



Ref. Certif. No.

JPIUV-039408

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

24-Port Fast Ethernet Switch

Name and address of the applicant
Nom et adresse du demandeur

Digital Data Communications Asia Co., Ltd
8F, No. 41
Lane 221, Kang-Chien Rd., Nei Hu Dist. Taipei 114 Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

Proware Technologies Co., Ltd
2/F, East Wing, South Sec., Factory
Bldg. 24, Science & Technology Park, Shennan Rd., Nanshan Dist.
Shenzhen, Guangdong P.R. China

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

Proware Technologies Co., Ltd
2/F, East Wing, South Sec., Factory
Bldg. 24, Science & Technology Park, Shennan Rd., Nanshan Dist.
Shenzhen, Guangdong, P.R. China

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Input : AC 100-240V; 50/60Hz; 0.3A; Class I

Trade mark (if any)
Marque de fabrique (si elle existe)

levelone

Model/type Ref.
Ref. de type

FSW-2450

Additional information (if necessary)
Information complémentaire (si nécessaire)

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60950-1:2005 + A1
National differences see test report

As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue une partie de ce Certificat

17020979 001

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



TÜVRheinland®

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Signature:


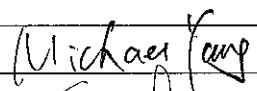
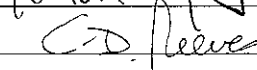
Ing. M. Eichenseder



Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.	17020979 001
Date of issue	Jul., 18, 2011
Total number of pages	91
CB Testing Laboratory	TÜV Rheinland (Shenzhen) Co., Ltd.
Address	34F Tower A World Finance Centre, Shennan East Road 4003, Luohu District, 518001 Shenzhen, P.R. China
Applicant's name	Digital Data Communications Asia Co., Ltd
Address	8F, No.41, Lane 221, Kang-Chien Rd., Nei Hu Dist., Taipei 114, Taiwan
Manufacturer's name	Proware Technologies Co., Ltd.
Address	2/F, East Wing, South Sec., Factory Bldg. 24, Science & Technology Park, Shennan Rd., Nanshan District, Shenzhen, Guangdong, P.R.China.
Test specification:	
Standard	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No	IEC60950_1B
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2010-04
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Test item description		: 24-Port Fast Ethernet Switch	
Trade Mark		:  levelone (levelone)	
Manufacturer		: Proware Technologies Co., Ltd. 2/F, East Wing, South Sec, Factory Bldg. 24, Science & Technology Park, Shennan Rd, Nanshan District, Shenzhen, Guangdong, P.R.China.	
Model/Type reference		: FSW-2450	
Ratings		: Input: 100-240Vac, 50/60Hz, 0.3A	
Testing procedure and testing location:			
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd	
Testing location/ address		Unit B, 1F, 2nd Building, Shenzhen Cyber-Tech Zone, 7th High-Tech South Avenue, High-Tech Industrial Park, Shenzhen 518057, P.R. China	
<input type="checkbox"/>	Associated CB Laboratory:	N/A	
Testing location/ address		N/A	
Tested by (name + signature)		Michael Yang	 
Approved by (name + signature)		Chris Reeves	
<input type="checkbox"/>	Testing procedure: TMP	N/A	
Testing location/ address		N/A	
Tested by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: WMT	N/A	
Testing location/ address		N/A	
Tested by (name + signature)			
Witnessed by (name + signature)			
Approved by (name + signature)			
<input type="checkbox"/>	Testing procedure: SMT	N/A	
Testing location/ address		N/A	
Tested by (name + signature)			
Approved by (name + signature)			
Supervised by (name + signature)			
<input type="checkbox"/>	Testing procedure: RMT	N/A	
Testing location/ address		N/A	
Tested by (name + signature)			
Approved by (name + signature)			
Supervised by (name + signature)			

List of Attachments (including a total number of pages in each attachment):

- Photo documentation (7 pages)

Summary of testing:

Tests performed (name of test and test clause):

1. Maximum ambient temperature: 40°C
2. Following tests performed during evaluation

<u>Clause(s)</u>	<u>Test(s)</u>
1.6.2	Input Current Test
1.7.11	Durability of Marking Test
2.1.1.1	Access to energized parts
2.1.1.5	Energy Hazard in Operator Access Area
2.2.2	SELV limits for Normal Conditions
2.2.3	SELV limits for Abnormal Conditions
2.6.3.4	Resistance of Earthing circuit
2.9.2	Humidity Conditioning
2.10.2	Working Voltage over Insulation
2.10.3 & 2.10.4	Clearance and creepage distance measurements
4.2.2	Steady force test 10 N
4.2.4	Steady force test
4.2.5	Impact test
4.2.7	Stress relief test
4.5.2	Maximum Temperature Test
5.1.6	Touch Current and PE current
5.2	Electric Strength Test
5.3	Fault Condition Test

The EUTs passed the test.

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2

Summary of compliance with National Differences

EU Group Differences, EU Special National Conditions, EU A-Deviations, AT, AU*, BE, CH, CN, CZ, DE, DK, FI, FR, GB, GR, HU, IT, JP#, KR, NL, NO, PL, SE, SG, SI, SK

Explanation of used codes: AT=Austria, AU=Australia, BE=Belgium, CH=Switzerland, CN=China, CZ=Czech Republic, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, GR=Greece, HU=Hungary, IT=Italy, JP=Japan, KR=Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SG=Singapore, SI=Slovenia, SK=Slovakia.

For National Differences see end of this test report.

* National differences to IEC 60950-1:2005 evaluated.

National differences to IEC 60950-1:2001 evaluated.

Copy of marking plate **levelone**

H/W: 4.0

FSW-2450 24-Port Fast Ethernet Switch

Power: 100-240V~50/60Hz 0.3A

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



S/N:

**RoHS**
Made in China

Test item particulars:	
Equipment mobility.....:	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%(requested by client)
Tested for IT power systems	<input type="checkbox"/> Yes (only for Norway) <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 2000
Altitude of test laboratory (m)	below 2000
Mass of equipment (kg)	1.73 Kg
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	07. Jun, 2011
Date(s) of performance of tests	Jun., 2011
General remarks:	
<p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60950-1:

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).....: Proware Technologies Co., Ltd.

2/F, East Wing, South Sec., Factory Bldg. 24,
Science & Technology Park, Shennan Rd., Nanshan
District, Shenzhen, Guangdong, P.R.China.

General product information:

The equipment model FSW-2450 is an Ethernet switch for general office use.

The equipment will be used on the desktop or mount on a rack.

Top enclosure is fixed to bottom enclosure by screws.

The equipment mainly consists of:

1) Built-in power supply board, 2) Main board with transmitting and receiving port.

The manufacture specified maximum ambient temperature as 40°C.

Abbreviations used in the report:

- functional insulation	FI	- basic insulation	BI
- supplementary insulation	SI	- reinforced insulation	RI

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	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Transformers used are suitable for their intended application and comply with the relevant requirements of the standard and particularly Annex C.	P
1.5.5	Interconnecting cables	No interconnecting cables	N/A
1.5.6	Capacitors bridging insulation	No such capacitor used.	N/A
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		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		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		N/A

IEC 60950-1			
Clause	Requirement + Test		Verdict
1.6	Power interface		P
1.6.1	AC power distribution systems	TN power system	P
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is the operation with the maximum specified by the manual instruction. (see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	This appliance is not hand-held equipment.	N/A
1.6.4	Neutral conductor	The neutral conductor insulated from earth and from the body throughout the equipment as if it were a line conductor	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:	Single power source	P
	Rated voltage(s) or voltage range(s) (V)	100-240V~	P
	Symbol for nature of supply, for d.c. only	AC source	N/A
	Rated frequency or rated frequency range (Hz)	50/60Hz	P
	Rated current (mA or A)	0.3A	P
1.7.1.2	Identification markings	See below	P
	Manufacturer's name or trade-mark or identification mark	See page 5	P
	Model identification or type reference	See page 5	P
	Symbol for Class II equipment only	Class I equipment	N/A
	Other markings and symbols	Additional symbol or marking does not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	English version (Version in other language will be provided when submitted for national approval)	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Appliance inlet serves as disconnect device.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.3	Overcurrent protective device	Not such equipment.	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No operator accessible area that needs to be accessed by the use of a tool.	N/A
1.2.7.6	Ozone	Not such equipment.	N/A
1.7.3	Short duty cycles	Equipment is designed 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 power outlets provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marking provided on circuit diagram near fusible resistor: F1 10R_2W	N/A
1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals	Class I equipment. Protective earthing terminal symbol marked on appliance inlet.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment with appliance inlet is intended to use the detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No d.c. mains supply.	N/A
1.7.8	Controls and indicators	No controls and indicators which can affect safety used	N/A
1.7.8.1	Identification, location and marking		N/A
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417		N/A
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources	Single power source	N/A
1.7.10	Thermostats and other regulating devices	Such devices not used.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge.	P
1.7.12	Removable parts	No removable part.	N/A
1.7.13	Replaceable batteries	No battery provided.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....	Not intended for use in restricted access locations.	N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	No access with test finger and test pin to any parts with only basic insulation to ELV or hazardous voltage.	P
2.1.1.1	Access to energized parts	See above.	P
	Test by inspection		P
	Test with test finger (Figure 2A)		P
	Test with test pin (Figure 2B)		P
	Test with test probe (Figure 2C)	No TNV.	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.5	Energy hazards	The energy does not exceed 240VA between any two points in accessible connector of secondary circuit. Evaluation is applied to the output terminal of internal power supply board (see appended table 2.1.1.5.)	P
2.1.1.6	Manual controls	No manual controls.	N/A
2.1.1.7	Discharge of capacitors in equipment	No capacitor before diode bridge in primary circuit.	N/A
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply	Connected to a.c. mains.	N/A
	a) Capacitor connected to the d.c. mains supply ..:		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers	Not such equipment.	N/A
2.1.2	Protection in service access areas	No operator accessible area that needs to be accessed by the use of a tool.	N/A
2.1.3	Protection in restricted access locations	Not intended for use in restricted access locations.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	The secondary circuits of internal power supply board were tested as SELV. See 2.2.2 to 2.2.4.	P
2.2.2	Voltages under normal conditions (V)	Between any conductors of the SELV circuits 42.4 V peak or 60 V d.c. are not exceeded. See appended table 2.2.	P
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V d.c. were not exceeded within 0.2 seconds and limits 42.4V peak and 60V d.c. were not exceeded for longer than 0.2 seconds.	P
2.2.4	Connection of SELV circuits to other circuits	See sub-clauses 2.2.2 and 2.2.3.	P

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

2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
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	<i>No such circuit used.</i>	N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or µF).....		—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	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) ..		—
	Use of integrated circuit (IC) current limiters		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Class I appliance inlet and Yellow/Green wire from inlet to bottom metal chassis	P
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors	See below	P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	No power cord provided	P
	Rated current (A), cross-sectional area (mm ²), AWG :		—
2.6.3.3	Size of protective bonding conductors	AWG 18 cross-sectional area (0.75mm ²) wire from inlet to bottom chassis	P
	Rated current (A), cross-sectional area (mm ²), AWG :		—
	Protective current rating (A), cross-sectional area (mm ²), AWG :	Rated 16A; See above	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	See appended table 2.6.3.4	P
2.6.3.5	Colour of insulation :	Green/yellow wire used	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	Earthing terminal of AC inlet is regarded as the PE terminal, screw to pillar with locking spring washer on chassis considered as the bonding terminals	P
	Rated current (A), type, nominal thread diameter (mm) :	Rated input current 0.3A, screw diameter is 5.0mm.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	AC inlet used	P
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	Not depending on interconnection for protective earth.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in protective earthing	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect earth without disconnecting mains as an appliance inlet is used.	P
2.6.5.4	Parts that can be removed by an operator	No such parts	P
2.6.5.5	Parts removed during servicing		P
2.6.5.6	Corrosion resistance		P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		P

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	The equipment relies on fuse or circuit breaker of the wall outlet protection of the building installation in regard to L to N short-circuits and earth fault condition. A build-in fusible resistor F1 provided as overcurrent protection device (see 5.3)	P
	Instructions when protection relies on building installation	Pluggable equipment type A.	N/A
2.7.2	Faults not simulated in 5.3.7	The protection devices are well dimensioned and mounted.	P
2.7.3	Short-circuit backup protection	Building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices :	Overcurrent protection by one built-in fusible resistor F1	P
2.7.5	Protection by several devices	Protection provided by one fusible resistor only.	N/A
2.7.6	Warning to service personnel :	No service work necessary.	N/A

