verdict	
20	ZB ANNEX (normative) SPECIAL NATIONAL CONE	DITIONS (EN)	Č.	
200	 passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor 	ACC ACC	N	
	complying with EN 60384-14:2005, subclass Y2.	60,00	- 0	
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:			
	- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;		Ċ Č	
	- the additional testing shall be performed on all the test specimens as described in EN 60384-14:			
	- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	Nor Yoc	JO	
6.1.2.2	In Finland , Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N	
7.2	In Finland , Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being		N	
	replaced by the term CABLE DISTRIBUTION SYSTEM.			
7.3	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N	
7.3	In Norway, for installation conditions see EN 60728-11:2005.		N	





1.5.1	TABLE: list of critical compone	nts	-C -		Р
Object/part no	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
Battery cell	Shenzhen Grand Powersource Co., Ltd	1165100	3.7V, 10000mAh, 37Wh Max. charging current: 6000mA Max. discharging current: 7000mA	IEC 62133: 2012	IEC 62133 test report: 50107421 001
Internal wire	SILICONE ENGINEERING	3100	12AWG , 150℃	UL 758	UL E118906
РСВ	Interchangeable	Interchangeable	V-0, 130°C	UL94, UL796	UL ZPMV2
Plastic enclosure	DONGGUAN HONOUR E P LTD	H2216(#)	Min. 1.5mm, V-0, 80°C	UL94	UL E341783
Note(s):	N .0	- Ci	0		30

1.6.2	TABLE: e	electrical data (i	n normal co	nditions)		. GO C	Р
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	Condition/status	
4.2	3.12		13.11	G		Discharge when the battery charged: USB load 10.5W	is fully
4.2	3.28	GG	13.78			The total output of wireless USB output is 10.5w	output and
5.0	1.89	2.0	9.45	- C-	<u> </u>	Charging when the battery empty:Battery current:1.994	

2.1.1.5c)1)	TABLE: n	nax. V, A, VA test		0		Р
Voltage (rate	ed) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (r	max.) (VA)
USB	: 5	2.1	5.10	3.21	C	13.89
Note(s):		Nº O	- Ci		9	× 60

2.1.1.5c)2)	TABLE: stored energy		N
Capacitance	e C (μF)	Voltage U (V)	Energy E (J)
- 6	U		
Note(s):			al c

2.2 TABLE: evaluation of voltage limiting components in SELV circuits			Ν	
Component (measured between)		max. voltage (V) (normal operation)	Volt	age Limiting





Report No.: AGC04094190506ES01 Page 44 of 51

	Vpeak	Vd.c.	Components
	<u> </u>	· · · · ·	-
Fault test performed on voltage limiting components	Voltage measure	d (V) in SELV circuits	s (V peak or V d.c.)
	- Ci	©	N .0
Note(s):			

2.5 TABLE: limited power source measu	TABLE: limited power source measurement				
Measured Uoc (V) with all load circuits	lsc (A	4)	VA		
disconnected:	Meas.	Limit	Meas.	Limit	
USB normal condition: 5V	3.21	8	13.89	100	
USB fault condition, U1 Pin 1-3, S-C: 4.07V	6.89	8	12.64	100	
Note(s):					

2.10.2	TABLE: Working voltage measurement					
Location		RMS voltage (V)	Peak voltage (V)	Comm	nents	
0				<u> </u>	Sec.	
Note(s):			e C			

2.10.3 and 2.10.4 TABLE: clearance and creepage distance measurements						
U p (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)	
<u>.</u>	.	o P		<u> </u>	<u> </u>	
	U p (V)	U p U r.m.s. (V) (V)	U p U r.m.s. Required cl (V) (V)	U p U r.m.s. Required cl cl (mm)	U p U r.m.s. Required cl cl Required dcr (V) (V) (V) (mm) (mm)	

2.10.5	TABLE: distance through insulation measurements				
Distance th	rough insulation di at/of:	U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)
Note(s):		- C.	0		60

4.3.8 TABLE: Batteries		10 - G	P	
The tests of 4.3.8 are applicable only when appropriate battery data is not available				
Is it possible to install the battery in a r	Customized connector used for battery pack.	N		
Non-rechargeable	batteries	Rechargeable batteries		



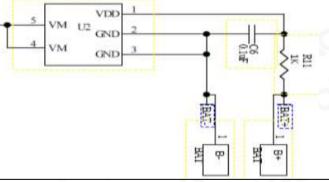
 $\label{eq:attestation} Attestation of Global Compliance (Shenzhen) Co., Ltd.$



