



Test Report issued under the responsibility of:



TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number.: T221-0052/16

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Total number of pages..... 198 pages

Applicant's name.....: GlobTek Inc.

Address: 186 Veterans Dr. Northvale, NJ 07647, USA

Test specification:

Standard: IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013

Test procedure.....: CB Scheme

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

Test Report Form No.....: IEC60950_1F

Test Report Form(s) Originator.....: SGS Fimko Ltd

Master TRF: Dated 2014-02

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General disclaimer:

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

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Test item description	Switching Power Supplies		
Trade Mark			
Manufacturer.....	GlobTek Inc.		
Model/Type reference.....	GT-21096-PPVV-X.X-FW and GT-21089-PPVV-X.X-AB(C) See nomenclature in General product information.		
Ratings	Input: 100 - 240 Va.c.; 50 - 60 Hz; 0,5 A max.		
Output ratings			
Model:	Output Ratings	Class	
GT-21096-0903-F	3,3 Vd.c. / 2,6 A	I	
GT-21096-1305-X.X-F	5 Vd.c. / 2,6 A	I	
GT-21096-1506-X.X-F	6 Vd.c. / 2,5 A	I	
GT-21096-1509-X.X-F	9 Vd.c. / 1,7 A	I	
GT-21096-1512-X.X-F	12 Vd.c. / 1,25 A	I	
GT-21096-1524-X.X-F	24 Vd.c. / 0,625 A	I	
GT-21096-1815-X.X-F	15 Vd.c. / 1,2 A	I	
GT-21096-1818-X.X-F	18 Vd.c. / 1,0 A	I	
GT-21096-1824-X.X-F	24 Vd.c. / 0,75 A	I	
GT-21096-1948-X.X-F	48 Vd.c. / 0,4 A	I	
GT-21096-0903-FW	3,3 Vd.c. / 2,6 A	II	
GT-21096-1305-X.X-FW	5 Vd.c. / 2,6 A	II	
GT-21096-1506-X.X-FW	6 Vd.c. / 2,5 A	II	
GT-21096-1509-X.X-FW	9 Vd.c. / 1,7 A	II	
GT-21096-1512-X.X-FW	12 Vd.c. / 1,25 A	II	
GT-21096-1524-X.X-FW	24 Vd.c. / 0,625 A	II	
GT-21096-1815-X.X-FW	15 Vd.c. / 1,2 A	II	
GT-21096-1818-X.X-FW	18 Vd.c. / 1,0 A	II	
GT-21096-1824-X.X-FW	24 Vd.c. / 0,75 A	II	
GT-21096-1948-X.X-FW	48 Vd.c. / 0,4 A	II	
GT-21089-0903-T3 (W3, W3E, W3U, W3A)	3,3 Vd.c. / 2,6 A	I	
GT-21089-1305-X.X-T3 (W3, W3E, W3U, W3A)	5 Vd.c. / 2,6 A	I	
GT-21089-1506-X.X-T3 (W3, W3E, W3U, W3A)	6 Vd.c. / 2,5 A	I	
GT-21089-1509-X.X-T3 (W3, W3E, W3U, W3A)	9 Vd.c. / 1,7 A	I	
GT-21089-1512-X.X-T3 (W3, W3E, W3U, W3A)	12 Vd.c. / 1,25 A	I	
GT-21089-1524-X.X-T3 (W3, W3E, W3U, W3A)	24 Vd.c. / 0,625 A	I	
GT-21089-1815-X.X-T3 (W3, W3E, W3U, W3A)	15 Vd.c. / 1,2 A	I	
GT-21089-1818-X.X-T3 (W3, W3E, W3U, W3A)	18 Vd.c. / 1,0 A	I	
GT-21089-1824-X.X-T3 (W3, W3E, W3U, W3A)	24 Vd.c. / 0,75 A	I	
GT-21089-1948-X.X-T3 (W3, W3E, W3U, W3A)	48 Vd.c. / 0,4 A	I	
GT-21089-0903-T2 (W2, W2E, W2U, W2A)	3,3 Vd.c. / 2,6 A	II	
GT-21089-1305-X.X-T2 (W2, W2E, W2U, W2A)	5 Vd.c. / 2,6 A	II	
GT-21089-1506-X.X-T2 (W2, W2E, W2U, W2A)	6 Vd.c. / 2,5 A	II	
GT-21089-1509-X.X-T2 (W2, W2E, W2U, W2A)	9 Vd.c. / 1,7 A	II	
GT-21089-1512-X.X-T2 (W2, W2E, W2U, W2A)	12 Vd.c. / 1,25 A	II	
GT-21089-1524-X.X-T2 (W2, W2E, W2U, W2A)	24 Vd.c. / 0,625 A	II	
GT-21089-1815-X.X-T2 (W2, W2E, W2U, W2A)	15 Vd.c. / 1,2 A	II	
GT-21089-1818-X.X-T2 (W2, W2E, W2U, W2A)	18 Vd.c. / 1,0 A	II	
GT-21089-1824-X.X-T2 (W2, W2E, W2U, W2A)	24 Vd.c. / 0,75 A	II	
GT-21089-1948-X.X-T2 (W2, W2E, W2U, W2A)	48 Vd.c. / 0,4 A	II	

Testing procedure and testing location:		
☒	CB Testing Laboratory:	SIQ Testing and Certification GmbH
Testing location/ address.....:		Angerstraße 11, D-86807 Buchloe, Germany
☐	Associated CB Testing Laboratory:	
Testing location/ address.....:		
Tested by (name + signature)		Alexander Mayr 
Approved by (name + signature)		Boštjan Glavič 
☐	Testing procedure: TMP/CTF Stage 1:	
Testing location/ address.....:		
Tested by (name + signature)		
Approved by (name + signature)		
☐	Testing procedure: WMT/CTF Stage 2:	
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
☐	Testing procedure: SMT/CTF Stage 3 or 4:	
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

List of Attachments:

1. Test Report (72 pages)
2. National Differences – Enclosure No. 1 (41 pages)
3. European Group Differences and National Differences according to EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011 – Enclosure No. 1a (21 pages)
4. Pictures – Enclosure No. 2 (9 pages)
5. Schematics, Layouts, Transformer data - Enclosure No. 3 (29 pages)
6. Family overview and Enclosure Drawings – Enclosure No. 4 (26 pages)

Summary of testing:
Tests performed (name of test and test clause):

1.6.2 Input Test
1.7.11 Durability
2.1.1.5 Energy Hazard Measurements
2.1.1.7 Capacitance Discharge Test
2.2.2 SELV: Hazard Voltage (Circuit) Measurement Test
2.2.3 SELV Reliability testing
2.4 Limited Current Circuit (Bridging components)
2.5 Limited Power Source
2.6 Earthing Test
2.9.2 Humidity Test
2.10.2 Working Voltage measurement on PCB and Transformer
2.10.3/2.10.4 Clearance and Creepage distance measurement
2.10.5 Distance Through Insulation measurement
2.10.5.6 Thin Sheet Material (barriers)
4.2.2-4.2.4 Steady force test, 10N, 30 N, 250 N
4.2.5 Impact test, Fall test, Swing test
4.2.6 Drop test
4.2.7 Stress relief test; heat test (°C/7 h)
4.3.6 Torque Test for direct plug in Products.
Dimensions of the plugs
4.5.2 Heating (Temperature) Test
4.5.5 Resistance to abnormal heat (Ball pressure test)
5.1 Touch Current and protective conductor current
5.2 Electric Strength Test
5.3 Abnormal Operating Tests foreseeable misuse: SELV reliability and failure in the voltage regulation, Functional insulation, Component faults, Overload and short at the outputs

Testing location:

SIQ Ljubljana, Tržaška c. 2, SI-1000 Ljubljana, Slovenia

Revision No. 2:

SIQ Testing and Certification GmbH
 Angerstraße 11, D-86807 Buchloe, Germany

Summary of compliance with National Differences

List of countries addressed:

Argentina**, Australia, Austria***, Bahrain**, Belarus**, Belgium***, Brazil**, Bulgaria***, Canada, China, Cyprus***, Colombia**, Croatia**, Czech Republic***, Denmark***, Finland***, France***, Germany***, Greece***, Hungary***, India**, Indonesia**, Iran**, Ireland***, Israel, Italy***, Japan*, Kazakhstan**, Kenya**, Korea, Lybia**, Malaysia**, Mexico**, Netherlands***, New Zealand*, Norway***, Pakistan**, Poland***, Portugal***, Romania***, Russian Federation**, Saudi Arabia**, Serbia**, Singapore**, Slovakia***, Slovenia***, South Africa**, Spain***, Sweden, Switzerland, Thailand**, Turkey***, Ukraine**, United Arab Emirates**, United Kingdom, Uruguay**, USA, Vietnam**

* No national differences to IEC 60950-1:2005 (2nd edition) (+ A1 + A2) declared

** No national differences to IEC 60950-1:2005 (2nd edition) + A1 + A2 or IEC 60950-1:2001 (1st edition) declared

*** EU group differences

☒ **The product fulfils the requirements of EN 60950-1:2006 + A1:2010 + A2:2013 + A11:2009 + A12:2011 (see Enclosure No. 1a).**

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



1089 Family



1096 Family

Refer also to Enclosure No. 5

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Test item particulars:	
Equipment mobility:	GT-21089-PPVV-X.X.-W2; W3: Direct Plug-in GT-21089-PPVV-X.X.-T2; -T3: Table top (portable) GT-21096-PPVV-X.X.: for building-in
Connection to the mains:	☒ pluggable equipment ☒ type A ☐ type B ☒ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	+/- 10% or 90 to 264 Va.c.
Tested for IT power systems	☐ Yes ☒ No
IT testing, phase-phase voltage (V)	
Class of equipment	Class I or Class II (depends on input connection, see page 2 and nomenclature on page 8)
Considered current rating of protective device as part of the building installation (A)	
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IPX0
Altitude during operation (m)	2000
Altitude of test laboratory (m)	627
Mass of equipment (kg)	0,2

Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing:	
Date of receipt of test item	2006-07-21
Date(s) of performance of tests	From 2006-07-24 to 2006-08-14 From 2013-10-11 to 2013-10-21 (Rev. No.1)
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	

Manufacturer's Declaration per sub-clause 4.2.5 of IECCE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

☒ **Yes**
☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) : 1) GlobTek Inc.
186 Veterans Dr. Northvale, NJ 07647, USA

2) GlobTek (Suzhou) Co., Ltd.
Building 4, No. 76, Jin Ling East Rd., Suzhou
Industrial Park, Suzhou, JiangSu CN-215021, China

General product information:

The EUT is an power adaptor for the general use with Information Technology Equipment.

Model differences:

Differences within the families are limited to minor changes to determine output voltage and current.

The 1096 Family is identical to the 1089 Family except the following:

- 1) The 1096 Family is open-frame / provided without enclosure. The unit is intended for building-in; The 1089 Family is provided with enclosure.
- 2) The 1096 Family is provided with input and output connectors.

The 1089 models are represented by the following nomenclature:

GT-21089-PPVV-X.X-AB(C)

Where:

"GT-2" designates IEC 60950 Version power supply;

"1089" represents Series Code;

"-X.X" is optional or blank and designates voltage differentiator (subtracting "X.X" Volts from standard output voltage "VV" in 0,1 V increments);

"A" designates physical configuration: "T" represents desktop model and "W" represents direct plug-in model;

"B" designates the input plug configuration, where "2" is Class II (2 pin) and "3" is Class I type (3 pin);

"C" (for direct plug-in units ONLY) designates the country plug configuration employed - E = European, A = Australian, U = United Kingdom, C = Chinese, K = Korean and blank = US plug;

The 1096 models are represented by the following nomenclature:

GT-21096-PPVV-X.X-FW

Where:

"GT-2" designates IEC 60950 Version power supply;

"1096" represents Series Code;

"PP" designates Rated Output Power;

"VV" designates Rated Output Voltage;

"-X.X" is optional or blank and designates voltage differentiator (subtracting "X.X" Volts from standard output voltage "VV" in 0,1 V increments);

"F" designates open frame;

"W" designates Class II unit (unit without "W" is class I unit);

History sheet			
Date	Report Number	Change	Revision No.
2006-08-16	T223-0216/06	Initial Test Report issued.	—
2013-10-21	T223-0373/13	Test report upgrade to new edition of the standard IEC 60950-1:2005 (Second Edition), Am 1: 2009 / EN 60950-1:2006 + Am 1:2010 + Am 11:2009 + Am 12:2011	1.0
See first page	See first page	Test report upgrade to new edition of the standard IEC 60950-1:2005 (Second Edition), Am 1: 2009 / EN 60950-1:2006 + Am 1:2010 + Am 2:2013 + Am 11:2009 + Am 12:2011 Administrative changes. No modification of the product. No testing considered required.	2.0

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	P
1.5.4	Transformers	(see list of safety critical components table 1.5.1 and the transformer drawings in the Enclosure No. 3)	P
1.5.5	Interconnecting cables	Interconnection O/P cable to other device is carrying only SELV voltage on an energy level below 240VA. Except for the insulation material there are no further requirements to the interconnection cable	P
1.5.6	Capacitors bridging insulation	X1 or X2 capacitors according to IEC 60384-14:1993.	P
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such resistors are bridging double/reinforced insulation.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	Components in equipment for IT power systems	Unit not tested for connection to IT power system.	N/A
1.5.9	Surge suppressors	No surge suppressors are used.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No VDR bridging double or reinforced insulation.	N/A

1.6	Power interface		P
1.6.1	AC power distribution systems	TN	P
1.6.2	Input current	(see appended table 1.6.2).	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	The required marking is readily visible in Operator access area.	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V)	100-240V~	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz):	50-60 Hz	P
	Rated current (mA or A)	0,5mA	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark	GlobTec	P
	Model identification or type reference	GT-21089-PPVV-X.X-AB(C) or GT-21096-PPVV-X.X-FW (see page 1 and 8)	P
	Symbol for Class II equipment only	Symbol is only on units which are class II.	P
	Other markings and symbols		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking		P
1.7.2.1	General	No precautions are necessary.	N/A
1.7.2.2	Disconnect devices	Detachable power supply cord or plug of direct plug-in equipment or approved connector.	P
1.7.2.3	Overcurrent protective device	Unit provides appropriate overcurrent protective device inside the equipment.	P
1.7.2.4	IT power distribution systems	The following information should be given in the installation instruction: "This product is also designed for IT power distribution system with phase-to-phase voltage 230V".	N/A
1.7.2.5	Operator access with a tool	The unit is for built in use not operator accessible. The unit is operator accessible. There are no areas to be opened with tool by the operator.	P
1.7.2.6	Ozone	Unit does not produce ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	T 1A 250V marked adjacent to the fuse on PCB.	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals	1096 Family PE terminal properly marked.	P
1.7.7.2	Terminals for a.c. mains supply conductors	1096 Family AC terminal properly marked.	P
1.7.7.3	Terminals for d.c. mains supply conductors	not intended for connection to DC mains.	N/A
1.7.8	Controls and indicators	There are no controls affecting safety.	N/A
1.7.8.1	Identification, location and marking		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.2	Colours	No indicators with colors.	N/A
1.7.8.3	Symbols according to IEC 60417	There are no switches in the equipment.	N/A
1.7.8.4	Markings using figures	No controls in the sense of this clause.	N/A
1.7.9	Isolation of multiple power sources	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No removable parts.	P
1.7.13	Replaceable batteries	No lithium battery in the equipment.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....	Equipment not intended for installation in RAL.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection	There is adequate protection against operator contact with bare parts at ELV or hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth). GT-21096-PPVV-X.X-FW and GT-21096-PPVV-X.X-F units are intended for building-in and do not provide enclosure. Test should be performed in the end product.	P
	Test with test finger (Figure 2A)	No access with test finger with any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test pin (Figure 2B)	The test pin can not touch hazardous voltage through and openings or seams of the whole enclosure.	P
	Test with test probe (Figure 2C)	No TNV circuit.	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	P
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is $\leq 0,1\mu F$, no measurement is performed.	P
	Measured voltage (V); time-constant (s)	See appended table 2.1.1.7.	—
2.1.1.8	Energy hazards – d.c. mains supply	Unit not connected to DC mains.	N/A
	a) Capacitor connected to the d.c. mains supply		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers	No audio amplifier within the unit.	N/A
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The equipment is not intended to be used in RAL.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	SELV limits (at accessible parts) are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V)	Within SELV limits. (See appended table 2.2)	P
2.2.3	Voltages under fault conditions (V)	See test results in appended table 5.3.	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits are only connected to other SELV circuits and protective earth.	P

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits in the equipment.	N/A
	Type of TNV circuits.....		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
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		P
2.4.1	General requirements		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.4.2	Limit values	See appended table 2.4 in enclosure No. 2.	P
	Frequency (Hz)	See appended table 2.4 in enclosure No. 2.	—
	Measured current (mA).....	The peak drop voltage was measured with an oscilloscope at 2 k Ω non-inductive resistor. See appended table 2.4 in enclosure No. 2.	—
	Measured voltage (V)	< 250V	—
	Measured circuit capacitance (nF or μ F)	< 0,1 μ F	—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		P
	a) Inherently limited output	The output is limited to the values of table 2B in normal operation conditions or in the case of a single fault (see appended table 2.5).	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters	(see Annex CC)	—
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....		—
	Current rating of overcurrent protective device (A) ..		—

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	For class I units only.	P
2.6.2	Functional earthing	No functional earthing is provided.	N/A
	Use of symbol for functional earthing		P
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	Power Supply cord not provided with the equipment.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors	Test according to clause 2.6.3.4 was performed.	P
	Rated current (A), cross-sectional area (mm ²), AWG	0,5 A	—
	Protective current rating (A), cross-sectional area (mm ²), AWG.....		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	<0,1 Ω	P
2.6.3.5	Colour of insulation	Green and yellow (for class I only)	P
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm).....		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet.	P
2.6.5	Integrity of protective earthing	Power supply cord is not part of the investigation.	N/A
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or over current protective devices in the protective earthing / bonding conductors.	N/A
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains.	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts.	N/A
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way, which impair safety.	N/A
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on a telecommunication network.	N/A
2.7	Overcurrent and earth fault protection in primary circuits		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation	The unit is provided with single fuse.	P
2.7.2	Faults not simulated in 5.3.7	The protection devices are well dimensioned and mounted.	N/A
2.7.3	Short-circuit backup protection	The building installation is considered as short circuit backup protection.	P
2.7.4	Number and location of protective devices	GT-21089: Overcurrent protection by single built in fuse. GT-21096: two fuses provided.	P
2.7.5	Protection by several devices	GT-21089: Only one fuse. GT-21096: unit for building-in. End product consideration.	P
2.7.6	Warning to service personnel.....	No service work necessary.	N/A

2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (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	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C) :	Humidity treatment performed for 48h at 90-96%.	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, reinforced.	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used :	Accessible conductive parts, SELV circuits or TNV circuits are separated from parts at hazardous voltage by double or reinforced insulation (Method 1).	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency :	50-60 Hz	P
2.10.1.2	Pollution degrees :	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation	Functional insulation Line to Neutral before fuse complies with 2.10.3 & 2.10.4. Other functional insulations comply with 5.3.4 c).	P
2.10.1.4	Intervening unconnected conductive parts	Distance to unconnected conductive parts considered during evaluation of clearances and creepage distances.	N/A
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N/A
2.10.1.6	Special separation requirements	No TNV circuits.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A
2.10.2	Determination of working voltage	See appended table 2.10.2.	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Considered.	P
2.10.2.3	Peak working voltage	Considered.	P
2.10.3	Clearances		P
2.10.3.1	General	See appended table 2.10.3 and 2.10.4	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.2	Mains transient voltages	Normal transient voltage considered.	P
	a) AC mains supply	Overvoltage category II for primary circuit and transient voltage 2500V _{peak} .	P
	b) Earthed d.c. mains supplies	Unit not intended for connection to DC mains.	N/A
	c) Unearthed d.c. mains supplies	Unit not intended for connection to DC mains.	N/A
	d) Battery operation	No battery.	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply	Secondary circuit is not earthed therefore same transients as for a.c. mains considered.	P
2.10.3.7	Transients from d.c. mains supply	Main transient voltage	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	Unit not intended for connection to telecommunication network or cable distribution system.	N/A
2.10.3.9	Measurement of transient voltage levels	Measurement not relevant.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	Complied with 2.10.5.2 to 2.10.5.14 and 5.2	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.3	Insulating compound as solid insulation	Certified sources of photo couplers used. No other components applied for. See sub-clause 2.10.5.2 and 2.10.10	P
2.10.5.4	Semiconductor devices	For photo couplers see sub-clause 2.10.5.3	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General	The thin sheet materials of polyester tape used in transformers. There are also 2 layers of polyester foil wrapped around the transformer.	P
2.10.5.7	Separable thin sheet material	Insulation tapes provide.	P
	Number of layers (pcs)..... :	2 layers (inside transformer) 2 layers around the transformer	—
2.10.5.8	Non-separable thin sheet material	No such insulation.	N/A
2.10.5.9	Thin sheet material – standard test procedure		P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Transformers provided with triple insulated wire complying with 2.10.5.12.	P
2.10.5.12	Wire in wound components	Approved triple insulated wire is used inside transformers. See list of critical components.	P
	Working voltage :	See appended table 2.10.2.	P
	a) Basic insulation not under stress :		N/A
	b) Basic, supplementary, reinforced insulation :	All used triple insulated wires are in compliance with Annex U.	P
	c) Compliance with Annex U :	Approved triple insulated wires are used. See list of critical components.	P
	Two wires in contact inside wound component; angle between 45° and 90° :	No contact between 45° and 90°.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No TNV circuits.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

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 that is PVC insulated, rated VW-1, min. 105°C, 300V, internal wiring is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heatsinks which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wires with only basic isolation are routed so that they are not close to any live bare components. The wires are secured by solder pins and quick connect terminals so that a loosening is unlikely.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	N/A
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and Creepage distances can be reduced.	N/A
	10 N pull test		P
3.1.10	Sleeving on wiring	Sleeves can only be removed by breaking or cutting.	P

3.2	Connection to a mains supply		P
3.2.1	Means of connection		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	Connection to an a.c. mains supply	Detachable power supply cord or plug of direct plug-in equipment or approved connector.	P
3.2.1.2	Connection to a d.c. mains supply	Only one supply connection.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	GT-21089-PPVV-X.X.-T2; -T3: Unit is provided with approved appliance inlet. See list of critical components.	P
3.2.5	Power supply cords	Power supply cord is not part of the investigation.	N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
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	No sharp points or cutting edges on the equipment surfaces.	P
3.2.8	Cord guards	Adequate cord-guard.	N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
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	Conductor sizes to be connected		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	Table top: appliance inlet is considered as disconnect device. Direct plug-in: the plug part is considered to be the disconnect device. For building-in: End product consideration.	P
3.4.2	Disconnect devices	Plug or appliance inlet. Refer above.	P
3.4.3	Permanently connected equipment	The unit is not the permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No part of the unit remains energized after disconnection of the mains supply.	P
3.4.5	Switches in flexible cords	No isolating switch in the flexible cord.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices	Direct plug-in equipment. Plug is not located on the power supply cord.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages or hazardous energy levels.	N/A
3.4.11	Multiple power sources	One power source only.	N/A
3.5	Interconnection of equipment		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits :	SELV circuit or limited current circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	The unit has a mass less than 7kg.	P
	Test force (N)	The unit is not floor standing.	N/A

4.2	Mechanical strength		P
4.2.1	General		P
	Rack-mounted equipment.	(see Annex DD)	N/A
4.2.2	Steady force test, 10 N	No hazard. See appended table 4.2.2.	P
4.2.3	Steady force test, 30 N	No internal enclosure.	N/A
4.2.4	Steady force test, 250 N	No hazard. The test was performed at 250N.	P
4.2.5	Impact test	Table top units were tested	P
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)	Direct plug-in: The adaptor has been subjected to 3 drops from 1 m height on a hard wooden surface.	P
4.2.7	Stress relief test	After 7 h at 110°C and cooling down to room temperature, no shrinkage, distortion or loosening of enclosure parts was noticeable on the equipment.	P
4.2.8	Cathode ray tubes	No cathode ray tubes.	N/A
	Picture tube separately certified	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Unit is not intended to be mounted on a wall or ceiling.	N/A

4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N).....	No knobs, grips, handles, lever, etc.	N/A
4.3.3	Adjustable controls	Setting of the voltage requires a tool.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.4	Securing of parts	No loosening of parts impairing Creepage distances or clearances is likely to occur.	N/A
4.3.5	Connection by plugs and sockets	SELV and TNV connectors do not comply with IEC 60320 or IEC 60083.	N/A
4.3.6	Direct plug-in equipment		P
	Torque	< 0,2 Nm	—
	Compliance with the relevant mains plug standard	Dimension of the injection part of the European plug is in accordance the with the requirement of EN 50075 standard. See also National differences.	P
4.3.7	Heating elements in earthed equipment	The equipment does not have any heating elements.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate dust, powder, does not contain liquid or gas. The unit is specified for office environment.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids		N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		—
4.3.13.6	Other types		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	No hazardous moving parts.	N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L	Rated load, as specified by Manufacturer.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	(see appended table 4.5.5)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.6	Openings in enclosures		P
4.6.1	Top and side openings	This clause applies only to 1089 Family. For 1096 Family clause 4.6 is not applicable.	P
	Dimensions (mm)	1089 Family: The enclosure is constructed with no opening.	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottom, dimensions (mm) ..	1089 Family: There is no opening at the bottom of enclosure.	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	N/A
	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 and testing in Single Fault Conditions.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	1089 Family: Fire enclosure covers all parts. 1096 Family: unit for building-in. Fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure	1089 Family: Output PVC cable	P
4.7.3	Materials		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification, tested according to Annex A.	P
4.7.3.2	Materials for fire enclosures	1089 Family: (see appended table 1.5.1) 1096 Family: unit is provided without enclosure.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	1089 Family: Output PVC cable and appliance inlet. 1096 Family: no such part.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	According to Fig. 5A	P
5.1.4	Application of measuring instrument	Measuring instrument D1 was used.	P
5.1.5	Test procedure	See appended table	P
5.1.6	Test measurements		P
	Supply voltage (V)	See appended table 5.1 in Enclosure No. 2.	—
	Measured touch current (mA)	See appended table 5.1 in Enclosure No. 2.	—
	Max. allowed touch current (mA)	0,25 mA	—
	Measured protective conductor current (mA)	—	—
	Max. allowed protective conductor current (mA)... :	—	—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2).	P
5.2.2	Test procedure		P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation.....:		P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE		N/A
5.3.7	Simulation of faults		N/A
5.3.8	Unattended equipment	The unit is intended for continuous operation. There is no thermal sensor or cut-off for operational condition.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No flame, melted metal, no fire- cheese cloth on top and tissue paper on bottom remain clean.	P
5.3.9.2	After the tests	The tested units passed the electric strength test.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, 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
	Supply 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 the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

