



# Test Report

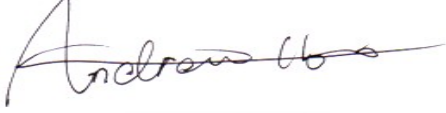

Report No.: GTE13112603

**Product:** Call Center Headset / Communication Headset /  
Telephone Headset

**Client:** Xiamen Mairdi Electronic Technology Co., Ltd

**Standard:** EN 60950-1:2006+A11:2009+A1:2010+A12:2011

**Greatek Testing and Certification Co., Ltd.**

TEST REPORT	
EN 60950-1	
Information technology equipment – Safety – Part 1: General requirements	
Reference No. ....	GTE13112603
Compiled by (+ signature).....	Andrew Hoo 
Approved by (+ signature).....	Sam Hong 
Date of issue.....	2013-11-26
Contents .....	31 pages
<b>Testing laboratory</b>	
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<b>Client</b>	
Applicant name.....	Xiamen Mairdi Electronic Technology Co., Ltd
Address.....	5/F Xinke Building, No.30 Xiangming Road, Torch (Xiang An) Hi-Tech Industrial Zone, Xiamen, China
Manufacturer name .....	Xiamen Mairdi Electronic Technology Co., Ltd
Address.....	5/F Xinke Building, No.30 Xiangming Road, Torch (Xiang An) Hi-Tech Industrial Zone, Xiamen, China
Factory name.....	Xiamen Mairdi Electronic Technology Co., Ltd
Address.....	5/F Xinke Building, No.30 Xiangming Road, Torch (Xiang An) Hi-Tech Industrial Zone, Xiamen, China
<b>Test specification</b>	
Standard .....	EN 60950-1:2006+A11:2009+A1:2010+A12:2011
Test procedure .....	Compliance with EN 60950-1
Procedure deviation .....	CE
<b>Test item</b>	
Description.....	Call Center Headset/Communication Headset/Telephone Headset
Trademark .....	Mairdi
Model and/or type reference .....	MRD-308S, MRD-308DS, MRD-509S, MRD-509DS, MRD-510S, MRD-510DS, MRD-512S, MRD-512DS,MRD-609,MRD-609D,MRD-612,MRD-612D,MRD-805,MRD-805D,MRD-806,MRD-806D
Rating(s) .....	5VDC, Max. 30mA

**Test item particulars**

Equipment mobility ..... :  movable  hand-held  stationary  fixed

Connection to the mains ..... :  pluggable equipment  direct plug-in  
 permanent connection  for building-in

Operating condition ..... :  continuous  short-time  intermittent

Over voltage category ..... :  OVC I  OVC II  OVC III  OVC IV

Mains supply tolerance (%)..... : 5V

Tested for IT power systems ..... :  Yes  No

IT testing, phase-phase voltage (V) ..... : N/A

Class of equipment ..... :  Class I  Class II  Class III  
 Not classified

Pollution degree ..... :  PD 2  PD 3

IP protection class ..... : IP20

**Possible test case verdicts:**

- test case does not apply to the test object ..... : N (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 ..... : 2013-11-11

Date(s) of performance of tests ..... : 2013-11-18 to 2013-11-26

**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.  
"(see appended table)" refers to a table appended to the report.

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

**General product information:**

The equipment is a Call Center Headset/Communication Headset/Telephone Headset for general use with information technology equipment.