2.8	Safety interlocks		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic material not used.	P
2.9.2	Humidity conditioning	Performed at 40 °C, 95% R.H. for 120 h (requested by manufacturer).	P
	Relative humidity (%), temperature (°C) :	See above.	—
2.9.3	Grade of insulation	See above.	
2.9.4	Separation from hazardous voltages	The adequate levels of safety insulation provided and maintained to comply with the requirements of this standard.	P
	Method(s) used :	SELV separated from primary by reinforced or double insulation.	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See 2.10.3, 2.10.4 and 2.10.5.	P
2.10.1.1	Frequency :	Frequency generated internally exceeds 30kHz	P
2.10.1.2	Pollution degrees :	2	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	N/A
2.10.1.4	Intervening unconnected conductive parts	No such part.	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	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.2	Determination of working voltage		P
2.10.2.1	General	The rms and the peak voltage were measured with unit connected to a 240V TN power system. Pollution Degree 2 and Overvoltage Category II considered.	P
2.10.2.2	RMS working voltage	(See appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(See appended table 2.10.2)	P
2.10.3	Clearances	See below and advantage of annex G is not considered.	P
2.10.3.1	General	Considered.	P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply	240V a.c. and Overvoltage Category II	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		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	Sub-clause 5.3.4 considered.	P
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply	Normal transient voltage considered (overvoltage category II for primary circuit).	N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	Only inside approved optocoupler.	N/A
2.10.5.4	Semiconductor devices	Approved optocoupler with $dti \geq 0.4\text{mm}$ used.	P
2.10.5.5.	Cemented joints	No such construction.	N/A
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material	Used in transformer T1	P
	Number of layers (pcs) :	2 layers for reinforced insulation.	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 5.2)	P
	Electric strength test		—
2.10.5.11	Insulation in wound components	Approved triple insulated wire used as secondary winding of T1	P
2.10.5.12	Wire in wound components		P
	Working voltage :		P
	a) Basic insulation not under stress :		N/A
	b) Basic, supplementary, reinforced insulation :	Wire complies to Annex U, three layers insulation.	P
	c) Compliance with Annex U :		P
	Two wires in contact inside wound component; angle between 45° and 90° :	Physical separation provided by insulation tape and tube.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No such construction.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No such construction.	N/A
	Working voltage :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards	See below.	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	No coated printed boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No multi-layer PCBs provided.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No multi-layer PCBs provided.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)	Single layer PCB	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	No such boards and 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		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	Approved optocoupler used. No other parts to be tested.	P
2.10.12	Enclosed and sealed parts	No hermetically sealed component.	N/A

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Internal wires are UL recognized wiring which is rated VW-1, min. 80°C and having gauge suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	Internal wires are routed and secured so that adequate insulations are maintained. Secondary wires and earth wire are secured by glue, so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	No such screws provided.	N/A
3.1.7	Insulating materials in electrical connections	All current carrying connections are metal to metal.	N/A
3.1.8	Self-tapping and spaced thread screws	Not used.	N/A
3.1.9	Termination of conductors	All conductors are reliably secured.	P
	10 N pull test	Force of 10 N applied to the termination points of the conductors.	P
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	Appliance inlet provided;	P
3.2.1.2	Connection to a d.c. mains supply	Only a.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only for one mains connection.	N/A
3.2.3	Permanently connected equipment	Unit is not a permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm) :		—
3.2.4	Appliance inlets	Approved appliance inlet used.	P
3.2.5	Power supply cords	Not provided.	N/A
3.2.5.1	AC power supply cords		N/A
	Type :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm ²), AWG :		—
3.2.5.2	DC power supply cords	AC Source.	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		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space	Not permanent connection or non-detachable power cord type.	N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	Appliance inlet used.	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
	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	See below.	P
3.4.2	Disconnect devices	Appliance inlet used.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	When appliance inlet is disconnected no hazardous voltage in the equipment.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.5	Switches in flexible cords	None	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Appliance inlet 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		N/A
3.4.10	Interconnected equipment	Not interconnected equipment.	N/A
3.4.11	Multiple power sources	Only one supply connection provided.	N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	This power supply is not considered for connection to TNV.	P
3.5.2	Types of interconnection circuits	Interconnection circuits of SELV through the connector. No ELV interconnection circuits.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N/A
3.5.4	Data ports for additional equipment	No such ports	N/A

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°		N/A
	Test force (N)		N/A

4.2	Mechanical strength		P
4.2.1	General	See below. After tests, unit complies with the requirements of sub-clauses 2.1.1 and 2.10.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	10 N applied to all internal components.	N/A
4.2.3	Steady force test, 30 N	No internal enclosure.	N/A
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure. No energy or other hazards.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test	Applied on top and side enclosure	P
	Fall test	1.3m, 3 times	P
	Swing test	See above	N/A
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	No CRT in the unit.	N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps	No high pressure lamp provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Not wall or ceiling mounted equipment.	N/A
4.2.11	Rotating solid media	No such parts	N/A
	Test to cover on the door.....		N/A

4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N)	No handles or controls provided.	N/A
4.3.3	Adjustable controls	No such controls provided.	N/A
4.3.4	Securing of parts	Mechanical fixings in such a way designed that they will withstand mechanical stress occurring in normal use.	P
4.3.5	Connection by plugs and sockets	Mismatch of connectors either not possible or does not result in any hazard.	P
4.3.6	Direct plug-in equipment	Not direct plug-in equipment	N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries provided.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	No heating elements provided.	N/A
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N/A
4.3.11	Containers for liquids or gases	No container for liquid or gas.	N/A
4.3.12	Flammable liquids	No such flammable liquid.	N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation	See only cl. 4.3.13.5	P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/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	See below	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The LED used for indication only, considered as inherently LED Class 1.	—
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts	<i>No moving parts</i>	N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Equipment loaded with rated output current.	P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L	(see appended table 4.5)	—
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	Phenolic bobbin material used in Transformer T1 and Line filter L1, which is acceptable without test. No other parts to be tested.	P

4.6	Openings in enclosures		P
4.6.1	Top and side openings	- No openings on top/rear/front enclosure. - Circle opening on side enclosure with diameter: 1.8mm, less than 5.0mm	P
	Dimensions (mm)	See above	—
4.6.2	Bottoms of fire enclosures	No openings on the bottom.	P
	Construction of the bottom, dimensions (mm) .. :		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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	No excessive temperatures. No easily burning materials employed. Fire enclosure provided.	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		N/A
4.7.2	Conditions for a fire enclosure	No excessive temperatures. No easily burning materials employed. Fire enclosure provided.	P
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: <ul style="list-style-type: none"> ▪ Components in primary ▪ Components having unenclosed arcing parts at hazardous voltage or energy level ▪ Insulated wiring The fire enclosure is required.	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	See below	P
4.7.3.2	Materials for fire enclosures	Metal fire enclosure provided.	P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	PCB rated V-1 or better. See appended table 1.5.1 for details. Internal components except small parts are V-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filters provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See sub-clauses 5.1.2 to 5.1.6.	P
5.1.2	Configuration of equipment under test (EUT)	EUT has only one mains connection.	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	Equipment of figure 5A used.	P
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	P
5.1.5	Test procedure	The touch current was measured from mains to DC output connector of SPS board, transmit/receive port and to accessible metal enclosure.	P
5.1.6	Test measurements	(see appended table 5.1.6)	P
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (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	No TNV.	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)		—

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

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	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	No motors.	N/A
5.3.3	Transformers	(see appended Annex C and table 5.3)	P
5.3.4	Functional insulation.....	By short-circuited, results see appended table 5.3.	P
5.3.5	Electromechanical components	No electromechanical component .	N/A
5.3.6	Audio amplifiers in ITE	Audio amplifiers not used.	N/A
5.3.7	Simulation of faults	(see appended table 5.3.)	P
5.3.8	Unattended equipment	No such equipment.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
5.3.9.2	After the tests	No reduction of clearance and creepage distance. Electric strength test is made on basic, supplementary and reinforced insulation after 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		—
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
A.3.2	Test procedure		N/A

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

A.3.3	Compliance criterion		N/A
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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	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	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	T1	—
	Manufacturer	See table 1.5.1	—
	Type	See table 1.5.1	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated values	See table 1.5.1	—
	Method of protection	By protection circuit	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended tables 5.2 and C2)	P
	Protection from displacement of windings	By bobbin, tube and insulation tape	P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		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)		P
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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
G.5	Measurement of transient voltages (V)		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)	P
	Metal(s) used : Screw, ring type lug and spring washer are made of steel with Zn plating; Enclosure and terminal are made of mild steel and no coating or plating on connecting surface.	—

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	See 1.6.2. P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
M.3	Method B		N/A
M.3.1	Ringling 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) Pulse current		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		P
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		P
R.2	Reduced clearances (see 2.10.3)		P
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		P
S.1	Test equipment		P
S.2	Test procedure		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.3	Examples of waveforms during impulse testing		P
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
		VDE approved triple insulated wire used.	—
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
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P

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

1.5.1	TABLE: List of critical components					P
Object/part No.	ManuFacterer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
PCB (for both main board and Power board)	Various	Various	V-1 or better, min. 130°C	UL	UL	
Metal enclosure	--	--	Metal, min. 0.8mm thickness	--	--	
Appliance inlet	STEADY ELECTRONICS CORP	2114	AC 250V, 10A, 70 °C, Standard sheet C14	IEC/EN 60320-1	VDE40011917	
Output cord	Various	Various	VW-1, min. 80 °C, min. 26 AWG	--	UL	
Green &Yellow earth wire	LINOYA ELECTRONIC TECHNOLOGY CO LTD	1015	600V, 105 °C, 18AWG, VW-1,	--	UL E315619	
Insulation sheet between PCB and bottom metal enclosure	DUPONT TEIJIN FILMS U S L P	Mylar MO31	VTM-2, 105°C, thickness 0.35mm	--	UL E93687	
Fusible Resistor (F1)	Nanjing Shagon Electronics CO., LTD	WWRES	10 Ohm 2W	--	Test with appliance	
(alternative)	Xiamen KoMing Electronics Co.,Ltd.	KNP-2WS-TB- 10RJ	10 Ohm 2W	--	Test with appliance	
Photocoupler (U2)	COSMO ELECTRONICS CORP	K1010	Dti=0.4mm, ext. dcr.=7.7mm, 100°C	EN 60747-5-2, IEC 60950-1, UL 1577	VDE 101347 UL E169586	
(Alternative)	LITE-ON TECHNOLOGY CORP	LTV-817	Dti=0.4mm, ext. dcr.=7.4mm, 100°C	EN 60747-5-2, IEC 60950-1, UL 1577	VDE 40015248 UL E113898	
Heat shrinkable tube used for F1,	CHANGYUAN ELECTRONICS (SHENZHEN) CO.,LTD.	CB-HFT	600V, 125°C, VW-1	--	UL E180908	
(alternative)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO., LTD.	RSHR-H	600V, 125°C, VW-1		UL E203950	
Bridge diode (D1-D4)	Various	Various	Min. 700 V, min. 1.0 A	--	Tested with appliance	

Electrolytic Capacitor (C2)	Various	Various	Max. 10uF, min. 400V, min.105°C	--	Tested with appliance
Primary control IC (U1)	Various	Various	min. 700V, 0.75A	--	Tested with appliance
Line filter (L1)	Shenzhen Cenker Enterprise LTD	CKUU9.8- 40mH/Min- A0022	130°C	--	Tested with appliance
Bobbin for L1	CHANG CHUN PLASTICS CO. LTD	T375J	Phenolic,V-0, 150°C, min. thick 0.71mm	UL	UL E59481
Insulation tape for L1	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO. LTD.	CT	130 °C	UL	UL E165111
Transformer (T1)	Dong Guan Sheng Kai Electronics Co., Ltd.	SEH1601-06	Class B	Applicable parts in IEC/EN 60950-1 and acc. to IEC 60085	Tested with appliance
(alternative)	Dong Guan Readore Electronics Co., Ltd.	LD-16325-STA	Class B	Applicable parts in IEC/EN 60950-1 and acc. to IEC 60085	Tested with appliance
(alternative)	TP-LINK	T033120-2	Class B	Applicable parts in IEC/EN 60950-1 and acc. to IEC 60085	Tested with appliance
Triple insulation wires (for T1)	Furukawa Electric Co Ltd	TEX-E	130°C	IEC/EN 60950-1	VDE 006735 UL E206440
(alternative)	TA YA ELECTRIC WIRE & CABLE CO., LTD	TILW-B	130°C	IEC/EN 60950-1	VDE 40019957 UL E225803
(alternative)	GREAT LEOFON INDUSTRIAL CO., LTD	TRW(B) series	130°C	IEC/EN 60950-1	VDE 136581 UL E211989
(alternative)	CHANGYUAN ELECTRONICS (SHENZHEN) CO. LTD	CB-TIW series	130°C	IEC/EN 60950-1	VDE 40018100 UL E249037
(alternative)	COSMOLINK CO. Ltd	TIW-M	130°C	IEC/EN 60950-1	VDE 138053 UL E258545