IEC 60950-1			
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		—
	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 (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
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.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
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 60695-11-5, cl. 5 and 9		N/A
	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
A.3.1	Mounting of samples		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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	(see appended table 5.3)	N/A
B.4	Running overload test	(see appended table 5.3)	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 d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		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)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	Primary to secondary	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Manufacturer	See critical component list	—
	Type	See critical component list	—
	Rated values	100-240 V.a.c.	—
	Method of protection	Primary current limitation	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	Reinforced	P
	Protection from displacement of windings		P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument	Measuring instrument D1 was used.	P
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Verified.	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		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
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	Rated load, as specified by Manufacturer.	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
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/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
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories		N/A
	b) Maximum continuous voltage		N/A
	c) Combination pulse current		N/A
	Body of the VDR Test according to IEC60695-11-5.....		N/A
	Body of the VDR. Flammability class of material (min V-1).....		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
		See separate test report	—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		See list of critical components. All used triple insulated wires are already approved to Annex U. No additional tests considered required.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....:		N/A
DD.3	Mechanical strength test, 250N, including end stops.....:		N/A
DD.4	Compliance.....:		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	Information of user instructions, maintenance and/or servicing instructions.....:		N/A
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2)		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
All units						
X Capacitor (CX1)	Pilcor	PCX2	Max.0,22 uF, min.275 V, min.X2	IEC60384-14 UL1414	S, N, D, FI UL, CSA	
X Capacitor (CX1) Alternative	Ultra Tech	HQX	Max.0,22 uF, min.275 V, min.X2	IEC60384-14 UL1414	S, N, D, FI UL, CSA	
X Capacitor (CX1) Alternative	Dain	MPX	Max.0,22 uF, min.275 V, min.X2	IEC60384-14 UL1414	S, N, D, FI UL, CSA	
X Capacitor (CX1) Alternative Alternative	CT	CTX	Max.0,22 uF, min.275 V, min.X2	IEC60384-14 UL1414	VDE 40022642 UL E193049	
Bulk Capacitor (C9)	various	Various	Max. 47uF, min.400 V, min.105°C	IEC/EN60950	Accepted	
Y Capacitor (CY1)	TDK	CD	Max.4700 pF, min.250 V, Y1	IEC60384-14 UL1414	VDE UL, CSA	
Y Capacitor (CY1) Alternative	Welson	WD	Max.4700 pF, min.250 V, Y1	IEC60384-14 UL1414	VDE	
Y Capacitor (CY1) Alternative	Chyun Fuh	CE	Max.4700 pF, min.250 V, Y1	IEC60384-14 UL1414	VDE	
Y Capacitor (CY1) Alternative	TDK	CD	Max.4700 pF, min.250 V, Y1	IEC60384-14 UL1414	VDE122006 VDE124321 UL E37861	
Y Capacitor (CY1) Alternative	Success	SB SE	Max.4700 pF, min.250 V, Y1	IEC60384-14 UL1414	VDE121379 VDE118218 ULE114280	
Insulating tape	Various	Mylar	1 layer, 0,06 mm thick	IEC/EN60950 UL510	Accepted UL	
Insulator - Silpad Around D8	Various	Various	0,5 mm thick, covered by 1 layer of Mylar insulating tape	IEC/EN60950 UL746C	Accepted UL, cUL R/C	

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Insulator – Heat sink	Various	Various	Min. 0,4 mm thick; L – shaped, overall 26 by 51 mm	IEC/EN60950 UL746C	Accepted UL, cUL R/C
Optocoupler (U1)	Sharp	PC817 series	Dcr.= Min. 6,4 mm; Dti. > 0,4 mm, Isolation voltage min. 3000 Vac, reinforced insulation (Operation temperature 100°C).	IEC 60950-1, VDE 0884	VDE
Optocoupler (U1) Alternative	Liteon	LTV-817	Dcr. = Min.7,8 mm (ext.), Min. 5,2 mm (int.); Dti.: Min. 0,8 mm Minimum 3000 V ac isolation. Reinforced insulation. (Operation temperature 100°C).	IEC 60950-1, VDE 0884	VDE
Optocoupler (U1) Alternative	Everlight Electronics Co., Ltd.	EL817	Dcr. = Min.7,8 mm (ext.), Min. 5,2 mm (int.); Dti.: Min. 0,8 mm Minimum 3000 V ac isolation. Reinforced insulation. (Operation temperature 100°C).	IEC 60950-1, VDE 0884	VDE 132249 UL E214129
Optocoupler (U1) Alternative	Bright LED	BPC817	Dcr. = Min.7,8 mm (ext.), Min. 5,2 mm (int.); Dti.: Min. 0,8 mm Minimum 3000 V ac isolation. Reinforced insulation. (Operation temperature 100°C).	IEC 60950-1, VDE 0884	VDE 40007240 UL E236324
Resistor, bleeding (R8, R9)	various	various	Min.470 kOhm, min.0,125 W, carbon	IEC/EN60950	Accepted

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Transformer (T1) Pri/sec	+ Comp., open type construction with overall dimension approx. 23 mm by 20 mm by 27 mm max. Rating: 240 V / 0,5 A, 50/60 Hz Core: Ferrite EE25 Coil: Primary: enamelled copper wire. Secondary: triple insulated wire, Furukawa, TEX-E, Class B. Bobbin: Phenolic EE-25, 8 pin, UR (QMFZ2), type +T373J from Chang Chun, rated min. 94V-1 at min thickness 1,0 mm, RTI 150°C. Insulation: Insulation is achieved by use of triple insulated wire, Furukawa, TEX-E, Class B on secondary. All winding outlets are tubed. Whole transformer is wrapped with polyester film tape. Insulation class B UL insulation system Corp., ST-2804, Class B			IEC/EN60950	Accepted
Heat sink	Aluminium, L shaped. Top dimensions 40 by 35 mm, 0,8 mm thick. Side dimensions 25 by 23 mm, 0,8 mm thick. Secondary side is protected by insulating sheet, L shaped, overall 27,3 by 33,5 by 18 mm, 0,5 mm thick.			IEC/EN60950	Accepted
PCB	+ Cheerful	03	Paper phenolic, paper epoxy or glass epoxy, rated min. 94V-1, min. 105°C	IEC/EN60950 UL94	Accepted UL
	SHENZHEN TONGCHUANG XIN ELECTRONICS CO LTD	TCX	Paper phenolic, paper epoxy or glass epoxy, rated min. 94V-1, min. 105°C	IEC/EN60950 UL94	Accepted UL
	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	Paper phenolic, paper epoxy or glass epoxy, rated min. 94V-1, min. 105°C	IEC/EN60950 UL94	Accepted UL
GT-21089-PPVV-X.X series (additional components)					

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Enclosure	Direct plug-in: overall 74 by 49 by 40,5 mm, min. 2,3 mm thick Desktop: 86,5 by 47 by 32 mm, min. 2,3 mm thick Constructed of two parts, secured together by ultrasonic welding. Moulded of UR (QMFZ2) E50075, Teijin Chemicals, Type LN-1250P/LN-1250G, rated 94V-0 by min. thickness 1,0 mm or E56070, Chi Mei Corporation, Type PA-769, rated 94V-0 at min. thickness 3,0 mm or E45329, SABIC, Type SE100, rated 94V-0 by min thickness 6,0 mm. Constructed with no opening.			IEC/EN60950	Accepted
Appliance inlet – T3 models	In-Always	3P	10 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Appliance inlet T3 models Alternative	TECX	TU-301-SP	10 A, 250 V	IEC60320 UL498	VDE 40025582 UL E220004
Appliance inlet T3 models Alternative	Leci	DB-14	10 A, 250 V	IEC60320 UL498	VDE 40032137 UL E302229
Appliance inlet – T3 models Alternative	Rich Bay	R-301SN	10 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Appliance inlet - T2 models Alternative	Rong Feng	RF-180	2.5 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Appliance inlet - T2 models Alternative	Tecx-Unions	SO-222-TP	2.5 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Appliance inlet - T2 models Alternative	Sun Fair	S-01	2.5 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Appliance inlet - T2 models Alternative	Rich Bay	R-201SN90	2.5 A, 250 V	IEC60320 UL498	VDE, FI, SEV, S UR, CSA
Fuse (F1)	Littelfuse	228	250 V, 1 A	IEC60127	VDE

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Fuse (F1) Alternative	Wickmann	195	250 V, 1 A	IEC60127	VDE
Fuse (F1) Alternative	Walter	TAP	250 V, 1 A	IEC60127	VDE
Input choke (LF1)	+ Comp., open type construction with overall dimension approx. 19,5 mm by 21,5 mm by 17 mm max. Ferrite core: UU-10,5 Bobbin: UU-10,5, material: Phenolic T373J from Chang Chun Plastics Co., Ltd. (E59481) Wire: enameled copper wire			IEC/EN60950	Accepted
Output cord	Various	Various	Style #1185, #1181 or #2646, 16 – 20 AWG, VW-1, min. 80°C, 300 V. Additionally may be provided with optional foil/braided shield in cord.	IEC/EN60950	Accepted
Output cord Alternative	Various	Various	VW-1, SPT-1, rated 80°C min., 2 wire, 16 AWG; one end soldered to PWB, other end molded with barrel type connector (center positive).	IEC/EN60950	Accepted
GT-21096-PPVV-X.X- series (additional components)					
Fuse (F1, F2)	+ Wickmann	382	T 1A, 250V	IEC60127	VDE UR
Input choke (LF1)	+ Cheng Chi Li Enterprise, open type construction with overall dimension approx. 20 mm by 23 mm by 18 mm max. Ferrite core: UU-10,5 Bobbin: UU-10,5, material: Phenolic T373J from Chang Chun Plastics Co., Ltd. (E59481) Wire: enameled copper wire			IEC/EN60950	Accepted

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Input connector (J4)	+ Molex	A-41791 series Class I unit: 3 pin Class II unit: 2 pin	Insulating material rated 94V-0.	IEC/EN60950	Accepted
Output connector (J5)	+ Molex	A-42227 series 2 pins	Insulating material rated 94V-0.	IEC/EN60950	Accepted
Output connector (J6)	+ Molex	A-42227 series 4 pins	Insulating material rated 94V-0.	IEC/EN60950	Accepted
1) an asterisk indicates a mark which assures the agreed level of surveillance 2) + means, that components from other vendor and other model number, but with the same rating and equivalent approvals are accepted.					

1.5.1	TABLE: Opto Electronic Devices	N/A
Manufacturer : Type..... : Separately tested : Bridging insulation : External creepage distance : Internal creepage distance : Distance through insulation : Tested under the following conditions : Input..... : Output..... : supplementary information		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status	
90 V, 50 Hz	0,407	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
100 V, 50 Hz	0,385	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
110 V, 50 Hz	0,365	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
120 V, 50 Hz	0,347	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
132 V, 50 Hz	0,327	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
210 V, 50 Hz	0,256	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
220 V, 50 Hz	0,255	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
230 V, 50 Hz	0,254	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
240 V, 50 Hz	0,253	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
264 V, 50 Hz	0,242	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
90 V, 60 Hz	0,406	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
100 V, 60 Hz	0,385	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
110 V, 60 Hz	0,363	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
120 V, 60 Hz	0,343	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
132 V, 60 Hz	0,323	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
210 V, 60 Hz	0,250	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
220 V, 60 Hz	0,245	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
230 V, 60 Hz	0,242	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
240 V, 60 Hz	0,239	0,5	—	F1	1 A	Model GT-21089-2048-T3, Rated load	
264 V,	0,239	0,5	—	F1	1 A	Model GT-21089-2048-T3,	

IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
60 Hz						Rated load
90 V, 50 Hz	0,347	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
100 V, 50 Hz	0,322	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
110 V, 50 Hz	0,300	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
120 V, 50 Hz	0,280	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
132 V, 50 Hz	0,262	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
210 V, 50 Hz	0,202	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
220 V, 50 Hz	0,202	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
230 V, 50 Hz	0,200	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
240 V, 50 Hz	0,200	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
264 V, 50 Hz	0,206	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
90 V, 60 Hz	0,346	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
100 V, 60 Hz	0,319	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
110 V, 60 Hz	0,295	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
120 V, 60 Hz	0,275	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
132 V, 60 Hz	0,259	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
210 V, 60 Hz	0,200	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
220 V, 60 Hz	0,196	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
230 V, 60 Hz	0,193	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
240 V, 60 Hz	0,190	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load
264 V, 60 Hz	0,193	0,5	—	F1	1 A	Model GT-21089-1305-T3, Rated load

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
90 V, 50 Hz	0,367	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
100 V, 50 Hz	0,334	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
110 V, 50 Hz	0,326	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
120 V, 50 Hz	0,312	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
132 V, 50 Hz	0,309	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
200 V, 50 Hz	0,215	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
210 V, 50 Hz	0,208	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
220 V, 50 Hz	0,203	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
230 V, 50 Hz	0,194	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
240 V, 50 Hz	0,191	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
264 V, 50 Hz	0,184	0,5	—	F1	1 A	Model GT-21089-1524-T3, Rated load
90 V, 50 Hz	0,407	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
100 V, 50 Hz	0,384	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
110 V, 50 Hz	0,361	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
120 V, 50 Hz	0,352	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
132 V, 50 Hz	0,344	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
200 V, 50 Hz	0,247	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
210 V, 50 Hz	0,239	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
220 V, 50 Hz	0,231	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
230 V, 50 Hz	0,225	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
240V, 50	0,219	0,5	—	F1	1 A	Model GT-21089-1818-T3,

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
Hz						Rated load
264 V, 50 Hz	0,217	0,5	—	F1	1 A	Model GT-21089-1818-T3, Rated load
Supplementary information: Input current did not exceed rated input current at rated input voltage and rated output load by more than 10%. Input current was greater at 50 Hz input voltage.						

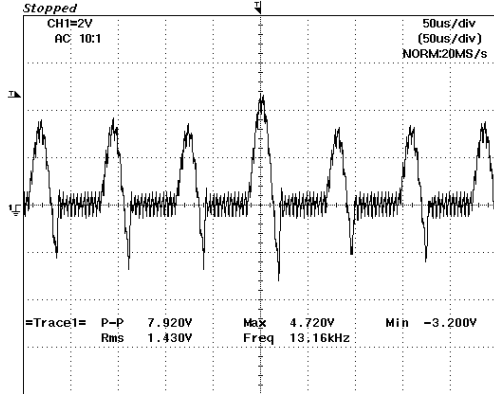
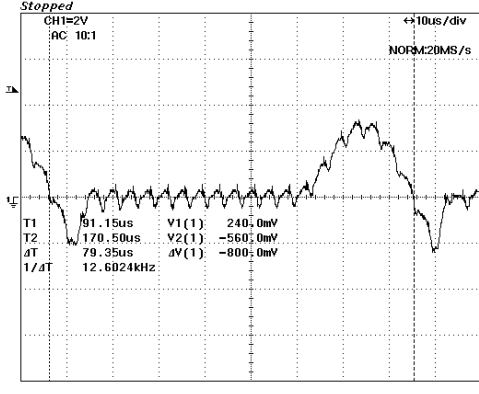
2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
supplementary information:					

2.1.1.5 c) 2)	TABLE: stored energy			N/A
Capacitance C (μF)		Voltage U (V)	Energy E (J)	
supplementary information:				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
T1, Pin6-Pin8		86Vpk	-	D8, L1
T1, C3 (+ to -)		48,9dc		-
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
supplementary information:				
Test was performed on the unit (GT-21089-1948-T3) with highest output voltage and is representable for all units. Test covers also GT-21096 product family.				
Refer to table 5.3 for SELV reliability tests.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.4	TABLE: Limited current circuit	P
<i>The unit was connected to 240 Vac, 50 Hz. A 2000 Ohms non-inductive resistor and a switch were connected between the user accessible part of a limited current circuit and either pole of the limited current circuit or earth. A storage oscilloscope was connected across the points under consideration. The switch was closed and voltages on resistor were measured.</i>		
Limit values	8,4 mA	
Circuit(s) tested	CY1	
Measured working voltage:	141,4 Vr.m.s.; 176 Vpeak	
Measured frequency	12 kHz	
Measured current through 2000Ω	2,36 mA (4,72 Vpk / 2000 Ω)	
Measured capacitance	2,2 nF	
Stopped CH1=2V AC 10:1 50us/div (50us/div) NORM20MS/s  =Trace1= P-P 7.920V Max 4.720V Min -3.200V Rms 1.430V Freq 13.16kHz =Filter= =Offset= =Record Length= =Trigger= Smoothing : OFF CH1 : ----- Main : 10K Mode : AUTO BW : FULL CH2 : ----- Zoom : 2K Type : EDGE CH1 f Delay : 0.0ns Hold Off : MINIMUM Stopped CH1=2V AC 10:1 10us/div NORM20MS/s  T1 91.15us V1(1) 240.0mV T2 170.50us V2(1) -560.0mV dT 79.35us dV(1) -800.0mV 1/dT 12.6024kHz =Filter= =Offset= =Record Length= =Trigger= Smoothing : OFF CH1 : ----- Main : 10K Mode : AUTO BW : FULL CH2 : ----- Zoom : 2K Type : EDGE CH1 f Delay : 0.0ns Hold Off : MINIMUM		
Comments: Test was performed on the unit with highest output voltage and is representable for all units. Test covers also GT-21096 product family.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: Limited power sources					P
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Sample No.	Uoc (V)	Isc (A)		VA	
			Meas.	Limit	Meas.	Limit
Normal operating conditions	GT-21089-1948-T3	48,31	1,19	8,0	57,49*	100
Normal operating conditions	GT-21089-1824-T3	24,44	1,73	8,0	42,29*	100
Normal operating conditions	GT-21089-1805-T3	5,21	5,93	8,0	19,10	100
supplementary information:						
Sc=Short circuit, Oc=Open circuit						
* Calculated power (Isc x Uoc) When short circuit test of any component in regulation circuit is performed, unit shuts down. Output of each unit was considered as limited power source.						

2.6	TABLE: Resistance of earthing conductors and their terminations				P
Using a maximum 12 V dc power source, a current of 40 A was passed between the equipment earthing terminal and the part in the equipment that is required by 2.6.1 to be earthed listed below for a period of 120 s. The voltage drop from the earthing terminal to the accessible metal part required to be earthed was recorded and the resistance was calculated.					
Model	Location	Test Current in A	Measured Voltage in (mV)	Calculated Resistance (mΩ)	
(GT-21089-PPVV-X.X-T3)	PE pin of appliance inlet to PCB	40	2200	55	
Comments: The resistance did not exceed 0,1 Ohm from any accessible conductive part and earth. GT-21096-PPVV-X.X-F: Test should be performed in the end use product.					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

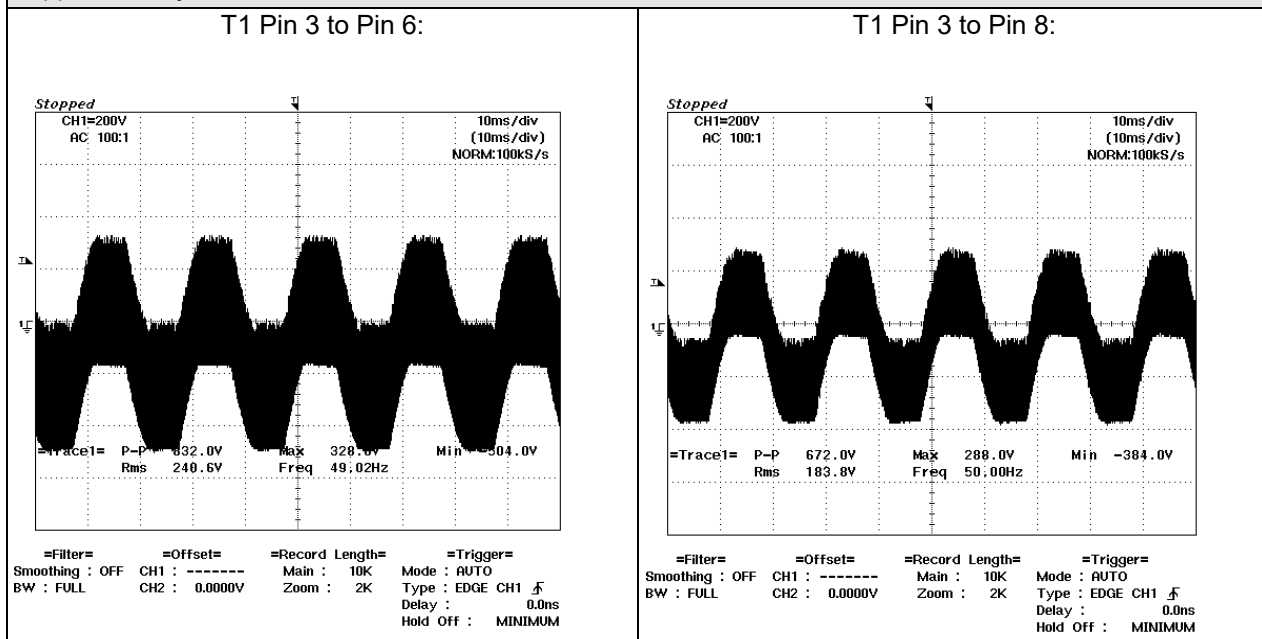
2.9.1, 2.9.2, 5.2.2	TABLE: Humidity test	P
A humidity chamber was maintained within 1°C of temperature “t” at a temperature of 25°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 94% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized. While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.		
Location	Insulation type	Potential used
Primary to PE	Basic	1500Vac
Primary to secondary	Reinforced	3000Vdc
Primary to enclosure	Reinforced	3000Vdc
Comment: There was no breakdown of insulation. There was no breakdown. Test covers also GT-21096 product family. All components were tested.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement	P
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Location	RMS voltage (V)	Peak voltage (V)	Comments
T1	142,5	192	pin 1 to pin 6 (PE)
T1 pin 2	141,0	184	pin 2 to pin 6 (PE)
T1 pin 3	240,6	504	pin 3 to pin 6 (PE)
T1 pin 4	141,1	184	pin 4 to pin 6 (PE)
T1 pin 1	161,1	328	pin 1 to pin 8
T1 pin 2	158,4	320	pin 2 to pin 8
T1 pin 3	183,8	384	pin 3 to pin 8
T1 pin 4	158,2	320	pin 4 to pin 8

supplementary information:



Comment:

Input: 240 V, 50 Hz

Working voltage was recorded for model with highest output voltage.

Test is representable for all units.

Test covers also GT-21096 product family.

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
GT- 21089 -PPVV-X.X-T3 and GT- 21089 -PPVV-X.X-W3						
GT- 21089 -PPVV-X.X-T3 and GT- 21089 -PPVV-X.X-W3	420	250	1,5	3,5	2,5	3,5
GT- 21089 -PPVV-X.X-T3 and GT- 21089 -PPVV-X.X-W3	420	250	Method C was used			
Primary to Earth (Basic)	420	250	2,0	5,8	2,5	5,8
Primary to Secondary (Reinforced) transformer T1	475	225	4,4	5,0*	5,0	>5,1*
Primary to Secondary on PCB	504	240,6	4,4	4,8	5,0	5,8
Secondary to Secondary	—	—	Method C was used			
Supplementary information:						
* TIW is used on Secondary						
Whole transformer outer is wrapped by 2 layers of insulating tape.						

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
GT- 21089 -PPVV-X.X-T2 and GT- 21089 -PPVV-X.X-W2							
Primary to Primary before fuse (functional)	420	250	1,5	3,5	2,5	3,5	
Primary to Primary after fuse (functional)	420	250	Method C was used				
Primary to Secondary (Reinforced) transformer T1	475	225	4,4	5,0*	5,0	>5,1*	
Primary to Secondary on PCB	504	240,6	4,4	4,8	5,0	5,8	
Secondary to Secondary	—	—	Method C was used				
Supplementary information:							
* TIW is used on Secondary							
Whole transformer outer is wrapped by 2 layers of insulating tape.							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
GT-21096-PPVV-X.X-F							
Primary to Primary before fuse(functional)	420	250	1,5	3,2	2,5	3,2	
Primary to Primary after fuse(functional)	420	250	Method C was used				
Primary to Earth (Basic)	420	250	2,0	4,0	2,5	4,0	
Primary to Secondary (Reinforced) transformer T1	475	225	4,4	5,0*	5,0	>5,1*	
Primary to Secondary on PCB	475	225	4,4	6,1	5,0	8,2	
Secondary to Secondary	—	—	Method C was used				
Supplementary information:							
* TIW is used on Secondary							
Whole transformer outer is wrapped by 2 layers of insulating tape.							

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
GT-21096-PPVV-X.X-FW							
Primary to Primary before fuse(functional)	420	250	1,5	3,2	2,5	3,2	
Primary to Primary after fuse(functional)	420	250	Method C was used				
Primary to PE trace **	420	250	2,0	4,0	2,5	4,0	
Primary to Secondary (Reinforced) transformer T1	475	225	4,4	5,0*	5,0	>5,1*	
Primary to Secondary on PCB	475	225	4,4	6,1	5,0	8,2	
Secondary to Secondary	—	—	Method C was used				
Supplementary information:							
* TIW is used on Secondary							
** PE trace on primary: this PE trace is not connected. This should be considered in end product.							
Whole transformer outer is wrapped by 2 layers of insulating tape.							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Insulating foil between heatsink and Secondary components		504	250	3000	0,4	Min. 0,4
Optocoupler (reinforced insulation)		504	250	3000	0,4	> 0,4
Supplementary information: Approved optocouplers are used. See list of critical components.						

2.10.3, 4.2.2, 4.2.3, 4.2.4	TABLE: Steady force test (internal spacings push test)			P
Components and parts, other than parts serving as an enclosure, are subjected to a steady force of 10 N ± 1 N. Parts of an enclosure located in Operator Access Area, which are protected by a cover or door, are subjected to a steady force of 30 N ± 3 N for a period of 5 s, applied by means of a straight unjointed version of the test finger, to the part on or within the equipment. External enclosures are subjected to a steady force of 250 N ± 10 N for a period of 5 s, applied in turn to the top, bottom and sides of the enclosure fitted to the equipment, by means of a suitable test tool providing contact over a circular plane surface 30 mm in diameter. However, this test is not applied to the bottom of an enclosure of equipment having a mass of more than 18 kg.				
Part	Thickness	Force	Observation	
GT-21089 family and GT-21096 family:				
Components	—	10 N	Passed, C9 is glued with LF1 (and optional with PE wire, if provided). L1 is tubed. D1 is tubed and glued to PCB. Tubing exceeds component by min. 5 mm. Tubing cannot be removed without breaking or cutting. Whole transformer T1 is wrapped with polyester tape. C3 was bent towards heatsink, but passed the test.	
GT-21089 family:				
Top/ Bottom of enclosure	2,3 mm	250 N	No deflection of the metal	
Left/ Right Side of Enclosure	2,3 mm	250 N	No deflection of the metal	
Comments: for all models GT-21089. GT-21096 family is provided without enclosure.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.2.5	TABLE: Impact Test		P
A sample consisting of the complete enclosure represented the largest area was supported in its normal position. A solid smooth steel ball, approximately 50 mm in diameter and with a mass of 500 g was permitted to fall freely from the rest through a vertical distance of 1,3 m onto the sample. A dielectric test from primary to earth and primary to secondary was conducted after the test.			
Part		Thickness	Observation
Front and sides of table top unit		2,3 mm	No damage
Dielectric test after the steel ball test:			
Location		Insulation type	Potential used
Primary → enclosure		Reinforced	3000Vac

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									
Is it possible to install the battery in a reverse polarity position?									
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									
Test results:									Verdict
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
Supplementary information:									

4.3.8	TABLE: Batteries	N/A
Battery category: (Lithium, NiMh, NiCad, Lithium Ion ...)		
Manufacturer.....:		
Type / model:		
Voltage.....:		
Capacity.....: mAh		
Tested and Certified by (incl. Ref. No.).....:		
Circuit protection diagram:		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s):	
Close to the battery:	
In the servicing instructions:	
In the operating instructions:	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures						P
	Supply voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	Ambient T_{min} (°C)	24,5	24,4				—
	Ambient T_{max} (°C)	30	30				—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
1.	Appliance inlet (body)	49,2	49,7				80
2.	X capacitor CX1	60,9	62,4				105
3.	Bulk capacitor C9	75,0	75,9				105
4.	LF1 (coil)	90,6	87,5				100
5.	Transformer T1 (winding)	95,7	111,5				120
6.	Transformer T1 (core)	94,5	106,6				120
7.	Heat sink above transformer	90,1	103,5				—
8.	Enclosure (top)	62,8	67,4				90
9.	Enclosure (bottom)	72,6	79,3				90
Supplementary information: The above temperatures are measured at t_{amb1}. The values measured are subtracted with t_{amb1} and t_{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient. Temperature of transformer winding was measured with thermocouple placed directly on the winding. Model: GT-21089-1948-T3							
Temperature T of winding:		t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)
Supplementary information:							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures						P
	Supply voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	tamb1 (°C)	24,4	24,4				—
	tamb2 (°C)	30	30				—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T _{max} (°C)
1.	Appliance inlet body	49,7	47,7				80
2.	LF1 winding	96,2	86,9				100
3.	Bulk capacitor C9	69,7	66,6				105
4.	X capacitor CX1	58,1	56,5				105
5.	Transformer T1 (core)	99,3	94,9				120
6.	Transformer T1 (winding)	99,6	94,6				120
7.	Heat sink above T1	90,4	85,9				—
8.	PCB under T1	88,0	86,7				105
9.	Output coil L1	88,9	86,0				105
10.	Enclosure (inside – above T1)	89,2	84,8				—
11.	Enclosure (top)	73,5	71,8				90
12.	Enclosure (bottom)	76,6	75,9				90
Supplementary information: The above temperatures are measured at tamb1. The values measured are subtracted with tamb1 and tamb2 (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient. Temperature of transformer winding was measured with thermocouple placed directly on the winding. Model: GT-21089-1305-T3							
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)
Supplementary information:							

IEC 60950-1							
Clause	Requirement + Test			Result - Remark			Verdict
4.5	TABLE: maximum temperatures						P
	Supply voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	tamb1 (°C)	24,3	24,5				—
	tamb2 (°C)	30	30				—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T _{max} (°C)
1. LF1 winding		86,1	67,6				100
2. Transformer T1 (winding)		106,2	97,4				110
3. Transformer T1 (core)		103,9	95,1				120
4. Output inductor L1		59,2	48,5				—
5. PCB near T1		90,0	87,6				105
6. Enclosure (top)		70,7	65,0				90
7. Enclosure (bottom)		77,6	71,2				90
8. LF1 winding		82,2	70,5				100
9. Transformer T1 (winding)		99	92,8				110
10. Transformer T1 (core)		96,5	90,8				120
11. Output inductor L1		54,4	47,8				—
12. PCB near T1		84,3	78,2				105
13. Enclosure (top)		70,8	65,6				90
14. Enclosure (bottom)		70,1	73,2				90
Supplementary information: The above temperatures are measured at tamb1. The values measured are subtracted with tamb1 and tamb2 (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient.							
Model: GT-21089-1818-T3							
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)
Supplementary information:							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) :	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Enclosure		125	1,3
Transformer bobbin		125	1,1
Supplementary information: Approved materials are used.			

