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

Ref. Certif. No.
JPTUV-002771A1

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

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

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product *Produit*	Personal Computer
Name and address of the applicant *Nom et adresse du demandeur*	ASUSTek Computer Inc. No. 150, Li-Te Rd. PEITOU, TAIPEI 112, TAIWAN, R.O.C.
Name and address of the manufacturer *Nom et adresse du fabricant*	ASUSTek Computer Inc. No. 150, Li-Te Rd. PEITOU, TAIPEI 112, TAIWAN, R.O.C.
Name and address of the factory *Nom et adresse de l'usine*	(See appendix for factories information)
Rating and principal characteristics *Valeurs nominales et caractéristiques principales*	Input rating : AC 100-120V/200-240V, 50-60Hz, 3A/1.5A Protection class : I
Trade mark (if any) *Marque de fabrique (si elle existe)*	ASUS
Model/type Ref. *Ref. de type*	T1000-120S, T1000-149PH, C300-CSTXX, E500-CSTXX X = 0-9, A-Z or blank
Additional information (if necessary) *Information complémentaire (si nécessaire)*	For differences between the models, refer to the test report. Remark : Replaces JPTUV-002771 dated 03.04.2001, due to first modification.
A sample of the product was tested and found to be in conformity with *Un échantillon de ce produit a été essayé et a été considéré conforme à la*	**PUBLICATION** **EDITION** IEC 60950:1991+A1+A2+A3+A4 inclusive CENELEC Common Modifications National differences see test report
as shown in the Test Report Ref. No. which form part of this certificate *comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat*	02160602 002

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

TÜV

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

Date 26.09.2001

Signature

Dipl.-Ing. M. Lechtermann

Issue 1998-09

TÜV

Appendix to CB Certificate JPTUV-002771A1
Report Number: 02160602 002

Name and address of the manufacturer
ASUSTek Computer Inc.
No. 150, Li-Te Rd.
Peitou, Taipei 112
Taiwan, R.O.C.

Name and address of the factory(ies)
ASUSTeK Computer Inc.

No. 5, Shing Yeh St.
Kwei Shan Hsiang, Taoyuan Hsien
Taiwan, R.O.C. 333

Maintek Computer (Suzhou) Co., Ltd.

233, Jin Feng Road
Su Zhou Dist., Jiangsu
P.R. China

Date: 26.09.2001

Dipl.-Ing. M. Lechtermann

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TEST REPORT FOR AN ADDITIONAL APPROVAL

IEC 950

Safety of information technology equipment

Report

Reference No. ..... : 02160602 002

Compiled by (+ signature) ..... : Jane Peng

Approved by (+ signature) ..... : R. CHARTON

Date of issue ..... : 21.09.2001.

Contents ..... : 30 pages

..... :

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

Testing laboratory

Testing laboratory ..... : TÜV Rheinland Japan Ltd., Yokohama Laboratories

Address ..... : Festo Bldg. 5F, 1-26-10 Hayabuchi, Tsuzuki-Ku, Yokohama 224-0025, Japan

Testing location ..... : TÜV Rheinland Japan Ltd., Yokohama Laboratories

Client

Name ..... : Asustek Computer Inc.

Address ..... : No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan, R.O.C.

Test specification

Standard ..... : IEC 60950:1991 + A1:1992 + A2:1993 + A3:1995 + A4:1996
EN 60950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997
EMKO-TSE(74-SEC)207/94, UL 1950, C22.2 No. 950 3rd edition, AS 3260

Test procedure ..... : CB Scheme

Procedure deviation ..... : Australia, Austria, Belgium, China, Canada, The Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Japan, Rep. of Korea, The Netherlands, Norway, Poland, Russia Fed., Slovenia, Slovakia, South Africa, Spain, Sweden, Switzerland, United Kingdom, USA

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

Test Report Form/blank test report

Test Report Form No. ..... : Cbaddapp.doc

TRF originator. ..... : TÜV Rheinland

Test item

Description ..... : Personal Computer

Trademark ..... : ASUS®

Model and/or type reference ..... : T1000-120S, T1000-149PH, C300-CSTXX, E500-CSTXX (X = 0-9, A-Z or blank)

Manufacturer ..... : Same as client

Rating ..... : AC 100-120/200-240V, 50-60Hz, 3/1.5A

Report No. <02160602 002>

The construction of the personal computer model was modified as follows:

1. Add an alternative non-approve switching power supply, which manufactured by AsusTek Computer Inc., type ATP-1505EP and ATP-1505NP. Model ATP-1505NP is identical to ATP-1505EP except without PFC function.

   Ratings: i/p: AC 100-120/200-240V, 47-63Hz, 4/2A
   o/p: DC+5Vsb/3.0A, +5V/4.0A, +12V/8.2A, +3.3V/8.0A, -12V/0.2A
   (1). Total output power: 150W max. and 172W peak,
   (2). +5Vsb, +5V & +3.3V combined power is 52W max.

For the above described modification the following testing was considered to be necessary:

Modification	Testing	Comments	Result
1.	- input test - maximum V, A, VA measurement - capacitance discharge test - humidity - working voltage measurement - earthing test - heating test - leakage current - electric strength - component failure - transformer abnormal operation - power supply output short circuit test	Results see appended tables.	**P**

Remark:

The history of modification as below:

- Modification: 002

Factory:

1. **Maintek Computer (Suzhou) Co., Ltd.**
   No. 233, Jin Feng Road, Su Zhou District, Jiang Su Province, P.R.China
2. **ASUSTek Computer Inc.**
   No. 5, Shing Yeh Street, Kwei Shan Hsiang, Taoyuan Hsien, Taiwan, R.O.C.

