INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
JPTUV-001695

IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ ET DE CERTIFICATION DES EQUIPEMENTS ELECTRIQUE (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Personal Computer

Name and address of the applicant
Nom et adresse du demandeur

Acer Incorporated
21th Fl., 88, Sec.1, Hsin Tai Wu Rd., Hsichih
Taipei Hsien 221, TAIWAN, R.O.C.

Name and address of the manufacturer
Nom et adresse du fabricant

Acer Incorporated
21th Fl., 88, Sec.1, Hsin Tai Wu Rd., Hsichih
Taipei Hsien 221, TAIWAN, R.O.C.
(further factories may be listed on appendices to this certificate)

Name and address of the factory
Nom et adresse de l'usine

Acer Incorporated
7 Hsin Ann Rd., Science-Based Ind. Park
Hsinchu 30077, TAIWAN, R.O.C.

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Input rating : AC 100-127V/200-240V, 5A/3A, 50/60Hz
Protection class : I

Trade mark (if any)
Marque de fabrique (si elle existe)

Trade mark of Acer

Model/type Ref.
Ref. de type

AP8400
AP8600
VT7100

Additional information (if necessary)
Information complémentaire (si nécessaire)

For differences between the models, refer to the test report.

A sample of the product was tested and found to be in conformity with
Un échantillon de ce produit a été essayé et a été considéré conforme à la

PUBLICATION	EDITION
IEC 60950:1991+A1+A2+A3+A4 inclusive CENELEC Common Modifications (refer also to the appendix)	

as shown in the Test Report Ref. No.
which form part of this certificate
comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat

E 2061557 E 01

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜV

TÜV Rheinland Japan Ltd.
3-19-5 Shin-Yokohama
222-0033 Japan

Date 13.06.2000

Signature Dipl.-Ing. M. Borgmann

Issue 1998-09

TEST REPORT

IEC 60950

Safety of information technology equipment

Report reference No.	E 2061557 E01
Compiled by (+ signature)	M. Ide
Approved by (+ signature)	M. Inoue
Date of issue	June 9, 2000
Testing laboratory	TÜV Rheinland Japan Ltd., Yokohama Laboratories
Address	Festo Bldg. 5F, 1-26-10 Hayabuchi, Tsuzuki-Ku, Yokohama 224-0025, Japan
Testing location	TÜV Rheinland Japan Ltd., Yokohama Laboratories
Applicant	Acer Incorporated
Address	21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Standard	IEC 60950:1991+A1:1992+A2:1993+A3:1995+A4:1996 EN 60 950:1992+A1:1993+A2:1993+A3:1995+A4:1997+A11:1997 EMKO-TSE(74-SEC)207/94 , AS 3260-1993, UL1950, C22-2 No. 950 3rd edition
Test Report Form No.	I950__D/97-06
TRF originator	FIMKO
Master TRF	reference No. I950 D, dated 97-02
Copyright blank test report	the bodies participating in the Committee of Certification Bodies (CCB) and/or the CENELEC Certification Agreement (CCA). This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator.
Test procedure	CB-Scheme
Procedure deviation	Austria, Australia(for models without modem card), Belgium, Canada, China, Czech. R., Denmark, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, Korea, Netherlands, Norway, Poland, Russian Federation, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, U.K., USA, Yugoslavia
Non-standard test method	N.A.

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

Type of test object	Personal Computer
Trademark	Acer trade mark
Model/type reference	AP8400, AP8600, VT7100
Manufacturer	Same as applicant
Factory	Acer Incorporated 7 Hsin Ann Rd., Science-Based Ind. Park, Hsinchu 30077, Taiwan, R.O.C.
Rating	AC 100-127/200-240V, 5/3A, 50/60Hz

Test item particulars:	
Equipment mobility	: movable
Operating condition	: continuous
Tested for IT power systems	: Yes
IT testing, phase-phase voltage (V)	: IT, 230V for Norway
Class of equipment	: Class I
Mass of equipment (kg)	: 12kg
Protection against ingress of water	: IPX0
Possible test case verdicts:	
- test case does not apply to the test object	: N(.A.)
- test object does meet the requirement	: P(ass)
- test object does not meet the requirement	: F(ail)

General remarks:

"(see remark #)" refers to a remark appended to the report.

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

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

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 testing laboratory.

Comments:

Brief description of the test sample:

The equipment is a tower type personal computer for general office use. The internal building-in switching power supply is an approved component according to EN 60950 standard and CB Scheme tested. For details of the power supply, see appended table 1.5.1.

The models AP8400, AP8600 and VT7100 are identical except for model number and secondary circuit.

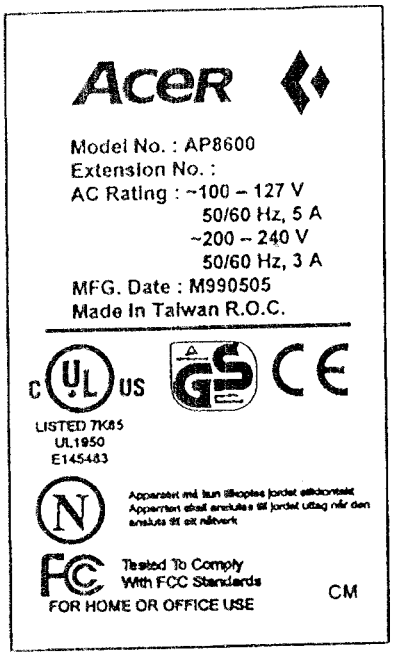
Special features are:

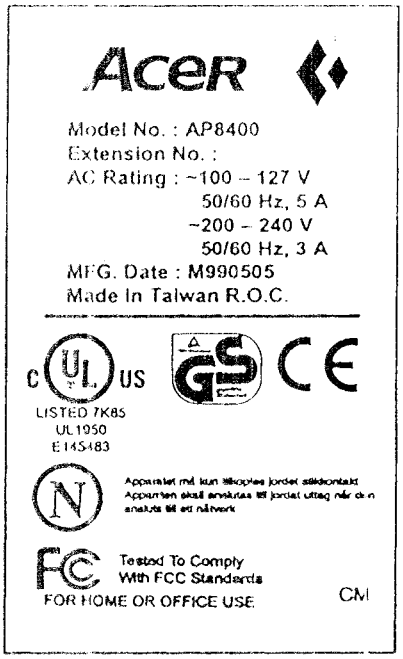
- 1 FDD,
- 1 HDD,
- 1 CD-ROM, CD-R/RW or 1 DVD-ROM,
- 1 VGA card,
- 1 motherboard with 500MHz CPU,
- 2 USB ports.

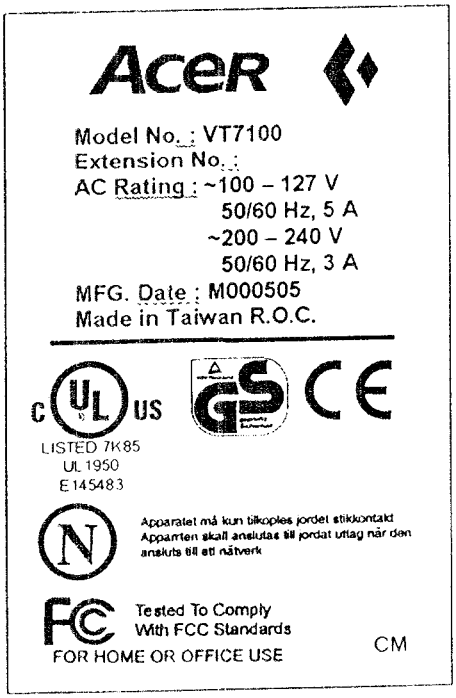
The Li-type battery is protected by a control circuit to prevent overcharging and discharging. Each o/p connector of USB, keyboard and mouse are protected by polyswitch.

The test sample was a pre-production sample without serial number.

Copy of the marking plate :







IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	Comply with IEC 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended tables)	P
1.5.2	Evaluation and testing components	Components which are certified to IEC and / or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
	Dimensions (mm) of mains plug for direct plug-in .....:	The equipment is not plug-in type	N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N
1.5.3	Transformers	Transformers used are suitable for their intended application and comply with the relevant requirements of the standard	P
1.5.4	High voltage components (component; manufacturer; flammability) .....:	No high voltage components used.	N
1.5.5	Interconnecting cables	Interconnection cables for signal output are carrying only SELV voltages on an energy level below 240VA. → Except for the insulation material, there are no further requirements to the interconnection cable.	P
1.5.6	Mains Capacitors	X-capacitor in approved SPS.	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
1.6	Power interface		P
1.6.1	Steady state input current	Highest load according to 1.2.2.1 for this equipment is the HiFD, HDD and CD-ROM permanently access, dummy load of 60W at o/p connectors and power supply with 80% of rated maximum power. (see appended table)	P
	Current deviation during normal operating cycle	< + 10%	P
1.6.2	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N
1.6.3	Neutral conductor insulated from earth and body	The neutral is not identified in the equipment. Basic insulation for rated voltage between earthed parts and primary phases.	P
1.6.4	Components in equipment intended for IT power system	Phase-to-earth designed according to phase-to-phase working voltage. Y2 type capacitor used between phase-to-earth.	P
1.6.5	Mains supply tolerance (V) .....:	-10% (for 100V/200V) +6% (for 127V) +10% (for 240V) Documentation specifies a rating of AC 100-127V/ 200-240V at 50/60Hz. Relevant tests were done with the range of 90-134/180-264V at 50/60Hz.	P

1.7	Marking and instructions		P
1.7.1	Rated voltage (V) .....:	- 100-127V/200-240V	P
	Symbol of nature of supply for d.c. .....:	mains from AC source	N
	Rated frequency (Hz) .....:	50/60 Hz	P
	Rated current (A) .....:	5/3A	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Manufacturer .....:	Not shown.	N
	Trademark .....:	Acer trade mark	P
	Type/model .....:	AP8400, AP8600, VT7100	P
	Symbol of Class II .....:	Class I equipment	N
	Certification marks .....:	TÜV Rheinland GS mark, CUL, N, UL	N
1.7.2	Safety instructions	The users manual contains information for operation, installation, servicing, transport, storage and technical data. The operation guide is provided to the user. Marking for laser class I type CD-ROM Driver, the German, English, French, Spanish, Nordic wording: CLASS 1 LASER PRODUCT, LASER DE CLASSE 1 PRODUIT, LASER KLASSE 1, LASER DE LA CLASSE I	P
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N
1.7.4	Marking for voltage setting/frequency setting ..:	Voltage setting is part of the approved power supply.	P
1.7.5	Marking at power outlets .....:	No power outlet.	N
1.7.6	Marking at fuseholders .....:	Fuse marking in the approved power supply.	N
1.7.7.1	Protective earthing terminals	Appliance inlet used.	N
1.7.7.2	Terminal for external primary power supply conductors	No terminal.	N
1.7.8.1	Identification and location of switches and controls .....:	The marking and indication of the functional switch is located that indication of function is clearly. The power switch is located on the back.	P
1.7.8.2	Colours of controls and indicators .....:	No safety relevant indicators.	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
1.7.8.3	Symbols according to IEC 60417 .....:	Marking for push-push type front panel functional switch according to IEC60417, No. 5009-a (line half inside circle). Power switch on back side is part of the approved power supply (IEC 60417, No. 5007, 5008), circle for off, line for on.	P
1.7.8.4	Figures used for marking .....:	No indicators for different positions.	N
1.7.8.5	Location of markings and indications for switches and controls .....:	Stand-by switch: The marking for the switch is located beside the knob of the switch. Power switch: The marking for the switch is located on the knob of the switch.	P
1.7.9	Isolation of multiple power sources .....:	Only one supply from the mains.	P
1.7.10	Instructions for installation to IT power system	In the installation manual: The product is also designed for IT power system with phase-to-phase voltage 230V.	P
1.7.11	Instructions when protection relies on building installation	Connected to the mains by pluggable type A.	N
1.7.12	Marking when leakage current exceeds 3,5 mA	Leakage current does not exceed 3.5mA.	N
1.7.13	Indication at thermostats and regulating devices	No adjustable thermostats.	N
1.7.14	Language of safety markings/instructions	Instructions related to safety and marking provided in English language. User manual is in English. User manuals in other languages will be provided with the national approval.	P
	Language .....:	English.	—

IEC 60950			
Clause	Requirement - Test	Result - Remark	Verdict
1.7.15	Durability and legibility	The label was subjected to the permanence of marking test. The label was rubbed with cloth for 15s and then again for 15s with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge.	P
1.7.16	Removable parts	No required markings placed on removable parts.	P
1.7.17	Warning text for replaceable lithium batteries	German. Versions in other languages will be provided when submitted for national certificate approval	P
	Language .....:	English.	—
1.7.18	Operator access with a tool .....:	The inside of the personal computer is regarded to be operator access area. This area is accessible when enclosure of PC is be disassembled with a screwdriver. When the enclosure is disassembled, the earthed metal enclosure of SPS is accessible. However, the SPS enclosure can be opened with the same screw driver as the screw head is in same construction. Therefore, the SPS provided with electric shock hazard symbol (ISO 3864, No. 5036) to discourage the user to access.	P
1.7.19	Equipment for restricted access locations .....:	No restricted access location.	N

2	PROTECTION FROM HALZARDS	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.1	Protection against electric shock and energy hazards		P
2.1.1	Access to energized parts	See below	P
2.1.2	Protection in operator access areas	The construction of this metal enclosure prevents the accessibility to any parts with only basic insulation to ELV or hazardous voltage with test pin or test finger.	N
	Test by inspection .....:	dto	N
	Test with test finger .....:	dto	N
	Test with test pin .....:	dto	N
2.1.3.1	Insulation of internal wiring in an ELV circuit accessible to operator	Equipment is for the use of sevice personnel only.	N
	Working voltage (V); distance (mm) through insulation .....:		N
2.1.3.2	Operator accessible insulation of internal wiring at hazardous voltage	No hazardous voltage wiring in operator accessible area.	N
2.1.4.1	Protection in service access areas	Hazardous voltage only in the inside of the SPS. At circuits of SPS is no service work in operation mode necessary.	P
2.1.4.2	Protection in restricted access locations	It is not intended to be used in restricted locations	N
2.1.5	Energy hazard in operator access area	The overall output of the SPS is below 240VA.	P
2.1.6	Clearances behind conductive enclosures	Refer to 4.2.3.	P
2.1.7	Shafts of manual controls	None at ELV or hazardous voltage	N
2.1.8	Isolation of manual controls	None at ELV or hazardous voltage	N
2.1.9	Conductive casings of capacitors	Casings of capacitors are considered as if directly connected to the respective circuitry. None at hazardous voltage accessible.	P
2.1.10	Risk of electric shock from stored charge on capacitors connected to mains circuit	Tests were done with the approval of switching power supply.	N
	Time-constant (s); measured voltage (V) .....:		—

