Certificate of Compliance

with

European Low Voltage Directive

No. 10001 218 001

Type of equipment:	**AAEON Technology Inc.**
Certificate holder:	**Embedded control PC**
Type designation:	**AEC-6910-XX, (X=0-9, A-Z or blank.)**
Technical data:	**Rating (s) : DC 9-30V, 5-2.7A**

A sample of the equipment has been tested for CE-marking according to the EC Low Voltage Directive, 73/23/EEC, 93/68/EEC.

Standard(s) used for showing compliance with the essential requirements of the directive:

Standard(s):	*Test report(s):*	*Issued by:*	*Date(s):*
IEC 60950-1:2001 **EN 60950-1:2001**	**10001 218 001**	**Cerpass**	**December 28, 2005**

The referred test report(s) show that the product fulfills the requirements in the EC Low Voltage Directive for CE marking. On this basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify compliance with the EC Low Voltage Directive.

Jackie Lin

Testing Department

Eric Chiu

Certification Department

TEST REPORT

IEC 60950-1/EN 60950-1 First Edition

Information technology equipment - Safety -

Part 1: General requirements

Report reference No . :	<10001 218 001 >
Tested by (printed name and signature) :	Sprewell Chien
Approved by (printed name and signature) :	Jackie Lin
Date of issue :	December 28, 2005
Testing Laboratory Name :	Cerpass Consultancy Corp.
Address :	5F, No. 35, Lane 188, Ruiguang Rd., Neihu District Taipei City, Taiwan
Testing location :	Same as above
Testing Laboratory Name :	Cerpass Consultancy Corp.
Applicant's Name .....:	AAEON Technology Inc.
Address .....:	5TH FL 135 LANE 235 PAO CHIAO RD HSIN-TIEN, TAIPEI TAIWAN
Test specification	
Standard .....:	IEC 60950-1:2001 EN 60950-1:2001
Test procedure .....:	Service of CE Marking in LVD
Non-standard test method .....:	N.A.
Test item description .....:	Embedded control PC
Trademark .....:	See marking plate in page 3 of 54
Model and/or type reference .....:	AEC-6910-XX, (X=0-9, A-Z or blank.)
Serial number .....:	Pre-production sample without serial number
Rating(s) .....:	DC 9-30V, 5-2.7A

Particulars: test item vs. test requirements	
Equipment mobility .....:	Movable
Operating condition .....:	Continuous
Mains supply tolerance (%).....:	No direct mains connection
Tested for IT power systems .....:	N/A
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	Class III
Mass of equipment (kg).....:	4.9 kg
Protection against ingress of water .....:	N/A
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)
General remarks	
This 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(s) tested.	
"(see remark #)" refers to a remark appended to the report.	
"(see Annex #)" refers to an annex appended to the report.	
Throughout this report a point is used as the decimal separator.	
Factory:	
AAEON Technology Inc.	
5TH FL 135 LANE 235 PAO CHIAO RD HSIN-TIEN, TAIPEI TAIWAN	
Comments:	
The equipment model AEC-6910-XX, (X=0-9, A-Z or blank, for marketing purpose) is an Embedded control PC for the use in information technology equipment.	
Circuits inside the equipment under test are classified as SELV circuits	
During testing, the equipment was connected to a power adaptor. However, adaptor is not part of this approved. The power adaptor must be complied with Limited Power Source when evaluated during the corresponding national approval process.	
The maximum ambient temperature is defined as 50°C.	

Copy of marking plate and summary of test results (information/comments):

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		**P**
1.5	Components		**P**
1.5.1	General		**P**
	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 table 1.5.1)	**P**
1.5.2	Evaluation and testing of 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**
1.5.3	Thermal controls	No thermal control.	**N**
1.5.4	Transformers	Transformers are used in approved switching power supply.	**N**
1.5.5	Interconnecting cables	No interconnection cables.	**N**
1.5.6	Capacitors in primary circuits ..... :	Class III equipment.	**N**
1.5.7	Double insulation or reinforced insulation bridged by components		**N**
1.5.7.1	General		**N**
1.5.7.2	Bridging capacitors		**N**
1.5.7.3	Bridging resistors		**N**
1.5.7.4	Accessible parts		**N**
1.5.8	Components in equipment for IT power systems	Class III equipment.	**N**
1.6	Power interface		**P**
1.6.1	AC power distribution systems	Equipment is not directly connected to the AC mains supply.	**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is cross reading/writing between the HDD, the dummy loads of 2.5W in each USB port.	**P**
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	**N**
1.6.4	Neutral conductor	Equipment is not directly connected to the AC mains supply.	**N**
1.7	Marking and instructions		**P**
1.7.1	Power rating	See below.	**P**
	Rated voltage(s) or voltage range(s) (V) ..... :	DC 9-30V	**P**
	Symbol for nature of supply, for d.c. only ..... :	⎓	**P**
	Rated frequency or rated frequency range (Hz) . :	Supplied by DC voltage	**N**
	Rated current (mA or A) ..... :	5-2.7A	**P**
	Manufacturer's name or trademark or identification mark ..... :	See marking plate in page 3 of 54	**P**
	Type/model or type reference..... :	AEC-6910-XX, (X=0-9, A-Z or blank.)	**P**
	Symbol for Class II equipment only ..... :	Class III equipment.	**N**
	Other symbols ..... :	Additional symbols or marking does not give rise to misunderstanding.	**P**
	Certification marks ..... :		**N**
1.7.2	Safety instructions	The User's Manual contains information regarding the operating environment and interconnection to other equipment.	**P**
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	**N**
1.7.4	Supply voltage adjustment ..... :	No voltage/frequency setting.	**N**
1.7.5	Power outlets on the equipment ..... :	No outlet.	**N**
1.7.6	Fuse identification ..... :		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.7	Wiring terminals	See below.	**N**
1.7.7.1	Protective earthing and bonding terminals ..... :	No direct connection to AC mains supply.	**N**
1.7.7.2	Terminal for a.c. mains supply conductors	No direct connection to AC mains supply.	**N**
1.7.7.3	Terminals for d.c. mains supply conductors		**N**
1.7.8	Controls and indicators	See below.	**N**
1.7.8.1	Identification, location and marking ..... :	No safety relevant switch or control.	**N**
1.7.8.2	Colours ..... :	No safety relevant control or indicator.	**N**
1.7.8.3	Symbols according to IEC 60417 ..... :	The secondary power switch is marked with the symbols: "0" and "I" (60417-1-IEC-5007 and 60417-1-IEC-5008).	**P**
1.7.8.4	Markings using figures ..... :	No indicators for different positions.	**N**
1.7.9	Isolation of multiple power sources ..... :		**N**
1.7.10	IT power distribution systems	No direct connection to AC mains supply.	**N**
1.7.11	Thermostats and other regulating devices	No thermostats provided.	**N**
1.7.12	Language ..... :	Marking label and User's manual in English. Versions in other languages have to be provided during the corresponding national approvals.	**P**
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s 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**
1.7.14	Removable parts	No removable parts provided.	**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.15	Replaceable batteries	Lithium battery for real time clock is exchangeable. Warning sentence is printed in manual.	**N**
	Language ..... :	English. Versions in other languages have to be provided during the corresponding national approvals.	**—**
1.7.16	Operator access with a tool ..... :		**N**
1.7.17	Equipment for restricted access locations..... :	No restricted access location.	**N**

2	PROTECTION FROM HAZARDS		**P**
2.1	Protection from electric shock and energy hazards *The unit is supplied from DC connector that provides SELV. No risk of electrical shock or energy hazards.*		**N**
2.1.1	Protection in operator access areas		**N**
2.1.1.1	Access to energized parts	EUT with SELV circuits. For details see below.	**N**
	Test by inspection ..... :	No concerned parts were access	**N**
	Test with test finger ..... :	Dto.	**N**
	Test with test pin ..... :	Dto.	**N**
	Test with test probe ..... :	Dto.	**N**
2.1.1.2	Battery compartments ..... :	No battery compartments provided.	**N**
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	**N**
	Working voltage (V); minimum distance (mm) through insulation		**—**
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	**N**
2.1.1.5	Energy hazards ..... :	No energy hazard in operator area.	**N**
2.1.1.6	Manual controls	No conductive shafts of operating knobs and handles.	**N**
2.1.1.7	Discharge of capacitors in equipment	No direct connection to AC mains supply.	**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Time-constant (s); measured voltage (V) ..... :		—
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	**N**
2.1.3	Protection in restricted access locations	The unit is not intended to be used in restricted locations.	**N**
2.2	SELV circuits		**P**
2.2.1	General requirements	See below.	**P**
2.2.2	Voltages under normal conditions (V) ..... :	Between any SELV circuits 42.4V peak or 60VDC are not exceeded.	**P**
2.2.3	Voltages under fault conditions (V)..... :	Single fault did not cause excessive voltage in SELV circuits. Limits of 71 V peak and 120 V d.c. were not exceeded within 0.2 s and limits of 42.4 V peak and 60 V d.c. were not exceeded for longer than 0.2 s, see appended tables 2.2.2.	**P**
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Class III equipment.	**N**
2.2.3.2	Separation by earthed screen (method 2)	Dto.	**N**
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Dto.	**N**
2.2.4	Connection of SELV circuits to other circuits..... :	See 2.2.2 and 2.2.3.	**N**
2.3	TNV circuits		**N**
2.3.1	Limits		**N**
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		**N**
	Insulation employed..... :		—
2.3.3	Separation from hazardous voltages		**N**
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		**N**
	Insulation employed..... :		—

