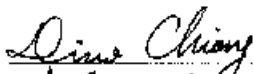
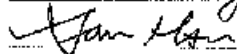
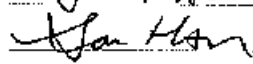



COVER PAGE FOR TEST REPORT

Test Item Description:	Server
Model/Type Reference:	FWA-6XXXXXXXX and FWA-6XXISB, where the X can be any alphanumeric character or blank.
Rating(s):	5 V dc, max. 6 A
Standards:	IEC 60950-1:2001, First Edition
Applicant Name and Address:	ADVANTECH CO LTD 4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Factory Location(s):	(1) ADVANTECH CO LTD 5TH FL 1 LANE 169 KANG-NING ST XI-ZHI CITY, TAIPEI HSIEN TAIWAN (2) ADVANTECH CO LTD 3RD FL 10 LANE 130 MING CHUAN RD, HSIN-TIEN, TAIPEI HSIEN 231 TAIWAN (3) SUPERIOR CO LTD TIENSONG AREA QINGXING TOWN DONGGUAN GUANGDONG CHINA (4) ADVANTECH TECHNOLOGY (CHINA) CO LTD NO. 600 HAN-PU ROAD YU-SHAN KUN-SHAN JIANGSU CHINA (5) BEIJING YAN HUA XING YE ELECTRONIC SCIENCE & TECHNOLOGY CO.,LTD. NO.7, 6TH STREET, SHANG DI ZONE, HAIDIAN DISTRICT, BEIJING, P.R. CHINA.
This Report includes the following parts, in addition to this cover page: <ol style="list-style-type: none">1. Specific Technical Criteria2. Clause Verdicts3. Critical Components4. Test Results5. National Differences6. Enclosures	
All applicable tests according to the above standard(s) have been carried out. Test results are valid only for the tested equipment. This Test Report can be reproduced only in whole. Amendments and corrections can be reproduced only with the original CB Test Report. Written permission from UL International Demko A/S is required if the test report is copied in part.	

TEST REPORT IEC 60950-1, First Edition Information technology equipment - Safety - Part 1: General Requirements	
Report Reference No	E180881-A55-CB-1
Compiled by (+ signature)	Dino Chiang 
Reviewed by (+ signature)	Sam Hsu 
Approved by (+ signature)	Sam Hsu 
Date of issue	2004-09-27
CB Testing Laboratory	UL International Services Limited
Address	4th Floor, No. 260 Da-Yeh Road, Pei Tou, Taipei, Taiwan 112
Testing location/procedure	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/> WMT <input type="checkbox"/>
Address	UL International Services Limited, 4th Floor, No. 260 Da-Yeh Road, Pei Tou, Taipei, Taiwan 112
Applicant's name	ADVANTECH CO LTD
>Address	4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Test specification:	
Standard	IEC 60950-1:2001, First Edition
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950__1A
TRF originator	SGS Fimko Ltd
Master TRF	dated 2002-03
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Test item description	Server
Trade Mark	ADVANTECH
	
Model/Type reference	FWA-6XXXXXXXX and FWA-6XXISB, where the X can be any alphanumeric character or blank.
Manufacturer	SAME AS APPLICANT
Rating	5 V dc, max. 6 A

Marking Plate - Refer to Enclosure titled Miscellaneous for copy.

Particulars: test item vs. test requirements

Equipment mobility :	movable
Operating condition :	continuous
Mains supply tolerance (%) :	No direct connection
Tested for IT power systems :	No
IT testing, phase-phase voltage (V) :	N/A
Class of equipment :	Class III (supplied by SELV)
Mass of equipment (kg) :	1.8
Protection against ingress of water :	IP 20

Possible test case verdicts:

- test case does not apply to the test object : N / A
- test object does meet the requirement : P(Pass)
- test object does not meet the requirement : F(Fail)

General remarks:

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by a NCB in accordance with IEC 60950-1.

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

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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

"(see appended table)" refers to a table appended to the report.

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

General Product Information:**Report Summary**

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

Electronic components were mounted on PWB incorporated with a HDD, and then housed within a metal enclosure. Instruction are provided for choosing a suitable supply.

Model Differences

All Models are identical to each other except for model designations.

Additional Information

N/A

Technical Considerations

The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 degree C

The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1	GENERAL		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950 or relevant component standard	(See appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	<p>Components certified to an IEC harmonized standard are checked for correct application and use in accordance with its rating.</p> <p>Components not certified are used in accordance with their specified ratings and they comply with the applicable parts of this standard and the relevant component Standard.</p> <p>Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using an equivalent standard.</p>	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits		N/A
1.5.7	Double insulation or reinforced insulation bridged by components		N/A
1.5.7.1	General		N/A
1.5.7.2	Bridging capacitors		N/A
1.5.7.3	Bridging resistors		N/A
1.5.7.4	Accessible parts		N/A
1.5.8	Components in equipment for IT power systems		N/A