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	Comply with IEC 60950 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended tables)	P
1.5.2	Evaluation and testing components	Components which are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
	Dimensions (mm) of mains plug for direct plug-in .....:	The equipment is not plug-in type	N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N
1.5.3	Transformers	Transformer used are suitable for their intended application and comply with the relevant requirements of the standard and particularly Annex C.	P
1.5.4	High voltage components (component; manufacturer; flammability) .....:	No high voltage components used.	N
1.5.5	Interconnecting cables	Interconnection o/p cable to supplied unit is carrying only SELV on an energy level below 240VA. → Except for the insulation material, there is no further requirements to the o/p interconnection cable.	P
1.5.6	Mains Capacitors	X2 capacitor according to IEC 60384-14:1993 with 21 days damp heat test.	N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
1.6	Power interface		P
1.6.1	Steady state input current	Highest load according to 1.2.2.1 for this equipment is the operation with the max. specified DC-load, max. power combination.	P
	Current deviation during normal operating cycle	< +10%	P
1.6.2	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	N
1.6.3	Neutral conductor insulated from earth and body	The neutral is not identified in the equipment. Basic insulation for rated voltage between earthed parts and primary phases.	P
1.6.4	Components in equipment intended for IT power system	Phase to earth designed in according to phase-to-phase working voltage. The Y2 type capacitor used between phase-to-earth.	P
1.6.5	Mains supply tolerance (V) .....:	+6%, -10% Documentation specifies a rating of AC 100-120/200-240V at 47-63Hz. Relevant tests were done with the range of AC 90-127/180-254V at 47-63Hz.	P
2	PROTECTION FROM HAZARDS		P
2.1	Protection against electric shock and energy hazards		P
2.1.1	Access to energized parts	See below	P

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.1.2	Protection in operator access areas	As the user's manual specifies directions for the operator how to add additional memory cards or add-on cards inside the enclosure, the inside of this personal computer is regarded to be operator access area. With the disassembled personal computer enclosure, the accessible SPS is covered with an earthed metal enclosure. The construction of this metal enclosure prevents the accessibility to any parts with only basic insulation to ELV or hazardous voltage with test pin or test finger.	P
	Test by inspection .....:	dto	P
	Test with test finger .....:	dto	P
	Test with test pin .....:	dto	P
2.1.3.1	Insulation of internal wiring in an ELV circuit accessible to operator	No ELV wiring in operator accessible area.	N
	Working voltage (V); distance (mm) through insulation .....:		N
2.1.3.2	Operator accessible insulation of internal wiring at hazardous voltage	No hazardous voltage wiring in operator accessible area.	N
2.1.4.1	Protection in service access areas	No maintenance work in operation mode necessary.	N
2.1.4.2	Protection in restricted access locations	It is not intended to be used in restricted locations	N
2.1.5	Energy hazard in operator access area	The energy does not exceed 240VA between any two points in accessible parts (o/p connector of secondary circuit). Results of max. V, A, VA test, see appended table.	P
2.1.6	Clearances behind conductive enclosures	Refer to 4.2.3.	P
2.1.7	Shafts of manual controls	None at ELV or hazardous voltage	N
2.1.8	Isolation of manual controls	None at ELV or hazardous voltage	N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.1.9	Conductive casings of capacitors	Casings of capacitors are considered as if directly connected to the respective circuitry. None at hazardous voltage accessible.	P
2.1.10	Risk of electric shock from stored charge on capacitors connected to mains circuit	No risk of electric shock, see below.	N
	Time-constant (s); measured voltage (V) .....:	<1s (see appended table)	—
2.2	Insulation		P
2.2.1	Methods of insulation	The insulation materials provided in the equipment with adequate thickness and adequate creepage distance over their surface and clearance distance through air.	P
2.2.2	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used	P
2.2.3	Humidity treatment	Total time elapsed: 48 hours	P
	Humidity (%) .....:	95% R.H.	—
	Temperature (°C) .....:	25°C	—
2.2.4	Requirements for insulation	Please refer to 5.3, 2.9 and 5.1.	P
2.2.5	Insulation parameters	Both parameters were considered.	P
2.2.6	Categories of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard.	P
2.2.7.1	General rules for working voltages	The rms and the peak voltages were measured on the switching power supply. The unit was connected to a 240V TN power system and secondary ground was maintained during measurement. Results see appended table.	P
2.2.7.2	Clearances in primary circuits	Considered	P

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.7.3	Clearances in secondary circuits	Considered	**P**
2.2.7.4	Creepage distances	Considered	**P**
2.2.7.5	Electric strength tests	Considered	**P**
2.2.8.1	Bridging capacitors	No component bridged reinforced or double insulation.	**N**
2.2.8.2	Bridging resistors		**N**
2.2.8.3	Accessible parts		**N**

2.3	Safety extra-low voltage (SELV) circuits		**P**
2.3.1	Voltage (V) of SELV circuits under normal operating conditions and after a single fault .....:	42.4V peak or 60VDC are not exceeded in SELV circuit under normal operation or single fault condition	—
2.3.2	Voltage (V) between any two conductors of SELV circuit(s) and for Class I equipment between any conductor of SELV circuit and equipment protective earthing terminal under normal operating conditions .....:	Between any SELV circuits 42.4V peak or 60VDC are not exceeded	**P**
2.3.3	Voltage (V) of SELV in the event of a single failure of basic or supplementary insulation or of a component .....:	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds	—
	Method used for separation .....:	Method 1	**P**
2.3.4	Additional constructional requirements	Ring terminals for PE connection are prevented from pivoting which could impair distances to hazardous parts by starwasher. In multiway connectors and other cable ties prevent contact to hazardous parts in case of loosening of connection or conductor breakage. IEC 60083 and IEC 60320 connectors are not used in SELV.	**P**

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.3.5	Connection of SELV circuits to other circuits	See 2.3.2 and 2.3.3. No direct connection between SELV and any primary circuits.	N
2.3.8	Construction of SELV circuits		N
2.3.9	SELV circuits connected to other circuits		N