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.3.5	Test for operating voltages generated externally		**N**
2.4	Limited current circuits		**N**
2.4.1	General requirements		**N**
2.4.2	Limit values		**N**
	Frequency (Hz) ..... :		**—**
	Measured current (mA)..... :		**—**
	Measured voltage (V) ..... :		**—**
	Measured capacitance (µF)..... :		**—**
2.4.3	Connection of limited current circuits to other circuits		**N**
2.5	Limited power sources *The output of approved power adaptor complies with the requirement of limited power source.*		**N**
	Inherently limited output		**N**
	Impedance limited output		**N**
	Overcurrent protective device limited output		**N**
	Regulating network limited output under normal operating and single fault condition		**N**
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		**N**
	Output voltage (V), output current (A), apparent power (VA) ..... :		**—**
	Current rating of overcurrent protective device (A)		**—**
2.6	Provisions for earthing and bonding *Class III equipment.*		**N**
2.6.1	Protective earthing		**N**
2.6.2	Functional earthing		**N**
2.6.3	Protective earthing and protective bonding conductors		**N**
2.6.3.1	General		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.3.2	Size of protective earthing conductors		**N**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		**N**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A) ..... :		**N**
2.6.3.5	Colour of insulation ..... :		**N**
2.6.4	Terminals		**N**
2.6.4.1	General		**N**
2.6.4.2	Protective earthing and bonding terminals		**N**
	Rated current (A), type and nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		**N**
2.6.5	Integrity of protective earthing		**N**
2.6.5.1	Interconnection of equipment		**N**
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		**N**
2.6.5.3	Disconnection of protective earth		**N**
2.6.5.4	Parts that can be removed by an operator		**N**
2.6.5.5	Parts removed during servicing		**N**
2.6.5.6	Corrosion resistance		**N**
2.6.5.7	Screws for protective bonding		**N**
2.6.5.8	Reliance on telecommunication network or cable distribution system		**N**
2.7	Overcurrent and earth fault protection in primary circuits *Class III equipment*		**N**
2.7.1	Basic requirements		**N**
	Instructions when protection relies on building installation		**N**
2.7.2	Faults not covered in 5.3		**N**
2.7.3	Short-circuit backup protection		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.4	Number and location of protective devices ..... :		**N**
2.7.5	Protection by several devices		**N**
2.7.6	Warning to service personnel ..... :		**N**
2.8	Safety interlocks *No safety interlock.*		**N**
2.8.1	General principles		**N**
2.8.2	Protection requirements		**N**
2.8.3	Inadvertent reactivation		**N**
2.8.4	Fail-safe operation		**N**
2.8.5	Moving parts		**N**
2.8.6	Overriding		**N**
2.8.7	Switches and relays		**N**
2.8.7.1	Contact gaps (mm) ..... :		**N**
2.8.7.2	Overload test		**N**
2.8.7.3	Endurance test		**N**
2.8.7.4	Electric strength test		**N**
2.8.8	Mechanical actuators		**N**
2.9	Electrical insulation *The unit is supplied from DC connector that provides SELV. Only SELV inside the unit. No electrical shock hazard.*		**N**
2.9.1	Properties of insulating materials		**N**
2.9.2	Humidity conditioning		**N**
	Humidity (%) ..... :		—
	Temperature (°C) ..... :		—
2.9.3	Grade of insulation		**N**
2.10	Clearances, creepage distances and distances through insulation *The unit is supplied from DC connector that provides SELV. Only SELV inside the unit. See also 5.3.4.*		**N**
2.10.1	General		**N**
2.10.2	Determination of working voltage		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.3	Clearances		**N**
2.10.3.1	General		**N**
2.10.3.2	Clearances in primary circuit		**N**
2.10.3.3	Clearances in secondary circuits		**N**
2.10.3.4	Measurement of transient voltage levels		**N**
2.10.4	Creepage distances		**N**
	CTI tests..... :	CTI rating for all materials of min. 100.	—
2.10.5	Solid insulation		**N**
2.10.5.1	Minimum distance through insulation		**N**
2.10.5.2	Thin sheet material		**N**
	Number of layers (pcs) ..... :		—
	Electric strength test		—
2.10.5.3	Printed boards		**N**
	Distance through insulation		**N**
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) ..... :		—
2.10.5.4	Wound components		**N**
	Number of layers (pcs) ..... :		**N**
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		**N**
2.10.6	Coated printed boards		**N**
2.10.6.1	General		**N**
2.10.6.2	Sample preparation and preliminary inspection		**N**
2.10.6.3	Thermal cycling		**N**
2.10.6.4	Thermal ageing (°C) ..... :		**N**
2.10.6.5	Electric strength test		**N**
2.10.6.6	Abrasion resistance test		**N**
	Electric strength test		**N**
2.10.7	Enclosed and sealed parts ..... :	No hermetically sealed components.	**N**
	Temperature $T_1=T_2 = T_{ma} - T_{amb} +10K$ (°C)..... :		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.8	Spacings filled by insulating compound..... :		**N**
	Electric strength test		**N**
2.10.9	Component external terminations		**N**
2.10.10	Insulation with varying dimensions	Insulation kept homogenous.	**N**
3	WIRING, CONNECTIONS AND SUPPLY		**P**
3.1	General		**P**
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring, rated VW-1 or FT-1, min. 60 °C, 30 V. Internal wiring gauge is suitable for current intended to be carried.	**P**
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation.	**P**
3.1.3	Securing of internal wiring	Loosening of terminal connections prevented by soldering and/or screwing the wiring terminations. No excessive strain observed. No damage of conductor insulation to be expected.	**P**
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	**P**
3.1.5	Beads and ceramic insulators	Not used.	**N**
3.1.6	Screws for electrical contact pressure	Not used.	**N**
3.1.7	Insulating materials in electrical connections	Not used.	**N**
3.1.8	Self-tapping and spaced thread screws	No self-tapping screws are used for connection purposes.	**N**
3.1.9	Termination of conductors	All terminations are fixed reliable.	**P**
	10 N pull test	Complied.	**P**
3.1.10	Sleeving on wiring	No sleeving used to provide supplementary insulation.	**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2	Connection to an a.c. mains supply or a d.c. mains supply *Class III equipment. No direct connection to mains supply.*		**N**
3.2.1	Means of connection ..... :		**N**
3.2.1.1	Connection to an a.c. mains supply		**N**
3.2.1.2	Connection to a d.c. mains supply		**N**
3.2.2	Multiple supply connections		**N**
3.2.3	Permanently connected equipment		**N**
	Number of conductors, diameter (mm) of cable and conduits ..... :		**—**
3.2.4	Appliance inlets		**N**
3.2.5	Power supply cords		**N**
3.2.5.1	AC power supply cords		**—**
	Type ..... :		**—**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		**N**
3.2.5.2	DC power supply cords		**N**
3.2.6	Cord anchorages and strain relief		**N**
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		**N**
3.2.8	Cord guards		**N**
	D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		**N**

