



Test Report issued under  
the responsibility of:



**TEST REPORT**  
**IEC 60950-1**  
**Information technology equipment - Safety -**  
**Part 1: General requirements**

**Report Reference No** .....: E141114-A4-CB-2  
**Date of issue** .....: 2012-08-27  
**Total number of pages** .....: 50

**CB Testing Laboratory** .....: UL San Jose  
**Address** .....: 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA

**Applicant's name** .....: MAXIM INTEGRATED PRODUCTS  
SUITE 200  
**Address** .....: 8516 ANDERSON MILL RD  
AUSTIN TX 78729  
UNITED STATES

**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 originator** .....: SGS Fimko Ltd  
**Master TRF** .....: 2010-04



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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

<b>Test item description</b> .....	STM1e Copper SFP Transceiver
Trade Mark .....	TSC
Manufacturer .....	MAXIM INTEGRATED PRODUCTS SUITE 200 8516 ANDERSON MILL RD AUSTIN TX 78729 UNITED STATES
Model/Type reference .....	STM1E-SFP26
Ratings .....	Ratings - N/A

<b>Testing procedure and testing location:</b>	
<input checked="" type="checkbox"/>	<p><b>CB Testing Laboratory</b>                  Testing location / address..... : UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA</p> <p><input type="checkbox"/> <b>Associated CB Test Laboratory</b>                  Testing location / address..... :                  Tested by (name + signature) ..... : Edgard Rincand </p> <p>Approved by (name + signature) ... : Gregory Ray </p>
<input type="checkbox"/>	<p><b>Testing Procedure: TMP</b>                  Tested by (name + signature) ..... : _____                  Approved by (+ signature) ..... : _____                  Testing location / address..... : _____</p>
<input type="checkbox"/>	<p><b>Testing Procedure: WMT</b>                  Tested by (name + signature) ..... : _____                  Witnessed by (+ signature)..... : _____                  Approved by (+ signature) ..... : _____                  Testing location / address..... : _____</p>
<input type="checkbox"/>	<p><b>Testing Procedure: SMT</b>                  Tested by (name + signature) ..... : _____                  Approved by (+ signature) ..... : _____                  Supervised by (+ signature) ..... : _____                  Testing location / address..... : _____</p>
<input type="checkbox"/>	<p><b>Testing Procedure: RMT</b>                  Tested by (name + signature) ..... : _____                  Approved by (+ signature) ..... : _____                  Supervised by (+ signature) ..... : _____                  Testing location / address..... : _____</p>

<b>List of Attachments</b>	
National Differences (41 pages)	
Enclosures (6 pages)	
<b>Summary Of Testing</b>	
Unless otherwise indicated, all tests were conducted at UL San Jose 455 E. Trimble Rd., San Jose, CA, 95131-1230, USA.	
<b>Tests performed (name of test and test clause)</b>	<b>Testing location / Comments</b>
Input: Single-Phase (1.6.2)	Test conducted during previous investigations under CBTR E143101-

Durability of Marking (1.7.11)

A10-CB-1.

Test conducted during previous investigations under CBTR E143101-A10-CB-1.

Heating (4.5.1, 1.4.12, 1.4.13)

Test conducted during previous investigations under CBTR E143101-A10-CB-1.

Component Failure (5.3.1, 5.3.4, 5.3.7)

Test conducted during previous investigations under CBTR E143101-A10-CB-1.

**Summary of Compliance with National Differences:**

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, UK, US

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011

### Copy of Marking Plate

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



<b>Test item particulars :</b>	
Equipment mobility .....	for building-in
Connection to the mains .....	No direct connection
Operating condition .....	continuous
Access location .....	operator accessible
Over voltage category (OVC) .....	OVC II
Mains supply tolerance (%) or absolute mains supply values .....	No direct connection
Tested for IT power systems .....	N/A
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	Class III (supplied by LPS)
Considered current rating of protective device as part of the building installation (A) .....	--
Pollution degree (PD) .....	PD 2
IP protection class .....	IP X0
Altitude of operation (m) .....	maximum 2000
Altitude of test laboratory (m) .....	maximum 2000
Mass of equipment (kg) .....	0.02
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing:</b>	
Date(s) of receipt of test item .....	2008-10-01
Date(s) of Performance of tests .....	2008-10-20
<b>General remarks:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the testing laboratory.  "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.  Throughout this report a point is used as the decimal separator.	
<b>Manufacturer's Declaration per Sub Clause 6.25 of IEC60950:</b>	
The application for obtaining a CB Test Certificate includes more than one factory and a declaration form the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	Not Applicable
When differences exist, they shall be identified in the General Product Information section.	
<b>Name and address of Factory(ies):</b>	WING MING CO LTD

DUTOU INDUSTRIAL ZONE  
DUTOU  
HUNG CHENG  
ZHONGSHAN  
GUANGDONG 526400 CHINA

## GENERAL PRODUCT INFORMATION:

### Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

### Product Description

The equipment described by this report is Small Form-factor Pluggable (SFP) copper transceiver model. The SFP module is STM1e with Multi Source Agreement for SFPs, 155 Mbit/s electrical synchronous digital hierarchy (SDH) interface.

The products are to be powered by an LPS source which is not covered by this report.

### Model Differences

N/A

### Additional Information

This CB Report is a reissue of CBTR Ref. E141114-A4-CB-1, CB Test Certificate No. US/15875/UL due to upgrading the Test Report from IEC/UL 60950-1 2nd Edition to IEC/UL 60950-1 2nd Edition, Amendment 1. Summary of Testing indicates that all required tests were conducted during the previous investigations under CBTR Ref. E143101-A10-CB-1, CB Test Certificate No. CA/1381/ULC.

Samples were not considered necessary under this investigation since no declared modifications to the product since the last testing; and construction analysis to verify compliance with the new standard was completed based on the review of the product technical documentation including the existing CBTR, previous and new photos, schematics, wiring diagrams and similar, and in all cases, the verification of critical components was completed based on documentation.

The EUT will be connected to a 3.3Vd.c. power supply and the tolerance is 3.15Vd.c. to 3.45Vd.c. Otherwise specified in the report, all the tests are performed at 3.45Vd.c. which is considered as most severe condition.

### Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 55°C
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following are available from the Applicant upon request: Installation (Safety) Instructions /

Manual

**Engineering Conditions of Acceptability**

When installed in an end-product, consideration must be given to the following:

- The following secondary output circuits are SELV: All
- The following secondary output circuits are at non-hazardous energy levels: All
- The following secondary output circuits are supplied by a Limited Power Source: All
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Fire, Mechanical
- The product is to be powered by an LPS source. --
- The SFP Modules have not been evaluated for connection to outside plant (TNV or CDS). --

Abbreviations used in the report:

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

Indicate used abbreviations (if any)



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	<b>GENERAL</b>		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950-1 or relevant component standard		Pass
1.5.2	Evaluation and testing of components		Pass
1.5.3	Thermal controls	The unit is not provided with any safety related thermal controls.	N/A
1.5.4	Transformers	The unit is not provided with any safety related transformers.	N/A
1.5.5	Interconnecting cables	No interconnecting cables provided as part of the equipment.	N/A
1.5.6	Capacitors bridging insulation	No primary circuits.	N/A
1.5.7	Resistors bridging insulation	The unit only employs functional 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	Result - Remark	Verdict

1.6	<b>Power interface</b>		Pass
1.6.1	AC power distribution systems	Not for direct connection to any AC power distribution.	N/A
1.6.2	Input current	Input current rating is not required. See 1.7 for more details.	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7	<b>Marking and instructions</b>		Pass
1.7.1	Power rating and identification markings	Only the model designation and trademark name are required.	Pass
1.7.1.1	Power rating mark		Pass
	Multiple mains supply connections .....		N/A
	Rated voltage(s) or voltage range(s) (V) .....		N/A
	Symbol for nature of supply, for d.c. only .....		N/A
	Rated frequency or rated frequency range (Hz) .....		N/A
	Rated current (mA or A) .....		N/A
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trademark or identification mark .....	TSC	Pass
	Model identification or type reference .....	STM1E-SFP26	Pass
	Symbol for Class II equipment only .....	Not class II	N/A
	Other markings and symbols .....		N/A
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	Pass
1.7.2.1	General		Pass
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT Power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment .....	Equipment is designed for single voltage operation.	N/A
	Method and means of adjustment; reference to installation instructions .....		N/A
1.7.5	Power outlets on the equipment .....	No standard power outlets are provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	No fuses.	N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals .....		N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Not for direct connection to the	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		AC Mains supply.	
1.7.7.3	Terminals for d.c. mains supply conductors	Not for direct connection to the DC main supply.	N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking .....		N/A
1.7.8.2	Colours .....		N/A
1.7.8.3	Symbols according to IEC 60417 .....		N/A
1.7.8.4	Markings using figures.....		N/A
1.7.9	Isolation of multiple power sources .....	One connection to power source.	N/A
1.7.10	Thermostats and other regulating devices .....		N/A
1.7.11	Durability	The marking(s) withstood the required test. (For UL/CUL only) All markings provided on UL Recognized Component labels suitable for surface they are applied.	Pass
1.7.12	Removable parts	No marking is located on (a) removable part(s).	Pass
1.7.13	Replaceable batteries.....	The unit does not employ any batteries	N/A
	Language(s) .....		-
1.7.14	Equipment for restricted access locations.....	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION only.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	<b>PROTECTION FROM HAZARDS</b>		Pass
2.1	Protection from electric shock and energy hazards		N/A
2.1.1	Protection in operator access areas		N/A
2.1.1.1	Access to energized parts		N/A
	Test by inspection..... :	See 2.1.1 for more details.	N/A
	Test with test finger (Figure 2A) ..... :	See 2.1.1 for more details.	N/A
	Test with test pin (Figure 2B)..... :	See 2.1.1 for more details.	N/A
	Test with test probe (Figure 2C) ..... :		N/A
2.1.1.2	Battery compartments	The unit does not employ any batteries.	N/A
2.1.1.3	Access to ELV wiring	No internal wiring.	N/A
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm) ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring	Unit is powered from a SELV source. This source is not converted (Step-up or Step-down) to hazardous voltages.	N/A
2.1.1.5	Energy hazards ..... :	The unit is powered from a non-energy hazard source	N/A
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles, levers, or the like.	N/A
2.1.1.7	Discharge of capacitors in equipment	Not for direct connection for AC or DC mains supply.	N/A
	Measured voltage (V); time-constant (s) ..... :		-
2.1.1.8	Energy hazards - d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the mains supply :		N/A
2.1.1.9	Audio amplifiers ..... :		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

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

2.2	<b>SELV circuits</b>		Pass
2.2.1	General requirements	Unit is powered from a SELV source.	Pass
2.2.2	Voltages under normal conditions (V) .....	3.3Vd.c.	Pass
2.2.3	Voltages under fault conditions (V) .....	3.3Vd.c.	Pass
2.2.4	Connection of SELV circuits to other circuits .....	SELV to SELV.	Pass

2.3	<b>TNV circuits</b>		N/A
2.3.1	Limits	The unit does not employ any TNV circuits.	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	<b>Limited current circuits</b>		N/A
2.4.1	General requirements	The unit does not employ any limited current circuits.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz) .....		-
	Measured current (mA).....		-
	Measured voltage (V) .....		-
	Measured circuit capacitance (nF or uF) .....		-
2.4.3	Connection of limited current circuits to other circuits		N/A

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

2.5	<b>Limited power sources</b>		N/A
	a) Inherently limited output	Unit is powered by LPS.	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 ..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	<b>Provisions for earthing and bonding</b>		N/A
2.6.1	Protective earthing	Protective earthing and bonding is not provided for safety.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		-
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG.....		-
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (ohm), voltage drop (V), test current (A), duration (min) .....		N/A
2.6.3.5	Colour of insulation .....		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm) .....		-
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable		N/A



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

	distribution system		
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2.7	<b>Overcurrent and earth fault protection in primary circuits</b>		N/A
2.7.1	Basic requirements	No primary circuits.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3.7	Class III equipment. Not connected to AC mains.	N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