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.2	Insulation		P
2.2.1	Methods of insulation	The insulation materials provided in the equipment with adequate thickness and adequate creepage distance over their surface and clearance distance through air.	P
2. 2.2	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used	P
2.2.3	Humidity treatment	Total time elapsed: 48 hours	P
	Humidity (%) .....:	93% R.H.	—
	Temperature (°C) .....:	25°C	—
2.2.4	Requirements for insulation	Please refer to 5.3, 2.9 and 5.1.	P
2.2.5	Insulation parameters	Both parameters were considered.	P
2.2.6	Categories of insulation	The adequate levels of safety insulation are provided and maintained to comply with the requirements of this standard.	P
2.2.7	Determination of Working voltage	The measurements were done with the approval of the SPS.	P
2.2.7.1	General rules for working voltages	Considered	P
2.2.7.2	Clearances in primary circuits	Considered	P
2.2.7.3	Clearances in secondary circuits	Considered	P
2.2.7.4	Creepage distances	Considered	P
2.2.7.5	Electric strength tests	Considered	P
2.2.8	Double or reinforced insulation bridged by components	No component bridged reinforced or double insulation.	N
2.2.8.1	Bridging capacitors		N
2.2.8.2	Bridging resistors		N
2.2.8.3	Accessible parts		N
2.3	Safety extra-low voltage (SELV) circuits		P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.3.1	Voltage (V) of SELV circuits under normal operating conditions and after a single fault .....:	42.4V peak or 60VDC are not exceeded in SELV circuit under normal operation or 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 .....:	Between any SELV circuits 42.4V peak or 60VDC are not exceeded	P
2.3.3	Voltage (V) of SELV in the event of a single failure of basic or supplementary insulation or of a component .....:	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds, see abnormal results 5.4.6.	—
	Method used for separation .....:	Method 1	P
2.3.4	Additional constructional requirements	In multiway connectors and other cable ties prevent contact to hazardous parts in case of loosening of connection or conductor breakage. IEC 60083 and IEC 60320 connectors are not used in SELV.	P
2.3.5	Connection of SELV circuits to other circuits	See 2.3.2 and 2.3.3. No direct connection between SELV and any primary circuits.	N

2.4	Limited current circuits		N
2.4.2	Frequency (Hz) .....:		—
	Measured current (mA) .....:		N
2.4.3	Measured voltage (V) .....:		—
	Measured capacitance (μF) .....:		N
2.4.4	Measured voltage (V) .....:		—
	Measured charge (μC) .....:		N
2.4.5	Measured voltage (V) .....:		—
	Measured energy (mJ) .....:		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.4.6	Limited current circuit supplied from or connected to other circuits ..... :		N

2.5	Provisions for earthing		P
2.5.1	Class I equipment	Basic insulated conductive parts touchable in operator area earthed reliably.	P
	Warning label for service personnel		N
2.5.2	Protective earthing in Class II equipment	Class I equipment	N
2.5.3	Switches/fuses in earthing conductors	No switches or fuses in earthing conductor.	P
2.5.4	Assured earthing connection for Class I equipment in systems comprising Class I and Class II equipment	This unit has its own earthing connection. Any other units connected via the interconnecting cable to other unit shall provide SELV only. The equipment does not comprise class I and class II	P
2.5.5	Green/yellow insulation	Green/yellow wire from inlet to chassis in the approved SPS.	P
2.5.6	Continuity of earth connections	It is not possible to disconnect earth without disconnecting mains as an appliance inlet is used.	P
2.5.7	Making and breaking of protective earthing connections	Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	P
2.5.8	Disconnection protective earthing connections	It is not necessary to disconnect earthing except for the removing of the earthed parts itself	P
2.5.9	Protective earthing terminals for fixed supply conductors or for non-detachable power supply cords		N
2.5.10	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.5.11	Resistance (Ω) of protective earthing conductors ≤ 0,1 Ω	≤ 0,1 Ω	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Test current (A) .....:	(See appended table 2.5.11).	—

2.6	Primary power isolation		P
2.6.1	General requirements	The appliance inlet is considered to be the disconnect device.	P
2.6.2	Type of disconnect device .....:	Appliance inlet	P
2.6.3	Disconnect device in permanently connected equipment	Pluggable equipment type A.	N
2.6.4	Parts of disconnect device which remain energized	When plug or inlet is disconnected no remaining parts with hazardous voltage in the equipment	P
2.6.5	Switches in flexible cords	No isolation switch provided.	N
2.6.6	Disconnection of both poles simultaneously for single-phase equipment	The plug or inlet disconnects both poles simultaneously.	P
2.6.7	Disconnection of all phase conductors of supply in three-phase equipment	Single phase equipment.	N
2.6.8	Marking of switch acting as disconnect device	See 1.7.8	N
2.6.9	Installation instructions if plug on power supply cord acts as disconnect device	See 1.7.2	N
	Language .....:		—
2.6.11	Interconnected equipment	Certified plug or inlet, earthing connected before phases are connected	P
2.6.12	Multiple power sources	Only one supply connection for every SPS provided.	N

2.7	Overcurrent and earth fault protection in primary circuits		P
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	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.7.2	Protection against faults not covered in 5.4	The protection devices are well dimensioned and mounted.	P
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit protection	P
2.7.4	Number and location of protective devices .....:	Overcurrent protection by polyswitch for keyboard, mouse and USB connector.	P
2.7.5	Protection by several devices	Overcharging protection by control circuit for Li-battery.	P
2.7.6	Warning to service personnel	With reversible type plug to the mains, hazardous voltage may be still presented in the equipment after the internal fuse opens. However, as it is considered that the plug to the mains will be disconnected during service work, no marking were requested.	P

2.8	Safety interlock *No operator accessible areas which presents hazards in the meaning of this standard.*		N
2.8.2	Design		N
2.8.3	Protection against inadvertent reactivation		N
2.8.4	Reliability		N
2.8.5	Overriding an interlock		N
2.8.6.1	Contact gap (m) .....:		N
2.8.6.2	Switch performing 50 cycles		N
2.8.6.3	Electric strength test: test voltage (V) .....:		N
2.8.7	Protection against overstress		N

2.9	Clearances, creepage distances and distances through insulation		P
	Nominal voltage (V) .....:	AC 240V	—
	General		P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
2.9.2	Clearances	See below	P
2.9.2.1	Clearances in primary circuits	(see appended table 2.9.2 and 2.9.3)	P
2.9.2.2	Clearances in secondary circuits	(see appended table 2.9.2 and 2.9.3)	P
2.9.3	Creepage distances	(see appended table 2.9.2 and 2.9.3)	P
	CTI tests .....:	CTI rating for all materials of min. 100.	—
2.9.4.1	Minimum distances through insulation		N
2.9.4.2	Thin sheet material	The thin material used in main transformer of the approved power supplies.	N
	Number of layers (pcs) .....:		N
	Electrical strength test: test voltage (V) .....:		N
2.9.4.3	Printed boards	Not applied for.	N
	Distance through insulation .....:		N
	Electric strength test at voltage (V) for thin sheet insulating material .....:		N
	Number of layers (pcs) .....:		N
2.9.4.4	Wound components without interleaved insulation	No wound components used.	N
	Number of layers (pcs) .....:		N
	Two wires in contact inside component; angle between 45° and 90°		N
	Routine testing for finished component		N
2.9.5	Distances (mm) on coated printed boards .....:	No coated printed wiring boards.	N
	Routine testing for electric strength		N
2.9.6	Enclosed and sealed parts	No hermetically sealed components.	N
	Temperature T1 (°C) .....:		N
	Humidity % .....:		N
2.9.7	Spacings filled by insulating compound	No component applied for.	N
	Temperature T1 (°C) .....:		N
	Humidity % .....:		N
2.9.8	Component external terminations	(see appended table 2.9.2 and 2.9.3)	P

IEC 60950			
Clause	Requirement - Test	Result - Remark	Verdict
2.9.9	Insulation with varying dimensions	Insulation kept homogenous.	N
2.10	Interconnection of equipment		P
2.10.1	General requirements	See below.	N
2.10.2	Type of interconnection circuits .....:	Interconnection circuits of SELV through the output connectors and TNV to TNV connection. No ELV interconnection circuits.	P
2.10.3	ELV circuits as interconnection circuits	No ELV interconnection.	N
2.11	Limited power source		N
	Use of limited power source .....:	Supplied from the mains.	N
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Cross-sectional area of internal wiring/interconnecting cables	All internal wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 80°C, 300V. Internal wiring gauge is suitable for current intended to be carried.	P
	Protection of internal wiring and interconnecting cables	No internal wire for primary power distribution.	N
3.1.2	Wireways	Wires do not touch sharp edges and heat sinks which could damage the insulation and cause hazard.	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
3.1.3	Fixing of internal wiring	Internal wires with only basic isolation are routed so that they are not close to any live bare components. The wires are secured by solder pins and quick connect terminals so that a loosening of the terminal connection is unlikely.	P
3.1.4	Fixing of uninsulated conductors	Securely held on PCB. No hazard.	P
3.1.5	Insulation of internal wiring	The insulation of the individual conductors are suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.6	Wires coloured green/yellow only for protective earth connection	See 2.5.5.	P
3.1.7	Fixing of beads and similar ceramic insulators	Not used.	N
3.1.8	Required electrical contact pressure	Electrical and earthing connections screwed two or more complete threads into metal. No screws of insulating material for electrical and earthing connections, or where supplementary or reinforced insulation could be impaired by a metal replacement.	P
3.1.9	Reliable electrical connections	All current carrying and safety earthing connections are metal to metal.	P
3.1.10	End of stranded conductor	No risk of stranded conductors coming loose.	P
3.1.11	Use of spaced thread screws/thread-cutting screws	No self tapping screws are used.	P

3.2	Connection to primary power		P
3.2.1	Type of connection .....:	Appliance inlet.	P
	Design of product with more than one supply connection .....:	Approved power supply has its own mains connection.	N
3.2.2	Provision for permanent connection .....:	Not permanently connected.	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Size (mm) of cables and conduits .....:		N
3.2.3	Appliance inlet	The appliance inlet complies with IEC 60320 and is located at the rear of the unit.	P
3.2.4	Type and cross-sectional area (mm²) of power supply cord .....:	Not provided for this CB approval. However, selection in power cord set was mentioned in the manual and shall be applied with the national approval.	N
3.2.5	Cord anchorage		N
	Test: 25 times; 1 s; pull (N) .....:		—
	Longitudinal displacement ≤ 2 mm .....:		N
3.2.6	Protection of power supply cord	No parts under this unit likely to damage the power supply cord. No sharp edges	P
3.2.7	Cord guard	*see clause 3.2.1*	N
	D (mm) .....:		—
	Test: mass (g) .....:		—
	Radius of curvature of the cord ≤ 1,5 D		N
3.2.8	Supply wiring space		N

3.3	Wiring terminals for external power supply conductors *Unit with detachable power supply cord, connected on appliance inlet.*		N
3.3.1	Terminals		N
3.3.2	Special non-detachable cord		N
	Type of connection .....:		—
	Pull test at 5 N		N
3.3.3	Screws and nuts		N
3.3.4	Fixing of conductors		N
3.3.5	Connection of connectors		N
3.3.6	Size of terminals		N
	Nominal thread diameter (mm) .....:		N
3.3.7	Protection against damage of conductors		N
3.3.8	Terminal location		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
3.3.9	Test with 8 mm stranded wire		N
4	PHYSICAL REQUIREMENTS		P
4.1	Stability and mechanical hazards		P
4.1.1	Stability tests		P
	Angle of 10°	This appliance is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position.	P
	Test: force (N)	Equipment is not a floorstanding unit.	N
4.1.2	Protection against personal injury	Fan of SPS, accessible at the rear panel, is covered by metal grid.	P
4.1.3	Warning and means provided for stopping the moving part	No hazardous moving parts.	N
4.1.4	Edges and corners	Edges and corners of the enclosure are rounded	P
4.1.5	Enclosure of a high pressure lamp	No lamp with cold pressure of 0.2MPa or hot pressure 0.4MPa.	N
4.2	Mechanical strength and stress relief		P
4.2.1	General		P
4.2.2	Internal enclosures 30 N ± 3 N; 5 s	30N force tested on internal enclosure (SPS and modem cover).	P
4.2.3	External enclosures 250 N ± 10 N; 5 s	250N applied to outer enclosure.	P
4.2.4	Steel ball tests *Hazardous voltages are contained in the approved SPS. As the SPS is complete enclosed by an earthed metal enclosure which meets the requirements of 2.1.2, no hazardous parts would be accessible with damaged PC 's enclosure. The steel sphere fall test and swung test are therefore not considered to be necessary for the PC enclosure.*		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Fall test		N
	Swing test		N
4.2.5	Drop test		N
4.2.6	Heat test for enclosures of moulded or formed thermoplastic materials: 7 h; T (°C) .....:	7h at 70°C in oven for modem cover	P
4.2.7	Compliance criteria	No safety relevant damages to impact the requirements of 2.1.2, 2.1.5, 2.5.1, 2.5.2, 2.9, 4.1.2. and 6.2.2.	P
4.2.8	Mechanical strength of cathode ray tubes	Unit does not employ a cathode ray tube	N
4.3	Construction details		P
4.3.1	Changing of setting for different power supply voltages	Part of the approved power supply.	N
4.3.2	Adjustment of accessible control devices	None that would cause hazard	P
4.3.4	Prevention of dangerous concentration of dust, powder, liquid and gas	Equipment in intended use not considered to be exposed to these.	N
4.3.5	Fixing of knobs, grips, handles, levers		P
	Test: force (N) .....:	30N on front panel switch.	P
4.3.6	Driving belts/couplings shall not ensure electrical insulation	Not used for insulation.	N
4.3.7	Retaining of sleeves	Sleevings on wiring reliable kept in position by cable ties or by the use of heatshrunk sleeving.	P
4.3.9	Protection of loosening parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatshrunk tubing are used	P
4.3.11	Resistance to oil and grease	Insulation not in contact with oil or grease	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
4.3.12	Protection against harmful concentration of ionizing radiation, ultraviolet light, LED, laser or flammable gases (for laser and LED see IEC 60825-1)	No ionizing radiation or flammable liquids presents. For CD-ROM or DVD-ROM drive, this component was evaluated according to relevant standard for laser product which is IEC 60825-1 and EN 60 825-1 approved. Therefore, complied with this clause without further test. Laser Class 1 symbol appeared on CD-/DVD-ROM and inside the user's manual. LED output power far below the limits for LED class 1.	P
4.3.13	Securing of screwed connections	No connection likely to be exposed to mechanical stress are provided in unit.	P
4.3.15	Openings in the top of enclosure	No top opening.	P
	Dimensions (mm) .....:	See appended table.	—
4.3.16	Openings in the sides of enclosure	No hazardous voltages within 5° projection area.	P
	Dimensions (mm) .....:	See appended table.	—
4.3.17	Interchangeable plugs and sockets	In operator and service area, mismate of connectors were prevented by incompatible form or location.	P
4.3.18	Torque test for direct plug-in equipment		N
	Additional torque (Nm) .....:		N
4.3.19	Protection against excessive pressure		N
4.3.20	Protection of heating elements in Class I equipment	No heating elements.	N
4.3.21	Protection of lithium batteries		P
	Construction of protection circuit .....:	Prevent from force charging by D9 and R241 in series of battery (BT1) The battery can be mounted reverse. However, with D9 as protection device no discharge of BT1 can happen.	P
4.3.22	Ageing of barrier/screen secured with adhesive		N
	Day 1: temperature (°C); time (weeks) .....:		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Day 8/22/57: a) temperature (°C) for 1 h b) temperature (°C) for 4 h c) temperature (°C) over 8 h .....:		N
	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

