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| TEST REPORT | |
| IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1: 2006 | |
| Information technology equipment – Safety – Part 1: General requirements | |
| Report Reference No.: | 1004C241 |
| Tested by (+ signature) | Ben Liu <i>Ben Liu</i> |
| Approved by (+ signature)..... | Sunny Yang <i>Sunny Yang</i> |
| Date of issue..... | May 20, 2010 |
| Contents | 45 pages |
| Testing laboratory | |
| Name | Neutron Engineering Inc. |
| Address : | No.3, Jinshagang 1 st Rd., Shixia, Dalang Town, Dongguan City, Guangdong, China |
| Applicant | |
| Name | Shenzhen 3NOD Electronics Co., Ltd. |
| Address | 3NOD High-Tech Park 15# Zhongfu Road Tangxiayong Village Industrial Zone Songgang Town, Baoan District, Shen Zhen City China |
| Manufacturer | |
| Name | Logitech, Inc |
| Address | 1499 SE Tech Centre Place, Suite 350, Vancouver, WA 98683, USA |
| Test specification | |
| Standard | IEC 60950-1: 2005 (2nd Edition) EN 60950-1: 2006/A11: 2009 |
| Test procedure | Service of CE Marking in LVD |
| Procedure deviation | N.A. |
| Non-standard test method..... | N.A. |
| Test Report Form/blank test report | |
| Test Report Form No..... | 60950-1C |
| Master TRF..... | Dated 2007-06 |
| Testing | |
| Date of receipt of test item. | 2010-05-04 |
| Date(s) of performance of test..... | 2010-05-04 to 2010-05-14 |
| Test equipment | |
| Description..... | Surround Sound Speakers Z506 |



| | |
|-----------------------------------|---|
| Trademark |  |
| Model and/or type reference | S-00097A, S-00097B |
| Rating(s)..... | 120-240V~, 50/60Hz, 800mA |

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| Particulars: test item vs. test requirements | |
| Equipment mobility | Movable equipment. |
| Operating condition | Continuous |
| Mains supply tolerance (%)..... | +10% and -10% |
| Tested for IT power systems | Yes |
| IT testing, phase-phase voltage (V) | 230 V (for Norway) |
| Class of equipment..... | Class II |
| Mass of equipment (kg)..... | Unit with speakers: 4.9kg, Speaker: 2.1kg |
| Protection against ingress of water | IPX0 |
| Test case verdicts | |
| Test case does not apply to the test object..... | N(.A.) |
| Test item does meet the requirement | P(ass) |
| Test item does not meet the requirement | F(ail) |
| Test case has not been checked | — |
| General remarks | |
| This test report shall not be reproduced except in full without the written approval of the testing laboratory. | |
| The test results presented in this report relate only to the item tested. | |
| "(see remark #)" refers to a remark appended to the report. | |
| "(see appended table)" refers to a table appended to the report. | |
| Throughout this report a point is used as the decimal separator. | |
| <u>Comments:</u> | |
| - The equipment under tests is a Class II Surround Sound Speakers Z506 with build-in switching mode power supply for using in scope of ITE. | |
| - Model S-00097A is identical to model S-00097B except the model designation. | |
| - The enclosure of speaker system is secured by screws. | |
| - If not specific, all tests were performed on model S-00097A to represent model S-00097B. | |
| - The maximum operating temperature is defined as 45°C. | |
| - The test samples are pre-production without serial numbers. | |

Copy of marking plate:

Logitech
Surround Sound Speakers Z506
M/N:S-00097A
P/N:880-000183
INPUT:120-240V~ 50/60Hz 800mA

SAFETY MARK
X X X X X X - X X

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
AVIS: Risque de choc électrique · ne pas ouvrir

CE
PC BZ02
Household Use
Recycling

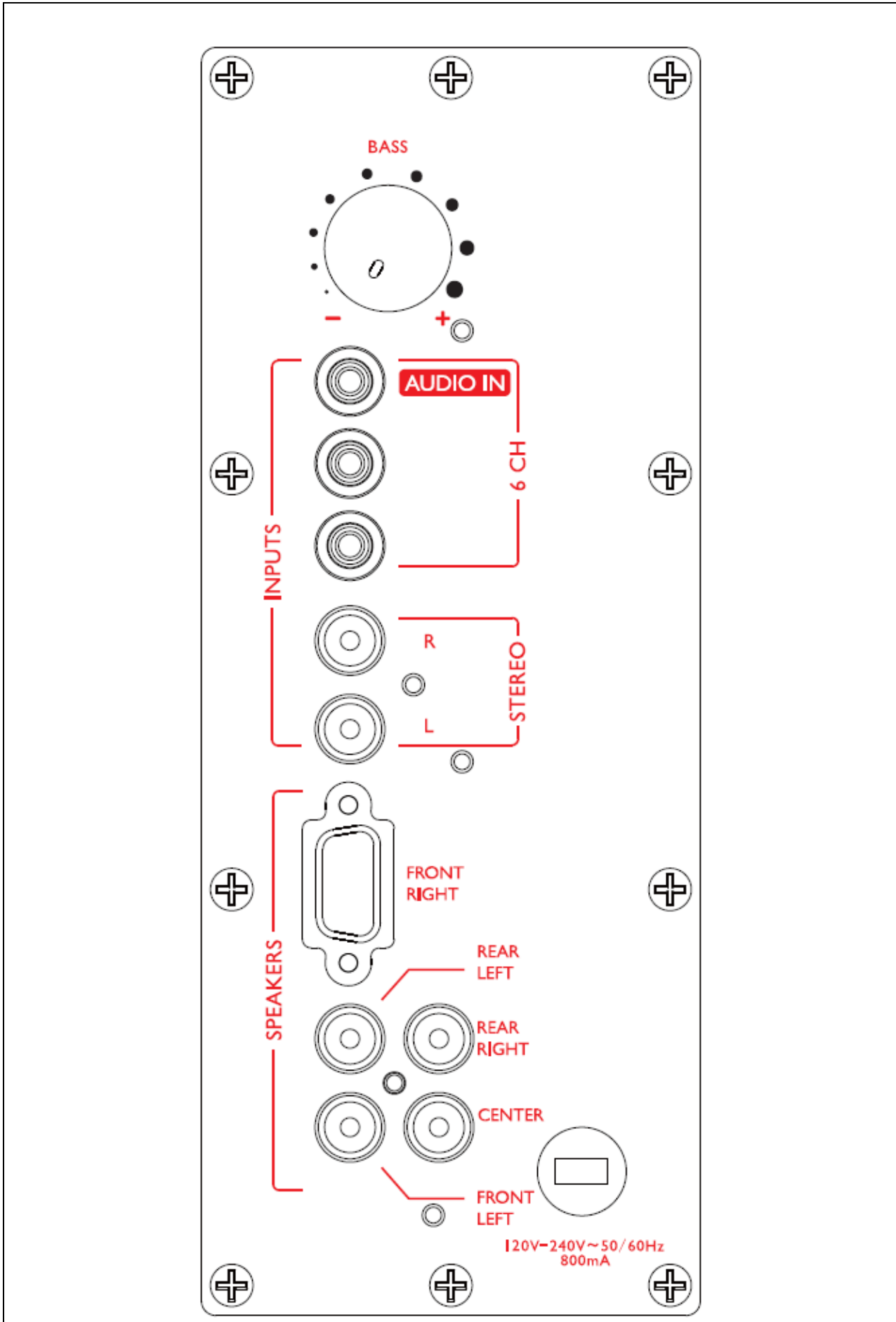
Made in China
Fabriqué en Chine

Logitech
Surround Sound Speakers Z506
M/N:S-00097B
P/N:880-000150
INPUT:120-240V~ 50/60Hz 800mA

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
AVIS: Risque de choc électrique · ne pas ouvrir

PC BZ02
CE
Household Use
Recycling

Made in China
Fabriqué en Chine





| EN 60950-1 | | | |
|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

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|---|---------|--|----------|
| 1 | GENERAL | | P |
|---|---------|--|----------|


