

TEST REPORT
IEC 60 950
Safety of information technology equipment

Report Reference No.: SPCLVD0106003

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This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator (see below).

Testing laboratory name: Superior Product Consulting, Inc.

Address: 3F, No. 10, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan, R.O.C.

Testing location: 3F, No. 10, Alley 6, Lane 235, Pao Chiao Rd., Hsien Tien, Taipei, Taiwan, R.O.C.

Client name: Advantech Co., Ltd

Address: 4th Fl, No. 108-3, Ming-Chuan Rd, Shing-Tien City, Taipei Hsien, Taiwan

Standard: IEC 60 950:1991 + A1:1992 + A2:1993 + A3:1995 + A4:1996
EN 60 950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997

Test procedure: Informative Test Report

Procedure deviation: N/A

Non-standard test method: N/A

Test Report Form/blank test report

Test Report Form No.: I950__D/97-06

TRF originator.: FIMKO

Master TRF: reference No. I950 D, dated 97-02

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Test item description: Server

Trademark: ADVANTECH

Model and/or type reference: MIC-3035-A and MIC-3037-A

Manufacturer: Advantech Co., Ltd

Rating(s): 100-240 Vac, 47-63 Hz, 4-2 A

Copy of marking plate

ADVANTECH

Model: MIC-3035-A

I/P: 100-240 Vac, 47-63 Hz, 4-2 A

S/N:

ADVANTECH

Model: MIC-3037-A

I/P: 100-240 Vac, 47-63 Hz, 4-2 A

S/N:

Test item particulars:

Equipment mobility..... : movable
 Operating condition : continuous
 Tested for IT power systems..... : No
 IT testing, phase-phase voltage (V) : N/A
 Class of equipment : Class I
 Mass of equipment (kg) : 6.9kg (MIC-3035-A); 4.8kg (MIC-3037-A)
 Protection against ingress of water : IPXO

Possible test case verdicts:

- test case does not apply to the test object..... : N / A
 - test object does meet the requirement : Pass
 - test object does not meet the requirement : Fail

General remarks:

- "(see Enclosure #)" refers to additional information appended to the Report.
- "(see appended table)" refers to a table appended to the Report.
- Throughout this report a point is used as the decimal separator.

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.

This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB in accordance with IECEE 02.

General product information:

Model Difference:

All models are identical except for model designations, drives and enclosure size.

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

1	GENERAL		Pass
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1.5	Components		Pass
1.5.1	Comply with IEC 60 950 or relevant component standard	(see appended table)	Pass
1.5.2	Evaluation and testing components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.	Pass
	Dimensions (mm) of mains plug for direct plug-in :		N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N/A
1.5.3	Transformers	Evaluated as part of power supply.	Pass
1.5.4	Flammability class of high voltage components (component; manufacturer; flammability) :		N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Mains capacitors	X capacitors meet the applicable requirements and/or tests in IEC 60384-14: 1981.	Pass

IEC 60 950			
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1.6	Power interface		Pass
1.6.1	Steady state input current	(see appended table)	Pass
	Current deviation during normal operating cycle	The current deviation during the normal operating cycle did not exceed 10 %.	Pass
1.6.2	Voltage limit of hand-held equipment		N/A
1.6.3	Neutral conductor insulated from earth and body	Neutral insulation is provided in the power supply.	Pass
1.6.4	Components in equipment intended for IT power system	Y capacitors comply with the applicable requirements of IEC 60384-14: 1981 or IEC 60384-14: 1993, subclass Y1, Y2 or Y4.	Pass
1.6.5	Mains supply tolerance (V) :	+10% / -10%.	Pass

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

1.7	Marking and instructions		Pass
1.7.1	Rated voltage (V)	100 - 240 V.	Pass
	Symbol of nature of supply for d.c.	mains from AC source	N/A
	Rated frequency (Hz)	63 - 47 Hz.	Pass
	Rated current (A)	4 - 2 A	Pass
	Manufacturer		N/A
	Trademark	ADVANTECH	Pass
	Type/model	MIC-3035-A MIC-3037-A	Pass
	Symbol of Class II		N/A
	Certification marks	UL, C-UL	Pass
1.7.2	Safety instructions	Marking for laser class 1 type CD-ROM Driver, with the following wording: CLASS 1 LASER PRODUCT.	Pass
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Marking for voltage setting/frequency setting	The means of adjustment is a simple control near the inlet. No instructions are required on the equipment.	Pass
1.7.5	Marking at power outlets	No standard power outlets are provided.	N/A
1.7.6	Marking at fuseholders	Fuse marking in power supply or on service documentation.	Pass
1.7.7.1	Protective earthing terminals		N/A
1.7.7.2	Terminal for external primary power supply conductors		N/A
1.7.8.1	Identification and location of switches and controls :	The marking and indication of the front panel controls is located that indication of function is clearly.	Pass
1.7.8.2	Colours of controls and indicators	A LED is illuminated when the unit is operating. Others functional indicators use color.	Pass
1.7.8.3	Symbols according to IEC 60 417		Pass