4.4	Resistance to fire		P
4.4.1	Methods of achieving resistance to fire	Use of materials with the required flammability classes.	P
4.4.2	Minimizing the risk of ignition	Electrical parts are not likely to ignite nearby materials. Parts not protected against overheating under fault conditions. Temperatures see 5.1	P
	Printed board: manufacturer; type; flammability :	See 1.5.1 appended table	P
4.4.3.2	Material and component: manufacturer; type; flammability .....:	Internal components except small parts are V-2, HF-2 or better.	P
4.4.3.3	Exemptions .....:	Considered.	P
4.4.3.4	Wiring harnesses: manufacturer; flammability ..:	Insulating material consists of PVC.	P
4.4.3.5	Cord anchorage bushings: manufacturer; flammability .....:	No cord anchorage.	N
4.4.3.6	Air filter assemblies: manufacturer; flammability :	No air filter assemblies	N
4.4.4	Enclosures and decorative parts: manufacturer; flammability .....:	Protective enclosure (metal) with decorative front plastic panel. The front panel assumed as decorative part, therefore the flammability class HB of that plastic material was acceptable.	P
4.4.5	Conditions for fire enclosures	See 4.4.5.1	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
4.4.5.1	Components which require fire enclosure: manufacturer; flammability .....:	With having the following components: • components with windings • wiring • semiconductor devices, transistors, diodes, integrated circuits • resistors, capacitors, inductors The fire enclosure is required.	P
4.4.5.2	Components not requiring fire enclosure .....:	See 4.4.5.1	N
4.4.6	Fire enclosure construction	Protection against emission of flame, molten metal, flaming or glowing particles or drops by the fire enclosure with no bottom opening.	P
4.4.7	Doors and covers	No door or cover within fire enclosure.	N
4.4.8	Flammable liquids	No flammable liquids in this unit.	N
5	THERMAL AND ELECTRICAL REQUIREMENTS		P
5.1	Heating		P
	Heating tests	(see appended table 5.1)	P
5.2	Earth leakage current		P
5.2.1	General	The leakage current was measured from primary to chassis.	P
5.2.2	Leakage current	(see attached table)	P
	Test voltage (V) .....:	(see attached table)	—
	Measured current (mA) .....:	(see attached table)	—
	Max. allowed current (mA) .....:	3.5mA	—

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
5.2.3	Single-phase equipment	See 5.2.2	P
	Test voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Max. allowed current (mA) ..... :		—
5.2.4	Three-phase equipment	Single phase equipment	N
	Test voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Max. allowed current (mA) ..... :		—
5.2.5	Equipment with earth leakage current exceeding 3.5 mA	Leakage current does not exceed 3.5mA	N
	Test voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Max. allowed current (mA) ..... :		—
	Cross-sectional area (mm^2) of internal protective earthing conductor ..... :		—
	Warning label		N

5.3	Electric strength		P
5.3.1	General	All tests voltages were applied for 1 minute in the chamber after the humidity test of 2.2.3 and in warm conditions after the heating test of 5.1. No isolation breakdown was observed (results see appended tables).	P
5.3.2	Test procedure	(see appended table)	P

5.4	Abnormal operating and fault conditions	P

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.2	Motors	(See appended table 5.4)) The cooling fan for the CPU is locked rotor protected. With the locked rotor, this protection turns in cycling mode in which the temp. is kept below the temp. under normal conditions. Other motors are used in the appliance which are certified HDDs, HiFD and CD-/DVD-ROMs.	P
5.4.3	Transformers	The protection of transformers are approved with the approval of the SPS.	P
5.4.4	Compliance of operational insulation *Power supply is an approved component, the over-current protection of the power supply ensure that there occur no hazards if there is short circuit in the SELV circuit.*		P
	Method used .....:	Method 1	P
5.4.5	Electromechanical components in secondary circuits	No electromechanical components.	N
5.4.6	Other components and circuits	Faults in primary and secondary components and operational insulation were already considered during the approval of the SPS. No other component fault test necessary.	P
5.4.7	Test in any expected condition and foreseeable misuse	No hazard by operating buttons and controls not in accordance with the instructions. Ventilation openings covered and cooling fan for unit locked: (see appended table 5.4). No hazards	P
5.4.8	Unattended use of equipment having thermostats, temperature limiters etc.	None of them are used.	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.9	Compliance	No fire propagated beyond the equipment. No molten metal was emitted. Electric strength test primary → SELV and primary →ground were passed.	P
5.4.10	Ball-pressure test of thermoplastic parts; impression shall not exceed 2 mm	None of them outside the approved power supply.	N

6	CONNECTION TO TELECOMMUNICATION NETWORKS *Equipment is not intended to be connected to TNV.*	N

6.1	General		P
6.2	TNV circuits		P
6.2.1.1	Limits of the TNV circuits		P
6.2.1.1 a)	TNV-1 circuits	The modem cards generate only signals within the limits of TNV-1 circuits.	P
6.2.1.1 b)	TNV-2 and TNV-3 circuits	The telecommunication network is considered to be TNV-3 circuit.	P
6.2.1.2	Separation from other circuits and from accessible parts	Basic insulation between TNV and SELV provided. Requirements of 6.4.1 are applicable.	P
	Voltage (V) in SELV circuits, TNV-1 circuits and accessible conductive parts in event of single insulation fault or component failure .....:	Limits of TNV-3 can not be exceeded.	P
6.2.1.3	Operating voltages generated externally	Basic insulation provided.	N
	Voltage (V) in SELV circuit, TNV-1 circuit or accessible conductive part .....:		N
6.2.1.4	Separation from hazardous voltages .....:	TNV circuit only connected to SELV circuit.	N
	Insulation between TNV circuit and circuit at hazardous voltage		N
	Method used .....:		N
6.2.1.5	Connection of TNV circuits to other circuits	TNV circuit only connected to SELV circuit.	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	TNV circuit supplied conductively from a secondary circuit .....:	Considered.	P
6.2.2.1	Protection against contact with bare conductive parts of TNV-2 and TNV-3 circuits	With the disconnected telecommunication cable the connector pins at the modem cards or at the plug may be touched. However, in this case the generated voltages are in compliance witch the requirements for TNV-1 circuits (see 6.2.1.1).	N
	Test with test finger	No access with test finger.	P
	Test with test probe	No access with test probe.	P
6.2.2.2	Battery compartments	No battery compartment.	N
	Marking next to door/on door		N

6.3	Protection of telecommunication network service personnel, and users of other equipment connected to the telecommunication network, from hazards in the equipment		P
6.3.1	Protection from hazardous voltages	The modem cards generate only signals within the limits of TNV-1 circuits.	P
6.3.2	Use of protective earthing *The protection of the telecommunication network does not rely on earthing.*		N
	Language of installation instructions .....:		N
6.3.3.1	Insulation between TNV circuit and parts or circuitry that may be earthed	See appended table 5.3.	P
6.3.3.2	Exclusions .....:		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
6.3.4.1	Limitation of leakage current (mA) to telecommunication network	**M3-5614PM3:** Line to Tip/Ring: I = 0.067mA Neutral to Tip/Ring: I = 0.055mA **M3-5614PM3G:** Line to Tip/Ring: I = 0.11mA Neutral to Tip/Ring: I = 0.096mA **V1456VQH20B:** Line to Tip/Ring: I = 0.103mA Neutral to Tip/Ring: I = 0.094mA **V1456VQH20C:** Line to Tip/Ring: I = 0.083mA Neutral to Tip/Ring: I = 0.07mA	P
6.3.4.2	Summation of leakage currents from telecommunication network	Only one modem card is intended to be used.	N

6.4	Protection of the equipment user from voltages on the telecommunication network		P
6.4.1	Separation requirements	Applied.	P
6.4.2	Test procedure	6.4.2.2 applied.	P
6.4.2.1	Impulse test: separation between TNV-1 circuits/TNV-3 circuits and:		N
6.4.2.1 a)	unearthed conductive parts/non-conductive parts of the equipment expected to be held or touched during normal use; test at 2,5 kV		N
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
6.4.2.1 c)	circuitry which is provided for connection of other equipment; test at 1,5 kV		N
6.4.2.2	Electric strength test: separation between TNV-1 circuits/TNV-3 circuits and:		P
6.4.2.2 a)	unearthed conductive parts/non-conductive parts of the equipment expected to be held or touched during normal use; test at 1,5 kV	No handheld parts.	N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
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	No isolation breakdown. (See appended table 5.3)	P
6.4.2.2 c)	circuitry which is provided for connection of other equipment; test at 1,0 kV	No isolation breakdown. (See appended table 5.3)	P
6.4.2.3	Compliance criteria	Complied.	P

6.5	Protection of telecommunication wiring system from overheating *Modem card is not intended to supply other units via telecommunication line.*		N
	Maximum continuous output current (A) .....:		N

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
A.1	Flammability test for fire enclosures of moveable equipment having a total mass exceeding 18 kg, and of stationary equipment		N
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.3	High current arcing ignition test		N
A.3.6	Number of arcs .....:		N
A.4	Hot wire ignition test		N
A.4.6	Ignition time (s) .....:		N
A.5	Hot flaming oil test		N
A.6	Flammability test for classifying materials V-0, V-1 or V-2		N
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HBF		N
A.8	Flammability test for classifying materials HB		N
A.9	Flammability test for classifying materials 5V		N
A	Tested material		N
	Preconditioning: 7 days (168 h); temperature (°C) .....:		—
	Mounting of samples during test .....:		—
	Wall thickness .....:		—
	Sample 1 burning time .....:		N
	Sample 2 burning time .....:		N

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Clause	Requirement – Test	Result - Remark	Verdict
	Sample 3 burning time .....:		N
	Material: compliance with the requirements		N
-----	Manufacturer of tested material .....:		---
	Type of tested material .....:		---
	Additional information .....:		---
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS *DC fan for CPU is an approved component.*		N
B.1	General requirements		N
	Position .....:		---
	Manufacturer .....:		---
	Type .....:		---
	Rated voltage (V) or current (A) .....:		---
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) .....:		---
	Electric strength test: test voltage (V) .....:		---
B.6	Running overload test for DC motor in secondary circuits		N
B.7	Locked-rotor overload test for DC motor in secondary circuits		N
B.7.2	Test time (h) .....:		N
B.7.3	Test time (h) .....:		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Test voltage (V) .....:		---
C	ANNEX C, TRANSFORMERS		N
	Position .....:		---

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Temperatures		N
	Thermal cut-out		N
C.1	Overload test		N
	Conventional transformer		N
C.2	Insulation		N
	Precautions ..... :		N
	Retaining of end turns of all windings		N
	Earthing test at 25 A		N
C.3	Electric strength test		N

H	ANNEX H, IONIZING RADIATION		N
	Ionizing radiation		N
	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
	See separate test report		N

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
PWB	various	various	V-0, 105°C	UL 94	UL
Front bezel	various	various	HB	UL 94	UL
Detachable power cord (For European market only)	King Cord	Plug: KC015 Connector: KC-003	250V, 10A	IEC 60320 VDE 0620 VDE 0625	VDE
	Yeh Yang	Wire: H05VV-F	3G, 0.75mm^2	VDE 0281	VDE
	Ta Hsing	Wire: H05VV-F	3G, 0.75mm^2	VDE 0281	VDE
	Walsin Lihwa	Wire: H05VV-F	3G, 0.75mm^2	VDE 0281	VDE
Lithium battery	Hitachi Maxell	CR2032	3Vdc, 220mAh	--	UL
	Matsushita	CR2032	3Vdc, 220mAh	--	UL
	Rayovac	CR2032	3Vdc, 220mAh	--	UL
	Sony	CR2032	3Vdc, 220mAh	--	UL
	Mitsubishi	CR2032	3Vdc, 220mAh	--	UL
	Toshiba	CR2032	3Vdc, 220mAh	--	UL
Polyswitch	Raychem	MiniSMDC110	6Vdc, 1.1A	--	UL
	Raychem	RUE110	30Vdc, 1.1A	DIN44080, DIN44081	TÜV, UL
	Raychem	RUE135	30Vdc, 1.35A	DIN44080, DIN44081	TÜV, UL
Switching power supply	Sirtec	SI-X200M3	I/P: 100-127/200-240Vac, 5/3A, 50/60Hz O/P: 5Vdc/20A, 12Vdc/8A, 3.3Vdc/14A, 5VSB/3A, -5Vdc/0.3A, -12Vdc/0.5A class I	IEC 60950	TÜV, UL, NEMKO (CB)

