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TEST REPORT
IEC/EN 60065
Audio, Video and Similar Electronic Apparatus: Safety Requirements

Report Reference No..... :	**Draft**	
Tested by (name + signature) ..... :		
Witnessed by (name + signature) :		
Supervised by (name + signature):		
Approved by (name + signature) . :		
Date of issue ..... :	**31 August 2007**	
CB Testing Laboratory Name..... :	**Nemko Hong Kong Ltd.**	Phone: (+852) 26750288
Address ..... :	**Unit 3-5, 1/F., Festigood Centre, No. 8 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong**	
Testing location/ procedure ..... :	**CBTL** ☒ **RMT** ☐ **SMT** ☐ **WMT** ☐ **TMP** ☐	
Testing location/ address ..... :	**Same as above.**	
Applicant's name..... :	**Action Multi Media Company**	
Address ..... :	**2/F, 150E Nan Shan Village, Sai Kung, N.T., Hong Kong**	
Test specification:		
Standard ..... :	**IEC 60065:2001 + Amd 1:2005 / EN 60065:2002 + A1 (2006)**	
Test procedure..... :	**CB**	
Non-standard test method……..:	**N/A**	
Test Report Form No..... :	**IECEN 60065G**	
Test Report Form(s) Originator..... :	**ASTABEAB**	
Master TRF..... :	**2006-03**	

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.

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Test item description ..... :	**32” LCD TV monitor**
Trade Mark ..... :	**ActionMedia; Nova; Techno; Xcess; Digital; TWIN; Utopia**
Manufacturer..... :	**Same as applicant**
Model/Type reference..... :	**Amm3201**
Ratings ..... :	**3.0-0.6A, 100-240V ~, 50/60Hz** **Cl.I**

Name and address of production-site (Factory):

Dongguan Zhongtang Hongji Plastic Hardware Processing Factory
Donghe Industrial area, Jiaoli village, Dongguan City, Guangdong Province, China

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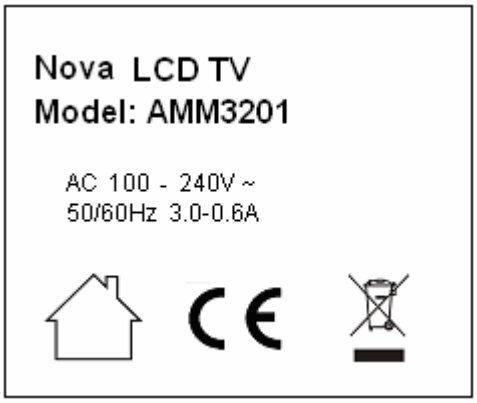
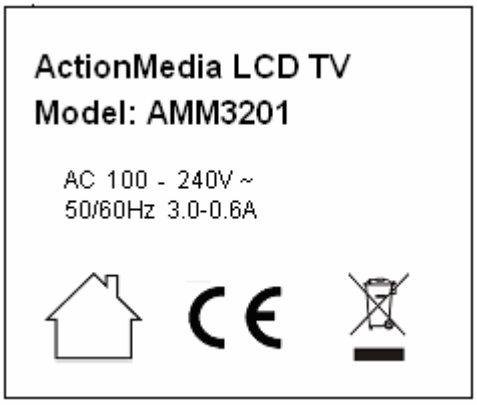
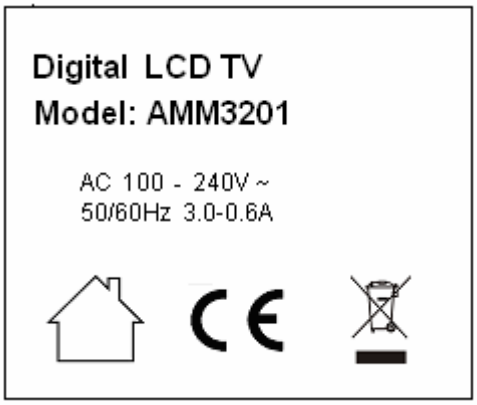
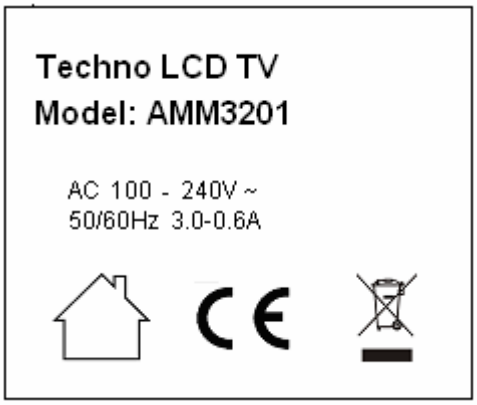
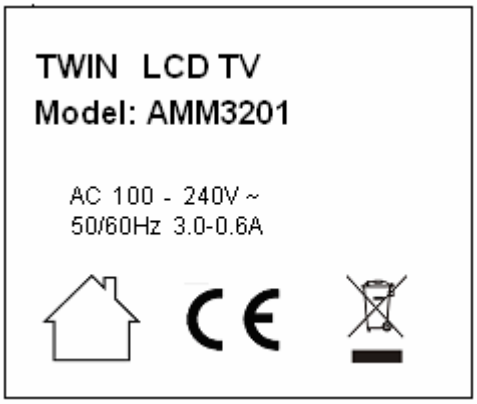
Copy of marking plate and summary of test results (information/comments):

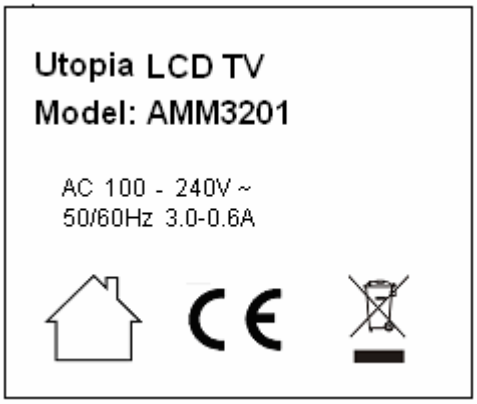


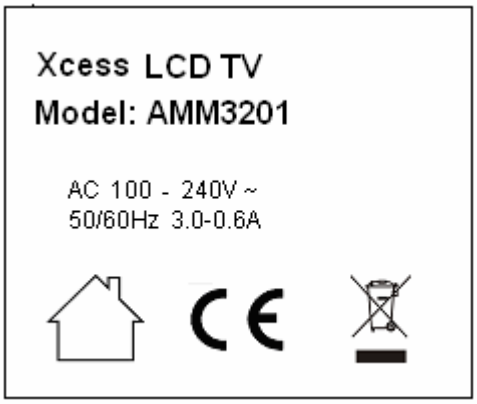












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Summary of testing:

Clause 9, Inverter output:
The inverter and LCD module are separately certified according to IEC 60950-1 and IEC 60065 std. Measured the Limited Current Circuit (LCC) according to IEC 60950 standard for inverter output, and measured values are not exceeding the limited value. See appended TABLE: List of critical components and materials

This multimedia display contains a VGA connector. Therefore the IEC Guide 112 for multimedia equipment has been considered.

Plug / External flexible cord
The appliance shall be provided with an approved mains plug and cord complying with the national regulations of the countries in which the appliance is to be sold.

Instructions: Instructions/users manual is only in English. The information shall be given in a language acceptable to the country where the apparatus is intended to be sold.

Heating: Acceptance of the operating temperatures up to 40ºC must be evaluated in the countries concerned.

EMC Compliance with the EMC directive has been evaluated: Compliance with the EMC directive must be evaluated in the countries concerned.

The Special National Conditions for Norway, Finland and Sweden:
The product does not have the separation between the coax screen of Cable Distribution Systems and the protective earth (PE) of the mains supply and connection to a CABLE DISTRIBUTION SYSTEM is to be provided through an external galvanic isolator.

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List of attachments:

1) ATTACHMENT: Tables to IEC/EN 60065 7th edition (6 pages)

2) PCB layout (1 page)

3) Transformer Specification (1 page)

4) Photos(5 pages)

5) Attachments:
- Argentina Differences (1 page)
- Australian / New Zealand Differences (6 pages)
- Canadian Differences (11 pages)
- Malaysia Differences (1 page)
- US Differences (15 pages)

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Test item particulars .....:	**32" LCD TV monitor**
Classification of installation and use.....:	**Class I**
Supply connection .....:	**Apparatus provided with appliance inlet**
.....:	
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	**N/A**
- test object does meet the requirement.....:	**Pass (P)**
- test object does not meet the requirement.....:	**Fail (F)**
Testing:	
Date of receipt of test items:	**August 2007**
Date(s) of performance of tests:	**August 2007**

General remarks:

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 Issuing 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.

List of test equipment must be kept on file and available for review.

General product information:

The equipment under tests is a 32" LCD TV monitor with build-in power supply.

The equipment can be operating at temperature = 40ºC.

The test samples were pre-production sample without serial numbers.

Dimensions: 810mm by 105mm by 560mm (without stand)
810mm by 105mm by 620mm (with stand)
Mass of the equipment is 14.5kg.

Normal operation condition: The unit is tested with colour pattern signal, max. brightness and contrast, and with 0.5W output power on speaker, picture provided from a DVD player.

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Clause	Requirement – Test	Result - Remark	Verdict
3	**GENERAL REQUIREMENTS**		
	Safety class of the apparatus .....:	**Class I apparatus**	**P**
4	**GENERAL CONDITIONS OF TESTS**		
4.1.4	**Ventilation instructions require the use of the test box**	**Tested according to user instruction.**	**P**
5	**MARKING**		
	Comprehensible and easily discernible	**Located at rear side of the enclosure.**	**P**
	Permanent durability against water and petroleum spirit	**After rubbing test by water and petroleum spirit, the label still easily discernible, indelible and legible.**	**P**
5.1	**Identification, maker, model .....:**	**See page 2.**	**P**
	Class II symbol if applicable	**Class I equipment.**	**N/A**
	Rated supply voltage and symbol .....:	**See page 2.**	**P**
	Frequency if safety dependant	**See page 2.**	**P**
	Rated current or power consumption .....:	**See page 2.**	**P**
5.2	**Earth terminal**	**Appliance inlet is used.**	**P**
	Hazardous live terminals	**No live parts accessible.**	**N/A**
	Supply output terminals (other than mains)	**No socket outlet for providing power to other apparatus.**	**N/A**
5.3	**Use of triangle with exclamation mark**	**The symbol is used several places in the circuit diagram.**	**P**
5.4	**Instructions for use**		**P**
5.4.1	**Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.**	**Adequate instruction supplied.**	**P**
	Hazardous live terminals, instructions for wiring	**No hazardous live terminal.**	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	Instructions for replacing lithium battery	**No lithium battery in the equipment.**	**N/A**
	Instructions for modem if fitted	**None.**	**N/A**
	Class I earth connection warning	**Warning test applied in the user manual.**	**P**
	Instructions for multimedia system connection	**Adequate instructions supplied.**	**P**
	Special stability warning for fixed installation	**No special stability warning.**	**N/A**
	Warning: battery exposure to heat	**No battery.**	**N/A**
	Warning: protective film on CRT face	**No CRT.**	**N/A**
5.4.2	**Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings**	**Appliance coupler is disconnecting device. Adequate information included in User Instruction.**	**P**
	Instructions for permanently connected equipment	**Not permanently connected equipment.**	**N/A**
6	**HAZARDOUS RADIATION**		
6.1	**Ionizing radiation < 36 pA/kg (0,5 mR/h)**	**No ionizing radiation.**	**N/A**
6.1 EN 60065	**European Council Directive 96/29/Euratom of 13 May 1996 10cm from outer surface of apparatus <1µSv/h (0,1mR/h)**		**N/A**
6.2	**Laser radiation, emission limits to IEC 60825-1 :**	**No laser radiation.**	**N/A**
	Emission limits under fault conditions .....:		**N/A**

7	**HEATING UNDER NORMAL OPERATING CONDITIONS**		
7.1	**Temperature rises not exceeding specified values, no operation of fuse links**	**No fuse links operate during normal operating operation. (see appended table)**	**P**
7.1.1	**Temperature rise of accessible parts**	**(see appended table)**	**P**
7.1.2	**Temperature rise of parts providing electrical insulation**	**(see appended table)**	**P**
7.1.3	**Temperature rise of parts acting as a support or as a mechanical barrier**	**(see appended table)**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
7.1.4	**Temperature rise of windings**	**(see appended table)**	**P**
7.1.5	**Parts not subject to a limit under 7.1.1 to 7.1.4**	**(see appended table)**	**P**
7.2	**Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C**	**No temperatures measured during heating test and fault condition tests require this test (7.2) to be performed.**	**N/A**
8	**CONSTRUCTIONAL REQUIREMENTS WITH REGARD TO THE PROTECTION AGAINST ELECTRIC SHOCK**		
8.1	**Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare**	**Considered.**	**P**
8.2	**No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.**	**No such component which operated by hand.**	**N/A**
8.3	**Insulation of hazardous live parts not provided by hygroscopic material**	**No hygroscopic material.**	**N/A**
8.4	**No risk of electric shock following the removal of a cover which can be removed by hand**	**No cover removable barely by hand. Tools are required.**	**N/A**
8.5	**Class I equipment**	**See below.**	**P**
	Basic insulation between hazardous live parts and earthed accessible parts	**Basic insulation complies with requirements specified in clause 10 and 13.**	**P**
	Resistors bridging basic insulation complying with 14.1 a)	**No resistors bridging basic insulation.**	**N/A**
8.6	**Class II equipment and Class II constructions within Class I equipment**		**P**
	Reinforced or double insulation between hazardous live parts and accessible parts	**Double / Reinforced insulation complies with requirements specified in clause 10 and 13.**	**P**
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3	**Isolating transformer (T1, T2). See clause 14.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.1 a)	**Certified capacitors CY1, CY2, CY3 and CY4 are mounted on PCB and inside enclosure. See clause 14.**	**P**
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)	**No such capacitors.**	**N/A**
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	**Certified capacitor CY5 is mounted on PCB and inside enclosure. See clause 14.**	**P**
	Basic insulation bridged by components complying with 14.3.4.3	**None.**	**N/A**
8.7	**This clause is void**		**–**
			–
8.8	**Basic or supplementary insulation > 0,4 mm (mm) ..... :**	**No incorporated.**	**N/A**
	Reinforced insulation > 0,4 mm (mm) ..... :	**a) Transformer bobbin: min. 0.4mm thickness. b) Opto-coupler inner insulation, ref 14.11.**	**P**
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)	**Thin sheet material is applied in the transformer T1 and T2.**	**P**
	Basic or supplementary insulation, at least two layers, each meeting 10.3		**N/A**
	Basic or supplementary insulation, three layers any two of which meet 10.3		**N/A**
	Reinforced insulation, two layers each of which meet 10.3		**N/A**
	Reinforced insulation, three layers any two which meet 10.3	**3 layer of insulation tape used in T1 and T2 and any of two layers complied with 4240Vpeak.**	**P**
8.9	**Adequate insulation between internal hazardous live conductors and accessible parts**	**Double insulated.**	**P**
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts		**P**