3.3	Wiring terminals for connection of external conductors		**N**
3.3.1	Wiring terminals		**N**
3.3.2	Connection of non-detachable power supply cords		**N**
3.3.3	Screw terminals		**N**
3.3.4	Conductor sizes to be connected		**N**
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.3.5	Wiring terminal sizes		**N**
	Rated current (A), type and nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminals design		**N**
3.3.7	Grouping of wiring terminals		**N**
3.3.8	Stranded wire		**N**
3.4	Disconnection from the mains supply *Class III equipment. No direct connection to mains supply.*		**N**
3.4.1	General requirement		**N**
3.4.2	Disconnect devices		**N**
3.4.3	Permanently connected equipment		**N**
3.4.4	Parts which remain energized		**N**
3.4.5	Switches in flexible cords		**N**
3.4.6	Single-phase equipment and d.c. equipment		**N**
3.4.7	Three-phase equipment		**N**
3.4.8	Switches as disconnect devices		**N**
3.4.9	Plugs as disconnect devices		**N**
3.4.10	Interconnected equipment		**N**
3.4.11	Multiple power sources		**N**
3.5	Interconnection of equipment		**P**
3.5.1	General requirements	See below.	**P**
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits of SELV through sec o/p cable. No ELV interconnection circuits.	**P**
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	**N**
4	PHYSICAL REQUIREMENTS		**P**
4.1	Stability		**P**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Angle of 10°	EUT is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal position.	**P**
	Test: force (N) ..... :	Equipment is not a floorstanding unit.	**N**
4.2	Mechanical strength *The unit is supplied from DC connector that provides SELV. Only SELV inside the unit.*		**N**
4.2.1	General		**N**
4.2.2	Steady force test, 10 N		**N**
4.2.3	Steady force test, 30 N		**N**
4.2.4	Steady force test, 250 N		**N**
4.2.5	Impact test		**N**
	Fall test		**N**
	Swing test		**N**
4.2.6	Drop test		**N**
4.2.7	Stress relief test		**N**
4.2.8	Cathode ray tubes		**N**
	Picture tube separately certified ..... :		**N**
4.2.9	High pressure lamps		**N**
4.2.10	Wall or ceiling mounted equipment; force (N) .... :		**N**
4.3	Design and construction		**P**
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	**P**
4.3.2	Handles and manual controls; force (N) ..... :	No handles or controls provided.	**N**
4.3.3	Adjustable controls	No control device.	**N**
4.3.4	Securing of parts	Mechanical fixings in such a way designed that they will withstand mechanical stress occurring in normal use.	**P**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.5	Connection of plugs and sockets	Mismatching of connectors, plugs or sockets either not possible or will not result in hazard.	**P**
4.3.6	Direct plug-in equipment	Not direct plug in type.	**N**
	Dimensions (mm) of mains plug for direct plug-in ..... :		**—**
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :		**N**
4.3.7	Heating elements in earthed equipment	No heating element.	**N**
4.3.8	Batteries	For RTC battery: Prevent from force charging by internal circuit.	**P**
4.3.9	Oil and grease	Insulation is intended use not considered to be exposed to oil or grease.	**P**
4.3.10	Dust, powders, liquids and gases	The equipment in intended use not considered to be exposed to dust, powders, liquids and gases.	**P**
4.3.11	Containers for liquids or gases	No container for liquid or gas provided.	**N**
4.3.12	Flammable liquids ..... :	No flammable liquids provided.	**N**
	Quantity of liquid (l) ..... :	Dto.	**N**
	Flash point (°C) ..... :	Dto.	**N**
4.3.13	Radiation; type of radiation ..... :	No ionizing radiation or laser present.	**N**
4.3.13.1	General		**N**
4.3.13.2	Ionizing radiation		**N**
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		**N**
4.3.13.4	Human exposure to ultraviolet (UV) radiation .... :		**N**
	Part, property, retention after test, flammability classification ..... :		—

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.13.5	Laser (including LEDs)	No radiation.	**N**
	Laser class ..... :		—
4.3.13.6	Other types ..... :		**N**
4.4	Protection against hazardous moving parts *No hazardous moving part.*		**N**
4.4.1	General		**N**
4.4.2	Protection in operator access areas		**N**
4.4.3	Protection in restricted access locations		**N**
4.4.4	Protection in service access areas		**N**
4.5	Thermal requirements		**P**
4.5.1	Maximum temperatures	See appended table 4.5.1.	**P**
	Normal load condition per Annex L ..... :	Refer to subclause 1.6.2.	**P**
4.5.2	Resistance to abnormal heat		**N**
4.6	Openings in enclosures		**N**
4.6.1	Top and side openings	No openings.	**N**
	Dimensions (mm) ..... :		**—**
4.6.2	Bottoms of fire enclosures	No openings.	**N**
	Construction of the bottom..... :		**—**
4.6.3	Doors or covers in fire enclosures		**N**
4.6.4	Openings in transportable equipment		**N**
4.6.5	Adhesives for constructional purposes		**N**
	Conditioning temperature (°C)/time (weeks) ..... :		—
4.7	Resistance to fire		**P**
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	**P**
	Method 1, selection and application of components wiring and materials	Method 1 used.	**P**
	Method 2, application of all of simulated fault condition tests		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.2	Conditions for a fire enclosure	See below.	**P**
4.7.2.1	Parts requiring a fire enclosure	See below.	**N**
4.7.2.2	Parts not requiring a fire enclosure	The appliance with: Supply of components in the secondary circuit by a limited power source adaptor. The components are mounted on PCB material of flammability rating V-1 min., the fire enclosure construction is not required.	**P**
4.7.3	Materials		**P**
4.7.3.1	General	PCB rated accordingly. For details see table 1.5.1.	**P**
4.7.3.2	Materials for fire enclosures	Metallic enclosure used.	**P**
4.7.3.3	Materials for components and other parts outside fire enclosures	Decorative parts and parts outside of the fire enclosure are made of minimum HB material.	**P**
4.7.3.4	Materials for components and other parts inside fire enclosures	Except for small parts, V-2 min.	**P**
4.7.3.5	Materials for air filter assemblies	No air filters provided.	**N**
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	**N**

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		**P**
5.1	Touch current and protective conductor current		**N**
5.1.1	General		**N**
5.1.2	Equipment under test (EUT)		**N**
5.1.3	Test circuit		**N**
5.1.4	Application of measuring instrument		**N**
5.1.5	Test procedure		**N**
5.1.6	Test measurements		**N**
	Test voltage (V) ..... :		**—**
	Measured touch current (mA) ..... :		**—**
	Max. allowed touch current (mA) ..... :		**—**
	Measured protective conductor current (mA) ..... :		**—**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Max. allowed protective conductor current (mA) :		—
5.1.7	Equipment with touch current exceeding 3.5 mA ..... :		**N**
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		**N**
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		**N**
	Test voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks ..... :		**N**
5.2	Electric strength *Class III equipment.*		**N**
5.2.1	General		**N**
5.2.2	Test procedure		**N**
5.3	Abnormal operating and fault conditions		**P**
5.3.1	Protection against overload and abnormal operation	See below.	**P**
5.3.2	Motors	No motor provided.	**N**
5.3.3	Transformers	No safety isolation transformer in this equipment.	**N**
5.3.4	Functional insulation ..... :	Method c) considered. Due to - all components are mounted on PCB of flammability V-1 - no risk of electrical shock no test had been performed.	**P**
5.3.5	Electromechanical components	No electromechanical component provided.	**N**
5.3.6	Simulation of faults		**N**
5.3.7	Unattended equipment		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.3.8	Compliance criteria for abnormal operating and fault conditions		**N**
6	CONNECTION TO TELECOMMUNICATION NETWORKS		**N**
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		**N**
6.1.1	Protection from hazardous voltages		**N**
6.1.2	Separation of the telecommunication network from earth		**N**
6.1.2.1	Requirements		**N**
	Test voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions..... :		**N**
6.2	Protection of equipment users from overvoltages on telecommunication networks		**N**
6.2.1	Separation requirements		**N**
6.2.2	Electric strength test procedure		**N**
6.2.2.1	Impulse test		**N**
6.2.2.2	Steady-state test		**N**
6.2.2.3	Compliance criteria		**N**
6.3	Protection of the telecommunication wiring system from overheating		**N**
	Max. output current (A)..... :		—
	Current limiting method..... :		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		**N**
7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		**N**
7.2	Protection of equipment users from overvoltages on the cable distribution system		**N**
7.3	Insulation between primary circuits and cable distribution systems		**N**
7.3.1	General		**N**
7.3.2	Voltage surge test		**N**
7.3.3	Impulse test		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
A	Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE		**N**
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		**N**
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		**N**
A.1.3	Mounting of samples..... :		**N**
A.1.4	Test flame		**N**
A.1.5	Test procedure		**N**
A.1.6	Compliance criteria		**N**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		**N**
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples		**N**
A.2.3	Mounting of samples		**N**
A.2.4	Test flame		**N**
A.2.5	Test procedure		**N**
A.2.6	Compliance criteria		**N**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		**N**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		**N**
A.3.1	Mounting of samples		**N**
A.3.2	Test procedure		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
A.3.3	Compliance criterion		**N**
B	Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		**N**
B.1	General requirements		**N**
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		**N**
B.3	Maximum temperatures		**N**
B.4	Running overload test		**N**
B.5	Locked-rotor overload test		**N**
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		**N**
B.7	Locked-rotor overload test for d.c. motors in secondary circuits *Approved DC fans used.*		**N**
B.7.1	Test procedure		**N**
B.7.2	Alternative test procedure; test time (h)..... :		**N**
B.7.3	Electric strength test		**N**
B.8	Test for motors with capacitors		**N**
B.9	Test for three-phase motors		**N**
B.10	Test for series motors		**N**
	Operating voltage (V) ..... :		—
C	Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)		**N**
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
C.1	Overload test		**N**
C.2	Insulation		**N**
	Protection from displacement of windings ..... :		**N**
D	Annex D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		**N**
D.1	Measuring instrument	Fig. D.1 used.	**N**
D.2	Alternative measuring instrument	See annex D.1.	**N**
E	Annex E, TEMPERATURE RISE OF A WINDING		**N**
F	Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		**N**
G	Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES *The alternative method is not considered.*		**N**
G.1	Summary of the procedure for determining minimum clearances		**N**
G.2	Determination of mains transient voltage (V) ..... :		**N**
G.2.1	AC mains supply		**N**
G.2.2	DC mains supply		**N**
G.3	Determination of telecommunication network transient voltage (V)..... :		**N**
G.4	Determination of required withstand voltage (V) . :		**N**
G.5	Measurement of transient levels (V)..... :		**N**
G.6	Determination of minimum clearances ..... :		**N**
H	Annex H, IONIZING RADIATION (see 4.3.13)		**N**
J	Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		**P**
	Metal used ..... :	Compliance checked.	—
K	Annex K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		**N**
K.1	Making and breaking capacity		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
K.2	Thermostat reliability; operating voltage (V) ..... :		**N**
K.3	Thermostat endurance test; operating voltage (V) ..... :		**N**
K.4	Temperature limiter endurance; operating voltage (V) ..... :		**N**
K.5	Thermal cut-out reliability		**N**
K.6	Stability of operation		**N**
L	Annex L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		**P**
L.1	Typewriters		**N**
L.2	Adding machines and cash registers		**N**
L.3	Erasers		**N**
L.4	Pencil sharpeners		**N**
L.5	Duplicators and copy machines		**N**
L.6	Motor-operated files		**N**
L.7	Other business equipment	Considered	**P**
M	Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		**N**
M.1	Introduction		**N**
M.2	Method A		**N**
M.3	Method B		**N**
M.3.1	Ringing signal		**N**
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		**N**
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		**N**
M.3.2.2	Tripping device		**N**
M.3.2.3	Monitoring voltage (V) ..... :		**N**