1.6	Power interface		Pass
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.1	AC power distribution systems	Class III unit intended to be supplied by SELV.	N/A
1.6.2	Input current	(See appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7	Marking and instructions		Pass
1.7.1	Power rating	The unit provides with no means for connection to the mains.	Pass
	Rated voltage(s) or voltage range(s) (V) :	5 Vdc (optional)	Pass
	Symbol for nature of supply, for d.c. only :	Symbol (60417-1-IEC-5031) is used.	Pass
	Rated frequency or rated frequency range (Hz) :		N/A
	Rated current (mA or A) :	max. 6 A. (optional)	Pass
	Manufacturer's name or trademark or identification mark :	Advantech Co., Ltd./ ADVANTECH	Pass
	Type/model or type reference :	FWA-6XXXXXXXXX and FWA-6XXISB, where the X can be any alphanumeric character or blank.	Pass
	Symbol for Class II equipment only :		N/A
	Other symbols :	Additional symbols or marking does not give rise to misunderstanding.	Pass
	Certification marks :	UL, C-UL.	Pass
1.7.2	Safety instructions	Safety instructions were in English. Other languages will be provided when submitted for international approval.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment :		N/A
1.7.5	Power outlets on the equipment :		N/A
1.7.6	Fuse identification :		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals :		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below	Pass
1.7.8.1	Identification, location and marking :	The function of controls affecting safety is obvious regardless of language.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.2	Colours.....:	Only functional indicators use colour.	Pass
1.7.8.3	Symbols according to IEC 60417	"On" and "Off" Switch, according to 60417-1-IEC-5007 and 60417-1-IEC-5008	Pass
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources		N/A
1.7.10	IT power distribution systems		N/A
1.7.11	Thermostats and other regulating devices		N/A
1.7.12	Language	Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer.	-
1.7.13	Durability	The marking(s) withstood the required test.	Pass
1.7.14	Removable parts		N/A
1.7.15	Replaceable batteries	The required warning is placed close to the battery or in both the operation and service manuals.	Pass
	Language	Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer.	-
1.7.16	Operator access with a tool.....:	No operator access areas require the use of a tool.	N/A
1.7.17	Equipment for restricted access locations.....:	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2	PROTECTION FROM HAZARDS		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	Class III equipment.	Pass
2.1.1.1	Access to energized parts	See below	Pass
	Test by inspection	The operator has access only to bare parts of SELV CIRCUITS.	Pass
	Test with test finger	The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits.	Pass
	Test with test pin	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe	No TNV present.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V); minimum distance (mm) through insulation		-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	Supplied by SELV	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Time-constant (s); measured voltage (V)		-
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.2	SELV circuits		Pass
2.2.1	General requirements	The unit is supplied by an approved Power adapter. The SELV reliability shall be considered as parts of power adapter certification.	Pass
2.2.2	Voltages under normal conditions (V)	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V)	All critical evaluations for SELV reliability are considered in separate power adaptor evaluation.	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	SELV circuits permanently separated from hazardous voltage circuits by barriers, routing and fixing.	Pass
2.2.3.2	Separation by earthed screen (method 2)	Method 1 used	N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Method 1 used	N/A
2.2.4	Connection of SELV circuits to other circuits	SELV circuit and all interconnected circuits separated from primary by double insulation. The SELV circuit does not exceed the SELV limits under normal and fault conditions. The SELV does not connected to Primary circuit directly.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits..... :		-
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed :		-
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed :		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed :		-
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) :		-
	Measured current (mA) :		-
	Measured voltage (V)..... :		-
	Measured capacitance (mF) :		-
2.4.3	Connection of limited current circuits to other circuits		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	Limited power sources		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA): :		-
	Current rating of overcurrent protective device (A) :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm ²), AWG		-
2.6.3.4	Resistance (W) of earthing conductors and their terminations, test current (A)		N/A
2.6.3.5	Colour of insulation		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm).....		-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.7	Overcurrent and earth fault protection in primary circuits		N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel..... :		N/A

2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock used.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm)..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.9	Electrical insulation		Pass
2.9.1	Properties of insulating materials	Supplied by SELV and no hazardous voltages are generated.	N/A
2.9.2	Humidity conditioning		N/A
	Humidity (%) :		-
	Temperature (°XC) :		-
2.9.3	Grade of insulation	Complied with Functional insulation.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10	Clearances, creepage distances and distances through insulation		Pass
2.10.1	General	The unit is supplied by SELV and considered comply with requirement of 5.3.4. Pollution degree 2 applicable.	Pass
2.10.2	Determination of working voltage		N/A
2.10.3	Clearances	See below.	Pass
2.10.3.1	General	Considered. (see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.3	Clearances in secondary circuits	Functional insulation only. (see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.4	Measurement of transient voltage levels		N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	Pass
	CTI tests..... :	Material group IIIb; $100 \leq \text{CTI} < 175$.	-
2.10.5	Solid insulation		N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material		N/A
	Number of layers (pcs)..... :		-
	Electric strength test..... :		-
2.10.5.3	Printed boards		N/A
	Distance through insulation		N/A
	Electric strength test for thin sheet insulating material :		-
	Number of layers (pcs)..... :		N/A
2.10.5.4	Wound components		N/A
	Number of layers (pcs)..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° :		N/A
2.10.6	Coated printed boards		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (ϕ XC..... :		N/A
2.10.6.5	Electric strength test..... :		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test..... :		-
2.10.7	Enclosed and sealed parts..... :		N/A
	Temperature $T_1=T_2 = T_{ma} - T_{amb} + 10K$ (ϕ XC..... :		N/A
2.10.8	Spacings filled by insulating compound :		N/A
	Electric strength test..... :		-
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3	WIRING, CONNECTIONS AND SUPPLY		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	All wires/conductors possess adequate cross-sectional areas for their intended application and Internal wiring are adequately insulated.	Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	Pass
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		Pass
3.1.8	Self-tapping and spaced thread screws		Pass
3.1.9	Termination of conductors	All conductors are reliably secured.	Pass
	10 N pull test		Pass
3.1.10	Sleeving on wiring		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.2	Connection to an a.c. mains supply or a d.c. mains supply		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits..... :		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type :		-
	Rated current (A), cross-sectional area (mm ²), AWG :		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) :		-
	Longitudinal displacement (mm) :		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g) :		-
	Radius of curvature of cord (mm)..... :		-
3.2.9	Supply wiring space		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm).....		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

