Test Report No.:	**LD910917L02-01**
Client	
Name :	**ADVANTECH CO., LTD**
Address :	No. 1 Alley 20, Lane 26, Rueiguang Road, Neihu District Taipei 114, Taiwan, R.O.C.
Test Item :	**Industrial Computer**
Identification :	**ACP-1120XX-XXD (X can be any alphanumeric character or blank)**
Testing laboratory	
Name :	Advance Data Technology Corporation
Address :	No. 46, Lane 504, Chung Hsiao Road, Lin Kou Hsiang, Taipei, R.O.C.
Test specification	
Standard :	**EN 60950, 3rd Edition:2000**
Test Result :	The test item passed.
Tested By :	Signature: Ted Wu Date: December 10, 2002 Supervisor
Approved By:	Signature: Angus Hsu Date: December 10, 2002 Manager

Other Aspects:

The completed test report includes the following documents:

■ EN 60950 report (32 pages)

■ CNLA 0528 ILAC MRA

TEST REPORT

EN 60950

Safety of information technology equipment including electrical business equipment

Report

Reference No. ..... : LD910917L02-01

Compiled by (+ signature) ..... : See cover sheet .....

Approved by (+ signature) ..... : See cover sheet .....

Date of issue ..... : December 10, 2002

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

Testing laboratory

Name ..... : Advance Data Technology Corporation

Address ..... : No. 46, Lane 504, Chung Hsiao Road, Lin Kou Hsiang, Taipei, Taiwan.

Testing location ..... : Advance Data Technology Corporation

Address ..... : No. 46, Lane 504, Chung Hsiao Road, Lin Kou Hsiang, Taipei, Taiwan.

Client

Name ..... : **ADVANTECH CO., LTD**

Address ..... : No. 1 Alley 20, Lane 26, Rueiguang Road, Neihu District Taipei 114, Taiwan, R.O.C.

Test specification

Standard ..... : EN 60950:2000

Test procedure ..... : This Test Report is not valid as a CCA Test Report unless signed by a CCA Testing Laboratory and appended to a CCA Test Certificate.

Procedure deviation ..... : N/A.

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

Test Report Form/blank test report

Test Report Form No. ..... : 60950__D/97-08

TRF originator. ..... : FIMKO

Master TRF ..... : Reference No. 60950 D, dated 97-02

Test item

Description ..... : Industrial Computer

Trademark ..... : ADVANTECH

Model and/or type reference ..... : ACP-1120XX-XXD (X can be any alphanumeric character or blank)

Manufacturer ..... : ADVANTECH CO., LTD.

Rating(s) ..... : 48 V dc, 8 A

Copy of marking plate

Industrial Computer

MODEL: ACP-1120XX-XXD

THIS DEVICE COMPLES WITH PART 15 FCC RULES OPERATION ISSUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATOR.

ADVANTECH CO., LTD.

Particulars: test item vs. test requirements

Equipment mobility.....: Moveable or Rack mountable

Operating condition.....: Continuous

Mains supply tolerance (%) ..... : +6%, -10%

Tested for IT power systems .....: No

IT testing, phase-phase voltage (V) .....: N/A

Class of equipment.....: Class III

Mass of equipment (kg).....: 10.6 kg

Protection against ingress of water .....: IPX0

Test case verdicts

- test case does not apply to the test object.....: N/A

- test object does meet the requirement.....: Pass

- test object does not meet the requirement .....: Fail

Testing

Date of receipt of test item .....: November 20, 2002

Date(s) of performance of test.....: November 27, 2002

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 comma is used as the decimal separator.

Brief description of the test equipment:

1) The equipment is a Class III Industrial Computer with building-in certified power supply

2) Dimension: 618 by 425 by 44 mm.

3) Maximum operating Temperature: 50℃.

Test condition:

Temperature : 25℃.
Relative humidity: 60%
Air pressure: 900 mbar.