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Figures used for marking		N/A
1.7.8.5	Location of markings and indications for switches and controls	Markings for switches and other controls located on the switch and control.	Pass
1.7.9	Isolation of multiple power sources		N/A
1.7.10	Instructions for installation to IT power system		N/A
1.7.11	Instructions when protection relies on building installation	Pluggable Type A.	N/A
1.7.12	Marking when leakage current exceeds 3.5 mA		N/A
1.7.13	Indication at thermostats and regulating devices		N/A
1.7.14	Language of safety markings/instructions	Only English reviewed.	Pass
	Language	English.	—
1.7.15	Durability and legibility	The marking(s) withstood the required test.	Pass
1.7.16	Removable parts	No marking is located on (a) removable part(s).	Pass
1.7.17	Warning text for replaceable lithium batteries	The lithium battery is not located in an Operator Access Area.	Pass
	Language	English.	—
1.7.18	Operator access with a tool	A tool is not needed to gain access to an operator access area.	N/A
1.7.19	Equipment for restricted access locations		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

2	PROTECTION FROM HAZARDS		Pass
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2.1	Protection against electric shock and energy hazards		Pass
2.1.1	Access to energized parts	No operator access to energized parts.	Pass
2.1.2	Protection against operator contact	No parts of ELV or hazardous voltages are accessible. Only SELV signal voltages are accessible.	Pass
	Test by inspection		Pass
	Test with test finger		Pass
	Test with test pin		Pass
2.1.3.1	Insulation of internal wiring in an ELV circuit accessible to operator		N/A
	Working voltage (V); distance (mm) through insulation		N/A
2.1.3.2	Operator accessible insulation of internal wiring at hazardous voltage		N/A
2.1.4.1	Protection in service access areas		Pass
2.1.4.2	Protection in restricted access locations		N/A
2.1.5	Energy hazard in operator access area	No hazardous energy circuits are accessible.	Pass
2.1.6	Clearances behind conductive enclosures	Clearances behind conductive enclosure complies during the 250N test of Sub-clause 4.2.	Pass
2.1.7	Shafts of manual controls		N/A
2.1.8	Isolation of manual controls		N/A
2.1.9	Conductive casings of capacitors		N/A
2.1.10	Risk of electric shock from stored charge on capacitors connected to mains circuit	Investigated and measured on the certified switching power supply.	N/A
	Time-constant (s); measured voltage (V)		—

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

2.2	Insulation		Pass
2.2.1	Methods of insulation	Adequate clearances through air, and creepages over the surface are provided.	Pass
2.2.2	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation.	Pass
2.2.3	Humidity treatment	Total time elapsed: 48 hours	Pass
	Humidity (%)	93%R.H.	—
	Temperature (°C)	25 °C.	—
2.2.4	Requirements for insulation	Refer to 5.3, 2.9 and 5.1	Pass
2.2.5	Insulation parameters	Considered.	Pass
2.2.6	Categories of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of the standard.	Pass
2.2.7.1	General rules for working voltages	The rms and the peak voltage were measured on the switching power supply.	Pass
2.2.7.2	Clearances in primary circuits	Considered.	Pass
2.2.7.3	Clearances in secondary circuits	Considered.	Pass
2.2.7.4	Creepage distances	Considered.	Pass
2.2.7.5	Electric strength tests	Considered.	Pass
2.2.8.1	Bridging capacitors	No bridging capacitors.	N/A
2.2.8.2	Bridging resistors		N/A
2.2.8.3	Accessible parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.3	Safety extra-low voltage (SELV) circuits		Pass
2.3.1	Voltage (V) of SELV circuits under normal operating conditions and after a single fault	SELV levels are maintained after single fault condition.	—
2.3.2	Voltage (V) between any two conductors of SELV circuit(s) and for Class I equipment between any conductor of SELV circuit and equipment protective earthing terminal under normal operating conditions	Only SELV circuits are accessible to the user.	Pass
2.3.3	Voltage (V) of SELV in the event of a single failure of basic or supplementary insulation or of a component	≤ 42.4 Vpk, 60 V d.c.	—
	Method used for separation	Method 1.	Pass
2.3.4	Additional constructional requirements	The SELV circuit is adequately constructed in order to prevent reduction of distances, loosening of terminals, breaking of wiring at terminals, accidental shorting to hazardous voltages and the improper use of connectors.	Pass
2.3.5	Connection of SELV circuits to other circuits		N/A

2.4	Limited current circuits		N/A
2.4.2	Frequency (Hz)		—
	Measured current (mA)		N/A
2.4.3	Measured voltage (V)		—
	Measured capacitance (μ F)		N/A
2.4.4	Measured voltage (V)		—
	Measured charge (μ C)		N/A
2.4.5	Measured voltage (V)		—
	Measured energy (mJ)		N/A
2.4.6	Limited current circuit supplied from or connected to other circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.5	Provisions for earthing		Pass
2.5.1	Class I equipment	Accessible parts are earthed.	Pass
	Warning label for service personnel		N/A
2.5.2	Protective earthing in Class II equipment	The equipment is not Class II.	N/A
2.5.3	Switches/fuses in earthing conductors	No switch or fuse in earthing conductor.	Pass
2.5.4	Assured earthing connection for Class I equipment in systems comprising Class I and Class II equipment	The equipment is not comprised of Class I and Class II assemblies.	N/A
2.5.5	Green/yellow insulation	Main earth conductor is green with yellow stripe from inlet reliable fixed to switching power supply chassis.	Pass
2.5.6	Continuity of earth connections	Disconnection of the protective earth at one assembly does not break the protective earthing connection to other assemblies.	Pass
2.5.7	Making and breaking of protective earthing connections	It is not possible to disconnect earth without disconnecting mains.	Pass
2.5.8	Disconnection protective earthing connections	Connections to protective earthing cannot be removed unless hazardous voltage is removed from the part simultaneously.	Pass
2.5.9	Protective earthing terminals for fixed supply conductors or for non-detachable power supply cords		N/A
2.5.10	Corrosion resistance	No risk of corrosion. Complies with Annex J.	Pass
2.5.11	Resistance (Ohm) of protective earthing conductors ≤ 0.1 Ohm	The resistance from the appliance inlet to the chassis is < 0.1 ohms. See enclosed test record.	Pass
	Test current (A) :	25A	—