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Clause	Requirement – Test	Result - Remark	Verdict
8.10	**Double insulation between conductors connected to the mains and accessible parts.** **Double insulation between internal hazardous live parts and conductors connected to accessible parts.**	**Class I apparatus.**	**N/A**
8.11	**Detaching of wires**	**No wire could become detached.**	**P**
	No undue reduction of creepages or clearance distances if wires become detached		**P**
	Vibration test carried out .....:	**See clause 12.1.2.**	**P**
8.12	**This clause is void**		**–**
8.13	**Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)**	**No windows, lenses, lamp cover etc.**	**N/A**
8.14	**Adequate fastening of covers (pull test 50 N for 10 s)**	**Cover adequately fastened with screw.**	**P**
8.15	**No risk of damage to the insulation of internal wiring due to hot parts or sharp edges**	**No risk of damage to the insulation of internal wiring due to high temperature, sharp edges, moving parts or pinches.**	**P**
8.16	**Only special supply equipment can be used**	**Not supplied by a special supply apparatus.**	**N/A**
8.17	**Insulated winding wire without additional interleaved insulation**		**N/A**
8.18	**Endurance test as required by 8.17**		**N/A**
8.19	**Disconnection from the mains**		**P**
8.19.1	**Disconnect device**	**The appliance coupler in cord set is disconnecting device.**	**P**
	All-pole switch or circuit breaker with >3mm contact separation		**N/A**
8.19.2	**Mains switch ON indication**	**The indication "I" is shown on main switch. (IEC 60417-5007)**	**P**
8.20	**Switch not fitted in the mains cord**	**No switch on the mains cord.**	**P**
8.21	**Bridging components comply with clause 14**		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
8.22	**Non-separable thin sheet material**	**Not used.**	**N/A**
9	**ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITIONS**		
9.1	**Testing on the outside**		**P**
9.1.1	**For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation**	**> 1000Vac for inverter output, but complies with LCC. Inverter separately certified and complied with Limited current circuit measurement according to IEC 60950-1.**	**P**
9.1.1.1	**a) Open circuit voltages**	**Mains input voltage > 35Vac. See below.**	**–**
	b) Touch current measured from terminal devices using the network in annex D .....:	**See attachment, Table to IEC/EN 60065 7th edition.**	**P**
	c) Discharge not exceeding 45 µC	**No part or contact of a terminal with stored voltages between 60V-15kV.**	**N/A**
	d) Energy of discharge not exceeding 350 mJ	**No part or contact of a terminal with stored voltages exceeding 15kV.**	**N/A**
9.1.1.2	**Test with test finger and test probe**	**No accesses of hazardous live with the finger and test probe.**	**P**
9.1.2	**No hazardous live shafts of knobs, handles or levers**	**No live shafts, handles or levers.**	**N/A**
9.1.3	**Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin**	**No access for the test pin.**	**P**
9.1.4	**Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032**	**No access to live parts.**	**P**
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	**No access to live parts.**	**P**
9.1.5	**Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032**	**No preset control.**	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
9.1.6	**No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s ..... :**	**The pins or contacts for the mains plug are not hazardous live (<25V) after 2 seconds, for with/without fuse conditions.**	**P**
	If C is not greater than 0,1 µF no test needed		**N/A**
9.1.7	**a) Enclosure sufficiently resistant to external force**		**P**
	Test probe 11 of IEC 61032 for 10 s (50 N)	**No hazard after tested with test finger.**	**P**
	b) Test hook of fig. 4 for 10 s (20 N)	**No hazard after tested with test hook.**	**P**
	c) 30 mm diameter test tool for 5 s (100 or 250 N) ..... :	**100N applied. No hazard.**	**P**
9.2	**No hazard after removing a cover by hand**	**No hazards after removed the cover of remote controller.**	**P**
10	**INSULATION REQUIREMENTS**		
10.1	**Insulation resistance (MΩ) at least 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation ..... :**	**Surge test performed. Complies with 10.3.**	**P**
10.2	**Humidity treatment 48 h or 120 h ..... :**	**120h (40ºC), 93%**	**P**
10.3	**Insulation resistance and dielectric strength between mains teminals**	**See below.**	**P**
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)	**(see appended table)**	**P**
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	**(see appended table)**	**P**
11	**FAULT CONDITIONS**		
11.1	**No shock hazard under fault condition**	**No electric shock hazard under fault conditions.**	**P**
11.2	**Heating under fault condition**	**(see appended table)**	**P**
	No hazard from softening solder	**No softening of solder.**	**N/A**
	Flames extinguish within 10 seconds	**No flame.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	Soldered terminations not used as protective mechanism	**No soldered terminations become lose.**	**P**
11.2.1	**Measurement of temperature rises**	**(see appended table)**	**P**
11.2.2	**Temperature rise of accessible parts**	**(see appended table)**	**P**
11.2.3	**Temperature rise of parts, other than windings, providing electrical insulation**	**(see appended table)**	**P**
	Temperature rise of printed circuit boards (PCB) exceeding the limits of table 3 by max. 100 K for max. 5 min	**No area where temperature exceeds 100K above limits.**	**N/A**
	a) Temperature rise of printed circuit boards (PCB) to 20.1.3, exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm²		**N/A**
	b) Temperature rise of printed circuit boards (PCB) to 20.1.3 up to 300 K for an area not greater than 2 cm² for a maximum of 5 min		**N/A**
	Meets all the special conditions if conductors on printed circuit boards are interrupted	**No conductors are interrupted / peeled / loosened during fault conditions.**	**P**
	Class I protective earthing maintained		**P**
11.2.4	**Temperature rise of parts acting as a support or mechanical barrier**	**Temperature rises are within the limits.**	**P**
11.2.5	**Temperature rise of windings**	**(see appended table)**	**P**
11.2.6	**Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.5**	**No excessive temperature observed/measured on other parts (see appended table).**	**P**

12	**MECHANICAL STRENGTH**		
12.1.1	**Bump test where mass >7 kg**	**Mass more than 7kg. No hazard.**	**P**
12.1.2	**Vibration test**	**No hazard.**	**P**
12.1.3	**Impact hammer test**	**No damaged.**	**P**
	Steel ball test	**No damaged.**	**P**
12.1.4	**Drop test for portable apparatus where mass < 7 kg**	**Not portable apparatus.**	**N/A**

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12.1.5	**Thermoplastic enclosures strain relief test**	**No damaged. 70°C / 7h.**	**P**
12.2	**Fixing of knobs, push buttons, keys and levers**	**Normal use will not impair the protection against electric shock.**	**P**
12.3	**Remote controls with hazardous live parts**	**No remote controls.**	**N/A**
12.4	**Drawers (pull test 50 N, 10 s)**	**No drawers.**	**N/A**
12.5	**Antenna coaxial sockets providing isolation**	**The antenna coaxial sockets do not incorporate parts or components which isolate hazardous live parts from accessible parts.**	**N/A**
12.6	**Telescoping or rod antennas construction**	**No telescoping or rod antennas.**	**N/A**
12.6.1	**Telescoping or rod antennas securement**		**N/A**
13	**CLEARANCE AND CREEPAGE DISTANCES**		
13.1	**Clearances in accordance with 13.3**	**See clause 13.3.**	**P**
	Creepage distances in accordance with 13.4	**See clause 13.4.**	**P**
13.2	**Determination of operating voltage**	**Rated supply voltage applied in determining the operating voltage. See attachment: Tables to IEC/EN 60065 7th edition**	**P**
13.3	**Clearances**	**2N for internal parts and 30N for enclosures are considered when determining clearance.**	**P**
13.3.1	**General**		**P**
13.3.2	**Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9**	**See attachment: Tables to IEC/EN 60065 7th edition**	**P**
13.3.3	**Circuits not conductively connected to the mains comply with table 10**	**No such construction provided.**	**N/A**
13.3.4	**Measurement of transient voltages**	**Not used.**	**N/A**
13.4	**Creepage distances**	**See attachment: Tables to IEC/EN60065 7th Edition.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	Creepage distances greater than table 11 minima		**N/A**
13.5	**Printed boards**		**N/A**
13.5.1	**Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10**	**No such PCB.**	**N/A**
13.5.2	**Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)**	**No type B coated PCB.**	**N/A**
13.6	**Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4**	**Jointed insulation not applied.**	**N/A**
	Conductive parts along reliably cemented joints comply with 8.8		**N/A**
	Temperature cycle test and dielectric strength test		**N/A**
13.7	**Enclosed, enveloped or hermetically sealed parts: not conductively connected to the mains: clearances and creepage distances as in table 12**	**No such parts used.**	**N/A**
13.8	**Parts filled with insulating compound, meeting the requirements of 8.8**	**Opto-couplers refer to sub-clause 14.11.**	**P**
14	**COMPONENTS**		
14.1	**Resistors**		**N/A**
	a) Resistors between hazardous live parts and accessible metal parts	**No resistors between hazardous live parts and accessible metal parts.**	**N/A**
	b) Resistors, other than between hazardous live parts and accessible parts	**Two bleeder resistors (R1 and R2) connected between Live and Neutral, located after fuse. Shorting-circuit or disconnecting of resistor does not cause infringement of the requirement for operation under fault conditions.**	**N/A**
	Resistors separately approved .....:		**N/A**
14.2	**Capacitors and RC units**	**See below.**	**P**
	Capacitors separately approved	**See below.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
14.2.1	**Y capacitors tested to IEC 60384-14, 2nd edition :**	**Y2 capacitors (CY1, CY2, CY3, CY4), Y1 capacitor (CY5), certified according to IEC 60384-14: 2nd edition.**	**P**
14.2.2	**X capacitors tested to IEC 60384-14, 2nd edition :**	**X2 capacitors (CX1, CX2) certified according to IEC 60384-14: 2nd edition.**	**P**
14.2.3	**Capacitors operating at mains frequency but not connected to the mains: tests for X2 ..... :**	**No such capacitor used.**	**N/A**
14.2.5	**Capacitors with volume exceeding 1750 mm³, where short-circuit current exceeds 0,2 A: compliance with IEC60384-1, 4.38 category B or better ..... :**	**The X-capacitors are certified according to IEC 60384-14, 2nd edition and several E. cap. exceeding 1750 mm³, but metal case.**	**N/A**
	Capacitors with volume exceeding 1750 mm³, mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60 384-1, 4.38 category B or better ..... :	**The X-capacitors are certified according to IEC 60384-14, 2nd edition and several E. cap. exceeding 1750 mm³, but metal case.**	**N/A**
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal ..... :		**N/A**
14.3	**Inductors and windings**	**See below.**	**P**
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4		**N/A**
14.3.1	**Transformers and inductors marked with manufacturer's name and type ..... :**	**Adequate marking applied.**	**P**
	Transformers and inductors separately approved ..... :		**N/A**
14.3.2	**General**	**Isolating transformer.**	**P**
	Insulation material complies with clause 20.1.4		**P**
14.3.3	**Constructional requirements**	**See below.**	**P**
14.3.3.1	**Clearances and creepage distances comply with clause 13**	**Transformer complied with clause 13.**	**P**
14.3.3.2	**Transformers meet the constructional requirements**	**Checked by inspection.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
14.3.4.1	**Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation)**	**Double or reinforced insulation between hazardous live windings and accessible conductive parts.**	**P**
	Coil formers and partition walls > 0,4 mm	**The bobbin: > 0.4mm thickness.**	**P**
14.3.4.2	**Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met**	**Transformer is evaluated with Class II construction.**	**N/A**
14.3.4.3	**Separating transformers with at least basic insulation**		**N/A**
14.3.5.1	**Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)**	**Double or reinforced insulation between hazardous live windings and accessible conductive parts.**	**P**
	Coil formers and partition walls > 0,4 mm	**The bobbin: > 0.4mm thickness.**	**P**
14.3.5.2	**Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal**	**Windings of Class II construction used.**	**N/A**
	Winding wires connected to protective earth have adequate current-carrying capacity		**N/A**
14.4	**High voltage components**	**No high voltage components.**	**N/A**
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		**N/A**
	Component meets category V-1 of IEC 60707		**N/A**
14.4.1	**High voltage transformers and multipliers tested as part of the submission**		**N/A**
14.4.2	**High voltage assemblies and other parts tested as part of the submission**		**N/A**
14.5	**Protective devices**		**P**
	Protective devices used within their ratings	**Mains fuse, F1**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	**Certified protective devices applied. See List of Critical components.**	**P**
14.5.1.1	**a) Thermal cut-outs separately approved**	**No thermal cut-outs.**	**N/A**
	b) Thermal cut-outs tested as part of the submission		**N/A**
14.5.1.2	**a) Thermal links separately approved**	**None.**	**N/A**
	b) Thermal links tested as part of the submission		**N/A**
14.5.1.3	**Thermal devices re-settable by soldering**	**No thermal devices re-settable.**	**N/A**
14.5.2.1	**Fuse-links in the mains circuit according to IEC 60127**	**Fuse is approved according to IEC 60127. See List of critical components.**	**P**
14.5.2.2	**Correct marking of fuse-links adjacent to holder ..... :**	**Correct marking applied close to the fuse: F1 T5AL 250V (VDE approved)**	**N/A**
14.5.2.3	**Not possible to connect fuses in parallel ..... :**	**No possible to connect fuses in parallel.**	**P**
14.5.2.4	**Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool .. :**	**A tool must be used to change the fuse.**	**P**
14.5.3	**PTC-S thermistors comply with IEC 60730-1**	**No PTC-S thermistor.**	**N/A**
	PTC-S devices (15 W) category V-1 or better		**N/A**
14.5.4	**Circuit protectors have adequate breaking capacity and their position is correctly marked**	**No such components.**	**N/A**
14.6	**Switches**		**P**