(alternative)	Dah Jin Technology	TLW-B	130°C	IEC/EN 60950-1	VDE 40008834 UL E236542
(alternative)	Young Chang Silicone Co., Ltd.	STW-B	130°C	IEC/EN 60950-1	VDE 40013359 UL E242198
Primary Winding (for T1)	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO. LTD	UEW/U	130°C	UL	UL E201757
(alternative)	TAI-I ELECTRIC WIRE & CABLE CO. LTD	UEW	130°C	UL	UL E85640
(alternative)	FENG CHING METAL CORP	UEW	130°C	UL	UL E172395
(alternative)	XIN LONG MAGNET WIRE CO LTD	UEW%	130°C	UL	UL E171082
(alternative)	GUANGDONG RONSEN SUPER	UEW/130	130°C	UL	UL E164502
(alternative)	TA YA ELECTRIC WIRE & CABLE CO LTD	TYPV-130	130°C	UL	UL E84201
(alternative)	TA YA ELECTRIC WIRE & CABLE CO LTD	TYA1R-130 (2)(UEW-B)	130°C	UL	UL E84201
Bobbin (for T1)	Changchun Plastics Co Ltd	T375HF	Phenolic, V-0, 150°C, min. thickness 0.71mm	UL	UL E59481
(alternative)	HITACHI CHEMICAL CO., LTD.	CP-J-8800	Phenolic, V-0, 150°C, min. thickness 0.71mm	UL	UL E42956
(alternative)	SUMITOMO BAKELITE CO LTD	PM9820	Phenolic, V-0, 150°C, min. thickness 0.71mm	UL	UL E 41429
(alternative)	CHANG CHUN PLASTICS CO. LTD	T375J	Phenolic, V-0, 150°C, min. thickness 0.71mm	UL	UL E59481
Insulation tape (for T1)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO. LTD.	CT/PZ	130°C	UL	UL E165111
(alternative)	SYMBIO INC	MY91HF	130°C	UL	UL E50292

(alternative)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1	130°C	UL	UL E17385
Tube (for T1)	CHANGYUAN ELECTRONICS (SHENZHEN) CO. LTD	CB-TT-L	200°C, VW-1	UL	UL E180908
(alternative)	FLUO TECH INDUSTRIES CO LTD	TFL	200°C, VW-1	UL	UL E175982
(alternative)	GREAT HOLDING INDUSTRIAL CO. LTD	TFL/TFT	200°C, VW-1	UL	UL E156256
(alternative)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO. LTD	WF	200°C, VW-1	UL	UL E203950
Glue fixing components and wires	Various	Various	Min V-2, 150°C	UL	UL
Note: ¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance					

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V/Hz)	I (mA)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (mA)	Condition/status
90V/50Hz	77	--	4.0	F1	77	Max. rated load*
90V/60Hz	77	--	4.0	F1	77	See above
100V/50Hz	71	0.3	3.9	F1	71	See above
100V/60Hz	71	0.3	3.9	F1	71	See above
240V/50Hz	42	0.3	4.1	F1	42	See above
240V/60Hz	42	0.3	4.0	F1	42	See above
264V/50Hz	44	--	4.3	F1	44	See above
264V/60Hz	43	--	4.4	F1	43	See above
Supplementary information:						
* Max. rated load indicates all the external interface was loaded with the signal transmitting and receiving (Data transfer rate: 200Mbps)						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
3.3	--	3.3	3.4	8.1	
supplementary information:					
Supplied by 240V/60Hz					
Tested on the output terminal of switching power board.					

2.1.1.7	TABLE: discharge test				N/A
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
--	--	--	--	--	
Notes:					

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 transformer Pin 10 to 7		16.8	--	
		--	3.3	After diode D10

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
With diode D10 shorted	Output terminal: 0*
supplementary information:	
* indicates unit shutdown. Supplied by 240V/60Hz	

2.4.2	TABLE: limited current circuit measurement					N/A
Location	Voltage (V)	Current (mA)	Freq. (KHz)	Limit (mA)	Comments	
--	--	--	--	--	--	
Note(s):						

2.5	TABLE: limited power source measurement			N/A
		Limits	Measured	Verdict
--				

2.6.3.4	TABLE: ground continue test		P
Location		Resistance measured (mΩ)	Comments
From AC inlet earth pin to bottom metal enclosure		9	Test current=32A, 2minute
From AC inlet earth pin to top metal enclosure		13	Test current=32A, 2minute
Note: limit : 0.1 Ohm			

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
T1 pin 1 to pin 6/7		182	428	
T1 pin 2 to pin 6/7		180	376	
T1 pin 3 to pin 6/7		205	444	
T1 pin 4 to pin 6/7		172	364	
T1 pin 5 to pin 6/7		171	352	
T1 pin 1 to pin 9/10		181	420	
T1 pin 2 to pin 9/10		179	360	
T1 pin 3 to pin 9/10		208	448	The highest RMS and Vpeak.
T1 pin 4 to pin 9/10		174	380	
T1 pin 5 to pin 9/10		172	352	
Optocoupler U2 pin 1 to pin 3		173	356	
Optocoupler U2 pin 1 to pin 4		174	352	
Optocoupler U2 pin 2 to pin 3		172	352	
Optocoupler U2 pin 1 to pin 4		173	352	
supplementary information:				
Input voltage is 240V/60Hz.				

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)	
On primary circuit							
L polarity before fusible resistor R1 to trace connected to component D2 (F)*	420	250	1.5	2.8	2.5	2.8	
Different polarity of fusible resistor F1 (F)	420	250	1.5	2.7	2.5	2.7	

Primary components to accessible part						
Primary trace under component C3 to accessible earthed bottom enclosure(B)*	420	250	2.0	5.8	2.5	5.8
Primary to earth pin of AC inlet on PCB(B)	420	250	2.0	2.9	2.5	2.9
Primary component C2 body to accessible top enclosure(B)	420	250	2.0	10.0	2.5	10.0
Primary component C2 body to earth pin of AC inlet(B)*	420	250	2.0	9.2	2.5	9.2
Primary components to secondary components						
Primary to Secondary trace of optocoupler U2 (R)	420	250	4.0	5.8	5.0	5.8
Primary trace under D6 to Secondary trace connected to C10 (R)	420	250	4.0	5.5	5.0	5.5
Primary to Secondary trace of T1 (R)	448	250	4.2	6.5	5.0	6.5
Secondary triple insulated wire pin to Core of T1 (R)	448	250	4.2	5.1	5.0	5.1
Secondary triple insulated wire soldering pin to primary winding of T1 (R)	448	250	4.2	5.1	5.0	5.1
Secondary component C4 body to core of T1 (R)	448	250	4.2	7.4	5.0	7.4
Supplementary information:						
* F=functional insulation, B=basic insulation, R=reinforced insulation. 1) 2 layers insulation tape wrapped around transformer as reinforced insulation. 2) Triple insulated wire used for secondary winding of the transformer. 3) SPS Secondary output wire fixed by glue 4) SPS output wires enclosed by heat shrinkable tube 5) One mylar sheet (100mmX56mm) with thickness at least 0.45mm located between PCB trace and bottom metal enclosure.						

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)
Photo couplers (reinforced insulation)		420	250	AC 3000	0.4	approved comp. ¹⁾
Supplementary information: ¹⁾ see appended table 1.5.1.						

4.5	TABLE: Thermal requirements				P		
	Supply voltage (V)	Test A: 90V, 60Hz Test B: 264V, 50Hz			—		
	Ambient T _{min} (°C)	--	--	--	—		
	Ambient T _{max} (°C)	--	--	--	—		
Maximum measured temperature T of part/at::		T (°C)			Allowed T _{max} (°C)		
Test voltage		A	B	--			
T1 core		45.1	50.8		120-(40-23) =103		
T1 winding		44.9	49.8		120-10-(40-23) =93		
PCB under T1		44.7	48.8		130-(40-23) =113		
PCB near Diode D1		37.3	43.3		130-(40-23) =113		
Electrolyte capacitor C2		36.2	42.0		85-(40-23) =68		
Line filter L1 winding		34.7	38.7		130-10-(40-23) =103		
Optocoupler U2		36.7	43.0		100-(40-23) =83		
IC U1 body		49.4	78.0		130-(40-23) =113		
PCB under Diode D10		50.1	50.9		130-(40-23) =113		
Electrolyte capacitor C7		35.9	36.0		105-(40-23) =88		
Electrolyte capacitor C8		35.0	36.4		105-(40-23) =88		
AC inlet		28.8	30.4		70-(40-23) =53		
Green/yellow earth wire		31.5	34.4		105-(40-23) =88		
SPS output wire		32.9	34.0		80-(40-23) =63		
IC U3 body on main board		55.8	56.1		130-(40-23) =113		
Top enclosure outside near T1		26.0	27.4		70-(40-23) =53		
Mylar sheet inside near T1		32.3	33.9		105-(40-23) =88		
Bottom enclosure outside near T1		27.5	28.1		70-(40-23) =53		
Front panel near indication LED		25.6	27.1		70-(40-23) =53		
Ambient		23.1	23.9		--		
Supplementary information:							
Note(s):							
1. The temperatures were measured under worst normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.							
2. The maximum ambient temperature permitted by the manufacturer's specification is 40°C.							
3. All values for allowed Tmax (°C) are re-calculat ed from actual ambient respectively.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class

Supplementary information:

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
	Allowed impression diameter (mm) : ≤ 2 mm			—
Part			Test temperature (°C)	Impression diameter (mm)
--			--	--
Supplementary information:				
Bobbin material of transformer T1 is made of Phenolic materials, no other parts necessary to test.				

4.7	TABLE: Resistance to fire					P
Part		Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--		--	--	--	--	--
Supplementary information: Metal enclosure used.						

5.1.6	TABLE: touch current measurement			P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions
Mains input to Metal enclosure		0.03	3.5	With earth disconnection
Mains input to SPS output terminal		0.04	0.25	With earth connection
Mains input to transmit/receive port		0.02	0.25	With earth connection
Supplementary information: Supplied with 264V/60Hz.				

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
Basic/supplementary insulation:				
L to N (fuse opened)		AC	1500	No
L & N to metal enclosure		AC	1500	No
Mylar sheet located between SPS and bottom metal enclosure		AC	1500	No
Reinforced insulation:				
Unit: primary to SPS output		AC	3000	No
Unit: primary to transmit/receive port		AC	3000	No
Transformer: Primary winding to secondary winding		AC	3000	No

Transformer: Core to secondary winding	AC	3000	No
One layer insulation tape wrapped around transformer	AC	3000	No
Supplementary information:			

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				See below	—
	Power source for EUT: Manufacturer, model/type, output rating				--	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
D1	s-c	240	1s	F1	--	Fusible resistor F1 opened immediately. 10 times repeated, the same result obtained, no hazard.
C2	s-c	240	1s	F1	--	Fusible resistor F1 opened immediately. 10 times repeated, the same result obtained, no hazard.
C4	s-c	240	10mins	F1	0.01	Unit shutdown immediately, recoverable, no hazard.
U1(D-S)	s-c	240	1s	F1	--	Fusible resistor F1 opened immediately. 10 times repeated, the same result obtained, no hazard.
U1(D-EN)	s-c	240	1s	F1	--	Fusible resistor F1 opened immediately. 10 times repeated, the same result obtained, no hazard.
U1(S-EN)	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
D5	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
D10	s-c	240	10mins	F1	0.003	Unit shutdown immediately, recoverable, no hazard.
C7	s-c	240	10mins	F1	0.003	Unit shutdown immediately, recoverable, no hazard.
U2 pin 2	o-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
U2 pin 1 to 2	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
U2 pin 3 to 4	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.

T1 pin 6 to 10	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
T1 pin 2 to 3	s-c	240	10mins	F1	0.002-0.005	Unit shutdown immediately, recoverable, no hazard.
T1 pin 4 to 5	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
SPS output terminal	s-c	240	10mins	F1	0.004	Unit shutdown immediately, recoverable, no hazard.
SPS output terminal	o-l	240	4 hours	F1	0.092A	Unit shutdown when SPS output current increased to 2.1 A. Measured max. temperature: T1 winding: 76.4°C; T1 core: 73.2 °C; Ambient: 27.4 °C, no hazard
Ventilation	blocked	240	3 hours	F1	0.043A	Measured max. temperature: T1 winding: 46.6°C; T1 core: 46.5 °C; Ambient: 25.1 °C, no hazard

Supplementary information:

The ambient temperature 40°C specified by the client. The unit passed 3000V hi-pot test between primary and accessible parts and 1500V hi-pot test between primary and metal enclosure after single fault test above.