IEC 60950-1/EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
N	Annex N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		**N**
N.1	ITU-T impulse test generators		**N**
N.2	IEC 60065 impulse test generator		**N**
P	Annex P, NORMATIVE REFERENCES		**P**
Q	Annex Q, BIBLIOGRAPHY		**N**
R	Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		**N**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		**N**
R.2	Reduced clearances (see 2.10.3)		**N**
S	Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		**N**
S.1	Test equipment		**N**
S.2	Test procedure		**N**
S.3	Examples of waveforms during impulse testing		**N**
T	Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		**N**
			—
U	Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		**N**
			—
V	Annex V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		**N**
V.1	Introduction	See below.	**N**
V.2	TN power systems		**N**
V.3	TT power systems	Not considered.	**N**
V.4	IT power systems	Not considered.	**N**

1.5.1	TABLE: list of critical components				**P**
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
External Power Supply Adapter	--	--	O/P: 9-30Vdc, 5-2.7A. LPS. 50 degree C.	IEC 60950:1999 or IEC 60950-1:2001 or EN 60950:2000 or EN 60950-1:2001	CB or TUV or ITS or VDE
Enclosure (Metallic)	--	--	1.5mm thick minimum	--	--
H.D.D. (Optional)	--	--	5/12Vdc, 1.5A maximum.	IEC 60950:1999 or IEC 60950-1:2001 or EN 60950:2000 or EN 60950-1:2001	CB or TUV or ITS or VDE
R.T.C. Battery	Hitachi Maxell Ltd	CR2032	Maximum abnormal charge current 10 mA	--	UL
PCB	--	--	V-1 minimum, 105°C minimum	--	UL
Note: [1]) an asterisk indicates a mark which assures the agreed level of surveillance.					

1.6.2	TABLE: electrical data (in normal conditions)					**P**
fuse #	Irated (A)	U (V)	P (W)	I (mA)	Ifuse (mA)	condition/status
--	5	9	40.5	4500	--	Maximum normal load
--	2.7	30	39.0	1300	--	Maximum normal load

2.1.1.5	TABLE: max. V, A, VA test				**N**
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	

2.1.1.7	TABLE: discharge test				**N**
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
Overall capacity :					
Discharge resistor :					
Note:					

2.2.2	TABLE: voltage measurement under normal condition				**N**
Transformer	Location	max. Voltage		Voltage Limitation Component	
		V peak	V d.c.		

2.2.3	TABLE: voltage measurement under abnormal condition	**N**
Location	Voltage measured (V)	Comments

2.6.3.4	TABLE: ground continue test	**N**
Method I – EUT current rating of 16A or less		
Location	Resistant measured (mΩ)	Comments

2.10.2	Table: working voltage measurement		**N**
Location	RMS voltage (V)	Peak voltage (V)	Comments

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements	**N**

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)
Note:						

2.10.5	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)

4.5	TABLE: maximum temperatures					**P**
	test voltage (V) ..... :	9Vdc	30Vdc	9Vdc	30Vdc	—
	t_{amb1} (°C) ..... :					—
	t_{amb2} (°C) ..... :					—

maximum temperature T of part/at::	T (°C)				allowed T_{max} (°C)
	Measured		Shifted		
Ambient	25.7	25.7	50.0	50.0	--
PCB under U19	69.7	71.6	94.0	95.9	105
PCB under U4	56.7	58.5	81.0	82.8	105
PCB under U18	67.2	70.3	91.5	94.6	105
PCB under U7	60.8	64.2	85.1	88.5	105
PCB under U2	61.4	64.2	85.7	88.5	105
L1 coil	54.9	56.5	79.2	80.8	105
C64 body	51.3	52.9	75.6	77.2	105
L21 coil	56.0	71.0	80.3	95.3	105
L22 coil	55.4	70.3	79.7	94.6	105
L23 coil	53.5	58.6	77.8	82.9	105
C20 body	48.3	51.7	72.6	76.0	105
PCB under D10	44.8	45.1	69.1	69.4	105
PCB under RTC battery	64.1	67.0	88.4	91.3	105
H.D.D	57.0	58.7	81.3	83.0	--
Metallic enclosure outside	41.6	43.1	65.9	67.4	70

temperature T of winding:	R_1 (Ω)	R_2 (Ω)	T (°C)	allowed T_{max} (°C)	insulation class

Comments:

1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at a voltage as described above.

4.5.2	TABLE: ball pressure test of thermoplastic parts		**N**
	allowed impression diameter (mm) .....:	≤ 2 mm	—

part	test temperature (°C)	impression diameter (mm)

4.6.1, 4.6.2	Table: enclosure openings	**N**
Location	Size (mm)	Comments

4.7	TABLE: resistance to fire			**N**
part	manufacturer of material	type of material	thickness (mm)	flammability class

5.1.6	TABLE: touch current measurement			**N**
Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	comments
Input voltage : Input frequency: Overall capacity:				

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests	**N**

test voltage applied between:	test voltage (V)	breakdown Yes / No
supplementary information		

5.3	TABLE: fault condition tests		**P**
	ambient temperature (°C) .....:	25°C, if no else specified	—
	model/type of power supply .....:		—
	manufacturer of power supply .....:		—
	rated markings of power supply .....:		—

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
01	D27(Pin2-3)	s-c	2h	--	--	Reverse current 3.07 mA. No hazards.
supplementary information						
1. In fault column, s-c=short-circuited, o-c=open-circuited, o-l=overload						

A.6.5	TABLE: flammability test for classifying materials V-0, V-1 or V-2	**N**
sample No. / ref.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
1/A		
2/A		
3/A		
4/A		
5/A		
6/B		
7/B		
8/B		
9/B		
10/B		
supplementary information:		
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:		
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.		
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.		

