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

Ref. Certif. No.
JPTUV-003626

**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

Wistron Corporation
21F, 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

Wistron Corporation
21F, 88, Sec. 1, Hsin Tai Wu Rd.
HSICHIH, TAIPEI HSIEN 221, TAIWAN, R.O.C.

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

Wistron Corporation
7, Hsin Ann Road
Hsinchu Science-Based Ind. Park, HSINCHU 300, TAIWAN, R.O.C.

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Input rating : 1) AC 100-127V/200-240V, 4A/2A, 50-60Hz
2) 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

1) VT5100, AP4400
2) VT5200, VT5200D

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 National differences see test report	

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

12001368 001

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 29.11.2001

Signature

Dipl.-Ing. F. Herlitschke

Issue 1998-09

TEST REPORT

IEC 60950

Safety of information technology equipment

Report

Reference No. ..... : <12001368 001>

Compiled by (+ signature) ..... : M. Kera

Approved by (+ signature) ..... : P. Petschig

Date of issue ..... : November 26, 2001

Contents ..... : 90 pages

..... :

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

Testing laboratory

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

Client

Name ..... : Wistron Corporation

Address ..... : 21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Test specification

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, UL 1950, C22.2 No. 950 3rd edition, AS 3260, GB 4943

Test procedure ..... : CB-scheme

Procedure deviation ..... : Austria, Belgium, Canada, China, Czech. R., Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Japan, Korea, Netherlands, Poland, Russia federation, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, U.K., USA

Non-standard test method ..... : N.A.

Test Report Form/blank test report

Test Report Form No. ..... : I950__D/97-06

TRF originator ..... : FIMKO

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

Test item

Description ..... :	Personal Computer
Trademark ..... :	Acer trade mark
Model and/or type reference..... :	AP4400, VT5100, VT5200, VT5200D
Manufacturer ..... :	Same as applicant
Rating ..... :	AC 100-127/200-240V, 4/2A, 50-60Hz for VT5100, AP4400 AC 100-127/200-240V, 5/3A, 50/60Hz for VT5200, VT5200D
..... :	

Particulars: test item vs. test requirements

Equipment mobility ..... :	movable
Operating condition..... :	continuous
Tested for IT power systems..... :	No
IT testing, phase-phase voltage (V) ..... :	N.A.
Class of equipment ..... :	Class I
Mass of equipment (kg)..... :	8.4kg
Protection against ingress of water ..... :	IPX0

Test case verdicts

Test case does not apply to the test object ..... :	N(.A.)
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement..... :	F(ail)
..... :	

Testing

Date of receipt of test item ..... :	November 12, 2001
Date(s) of performance of test..... :	November 13 - 26, 2001
..... :	

General remarks

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

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

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

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

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

Factory:

Wistron Corporation
7 Hsin Ann Rd., Science-Based Ind. Park, Hsinchu 30077,
Taiwan, R.O.C.

Comments:

Brief description of the test sample:

The models AP4400, VT5100, VT5200 and VT5200D are desktop type personal computers for general office use. The internal building-in switching power supplies are approved components according to EN 60950 standard and CB Scheme tested. For details of the power supply, see appended table 1.5.1. All models are similar except for type designation and SELV circuit. The model VT5200 is similar to the model VT5100 except different power rating of AC 100-127/200-240V, 5.0/3.0A, 50/60Hz. The model VT5200D is similar to model VT5200 except of model name, alternate components and safety extra low (SELV) secondary circuit.