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Supplementary information: Approved materials are used. See list of critical components						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: touch current measurement			P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
N (L) to - output		140,3 μA	3,5	GT-21089-1948-T3
N (L) to + output		138,9 μA	3,5	GT-21089-1948-T3
N (L) to Enclosure		< 1 μA	3,5	GT-21089-1948-T3
L (N) to - output		162,9 μA	3,5	GT-21089-1948-T3
L (N) to + output		162,2 μA	3,5	GT-21089-1948-T3
L (N) to Enclosure		< 1 μA	3,5	GT-21089-1948-T3
supplementary information:				
Comments:				
The tests were performed at 264 Va.c. and 60 Hz with D1 measurement circuit.				
For measurement to enclosure aluminium foil was wrapped around enclosure.				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Primary to Earth (Basic)		AC	1500	No
Primary to Secondary (Reinforced)		AC	3000	No
1 layer of polyester foil (inside and around the transformer) *		AC	3000	No
Supplementary information: * Whole transformer is wrapped with two layers of polyester tape. Core is wrapped with two layers of polyester tape and is additionally insulated on the bottom of transformer with two additional layers, which are bent at the edge to the side walls of core.				

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
5.3	TABLE: Fault condition tests						P
	Ambient temperature (°C) :				23 ± 2°C		—
	Power source for EUT: Manufacturer, model/type, output rating :				Various 100-240Vac		—
Com- ponent No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
SELV reliability testing							
GT-21089-1948-T3							
Output Diode D8	Short	264Vac	> 10 min	F1	—	Unit switched off, no hazard, no fire. Output voltage dropped to 0V immediately.	
U1 (Pin 1-2)	Short	264Vac	< 1sec	F1	—	Fuse F1 opened immediately. No hazard.	
Method C – functional insulation (clause 5.3.4)							
GT-21089-1948-T3							
LF1	Short	264Vac	< 1sec	F1	—	F1 opened immediately. No hazard, no fire.	
C11	Short	264Vac	< 1sec	F1	—	F1 opened immediately. No hazard, no fire.	
Bulk capacitor C9	Short	264Vac	< 1sec	F1	—	F1 opened immediately. No hazard, no fire.	
Additional component faults							
GT-21089-1948-T3							
Q3 (1-2)	Short	264Vac	< 1sec	F1	—	F1 opened immediately. No hazard, no fire. Q1, R1, R10 defect.	
Q3 (1-3)	Short	264Vac	< 1sec	F1	—	F1 opened immediately. No hazard, no fire. Q1, R1, R10 defect.	
D1	Short	264Vac	>10min	F1	—	Unit switched off, no hazard, no fire, no damage.	
T1 (Pin 1-3)	Short	264Vac	< 1sec	F1	—	Fuse opened immediately, Q3 defect, no hazard, no fire.	
Misuse							
GT-21089-1805-T3							
Output	Short	264Vac	>10 min	F1	—	Unit switched off immediately. No hazard, no fire, no excessive temperature.	

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	
Com- ponent No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Output	overload	264Vac	>3 h	F1	0,23	Conditions: 3,24A output current. Temperature of T1 winding reached 117,8°C, Core reached 143,0°C at 23,6°C.
GT-21089-1818-T3						
Output	Short	264Vac	1 h	F1	—	Conditions: 1,12A output current. Temperature of T1 winding was 104,2°C.
Output	Overload	264Vac	3h	F1	0,24	Conditions: 1,54A output current. Temperature of T1 winding was 138,2°C.
GT-21089-1524-T3						
Output	Short	264Vac	>10 min	F1	—	Unit switched off immediately. No hazard.
Output	Overload	264Vac	3 h	F1	0,23	Conditions: 1,24 A output current. Temperature of T1 winding was 134,7°C at 23,1°C ambient.
GT-21089-1948-T3						
Output	Short	264Vac	10 sec	F1	0,225	Conditions: 1,19 A output current, Unit shut down after 10 seconds. No hazard.
Output	Overload	264Vac	1 h	F1	0,23	Conditions: 1,21 A output current, Unit shut down after 5 minutes. No excessive temperatures on transformer. No hazard.
Supplementary information: Fault condition tests on GT-21089 are representable also for GT-21096 family power supplies. Transformer short / overload test were considered covered by output short / overload tests.						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers							P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
pin 3 to pin 6 (PE)	Reinforced	504	241	3000V	4,4	5,0	0,4	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
Primary to Secondary	Reinforced			3000	5,0	5,1	0,4	
supplementary information:								

C.2	TABLE: transformers	P
See enclosure No. 3 for transformer specifications.		

Enclosure No. 1

National differences to IEC60950-1:2005/Am 1/Am 2

(41 pages including this cover page)

IEC 60950-1													
Clause	Difference – Test		Result – Remark	Verdict									
AUSTRALIA-Differences to IEC 60950-1:2005 AS/NZS 60950.1-2011 (2011-05-06)													
Appendix ZZ (normative) Variations to IEC 60950-1:2005 (2nd Ed.) for application in Australia and New Zealand													
ZZ.1 Introduction This Appendix sets out variations and additional requirements to cover issues which have not been addressed by the International Standard. These variations indicate national variations for purposes of the IECEE CB System and will be published in the IECEE CB Bulletin.													
ZZ.2 Variations The following variations apply to the source text:													
1.2	Insert the following between ‘person, service’ and ‘range, rated frequency’: POTENTIAL IGNITION SOURCE 1.2.12		Considered.	P									
1.2.12.20 1	Insert a new Clause 1.2.12.201 after Clause 1.2.12.15 as follows: 1.2.12.201 POTENTIAL IGNITION SOURCE Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS. NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202: This definition is from AS/NZS 60065:2003.			N/A									
1.5.1	1. Add the following to the end of the first paragraph: ‘or the relevant Australian/New Zealand Standard.’ 2. In NOTE 1, add the following after the word ‘standard’: ‘or an Australian/New Zealand Standard’			N/A									
1.5.2	Add the following to the end of the first and third dash items: ‘or the relevant Australian/New Zealand Standard’			N/A									
3.2.5.1	Modify Table 3B as follows: 1. Delete the first four rows and replace with the following: <table><tr><td rowspan="3">RATED CURRENT OF EQUIPMENT (A)</td><td colspan="2">Minimum conductor sizes</td></tr><tr><td rowspan="2">Nominal cross-sectional area mm²</td><td>AWG or Kcmil (cross-sectional area in mm²)</td></tr><tr><td>See note 2</td></tr><tr><td>Over 0.2 up to and including 3</td><td>0,5 a)</td><td>18 [0,8]</td></tr></table>		RATED CURRENT OF EQUIPMENT (A)	Minimum conductor sizes		Nominal cross-sectional area mm²	AWG or Kcmil (cross-sectional area in mm²)	See note 2	Over 0.2 up to and including 3	0,5 a)	18 [0,8]	No cord provided.	N/A
RATED CURRENT OF EQUIPMENT (A)	Minimum conductor sizes												
	Nominal cross-sectional area mm²	AWG or Kcmil (cross-sectional area in mm²)											
		See note 2											
Over 0.2 up to and including 3	0,5 a)	18 [0,8]											

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	Over 3 up to and including 7,5 0,75 16 [1,3] Over 7,5 up to and including 10 (0,75) ^{b)} 1,00 16 [1,3] Over 10 up to and including 16 (1,0) ^{c)} 1,5 14 [2]		
	2. Delete NOTE 1. 3. Delete Footnote ^a and replace with the following: ^a This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0,5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191).		N/A
4.1.201	Insert a new Clause 4.1.201 after Clause 4.1 as follows: 4.1.201 Display devices used for television purposes Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.		N/A
4.3.6	Delete the third paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flatpin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.3.13.5	Add the following to the end of the first paragraph: ‘, or AS/NZS 2211.1’.		N/A
4.7	Add the following paragraph: ‘For alternate tests refer to Clause 4.7.201.’		N/A

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
4.7.201	Insert a new Clause 4.7.201 after Clause 4.7.3.6 as follows: 4.7.201 Resistance to fire – Alternative tests 4.7.201.1 General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following: (a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1mm in width regardless of length. (b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1,750 mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another. Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.	The flame rating of the components was evaluated to the requirements of IEC. The PCB board is specified min. V-1. Therefore no needle test was considered as required.	N/A

IEC 60950-1							
Clause	Difference – Test	Result – Remark	Verdict				
4.7.201.2	Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.	Approved materials are used. See list of critical components.	N/A				
4.7.201.3	Testing of insulating materials Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications: <table><tr><td>Clause of AS/NZS 4695.11.5</td><td>Change</td></tr><tr><td colspan="2">9 Test procedure</td></tr></table>	Clause of AS/NZS 4695.11.5	Change	9 Test procedure		Approved materials are used. See list of critical components.	N/A
Clause of AS/NZS 4695.11.5	Change						
9 Test procedure							

IEC 60950-1

IEC 60950-1				
Clause	Difference – Test		Result – Remark	Verdict
	9.2 Application of needleflame	Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner Replace the second paragraph with: The duration of application of the test flame shall be 30 s ±1 s.		
	9.3 Number of test specimens	Replace with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.		
	11 Evaluation of test results	Replace with: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part.			

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.	Approved materials are used. See list of critical components.	N/A

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
4.7.201.5	Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material. NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected	Approved PCB materials are used. See list of critical components.	N/A
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
6.2.2.1	For Australia only, delete the first paragraph including the Notes, and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, U_c, is: (i) for 6.2.1 a): 7,0 kV for hand-held telephones and for headsets and 2,5 kV for other equipment; and (ii) for 6.2.1 b) and 6.2.1 c): 1,5 kV. NOTE 201: The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202: The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: In Australia only, the a.c. test voltage is: (i) for 6.2.1 a): 3 kV; and (ii) for 6.2.1 b) and 6.2.1 c): 1,5 kV. NOTE 201: Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202: The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7.3	Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.		N/A
Annex P	Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets	Considered. IEC approved material and components are used.	P
Index	1. Insert the following between 'asbestos, not to be used as insulation' and 'attitude see orientation': AS/NZS 2211.1.....4.3.13.5 AS/NZS 3112.....4.3.6 AS/NZS 3191.....3.2.5.1 (Table 3B) AS/NZS 60064.....4.1.201 AS/NZS 60695.2.11.....4.7.201.2, 4.7.201.3 AS/NZS 60695.11.10.....4.7.201.1, 4.7.201.5 AS/NZS 60695.11.5.....4.7.201.3 2. Insert the following between 'positive temperature coefficient (PTC) device' and 'powder': potential ignition source 1.2.201, 4.7.201.3, 4.7.201.5		P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
KOREA - Differences to IEC 60950-1, Second Edition (2005) + A1:2009 (2012-05-31)			
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	Built-in product.	N/A
8: EMC	The apparatus shall comply with the relevant CISPR standards	End product consideration.	N/A

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1: 2009 and A2:2013 U.S.A. NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to	UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014
Attachment Form No.....	US_ND_IEC60950_1F
Attachment Originator.....	UL
Master Attachment.....	Date 2014-07
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U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
Special national conditions			
1.1.1	All equipment is designed as to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and if applicable, the National Electrical Safety Code, IEEE C2		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A		P
1.5.5	For lengths exceeding 3,05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the /NEC		N/A
	For lengths 3,05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings	Single phase unit.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions"		N/A
	Likewise, a voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions"		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with NEC or CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable		N/A
2.6	Equipment with isolated ground (earthing) receptacles is in compliance with NEC 250.146(D) and CEC 10-112 and 10-906(8)	Considered.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC		P
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements	The unit is not intended for direct connection to d.c. mains.	N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs	No cord provided.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length		N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC		N/A
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space		N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0		N/A
3.3.3	Wire binding screws are not attached with conductors larger than 10 AWG (5,3 mm ²)		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7)		N/A
3.3.5	Revise first column of Table 3E to "Smaller of the rated current of the equipment or the protective current rating of the circuit under consideration"	Considered.	N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30		N/A
4.3.13.5.1	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	For computer room applications, automated information storage systems with combustible media greater than 0,76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0,9m ² (10 sq ft) or a single dimension greater than 1,8 m (6 ft) have a flame spread rating of 50 or less		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370)		N/A
Other National Differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42,4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts		N/A
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified		P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT		N/A
4.3.2	Equipment with handles complies with special loading tests		N/A
4.3.8	Battery packs for both portable and stationary applications comply with special component requirements		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded		N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger		N/A

U.S.A. National Differences to IEC 60950-1+ A1+ A2			
Clause	Requirement + Test	Result - Remark	Verdict
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements		N/A

**CANADA NATIONAL DIFFERENCES to
IEC 60950-1, Second Edition (2005) + A1:2009 + A2:2013
(2014-09-13)
National standard: CAN/CSA-C22.2 NO. 60950-1A-07**

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Special national conditions			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3,05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.		N/A
	For lengths 3,05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent.		N/A
	Marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A
2.6	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.		N/A
	Minimum cord length is required to be 1,5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5,3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes,		N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	or if the motor has a nominal voltage rating greater than 120 V,		N/A
	or is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5.1	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0,76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0,9 m ² (10 sq ft) or a single dimension greater than 1,8 m (6 ft) are required to have a flame spread rating of 50 or less.		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.		N/A
Other National Differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.		N/A
	This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A

IEC 60950-1, CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092)		P
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.		N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
GENERAL	All warnings should be in French language.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
ISRAEL-Differences to IEC 60950-1:2005 (2011-03-02)			
ISRAEL STANDARD SI 60950 PART 1 INFORMATION TECHNOLOGY EQUIPMENT - SAFETY: GENERAL REQUIREMENTS TRANSLATION OF ISRAEL NATIONAL DEVIATIONS ONLY			
1.	Scope (with national deviations)		—
1.1.1	Equipment covered by this Standard This Standard is applicable to mains-powered or battery-powered information technology equipment, including electrical business equipment and associated equipment, with a rated voltage not exceeding 600 V. This Standard is also applicable to the information technology equipment mentioned below: - equipment designed for use as telecommunication terminal equipment and telecommunication network infrastructure equipment, independent of the source of power; - equipment designed and intended to be connected directly to, or used as infrastructure equipment in, a cable distribution system, independent of the source of power; - equipment designed to use the general a.c. mains supply as a communication transmission medium (see clause 6, Note 4 and subclause 7.1, Note 4). This Standard is also applicable to components and subassemblies intended for incorporation in information technology equipment. It is not expected that such components and subassemblies comply with every aspect of the Standard, provided that the complete information technology equipment, incorporating such components and subassemblies, does comply. Note 1: Examples of aspects with which uninstalled components and subassemblies may not comply include the marking of the power rating and access to hazardous parts. Note 2: This Standard may be applied to the electronic parts of equipment even if that equipment does not wholly fall within its Scope, such as large-scale air conditioning systems, fire detection systems and fire extinguishing systems. Different requirements may be necessary for some applications. This Standard specifies requirements intended to reduce risks of fire ignition, electric shock or bodily injury for the operator and layman who may come into contact with the equipment and, where specifically stated, for a service person. This Standard is intended to reduce such risks with respect to installed equipment, whether it consists of a system or interconnected units or independent units, subject to installing, operating and maintaining the equipment in the manner prescribed by the manufacturer. Examples of equipment that is in the scope of this Standard are the following:		—

IEC 60950-1/Am1																									
Clause	Difference – Test		Result – Remark	Verdict																					
	<table><tr><th>Generic product type</th><th>Specific examples of generic type</th></tr><tr><td>Banking equipment</td><td>Monetary processing machines (counting, dispensing, etc.) for bills and coins, including automated teller machines (ATM)</td></tr><tr><td>Data and text processing machines and associated equipment</td><td>Data preparation equipment, data processing equipment, data storage equipment, personal computers, plotters, printers, scanners, text processing equipment and visual display units</td></tr><tr><td>Data network equipment</td><td>Bridges, data circuit terminating equipment, data terminal equipment and routers</td></tr><tr><td>Electrical and electronic retail equipment</td><td>Cash registers, point of sale terminals including associated electronic scales</td></tr><tr><td>Electrical and electronic office machines</td><td>Calculators, copying machines^(A), dictation equipment, document shredding machines, duplicators, erasers, micrographic office equipment, motor-operated files, paper trimmers (punchers, cutting machines, separators), paper jogging machines, pencil sharpeners, staplers and typewriters</td></tr><tr><td>Other information technology equipment</td><td>Photoprinting equipment, public information terminals and multimedia equipment</td></tr><tr><td>Postage equipment</td><td>Mail processing machines and postage machines</td></tr><tr><td>Telecommunication network infrastructure equipment</td><td>Billing equipment, multiplexers, network powering equipment, network terminating equipment, radio base stations, repeaters, transmission equipment and telecommunication switching equipment</td></tr><tr><td>Telecommunication terminal equipment</td><td>Facsimile equipment, key telephone systems, modems, PABXs^(B), pagers, telephone answering machines and telephone sets (wired and wireless)</td></tr></table>		Generic product type	Specific examples of generic type	Banking equipment	Monetary processing machines (counting, dispensing, etc.) for bills and coins, including automated teller machines (ATM)	Data and text processing machines and associated equipment	Data preparation equipment, data processing equipment, data storage equipment, personal computers, plotters, printers, scanners, text processing equipment and visual display units	Data network equipment	Bridges, data circuit terminating equipment, data terminal equipment and routers	Electrical and electronic retail equipment	Cash registers, point of sale terminals including associated electronic scales	Electrical and electronic office machines	Calculators, copying machines ^(A) , dictation equipment, document shredding machines, duplicators, erasers, micrographic office equipment, motor-operated files, paper trimmers (punchers, cutting machines, separators), paper jogging machines, pencil sharpeners, staplers and typewriters	Other information technology equipment	Photoprinting equipment, public information terminals and multimedia equipment	Postage equipment	Mail processing machines and postage machines	Telecommunication network infrastructure equipment	Billing equipment, multiplexers, network powering equipment, network terminating equipment, radio base stations, repeaters, transmission equipment and telecommunication switching equipment	Telecommunication terminal equipment	Facsimile equipment, key telephone systems, modems, PABXs ^(B) , pagers, telephone answering machines and telephone sets (wired and wireless)			—
	Generic product type	Specific examples of generic type																							
	Banking equipment	Monetary processing machines (counting, dispensing, etc.) for bills and coins, including automated teller machines (ATM)																							
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	(A) Commonly known as "copiers".																								
(B) PABX - Private Automatic Branch Exchange.																									
Note 3:																									
The requirements of Israel Standard SI 60065 ^(C) may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment.																									
The list of equipment (brought in the above table) is not intended to be comprehensive and exhaustive, and equipment that is not listed is not necessarily excluded from the Scope, Equipment complying with the relevant requirements in this Standard is considered suitable for use with process control equipment, automatic test equipment and similar systems requiring information processing facilities. However, this Standard does not include requirements for performance or functional characteristics of equipment.																									
(C) In preparation																									

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.1.2	Additional requirements Requirements additional to those specified in this Standard may be necessary for: - equipment intended for operation in special environments (for example, extremes of temperature; very high concentration of dust, moisture or vibration; flammable gases; and corrosive or explosive atmospheres); - electromedical applications with physical connections to the patient; - equipment intended to be used in vehicles, on board ships or aircraft, in tropical countries, or at altitudes greater than 2,000 m. - equipment intended for use where ingress of water may be possible. For guidance on such requirements and on relevant testing, see Annex T. Note: Attention is drawn to the fact that government authorities of some countries impose additional requirements.		N/A
1.1.3	Exclusions This Standard does not apply to: - power supply systems which are not an integral part of the equipment, such as motor-generator sets, battery backup systems and transformers; - building installation wiring; - devices requiring no electric power.		—
National deviations to the clauses of the International Standard			
1.6	Power interface The clause is applicable with the following addition:		N/A
1.6.1	AC Power distribution systems A note shall be added to the clause as follows: Note: In Israel, this clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.		N/A
1.7	Marking and instructions The clause is applicable with the following additions: - Subclause 1.7.201 shall be added at the beginning of the clause as follows:		N/A
1.7.201	Marking in the Hebrew language The marking in the Hebrew language shall be in	Built-in unit. End product consideration.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed. 1. Name of the apparatus and its commercial designation; 2. Manufacturer's name and address. If the apparatus is imported, the importer's name and address; 3. Manufacturer's registered trademark, if any; 4. Name of the model and serial number, if any; 5. Country of manufacture.		
1.7.2	Safety instructions and marking		N/A
1.7.2.1	General The following shall be added to the clause: All the instructions and warnings related to safety shall also be written in the Hebrew language. - At the end of clause 1, clause 1.201 shall be added as follows:	Built-in unit. End product consideration.	N/A
1.201	Power Consumption in standby mode The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10%		N/A
2.	Protection from hazards The clause is applicable with the following additions:		N/A
2.9.4	Separation from hazardous voltages The following shall be added at the beginning of the clause: In Israel, according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991, seven means of protection against electrocution are permitted, as follows: 1. TN-S - Network system earthing; TN-C-S -		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	Network system earthing; 2. TT - Network system earthing; 3. IT - Network Insulation Terre; 4. Isolated transformer; 5. Safety extra low voltage (SELV or ELV); 6. Residual current circuit breaker (30 ma = I_Δ); 7. Reinforced insulation; Double insulation (class II) . Clause 2.201 shall be added at the end of the clause, as follows:		
2.201	Prevention of electromagnetic interference - Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus with the relevant requirements specified in the appropriate part of the Standard series, SI 961, shall be checked. The apparatus shall meet the requirements in the appropriate part of the Standard series, SI 961. - If there are components in the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this Standard.		N/A
3.	Wiring, connections and supply The clause is applicable with the following additions:		N/A
3.2	Connection to a mains supply		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply After the note, the following note shall be added: Note: In Israel, the feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.		N/A
3.2.1.2	Connection to a d.c. mains supply At the end of the first paragraph, the following note shall be added: Note: At the time of issue of this Standard, there is no Israel Standard for connection accessories to d.c.		—

IEC 60950-1/Am1				
Clause	Difference – Test		Result – Remark	Verdict
Annex P	ANNEX P (normative) Normative references The annex is applicable with the following national deviations: - The following Israel Standards have been inserted in place of some of the International Standards specified in this annex of the Standard, as follows:			N/A
	The referenced International Standard	The substituted Israel Standard	Comments	
	IEC 60065: 2001	SI 250 ^(A) - Safety requirements for mains operated electronic and related apparatus for household and similar general use	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 65:1985, including its amendments	
	IEC 60083	SI 32 Part 1.1 ^(a) – Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements national modifications and	The Israeli Standard, excluding national modifications and additions noted, is identical to the International Standard, IEC 60884-1 – Third edition:2002-06	
	IEC 60227 (all parts)	SI 473, all parts - Cables, cords and insulated conductors for nominal voltage up to 1000 volt	The Israeli Standard, excluding national modifications and additions noted, is identical to the I Standard series, IEC 60227 (all parts)	
	IEC 60245 (all parts)	SI 60245 Part 1 – Rubber insulated cables – Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions noted, is identical to the Standard series, IEC 60245 (all parts)	
	IEC 60309 (all parts)	SI 1109, all parts - Plugs, socket-outlets and couplers for industrial purposes	SI 1109, part 1 and part 2, excluding national deviations in them, are identical to the Standards of the International Electrotechnical Commission IEC 60309-1-1999 and IEC 60309-2-1999, respectively.	
	IEC 60317 (all parts)	SI 1067 Part 1 – Enamelled round copper wires with high mechanical properties	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-1 (1980)	
		SI 1067 Part 2 - Self-fluxing enamelled ^(B) round copper wires	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-4 (1980)	
		SI 1067 Part 3 – Enamelled round copper wires with a temperature index of 180°C	The Israel Standard is identical to the Standard of the International Electrotechnical Commission IEC 317-8 (1980)	
	IEC 60320 (all parts)	SI 60320 Part 1 - Appliance couplers for household and similar general purposes: General requirements	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC	

IEC 60950-1/Am1				
Clause	Difference – Test		Result – Remark	Verdict
			60320-1 (2001)	N/A
		SI 60320 Part 2.1 - Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.1 (2000)	
		SI 60320 Part 2.2 - Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.2 (1998)	
		SI 60320 Part 2.3 -Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment Appliance coupler for household and similar general purposes: Appliance coupler with a degree of protection higher than IPX0	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60320-2.3 (1998)	
	IEC 60364-1:2001	Electricity Law, 1954, with its Regulations and updates	-	
	IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part 1 - Automatic electrical controls for household and similar use: General requirements	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60730-1 Edition 3.2:2007-03.	
	IEC 60825-1	SI 60825 Part 1 - Safety of laser products: Equipment classification, requirements and user's guide	The Israel Standard, excluding national deviations in it, is identical to the Standard of the International Electrotechnical Commission, IEC 60825-1 2 nd Edition:2007-03	
	IEC 60947-1; 2004	SI 60947 Part 1 -Low-voltage switchgear and controlgear: General rules	The Israel Standard, excluding national modifications and additions noted, is identical to Standard of the International Electrotechnical Commission, IEC 60947-1Edition 5.0:2007-06.	
	IEC 61058-1: 2000	SI 61058 Part 1 - Switches for appliances: General requirements	The Israel Standard, excluding national modifications and additions noted, is identical to the Standard of the International Electrotechnical Commission, IEC 61058-1 Edition 3.1:2001:	
	ISO 3864 (all parts)	SI 3864 Part 1 -Graphical symbols	The Israel Standard, excluding national modifications and additions noted, is identical to the Standard of the International Electrotechnical Commission IEC 3864-1 (First Edition:2002-05-15	
Notes:				

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	(a) The standard is being revised (b) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the relevant Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (c) Not relevant to the translation.		N/A
The following shall be added to the annex: Israeli Standards SI 961 (all parts) – Electromagnetic compatibility Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24 Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011			

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
CHINA-Differences to IEC 60950-1:2005 (ed. 2) (2013-09-26) (GB4943.1-2011 Information technology equipment – Safety – Part 1: General requirements)			
1.1.2	Revise the third dashed paragraph as: —equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	Considered	N/A
1.4.5	At the end of the third dashed paragraph ,added following paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. Delete the contents which behind the first dash.	Tolerances +10%, -10% considered.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. And note 1: for equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: for equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are considered.		N/A
1.5.2	Add a note behind the first dash : A component used shall comply with related requirements corresponding altitude of 5000m.	Unit not specified for altitude more than 2000 m	N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Chinese label will be verified during national approval.	N/A
1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V(three-phases)when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	The rated voltage range and frequency range is covering China mains voltage 220V/50Hz.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	Unit not intended for altitude >2000m. Appropriate label added to the unit. Unit verified for tropical condition (extended humidity test performed).	N/A
2.7.1	Amended as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	Unit provides appropriate internal protection.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.9	Humidity conditioning This section applies for equipment to be operated at tropical climatic conditions, humidity conditioning dealt with tropical climatic conditions. For equipment not to be operated at tropical climatic conditions, its humidity conditioning complies with rules of CTL 624/07.	Unit not intended for tropical conditions.	N/A
2.9.	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature $40\pm 2^{\circ}\text{C}$ and a relative humidity of $(93\pm 3)\%$. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of $(93\pm 3)\%$. The temperature of the air, at all places where samples can be located, is maintained within 2°C of any convenient value t between 20°C and 30°C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.		
2.10.3.1	Change the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T 16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T 16935.1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Unit verified for altitude <5000m.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T 16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T 16935.1. Add "(apply for up to 2000m)" in header of Table 2K, 2L and 2M.		N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	No plug provided.	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No CRT used.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35°C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	No linear transformer used.	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment. A component that has been demonstrated to comply with National Industry standards or the relevant national standard shall be subjected to the applicable tests of this standard as part of the equipment.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	--
Annex DD (normative)	Added annex DD: Instructions of the new safety warning labels.	Must be verified during national approval.	N/A
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005.		