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Clause	Requirement + Test	Result - Remark	Verdict

2.6	Disconnection from primary power		Pass
2.6.1	General requirements	The appliance inlet is considered to be the disconnect device.	Pass
2.6.2	Type of disconnect device :	Unit employs an appliance inlet.	Pass
2.6.3	Disconnect device in permanently connected equipment		N/A
2.6.4	Parts of disconnect device which remain energized	No accessible parts on the supply side of the disconnect device.	N/A
2.6.5	Switches in flexible cords		N/A
2.6.6	Disconnection of both poles simultaneously for single-phase equipment	Disconnect device disconnects all poles simultaneously.	Pass
2.6.7	Disconnection of all phase conductors of supply in three-phase equipment	The un is a single-phase equipment.	N/A
2.6.8	Marking of switch acting as disconnect device		N/A
2.6.9	Installation instructions if plug on power supply cord acts as disconnect device		N/A
	Language :		—
2.6.11	Interconnected equipment	No interconnection of hazardous voltages.	N/A
2.6.12	Multiple power sources	The equipment only receives power from one source.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.7	Overcurrent and earth fault protection in primary circuits		Pass
2.7.1	Basic requirements	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Overcurrent protection is provided by the built-in device fuse is SPS.	Pass
2.7.2	Protection against faults not covered in 5.4	The protection devices are well dimensioned and mounted.	Pass
2.7.3	Short-circuit backup protection	Pluggable Type A. The building installation is considered as providing short-circuit backup protection.	Pass
2.7.4	Number and location of protective devices :	Overcurrent protection by one built-in fuse in SPS.	Pass
2.7.5	Protection by several devices	Only one protective device is provided.	N/A
2.7.6	Warning to service personnel		N/A

2.8	Safety interlock		N/A
2.8.2	Design		N/A
2.8.3	Protection against inadvertent reactivation		N/A
2.8.4	Reliability		N/A
2.8.5	Override an interlock		N/A
2.8.6.1	Contact gap (mm) :		N/A
2.8.6.2	Switch performing 50 cycles		N/A
2.8.6.3	Electric strength test: test voltage (V) :		N/A
2.8.7	Protection against overstress		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.9	Clearances, creepage distances and distances through insulation		Pass
	Nominal voltage (V)	100 - 240 V	—
	General		Pass
2.9.2	Clearances	(see appended table)	Pass
2.9.2.1	Clearances in primary circuits	(see appended table 2.9.2 and 2.9.3)	Pass
2.9.2.2	Clearances in secondary circuits	See 5.4.4.	Pass
2.9.3	Creepage distances	(see appended table)	Pass
	CTI tests	Material group IIIb; 100 ≤ CTI minimum	—
2.9.4.1	Minimum distances through insulation	(see appended table)	Pass
2.9.4.2	Thin sheet material	All critical distances through insulation are covered in power supply evaluation.	Pass
	Number of layers (pcs)		N/A
	Electrical strength test: test voltage (V)		N/A
2.9.4.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test at voltage (V) for thin sheet insulating material		N/A
	Number of layers (pcs)		N/A
2.9.4.4	Wound components without interleaved insulation	(see Annex U).	N/A
	Number of layers (pcs)		N/A
	Two wires in contact inside component; angle between 45° and 90°		N/A
	Routine testing for finished component		N/A
2.9.5	Distances on coated printed boards		N/A
	Routine testing for electric strength		N/A
2.9.6	Enclosed and sealed parts	(see appended table 2.9.2. and 2.9.3)	N/A
	Temperature T1 (°C)		N/A
	Humidity %		N/A
2.9.7	Spacings filled by insulating compound	(see appended table 2.9.4.1)	N/A
	Temperature T1 (°C)		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict
	Humidity %:		N/A
2.9.8	Component external terminations	(see appended table 2.9.2 and 2.9.3)	N/A
2.9.9	Insulation with varying dimensions	(see appended table 2.9.2 and 2.9.3 and 2.9.4)	N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

2.10	Interconnection of equipment		Pass
2.10.1	General requirements	SELV is only connected to SELV and Safety Earth.	Pass
2.10.2	Type of interconnection circuits :	SELV to SELV.	Pass
2.10.3	ELV circuits as interconnection circuits	No other equipment.	N/A