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| 1.5 | Components | | P |
| 1.5.1 | General | See below. | P |
| | Comply with IEC 60950-1 or relevant component standard | (see appended table 1.5.1) | P |
| 1.5.2 | Evaluation and testing of components | Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application. | P |
| 1.5.3 | Thermal controls | | N |
| 1.5.4 | Transformers | Transformers used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C. | P |
| 1.5.5 | Interconnecting cables | The interconnecting cables contain only SELV. | P |
| 1.5.6 | Capacitors bridging insulation | Bridge and X capacitors used according to IEC 60384- 14 (see appended table 1.5.1) | P |
| 1.5.7 | Resistors bridging insulation | See below. | P |
| 1.5.7.1 | Resistors bridging functional, basic or supplementary insulation | Only bridging functional insulation | P |
| 1.5.7.2 | Resistors bridging double or reinforced insulation between a.c. mains and other circuits | No resistors bridging double or reinforced insulation. | N |
| 1.5.7.3 | Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable | No such resistors. | N |
| 1.5.8 | Components in equipment for IT power systems | No such components. | N |
| 1.5.9 | Surge suppressors | | 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 | | 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 | | N |

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| 1.6 | Power interface | | P |
| 1.6.1 | AC power distribution systems | TN, and IT for Norway. | P |



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|-------|--------------------------------------|--|----------|
| 1.6.2 | Input current | The steady state input current of the equipment did not exceed the rated current by more than 10% under normal load condition. (see appended table 1.6.2) | P |
| 1.6.3 | Voltage limit of hand-held equipment | The equipment is not hand-held. | N |
| 1.6.4 | Neutral conductor | The neutral conductor insulated from earth and from the body throughout the equipment as if it were a line conductor. | P |

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| 1.7 | Marking and instructions | | P |
| 1.7.1 | Power rating | The required marking is located on the outside surface of the equipment. | P |
| | Rated voltage(s) or voltage range(s) (V) | 120-240V~ | P |
| | Symbol for nature of supply, for d.c. only | The equipment is for a.c. supply. | N |
| | Rated frequency or frequency range (Hz) | 50/60Hz | P |
| | Rated current (mA or A) | 800mA | P |
| | Manufacturer's name or trade-mark or identification mark | Logitech, Inc  | P |
| | Model identification or type reference | S-00097A, S-00097B | P |
| | Symbol for Class II equipment only | Class II symbol (IEC 60417-1, symbol No. 5172) is applied to the label. | P |
| | Other markings and symbols | Additional symbol or marking does not give rise to misunderstanding. | P |
| 1.7.2 | Safety instructions and marking | User's manual provided. | P |
| 1.7.2.1 | General | Instructions are available. | P |
| 1.7.2.2 | Disconnect devices | Plug on power will be easily accessible from socket-outlet. | P |
| 1.7.2.3 | Overcurrent protective device | Pluggable equipment Type A. | N |
| 1.7.2.4 | IT power distribution systems | | N |
| 1.7.2.5 | Operator access with a tool | All areas containing hazard are inaccessible to the operator. | N |



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|------------|--|--|----------|
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| 1.7.2.6 | 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 | No standard power outlet. | N |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference) | Build-in fuses (F1: T3.15AL /250 V) used, not located in operator access areas. | P |
| 1.7.7 | Wiring terminals | See below. | N |
| 1.7.7.1 | Protective earthing and bonding terminals | Class II equipment. | N |
| 1.7.7.2 | Terminal for a.c. mains supply conductors | The equipment is not permanently connected. | N |
| 1.7.7.3 | Terminals for d.c. mains supply conductors | The equipment is not supplied from d.c mains. | N |
| 1.7.8 | Controls and indicators | See below. | N |
| 1.7.8.1 | Identification, location and marking | No switch or safety involved indicators provided. | N |
| 1.7.8.2 | Colours | No safety relevant color for controls. | N |
| 1.7.8.3 | Symbols according to IEC 60417 | No symbols used. | N |
| 1.7.8.4 | Markings using figures | No figures used. | N |
| 1.7.9 | Isolation of multiple power sources | Only one connection supplying hazardous voltages and energy levels to the equipment. | N |
| 1.7.10 | Thermostats and other regulating devices | No thermostats or other regulating devices. | N |
| 1.7.11 | Durability | The marking plate has no curling and is not able to be removed easily. | P |
| 1.7.12 | Removable parts | No removable part. | N |
| 1.7.13 | Replaceable batteries | No battery. | N |
| | Language(s) | | N |
| 1.7.14 | Equipment for restricted access locations | Equipment not intended for installation in a RESTRICTED ACCESS LOCATION. | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

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| 2 | PROTECTION FROM HAZARDS | | P |
| 2.1 | Protection from electric shock and energy hazards | | P |
| 2.1.1 | Protection in operator access areas | Only SELV signal interface accessible by operator. | P |
| 2.1.1.1 | Access to energized parts | See below. | P |
| | Test by inspection | No access with test finger and test pin to any energized parts or hazardous voltage. | P |
| | Test with test finger (Figure 2A) | No access to any energized parts or hazardous voltage with test finger. | P |
| | Test with test pin (Figure 2B) | No access to any energized parts or hazardous voltage with test pin. | P |
| | Test with test probe (Figure 2C) | | N |
| 2.1.1.2 | Battery compartments | | N |
| 2.1.1.3 | Access to ELV wiring | | N |
| | Working voltage (V _{peak} or V _{rms}); 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 | The energy does not exceed 240VA between any two points of accessible parts. (See appended table 2.1.1.5) | P |
| 2.1.1.6 | Manual controls | No Manual control in primary circuit. | N |
| 2.1.1.7 | Discharge of capacitors in equipment | No risks of electric shock. See below. | P |
| | Measured voltage (V); time-constant (s) | (See appended table 2.1.1.7) | — |
| 2.1.1.8 | Energy hazards – d.c. mains supply | No direct connected to 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 | Equipment complied with 2.1.1.1. | P |
| 2.1.2 | Protection in service access areas | No maintenance works in operation mode necessary. | N |
| 2.1.3 | Protection in restricted access locations | The unit is not intended to be used in restricted locations. | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

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| 2.2 | SELV circuits | | P |
| 2.2.1 | General requirements | See below. | P |
| 2.2.2 | Voltages under normal conditions (V) | 42.4V peak or 60V d.c. are not exceeded in SELV circuit under normal operation. (See appended table 2.2.2) | P |
| 2.2.3 | Voltages under fault conditions (V)..... | Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V d.c. were not exceeded within 0.2 sec. and limits 42.4V peak and 60V d.c. were not exceeded for longer than 0.2 sec. (See appended table 2.2.3) | P |
| 2.2.4 | Connection of SELV circuits to other circuits..... | See 2.2.2 and 2.2.3. | P |

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| 2.3 | TNV circuits | | N |
| 2.3.1 | Limits | No TNV circuit. | 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 |

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| 2.4 | Limited current circuits | | P |
| 2.4.1 | General requirements | Limits are not exceeded. | P |
| 2.4.2 | Limit values | (See appended table 2.4.2) | P |
| | Frequency (Hz) | (See appended table 2.4.2) | — |
| | Measured current (mA)..... | (See appended table 2.4.2) | — |
| | Measured voltage (V) | (See appended table 2.4.2) | — |



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| Clause | Requirement - Test | Result - Remark | Verdict |

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| | Measured capacitance (nF or μ F) | | — |
| 2.4.3 | Connection of limited current circuits to other circuits | Only intended to be connected with SELV circuits. | P |

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| 2.5 | Limited power sources | | P |
| | a) Inherently limited output | | N |
| | b) Impedance limited output | | N |
| | c) Regulating network limited output under normal operating and single fault condition | Output for all speaker complied with limited power source. | P |
| | d) Overcurrent protective device limited output | | N |
| | Max. output voltage (V), max. output current (A), max. apparent power (VA) | (See appended table 2.5) | — |
| | Current rating of overcurrent protective device (A) | | — |

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|---------|---|---------------------|----------|
| 2.6 | Provisions for earthing and bonding | | N |
| 2.6.1 | Protective earthing | Class II equipment. | 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 (mm^2), AWG | | — |
| 2.6.3.3 | Size of protective bonding conductors | | N |
| | Rated current (A), cross-sectional area (mm^2), AWG | | — |
| | Protective current rating (A), cross-sectional area (mm^2), AWG | | — |
| 2.6.3.4 | Resistance of earthing conductors and their terminations; resistance (Ω), 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 |
| 2.6.4.2 | Protective earthing and bonding terminals | | N |
| | Rated current (A), type and nominal thread diameter (mm) | | — |



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| Clause | Requirement - Test | Result - Remark | Verdict |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors | | N |
| 2.6.5 | Integrity of protective earthing | | — |
| 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 |