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
JAPAN- Differences to IEC 60950-1 1st Edition (2001) (National differences to IEC 60950-1:2005) (2010-11-27)			
1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	Equipment is rated class I with separate earth connection.	N/A
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing externally an earth terminal or a lead wire for earthing in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation.	Equipment is rated class I.	N/A
1.3.2	Add the following notes after first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.5.1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards in case there is no applicable JIS component standard is available. However, a component that falls within the scope of METI Ministerial ordinance No. 85 is properly used in accordance with its marked ratings, requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set mating with appliance inlet complying with the standard sheet of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1. Replace Note 1 with the following: Note 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.	IEC/UL approved materials are used.	P
1.5.2	Replace first sentence in the first dashed paragraph with the following: - a component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating. Add a note after the first dashed paragraph as follows: Note 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A. Replace first sentence in the third dashed paragraph as follows: - where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment.	IEC/UL approved materials are used within their ratings.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.7.1	Replace fifth dashed paragraph with the following: - manufacturer's or responsible company's name or trade-mark or identification mark;		P
1.7.5A	Add the following new clause. after 1.7.5 1.7.5A Appliance Coupler If appliance coupler according to IEC60320-1, C.14(rated current: 10A)is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the user instruction. “ Use only designated cord set attached in this equipment”	No IEC60320-1, C.14 appliance coupler used.	N/A
1.7.12	Replace first sentence with the following: Instructions and equipment marking related to safety shall be in Japanese.	Japanese instructions and equipment marking will be verified during national approval.	N/A
1.7.17A	Add the following new clause. after 1.7.17 1.7.17A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body: “Provide an earthing connection” Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions: “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”	Not CLASS 0I equipment.	N/A
2.6.3.2	Add the following after 1st paragraph. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.	Not CLASS 0I equipment.	N/A
2.6.4.2	Replace 1st paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.	Not CLASS 0I equipment.	N/A
2.6.5.4	Replace 1st sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:	No operator removable parts.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.6.5.8A	Add the following new clause. after 2.6.5.8A 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.	Not CLASS 0I equipment.	N/A
3.2.3	Add the following after Table 3A: Table 3A applies when cables complying JIS C 3662 or JIS C 3663 are used. In case of other cables, cable entries shall be so designed that a conduit suitable for the cable used can be fitted.	The equipment is not intended for permanent connection to the mains.	N/A
3.2.5.1	Add the following to the last of first dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.. Add the following to the last of second dashed paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.. Delete 1) in Table 3B.	Power supply cord is not provided.	N/A
3.3.4	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 or JIS C 3663, terminals shall be suitable for the size of the intended cables.		N/A
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of Class 0I equipment.	Not CLASS 0I equipment.	N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.	No loosening of parts impairing creepage distances or clearances over basic, insulation is likely to occur.	P
5.1.3	Add a note after the first paragraph as follows: Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.	Single phase equipment.	N/A

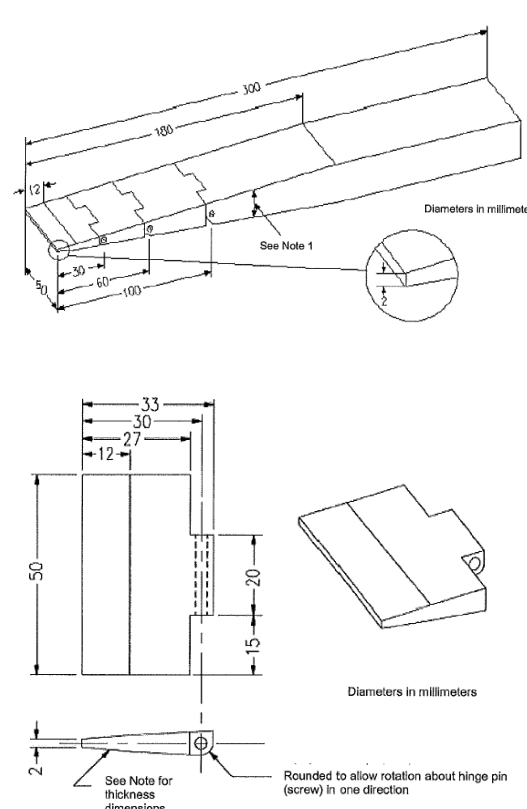
IEC 60950-1/Am1																																												
Clause	Difference – Test	Result – Remark	Verdict																																									
5.1.6	Replace Table 5A. as follows <table border="1"> <thead> <tr> <th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. 1)</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr> </thead> <tbody> <tr> <td>ALL equipment</td><td>ALL equipment Accessible parts and circuits not connected to protective earth</td><td>0,25</td><td>-</td></tr> <tr> <td>HAND-HELD</td><td rowspan="4">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr> <tr> <td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)</td><td>3,5</td><td>-</td></tr> <tr> <td>STATIONARY, PLUGGABLE TYPE A</td><td>3,5</td><td>-</td></tr> <tr> <td>ALL other STATIONARY EQUIPMENT</td><td>3,5</td><td>-</td></tr> <tr> <td>- not subject to the conditions of 5.1.7</td><td></td><td></td><td></td></tr> <tr> <td>- subject to the conditions of 5.1.7</td><td></td><td>3,5</td><td>-</td></tr> <tr> <td></td><td></td><td>-</td><td>5 % of input current</td></tr> <tr> <td>HAND-HELD</td><td>Equipment main protective earthing terminal (if any)</td><td>0,5</td><td>-</td></tr> <tr> <td>Others</td><td>CLASS 0I EQUIPMENT</td><td>1,0</td><td>-</td></tr> </tbody> </table> 1) If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT	ALL equipment	ALL equipment Accessible parts and circuits not connected to protective earth	0,25	-	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0,75	-	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)	3,5	-	STATIONARY, PLUGGABLE TYPE A	3,5	-	ALL other STATIONARY EQUIPMENT	3,5	-	- not subject to the conditions of 5.1.7				- subject to the conditions of 5.1.7		3,5	-			-	5 % of input current	HAND-HELD	Equipment main protective earthing terminal (if any)	0,5	-	Others	CLASS 0I EQUIPMENT	1,0	-		N/A
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT																																									
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STATIONARY, PLUGGABLE TYPE A		3,5	-																																									
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		-	5 % of input current																																									
HAND-HELD	Equipment main protective earthing terminal (if any)	0,5	-																																									
Others	CLASS 0I EQUIPMENT	1,0	-																																									
7.2	Add the following after the paragraph: However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to a CABLE DISTRIBUTION SYSTEM if all of the following apply: – the circuit under consideration is a TNV-1 CIRCUIT; and – the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and – the screen of the coaxial cable is intended to be connected to earth in the building installation.		N/A																																									
W.1	Replace second and third sentence in the first paragraph with the following: This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.		N/A																																									

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex JA	Add a new annex JA with the following contents. Annex JA (normative) Document shredding machines Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more. JA.1 Markings and instructions The symbol  (JIS S 0101:2000, 6.2.4) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible; - that use by an infants/children may cause a hazard of injury etc.; - that a hand can be drawn into the mechanical section for shredding when touching the document-slot; - that clothing can be drawn into the mechanical section for shredding when touching the document-slot; - that hairs can be drawn into the mechanical section for shredding when touching the document-slot; - in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas. JA.2 Inadvertent reactivation Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard. Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1 JA.3 Disconnection from the mains supply Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.	No such equipment.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	If two-position switch, the positions for “ON” and “OFF” shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for “OFF” shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols. Compliance is checked by inspection JA.4 Protection against hazardous moving parts Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool. Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shredding, with the probe.		N/A

IEC 60950-1/Am1

Clause	Difference – Test	Result – Remark	Verdict
	Figure JA.1 Test finger		N/A

IEC 60950-1/Am1											
Clause	Difference – Test	Result – Remark	Verdict								
	 (Details of the tip of wedge) <table><tr><th>Distance from the tip (mm)</th><th>Thickness of probe (mm)</th></tr><tr><td>0</td><td>2</td></tr><tr><td>12</td><td>4</td></tr><tr><td>180</td><td>24</td></tr></table> Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table. Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.	Distance from the tip (mm)	Thickness of probe (mm)	0	2	12	4	180	24		N/A
Distance from the tip (mm)	Thickness of probe (mm)										
0	2										
12	4										
180	24										

Enclosure No. 1a

**European Group Differences and National Differences
according to EN 60950-1:2006 +A1:2010 +A2:2013 +
A11:2009 + A12:2011**

(21 pages including this cover page)

ATTACHMENT TO TEST REPORT IEC 60950-1 **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**

Information technology equipment – Safety –

Part 1: General requirements

Differences according to: EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

Attachment Form No.: EU_GD_IEC60950_1F

Attachment Originator: SGS Fimko Ltd

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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)						
Clause	Requirement + Test			Result - Remark		Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"					P
Contents	Add the following annexes:					P
(A2:2013)	Annex ZA (normative)		Normative references to international publications with their corresponding European publications			
	Annex ZB (normative) Annex ZD (informative)		Special national conditions IEC and CENELEC code designations for flexible cords			
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list:					P
	1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note
	1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6
	2.2.3	Note	2.2.4	Note	2.3.2	Note
	2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3
	2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3
	3.2.1.1	Note	3.2.4	Note 3.	2.5.1	Note 2
	4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note
	4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1
	6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note
	6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note
	7.1	Note 3	7.2	Note	7.3	Note 1 & 2
	G.2.1	Note 2	Annex H	Note 2		
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:					P
	1.5.7.1	Note	6.1.2.1	Note 2		
	6.2.2.1	Note 2	EE.3	Note		

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	No headphones or earphones provided.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment□ for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.	Switch mode power supply. No provisions for playing music provided.	N/A
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: – equipment provided as a package (personal music player with its listening device), where - the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”  Figure 1 – Warning label (IEC 60417-6044) Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
2.7.1	Replace the subclause 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 by protective devices in the building installation;		P						
	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 the 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 PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P						
2.7.2	This subclause has been declared 'void'.		N/A						
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A						
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 </td><td>(0,75) ^{b)} 1,0 </td></tr><tr><td>Over 10 up to and including 16 </td><td>(1,0) ^{c)} 1,5 </td></tr></table> In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}. In NOTE 1, applicable to Table 3B, delete the second sentence.	Up to and including 6	0,75 ^{a)}	Over 6 up to and including 10	(0,75) ^{b)} 1,0	Over 10 up to and including 16	(1,0) ^{c)} 1,5		N/A
Up to and including 6	0,75 ^{a)}								
Over 6 up to and including 10	(0,75) ^{b)} 1,0								
Over 10 up to and including 16	(1,0) ^{c)} 1,5								
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Considered.	P						

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A	No terminals provided.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).	EUT does not produce radiation.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	EUT does not produce radiation.	N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.	Equipment not intended for connection to cable distribution systems	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No resistors bridging basic insulation.	N/A
1.5.8	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 (230 V).		N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In Finland, Norway and 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 in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1 (A11:2009)	In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A
1.7.2.1 (A2:2013)	In Denmark, 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 Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5 1.7.5 (A11:2009)	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. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket outlet provided.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c	No socket outlet provided.	N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuit.	N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered.	P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Unit provides appropriate internal protection.	P
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuit.	N/A
3.2.1.1	In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A 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.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		N/A
3.2.1.1	In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. 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 UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	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.		N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Ireland , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	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 10 A up to and including 13 A is: • 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.		N/A
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 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, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The EUT is not direct plug-in equipment.	N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	The EUT is not direct plug-in equipment.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Measured touch current was less than 3,5 mA.	N/A
6.1.2.1 (A1:2010)	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: 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 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements 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 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	Equipment not intended for connection to telecommunication networks.	N/A

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, 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 is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Equipment not intended for connection to cable distribution systems	N/A
7.3 (A11:2009)	In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

Annex ZD (informative)		
IEC and CENELEC code designations for flexible cords		
Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

Clause	Requirement	Verdict
Denmark national differences (2013-07-04) National standard: DS/EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013		
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.7.5	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. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	N/A
3.2.1.1	In Denmark , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A 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.	N/A

Clause	Requirement	Verdict
Sweden national differences (2013-06-25) National standard: SS-EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011		
Various	Please see the EN version of the standard where the Swedish National and Special National Deviations are stated.	P

Enclosure No. 2

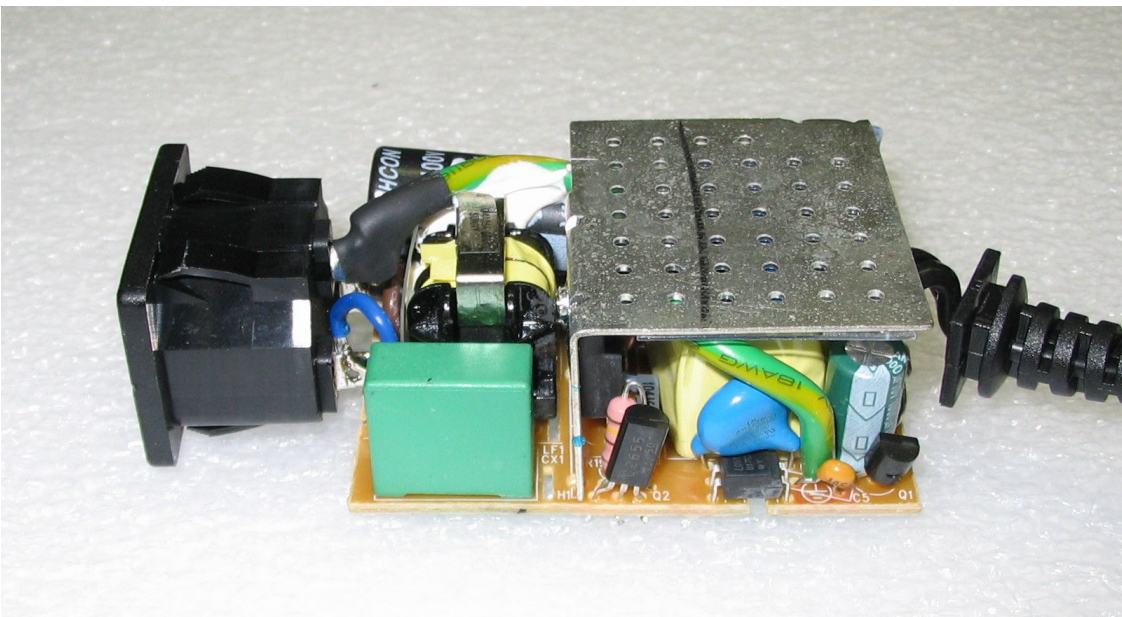
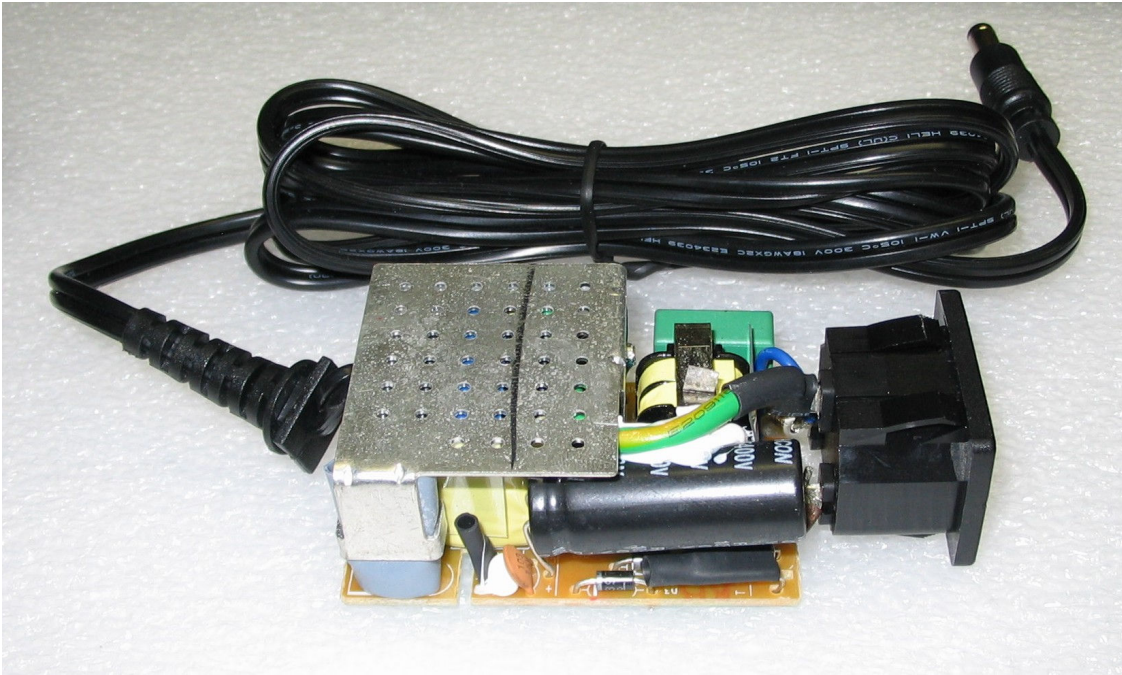
Pictures of the unit

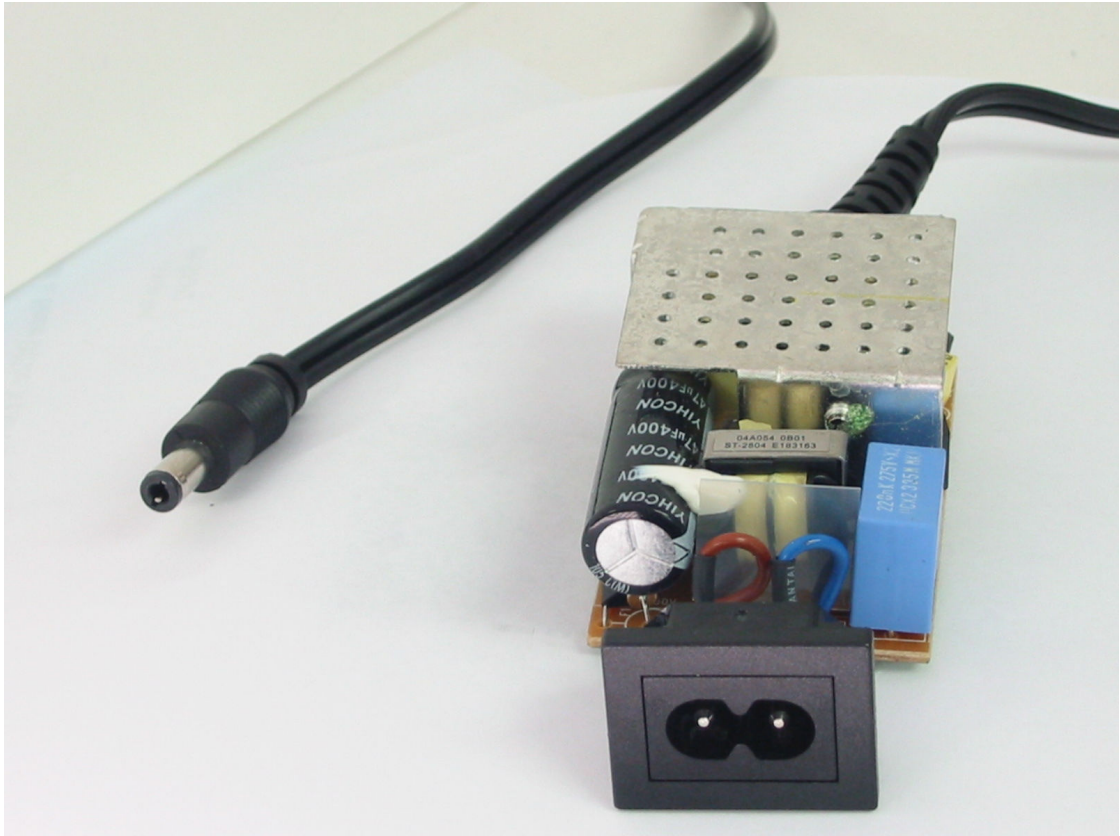
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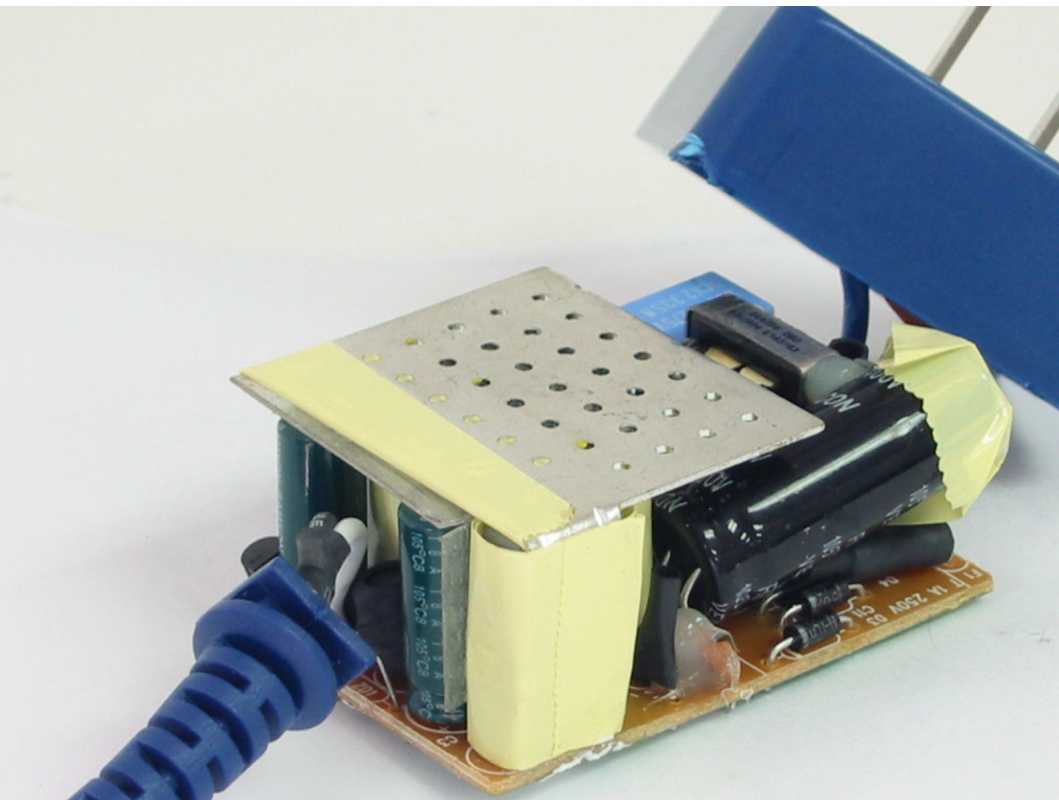
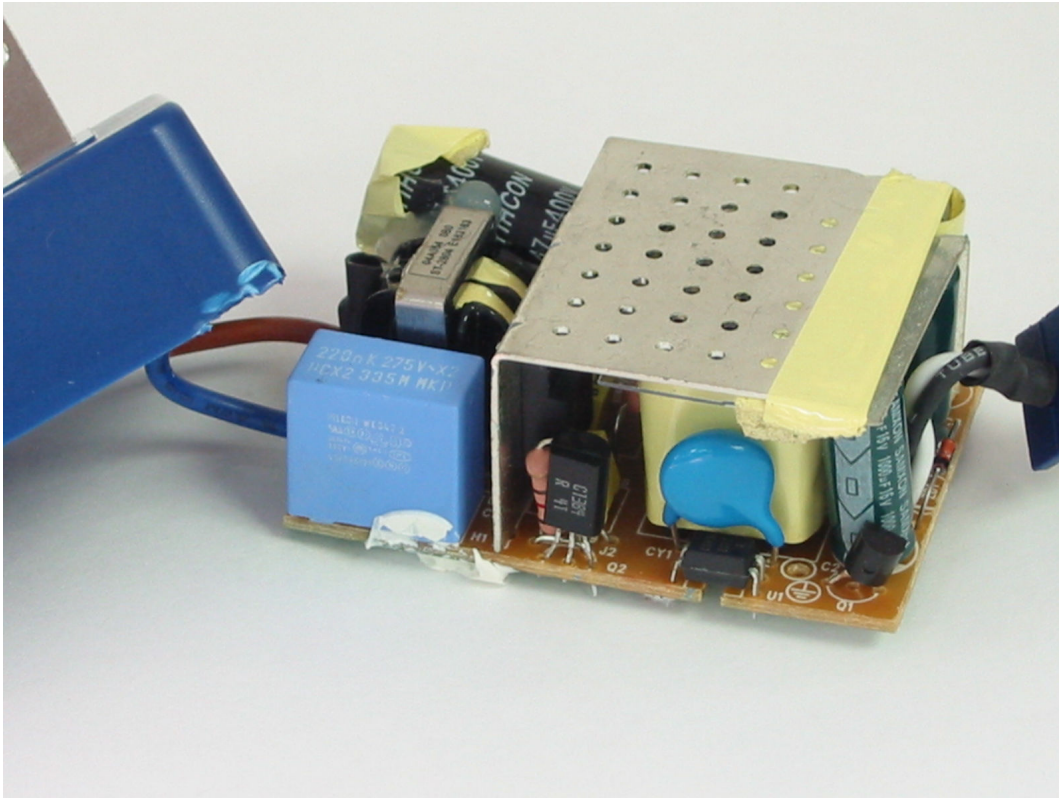
1089 Family