IEC 60950				
Clause	Requirement – Test	Result - Remark		Verdict

	Delta Electronics, Inc.	DPS-200PB-95 BX	I/P: 100-120V~/6A, 200-240V~/3A, 47-63Hz O/P: 5Vdc/22A, 12Vdc/6A, 3.3Vdc/14A, 5VSB/3A, -5Vdc/0.1A, -12Vdc/0.8A class I	IEC 60950	TÜV, NEMKO (CB)
Floptical Disc Driver	Matsushita Kotobuki Electronics Industries Inc.	LKM-F933-1 LKM-F934-1	5Vdc/2.7A Laser class 1	EN 60950 EN 60825-1	TÜV, Semko, UL
Floppy Disk Drive	Newtronics Co.	D35XM3	5/12Vdc, 1.0A	IEC 60950	TÜV, UL
	Matsushita	JU-2XYAXXXX	5/12Vdc, 1.2A	IEC 60950	TÜV, UL
ZIP Drive	Iomega Corp.	Z250ATAPI	5Vdc/0.25A	EN 60950	TÜV, UL
		Z100ATAPI	5Vdc/0.8A	EN 60950	TÜV , UL
Hard Disk Drive	Quantum	3.5 series 5.25 series	5/12Vdc, 1.5A	IEC 60950	TÜV, UL
	Seagate	ST3XXXXY ST5XXXY ST5XXXXY	5/12Vdc, 1.5A	IEC 60950	TÜV, UL
	Maxtor Corp.	8XXXXYX 9XXXXYX	5/12Vdc, 0.6A	IEC 60950	TÜV, UL
DVD-ROM (optional)	Hitachi	GD-2500#	5/12Vdc, 0.7/1.0A Laser class 1	IEC 60950, IEC 60825-1	TÜV, UL, S
		GD-3000# GD-5000#	5/12Vdc, 1.0/0.5A Laser class 1	IEC 60950, IEC 60825-1	TÜV, UL, S
		GD-7000	1.2A/5Vdc Laser class 1	IEC 60950	UL,TUV Semko
CD-R/RW	Sony	CRX100E-XX	5/12Vdc, 1.3/1.8A Laser class 1	IEC 60950 IEC 60825-1	TÜV, UL

IEC 60950					
Clause	Requirement – Test		Result - Remark		Verdict
	Aopen Inc	CRW 9420	5Vdc/2.0A Laser class 1	EN 60950 EN 60825-1	TÜV, UL
	Sony Electronics Inc.	CRX140E-XX	1.2A/5Vdc Laser class 1	IEC 60950 EN 60825-1	UL,TUV
	LG Electronics Inc.	CED-80808	1.2A/5Vdc Laser class 1	IEC 60950 EN 60825-1	UL,TUV
CD-ROM	Aopen Inc.	CD-94. /... , CD-95. /...	0.9A/5Vdc Laser class 1	IEC 60950 EN 60825-1	UL/CUL Nemko Remark: Acceptance of this component should be decided when the national approval is done
	Aopen Inc.	CD-93.E/... CD-94.E/...	5/12Vdc, 0.9/1.5A Laser class 1	IEC 60950 IEC 60825-1	NEMKO, UL
• Tray motor	Matsushita	MDN3BL3DLRA	2Vdc, 98.3mA	--	--
	Mabuchi Motor	RF-300CA	2Vdc, 125mA	--	--
• Sled motor	Matsushita	MDN3JL4DSG	3Vdc, 90mA	--	--
	Sanyo Seike	JCL9B	3Vdc, 18mA	--	--
	Mabuchi Motor	RF300CA-13300, RF300C-13300	2Vdc, 125mA	--	--
• Slide motor	Matsushita	BM3L3E5	12Vdc, 540mA	--	--
	Victor Company	EN24HA	12Vdc, 800mA	--	--
	Matsushita	BML5E6CRA	12Vdc, 700mA	--	--
		BML3E5CRC	12Vdc, 650mA	--	--
• Optical pickup	Sanyo Seike	SPU3220, SPU3224, SPU3227	5Vdc, 5mW	--	--
• Laser diode	Rohm Co.	RLD-78MA	791nm, 134μW	--	--
	Sony	SLD105UL-52	787nm, 77.5μW	--	--
	Tottori Sanyo	DL-3150-103	787nm, 159μW	--	--
• Leading base	GE Plastic	SE100	V-0	UL 94	UL
• Traverse base	GE Plastic Japan	HM3020	V-1	UL 94	UL
• Front bezel	Chi Mei	PA-765A	V-0	UL 94	UL

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict

• PCB	--	--	V-0, 105°C	UL 94	UL
Fax/modem card	CIS Technology	M3-51614PM3	5Vdc, 300mA	EN 60950	UL, NEMKO (CB)
	-	M3-5614PM3G			
	Askey Computer Corp.	V1456VQH20B	5Vdc, 40mA	EN 60950	TÜV, UL, NEMKO
		V1456VQH20C			
Fax / Modem	Ambit Microsystems Corp.	T62M154.00	5Vdc,500mA	IEC 60950	UL Nemko
Enclosure	various	metal	1mm	--	--

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

1.6	TABLE: electrical data (in normal conditions)					P
fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	condition/status
F1	--	90V/50Hz	174	3.21	3.21	Max. normal load
F1	--	90V/60Hz	170	3.10	3.10	dto.
F1	4	100V/50Hz	173	2.91	2.91	dto.
F1	4	100V/60Hz	170	2.78	2.78	dto.
F1	4	127V/50Hz	173	2.42	2.42	dto.
F1	4	127V/60Hz	171	2.34	2.34	dto.
F1	4	134V/50Hz	172	2.33	2.33	dto.
F1	4	134V/60Hz	172	2.24	2.24	dto.
F1	--	140V/50Hz	173	2.26	2.26	dto.
F1	--	140V/60Hz	172	2.18	2.18	dto.
F1	--	180V/50Hz	169	1.67	1.67	dto.
F1	--	180V/60Hz	168	1.60	1.60	dto.
F1	2	200V/50Hz	169	1.52	1.52	dto.
F1	2	200V/60Hz	169	1.48	1.48	dto.
F1	2	240V/50Hz	171	1.34	1.34	dto.
F1	2	240V/60Hz	171	1.30	1.30	dto.
F1	--	254V/50Hz	173	1.28	1.28	dto.
F1	--	254V/60Hz	173	1.26	1.26	dto.
F1	--	264V/50Hz	169	1.23	1.23	dto.
F1	--	264V/60Hz	170	1.20	1.20	dto.

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict

2.1.10	TABLE: discharge test				N
Condition		τ calculated (s)	τ measured (s)	t u→ 0V (s)	comments
Overall capacity : in approved SPS					
Discharge resistor : in approved SPS					

2.5.11	TABLE: ground continue test		P
Location		Resistant measured (Ω)	Comments
inlet ground pin to metal enclosure		0.011	25A test current, 1 minute
inlet ground pin to metal enclosure		0.014	30A test current, 2 minutes
Test current = 25A/1min, 30A/2min			

2.9.2 and 2.9.3	TABLE: clearance and creepage distance measurements					P
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)
TNV to other PC components (which are not part of the fax/modem card)	≤140	≤100	2.0	≥2.0	2.5 [1]	≥2.5
Notes:						
• Creepage distances and clearances between primary and secondary are all in approved switching power supply.						
TNV circuits of the modem cards are covered by plastic case.						

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

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict
Note: In approved switching power supply.			

4.3.15/16 & 4.4.6	Table: enclosure openings		P
Location	Size (mm)	Comments	
Top	None	--	
Left side	3.15x3.15mm	covering an area of 22x315mm	
Rear side	Ø2.9mm	covering an area of 22x260mm for ventilation	
	Ø90mm	DC fan of power supply, in a projected area of 5 degree no hazardous bare parts	
Bottom	None	--	

5.1	TABLE: temperature rise measurements		P
	test voltage (V)	100V-10% 240V+6%/ 240V+10%	—
	t1 (°C)		—
	t2 (°C).....		—
temperature rise dT of part/at:		dT (K)	required dT (K)
SPS			
T0 coil		12/6/5	55*)
T3 coil		8/8/10	55*)
L0 coil		16/9/7	70*)
C6		6/5/5	50*)
T4 coil		10/10/7	55*)
T5 coil		14/20/7	55*)
D28		15/15/15	--
Q1		13/21/14	--
IC1		11/12/20	--

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict

Enclosure	5/5/6	35
Fan enclosure	7/7/6	--
System		
U9	15/14/14	--
U17	9/8/15	--
CPU heat sink	13/12/12	--
Q3	28/28/25	--
CD-ROM	7/6/6	--
FDD	5/2/4	--
HDD	9/7/8	--
Enclosure	3/2/2	35
Room ambient at	25°C/24°C/25°C	--

*) For the approved switching power supply all winding components considered to be rated isolation class A respectively 105°C (class A IEC 60085) and capacitors 85°C.

temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	required dT (K)	insulation class

Comments:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.

With a specified ambient temperature of 35°C for all models, the max. temperature rise is calculated as follows:

Winding components:

- class A → dTmax = 75K - 10K - (35 - 25)K = 55K

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → dTmax = (85-35) K = 50K
- max. absolute temp. of 105°C → dTmax = (105-35) K = 70K

5.2	TABLE: leakage current measurement			P
Condition	current L→PE (mA)	current N→PE (mA)	comments	

IEC 60950			
Clause	Requirement – Test	Result - Remark	Verdict

Switch ON	0.74/0.76	0.69/0.74	
Switch OFF	1.12/1.18	0.273/0.258	

Input voltage : 254V/264V

Input frequency : 60Hz

Overall capacity : in approved SPS

5.3	TABLE: electric strength measurements		P
test voltage applied between:		test voltage (V)	breakdown
primary and secondary		DC 4242V	No
primary and ground		DC 2121V	No
TNV to ground		1500Vac	No
TNV to secondary		1500Vac	No

Used SPS: Delta, DPS-200PB-95BX

Electric strength test were performed after heating, humidity, ventilation blocked, fan locked and overloading test.

5.4	TABLE: fault condition tests *For SPS tests were done with the approval of switching power supply, others see below.*		P
	ambient temperature (°C) .....:	25°C	—
	model/type of power supply .....:	See below.	—
	manufacturer of power supply .....:	See below.	—
	rated markings of power supply .....:	See appended table 1.5.1	—

No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
1	Openings	covered	254	11.5hrs	--	--	No affect to operation, no hazards. T0 max. temp. = 59°C. T3 max. temp. = 65°C. T4 max. temp. = 65°C. T5 max. temp. = 81°C.

IEC 60950							
Clause	Requirement – Test					Result - Remark	Verdict
2	SPS fan	locked	264	12hrs	--	--	No affect to operation, no hazards. T0 max. temp. = 60°C. T3 max. temp. = 91°C. T4 max. temp. = 77°C. T5 max. temp. = 115°C.
3	Output connectors	overl.	--	1h	--	--	No hazards.
4	D9	s-c	240V	1.5hrs	--	--	No affect to operation, no hazards. BT1 max. temp. = 28.5°C.

5.4.10	TABLE: ball pressure test of thermoplastics *Done in the approval of switching power supply. No other test item necessary.*		N
	required impression diameter (mm) .....:	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	EN 60950:1992 + A1:1993: + A2:1993 + A3:1995 + A4:1997 + A11:1997 TEST REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996) CENELEC common modification, Special National condition, Nation deviation and other information		P
EXPLANATION FOR ABBREVIATIONS C = CENELEC common modification, S = Special National condition, D = National deviation, F = Other information, AT = Austria, GB = Great Britain, CH = Switzerland, DE = Germany, DK = Denmark, FI = Finland, FR = France, NO = Norway, SE = Sweden. P = Pass, F = Fail, N = Not applicable. place in the column to the right.			
1.2.4.1 S	(DK). Certain types of Class I appliances (see § 3.2.1) may be provided with a plug not establishing earthing continuity when inserted into Danish socket-outlets.	Approved power cord set used.	P
1.5.1 D	(SE). Add the following: NOTE: Switches containing mercury such as thermostats, relay and level controllers are not allowed.	No such switch.	N
1.7.2 S	(NO). If separation between the mains and a communication system/network, other than public telecommunication networks, relies upon connection to safety earth, the equipment shall have a marking stating that is must be connected to an earthed mains socket-outlet. NOTE: For requirements for equipment to be connected to a public telecommunication network: See 6.2.1.4.	Required text printed on label and affixed to unit	P
1.7.2 S	(SE). If the separation between the mains and a SELV terminal relies upon connection to the safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet when a SELV circuit is connected to network passing both unearthed and earthed electrical environment. The marking text shall be in Swedish and as follows: "Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk".	Required text printed on label and affixed to unit	P

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
1.7.2 D	(DK). Supply cords of Class I appliances, which are delivered without a plug, must be provided with a visible tag with the following text: "Vigtigt. Lederen med grøn/gul isolation mä Kun tilsluttes en klemme mærket eller". If essential for the safety of the appliance, 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".	Must be evaluated with the national approval.	N
1.7.2 C	Delete note 4.	Deleted	N
1.7.5 S	(DK). Socket-outlets for providing power to other appliances 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 appliances of Class I.	No socket outlet.	N
1.7.5 D	(DK). Class II appliances shall not be fitted with socket-outlets for providing power to other appliances.	Class I equipment.	N
1.7.14 D	(DE). Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labor equipment, also for imported technical labor equipment shall be written in German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	No technical labor equipment.	N
1.7.17 D	(CH). Annex 4.10 of SR 814.013 (ordinance on environmentally hazardous substances) applies for batteries.	Must be evaluated in the national approval.	N
2.1.3.1 C	Table 0, first column, replace "Over 50" by "Over 350".	Replaced.	N
2.3.3 C	Delete Method 4 and the line in note 1 relating to this method	Deleted.	N
2.3.6 S	(FR). Method 3 is not acceptable.	Method 3 is not used.	P
2.3.6 C	Delete the note.	Deleted.	N
2.3.7 C	Replace the text of this sub-clause by: Void.	Replaced.	N
2.3.9 S	(NO). Marking and insulation requirements according to this annex, subclauses 1.7.02 and 6.2.01.4 b) apply.	Must be evaluated with the national approval.	N
2.5.2 S	(DK, NO) add after the first paragraph: " The above exception is not acceptable in Pluggable equipment type A "	Added.	N
2.5.2 C	Delete the note.	Deleted.	N

CENELEC common modification, Special National condition, Nation deviation and other information.