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| 2.7 | Overcurrent and earth fault protection in primary circuits | | P |
| 2.7.1 | Basic requirements | Protective device is integrated in the equipment, see also Sub-clause 5.3. | P |
| | Instructions when protection relies on building installation | Not required for pluggable equipment type A. | N |
| 2.7.2 | Faults not simulated in 5.3.7 | The protection devices are well dimensioned and mounted. | P |
| 2.7.3 | Short-circuit backup protection | Pluggable equipment type A, the building installation is considered as providing short-circuit backup protection. | P |
| 2.7.4 | Number and location of protective devices | Overcurrent protection by one built-in fuse. | P |
| 2.7.5 | Protection by several devices | Only one protective device. | N |
| 2.7.6 | Warning to service personnel | No fuse used in the neutral phase. | N |

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| 2.8 | Safety interlocks | | N |
| 2.8.1 | General principles | No such device. | N |
| 2.8.2 | Protection requirements | | N |
| 2.8.3 | Inadvertent reactivation | | N |
| 2.8.4 | Fail-safe operation | | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

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| 2.8.5 | Moving parts | | N |
| 2.8.6 | Overriding | | N |
| 2.8.7 | Switches and relays | | N |
| 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 (V) | | N |
| 2.8.8 | Mechanical actuators | | N |

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| 2.9 | Electrical insulation | | P |
| 2.9.1 | Properties of insulating materials | Natural rubber, asbestos or hygroscopic material is not used. | P |
| 2.9.2 | Humidity conditioning | Humidity treatment performed for 120 h. | P |
| | Relative humidity (%), temperature (°C) | 93% R.H., 40°C | — |
| 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. | — |

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| 2.10 | Clearances, creepage distances and distances through insulation | | P |
| 2.10.1 | General | See below. | P |
| 2.10.1.1 | Frequency | Considered. | P |
| 2.10.1.2 | Pollution degrees | Pollution Degree 2. | P |
| 2.10.1.3 | Reduced values for functional insulation | The functional insulation complied with clause 5.3.4. | P |
| 2.10.1.4 | Intervening unconnected conductive parts | Considered. | P |
| 2.10.1.5 | Insulation with varying dimensions | No such transformer used. | N |
| 2.10.1.6 | Special separation requirements | Special separation is not used. | N |
| 2.10.1.7 | Insulation in circuits generating starting pulses | No insulation in circuit generating starting pulses. | N |
| 2.10.2 | Determination of working voltage | See below. | P |



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| 2.10.2.1 | General | The rms and the peak voltage of the appliance is mains voltage 240V. The unit was connected to a 240V TN power system. | P |
| 2.10.2.2 | RMS working voltage | (See appended table 2.10.2) | P |
| 2.10.2.3 | Peak working voltage | (See appended table 2.10.2) | P |
| 2.10.3 | Clearances | See below | P |
| 2.10.3.1 | General | Alternate method of Annex G was not considered. | P |
| 2.10.3.2 | Mains transient voltages | Measurement not relevant. | 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 | (See appended table 2.10.3 and 2.10.4). | P |
| 2.10.3.4 | Clearances in secondary circuits | Only the functional insulation in secondary circuits complied with clause 5.3.4. | P |
| 2.10.3.5 | Clearances in circuits having starting pulses | The circuit will not generating starting pulse. | N |
| 2.10.3.6 | Transients from a.c. mains supply | Considered. | P |
| 2.10.3.7 | Transients from d.c. mains supply | Not connected to d.c mains supply. | N |
| 2.10.3.8 | Transients from telecommunication networks and cable distribution systems | Not connected to telecommunication networks and cable distribution system. | N |
| 2.10.3.9 | Measurement of transient voltage levels | Measurement not relevant. | 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 | See below. | P |
| 2.10.4.1 | General | Considered. | P |
| 2.10.4.2 | Material group and comparative tracking index | Material group IIIb is assumed to be used. | P |
| | CTI tests | CTI rating for all materials of min. 100. | — |



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| 2.10.4.3 | Minimum creepage distances | (See appended table 2.10.3 and 2.10.4). | P |
| 2.10.5 | Solid insulation | See below. | P |
| 2.10.5.1 | General | Considered. | P |
| 2.10.5.2 | Distances through insulation | (See appended table 2.10.5) | P |
| 2.10.5.3 | Insulating compound as solid insulation | No such construction used. | P |
| 2.10.5.4 | Semiconductor devices | Optocoupler is certified component. (See appended table 1.5.1) | P |
| 2.10.5.5. | Cemented joints | Not used. | N |
| 2.10.5.6 | Thin sheet material – General | The thin sheet materials of polyester tape used in and around transformer T1. | P |
| 2.10.5.7 | Separable thin sheet material | Not used. | N |
| | Number of layers (pcs) | | — |
| 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 |
| | Electric strength test | | — |
| 2.10.5.10 | Thin sheet material – alternative test procedure | | P |
| | Electric strength test | (See appended table 5.2) | — |
| 2.10.5.11 | Insulation in wound components | Triple insulated wire used as secondary winding of transformer T1. | P |
| 2.10.5.12 | Wire in wound components | | P |
| | Working voltage | | P |
| | a) Basic insulation not under stress | | N |
| | b) Basic, supplementary, reinforced insulation | See sub-clause 2.10.5.11. | P |
| | c) Compliance with Annex U | | P |
| | Two wires in contact inside wound component; angle between 45° and 90° | By insulation tube. | P |
| 2.10.5.13 | Wire with solvent-based enamel in wound components | | N |
| | Electric strength test | | — |
| | 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 |



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| 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 | | 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 |
| 2.10.8.3 | Electric strength test | | N |
| 2.10.8.4 | Abrasion resistance test | | N |
| 2.10.9 | Thermal cycling | No special insulation in order to reduce distance. | 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 | No hermetically sealed component. | N |

| | | | |
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| 3 | WIRING, CONNECTIONS AND SUPPLY | | P |
| 3.1 | General | | P |
| 3.1.1 | Current rating and overcurrent protection | All internal wires are UL recognized wiring which is PVC insulated, rated VW-1, min. 80°C. Internal wiring gauge is suitable for current intended to be carried. No internal wire for primary power distribution. | P |
| 3.1.2 | Protection against mechanical damage | Wires do not touch sharp edges and heatsinks which could damage the insulation and cause hazard. | P |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|--------|--|--|----------|
| 3.1.3 | Securing of internal wiring | The wires are secured by soldering, solder pins and quick connect terminals so that a loosening of the terminal connection is unlikely. | P |
| 3.1.4 | Insulation of conductors | The insulation of the individual conductors are suitable for the application and the working voltage. For the insulation material see 3.1.1. | P |
| 3.1.5 | Beads and ceramic insulators | Not used. | N |
| 3.1.6 | Screws for electrical contact pressure | No such screws provided. | N |
| 3.1.7 | Insulating materials in electrical connections | | N |
| 3.1.8 | Self-tapping and spaced thread screws | No self tapping screws are used. | N |
| 3.1.9 | Termination of conductors | All conductors are reliable secured. | P |
| | 10 N pull test | | P |
| 3.1.10 | Sleeving on wiring | | N |

| | | | |
|---------|---|--|----------|
| 3.2 | Connection to a mains supply | | P |
| 3.2.1 | Means of connection | See below. | P |
| 3.2.1.1 | Connection to an a.c. mains supply | Plug or appliance inlet used. | P |
| 3.2.1.2 | Connection to a d.c. mains supply | The equipment is not for connection to a d.c.mains supply. | N |
| 3.2.2 | Multiple supply connections | Only one supply. | N |
| 3.2.3 | Permanently connected equipment | Not a permanently connected equipment. | N |
| | Number of conductors, diameter of cable and conduits (mm) | | — |
| 3.2.4 | Appliance inlets | Certified appliance inlet used. | P |
| 3.2.5 | Power supply cords | Certified power supply cord used. | P |
| 3.2.5.1 | AC Power supply cords | (See appended table 1.5.1.) | P |
| | Type | (See appended table 1.5.1.) | — |
| | Rated current (A), cross-sectional area (mm ²), AWG | (See appended table 1.5.1.) | — |
| 3.2.5.2 | DC power supply cords | | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|-------|--|---|----------|
| 3.2.6 | Cord anchorages and strain relief | See below | P |
| | Mass of equipment (kg), pull (N) | 2.8kg, 60N, 25 times, 1s. | — |
| | Longitudinal displacement (mm) | 1.0mm | — |
| 3.2.7 | Protection against mechanical damage | Strain Relief for power supply cord provided. | P |
| 3.2.8 | Cord guards | No cord guard used. | N |
| | D (mm); test mass (g) | | — |
| | Radius of curvature of cord (mm)..... | | — |
| 3.2.9 | Supply wiring space | Complied checked. | P |