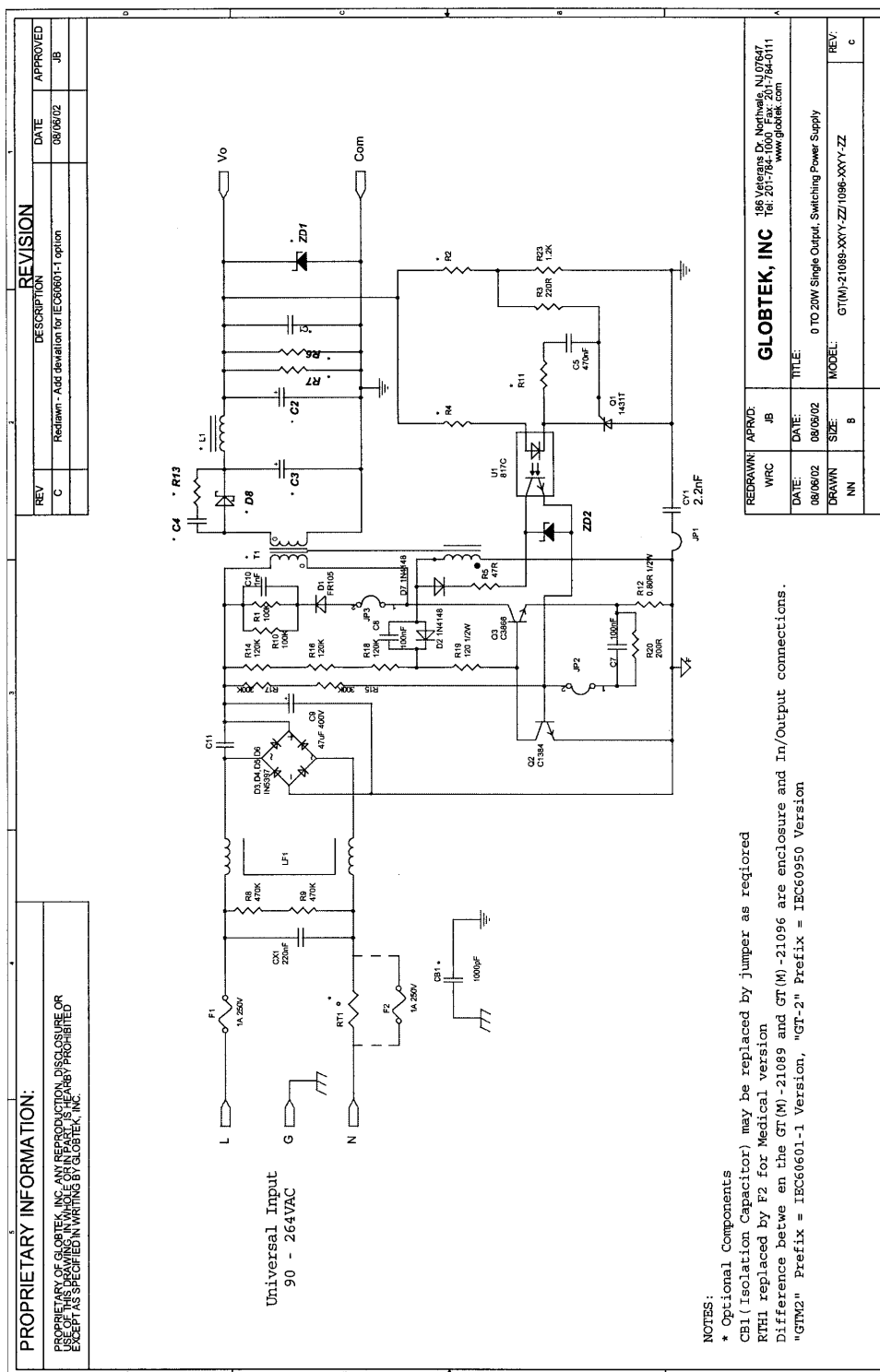






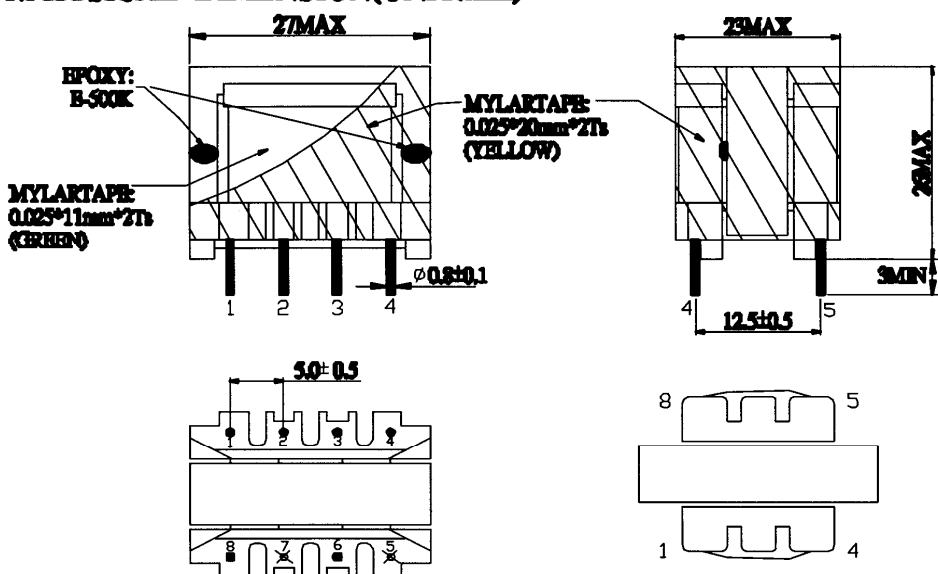
1096 Family

Enclosure No. 3
Schematics, layouts and transformer
drawings
(29 pages including this cover page)



T1

GlobTek Inc.

PART NO.			
PART NAME	EE-25 XFMR	CUSTOMER MODEL	GT-21089-1509
REV. NO.	A	ISSUE DATE	2004/04/13
1. PHYSICAL DIMENSION (UNIT: mm)			
 Technical drawing of the EE-25 XFMR showing top, side, and cross-sectional views with dimensions and material specifications. Top View Dimensions: 27MAX, 23MAX, 12.5±0.5, 28MAX, 3MIN. Side View Dimensions: 50±0.5, 12.5±0.5. Material Specifications: - EPOXY: E-500K - MYLARTAPE: 0.025*11mm*2Tb (GREEN) - MYLARTAPE: 0.025*20mm*2Tb (YELLOW) Pin Dimensions: 1, 2, 3, 4, 5, 6, 7, 8. Pin 4 diameter: $\phi 0.8 \pm 0.1$.			
NOTE: 1. PINS, 7 CUT OFF; 2. 所有繞組進出線必須穿 TEFLON TUBE; 3. CW 端 NP1 收線及 NP2 起線絞合在一起, 焊錫后用 0.025*11.5mm GREEN MYLAR TAPE 包兩圈; 4. 三層絕緣線須先剝皮再鍍錫; 5. GAP CORE 置於頂部, 底部 CORE 須貼 0.025*12mm*2L "U" 型 TAPE; 然後包 CORE TAPE 0.025*6mm*2Tb (BLUE); 6. CORE 接合處 PIN1-4 縫須貼 E-500K 膠; 7. 合模後成品包 0.025*20mm*2Tb YELLOW MYLAR TAPE.			
APPROVED BY	CHECKED BY	REPORTED BY	
		李小芳 2004/04/13	

PART NO.			
PART NAME	EE-25 X'FMR	CUSTOMER MODEL	
REV. NO.	A	ISSUE DATE	2004/04/13

2.SCHEMATIC:

PRI

SEC

NP1(3-CW) $\varnothing 0.26 \times 1P \times 70T$: 2UEW

E1(2) $0.025 \times 10mm \times 0.8T$: 7UEW

NS(8-6) $\varnothing 0.5 \times 3P \times 14T$: TEX-E

E2(2) $0.025 \times 10mm \times 0.8T$: 7UEW

NP2(CW-1) $\varnothing 0.26 \times 1P \times 70T$: 2UEW

NV(2-4) $\varnothing 0.16 \times 1P \times 7T$: 2UEW

3.WINDING CONSTRUCTION:

INSULATION TAPE: $0.025 \times 11mm$
 NV INSULATION TAPE: $0.025 \times 11.5mm$

TOP SIDE

PIN SIDE

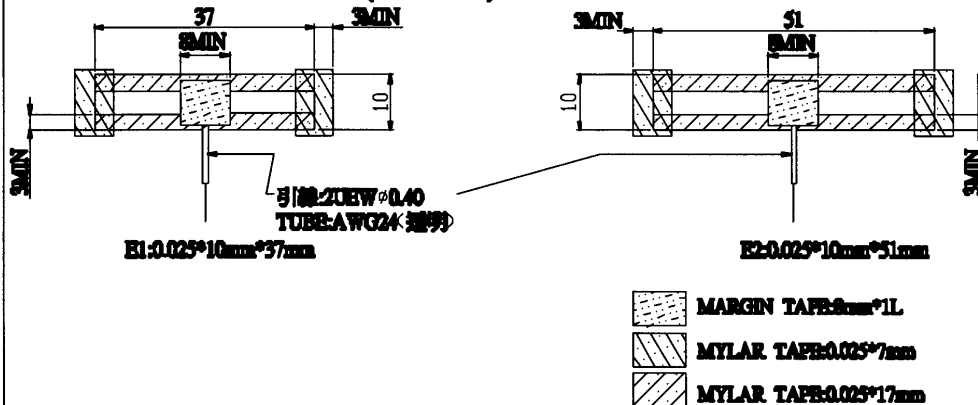
APPROVED BY	CHECKED BY	REPORTED BY
		李小芳 2004/04/13

PART NO.			
PART NAME	EE-25 XFMR	CUSTOMER MODEL	
REV. NO.	A	ISSUE DATE	2004/04/13

4.WINDING TABLE:

Winding No. (層號)	Margin Tape (膠帶)	Pin (PIN)	Copper Wire (銅線)	Turns (圈數)	Winding Method (繞線方式)	Tape Turns (膠帶圈數)	Tube (管徑)
NP1	0	3-CW	$\phi 0.26 \times 1P$	70Tb	密繞	1Tb	28*11mm/28*12mm
E1	0	-2	0.025*10mm	0.5Tb	背膠	1Tb	-24*8mm-
NS	0	8-6	$\phi 0.5 \times 3P$	14Tb	密繞	1Tb	15*10mm/15*10mm
E2	0	-2	0.025*10mm	0.5Tb	背膠	1Tb	-24*8mm-
NP2	0	CW-1	$\phi 0.26 \times 1P$	70Tb	密繞	1Tb	28*11mm/28*10mm
NV	0	2-4	$\phi 0.16 \times 1P$	7Tb	密繞	2Tb	30*9mm/30*9mm
將CW*線繞線後折回線包內						2Tb	

5.MATERIAL PROCESSING:(UNIT:mm)



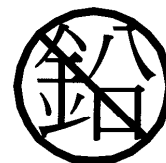
APPROVED BY	CHECKED BY	REPORTED BY
		李小芳 2004/04/13

PART NO.			
PART NAME	EE-25 XFMR	CUSTOMER MODEL	
REV. NO.	A	ISSUE DATE	2004/04/13
7. MATERIAL LIST:			
NO.	TEM	MATERIAL	SUPPLIERS
1	BOBBIN	PHENOLIC EE-25 SPIN YW-014 HC-2506 OR EQUIV	CHANG CHUN PLASTICS CO.,LTD.
2	CORE	FERRITE CORE EE25 R23K	JIU LONG CO.,LTD
3	WIRE	POLYURETHANE(DD-F)	PACIFIC ELECTRIC WIRE&CABLE CO.,LTD
4	TRIPLE WIRE	TRIPLE INSULATION WIRE TEX-B	FURUKAWA ELBCTRIC CO.,LTD
5	INSULATION TAPE	POLYESTER FILM TAPE 1350	3M CO.,LTD
6	TUBE	TEFLON TUBE	GREAT HOLDING INDUSTRIAL CO.,LTD
7	MARGIN TAPE	FIBER GLASS CLOTH 3M #44	MINNESOTA MINING & MFG CO.,LTD
8	COPPER FOIL	0.025*10mm	DIANQIANG MATERIAL CO.,LTD.
9	VARNISH	468-2FC	RIPLEY RESIN ENGINEERING CO INC
10	SOLDER	BAR 63/37	SOLNET METAL INDUSTRY CO.,LTD.
APPROVED BY		CHECKED BY	REPORTED BY
			李小芳 2004/04/13

GT21089

LF1

規格承認書



SPECIFICATION FOR APPROVAL

Customer: 呈威

Customer Model: SYS1089

Sample NO: 04A054

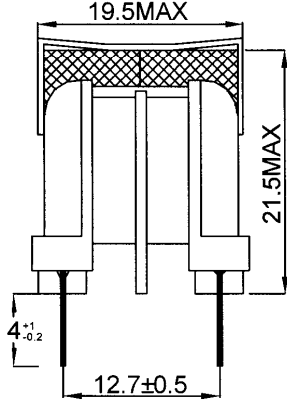
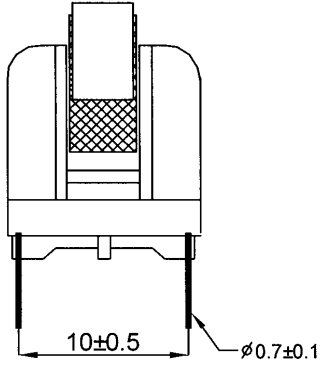
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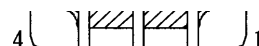
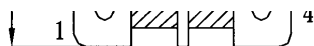
Issued Date: 2006/07/20

	"V"	Customer's Signatures	Signature
Full Approved			
Conditional Approved			
Rejected			

REPORTED	CHECKED	QC	APPROVED

SUNNY NO. 04A054

SUNNY NO.	04A054	CUSTOMER MODEL	SYS1089
REV. NO.	A	ISSUE DATE	2006/07/20
1.PHYSICAL DIMENSION(UNIT:mm)  			



NOTE:

- 1.PIN1 朝機插入軸心繞線；
2. 繞線須平整緊密，線包須包膠帶 :0.025*4mm (黃)二圈。

APPROVED	CHECKED	REPORTED	PAGE
			1/4

SUNNY NO.	04A054	CUSTOMER MODEL	SYS1089
REV. NO.	A	ISSUE DATE	2006/07/20

2.SCHEMATIC:

N1(1-2) $\varnothing$ 0.30*1P*100Ts 2UEW

N2(4-3) $\varnothing$ 0.30*1P*100Ts 2UEW

3.WINDING CONSTRUCTION:

INSULATION TAPE:
0.025*4.0mm(YELLOW)

PIN1-2 SIDE

PIN3-4 SIDE

2Ts

N1(1-2): 密繞
2UEW 0.30*1P
100Ts

N2(4-3): 密繞
2UEW 0.30*1P
100Ts

BOBBIN

APPROVED	CHECKED	REPORTED	PAGE
			2/4

SUNNY NO. 04A054

SUNNY NO.	04A054	CUSTOMER MODEL	SYS1089
REV. NO.	A	ISSUE DATE	2006/07/20
4.ELECTRICAL CHARACTERISTIC:			
TEST ITEM 測試項目	TEST CONDITION 測試條件	RESULT 規格範圍	
INDUCTANCE 電感	@1KHz 0.3V L1:(1-2) L2:(4-3)	15mH MIN 15mH MIN	
INDUCTANCE BALANCE 電感差值	@1KHz 0.3V L1-L2	0.1mH MAX	
D.C.RESISTANCE 電阻	(1-2) (4-3)	0.98Ω MAX 0.98Ω MAX	
TURN RATIO 圈數比	N1:(1-2) N2:(4-3)	100±0.3Ts 100±0.3Ts	
HI-POT 耐壓	@5mA 60SEC	COIL-COIL: 1.0KVAC COIL-CORE: 0.50KVAC	
APPROVED	CHECKED	REPORTED	PAGE
 經理 20 JUL 06 劉傑	 工程 部 20 JUL 06 歐陽海歡	 工程 部 20 JUL 06 唐湘	3/4

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SUNNY NO.	04A054	CUSTOMER MODEL	SYS1089
REV. NO.	A	ISSUE DATE	2006/07/20

5. MATERIAL LIST:

NO.	ITEM	MATERIAL	SUPPLIERS	UL NO.
1	BOBBIN	PHENOLIC UU-10.5 HC-1101	CHANG CHUN PLASTICS CO.,LTD.	E59481(S)
2	WIRE	POLYURETHANE ENAMELLED MW75-C 2UEW	HUIYANG GOLDEN OCEAN MAGNET WIRE FACTORY	E225143
3	INSULATION TAPE	POLYESTER FILM TAPE 1350-1	MINNESOTA MINING&MFG CO.,LTD	E17385(N)
4	VARNISH	468-2FC	RIPLEY RESIN ENGINEERING CO INC	E81777(N)

APPROVED	CHECKED	REPORTED	PAGE
			4/4

GT 21096

LF1

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:28AM P2



CUSTOMER'S PART NO.:

10710570103

105/

C/M

公司編號

OUR DWG.NO.:

HCL-UU10.5V-0103

品名/規格

ITEM:

UU-10.5V LINE FILTER

版本編號

REV. NO.:

B

日期

DATE:

Aug. 23th.

2002

承認印章 APPROVED SIGNATURES			工程開發發行章

本圖共計 1 份, 此圖係由本公司工程師核准



E206710

亨吉力企業有限公司

HENG CHI LI ENTERPRISE CO.,LTD.

公司: 桃園縣八德市和平路528巷3號2F

TEL:03-3632282 3631600

FAX:03-3632454

Taiwan E-Mail Address:lcc1006@ms19.hinet.net

工廠: 廣東省東莞石碣鎮崇煥西路(石碣新醫院旁)

TEL: 0769-6639688 6639689

FAX: 0769-6639687

Dalu E-Mail Address:henchili@pub.dgnnet.gd.cn

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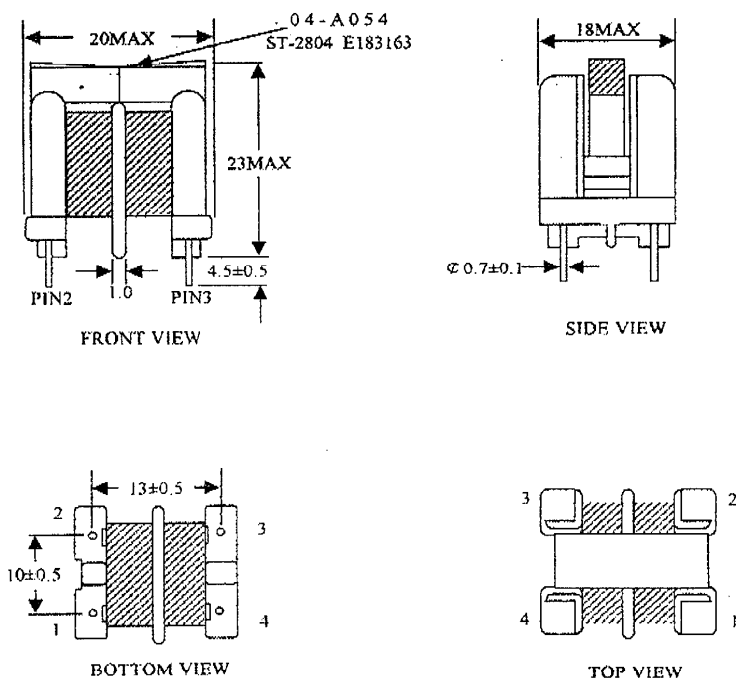
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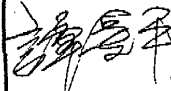
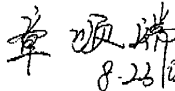
DEC. 25 2002 11:29AM P3

SPECIFICATION FOR APPROVAL

PART NO.	104A0540B09*	H. C. L. NO.	HCL-UU10.5V-0103
PART NAME	UU-10.5 LINE FILTER	CUSTOMER MODEL	
REV. NO.	B	ISSUE DATE	Aug. 23th, 2002

1. CONSTRUCTION DIMENSION (UNIT: mm)



APPROVED BY	CHECKED BY	REPORTED BY
 8/23/02	 8/23/02	胡玲艷

亨吉力企業有限公司
HENG CHI LI ENTERPRISE CO., LTD.

FROM : PANASONIC

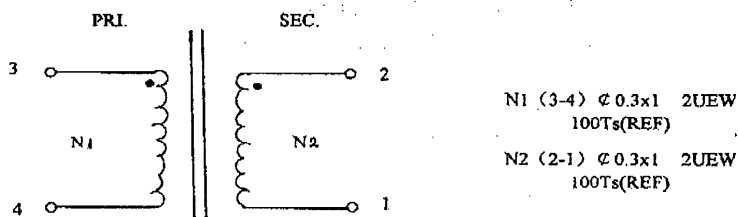
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DEC. 25 2002 11:29AM P4

SPECIFICATION FOR APPROVAL

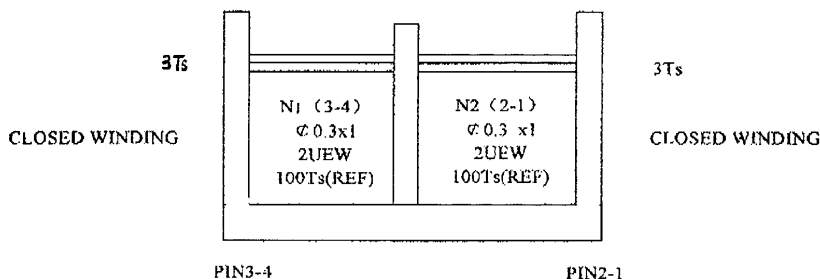
PART NO.	104A0540B09*	H. C. L. NO.	HCL-UU10.5V-0 103
PART NAME	UU-10.5 LINE FILTER	CUSTOMER MODEL	
REV. NO.	B	ISSUE DATE	Aug. 23th, 2002

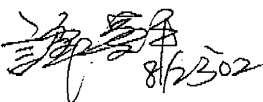
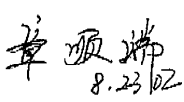
2. SCHEMATIC.



3. WINDING CONSTRUCTION.

INSULATION TAPE: 1milx4mm(YELLOW)



APPROVED BY	CHECKED BY	REPORTED BY
 8/23/02	 8.23/02	胡玲艳

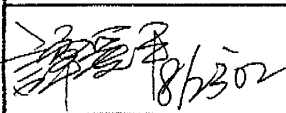
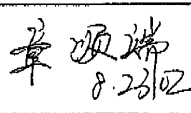
亨吉力企业有限公司
HENG CHI LI ENTERPRISE CO., LTD.

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:29AM P5

SPECIFICATION FOR APPROVAL

PART NO.	104A0540B09*	H. C. L. NO.	HCL-UU10.5V-0103
PART NAME	UU-10.5 LINE FILTER	CUSTOMER MODEL	
REV. NO.	B	ISSUE DATE	Aug. 23th, 2002
4. ELECTRICAL SPEC.			
4-1. INDUCTANCE RESISTANCE TEST :AT 1KHZ 0.25V _{rms} (CHEN HWA1062)			
L1: (2-1)		15mH MIN.	
L2: (3-4)		15mH MIN.	
4-2. D.C RESISTANCE TEST:AT 25°C(CHEN HWA 502)			
DCR1: (2-1)		1.0 Ω MAX	
DCR2: (3-4)		1.0 Ω MAX	
4-3. HI-POT TEST(CS2670 OR CHEN HWA CWV-902):			
(1) PRI-SEC:		3.0KV/AC 5mA 60SEC	
(2) PRI-CORE:		2.5KV/AC 5mA 60SEC	
(3) SEC-CORE:		0.5KV/AC 5mA 60SEC	
APPROVED BY		CHECKED BY	REPORTED BY
 8/23/02		 8.23/02	胡玲艷

亨吉力企業有限公司
HENG CHI LI ENTERPRISE CO., LTD.

第3頁 共5頁

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:30AM P6

SPECIFICATION FOR APPROVAL

PART NO.	104A0540B09*	H. C. L. NO.	HCL-UU10.5V-0103
PART NAME	UU-10.5 LINE FILTER	CUSTOMER MODEL	
REV. NO.	B	ISSUE DATE	Aug. 23th, 2002

5.MATERIAL

NO.	ITEM	DESCRIPTION	SUPPLIERS	UL NO.
1	BOBBIN	UU-10.5 T373J 94V0 150°C	CHANG CHUN PLASTIC CO.,LTD.	E59481(S)
2	CORE	UU-10.5 HG702 A07,K9J	CHLPI ECECTRICAL CO.,LTD. MAGSOURCE ELECTRONIC CO.,LTD. ACME CO.,LTD	
3	WIRE	POLYURETHANE ENAMELLED COPPER DD-NYU 130°C UEW -2 130°C UEW-B 130°C UEW 130°C	PACIFIC ELECTRIC WIRE&CABLE CO.,LTD. HUNG CHENG ELECTRIC WIRE CO.,LTD. TOTODU ELECTRIC CO.,LITE ELERNAL WELL INDUSTRIAL TAI-I ELECTRIC WIRE	E84081(S) E164750(S) E79029(S) E171564(S) E7056643(S)
4	TAPE	3M NO. 1350 or 56 or 1298 #371F (YELLOW)	MINNESOTA MINING&MFG CO ELECTRICAL SPECIALTIES DIV BONDTEC ENTERPRISE CO.,LTD. TENNRRICH CORP.	E17385(N) E175868(S) E154354(S)
5	VARNISH	BC-359 200°C BC-346A 200°C	JOHN C DOLPH CO.,LTD CBMP	E51047(M)
6	SOLDER	BAR 63/37	WELLS CHEMICAL	

APPROVED BY	CHECKED BY	REPORTED BY
 8/23/02	 8.23/02	胡 玲 艳

亨吉力企業有限公司
HENG CHI LI ENTERPRISE CO., LTD.

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:30AM P7

亨吉力企業有限公司 HENG CHI LI ENTERPRISE CO., LTD SAMPLES TEST DATA

CUSTOMER	呈威	PART NO.	104A0540B09*	SPECIFICATION	UU10.5
ITEM	LOWE FILTER	SAMPLE	5 PCS	DATE	Aug. 23th, 2002
TEMP.	25°C	HUM.	75% RH.	TEST (f)	1KHZ 0.25V
MANUFACTURE EXTERIOR DIMENSIONS: (O.K) UNIT:mm				TEST INSTRUCTMENTS	
LENGTH 20 MAX. PIN DISTANCE 10±0.5				☐ CH100 ☒ CH502 ☐ CH310 ☐ CH102 ☐ CWV852 ☐ CH3200A ☐ CH1061 ☒ CWV902 ☐ TF6800A3 ☒ CH1062 ☒ CS2670 ☒ CH301A	
WIDTH 18 MAX. ROW DISTANCE 13±0.5					
HIGH 23 MAX. PIN LENGTH 4.5±0.5					
INDUCTANCE	☐ H ☒ mH ☐ uH		☐ TURNS ☐ VOLTAGE RATIO		D.C RESISTANCE
SPEC	L 15mH MIN.	L 15mH MIN.			DCR 1.0Ω MAX.
PIN NO. ITEM NO.	(2-1)	(3-4)			(2-1) (3-4)
1	21.98	22.10			0.869 0.871
2	23.00	23.01			0.869 0.876
3	22.86	22.90			0.866 0.870
4	23.81	21.80			0.869 0.867
5	23.09	23.10			0.866 0.873
6					
7					
8					
9					
10					
HI-POT TEST	KV	mA	Sec	RESULT	NOTE:
PRI.-SEC.	3.0	5	60	O.K	林偉
PRI.-CORE	2.5	5	60	O.K	
SEC.-CORE	0.5	5	60	O.K	
PRI.-PRI.					
SEC.-SEC.					
				TESTER	CHECKED
				林偉	章順端
					8-23-02
					8/23/02
				APPROVED	

TEL: 0769-6639688,6639689

FAX: 0769-6639687

第5頁 共5頁

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:31AM P8

1655 Scott Blvd
Santa Clara, CA 95050-1109
(408) 985-2400
FAX No. (408) 296-3256



Underwriters Laboratories Inc.®

File E206710

Vol 1

Issued 12/28/1999
Revised

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

COMPONENT - SYSTEMS, ELECTRICAL INSULATION
(OBJY2)

Manufacturer: HENG CHI LI ENTERPRISE CO LTD
(775762-001) CHONG HUAN W RD
SHIJIE TOWN
DONGGUAN GUANGDONG CHINA

Applicant: HENG CHI LI ENTERPRISE CO LTD
(775746-001) 11TH FL-2
129 JIE SHOU RD, SEC 2
BA DE CITY
TAOYUAN HSIEN TAIWAN

Recognized Company: SAME AS APPLICANT
(775746-001)

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

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UNDERWRITERS LABORATORIES INC.