Report No.: AGC04094190506ES01 Page 45 of 51

	Discharging		Uninten-	Cha	rging	Disch	arging	Reverse	Charging
	Meas. current	Manuf. Specs.	tional charging	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition		<u>P</u> G	20	1990mA	6000mA	3280mA	7000mA	N.S.	N.C
Max. current during fault condition	0	GC.	æ	2020mA	6000mA	3310mA	7000mA	60	- C
Test results:	0			200	~0)	8		Verdict
- Chemical leaks No									Р
- Explosion of the	ne battery		90	- 6	0	No	20		Р
- Emission of flame or expulsion of molten metal No								Р	
- Electric strength tests of equipment after completion of tests								N	
Note(s):		S	-	9				0	
		-						1.0	-

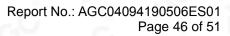
4.3.8	TABLE: Batteries		Р
Battery ca	tegory	: li-ion battery cell	100 al
Manufactu	ırer	: See table 1.5.1	
Type/mod	el	: See table 1.5.1	C.
Voltage, C	Capacity	: See table 1.5.1	Č,
Circuit pro	tection diagram	: See below	



MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	Non-replaceable li-ion battery cell
Language(s):	
Close to the battery:	
In the servicing instructions:	
In the operating instructions:	
Note(s):	



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4.5	TABLE: maximum temperatures					Р		
20	Test voltage (V)			b): Battery	charge mo cell dischar output 10.5	ae only (W	ireless and	
					Т	(°C)		allowed
maximum temperature T of part/at:			а	a)		b)	Tmax (°C)	
PCB near	U1	0	0	82	.6		91.1	130
PCB near	Q2		0	83.4		90.3		130
Coil			86.8		92.6		100	
Battery cell			56.0		58.9		Ref.	
Internal wi	re	100	- (58	.3	6	60.2	150
Internal en	closure		N.	59	.2	6	5.7	80
Metal shell	.C.	0		55.8 57.6		57.6	75	
Ambient		60	. 6	40	.0	4	0.0	U
Tempe	rature T of winding	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation Class
			(a) 		2			(6)

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4.5.5	5 TABLE: ball pressure test of thermoplastic parts				
0	allowed impression diameter (mm)	•			
Part		Test temperature(°C)	Impression diameter (mm)		
Note(s):		0	Nº . C		

4.7	TAE	BLE: Resistance to fire	0	20-	-,0	Р
Part		Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
<u> </u>	-				0	1.1
Note(s): refe	er to t	able 1.5.1			0.0	

<u> </u>		7		
5.1	TABLE: touch current measurement			N
Measured be	etween:	Measured(mA)	Limit(mA)	Comments/conditions
0				
Note(s):		<u></u>	-O -	

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TABLE: electric strength tests and impulse tests

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Attestation of Global Compliance(Shenzhen)Co.,Ltd.



Report No.: AGC04094190506ES01 Page 47 of 51

Test voltage applied between:	Test voltage (V)	Breakdown	
Note(s):	N .0	- 6	

5.3	TABLE: fault condition tests						Р
	ambient temperature (°C): 24.2 - 25.1						
rated markings of power supply:							
Component	t no.	Fault	Test voltage (V)	Test time	Fuse no.	Result	
Battery c	ell	Over discharge (Output, S-C)	60	30min		No fire, chemical leaks and explosion of the cell, No hazards.	
Battery co	ell	Overcharge (U2 Pin 3-4, S- C)		7h	<u> </u>	No fire, chemical leaks and explosion of the cell, No hazards.	
Battery c	ell	Output,S-C		10min	<u> </u>	Unit shutdown immediately. No hazards.	
R1		S-C	5.0	10min	-0	No damage and hazards.	
Output	N	S-C	5.0	10min	-	Unit shutdown immediately, no damage and hazards.	
Output		O-L	5.0	2h25min		No high temperature No damage and hazards.	
U1		Pin 1-8, S-C	5.0	10min		No damage and hazards.	
U1	Ø	Pin 1-3, S-C	5.0	10min	<u>.</u>	No damage and hazards.	
U1	C	Pin 3-8, S-C	5.0	10min	69	No damage and hazards.	
Fault: S-C =	shor	circuit, O-C = op	en circuit	0		20	è



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Report No.: AGC04094190506ES01 Page 48 of 51