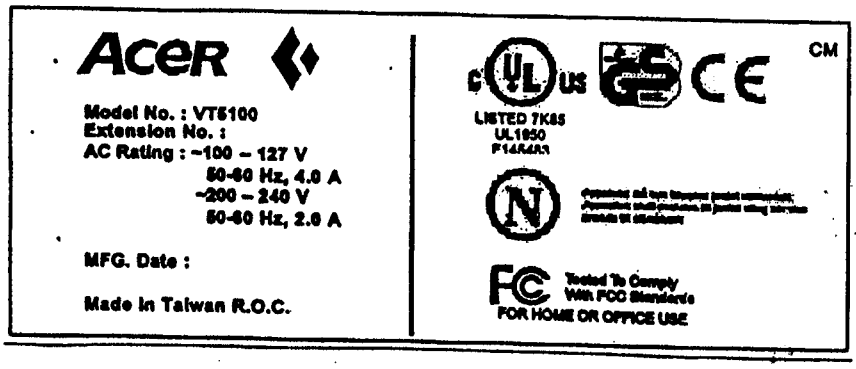
The test samples were pre-production samples without serial number.

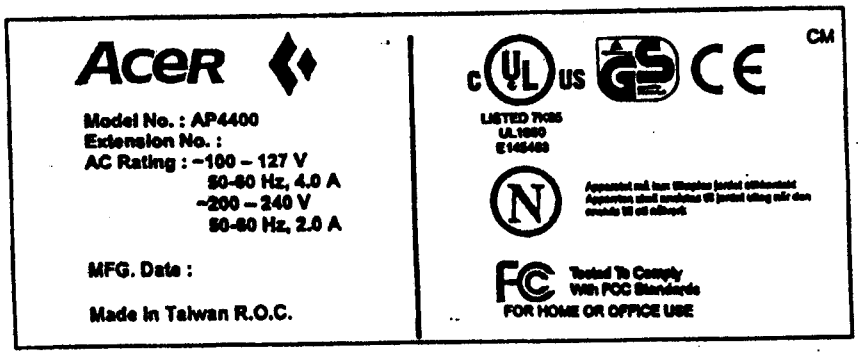
Special features are:

- 1 HiFD,
- 1 HDD,
- 1 CR-RW
- 1 CD-ROM or 1 DVD-ROM,
- 1 modem,
- 1 motherboard with 466MHz CPU and VGA chipset,
- 2 USB ports.

The Li-ION 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.

Copy of the marking plate :





acer

Model No.: VT5200D
Extension No.:
AC Rating:
~100–127/200–240V
5/3A
50/60Hz
MFG. Date: AM0150
Made in Taiwan R.O.C.

Apparatet må kun tilkoples jordet stikkontakt
Apparrten skall anslutas till jordat uttag när den ansluts till ett nätverk

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

TÜV Rheinland Product Safety

LISTED 7K85
UL1950
E145483

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		**P**
1.5	Components		**P**
1.5.1	Comply with IEC 950 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 and particularly Annex C.	**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 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 950			
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	Equipment was not applied for the IT power system.	N
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) .....:	4.0A/2.0A for models AP4400, VT5100 5.0A/3.0A for models VT5200, VT5200D	P

CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 99A, July 2001

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	Manufacturer .....:	Not shown.	N
	Trademark .....:	Acer trademark	P
	Type/model .....:	AP4400, VT5100, VT5200, VT5200D	P
	Symbol of Class II .....:	Class I equipment	N
	Certification marks .....:	TÜV Rheinland GS mark, UL, CUL, N	P
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 English, Spanish, French, German, Swedish wording: CLASS 1 LASER PRODUCT LASER DE LA CLASE I LASER DE CLASSE 1 LASER KLASSE 1	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 950			
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 on, line for off.	**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	Equipment was not applied for IT power system.	**N**
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 950			
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 soaked with water for 15 sec. and then again for 15 sec. 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 neither 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	Lithium battery for real time clock in user accessible area is exchangeable. → warning text provided in user's manual.	P
	Language .....:	English and German, Swedish, Finnish, Norwegian.	—
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2	PROTECTIONS FROM HAZARDS		P
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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 supplies.	N
	Time-constant (s); measured voltage (V) .....:		—
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: 120 hours	P
	Humidity (%) .....:	93% R.H.	—
	Temperature (°C) .....:	40°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
2.2.7.1	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
2.2.8.1	Bridging capacitors		N
2.2.8.2	Bridging resistors		N
2.2.8.3	Accessible parts		N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.3	Safety extra-low voltage (SELV) circuits		**P**
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**
2.3.8	Construction of SELV circuits		N
2.3.9	SELV circuits connected to other 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**

CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 99A, July 2001

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.4.4	Measured voltage (V) .....:		—
	Measured charge (μC) .....:		N
2.4.5	Measured voltage (V) .....:		—
	Measured energy (mJ) .....:		N
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
	Test current (A) .....:	(See appended table 2.5.11).	—
2.6	Disconnection from primary power		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

CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 99A, July 2001

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
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-Ion 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

CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 99A, July 2001

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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 100-127/200-240V	—
	General		P
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	In compliance with 5.4	N
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

CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 99A, July 2001

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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, the switching power supplies are approved components.	N
	Temperature T1 (°C) .....:		N
	Humidity % .....:		N
2.9.8	Component external terminations		N
2.9.9	Insulation with varying dimensions	Insulation kept homogenous.	N
2.10	Interconnection of equipment		P
2.10.1	General requirements	See below.	P
2.10.2	Type of interconnection circuits .....:	Interconnection circuits of SELV through the output connectors. 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. (see appended table 5.1)	P

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	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**
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**

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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 .....:	Every approved power supply has its own mains connection.	N
3.2.2	Provision for permanent connection .....:	Not permanently connected.	N
	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 in 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

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
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 floor standing 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

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.2	Internal enclosures 30 N ± 3 N; 5 s	30N force tested on internal enclosure (SPS).	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
	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) .....:	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, the oven test is not considered to be necessary.	N
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 and 4.1.2. .	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

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
4.3.12	Protection against harmful concentration of ionizing radiation, ultraviolet light, laser or flammable gases (for laser see IEC 825-1)	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 laser 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

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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 .....:	a) Prevent from force charging by D3 and R81 in series of battery (BT1). b) Protected from reverse polarity installation by form of battery socket.	P
4.3.22	Ageing of barrier/screen secured with adhesive		N
	Day 1: temperature (°C); time (weeks) .....:		N
	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	Flammability of materials and components	See below.	P
4.4.3.2	Material and component: manufacturer; type; flammability .....:	Internal components except small parts are V-2, HF-2 or better.	P

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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	—
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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**
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. (see appended table)	**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	**P**

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 card generates 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**

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
	Insulation (mm) between TNV circuit supplied conductively from secondary circuit and hazardous voltage 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 card 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 card generates 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

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
6.3.4.1	Limitation of leakage current (mA) to telecommunication network .....:	▪ **Ambit/T62M154:** Line to Tip/Ring: I=0.15mA Neutral to Tip/Ring: I=0.12mA ▪ **Ambit/T62M206:** Line to Tip/Ring: I<0.035mA Neutral to Tip/Ring: I<0.035mA ▪ **Askey/1456VQH75D:** Line to Tip/Ring: I≤0.050mA Neutral to Tip/Ring: I≤0.050mA	**P**
6.3.4.2	Summation of leakage currents from telecommunication network .....:		**N**

6.4	Protection of the equipment users from voltages on the telecommunication networks		**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**
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**

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
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
	Sample 3 burning time .....:		N
	Material: compliance with the requirements		N

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	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 .....:		—
	Manufacturer .....:		—
	Type .....:		—

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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	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