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Clause	Requirement – Test	Result - Remark	Verdict
14.6.1 a)	**Separate testing to IEC 61058 including:** **10 000 operations** **Normal pollution suitability** **Resistance to heat and fire level 3** **and** **Make and break speed independent of speed of actuation** **V-0 compliance with annex G, G.1.1**	**Switch certified according to IEC61058.** **- 10 000 operations** **- Normal pollution suitability** **- Resistance to heat and fire level 3** **- Comply with annex G, G.1.1** **- Peak surge current measured on mains switch is <4A at 264V peak.** **The measured peak surge current is less than rated current (10A)**	**P**
14.6.1 b)	**Tested in the apparatus:**	**Approved power switch is used.**	**N/A**
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		**N/A**
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		**N/A**
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		**N/A**
14.6.2	**Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation**	**Mains switch approves as a separate component.**	**N/A**
14.6.3	**Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use**	**Mains switch approves as a separate component.**	**N/A**
14.6.4	**Switch tested to 14.6.1 b) has adequate dielectric strength**	**Mains switch approves as a separate component.**	**N/A**
14.6.5	**Mains switch controlling mains socket outlets additional tests to IEC 60058-1**	**No mains socket outlets.**	**N/A**
	Socket outlet current marking correct		**N/A**
14.7	**Safety interlocks**	**No interlock.**	**N/A**
	Safety interlocks to 2.8 of IEC 60950		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
14.8	**Voltage setting devices and the like**	**No voltage selecting switch.**	**N/A**
	Voltage setting device not likely to be changed accidentally		**N/A**
14.9	**Motors**	**No motor.**	**N/A**
14.9.1	**Endurance test on motors**		**N/A**
	Motor start test		**N/A**
	Dielectric strength test		**N/A**
14.9.2	**Not adversely affected by oil or grease etc.**		**N/A**
14.9.3	**Protection against moving parts**		**N/A**
14.9.4	**Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950, Annex B**		**N/A**
14.10	**Batteries**	**No battery.**	**N/A**
14.10.1	**Batteries mounted with no risk of accumulation of flammable gases**		**N/A**
14.10.2	**No possibility of recharging non-rechargeable batteries**		**N/A**
14.10.3	**Recharging currents and times within manufacturers limits**		**N/A**
	Lithium batteries discharge and reverse currents within the manufacturers limits		**N/A**
14.10.4	**Battery mould stress relief**		**N/A**
14.10.5	**Battery drop test**		**N/A**
14.11	**Optocouplers**		**P**
	Optocouplers comply with Cl. 8	**Insulation thickness > 0.4mm**	**P**
	Internal and external dimensions to 13.1. or alternatively 13.6 (jointed insulation)	**See Table: Opto electronic device.**	**P**
14.12	**Surge suppression varistors**	**Varistor RV1 located on mains circuit (after fuse).**	**P**
	Comply with IEC 61051-2		**P**
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		**P**
15	**TERMINALS**		
15.1.1	**Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard**	**Approved appliance inlet provided, see list of critical components.**	**P**
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	**Not provide mains socket outlets to other apparatus.**	**N/A**
	Overloading of internal wiring prevented if the apparatus has mains socket outlets		**N/A**
15.1.2	**Connectors for antenna, earth, audio, video or data:**		**N/A**
	No risk of insertion in mains socket-outlets	**No connectors is designed that can be inserted into a mains socket outlet or appliance coupler.**	**N/A**
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2	**No such audio or video circuit.**	**N/A**
15.1.3	**Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets**	**No such device provided.**	**N/A**
15.2	**Provision for protective earthing**		**P**
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	**Approved appliance inlet provided and GND of inlet screw on metal enclosure and PCB directly.**	**P**
	Protective earth conductors correctly coloured	**No insulated protective earth conductors.**	**N/A**
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input	**Appliance inlet provided.**	**N/A**
	Protective earth terminal resistant to corrosion	**Metal combination acceptable according to Annex F.**	**P**

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Clause	Requirement – Test	Result - Remark	Verdict
	Earth resistance test: < 0,1 Ω at 25 A .....:	**Appliance inlet – Accessible conductive parts: - 0.034Ω at 30A / 2 min.**	**P**
15.3	**Terminals for external flexible cords and for permanent connection to the mains supply**	**Appliance inlet used.**	**N/A**
15.3.1	**Adequate terminals for connection of permanent wiring**		**N/A**
15.3.2	**Reliable connection of non-detachable cords:**		**N/A**
	Not soldered to conductors of a printed circuit board		**N/A**
	Adequate clearances and creepage distances between connections should a wire break away		**N/A**
	Wire secured by additional means to the conductor		**N/A**
15.3.3	**Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar**		**N/A**
15.3.4	**Soldered conductors wrapped around terminal prior to soldering or held in place by additional means**		**N/A**
	Clamping of conductor and insulation if not soldered or held by screws		**N/A**
15.3.5	**Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment**		**N/A**
15.3.6	**Terminals to 15.3.3 have sizes required by table 16**		**N/A**
15.3.7	**Terminals clamp conductors between metal and have adequate pressure**		**N/A**
	Terminals designed to avoid conductor slipping out when tightened or loosened		**N/A**
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		**N/A**
15.3.8	**Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic**		**N/A**
15.3.9	**Termination of non-detachable cords: wires terminated near to each other**		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	Terminals located and shielded: test with 8 mm strand		**N/A**
15.4	**Devices forming a part of the mains plug**	**The apparatus is not a device forming a part of the mains plug.**	**N/A**
15.4.1	**No undue strain on mains socket-outlets**		**N/A**
15.4.2	**Device complies with standard for dimensions of mains plugs**		**N/A**
15.4.3	**Device has adequate mechanical strength (tests a,b,c)**		**N/A**
16	**EXTERNAL FLEXIBLE CORDS**		
16.1	**Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords .....:**	**Appliance inlet, cord set not supplied for testing. See Summary of Testing.**	**N/A**
	Non-detachable cords for Class I have green/yellow core for protective earth		**N/A**
16.2	**Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment**		**N/A**
16.3	**a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength**		**N/A**
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)		**N/A**
16.4	**Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions**		**N/A**
16.5	**Adequate strain relief on external flexible cords**		**N/A**
	Not possible to push cord back into equipment		**N/A**
	Strain relief device unlikely to damage flexible cord		**N/A**
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
16.6	**Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use**		**N/A**
16.7	**Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1**		**N/A**
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord		**N/A**
17	**ELECTRICAL CONNECTIONS AND MECHANICAL FIXINGS**		
17.1	**Torque test to table 20:**		**P**
	- screws into metal: 5 times	**Not used.**	**N/A**
	- screws into non-metallic material: 10 times	**See attachment, Table to IEC/EN 60065 7th edition.**	**P**
17.2	**Correct introduction into female threads in non-metallic material**	**No safety impact in the sense of this standard after loosening and tightening several times.**	**P**
17.3	**Cover fixing screws: captive**	**Captivity not necessary, see below.**	**P**
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter	**Tested with screw with 10 times diameter.**	**P**
17.4	**No loosening of conductive parts carrying a current > 0,2 A**	**Loosening is sufficiently prevented.**	**P**
17.5	**Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A**	**No contact pressure transmitted through insulating material.**	**P**
17.6	**Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder**	**Appliance inlet provided.**	**N/A**
17.7	**Cover fixing devices other than screws have adequate strength and their positioning is unambiguous**	**Only screws used as cover fixing devices.**	**N/A**
17.8	**Fixing devices for detachable legs or stands provided**	**No detachable legs or stands provided.**	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
17.9	**Internal pluggable connections, affecting safety, unlikely to become disconnected**	**Internal pluggable connections have mechanical securing.**	**P**
18	**MECHANICAL STRENGTH OF PICTURE TUBES AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		
	Picture tube separately approved to IEC 61965:	**No CRT in the equipment.**	**N/A**
	Picture tube separately approved to 18.1		**N/A**
18.1	**Picture tubes > 16 cm intrinsically protected**		**N/A**
	Non-intrinsically protected tubes > 16 cm used with protective screen		**N/A**
	Protective film as part of implosion protection: edges covered by enclosure		**N/A**
18.2	**Intrinsically protected tubes: tests on 12 samples**		**N/A**
18.2.1	**Samples subject to ageing: 6**		**N/A**
18.2.2	**Samples subject to implosion test: 6**		**N/A**
18.2.3	**Samples subject to mechanical strength test (steel ball): 6**		**N/A**
18.3	**Non-intrinsically protected tubes tested to 18.3**		**N/A**
19	**STABILITY AND MECHANICAL HAZARDS**		
	Mass of the equipment exceeding 7 kg ..... :	**No, mass is less than 7kg.**	**N/A**
	Apparatus intended to be fastened in place – suitable instructions	**No.**	**N/A**
19.1	**Test on a plane, inclined at 10° to the horizontal**		**N/A**
19.2	**100 N force applied vertically downwards**		**N/A**
19.3	**100 N force, or 13% of weight, applied horizontally to point of least stability.**	**Apparatus mass <25kg and height <1M.**	**N/A**
19.4	**Edges or corners not hazardous**	**There are no hazardous edges or corners when the apparatus is operating in normal position.**	**P**
19.5	**Glass surfaces (exc.laminated) with an area exceeding 0,1 m² or maximum dimension > 450 mm, pass the test of 19.5.1**	**No glass surface.**	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
19.6	**Wall or ceiling mountings adequate**	**No wall or celling mountings.**	**N/A**
20	**RESISTANCE TO FIRE**		
20.1	**Electrical components and mechanical parts**		**P**
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60695-11-10 with openings not exceeding 1 mm in width		**N/A**
	b) Exemption for small components as defined in 20.1	**PCB is flammability class V-0 and exception is made for small components.**	**P**
20.1.1	**Electrical components meet the requirements of Clause 14 or 20.1.4**	**Electrical components comply with flammability requirements in Clause 14.**	**N/A**
20.1.2	**Insulation of internal wiring working at voltages > 4 Kv or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire**	**No wires working at voltages > 4kV or leaving an internal fire enclosure.**	**N/A**
20.1.3	**Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC60707, unless used in a fire enclosure**	**All PCB are of base material with flammability category V-0. See List of Critical Components**	**P**
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage >400 V (peak) a.c. or d.c. meets V-0 to IEC 60707	**All PCB are of base material with flammability category V-0. See List of Critical Components**	**P**
20.1.4	**Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21**	**Min. flammability class for transformer and line filter is V-1.**	**P**
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	Apparatus with voltages >4kV under normal operating conditions and distances to the enclosure exceed those specified Table 21, flammability classification HB40 or better is required for the enclosure.	**Operating voltage is less than 4kV.**	**N/A**
20.2	**Fire enclosure**		
20.2.1	**Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1**	**No voltage exceeding 4kV, no fire enclosure requirement.**	**N/A**
20.2.2	**Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled**	**No internal fire enclosure.**	**N/A**
20.2.3	**Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure**	**No internal fire enclosure.**	**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
A	**APPENDIX A, ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER**		
A.5.1	**j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply**	**Not intended for outdoor use.**	**N/A**
A.10.2.1	**Enclosure provides protection against splashing water**		**N/A**
A.10.2.2	**Humidity treatment carried out for 7 days**		**N/A**
B	**APPENDIX B, APPARATUS TO BE CONNECTED TO THE TELECOMMUNICATION NETWORKS**		
	Complies with IEC 62151 clause 1	**Not intended for telecommunication networks.**	**N/A**
	Complies with IEC 62151 clause 2		**N/A**
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		**N/A**
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		**N/A**
	Complies with IEC 62151 cause 5 but with 5.3.1 modified in accordance with annex B of this standard		**N/A**
	Complies with IEC 62151 clause 6		**N/A**
	Complies with IEC 62151 clause 7		**N/A**
	Complies with IEC 62151 annex A, B and C		**N/A**

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Clause	Requirement – Test	Result - Remark	Verdict
	IEC 62151 clause 4.1.1: **Add after the first paragraph:** **NOTE- In Finland, Norway and Sweden, class lequipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and ACCESSIBLE parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.** **The marking text in the applicable countries shall be as follow:** **In Finland;** **"Laite on liitettävä suojamaadoituskoskettimilla va rustettuumpistorasiaan"** **In Norway; "Apparatet må tikoples jordet stikkontakt"** **In Sweden; "Apparaten skall anslutas till jordat uttag"**	**Adequate marking shall be applied when marketed into Finland, Norway and Sweden. The manufacturer confirmed.**	**P**

L	**APPENDIX L, ADDITIONAL REQUIREMENTS FOR ELECTRONIC FLASH APPARATUS FOR PHOTOGRAPHIC PURPOSES.**		
L5.4	**Marking and Instructions**	**Not contains electronic flash circuit.**	**N/A**
L9.1.1	**Terminals to connection to synchroniser not HAZARDOUS LIVE**		**N/A**
L7.1.5 & **L11.2.6**	**Lithium batteries meet permissible temp rise in Table 3 , unless comply with 6.3.2 of IEC 60086-4**		**N/A**
L14.6.6	**Mains switch characteristics appropriate to its function under normal conditions**		**N/A**
			N/A

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7.1	TABLE: temperature rise measurements		P
	Power consumption in the OFF/Stand-by	Standby: 1.2W(264V), 2.3W（90V）	—
	Position of the functional switch (W) ..... :		—

Test No.	Operating conditions	Input				output			
		V	Hz	W	A	Channel	V	W	Ω
1	A	90	50	142.3	1.591	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
2	A	90	60	142.5	1.583	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
3	A	100	50	142.2	1.429	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
4	A	100	60	142.0	1.430	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
5	A	240	50	137.6	0.593	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
6	A	240	60	138.1	0.594	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
7	A	264	50	138.5	0.570	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
8	A	264	60	138.3	0.568	HF	0.3	0.02x2	4x2
						LF	2.4	0.72 x2	8x2
9	B	90	50	134.5	1.504	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
10	B	90	60	134.9	1.497	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
11	B	100	50	133.8	1.346	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
12	B	100	60	134.0	1.346	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
13	B	240	50	130.1	0.570	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
14	B	240	60	130.2	0.567	HF	0.3	0.02x2	4x2

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Test No.	Operating conditions	Input				output			
		V	Hz	W	A	Channel	V	W	Ω
						LF	2.0	0.5 x2	8x2
15	B	264	50	130.4	0.557	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
16	B	264	60	130.3	0.549	HF	0.3	0.02x2	4x2
						LF	2.0	0.5 x2	8x2
supplementary information:									
Condition A: Max. non-clipped output power on speaker. Condition B: 1/8 Max. non-clipped output power on speaker. Normal operation condition: See page 6.									

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	Loudspeaker impedance (Ω)	4ohm 2W x 2	—
	Several loudspeaker systems	-	-
	Marking of loudspeaker terminals	-	-

Monitored point:	dT (K)		Limit dT (K)
	90Vac / 60Hz	264Vac / 50Hz	
L1 COIL	61.1	43.5	95
L1 CORE	53.3	39.4	95
L5 COIL	58.2	39.7	95
CX2	51.5	36.3	65
CX1	51.2	34.2	65
L4 COIL	61.0	37.0	95
HEATSINK（HS2）	46.2	46.5	-
CY4	41.7	35.2	90
CY5	43.5	41.9	90
CY3	44.1	38.4	90
IC4	39.1	39.1	65
IC5	40.1	40	65
LCD PANEL	29.7	28.7	-
PCB UNDER Q2	55.4	53.7	95
T1 COIL	41.3	39.7	85
T1 CORE	41.6	40.2	85
E1 BODY	51.3	46.5	70
IC2	55.4	55.4	65
T2 CORE	50.3	50.3	85
T2 COIL	67.1	65.7	85
L8 COIL	50.1	50.7	-
E16 BODY	41.2	40.7	65
U203	55.8	56.1	-
U41	41.7	39.7	-
INVERTER TRANSFORMER T1	46.0	45.3	-
INVERTER TRANSFORMER T1 CORE	45.4	44.7	-
INTERNAL WIRE	34.5	28.2	70
INLET	4.6	3.4	60

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BUTTON	5.3	4.6	60
ENCLOSURE INSIDE	18.2	18.1	-
ENCLOSURE OUTSIDE	18.4	16.9	60
Ambient (ºC)	27	27.4	
supplementary information:			
The unit is tested with white screen, max. brightness and contrast, and with 0.5W output power on speaker, picture provided from a PC. *) Temperature limits for winding include less 10K for thermocouple measurement method. For max. operating temperature = 45ºC, limit temperature rises of 10K less than those specified in above table are required.			