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

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1	**GENERAL**		Pass
1.5	**Components**		Pass
1.5.1	Comply with IEC60950 or relevant component standard	(See appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	Components, which were found to affect safety aspects, are complied with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended table)	Pass
	Dimensions (mm) of mains plug for direct plug-in .....:	The equipment is not direct plug-in type.	N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N).....:	The equipment is not direct plug-in type.	N/A
1.5.3	Thermal controls	No thermal control.	N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Interconnecting cable for Interconnection is carrying only SELV voltages on an energy level below 240 VA. Except for the insulation material, there is no further requirements to the o/p interconnection cable.	Pass
1.5.6	Capacitors in primary circuits .....:		N/A
1.5.7	Double or reinforced insulation bridged by components		N/A
1.5.7.1	Bridging capacitors		N/A
1.5.7.2	Bridging resistors		N/A
1.5.7.3	Accessible parts		Pass
1.5.8	Components in equipment for IT power systems	TN system	N/A

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.6	**Power interface**		Pass
1.6.1	AC power distribution systems		N/A
1.6.2	Input current	(See appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N/A
1.6.4	Neutral conductor		N/A
1.7	**Marking and instructions**		Pass
1.7.1	Power rating	Not required	N/A
	Rated voltage(s) or voltage range(s) (V) .....:		N/A
	Symbol for nature of supply for d.c. .....:		N/A
	Rated frequency or frequency range (Hz) .....:		N/A
	Rated current (A) .....:		N/A
	Manufacturer's name/Trademark .....:	ADVANTECH CO., LTD. / ADVANTECH.	Pass
	Type/model .....:	Industrial Computer. / ACP-1120XX-XXD (X can be any alphanumeric character or blank)	Pass
	Symbol of Class II .....:	Class III equipment.	N/A
	Other symbols .....:	--	N/A
	Certification marks .....:	CE	Pass
1.7.2	Safety instructions	The users manual provided.	Pass
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment .....:		N/A
1.7.5	Power outlets on the equipment .....:	No outlet	N/A
1.7.6	Fuse identification .....:		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminal for a.c. mains supply conductors	Appliance inlet used	N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking .....:		N/A
1.7.8.2	Colours .....:		N/A
1.7.8.3	Symbols according to IEC 60417.....:		N/A
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources .....:		N/A
1.7.10	IT power system		N/A

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.11	Thermostats and other regulating devices	No adjustable thermostats	N/A
1.7.12	Language ..... :	English	—
1.7.13	Durability	The label was subjected to the test for permanence of marking. The label was rubbed with cloth for 15 sec. And then rubbed by the cloth soaked with Naphtha for 15 sec. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting on the label edge.	Pass
1.7.14	Removable parts	Markings is not placed on removable parts	N/A
1.7.15	Replaceable batteries	Lithium battery for Real Time Clock (RTC). Warning sentence printed in manual or close to the battery.	Pass
	Language ..... :	English	—
1.7.16	Operator access with a tool..... :	There is no hazard parts can be touched for operator access with a tool	N/A
1.7.17	Equipment for restricted access locations ..... :	No restricted access location	N/A
2	**PROTECTION FROM HAZARDS**		N/A
2.1	**Protection from electric shock and energy hazards**		N/A
2.1.1	Protection in OPERATOR access areas		N/A
2.1.1.1	Access to energized parts		N/A
	Test by inspection ..... :		N/A
	Test with test finger ..... :		N/A
	Test with test pin ..... :		N/A
	Test with test probe ..... :		N/A
2.1.1.2	Battery compartments..... :		N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V); distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards ..... :		N/A

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles, levers, or the like.	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in the primary circuit	Approved power supply used.	N/A
	Time-constant (s); measured voltage (V) ..... :		—
2.1.2	Protection in service access areas	No maintenance works in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	It is not intended to be used in restricted locations.	N/A
2.2	**SELV circuits**		N/A
2.2.1	General requirements		N/A
2.2.2	Voltages under normal conditions (V) ..... :		N/A
2.2.3	Voltages under fault conditions (V) ..... :		N/A
2.2.3.1	Separation by double or reinforced insulation (method 1)	Class III equipment	N/A
2.2.3.2	Separation by earthed screen (method 2)		N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N/A
2.2.4	Connection of SELV circuits to other circuits ..... :		N/A
2.3	**TNV circuits**		N/A
2.3.1	Limits		N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
	Insulation employed ..... :		—
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (kHz)..... :		—
	Measured current (mA) ..... :		—

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V)..... :		—
	Measured capacitance (μF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N/A
	Output voltage (V), output current (A), apparent power (VA) .....:		—
	Current rating of overcurrent protective device (A)		—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing		N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.2	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Rated current (A), type and nominal thread diameter (mm)..... :		N/A
	Resistance (Ω) of earthing conductors and their terminations, test current (A)..... :		N/A
2.6.3.4	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm)..... :		—
2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network	No TNV	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices .....:		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel .....:		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Interlocks with moving parts		N/A
2.8.6	Overriding an interlock		N/A
2.8.7	Switches and relays in interlock systems		N/A
2.8.7.1	Contact gaps (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test (V)		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		N/A
2.9.1	Properties of insulating materials		N/A
2.9.2	Humidity conditioning		N/A
2.9.3	Requirements for insulation		N/A