A.6.6	TABLE: flammability re-test for classifying materials V-0, V-1 or V-2	**N**
sample No.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
11		
12		
13		
14		
15		
supplementary information:		
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:		

A.7.4, A.7.5, A.7.6 and A.7.7	TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF	**N**

sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
1/A				
2/A				
3/A				
4/A				
5/A				
6/B				
7/B				
8/B				
9/B				
10/B				

supplementary information:
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.

A.7.8	TABLE: flammability re-test for classifying foam materials HF-1 or HF-2	**N**

sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment
11				
12				
13				
14				
15				

supplementary information:

A.7.9	TABLE: flammability re-test for classifying foam materials HBF			**N**
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
11				
12				
13				
14				
15				
supplementary information:				

A.8.5	TABLE: flammability test for classifying materials HB	**N**
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)
1		
2		
3		
supplementary information:		

A.8.6	TABLE: flammability re-test for classifying materials HB	**N**
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)
4		
5		
6		
supplementary information:		

A.9.6	TABLE: flammability test for classifying materials 5V				**N**
sample	test bars		test plaques		
No./ref.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
1/A			A		
2/A			B		
3/A			C		

sample No./ref.	test bars		test plaques		
	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
4/A			D		
5/A			—	—	—
6/B			A		
7/B			B		
8/B			C		
9/B			D		
10/B			—	—	—
supplementary information:					
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.					
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.					

A.9.7	TABLE: flammability re-test for classifying materials 5V	**N**

sample No.	test bars		test plaques		
	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
11			A		
12			B		
13			C		
14			D		
15			—	—	—
supplementary information:					

APPENDIX	CENELEC common modifications (Group differences), Special national conditions, A-deviations and Other requirements according to CB Bulletin No. 103A, July 2002 EN 60950-1: 2001 (BS EN 60950-1:2001, SS-EN 60950-1) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS C=CENELEC common modification, S=Special national condition, A=A-deviations, O=Other requirements AT=Austria, CH=Switzerland, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, GB=United Kingdom, IE=Ireland, NO=Norway, SE=Sweden. P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.			
1.2.4.1 S	(DK) In Denmark, certain types of Class I appliances (see 3.2.1.1) maybe provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Class III equipment	**N**
1.5.1 C	Delete NOTE 2.	Deleted.	**N**
1.5.1 A	(SE) The following is added: Sweden (Ordinance (1990:944)) NOTE- In Sweden, switches containing mercury such as thermostates, relays and level controllers are not allowed.		**N**
1.5.8 C	Delete NOTE 2.	Deleted.	**N**
1.5.8 S	(NO) In Norway, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230V).	Class III equipment	**N**
1.6.1 C	Delete NOTE.	Deleted.	**N**
1.7.2 C	Delete NOTE 4.	Deleted.	**N**
1.7.2 A	(DK) Denmark (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is 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 equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning".	Class III equipment.	**N**

1.7.2 S	(FI) In Finland, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socked-outlet. The marking text in the applicable countries shall be as follows: “Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan“	Class III equipment.	**N**
1.7.2 S	(NO) In Norway, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: “Apparatet må tilkoples jordet stikkontakt”	Class III equipment.	**N**
1.7.2 S	(SE) The following text is added: NOTE- In Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be in Swedish and as follows: “Apparaten skall anslutas till jordat uttag”	Class III equipment.	**N**
1.7.5 S	(DK) In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	No outlets.	**N**
1.7.5 O	(DK) In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.		**N**

	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 13A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		
1.7.5 A	(DK) Denmark (Heavy Current Regulations) CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	No outlets.	**N**
1.7.12 C	Delete NOTE 2.	Deleted.	**N**
1.7.12 A	(DE) Germany (Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}] of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, 4th paragraph, item 2) Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in German language. NOTE Of this requirement, rules for use even only by service personnel are not exempted.	Not technical labour equipment.	**N**
2.1 C	Delete NOTE.	Deleted.	**N**
2.2.3 C	Delete NOTE.	Deleted.	**N**
2.2.4 C	Delete NOTE.	Deleted.	**N**
2.2.4 S	(NO) In Norway, requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Must be evaluated during national approval.	**N**
2.3.2 C	Delete NOTE 2, NOTE 7 & NOTE 8.	Deleted.	**N**
2.3.2 S	(NO) In Norway, requirements according to this annex, 6.1.2.1 apply.	Must be evaluated during national approval.	**N**
2.3.3 C	Delete NOTE 1 & NOTE 2.	Deleted.	**N**

2.3.3 S	(NO) In Norway, requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Must be evaluated during national approval.	**N**
2.3.4 C	Delete NOTE 2 & NOTE 3.	Deleted.	**N**
2.3.4 S	(NO) In Norway, requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	Must be evaluated during national approval.	**N**
2.6.3.3 S	(GB) In the United Kingdom, the current rating of the circuit shall be taken 13A, not 16A.		**N**
2.7.1 C	Delete NOTE.	Deleted.	**N**
2.7.1 C	Replace the sub-clause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided with protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PULGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Class III equipment	**N**
2.7.1 S	(GB) In the United Kingdom, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PULG-IN EQUIPMENT, protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Equipment is not direct plug-in type.	**N**
2.7.2 C	This subclause has been declared 'void'.	Replaced.	**N**
2.10.2 C	Replace in the first line "(see also 1.4.7)"	Replaced.	**N**

	by ”(see also 1.4.8)”		
2.10.3.1 C	Delete NOTE 4.	Deleted.	**N**
2.10.3.1 S	(NO) In Norway, due to the IT power distribution system used (see annex V, Figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230V in case of a single earth fault.	Class III equipment.	**N**
3.2.1.1 C	Delete NOTE.	Deleted.	**N**
3.2.1.1 S	(GB) In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a ’standard plug’ in accordance with Statutory Instrument 1768:1994 -The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE ‘Standard plug’ is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Class III equipment	**N**
3.2.1.1 S	(DK) In Denmark, supply cords of single-phase equipment having a rated current not exceeding 10A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-DI. 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 107-2-D1 or EN 60309-2.	Class III equipment	**N**
3.2.3 C	Delete NOTE 1 & NOTE 2.	Deleted.	**N**
	In Table 3A, delete the conduit sizes in parentheses.	Deleted.	**N**
3.2.5.1 C	Delete NOTE 2.	Deleted.	**N**
3.2.5.1 C	Replace “60245 IEC 53” by “H05 RR-F” “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”	Replaced.	**N**

	"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2" In table 3B, replace the first four lines by the following: Up to and including 6 Over 6 up to and including 10 Over 10 up to and including 16 In the conditions applicable to table 3B, delete the words "in some countries" in condition [1)] In NOTE 1, delete the second sentence.		
3.2.5.1 S	(GB) In the United Kingdom, a power supply cord with conductor of 1,25mm^2 is allowed for equipment with a rated current over 10A and up to and including 13A.	Class III equipment	**N**
3.3.4 C	In table 3D, delete the fourth line – conductor sizes for 10 to 13A, and replace with the following: Over 10 up to and including 16 Delete the fifth line – conductor sizes for 13 to 16A.	Deleted.	**N**
3.3.4 S	(GB) In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10A up to and including 13A is: -1,25mm^2 to 1,5mm^2 nominal cross-sectional area.	Class III equipment	**N**
4.3.6 C	Delete NOTE 1 & NOTE 2.	Deleted.	**N**
4.3.6 S	(GB) In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125°C.	Equipment is not direct plug-in type.	**N**
4.3.13.6 C	Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0Hz to 300GHz. Standards taking into account this Recommendation are currently under development.	Added.	**N**

4.7.2.2 C	Delete NOTE.	Deleted.	**N**
4.7.3.1 C	Delete NOTE 2.	Deleted.	**N**
6.1.2.1 C	Delete NOTE.	Deleted.	**N**
6.1.2.1 S	(FI, NO) Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either -two layers of thin sheet material, each of which shall pass the electric strength test below, or -one layer having a distance through insulation of at least 0,4mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCE do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition -passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5kV), and -is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994. May bridge this insulation under the following conditions: -the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5kV defined in EN 60950:2000, 6.2.2.1; -the additional testing shall be performed on all the test specimens as described in EN 132400; -the impulse test of 2,5kV is to be performed before the endurance test in EN 132400, in the sequence of test as described in EN 132400.	Class III equipment	**N**
6.1.2.1 S	(SE) The following text is added:	Class III equipment	**N**