3.5	Interconnection of equipment		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits..... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

4	PHYSICAL REQUIREMENTS		Pass
4.1	Stability		N/A
	Angle of 10T		N/A
	Test: force (N) :		N/A

4.2	Mechanical strength		N/A
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3	Design and construction		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N)		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection of plugs and sockets		N/A
4.3.6	Direct plug-in equipment		N/A
	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
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	Battery is protected against charging current by multiple components.	Pass
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids		N/A
	Quantity of liquid (l)		N/A
	Flash point (°XC)		N/A
4.3.13	Radiation; type of radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	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/A
	Part, property, retention after test, flammability classification.....		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Laser (including LEDs)		N/A
	Laser class		-
4.3.13.6	Other types		N/A

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

4.5	Thermal requirements		Pass
4.5.1	Maximum temperatures	(See appended table 4.5)	Pass
	Normal load condition per Annex L	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	Pass
4.5.2	Resistance to abnormal heat		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.6	Openings in enclosures		Pass
4.6.1	Top and side openings	Numerous circular openings on both sides. Each covering an area approximately 86.2 by 28.7 mm. Each opening measures 2 mm diameter, 3.8 mm center-to-center.	Pass
	Dimensions (mm)		-
4.6.2	Bottoms of fire enclosures	No bottom openings provided.	Pass
	Construction of the bottom		-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°XC)/time (weeks)		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.7	Resistance to fire		Pass
4.7.1	Reducing the risk of ignition and spread of flame	See below.	Pass
	Method 1, selection and application of components wiring and materials	(See appended table 4.7)	Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	The fire enclosure is not required.	N/A
4.7.2.1	Parts requiring a fire enclosure	See 4.7.2.	Pass
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		Pass
4.7.3.1	General	See below.	Pass
4.7.3.2	Materials for fire enclosures	Metal. (See appended table 1.5.1)	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, rated VW-1 or FT-1. (See appended table 1.5.1)	Pass
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		Pass
5.1	Touch current and protective conductor current		N/A
5.1.1	General		N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V)..... :		-
	Measured touch current (mA) :		-
	Max. allowed touch current (mA)..... :		-
	Measured protective conductor current (mA) :		-
	Max. allowed protective conductor current (mA) ... :		-
5.1.7	Equipment with touch current exceeding 3.5 mA .. :		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N/A
	Test voltage (V)..... :		-
	Measured touch current (mA) :		-
	Max. allowed touch current (mA)..... :		-
5.1.8.2	Summation of touch currents from telecommunication networks :		N/A

5.2	Electric strength		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	Abnormal operating and fault conditions		Pass
5.3.1	Protection against overload and abnormal operation		Pass
5.3.2	Motors		N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation	Functional insulation complies with the requirements (a), (b), or (c).	Pass
5.3.5	Electromechanical components		N/A
5.3.6	Simulation of faults	Block opening test DC Fan lock test O/L of operator accessible connector test See appended table for other details	Pass
5.3.7	Unattended equipment		N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal, deformation, excessive temperature rises or insulation breakdown was detected during these tests	Pass

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V).....		-
	Current in the test circuit (mA)		-
6.1.2.2	Exclusions		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

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

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.2	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.3	Insulation between primary circuits and cable distribution systems		N/A
7.3.1	General		N/A
7.3.2	Voltage surge test		N/A
7.3.3	Impulse test		N/A

IEC 60950-1			
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 movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		-
	Wall thickness (mm)		-
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		-
	Sample 2 burning time (s)		-
	Sample 3 burning time (s)		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

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
A.2.1	Samples, material		-
	Wall thickness (mm)		-
A.2.2	Conditioning of samples		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame		N/A
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		-
	Sample 2 burning time (s)		-
	Sample 3 burning time (s)		-
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s)		-
	Sample 2 burning time (s)		-
	Sample 3 burning time (s)		-

A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

B	Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		-
	Manufacturer		-
	Type		-
	Rated values		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		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 d.c. motors in secondary circuits		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h)		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C	Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position		-
	Manufacturer		-
	Type		-
	Rated values		-
	Method of protection		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings		N/A

D	Annex D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	Annex E, TEMPERATURE RISE OF A WINDING		N/A
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F	Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		Pass
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

G	Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	DC mains supply		N/A
G.3	Determination of telecommunication network transient voltage (V) :		N/A
G.4	Determination of required withstand voltage (V) ... :		N/A
G.5	Measurement of transient levels (V)..... :		N/A
G.6	Determination of minimum clearances		N/A