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
2.7.1 C	Replace the text of this sub-clause by: Basic requirements: To protect against excess current, short-circuits and earth faults in primary circuits, protective devices shall be included ether as integral parts of the equipment or as a part of the building installation, subject to all of the following a), b), c) and d): (a) Except as detailed in (b) and (c), protective devices necessary to comply with the requirements of Sub-clause 5.4 shall be included as integral parts of the equipment. (b) For components in series with the mains input to the equipment such as the supply cord, appliance coupler, RFI filter and switch, short circuit and earth fault protection may be provided with protective devices in the installation. (c) It is permitted for equipment with rated current exceeding 16A, which is 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 breaker, is fully specified in the installation instruction (d) If reliance is placed on protection in the building installation, the installation instructions shall comply with Sub-clause 1.7.11 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 and 1.7.11 does not apply.	Replaced.	P
2.7.2 C	Replace the text of this sub-clause by: Void.	Replaced.	N
2.8.4 C	Delete the note.	Deleted.	N
2.9.1 S	(NO). Due to the IT power systems used, the mains supply voltage is considered to be equal to the phase-to-phase voltage.	Mains voltage as reference voltage	P
2.11 C	Delete notes 1,2 and 3.	Deleted.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
3.2.1 S	(DK). Supply cords of single phase appliances having a rated current not exceeding 10 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1. Class I equipment provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a rated current exceeding 10A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations Section 107-1-D1 or EN 60309-2.	Approved power cord set used.	P
3.2.1 S	(CH). Supply cords of equipment having a rated current not exceeding 10A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets SEV 6532-2,1991 Plug type 15 3P+N+PE 250/400V, 10A SEV 6533-2,1991 Plug type 11 L+N 250V, 10A SEV 6534-2,1991 Plug type 12 L+N+PE 250V, 10A EN 60 309 applies for plugs for currents exceeding 10A	To be evaluated when national approval is done	N
3.2.1 S	(GB). Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS1363 by means of that flexible cable or cord and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1788:1994 - The Plugs and Sockets etc. (safety) Regulations 1994, unless exempted by those regulations.	To be evaluated when national approval is done	N
3.2.2 C	Delete the note and in table 10, delete the value in parentheses.	Deleted.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
3.2.4 S	(GB). A power supply cord with conductor of 1.25 mm² is allowed for equipment with rated current over 10 A and up to and including 13 A.	Rated current below 10A.	N
3.2.4 C	Replace "245 IEC 60053" by "H05 RR-F", "227 IEC 60052" by "H03 VV-F or H03 VVH2-F" and "227 IEC 60053" by "H05 VV-F or H05 VVH2-F". In table 11, replace the first four lines by the following: Up to and including 6 0.75" Over 6 up to and including 10 1.0 (0.75)" Over 10 up to and including 16 1.5 (1.0)" In the conditions applicable to table 11, delete the words "in some countries" in condition 1). In the note delete the second sentence.	Replaced.	P
3.2.5 S	(GB). The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A and up to and including 13 A is: 1.25 mm² to 1.5 mm² nominal cross-sectional area.	To be evaluated when national approval is done	N
3.3.5 C	In table 13, replace the fourth and the fifth lines by : Over 10 up to and including 16 1.5 to 2.5 1.5 to by 4	Replaced.	N
4.3.12 C	Amend the third compliance paragraph as follows: For equipment using LEDs or lasers, compliance is checked according to EN 60825-1. Add a note: NOTE: If equipment falling within the scope of EN 60950 is inherently a class 1 laser product i.e. it contains no embedded laser or LED of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1)	See report IEC 60950.	P
4.3.18 S	(GB). This test should be performed using an appropriate socket-outlet with an earthing contact.	No direct plug-in equipment.	N
4.4.4 C	Delete note 2.	Deleted.	N

CENELEC common modification, Special National condition, Nation deviation and other information.

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.9 S	(NO). The electric strength test after the tests of 5.4.4, 5.4.5, 5.4.6, 5.4.7 and 5.4.8 includes testing of basic insulation in Class I equipment.		P
6.1 S	(CH).Protective means in the equipment shall not prevent transient surge protection in the telecommunication network from operating properly (d.c. spark-over voltage of the surge suppressor installed in the telecommunication network: approx. 245V.)	Approved modem card used	N
6.2.1.2 C 6.2.1.3 C	Add at the end of each sub-clause: This sub-clause only applies to TNV circuits normally operating in excess of the limits of SELV circuits.	Added	P
6.2.1.4b S	(NO). Insulation between parts conductively connected to the supply mains and parts connected to a public telecommunication network shall comply with the requirements for double or reinforced insulation.	Complied	P
6.2.1.4b S	(FI). This method is only permitted for permanently connected equipment or for pluggable equipment type B.	Pluggable type A	N
6.2.1.4 C	Delete notes.	Deleted	P
6.2.1.5 S	(NO). Requirements in 6.2.1.4, Note 2, apply	Applied	P
6.3.3. S	(NO). 6.3.3 is applicable for pluggable equipment type A and B and for permanently connected equipment	Applied	P
6.4.1 C	Delete note 2.	Deleted	P
6.4.2.1 C	Delete note 2.	Deleted	P
6.4.2.1 D	(AT). Equipment shall comply with Uc = 2.0KV in cases b) and c).	6.4.2.2 applied	N
Annex H. D	(DE) a) A license is required by those who operate an X-ray emission source.	No CRT.	N

CENELEC common modification, Special National condition, Nation deviation and other information.

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
	b) A license in accordance with clause 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 1) the local dose rate at a distance of 0.1m from the surface does not exceed 1MSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A license in accordance with clause 1 is also not required by persons who operate an X ray emission source on which the electron acceleration voltage exceeds 20 KV , if 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 i) X-ray are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local does 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. d) Furthermore, a license in accordance with clause 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 1) the X-rays are generated only intrinsically safety CRTs complying with Enclosure III, No.6, 2) the values stipulated in accordance with Enclosure III, bi, 6.2 are limited by technical		
Annex P C	Replace the text of this annex by: See annex ZA.	Replaced.	N

CENELEC common modification, Special National condition, Nation deviation and other information.

National Deviations			
Clause	Requirement - Test	Result - Remark	Verdict
Annex Q C	Add for IEC 60529: Note: Endorsed by EN 60529:1991 (not modified) Add for IEC 60707 Note: Endorsed by HD441:1983 (not modified) Add for IEC 61058-1: Note: Endorsed by EN 61058:1992 (not modified).	Added.	N

CENELEC common modification, Special National condition, Nation deviation and other information.

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	EMKO-TSE(74-SEC)207/94 TO EN 60950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997 TEST REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996) Nordic Explanations, and other information not covered by Appendix EN 60950:1992, + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997.		P
EXPLANATION FOR ABBREVIATIONS NF = Nordic Explanations and other information. DK = Denmark, FI = Finland, NO = Norway, SE = Sweden. P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
1.2.02.01 NF	(DK,FI,NO,SE). The heating test of separate power supplies of personal computers is carried out according to their rated output values marked on the power supplies.	No separate power supply.	N
1.5.01 NF	(DK,FI,NO,SE). The following capacitors are accepted across the mains: 1) X1 capacitor which complies with Publication IEC 60 384-14. 2) X2 capacitor which complies with Publication IEC 60 384-14 and which has been subjected to a pulse test according to § 12.11.2, except the value of the voltage is reduced to 2.5 kV. 3) X2 capacitor which complies with Publication IEC 60 384-14 in case the endurance test of § 12.11.2 has been modified so that the resistor of 220Ω through which the voltage of 1000 V rms is applied to the capacitor under test, is short circuited. 4) Capacitor which complies with Publication HD 195 S6, § 14.2.	X2 capacitor comply with this clause (see report IEC 60950 report).	P
1.5.02 NF	(DK,FI,NO,SE). Transient protection components shall be installed in such a way that insulation for protection against electric shock will not be bridge. This means that transient protection components must not be connected to safety earthed parts in pluggable equipment or to other accessible parts.	No transient protection components connected to safety earthed parts.	P
	-3.2.3 (DK,FI,NO,SE). Interconnection couplers in accordance with EN 60 320-2-2 are accepted. Outlets of non-standard types are not accepted.	No outlet.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
1.7.01 NF	-1st dash (DK). When supplied in Denmark the appliances shall be set to 230 V .	Included in the voltage range.	P
	-5th dash (DK). The equipment may instead be provided with a marking indicating name, trade-mark or identify of the responsible vendor.	Refer to CB report page 3.	P
2.1.04 NF	(DK,FI,NO,SE). For monitors, warning label is not required for repairing area, neither the partial shielding against contact although the voltage is > 42.4 V peak or > 60 V d.c.	Unit is PC.	N
2.5.11 NF	(DK,FI,NO,SE). Due to installation fuses of 16A, the earth resistance shall always be controlled at 25 A.	Earthing test conducted at 25A, see IEC 60950 report.	P
2.6.06 NF	(DK,FI,NO,SE). The plug is regarded to be a disconnect device and therefore a single pole mains switch is acceptable (TC 74-WG 8's recommendation).	Appliance inlet considered as disconnect device.	N
2.6.11 NF	(DK,FI,NO). The warning label on an appliance with two or several supply connections shall be in the official language of the country in question.	Only one supply from the mains.	N
	(DK,FI,NO). UPS-appliances can be fitted with a signal lamp instead of a warning label, under the condition that the function and location of the signal lamp is correct. Audible signal is not acceptable as warning.	Equipment is not a UPS.	N
2.7.03 NF	(DK,FI,NO,SE). A single-pole protective device is acceptable.	Only one fuse on live phase.	P
2.9.01 NF	(DK,FI,NO,SE). Pollution Degree 3 is considered applicable for the following equipment which is within the scope of this standard: Document Shredder Machines.	Equipment is not a shredding machine	N
4.2.07 NF	(DK,FI,NO,SE). If there are visible cracks on the apparatus after the mechanical strength test, the apparatus is not rejected, if it still complies with the other requirements of subclause 4.2.7.	Metal enclosure.	N

National Deviations			
Clause	Requirement - Test	Result - Remark	Verdict
4.4.04 NF	(DK,FI). Fire enclosure is required if the available power exceeds the values of a limited power source. The limited power source shall incorporate an isolating transformer and shall comply with the following: * The open-circuit voltage shall not exceed 42.4 V peak or d.c. and shall not generate voltages above the value and * The current which may be drawn for more than two minutes at any load, including short-circuit, shall not exceed 0.2 A.	Supplied from the mains.	N
	(NO). A fire enclosure is not required in spots of the equipment where the available power does not exceeded 50 VA and the available voltage 42.4 V (peak) or 60 V d.c.	Supplied from the mains.	N
5.4.06 NF	(DK,FI,NO,SE). Faults need not to be carried out in circuits which are supplied by an isolating transformer and which comply with the following: * The open-circuit voltage shall not exceed 42.4 V peak or d.c. and shall not generate voltages above the value and * The current which may be drawn for more than two minutes at any load, including short-circuit, shall not exceed 0.2 A.	Supplied from the mains.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Japanese Deviations MITI Ordinance No. 85 REPORT (IEC Publication 60950 : 1991 + A1 + A2 + A3 + A4)		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
1.2	Add new sub-clauses. 1.2.4.101 Equipment, Class OI 1.2.13.X Material, VTM class 1.2.14.X Laser	Added new definitions	N
1.2.13.1	- Replace "1.2.13.9" with "1.2.13.X" in the first paragraph. - Add new "NOTE 3" after NOTE 2.	Replaced and added	N
1.3.3	- Add additional protection class "Class OI". - Replace "Class I or Class II" with "Class OI, Class I or Class II" in the first sentence of the NOTE.	Added and replaced	N
1.5.1	Replace the first paragraph as follows: "Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant IEC standards or with the relevant technical requirements of MITI Ordinance No.85."	Replaced	P
1.5.2	Replace the requirements except 4th Item.	Checked according to the replaced requirements. See 1.5.1 also.	P
1.7.1	Replace "manufacturer's name, trade mark or identification mark," with "manufacturer's name or name of the business company taking the responsibility, trade mark or identification mark," in the NOTE 2	Replaced	P
1.7.2	Delete Notes 1, 2 and 4	Deleted	N
1.7.5	Replace "IEC 83" with "IEC 83 or JIS C 8303" in the last paragraph.	Replaced	N
1.7.101	Add new sub-clause. Indication for CLASS OI EQUIPMENT: - "Provide an earthing connection." on the visible place of the mains plug or the main body.	Added, certified appliance inlet used.	P
	- "Provide an earthing connection before the mains plug is connected to the mains. When disconnecting the earthing connection, pull out the mains plug from the mains." on the visible place of the main body or in the instructions.	Added, certified appliance inlet used.	P
2.1.2	Replace "IEC83" with "IEC 83 or JIS C 8303" in Item b).	Replaced, certified appliance inlet used.	P
2.3.2	Replace "CLASS I EQUIPMENT" with "CLASS I or CLASS OI EQUIPMENT" in the paragraph.	Replaced.	P

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Clause	Requirement – Test	Result - Remark	Verdict
2.3.4	Replace "IEC83 or IEC 320" with "IEC 83, JIS C 8303 or IEC 320" in the last item.	Replaced.	P
2.5.1	Replace "CLASS OI equipment" with "CLASS I or CLASS OI equipment" as the subtitle and in the first paragraph.	Replaced.	P
2.5.4	Replace "CLASS OI EQUIPMENT" with "CLASS I or CLASS OI EQUIPMENT" in the sentence.	Replaced.	P
2.5.101	Add new sub-clause. - Plug with an earthing lead wire shall not be used for the equipment having a rated voltage exceeding 150V.	Added, no power cord provided.	N
	- Earthing lead wire provided in plug shall not be earthed by using a clip.	Added, no power cord provided.	N
2.7.4	Replace "CLASS I EQUIPMENT" with "CLASS I or CLASS OI EQUIPMENT" in the first paragraph.	Replaced.	P
2.7.6	Replace "CLASS I EQUIPMENT" with "CLASS I or CLASS OI EQUIPMENT" in the Item 1).	Replaced.	P
2.9.2.1	In Table 3, the 1st column is not valid [Nominal mains supply voltage ≤ 150V (Transient rating 1500V)]	Clearance distance from column 2 taken (≤ 300V)	P
2.9.2.2	In Table 5, the 1st column is not valid [Nominal mains supply voltage ≤ 150V (Maximum transient in secondary circuit 800V)]	Clearance distance from column 2 taken (≤ 300V)	P
2.9.4.4	Replace all text in this clause. (Shall comply with Japanese standard text.)	Different Japanese standard text considered. Construction: HV test: Test according to Annex U:	N
3.2.2	- Replace NOTE with the following sentence: "Equipment fitting to the diameters specified in Appendix 2: Supplement Table 1 and Table 5 of MITI Ordinance No. 85 is considered to comply with the requirement of this clause".	Replaced.	N
	- Delete the values specified in parentheses of Table 10.	Deleted.	N
3.2.4	Add the requirements regarding to MITI Ordinance No.85 in first and second items.	No power cord provided.	N
	Delete the condition 1) in Table 11.	Deleted.	N
	Add NOTE 2 after NOTE. (Compliance with JEAC)	Added.	N
3.3.8	Add the following at the end of this clause: "For CLASS OI EQUIPMENT, earth terminal or lead-wire for earthing shall be located in the external visible place."	Added.	N