2.9	Clearances, creepage distances and distances through insulation		P
	Nominal voltage (V) .....:	AC 100-120/200-240V	—
	General		P
2.9.2	Clearances	See below	P
2.9.2.1	Clearances in primary circuits	(see appended table 2.9.2 and 2.9.3)	P
2.9.2.2	Clearances in secondary circuits	In compliance with 5.4.6.	P
2.9.3	Creepage distances	(see appended table 2.9.2 and 2.9.3)	P
	CTI tests .....:	CTI rating for all materials of min. 100.	—
2.9.4.1	Minimum distances through insulation	(see appended table 2.9.4)	P
2.9.4.2	Thin sheet material	The thin sheet materials of polyester tape used in transformers T1 and T2.	P
	Number of layers (pcs) .....:	3 layers	P
	Electrical strength test: test voltage (V) .....:	3000 Vac applied on any combination of two layers	P
2.9.4.3	Printed boards	Not applied for	N
	Distance through insulation .....:		N
	Electric strength test at voltage (V) for thin sheet insulating material .....:		N
	Number of layers (pcs) .....:		N
2.9.4.4	Wound components without interleaved insulation	No wound components without interleaved insulation.	N
	Number of layers (pcs) .....:		N
	Two wires in contact inside component; angle between 45° and 90°		N
	Routine testing for finished component		N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.9.5	Distances (mm) on coated printed boards .....:	No coated printed wiring boards.	N
	Routine testing for electric strength		N
2.9.6	Enclosed and sealed parts	No hermetically sealed components.	N
	Temperature T1 (°C) .....:		N
	Humidity % .....:		N
2.9.7	Spacings filled by insulating compound	Optocouplers are approved components. Other components not applied for. (see appended table 2.9.4 and 5.3).	P
	Temperature T1 (°C) .....:		N
	Humidity % .....:		N
2.9.8	Component external terminations	(see appended table 2.9.2 and 2.9.3)	P
2.9.9	Insulation with varying dimensions	Insulation kept homogenous.	N

3.2	Connection to primary power		P
3.2.1	Type of connection .....:	Appliance inlet.	P
	Design of product with more than one supply connection .....:	Only one mains supply.	N
3.2.2	Provision for permanent connection .....:	Not permanently connected.	N
	Size (mm) of cables and conduits .....:		N
3.2.3	Appliance inlet	The appliance inlet complies with IEC 60320 and is located at the rear of the unit.	P
3.2.4	Type and cross-sectional area (mm²) of power supply cord .....:	Not provided. The correct power cord selection is mentioned in the user's manual.	N
3.2.5	Cord anchorage		N
	Test: 25 times; 1 s; pull (N) .....:		—
	Longitudinal displacement ≤ 2 mm .....:		N
3.2.6	Protection of power supply cord	No parts under this unit likely to damage the power supply cord. No sharp edges	P

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.7	Cord guard	*see clause 3.2.1*	N
	D (mm) ..... :		—
	Test: mass (g) ..... :		—
	Radius of curvature of the cord ≤ 1.5 D		N
3.2.8	Supply wiring space		N
5.1	Heating		P
	Heating tests	(see appended table)	P
5.2	Earth leakage current		P
5.2.1	General	The leakage current was measured from primary to chassis.	P
5.2.2	Leakage current	See 5.2.3.	P
5.2.3	Single-phase equipment	(see attached table)	P
	Test voltage (V) ..... :	(see attached table)	—
	Measured current (mA) ..... :	(see attached table)	—
	Max. allowed current (mA) ..... :	3.5mA	—
5.2.4	Three-phase equipment	Single phase equipment	N
	Test voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Max. allowed current (mA) ..... :		—
5.2.5	Equipment with earth leakage current exceeding 3.5 mA	Leakage current does not exceed 3.5mA	N
	Test voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Max. allowed current (mA) ..... :		—
	Cross-sectional area (mm^2) of internal protective earthing conductor ..... :		—
	Warning label		N
5.3	Electric strength		P

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
5.3.1	General	All tests voltages were applied for 1minute in the chamber after the humidity test of 2.2.3 and in warm conditions after the heating test of 5.1. No isolation breakdown was observed (results see appended tables).	**P**
5.3.2	Test procedure	(see appended table)	**P**
5.4	Abnormal operating and fault conditions		**P**
5.4.2	Motors	Approved components used.	**P**
5.4.3	Transformers	With the shorted o/p of the transformers T1 and T2 the unit shuts down immediately. No high temp. of the transformer are to be observed or to be expected. Result of the short tests see 5.4.6 appended table and Annex C.	**P**
5.4.4	Compliance of operational insulation		**P**
	Method used .....:		**N**
5.4.5	Electromechanical components in secondary circuits	No electromechanical components.	**N**
5.4.6	Other components and circuits	The power supply is protected by the following means: - Overcurrent fuse F01 - OPP protection by R24, R65, U1 and U2 Results see appended table.	**P**

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
5.4.7	Test in any expected condition and foreseeable misuse	Output overload (transformer overload) test: The mose unfavorable load test: Result see appended table. Ventilation blocked and DC fan locked test: Result see appended table. No hazard by operating buttons and controls not in accordance with the instructions.	**P**
5.4.8	Unattended use of equipment having thermostats, temperature limiters etc.	None of them are used.	**N**
5.4.9	Compliance	No fire propagated beyond the equipment. No molten metal was emitted.	**P**
5.4.10	Ball-pressure test of thermoplastic parts; impression shall not exceed 2 mm	Phenolic bobbin used accepted without test.	**P**

C	ANNEX C, TRANSFORMERS		**N**
	Position .....:	1) T1, 2) T2	—
	Manufacturer .....:	See appended table 1.5.1	—
	Type .....:	See appended table 1.5.1	—
	Rated values .....:	Class B	—
	Temperatures	See appended table 5.4	**P**
	Thermal cut-out	No thermal cut-out	**N**
C.1	Overload test	See 5.4.3	**P**
	Conventional transformer		**N**
C.2	Insulation		
	Precautions .....:	(See transformer construction check)	**P**
	Retaining of end turns of all windings	Dto	**P**
	Earthing test at 25 A		**N**
C.3	Electric strength test	(See 5.3)	**P**