2.8	<b>Safety interlocks</b>		N/A
2.8.1	General principles	The unit does not employ any safety interlocks.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9	<b>Electrical insulation</b>		Pass
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation.	Pass
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C)..... :		-
2.9.3	Grade of insulation	Functional insulation only.	Pass
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used..... :		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10	<b>Clearances, creepage distances and distances through insulation</b>		N/A
2.10.1	General	Creepages and Clearances for Functional Insulation complies based on subclause 5.3.4 c, use of min. V-1 rated PWB.	N/A
2.10.1.1	Frequency..... :		N/A
2.10.1.2	Pollution degrees..... :		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply .....		N/A
	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		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply..... :		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests .....		-
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material - General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....		-
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		N/A
	Electric strength test .....		-
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....		N/A
	a) Basic insulation not under stress .....		N/A
	b) Basic, supplementary, reinforced insulation.....		N/A
	c) Compliance with Annex U .....		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test .....		-
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....		N/A
	- Basic insulation not under stress .....		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Supplementary, reinforced insulation..... :		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)..... :		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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

3	<b>WIRING, CONNECTIONS AND SUPPLY</b>		Pass
3.1	General		N/A
3.1.1	Current rating and overcurrent protection		N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

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

3.2	<b>Connection to mains supply</b>		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type .....		-
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....		-
	Longitudinal displacement (mm) .....		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter of minor dimension D (mm); test mass (g) .....		-
	Radius of curvature of cord (mm) .....		-
3.2.9	Supply wiring space		N/A

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

3.3	<b>Wiring terminals for connection of external conductors</b>		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) .....		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) .....		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	<b>Disconnection from the mains supply</b>		N/A
3.4.1	General requirement	Built-in Class III equipment. Not connected to AC mains.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment	Not three phase equipment.	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources	The equipment only receives power from one source.	N/A



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

3.5	<b>Interconnection of equipment</b>		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A

4	<b>PHYSICAL REQUIREMENTS</b>		Pass
4.1	Stability		N/A
	Angle of 10°	The equipment is not floor-standing or does not weigh over 25 kg. Test was waived.	N/A
	Test force (N)..... :		N/A

4.2	<b>Mechanical strength</b>		N/A
4.2.1	General		N/A
	Rack-mounted equipment		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		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	The equipment does not have any CRTs.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	The equipment does not have any high pressure lamps.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Equipment for building in.	N/A
4.2.11	Rotating solid media		N/A
	Test to cover on the door..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3	<b>Design and construction</b>		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard. Based on inspection.	Pass
4.3.2	Handles and manual controls; force (N) ..... :		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection by plugs and sockets	The equipment does not have any interchangeable plugs/sockets.	N/A
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque ..... :		N/A
	Compliance with the relevant mains plug standard:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	The equipment does not have any batteries.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	The insulation of the internal wiring is not exposed to oil, grease, etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not produce dust or employ powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquids.	N/A
4.3.12	Flammable liquids..... :	The equipment does not use any flammable liquids.	N/A
	Quantity of liquid (l)..... :		N/A
	Flash point (°C)..... :		N/A
4.3.13	Radiation	The equipment does not generate ionizing radiation or contain flammable liquids or gases.	N/A
4.3.13.1	General		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class ..... :		-
4.3.13.5.2	Light emitting diodes (LEDs)		N/A
4.3.13.6	Other types ..... :		N/A

4.4	<b>Protection against hazardous moving parts</b>		N/A
4.4.1	General	No hazardous moving parts.	N/A
4.4.2	Protection in operator access areas..... :		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)..... :		N/A
	Is considered to cause pain, not injury. b)..... :		N/A
	Considered to cause injury. c)..... :		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ..... :		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ..... :		N/A

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

4.5	<b>Thermal requirements</b>		Pass
4.5.1	General		Pass
4.5.2	Temperature tests	See table 4.5.1.	Pass
	Normal load condition per Annex L ..... :	According to user manual.	-
4.5.3	Temperature limits for materials		Pass
4.5.4	Touch temperature limits		Pass
4.5.5	Resistance to abnormal heat..... :		N/A

4.6	<b>Openings in enclosures</b>		N/A
4.6.1	Top and side openings	Built-in class III equipment. This shall be evaluated in end system.	N/A
	Dimensions (mm) ..... :		-
4.6.2	Bottoms of fire enclosures		N/A
	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) ..... :		-
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) ..... :		-

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

4.7	<b>Resistance to fire</b>		Pass
4.7.1	Reducing the risk of ignition and spread of flame		Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		N/A
4.7.2.1	Parts requiring a fire enclosure	A suitable fire enclosure is to be provided in the end product	N/A
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		Pass
4.7.3.1	General		Pass
4.7.3.2	Materials for fire enclosures	A suitable fire enclosure is to be provided in the end product. Compliance with the fire enclosure requirements to be determined in the end product evaluation.	N/A
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	PWBs are rated min. V-1.	Pass
4.7.3.5	Materials for air filter assemblies	The equipment does not have any air filters.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		Pass
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Class III DC powered unit.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
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		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	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		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....		-
	Measured touch current (mA).....		-
	Max. allowed touch current (mA).....		-
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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

5.2	<b>Electric strength</b>		N/A
5.2.1	General	Only functional insulation. See 5.3.4 for more details.	N/A
5.2.2	Test procedure		N/A

5.3	<b>Abnormal operating and fault conditions</b>		Pass
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers	Transformer is a signal transformer and does not require isolation.	N/A
5.3.4	Functional insulation..... :	Functional insulation complies with the requirements (c). See table 5.3.6.	Pass
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE..... :		N/A
5.3.7	Simulation of faults	See table 5.3. No hazards.	Pass
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		Pass
5.3.9.1	During the tests		Pass
5.3.9.2	After the tests		N/A

6	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		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	The unit does not employ any TNV circuits.	N/A
	Supply voltage (V)..... :		-
	Current in the test circuit (mA)..... :		-
6.1.2.2	Exclusions..... :		N/A

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

6.2	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		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	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
	Max. output current (A) .....		-
	Current limiting method .....		-