1. In fault column, s-c=short-circuited, o-c=open-circuited, o-l=over-loaded.
2. Measure transformer temperature at all times (by thermocouple).
3. Transformer winding and core temperature limit is 150°C (175-10-(40-25))
4. Each fault where fuse opened was tested with all sources of fusible resistor

C.2	Safety isolation transformer		P
Construction details:			
Transformer part name: T1			
Manufacturer: See appended table 1.5.1			
Type: See appended table 1.5.1			
Recurring peak voltage	448V _{peak}		
Required clearance for reinforced			
insulation (from table 8 and 9)	4.2 mm		
Effective voltage rms	250V _{rms}		
Required creepage distance for reinforced			
insulation (from table 11)	5.0 mm		
Measured min. creepage distance			
Location	inside (mm)	outside (mm)	
Primary-secondary	Triple insulation wire used	5.1(primary winding to secondary conductive pin)	
Primary-core	Core considered as primary	Core considered as primary	
Secondary-core	Triple insulation wire used	5.1(secondary conductive pin to transformer core)	
Primary-primary	--	--	
Measured min. clearances			
Location	inside (mm)	outside (mm)	
Primary-secondary	Triple insulation wire used	5.1(primary winding to secondary conductive pin)	
Primary-core	Core considered as primary	Core considered as primary	
Secondary-core	Triple insulation wire used	5.1(secondary conductive pin to transformer core)	
Primary-primary	--	--	

Construction:	
Concentric windings on bobbin. Two layers insulation tapes wrapped around transformer as reinforced insulation. Triple insulated wires used as secondary winding. Tube and insulation tape used where primary windings and secondary triple insulated wires contact. The primary lead pins soldered to primary windings directly moulded in bobbin and secondary lead pins soldered to secondary windings directly moulded in bobbin also.	
Pin numbers	
Prim.	3-2-1, 4-5
Sec.	7/6-10/9
Bobbin	
Material	See appended table 1.5.1
Thickness	See appended table 1.5.1
Electric strength test	
With AC 3000V after humidity treatment	
Result	Pass

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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
Attachment Form No.	EU_GD_IEC60950_1B
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date (2010-04)
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EN 60950-1:2006/A11:2009/A1:2010 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)							
Clause	Requirement + Test			Result - Remark		Verdict	
Contents	Add the following annexes:					P	
	Annex ZA (normative)		Normative references to international publications with their corresponding European publications				
	Annex ZB (normative)		Special national conditions				
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:					N/A
1.5.7.1		Note	6.1.2.1	Note 2			
6.2.2.1		Note 2	EE.3	Note			

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>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.</p> <p>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.</p>	Not such equipment.	N/A
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Added.	P
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.	Added.	N/A
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p> <p>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>	Replaced.	P

Page 32 of 51

Report No.: 17020575-00

IEC60950_1B - ATTACHMENT									
Clause	Requirement + Test	Result - Remark	Verdict						
	<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.</p> <p>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.	Deleted.	N/A						
3.2.5.1	<p>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".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 (0,75) ^{b)}</td><td>1,0 </td></tr><tr><td>Over 10 up to and including 16 (1,0) ^{c)}</td><td>1,5 </td></tr></table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	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	Replaced.	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								
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table><tr><td>Over 10 up to and including 16 </td><td>1,5 to 2,5 </td><td>1,5 to 4 </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	Deleted.	N/A			
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>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).</p>	Added.	N/A						

IEC60950_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		
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 μ Sv/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.	Replaced.	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	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	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.		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).	No such capacitor used.	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.	No such construction.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>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.</p> <p>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.</p> <p>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:</p> <p>"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)."</p>	To be evaluated during national approval.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“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.”</p> <p>Translation to Swedish:</p> <p>”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.”</p>		
1.7.5	<p>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.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	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.	No TNV.	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.	No TNV.	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.	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.		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.	Not direct plug-in equipment	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	N/A
3.2.1.1	<p>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:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>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:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A</p>		N/A
3.2.1.1	<p>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.</p> <p>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.</p> <p>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.</p>	.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>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.</p> <p>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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
3.2.1.1	<p>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.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>	No power supply cord provided.	N/A
3.3.4	<p>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:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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.		N/A
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: <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> 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. 	Not exceed 3.5mA.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>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</p> <ul style="list-style-type: none"> - 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. 	No TNV.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - 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. 		
6.1.2.2	<p>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.</p>	No TNV.	N/A
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	Not connected to cable distribution system.	N/A
7.3	<p>In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>	Not connected to cable distribution system.	N/A
7.3	<p>In Norway, for installation conditions see EN 60728-11:2005.</p>	Not connected to cable distribution system.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 FINLAND NATIONAL DIFFERENCES Information technology equipment – Safety – PART 1: GENERAL REQUIREMENTS			
Differences according to : EN 60950-1:2006/A11:2009/A1:2010			
Attachment Form No. : FI_ND_IEC60950_1B Attachment Originator : SGS Fimko Ltd Master Attachment : Date (2010-04)			
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	National Differences		P
General	See also Group Differences (EN 60950-1:2006/A11/A1)		P
1.5.7.1	In Finland 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.		N/A
1.5.9.4	In Finland , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	In Finland , CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in in Finland shall be as follows: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	To be evaluated during national approval.	N/A
2.3.2	In Finland , there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	Remark: For 6.1.2.1 see "European Group Differences and National Differences".	N/A
2.10.5.13	In Finland , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	Remark: For 6.1.2.1 see "European Group Differences and National Differences".	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> - 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. 		N/A
6.1.2.1 (A1:2010)	<p>In Finland, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - 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. 		N/A

IEC60950_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 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 60384-14:2005; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005. 		N/A
6.1.2.2	<p>In Finland, 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.</p>		N/A
7.2	<p>In Finland, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 GERMANY NATIONAL DIFFERENCES Information technology equipment – Safety –</p>			
PART 1: GENERAL REQUIREMENTS			
Differences according to: VDE 0805-1:2011-01			

Annex ZC, 1.7.2.1	According to GPSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.	To be evaluated when submitted for national approval.	N/A
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National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	Korean National Differences		P
	Corresponding National Standard: K 60950-1		P
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	No power supply cord provided.	N/A
8	Addition: EMC The apparatus shall comply with the relevant CISPR standards.	To be evaluated when submitted for national approval.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 AUSTRALIA and NEW ZEALAND NATIONAL DIFFERENCES Information technology equipment – Safety – PART 1: GENERAL REQUIREMENTS</p>			
Differences according to: AS/NZS 60950.1:2011			

1.2	Insert the following between 'person, service' and 'range, rated frequency': POTENTIAL IGNITION SOURCE 1.2.12		P
1.2.12.201	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.	Inserted.	P
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'	Added.	P
1.5.2	Add the following to the end of the first and third dash items: 'or the relevant Australian/New Zealand Standard'	Added.	P

National Differences					
Clause	Requirement – Test	Result – Remark	Verdict		
3.2.5.1	Modify Table 3B as follows: 1. Delete the first four rows and replace with the following:		Replaced.	N/A	
	RATED CURRENT of equipment A	Minimum conductor sizes			
		Nominal cross-sectional area a mm ²			AWG or kcmil [cross-sectional area in mm ²] see Note 2
	Over 0.2 up to and including 3	0,5 ^a			18 [0,8]
	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).					
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.	Not such equipment	N/A		
4.3.6	Delete the third paragraph and replace with the following: <i>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.</i>		N/A		
4.3.16.5	Add the following to the end of the first paragraph: 'or AS/NZS 2211.1'	Added.	N/A		
4.7	Add the following new paragraph to the end of the clause: 'For alternate tests refer to Clause 4.7.201.'	Added.	P		
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	Added. Alternative tests not applied for	N/A		

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.201.1	<p>4.7.201.1 General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>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:</p> <p>(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.</p> <p>(b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> - 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. <p>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.</p> <p>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.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>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.</p> <p>These tests are not carried out on internal wiring.</p>		N/A
4.7.201.2	<p>4.7.201.2 Testing of non-metallic materials</p> <p>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.</p> <p>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.</p>		N/A

National Differences													
Clause	Requirement – Test	Result – Remark	Verdict										
4.7.201.3	<p>4.7.201.3 Testing of insulating materials</p> <p>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.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p> <p>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:</p> <table><tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr><tr><td colspan="2">9 Test procedure</td></tr><tr><td>9.2 Application of needleflame</td><td><p>Replace the first paragraph with:</p><p>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</p><p>Replace the second paragraph with:</p><p>The duration of application of the test flame shall be 30 s ±1 s.</p></td></tr><tr><td>9.3 Number of test specimens</td><td><p>Replace with:</p><p>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.</p></td></tr><tr><td>11 Evaluation of test results</td><td><p>Replace with:</p><p>The duration of burning</p></td></tr></table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needleflame	<p>Replace the first paragraph with:</p> <p>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</p> <p>Replace the second paragraph with:</p> <p>The duration of application of the test flame shall be 30 s ±1 s.</p>	9.3 Number of test specimens	<p>Replace with:</p> <p>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.</p>	11 Evaluation of test results	<p>Replace with:</p> <p>The duration of burning</p>		N/A
Clause of AS/NZS 60695.11.5	Change												
9 Test procedure													
9.2 Application of needleflame	<p>Replace the first paragraph with:</p> <p>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</p> <p>Replace the second paragraph with:</p> <p>The duration of application of the test flame shall be 30 s ±1 s.</p>												
9.3 Number of test specimens	<p>Replace with:</p> <p>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.</p>												
11 Evaluation of test results	<p>Replace with:</p> <p>The duration of burning</p>												