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
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J	Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal used		-

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

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

M	Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		-
M.3.1.2	Voltage (V)		-
M.3.1.3	Cadence; time (s), voltage (V)		-
M.3.1.4	Single fault current (mA)		-
M.3.2	Tripping device and monitoring voltage.....		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

P	Annex P, NORMATIVE REFERENCES		Pass
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Q	Annex Q, BIBLIOGRAPHY		Pass
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R	Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
 :		-

U	Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
 :		-

IEC 60950-1			
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⁾	
Enclosure	Various	Various	Painted metal. Overall 250 mm by 172 mm by 41 mm, 1 mm thickness. Secured together by screws. Numerous circular openings on both sides. Each covering an area measures approximately 86.2 by 28.7 mm. Each opening measures 2 mm diameter, 3.8 mm center-to- center.	--	--, --	
Power Switch	Solteam	MR-21	6A, 125V	UL 1054	UL, --	
Power Adapter	Universal Micro Electronics Co., Ltd.	UP0301E-05P	i/p: 100-240 Vac, 47-63 Hz, 0.7 A; output rated 5 Vdc, 6 A	UL 60950, IEC 60950	UL, TUV, CB Certificate No. (JPTUV-006342)	
Alternate Power Adapter	Sinpro Electronic Co., Ltd.	SPU45E-102	i/p: 100-240 Vac, 47-63 Hz, 1.35 A; output rated 5 Vdc, 8 A	UL 60950, IEC 60950	UL, TUV, CB Certificates No. (DE 2-003810- M1)	
RJ-45 Connector (optional)	Various	Various	--	--	--, --	
PCB	Various	Various	V-1 or better, 105 degree C	UL 796	UL, --	
Hard Disk Drives (optional)	Various	Various	5Vdc, 0.55A	UL 60950, EN 60950	UL, TUV	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Lithium Battery (BT1)	Rayovac	BR2032	3V, 195 mAh. Maximum abnormal charging current 4 mA, Reverse current protection by series circuit of Diode (DD4) and resistor (R464), rated 1K ohm.	UL 1642	UL, --
System Fans (Two provided)	Delta	AFB03505HA	5Vdc, 0.21A	UL 507, EN 60950	UL, TUV

¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)						Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status	
--	6	5Vdc	--	3080	--	Max. normal load	
supplementary information:							
Max. normal load: Connected to Computers and operated continuously.							

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements						Pass
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)	
--	--	--	--	--	--	--	
supplementary information:							
All critical clearance and creepage distances in primary circuit are considered in separate power supply evaluation. Only functional insulation is required.							

2.10.5	TABLE: distance through insulation measurements				N/A
distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)	
--	--	--	--	--	
supplementary information:					
--					

4.5	TABLE: temperature rise measurements						Pass
test voltage (V)	5 Vdc	--	--	--	---		
t1 (°XC)	--	--	--	--	--		
t2 (°XC)	50 degree C	--	--	--	---		
maximum temperature T of part/at:	T (°XC)					allowed Tmax (°XC)	
1. PCB near U25	57	--	--	--	--	105	
2. PCB near U16	61	--	--	--	--	105	
3. HD Body	54	--	--	--	--	--	
4. Enclosure	51	--	--	--	--	70	
5. L1 coil	69	--	--	--	--	105	
6. T1 coil	70	--	--	--	--	90	

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
7. Enclosure	60	--	--	--	--	95
8. Ambient air	50 degree C	--	--	--	--	--
temperature T of winding:		R ₁ (Ω)	R ₂ (Ω)	T (°XC	allowed Tmax (°XC	insulation class
--		--	--	---	--	--
supplementary information:						
N/A						

4.5.2	TABLE: ball pressure test of thermoplastics				N/A
	allowed impression diameter (mm)..... :				
part			test temperature (°XC	impression diameter (mm)	
supplementary information:					

4.7	TABLE: resistance to fire				Pass
part		manufacturer of material	type of material	thickness(mm)	flammability class
Enclosure		--	Metal	1	--
Printed Wiring Board		Various	Various	--	V-1 min.
supplementary information:					
N/A					

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests			N/A
test voltage applied between:			test voltage (V) a.c./d.c.	breakdown Yes / No
supplementary information:				

5.3	TABLE: fault condition tests			Pass
	ambient temperature (°XC :			--
	model/type of power supply :			---

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	manufacturer of power supply..... :					---	
	rated markings of power supply :					---	—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
Unit	Stalled fan	5 Vdc	2 hrs	--	--	Amb.= 24 ºXC, Temp. was stable, T1 coil = 49 degree C, NC, NT.	
Unit	Blocked Opening	5 Vdc	30 min	--	--	Amb.= 25 ºXC, Temp. was stable, T1 coil = 50 degree C, NC, NT.	
supplementary information:							
Comments Key: NC: Cheescloth remained intact. NT: Tissue paper remained intact							

Enclosure

National Differences

(Total 30 Pages including this Cover Page)