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	Winding temperature rise measurements				N/A
	Ambient temperature t1 (°C) ..... :	Switch mode transformer			—
	Ambient temperature t2 (°C) ..... :				—
Temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit dT (K)	Insulation class

7.2	TABLE: softening temperature of thermoplastics	N/A

Temperature T of part	T - normal conditions (°C)	T - fault conditions (°C)	T softening (°C)

10.3	TABLE: insulation resistance measurements	P

Insulation resistance R between:	R (MΩ)	Required R (MΩ)
For unit:		
Between mains poles (primary fuse disconnected)	>100	2
Primary circuit and plastic enclosure	>100	4
Primary circuit and secondary circuit	>100	2
Primary circuit and metal enclosure	>100	2
For transformer:		
Basic: Transformer primary and core	>100	2
Reinforced: Transformer primary and secondary	>100	4
Reinforced: Two layers of insulating tape (Located on T1)	>100	4

10.3	TABLE: electric strength measurements	P

Test voltage applied between:	Test voltage (Vac)	Breakdown
For unit:		
Poles of supply (switch off)	DC 2121	No
Poles of supply and output terminals (switch on)	DC 4242	No
Poles of supply and the metal enclosure (switch on)	DC 2121	No
Primary winding and secondary winding of transformer	AC 3000	No
Insulation tapes inside transformer (2 layers)	AC 3000	No
For transformer:		
Basic: Transformer primary and core	1658Vac	No
Reinforced: Transformer primary and secondary	3000Vac	No

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Test voltage applied between:	Test voltage (Vac)	Breakdown
Reinforced: Two layers of insulating tape (Located on T1)	3000Vac	No

11.2	TABLE: summary of fault condition tests		P
	Voltage (V) 0,9 or 1,1 times rated voltage ..... :	90V or 264V	—
	Ambient temperature (°C) ..... :	25°C	—

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
BD1(1-2)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
BD1(1-2)	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
E1	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
E1	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
D1	S-C	264	2hour	F1	0.589A→ 1.03A	Temp rise at T1 winding= 46,2 K Temp rise at T2 winding= 66,5 K PCB UNDER Q2 =62K
C709/Q1(D-S)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, Q1 damaged. No hazard.
Q1(D-G)	S-C	264	2.3hour	F1	0.589A→ 0.871A	Temp rise at T1 winding= 43,2 K Temp rise at T2 winding= 62,5 K PCB UNDER Q2 =56K
C709/Q1(G-S)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, Q1 damaged. No hazard.
IC4(1-2)	S-C	264	15min	F1	0.128A→ 0.075A	Unit protected, input current varied from 0.128A→0.075A no hazard.
IC4(3-4)	S-C	264	15min	F1	0.589A→ 0.075A	Unit protected. no hazard.
IC4(4)	O-C	264	15min	F1	0.128A→ 0.075A	Unit protected, input current varied from 0.128A→0.075A no hazard.
IC2(5-8)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, Z3,D9 damaged. No hazard.
IC2(2-5)	S-C	264	1s	F1	>11A	Fuse F1, FX1 open immediately, IC2, DX1 damaged. No hazard.
D14	S-C	264	15min	F1	0.073A→ 0.08A	Unit protected, input current varied from 0.073A→0.08A no hazard.
+5VSB-GND(near C913)	S-C	264	15min	F1	0.087A→ 0.077A	Unit protected, input current varied from 0.087A→0.77A no hazard.

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component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
T1(4-5)	S-C	264	15min	F1	0.11A→ 0.078A	Unit protected, input current varied from 0.11A→0.078A no hazard.
T1(6-8)	S-C	264	15min	F1	0.12A→ 0.078A	Unit protected, input current varied from 0.12A→0.078A no hazard.
T1(1-2)	S-C	264	15min	F1	0.589A	Circuit work normally, no reaction
T1(2-3)	S-C	264	15min	F1	0.096A→ 0.076A	Unit protected, input current varied from 0.096A→0.076A no hazard.
D10	S-C	264	15min	F1	0.589A→ 0.076A	Unit protected, no hazard.
IC5(1-2)	S-C	264	15min	F1	0.134A→ 0.132A	Unit protected, input current varied from 0.134A→0.132A no hazard.
IC5(3-4)	S-C	264	15min	F1	0.589A	Circuit work normally, no reaction
T2(9-11)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
T2(9-11)	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
T2(7-8)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
T2(7-8)	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
D11	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
D11	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
D13	S-C	264	1s	F1	>11A	Fuse F1 open immediately, no hazard
D13	S-C	90	1s	F1	>11A	Fuse F1 open immediately, no hazard
L8(near C938)	S-C	264	15min	F1	0.589A→ 0.132A	Unit protected, no hazard.
L8(near E13)	S-C	264	15min	F1	0.589A→ 0.131A	Unit protected, no hazard.
24V-GND(C939)	S-C	264	15min	F1	0.589A→ 0.117A	Unit protected, no hazard.
12V-GND(C943)	S-C	264	1s	F1	>11A	Fuse F1 open immediately, D13 damaged. No hazard.
IC6(1-2)	S-C	264	15min	F1	0.589A→ 0.121A	Unit protected, no hazard.
IC6(3-4)	S-C	264	15min	F1	0.589A→ 0.076A	Unit protected, no hazard.
IC6(4)	O-C	264	15min	F1	0.589A→ 0.122A	Unit protected, no hazard.

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component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
LF SPEAKER	S-C	264	2hour	F1	0.589A→ 0.721A	Temp rise at T1 winding= 43,4 K Temp rise at T2 winding= 67,3 K PCB UNDER Q2 =53.3K U41=79.2K
HF SPEAKER	S-C	264	15min	F1	0.589A	Circuit work normally, no reaction
Ventilation openings	Blocked	264	2 hour	F1	0.557A	Temp rise at T1 winding= 44.3 K Temp rise at T2 winding= 69.0 K PCB UNDER Q2 =54.8K
Output	Max. non-clipped	264	2 hour	F1	0.570A	Temp rise at T1 winding= 46.1K Temp rise at T2 winding= 70.8K PCB UNDER Q2 =57K
supplementary information:						
S-c=short circuit, O-c=open circuit Tested with 0.5W power on speakers, full white display with max. brightness and contrast, picture provided from a computer. Maximum volume with a 1KHz sinusoidal input signal. *) Fuse opened at 2.1 times of fuse rating.						

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14	TABLE: list of critical components and materials	P

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Power plug	Shenzhen Deren Electronic Co.ltd	DR310	250V, 16A	IEC 60884	VDE
Connector (CN1)	Shenzhen Deren Electronic Co.ltd	DK-390	250V,10A	IEC 60320	VDE
Power cord	Gu Shun Electronic Co Ltd	H03VVH2-F	3x0.75mm2	IEC 60227	VDE
Appliance inlet	Inalways corp	0713-PQG	10A 250V	IEC 60320	VDE
Mains switch	Canal Electronic Co.,Ltd	MR-2	10A 250VAC	IEC 61058-1	VDE
Fuse (F1)	XC Electronic (Shenzhen) Corp	5TR	T5A 250V	IEC 60127	VDE
PCB	Various	Various	V-0, 130°C	UL94	UL
NTC (RT1)	Various	Various	5A, 25°C	IEC60065	Tested with equipment
Plastic enclosure	GuangZhou Kingfa Science & Technology Co Ltd	FRHIPS-113	V-0	UL94	UL
Internal wire	Various	AWG 22	Min. 105 'C, 300V	UL1672	UL
Y1 capacitor (CY5)	Jyh Chung Electronics Co., Ltd	JD	2200pF, 250VAC, 125℃	IEC 60384-14	VDE
Alternative	Hongzhi Enterprises Co. Ltd.	Y	2200pF, 250VAC, 125℃	IEC 60384-14	VDE
X2 capacitor across mains switch (CX1,CX1)	Hsuan Tai Electrical Co., Ltd.	CY	0.47u F 275V X2	IEC 60384-14	VDE

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Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
X2 capacitor (CX1,CX1)	Dain Electronics Co Ltd	MPX	0.47uF 275V X2	IEC 60384-14	VDE
Alternative	Tenta Electric Industrial Co., Ltd.	MEX	0.47u F 275V X2	IEC 60384-14	VDE
Alternative	Shenzhen Su Rong Electronic Co., Ltd.	X2	0.47u F 275V X2	IEC 60384-14	VDE
Alternative	Shenzhen Jing Yu Electronic Co., Ltd.	CBBX2	0.47u F 275V X2	IEC 60384-14	VDE
Y1 capacitor (CY1,CY2,CY3, CY4)	Jyh Chung Electronics Co., Ltd	JD	1000pF, 250VAC, 125℃	IEC 60384-14	VDE
Alternative	Hongzhi Enterprises Co. Ltd.	Y	1000pF, 250VAC, 125℃	IEC 60384-14	VDE
Optocoupler	Everlight Electronics Co., Ltd	EL817	AC 250V, Dti between I/P and O/P = 0.5mm	DIN EN 60747-5-2	VDE
Alternative	SHARP	PC 817	AC 250V, Dti between I/P and O/P = 0.5mm	DIN EN 60747-5-2	VDE
Alternative	COSMO electronic	K1010	AC 250V, Dti between I/P and O/P = 0.5mm	DIN EN 60747-5-2	VDE
Transformer T1					
Transformer (T1)	Jepuls Technology(Shenzhen)	CT4A126	Class B	IEC60065	Tested with the equipment
Primary winding	Shenzhen CITY CHENGWEI INDUSTRY CO.LTD.	2UEW	130°C	UL1446	UL
Secondary winding	FURUKAWA ELECTRIC CO LTD	TEX-E	Reinforced insulation wire 130℃	UL1446	UL

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Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Alternative	TOTOKU ELECTRIC CO LTD	TIW-2	Reinforced insulation wire 130℃	UL1446	UL
Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ	130℃	UL510	UL
Bobbin	ChangChun Plastics Co Ltd	T375J	150℃, V-0	UL94	UL
Tube	FLUO TECH INDUSTRIES CO LTD	TFT	200°C 300V	UL94	UL
Transformer T2					
Transformer (T2)	Jepuls Technology(Shenzhen)	CT4A127	Class B	IEC60065	Tested with the equipment
Primary winding	Shenzhen CITY CHENGWEI INDUSTRY CO.LTD.	2UEW	130°C	UL1446	UL
Secondary winding	FURUKAWA ELECTRIC CO LTD	TEX-E	Reinforced insulation wire 130℃	UL1446	UL
Alternative	TOTOKU ELECTRIC CO LTD	TIW-2x#	Reinforced insulation wire 130℃	UL1446	UL
Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ	130℃	UL510	UL
Bobbin	ChangChun Plastics Co Ltd	T375J	150℃, V-0	UL94	UL

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Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Tube	FLUO TECH INDUSTRIES CO LTD	TFT	200°C 300V	UL94	UL
Line Filter L1					
Line filter transformer	Nanjing coiltech electronics C.,Ltd.	CT4B068	130℃	IEC60065	Tested with the equipment
Primary winding	CHANGZHOU DAYANG WIRE & CABLE CO.,LTD.	Φ 0.1mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WUXI TAIHU COPPER MATERIAL WORKS	Φ 0.1mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WIRE & CABLES PLANT OF ANHUI TONGDU COPPER STOCK CO LTD	Φ 0.1mm	2UEW 130℃,V-0	UL1446	UL
Secondary winding	CHANGZHOU DAYANG WIRE & CABLE CO.,LTD.	Φ 0.4mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WUXI TAIHU COPPER MATERIAL WORKS	Φ 0.4mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WIRE & CABLES PLANT OF ANHUI TONGDU COPPER STOCK CO LTD	Φ 0.4mm	2UEW 130℃,V-0	UL1446	UL

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Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Bobbin	CHANG CHUN CO.,LTD	T375J	94V-0,130℃	UL94	UL
Insulation tape	YA HUA STICKING TAPE CO・，LTD	PZ./CT	130℃,V-0	UL510	UL
Alternative	FOUR PILLARS ENTERPRISE CO., LTD	PET	130℃,V-0	UL510	UL
Tube	SHANGHAI CHANGYUAN CO.,LTD.	TFT	130°C V-0	UL94	UL
Line Filter (L4, L5)					
Line filter transformer	Nanjing coiltech electronics C.,Ltd.	CT4C046	130°C	IEC60065	Tested with the equipment
Primary /Secondary winding	CHANGZHOU DAYANG WIRE & CABLE CO.,LTD.	Φ 0.65mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WUXI TAIHU COPPER MATERIAL WORKS	Φ 0.65mm	2UEW 130℃,V-0	UL1446	UL
Alternative	WIRE & CABLES PLANT OF ANHUI TONGDU COPPER STOCK CO LTD	Φ 0.65mm	2UEW 130℃,V-0	UL1446	UL
Bobbin	CHANG CHUN CO.,LTD	T375J	94V-0,130℃	UL94	UL
supplementary information:					

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Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
[1]) An asterisk indicates a mark which assures the agreed level of surveillance.					