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

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.8	Spacings filled by insulating compound .....:		N/A
	Electric strength test		—
2.10.9	Component external terminations		N/A
2.10.10	Insulation with varying dimensions		N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		N/A
3.1	**General**		N/A
3.1.1	Current rating and overcurrent protection		N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Non-metallic materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A
3.2	**Connection to a.c. mains supplies**		N/A
3.2.1	Means of connection .....:		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		N/A
3.3.5	Rated current (A), type and nominal thread diameter (mm)..... :		N/A
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the a.c. mains supply**		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits..... :	The power supply is considered for connection to SELV only.	Pass
3.5.3	ELV circuits as interconnection circuits	NO ELV interconnection.	N/A
4	**PHYSICAL REQUIREMENTS**		Pass
4.1	**Stability**		Pass

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
	Angle of 10°	This unit is of a stable mechanical construction and does not overbalance when tilted to an angle of 10 degrees from its normal upright position.	Pass
	Test: force (N) ..... :	Not floor standing	N/A
4.2	**Mechanical strength**		N/A
4.2.1	General		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
4.2.6	Drop test	Not hand-held equipment	N/A
4.2.7	Stress relief	Metal enclosure.	N/A
4.2.8	Cathode ray tubes	Not provided.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	Not provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .... :		N/A
4.3	**Design and construction**		Pass
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	Pass
4.3.2	Handles and manual controls; force (N) ..... :		N/A
4.3.3	Adjustable controls	No control device	N/A
4.3.4	Securing of parts	No connection likely to be exposed to mechanical stress are provided in unit.	Pass
4.3.5	Connection of plugs and sockets	No mismatching connector, plug or socket possible.	Pass
4.3.6	Direct plug-in equipment	Not direct plug-in equipment	N/A
	Torque (Nm) ..... :	Dto.	—
4.3.7	Heating elements in earthed equipment	No heating element.	N/A
4.3.8	Batteries	A devise that prevent reverse polarity installation provided.	Pass
4.3.9	Oil and grease	No oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	Pass

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.11	Containers for liquids or gases	No containers for liquid or gases.	N/A
4.3.12	Flammable liquids .....:	No flammable liquids in the equipment.	N/A
	Quantity of liquid (l) .....:	Dto.	N/A
	Flash point (°C) .....:	Dto.	N/A
4.3.13	Radiation; type of radiation .....:	Dto.	N/A
	Equipment using lasers	No laser used	N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.5	**Thermal requirements**		Pass
4.5.1	Temperature rises	(see appended table)	Pass
	Normal load condition per Annex L.....:	Dto.	Pass
4.5.2	Resistance to abnormal heat	Dto.	Pass
4.6	**Openings in enclosures**		Pass
4.6.1	Top and side openings	No hazardous parts within 5° projection area. Rear side: Provided numerous openings, covered an area of 40 by 33.5 mm.	Pass
	Dimensions (mm) .....:	Rear: Each opening measured 3 mm diameter, 6 mm centre to centre.	—
4.6.2	Bottoms of fire enclosures	No bottorm opening provided.	Pass
	Construction of the bottom.....:		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature/time.....:		—
4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	Pass

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Conditions for a fire enclosure	With having the following components: -components with windings -wiring -semiconductor devices, transistors, diodes, integrated circuits. -resistors, capacitors, inductors. - The fire enclosure is required.	Pass
4.7.2.1	Parts requiring a fire enclosure		Pass
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	**Materials**		Pass
4.7.3.1	General		Pass
4.7.3.2	Materials for fire enclosures	Metal used	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better.	Pass
4.7.3.5	Materials for air filter assemblies	No air filter	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage component.	N/A