7	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		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	The unit does not employ any circuits directly connected to 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	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		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..... :		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		-
	Sample 2 burning time (s)..... :		-
	Sample 3 burning time (s)..... :		-
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material..... :		-
	Wall thickness (mm)..... :		-
A.2.2	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	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		N/A
B.1	General requirements	The unit does not employ any motors.	N/A
	Position .....		-
	Manufacturer .....		-
	Type.....		-
	Rated values.....		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days).....		-
	Electric strength test: test voltage (V).....		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V).....		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V).....		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		-

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

C	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N/A
	Position .....	Only signal transformers.	-
	Manufacturer .....		-
	Type .....		-
	Rated values .....		-
	Method of protection .....		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings .....		N/A

D	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N/A
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F	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

G	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		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 supply ..... :		N/A
G.2.3	Unearthed d.c. mains supply ..... :		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
	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	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
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J	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N/A
	Metal(s) used..... :		-

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

K	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N/A
K.1	Making and breaking capacity	The unit does not employ any safety related thermal controls.	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	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		Pass
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	Loaded with 75 ohm resistor according to the manual.	Pass

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

M	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		N/A
M.1	Introduction	The unit does not employ any TNV circuits.	N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringng 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	<b>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)</b>		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	<b>ANNEX P, NORMATIVE REFERENCES</b>		Pass
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Q	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N/A
	a) Preferred climatic categories .....		N/A
	b) Maximum continuous voltage .....		N/A
	c) Pulse current .....		N/A

R	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

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

S	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
	..... :		-

U	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N/A
	..... :		-

V	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A

W	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		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	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

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

Y	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		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	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		N/A
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AA	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N/A
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BB	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		Pass
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CC	<b>ANNEX CC, EVALUATION OF INTEGRATED CIRCUIT (IC) CURRENT LIMITERS</b>		N/A
CC.1	General		N/A
CC.2	Test program 1..... :		N/A
CC.3	Test program 2..... :		N/A

DD	<b>ANNEX DD, REQUIREMENTS FOR THE MOUNTING MEANS OF RACK-MOUNTED EQUIPMENT</b>		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N..... :		N/A
DD.3	Mechanical strength test, 250 N, including end stops..... :		N/A
DD.4	Compliance..... :		N/A



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

EE	<b>ANNEX EE, HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS</b>		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols ..... :		N/A
	Information of user instructions, maintenance and/or servicing instructions ..... :		N/A
EE.3	Inadvertent reactivation test ..... :		N/A
EE.4	Disconnection of power to hazardous moving parts		N/A
	Use of markings or symbols ..... :		N/A
EE.5	Protection against hazardous moving parts ..... :		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2) ..... :		N/A

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

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (Edition or year)	mark(s) of conformity <sup>1)</sup>	
Printed Circuit Board	Various	Various	Rated V-1 min, 105°C	UL796	UL, ---	
Label	Flexcon	THERMLfilm 21940	Suitable for surface applied.	UL969, Subjected to Durability of Marking Test	UL, ---	
Top and Bottom Housing	Various	Various	Zamak 3 or equivalent Zinc and ZA Die Casting Alloy	---	---, ---	
Supplementary information: <sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.						

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

1.5.1	TABLE: Opto Electronic Devices			N/A
Manufacturer.....:				
Type.....:				
Separately tested.....:				
Bridging insulation.....:				
External creepage distance.....:				
Internal creepage distance.....:				
Distance through insulation.....:				
Tested under following conditions.....:				
Input.....:				
Output.....:				
supplementary information:				
Additional devices may be described in Enclosure - Miscellaneous				

1.6.2	TABLE: electrical data (in normal conditions)						Pass
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	condition/status	
3.15	0.1725	-	0.543	N/A	N/A	Normal load.	
3.45	0.1746	-	0.602	N/A	N/A	Normal load	
supplementary information:							

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

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

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

2.2	<b>TABLE: Evaluation of voltage limiting components in SELV circuits</b>		N/A
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V Peak	V d.c.	
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
supplementary information:			

2.5	<b>TABLE: limited power sources</b>			N/A
Circuit output tested:				
Measured Uoc (V) with all load circuits disconnected:				
	Isc (A)		VA	
	Meas.	Limit	Meas.	Limit
Normal condition				
Single fault: ____				
supplementary information:				
Sc=short circuit, Oc-Open circuit				

2.10.2	<b>TABLE: working voltage measurement</b>			N/A
Location	RMS Voltage (V)	Peak voltage (V)	Comments	

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

supplementary information:

2.10.3 and 2.10.4	<b>TABLE: clearance and creepage distance measurements</b>						N/A
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)	
Functional:							
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)	
Basic/supplementary:							
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)	
Reinforced:							
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)	
supplementary information:							
N/A							

2.10.5	<b>TABLE: distance through insulation measurements</b>					N/A
Distance through insulation (DTI) at/of:	U peak (V)	Urms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
supplementary information:						

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

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

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

4.3.8	TABLE: Batteries					N/A
Battery Category (Lithium, NiMh, NiCad, Lithium ion, etc.).....:						
Manufacturer.....:						
Type/Model.....:						
Voltage.....:						
Capacity (mAh).....:						
Tested and Certified by (incl. Ref. No.).....:						
Circuit protection diagram (Refer indicated supplement of Enclosure-Miscellaneous).....:						
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)						
Location of replaceable battery.....:						
Language(s).....:						
Close to the battery.....:						
In the servicing instructions.....:						
In the operating instructions.....:						
In the operating instructions						
supplementary information:						
Additional devices may be described in Enclosure - Miscellaneous						

4.5	TABLE: Thermal requirements					Pass
Supply voltage (V)..... :	3.45Vd .c.	3.45Vd .c.	--	--	--	—
Ambient Tmin (°C) .....	24	55*	--	--	--	—
Ambient Tmax (°C) .....	24	55*	--	--	--	—
Maximum measured temperature T of part/at:	T (°C)					allowed Tmax (°C)
Metal enclosure	28	59	--	--	--	70

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

Output connector	26	57	--	--	--	70	
PCB	31	62	--	--	--	105	
temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	allowed T <sub>max</sub> (°C)	insulation class
N/A							
supplementary information:							
* Test results are normalized to ambient temperature of 55°C. Test at max. input voltage tolerance of 3.45V Note: Testing conducted under previous CB Scheme investigation (Test Report Ref. E143101-A10-CB-1).							