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IEC 950			
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])
Switching power supply	Acbel Polytech. Inc.	API-9502	I/P: 100-127/ 200-240Vac, 4.0/2.0A, 47-63Hz O/P: 3.3Vdc/12A, 5Vdc/15A, 12Vdc/3A, 5VSB/3A, -12Vdc/0.3A class I	IEC 60950	TÜV (CB), UL, NEMKO
	Delta Electronics Co.	DPS-145PB-82XX	I/P: 100-127/ 200-240Vac, 4.0/2.0A, 47-63Hz O/P: 3.3Vdc/12A, 5Vdc/15A, 12Vdc/3A, 5VSB/3A, -12Vdc/0.3A class I	IEC 60950	TÜV, UL, NEMKO (CB)
SPS	High Power Electronic Co.	SI-145M3	Input: 100-127/200-240 Vac, 4/2A, 50-60HZ Output: 5/12/3.3/-12/5sb Vdc, 13/3/12/0.3/3 A	EN60950 IEC60950	TÜV (CB)
SPS	Sirtec	SI-X145P3	Input : 4/2 A,	IEC60950	TÜV, UL

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National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

	Co., Ltd.		100-127 /200-240 V, 50-60 Hz Output: +5/+12/-12/ +3.3/+5 Vsb Vdc, 15/3/0.3/12/3 A.	EN60950	CB (by TÜV)
	Acbel Polytech Inc.	APIOPC62	I/P: 100-127/200-240V, 47-63Hz, 4/2A O/P: +5V/15A, +12V/3.0A, -12V/0.3A, +3.3V/12.0A, +5Vsb/3.0A max. output power 145W Class I	IEC 60950	TÜV
Switching Power Supply (for VT 5200)	Sirtec International Co., Ltd.	SI-X200M3	100-127V/200-240V, 50/60Hz, 5/3A +5/+12/+3.3/-5V/-12/+5Vsb V dc, 20.0/8.0/14.0/0.3/0.3/1.0 A.	IEC 60950	TÜV, CB, CSA, UL
(for VT 5200)		SI-X200P3	100-127V/200-240V, 50-60Hz, 5/3A +5/+12/+3.3/-12/+5Vsb V dc, 20.0/8.0/14.0/0.5/3.0 A.	IEC 60950	TÜV, CB, CSA, UL
(for VT 5200)	Delta Electronics Inc.	DPS-200PB-112XX	100-127V/200-240V, 47-63Hz, 5/3A +5/+12/+3.3/-12/+5Vsb V dc, 25.0/13.0/17.0/0.8/3.0 A	IEC 60950	TÜV, CB, CSA, UL
PWB	various	various	V-0, 105°C	UL 94	UL
Front bezel	various	various	HB	UL 94	UL
Hard Disk Drive	Quantum	3.5 series 5.25 series	5/12Vdc, 1.5/1.5A	IEC 60950	TÜV, UL

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

	Seagate	ST3XXXXY ST5XXXY ST5XXXXY	5/12Vdc, 1.5/1.5A	IEC 60950	TÜV, UL, CSA
	Maxtor Corp.	9XXXXYX 8XXXXYX	5/12Vdc, 0.66/1.6A	IEC 60950	TÜV, UL
	Seagate Technology Inc.	ST3XXXXYYX	+5 /+12 V dc 1.5/1.5 A	IEC60950 EN60950	TÜV, UL
	IBM Japan, Ltd.	DyyA-3xxxxx DyyS-3xxxxx	+5 /+12 V dc 0.55/0.65 A	IEC60950 EN60950	TÜV, UL
	Maxtor Corp.	3XXXXYX (X= 0-9; Y= A-Z)	5V/1.0A, 12V/3.0A	IEC 60950	TÜV
	Maxtor Corp.	5XXXXYX (X= 0-9; Y= A-Z)	5V/1.0A, 12V/3.0A	IEC 60950	TÜV
	IBM Japan Ltd.	IC35L0nnAVER 07-y	5 / 12 V dc 0.3 / 0.5 A max.	EN 60950	TÜV, CSA, UL
(Only VT5200D)	Maxtor Corp.	2XXXXYYY	5vdc /1.0A, 12 Vdc/ 3.0A	IEC 60950	TUV, UL
(Only VT5200D)	Maxtor Corp.	4XXXXYYY	5vdc /1.0A, 12 Vdc/ 3.0A	IEC 60950	TUV, UL
Floppy Disk Drive	Newtronics Co.	D35XM3	5/12Vdc, 1.0/1.0A	IEC 60950	TÜV, UL
	Matsushita	JU-2XYAXXXX	5/12Vdc, 1.0/1.0A	IEC 60950	TÜV, UL
Floptical Disk Drive	Mitsubishi	LKM-F933-1 LKM-F934-1	5Vdc, 2.7A	EN 60950 EN 60825-1	TÜV, SEMKO
Zip-drive	IOMEGA	Z100ATAPI	5Vdc, 0.8A	IEC 60950	TÜV, UL
	IOMEGA	Z250ATAPI	5Vdc, 0.25A	IEC 60950	TÜV, UL
Lithium Battery	Hitach Maxell	CR2032	3Vdc, 220mAh	--	UL
	Matsushita	CR2032	3Vdc, 220mAh	--	UL
	Rayovac	CR2032	3Vdc, 220mAh	--	UL
	Sony	CR2032	3Vdc, 220mAh	--	UL
CD-ROM	Acer Peripheral	CD-640A	5/12Vdc, 0.6/1.9A Laser class 1	IEC 60950 IEC 60825-1	TÜV, UL
	Lite On	LTN-XX3XXXXX	5/12Vdc, 1.0/1.2A Laser class 1	IEC 60950, IEC 60825-1	TÜV, UL