| | | | |
|-------|--|--|----------|
| 3.3 | Wiring terminals for connection of external conductors | | P |
| 3.3.1 | Wiring terminals | Compliance checked for non-detachable cord. | P |
| 3.3.2 | Connection of non-detachable power supply cords | Power cord soldered on PCB and glued. Excess of temperature rise on terminal is unlikely. | P |
| 3.3.3 | Screw terminals | | N |
| 3.3.4 | Conductor sizes to be connected | H03VVH2-F. | P |
| | Rated current (A), cord/cable type, cross-sectional area (mm ²)..... | Cross-sectional area of each conductor 0.75mm ² , 18AWG. | — |
| 3.3.5 | Wiring terminals sizes | | N |
| | Rated current (A), type, nominal thread diameter (mm)..... | | — |
| 3.3.6 | Wiring terminals design | | N |
| 3.3.7 | Grouping of wiring terminals | | N |
| 3.3.8 | Standard wire | Compliance check. | P |

| | | | |
|-------|-------------------------------------|---|----------|
| 3.4 | Disconnection from the mains supply | | P |
| 3.4.1 | General requirement | See Sub-clause 3.4.2. | P |
| 3.4.2 | Disconnect devices | Plug on power cord or appliance inlet provided as disconnect devices. | P |
| 3.4.3 | Permanently connected equipment | Not a permanently connected equipment. | N |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|--------|---|---|----------|
| 3.4.4 | Parts which remain energised | When plug is disconnected no remaining parts with hazardous voltage in the equipment. | P |
| 3.4.5 | Switches in flexible cords | No switch. | N |
| 3.4.6 | Number of poles - single-phase and d.c. equipment | The disconnect device disconnects both poles simultaneously. | P |
| 3.4.7 | Number of poles - three-phase equipment | Single phase equipment. | N |
| 3.4.8 | Switches as disconnect devices | No switches provided. | N |
| 3.4.9 | Plugs as disconnect devices | See 1.7.2.1 | P |
| 3.4.10 | Interconnected equipment | Interconnection to other devices by secondary output only. | N |
| 3.4.11 | Multiple power sources | Only one supply connection provided. | N |

| | | | |
|-------|--|---|----------|
| 3.5 | Interconnection of equipment | | P |
| 3.5.1 | General requirements | See below | P |
| 3.5.2 | Types of interconnection circuits | Interconnection circuits are SELV CIRCUITS. | P |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection. | N |
| 3.5.4 | Data ports for additional equipment | See 2.5. | P |

| | | | |
|-----|-----------------------|----------------------------------|----------|
| 4 | PHYSICAL REQUIREMENTS | | P |
| 4.1 | Stability | | N |
| | Angle of 10° | Mass of equipment not exceed 7kg | N |
| | Test: force (N) | | N |

| | | | |
|-------|--------------------------|--|----------|
| 4.2 | Mechanical strength | | P |
| 4.2.1 | General | See below. | P |
| 4.2.2 | Steady force test, 10 N | Considered. | P |
| 4.2.3 | Steady force test, 30 N | No internal enclosure. | N |
| 4.2.4 | Steady force test, 250 N | 250N applied to enclosure. No energy or other hazards. | P |
| 4.2.5 | Impact test | | P |
| | Fall test | | P |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|--------|---|--|----------|
| | Swing test | | P |
| 4.2.6 | Drop test; height (mm) | | N |
| 4.2.7 | Stress relief | 81°C, 7 hours, no deformation on plastic enclosure and wood enclosure. | P |
| 4.2.8 | Cathode ray tubes | No CRT in the unit. | N |
| | Picture tube separately certified | | N |
| 4.2.9 | High pressure lamps | No high pressure lamp. | N |
| 4.2.10 | Wall or ceiling mounted equipment; force (N) ...: | Not wall or ceiling mounted. | N |

| | | | |
|-------|--|---|----------|
| 4.3 | Design and construction | | P |
| 4.3.1 | Edges and corners | All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard. | P |
| 4.3.2 | Handles and manual controls; force (N).....: | No handle or manual control in primary. | N |
| 4.3.3 | Adjustable controls | No control device. | N |
| 4.3.4 | Securing of parts | No connection likely to be exposed to mechanical stress. | P |
| 4.3.5 | Connection by plugs and sockets | No mismatch of connector, plug or socket possible. IEC 60083 and IEC 60320-1 connectors are not used in SELV. | P |
| 4.3.6 | Direct plug-in equipment | | N |
| | Torque | | — |
| | Compliance with the relevant mains plug standard | | N |
| 4.3.7 | Heating elements in earthed equipment | No heating element. | N |
| 4.3.8 | Batteries | No battery. | 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 | No oil or grease. | N |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|----------|---|--|----------|
| 4.3.10 | Dust, powders, liquids and gases | The equipment in intended use not considered to be exposed to dust, powers, liquids and gases. | N |
| 4.3.11 | Containers for liquids or gases | No container for liquid or gas. | N |
| 4.3.12 | Flammable liquids.....: | No flammable liquid. | N |
| | Quantity of liquid (l).....: | | N |
| | Flash point (°C).....: | | N |
| 4.3.13 | Radiation | | N |
| 4.3.13.1 | General | | N |
| 4.3.13.2 | Ionizing radiation | | N |
| | Measured radiation (pA/kg).....: | | — |
| | Measured high-voltage (kV).....: | | — |
| | Measured focus voltage (kV).....: | | — |
| | CRT markings.....: | | — |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | | 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) | | N |
| | Laser class.....: | | — |
| 4.3.13.6 | Other types.....: | | N |

| | | | |
|-------|---|---------------------------|----------|
| 4.4 | Protection against hazardous moving parts | | N |
| 4.4.1 | General | No hazardous moving part. | N |
| 4.4.2 | Protection in operator access areas | | N |
| 4.4.3 | Protection in restricted access locations | | N |
| 4.4.4 | Protection in service access areas | | N |

| | | | |
|-------|---|---------------------------|----------|
| 4.5 | Thermal requirements | | P |
| 4.5.1 | General | No exceeding temperature. | P |
| 4.5.2 | Temperature tests | (See appended table 4.5) | P |
| | Normal load condition per Annex L.....: | (See Annex L) | — |
| 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 | | P |
| 4.6.1 | Top and side openings | (See appended table 4.6.1) | P |
| | Dimensions (mm) | | — |
| 4.6.2 | Bottoms of fire enclosures | No openings. | P |
| | Construction of the bottom, dimensions (mm) | | — |
| 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 | Use of materials with the required flammability classes. | P |
| | Method 1, selection and application of components wiring and materials | Selection and application of components and materials which minimize the possibility of ignition and spread of flame. | P |
| | Method 2, application of all of simulated fault condition tests | | N |
| 4.7.2 | Conditions for a fire enclosure | See below | P |
| 4.7.2.1 | Parts requiring a fire enclosure | With having the following components: <ul style="list-style-type: none"> ■ Components in primary. ■ Insulated wiring. the fire enclosure is required | P |
| 4.7.2.2 | Parts not requiring a fire enclosure | Centre, Left and right speaker supplied by limited power source. | P |
| 4.7.3 | Materials | See below. | P |
| 4.7.3.1 | General | PCB rated V-1 or better. | P |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---------|--|---|----------|
| 4.7.3.2 | Materials for fire enclosures | V-1 or better. | P |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures | HB or better for enclosure of left and right speaker. | P |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | Internal components except small parts are V-2, HF-2 or better. | P |
| 4.7.3.5 | Materials for air filter assemblies | No air filter provided. | N |
| 4.7.3.6 | Materials used in high-voltage components | No high voltage component. | N |