Remarks

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ZB	**ANNEX ZB TO EN 60 065, SPECIAL NATIONAL CONDITIONS**		
2.6.1	**DK: certain types of Class I apparatus, see 15.1.1, may be provided with a plug not establishing earthing continuity when inserted in Danish socket-outlets**	**Not supplied with a cord set. See Summary of Testing.**	**N/A**
13.3.1	**NO: In Norway, due to IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230V in case of a single earth fault.**	**Considered.**	**P**
15.1.1	**DK: mains cord for single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to Heavy Current Regulations Section 107-2-D1**	**Supply cord has not provided.**	**N/A**
	DK: Class I equipment with socket-outlets with earthing contact, or which are intended to be used in locations where protection against indirect contact is required shall be provided with a plug in compliance with Standard Sheet DK 2-1a	**No socket outlet used.**	**N/A**
	DK: socket-outlets for providing power to Class II equipment with a rated current of 2,5 A shall have dimensions according to the drawing on page 179 of EN 60 065:2002 other dimensions shall be to IEC 60 083 Standard Sheet C 1a for portable socket-outlets	**No socket outlet used.**	**N/A**
	DK: mains socket-outlets with earthing contact shall comply with Heavy Current Regulations Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a	**No socket outlet used.**	**N/A**
	GB: equipment fitted with a flexible cable or cord provided with a 13A BS 1363 plug as in Statutory Instrument 1768:94	**Not provided.**	**N/A**
	IE: equipment fitted with a flexible cable or cord provided with a 13 A plug in accordance with Statutory Instrument 525:97	**Not provided.**	**N/A**
	NO: mains socket-outlets on Class II equipment meet CEE Publication 7 with the following amendments:		
	- dimensions 2,5 A, 250 V socket-outlets shall comply with Standard Sheet I page 180 of EN 60 065:2002		**N/A**
	- mechanical strength 2,5 A, 250 V socket-outlets tested as specified in EN 60 065, 12.1.3		**N/A**
	- protecting rim also tested		**N/A**

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	NO: method b) of 8.1 is not permitted. Double or reinforced insulation is required between parts connected to the mains and parts connected to the public telecommunications network		**N/A**
J.2	**NO: In Norway, due to IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230V in case of a single earth fault.**		**N/A**

ZC	**ANNEX ZC TO EN 60 065, A-DEVIATIONS**		
5	**DE: additional markings required in German language:**		**N/A**
	- cathode ray tubes with an accelerating voltage between 20 kV and 30 kV (marking on the tube)	**No CRT.**	**N/A**
	- TV receivers whose picture tube has an accelerating voltage between 20 kV and 30 kV		**N/A**
	- TV receivers whose picture tube has an accelerating voltage greater than 30 kV		**N/A**
	- TV receivers whose picture tube has an accelerating voltage less than 20 kV		**N/A**
5.1	**IT: additional markings on the outside of the TV receiver in Italian language**		**N/A**
	IT: user instructions in Italian language including a conformity declaration		**N/A**
	IT: certification number on the back cover		**N/A**
14	**SE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.**	**No switches.**	**N/A**

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	TABLE: Opto Electronic Devices	**P**

Manufacturer ..... : COSMO / SHARP / Everlight

Type..... : K1010 / PC 817 / EL817

Separately tested..... : Tested by FIMKO
Bridging insulation ..... : Reinforced insulation
External creepage distance..... : 8 / 7.62 / 7.7 mm

Internal creepage distance..... : 5.3 / 6.4 / 6.0 mm

Distance through insulation..... : 0.5 / 0.4 / 0.5 mm

Tested under the following conditions..... : R, S, B
Input..... :
Output..... :

supplementary information

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9.1.1.1	Touch current expressed as voltages U1 and U2 in Annex D	P

Location	Measured U1 V (peak)	Measured U1 V (DC)	Measured U2 V (peak)	Limits : U1 Max 35V (peak) U1 Max 1.0V (DC) U2 Max 0.35V (peak)
Mains pole –plastic enclosure with metal foil (rear panel earthed)	---	0.01	---	Pass
Mains pole – accessible terminal (earthed)	---	0.37	---	Pass
Mains pole –plastic enclosure with metal foil (rear panel earthed)(Fuse opened)	---	0.01	---	Pass
Mains pole – accessible terminal (earthed) (Fuse opened)	---	0.62	---	Pass
Mains pole –plastic enclosure with metal foil	2.98	0.01	42mV	Pass
Mains pole – accessible terminal	4.0V	0.19	162mV	Pass
Mains pole –plastic enclosure with metal foil (Fuse opened)	3.0V	0.01	68mV	Pass
Mains pole – accessible terminal (Fuse opened)	6.1V	0.30	194mV	Pass

Comments:	Vin = 264Vac, 60Hz Between AC mains and Earthed metal chassis: 0.47mA.

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13.2	Table: working voltage measurement	—

Location 1	Location 2	RMS voltage (V)	Peak voltage (V)	Comments
T1 Pri.pin1	T1 Sec.pin7	202V	448V	
T1 Pri.pin2	T1 Sec.pin7	210V	424V	
T1 Pri.pin3	T1 Sec.pin7	204V	360V	
T1 Pri.pin4	T1 Sec.pin7	260V	**496V**	
T1 Pri.pin5	T1 Sec.pin7	260V	408V	
T1 Pri.pin1	T1 Sec.pin9	209V	424V	
T1 Pri.pin2	T1 Sec.pin9	210V	414V	
T1 Pri.pin3	T1 Sec.pin9	207V	360V	
T1 Pri.pin4	T1 Sec.pin9	260V	488V	
T1 Pri.pin5	T1 Sec.pin9	**262V**	440V	
T2 Pri.pin1	T2 Sec. Pin7	201V	360V	
T2 Pri.pin4	T2 Sec. Pin7	254V	404V	
T2 Pri.pin6	T2 Sec. Pin7	278V	468V	
T2 Pri.pin1	T2 Sec. Pin8	202V	376V	
T2 Pri.pin4	T2 Sec. Pin8	255V	404V	
T2 Pri.pin6	T2 Sec. Pin8	280V	476V	
T2 Pri.pin1	T2 Sec. Pin9	204V	412V	
T2 Pri.pin4	T2 Sec. Pin9	256V	408V	
T2 Pri.pin6	T2 Sec. Pin9	**284V**	**480V**	
T2 Pri.pin1	T2 Sec. Pin11	206V	360V	
T2 Pri.pin4	T2 Sec. Pin11	254V	404V	
T2 Pri.pin6	T2 Sec. Pin11	276V	464V	
supplementary information:				
Normal operation condition: See page 6.				

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13.3 - 13.4	TABLE: clearance and creepage distance measurements	P

clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Basic: Live to Neutral (on PCB)	340	240	2.0	3.8	2.5	3.8
Basic: F1 pad 1 to F1 pad 2 (on PCB)	340	240	2.0	2.3	2.5	3.6 [1])
Basic: CY1 to GND (on PCB)	340	240	2.0	7.1	2.5	7.1
Basic: CY2 to GND (on PCB)	340	240	2.0	7.0	2.5	7.0
Basic: CY4 to GND (on PCB)	340	240	2.0	3.6	2.5	7.5 [1])
Basic: Live (before fuse) to GND (on PCB)	340	240	2.0	7.8	2.5	7.8
Basic: L1 to GND (on PCB)	340	240	2.0	6.9	2.5	6.9
Basic: CY4 to GND (on PCB)	340	240	2.0	7.0	2.5	7.0
Basic: CY5 to GND (on PCB)	340	240	2.0	7.2	2.5	7.2
Basic: Primary components to GND (under PCB) (components)	496	284	2.2	5.6	3.0	>> 5.6
Reinforced: T2 Pin 1 to C935 (on PCB)	480	284	4.2	7.4	6.0	7.4
Reinforced: T2 Pin 4 to R970 (on PCB)	480	284	4.2	20.0	6.0	20.0
Reinforced: T2 Pin 6 to R920 (on PCB)	480	284	4.2	13.4	6.0	13.4
Reinforced: IC6 pin 1 to IC6 pin 4 (on PCB)	340	240	4.0	5.8	5.0	8.0 [1])
Reinforced: IC4 pri. to IC4 sec. (on PCB)	340	240	4.0	7.1	5.0	7.1
Reinforced: T1 pri. to T1 sec. (on PCB)	496	262	4.4	14.3	5.4	14.3
Reinforced: T1 pin 1 to IC4 pin 1 (on PCB)	496	262	4.4	8.1	5.4	8.1
Reinforced: T1 pri. to IC7 via T1 core (component)	496	262	4.4	5.4	5.4	5.4
supplementary information:						

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Tables to IEC/EN 60065 7th edition

Report No. Draft

For construction of transformers, see appended Table 14.3.3. 2N test on following components: RT1, RV1, E18, IC8, E12, IC7, C905, R60, input wires and secondary wires. Glue on following components: R59, R60 and R913. Tube on following components: RV1, R59, R60 and J2. There is one layer insulation tape surrounded C935. [1]) There is a 1.9mm gap in between.

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Tables to IEC/EN 60065 7th edition

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14.3.3	Transformer/motor, constructional requirements	P

Loc.	Tested insulation	Working voltage		Insulation Res.	Required electric strength	Required distance		
		peak / V	rms / V	M Ohms	kV (60 s)	clearance / mm	creepage distance / mm	distance thr. insul.
T1	Pri. –sec.	262	496	4	3.0	4.4	5.4 [1])	*
T1	Pri. – core – sec.	262	496	4	3.0	4.4	5.4 [1])	*
T2	Pri. –sec.	284	480	4	3.0	4.2	6.0 [1])	*
T2	Pri. – core – sec.	284	480	4	3.0	4.2	6.0 [1])	*

Loc.	Tested insulation	Measured Insulation Res.	Tested electric strength	Measured distance		
		M Ohms	kV (60 s)	clearance / mm	creepage distance / mm	distance thr. insul.
T1	Pri. –sec.	>100	3.0	5.4	5.4	3 layers
T1	Pri. – core – sec.	>100	3.0	10.8	10.8	3 layers
T2	Pri. –sec.	>100	3.0	8.2	8.2	2 layers
T2	Pri. – core – sec.	>100	3.0	7.0	7.0	2 layers

supplementary information:

*) 2 or 3 layers or 0.4mm
[1]) Linear interpolation used.

17.1	Torque test to Table 20:	P

Screw Location / function	Diameter (mm)	With Head	Without Head	Material Screw	Material Nut	Torque test (Nm) Fulfilled / Remarks
Fixing of rear plastic panel	4.1	X	--	Metal	plastic	Tested with 1.2Nm, 10 times / Pass

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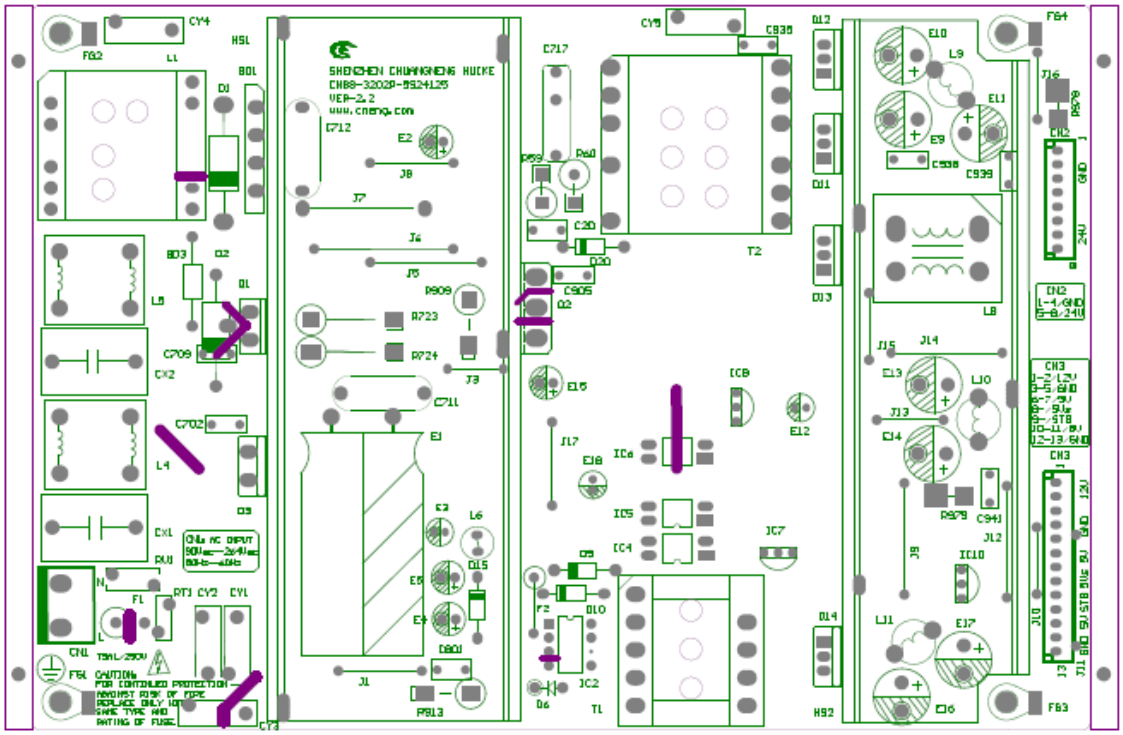
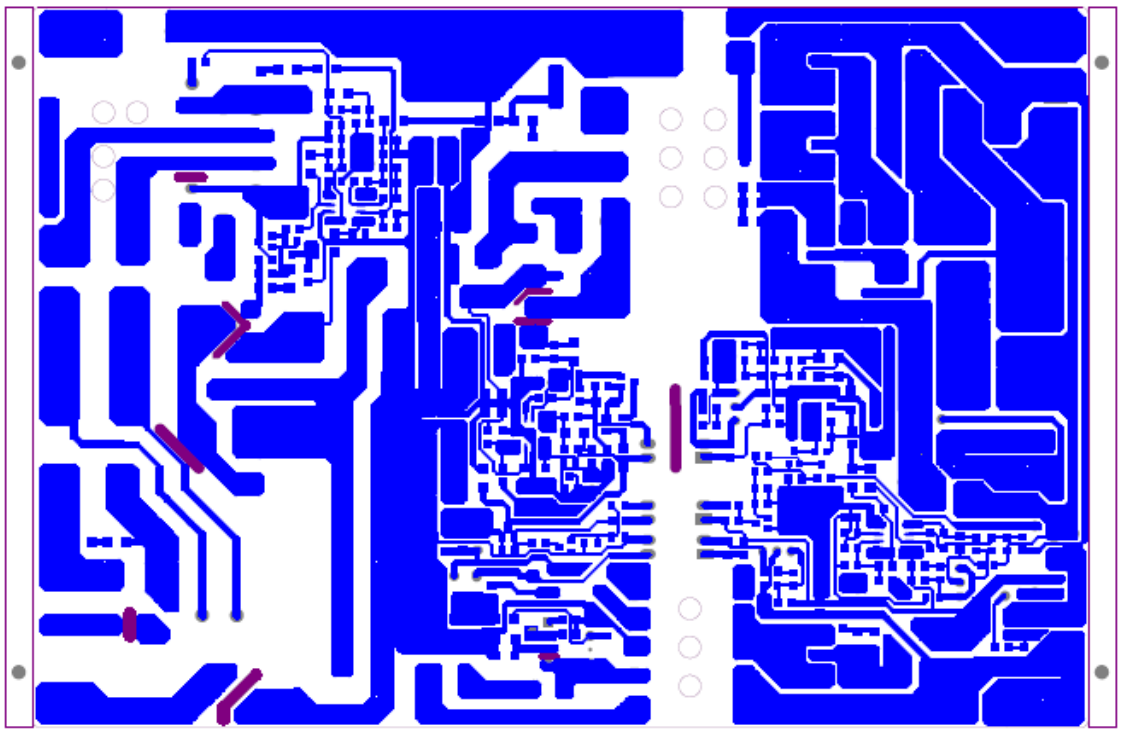
PCB Layout

Report No. Draft

Copy of PCB, layout of tracing (not to scale):





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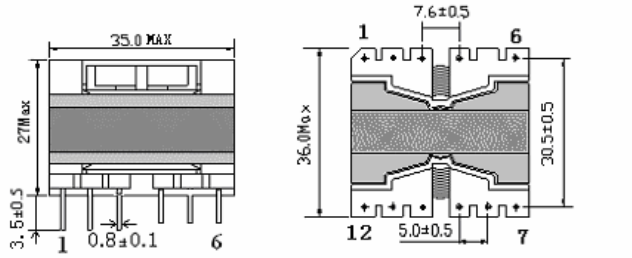
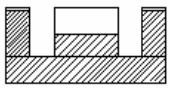
Transformer Specification