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard		P
1.5.2	Evaluation and testing of components		P
1.5.3	Thermal controls	No thermal controls provided.	N
1.5.4	Transformers		N
1.5.5	Interconnecting cables		N
1.5.6	Capacitors bridging insulation		N
1.5.7	Resistors bridging insulation		N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	No such parts.	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 and antenna or coaxial cable		N
1.5.7.4	Accessible parts		N
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		N
1.5.9.2	Protection of VDRs		N
1.5.9.3	Bridging of functional insulation by a VDR	No such parts.	N
1.5.9.4	Bridging of basic insulation by a VDR	No such parts.	N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such parts.	N
1.6	Power interface		N
1.6.1	AC power distribution systems	No applicable	N
1.6.2	Input current		N
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N
1.6.4	Neutral conductor		N
1.7	Marking and instructions		P
1.7.1	Power rating	See below.	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated voltage(s) or voltage range(s) (V) ..... :	5VDC	P
	Symbol for nature of supply, for d.c. only ..... :	DC source	P
	Rated frequency or rated frequency range (Hz) ... :	DC source	N
	Rated current (mA or A) ..... :		P
	Manufacturer's name or trade-mark or identification mark ..... :		P
	Model identification or type reference ..... :		P
	Symbol for Class II equipment only ..... :	Class III equipment.	N
	Other markings and symbols ..... :	There is no additional marking.	N
1.7.2	Safety instructions and marking	The user manual contains information for operation, installation, servicing transport, storage and technical data.	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		--
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.2.7.6	Ozone	The equipment does not produce Ozone.	N
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N
	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) ..... :	No fuse provided.	N
1.7.7	Wiring terminals	See below	P
1.7.7.1	Protective earthing and bonding terminals ..... :		N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		P
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking ..... :	-	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.2	Colours .....	Colors are acceptable due to only used for information (no safety involved even if disregarded).	P
1.7.8.3	Symbols according to IEC 60417 .....	Symbol of functional standby power switch is marked according to IEC 60417 provided on the push button on the front panel.	P
1.7.8.4	Markings using figures .....	Not used.	N
1.7.9	Isolation of multiple power sources .....		N
1.7.10	Thermostats and other regulating devices .....	No thermostats or other regulating devices.	N
1.7.11	Durability	The marking withstands required tests. (see appended table 1.7.11)	P
1.7.12	Removable parts	No removable parts.	N
1.7.13	Replaceable batteries .....	No battery in the equipment.	N
	Language(s) .....		--
1.7.14	Equipment for restricted access locations.....	Operator is not instructed to use a tool in order to gain access to operator access area.	N

2	PROTECTION FROM HAZARDS		N
2.1	Protection from electric shock and energy hazards		N
2.1.1	Protection in operator access areas		N
2.1.1.1	Access to energized parts		N
	Test by inspection .....		N
	Test with test finger (Figure 2A) .....		N
	Test with test pin (Figure 2B) .....		N
	Test with test probe (Figure 2C) .....		N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)		--
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N
2.1.1.5	Energy hazards .....		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment		N
	Measured voltage (V); time-constant (s) ..... :		--
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply . :		N
	b) Internal battery connected to the d.c. mains supply ..... :		N
2.1.1.9	Audio amplifiers ..... :		N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N
2.2	SELV circuits		N
2.2.1	General requirements		N
2.2.2	Voltages under normal conditions (V) ..... :		N
2.2.3	Voltages under fault conditions (V) ..... :		N
2.2.4	Connection of SELV circuits to other circuits .....:		N
2.3	TNV circuits	(No TNV circuit)	N
2.3.1	Limits		N
	Type of TNV circuits ..... :		--
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
	Insulation employed..... :		--
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed..... :		--
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		N
2.4.1	General requirements	Limits are not exceeded.	N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.4.2	Limit values		N
	Frequency (Hz) ..... :		N
	Measured current (mA)..... :		N
	Measured voltage (V) ..... :		N
	Measured circuit capacitance (nF or $\mu$ F)..... :		--
2.4.3	Connection of limited current circuits to other circuits	Only intended to be connected with SELV circuits	N

2.5	Limited power sources	(Not applied for)	N
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		N
	Current rating of overcurrent protective device (A)		N

2.6	Provisions for earthing and bonding		N
2.6.1	Protective earthing		N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG ..... :		N
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG ..... :		N
2.6.3.4	Resistance of earthing conductors and their terminations; resistance ( $\Omega$ ), voltage drop (V), test current (A), duration (min) ..... :		N
2.6.3.5	Colour of insulation..... :		N
2.6.4	Terminals		N
2.6.4.1	General		N



EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type, nominal thread diameter (mm)..... :		--
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		N
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		N
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		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		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.7.1	Contact gaps (mm) .....		N
2.8.7.2	Overload test		N
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		P
2.9.1	Properties of insulating materials	Suitable material according to their thermal electrical and mechanical properties.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 48 hrs.	P
	Relative humidity (%), temperature (°C) .....	90-95%, 25°C.	P
2.9.3	Grade of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard	P
2.9.4	Separation from hazardous voltages	See below.	P
	Method(s) used .....	Method 1 and 2	--