	NOTE- In Sweden the following text is added between the first and the second paragraph: If the insulation is solid, including insulation forming part of a component, it shall at least consist of either: - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0.4mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition: - passes the tests and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1.5kV multiplied by 1.6 (the electric strength test of IEC 60950-1, 2.10.7 shall be performed using 1.5kV); and - is subjected to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5kV. It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2. A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14:1993, which in addition to the Y3 testing, is tested with an Impulse test of 2.5kV defined in IEC 60950-1, subclause 6.2.2.1. - the additional testing shall be performed on all the test sepcimens as described in IEC 60384-14. - the Impulse test of 2.5kV is to be performed before the Endurance Test in IEC 60384-14, in the sequence of test as described in IEC 60384-14		
6.1.2.2 C	Delete NOTE.	Deleted.	**N**
6.1.2.2 S	(FI, NO, SE) The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT	Class III equipment	**N**

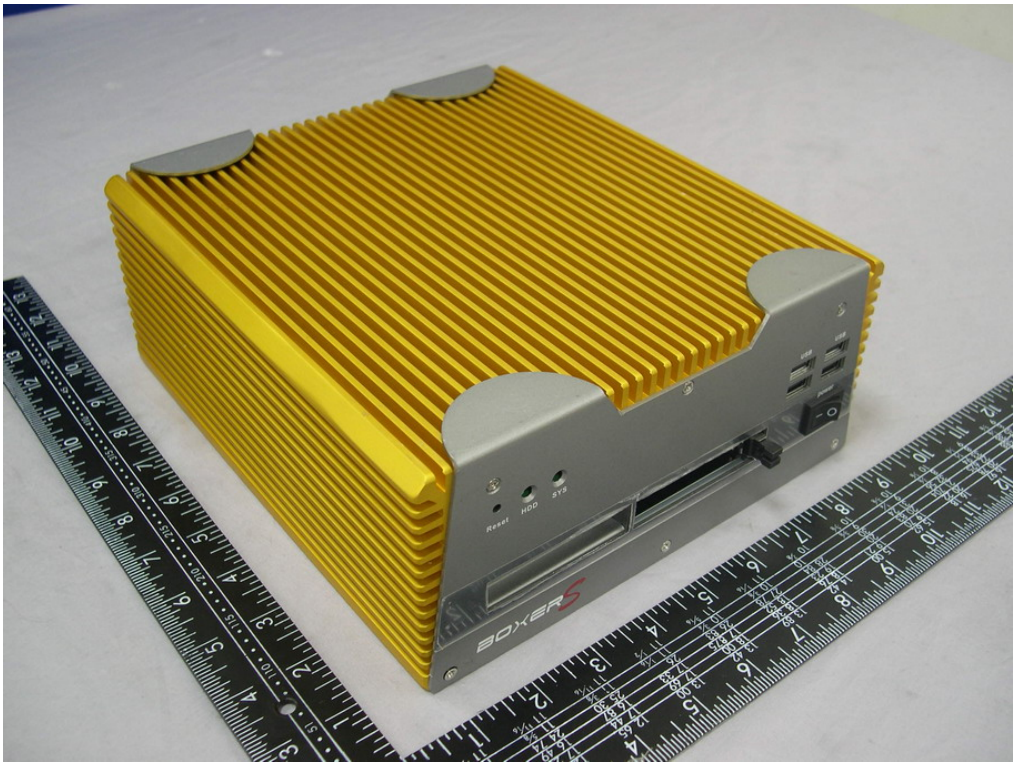
	and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and provided with instructions for the installation of that conductor by a service person.		
6.2.2 C	Delete NOTE.	Deleted.	**N**
6.2.2.1 C	Delete NOTE 2.	Deleted.	**N**
6.2.2.2 C	Delete NOTE.	Deleted.	**N**
7 C	Delete NOTE 4.	Deleted.	**N**
7.1 C	Delete NOTE.	Deleted.	**N**
7.1 S	(FI, NO, SE) Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		**N**
G2.1 C	Delete NOTE 1 & NOTE 2.	Deleted.	**N**
G.2.1 S	(NO) In Norway, due to the IT power distribution system used (see annex V, Figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230V in case of a single earth fault.	Class III equipment	**N**
Annex H C	Delete NOTE 2.	Deleted.	**N**
Annex H C	Replace the last paragraph of this annex by: At any point 10cm from the surface of the OPERATOR ACCESSS AREA, the dose rate shall not exceed 1µSv/h (0,1mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Eurat om. Delete Note 2.	Replaced.	**N**
Annex H A	(DE) Germany (Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4) a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with clause 1 is not required by those who operate an X-ray emission source on which the electron	No CRT.	**N**

	acceleration voltage does not exceed 20kV if 1) the local dose rate at distance of 0,1m from the surface does not exceed 1µSv/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 20kV 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-rays are generated, ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded , and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. 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 30kV 1) if the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device, and 3) it is adequately indicated on the X-ray emission source that the X-rays generate are adequately screened by the intrinsically safe CRT.		
Annex P C	Replace the text of this annex by: See annex ZA.	Replaced.	**P**
Annex Q C	Replace the title of IEC 61032 by “Protection of persons and equipment by enclosures – Probes for verification”.	Replaced.	**P**

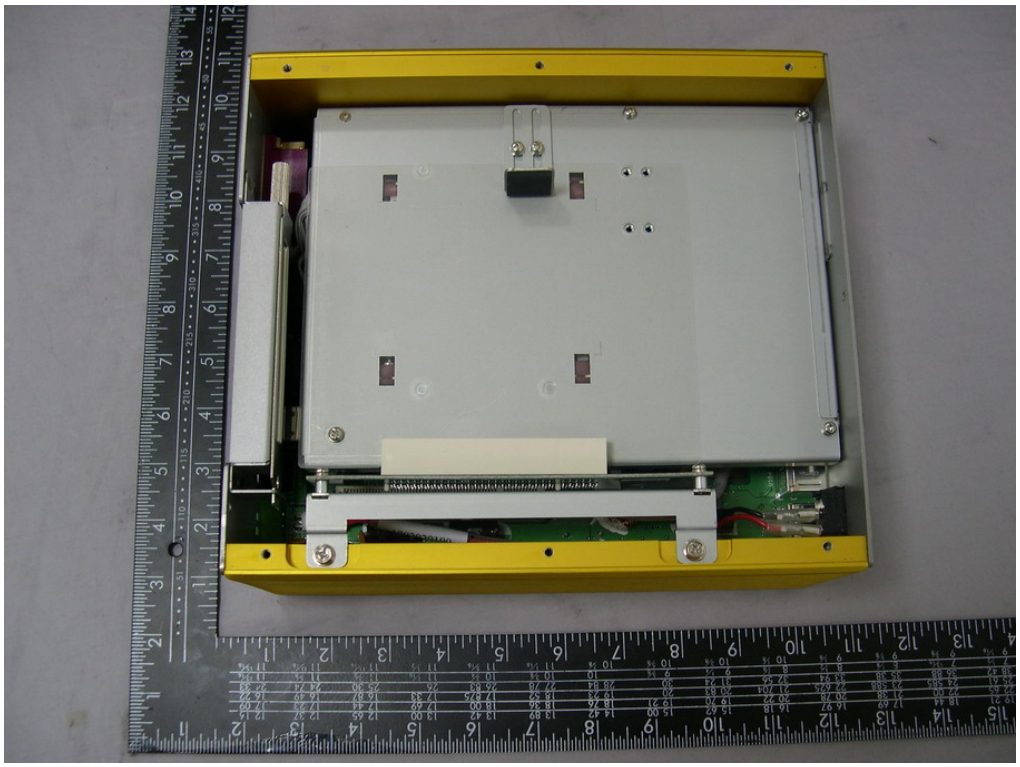
	Add the following notes for the standards indicated: IEC 60127 — NOTE: Harmonized as EN 60127 series (not modified) IEC 60269-2-1 — NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 — NOTE: Harmonized as EN 60529:1991 (not modified) IEC 61032 — NOTE: Harmonized as EN 61032:1998 (not modified) IEC 61140 — NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 — NOTE In Europe, the suggested document is EN 50083-1	Added.	**N**
Annex ZA C	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies. — IEC 60050-151 — IEC 60050-195 EN 60065:1998 + corr. June 1999 — IEC 60065 (mod):1998 EN 60073:1996 — IEC 60073:1996 HD 566 S1:1990 — IEC 60085:1984 HD 214 S2:1980 — IEC 60112:1979 HD 611.4.1.S1:1992 — IEC 60216-4-1:1990 HD 21 [1)] Series — IEC 60227 (mod) Series HD 22 [2)] Series — IEC 60245 (mod) Series EN 60309 Series — IEC 60309 Series EN 60317-43:1997 — IEC 60317-43:1997 EN 60320 Series — IEC 60320 (mod) Series		**P**