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

	Aopen	CD-94./...	5Vdc, 0.9A	IEC 60950	TÜV, UL,
	Acer	650P-XXX	5Vdc, 1.2A 12Vdc, 1.5A Laser Class 1	IEC 60950 IEC 60825-1	TÜV, UL,
	Teac	CD-95./...	5Vdc, 0.9A Laser Class 1	IEC 60950 IEC 60825-1	TÜV, UL,
	Lite-On I.T. Corp.	LTN-XX5XXXX	+5 /+12 V dc 1.0 /1.5 A	IEC60950 IEC60825-1	TÜV, UL
CD-ROM	Acer Peripherals Inc.	652P-XXX (X = 0-9, A-Z or blank)	5Vdc/1.2A 12Vdc/1.5A Laser Class I	IEC 60950 IEC 60825-1	
	Aopen Inc.	CD-93.E/... CD-94.E/...	5/12Vdc, 0.9/1.5A Laser class 1	IEC 60950 IEC 60825-1	NEMKO (CB), 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

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

• PCB	--	--	V-0, 105°C	UL 94	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
	Hitachi	GD-7000	5Vdc, 1.2A Laser Class I	IEC60950 IEC 60825-1	TÜV, UL,
DVD-ROM Drive	Pioneer Corp.	DVD-115XXX	+5 /+12 V dc 0.8/1.3 A	IEC60950 IEC60825-1	CB (by TÜV)
	Hitachi Ltd.	GD-7500	+5 /+12 V dc 1.2/0.9 A	IEC60950 IEC60825-1	TÜV, UL
	Pioneer Corp.	DVD-116XXX	5 / 12 V dc 0.8 / 1.3 A Laser Class 1	IEC 60950 IEC 60825-1	TÜV, CSA, UL
	NEC Tech. Inc.	DV-5700B	5Vdc/1.5A 12Vdc/1.5A Laser Class I	IEC 60950 IEC 60825-1	TÜV
CD-RW (optional)	Acer Peripherals	4432A-XXX	5/12Vdc, 0.7/1.0A Laser Class 1	IEC 60950, IEC 60825-1	TÜV, UL
	Aopen	CRW9420	5/12Vdc, 2.0/0.7A Laser Class 1	IEC 60950, IEC 60825-1	TÜV, UL
	Sony	CRX100E-XX	5/12Vdc, 1.3/1.8A Laser Class 1	IEC 60950, IEC 60825-1	TÜV
	Sony	CRX140E-XX	5Vdc, 1.2A Laser Class 1	IEC 60950 IEC 60825-1	TÜV, UL
	LG Electronics	CED-8080B	5Vdc, 1.2A Laser Class 1	IEC 60950 IEC 60825-1	TÜV, UL
	Acer Peripherial Inc.	8432IA-XXX	+5 /+12 V dc 0.7/1.5 A	IEC60950 IEC60825-1	CB (by TÜV)
	Aopen Inc.	CRW1232	5 / 12 V dc 1.0 / 1.4 A max. Laser Class 1	IEC 60950 IEC 60825-1	TÜV, CSA, UL
(only VT5200D)	Aopen Inc.	CRW2Y4Y	5 / 12 V dc 2.0 / 1.4 A.	IEC 60950	TÜV, UL
Fax/modem card (optional)	CIS Technology	M3-5614PS3G M3-5614PM3G	5Vdc, 300mA	EN 60950	UL, NEMKO (CB)