2.10	Clearances, creepage distances and distances through insulation		N
2.10.1	General		N
2.10.1.1	Frequency .....		N
2.10.1.2	Pollution degrees .....		N
2.10.1.3	Reduced values for functional insulation		N
2.10.1.4	Intervening unconnected conductive parts		N
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		N
2.10.2.1	General		N
2.10.2.2	RMS working voltage		N
2.10.2.3	Peak working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.2	Mains transient voltages		N
	a) AC mains supply .....		N
	b) Earthed d.c. mains supplies .....		N
	c) Unearthed d.c. mains supplies .....		N
	d) Battery operation .....		N
2.10.3.3	Clearances in primary circuits		N
2.10.3.4	Clearances in secondary circuits		N
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
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply .....		N
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and comparative tracking index		N
	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	Insulating compound as solid insulation	No such construction used.	N
2.10.5.4	Semiconductor devices	No such component used.	N
2.10.5.5.	Cemented joints	Not used.	N
2.10.5.6	Thin sheet material – General		N
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs) .....		N
2.10.5.8	Non-separable thin sheet material	Not used.	N
2.10.5.9	Thin sheet material – standard test procedure	Not used.	N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test		--
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		N
2.10.5.11	Insulation in wound components	Not used.	N
2.10.5.12	Wire in wound components		N
	Working voltage ..... :		N
	a) Basic insulation not under stress ..... :		N
	b) Basic, supplementary, reinforced insulation ..... :		N
	c) Compliance with Annex U ..... :		N
	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	No wire with solvent-based enamel in wound components.	N
	Electric strength test		N
	Routine test		N
2.10.5.14	Additional insulation in wound components	No additional insulation used.	N
	Working voltage ..... :		N
	- Basic insulation not under stress ..... :		N
	- Supplementary, reinforced insulation ..... :		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards		N
2.10.6.2	Coated printed boards		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		N
	Distance through insulation		N
	Number of insulation layers (pcs) ..... :		N
2.10.7	Component external terminations	Coatings not used over terminations to increase effective creepage and clearance distances.	N
2.10.8	Tests on coated printed boards and coated components	No special coating in order to reduce distance.	N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.8.3	Electric strength test		N
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		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N
3	WIRING, CONNECTIONS AND SUPPLY		N
3.1	General		N
3.1.1	Current rating and overcurrent protection		N
3.1.2	Protection against mechanical damage		N
3.1.3	Securing of internal wiring		N
3.1.4	Insulation of conductors		N
3.1.5	Beads and ceramic insulators		N
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		N
	10 N pull test		N
3.1.10	Sleeving on wiring		N
3.2	Connection to a mains supply		N
3.2.1	Means of connection		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
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter of cable and conduits (mm) ..... :		--
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Type .....		N
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		N
3.2.5.2	DC power supply cords	Not provided.	N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....		--
	Longitudinal displacement (mm) .....		--
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	Diameter or minor dimension 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
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		N
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) .....		--
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) .....		--
3.3.6	Wiring terminal 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		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		N
3.4.6	Number of poles - single-phase and d.c. equipment		N

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.7	Number of poles - 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		P
3.5.1	General requirements	SELV voltage connections for the input.	P
3.5.2	Types of interconnection circuits ..... :		P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N
3.5.4	Data ports for additional equipment	No data ports.	N
4	PHYSICAL REQUIREMENTS		N
4.1	Stability		N
	Angle of 10°		N
	Test force (N) ..... :		N
4.2	Mechanical strength		P
4.2.1	General		P
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		P
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure. No energy or other hazards.	P
4.2.5	Impact test	No hazard as a result from steel ball impact test.	P
	Fall test	No hazard as a result from steel ball impact test.	P
	Swing test		N
4.2.6	Drop test; height (mm) ..... :	Not required for this equipment.	N
4.2.7	Stress relief test	Tested at 70°C and passed.	P
4.2.8	Cathode ray tubes	No cathode ray tube.	N
	Picture tube separately certified ..... :		--