C.2	Safety isolation transformer	**P**
Construction details:		

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Transformer T1		
Mfr.: Hua Jung, Szfong, Tyen Ping, Hi-Pro, CIC, I-Mag		
Type: see appended table 1.5.1, all type are identical except for the brand name.		
Recurring peak voltage	340V 0-p	
Required clearance for reinforced		
insulation (from table 3 and 4)	4.0mm	
Effective voltage rms	216V	
Required creepage for reinforced		
insulation (from table 6) interpolated	5.0mm	
Measured min. creepages		
Location	inside (mm)	outside (mm)
prim-sec	6.4	7.2
prim-core	3.2	3.6
sec-core	3.2	3.6
prim-prim	%	%
Measured min. clearances		
Location	inside (mm)	outside (mm)
prim-sec	6.4	7.2
prim-core	3.2	3.6
sec-core	3.2	3.6
prim-prim	%	%
Construction: Concentric windings on EI-33 type bobbin, three layers insulation between prim and sec windings. Distance tape is 3.2mm on both sides of transformer. N2 (pin 4/5 - 6) use copper with 3 layers insulation and overlapping 2.7 mm on both sides. Winding ends additionally fixed with tape. Outer winding is primary. Tubing on winding exit ends is leaded above the distance tape.		
Pin numbers		
Prim.	7-8-10/11	
Sec.	4/5-6-3	
Bobbin		

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Material	Phenolic T373J, Chang Chun Plastics Co., Ltd., V-0, 150°C
Thickness	0.8mm
Electric strength test	
With AC 3000V after humidity treatment	
Result	pass

C.2	Safety isolation transformer	P
Construction details:		
Transformer T2		
Mfr.: Hua Jung, Szfong, Tyen Ping, Hi-Pro, CIC, I-Mag		
Type: see appended table 1.5.1, all type are identical except for the brand name.		
Recurring peak voltage	401V 0-p	
Required clearance for reinforced		
insulation (from table 3 and 4)	4.0mm	
Effective voltage rms	292V	
Required creepage for reinforced		
insulation (from table 6) with interpolation	6.2mm	
Measured min. creepages		
Location	Inside (mm)	outside (mm)
prim-sec	6.4	7.0
prim-core	3.2	3.5
sec-core	3.2	3.5
prim-prim	%	%
Measured min. clearances		
Location	inside (mm)	outside (mm)
prim-sec	6.4	7.0
prim-core	3.2	3.5
sec-core	3.2	3.5
prim-prim	%	%

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Construction:	
Concentric windings on ER-28 type bobbin, three layers insulation between prim and sec windings. Distance tape is 3.2mm on both sides of transformer. N2 (pin 8-10) use a copper with 3 layers insulation and overlapping 3.3mm on both sides. Winding ends additionally fixed with tape. Outer winding primary. Tubing on winding exit ends is leaded above the distance tape.	
Pin numbers	
Prim.	3-4-5
Sec.	1-2, 8-10
Bobbin	
Material	Phenolic T373J, Chang Chun Plastics Co., Ltd., V-0, 150°C
Thickness	0.8mm
Electric strength test	
With AC 3000V after humidity treatment	
Result	pass

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Switching power supply	Asustek	ATP-1505-EP, ATP-1505-NP	I/P:100-120/200-240 Vac, 47-63Hz, 4/2 A. O/P: +5Vsb/ 3.0A, +5V/ 4.0A, +12V/ 8.2A, +3.3V/ 8.0A, -12V/ 0.2A	--	--
-Enclosure	Metal	--	--	--	--
-PCB	--	--	V-1 min.,105°C min.	UL 94	UL
-AC Inlet	Rong Feng	SS-7B	10A, 250V	EN 60320-1	VDE
	Inalways	0707, 0707-1, 0711 series	10, 250V	EN 60320-1	VDE
	Zhang Jiagang Hua Feng	HF-301	10A, 250V	EN 60320-1	VDE

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

-Select Switch	Rong Feng	RF-1002	10A, 250V	EN 61058	VDE
	Canal	SL 14 / SL15	10A, 250V	EN 61058	VDE
	Zhang Jiagang Hua Feng	HF-308	10A, 250V	EN 61058	VDE
	Pronic	L21	10A, 250V	EN 61058	VDE
	Legion	VS12	12A, 250V	EN 61058	VDE
-Fuse (Fuse1)	Conquar	UTE	T6.3A, 250V	IEC 60127-2	VDE
	Littlefuse	215/ 218	T6.3A, 250V	IEC 60127-2	VDE
	Bel	5ST/ 5HT	T6.3A, 250V	IEC 60127-2	VDE/SEMKO
	Walter	TSD/ TSC	T6.3A, 250V	IEC 60127-2	VDE
X-Cap. (C5, C6) -(Optional)	Hua Jung	MKP	0.47uF, 275V max.	IEC 60384-14	VDE
	Philips	MKP 336/1/2	0.47uF, 275V max.	IEC60384-14	VDE
	Iskra	KNB 156 0/2/3	0.47uF, 275V max.	IEC60384-14	VDE
	Siemens	MKP/ MKT	0.47uF, 275V max.	IEC60384-14	VDE
	Okaya	RE/PA	0.47uF, 275V max.	IEC60384-14	VDE
Bleeder Resistor (R1 and R5)	--	--	470KΩ, 1/4W.	--	--
Y- Cap. (C1, C7, and C12), -(Optional)	Pan Overseas	AH/ AC	4700pF, 250V max.	IEC60384-14	VDE
	TDK	CS/ CD	4700pF, 250V max.	IEC60384-14	VDE
	Murata	KX/ KH	4700pF, 250V max.	IEC60384-14	VDE
	Matsushita	TS/ NS-A	4700pF, 250V max.	IEC60384-14	DEMKO/VDE
	Success	SF	4700pF, 250V max.	IEC60384-14	VDE
Optical Isolator - (U2, U5, U7 and U9)	Vishay	TCET1109G	di>0.7mm	VDE 0884	VDE
	Sharp	PC 817C	di>0.7mm	VDE 0884	VDE
	Cosmo	KPC817/ KP1010	di>0.7mm	VDE 0884	VDE