EN 60950			
Clause	Requirement + Test	Result - Remark	Verdict
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		N/A
5.1	**Touch current and protective conductor current**		N/A
5.1.1	General		N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V) .....:		—
	Measured current (mA) .....:		—
	Max. allowed current (mA) .....:		—
5.1.7	Equipment with touch current exceeding 3.5 mA .....:		N/A
5.1.8	Touch currents to and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network		N/A
	Test voltage (V) .....:		—
	Measured current (mA) .....:		—
	Max. allowed current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks.....:		N/A
5.2	**Electric strength**		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A
5.3	**Abnormal operating and fault conditions**		Pass
5.3.1	Protection against overload and abnormal operation	See below.	Pass
5.3.2	Motors	Certified fans used, no hazard.	Pass
5.3.3	Transformers		N/A
5.3.4	Functional insulation .....:		N/A
5.3.5	Electromechanical components	No electromechanical component other than motor provided.	N/A
5.3.6	Simulation of faults	Result see appended table.	Pass
5.3.7	Unattended equipment	Not provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted.	Pass
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment**		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Test voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of telecommunication wiring system from overheating**		N/A
	Max. output current (A) .....:		—
	Current limiting method .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**		N/A
A.1.1	Samples, material .....:		—
	Wall thickness (mm) .....:		—
A.1.2	Conditioning of samples; temperature (°C).....:		N/A
A.1.3	Mounting of samples.....:		N/A
A.1.4	Test flame		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—

A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material .....:		—
	Wall thickness (mm) .....:		—
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2.7	Alternative test acc. To IEC 60695-2-2, cl. 4, 8		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—

A.3	**High current arcing ignition test (see 4.7.3.2)**		N/A
A.3.1	Samples, material .....:		—
	Wall thickness (mm) .....:		—
A.3.5	Compliance criteria		N/A
	Sample 1 number of arcs to ignition (pcs) .....:		—
	Sample 2 number of arcs to ignition (pcs) .....:		—
	Sample 3 number of arcs to ignition (pcs) .....:		—
	Sample 4 number of arcs to ignition (pcs) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Sample 5 number of arcs to ignition (pcs) .....:		—
A.4	**Hot wire ignition test (see 4.7.3.2)**		N/A
A.4.1	Samples, material .....:		—
	Wall thickness (mm) .....:		—
A.4.5	Compliance criteria		N/A
	Sample 1 ignition time (s).....:		—
	Sample 2 ignition time (s).....:		—
	Sample 3 ignition time (s).....:		—
	Sample 4 ignition time (s).....:		—
	Sample 5 ignition time (s).....:		—
A.5	**Hot flaming oil test (see 4.6.2)**		N/A
A.6	**Flammability tests for classifying materials V-0, V-1 or V-2**		N/A
A.6.1	Samples, material .....:		—
	Wall thickness (mm) .....:		—
A.6.5	Compliance criteria		N/A
A.6.6	Permitted re-test		N/A
A.7	**Flammability test for classifying foamed materials HF-1, HF-2 or HFB**		N/A
A.7.1	Sample, material .....:		—
	Wall thickness (mm) .....:		—
A.7.4	Compliance criteria		N/A
A.7.5	Compliance criteria, HF-2		N/A
A.7.6	Compliance criteria, HF-1		N/A
A.7.7	Compliance criteria, HBF		N/A
A.7.8	Permitted re-test, HF-1 or HF-2		N/A
A.7.9	Permitted re-test, HBF		N/A
A.8	**Flammability test for classifying materials HB**		N/A
A.8.1	Samples, material .....:		—
	Sample thickness (mm) .....:		—
A.8.2	Conditioning of samples; temperature (°C).....:		N/A
A.8.4	Test procedure		N/A
A.8.5	Compliance criteria		N/A
A.8.6	Permitted re-test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.9	**Flammability test for classifying materials 5V**		N/A
A.9.1	Samples, material ..... :		—
	Sample thickness (mm) ..... :		—
A.9.4	Test procedure, test bars		N/A
A.9.5	Test procedure, test plaques		N/A
A.9.6	Compliance criteria		N/A
A.9.7	Permitted re-test		N/A
A.10	**Stress relief conditioning (see 4.2.7)**		N/A
	Temperature (°C) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for DC motors in secondary circuits		N/A
B.7	Locked-rotor overload test for DC motors in secondary circuits		N/A
B.7.1	Test procedure		N/A
B.7.2	Alternative test procedure; test time (h) ..... :		N/A
B.7.3	Electric strength test		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
	Ionizing radiation		N/A
	Measured radiation (mR/h) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal used ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
	Separate test report		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components				Pass
object/part No.	manufacturer/ trademark	type/model	technical data	Standard	mark(s) of conformity[1])
1. Power Supply	Zippy	D1U-6180F	Input: 40-56 V dc, 8 A. Output: +12 V dc/7 A, +5 V dc/20 A, +3.3 V dc/12 A, -12 V dc/1.0 A, -5 V dc/0.5 A, +5 VSB/1.5 A	EN 60950	TUV, NEMKO, UL
2. Hard Disk (Optional)	Various	--	+5/+12 V dc, 1.5/1.8 A maximum.	EN 60950	TUV, UL
3. Floppy Disk (Optional)	Various	--	+5/+12 V dc, 1.5/1.8 A maximum.	EN 60950	TUV, UL
4. CD-ROM Drive (Optional)	Various	--	+5 V dc, 1.5 A maximum.	EN 60950	TUV, UL
5. RTC Battery	Rayvoas	BR2335	+3.0Vdc, 300mAh	--	UL
6. CPU Fan	Yen Sun	FD1250109B-2A	+12 V dc, 2.16 W	EN 60950	TUV, UL
7. System DC Fan (four provided)	Delta	EFB0412VHD	+12 V dc, 0.18 A	EN 60950	TUV, UL
8. PCB	Various	Various	V-1 min. 105℃	UL94	UL
9. Enclosure Material	---	Metal	1.1 mm thick minimum.	--	--