4.5.5	<b>TABLE: Ball pressure test of thermoplastic parts</b>					N/A
	allowed impression diameter (mm) .....	:	less than or equal to 2.0			—
part			test temperature (°C)	impression diameter (mm)		
supplementary information:						

4.7	<b>TABLE: resistance to fire</b>					Pass
part	manufacturer of material	type of material	thickness (mm)	flammability class	Evidence	
Housing	---	zinc cast alloy	0.8	---		
Printed Wiring Board	---	FR4	at thickness used	V-1 min		
supplementary information:						
---						

5.1	<b>TABLE: touch current measurement</b>					N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/Conditions			
supplementary information:						



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

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests			N/A
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Functional:				
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary:				
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Reinforced:				
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
supplementary information:				

5.3	TABLE: fault condition tests					Pass
	ambient temperature ( ° C) .....				24	—
	Power source for EUT: Manufacturer, model/type, output rating .....				N/A	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
output connector	short	3.45	4h	-	-	Unit operated till temperature stabilized. Measured max. temperature on PCB 31°C. No hazards.
supplementary information:						

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

C.2	TABLE: transformers						N/A
Loc.	Tested insulation	Working voltage peak /V (2.10.2)	Working voltage rms /V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Loc.	Tested insulation			Test voltage / V	Measured clearance / mm	Measured creepage dist./mm	Measured distance thr. insul / mm; number of layers
Transformer type number				Enclosure - Miscellaneous ID			
supplementary information:							

## **Enclosure**

### **National Differences**

**Austria\*\*  
Belarus\*  
Belgium\*\*  
Bulgaria\*\*  
China\*  
Czech Republic\*\*  
Denmark  
Finland  
France\*\*  
Germany  
Greece\*\*  
Group  
Hungary\*\*  
Ireland  
Israel  
Italy\*\*  
Japan\*  
Korea  
Netherlands\*\*  
Norway  
Poland\*\*  
Portugal\*\*  
Romania\*\*  
Singapore\*  
Slovakia\*\*  
Slovenia\*\*  
Spain  
Sweden  
Switzerland  
USA / Canada  
Ukraine\*  
United Kingdom**

\* No National Differences Declared

\*\* Only Group Differences

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Denmark - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.2.4.1	In Denmark, certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.	Built-in class III equipment.	N/A
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment, the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5	For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (Heavy Current Regulations, Section 107-2-D1)		N/A
3.2.1.1	<p>Supply cord 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 contact 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

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Finland - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.5.7.1	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	The third dashed sentence is applicable only to equipment as defined by annex, 6.1.2.2.		N/A
1.7.2.1	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	Class III equipment. Not connected to AC mains.	N/A
2.3.2	Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	Touch current measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: - STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>of that conductor by a SERVICE PERSON;                      - STATIONARY PLUGGABLE EQUIPMENT TYPE B                      - STATIONARY PERMANENTLY CONNECTED EQUIPMENT</p>		
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause:                      If this insulation is solid, including insulation forming part of a component, it shall at least consist of either                      - two layers of thin sheet material, each of which shall pass the electric strength test below, or                      - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</p> <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                      - 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.</p> <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 132400:1994 (EN 60384-14:2005), subclass Y2.                      A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions:                      - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14].		
6.1.2.2	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 center, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
Germany - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009			
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.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
<b>Group - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.1.1	<p>Replace the text of NOTE 3 by the following: NOTE 3 The requirements of EN60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the Safety of Multimedia Equipment. For television sets, EN60065 applies.</p>		N/A
1.2.3	<p>Add the following definition. 1.2.3.Z1 Portable Sound System Small battery powered audio equipment -whose prime purpose is to listen to recorded or broadcasted sound; and -that uses headphones or earphones that can be worn in or on or around the ears; and -that allows the user to walk around NOTE: Examples are mini-disk or CD players, MP3 audio players or similar equipment.</p>		N/A
1.5.1	<p>Add the following NOTE Z1: The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>		Pass
1.7.2.1	<p>Delete NOTE Z1 and add the following paragraph at the end of the subclause: In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>		N/A
2.7.1	<p>Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements</p>		N/A



IEC 60950-1:2005									
SubClause	Difference + Test	Result - Remark	Verdict						
	<p>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> <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	Void		N/A						
3.2.3	Delete the NOTE and conduit sizes in parentheses in Table 3A		N/A						
3.2.5.1	<p>Replace:</p> <p>"60245 IEC 53" by "H05 RR-F"</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F"</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F"</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="0"> <tr> <td>Up to and including 6</td> <td>0.75 a)</td> </tr> <tr> <td>Over 6 up to and including 10</td> <td>0.75 b) 1.0</td> </tr> <tr> <td>Over 10 up to and including 16</td> <td>1.0 c) 1.5</td> </tr> </table> <p>In the conditions applicable to table 3B, delete the words "in some countries" in condition a).</p> <p>In Note 1, applicable Table 3B, to 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		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	In table 3D, delete the fourth line: conductor		N/A						

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>sizes for 10 to 13 A, and replace with the following:            "Over 10 up to and including 16      1.5 to 2.5    1.5 to by 4"</p> <p>Delete the fifth line: conductor sizes for 13 to 16A.</p>		
4.3.13.6	<p>Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation). Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		N/A
H	<p>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 <math>\mu</math>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.</p>		N/A
Zx	<p>Protection against excessive sound pressure from personal music players</p>		N/A
Zx.1	<p>General - This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that:            - is designed to allow the user to listen to recorded</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>or broadcast sound or video; and</p> <ul style="list-style-type: none"> <li>- primarily uses headphones or earphones that can be worn in or on or around the ears; and</li> <li>- allows the user to walk around while in use.</li> </ul> <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> <li>- while the personal music player is connected to an external amplifier; or</li> <li>- while the headphones or earphones are not used.</li> </ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> <li>- hearing aid equipment and professional equipment;</li> </ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> <li>- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</li> </ul> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN</p>		