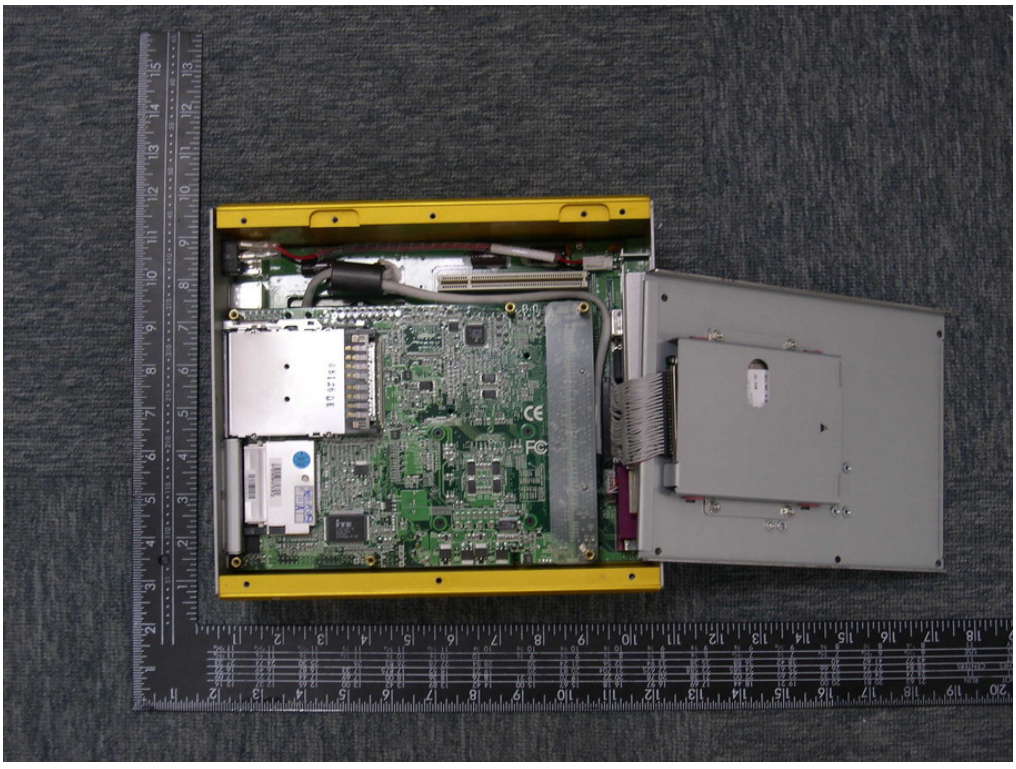
HD 384.3 S2:1995	IEC 60364-3 (mod):1993
HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 [3]
EN 132400:1994 [4] + A2:1998 + A3:1998 + A4:2001	IEC 60384-14:1993
EN 60417-1	IEC 60417-1
HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992
EN 60695-2-2:1994	IEC 60695-2-2:1991
EN 60695-2-11:2001	IEC 60695-2-11:2000
—	IEC 60695-2-20:1995
—	IEC 60695-10-2:1995
—	IEC 60695-11-3:2000
—	IEC 60695-11-4:2000
EN 60695-11-10:1999	IEC 60695-11-10:1999
EN 60695-11-20:1999	IEC 60695-11-20:1999
EN 60730-1:2000	IEC 60730-1:1999 (mod)
EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993
EN 60825-2:2000	IEC 60825-2:2000
—	IEC 60825-9:1999
EN 60851-3:1996	IEC 60851-3:1996
EN 60851-5:1996	IEC 60825-5:1996
EN 60851-6:1996	IEC 60851-6:1996
—	IEC 60885-1:1987
EN 60990:1999	IEC 60990:1999
—	IEC 61058-1:2000
EN 61965:2001	IEC 61965:2000
EN ISO 178:1996	ISO 178:1993
EN ISO 179 Series	ISO 179 Series
EN ISO 180:2000	ISO 180:1993
—	ISO 261:1998
—	ISO 262:1998
EN ISO 527 Series	ISO 527 Series
—	ISO 3864:1984
EN ISO 4892 Series	ISO 4892 Series
—	ISO 7000:1989
EN ISO 8256:1996	ISO 8256:1990

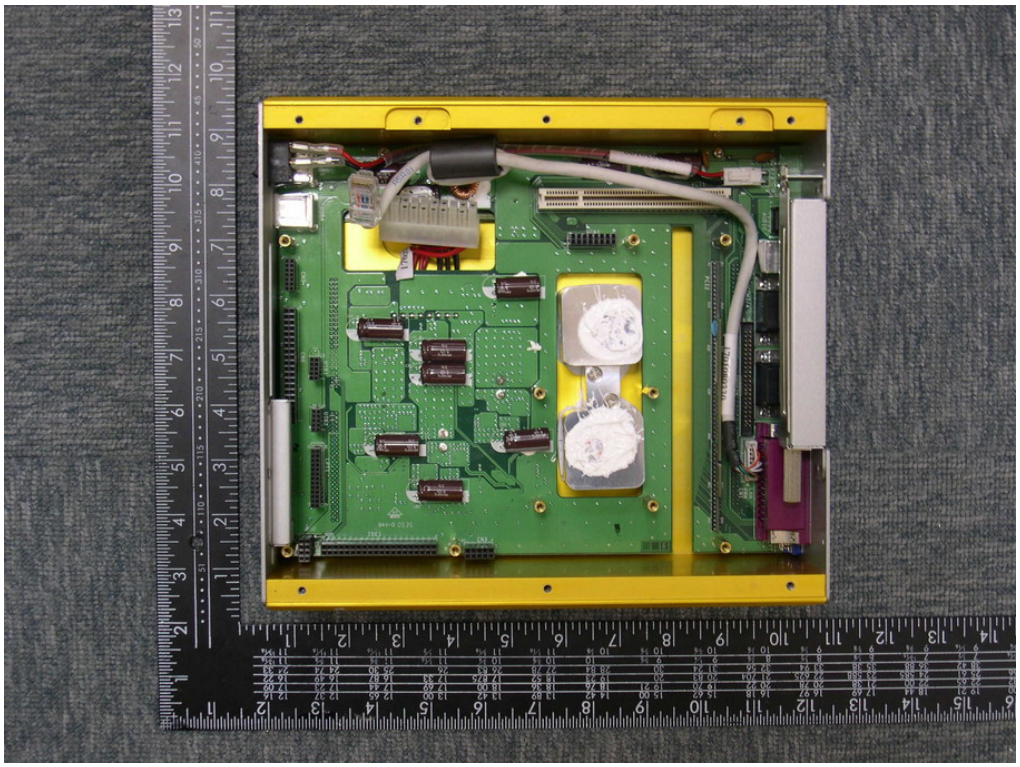
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