| | | | |
|---------|--|--|----------|
| 5 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS | | P |
| 5.1 | Touch current and protective conductor current | | P |
| 5.1.1 | General | See sub-clauses 5.1.2 to 5.1.6. | P |
| 5.1.2 | Configuration of equipment under test (EUT) | See below. | P |
| 5.1.2.1 | Single connection to an a.c. mains supply | EUT has only one mains connection. | P |
| 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 | Using figure 5A. | P |
| 5.1.4 | Application of measuring instrument | Using measuring instrument in annex D. | P |
| 5.1.5 | Test procedure | The touch current was measured from mains to output terminals. | P |
| 5.1.6 | Test measurements | See below. | P |
| | Supply voltage (V) | (See appended table 5.1.6) | — |
| | Measured touch current (mA) | (See appended table 5.1.6) | — |
| | Max. allowed touch current (mA) | (See appended table 5.1.6) | — |
| | 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 and from telecommunication networks and cable distribution systems and from telecommunication networks | No TNV circuits. | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---------|--|--|----------|
| 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) | | — |
| | 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 | | P |
| 5.2.1 | General | (See appended table 5.2) | P |
| 5.2.2 | Test procedure | (See appended table 5.2) | P |

| | | | |
|---------|---|--|----------|
| 5.3 | Abnormal operating and fault conditions | | P |
| 5.3.1 | Protection against overload and abnormal operation | (See appended table 5.3). | P |
| 5.3.2 | Motors | No motor. | N |
| 5.3.3 | Transformers | With the shorted and overload of the transformer, no high temperature of the transformer was recorded. Results of the tests see appended table 5.3 and Annex C. | P |
| 5.3.4 | Functional insulation | Method c) used. | P |
| 5.3.5 | Electromechanical components | No electromechanical component. | N |
| 5.3.6 | Audio amplifiers in ITE | (See appended table 5.3). | P |
| 5.3.7 | Simulation of faults | | P |
| 5.3.8 | Unattended equipment | | N |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions | See below | P |
| 5.3.9.1 | During the tests | Neither fire burns the equipment nor molten metal. | P |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---------|-----------------|--|----------|
| 5.3.9.2 | After the tests | No reduction of clearance and creepage distances. Electric strength test is made on reinforced insulation after tests. | P |
|---------|-----------------|--|----------|

| | | | |
|---------|---|--|----------|
| 6 | CONNECTION TO TELECOMMUNICATION NETWORKS | | N |
| 6.1 | Protection of telecommunication network service personnel, 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 | | N |
| | Supply voltage (V) | | — |
| | Current in the test circuit (mA) | | — |
| 6.1.2.2 | Exclusions | | N |

| | | | |
|---------|---|--|----------|
| 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 telecommunication wiring system from overheating | | N |
| | Max. output current (A) | | — |
| | Current limiting method | | — |

| | | | |
|-------|---|--|----------|
| 7 | CONNECTION TO CABLE DISTRIBUTION SYSTEMS | | N |
| 7.1 | General | | 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 |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|-------|--------------------|--|----------|
| 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 |
| | 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 | | 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).....: | | — |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|-------|----------------------------------|--|----------|
| | Sample 3 burning time (s)..... : | | — |
| A.3 | Hot flaming oil test (see 4.6.2) | | N |
| 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 | | — |
| | 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 DC motors in secondary circuits | | N |
| B.7 | Locked-rotor overload test for DC 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) | | — |

| | | | |
|---|---|---------------------------|----------|
| C | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3) | | P |
| | Position | T1 | — |
| | Manufacturer | See appended table 1.5.1. | — |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|-----|--|---|----------|
| | Type | See appended table 1.5.1. | — |
| | Rated values | Class A | |
| | Method of protection | Protection by inherent or external impedance. | — |
| C.1 | Overload test | See appended table 5.3. | P |
| C.2 | Insulation | See appended table C.2. | P |
| | Protection from displacement of windings | See appended table C.2. | — |

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

| | | | |
|---|--|--|----------|
| E | ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13) | | N |
| F | ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G) | | P |

| | | | |
|-------|--|--|----------|
| 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 | | N |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|-----|--|--|----------|
| | For an a.c. mains supply | | N |
| | For a d.c. mains supply | | N |
| | b) Transients from a telecommunication network | | N |
| G.6 | Determination of minimum clearances | | N |

| | | | |
|---|--|--|----------|
| H | ANNEX H, IONIZING RADIATION (see 4.3.13) | | N |
|---|--|--|----------|

| | | | |
|---|--|--|----------|
| 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 | No thermal control. | 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) | | P |
| 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 | Maximum normal load. | P |

| | | | |
|---------|---|----------------------|----------|
| M | ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1) | | N |
| M.1 | Introduction | No telephone signal. | N |
| M.2 | Method A | | N |
| M.3 | Method B | | N |
| M.3.1 | Ringling signal | | N |
| M.3.1.1 | Frequency (Hz) | | N |



| EN 60950-1 | | | |
|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---------|---|--|----------|
| 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 |
| 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 |

| | | | |
|---|-------------------------------|--|----------|
| P | ANNEX P, NORMATIVE REFERENCES | | P |
|---|-------------------------------|--|----------|

| | | | |
|---|---|--|----------|
| 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 |
| | | | — |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---|--|---|----------|
| U | ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4) | | P |
| | Separate test report | VDE & UL approved triple insulated wire used. | — |

| | | | |
|-----|--|--|----------|
| V | ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1) | | P |
| V.1 | Introduction | | P |
| V.2 | TN power systems | | P |

| | | | |
|-------|--|--|----------|
| W | ANNEX W, SUMMATION OF TOUCH CURRENTS | | N |
| W.1 | Touch current from electronic circuits | | N |
| 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 | | 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 |
|----|---------------------------------------|--|----------|

| | | | |
|----|---|--|---|
| BB | ANNEX BB, CHANGES IN THE SECOND EDITION | | — |
|----|---|--|---|



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| | |
|-------|------------------------------------|
| 1.5.1 | TABLE: list of critical components |
|-------|------------------------------------|

| object/part No. | manufacturer/ trademark | type/model | technical data | standard | mark(s) of conformity ¹⁾ |
|---|---|-------------|--|------------|--|
| EU plug | Various | Various | 250VAC, 2.5A | EN 50075 | EU certification mark |
| BS plug | Various | Various | 250VAC, 13A | BS 1363-1 | BS certification mark |
| Power cord | Various | H03VVH2-F | 2x0.75mm ² | HD 21.5 S3 | EU certification mark |
| Wood Enclosure (for Subwoofer) | -- | -- | Wooden, 6.0mm thickness min. | -- | -- |
| Plastic enclosure (for Subwoofer speaker) | Lg Chemical Ltd. | AF312A | V-0, 1.5mm thickness min., 75°C min. | UL 94 | UL |
| Plastic enclosure (for Front Right and Left, Rear Right and Left, Centre speaker) | Various | Various | HB or better | UL 94 | UL |
| Speaker (For Subwoofer) | -- | -- | 6Ω | -- | -- |
| Speaker (For Center two Series) | -- | -- | 2Ω | -- | -- |
| Speaker (For Front Left and Right) | -- | -- | 4Ω | -- | -- |
| Speaker (For Rear Left and Right) | -- | -- | 4Ω | -- | -- |
| PCB | Various | Various | V-1 or better, 105°C min. | UL 796 | UL |
| For Power Board | | | | | |
| Primary Connector (AC) | Zhejiang Jinda Electronics Co., Ltd | 3.96T-02 | 2.5A, 250V | -- | UL |
| Fuse (F1) | Xc Electronics (Shenzhen) Corp Ltd | 3T-Serie(s) | T3.15AL, 250 V | EN 60127 | VDE |
| | Shenzhen Lanson Electronics Co Ltd | 3K | T3.15AL, 250 V | EN 60127 | VDE |