1.6.2	**TABLE: electrical data (in normal conditions)**					Pass
fuse #	I rated (A)	U (V)	P (W)	I (A)	I fuse (A)	condition/status
--	8	48	65.8	1.37	---	Maximum normal load.
supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: temperature rise measurements**		Pass
	test voltage (V) .....:	Maximum normal load/ Blocked openings/ Fan 1 locked / Fan 2 locked.	—
	t1 (°C) .....:	--	—
	t2 (°C) .....:	--	—

temperature rise dT of part/at:	dT (K)	Required dT (K)
Ambient	26 / 27 / 26 / 26℃	--
Power Supply		
T1 coil	15 / 27 / 19 /35	40
T1 core	13 / 24 / 17 / 33	40
T2 coil	9 / 20 / 14 / 31	40
T2 core	9 / 20 / 13 / 26	40
Metal enclosure	10 / 21 / 13 / 17	---
Main Board		
H.S. of U16	21 / 31 / 28 / 28	---
H.S. of U20	24 / 34 / 34 / 30	---
PWB near CPU	25 / 34 / 32 / 30	55
C106 body	11 / 21 / 23 / 17	35
L11 coil	11 / 20 / 17 / 16	55
U19 body	7 / 16 / 13 / 14	---
BT1 body	6 / 15 / 13 / 12	---

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System		
HDD body	10 / 21 / 13 / 20	--
FDD body	3 / 12 / 2 / 4	--
CD-ROM body	2 / 13 / 3 / 5	--
Enclosure indside near power	8 / 20 / 11 / 14	--
Enclosure outside near power	5 / 18 / 8 / 10	20

comments:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and described in 1.6.2 at voltages as described in 1.4.5

Without specified ambient temperature in users manual, therefore the ambient temperature assumed as 50 ℃, the max. temperature rise is calculated as follows:

Winding components:

- class A → dTmax = 75K – 10K-(50-25)K = 40 K

Electrolyte capacitor or components with:

- max. absolute temp. of 105 ℃ → dTmax = (105-50-)K = 55 K
- max. absolute temp. of 85 ℃ → dTmax = (85-50-)K = 35 K

Enclosure temp. 45K → dTmax = 45 - (50-25)K = 20 K

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5.3.1, 5.3.4, 5.3.6	**TABLE: fault condition tests**		Pass
	ambient temperature (°C) .....:	28°C	—
	model/type of power supply .....:	D1U-6180F	—
	manufacturer of power supply .....:	Zippy Technology Corp.	—
	rated markings of power supply .....:	Input: 40-56 V dc, 8 A. Output: +12 V dc/7 A, +5 V dc/20 A, +3.3 V dc/12 A, -12 V dc/1.0 A, -5 V dc/0.5 A, +5 VSB/1.5 A	—

No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
1	Ventilation openings	Blocked	48	2.5 hrs	F1	1.37	No hazardous
2	Fan 1	Locked	48	2 hrs	F1	1.37	No hazardous
3.	Fan 2	Locked	48	2 hrs	F1	1.37	No hazardous
4	Diode	Short	48	< 1 sec	---	---	Abnormal reverse charging current =3 mA

supplementary information

Fan 1: Rear fan, CPU fan, mainboard right fan.