2.11	Limited power source		Pass
	Use of limited power source :	USB connector. See enclosed test record.	Pass

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

3	WIRING, CONNECTIONS AND SUPPLY		Pass
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3.1	General		Pass
3.1.1	Cross-sectional area of internal wiring/interconnecting cables	All internal wiring is rated for the application.	Pass
	Protection of internal wiring and interconnecting cables		N/A
3.1.2	Wireways	The wires are well routed away from sharp edges, etc. and are adequately fixed to prevent excessive strain on wire and terminals.	Pass
3.1.3	Fixing of internal wiring	All wiring is reliably routed or separated and secured.	Pass
3.1.4	Fixing of uninsulated conductors	Uninsulated conductors have been adequately fixed to prevent, in normal use, any reduction of creepage or clearance distances below those prescribed by in 2.9.	Pass
3.1.5	Insulation of internal wiring	Insulation on internal conductors are considered to be of adequate quality and suitable for the application and the working voltages involved.	Pass
3.1.6	Wires coloured green/yellow only for protective earth connection	Green/yellow conductores used only for safety earth.	Pass
3.1.7	Fixing of beads and similar ceramic insulators		N/A
3.1.8	Required electrical contact pressure	All electrical screw connections are by metal screw with more than 2 threads into a metal plate.	Pass
3.1.9	Reliable electrical connections	All current carrying and safety earthing connections are metal to metal.	Pass
3.1.10	End of stranded conductor	No risk of stranded conductor becoming unfixed.	Pass
3.1.11	Use of spaced thread screws/thread-cutting screws	Thread-cutting or space thread screws are not used for electrical connections. Machine screws only.	Pass

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

3.2	Connection to primary power		Pass
3.2.1	Type of connection	Unit employs an appliance inlet.	Pass
	Design of product with more than one supply connection		N/A
3.2.2	Provision for permanent connection	The equipment is not permanently connected.	N/A
	Size (mm) of cables and conduits		N/A
3.2.3	Appliance inlet	The appliance inlet complies with IEC 60320.	Pass
3.2.4	Type and cross-sectional area (mm ²) of power supply cord	Power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; to be determined by the country's local certification body.	N/A
3.2.5	Cord anchorage		N/A
	Test: 25 times; 1 s; pull (N)		—
	Longitudinal displacement ≤ 2 mm		N/A
3.2.6	Protection of power supply cord		N/A
3.2.7	Cord guard		N/A
	D (mm)		—
	Test: mass (g)		—
	Radius of curvature of the cord ≤ 1.5 D		N/A
3.2.8	Supply wiring space		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

3.3	Wiring terminals for external power supply conductors		N/A
3.3.1	Terminals	Power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; to be determined by the country's local certification body.	N/A
3.3.2	Special non-detachable cord		N/A
	Type of connection		—
	Pull test at 5 N		N/A
3.3.3	Screws and nuts		N/A
3.3.4	Fixing of conductors		N/A
3.3.5	Connection of connectors		N/A
3.3.6	Size of terminals		N/A
	Nominal thread diameter (mm)		N/A
3.3.7	Protection against damage of conductors		N/A
3.3.8	Terminal location		N/A
3.3.9	Test with 8 mm stranded wire		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

4	PHYSICAL REQUIREMENTS		Pass
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4.1	Stability and mechanical hazards		Pass
4.1.1	Stability tests		Pass
	Angle of 10°		Pass
	Test: force (N) :	Unit not specified for floor-standing use.	N/A
4.1.2	Protection against personal injury	Equipment does not have any hazardous moving parts	N/A
4.1.3	Warning and means provided for stopping the moving part :	The equipment does not have any hazardous moving parts.	N/A
4.1.4	Edges and corners	All edges and corners are rounded and smooth.	Pass
4.1.5	Enclosure of a high pressure lamp	The equipment does not have any high pressure lamps.	N/A

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4.2	Mechanical strength and stress relief		Pass
4.2.1	General		Pass
4.2.2	Internal enclosures 30 N \pm 3 N; 5 s	No hazard as a result of the 30 N test.	Pass
4.2.3	External enclosures 250 N \pm 10 N; 5 s	No hazards as a result of the 250 N test.	Pass
4.2.4	Steel ball tests		N/A
	Fall test	All metal enclosure.	N/A
	Swing test		N/A
4.2.5	Drop test	Product is movable equipment.	N/A
4.2.6	Heat test for enclosures of moulded or formed thermoplastic materials: 7 h; T (°C) :		N/A
4.2.7	Compliance criteria		N/A
4.2.8	Mechanical strength of cathode ray tubes		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