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| object/part No. | manufacturer/ trademark | type/model | technical data | standard | mark(s) of conformity ¹⁾ |
|--|--|--------------|---|--------------|--|
| X-Cap. (C1) (Optional) | Tenta Electric Industrial Co Ltd | MEX | Min. 250V, max. 0.22µF, min. 85°C | IEC 60384-14 | VDE, UL |
| | Shenzhen Su Rong Capacitors Co., Ltd. | MPX/MKP | Min. 250V, max. 0.22µF, min. 85°C | IEC 60384-14 | VDE, UL |
| | Yimanfeng Science And Technology Ltd Co | MPX/MKP | Min. 250V, max. 0.22µF, min. 85°C | IEC 60384-14 | VDE, UL |
| Bleeder Resistor (R14, R17) | -- | -- | 470KΩ, Min.1/4W | -- | -- |
| Choke (L1) | Shenzhen Dong Sheng Xing Science Technology Co., Ltd. | UU10.5 | 105°C | -- | -- |
| | Huang shi Hong guang Electronic Co., Ltd. | UU10.5 | 105°C | -- | -- |
| - Bobbin of L1 | Chang Chun Plastics Co Ltd. | T375J, T373J | V-0, 150°C | UL 94 | UL |
| Bridge Diode (D1, D2, D3, D4) | -- | -- | Min. 2.0A, min. 700V | -- | -- |
| Electrolytic Capacitor (C2) | -- | -- | Min. 400 V, max.120uF, min.105°C. | -- | -- |
| PWM IC (U1) | -- | -- | Min. 3.0A, min. 700V | -- | -- |
| Bridging Capacitors (C14) (Optional) | Xi'an Jiu Yuan High Voltage Capacitor Factory | CT7 | Max. 1000pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |
| | Shantou High- New Technology Dev. Zone Songtian Enterprise Co., Ltd. | CD | Max. 1000pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| object/part No. | manufacturer/ trademark | type/model | technical data | standard | mark(s) of conformity ¹⁾ |
|-------------------------------------|---|--------------|--|---------------------------|--|
| | Jyh Chung Electronics Co Ltd | JD | Max. 1000pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |
| | Guangzhou Huawan Electronics Co., Ltd. | EG-Y1 | Max. 1000pF, min. 250V, min. 85°C | IEC 60384-14 | VDE |
| Bridging Capacitors (C4) (Optional) | Xi'an Jiu Yuan High Voltage Capacitor Factory | CT7 | Max. 2200pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |
| | Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd. | CD | Max. 2200pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |
| | Jyh Chung Electronics Co Ltd | JD | Max. 2200pF, min. 250V, min. 85°C | IEC 60384-14 | VDE, UL |
| | Guangzhou Huawan Electronics Co., Ltd. | EG-Y1 | Max. 2200pF, min. 250V, min. 85°C | IEC 60384-14 | VDE |
| Optocoupler (U2) | Bright Led Electronics Corp | BPC-817B | di >0.4 mm External Cr>=7.62mm Internal Cr=8.0mm | VDE 0884 EN 60747-5-2 | VDE, UL |
| Transformer (T1) | ShenZhen Dong Sheng Xing Science Technology Co., Ltd. | EER28-1W | Class B | -- | Tested in appliance |
| | Huang shi Hong guang Electronic Co., Ltd | EER28-1W | Class B | -- | Tested in appliance |
| - Bobbin of T1 | Chang Chun Plastics Co Ltd | T373J, T375J | V-0, 150°C | UL 94 | UL |
| - Triple Wire of T1 | Shanghai Xiangxiang Electron Co Ltd | TKE-B | 130°C | EN 60950-1, UL 60950-1 | VDE, UL |



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| object/part No. | manufacturer/ trademark | type/model | technical data | standard | mark(s) of conformity ¹⁾ |
|---|----------------------------|------------|-------------------------------------|----------|--|
| Primary Wire and Power board output Wire | Various | Various | 300V, VW-1, 105°C, min. 20AWG | UL 758 | UL |

Supplementary information:



| EN 60950-1 | | | |
|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | |
|-------|---|----------|
| 1.6.2 | TABLE: electrical data (in normal conditions) | P |
|-------|---|----------|

| fuse # | I _{rated} (mA) | U (V)/F(Hz) | P (W) | I (mA) | I _{fuse} (mA) | condition/status |
|--------|-------------------------|-------------|-------|--------|------------------------|---------------------|
| F1 | -- | 108V/50Hz | 35.3 | 645 | 645 | Maximum normal load |
| F1 | -- | 108V/60Hz | 35.3 | 643 | 643 | Maximum normal load |
| F1 | 800 | 120V/50Hz | 35.2 | 600 | 600 | Maximum normal load |
| F1 | 800 | 120V/60Hz | 35.1 | 592 | 592 | Maximum normal load |
| F1 | 800 | 240V/50Hz | 35.5 | 355 | 355 | Maximum normal load |
| F1 | 800 | 240V/60Hz | 35.5 | 351 | 351 | Maximum normal load |
| F1 | -- | 254V/50Hz | 35.7 | 341 | 341 | Maximum normal load |
| F1 | -- | 254V/60Hz | 35.7 | 333 | 333 | Maximum normal load |
| F1 | -- | 264V/50Hz | 35.8 | 327 | 327 | Maximum normal load |
| F1 | -- | 264V/60Hz | 35.8 | 325 | 325 | Maximum normal load |

Supplementary information:

Maximum normal load: Operated with pink noise signal was applied to the audio input terminal, 6 pieces speakers loaded with 1/8 non-clipped output power, Speaker: Subwoofer: 3.15V 6ohm; Center: 2.14V, 4ohm; Front Left & Right: 1.61V, 4ohm; Rear Left & Right: 1.61V, 4ohm.

| | | |
|---------|---------------------------|----------|
| 2.1.1.5 | TABLE: max. V, A, VA test | P |
|---------|---------------------------|----------|

| Voltage (rated) (V) | Current (rated) (A) | Voltage (max.) (V) | Current (max.) (A) | VA (max.) (VA) |
|----------------------------------|---------------------|--------------------|--------------------|----------------|
| +15Vdc output of the power board | -- | 16.4 | 16 | 87 |

Note(s):

| | | |
|---------|-----------------------|----------|
| 2.1.1.7 | TABLE: discharge test | P |
|---------|-----------------------|----------|

| Condition | τ calculated (s) | τ measured (s) | t _{u→0V} (s) | Comments |
|-----------|-----------------------|---------------------|-----------------------|---|
| Fuse in | 0.207 | 0.200 | 0.832 | V ₀ =378 V, 37% V ₀ =139.86 V |

Notes:

Overall capacity: C1 = 0.22uF

Discharge resistor: R14=R17 = 470KΩ

| | | |
|-------|--------------------------------------|----------|
| 2.2.2 | TABLE: Hazardous voltage measurement | P |
|-------|--------------------------------------|----------|

| Transformer | Location | max. Voltage | | Voltage Limitation Component |
|-------------|----------|--------------|--------|------------------------------|
| | | V peak | V d.c. | |
| | | | | |



| EN 60950-1 | | | | |
|------------|--------------------|-----------------|------|---------|
| Clause | Requirement - Test | Result - Remark | | Verdict |
| T1 | Pin 9 – 12 | 45.6 | -- | -- |
| | After R8 | 41.2 | -- | R8 |
| | After D7 | -- | 17.2 | D7 |
| Note(s): | | | | |

| 2.2.3 | TABLE: SEL voltage measurement | | | P |
|-----------------|--------------------------------|--|----------|---|
| Location | Voltage measured (V) | | Comments | |
| C9(+) to Return | 17.2 | | Short R8 | |
| C9(+) to Return | 0 | | Short D7 | |
| Note(s): | | | | |

| 2.4.2 | TABLE: limited current circuit measurement | | | | | P |
|-----------------------------|--|--------------|------------|------------|-----------------------|---|
| Location | Voltage (V) | Current (mA) | Freq. (Hz) | Limit (mA) | Comments | |
| C4 & C14 secondary to earth | 1.30 | 0.65 | 60 | 0.70 | C4=2200pF, C14=1000pF | |
| Note: | | | | | | |
| Test Voltage: 264V, 60Hz | | | | | | |

| 2.5 | TABLE: limited power source measurement | | | P |
|---|---|-------|----------|---------|
| | Limits | | Measured | Verdict |
| 01. According to Table 2B with a normal condition, (Uoc =3.15V) Subwoofer speaker: | | | | |
| | current (in A) | ≤ 8 | 2.4 | |
| | power (in VA) | ≤ 100 | 6.3 | |
| 02. According to Table 2B with a normal condition (Uoc =2.14V) Centre speaker: | | | | |
| | current (in A) | ≤ 8 | 1.8 | |
| | power (in VA) | ≤ 100 | 2.8 | |
| 03. According to Table 2B with a normal condition, (Uoc =1.61V) Front Left speaker: | | | | |
| | current (in A) | ≤ 8 | 1.2 | |
| | power (in VA) | ≤ 100 | 1.6 | |
| 04. According to Table 2B with a normal condition (Uoc =1.61V) Front Right speaker: | | | | |
| | current (in A) | ≤ 8 | 1.2 | |
| | power (in VA) | ≤ 100 | 1.6 | |
| 05. According to Table 2B with a normal condition, (Uoc =1.61V) Rear Left speaker: | | | | |