Argentina*
Australia / New Zealand
Austria**
Belgium**
Czech Republic*
Denmark
Finland
France*
Germany
Greece**
Group
Hungary*
Ireland*
Israel*
Korea
Malaysia*
Netherlands**
Norway
Poland*
Portugal*
Slovakia*
Slovenia*
Spain*
Sweden
Switzerland
USA / Canada
United Kingdom

* No National Differences Declared

** Only Group Differences

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Australia / New Zealand - Differences to IEC 60950-1:2001, First Edition			
1.2.12.11	<p>POTENTIAL IGNITION SOURCE</p> <p>Possible fault which can starts a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15VA.</p> <p>Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards.</p> <p>Note 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE.</p>		N/A
1.5.1	Add to the first paragraph: "or the relevant Australian / New Zealand Standard".		Pass
1.5.2	Add to the first and third dashed items after the words "IEC Component Standard": "or the relevant Australian / New Zealand Standard".		Pass
1.6.1	Add: AC power distribution systems classified as TT or IT are not allowed		N/A
1.7.12	Add to the first paragraph: All safety instructions and safety markings shall be in English.		Pass

IEC 60950-1																																									
SubClause	Difference + Test	Result - Remark	Verdict																																						
3.2.5	Substitute for Table 3B: Sizes of Conductors		N/A																																						
	<table><thead><tr><th>Rated Current of Equipment (A)</th><th>Nominal cross-sectional area (mm2)</th></tr></thead><tbody><tr><td>0.2 <= 3</td><td>0.5*</td></tr><tr><td>3 <= 7.5</td><td>0.75</td></tr><tr><td>7.5 <= 10</td><td>(0.75) 1.00</td></tr><tr><td>10 <= 16</td><td>(1,0) 1.5</td></tr><tr><td>16 <= 25</td><td>2.5</td></tr><tr><td>25 <= 32</td><td>4</td></tr><tr><td>32 <= 40</td><td>6</td></tr><tr><td>40 <= 63</td><td>10</td></tr><tr><td>63 <= 80</td><td>16</td></tr><tr><td>80 <= 100</td><td>25</td></tr><tr><td>100 <= 125</td><td>35</td></tr><tr><td>125 <= 160</td><td>50</td></tr><tr><td>160 <= 190</td><td>70</td></tr><tr><td>190 <= 230</td><td>95</td></tr><tr><td>230 <= 260</td><td>120</td></tr><tr><td>260 <= 300</td><td>150</td></tr><tr><td>300 <= 340</td><td>185</td></tr><tr><td>340 <= 400</td><td>240</td></tr><tr><td>400 <= 460</td><td>300</td></tr></tbody></table> <p>* This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord or cord guard, enters the appliance, and the entry to the plug, does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see Note 2 to Table 2.17 of AS/NZS 3191).</p>			Rated Current of Equipment (A)	Nominal cross-sectional area (mm2)	0.2 <= 3	0.5*	3 <= 7.5	0.75	7.5 <= 10	(0.75) 1.00	10 <= 16	(1,0) 1.5	16 <= 25	2.5	25 <= 32	4	32 <= 40	6	40 <= 63	10	63 <= 80	16	80 <= 100	25	100 <= 125	35	125 <= 160	50	160 <= 190	70	190 <= 230	95	230 <= 260	120	260 <= 300	150	300 <= 340	185	340 <= 400	240
Rated Current of Equipment (A)	Nominal cross-sectional area (mm2)																																								
0.2 <= 3	0.5*																																								
3 <= 7.5	0.75																																								
7.5 <= 10	(0.75) 1.00																																								
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25 <= 32	4																																								
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63 <= 80	16																																								
80 <= 100	25																																								
100 <= 125	35																																								
125 <= 160	50																																								
160 <= 190	70																																								
190 <= 230	95																																								
230 <= 260	120																																								
260 <= 300	150																																								
300 <= 340	185																																								
340 <= 400	240																																								
400 <= 460	300																																								
4.3.6	Replace the third paragraph: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A																																						
4.3.13	For the purpose of this standard compliance with AS/NZS 2211.1 is deemed to be compliance with IEC60825.1		N/A																																						
4.7	Add after the clause: For alternative resistance to fire tests, refer to Annex YY.		N/A																																						