J. J. Ritchie

J. J. Ritchie
Vice President
Laboratory Management and Operations

A not-for-profit organization
dedicated to public safety and
committed to quality service

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:32AM P9

CHANG CHUN PLASTICS CO LTD
7TH/FL 301 SONGKIANG RD, TAIPEI TAIWAN

E59481 (S)

Mtl Dsg	Col	Min Thk mm	UL94 Flame Class	Elec	RTI Mech with Imp	Mech w/o Imp	H W I	H A I	H V T R	D 4 9 5	C T I
Phenolic, "PM" furnished in the form of granules.											
T33	BK	1.57	94HB	150	150	150	0	0	4	7	4
		3.17	94V-1	150	150	150	0	0	2	7	4
		6.35	94V-0	150	150	150	0	0	4	7	4
T353	BK	0.79	94V-0	150	150	150	0	0	5	5	4
		1.57	94V-0	150	150	150	0	0	3	5	4
		3.17	94V-0	150	150	150	0	0	0	5	4
T357	BK	0.79	94V-0	150	150	150	0	0	4	5	4
		1.57	94V-0	150	150	150	0	0	5	5	4
		3.17	94V-0	150	150	150	0	0	5	5	4
T614	BN	1.57	94HB	150	150	150	0	0	4	7	4
		3.17	94HB	150	150	150	0	0	4	7	4
		6.35	94V-0	150	150	150	0	0	4	7	4
T358J	BK, BN	0.79	94HB	150	150	150	1	0	4	7	4
		1.57	94HB	150	150	150	1	0	4	7	4
		3.17	94HB	150	150	150	0	0	4	7	4
T373J	BK, BN	1.00	94V-1	150	150	150	2	0	3	6	4
	NC	1.00	94V-0	150	150	150	2	0	3	5	4
	@	2.00	94V-0	150	150	150	1	0	3	6	4
T375J	BK, BN	0.79	94V-0	150	150	150	1	0	4	5	4
		1.57	94V-0	150	150	150	0	0	4	5	4
		3.17	94V-0	150	150	150	0	0	4	5	4
T377J	BK	0.79	94HB	150	150	150	2	0	4	7	4
		1.57	94HB	150	150	150	1	0	4	7	4
		3.17	94HB	150	150	150	0	0	4	7	4
T385J	BK, BN	3.17	94V-1	150	150	150	1	0	4	7	4
	NAT	3.17	94V-0	150	150	150	1	0	3	7	4
	@	6.34	94V-0	150	150	150	0	0	3	7	4
T200NA	BK, BN	1.00	94V-0	150	150	150	0	0	0	7	4
	BK, BN	2.00	94V-0	150	150	150	0	0	0	7	4
T376J	BK, BN	1.00	94V-0	150	150	150	0	0	1	5	4
	BK	2.00	94V-0	150	150	150	0	0	1	5	4
T210LA	BK	0.80	94V-0	150	150	150	1	3	0	6	4
	BK	1.00	94V-0	150	150	150	0	0	0	6	4
	BK	2.00	94V-0	150	150	150	0	0	0	6	4
T389	BK	1.00	94HB	150	150	150	0	0	1	6	4
	BK	2.00	94HB	150	150	150	0	0	1	6	4
	BK	3.20	94HB	150	150	150	0	0	1	6	4
T310	BK	1.00	94V-1	150	150	150	1	0	2	5	4
		1.57	94V-1	150	150	150	1	0	2	5	4
		3.17	94V-0	150	150	150	0	0	2	5	4
T308J	BK, BN	2.00	94HB	150	150	150	1	0	3	5	4
		3.17	94HB	150	150	150	1	0	3	5	4
Urea, furnished in the form of granules.											
UM	All	1.57	94HB	100	100	100	0	0	2	6	1

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:32AM P10

Magnet Wire (OBMW2) —Continued

E84081

PACIFIC ELECTRIC WIRE & CABLE CO LTD
4TH & 5TH FL PACIFIC COMMERCIAL BLDG 285
CHUNG HSIAO EAST RD, SEC 4, TAIPEI 10514 TAIWAN

Mtl	Dsg	BC	Coat Typ	Overcoat	ANSI Typ (+)	TI
Magnet wire. AIEIW-200		Polyester- imide		Polyamide- imide	MW35C or MW73C MW35A or MW73A MW79	200 220
DO-F		Polyurethane		—	—	155
DO		Polyurethane		—	—	130
DO-NYU		Polyurethane		Polyamide	MW28 MW5	*130 155
SS-F		Polyester		—	—	130
SSU		Polyester		—	—	180
PEWH		Polyesterimide		—	MW30C MW35C	200
PALW		Polyester-imide		Polyamide- imide/ polyethylene Polyamide- imide	or MW73C	
APB		Polyester- imide		Polyester cement	MW35A or MW73A	200

+ANSI Type applies to round magnet wire.
Marking: Company name or E84081 and type designation on packages or reels.

May. 27 2001 02:05PM P1

PHONE NO. : 002 86

INDUSTRIAL CORP.

FROM :

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:32AM P11

OANZ2 August 4, 1995
Component - Insulating Tape

MINNESOTA MINING & MFG CO ELECTRICAL SPECIALTIES DIV E17385 (N)
(B-cont. from A card)

- Polyester film insulating tape, Nos. 5, 54, 56(a), 76, 131(a), for use at temperatures not exceeding 130 C.
- Polyester film insulating tape, Nos. 1169, MR98, for use at temperatures not exceeding 130 C.
- Polyester film insulating tape, Nos. 57, 58, 1291, for use at temperatures not exceeding 130 C.
- Polyester film insulating tape, No. 74, for use at temperatures not exceeding 130 C.
- Flame retardant polyester film insulating tape, Nos. 1298(b), 1360(b)(b1), 1360(b)(b1), for use at temperatures not exceeding 130 C.
- Flame retardant polyimide film tape, Nos. 92, 1206, 5413.
- Glass cloth insulating tape, No. 27(e), for use at temperatures not exceeding 150 C.

Reports: September 17, 1984; July 8, 1988; September 17, 1984; May 5, 1988; March 26, 1975; June 18, 1973; October 2, 1989.

Replaces E17385B dated July 10, 1995.
561521007 Underwriters Laboratories Inc.® (Cont. on C card)
011/0024261

FROM : PANASONIC

PHONE NO. : 0769+3377352

DEC. 25 2002 11:33AM P12

		E51047 (M)	
Varnishes (ODOR2)			
JOHN C DOLPH CO			
BC-340	Helical Coil	Polyester	MW-35C 200
	Twisted Pair	Polyester	MW-35C 180
BC-348A, -348B, -348AN	Helical Coil	Polyimide	MW-16C 200
	Twisted Pair	Polyimide	MW-16C 240
	Helical Coil	Polyester	MW-24C 180
	Twisted Pair	Polyester	MW-24C 165
	Helical Coil	Polyurethane	MW-28C 130
	Twisted Pair	Polyurethane	MW-28C 155
	Helical Coil	Polyesterimide	MW-30C 180
	Twisted Pair	Polyesterimide	MW-30C 180
	Helical Coil	Polyesterimide	MW-35C 200
	Curved Electrode	Polyimide	180

GT 21096

LF1 (Alternate)

FROM :

FAX NO. :

Jun. 30 2002 00:03 P3



承認書

APPROVED DATA

呈 威 公 司

公 元 2003 年 5 月 31 日

機種名 Machinery	UU-10.5
------------------	---------

客戶料號 PartNo	104A0540B0Y*
----------------	--------------

品 名 Description	TRANSFORMER
--------------------	-------------

編 號 NO	J-UU10.504-1211A
-----------	------------------

全部承認	修改承認	部分確認

承認敬請簽回一份

嘉 盛 電 子 廠

地址: 廣東省東莞市清溪鎮鬆崗管理區

FAX: 0769-7386526

TEL: 0769-7386846 7386343

7380501 7380502 7380504

FROM :

FAX NO. :

Jun. 30 2002 00:04 P4



SPECIFICATION FOR APPROVAL

客戶名稱	呈威	客戶料號	104A0540B0Y*	嘉盛編號	J-UU10.504-1211A
規格	UU-10.5	版本	V1.0	日期	2003/05/31

UNIT:mm

04A054 0B0
ST-2804 E183163

備 注	1. 繞制時, 銅線不能破皮; PIN3-4朝機臺作業. 2. 鐵芯用鐵扣夾住, 成品須真空含浸 3. 標籤貼法及各項外觀尺寸如圖所示.
--------	--

核 準		審 核		擬 定	
		確 認		制 圖	彭路英

地址: 廣東省東莞市清溪鎮鬆崗管理區

FAX: 0769-7386526

TEL: 0769-7386846 7386343 7380501 7380502 7380504

FROM :

FAX NO. :

Jun. 30 2002 00:05 P6



SPECIFICATION FOR APPROVAL

客戶名稱	呈 威	客戶料號	104A0540B0Y*	嘉盛編號	J-UU10.504-1211A
規 格	UU-10.5	版 本	V1.0	日期	2003/05/31
VELETRICAL CHARACTERISTICS: RELATIVE HUMIDITY: TEMPERATURE: 25°C STORAGE TEMPERATURE:					
TEST	CONDITIONS		WINDING	REQUIREMENTS	
INDUCTANCE	1KHz/0.25V		N1 = N2	15mH MIN	
DC RESISTANCE	20°C				
Q 值					
LEAKAGE INDUCTANCE					
DOELECTRIC WITHSTANDING	AC60Hz/5mA 1 MINUTE		N1 --- N2	3.0KV	
			N1 --- C	0.5KV	
			N2 --- C	0.5KV	
以上測試以CH-100, CH-901為標籤或相當儀器					
INSULATION RESISTANCE MEGAOHM	0.5KVDC		N1 --- N2	100M OHM MIN	
			N1 --- C	100M OHM MIN	
			N2 --- C	100M OHM MIN	
TEMPERATURE PORERTY: BETWEEN -20°C TO 80°C, TEST INDUCTANCE AND RESISTANCE ON THE BASIS OF 25°C. THE VARIATION SHALL NOT ESCEED 20 %.					
核 準		審 核		擬 定	彭路英
		確 認		制 圖	
地址: 廣東省東莞市清溪鎮鬆崗管理區 FAX: 0769-7386526 TEL: 0769-7386846 7386343 7380504 7380502 7380501					

FROM :

FAX NO. :

Jun. 30 2002 00:05 P7



SPECIFICATION FOR APPROVAL

客戶名稱	呈 威	客戶料號	104A0540B0Y*	嘉盛編號	J-UU10.504-1211A
規 格	UU-10.5	版 本	V1.0	日期	2003/05/31

ITEM	MATERIAL	SUPPLIER	UL NO:	OPTION
WIRE	POLYURETHANE UEW WIRE 130°C	PACIFIC ELECTRIC & CABLE CO., LTD.	E84081(S)	✓
CORE	UU-10.5 <R7K>	STEADY FIRST CO., LTD DA SHENG CO., LTD YANG GUANG CO., LTD OR EQU		✓
BOBBIN	PHENOLICS UU-10.5 T375J 94V-0 自帶鐵夾	CHANG CHUN PLASTICS CO LTD.	E59481(S)	✓
VARNISH	V-1630FS	JASDI CO., LTD.	E73071(M) E60614(M)	✓

核 準		審 核		擬 定	
		確 認		制 圖	彭路英

地址: 廣東省東莞市清溪鎮鬆崗管理區

FAX: 0769-7386526

TEL: 0769-7386846 7386343 7380504 7380502 7380501

FROM :

FAX NO. :

Jun. 30 2002 00:06 P8



嘉盛五金電子有限公司

變壓器樣品測試記錄

客 戶	呈 威	料號	104A0540B0Y*	規格	UU-10.5
測試條件	1KHz 0.25V	判定	合格	日期	03/05/31
測試項目	L值	L.K	DCR	Q值	圈數 極性
腳位	N1 = N2				
規格					
實測值	15mH MIN				
1	22.3				OK
2	18.2				OK
3	20.6				OK
4	22.48				OK
5	21.32				OK
6					
7					
8					
9					
10					
HI-POT TEST			外 觀 檢 查		
測試端	測試條件<60 SEC>	結果	外觀	長度	寬度
N1 -- N2	3.0 KVAC/5mA	OK	合格	合格	合格
N1 -- C	0.5 KVAC/5mA	OK	高度	PIN距	排距
N2 -- C	0.5 KVAC/5mA		合格	合格	合格
備注:1.測試使用儀器: 全華100電感測試儀; 全華901耐壓測試儀.					
核準	王長明 6/2	審核	楊明華	測試者	

Enclosure No. 4
Family overview and Enclosure Drawings
(26 pages including this cover page)



PROPRIETARY INFORMATION:		REVISION			
PROPRIETARY OF GLOBTEK, INC. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IN WHOLE OR IN PART, IS HEREBY PROHIBITED EXCEPT AS SPECIFIED IN WRITING BY GLOBTEK, INC.		REV	DESCRIPTION	DATE	APPROVED
		A	INITIAL RELEASE, RFS. 2441, FS	10/22/03	DMR
		B	UPDATE, RFS.3890, DMR	06/15/04	DMR
		C	UPDATE MANUEL, RFS.3934, DMR	06/23/04	DMR
		D	UPDATE MANUEL, RFS.4085, DMR	07/19/04	DMR

1. ELECTRICAL SPECIFICATIONS:

INPUT

INPUT VOLTAGE: 90Vac TO 264Vac
INPUT CURRENT: <0.5Arms AT 90Vac INPUT
INPUT FREQUENCY: 47HZ - 63HZ

OUTPUT

OUTPUT VOLTAGE:

CLASS II WITH FUNCTIONAL EARTH ITE MODEL	OUTPUT RATING
GT-21089-0903-T3(W3,W3E,W3U,W3A)	+3.3VDC @ 0-2.6A
GT-21089-1305-X.X-T3(W3,W3E,W3U,W3A)**	+5.0VDC @ 0-2.6A
GT-21089-1506-X.X-T3(W3,W3E,W3U,W3A)**	+6.0VDC @ 0-2.5A
GT-21089-1509-X.X-T3(W3,W3E,W3U,W3A)**	+9.0VDC @B 0-1.7A
GT-21089-1512-X.X-T3(W3,W3E,W3U,W3A)**	+12VDC @ 0-1.25A
GT-21089-1524-X.X-T3(W3,W3E,W3U,W3A)**	+24VDC @ 0-0.625A
GT-21089-1815-X.X-T3(W3,W3E,W3U,W3A)**	+15VDC @ 0-1.20A
GT-21089-1818-X.X-T3(W3,W3E,W3U,W3A)**	+18VDC @ 0-1.00A
GT-21089-1824-X.X-T3(W3,W3E,W3U,W3A)*	+24VDC @ 0-0.75A
GT-21089-1948-X.X-T3(W3,W3E,W3U,W3A)*	+48VDC @ 0-0.4A

CLASS II ITE MODEL	OUTPUT RATING
GT-21089-0903-T2(W2,W2E,W2U,W2A)	+3.3VDC @ 0-2.6A
GT-21089-1305-X.X-T2(W2,W2E,W2U,W2A)	+5.0VDC @ 0-2.6A
GT-21089-1506-X.X-T2(W2,W2E,W2U,W2A)	+6.0VDC @ 0-2.5A
GT-21089-1509-X.X-T2(W2,W2E,W2U,W2A)	+9.0VDC @B 0-1.7A
GT-21089-1512-X.X-T2(W2,W2E,W2U,W2A)	+12VDC @ 0-1.25A
GT-21089-1524-X.X-T2(W2,W2E,W2U,W2A)	+24VDC @ 0-0.625A
GT-21089-1815-X.X-T2(W2,W2E,W2U,W2A)	+15VDC @ 0-1.20A
GT-21089-1818-X.X-T2(W2,W2E,W2U,W2A)	+18VDC @ 0-1.00A
GT-21089-1824-X.X-T2(W2,W2E,W2U,W2A)*	+24VDC @ 0-0.75A
GT-21089-1948-X.X-T2(W2,W2E,W2U,W2A)*	+48VDC @ 0-0.4A

Foot Note: Globtek Inc. will not be liable for the safety and performance of these power supplies if unauthorized access and repair occurs. End user should consult for the proper installation instruction the applicable UL, CSA and EN standards.	DASH NO.	PART NO	REV.	DESCRIPTION	NOTES	
	TABULATION BLOCK					
	REVISION	D B B B B B B B B D	TOLERANCES: DECIMALS ANGULAR .XX +/- 0.1 XXX +/- .005			 GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111 www.globtek.com
	SHEET	1 2 3 4 5 6 7 8 9 10 11	MILLIMETERS ANGULAR .XX +/- 0.3 XXX +/- .013			
Limitation of Use: Globtek product are not authorized for use as mission critical components in life support, hazardous environment, nuclear or aircraft applications without prior written approval from the CEO of Globtek Inc.	INIT.BY: DMR		DATE: 10/22/03		DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY DESKTOP AND WALL PLUG IN: N.A., EURO, U.K.,SAA UNIVERSAL INPUT, ITE , CLASS I & II	
	DRAWN: NF		DATE: 10/22/03			
Contents of this document are subject to change without prior notice	APRVD : DMR		DATE: 10/22/03		MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A)	
			SCALE: NONE		PART NO: GT-21089- FAMILY	
					REV. D	
					SHEET 1 OF 11	

PROPRIETARY INFORMATION:		REVISION		
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		A	INITIAL RELEASE, RFS. 2441, FS	10/22/03
		B	UPDATE, RFS.3890, DMR	06/15/04
LEGEND: GT2: INFORMATION TECHNOLOGY EQUIPMENT (ITE) SERIES 1089: FAMILY DESIGNATION T3/T2: DESK TOP 3PIN/2PIN W2/W3: WALL PLUG IN 3PIN/2PIN E/U/A: PLUG CONFIGURATION, NORTH AMERICA/JAPAN/EURO/UK/AUSTRILIA 0903 TO1948: POWER (09WATTS) AND OUTPUT VOLTAGE (03V) X.X: IS AN OPTION FOR SPECIFYING OUTPUT VOLTAGE DEVIATION FROM STANDARD MODEL SUBTRACTING X.X VOLTS FROM STANDARD OUTPUT NOTES: * cTUVus, CE AND TUV APPROVALS ONLY ** MODEL WITH CCC APPROVALS 1) CLASS II WITH FUNCTIONAL EARTH UNITS HAS ITS OUTPUT COMMON CONNECTED TO EARTH OR WITH OPTION OF CAPACITOR BETWEEN EARTH AND OUTPUT COMMON. 2) OUTPUT VOLTAGE CAN BE CONFIGURED FROM 3.3V TO 48V IN 0.1V INCREMENTS OUTPUT CURRENT: SEE TABLE, NO LOAD TO FULL LOAD, NO MINIMUM LOAD REQUIRED RATED OUTPUT POWER: 20 WATTS, MAXIMUM OUTPUT REGULATION: +/-5% MEASURED AT THE OUTPUT CONNECTOR LINE VOLTAGE REGULATION: +/- 1% TYPICAL MEASURED AT FULL LOAD HIGH FREQ. OUTPUT RIPPLE: 1% OF OUTPUT VOLTAGE , PEAK TO PEAK, TYPICAL TURN-ON/TURN-OFF OVERSHOOT: 5% MAXIMUM, 1mS TYPICAL RECOVERY TIME FOR 25% STEP LOAD TURN-ON DELAY: 1 SECOND, TYPICAL HOLD-UP TIME: 10mS TYPICAL AT NOMINAL INPUT VOLATAGE AND FULL LOAD INRUSH CURRENT: 30A TYPICAL AT 115Vac INPUT AND 40A TYPICAL AT 230Vac INPUT SWITCHING FREQUECNKY: 100KHZ TYPICAL, VARIES WITH LINE AND LOAD EFFICIENCY: 75% TYPICAL AT NOMINAL INPUT AND FULL LOAD PROTECTION OVER-VOLTAGE: VOLTAGE LIMITED TO LESS THAN 130%, CROWBAR METHOD OVERLOAD/SHORT CIRCUIT: MOMENTARY SHORT CIRCUIT PROTECTED, OUTPUT WILL AUTORECOVER UPON REMOVAL OF SHORT INPUT PROTECTION: INPUT FUSING; LINE FUSING SAFETY DIELECTRIC WITHSTAND VOLTAGE: 4242Vdc FROM PRIMARY TO SECONDARY FOR CLASS II WITH FUNCTIONAL EARTH VERSIONS: FOR CLASS II VERSIONS: 4242Vdc FROM PRIMARY TO SECONDARY EARTH LEAKAGE CURRENT: < 300uA at 264Vac INPUT VOLTAGE				
GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111 www.globtek.com DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY DESKTOP AND WALL PLUG IN: N.A., EURO, U.K.,SAA UNIVERSAL INPUT, ITE , CLASS I & II MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A) PART NO: GT-21089- FAMILY				
				REV. B
				SHEET 2 OF 11



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		REV	DESCRIPTION	DATE	APPROVED
		A	INITIAL RELEASE, RFS. 2441, FS	10/22/03	DMR
		B	UPDATE, RFS.3890, DMR	06/15/04	DMR

APPROVALS	
ITE UNITS:	UL 60950, CUL TO 22.2NO.60950, TUV TO EN60950 AND cTUVus TO UL 60950 FOR CLASS II FE AND AND CLASS II; CE FOR EMC, KTL EK MARK TO 60950 (FOR GT-21089-090913 ~ GT-21089-1305-T3), CHINESE CCC MARK TO GB4943-2001, GB9254-1998, GB17625.1-2003 (GT-21089-T3 FROM 5~18V OUTPUT), PSE TO J60950 AS/NZ 60950, DEMKO TO EN 60950, POLAND (PCBC) B-MARK TO EN 60950, ARGENTINA S-MARK
EMI:	COMPLIES WITH EN55022 CLASS B AND FCC PART 15 CLASS B WHEN TESTED WITH RESISTIVE LOAD, BOTH CONDUCTED AND RADIATED EMI
CE MARK:	TESTED TO COMPLY WITH EN61000-3-2 EN610003-3 AND EN50082-1 INCLUDING EN61000-4-2 (SYSTEM LEVEL), EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11 LEVEL 4.
OTHERS	
MTBF:	GREATER THAN 50,000 HOURS AT 25C AMBIENT TEMPERATURE NOMINAL LINE AND FULL LOAD PER MIL-217 STANDARD
OPERATING TEMPERATURE:	0°C TO 40°C AMBIENT TEMPERATURE
HUMIDITY:	0% TO 90% RELATIVE HUMIDITY
STORAGE TEMPERATURE:	-10°C TO 80°C

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MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A)	REV. B
PART NO: GT-21089- FAMILY	SHEET 3 OF 11

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		B	UPDATE, RFS. 3890, DMR	06/15/04	DMR

2. ENCLOSURE / INPUT CONNECTOR CONFIGURATION:
 DIMENSIONS ARE IN MM UNLESS SPECIFIED OTHERWISE
 UPPER HOUSING: HIGH IMPACT PLASTIC, 94V0 POLYCARBONATE, NON-VENTED, COLOR BLACK
 LOWER HOUSING: HIGH IMPACT PLASTIC 94V0 POLYCARBONATE, NON- VENTED, COLOR BLACK

2.1 DESKTOP CLASS I (-T3):
 SIZE: 86.5 x 47 x 32 ± 0.5 mm

INPUT CONNECTOR:
 CONFIGURATION: CLASS I & II FE MODEL IEC320 / C14, AC POWER RECEPTACLE WITH 3 MALE PRONGS.

2.2 DESKTOP CLASS II (-T2):
 SIZE: 86.5 x 47 x 32 ± 0.5 mm

INPUT CONNECTOR:
 CONFIGURATION: CLASS II MODEL IEC320 / C8, AC POWER RECEPTACLE (NON-POLARIZED, SHAVER STYLE) WITH 2 MALE PRONGS

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MODEL NO: GT-21089-YYZZ-X-X-T2(3),W2(E,U,A),W3(E,U,A)			REV. B
PART NO: GT-21089- FAMILY			SHEET 4 OF 11

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B	UPDATE, RFS.3890, DMR	06/15/04	DMR	

2.3 WALL PLUG-IN CLASS I (-W3, -W3E, -W3U, -W3A):
SIZE: 74 x 49 x 40.5 ± 0.5 mm

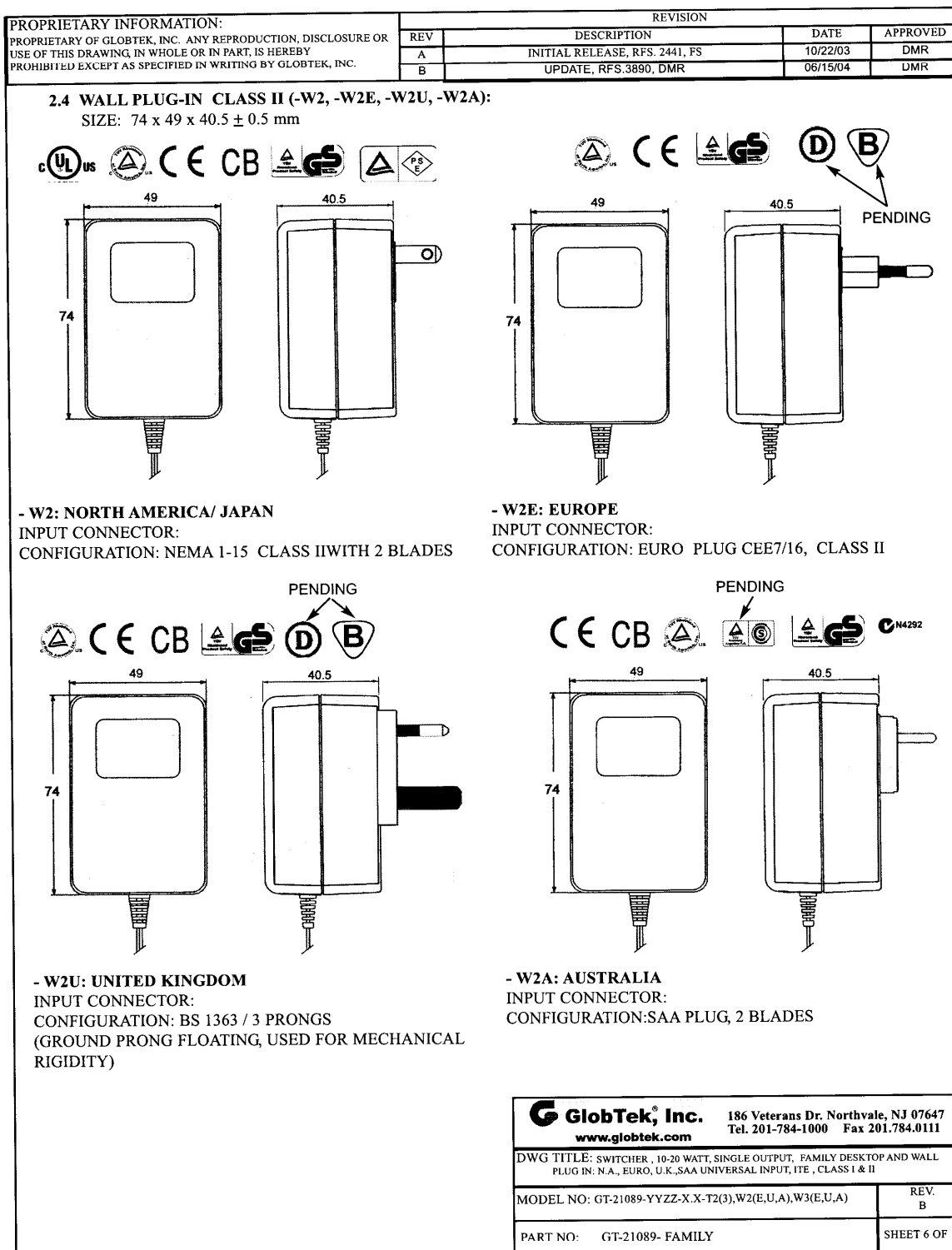
- W3: NORTH AMERICA
INPUT CONNECTOR:
CONFIGURATION: NEMA 5-15 WITH 3 BLADES / GROUND PRONG