Fan 2: Power fan, DC fan, mainboard left fan

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Clause	Requirement + Test	Result - Remark	Verdict

5.3.6	**TABLE: Overload of Operator Accessible Connector test**				Pass
Connector	Pin # s	Open Circuit Voltage (V)	Maximum Available Current (mA)	Length of Test	Comments
VGA	1~8, 10, 11	0	0	---	No hazard
VGA	12, 15	4.88	10	---	No hazard
VGA	9	4.97	1600	1 hr	No hazard
VGA	13	4.68	50	1 hr	No hazard
VGA	14	4.96	60	1 hr	No hazard
PS2	1, 2	4.74	10	---	No hazard
PS2	3	4.97	2300	1 hr	No hazard
PS2	4~6	0	0	---	No hazard
RJ45	All pins	0	0	---	No hazard
RS232	All pins	0	0	---	No hazard

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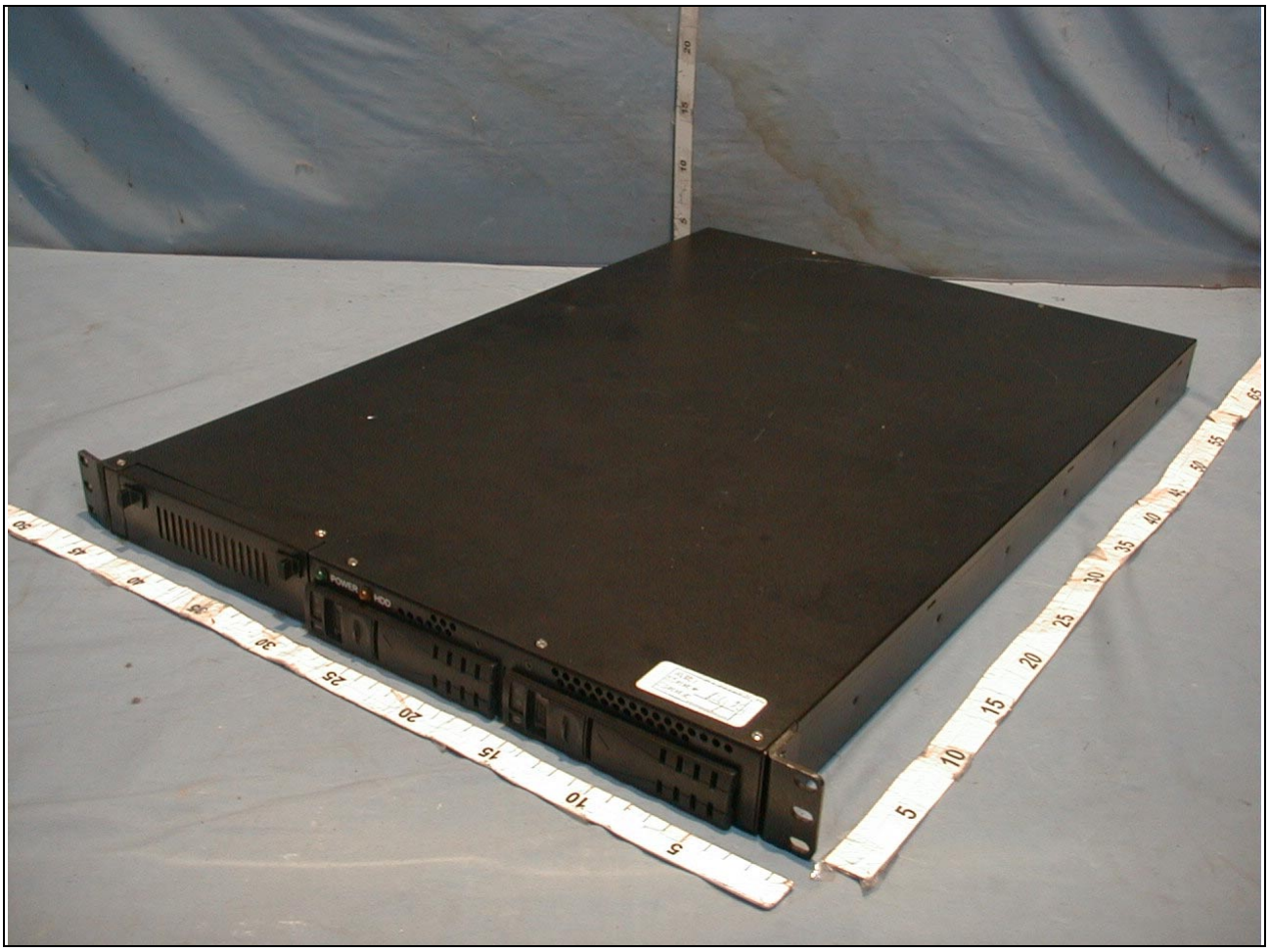
Photos