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	71-1 apply.		
Zx.2	<p>Equipment Requirements - No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> <li>- equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</li> <li>- a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</li> </ul> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"> <li>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</li> <li>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</li> <li>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</li> </ul> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>listening time, independent how often and how long the personal music player has been switched off.                      d) have a warning as specified in Zx.3; and                      e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.                      For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		
Zx.3	<p>Warning - The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>- the symbol of Figure 1 (IEC 60417-6044) with a minimum height of 5 mm; and</li> <li>- the following wording, or similar:</li> </ul>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.” Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level</p>		
Zx.4	Requirements for Listening devices (headphones and earphones)		N/A
Zx.4.1	<p>Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A
Zx.4.2	<p>Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be <math>\leq 100</math> dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
Zx.4.3	Wireless listening devices In wireless mode:		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>- with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</p> <p>- respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</p> <p>- with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be <math>\leq 100</math> dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		
Zx.5	<p><b>Measurement Methods</b></p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A
Ireland - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009			
4.3.6	<p><b>DIRECT PLUG-IN EQUIPMENT</b> 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.</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Israel - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.6.1	Add Note: This clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.		N/A
1.7	Add: Sub-clause 1.7.201 shall be added at the beginning of the clause.		N/A
1.7.2.1	Add: All the instructions and warnings related to safety shall also be written in the Hebrew language.		N/A
1.7.201	<p>The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition, the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed.</p> <ol style="list-style-type: none"> <li>1) name of the apparatus and its commercial designation;</li> <li>2) Manufacturer's name and address. If the apparatus is imported, the importer's name and address;</li> <li>3) Manufacturer's registered trademark, if any;</li> <li>4) Name of the model and serial number, if any;</li> <li>5) country of manufacturer</li> </ol>		N/A
2.9.4	<p>Add: Seven means of protection against electrocution are permitted according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991. The seven are</p> <ol style="list-style-type: none"> <li>1) TN-S or TN-C-S</li> <li>2) TT</li> <li>3) IT</li> <li>4) Isolated Transformer</li> </ol>		N/A



IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	5) Safety extra low voltage (SELV or ELV) 6) Residual current circuit breaker (30 ma = 1delta) 7) reinforced insulation; double insulation (Class II)		
2.201	Add: Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus with the relevant requirements specified in the appropriate part of the standard series SI 961, shall be checked. The apparatus shall meet the requirements in the appropriate part of the standard series SI 961. If there are components of the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this standard.		N/A
3.2.1.1	Add after the note: The feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.		N/A
3.2.1.2	Add: At the end of the first paragraph add the following note: At the time of issue of the standard, there is no Israel Standard for connection accessories to d.c.		N/A
Korea - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009			
1.5.101	Plugs for the connection of the apparatus to the mains supply shall comply with the Korean requirement (KSC 8305)	Class III equipment. Not connected to AC mains.	N/A
8	EMC - The apparatus shall comply with the relevant CISPR standards		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Norway - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.2.13.14	Requirements according to this annex 1.7.2.1 and 7.3 apply.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. 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	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).	Class III equipment. Not connected to AC mains.	N/A
1.5.9.4	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	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparatet må tilkoples jordet stikkontakt"	Class III equipment. Not connected to AC mains.	N/A
1.7.2.1	In Norway, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<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> <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): "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>		
2.2.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.3.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
5.1.7.1	<p>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"> <li>- STATIONARY PLUGGABLE EQUIPMENT TYPE A that: <ul style="list-style-type: none"> <li>(1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>(2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>(3) is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>- STATIONARY PLUGGABLE EQUIPMENT TYPE B</li> <li>- STATIONARY PERMANENTLY CONNECTED EQUIPMENT</li> </ul>		N/A
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <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"> <li>- 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</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul>		N/A

IEC 60950-1:2005			
SubClause	Difference + 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 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 123400 [EN 60384-14:2005], may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14];</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]</li> </ul>		
6.1.2.2	<p>The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>		N/A
7.2	<p>Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A
7.3	<p>Refer to EN 60728-11:2005 for installation conditions</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A
Spain - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009			
3.2.1.1	Supply cords of single-phase equipment having a rated current not exceeding 10A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2.5A shall be provided with a plug according to UNE-EN 50075:1993. CLASS 1 EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Sweden - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.2.13.14	Requirements according to this annex 1.7.2.1 and 7.3 apply.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. 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	The third dashed sentence is applicable only to equipment as defined by this annex, 6.1.2.2		N/A
1.7.2.1	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Apparaten skall anslutas till jordat uttag"	Class III equipment. Not connected to AC mains.	N/A
1.7.2.1	In Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>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> <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 Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."</p>		
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	<p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment:</p> <p>STATIONARY PLUGGABLE EQUIPMENT TYPE A that:</p> <p>(1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</p> <p>(2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</p> <p>(3) is provided with instructions for the installation of that conductor by a SERVICE PERSON;</p> <p>- STATIONARY PLUGGABLE TYPE B</p> <p>- STATIONARY PERMANENTLY CONNECTED EQUIPMENT</p>		N/A



IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	<p>Add the following text between the first and second paragraph of the compliance clause:                      If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <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"> <li>- 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</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <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 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14];</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in</li> </ul>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	EN 132400 [EN 60384-14.]		
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>Switzerland - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
3.2.1.1	<p>Supply cords of equipment having a RATED CURRENT not exceeding 10A 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                      SEV 6533-2 1991 Plug Type 11 L+N                      SEV 6534-2 1991 Plug Type 12 L+N+PE</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10A. However, a 16A 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                      SEV 5933-2 1998:Plug Type 21 L+N                      SEV 5934-2 1998:Plug Type 23 L+N+PE</p>		N/A
3.2.4	<p>Requirements according to this annex 3.2.1.1 apply.</p>		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>USA / Canada - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A
1.4.14	For PLUGGABLE EQUIPMENT TYPE A, the protection in the installation is assumed to be 20 A.		N/A
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	conductor.		
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when subjected to special construction requirements and routine testing.		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.3.3	For PLUGGABLE EQUIPMENT TYPE A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		N/A
2.6.3.3	The first column on Table 2D requirement: "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	special conditions based on the current rating of the circuit.		
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.		N/A



IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		N/A
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.	Built-in Class III equipment. Not connected to AC or DC mains.	N/A
3.2.1	Permitted use for flexible cords and plugs.		N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing.		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	connection and earthing electrode connection.		
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm <sup>2</sup> ) and not less than 150 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	<p>Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.</p> <p>Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.</p>		
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.	Built-in Class III equipment. Not connected to AC mains.	N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	than those specified in 3.3 if wiring is reliably separated.		
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm <sup>2</sup> ) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.5	First column of Table 3E requirement: "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		N/A
4.3.12			N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m <sup>3</sup> of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m <sup>2</sup> or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	No wires provided.	N/A
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	All connectors are considered as LPS.	N/A
5.3.7	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific		N/A



IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	primary or secondary protector marked with suitable instructions.		
NAD	Acoustic pressure from an ear piece less than 140 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets and insert earphones, for long duration disturbances.		N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
EE.5	UL articulated accessibility probe (Fig. EE.3) required for assessing accessibility to document/media shredders, instead of Figure 2A test finger.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

<b>United Kingdom - Differences to IEC 60950-1:2005 (2nd Edition); Am 1:2009</b>			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	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.		N/A
3.2.1.1	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 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.  NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5.1	A power supply cord with conductor of 1.25 mm <sup>2</sup> is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is 1.25 mm <sup>2</sup> to 1.5 mm <sup>2</sup> nominal cross-sectional area.		N/A
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 part 1:1995,		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	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.		

## Enclosures

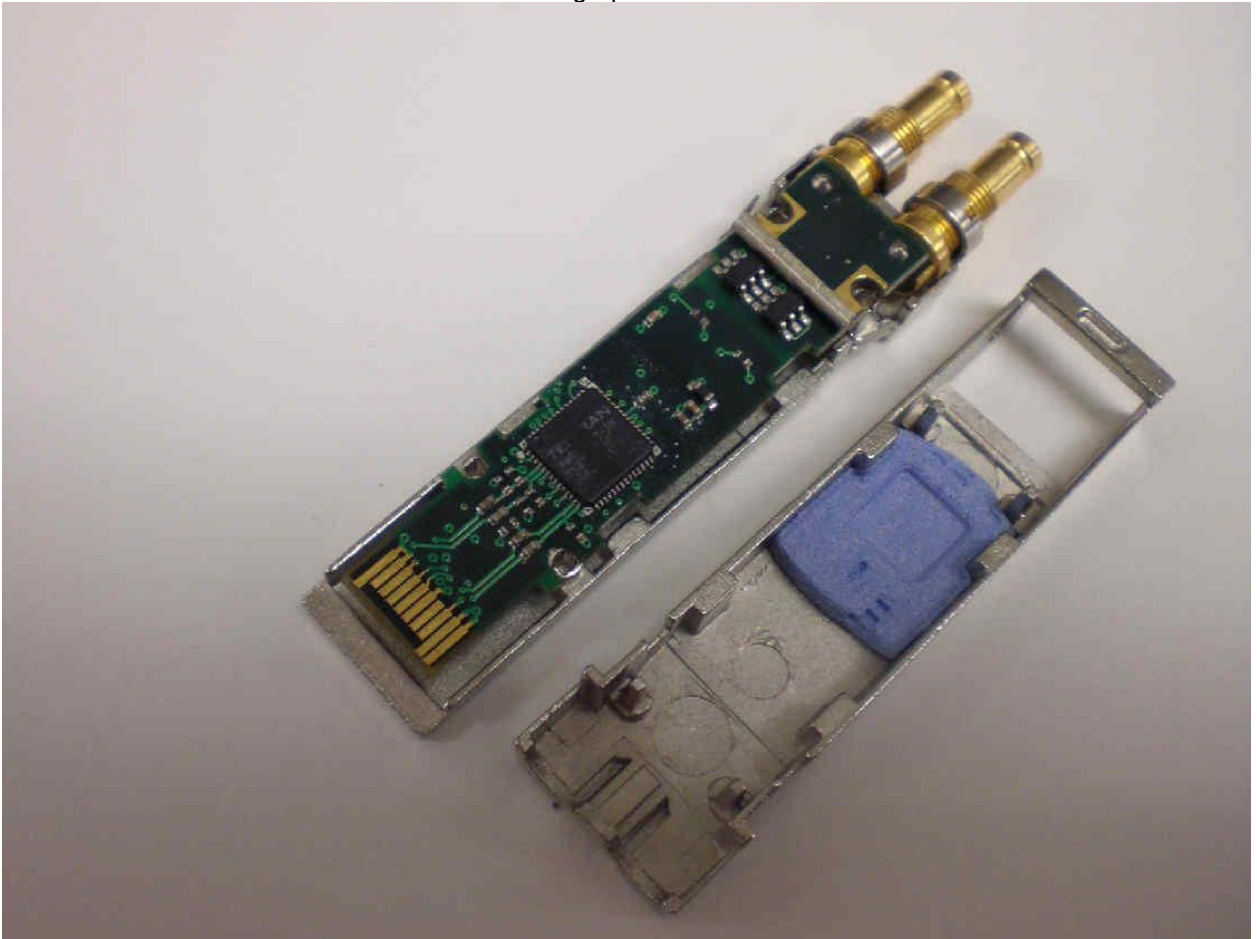
**Enclosures**

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-04	STM1E-SFP26
Photographs	3-11	STM1E-SFP26 inside view
Diagrams		
Schematics + PWB	5-01	STM1E-SFP26 Schematic
Manuals		
Miscellaneous	7-01	Letter of Assurance
Licenses	8-01	CB Test Certificate - CA/1381/ULC
Marking Plate		