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.2.1	Replace item c) with: An SELV circuit, a TNV-2 circuit or a Limited Current Circuit provided for connection of other equipment. The requirement for separation applies whether or not this circuit is accessible.		N/A
6.2.2	Replace the first paragraph by: In Australia (not in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.	No TNV present.	N/A
6.2.2.1	<p>Replace 6.2.2.1 with: In Australia (not in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of Annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, U_c is:</p> <p>- for 6.2.1a): 7.0 kV for hand-held telephones and for headsets; 2.5 kV for other equipment;</p> <p>for 6.2.1b) and 6.2.1c): 1.5 kV.</p> <p>NOTE 1 - The 7 kV impulse is to simulate lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 2 - The value of 2.5 kV for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>		N/A
6.2.2.2	<p>Replace the first and second paragraphs of 6.2.2.2 with: In Australia (not New Zealand), the electrical separation is subjected to an electric strength test according to 5.2.2.</p> <p>The a.c. test voltage is:</p> <p>- for 6.2.1a) 3 kV - for 6.2.1b) and 6.2.1c) 1.5 kV</p> <p>NOTE 1 - Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 2 - The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Denmark - Differences to IEC 60950-1:2001, First Edition			
1.2.4.1	Certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2	<p>Supply cords of Class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p style="text-align: center;">"Vigtigt ! Lederen med grøn/gul isolation må kun tilsluttes en klemme marked (IEC 417, No. 5019) eller (IEC 417, No. 5017)."</p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning".</p>		N/A
1.7.5	Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment, the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5	Class II equipment shall not be fitted with socket-outlets for providing power to other equipment.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
3.2.1.1	<p>Supply cord of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>Class I equipment provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a rated current exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Finland - Differences to IEC 60950-1:2001, First Edition			
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Laite on liitettava suojamaadoituskoskettimilla varustettuun pistorasiaan"		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	<p>Add the following text between the first and second paragraph:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition:</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and - is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2.</p> <p>A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1, subclause 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in IEC 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14. 		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Germany - Differences to IEC 60950-1:2001, First Edition			
1.7.12	<p>(Gesetz uber technische Arbeitsmittel (Geratesicherheitsgesetz) [Law of technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchfuehrung des Zweiten Abschnitts des Geratesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, the paragraph, item 2).</p> <p>Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language.</p> <p>NOTE: Of this requirement, rules for use even only by service personnel are not exempted.</p>	Reviewed only English markings/instructions. May be provided in other languages when the equipment will be applied for other national certificated.	N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
1.7.15	<p>(Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [operation of X-ray emission source], clauses 1 to 4)</p> <p>a) A licence is required by those who operate an X-ray emission source.</p> <p>b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if</p> <ol style="list-style-type: none"> 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 EgSV/h and 2) it is adequately indicated on the X-ray emission source that <ol style="list-style-type: none"> i) X-rays are generated ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. <p>c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <ol style="list-style-type: none"> 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that <ol style="list-style-type: none"> i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. <p>d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <ol style="list-style-type: none"> 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT. 		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Group - Differences to IEC 60950-1:2001, First Edition			
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in primary circuits, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A
2.7.2	Void		N/A
2.10.2	Replace the first line "(see also 1.4.7)" by "(see also 1.4.8)".		N/A
3.2.3	Delete NOTE 1, and in table 3A delete the conduit sizes in parentheses.		N/A

IEC 60950-1																																																											
SubClause	Difference + Test	Result - Remark	Verdict																																																								
3.2.5	<p>Replace: "60245 IEC 53" by "H05 RR-F" "60227 IEC 52" by "H03 VV-F or H03 VVH2-F" "60227 IEC 53" by "H05 VV-F or H05 VVH2-F"</p> <p>In table 3B, replace the first four lines by the following: Up to and including 6 0.75 1 Over 6 up to and including 10 0.75 2 1.0 Over 10 up to and including 16 1.0 3 1.5</p> <p>In the Conditions applicable to table 3B, delete the words "in some countries" in condition 1. In Note 1, delete the second sentence.</p>		N/A																																																								
3.3.4	<p>In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 1.5 to 2.5 1.5 to by 4"</p> <p>Delete the fifth line: conductor sizes for 13 to 16A.</p>		N/A																																																								
4.3.13.6	<p>Add the following note: NOTE - Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.</p>		N/A																																																								
General	<p>Delete all the "country" notes in the reference document according to the following list:</p> <table> <tr> <td>1.5.1</td><td>Note 2</td> <td>1.5.8</td><td>Note 2</td> </tr> <tr> <td>1.6.1</td><td>Note</td> <td>1.7.2</td><td>Note 4</td> </tr> <tr> <td>1.7.12</td><td>Note 2</td> <td>2.1</td><td>Note</td> </tr> <tr> <td>2.2.3</td><td>Note</td> <td>2.2.4</td><td>Note</td> </tr> <tr> <td>2.3.2</td><td>Note 2, 7, 8</td> <td>2.3.3</td><td>Note 1, 2</td> </tr> <tr> <td>2.3.4</td><td>Note 2,3</td> <td>2.7.1</td><td>Note</td> </tr> <tr> <td>2.10.3.1</td><td>Note 4</td> <td>3.2.1.1</td><td>Note</td> </tr> <tr> <td>3.2.3</td><td>Note 1, 2</td> <td>3.2.5.1</td><td>Note 2</td> </tr> <tr> <td>4.3.6</td><td>Note 1,2</td> <td>4.7.2.2</td><td>Note</td> </tr> <tr> <td>4.7.3.1</td><td>Note 2</td> <td>6.1.2.1</td><td>Note</td> </tr> <tr> <td>6.1.2.2</td><td>Note</td> <td>6.2.2</td><td>Note</td> </tr> <tr> <td>6.2.2.1</td><td>Note 2</td> <td>6.2.2.2</td><td>Note</td> </tr> <tr> <td>7</td><td>Note 4</td> <td>7.1</td><td>Note</td> </tr> <tr> <td>G2.1</td><td>Note 1, 2</td> <td>H</td><td>Note 2</td> </tr> </table>	1.5.1	Note 2	1.5.8	Note 2	1.6.1	Note	1.7.2	Note 4	1.7.12	Note 2	2.1	Note	2.2.3	Note	2.2.4	Note	2.3.2	Note 2, 7, 8	2.3.3	Note 1, 2	2.3.4	Note 2,3	2.7.1	Note	2.10.3.1	Note 4	3.2.1.1	Note	3.2.3	Note 1, 2	3.2.5.1	Note 2	4.3.6	Note 1,2	4.7.2.2	Note	4.7.3.1	Note 2	6.1.2.1	Note	6.1.2.2	Note	6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note	7	Note 4	7.1	Note	G2.1	Note 1, 2	H	Note 2		Pass
1.5.1	Note 2	1.5.8	Note 2																																																								
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1.7.12	Note 2	2.1	Note																																																								
2.2.3	Note	2.2.4	Note																																																								
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G2.1	Note 1, 2	H	Note 2																																																								