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

	QT	H11A817	di>0.7mm	VDE 0884	VDE
	Toshiba	TLP621	di>0.7mm	VDE 0884	VDE
	Toshiba	TLP421F	di>0.8mm	VDE 0884	VDE
Storage Cap. (C2 and C9)	Various	Various	330uF, 200V, 85°C	--	--
Voristor – (Mov1, Mov2 and Mov3)	Song Long	SAS-241KD07	--	--	UL
	Wujin Thanking	TVR-07D241	--	--	UL
	Maida	D73ZOV181RA	--	--	UL
Main Transformer (T1)	Hua Jung	TEI33S-V4211-S1025B	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Szfong	84A-010404	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Tyen Ping	17009-051021000	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Hi-Pro	TEI33S-V4211-S1025B	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	CIC	3700EI33172	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	I-Mag	IM113-1513A	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
Main Transformer (T2)	Hua Jung	TER28S-V4211-S1026A	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Szfong	84A-010405	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Tyen Ping	18009-051022000	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	Hi -Pro	TER28S-V4211-S1026A	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	CIC	3700ER28172	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland
	I-Mag	IM113-1514A	Class B	accord. to IEC 60085 and IEC 60950	acc. by TÜV Rheinland

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Line Filter (LF1)	Hua Jung	FEE25S-V28002-S13870	Class B	--	--
	Szfong	84A-010704	Class B	--	--
	Tyen Ping	EE25	Class B	--	--
	Xepex	39EEE25000400	Class B	--	--
	CIC	39EEE25000400	Class B	--	--
	I-Mag	IM113-1515A	Class B	--	--
Line Filter (LF2)	Hua Jung	FT116S-V05002-S10280	Class 120°C	--	--
	Tyen Ping	14009-020001000	Class 120°C	--	--
	Xepex	39ETR01720400	Class 120°C	--	--
	Mushin	08161100MS	Class 120°C	--	--
	Chilisih	ATP1505LF2	Class 120°C	--	--
	I-Mag	IM113-1517A	Class 120°C	--	--
PFC Chock (for Model ATP-1505-EP)	Hua Jung	CEI41S-V24603-Q1329A	Class B	--	--
	Tyen Ping	EI-41*26.5	Class B	--	--
	Szfong	84A-010703	Class B	--	--
	Xepex	39AEI41200200	Class B	--	--
	CIC	39AEI41200200	Class B	--	--
Mylar	--	--	94V-2 min	UL 94	UL
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

1.6	TABLE: electrical data (in normal conditions)					P
fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	condition/status
Fuse	--	90/50Hz	197	3.30	3.30	Normal load, condition A
Fuse	--	90/60Hz	196	3.25	3.25	dto
Fuse	4	100/50Hz	194	2.97	2.97	dto
Fuse	4	100/60Hz	194	2.95	2.95	dto
Fuse	4	120/50Hz	192	2.54	2.54	dto
Fuse	4	120/60Hz	192	2.51	2.51	dto

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Fuse	--	127/50Hz	192	2.41	2.41	dto
Fuse	--	127/60Hz	192	2.40	2.40	dto
Fuse	--	180/50Hz	193	1.41	1.41	dto
Fuse	--	180/60Hz	194	1.40	1.40	dto
Fuse	2	200/50Hz	192	1.25	1.25	dto
Fuse	2	200/60Hz	192	1.24	1.24	dto
Fuse	2	240/50Hz	190	1.03	1.03	dto
Fuse	2	240/60Hz	190	1.02	1.02	dto
Fuse	--	254/50Hz	190	0.98	0.98	dto
Fuse	--	254/60Hz	190	0.96	0.96	dto
Fuse	--	90/50Hz	189	3.29	3.29	Normal load, condition B
Fuse	--	90/60Hz	189	3.24	3.24	dto
Fuse	4	100/50Hz	187	2.96	2.96	dto
Fuse	4	100/60Hz	186	2.92	2.92	dto
Fuse	4	120/50Hz	185	2.51	2.51	dto
Fuse	4	120/60Hz	185	2.49	2.49	dto
Fuse	--	127/50Hz	184	2.39	2.39	dto
Fuse	--	127/60Hz	184	2.37	2.37	dto
Fuse	--	180/50Hz	192.3	1.40	1.40	dto
Fuse	--	180/60Hz	193.2	1.40	1.40	dto
Fuse	2	200/50Hz	190.9	1.24	1.24	dto
Fuse	2	200/60Hz	191.3	1.24	1.24	dto
Fuse	2	240/50Hz	189.5	1.03	1.03	dto
Fuse	2	240/60Hz	189.8	1.02	1.02	dto
Fuse	--	254/50Hz	189.3	0.97	0.97	dto
Fuse	--	254/60Hz	189.5	0.96	0.96	dto
Fuse	--	90/50Hz	186	3.24	3.24	Normal load, condition C
Fuse	--	90/60Hz	185	3.19	3.19	dto
Fuse	4	100/50Hz	184	2.91	2.91	dto
Fuse	4	100/60Hz	183	2.87	2.87	dto
Fuse	4	120/50Hz	182	2.46	2.46	dto
Fuse	4	120/60Hz	182	2.45	2.45	dto
Fuse	--	127/50Hz	182	2.36	2.36	dto