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

	Askey Computer Corp.	V1456VQH20B	5Vdc, 40mA	EN 60950	TÜV (CB), UL, NEMKO
	Ambit	T62M154	5Vdc, 500mA	IEC 60950	TÜV (CB), UL
	Askey Computer Corp.	1456VQH20E	+5 V dc, 300 mA	IEC60950 EN60950	Nemko, UL
(only VT5200D)	Ambit	T62M206	5Vdc / 30mA	IEC 60950	TUV, CSA
(only VT5200D)	Askey	1456VQH75D (INT)	5Vdc / 300mA	IEC 60950	TUV, UL, FIMKO
HiFD	Sony	SFD200-XXX	5Vdc, 1.2A	IEC 60950	TÜV, UL,
Polyswitch	Raychem	MiniSMDC110	6Vdc, 1.1A	--	UL
		SMD100-2018	15Vdc, 1.1A	DIN44080, DIN44081	TÜV, UL
		RUE135	30Vdc, 1.35A	DIN44080, DIN44081	TÜV, UL
Video card	Acer Peripherals	NV2016	Riva TNT II graphics processor	--	--
	ATI	Xpert 99	ATI Rage 128 graphics processor	--	--
DC fan (for CPU)	GE	DF Series	12Vdc, 7.4CFM	EN 60950	UL, TÜV
Pad	various	various	Minimum V-1	UL 94	UL
Enclosure	--	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
with SPS DPS-145PB-82						
F1	--	90V/50Hz	117	2.09	2.09	Max. normal load
F1	--	90V/60Hz	119	2.08	2.08	dto.
F1	4	100V/50Hz	119	1.97	1.97	dto.
F1	4	100V/60Hz	121	1.95	1.95	dto.
F1	4	120V/50Hz	122	1.72	1.72	dto.

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

F1	4	120V/60Hz	122	1.68	1.68	dto.
F1	4	127V/50Hz	123	1.63	1.63	dto.
F1	4	127V/60Hz	123	1.62	1.62	dto.
F1	--	134V/50Hz	123	1.58	1.58	dto.
F1	--	134V/60Hz	123	1.55	1.55	dto.
F1	--	180V/50Hz	120	1.27	1.27	dto.
F1	--	180V/60Hz	120	1.23	1.23	dto.
F1	2	200V/50Hz	120	1.16	1.16	dto.
F1	2	200V/60Hz	120	1.12	1.12	dto.
F1	2	240V/50Hz	121	0.92	0.92	dto.
F1	2	240V/60Hz	120	0.96	0.96	dto.
F1	--	254V/50Hz	122	0.95	0.95	dto.
F1	--	254V/60Hz	122	0.92	0.92	dto.
F1	--	264V/50Hz	121	0.93	0.93	dto.
F1	--	264V/60Hz	120	0.90	0.90	dto.
with SPS API-9502						
F1	--	90V/50Hz	120	2.158	2.158	Max. normal load
F1	--	90V/60Hz	122	2.137	2.137	dto.
F1	4	100V/50Hz	123	2.030	2.030	dto.
F1	4	100V/60Hz	125	2.014	2.014	dto.
F1	4	120V/50Hz	127	1.793	1.793	dto.
F1	4	120V/60Hz	128	1.752	1.752	dto.
F1	4	127V/50Hz	127	1.727	1.727	dto.
F1	4	127V/60Hz	129	1.690	1.690	dto.
F1	--	134V/50Hz	128	1.681	1.681	dto.
F1	--	134V/60Hz	130	1.632	1.632	dto.
F1	--	180V/50Hz	124	1.269	1.269	dto.
F1	--	180V/60Hz	125	1.231	1.231	dto.
F1	2	200V/50Hz	125	1.220	1.220	dto.
F1	2	200V/60Hz	126	1.178	1.178	dto.
F1	2	240V/50Hz	126	1.050	1.050	dto.
F1	2	240V/60Hz	126	1.022	1.022	dto.
F1	--	254V/50Hz	127	1.004	1.004	dto.
F1	--	254V/60Hz	127	0.980	0.980	dto.