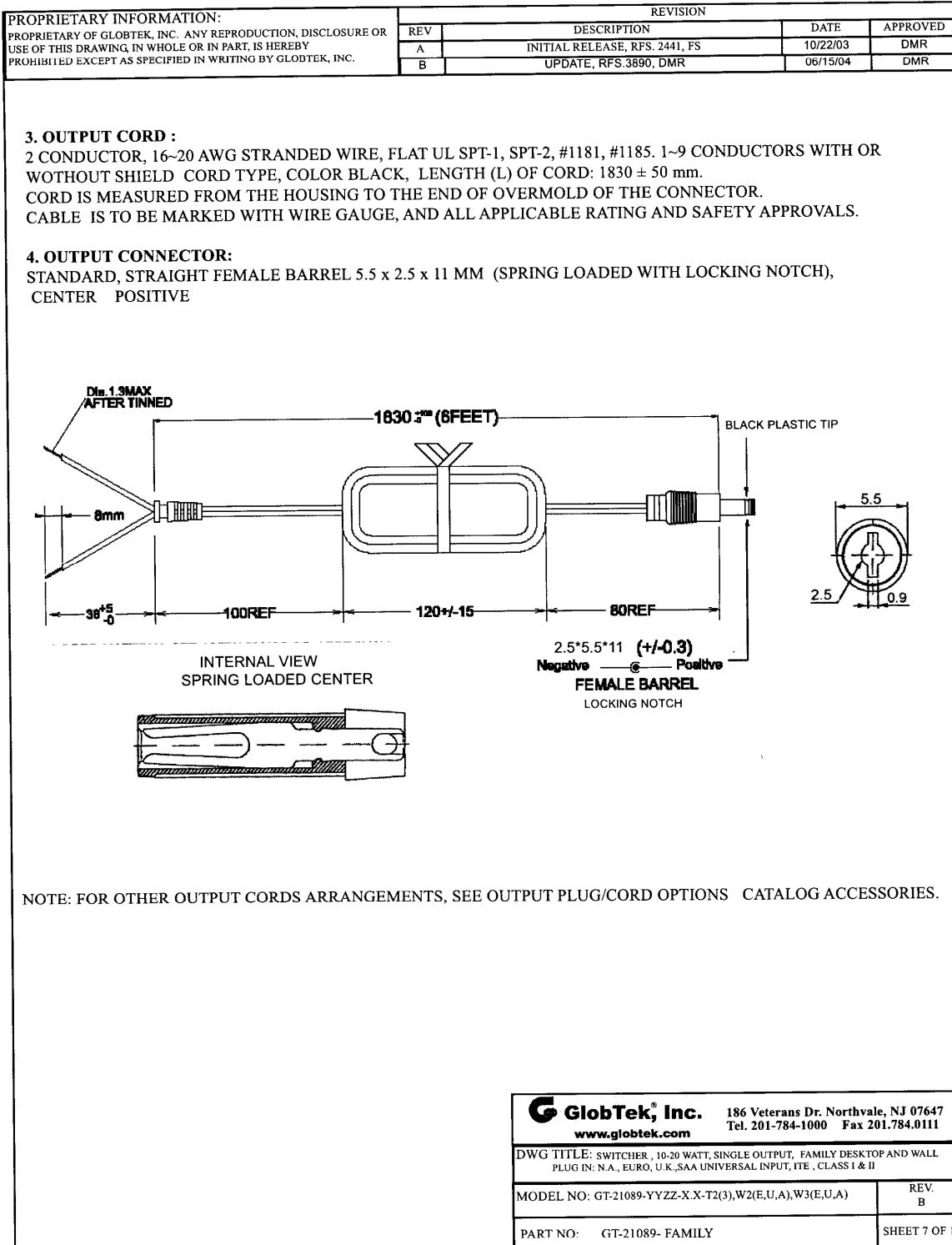
- W3E: EUROPE
INPUT CONNECTOR:
CONFIGURATION: EURO (SHUKO) PLUG CEE 7, PRONGS W/GROUND

- W3U: UNITED KINGDOM
INPUT CONNECTOR:
CONFIGURATION: BS 1363 / 3 PRONGS

- W3A: AUSTRALIA
INPUT CONNECTOR:
CONFIGURATION: SAA PLUG, 3 BLADES

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MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A)	REV. B
PART NO: GT-21089- FAMILY	SHEET 5 OF 11





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5. LABEL:

MATERIAL: .007 (0.18) THICK FLAT THERMAL TRANSFER, IMPRINTABLE, WHITE OR GRAY POLYESTER SHEET WITH BLACK NOMENCLATURE.

MANUFACTURER: STEVEN LABEL, MATERIAL I.D. NO.3302-33, UL FILE NO. MH12821(N), UL MATERIAL DESIGNATION FILE NO. GHW332RL. OPTIONAL LABEL MATERIAL CAN BE SUBSTITUTED PROVIDING MATERIAL IS UL LISTED AND COMPLIES WITH APPLICABLE SAFETY REQUIREMENTS.

TABLE TOP SAMPLE LABEL

"W2" NA WALL PLUG SAMPLE LABEL

PS E JQA → AVAILABLE UPON REQUEST

→ CAUTION: FOR INDOOR USE ONLY
 ATTENTION: POUR UTILISATION A L'INTERIEUR SEULEMENT

SECOND LABEL: S/N: _____ UNDERNEATH OF MAIN LABEL

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MODEL NO: GT-21089-YYZZ-X X-T2(3), W2(E,U,A), W3(E,U,A)			REV. B
PART NO: GT-21089- FAMILY			SHEET 8 OF 11

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"W2A" AUSTRALIA/ARGENTINA WALL PLUG SAMPLE LABEL

35.5

35.5

R4*3 C4 PENDING N4292 LABEL 製造廠代碼

"W2E" EUROPE WALL PLUG SAMPLE LABEL

35.5

35.5

R4*3 C4 PENDING LABEL 製造廠代碼

CAUTION: FOR INDOOR USE ONLY

ATTENTION: POUR UTILISATION A L'INTERIEUR SEULEMENT

SECOND LABEL: S/N: [] UNDERNEATH OF MAIN LABEL

AVAILABLE UPON REQUEST

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MODEL NO: GT-21089-YYZZ-X.X-T2(3), W2(E,U,A), W3(E,U,A)			REV. B
PART NO: GT-21089- FAMILY			SHEET 9 OF 11

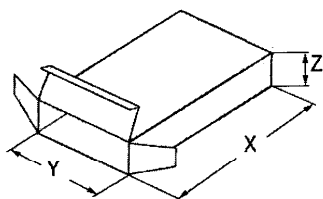
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	B	UPDATE, RFS.3890, DMR	06/15/04	DMR

6. INDIVIDUAL PACKING BOX:

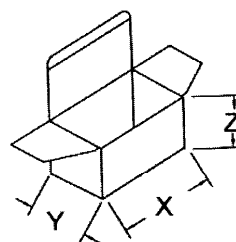
MATERIAL: CORRUGATED FIBERBOARD, F-FLUTE 0.8 (2.0) THICK, DOUBLE WALL CONSTRUCTION.

EXTERNAL FINISH: WHITE, COATED WITH GLOSS FINISH (AQUEOUS OR VARNISH) STYLE: TUCK SIDES WITH LOCKING TABS ON BOTH SIDES OF BOX. NO PRINTING ON THE OUTSIDE OF BOX.

CLASS I (-T3); CLASS II (-T2)


$$X = 147 \text{ mm}$$
$$Y = 100 \text{ mm}$$
 $Z = 33 \text{ mm}$

CLASS I (-W3); CLASS II (-W2)



$X = 120 \text{ mm}$

$$Y = 98 \text{ mm}$$
$$Z = 74 \text{ mm}$$

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MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A)	REV. B
PART NO: GT-21089- FAMILY	SHEET 10 OF 11

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REV	DESCRIPTION	DATE	APPROVED	
A	INITIAL RELEASE, RFS. 2441, FS	10/22/03	DMR	
B	UPDATE, RFS.3890, DMR	06/15/04	DMR	
C	UPDATE MANUEL, RFS.3934, DMR	06/23/04	DMR	
D	UPDATE MANUEL, RFS.4085, DMR	07/19/04	DMR	

⚠ This manual is Provided to customer within the product specification - it is the responsibility of the OEM/customer to provide the end system user instructions + warnings for the use of this product in the end system. By accepting this specification the customer/OEM Agrees to these terms.

USER MANUAL FOR GT-21089 SERIES SWITCHING POWER SUPPLIES
Manual del Usuario. Fuentes de Alimentación Series GT-21089

WARNING! RISK OF FIRE! SHOCK HAZARD!
Advertencia! Riesgo de Fuego! Peligro de Choque eléctrico!

No user serviceable components inside. Disconnect power cord before removing cover.
No contiene dentro componentes servibles para el usuario. Desconecte el cable de alimentación antes de quitar la cubierta.

INDOOR USE ONLY!
Únicamente para uso en el interior.

GROUNDING: *If Ground is provided, "-W3", "-T3" models, An approved power supply cord for use in the country of destination must be provided. Ground is Functional only and not used for prevention of Electrical Shock. The Power Supply is double insulated.*
TIERRA: Si se proporciona conexión a tierra, "- modelos W3", "- T3", un cable de alimentación certificado debe ser usado en el país de destino. El conector a tierra es funcional solamente y no se utiliza para la prevención de choque eléctrico. La fuente de alimentación debe tener doble aislación.

POWER SUPPLY CORD: *AC Mains voltage should be provided to the power supply by a power supply cords approved to the national standards in which it will be used. Please use the below table as a guideline for Suitable Power cords.*
CABLE DE ALIMENTACIÓN: El voltaje de la CA debe proporcionarse a la fuente de alimentación mediante los cables de alimentación aprobados conforme a las normas nacionales según las cuales será utilizada. Utilice por favor la tabla mencionada aquí abajo como guía para los cables eléctricos adecuados.

Country / País	Rating / Rangos	Agency / Agencia	GlobTek P/N for Class I / GlobTek P/N Para Tipo Clase I	GlobTek P/N for Class II / GlobTek P/N Para Tipo Clase II
NORTH AMERICA / NORTE AMERICA	120V	UL/CSA/cUL	3021457F701	4511116F703A
EUROPE / EUROPA	230V	VDE, MIN.	23144272M5701	2074112M703A
UNITED KINGDOM/ Reino Unido	230~240V	BSI, N, OR EQUIV	PZ0800100/2M5BK13	6104112M703
CHINA	230V	CCC	6023602M5701	4533501M8703
JAPAN / JAPÓN	100V	PSE	451J3401M8703	3003068F2701
ARGENTINA	230V	IRAM	2194272M0703	5034112M0703

FUSING: *Internal fuse for Line is provided in the power supply. A blown internal fuse is an indication of catastrophic failure of circuit component(s). Repair must be performed by GlobTek, Inc. authorized personnel. Fuses must be replaced with same type and ratings per GlobTek internal documentation.*

FUSIBLES: *La fuente de alimentación provee un fusible interno para la línea. Un fusible interno quemado es un indicador de una falla catastrófica de los componentes del circuito. La reparación debe ser hecha por personal autorizado de GlobTek, Inc. Los fusibles se deben reemplazar por los mismos tipos y rangos que la documentación interna de GlobTek mencione.*

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MODEL NO: GT-21089-YYZZ-X.X-T2(3),W2(E,U,A),W3(E,U,A)	REV. D
PART NO: GT-21089- FAMILY	SHEET 11 OF 11

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		REV	DESCRIPTION	DATE	APPROVED
		A	INITIAL RELEASE	10/27/03	DMR

1. ELECTRICAL SPECIFICATIONS:

INPUT VOLTAGE: 90 VAC TO 264 VAC

INPUT CURRENT: <0.5 A RMS AT 90 VAC INPUT

INPUT FREQUENCY: 47 HZ - 63 HZ

OUTPUT VOLTAGE:

CLASS I

GT-21096-1003-F	+3.3 V DC @ 0 - 2.6 A
GT-21096-1505-X.X-F	+5.0 V DC @ 0 - 2.6 A
GT-21096-1506-X.X-F	+6.0 V DC @ 0 - 2.5 A
GT-21096-1509-X.X-F	+9.0 V DC @ 0 - 1.7 A
GT-21096-1512-X.X-F	+12.0 V DC @ 0 - 1.25 A
GT-21096-1524-X.X-F	+24.0 V DC @ 0 - 0.625 A
GT-21096-1815-X.X-F	+15.0 V DC @ 0 - 1.2 A
GT-21096-1818-X.X-F	+18.0 V DC @ 0 - 1.0 A
GT-21096-1824-X.X-F*	+24.0 V DC @ 0 - 0.75 A
GT-21096-2048-X.X-F*	+48.0 V DC @ 0 - 0.4 A

CLASS II

GT-21096-1003-FW	+3.3 V DC @ 0 - 2.6 A
GT-21096-1505-X.X-FW	+5.0 V DC @ 0 - 2.6 A
GT-21096-1506-X.X-FW	+6.0 V DC @ 0 - 2.5 A
GT-21096-1509-X.X-FW	+9.0 V DC @ 0 - 1.7 A
GT-21096-1512-X.X-FW	+12.0 V DC @ 0 - 1.25 A
GT-21096-1524-X.X-FW	+24.0 V DC @ 0 - 0.625 A
GT-21096-1815-X.X-FW	+15.0 V DC @ 0 - 1.2 A
GT-21096-1818-X.X-FW	+18.0 V DC @ 0 - 1.0 A
GT-21096-1824-X.X-FW*	+24.0 V DC @ 0 - 0.75 A
GT-21096-2048-X.X-FW*	+48.0 V DC @ 0 - 0.4 A

MODEL NUMBER CODE:

GT-2: INFORMATION TECHNOLOGY EQUIPMENT (ITE) SERIES

1096: FAMILY DESIGNATION

F: OPEN FRAME

W: CLASS II DOUBLE INSULATED; NO W: CLASS I

1003 TO 2048: POWER (10 WATTS) AND OUTPUT VOLTAGE (03V) TO POWER (20 WATTS) AND OUTPUT VOLTAGE (48V)

X.X: IS AN OPTION FOR SPECIFYING OUTPUT VOLTAGE DEVIATION FROM STANDARD MODEL

NOTES:

* cTUVus, CE AND TUV APPROVALS ONLY

1) OUTPUT VOLTAGE CAN BE CONFIGURED FROM 3.3V TO 48V IN 0.1V INCREMENTS

Foot Note: Globtek Inc. will not be liable for the safety and performance of these power supplies if unauthorized access and repair occurs. End user should consult for the proper installation instruction for the applicable UL, CSA and EN standards.	DASH NO.	PART NO	REV.	DESCRIPTION	NOTES	
	TABULATION BLOCK					
	REVISION	A	A	A	A	TOLERANCES: DECIMALS ANGULAR .XX +/- 0.1 +/- 1° .XXX +/- .005
	SHEET	1	2	3	4	
	Limitation of Use: Globtek product are not authorized for use as mission critical components in life support, hazardous environment, nuclear or aircraft applications without prior written approval from the CEO of Globtek Inc.	INIT.BY: DMR		DATE: 10/27/03		MILLIMETERS ANGULAR .XX +/- 0.3 +/- 1° .XXX +/- .013
DRAWN: NF		DATE: 10/27/03				
Contents of this document are subject to change	APRVD : DMR		DATE: 10/27/03		SCALE: NONE	

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DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY (1.7x3.3)" OPEN FRAME UNIVERSAL INPUT, ITE, CLASS I & II

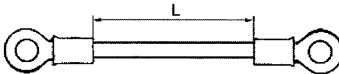
MODEL NO: GT-21096-YYZZ-X.X-F(B)(W) REV. A

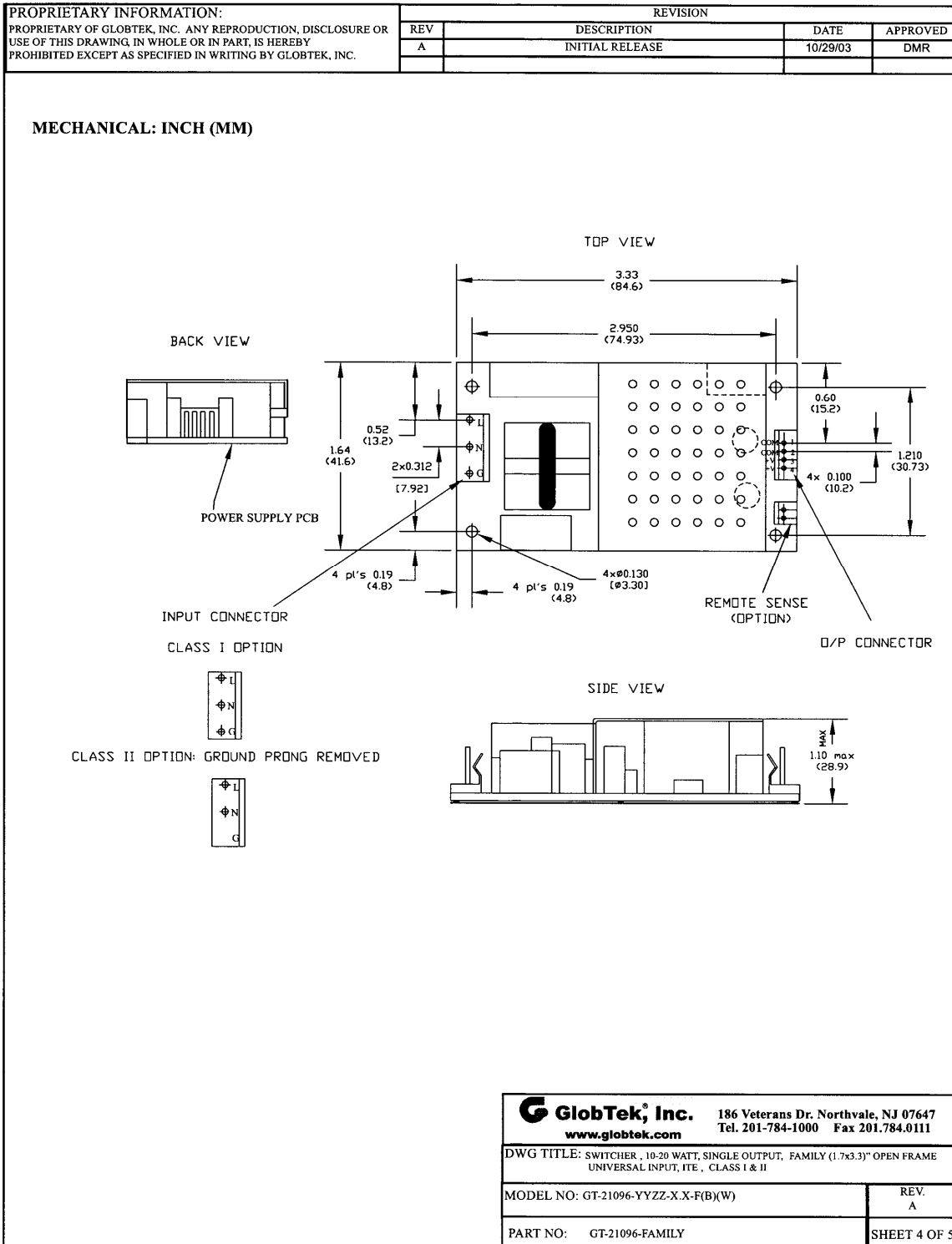
PART NO: GT-21096-FAMILY SHEET 1 OF 5



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REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/27/03	DMR
OUTPUT CURRENT:		SEE TABLE, NO LOAD TO FULL LOAD, NO MINIMUM LOAD REQUIRED	
RATED OUTPUT POWER:		20 WATTS, MAXIMUM	
OUTPUT REGULATION:		+/-5% MEASURED AT THE OUTPUT CONNECTOR	
LINE VOLTAGE REGULATION:		+/- 1% TYPICAL MEASURED AT FULL LOAD	
HIGH FREQ. OUTPUT RIPPLE:		1% OF OUTPUT VOLTAGE , PEAK TO PEAK, TYPICAL	
TURN-ON/TURN-OFF OVERSHOOT:		5% MAXIMUM, 1mS TYPICAL RECOVERY TIME FOR 25% STEP LOAD	
TURN-ON DELAY:		1 SECOND, TYPICAL	
HOLD-UP TIME:		10mS TYPICAL AT NOMINAL INPUT VOLTAGE AND FULL LOAD	
INRUSH CURRENT:		30A TYPICAL AT 115Vac INPUT AND 40A TYPICAL AT 230Vac INPUT	
SWITCHING FREQUECNCY:		100KHZ TYPICAL, VARIES WITH LINE AND LOAD	
EFFICIENCY:		75% TYPICAL AT NOMINAL INPUT AND FULL LOAD	
PROTECTION			
OVER-VOLTAGE:		VOLTAGE LIMITED TO LESS THAN 130%, CROWBAR METHOD	
OVERLOAD:		CONSTANT CURRENT METHOD	
SHORT CIRCUIT:		MOMENTARY SHORT CIRCUIT PROTECTED, OUTPUT WILL AUTORECOVER UPON REMOVAL OF SHORT	
INPUT PROTECTION:		INPUT FUSING; LINE FUSING	
DIELECTRIC WITHSTAND VOLTAGE: FOR CLASS II WITH FUNCTIONAL EARTH VERSIONS:		4242Vdc FROM PRIMARY TO SECONDARY	
FOR CLASS II VERSIONS:		4242Vdc FROM PRIMARY TO SECONDARY FOR ITE VERSIONS	
EARTH LEAKAGE CURRENT:		< 300uA at 264Vac INPUT VOLTAGE	
APPROVALS			
ITE UNITS:		UL 60950, CUL TO 22.2NO.60950, TUV TO EN60950 AND cTUVus TO UL 60950 FOR CLASS I AND CLASS II; CE FOR EMC	
EMI:		COMPLIES WITH EN55022 CLASS B AND FCC PART 15 CLASS B WHEN TESTED WITH RESITIVE LOAD, BOTH CONDUCTED AND RADIATED EMI	
CE MARK:		TESTED TO COMPLY WITH EN61000-3-2 EN610003-3 AND EN50082-1 INCLUDING EN61000-4-2 (SYSTEM LEVEL), EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11 LEVEL 4.	
OTHERS			
MTBF:		GREATER THAN 50,000 HOURS AT 25C AMBIENT TEMPERATURE NOMINAL LINE AND FULL LOAD PER MIL-217 STANDARD	
OPERATING TEMPERATURE:		0°C TO 40°C AMBIENT TEMPERATURE	
HUMIDITY:		0% TO 90% RELATIVE HUMIDITY	
STORAGE TEMPERATURE:		-10°C TO 80°C	

 GlobTek, Inc. www.globtek.com		186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111	
DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY (1.7x3.3)" OPEN FRAME UNIVERSAL INPUT, ITE, CLASS I & II			
MODEL NO: GT-21096-YYZZ-X.X-F(B)(W)			REV. A
PART NO: GT-21096-FAMILY			SHEET 2 OF 5

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	REV	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	10/27/03	DMR
2. MECHANICAL SPECIFICATION: ALL DIMENSIONS ARE IN INCH(MM)				
INPUT CONNECTOR: STRAIGHT SQUARE PIN LOCKING HEADERS, WITH .312(7.92) BETWEEN CONDUCTORS, .045 (1.14) SQUARE PINS, TIN PLATED UL 94V-0 RATED NYLON HOUSING, MOLEX: 09-65-2038 OR EQUIVALENT (5 CIRCUITS, WITH 2 PINS REMOVED). HEADER MATES WITH MOLEX NO. 2139 CONNECTOR OR EQUIVALENT.				
OUTPUT CONNECTOR: 4 PIN STRAIGHT SQUARE PIN FRICTION LOCK HEADER, 0.100"(2.54 mm) BETWEEN CONDUCTORS, 0.025"(0.64 mm) SQUARE PINS, TIN PLATED, UL 94V-0 RATED, NYLON ; MOLEX: 22-28-0040 OR EQUIVALENT. HEADER MATCH WITH MOLEX # MOL22-01-2047 CONNECTOR OR EQUIVALENT.				
REMOTE SENSE CONNECTOR (OPTION): 2 PINS STRAIGHT HEADER WITH LOCKING RAMP, UL 94V-0 RATED, NYLON , PLATED, 0.100"(2.54 mm) PITCH BETWEEN CONDUCTORS, .025 (0.64 mm) SQUARE PINS, TIN PLATED, MOLEX: 22- 28-0020 OR EQUIVALENT, HEADER MATES WITH MOLEX # 2695 CONNECTOR OR EQUIVALENT.				
IMPORTANT INSTALLATION NOTE FOR PROPER INSULATION AND GROUNDING RELIABILITY: OPTION: 1. USE NYLON 4-40 SCREWS AND NYLON STAND-OFF FOR ALL MOUNTING HOLES AND ADD JUMPER WIRE OPTION SHOWN BELOW FOR FUNCTIONAL EARTH CONNECTION BETWEEN HOLES 4 AND 3.				
				
RING TERMINAL, AMP P/N: 8-34142-5 AWG 18 STRANDED WIRE, GREEN, 100 mm LENGTH				
2. USE METALLIC 4-40 SCREWS AND METALLIC STAND-OFF FOR HOLES 3 AND 4 AND USE NYLON 4-40 SCREWS AND NYLON STAND-OFF FOR HOLES 1 AND 2.				
 GlobTek, Inc. www.globtek.com 186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111				
DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY (1.7x3.3)" OPEN FRAME UNIVERSAL INPUT, ITE , CLASS I & II				
MODEL NO: GT-21096-YYZZ-X.X-F(B)(W)				REV. A
PART NO: GT-21096-FAMILY				SHEET 3 OF 5



REVISION			
REV	DESCRIPTION	DATE	APPROVED
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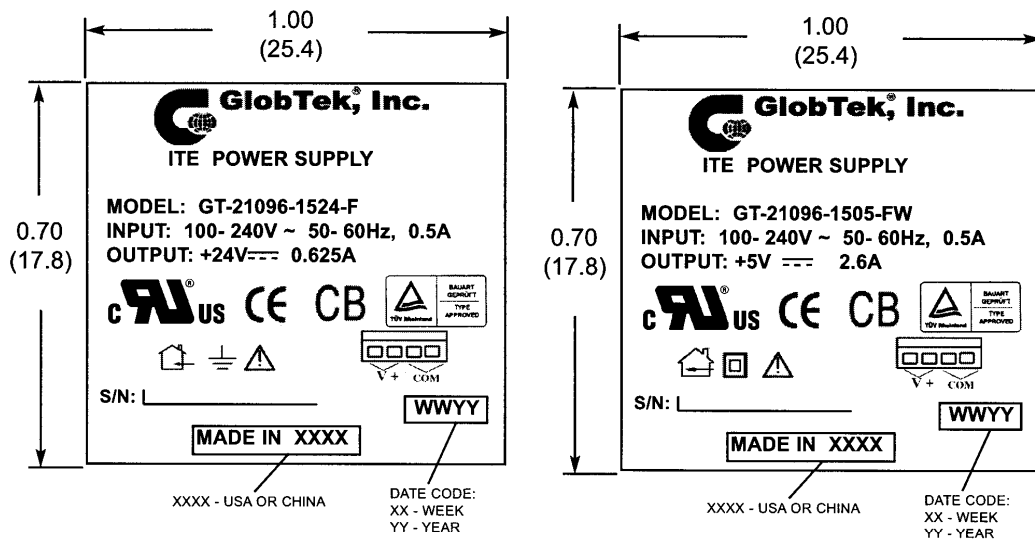
3. LABEL:

MATERIAL: .007 (0.18) THICK FLAT THERMAL TRANSFER, IMPRINTABLE, WHITE OR GRAY POLYESTER SHEET WITH BLACK NOMENCLATURE.

MANUFACTURER: STEVEN LABEL, MATERIAL I.D. NO.3302-33, UL FILE NO. MH12821(N), UL MATERIAL DESIGNATION FILE NO. GHW332RL. OPTIONAL LABEL MATERIAL CAN BE SUBSTITUTED PROVIDING MATERIAL IS UL LISTED AND COMPLIES WITH APPLICABLE SAFETY REQUIREMENTS.