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Fuse	--	127/60Hz	181	2.34	2.34	dto
Fuse	--	180/50Hz	189	1.37	1.37	dto
Fuse	--	180/60Hz	190	1.37	1.37	dto
Fuse	2	200/50Hz	187	1.22	1.22	dto
Fuse	2	200/60Hz	188	1.22	1.22	dto
Fuse	2	240/50Hz	186	1.01	1.01	dto
Fuse	2	240/60Hz	186	1.00	1.00	dto
Fuse	--	254/50Hz	186	0.96	0.96	dto
Fuse	--	254/60Hz	186	0.95	0.95	dto
Fuse	--	90/50Hz	186	3.26	3.26	Normal load, condition D
Fuse	--	90/60Hz	186	3.20	3.20	dto
Fuse	4	100/50Hz	184	2.93	2.93	dto
Fuse	4	100/60Hz	184	2.89	2.89	dto
Fuse	4	120/50Hz	183	2.48	2.48	dto
Fuse	4	120/60Hz	183	2.47	2.47	dto
Fuse	--	127/50Hz	182	2.37	2.37	dto
Fuse	--	127/60Hz	182	2.35	2.35	dto
Fuse	--	180/50Hz	189	1.38	1.38	dto
Fuse	--	180/60Hz	190	1.38	1.38	dto
Fuse	2	200/50Hz	188	1.23	1.23	dto
Fuse	2	200/60Hz	188	1.22	1.22	dto
Fuse	2	240/50Hz	187	1.02	1.02	dto
Fuse	2	240/60Hz	187	1.01	1.01	dto
Fuse	--	254/50Hz	186	0.96	0.96	dto
Fuse	--	254/60Hz	187	0.95	0.95	dto
Fuse	--	90/50Hz	188	3.27	3.27	Normal load, condition E
Fuse	--	90/60Hz	188	3.24	3.24	dto
Fuse	4	100/50Hz	186	2.95	2.95	dto
Fuse	4	100/60Hz	186	2.91	2.91	dto
Fuse	4	120/50Hz	184	2.50	2.50	dto
Fuse	4	120/60Hz	184	2.48	2.48	dto
Fuse	--	127/50Hz	184	2.39	2.39	dto
Fuse	--	127/60Hz	184	2.39	2.39	dto

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Fuse	--	180/50Hz	192	1.40	1.40	dto
Fuse	--	180/60Hz	192	1.40	1.40	dto
Fuse	2	200/50Hz	190	1.25	1.25	dto
Fuse	--	254/60Hz	187	0.95	0.95	dto
Fuse	--	90/50Hz	188	3.27	3.27	Normal load, condition E
Fuse	--	90/60Hz	188	3.24	3.24	dto
Fuse	4	100/50Hz	186	2.95	2.95	dto
Fuse	4	100/60Hz	186	2.91	2.91	dto
Fuse	4	120/50Hz	184	2.50	2.50	dto
Fuse	4	120/60Hz	184	2.48	2.48	dto
Fuse	--	127/50Hz	184	2.39	2.39	dto
Fuse	--	127/60Hz	184	2.39	2.39	dto
Fuse	--	180/50Hz	192	1.40	1.40	dto
Fuse	--	180/60Hz	192	1.40	1.40	dto
Fuse	2	200/50Hz	190	1.25	1.25	dto
Fuse	2	200/60Hz	191	1.24	1.24	dto
Fuse	2	240/50Hz	189	1.03	1.03	dto
Fuse	2	240/60Hz	189	1.02	1.02	dto
Fuse	--	254/50Hz	189	0.97	0.97	dto
Fuse	--	254/60Hz	189	0.96	0.96	dto
Fuse	--	90/50Hz	189	3.29	3.29	Normal load, condition F
Fuse	--	90/60Hz	189	3.24	3.24	dto
Fuse	4	100/50Hz	187	2.95	2.95	dto
Fuse	4	100/60Hz	187	2.92	2.92	dto
Fuse	4	120/50Hz	185	2.51	2.51	dto
Fuse	4	120/60Hz	185	2.48	2.48	dto
Fuse	--	127/50Hz	185	2.37	2.37	dto
Fuse	--	127/60Hz	185	2.38	2.38	dto
Fuse	--	180/50Hz	192	1.40	1.40	dto
Fuse	--	180/60Hz	193	1.40	1.40	dto
Fuse	2	200/50Hz	191	1.25	1.25	dto
Fuse	2	200/60Hz	191	1.24	1.24	dto
Fuse	2	240/50Hz	190	1.03	1.03	dto

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Fuse	2	240/60Hz	190	1.02	1.02	dto
Fuse	--	254/50Hz	189	0.98	0.98	dto
Fuse	--	254/60Hz	190	0.97	0.97	dto

Condition A: +5Vsb/1.12A, +5V/4A, +12V/7.96A, +3.3V/ 8, -12V/0.2A

Condition B: +5Vsb/1.12A, +5V/4A, +12V/8.2A, +3.3V/ 8, -12V/0A

Condition C: +5Vsb/3A, +5V/4A, +12V/7.96A, +3.3V/ 5.15, -12V/0.2A

Condition D: +5Vsb/3A, +5V/4A, +12V/8.2A, +3.3V/ 5.15, -12V/0A

Condition E: +5Vsb/3A, +5V/2.12A, +12V/7.96A, +3.3V/8, -12V/0.2A

Condition F: +5Vsb/3A, +5V/2.12A, +12V/8.2A, +3.3V/ 8, -12V/0A

2.1.5	TABLE: max. V, A, VA test			P
Voltage (Rated) (V)	Current (Rated) (A)	Voltage (Max) (V)	Current (Max.) (A)	VA (Max.) (VA)
+5	4	5.01	8.5	33.67
+5Vsb	3	4.94	11.2	38.13
+12	8.2	12.92	17.0	185.49
+3.3	8	3.34	30.8	56.1
-12	0.2	-12.56	1.7	19.62