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

F1	--	264V/50Hz	127	0.978	0.978	dto.
F1	--	264V/60Hz	127	0.956	0.956	dto.
with SPS SI-145M3						
F1	--	90V/50Hz	121	2.14	2.14	Max. normal load
F1	--	90V/60Hz	123	2.13	2.13	dto.
F1	4	100V/50Hz	124	2.02	2.02	dto.
F1	4	100V/60Hz	124	2.01	2.01	dto.
F1	4	120V/50Hz	123	1.74	1.74	dto.
F1	4	120V/60Hz	124	1.71	1.71	dto.
F1	4	127V/50Hz	125	1.69	1.69	dto.
F1	4	127V/60Hz	126	1.67	1.67	dto.
F1	--	134V/50Hz	127	1.64	1.64	dto.
F1	--	134V/60Hz	128	1.64	1.64	dto.
F1	--	180V/50Hz	123	1.30	1.30	dto.
F1	--	180V/60Hz	124	1.27	1.27	dto.
F1	2	200V/50Hz	123	1.19	1.19	dto.
F1	2	200V/60Hz	123	1.15	1.15	dto.
F1	2	240V/50Hz	122	0.98	0.98	dto.
F1	2	240V/60Hz	124	0.96	0.96	dto.
F1	--	254V/50Hz	124	0.97	0.97	dto.
F1	--	254V/60Hz	125	0.94	0.94	dto.
F1	--	264V/50Hz	125	0.94	0.94	dto.
F1	--	264V/60Hz	125	0.92	0.92	dto.
With SPS API0PC62						
F1	--	90V/50Hz	125	2.35	2.35	Max. normal load
F1	--	90V/60Hz	125	2.24	2.24	dto.
F1	4	100V/50Hz	124	2.12	2.12	dto.
F1	4	100V/60Hz	124	2.04	2.04	dto.
F1	4	127V/50Hz	128	1.76	1.76	dto.
F1	4	127V/60Hz	129	1.70	1.70	dto.
F1	--	135V/50Hz	128	1.67	1.67	dto.
F1	--	135V/60Hz	128	1.62	1.62	dto.
F1	--	180V/50Hz	124	0.88	0.88	dto.