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.9	High pressure lamps	No high pressure lamp provided.	N
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Not for wall or ceiling mounting.	N
4.3	Design and construction		
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N).....:	No axial pull applied to pushbutton of stand-by switch because it is unlikely to be pulled.	N
4.3.3	Adjustable controls	No adjustable controls.	N
4.3.4	Securing of parts	Mechanical fixings in such a way designed that they will withstand mechanical stress occurring in normal use.	P
4.3.5	Connection by plugs and sockets		N
4.3.6	Direct plug-in equipment		N
	Torque .....		--
	Compliance with the relevant mains plug standard .....		--
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N
4.3.8	Batteries	No battery in the equipment.	N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N



EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.12	Flammable liquids .....	The equipment does not contain flammable liquid.	N
	Quantity of liquid (l) .....		--
	Flash point (°C) .....		--
4.3.13	Radiation		P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation	No ionising radiation.	N
	Measured radiation (pA/kg) .....		N
	Measured high-voltage (kV) .....		N
	Measured focus voltage (kV) .....		N
	CRT markings .....		N
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet radiation.	N
	Part, property, retention after test, flammability classification .....		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....		N
4.3.13.5	Laser (including LEDs)	Non-lasing LEDs provided for indicating only.	P
	Laser class .....	Class 1	--
4.3.13.6	Other types .....	The equipment does not generate other types of radiation.	N
4.4	Protection against hazardous moving parts		P
4.4.1	General		N
4.4.2	Protection in operator access areas .....		N
4.4.3	Protection in restricted access locations .....	Not for restricted access locations.	N
4.4.4	Protection in service access areas		N
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L .....		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.5.5	Resistance to abnormal heat .....	(see appended table 4.5.5)	P
4.6	Openings in enclosures		N
4.6.1	Top and side openings		N
	Dimensions (mm) .....		N
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) .. :		N
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) .....		--
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks) .....		--
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	Method 1 used. No excessive temperatures. No easily burning materials employed. Safety relevant components used within their specified temperature limits. (see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	Not used method 2.	N
4.7.2	Conditions for a fire enclosure	For all parts inside enclosure, a fire enclosure is required.	P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. For details see table 1.5.1	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is V-2(or higher) material.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		N
5.1	Touch current and protective conductor current		N
5.1.1	General		N
5.1.2	Configuration of 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		N
5.1.6	Test measurements		N
	Supply voltage (V) .....		--
	Measured touch current (mA) .....		--
	Max. allowed touch current (mA) .....		--
	Measured protective conductor current (mA) .....		--
	Max. allowed protective conductor current (mA) .....		--
5.1.7	Equipment with touch current exceeding 3,5 mA		N
5.1.7.1	General .....		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V) .....		--
	Measured touch current (mA) .....		--

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Clause	Requirement + Test	Result - Remark	Verdict

	Max. allowed touch current (mA) .....		--
5.1.8.2	Summation of touch currents from telecommunication networks		N
	a) EUT with earthed telecommunication ports .....		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

5.2	Electric strength		N
5.2.1	General		N
5.2.2	Test procedure		N

5.3	Abnormal operating and fault conditions		N
5.3.1	Protection against overload and abnormal operation		N
5.3.2	Motors		N
5.3.3	Transformers		N
5.3.4	Functional insulation .....		N
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE .....		N
5.3.7	Simulation of faults		N
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions		N
5.3.9.1	During the tests		N
5.3.9.2	After the tests		N

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	No TNV circuit.	N
	Supply voltage (V) .....		N
	Current in the test circuit (mA) .....		N
6.1.2.2	Exclusions .....		N

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Clause	Requirement + Test	Result - Remark	Verdict

6.2	Protection of equipment users from overvoltages 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		N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A) .....		N
	Current limiting method .....		N

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	General	Not connected to Cable Distribution System.	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		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		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N

A	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)		N
A.1.1	Samples .....		N
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Flame A, B, C or D .....		--
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s) .....		--
	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)		N
A.2.1	Samples, material .....		N
	Wall thickness (mm) .....		--
A.2.2	Conditioning of samples; temperature (°C) .....		N
A.2.3	Mounting of samples .....		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C .....		--
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s) .....		--
	Sample 2 burning time (s) .....		--
	Sample 3 burning time (s) .....		--
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N
	Sample 1 burning time (s) .....		--
	Sample 2 burning time (s) .....		--
	Sample 3 burning time (s) .....		--
A.3	Hot flaming oil test (see 4.6.2)		--
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements		N
	Position .....		--
	Manufacturer .....		--
	Type .....		--