4.3	Construction details		Pass
4.3.1	Changing of setting for different power supply voltages	The equipment an operator accessible voltage selector.	Pass
4.3.2	Adjustment of accessible control devices	The equipment does not have any operator accessible adjustable controls.	N/A
4.3.4	Prevention of dangerous concentration of dust, powder, liquid and gas		N/A
4.3.5	Fixing of knobs, grips, handles, levers		N/A
	Test: force (N) :		N/A
4.3.6	Driving belts/couplings shall not ensure electrical insulation		N/A
4.3.7	Retaining of sleeves	Sleeving is not used as supplementary insulation.	N/A
4.3.9	Protection of loosening parts	No loosening of parts impairing creepage distances or clearances over supplementary or reinforced insulation is likely to occur.	Pass
4.3.11	Resistance to oil and grease		N/A
4.3.12	Protection against harmful concentration of ionizing radiation, ultraviolet light, laser or flammable gases (for laser see IEC 60 825-1)	CLASS 1 Laser under normal operation. Compliance checked according to IEC 60825.	Pass
4.3.13	Securing of screwed connections	Screwed connections are reliably secured.	Pass
4.3.15	Openings in the top of enclosure	There are no openings in the top of the enclosure.	N/A
	Dimensions (mm) :		—
4.3.16	Openings in the sides of enclosure	Foreign objects entering the enclosure will not contact bare parts at hazardous voltage. (No hazardous parts within 5°arc)	Pass
	Dimensions (mm) :		—
4.3.17	Interchangeable plugs and sockets		Pass
4.3.18	Torque test for direct plug-in equipment		N/A
	Additional torque (Nm) :		N/A
4.3.19	Protection against excessive pressure		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.20	Protection of heating elements in Class I equipment		N/A
4.3.21	Protection of lithium batteries		Pass
	Construction of protection circuit :	Lithium battery is protected against charging current by Diode and Resistor (1k ohms minimum).	Pass
4.3.22	Ageing of barrier/screen secured with adhesive		N/A
	Day 1: temperature (°C); time (weeks) :		N/A
	Day 8/22/57: a) temperature (°C) for 1 h b) temperature (°C) for 4 h c) temperature (°C) over 8 h :		N/A
	Day 9/23/58: a) relative humidity (%) for 72 h b) temperature (°C) for 1 h c) temperature (°C) for 4 h d) temperature (°C) over 8 h :		N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

4.4	Resistance to fire		Pass
4.4.1	Methods of achieving resistance to fire	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
4.4.2	Minimizing the risk of ignition	Components rated at least 94V-2 are mounted on PWB rated at least 94V-1.	Pass
	Printed board: manufacturer; type; flammability ... :	min. 94V-1.	Pass
4.4.3	Flammability of materials and components	The propagation of fire is minimized through the fire enclosure construction.	Pass
4.4.3.2	Material and component: manufacturer; type; flammability	Internal plastic parts are rated 94V-2 min.	Pass
4.4.3.3	Exemptions	Integrated circuits, capacitors, etc. mounted on V-1 printed	Pass
4.4.3.4	Wiring harnesses: manufacturer; flammability	Wiring is PVC, TFE, PTFE, FEP or neoprene.	Pass
4.4.3.5	Cord anchorage bushings: manufacturer; flammability		N/A
4.4.3.6	Air filter assemblies: manufacturer; flammability ..		N/A
4.4.4	Enclosures and decorative parts: manufacturer; flammability	metal enclosure	Pass
4.4.5	Conditions for fire enclosures		Pass
4.4.5.1	Components which require fire enclosure: manufacturer; flammability		Pass
4.4.5.2	Components not requiring fire enclosure	Fire enclosure covers all parts.	Pass
4.4.6	Fire enclosure construction		Pass
4.4.7	Doors and covers in fire enclosures	Doors and/or covers are intended for routine opening. They are not removable and are provided with a means to keep them closed.	Pass
4.4.8	Flammable liquids	The equipment does not use any flammable liquids.	N/A

IEC 60 950			
Clause	Requirement + Test	Result - Remark	Verdict

5	THERMAL AND ELECTRICAL REQUIREMENTS		Pass
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5.1	Heating		Pass
	Heating tests	(see appended table)	Pass

5.2	Earth leakage current		Pass
5.2.1	General	Investigated and measured on the certified switching power supply.	Pass
5.2.2	Leakage current	Investigated and measured on the certified switching power supply.	Pass
	Test voltage (V)	Investigated and measured on the certified switching power supply.	—
	Measured current (mA)	Investigated and measured on the certified switching power supply.	—
	Max. allowed current (mA)	3.5 mA (Class I movable)	—
5.2.3	Single-phase equipment	See 5.2.2	Pass
	Test voltage (V)		—
	Measured current (mA)		—
	Max. allowed current (mA)		—
5.2.4	Three-phase equipment		N/A
	Test voltage (V)		—
	Measured current (mA)		—
	Max. allowed current (mA)		—
5.2.5	Equipment with earth leakage current exceeding 3.5 mA		N/A
	Test voltage (V)		—
	Measured current (mA)		—
	Max. allowed current (mA)		—
	Cross-sectional area (mm ²) of internal protective earthing conductor		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Warning label		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	Electric strength		Pass
5.3.1	General	Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	Pass
5.3.2	Test procedure	(see appended table)	Pass