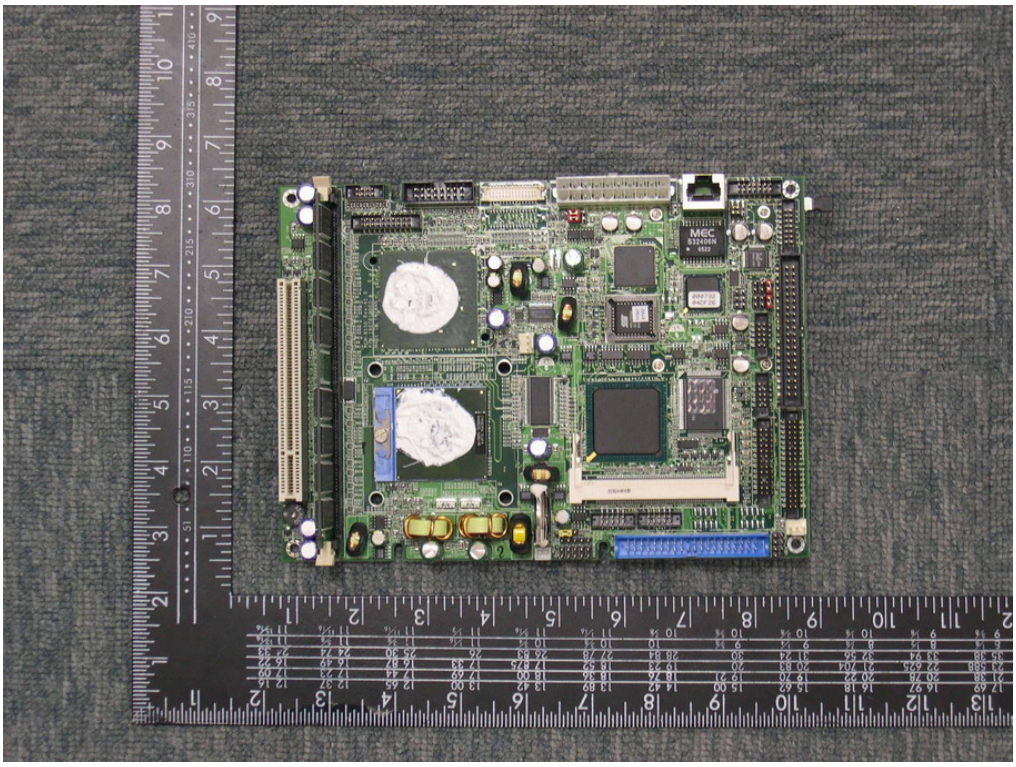

Reset
HDD
SYS
BOXER

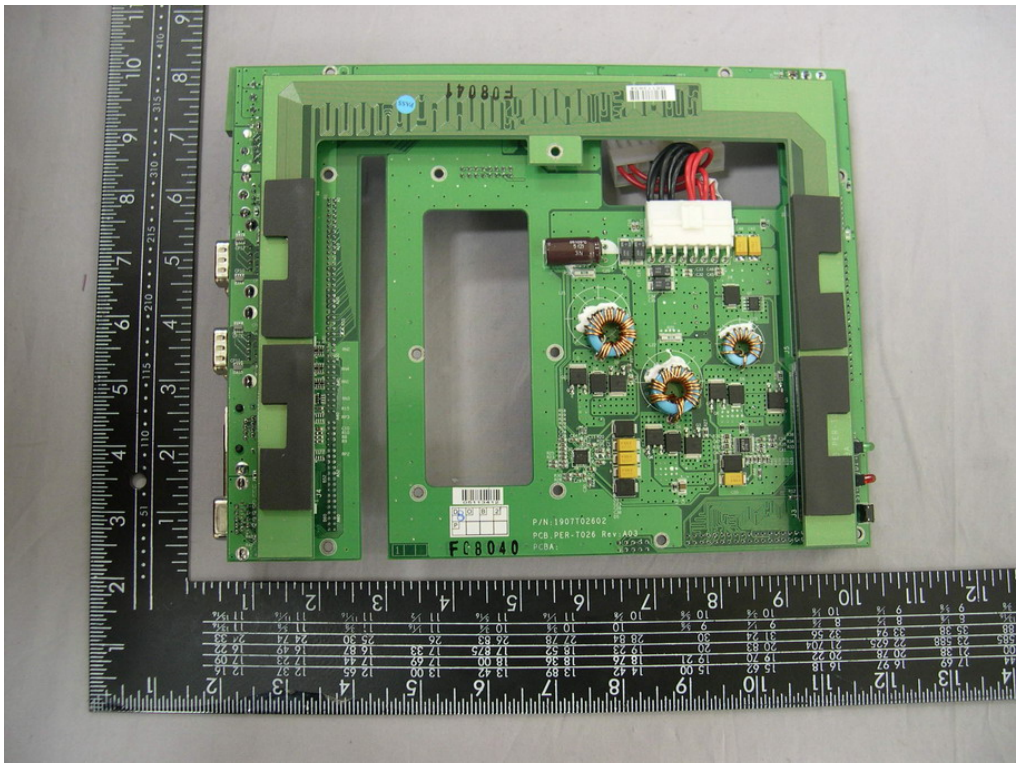

BOXER







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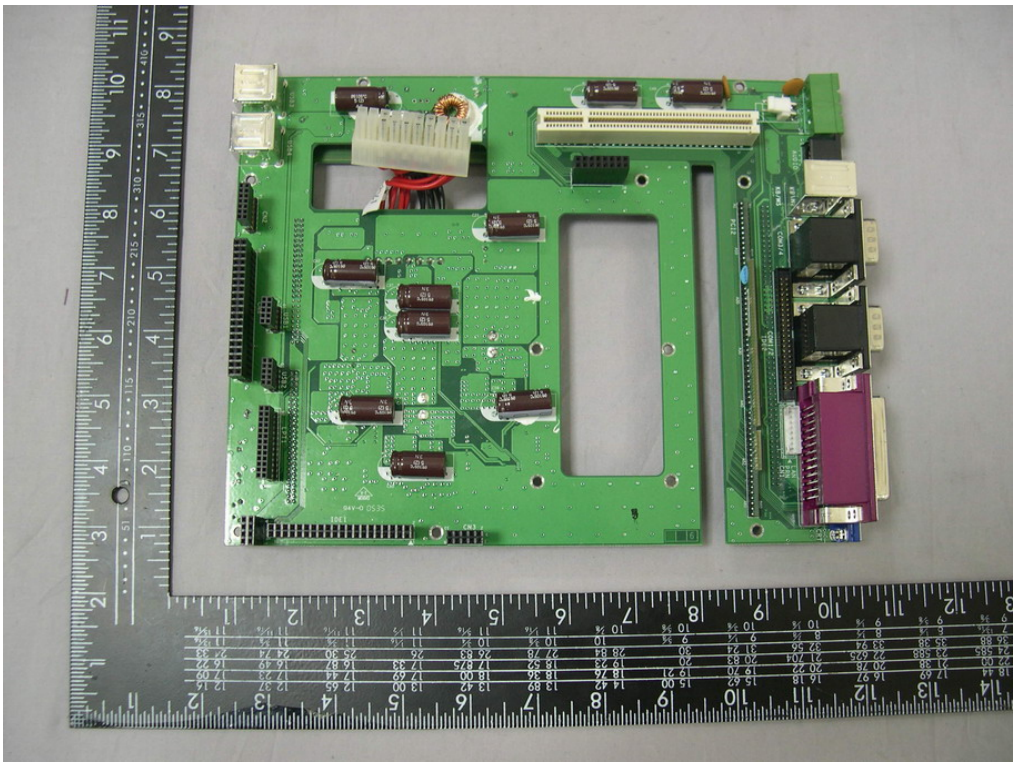

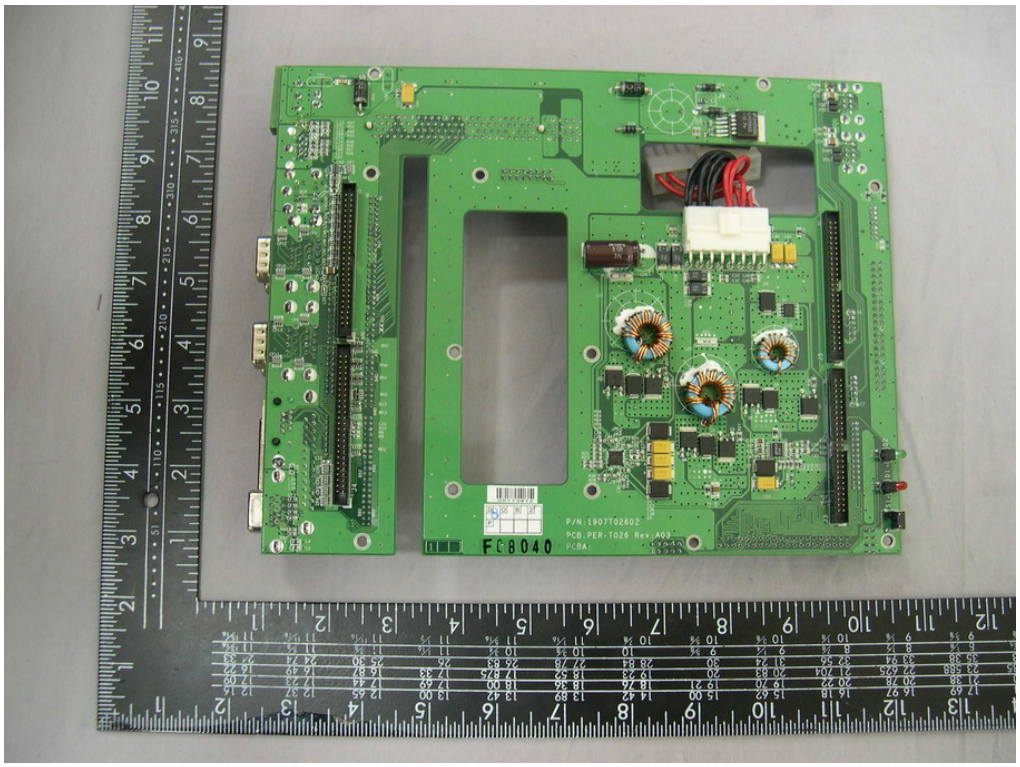
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