2.1.10	TABLE: discharge test			P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
System off	0.884	0.050	--	Vo = 361V, 37% of Vo = 133.5V, voltage after 1 second = 0V
System on	0.884	0.010	--	Vo = 340V, 37% of Vo = 125.8V, voltage after 1 second = 0V

Overall capacity: 0.94μF (C5 = C6 = 0.47μF)

Discharge resistor : 940kΩ (R1 = R5 = 470kΩ)

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

2.2.7	Table: working voltage measurement			P
Location		RMS Voltage (V)	Peak Voltage (V)	Comments
T1, pin 7 – 3		214.5	**340.4**	*
pin 7 – 4, 5(earth)		209	322.3	
pin 7 – 6		215	339.9	
pin 10, 11 – 3		215.4	335.1	
pin 10, 11 – 4, 5(earth)		215.5	334.3	
pin 10, 11 – 6		**216.1**	334.8	*
T2, pin 1 – 8		173.4	335.5	
pin 1 – 10 (earth)		173.4	336.3	
pin 2 – 8		173.2	335.6	
pin 2 – 10 (earth)		173.4	335.1	
pin 3 – 8		216.2	347.2	
pin 3 – 10 (earth)		**291.5**	**401.1**	*
pin 5 – 8		217.2	336.9	
pin 5 – 10 (earth)		217.2	335.9	
Input voltage: 240V, 60 Hz				
[1]) an asterisk indicates the highest measured working voltage.				

2.3.2	TABLE: Hazardous voltage measurement			P
Transformer	Location	max. Voltage		Voltage Limitation
		V peak	V dc	Component
T1	pin 3 – 6	44.7		--
		41.4		R4
T1	pin 6 – 4	12.6		--
L2	pin 5 – 6	28.6		--
T2	pin 8 – 10	12.8		--

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

2.3.2	TABLE: SEL voltage measurement		P
Location		Voltage measured (V)	Comments
output (+15V) – GND		0	

2.5.11	TABLE: ground continue test		P
Location		Resistant measured (Ω)	Comments
Inlet ground pin to metal enclosure		0.011	25A test current, 1 minute
Inlet ground pin to metal enclosure		0.012	30A test current, 2 minutes

2.9.2 and 2.9.3	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)
Primary components (10N) → secondary components (10N)	<420	<240	4.0	4.0	5.0	5.0
Primary components (10N) → earted metal chassis (30N)	<420	<240	2.0	3.0	2.5	3.0
Primary traces –→ secondary traces under T1	<420	<240	4.0	14.0	5.0	14.0
Primary traces –→ secondary traces under T2 (with 1.2 mm slot)	<420	<292	4.0	5.2	6.2	6.2
Primary traces –→ secondary traces under U2, U7	<420	<240	4.0	6.5	5.0	6.5

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Primary traces --→ secondary traces under U9, U5 (with 1 mm slot)	<420	<240	4.0	5.8	5.0	6.4
Primary traces → secondary others (with 1 mm slot)	<420	<240	4.0	5.2	5.0	5.2
Primary traces --→ earth trace	<420	<240	2.0	2.7	2.5	2.7

Operational insulation shorted, see 5.4.4

1.) All wires to PCB will reliable fixed in place by glue.

2.) A "L" – shape insulation sheet (0.2mm thick) provided on bottom side of PCB between PCB and chassis as well as primary component and chassis.

3.) An insulation sheet (0.3mm thick) provided between T1 core and primary heatsink glue together with T1 core.

4.) Tubing components: F01, MOV1, MOV3, R9, R4.

2.9.4.1	TABLE: distance through insulation measurements			N
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
Photo coupler reinforced insulation	250	3000	0.4	approved comp.
Black heat shrinkable tubing	250	3000	0.4	0.4

5.1	TABLE: temperature rise measurements					P
	test voltage (V)	a: 90V, b: 127V, c: 180V, d: 254V				—
	t1 (°C)					—
	t2 (°C)					—
temperature rise dT of part/at:		dT (K)				required dT (K)
Test Voltage		a	b	c	d	
LF1 coil		9.4	7.4	4.5	3.7	80
LF1 core		6.7	5.9	4.1	3.3	80
LF2 coil		13.8	10.8	6.3	5.4	80
LF2 core		13.1	10.7	6.6	6.0	80

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

BD1 between PWB	23.9	21.0	19.1	16.8	--
Top of C2 body	11.9	11.2	8.7	8.3	45
T1 coil	23.3	25.5	25.2	26.3	65
T1 core	20.4	22.9	21.4	23.0	65
T2 coil	10.8	12.0	11.3	12.1	65
T2 core	10.5	11.9	10.8	11.9	65
Heatsink of Q6	22.0	26.6	21.4	24.8	--
Heatsink of Q2	24.6	28.5	24.2	27.0	--
Heatsink of D1	22.7	24.5	25.9	25.9	--
L2 coil	25.2	31.2	26.2	31.4	80
PFC coil	6.7	7.9	27.1	20.1	80
PFC core	7.2	8.4	27.1	21.0	80
Heatsink for CPU	12.0	12.6	12.6	12.5	--
RTC battery body	9.7	10.4	9.9	10.0	--
CD-ROM body near motor	3.1	3.1	2.6	2.3	--
HDD1 body near motor	4.2	5.1	4.7	4.7	--
HDD2 body near motor	3.6	4.2	4.0	3.9	--
FDD body near motor	2.2	2.7	2.9	7.3	--
Enclosure near motor	2.0	2.7	1.9	2.0	30
Ambient air	21.7°C	21.3°C	22.8°C	22.3°C	--

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

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Comments:

The temperatures were measured by thermal couple method under worst case normal load as described in 1.6.1 at voltages described in 1.6.5.