5.4	Abnormal operating and fault conditions		Pass
5.4.2	Motors	Cooling fans for unit and used in the appliance which are certified HDD, FDD and CD-ROM. (See appended table)	Pass
5.4.3	Transformers	Evaluated as part of power supply.	Pass
5.4.4	Compliance of operational insulation		Pass
	Method used	Method C.	Pass
5.4.5	Electromechanical components in secondary circuits		N/A
5.4.6	Other components and circuits	(see appended table)	Pass
5.4.7	Test in any expected condition and foreseeable misuse	(see appended table)	Pass
5.4.8	Unattended use of equipment having thermostats, temperature limiters etc.		N/A
5.4.9	Compliance	No fire, emission of molten metal or deformation was noted during the tests.	Pass
5.4.10	Ball-pressure test of thermoplastic parts; impression shall not exceed 2 mm	It has been determined from examination of the physical characteristics of the materials used that the material meets the requirements of the test.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
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6.1	General		N/A
6.2	TNV circuits		N/A
6.2.1.1	Limits of the TNV circuits		N/A
6.2.1.1 a)	TNV-1 circuits		N/A
6.2.1.1 b)	TNV-2 and TNV-3 circuits		N/A
6.2.1.2	Separation from other circuits and from accessible parts	(see appended table 2.9.2, 2.9.3 and 2.9.4)	N/A
	Voltage (V) in SELV circuits, TNV-1 circuits and accessible conductive parts in event of single insulation fault or component failure		N/A
6.2.1.3	Operating voltages generated externally		N/A
	Voltage (V) in SELV circuit, TNV-1 circuit or accessible conductive part		N/A
6.2.1.4	Separation from hazardous voltages		N/A
	Insulation between TNV circuit and circuit at hazardous voltage		N/A
	Method used		N/A
6.2.1.5	Connection of TNV circuits to other circuits	(see appended table 5.4)	N/A
	Insulation (mm) between TNV circuit supplied conductively from secondary circuit and hazardous voltage circuit		N/A
6.2.2.1	Protection against contact with bare conductive parts of TNV-2 and TNV-3 circuits		N/A
	Test with test finger		N/A
	Test with test probe		N/A
6.2.2.2	Battery compartments		N/A
	Marking next to door/on door		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

6.3	Protection of telecommunication network service personnel, and users of other equipment connected to the telecommunication network, from hazards in the equipment		N/A
6.3.1	Protection from hazardous voltages		N/A
6.3.2	Use of protective earthing		N/A
	Language of installation instructions		N/A
6.3.3.1	Insulation between TNV circuit and parts or circuitry that may be earthed	(see appended table 5.3)	N/A
6.3.3.2	Exclusions		N/A
6.3.4.1	Limitation of leakage current (mA) to telecommunication network		N/A
6.3.4.2	Summation of leakage currents from telecommunication network		N/A

6.4	Protection of the equipment user from voltages on the telecommunication network		N/A
6.4.1	Separation requirements		N/A
6.4.2	Test procedure		N/A
6.4.2.1	Impulse test: separation between TNV-1 circuits/TNV-3 circuits and:		N/A
6.4.2.1 a)	unearthed conductive parts/non-conductive parts of the equipment which are held or touched during normal use; test at 2.5 kV		N/A
6.4.2.1 b)	parts and circuitry that can be touched by the test finger except contacts of connectors that cannot be touched by test probe; test at 1.5 kV		N/A
6.4.2.1 c)	circuitry which is provided for connection of other equipment; test at 1.5 kV		N/A
6.4.2.2	Electric strength test: separation between TNV-1 circuits/TNV-3 circuits and:		N/A
6.4.2.2 a)	unearthed conductive parts/non-conductive parts of the equipment which are held or touched during normal use; test at 1.5 kV		N/A
6.4.2.2 b)	parts and circuitry that can be touched by the test finger except contacts of connectors that cannot be touched by test probe; test at 1.0 kV		N/A
6.4.2.2 c)	circuitry which is provided for connection of other equipment; test at 1.0 kV		N/A
6.4.2.3	Compliance criteria		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

6.5	Protection of telecommunication wiring system from overheating		N/A
	Maximum continuous output current (A) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of moveable equipment having a total mass exceeding 18 kg, and of stationary equipment		N/A
A.2	Flammability test for fire enclosures of moveable equipment having a total mass not exceeding 18 kg, and for materials located within fire enclosures		N/A
A.3	High current arcing ignition test		N/A
A.3.6	Number of arcs		N/A
A.4	Hot wire ignition test		N/A
A.4.6	Ignition time (s)		N/A
A.5	Hot flaming oil test		N/A
A.6	Flammability test for classifying materials V-0, V-1 or V-2		N/A
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HBF		N/A
A.8	Flammability test for classifying materials HB		N/A
A.9	Flammability test for classifying materials 5V		N/A
A	Tested material		N/A
	Preconditioning: 7 days (168 h); temperature (°C) :		—
	Mounting of samples during test		—
	Wall thickness		—
	Sample 1 burning time		N/A
	Sample 2 burning time		N/A
	Sample 3 burning time		N/A
	Material: compliance with the requirements		N/A
	Manufacturer of tested material		—
	Type of tested material		—
	Additional information		—

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Clause	Requirement + Test	Result - Remark	Verdict

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS <i>Approved DC fans , HDDs, FDD and CD-ROM.</i>		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated voltage (V) or current (A)		—
B.2	Test conditions	(see appended table 5.4)	N/A
B.3	Maximum temperatures	(see appended table 5.4)	N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for DC motor in secondary circuits		N/A
B.7	Locked-rotor overload test for DC motor in secondary circuits		N/A
B.7.2	Test time (h)		N/A
B.7.3	Test time (h)		N/A
B.8	Test for motors with capacitor		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Test voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict

C	ANNEX C, TRANSFORMERS <i>Approved power supply.</i>		N/A
	Position	Insulation transformers used in certified switching power supply were investigated.	—
	Manufacturer		—
	Type		—
	Rated values		—
	Temperatures	(see appended table 5.1)	N/A
	Thermal cut-out		N/A
C.1	Overload test	Insulation transformers used in certified switching power supply were investigated.	N/A
	Conventional transformer		N/A
C.2	Insulation		N/A
	Precautions	Insulation transformers used in certified switching power supply were investigated.	N/A
	Retaining of end turns of all windings	Insulation transformers used in certified switching power supply were investigated.	N/A
	Earthing test at 25 A		N/A
C.3	Electric strength test	Insulation transformers used in certified switching power supply were investigated.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

H	ANNEX H, IONIZING RADIATION		N/A
	Ionizing radiation		N/A
	Measured radiation	:	—
	Measured high-voltage (kV)	:	—
	Measured focus voltage (kV)	:	—
	CRT markings	:	—
	Certified by	:	—
	Standard used	:	—

U	ANNEX U, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION		N/A
	See separate test report		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Power Supply	Zippy Technology Corp.	P1U-6200P	Class I i/p: 100-240V, 47-63Hz, 4-2A. o/p: +3.3Vdc/ 14A +5Vdc/16A -5Vdc/0.2A -12Vdc/0.7A +5Vsb/1.5A total 200W	IEC 60950	TÜV, UL, CB	
RTC Battery (BT1)	Rayovac	BR2032	Lithium Manganese Dioxide type, 3Vdc, 210mAh Reverse current protection by series circuit of Diode and resistor, rated 1K ohm. Maximum abnormal charging current 4 mA	--	UL	
System Fans (Four provided, one is optional.)	ADDA	AD0412HB-C56	12Vdc, 0.1A 10.1CFM	--	UL	
Drive (CD-ROM) (Optional)	Quanta Or equal	SCR-242	5Vdc, 5A	--	UL	
Floppy Disk Drive (Optional)	TEAC Or equal	FD-235HF	5Vdc/1.2A max.	EN 60950	TÜV, UL	
Hard Disk Drive (Maximum two provided)	Quantun Or equal	EX5100AT	5Vdc/0.9A max. 12Vdc/1.2A max.	EN 60950	TÜV, UL	
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance						

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Clause	Requirement + Test	Result - Remark	Verdict

1.6	TABLE: electrical data (in normal conditions)					Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status
						see enclosed test record
supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

2.9.2 and 2.9.3	TABLE: clearance and creepage distance measurements <i>Approved power supply.</i>					N/A
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Primary to ground						
Primary to secondary						
supplementary information:						

2.9.4.1	TABLE: distance through insulation measurements				N/A
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)	
supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: temperature rise measurements				Pass
	test voltage (V)		90 / 264 V		—
	t1 (°C)		--		—
	t2 (°C)		--		—
temperature rise dT of part/at:			dT (K)	required dT (K)	
see enclosed test record					
temperature rise dT of winding:		R ₁ (Ω)	R ₂ (Ω)	dT (K)	required dT (K)
supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: electric strength measurements		Pass
test voltage applied between:		test voltage (V)	breakdown
see enclosed test record			No
supplementary information:			

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Clause	Requirement + Test	Result - Remark	Verdict

5.4	TABLE: fault condition tests						Pass
	ambient temperature (°C) : 25 °C						—
	model/type of power supply : (see appended table)						—
	manufacturer of power supply : (see appended table)						—
	rated markings of power supply : (see appended table)						—
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
							see enclosed test record
supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.10	TABLE: ball pressure test of thermoplastics		N/A
	required impression diameter (mm) :	<= 2 mm	—
part		test temperature (°C)	impression diameter (mm)
supplementary information:			