National Deviation						
Clause	Requirement – Test			Result – Remark		Verdict
F1	--	180V/60Hz	124	0.87	0.87	dto.
F1	2	200V/50Hz	123	0.79	0.79	dto.
F1	2	200V/60Hz	123	0.78	0.78	dto.
F1	2	240V/50Hz	123	0.67	0.67	dto.
F1	2	240V/60Hz	123	0.66	0.66	dto.
F1	--	254V/50Hz	123	0.64	0.64	dto.
F1	--	254V/60Hz	123	0.63	0.63	dto.
F1	--	264V/50Hz	123	0.62	0.62	dto.
F1	--	264V/60Hz	123	0.61	0.61	dto.
With SPS: SI-X200M3						
F1	--	90	223	4.05	4.05	normal load at 50Hz
F1	5.0	100	222	3.68	3.68	dto
F1	5.0	127	223	3.05	3.05	dto
F1	--	134	223	2.95	2.95	dto
F1	--	140	225	2.87	2.87	dto
F1	--	180	221	2.30	2.30	dto
F1	3.0	200	218	2.09	2.09	dto
F1	3.0	240	217	1.82	1.82	dto
F1	--	254	219	1.75	1.75	dto
F1	--	264	217	1.72	1.72	dto
F1	--	90	224	4.06	4.06	normal load at 60Hz
F1	5.0	100	224	3.67	3.67	dto
F1	5.0	127	223	3.03	3.03	dto
F1	--	134	224	2.96	2.96	dto
F1	--	140	224	2.89	2.89	dto
F1	--	180	219	2.28	2.28	dto
F1	3.0	200	218	2.05	2.05	dto
F1	3.0	240	218	1.79	1.79	dto
F1	--	254	218	1.71	1.71	dto
F1	--	264	218	1.67	1.67	dto
With SPS: SI-X200P3						
F1	--	90	223	3.12	3.12	normal load at 50Hz
F1	5.0	100	219	2.79	2.79	dto

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

F1	5.0	127	219	2.25	2.25	dto
F1	--	134	218	2.14	2.14	dto
F1	--	140	223	2.06	2.06	dto
F1	--	180	216	1.57	1.57	dto
F1	3.0	200	217	1.42	1.42	dto
F1	3.0	240	217	1.18	1.18	dto
F1	--	254	217	1.13	1.13	dto
F1	--	264	218	1.10	1.10	dto
F1	--	90	222	3.09	3.09	normal load at 60Hz
F1	5.0	100	220	2.78	2.78	dto
F1	5.0	127	219	2.22	2.22	dto
F1	--	134	219	2.12	2.12	dto
F1	--	140	222	2.03	2.03	dto
F1	--	180	217	1.58	1.58	dto
F1	3.0	200	216	1.40	1.40	dto
F1	3.0	240	218	1.17	1.17	dto
F1	--	254	217	1.11	1.11	dto
F1	--	264	218	1.08	1.08	dto
With SPS: DPS-200PB-112XX						
F1	--	90	285	5.29	5.29	normal load at 50Hz
F1	5.0	100	285	4.85	4.85	dto
F1	5.0	127	284	4.00	4.00	dto
F1	--	134	283	3.85	3.85	dto
F1	--	140	282	3.71	3.71	dto
F1	--	180	281	2.85	2.85	dto
F1	3.0	200	277	2.59	2.59	dto
F1	3.0	240	275	2.21	2.21	dto
F1	--	254	275	2.10	2.10	dto
F1	--	264	275	2.05	2.05	dto
F1	--	90	286	5.35	5.35	normal load at 60Hz
F1	5.0	100	287	4.88	4.88	dto
F1	5.0	127	283	3.97	3.97	dto
F1	--	134	282	3.86	3.86	dto

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

F1	--	140	283	3.68	3.68	dto
F1	--	180	279	2.80	2.80	dto
F1	3.0	200	278	2.55	2.55	dto
F1	3.0	240	275	2.17	2.17	dto
F1	--	254	276	2.07	2.07	dto
F1	--	264	274	2.01	2.01	dto

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	API-9502 25A test current, 1 minute
inlet ground pin to metal enclosure	0.014	API-9502 30A test current, 2 minutes
inlet ground pin to metal enclosure	0.015	DPS-145PB-82 25A test current, 1 minute
inlet ground pin to metal enclosure	0.020	DPS-145PB-92 30A test current, 2 minutes
inlet ground pin to metal enclosure	0.006	SI-145M3 30A test current, 2 minutes
inlet ground pin to metal enclosure	0.010	SI-X200M3 25A test current, 1 minute
inlet ground pin to metal enclosure	0.011	SI-X200M3 30A test current, 2 minutes