With a specified ambient temperature of 40°C, the max. temperature rise is calculated as follows:

Winding components or components:

- class B → dTmax = 90K - 10K – (40-25)K = 65K

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → dTmax = (85-40) K = 45K

- max. absolute temp. of 120°C → dTmax = (105-40) K = 80K

Touchable enclosure surface with:

- metal parts → dTmax = 45K – (40-25)K = 30K

5.2	TABLE: leakage current measurement		P
Condition	current L→PE (mA)	current N→PE (mA)	Comments
System on	0.48	0.48	
System off	0.47	0.47	

Input voltage : 254V

Input frequency : 60Hz

Overall capacity : C1 = C7 = 12 = 4700pF

5.3	TABLE: electric strength measurements	P
test voltage applied between:	test voltage (V)	breakdown
Unit: primary and secondary	DC 4242	No
Unit: primary and ground	DC 2270	No
Power supply: primary and ground	DC 2270	No
Power supply: primary and secondary	DC 4242	No
T1, T2: primary and secondary	AC 3000	No
T1, T2: primary and core	AC 1500	No
T1, T2: secondary and core	AC 1500	No
T1 T2: 2 layers of insulation	AC 3000	No
T1: between Mothboard and chassis for mylar	AC 3000	No

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

5.4	TABLE: fault condition tests		P
	ambient temperature (°C) .....:		—
	model/type of power supply .....:	ATP-1505-EP	—
	manufacturer of power supply .....:	Asustek	—
	rated markings of power supply .....:		—

No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
01	Q2 pin 1 – 2	s-c	240	<1 sec	F01	0	F01 opened, Q2 damaged, no hazards
02	Q2 pin 2 – 3	s-c	240	<1 sec	F01	0	F01 opened, U1, Q2, D5, R15 damaged, no hazards
03	Q2 pin 1 – 3	s-c	240	<1 sec	F01	0	F01 opened, Q2 damaged, no hazards
04	BD1 pin 1- 4	s-c	240	<1 sec	F01	0	F01 opened, no hazards
05	C2	s-c	240	<1 sec	F01	0	F01 opened, mov3 damaged, no hazards
06	D2	s-c	240	1 hr	F01	0.070	Unit shut down immediately expect +5Vsb, no hazards
07	T1 pin 3 – 6	s-c	240	1 hr	F01	0.073	T1 shut down, unit foldback, expect +5Vsb, no hazards
08	T1 pin 4 – 6	s-c	240	1 hr	F01	0.065	T1 shut down, unit foldback, expect +5Vsb, no hazards
09	T2 pin 8 – 10	s-c	240	1 hr	F01	0.075	T1 shut down, unit foldback, expect +5Vsb, no hazards
10	R24	open	240	0.5 hr	F01	0.065	T1 shut down, unit foldback, expect +5Vsb, no hazards
11	U2 pin 1 – 2	s-c	240	1 hr	F01	0.069	T1 shut down expect +5Vsb, unit fold back, no hazards

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

12	U2 pin 3	s-c	240	1.5 hr	F01	0.068	T1 shut down expect +5Vsb, unit fold back, no hazards
13	U7 pin 1 – 2	s-c	240	0.5 hr	F01	0.068	T1 shut down expect +5Vsb, unit fold back, no hazards
14	U7 pin 3	s-c	240	0.5 hr	F01	0.071	T1 shut down expect +5Vsb, unit fold back, no hazards
15	U5 pin 1 – 2	s-c	240	10 min	F01	--	Unit shut down immediately, no component damaged, no hazards
16	U5 pin 3	s-c	240	<1 sec	F01	--	Unit shut down immediately, no hazards
17	Q6 pin 1 – 2	s-c	240	<1 sec	F01	--	Unit shut down immediately, Fuse, Q6 damaged, no hazards
18	Q6 pin 1 – 3	s-c	240	<1 sec	F01	--	Unit shut down immediately, no hazards
19	U9 pin 1 – 2	s-c	240	2 hr	F01	--	Unit operated normally, no hazards
20	R4	s-c	240	3 hr	F01	--	Unit operated normally, no hazards
21	T1 +12V	o-l	240	7 hr	F01	--	Overload to 7.1A, unit shut down, T1 coil = 118°C, T1 core = 103°C, ambient = 24°C, no hazards
22	T1 +3.3V	o-l	240	8 hr	F01	--	Overload to 14A, unit shut down, T1 coil = 107°C, T1 core = 94°C, ambient = 23°C, no hazards
23	T2 +5V	o-l	240	2 hr	F01	--	Overload to 3.5A, unit shut down, T1 coil = 48°C, T1 core = 47°C, ambient = 25°C, no hazards
24	T2 +5Vsb	o-l	240	8 hr	F01	--	Overload to 10A, unit shut down, T1 coil = 42°C, T1 core = 38°C, ambient = 23°C, no hazards

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

25	+5V output	s-c	240	1.5 hr	F01	0.71	T1 shut down expect +5Vsb, T1 = 24.5°C, T2 = 25.3°C, ambient = 22.6°C, no hazards
26	+12V output	s-c	240	1.5 hr	F01	0.71	T1 shut down expect +5Vsb, T1 = 25°C, T2 = 25.7°C, ambient = 23°C, no hazards
27	+3.3V output	s-c	240	1 hr	F01	0.72	T1 shut down expect +5Vsb, T1 = 24.2°C, T2 = 24°C, ambient = 22.3°C, no hazards
28	-12V output	s-c	240	1 hr	F01	0.72	T1 shut down expect +5Vsb, T1 = 24.2°C, T2 = 25.1°C, ambient = 22.3°C, no hazards
29	+5Vsb output	s-c	240	1.5 hr	F01	0	Unit shut down expect +5Vsb, T1 = 23°C, T2 = 23.4°C, ambient = 22.7°C, no hazards
30	DC Fan locked	--	240	4 hr	F01	--	Temperature of all parts stabled, LF1 coil = 71.3°C, LF2 coil = 71.4°C, T1 coil = 90.4°C, T2 coil = 87.7°C, L2 coil = 104.9°C, PFC coil = 86.8°C, ambient = 20.4°C, no hazards