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N
B.6.2	Test procedure		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 secondary circuits		N
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V) .....		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V) .....		N
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N
	Position .....		--
	Manufacturer .....		--
	Type .....		--
	Rated values .....		--
	Method of protection .....		--
C.1	Overload test		N
C.2	Insulation		N
	Protection from displacement of windings :		N

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Clause	Requirement + Test	Result - Remark	Verdict
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		N
D.1	Measuring instrument		N
D.2	Alternative measuring instrument		N
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13) <i>Thermocouple method used</i>		N
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
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)		N
G.2.1	AC mains supply .....		N
G.2.2	Earthed d.c. mains supplies .....		N
G.2.3	Unearthed d.c. mains supplies .....		N
G.2.4	Battery operation .....		N
G.3	Determination of telecommunication network transient voltage (V) .....		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 voltages (V)		N
	a) Transients from a mains supply		--
	For an a.c. mains supply		--
	For a d.c. mains supply		--
	b) Transients from a telecommunication network		--
G.6	Determination of minimum clearances .....		N
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N



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Clause	Requirement + Test	Result - Remark	Verdict
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal(s) used :		--
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) ..... :		N
K.3	Thermostat endurance test; operating voltage (V) ..... :		N
K.4	Temperature limiter endurance; operating voltage (V) ..... :		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 4.5.2)		N
L.1	Typewriters		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		N
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N
M.3.1.1	Frequency (Hz) ..... :		N
M.3.1.2	Voltage (V) ..... :		N
M.3.1.3	Cadence; time (s), voltage (V) ..... :		N
M.3.1.4	Single fault current (mA) ..... :		N
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

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) ..... :		N
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	a) Preferred climatic categories ..... :		N
	b) Maximum continuous voltage ..... :		N
	c) Pulse current ..... :		N
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
			--
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
			--
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N
V.1	Introduction		N
V.2	TN power distribution systems		N
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits		N

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Clause	Requirement + Test	Result - Remark	Verdict
W.1.1	Floating circuits		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
W.2.3	Common return, connected to protective earth		N
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N
Y.1	Test apparatus .....	No ultraviolet light.	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 (see 2.10.3.2 and Clause G.2)		N
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N

Tables

1.7.11	TABLE: durability of marking test			P
Location	Checked by	Times	Result	
External enclosure	Water	15s	No any curling and still legibility	
External enclosure	Petroleum spirit	15s	No any curling and still legibility	
Supplementary information:				

2.6.3.4	TABLE: ground continue test				N
Location	Resistance measured (mΩ)	Voltage measured (V)	Current applied (A)	Duration (min)	
Supplementary information:					

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					N
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Supplementary information:						

4.5	TABLE: Thermal requirements						P	
	Supply voltage (V) .....	As normal use				—		
	Ambient T <sub>min</sub> (°C) .....	26.0				—		
	Ambient T <sub>max</sub> (°C) .....	26.1				—		
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)		
Enclosure		26.3				--		
Supplementary information:								
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
Supplementary information:								

Tables

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N
	Allowed impression diameter (mm) .....	≤ 2 mm	—
Part	Test temperature (°C)	Impression diameter (mm)	
--	--	--	
Supplementary information:			

4.7	TABLE: Resistance to fire					N
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
--	--	--	--	--	--	
Supplementary information:						

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests				N
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes/No		
Supplementary information:					

5.2	TABLE: touch current measurement			N
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
supplementary information: Vin =230V				

Pictures:

Fig. 1 Overview



Fig. 2 Overview



**Remarks:**

1. The instructions specified by the standard have to be in official language of each country, however, only English is checked for this report. It is the applicant responsibility to provide instruction in each official language of the EU.
2. This report is submitted for the exclusive use of the client to whom it is addressed. Its significance is subject to the adequacy and representative character of the sample(s) and to the comprehensiveness of the tests, examinations or surveys made.
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===== End of Test Report =====





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