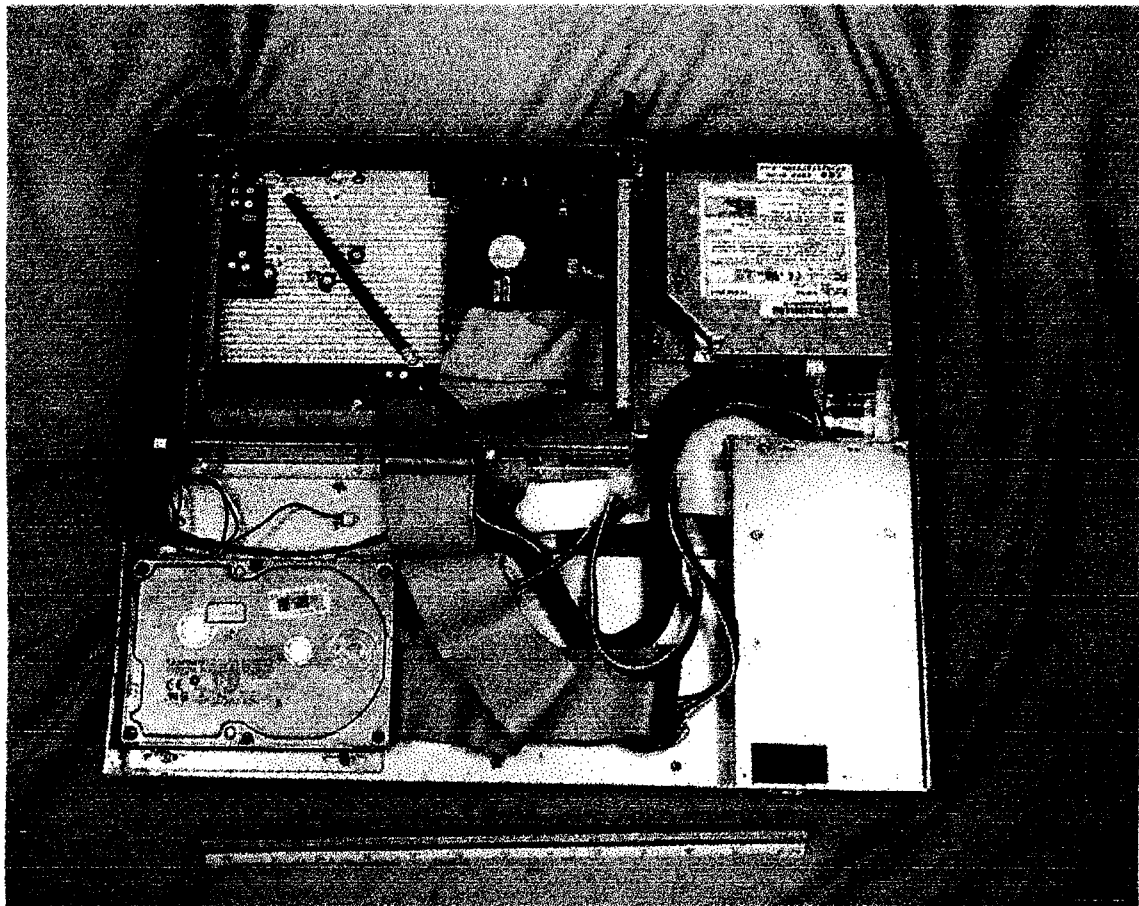
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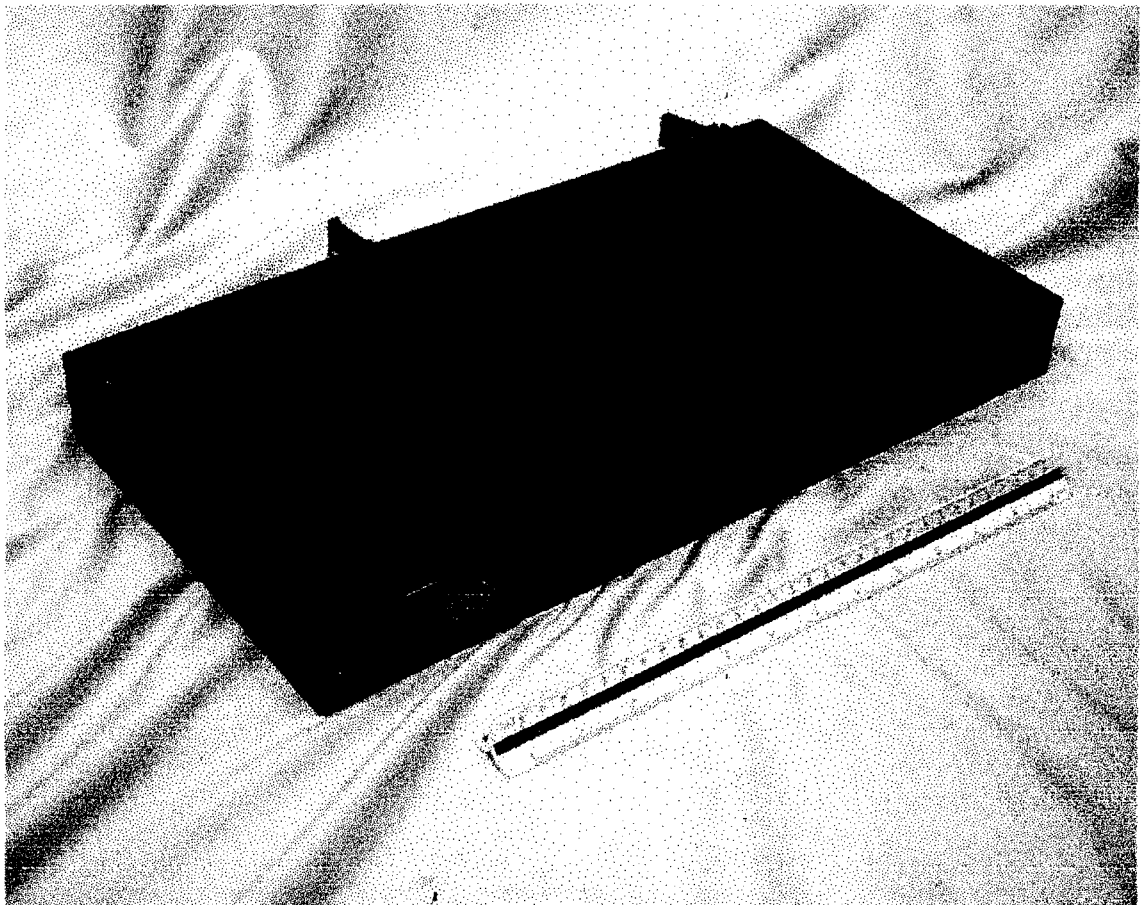
Photographs

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ENCLOSURE No. 3

Schematics

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ENCLOSURE No. 2

Test Record and Test Instruments List

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ENCLOSURE No. 4

User Manual & Instructions

(Total 38 Pages including this Cover Page)