Fig.1 – overview

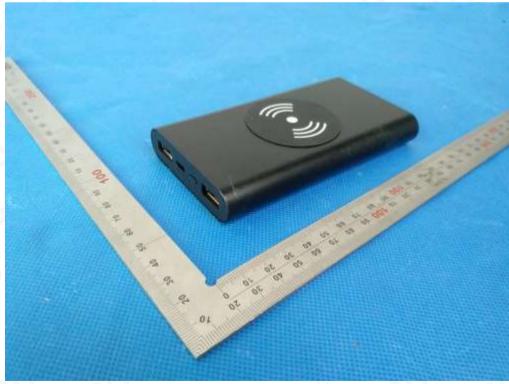


Fig.2 – overview





Report No.: AGC04094190506ES01 Page 49 of 51

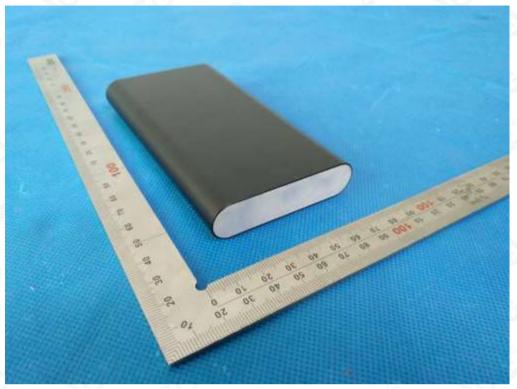


Fig.3 - overview

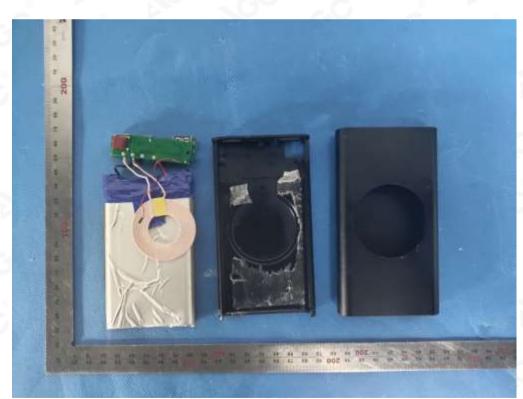
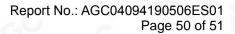


Fig.4 – partview





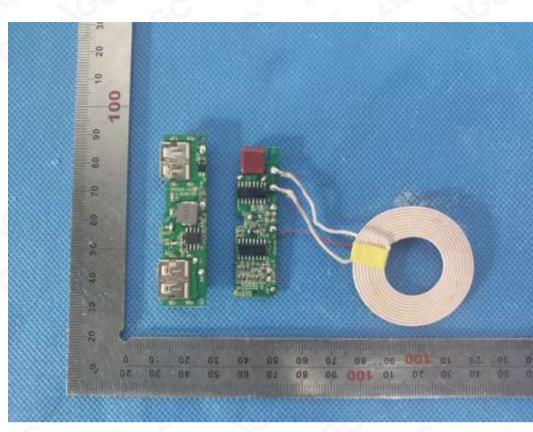


Fig.5 - partview

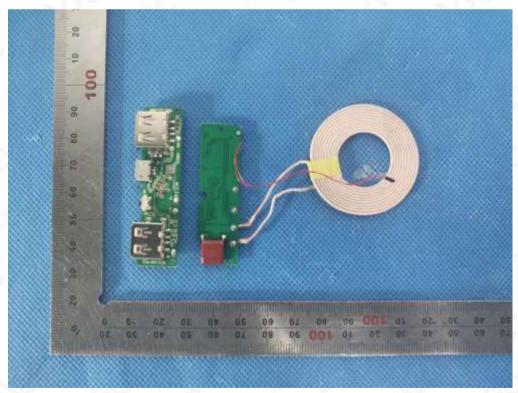


Fig.6 – partview



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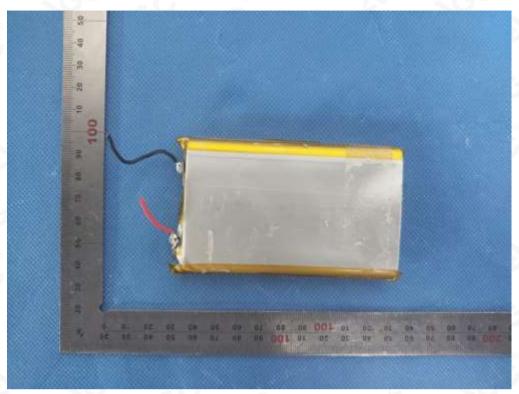


Fig.7 – Battery



Fig.8 – Battery

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