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Clause	Requirement – Test	Result - Remark	Verdict
4.3.9	After the first paragraph, add the following: "CLASS OI EQUIPMENT shall be so constructed that it cannot become in normal use so disposed that those distances in the above-mentioned case are reduced to less than the values specified for CREEPAGE DISTANCES or CLEARANCES for BASIC INSULATION".	Added.	P
	At the end of this clause, add new requirement item as follows: "- for coming off of the earthing connection of CLASS OI EQUIPMENT, if accessible metal parts and live parts of electric wire with HAZARDOUS VOLTAGES are separated by BASIC INSULATION, conductors connected by soldering alone are not considered to be adequately fixed, unless they are held in place near to the termination, independently of the soldered connection. And, mechanical "hooking in" before soldering is considered to be a suitable means for maintaining the conductors in position provided the hole through which the conductor is passed is not unduly large."	Added.	P
4.3.12	Add NOTE: "For LED, IEC 60825-1 shall be applied only for those coming under the definition for laser and working with the process of controlled inducting radiation.	Added.	P
4.3.20	Replace "CLASS OI EQUIPMENT" with "CLASS I or CLASS OI EQUIPMENT" in the first paragraph.	Replaced.	N
4.4.1	Add the following to NOTE 1: "Similarly, for thin MATERIALS, VTM-0 Class materials are regarded as better than those of VTM-1 Class, and VTM-1 better than VTM-2."	Added.	P
4.4.3.2	Add new item as follows: "- for thin materials like as flexible printed circuit board or the like being inside the equipment, those shall have a FLAMMABILITY CLASS of VTM-2 or better;"	Added.	P
5.1	Add condition 8) in table 16 part 1: "Synthetic rubber or PVC insulation of internal and external wiring including power supply cords[8)] without T-Marking: 50K with T-marking: T-2	For other than those complied with IEC standards, refer to added condition 8) below.	P
	Add the requirement to condition 5): "For part 1, limits are given in MITI Ordinance No. 85:1962, Appendix 4: 1.1.2, detailed rule (3)."	Added.	P

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Clause	Requirement – Test	Result - Remark	Verdict
	Add new condition 8): "This limits are applied to cords or wiring complying with IEC standards concerned. For others, those shall comply with MITI Ordinance No. 85:1962, Appendix 4: 1.1.2, detailed rule (3)".	Added.	P
5.2.2	Add the limits for CLASS OI EQUIPMENT in Table 17: - HAND-HELD: 0,5 mA - OTHER THAN HAND-HELD: 1,0 mA	Added.	N
5.3.2	Delete the following in NOTE 1: "Alternative methods of production test are under consideration."	Deleted.	P
5.4.9	Replace "CLASS I PLUGGABLE EQUIPMENT TYPE A" with "CLASS I or CLASS OI PLUGGABLE EQUIPMENT TYPE A" in the third item of 4th paragraph.	Replaced.	P
	Replace NOTE with the following: "Electric strength test includes testing of BASIC INSULATION in CLASS OI PLUGGABLE EQUIPMENT TYPE B."	Replaced.	P
6.3.2	Replace "CLASS I" with "CLASS I or CLASS OI" in the first paragraph.	No TNV.	N
6.3.4.2	Delete	No TNV.	N
Annex A A.101	Add new sub-clause: Flammability test for classifying materials VTM. Thin sheet material shall comply with ISO 9773.	Added.	N
Annex G G.2	Add the limits for CLASS OI EQUIPMENT in Table G.1: HAND-HELD: 0,5 mA Other than HAND-HELD: 1,0 mA	Added.	N
Annex M M.1	Replace the sentence with the following: "Test method shall be selected one from the two methods described in this Annex."	Replaced.	N
Annex U	Replace all: ANNEX U INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION	Replaced.	N
	U.1 Wire construction		N
	U.2 Type test		N
	U.2.1 Electric strength		N
	U.2.2 Adherence and flexibility		N
	U.2.3 Heat shock		N
	U.2.4 Retention of electric strength after bending		N
	U.3 Routine test		N
	U.3.1 Full-length test during production	Test voltage:	N
	U.3.2 Sampling test	Test voltage:	N
Comment:			

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Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Korean Deviations according to CB Bulletin, No. 96A I March 2000 REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
General	LIMITATIONS - Voltage ratings As national supply voltage is subject to be increased to 220V, an appliance rated 220V is to be allowed to obtain type approval in Korea. Either an appliance rated 110V or 220/110V is not allowed. When an appliance is supplied in Korea, it shall be set to and marked with 220V. But free voltage appliance by SMPS (Switching Mode Power Supply) is allowed and it shall be marked with "100-220V".	Rated 100-127/200-240V	P
General	LIMITATIONS - Frequency Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted. When an appliance is supplied in Korea, it shall be set to and marked with 60Hz.	Certified in the 50/60Hz frequency range.	P
General	LIMITATIONS - Instruction Instruction manuals and appliance markings related to safety, including nameplate shall be in Korean or graphical symbols in IEC Publication 60417.	Instruction manual will be in Korean.	N
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirements (KSC 8305).	No power plug provided.	N
7	Addition: The apparatus shall comply with the relevant CISPR requirements.	The CISPR requirements have to be considered when national approval is done	N

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Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Singapore National Deviations according to CB Bulletin, No. 96A I March 2000 REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
General	IT Power Systems are not allowed in the Republic of Singapore and all clauses related to IT Power Systems are not applicable.	The unit is not applied for IT Power System.	P
2.2.3	(a) After the first paragraph, insert the following: Conditions described in IEC Publication 68-2-3: Test Ca: Damp Heat, Steady State (temperature: 40 ± 2°C, relative humidity: 90% to 95%) shall apply to insulation to be used under tropical conditions. (b) At the end of the last paragraph, insert the following note: NOTE: The additional requirement on humidity conditioning is drawn from Clause 10.2 of IEC 60065:1985.	To be evaluated in national approval.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Australian National Differences according to CB Bulletin No. 96A, March 2000 (AS/NZS 3260-1993) REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
1.2.12.2	Add: "TT power systems are not permitted in Australia or New Zealand."	Added.	N
1.2.12.3	Add: "IT power systems are not permitted in Australia or New Zealand." Note: Australia and New Zealand principally use multiple-earthed neutral (MEN) systems but allow TN-C for installations using metal-sheathed cables.	Added.	N
1.5.1	Add to paragraph 1: "or the other relevant Australian or New Zealand Standard."	Added.	P
1.5.2	Add to the first and third dashed items after the words "IEC component standard": "or the other relevant Australian or New Zealand Standard."	Added.	P
1.6.4	Add: "IT power systems are not permitted in Australia or New Zealand."	Added.	N
1.7.14	Add to paragraph 1: "In Australia and New Zealand all safety instructions shall be in English."	User manual is in English.	P
2	Add after clause 2: "For the limit of direct current from a.c. appliances, refer to AS/NZS Appendix 3."	See Appendix 3.	N
3.2.2	Substitute for table 10: "For sizes of cables and conduits in Australia, refer to AS 3000."	No power cord provided.	N
3.2.4	Substitute for table 11: "For sizes of conductors in power supply cords use following Table 11: **Table 11** **Sizes of conductors in power supply cords** Rated current (A) — Cross-section area (mm^2) $> 0.2 \leq 3$ — 0.5* $> 3 \leq 7.5$ — 0.75 $> 7.5 \leq 10$ — 1 $> 10 \leq 16$ — 1.5 $> 16 \leq 25$ — 2.5 $> 25 \leq 32$ — 4 $> 32 \leq 40$ — 6 $> 40 \leq 63$ — 10 * This nominal cross-section 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 2m (0.5mm^2 three-core supply flexible cords are not permitted; see Note 2 to table 2.17 of AS/NZS 3191).	No power cord provided.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
4.3.18	Replace Clause 4.3.18 by: "Direct plug-in equipment shall not impose undue strain on the socket outlet and shall comply with the relevant Clauses 2.8.1 and 2.14.6 of AS/NZS 3112. Compliance is checked by inspection, measurement and the appropriate tests as detailed in Clauses 2.8.4 and 2.14.6 of AS/NZS 3112 using the 10 amp gauge of Appendix A of AS/NZS 3112 and by inserting the pins of the appliance, as in normal use, into a socket outlet capable of accepting a 10 amp plug complying with Figure 2.1(A) of AS/NZS 3112. The socket outlet has a horizontal pivot at a distance of 8mm behind the engagement face of the socket outlet and in the plane of the lower intersection of the centre-lines of the contact apertures. The additional torque which has to be applied to the socket outlet to maintain the engagement face in the vertical plane shall not exceed 0.25N.m."	Appliance inlet used.	N
4.4.1	Add after Clause 4.4.1: "For the Australian and New Zealand alternative resistance to fire test, refer to AS/NZS Appendix 2."	Not applied for Appendix 2.	N
6.3.3.2	Add to the second dash point the following note: "NOTE: To satisfy the requirements of Clause 1.7.2 for equipment intended to be installed by service personnel, the equipment documentation or equipment warning label if equipment documentation is not supplied should contain the following or similar text: WARNING: THIS EQUIPMENT MUST ONLY BE INSTALLED AND MAINTAINED BY SERVICE PERSONNEL"	No TNV.	N
6.4.2	Replace the first paragraph by: "In Australia (this variation to IEC 60950 does not apply in New Zealand), compliance with 6.4.1 is checked by both the test of 6.4.2.1 and 6.4.2.2". Delete the fourth paragraph 'The choice of tests.....manufacturer'.	No TNV	N
6.4.2.1	Replace Clause 6.4.2.1 by: *Impulse test* The electrical separation is subjected to ten impulses of alternating polarity, using the impulse test generator of Annex N. The interval between successive impulses is 60s and the initial voltage U_c is: - in case (a) of 6.4.1, 7kV for hand-held telephones and for handsets; and 2.5kV for other equipment; and - in case (b) and (c) 1.5kV. Notes: 1 The seven kV impulse is to simulate measured lighting surges in typical Australian rural and semi rural network lines. 2 The value of 2.5kV has been chosen primarily to ensure adequacy of the insulation concerned, but not necessarily to simulate likely overvoltages.	No TNV	N

Australian National Differences according to CB Bulletin No. 96A, March 2000

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Clause	Requirement – Test	Result - Remark	Verdict
6.4.2.2	Replace Clause 6.4.2.2 by: *Electric strength test* The electrical separation is subjected for 60s to a substantially sinusoidal voltage having a frequency of 50Hz or 60Hz, or to a d.c. voltage equal to the peak value of the prescribed a.c. voltage. The a.c. test voltage is: - in case (a) of 6.4.1 3kV - in case (b) and (c) 1.5kV. The voltage is gradually raised from zero to the prescribed voltage and then held at that value for 60s. NOTE: 1. Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. 2. The 3 kV and 1.5kV values have been determined considering the low frequency induced voltages from the power supply distribution system.	No TNV	N
Annex A	Add. after Annex title: Alternative resistance to fire test-determination if ignitability and combustion propagation	Not applied for this Appendix	N
Appendix 2	Add. Appendix ALTERNATE RESISTANCE TO FIRE TEST DETERMINATION OF IGNITABILITY AND COMBUSTION PROPAGATION	Not applied for this Appendix	N
X2.0	GENERAL This test is an alternative to the testes in Annex A to allow approval of equipment which has inadequate documentation to verify having been tested to Annex A.		N
X2.1	SOLID INSULATION MATERIALS AND NON-METALLIC ENCLOSURES		N
X2.1.1	GENERAL REQUIREMENTS Parts of non metallic material shall be subjected to the glow wire test specified in X2.1.2, X2.1.3 and X2.1.4 and if necessary by the test of X2.2		N

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Clause	Requirement – Test	Result - Remark	Verdict
X2.1.2	NON-METALLIC MATERIAL Relevant parts of non-metallic material are subjected to the glow-wire test of AS/NZS 3350.1, the test being made at a temperature of 550°C. The 550°C glow-wire test need not be carried out on parts which are made of material classified as FH 3-40 mm/min or better according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be thicker than the relevant part. Insulating material of winding bobbins and formers are subject to the glow-wire test of AS/NZS 3350.1, the test being made a temperature of 650°C. Base material of printed circuit boards with any coating or encapsulation to the needle-flame test of AS/NZS 3350.1, however, flames shall have extinguished with 15s of removal of the test flame. The flame shall be applied to an edge of the board having the lowest heat sink effect, with the board orientated in its normal position of use and at a point, if possible, not less than 10mm from a corner. The needle-flame test is not carried out on base material which is made of material classified as FV-0 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than that of the relevant printed circuit board. Notes: 1. The test is not carried out on printed circuit boards contained in a metal enclosure that prevents flames or burning droplets from escaping. 2. If the printed circuit board is tested with components mounted and a component ignites during the test, this would not constitute a failure of the printed circuit board material unless it is ignited by the component.		N
X2.1.3	ATTENDED EQUIPMENT For equipment which is operated while attended, parts of insulating material supporting, in contact with or in close proximity to current carrying connections, other than those in SELV circuits are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 650°C. However parts of insulating material supporting, in contact with or in close proximity to screw connections which carry a current exceeding 0.5A during normal operation and which are likely to be made or remade during installation, user maintenance or when replacing a supply cord assembled with the appliance by Type X attachment, are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 750°C.		N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
	Notes: 1. The test is not carried out on parts supporting welded connections. 2. 'In close proximity' is considered to be a distance not exceeding 3mm.		
X2.1.4	UNATTENDED EQUIPMENT For equipment which is operated while unattended, parts of insulating material supporting, in contact with or in close proximity to current carrying connections, other than those in SELV circuits are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 750°C. However parts of insulating material supporting, in contact with or in close proximity to screw connections which carry a current exceeding 0.5A during normal operation and which are likely to be made or remade during installation, user maintenance or when replacing a supply cord assembled with the appliance by Type X attachment, are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 850°C. Notes: 1. The test is not carried out on parts supporting welded connections. 2. 'In close proximity' is considered to be a distance not exceeding 3mm. During the application of glow-wire, the height and duration of flames are measured. In addition, for parts which withstand the glow-wire test but which flame during the application of the glow-wire, the surrounding parts are subject to the needle-flame test of AS/NZS 3350.1 for the measured duration of the flame after or 30s, whichever is the least if - a) They are positioned within a distance equal to the height of the flame; and b) they are likely to be impinged upon by the flame However, surrounding parts shielded by a separate barrier which meets the needle-flame test are not tested. The needle-flame test is not carried out on parts which are made of material classified as FV-0 or FV-1 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than the relevant part. Note: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cycling having a radius of 10mm and a height equal to the height of flame, positioned above the point of the material supporting, in contact with or in close proximity to connections.		N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
X2.2	ADDITIONAL TEST REQUIREMENTS If parts, other than enclosures, do not withstand the test of clauses X2.1.3 or X2.1.4, by failure to extinguish within 30s after removal of the glow wire tip, the needle-flame test of AS/NZS 3350.1 is made on all parts of non-metallic material which are within a distance of 50mm or which are likely to be impinged upon by flame during the test of clauses X2.1.3 or X2.1.4. Parts shielded by a separate barrier which meets the flame-needle test are not tested. Notes: 1. If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirement of Appendix 2 without the need for consequential testing. 2. If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the appliance, the appliance is considered to have failed to meet the requirement of Appendix 2 without the need for consequential testing. 3. Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with or in close proximity to connections. The needle-flame test need not be carried out on parts which are made of classified as FV-0 or FV-1 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than the relevant part.		N
Appendix 3	Add Appendix: D.C. COMPONENTS FROM A.C. EQUIPMENT Equipment shall be designed so that in normal use the value of any direct current in the equipment neutral will not contribute unduly to the failure of the installation earth electrode by corrosion. Any device such as isolating transformer intended to prevent direct current in the supply shall be an integral part of the equipment. Compliance is checked by inspection and by operating the equipment (a) at the rated voltage under the conditions specified in Clause 5.1; (b) on a supply free from any d.c. component; and (c) in the maximum d.c. producing mode, if any, but not exceeding normal load; and measuring the d.c. component in the supply neutral caused by the equipment as described below.	No D.C. current under normal operation condition	P