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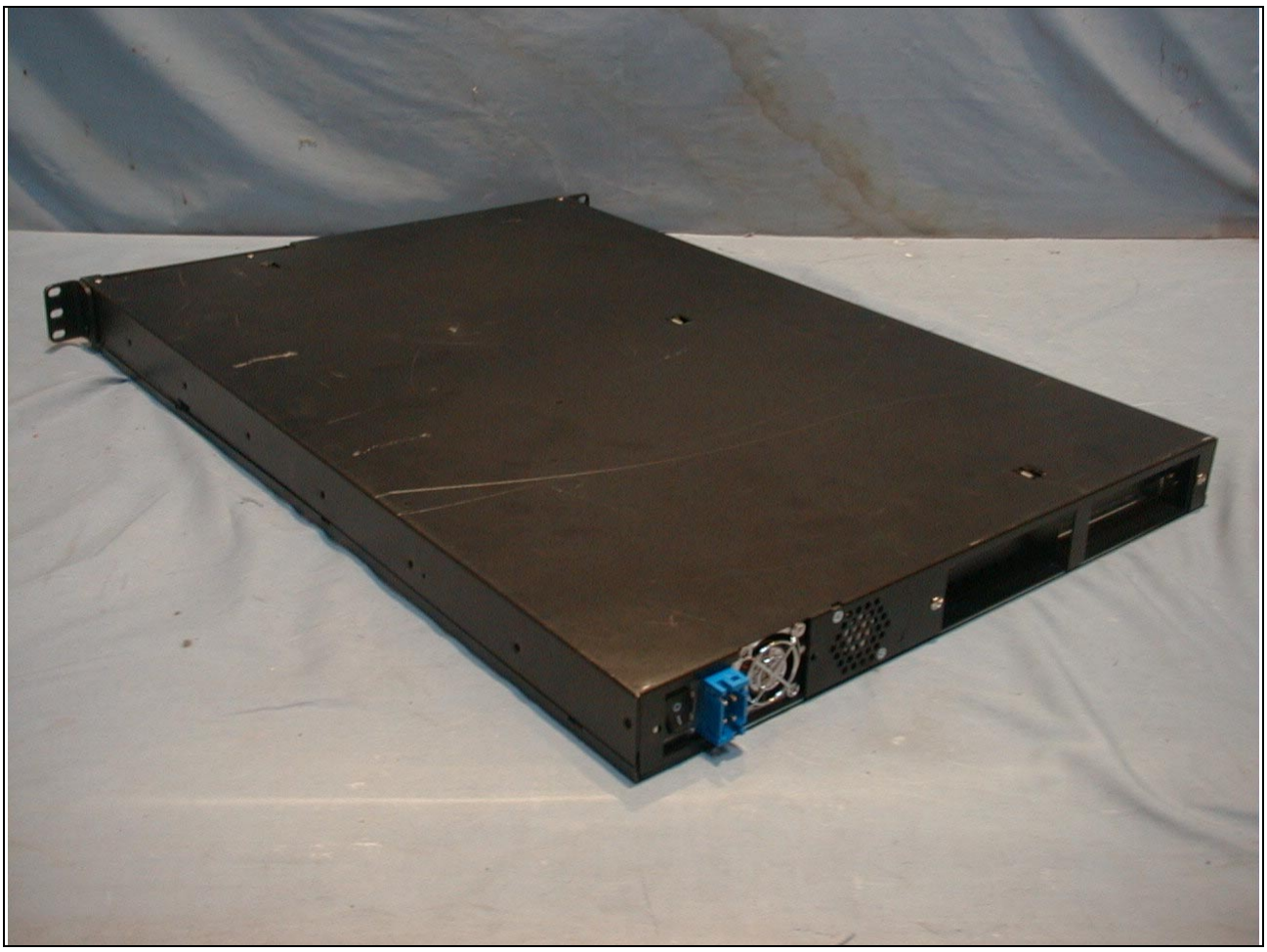

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