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μ Sv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE - These values appear in Directive 96/29/Euratom. Delete Note 2.		N/A
P	Replace the text of this annex by: See annex ZA		Pass
Q	Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures - Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		Pass

Korea - Differences to IEC 60950-1:2001, First Edition			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains comply with the Korean requirement (KSC 8305).		N/A
7	Addition: EMC - The apparatus shall comply with the relevant CISPR standards.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Norway - Differences to IEC 60950-1:2001, First Edition			
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).		N/A
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparatet må tilkoples jordet stikkontakt"		N/A
2.2.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 apply.		N/A
2.3.3	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.3.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.		N/A
2.10.3.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	<p>Add the following text between the first and second paragraph:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none">- two layers of thin sheet material, each of which shall pass the electric strength test below, or- one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition:</p> <ul style="list-style-type: none">- passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and- is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2.</p> <p>A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none">- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1, subclause 6.2.2.1;- the additional testing shall be performed on all the test specimens as described in IEC 60384-14;- the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A
G.2.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Sweden - Differences to IEC 60950-1:2001, First Edition			
1.5.1	(Ordinance (1990:944)) Add NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no any switches containing mercury.	N/A
1.7.2	Class I Pluggable Equipment Type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparaten skall anslutas till jordat uttag"		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	<p>Add the following text between the first and second paragraph:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none">- two layers of thin sheet material, each of which shall pass the electric strength test below, or- one layer having a distance through insulation of at least 0.4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition:</p> <ul style="list-style-type: none">- passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5 kV multiplied by 1.6 (the electric strength test of 2.10.7 shall be performed using 1.5 kV), and- is subject to routing testing for electric strength during manufacturing, using a test voltage of 1.5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2.</p> <p>A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none">- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1, subclause 6.2.2.1;- the additional testing shall be performed on all the test specimens as described in IEC 60384-14;- the impulse test of 2,5 kV is to be performed before the endurance test in IEC 60384-14, in the sequence of tests as described in IEC 60384-14.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for permanently connected equipment and pluggable equipment type B and equipment intended to be used in a restricted access location where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected protective earthing conductor and is provided with instructions for the installation of that conductor by a service person.		N/A
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term telecommunication network in 6.1.2 being replaced by the term cable distribution system.		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

Switzerland - Differences to IEC 60950-1:2001, First Edition			
1.5.1	Add NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no any switches containing mercury.	N/A
1.7.15	Annex 4.10 of SR 814.013 (Ordinance on environmentally hazardous substances) applies for batteries.		N/A
3.2.1.1	<p>Supply cords of equipment having a rated current not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V,10 A</p> <p>SEV 6533-2.1991, Plug type 11, L+N 250 V,10 A</p> <p>SEV 6534-2.1991, Plug type 12, L+N+PE 250 V,10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998, Plug type 25, 3P+N+PE 230/400 V,16 A</p> <p>SEV 5933-2.1998, Plug type 21, L+N 250 V,16 A</p> <p>SEV 5934-2.1998, Plug type 23, L+N+PE 250 V,16 A</p>		N/A

IEC 60950-1			
SubClause	Difference + Test	Result - Remark	Verdict

USA / Canada - Differences to IEC 60950-1:2001, First Edition			
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.		N/A
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor.		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1	Screw shell of Edison-base lampholder tied to the neutral conductor.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
2.3.2	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when subjected to special construction requirements and routine testing.		N/A
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.3.3	For Pluggable Equipment Type A, if neither a) or b) are applicable, the current rating of the circuit is taken as 20 A.		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
2.10.5.4	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.4 and Annex U.		N/A
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	Interconnecting cables comply with the relevant requirements of this standard.	Pass
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		N/A
3.2.1	Permitted use for flexible cords and plugs.		N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 152 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 ϕ XC, marking indicates use of 75 ϕ XC or 90 ϕ XC wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.		N/A
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 mm ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	Internal wiring is UL Recognized, rated VW-1 or FT-1.	Pass
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.6	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	Operator accessible connector overload test, measured less than 12.5 mA or 0 V	Pass
5.3.6	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.8.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.	No TNV present	N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.2.1	Special requirements for enameled wiring used as electrical separation provided between parts connected to telecommunication network and telecommunication circuitry intentionally isolated from network.		N/A
6.2.1	Digital line termination equipment (e.g., NCTE) subject to separation requirements.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
6.5	Acoustic pressure from an ear piece less than 136 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets, and 121 dBA for insert earphones, for long duration disturbances.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict

M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A

United Kingdom - Differences to IEC 60950-1:2001, First Edition			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, protective device shall be included as integral parts of the direct plug-in equipment.		N/A
3.2.1.1	Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5.1	A power supply cord with conductor of 1.25 mm ² is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is 1.25 mm ² to 1.5 mm ² nominal cross-sectional area.		N/A
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 and the plug part of Direct Plug-In Equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 ϕ XC		N/A

Enclosure**Photographs**

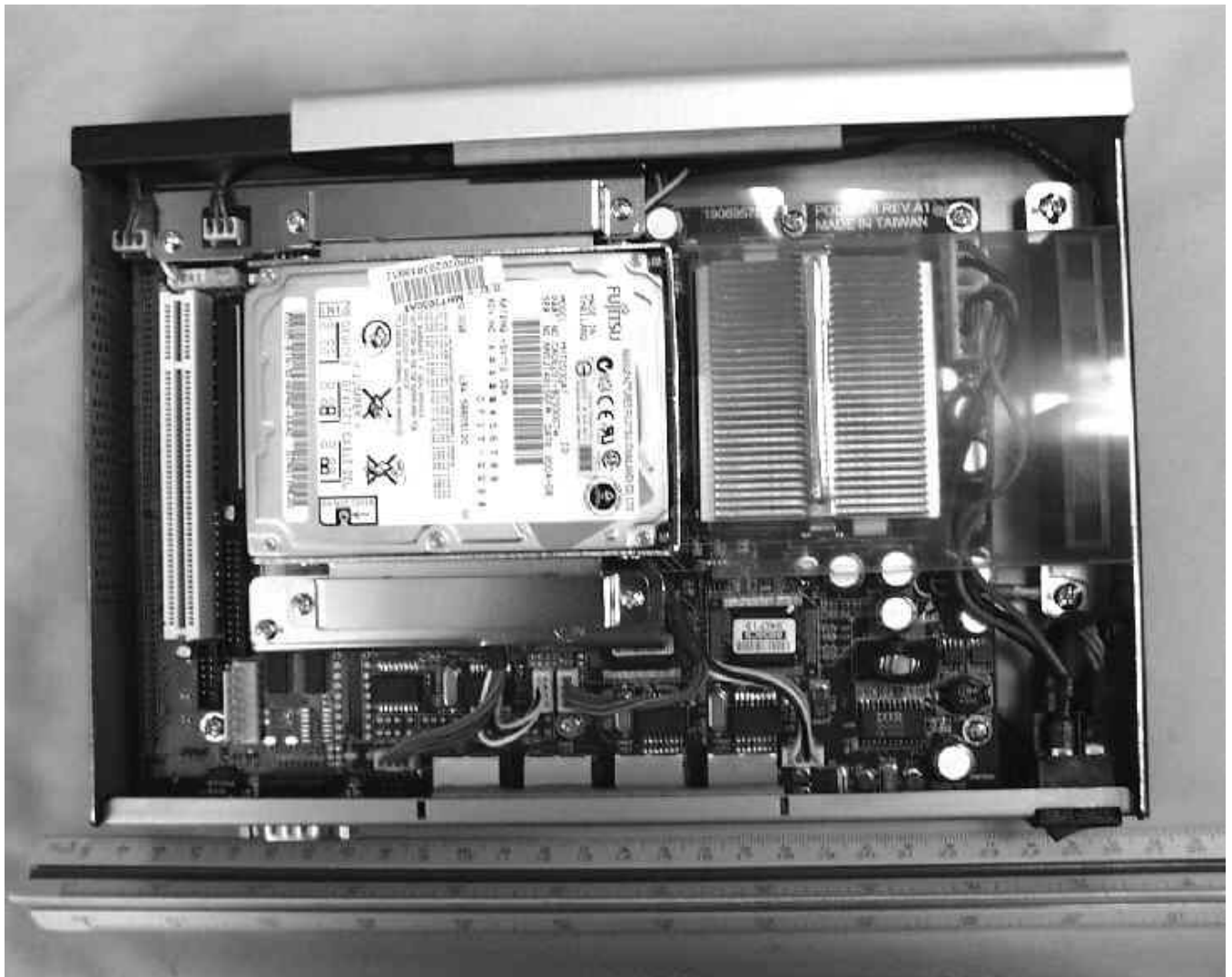
(Total 5 Pages including this Cover Page)

Supplement Id	Description
3-01	Overall View - front
3-02	Overall View - rear (with 3 ports)
3-03	Overall View - rear (with 4 ports)
3-04	Internal View









Enclosure**Miscellaneous**

(Total 2 Pages including this Cover Page)

Supplement Id	Description
7-01	Label

*Your ePlatform Partner***ADVANTECH**□ FWA-660
MODEL: □ FWA-600**FCC**

This device complies with the requirements in part 15 of the FCC rule :
Operation is subject to the following two conditions : (1) this device may
not cause harmful interference, and (2) this device must accept any
interference received, including interference that may cause undesired
operation.

警告使用者

這是甲類的資訊產品，在居住的環境中使用時，
可能會造成射頻干擾，在這種情況下，使用者會
要求採取某些適當的對策。

檢磁

Input +5 Vdc
, Max 6A

**CAUTION !**

To prevent electric shock,
Do not remove cover. No
user serviceable parts
inside. Refer servicing to
qualified personnel.

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