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Clause	Requirement – Test	Result - Remark	Verdict
	If it is evident from the design of the equipment that there will be no d.c. component, e.g. equipment provided with a full-wave mains power supply or a mains isolating transformer, this test is not conducted. The permissible direct current in the equipment neutral shall not exceed (i) for equipment considered as operating continuously ..... 5 mA; or (ii) for other than continuously operated equipment where t is the assessed daily average operating time, in hours .....(5*24)/t mA For equipment which is not continuously operated but includes a component or a device which is continuously energized, e.g. stand-by control or remote switching device, the summation of the product of the direct current from the control device over 24h and the direct current from the equipment for its assessed daily average operating time in hours shall not exceed 120mAh per day. The maximum value of direct current permitted in the neutral is 1.44A which could be applicable to equipment with an assessed average daily operating time of 5 min. or less. Notes: 1. When determining the assessed daily average operating time the approvals authority may accept evidence supplied by the manufacturer. 2. The d.c. peak value due to transient starting effects is ignored. The measuring system used to measure any direct current produced shall have a sufficiently high normal (series) mode rejection ratio, by the use of a low pass filter if necessary, to ensure that an overall uncertainty of less than 10% can be achieved.		

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Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	Canadian Deviation (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
1.1.1	All equipment installations are required to be in accordance with the Canadian Electrical Code (CEC). Part 1, CAN/CSA C22.1.	Complies.	P
1.7.1	Equipment for use on supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extended into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than specified "Normal Operating Condition," unless it is part of a range that extends into the "Normal Operating Conditions."	Single phase.	N
2.5.9	Terminals for permanent wiring are required to be suitable for U.S./Canadian wire gauge sizes anf be rated 125 percent of the equipment rating.		N
2.5.11	The capacity of the connection between the earthing terminal and parts required to be earthed is required to comply with CAN/CSA C22.2 No. 0.4.	Considered, see IEC 60950 report.	P
2.6.2	Motor control devices are required for cord-connected equipment with a motor if the motor (a) has a nominal voltage rating greater than 120V, (b) in rated more than 12 A, or (c) is rated more than 1/3 hp (locked rotor current over 43 A).	Not motor control device.	N
2.6.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No vertically mounted disconnect switch or circuit breaker.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
2.6.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power off circuit.		N
2.7.1	Suitable NEC/CEC branch circuit protection is required for all standard supply outlets and medium-base or smaller lampholders if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10KVA or more, required transformer overcurrent protection. Panelboards provided as part of information technology equipment are required to have suitable overcurrent protection.	No power outlet.	N
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V. 15 A.	No fuse in neutral or earth conductors.	N
3.1.12	For lengths exceeding 2 m, external interconnecting flexible cord and cable assemblies are required to be suitable cable type (e.g. DP, CL2) described in the NEC.		N
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC and CEC.		N
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No power cord provided.	N
3.2.2	Permanent connection of equipment to the mains by a power supply cord is not permitted.	No power cord provided.	N
3.2.4	Power supply cords are required to be not longer than 4.5 m in length. Flexible power supply cords are required to be compatible with article 400 of the NEC and Table 12 of the CEC.	No power cord provided.	N
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.	No power cord provided.	N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CAN/CSA No. 0.	No wire binding screws used	N

Canadian Deviation

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
3.3.3	Wiring binding screws are not permitted to attach conductors larger than 10 AWG (5.3mm²).	No wire binding screws used	N
4.3.12	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C 1370.	CD-ROM is approved component.	P
4.4.1	For computer room application, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N
4.4.4	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m, are required to have flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N
4.4.8	The maximum quantity of flammable liquid stored in equipment is required to meet NFPA 30.	No liquid.	N
Other differences			

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
1.5	Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the Canadian or U.S. components standards, as far as they may apply. The acceptance will be based on the following: A) A component certified by a Canadian or U.S. NCB to a Canadian or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subjected to the applicable tests of the equipment standard. B) A component which has a CB Test Certificate for compliance with a relevant IEC component standard will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subjected to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and U.S. component standard, under the conditions occurring in the equipment. C) A component which has no approval as in A) or B) above or which is used not in accordance its specified ratings, will be subjected to the applicable tests of the equipment standard, and to the applicable tests of the Canadian or U.S. component standard, under the conditions occurring in the equipment. D) Some components may require annual re-testing which may be carried out by the manufacturer, CSA or another laboratory.	Components UL or CSA approved, see component list 1.5.1.	P
3.4	Equipment connected to a centralized d.c. power system is required to meet special earthing wiring and marking requirements.		N
4.1.6	Wall and ceiling mounted equipment is required to comply with special loading tests.		N
4.1.7	Equipment with handles is required to comply with special loading tests.		N
4.2.9	Enclosures around C.R.T.'s having a diagonal dimension of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	N

Canadian Deviation

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
4.3.18	Direct plug-in equipment is required to comply with UL 1310 or CAN/CSA C22.2 No. 223 mechanical assembly requirements.		N
6.2.1.1	The maximum acceptable TNV circuit levels for other than ringing signals are: normal condition- (Uac/42.4 + Udc/42.4 ≤1 for Udc ≤21.2 (Uac/32.8 + Udc/60) ≤ 1 for Udc >21.2 abnormal conditions- (Uac/70.7 + Udc/120) ≤1		P
6.4.3	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against the ear is required to comply with special acoustic pressure tests.		P
6.4.4	Equipment intended to receive telecommunication ringing signals is required to comply with special leakage current measurement tests.		P
6.5	Equipment intended to provided power over the telecommunication wiring system is required to limit output current to values which will not damage the telecommunication wiring system.		N
6.6	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage.		N

Canadian Deviation

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
APPENDIX	National deviations US for IEC 60950 (1991) 2nd Addition, Amendment No.1 (1992), Amendment No. 2 (1993), Amendment No. 3 (1995) and Amendment No. 4 (1996) The following US national deviations are based on the requirements of the US National Electrical Code (NEC) ANSI/NFPA 75.		P
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
1.1.1	All equipment installations are required to be in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for the Protection Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	P
1.7.1	Equipment for use on supply systems with a neutral and more than one phase conductor (e.g. 120/240V, 3-wire) require a special marking format for electrical rating. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions". Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions", unless it is part of a range that extends into the "Normal Operating Conditions".	Single phase.	N
2.5.9	Terminals for permanent wiring are required to be suitable for U.S./Canadian wire gauge sizes and be rated 125 percent of the equipment rating.		N
2.5.11	The capacity of the connection between the earthing terminal and parts required to be earthed is required to comply with CAN/CSA C22.2 No. 0.4.		N
2.6.2	Motor control devices are required for cord-connected equipment with a motor if the motor (a) has a nominal voltage rating greater than 120V, (b) is rated more than 12A, or (c) is rated more than 1/3 hp (locked rotor current over 43A).	Not motor control device.	N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
2.6.8	Vertically mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the "up" position.	Not vertically-mounted disconnect switch or circuit breaker.	N
2.6.11	For computer room applications, equipment with battery systems capable of supplying 750VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such battery.	N
2.7.1	Suitable NEC/CEC branch circuit protection is required for all standard supply outlets and medium-base or smaller lampholders if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10kVA or more, require transformer overcurrent protection. Panelboards provided as part of information technology equipment are required to have suitable overcurrent protection.		N
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V, 15A.	No fuse in earthing conductor.	N
3.1.12	For lengths exceeding 2m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) described in the NEC.		N
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC and CEC.		N
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N
3.2.2	Permanent connection of equipment to the mains by a power supply cord is not permitted.		N
3.2.4	Power supply cords are required to be no longer than 4.5m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC and Table 12 of the CEC.		N

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.		N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N
3.3.3	Wire binding screws are not permitted to attach supply conductors larger than 10 AWG (5.3mm²).		N
4.3.12	Equipment with lasers is required to meet Code of Federal Regulations 21CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C1370.	CD-ROM is approved component.	P
4.4.1	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N
4.4.4	For computer room applications, enclosures with combustible material measuring greater than 0.93mm² or having a single dimension greater than 1.8m are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N
4.4.8	The maximum quantity of flammable liquid stored in equipment is required to meet NFPA 30.	No liquid.	N
The following national differences are based on requirements other than national regulatory requirements.			

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, cathode ray tubes, circuit breakers, communication circuit accessories, cord sets and power supply cords, enclosures (outdoor), flexible cords and cables, fuses, fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, lampholders, limit controls, printed wiring, protectors for communication circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches, thermal cutoffs, thermostats, tubing, wire connectors, and wire and cables.	See component list clause 1.5.1 of IEC 60950 report.	P
3.4	Equipment connected to a centralized d.c. power system is required to meet special earthing, wiring and marking requirements.		N
4.1.6	Wall and ceiling mounted equipment is required to comply with special loading tests.		N
4.1.7	Equipment with handles is required to comply with special loading tests.		N
4.2.9	Enclosures around CRT's with a face area of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	N
4.3.18	Direct plug-in equipment is required to comply with UL 1310 or CAN/CSA C22.2 No. 223 mechanical assembly requirements.		N
6.2.1.1	The maximum acceptable TNV circuit levels for other than ringing signals are: normal condition- (Uac/42.4 + Udc/42.4 ≤1 for Udc ≤21.2 (Uac/32.8 + Udc/60) ≤ 1 for Udc >21.2 abnormal conditions- (Uac/70.7 + Udc/120) ≤1		P
6.4.3	Equipment connected to a telecommunication network and supplied with an earphone intended to be held against the ear is required to comply with special acoustic pressure tests.		P

National Deviations			
Clause	Requirement – Test	Result - Remark	Verdict
6.4.4	Equipment intended to receive telecommunication ringing signals is required to comply with special leakage current measurement tests.		P
6.5	Equipment intended to provide power over the telecommunication wiring system is required to limit output current to values which will not damage the telecommunication wiring system.		N
6.6	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage.		N

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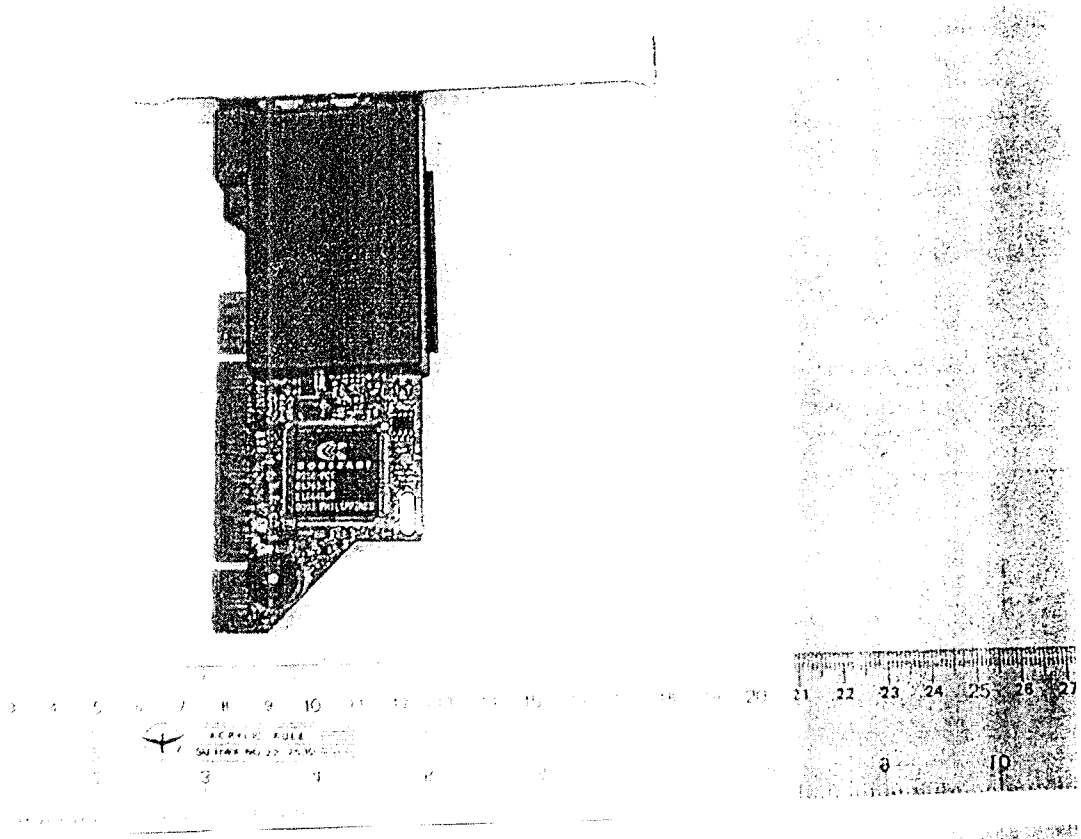
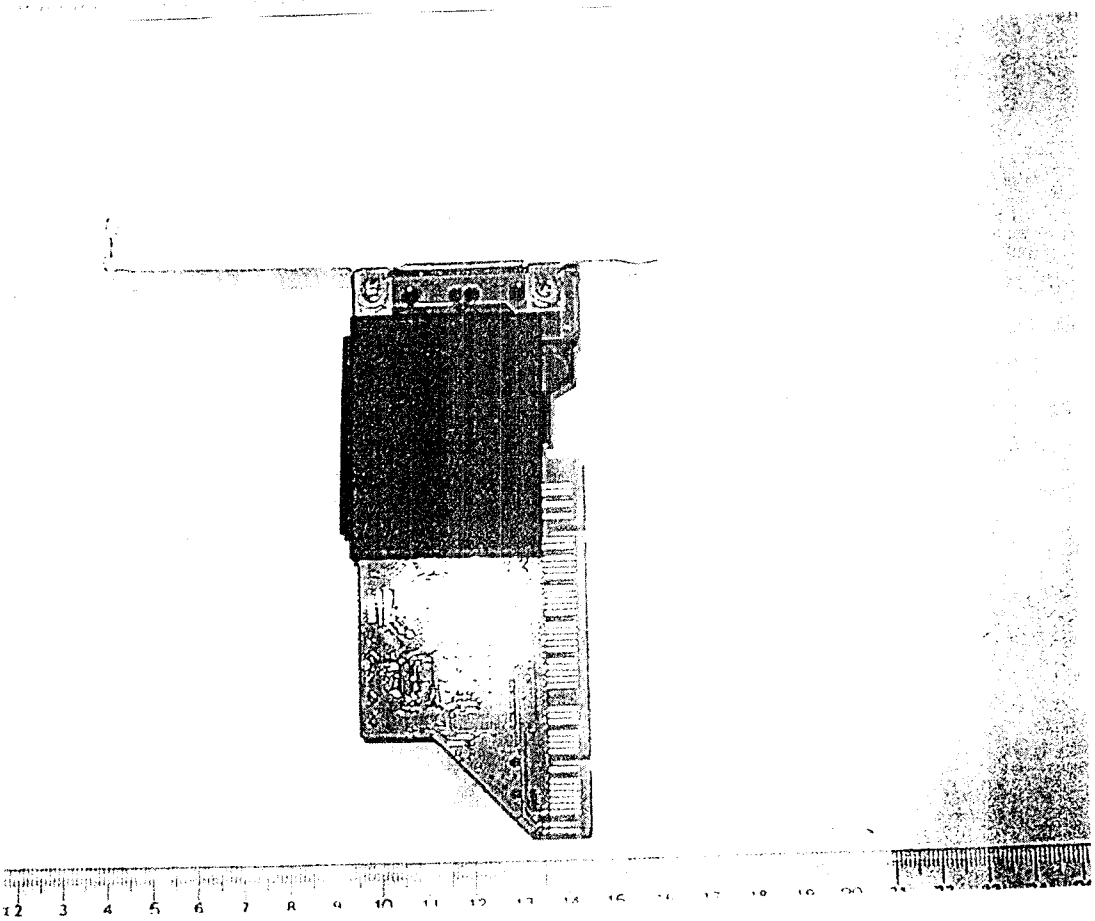
Report Number: E 2061557 E01