National Differences			
Clause	Requirement – Test		Verdict
	<div> <div></div> <div>(t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</div> </div> <p>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.</p>		
4.7.201.4	<p>4.7.201.4 Testing in the event of non-extinguishing material</p> <p>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 glowwire 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.</p> <p>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.</p> <p>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.</p> <p>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.</p>		N/A
4.7.201.5	<p>4.7.201.5 Testing of printed boards</p> <p>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.</p> <p>The test is not carried out if the —</p> <ul style="list-style-type: none"> - 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 		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>only for connecting wires which fill the openings completely; or</p> <p>- 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.</p> <p>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.</p>		
6.2.2	<p>For Australia only, delete the first paragraph and Note, and replace with the following:</p> <p>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.</p>	No TNV.	N/A
6.2.2.1	<p>For Australia only, delete the first paragraph including the Notes, and replace with the following:</p> <p><i>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></p> <p><i>(i) for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and</i></p> <p><i>(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.</i></p> <p>NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines.</p> <p>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.</p>	No TNV.	N/A
6.2.2.2	<p>For Australia only, delete the second paragraph including the Note, and replace with the following:</p> <p><i>In Australia only, the a.c. test voltage is:</i></p> <p><i>(i) for 6.2.1 a): 3 kV; and</i></p> <p><i>(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.</i></p> <p>NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>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.</p>	No TNV.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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.	Not connected to cable distribution system.	N/A
Annex P	Normative references (List of relevant Australia/New Zealand Standards that have been inserted in place of some of the International Standards)	Added.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
J 60950-1 (H22) : 2009 TEST REPORT (Deviations from IEC 60950-1:2001, first edition) Special National conditions, National deviation and other information according to MITI Ordinance No. 85. <u>Japanese unique deviations</u> in J60950-1(H22):2009(=JIS C 6950-1:2009)			
1.1.A	Add this sub-clause See Annex P for normative references	Considered	P
1.2	Add the following terms. Equipment, Class 0I 1.2.4.3A	Added	N/A
1.2.4.1	Add the following NOTE 2: NOTE 2 – Even in the case of CLASS 0I equipment, two-pins plug with a protective earthing lead wire (an adapter for converting a Class 0I equipment plug into a two-pin plug without earthing wire) and cord sets having a two-pin type plug with a lead wire for earthing are also regarded as Class 0I equipment if they are included in packaging as accessories or if users are recommended to use them.	Added. The equipment is “Protection Class I”	N/A
1.2.4.3A	Add this sub-clause: CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by: using BASIC INSULATION, and providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES if the BASIC INSULATION fails, and using a supply cord without earthing conductor and a plug without earthing wire although the equipment has externally an earth terminal or a lead wire for earthing. Equipment provided with a cord set having a two-pin type plug with a lead wire for earthing is also regarded as Class 0I. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation as well as an operating part as SELV circuit.	Added. The equipment is “Protection Class I”	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
1.3.2	<p>Add the following NOTE 1 and 2:</p> <p>Note1: transportable equipments or similar equipments that are frequently transported for use should not be considered Class I or Class 0I equipments. However, this shall not apply to equipments that are intended for installation by service personnel or installation personnel.</p> <p>Note 2: in consideration of the state of electrical power distribution in Japan, it is best to avoid the use of Class I or Class 0I devices if it is evident that it will be difficult to connect earthing during installation of the equipment. However, this shall not apply to devices that are intended for installation by service personnel or installation personnel.</p>	<p>Added.</p> <p>The equipment is “Protection Class I”</p>	N/A
1.5.1	<p>When safety issues apply, in the absence of matters required by these specifications or JIS stipulated required matters concerning safety of related components, or in the absence of JIS concerning the component, the component must comply with one of the related IEC safety requirements. However, if a component compliant with ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products is being used in accordance with the rating indicated for that component, apply articles 1.5.4, 2.8.7 and 3.2.5; electrical power cord sets that fit with inlets for equipments regulated by the IEC 60320-1 Standards Sheet must match the dimensions indicated on the applicable IEC 60320-1 Connector Standards Sheet.</p> <p>Note 1: regarding the JIS or IEC standards related to a component as related shall be limited to cases where the component in question is clearly within the scope of application of those standards.</p>	Considered	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
1.5.2	<p>In the case of components that are certified as being in compliance with JIS harmonized with the related IEC, it must be confirmed that the component is being used correctly in accordance with the stipulated standards. In the absence of JIS harmonized with the related IEC,</p> <p>Note 1: When using an IEC 60320-1 C.14 device coupler with rated voltage less than 125 V and rated current in excess of 10A, refer to 1.7.5A.</p> <p>If JIS harmonized with the IEC related to the component does not exist concurrently with the IEC standards, or if the component is using circuitry that does not comply with its rating, the component must be tested in accordance with the conditions and within equipment. The number of samples required for testing shall normally be the same as the number required under similar standards.</p>	Considered	P
1.5.6	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause		N/A
1.5.7.2	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause		N/A
1.5.8	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause		N/A
1.7.1	Add local importer in this sub-clause manufacturer’s name or local importer or trade-mark or identification mark;	Shall be evaluated during national approval	N/A
1.7.5	Replace “IEC 60083” to “IEC/TR 60083:1997 or JIS C 8303:2007” of this Sub-Clause	No power outlet provided	N/A
1.7.5.A	<p>Add this sub-clause</p> <p>1.7.5A Device Coupler</p> <p>When using an IEC 60320-1 C.14 device coupler (rated current 10A) with rated voltage less than 125 V and rated current in excess of 10A, be sure to write “Only use power supply cord sets that are provided with this device” or a similar statement in the user’s manual.</p>		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.17A	<p>Add this sub-clause:</p> <p><i>Marking for CLASS 0I EQUIPMENT</i></p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body:</p> <p>“Provide an earthing connection”</p> <p><i>Example in Japanese:</i></p> <p>必ず接地接続を行って下さい</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>“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.”</p> <p><i>Example in Japanese:</i></p> <p>接地接続は必ず、電源プラグを電源につなぐ前に行ってください。又、接地接続を外す場合は、必ず電源プラグを電源から切り離してから行って下さい。</p>	<p>Added.</p> <p>The equipment is “Protection Class I”</p>	N/A
2.1.1.1	In the Item b) of this Sub-Clause, replace “IEC 60083” to “ IEC 60083 or JIS C 8303:2007”.	Replaced	P
2.6.3.2	<p>Add the following in front of 1st paragraph of this Sub-Clause.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>	<p>Added.</p> <p>The equipment is “Protection Class I”</p>	N/A
2.6.3.4	<p>Add the following in this Sub-Clause.</p> <p>(See 2.6.3.3)</p>		P
2.6.4.2	<p>Add the following after 1st paragraph of this Sub-Clause.</p> <p>However, this shall not apply when the Class 0I equipment is equipped with a separate main protective earthing terminal.</p>	<p>Added.</p> <p>The equipment is “Protection Class I”</p>	N/A
2.6.5.4	<p>Replace the first sentence of this Sub-Clause by:</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>		P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.8A	<p>Add this sub-clause:</p> <p><i>Earthing of CLASS 0I EQUIPMENT</i></p> <p>Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V.</p> <p>For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip.</p> <p>CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external where easily visible.</p>	<p>Added.</p> <p>The equipment is "Protection Class I"</p>	N/A
2.10.1	Replace "IEC 60664-1" to "JIS C 0664:2003" in NOTE of this Sub-Clause	Considered	P
2.10.3.1	Replace "IEC 60664-1" to "JIS C 0664:2003" in NOTE 1 and NOTE 2		P
2.10.3.2	Replace "IEC 60664-1" to "JIS C 0664:2003" in the first sentence of this Sub-Clause		P
3.2.3	<p>Add the following after Table 3A of this Sub-Clause.</p> <p>Table 3A shall apply when a JIS C 3662 or JIS C 3663 compliant cable is used. Other cables that are used must be designed to allow suitable conduits to be run in,</p>	Not permanently connected	N/A
3.2.5.1	<p>Add the following of this Sub-Clause.</p> <p>Or must be sheathed in accordance with Section 1, Annex 1 of the ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products.</p> <p>- Or must be sheathed in accordance with Section 1, Annex 1 of the ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products.</p> <p>- Electric cables that comply with JIS C 3662 or JIS C 3663 have a conductor with a cross-sectional area value greater than the values provided for in Table 3B. Other electrical cables comply with relevant wiring regulations.</p> <p>Delete 1) in Table 3B.</p>	No power cord provided	N/A
3.3.4	<p>Add the following in Table 3D</p> <p>Note: when using JIS C 3662 or JIS C 3663-compliant electrical wiring, the terminal must enable connection of electric wiring commensurate with the regulated sizes</p>		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
3.3.7	Add the following after 1 st paragraph of this Sub-Clause. ◦ However, this shall not apply to the external grounding terminals of Class 0I equipment.	Added. The equipment is “Protection Class I”	N/A
4.3.4	Add the following of this Sub-Clause. ◦ Class 0I equipment where the values for creepage distance and clearance distance of the basic insulation drop further to a level lower than that stipulated in 2.10 must be properly fixed to withstand the mechanical stress generated in the course of normal use.	Added. The equipment is “Protection Class I”	N/A
4.3.5	Replace “IEC 60083” to “JIS C 8303:2007” in the first sentence of this Sub-Clause	Replaced	P
4.3.13.3	Add the following in Table 4A Note: JIS K 7161:1994, JIS K 7162:1994, IS K 7127:1999 are available as JIS compatible with part of ISO527.	No UV radiation	N/A
4.3.13.5	Replace “IEC 60825-1” to “JIS C 6802:2005 or JIS C of this Sub-Clause	No Laser radiation	N/A
	Replace “IEC 60825-2:2000” to “JIS C 6803:2006 or IEC 60825-2:2000” of this Sub-Clause		N/A
4.5.1	Add the following to Suffix 3) of Table 4B (part one and part two). Note: When data concerning materials is unavailable, Annex 4, 1 (1) 3 of “Regarding Interpretation of Ministerial Ordinance Providing Technical Standards for Electrical Products” (June 19, 2008 Bureau of Commerce No. 3) may be applied to Item 1.	Considered	P

Attachment

The insulating materials shall not be exposed to the temperature exceeding the values when the appliance is operated at rated voltage and normal operating condition.

These values may be increased by;

8 degrees for Duty 2 appliance, and

16 degrees for Duty 3 appliance.

In order to classify the appliances, following assumptions are to be used.

Duty 1 appliances: considered to be connected to supply mains throughout the years such as refrigerators

Duty 2 appliances: considered to be connected to be in between Duty 1 and Duty 3 such as room heaters

Duty 3 appliances: considered to be connected to supply mains when it is operated for rather short time such as portable coffee mill.

Permissible temperature limits of insulating materials

Natural materials	
Material	Permissible temperature limit (°C)
Bituminous compound for filter	75, (105) 1)
Paper, cotton, silk, other natural fiber and wood	90, (105) 2)
Oil denatured natural resin	105
Silica powder	500
Mica (Hard)	500, (600) 3)
(Soft)	650, (850) 3)

Notes: 1) Value applies to thermal insulating materials.

2) Value applies to materials impregnated with varnish.

3) Value in parenthesis is applied when mechanical external force is absent.

Mica splittings and untreated mica papers

Lining	Adhesive	Permissible Temperature Limit (°C)
--------	----------	------------------------------------

National Differences								
Clause	Requirement – Test						Result – Remark	Verdict

	a	b	c	d	e	f	g	
None	X	X	X	X	X	X	X	130 155 180; 450, (700) ¹⁾ ; 600, (800) ²⁾ ; 600, (700) ¹⁾ ; 700, (850) ²⁾
Paper	X	X	X	X				130
Polyethylene terephthalate film				X				130
Glass fabric				X	X	X		130 155 180
Polyester nonwoven fabric, Polyester woven, and Polyethylene naphthalate film				X	X			130 155
Polyamide-imide film, Aramid film, and Polymide film						X	X	155 180

a: with asphalt base

b: with natural resin or denatured natural resin base

c: with ceramic base

d: with oil-denatured synthetic resin, alkyd orthophthalate resin or cross-linked polyester base.

e: with silicon-denatured synthetic resin, isophthalate alkyd resin, terephthalate alkyd resin or epoxy resin.

f: with silicon resin.

g: inorganic

Notes: 1) value applies to hard mica-made heating substrate.

2) value applies to soft mica-made heating substrate.

Remarks: value in parenthesis is applied when mechanical external force is absent.

Organic materials (Thermosetting Resins)

Material	Permissible temperature limit (°C)
laminated melamine resin mixed with glass fiber	75, (100) ¹⁾
moulded melamine resin mixed with: cellulose	120
inorganics	140
laminated phenol resin with: cotton fiber base	115, (85) ²⁾
paper base	120, (70) ³⁾
polyamide cloth base	75
inorganics	140
moulded phenol resin with: inorganics	150, (160) ¹⁾
others	140, (150) ¹⁾
moulded melamine phenol resin with the gravity of less than 1.55	130
moulded urea resin mixed with cellulose	90
unsaturated polyester-casting	120
laminated unsaturated polyester mixed with inorganics	140
moulded unsaturated polyester mixed with: other than organics	120
inorganic powder	140
glass fiber	155
epoxy resin-casting	120
laminated epoxy resin mixed with: inorganic	130, (140) ¹⁾
other than inorganics	110, (90) ³⁾
moulded epoxy resin mixed with inorganics	130
laminated diallyl phthalate resin mixed with inorganics	140
moulded diallyl phthalate resin mixed with: other than inorganics	130
inorganic powder	150
glass fiber	155
xylene resin-casting	140
polyamide-imide film	180
laminated silicone resin mixed with inorganics	180, (220) ¹⁾
moulded silicon resins mixed with inorganics	180, (240) ⁴⁾

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

polyimide film	210
laminated polyimide	190
polybutadiene-casting	120
moulded polybutadiene mixed with inorganics	130
laminated diphenyl oxide mixed with inorganics	180

Notes: 1) Values apply to thermal insulating materials.

2) Values apply to materials with a thickness less than 0.8 mm.

3) Values apply to materials with a thickness less than 0.8 mm when treated to retard flame.

4) Values apply to materials used for thermal insulation and to seal outlets of sheathed heating wires.