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|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---|--------------------------|------|--|
| | current (in A) ≤ 8 | 1.2 | |
| | power (in VA) ≤ 100 | 1.6 | |
| 06. According to Table 2B with a normal condition (Uoc =1.61V) Rear Rightt speaker: | | | |
| | current (in A) ≤ 8 | 1.2 | |
| | power (in VA) ≤ 100 | 1.6 | |
| Max non-clipped out power: | | | |
| 07. According to Table 2B with a single fault condition, (Uoc =8.9V) Subwoofer speaker: | | | |
| | current (in A) ≤ 8 | 3.7 | |
| | power (in VA) ≤ 100 | 25.4 | |
| 08. According to Table 2B with a single fault condition (Uoc =6.05V) Centre speaker: | | | |
| | current (in A) ≤ 8 | 2.2 | |
| | power (in VA) ≤ 100 | 12.4 | |
| 09. According to Table 2B with a single fault condition, (Uoc =4.54V) Front Left speaker: | | | |
| | current (in A) ≤ 8 | 1.8 | |
| | power (in VA) ≤ 100 | 7.2 | |
| 10. According to Table 2B with a single fault condition (Uoc =4.54V) Front Right speaker: | | | |
| | current (in A) ≤ 8 | 1.8 | |
| | power (in VA) ≤ 100 | 7.2 | |
| 11. According to Table 2B with a single fault condition, (Uoc =4.54V) Rear Left speaker: | | | |
| | current (in A) ≤ 8 | 1.8 | |
| | power (in VA) ≤ 100 | 7.2 | |
| 12. According to Table 2B with a single fault condition (Uoc =4.54V) Rear Rightt speaker: | | | |
| | current (in A) ≤ 8 | 1.8 | |
| | power (in VA) ≤ 100 | 7.2 | |
| Note(s): Test voltage: 240Vac, 60Hz | | | |

| 2.6.3.4 | TABLE: ground continue test | N |
|----------|-----------------------------|----------|
| Location | Resistance measured (mΩ) | Comments |
| -- | -- | -- |
| Note(s): | | |

| | | |
|--------|------------------------------------|----------|
| 2.10.2 | Table: working voltage measurement | P |
|--------|------------------------------------|----------|



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| Location | RMS voltage (V) | Peak voltage (V) | Comments |
|-------------------------|-----------------|------------------|-----------------------------|
| T1 Pin1,2 - 9 | 209 | 347 | |
| T1 Pin1,2 - 12 | 210 | 386 | |
| T1 Pin4 - 9 | 259 | 581 | Cr.=5.2mm, Cl.=4.6mm |
| T1 Pin4 - 12 | 250 | 572 | |
| T1 Pin5 - 9 | 218 | 403 | |
| T1 Pin5 - 12 | 216 | 366 | |
| T1 Pin6 - 9 | 216 | 359 | |
| T1 Pin6 - 12 | 217 | 374 | |
| U2 Pin1-3 | 222 | 366 | |
| U2 Pin1-4 | 211 | 350 | |
| U2 Pin2-3 | 221 | 365 | |
| U2 Pin2-4 | 210 | 351 | |
| C4 Primary – Secondary | 209 | 347 | |
| C14 Primary – Secondary | 216 | 359 | |
| T1 Pin5 - U2 Pin2 | 226 | 417 | |
| U2 Pin3 -T1 Pin9 | 212 | 355 | |
| C14 Primary - U2 Pin1 | 227 | 374 | |
| U2 Pin4 – C14 Secondary | 200 | 339 | |

Note(s): Test voltage: 240Vac, 60Hz

| 2.10.3 and 2.10.4 | TABLE: clearance and creepage distance measurements | | | | | P |
|--|---|--------------|------------------|---------|-------------------|----------|
| Clearance cl and creepage distance dcr at/of: | U p (V) | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required dcr (mm) | dcr (mm) |
| Under Fuse (F1) | < 420 | < 250 | 2.0 | 3.0 | 2.5 | 3.0 |
| L to N before fuse (F1) | < 420 | < 250 | 2.0 | 3.5 | 2.5 | 3.5 |
| Primary components (10N) to secondary components (10N) | | | | | | |
| Transformer Core to Secondary heat sink | 581 | 259 | 4.6 | 8.0 | 5.2 | 8.0 |
| Transformer Core to Secondary component(C11) | 581 | 259 | 4.6 | 7.1 | 5.2 | 7.1 |
| Primary trace to secondary trace | | | | | | |
| Trace under C4 | 347 | 209 | 4.0 | 7.1 | 5.0 | 7.1 |
| Trace under C14 | 359 | 216 | 4.0 | 6.6 | 5.0 | 6.6 |



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| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | | | | |
|----------------|-----|-----|-----|-----|-----|-----|
| Trace under U2 | 366 | 222 | 4.0 | 7.0 | 5.0 | 7.0 |
| Trace under T1 | 581 | 259 | 4.6 | 6.6 | 5.2 | 6.6 |

Notes:

1. Functional insulation shorted, see 5.3.4 a).
2. Other functional insulation evaluated according to sub-clause 5.3.4 c).
3. All internal wires were fixed by soldering and glued.
4. Fuse (F1) is covered with tube.
5. Clearance and creepage not described above are far larger than limit above.

| 2.10.5 | TABLE: distance through insulation measurements | | | P |
|---------------------------------------|---|------------------|------------------|---------------|
| Distance through insulation di at/of: | U r.m.s. (V) | Test voltage (V) | Required di (mm) | di (mm) |
| Optocoupler (reinforced insulation) | 250 | 3000 | 0.4 | ¹⁾ |

Note(s): ¹⁾ Refer to appended table 1.5.1 for details.

| 4.5 | TABLE: temperature rise measurements | | P |
|-----|--------------------------------------|------------------------|---|
| | test voltage (V) | A. 108Vac B. 264Vac | — |
| | t _{amb1} (°C) | -- | — |
| | t _{amb2} (°C) | -- | — |

| maximum temperature T of part/at: | T (°C) | | | | allowed T _{max} (°C) |
|-----------------------------------|--------|------|------|-------|-------------------------------|
| | A | | B | | |
| Locations: | Mea | Cal | Mea | Cal | |
| 01. T1 coil | 77.5 | 97.5 | 82.4 | 102.2 | 110 |
| 02. T1 core | 76.1 | 96.1 | 81.2 | 101.0 | 110 |
| 03. Input wire | 53.2 | 73.2 | 52.0 | 71.8 | 105 |
| 04. AC connector | 53.0 | 73.0 | 52.8 | 72.6 | -- |
| 05. C1 body | 56.0 | 76.0 | 52.2 | 72.0 | 105 |
| 06. L1 coil | 64.6 | 84.6 | 52.5 | 72.3 | 105 |
| 07. PWB near D1 | 64.1 | 84.1 | 54.1 | 73.9 | 105 |
| 08. C2 body | 56.5 | 76.5 | 53.4 | 73.2 | 105 |
| 09. Heat sink near U1 | 66.1 | 86.1 | 67.7 | 87.5 | 105 |
| 10. C4 body | 59.2 | 79.2 | 61.3 | 81.1 | 85 |
| 11. C14 body | 58.9 | 78.9 | 60.8 | 80.6 | 85 |
| 12. U2 body | 69.7 | 89.7 | 74.0 | 93.8 | 100 |
| 13. PWB near D7 | 69.7 | 89.7 | 72.3 | 92.1 | 105 |
| 14. C9 body | 62.8 | 82.8 | 66.1 | 85.9 | 105 |
| 15. L2 coil | 59.2 | 79.2 | 61.9 | 81.7 | 105 |
| 16. Output wire | 59.9 | 79.9 | 61.6 | 81.4 | 105 |
| 17. C71 body | 48.2 | 68.2 | 47.8 | 67.6 | 105 |
| 18. C79 body | 66.5 | 86.5 | 66.7 | 86.5 | 105 |



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|------------|--------------------|--|--|-----------------|--|---------|
| Clause | Requirement - Test | | | Result - Remark | | Verdict |

| | | | | | |
|---------------------------------|------|------|------|------|-----|
| 19. PWB near IC5 | 76.4 | 96.4 | 76.9 | 96.7 | 105 |
| 20. Inside enclosure (plastic) | 50.4 | 70.4 | 50.4 | 70.2 | -- |
| 21. Inside enclosure (wood) | 47.0 | 67.0 | 48.3 | 68.1 | -- |
| 22. Outside enclosure (plastic) | 34.0 | 54.0 | 34.0 | 53.8 | 95 |
| 23. Outside enclosure (wood) | 39.0 | 59.0 | 40.9 | 60.7 | 95 |
| 24. Knob body | 29.8 | 49.8 | 30.3 | 50.1 | 75 |
| 25. Ambient (°C) | 25.0 | 45.0 | 25.2 | 45.0 | -- |