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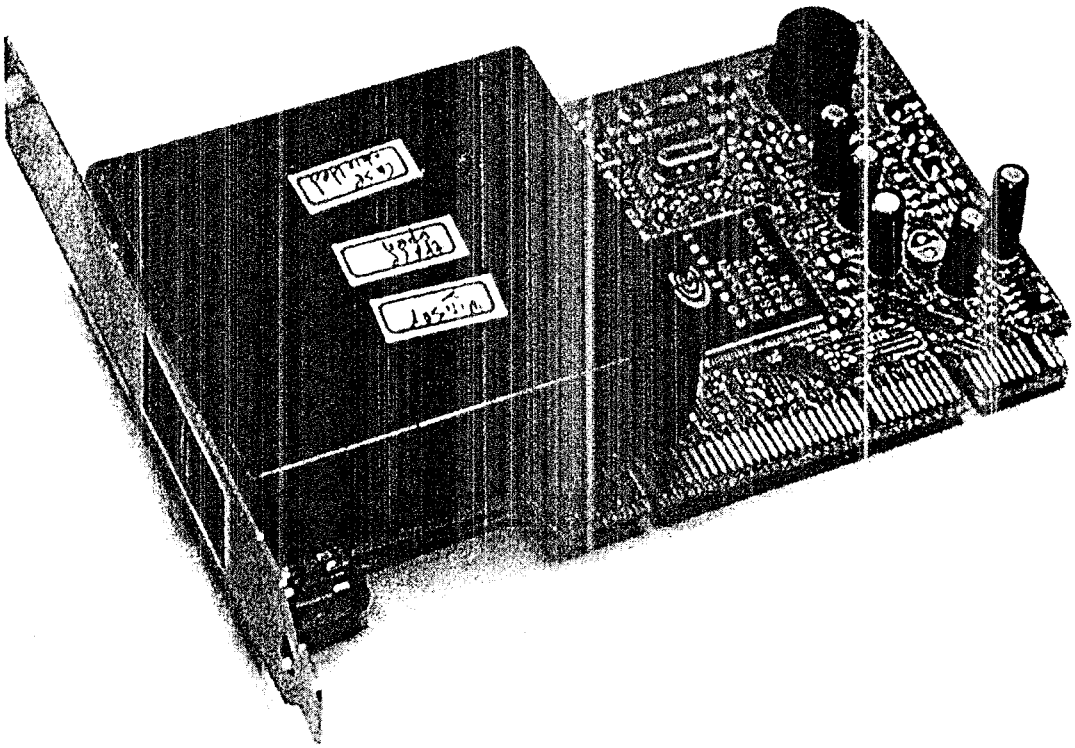

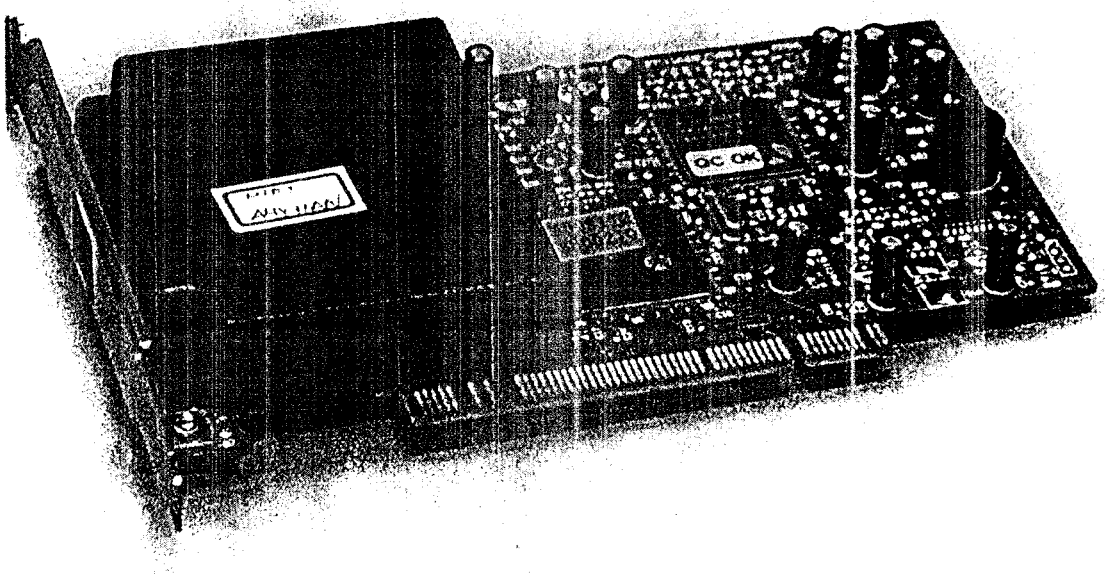

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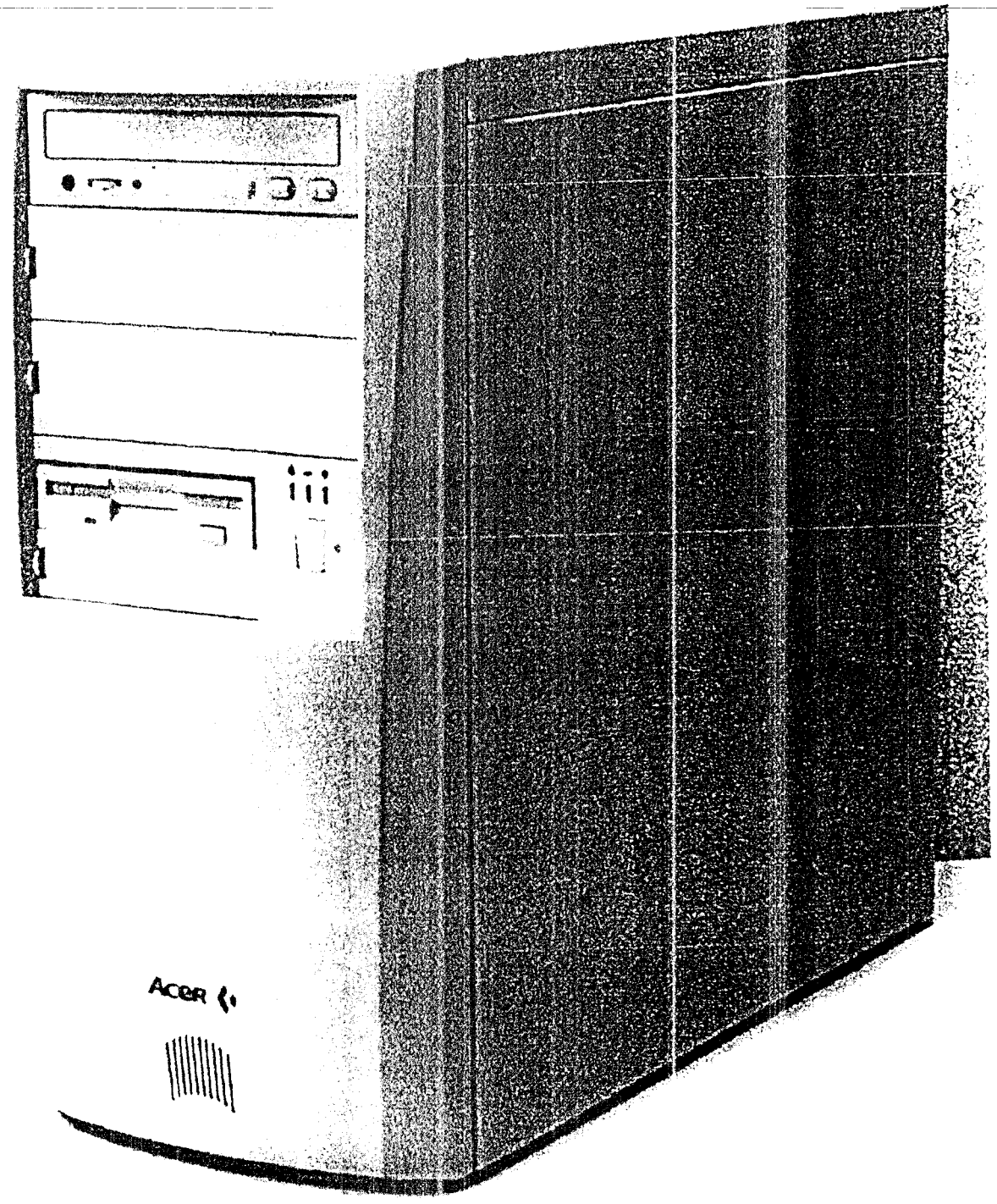

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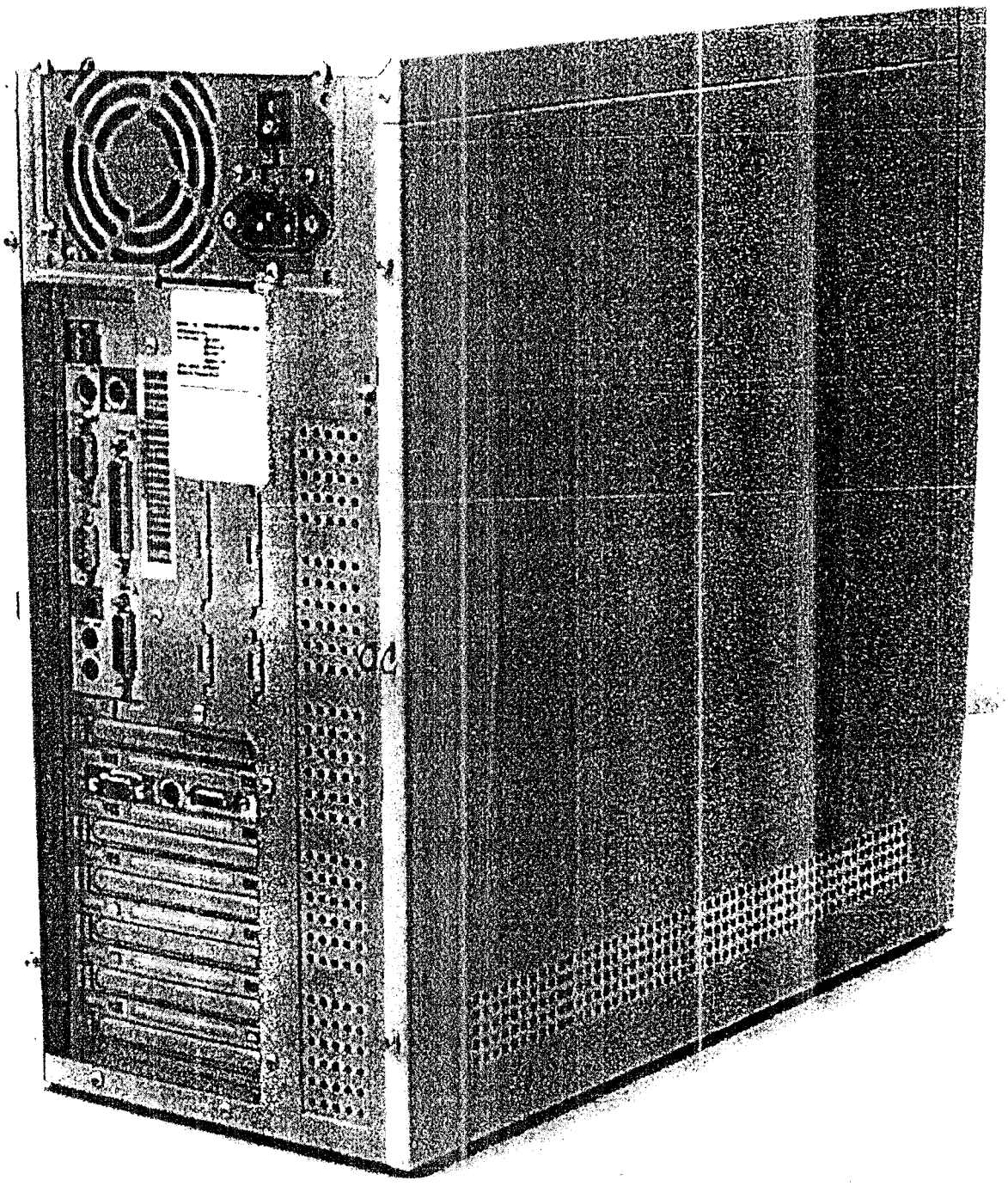

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