Report No. Draft

Construction / winding diagram / component part no.: T1





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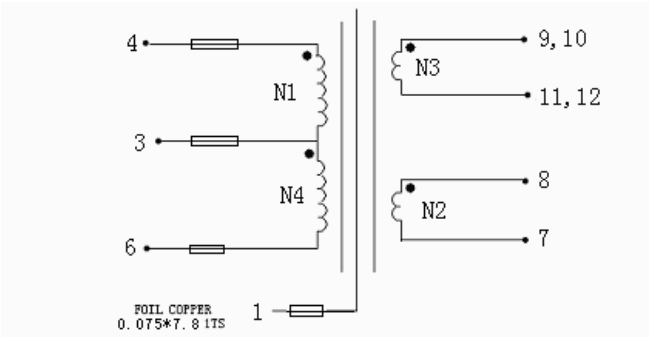

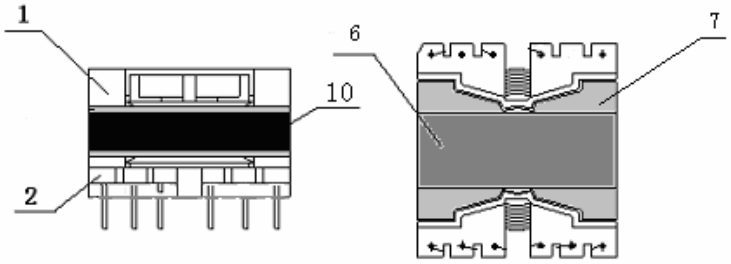

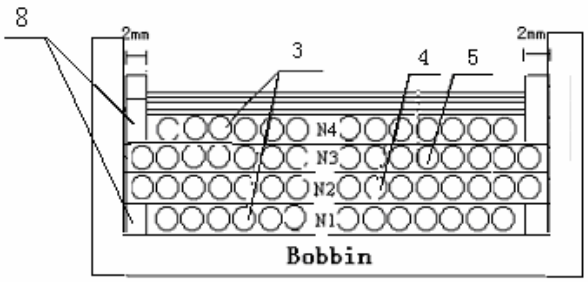

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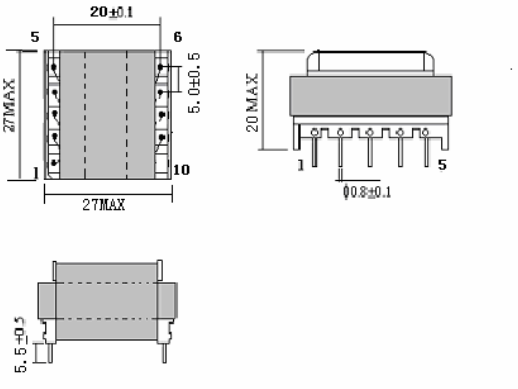
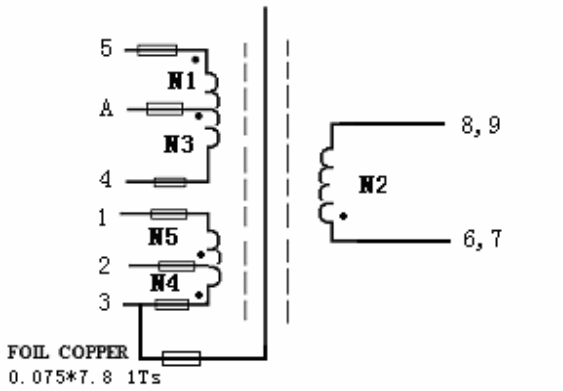
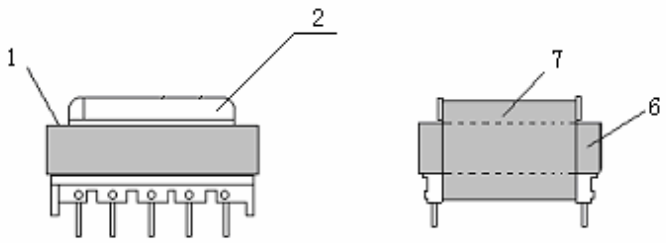
Transformer Specification

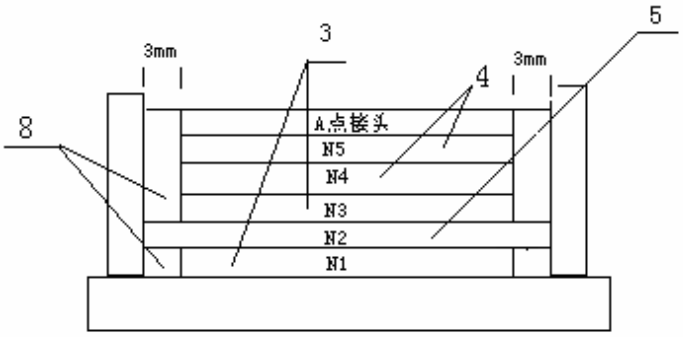
Report No. Draft

Construction / winding diagram / component part no.: T2









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Photos

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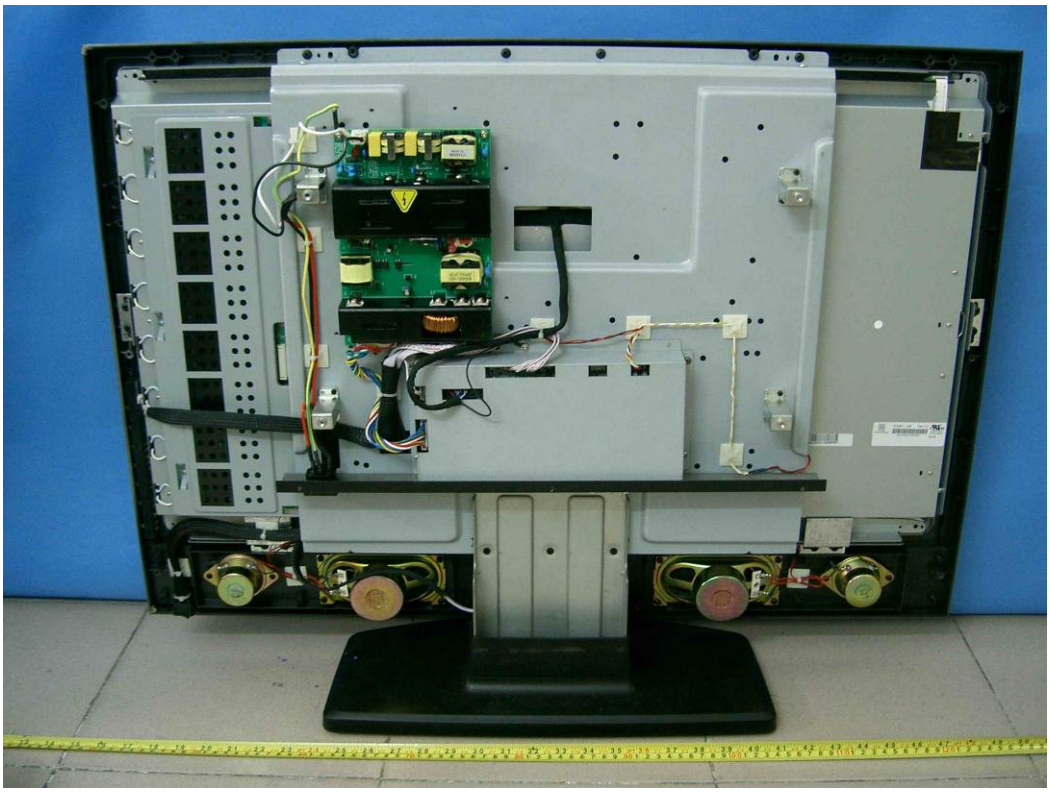

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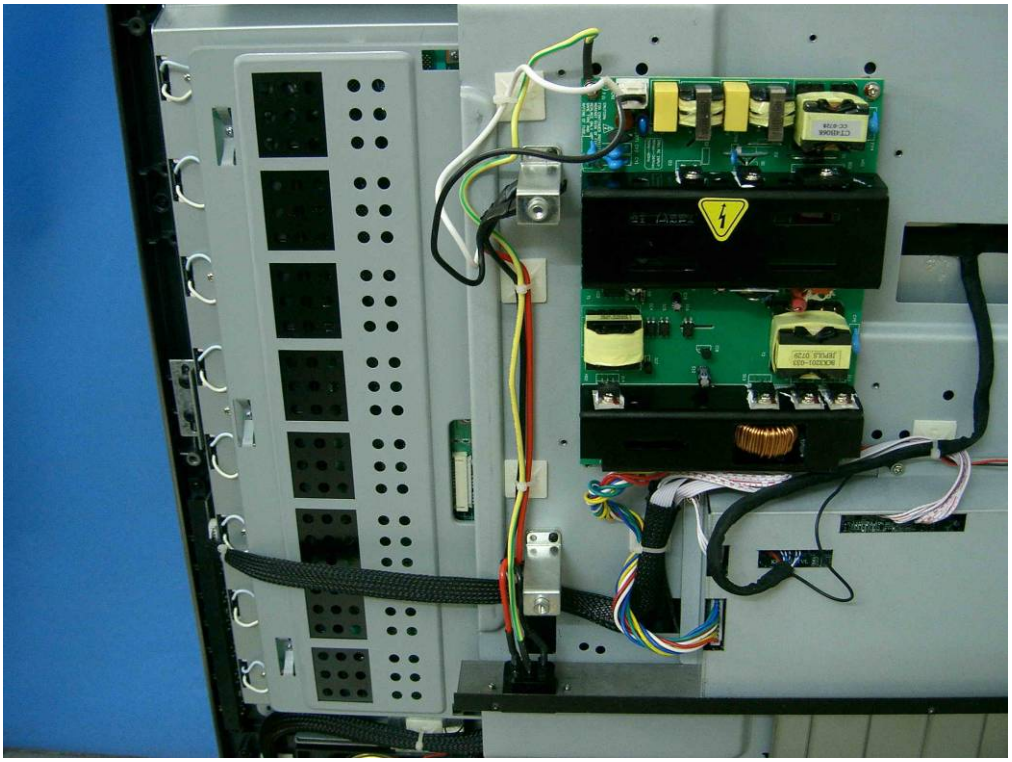

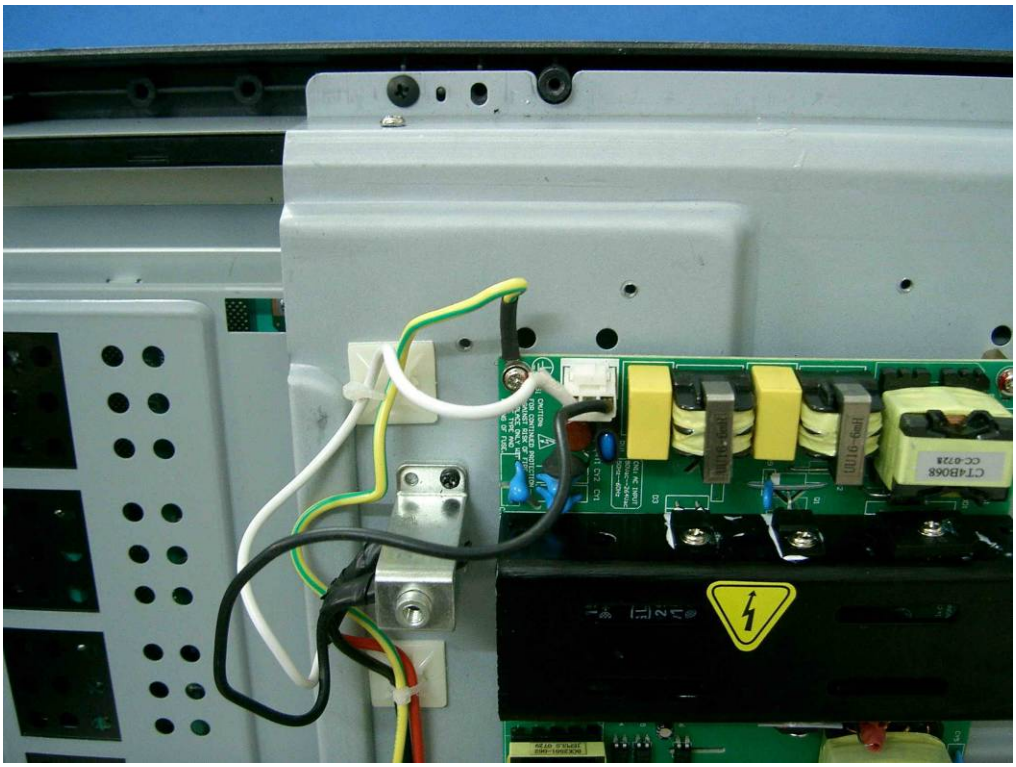

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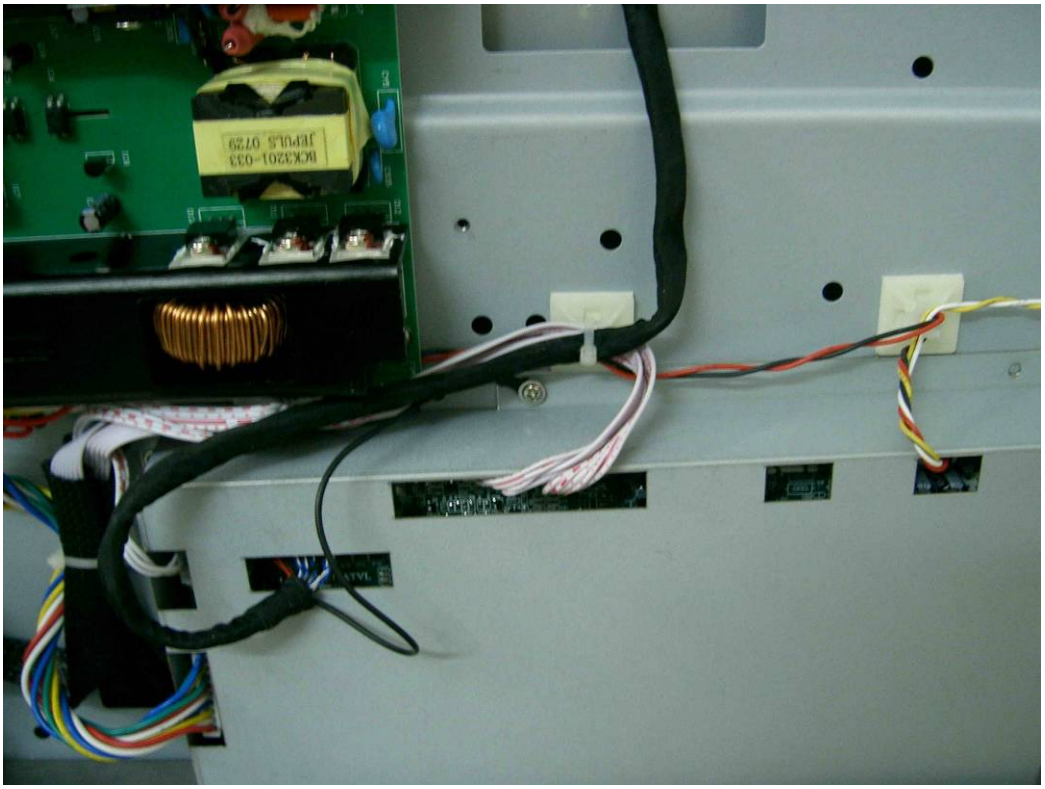