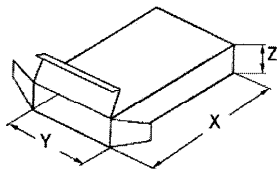
3.1. LABEL PLACEMENT:

LABEL IS PLACED ON COMPONENT 'CXI' FACING SIDEWARDS.



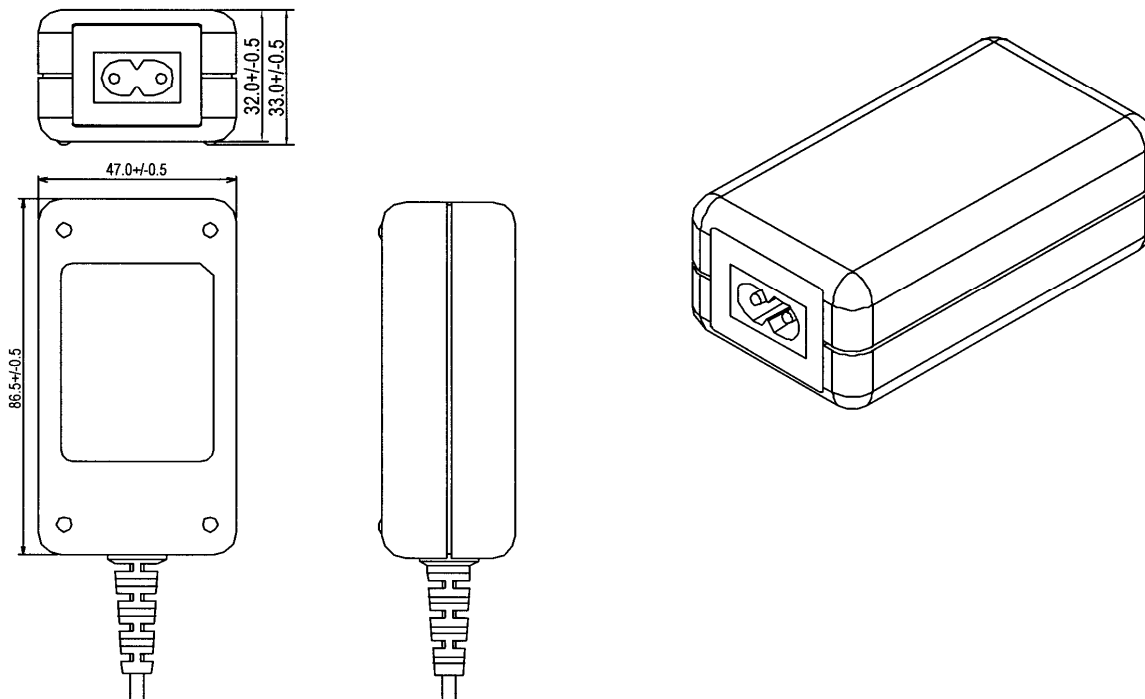
4. INDIVIDUAL PACKING :

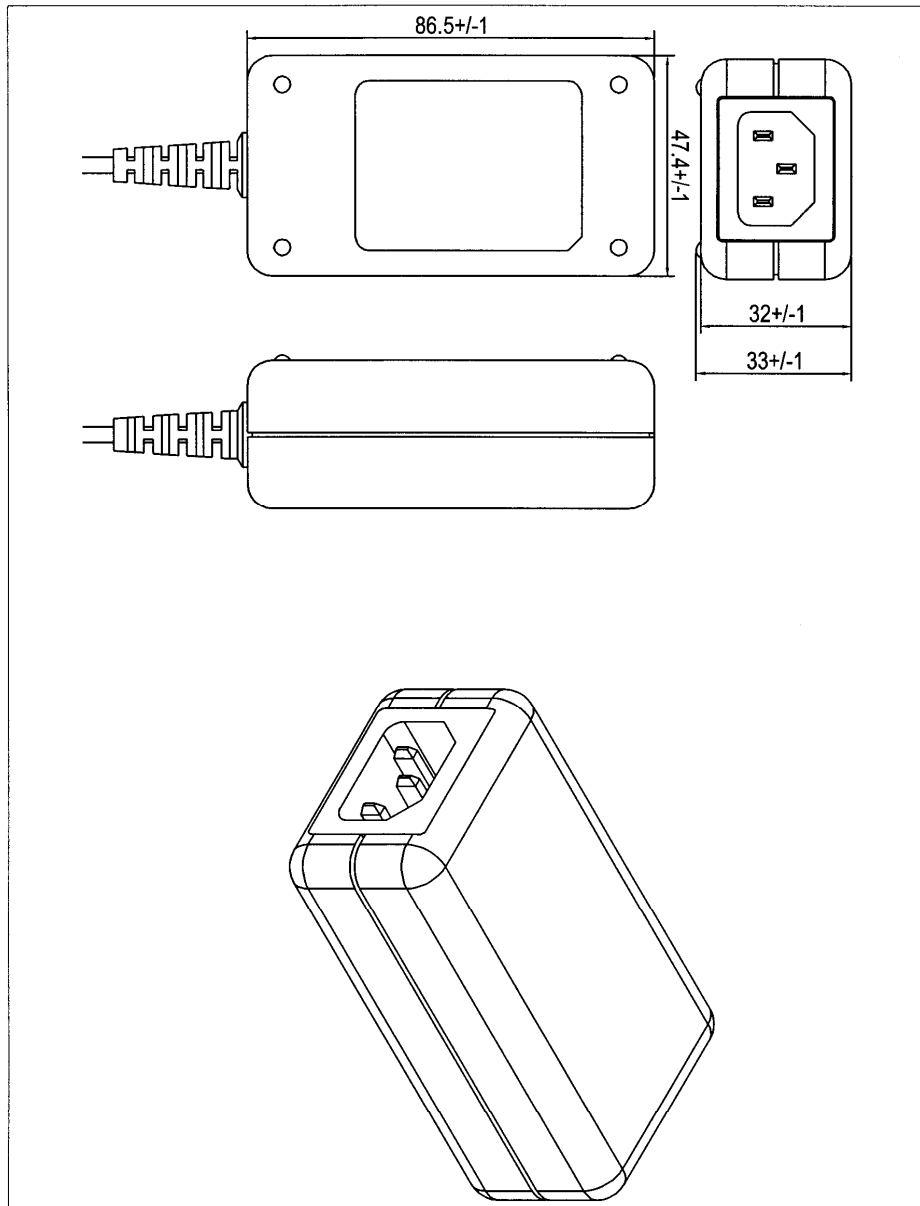
EACH POWER SUPPLY SHALL BE CONTAINED IN A SEALED POLYESTER BUBBLE WRAP BAG.
 MATERIAL: CORRUGATED FIBERBOARD, F-FLUTE 0.8 (2.0) THICK, DOUBLE WALL CONSTRUCTION.
 EXTERNAL FINISH: WHITE, COATED WITH GLOSS FINISH (AQUEOUS OR VARNISH) STYLE: TUCK SIDES WITH LOCKING TABS ON BOTH SIDES OF BOX. NO PRINTING ON THE OUTSIDE OF BOX.



X = 90 mm
 Y = 45 mm
 Z = 30 mm

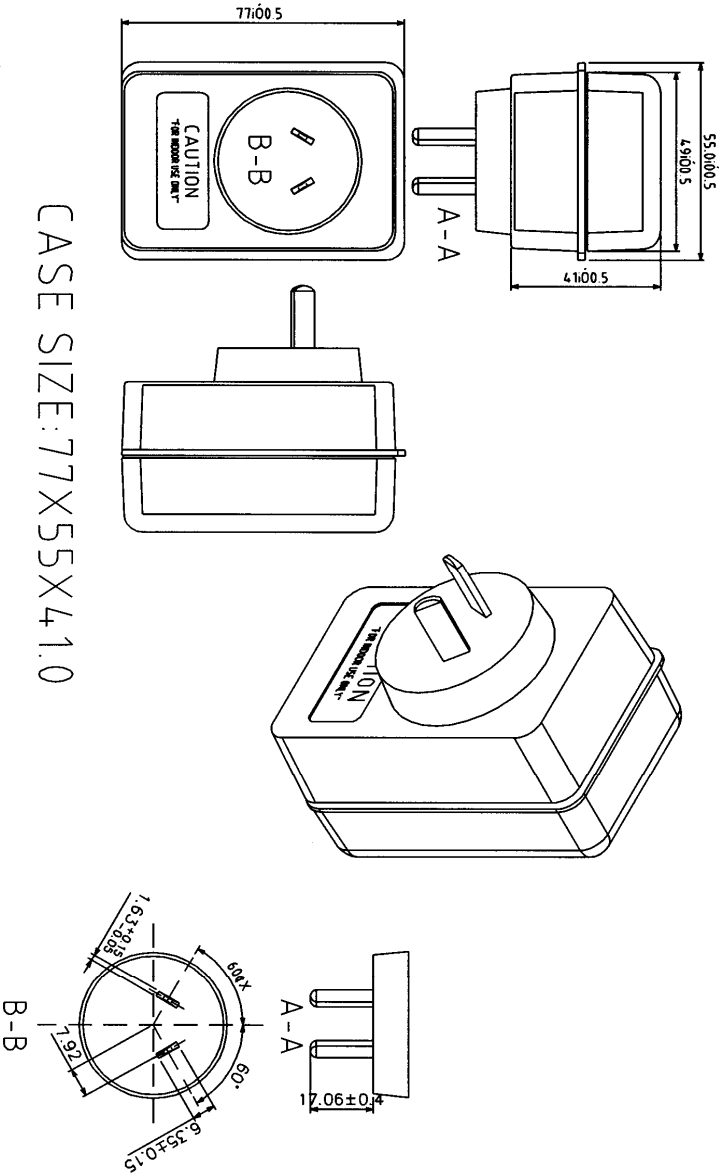
GlobTek, Inc. www.globtek.com		186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111
DWG TITLE: SWITCHER , 10-20 WATT, SINGLE OUTPUT, FAMILY (1.7x3.3)" OPEN FRAME UNIVERSAL INPUT, ITE, CLASS I & II		
MODEL NO: GT-21096-YYZZ-X.X-F(B)(W)	REV. A	
PART NO: GT-21096-FAMILY	SHEET 5 OF 5	



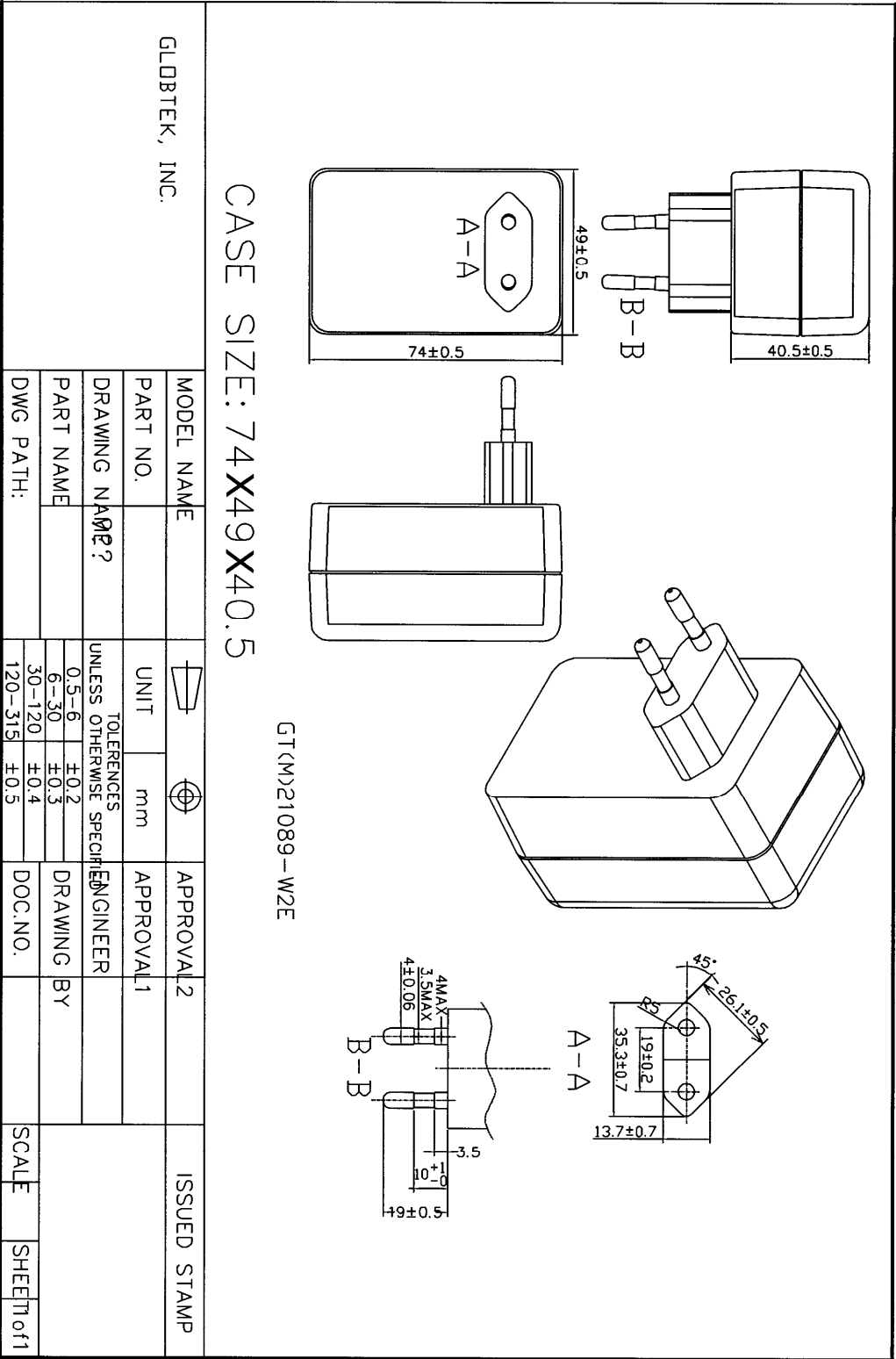


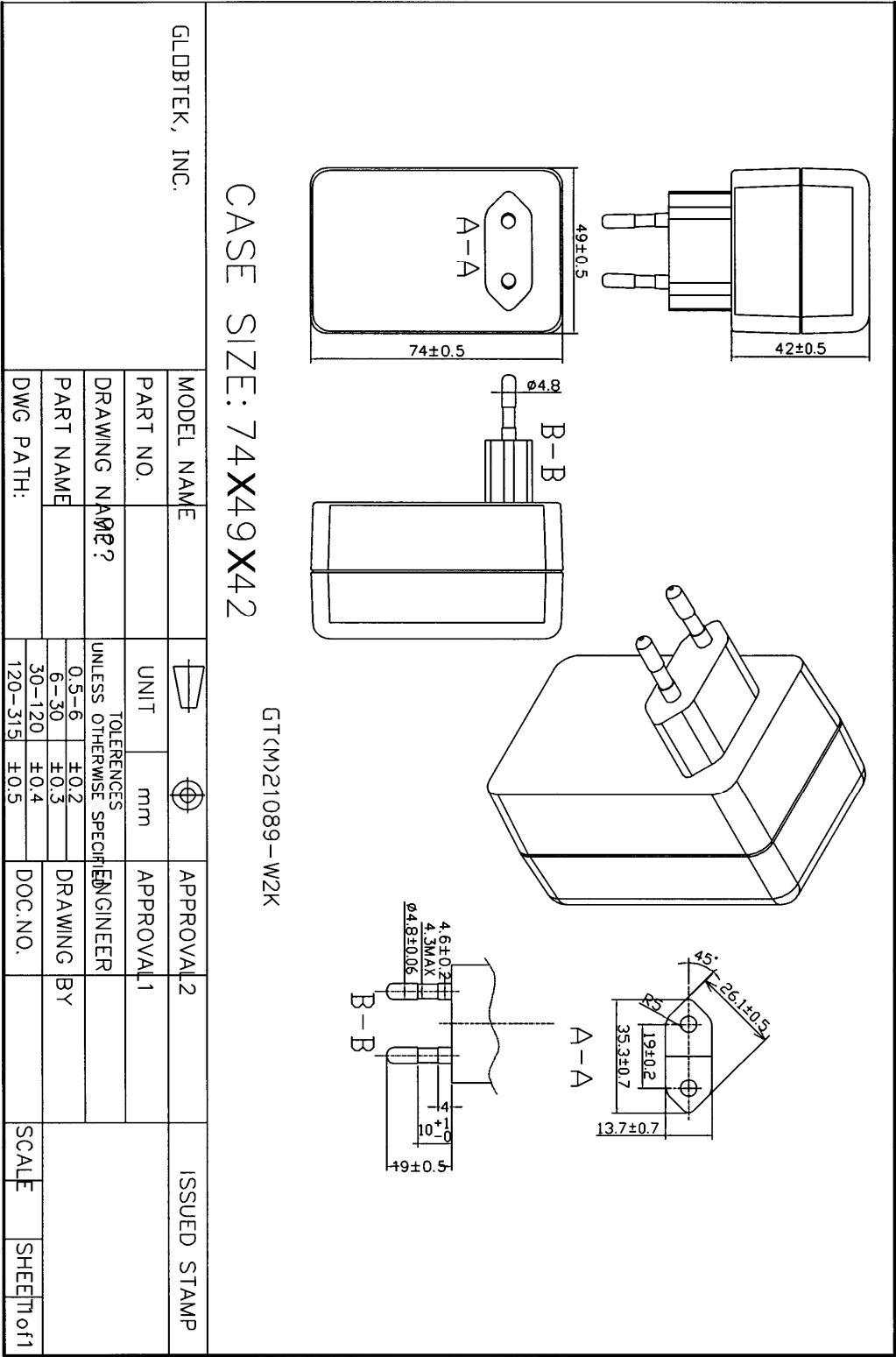
Enclosure Drawing for Australia & Argentina

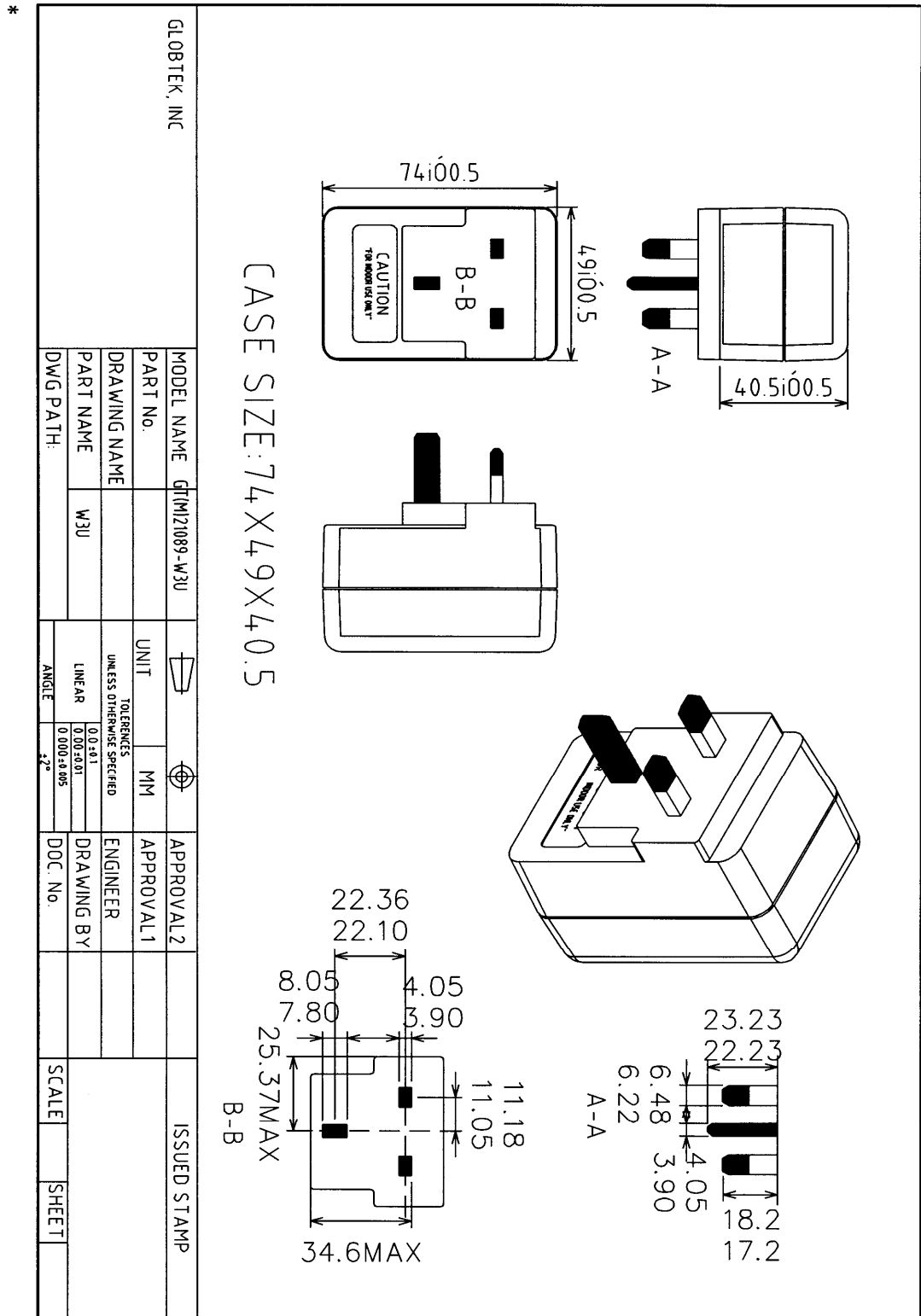
CASE SIZE: 77X55X41.0

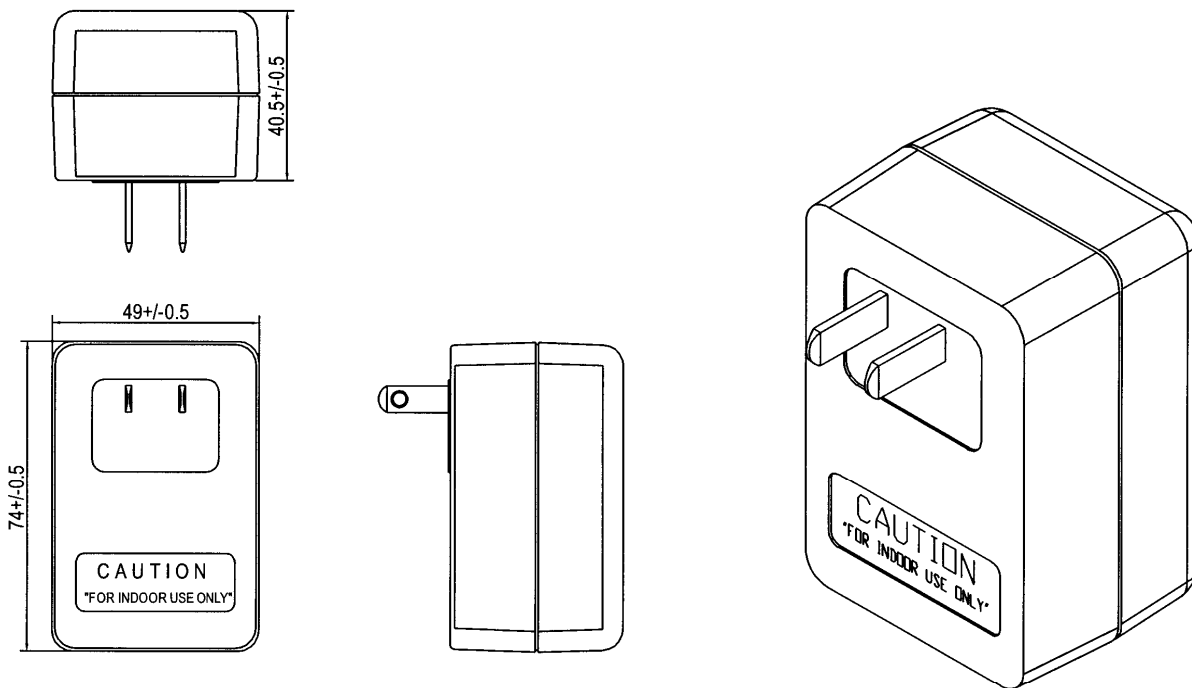


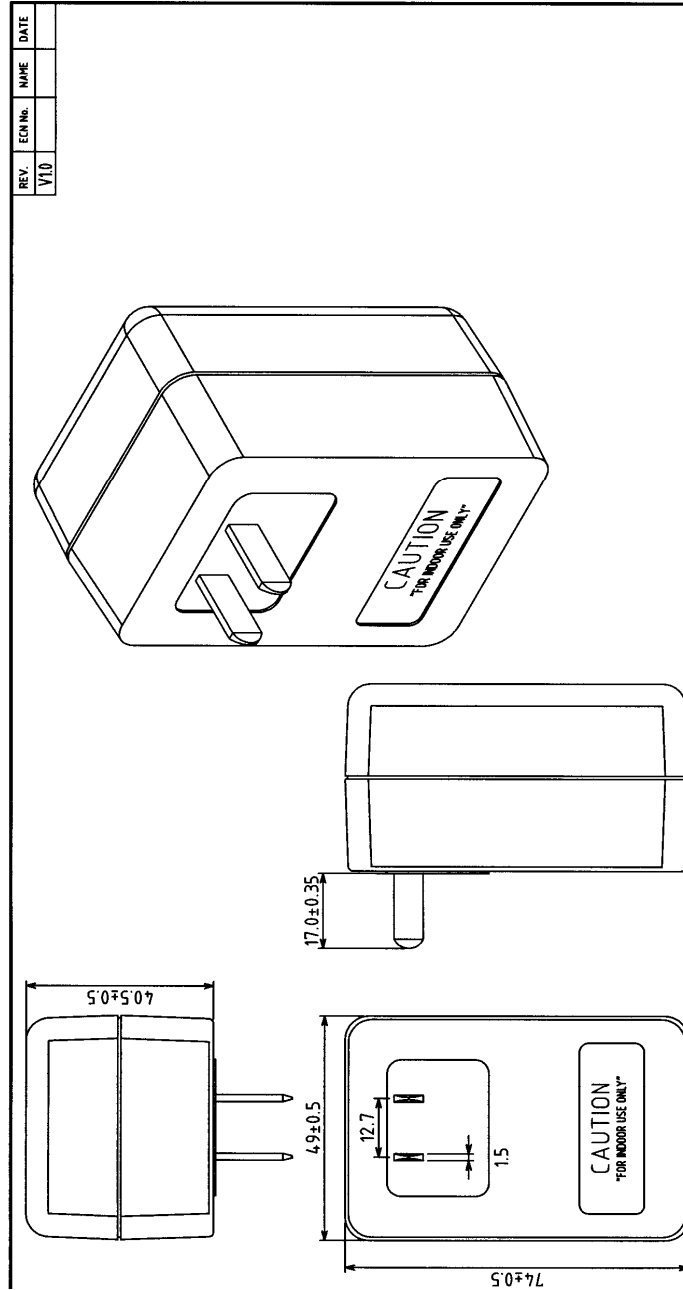
GLOBTEK, INC		GT(M)21089-W2A		APPROVAL 2		ISSUED STAMP	
PART No.		UNIT	UNIT	APPROVAL 1			
DRAWING NAME	外觀圖	TOLERANCES UNLESS OTHERWISE SPECIFIED		ENGINEER			
PART NAME		LINEAR	0.00 TO 0.00	DRAWING BY			
DWG PATH:		ANGLE	0.000 TO 0.000	DOC. No.		SCALE	SHEET











CASE SIZE: 74X49X40.5

COMPUTER TECHNOLOGY CO.,LTD.	MODEL NAME	SYS1089	APPROVAL2	ISSUED STAMP
'756-9 3377358	PART No.	SYS1089-W2	APPROVAL1	
7351	DRAWING NAME	外觀圖	ENGINEER	
idg.163Mail.net	PART NAME	外觀圖	DRAWING BY	
	DWG PATH: D:\SHAR-D\SYNIM...		DOC. No.	
			SCALE	SHEET

: SUNNY COMPUTER TECHNOLOGY CO., LTD. DO NOT BE USED OR DUPLICATED WITHOUT PERMISSION OF THE OWENER. STYLE:192-V1.0