Organic materials (Thermoplastic Resins)

Material	Permissible temperature limit (°C)
methacrylic resin, cellulose resin, cellulose acetate butylate resin, ulcanise, polyethylene	50
foamed polyethylene compound for insulated conductors, polyvinyl chloride	60
polyethylene compound for insulated conductors, heat-resistant polyvinyl chloride, cross-linked polyvinyl chloride compound for insulated conductors	75
cross-linked polyethylene, chlorinated polyethylene compound for insulated conductors	90
acrylonitrile acrylic rubber styrene resin, acrylonitrile chlorinate polyethylene styrene resin	55
acrylonitrile styrene resin, acrylonitrile butadiene resin, acrylonitrile butadiene chlorinated polyethylene resin : general : reinforced with glass fiber	55 80
polypropylene : general : reinforced with glass fiber	105, (85) ³⁾ 110
denatured polyphenyle oxide : general : reinforced with glass fiber	75 100
Polystyrene	50, (70) ¹⁾
polyacetal : general : reinforced with glass fiber	100 120
polyamide : general : reinforced with glass fiber	90 120
polycarbonate : general : reinforced with glass fiber	110 120
polyethylene terephthalate : general : reinforced with glass fiber	120 130
polybutylene terephthalate : general : reinforced with glass fiber	120 135
heat resistant polyethylene terephthalate film	135
fluorinated polyvinylidene compound for insulated conductors, polychlorotrifluoroethylene (ethylene-trifluoride resin), ethylene-tetrafluorethylene copomylene for insulated conductors	150
tetrafluoroethylene hexafluoropropylene resin	200
polytetrafluoroethylene(ethylene-tetrafluoride), perflouroalkoxy compound for insulated conductors	250
aramide(aromatic polyamide paper)	220
Polysulfone	140, (150) ²⁾
polyethylene naphthalate	155
polyallylate : general : reinforced with glass fiber	120 130

Notes : 1) Values apply to capacitor dielectrics.

2) Values apply to thermal insulating material

3) Values apply to materials with a thickness of less than 0.8 mm

4) Inorganic materials

Inorganic materials

Material	Permission temperature limit (°C)
glass fiber (only alkaline free)	300
lead glass	380
borosilicate glass	490
quartz glass	800
ceramic	800. (1000) ¹⁾

Note: 1) Value apply to materials used as electric heating elements

Rubber compounds

Japanese Deviations for J60950-1 (H22):2009 (MITI Ordinance Clause 2)

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

Material	Permission temperature limit (°C)
natural rubber, polyurethane rubber, ebonite	60
nitrile rubber, styrene butadiene rubber, chloroprene rubber	75
butyl rubber	80
ethylene propylene (diene) rubber, chlorosulfonated polyethylene rubber	90
silicone rubber	180, (200) ¹⁾

Note : 1) Value apply to thermal insulating material and sealing compounds for sheathed heating elements.


Sleeves, Cloth, Tapes and like

Material	Impergnat or coating	Permission temperature limit (°C)
rayon, cellulose acetate, vinylon	adhesive, oil varnish	105
paper, cotton fabric, silk fabric, polyamide, polyester fabric, polyester nonwoven fabric	oil varnish	105
polyester fabric, polyester nonwoven fabric	alkyd resin varnish	120
glass fabric	(ditto)	130
paper	Iso or terephthalate alkyd resin varnish, epoxy resin varnish, alkyd resin varnish	105
polyester fabric, polyester nonwoven fabric	(ditto)	120
glass fabric, aramide paper	Iso or terephthalate, alkyd resin varnish, epoxy resin varnish, silicone resin varnish, silicone rubber	155 180
vulcanised fiber		105
heat resistant fiber		120

National Differences																																		
Clause	Requirement – Test	Result – Remark	Verdict																															
5.1.3	Add the following NOTE Note: Note that domestic three-phase power distribution systems have many delta connections, in which case tests should be performed using IEC 60990:1990 Figure 13 test circuitry.	Single phase	N/A																															
5.1.6	Replace Table 5A of this Sub-Clause by:	Replaced.	P																															
Table 5A	Table 5A – Maximum current																																	
	<table> <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> <tr> <td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth</td><td>0,25</td><td>-</td></tr> <tr> <td>HAND-HELD</td><td rowspan="5">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 not subject to the conditions of 5.1.7</td><td>3,5</td><td>-</td></tr> <tr> <td>- subject to the conditions of 5.1.7</td><td>-</td><td>5 % of input current</td></tr> <tr> <td>HAND-HELD</td><td rowspan="2">Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT</td><td>0,5</td><td>-</td></tr> <tr> <td>Others</td><td>1,0</td><td>-</td></tr> </table>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT	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 not subject to the conditions of 5.1.7	3,5	-	- subject to the conditions of 5.1.7	-	5 % of input current	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-	Others	1,0	-		
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT																															
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 not subject to the conditions of 5.1.7		3,5	-																															
- subject to the conditions of 5.1.7		-	5 % of input current																															
HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-																															
Others		1,0	-																															
	¹⁾ If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.																																	
6	Add the following after NOTE1 of this Sub-Clause. Refer to the accompanying document, JB, for details concerning appropriate additional measures,	Not subject connected to telecom	N/A																															
	Replace “IEC 60664-1” to “JIS C 0664 in note 4		N/A																															
7	Replace “IEC 60664-1” to “JIS C 0664:2003 of this NOTE 3	Not to be connected to cable distribution system	N/A																															

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
7.2	<p>Add the following</p> <p>However, when all of the following criteria are satisfied, the separation requirement and test in 6.2.1 a), b) and c) shall not be applied to the cable distribution system.</p> <ul style="list-style-type: none"> - the applicable circuit is a TNV-1 circuit. - the applicable circuit's common side or grounding side is connected to the coaxial cable shielding, and to all accessible parts and circuits (SELV circuits, accessible metal parts, and limited current circuits also applicable if they exist) - the external conductor of the coaxial cable is intended to be connected to the grounding wire used for building wiring. 		N/A
Annex G 2.1	Replace "IEC 60664-1" to "JIS C 0664:2003"	Not considered the alternative method	N/A
Annex G 6	Replace "IEC 60664-1" to "JIS C 0664:2003"		N/A
Annex N	<p>Add Note</p> <p>Note: ITU-T Recommendation K.17:1996 has been abolished and replaced with ITU-T Recommendation K.44:2003, K.45:2003.</p>		N/A
	<p>Note: The ITU-T Recommendation K.21:1996 test circuit was replaced with K.44:2003 in July 2003.</p>		N/A
Annex P	<p>Add the following terms.</p> <p><u>JIS C 5101-14:1998 Fixed capacitors for use in electronic equipment -- Part 14: Type-specific standards: Fixed capacitors for electromagnetic interference suppression in electrical power supply</u></p> <p>Fixed capacitors for use in electronic equipment— Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains</p>	Add, No such capacitor	N/A
	Replace "IEC 60065:1998" to "IEC 60065:2001"	Replaced, no A/V device	N/A
	Add the following terms. JIS C 6802:2005	Considered	P
	Add the following terms. JIS C 6803:2006 2004.	Considered	P
	Add the following terms. JIS C 8303:2007	Considered	P
	Add the following terms. JIS S 0101:2000	Considered	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	Add the following terms. ITU-T Recommendation K.44:2003 , Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation.	No TNV	N/A
	Add the following terms. ITU-T Recommendation K.45:2003 , Resistibility of telecommunication equipment installed in the access and trunk networks to overvoltages and overcurrents.	No TNV	N/A
Annex Q	Add the following terms. ITU-T Recommendation K.66:2004 , Protection of customer premises from overvoltages.	No TNV	N/A
Annex T	Replace “IEC 60529:1989” to “JIS C 0920:2003		N/A
Annex W.1	Add following. Equipment, Class 0I	Class I	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
Annex JA	<p>Add Annex JA (Document shredding machines)</p> <p>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.</p>	See below	N/A
JA.1	<p>Markings and instructions</p> <p>In the easily visible part near the document-slot, by a method capable to make out clearly and not easily disappeared, and by easily understandable wording, shall indicate the symbol of;</p> <p></p> <p>and, also the following precautions for use;</p> <p>that use by an infant/child may cause a hazard of injury etc.;</p> <p>that a hand can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>that clothes can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>that hairs can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.</p>	<p>Added.</p> <p>Product is DC Power Supply Unit, not Paper Shredder.</p>	N/A
JA.2	<p>INADVERTENT REACTIVATION</p> <p>Any safety interlock which can be operated by means of the test finger, Figure JA.1, is considered to cause reactivation of the hazard. Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1.</p>	No safety interlock used	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

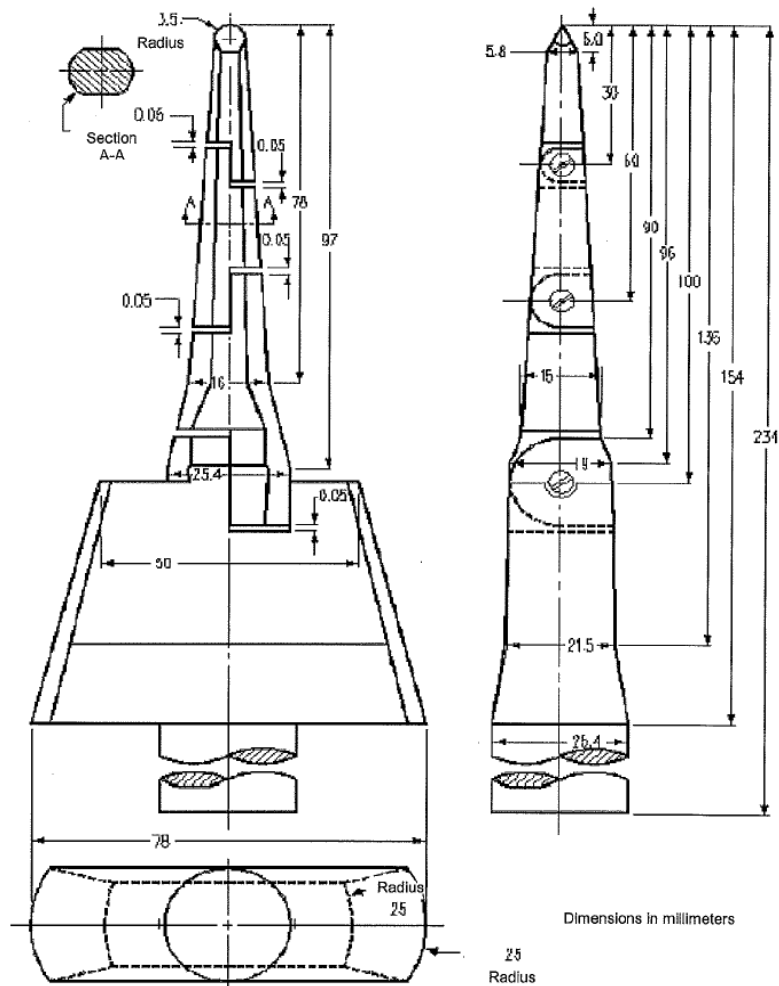
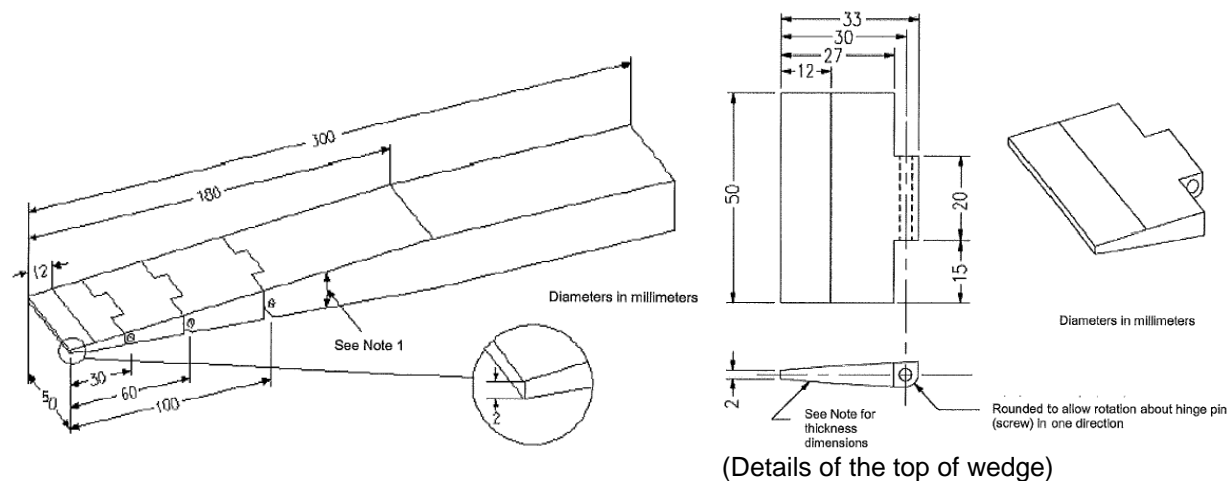


Figure JA.1 Test finger

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
JA.3	<p>ISOLATING SWITCH</p> <p>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.</p> <p>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.</p> <p>Compliance is checked by inspection.</p>		N/A
JA.4	<p>PROTECTION IN OPERATOR ACCESS AREAS</p> <p>Any warning shall not be used instead of the structure for preventing access to hazardous moving parts.</p> <p>Document shredding machines shall comply with the following requirements.</p> <p>Push the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying additional force. It shall not be possible to touch hazardous moving parts with the test finger. The document shredding machine is installed as intended, and all face of MECHANICAL ENCLOSURES are subjected to this test. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Push 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 shall not influence the test. Before testing with the test finger, 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 shedding, with the probe.</p>	<p>Added.</p> <p>Product is Power Supply Unit, not Paper Shredder.</p>	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict



Distance from the top	Thickness of probe
0	2
12	4
180	24

Note 1 - The probe shall be of changing the thickness linearly. However, the slope shall be changed at the respective points shown in the table.

Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.

Figure JA.2 Wedge-probe

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
Annex JB (reference)	Add Annex JB (Current state and means of handling overvoltage and overcurrent in the installation environment) The objective of this reference is not to propose new technical standards for the device. As a means of reducing the possibility that voltages in excess of 1.5kV peak may be applied to the device, these specifications provide for matters that must be adhered to concerning the device on the premise that it is installed in an environment within which appropriate measures have been taken in accordance with “ ITU-T Recommendation K.11:1993 ”. However, since environments that are not commensurate with this K.11 are often discovered domestically, this document attempts to describe the preferred environment and demonstrate the means for developing the preferred installation environment, thus contributing to its enhancement.	No such installation requirement	N/A
JB.1	JB.1 Preferred installation environment		N/A
JB.2	Current state and means of handling overvoltage and overcurrent in the installation environment		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
Appendix	J3000 (H21) Special National conditions, National deviation and other information according to MITI Ordinance No. 85.		—
1	General requirement When equipment provides with appliance inlet complying with JIS-C 8283-1(2008), soldered parts of appliance inlet is not applied by force during insert or removal of connector. This is not applied when inlet body is fixed itself and not fixed by solder.	Inlet is fixed by adequate mechanical construction (fixed by screws with PCB to enclosure), not rely on soldering. Soldered parts of appliance inlet is not applied by force during insert or removal of connector	P
2	Requirement for equipment		—
2.1	Electric heater When diode is used in parallel for adjustment of power, the equipment shall remain safe for operation under open condition of one diode.	Not electric stove.	N/A
	The current rating of one diode shall be more than main current. The diodes connected in parallel are same type.		N/A
	The heating test specified by clause 11 of JIS C 9335-2-30(2006) under open condition of one diode shall comply with the requirements.		N/A
2.2	Electric heater with glowing heating elements	Not electric stove.	N/A
	Surface treatment by paint or adhesive on protective frame or protective mesh shall not be used.		N/A
	Caution marking like below shall be on - easily visible place of the equipment or - Instruction manual 「注意 当該機器から、使用初期段階で揮発性有機化合物およびカルボニル化合物が最も放散するおそれがあるため、その際には十分換気を行うこと。」		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
3	Components used in equipment	No relevant equipment or component.	N/A
3.1	<p>Motor capacitors used in air conditioner, electric washing machine, refrigerator or electric freezer shall be comply with</p> <ul style="list-style-type: none"> - capacitors with protective elements or protective mechanism complying with JIS C 4908(2007) - P2 capacitor complying with IEC 60252-1(2001) <p>Capacitor complying with below is acceptable</p>		N/A
	Enclosed by metal or ceramic		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material within 50 mm from capacitor surface comply with needle frame test of JIS C 9335-1(2003), Annex E		N/A
	Non-metallic material within 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006).		N/A
3.2	<p>Plug directly inserted to outlet used refrigerator or electric freezer.</p> <p>Shall comply with</p> <ul style="list-style-type: none"> - Face contact with outlet shall have CTI with more than 400 according to JIS C 2134(2007) or - Supporting material of blades shall comply with glow wire test by temperature of 750°C according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). <p>Materials having glow wire frame temperature of 775 °C are acceptable.</p>		N/A