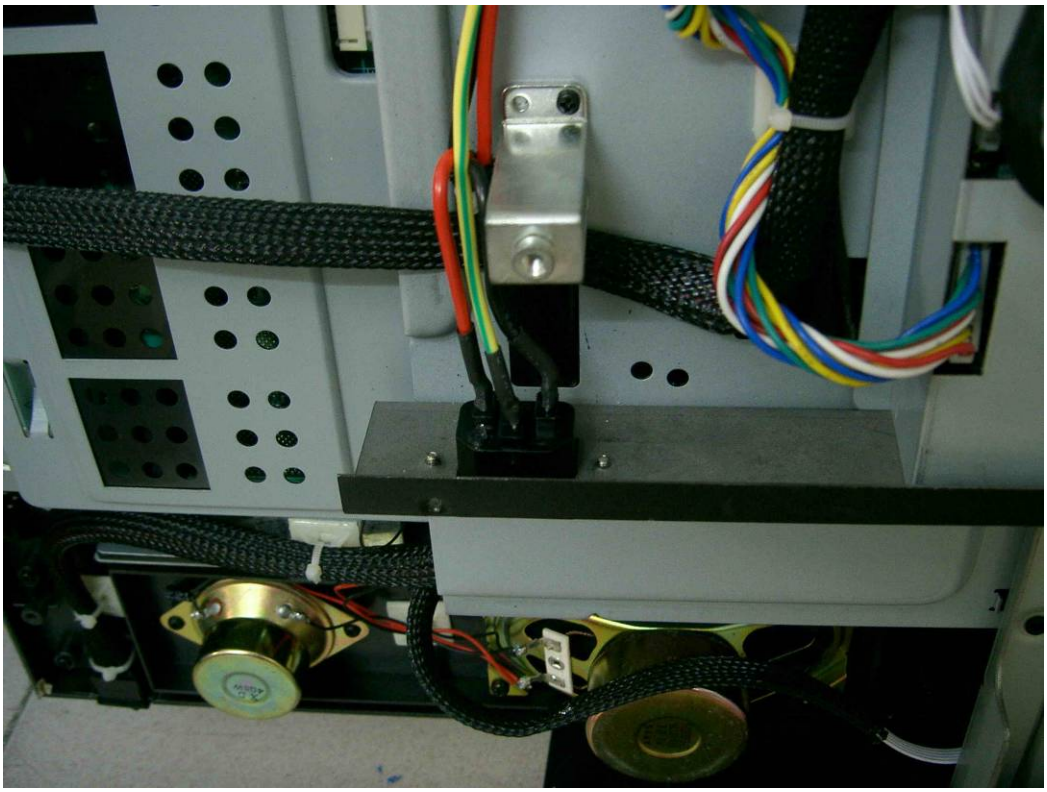

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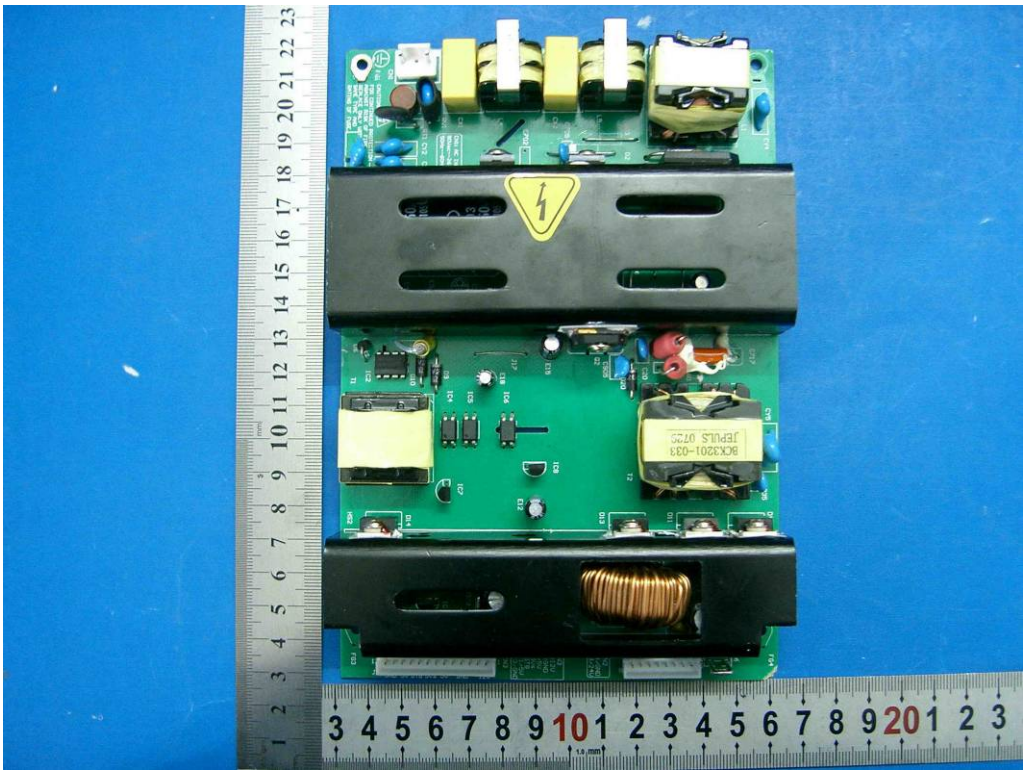

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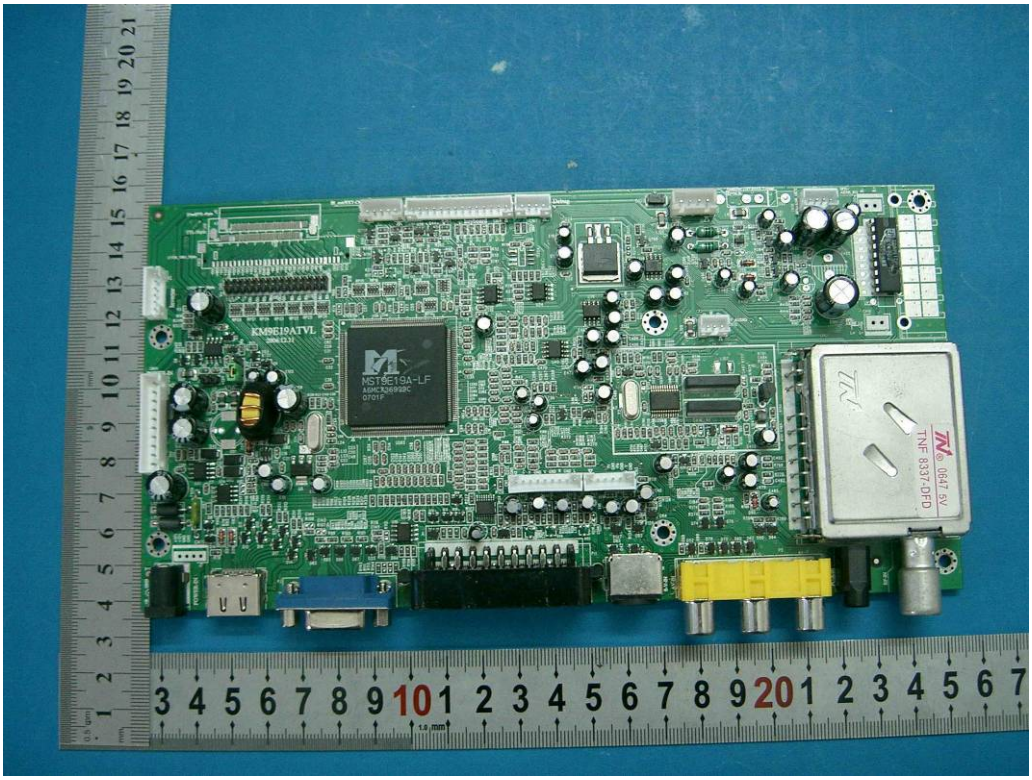

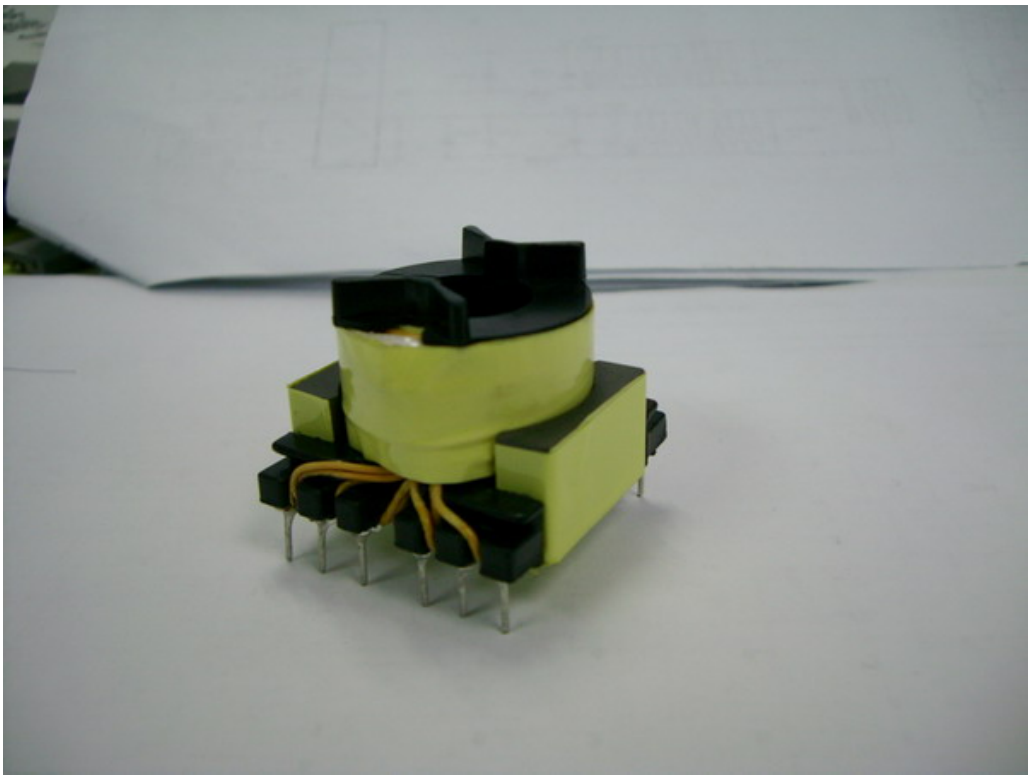

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ATTACHMENT: ARGENTINA DIFFERENCES

Test results according to CB BULLETIN No. 110A, June 2006

Clause	Requirement - Test	Result - Remark	Verdict
	Ratings 220V ac – 50Hz	Rating 100-240V covered 220V.	P
	Class 0 and Class 01 are not allowed	Class I apparatus.	N/A
	Safety instructions and manuals shall be written in Spanish languages	Should be considered when apply national approval.	N/A
	Country of origin shall be shown on the marking plate or, if not possible, in the primary packaging	Should be considered when apply national approval.	N/A
	Address of the importer in Argentina shall be shown on the product or on the primary packaging	Should be considered when apply national approval.	N/A
	Class I appliances provided with plugs shall be provided with the label specified in sheet "Class I"	The power supply cord is not provided. Must be evaluated when marketed in Argentina.	N/A
	Class II appliances provided with plugs shall be provided with the label specified in sheet "Class II"	Class I apparatus.	N/A
	Plug must comply with relevant IRAM Standard. (IRAM 2063 Class II appliance and IRAM 2073)	The power supply cord is not provided. Must be evaluated when marketed in Argentina.	N/A
	Appliances certified under System Nº 4 (Type Certification scheme) shall be marked with the symbol specified in sheet "St Mark"	Should be considered when apply national approval.	N/A
	Appliances certified under System Nº5 (Mark of Conformity Certification scheme) shall be marked with the symbols specified in sheet "S Mark"	Should be considered when apply national approval.	N/A

Report No. Draft

ATTACHMENT: AUSTRALIAN / NEW ZEALAND DIFFERENCES
to IEC 60065 7th ed. (2001)
Test results according to AS/NZS 60065:2003

Clause	Requirement – Test	Result - Remark	Verdict
ZZ.1 Introduction **This Annex sets out variations between this Standard and IEC 60065: 2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard by shading and strikethrough.**			
ZZ.2 Variations **The variations are as follows:**			
7.1.5 and Table 3	As an alternative to the method described in footnote f), the following may be used. The ball-pressure test described in AS/NZS 60695.10.2 may be carried out.	See clause 7.2.	–
	For external parts		P
	For materials supporting parts conductively connected to the mains	Ball pressure tested at 125°C / 1hr for CN1, L4 and L5 bobbin. Impression: <2mm	P
7.2	As an alternative to the second paragraph, the following may be used. The alternative for the method described in footnote h) of Table 3 may be used.	Not used.	N/A
15.1.1	After the second paragraph, add the following: Plugs for the connection of apparatus to mains-powered socket-outlets shall comply with AS/NZS 3112 or AS/NZS 3123. Apparatus with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements of AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Not direct plug-in.	N/A
15.3.5	In Table 15, in the second and third rows of the first column *replace* '6' with '7.5'.		–
16.2	In Table 18, in the second and third rows of the first column replace '6' with '7.5'.		–
16.3	After item (b) add the following: A flexible cord complying with AS/NZS 3191 need not to undergo this test.	Power supply cord not supplied.	N/A
20	Add the following after NOTE 2: For alternative test refer to Clause 20.201.		–

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20.1.4	In Table 21, in the third and fourth columns *change* both 'HB75' and 'No requirement' to 'V-1'.	Considered.	P
20.2.3	After this Clause, *add* the following:		–
20.201 20.201.1	**Resistance to fire—Alternative tests** **General** Parts of non-metallic material shall be resistant to ignition and the spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1 750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1 or better according to AS/NZS 60695.11.10. NOTE – In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. *Compliance shall be checked by the tests of 20.201.2.1, 20.201.2.2. and 20.201.2.3* *For the base material of* PRINTED BOARDS*, compliance shall be checked by the test of 20.201.2.4.* The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, they are	Enclosure material rated V-1. Material of printed board is V-0.	P

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	placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		
20.201.2 20.201.2.1	**Tests** **Testing of non-metallic parts** Part of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.	Enclosure material rated V-1. Material of printed board is V-0.	P
20.201.2.2	**Testing of insulated parts** Part of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 64695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection NOTE – Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:	Enclosure material rated V-1. Material of printed board is V-0.	P

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	Clause of AS/NZS 4695.2.2		–
	5 Severities *Replace* with: The duration of application of the test flame shall be 30 s ±1 s.		–
	8.2 Test procedure *Replace* the first sentence with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.		–
	8.4 The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner.		–
	8.5 *Replace* with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test		–
	10 Evaluation of test results *Replace* with: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		–
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10 provided that the sample tested was not thicker than the relevant part.		–
20.201.2.3	**Testing by needle-flame test** If parts, other than enclosures, do not withstand the glow wire tests of 20.201.2.2, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 20.201.2.2 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 20.201.2.2. Parts shielded by a separate	Enclosure material rated V-1. Material of printed board is V-0.	P