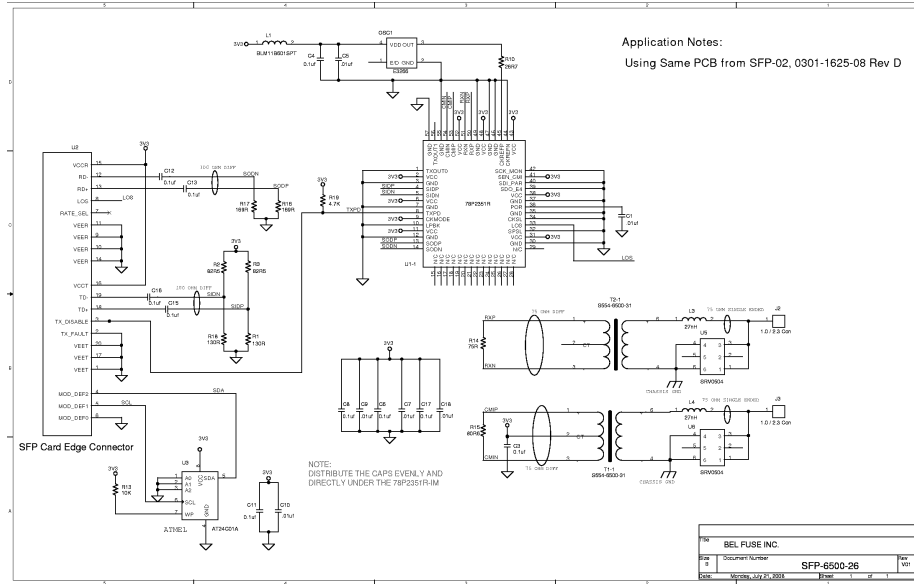
Photographs ID 3-04



Photographs ID 3-11



### Schematics ID 5-01



Misc ID 7-01

Underwriters Laboratories Inc.  
455 East Trimble Road  
San Jose, CA 95131

Attn: Edgard Rincand

Email : Edgard.Rincand@ul.com

Subject: National Differences

Dear Mr. Rincand:

This document confirms that Maxim Integrated Products will provide the following items needed to the accepting National Certification Bodies (NCBs) along with the CB test report.

**Markings and Safety Instructions** – Safety instructions and markings in the language suitable for the countries listed in the attached reports will be provided at the same time the CB test report is submitted to the NCB.


**EMC Test Report** – Where detailed in the National Differences, an EMC test report or Declaration of Conformity will accompany this product when sent to countries that require EMC test results as part of their certification process.

**Power Supply Cords and Plugs** – All power cords and plug assemblies provided with the unit will be certified and suitable for use in the countries listed in the attached CB test report.

**Multiple Factories** - This confirms that samples submitted for certification are representative of the products from each factory. The factories are as noted in this CB Test Report.

**Batteries** – Upon shipment of products to Switzerland, the requirements of the most up-to-date Swiss Ordinance Annex 2.15 of SR 814.81 will be met by providing the necessary documents and annual reports relative to the disposal of the batteries to the Swiss Authorities.

**ROHS Directive** – We have been advised that we will need to provide evidence that our product complies with ROHS Directive 2002/95/EC. The accepting NCB may obtain this information from Maxim Integrated Products by part number upon request.

  
\_\_\_\_\_  
QA Manager Maxim Integrated Products  
Name of Company Representative  
Company Title  
Company Name



License ID 8-01

		Ref. Certif. No. <b>CA/1381/ULC</b>
IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		SYSTEME CEI D'ESSAIS DE CONFORMITE ET DE CERTIFICATION DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC
<b>CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC</b>		
<p>Product <i>Produit</i></p> <p>Name and address of the applicant <i>Nom et adresse du demandeur</i></p> <p>Name and address of the manufacturer <i>Nom et adresse du fabricant</i></p> <p>Name and address of the factory <i>Nom et adresse de l'usine</i></p> <p>Rating and principal characteristics <i>Valeurs nominales et caractéristiques principales</i></p> <p>Trademark (if any) <i>Marque de fabrique (si elle existe)</i></p> <p>Model / Type Ref. <i>Ref. de type</i></p> <p>Additional information (if necessary) <i>Information complémentaire (si nécessaire)</i></p> <p>A sample of the product was tested and found to be in conformity with <i>Un échantillon de ce produit a été essayé et a été considéré conforme à la</i></p> <p>as shown in the Test Report Ref. No. which forms part of this Certificate. <i>comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat</i></p>	<p><b>STM1e Copper SFP Transceiver</b></p> <p>BEL FUSE INC 206 VAN VORST ST JERSEY CITY NJ 07302 UNITED STATES</p> <p>BEL FUSE INC 206 VAN VORST ST JERSEY CITY NJ 07302 UNITED STATES</p> <p>WING MING CO LTD DUTOU INDUSTRIAL ZONE DUTOU HUNG CHENG ZHONGSHAN GUANGDONG CHINA</p> <p><b>Not Applicable</b></p> <p><b>TSC</b></p> <p><b>STM1E-SFP26</b></p> <p>Subject to conditions of acceptability in the Test Report. This report comprises of 2 enclosures.</p> <p><b>PUBLICATION EDITION</b> IEC 60950-1:2001, First Edition inclusive of CENELEC Common Modifications. See Test Report for National Differences and EU Group Differences. AU, NZ, DK, FI, DE, IE, NO, JP, ES, SE, CH, GB, US, CA, AT, BE, C, N, CZ, FR, GR, HU, IN, IT, IL, KR, NL, PL, SK, SI, SG, AR, PT, MY, KE</p> <p>E143101-A10-CB-1</p>	<p>This CB Test Certificate is issued by the National Certification Body <i>Ce Certificat d'essai OC est établi par l'Organisme National de Certification</i></p>
<p><b>Underwriters' Laboratories of Canada</b></p>	<p>Underwriters' Laboratories of Canada 7 Underwriters Road, Toronto, Ontario M1R 3B4 Canada TEL INT* 1-416-757-3611, FAX INT* 1-416-757-8915 email: nomand.breton@ca.ul.com</p>	
<p>Date: Issued: 2008 November 7</p>	<p>Signature: </p> <p style="text-align: center;">Gunsmar Paital</p>	
<p>Issued 05-2003</p>		