Type Designation: FSW-2450
Report Number: 17020979 001

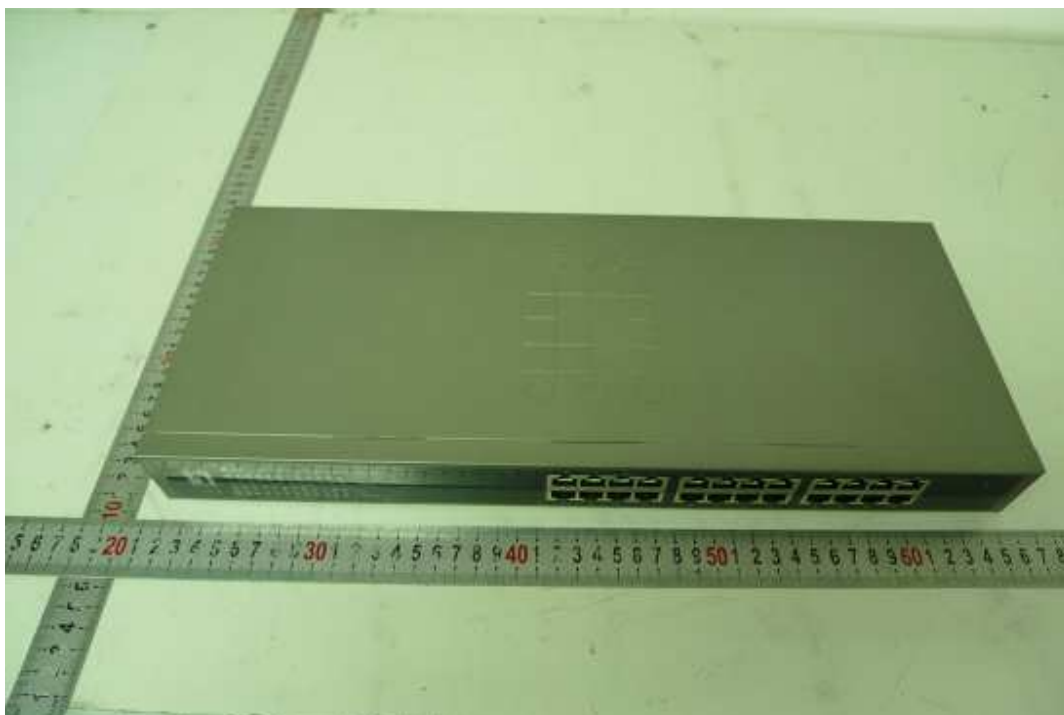


Figure 1. Top side view of unit



Figure 2. Side view of unit

Type Designation: FSW-2450
Report Number: 17020979 001



Figure 3. Bottom side view of unit

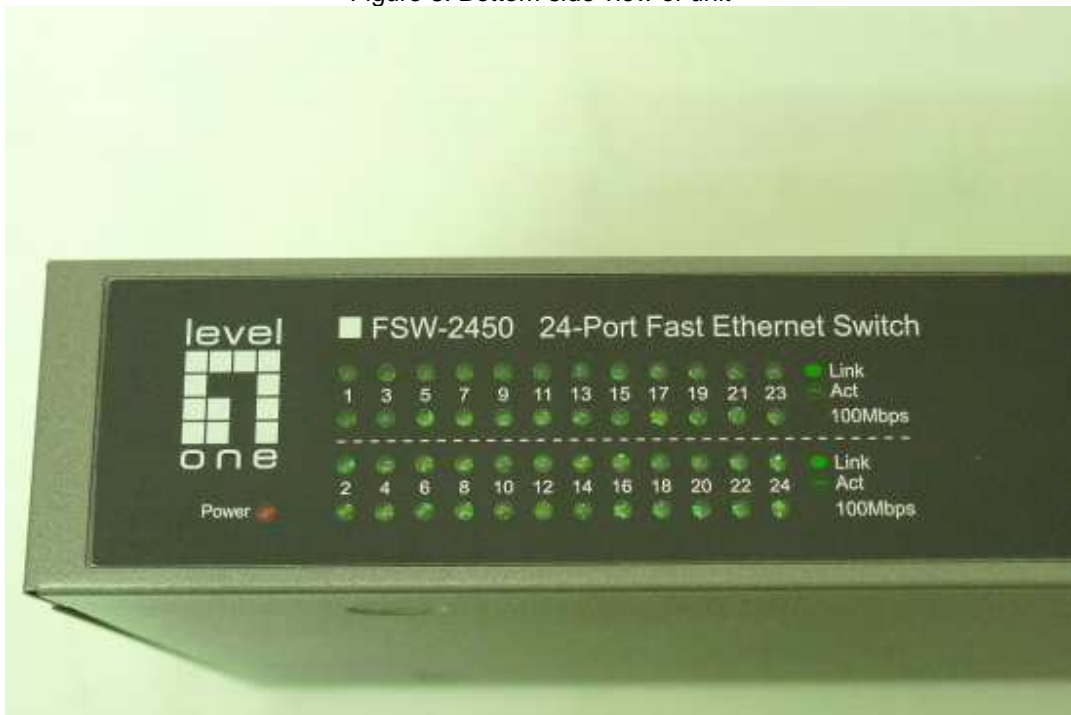


Figure 4. Front panel for indication LED

Type Designation: FSW-2450
Report Number: 17020979 001



Figure 5. Inside view



Figure 6. Protective bonding terminal

Type Designation: FSW-2450
Report Number: 17020979 001

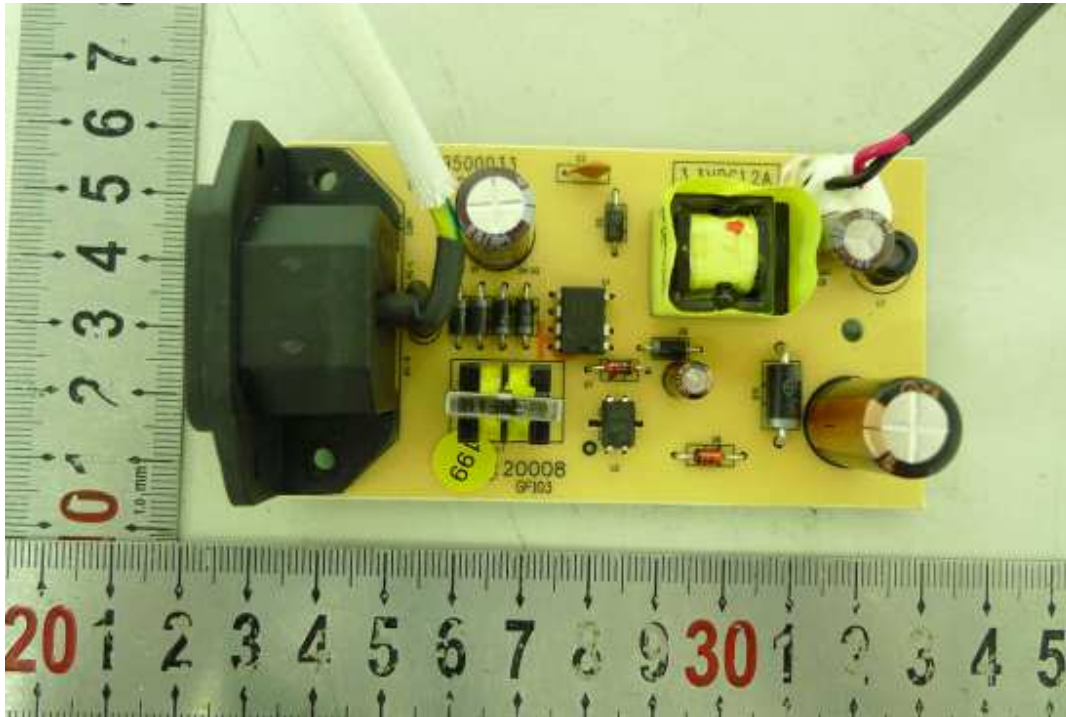


Figure 7. SPS PCB component side view

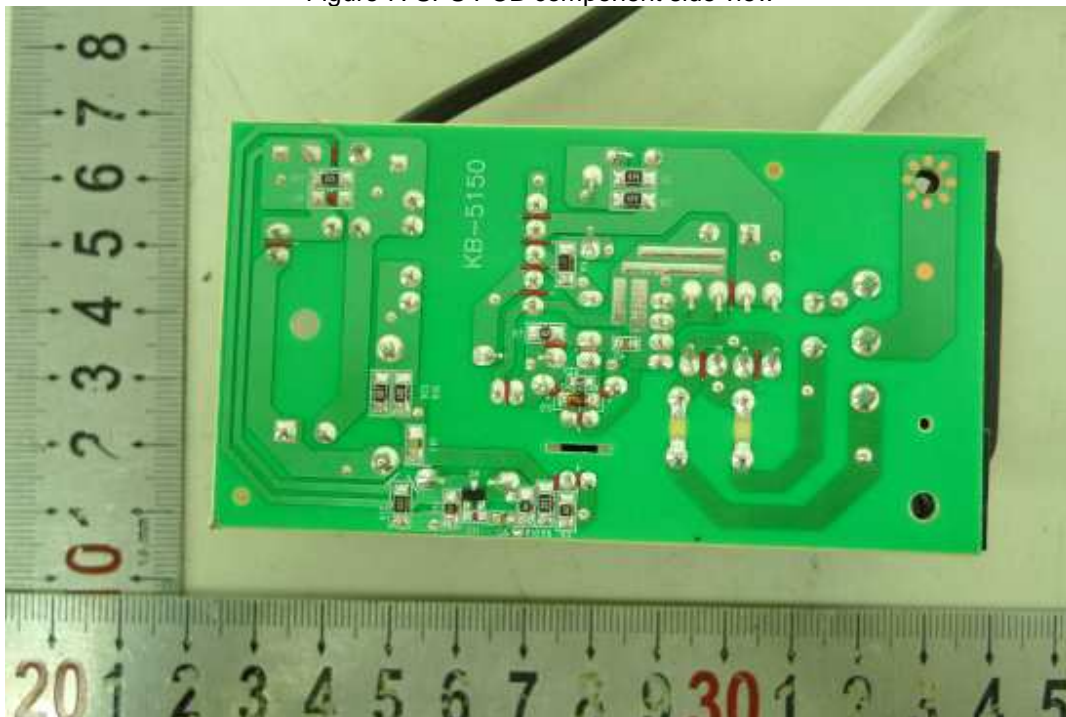


Figure 8. SPS PCB trace side view

Type Designation: FSW-2450
Report Number: 17020979 001



Figure 9. Main board PCB components side view

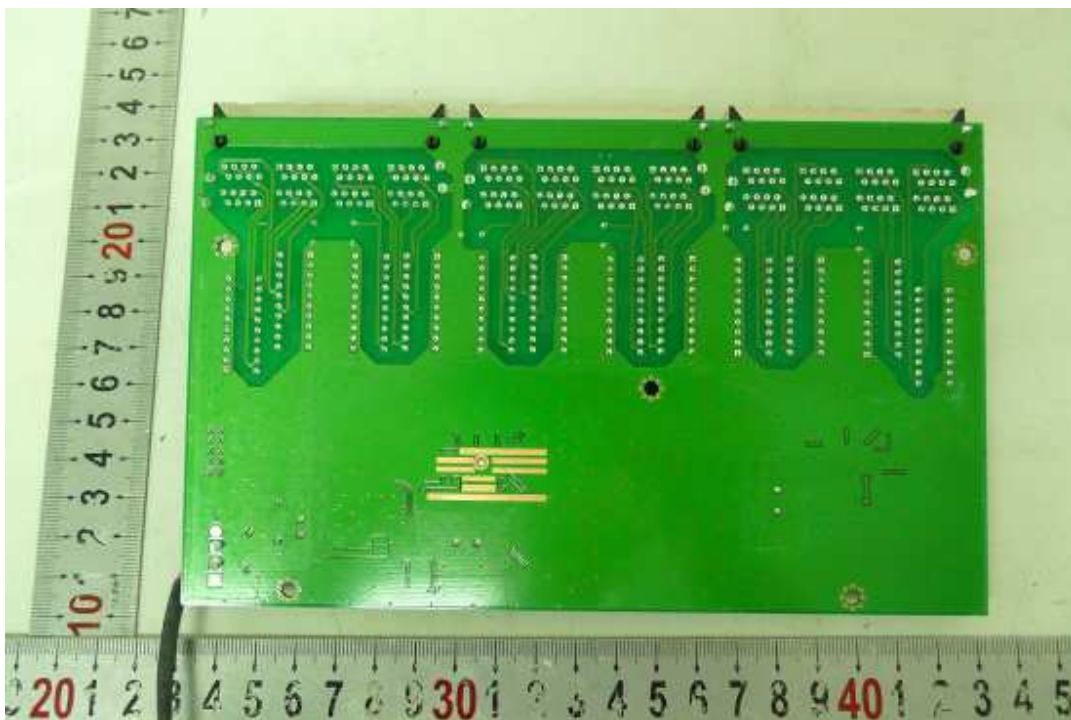


Figure 10. Main board PCB trace side view

Type Designation: FSW-2450
Report Number: 17020979 001

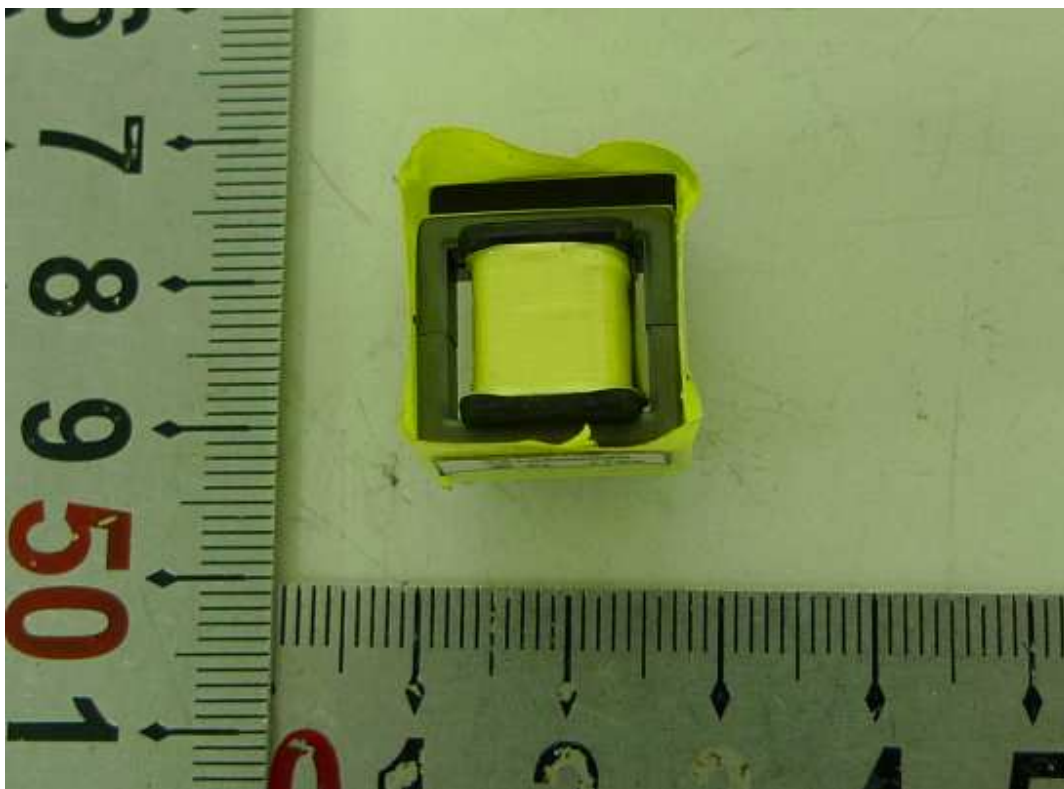


Figure 11. top view of T1

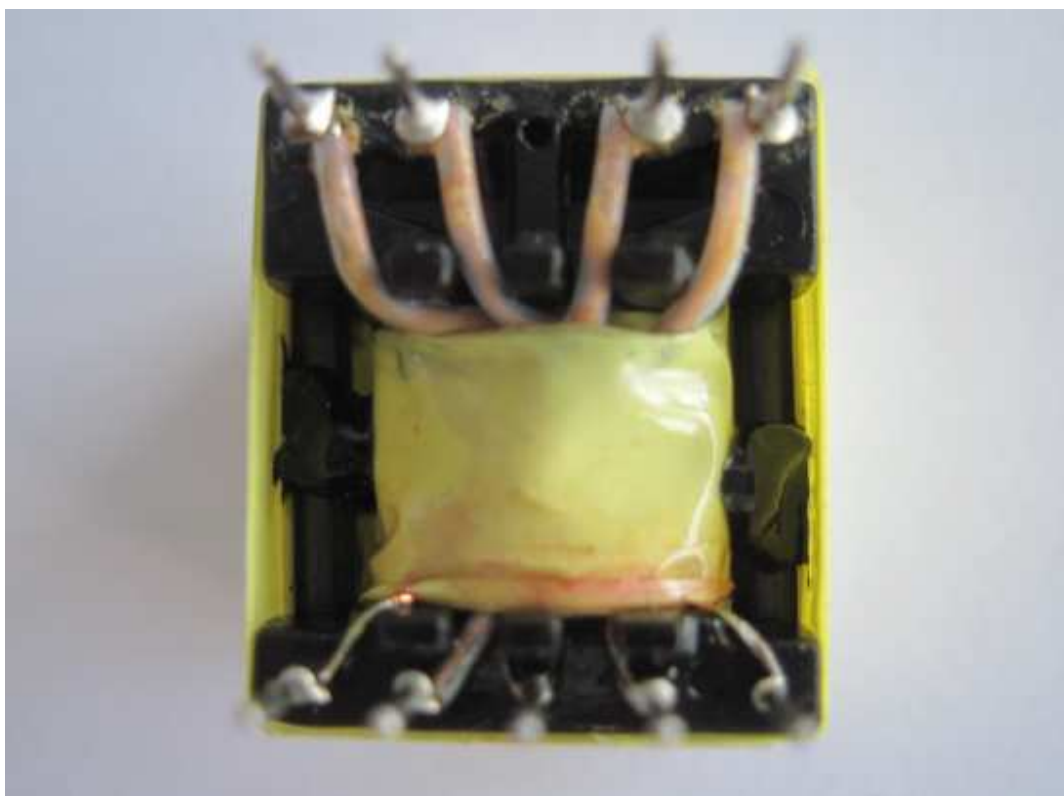


Figure 12. bottom view of T1

Type Designation: FSW-2450
Report Number: 17020979 001

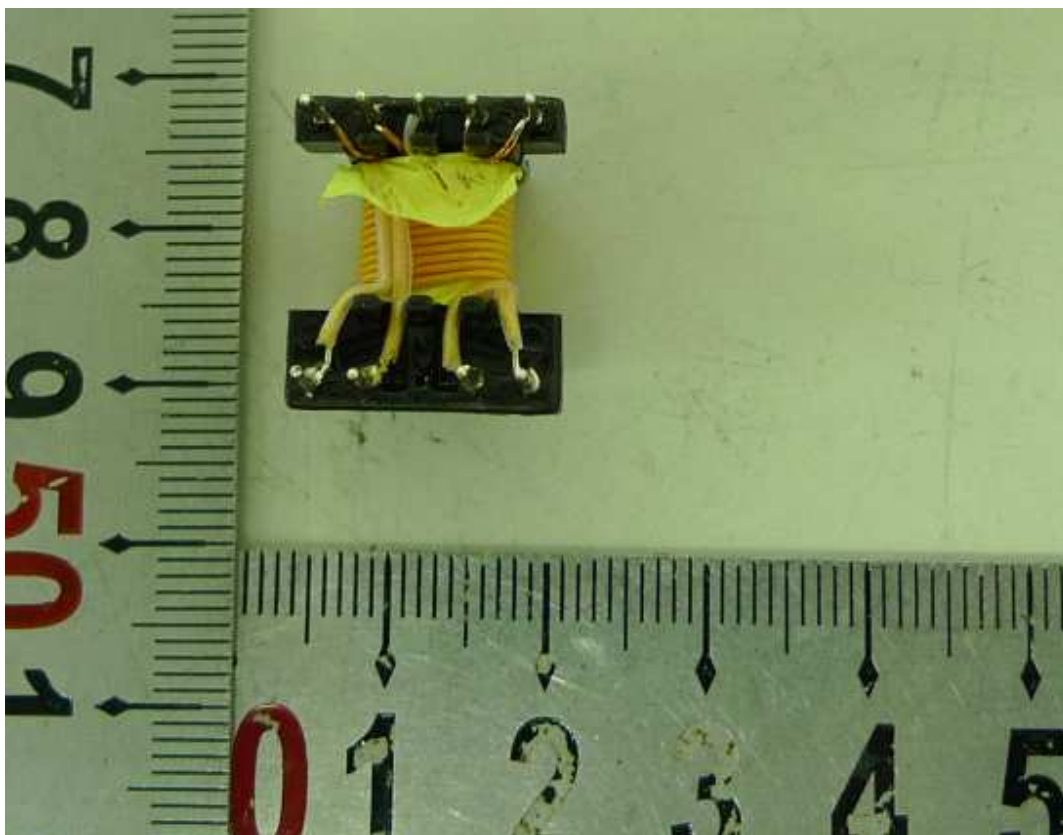


Figure 13. Secondary TIW separated to primary winding by "U" shape insulation tape