Note:

Supplementary information:

- The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.
- With a maximum ambient temperature of 45 °C for model as declared by the manufacturer.
- All values for T (°C) are re-calculated from actual ambient which the actual ambient lower than manufacturer's specification ambient temperature.

| 4.5.5 | TABLE: ball pressure test of thermoplastic parts | | | P |
|--|--|--------|--------------------------|----------|
| | allowed impression diameter (mm) | ≤ 2 mm | | — |
| Part | Test temperature (°C) | | Impression diameter (mm) | |
| Primary Connector (Zhejiang Jinda, type: 3.96T-02) | 125 | | 1.5 | |

Note:

Bobbin of T1 and L1 is made of Phenolic material, which is accepted without test.

| 4.6 | Table: enclosure openings | | | P |
|------------|--------------------------------|--|--|----------|
| Location | Size (mm) | Comments | | |
| Top/bottom | -- | No openings. | | |
| Side | One round opening, Max. Φ 54mm | No hazardous voltage and energy hazards within 5° projection area. | | |

Note(s):

| 5.1.6 | TABLE: touch current measurement | | | | P |
|-----------|----------------------------------|---------------------|------------|--|----------|
| Condition | L → terminal A (mA) | N → terminal A (mA) | Limit (mA) | Comments | |
| Fuse in | 0.23 | 0.23 | 0.25 | To secondary terminal, switch "e" closed | |
| Fuse in | 0.02 | 0.02 | 0.25 | To enclosure with copper foil, switch "e" closed | |



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

Note(s):
 Input voltage : 264V
 Input frequency : 60Hz
 Overall capacity : C4=2200pF, C14=1000pF

| | | |
|--|--|------------------|
| 5.2 | TABLE: electric strength tests and impulse tests | P |
| Test voltage applied between: | | Test voltage (V) |
| Primary and secondary | | DC 4242 |
| Primary and enclosure with copper foil | | DC 4242 |
| Transformer (T1) primary and secondary | | AC 3000 |
| Transformer (T1) secondary to core | | AC 3000 |
| One layer of insulation tape used in transformer | | AC 3000 |
| Note(s): | | |

| 5.3 | TABLE: fault condition tests | | | | | | P |
|-----|--------------------------------------|--------------------------------|------------------|-----------|----------|------------------|--|
| | ambient temperature (°C) | 25 °C, if not otherwise stated | | | | | — |
| | model/type of power supply | -- | | | | | — |
| | manufacturer of power supply | -- | | | | | — |
| | rated markings of power supply | -- | | | | | — |
| No. | Component no. | Fault | Test voltage (V) | Test time | Fuse no. | Fuse current (A) | Result |
| 1 | D1 | S-C | 240V/60Hz | 1s | F1 | 0.35 to 0 | Fuse Open immediately. No hazards. |
| 2 | C2 | S-C | 240V/60Hz | 1s | F1 | 0.35 to 0 | Fuse Open immediately. No hazards. |
| 3 | U1 Pin1-3 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 4 | U1 Pin1-5 | S-C | 240V/60Hz | 1s | F1 | 0.35 to 0 | Fuse Open immediately. No hazards. |
| 5 | U1 Pin3-5 | S-C | 240V/60Hz | 1s | F1 | 0.35 to 0 | Fuse Open immediately. No hazards. |
| 6 | U2 Pin1-2 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.35 | Unit operated normally, no damaged, no hazards. |
| 7 | U2 Pin1 | O-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.35 | Unit operated normally, no damaged, no hazards. |
| 8 | U2 Pin3-4 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |



| EN 60950-1 | | | |
|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| No. | Component no. | Fault | Test voltage (V) | Test time | Fuse no. | Fuse current (A) | Result |
|-----|-------------------|---------------------------|------------------|-----------|----------|------------------|--|
| 9 | U2 Pin3 | O-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.35 | Unit operated normally, no damaged, no hazards. |
| 10 | T1 Pin1,2-4 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 11 | T1 Pin5-6 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 12 | T1 Pin9-11,12 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 13 | D7 | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 14 | +15V | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.03 | Unit shutdown immediately. No damaged, no hazards. |
| 15 | Subwoofer speaker | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.12 | Subwoofer speaker no output, other speaker operated normally, No damaged, no hazards. |
| 16 | Center Speaker | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.18 | Center speaker no output, other speaker operated normally, No damaged, no hazards. |
| 17 | Front Speaker | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.18 | Front speaker no output, other speaker operated normally, No damaged, no hazards. |
| 18 | Rear Speaker | S-C | 240V/60Hz | 30 min | F1 | 0.35 to 0.18 | Rear speaker no output, other speaker operated normally, No damaged, no hazards. |
| 19 | Openings | Bolcked | 240V/60Hz | 3.5 hrs | F1 | 0.35 to 0.35 | Unit operated normally, no damaged, no hazards. Maximum temperature: 01. T1 coil=109.9°C; 02. T1 core=107.0°C; 03. U2 body=88.7°C; 04. Ambient=26.2°C. |
| 20 | Speaker output | Maximum attainable output | 240V/60Hz | 4.0 hrs | F1 | 0.35 to 0.68 | Unit operated normally, no damaged, no hazards. Maximum temperature: 01. T1 coil=117.8°C; 02. T1 core=113.5°C; 03. U2 body=96.3°C; 04. Ambient=26.7°C. |
| 21 | T1 Pin9-11, 12 | O-L | 240V/60Hz | 10.0 hrs | F1 | 0.35 to 0.10 | Unit into cycle protective, when overload to 2.5A, then load to 6.5A Unit shutdown, |



| | | | |
|------------|--------------------|-----------------|---------|
| EN 60950-1 | | | |
| Clause | Requirement - Test | Result - Remark | Verdict |

| No. | Component no. | Fault | Test voltage (V) | Test time | Fuse no. | Fuse current (A) | Result |
|-----|---------------|-------|------------------|-----------|----------|------------------|--|
| | | | | | | | no damaged, no hazards. Maximum temperature : 01. T1 coil=139.4°C; 02. T1 core=131.1°C; 03. U2 body=88.1°C; 04. Ambient=26.2°C. |

Note(s):
1) In fault column, where s-c = short-circuited, o-c = open-circuited, o-l=overloaded.

| | | |
|---|------------------------------|--------------|
| C.2 | Safety isolation transformer | P |
| Construction details: | | |
| Transformer part name: T1 | | |
| Manufacturer: See appended table 1.5.1 | | |
| Type: See appended table 1.5.1 | | |
| All type of transformer are similar in construction, except for secondary windings. | | |
| | | |
| Recurring peak voltage | 581 V _{peak} | |
| Required clearance for reinforced insulation (from table 2H and 2J) | 4.0+0.6 = 4.6 mm | |
| | | |
| Effective voltage rms | 259 V _{rms} | |
| Required creepage distance for reinforced insulation (from table 2L with linear interpolation) | 5.2 mm | |
| | | |
| Measured min. clearances | | |
| Location | inside (mm) | outside (mm) |
| Primary-secondary | 6.6 | 6.6 |
| Primary-core | -- | -- |
| Secondary-core | 8.0 | 8.0 |
| Primary-primary | -- | -- |
| | | |
| Measured min. creepage distance | | |
| Location | inside (mm) | outside (mm) |
| Primary-secondary | 6.6 | 6.6 |
| Primary-core | -- | -- |



| EN 60950-1 | | | |
|------------|--------------------|-----------------|---------|
| Clause | Requirement - Test | Result - Remark | Verdict |

| | | | |
|---|--|--|-----|
| Secondary-core | | 8.0 | 8.0 |
| Primary-primary | | -- | -- |
| Construction: | | | |
| Concentric windings on Phenolic bobbin, three layers insulation between primary and secondary windings. Winding ends additionally fixed with tape. Tubing on secondary winding exit ends. | | | |
| Pin numbers | | | |
| Prim. | | 5 -- 6, 2 -- NC, 4 - 2, NC -- 2 | |
| Sec. | | 9 -- 12 | |
| Bobbin | | | |
| Material | | Chang Chun Plastics Co Ltd, T373J, T375J (Phenolic), flammability class V-0, 150 °C. | |
| Thickness | | 0.71 mm min. | |
| Electric strength test | | | |
| With 3000 V a.c. after humidity treatment | | | |
| Result | | Pass | |



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