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	barrier which meets the needle-flame test shall not be tested. **NOTE 1 –** If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing. **NOTE 2 –** If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the apparatus, the apparatus is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing **NOTE 3 –** Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		
20.201.2.4	**Testing of printed boards** The base material of PRINTED BOARDS shall be subject to the needle-flame test of Clause 21.201.2.3. The flame shall be applied to the edge of the board where the heatsink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the— - PRINTED BOARD does not carry any potential ignition source; - base material of PRINTED BOARDS, on which the available power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the PRINTED BOARDS are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - base material of PRINTED BOARDS, on which the available power at a connection exceeds 15 VA operating at a voltage	PCB meets FV-0.	–

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	exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of PRINTED BOARDS supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the PRINTED BOARDS are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Compliance shall be determined using the smallest thickness of the material.* NOTE – Available power is the maximum power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the power for more than 2 min when the circuit supplied is disconnected.		
21.201.3	For open circuit voltages greater than 4 kV POTENTIAL IGNITION SOURCES with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.	No parts exceed 4kV.	N/A
Annex B	After the heading *add*: For Australia only, this Annex is replaced by the requirements of the Telecommunications Labelling Notice issued under the Telecommunications Act. NOTE – The Telecommunications Act is administered by the Australian Communications Authority.	No TNV circuits.	N/A

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ATTACHMENT: CANADIAN DIFFERENCES
Test results according to CB Bulletin 110A June 2006

Clause	Requirements – Test	Result – Remark	Verdict
3	**General requirements**		N/A
3.2A	Add the following clause: A component power supply complying with CAN/CSA-C22.2 No. 60950 is considered to comply with this construction and fault conditions of this Standard after taking into account any relevant conditions of acceptability.		N/A
4.2	**Normal operating conditions**		P
4.2.1	Add the following after the fifth paragraph: For apparatus intended for use at nominal 120V ac, the apparatus shall comply with this Standard at supply voltages between 108V and 125V. For apparatus intended for use at nominal 240V ac the apparatus shall comply with this Standard at supply voltages between 216V and 250V.	Covered.	P
4.2.10	Add the following after the second paragraph: As an alternative, a supply apparatus for general use complying with CAN/CSA-C22.2 No. 223 or CAN/CSA-C22.2 No. 60950 shall be acceptable.		–
5	**Marking and instructions** Add the following paragraph: Adhesive nameplates on commercial products shall comply with CSA C22.2 No. 0.15.	Not commercial.	N/A
5.1	**Identification and supply ratings** Add the following item: hA) date of manufacture: a date or code identifying the period of manufacture shall be marked on the apparatus;	Marked.	P

5.3A	Add the following clause: Where a loudspeaker grille, removable from outside, is relied on as the enclosure (see Clause 9.2), the following marking or equivalent shall be visible on the enclosure after removal of the grille: ”Caution – To prevent electric shock hazard, replace grille.” Alternatively, the symbol in Clause 5.2 b) shall be visible after removal of the grille, and the caution wording above shall appear in the user instructions, accompanied by the symbol. Compliance is checked by inspection.	No such speaker.	N/A
8	**Constructional requirements with regard to protection against shock**		N/A
8.9	*Add the following title to this clause*: **Mains wiring** *Add the following paragraph:* Wiring in circuits with voltages higher than 42 V peak shall comply with CSA C22.2 No. 127 or CAN/CSA-C22.2 No. 210.2.	No such wire.	N/A
9.1	**Testing on the outside**		N/A
9.1.1A	**Class I apparatus leakage** *Add the following clause:* For cord-connected Class I apparatus, the leakage current through the safety earthing conductor, expressed as voltages U1 and U2 shall not exceed U1 = 105V (peak) and U2 = 1.05V (peak) (1.5mA). Apparatus having a leakage current between 0.75mA and 1.5mA shall be provided with a caution label on the mains cord with the following, or equivalent: ”CAUTION – TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CERTRE PIN OF THIS PLUG MUST BE MAINTAINED”.	Not commercial.	N/A
9.1.1.2	**Determination of accessible parts** *Add the following after the fourth paragraph:* Moving parts of loudspeaker systems, such as dust caps, cones of drivers, or passive radiators, are not regarded as preventing accessibility. **Note 1A:** *See also Clause 13.3.1.*	No such loudspeaker.	N/A

9.2	**Removal of protective covers** *Add the following after the second paragraph:* This requirement applies also to internal parts of loudspeaker systems that become accessible by removal of loudspeaker grille from the outside either by hand or with the use of a tool, or other object. In such case, the apparatus shall be marked according to Clause 5.3A. *Replace the third paragraph with the following:* Compliance is checked by inspections and by application of the tests of Clause 9.1.1, except that the measurements are made 2 s after removal of the cover or grille.	No such loudspeaker.	N/A
10	**Insulation requirements**		N/A
10.2A	**Enclosure type designation and use** *Add the following clause:* If equipment is installed in environments where the enclosure is required to prevent ingress of water or dust, the enclosure shall be classified as type recognized by the *Canadian Electrical Code, Part 1*, and shall comply with the requirements of CAN/CSA-C22.2 No. 94.	Not outdoor.	N/A
11.2	**Heating** *Add the following paragraph:* Flammable gases shall not be emitted from a component for more than 10 s.	No flammable gas.	P
12.	**Mechanical strength**		N/A
12.3A	**Television impacts** *Add the following clause:*	No television.	N/A

12.3A.1	For television sets and similar apparatus using a cathode ray tube larger than 160 mm diagonally, the top, sides, front, and rear of the enclosure, including the safety screen where provided, shall be capable of withstanding a single impact of 7 J in according with Clause 12.3A.2 without developing any opening larger than 130 mm in the enclosure of the cathode ray tube, unless the minor dimension of 2 any opening is not larger than 7 mm. When applied to a safety screen, the impact shall not result in damage to its mounting to the extent that it is mechanically unsuitable for reuse, nor shall tempered glass, if used, be cracked. When applied to the face of a directlly viewed cathode ray tube, the impact shall not cause any opening in the face of the tube. Scaling and cracking of the glass shall be permissible. A cathode ray tube that has been shown to complying with CAN/CSA-C22.2 No. 228 or CAN/CSA-E61965 shall be considered acceptable with no further tests.		N/A
12.3A.2	The impact specified in Clause 12.3A.1 shall be caused by allowing a solid, smooth, steel sphere 51 mm in diameter and weighing approximately 0.5kg to strike the enclosure with the specified impact in a direction perpendicular to the enclosure surface. If deemed necessary, the enclsoure shall be tested with the proper cathode ray tube mounted.		N/A
13.3	**Clearances**		P
13.3.1	**General** *Add the following after the third paragraph:* Clearances between a loudspeaker voice coil and adjacent conductive parts shall be disregarded.	Considered.	P
14.2	**Capacitors and RC-units**		P
14.2.1	*Add the following paragraph:* As an alternative, an isolating capacitor complying with the applicable requirements of CSA C22.2 No. 1 shall be acceptable for bridging basic or supplementary insulation.	CSA No.1.	P

14.2.2	*Add the following paragraph:* As an alternative, an across-line capacitor complying with the applicable requirements of CSA C22.2 No. 1 shall be acceptable.	CSA No.1.	P
14.5.1	**Thermal releases**		N/A
14.5.1.2	*Add the following paragraph:* As an alternative, a thermal link complying with CSA C22.2 No. 209 shall be acceptable.	No thermal link used.	N/A
14.5.2	**Fuse-links and fuse holders**		P
14.5.2.1	*Add the following paragraph:* As an alternative, a fuse-link complying with CSA C22.2 No. 248.14 shall be acceptable.	Complied with IEC 60127 std.	P
14.5.2.4	*Add the following paragraph:* As an alternative, a fuseholder complying with CSA C22.2 No. 39 shall be acceptable.	No such fuse holder.	N/A
14.6	**Switches**		N/A
14.6.1	*Add the following paragraph:* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.	No switch.	N/A
14.6.2	Add the following paragraph As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		N/A
14.6.3	*Add the following paragraph:* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		N/A
14.6.4	*Add the following paragraph:* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		N/A
14.6.5	*Add the following paragraph:* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		N/A
14.11	**Optocouplers** *Add the following paragraph:* As an alternative, an optocoupler complying with CSA C22.2 No. 1 shall be acceptable.	CSA No. 1.	P

14.12	**Surge suppression varistors** *Add the following paragraph:* As an alternative, a varistor complying with CSA C22.2 No. 1 shall be acceptable.	CSA No. 1.	P
14.12A	**Gas discharge tubes** *Add the following clause:* Gas discharge tubes complying with the following tests may be connected to bridge basic or reinforced insulation. Ten samples of gas discharge tubes isolating the ac supply from exposed parts shall be subjected to the varistor pulse tests of Clause 14.12. Following the pulses, the device shall be allowed to return to room temperature. The dielectric breakdown voltage of the gas tube shall not decrease by more than 50%, and the gas discharge tube shall complying the dielectric strength test of Clause 10.3, with the test voltage reduced to twice the mains voltage.	Not used.	N/A
15.1	**Plugs and sockets**		N/A
15.1.1	*Add the following paragraph:* A recaptacle provided for general purpose mains output shall comply with the requirements of CSA C22.2 No. 42 (dimensional requirements are also specifeid in IEC 60906-2). The attachment plug shall be of the polarized type when apparatus is provided with a manually operated, mains-connected single-pole switch for apparatus on-off operation, a socket screwshell lampholder, or a 15 ro 20A socket-outlet.	No socket.	N/A
15.1.2	*Add the following paragraph:* Banana plugs shall be acceptable.	No banana plugs.	N/A
15.1.3	*Add the following title:* **Adapter output connectors** *Replace the first paragraph with the following:* Terminals and connectors used in output circuits of supply apparatus, whose output voltage is not a standard nominal mains voltage according to IEC60038, Table 1, shall not be compatible with those specified for household and similar general purposes. For example those described in IEC 60038 [1], IEC 60320, IEC 60884, IEC60906 (parts 1, 2 and 3), and CSA C22.2 No. 42.	No mains output.	N/A

15.2	**Provisions for protective earthing** *Replace the third paragraph with the following:* Earthing connections shall comply with the test requirements of CSA C22.2 No. 0.4.		P
15.3	**Terminals for external flexible coards and for permanent connection to the mains supply**		N/A
15.3.1A	*Add the following clause:* Equipment intended for permanent connection for the mains shall have provisions for connection to the wiring system in accordance with the *Canadian Electrical Code Part 1.* The terminal parts and all other provisions for permanent connection to fixed wiring shall comply with CAN/CSA-C22.2 No. 0.		N/A
15.4	**Devices forming a part of the mains plug**		N/A
15.4.2	*Add the following paragraphs:* Mains plugs of non-permanently installed equipment shall complying with a) CSA C22.2 No. 21 for moulded-on-type attachment plugs; and b) CSA C22.2 No. 42 for disassembly-type attachment plugs (dimensional requirements are also specified in IEC 60906-2). Class II equipment provided with a general purpose mains outlet, or a lampholder, shal be provided with a polarized-type-plug. If the plug is a polarized type, single-pole switches or overcurrent protectors shall not be connected in the identified conductor.		N/A
16.	**External flexible cords**		N/A
16.1	*Replace this clause with the following:* Flexible cord used for mains supply shall comply with the requiremnts of CSA C22.2 No. 49. The cord type shall be in accordance with Table 4 of CSA C222.2 No.1. The attachment plug shall be rated less than 125% of the apparatus rated current. Cord sets shall comply with the requirements of CSA C22.2 No.21. Non-detachable flexibe cables and cords of Class I apparatus shall be provided with a green/yellow core connected to the protective earthing terminal of the apparatus and, if a plug is provided, to the protective earthing contact of the plug. Compliance is checked by inspection. **Note:** *The colour of cores of flexible mains cords is contained in IEC 60173 (4).*	Not supplied with a cord set. Must be considered when marketing in Canada.	N/A

17	**Electrical connections and mechanical fixings**		N/A
17.9A	**Adhesive securement and conductive coatings** *Add the following clause:*	See below.	–
17.9A.1	**Adhesive securement** The following parts, the displacement of which may result in a fire or shock hazard, shall not be secured solely by adhesive, unless the adhesive system complies with the resistance to external forces test of Clause 9.1.7, the bump test of Clause 12.1.1, and the impact test of Clause 12.1.3, after conditioning in accordance with Clause 17.9A.2: a) internal metal parts/conductive coatings; b) barriers; and c)required enclosure parts. **Note:** *Cathode ray tubes are excluded from this test.*	Adhesives / conductive coating not used.	N/A
17.9A.2	**Adhesive and conductive coatings securement conditioning**		N/A
17.9A.2.1	**General** Where required by Clause 17.9A.1, one sample of the apparatus or enclosure section shall be conditioned in accordance with the requirements of Clause 17.9A.2.2. Equivalent aging test data supplied by the manufacturer may be considered in lieu of ageing.		N/A

17.9A.2.2	Aging Day 1: Place in oven at 100 ± 1 °C for 1 week, or 82 ± 1 °C for 8 weeks at the manufacturer's option. Day 8 or day 57: 1. Remove from oven and leave at room temperature for 1 h. 2. Place in freezer at –35 °C for 2 h. 3. Remove from freezer and allow to reach room temperature overnight. Day 9 or day 58: 1. Place in a compartment at 96% relative humidity for 3 h. 2. Remove and leave at room temperature and humidity for 1 h. 3. Place in oven at a temperature selected in the first cycle for 3 h. 4. Remove and allow to come to room temperature overnight. Day 10 or day 59: 1. Place in freezer at –35 °C for 2 h. 2. Remove and leave at room temperature for 1 h., 3. Place in humidity chamber at 96% relative humidity for 3 h. 4. Remove and allow to come to room temperature overnight. Day 11 or day 60: 1. Place in oven at the temperature selected in the first cycle for 3 h. 2. Remove for 1 h. 3. Place in freezer at –35 °C for 2 h. 4. Remove and allow to come to room temperature overnight. Day 12 or day 61: 1. Place in humidity chamber at 96% relative humidity for 3 h. 2. Remove and perform mechanical tests as required by Clause 17.9A.1 as applicable.	Not tested.	N/A

18	Mechanical strength of picture tubes and protection against the effects of implosion		N/A

18.1A	*Add the following clause:* A picture tube with a maximum face dimensions exceeding 75mm either shall be intrinsically protected with respect to effects of implosion and to mechanical impact, in accordance with CAN/CSA C22.2 No. 228 or CAN/CSA-E61965, or the enclosure of the apparatus shall provide adequate protection against the effects of an implosion of the tube (see sub-clause 12).	No picture tube.	N/A
19	**Stability and mechanical hazards** *Add the following after the second paragraph:* The test of Clause 19.3, is only required for a) apparatus wit a mass of 25kg or more; b) apparatus, excluding loudspeaker systems, with a height of 1 m ore more; or c) apparatus, including loudspeaker systems, in combination with a supplied or recommended cart or stand with a total height of 1 m or more. *Add the following paragraph:* Apparatus not tested because it is intended be fastened in place shall be provided with the following warning, marked on the apparatus or on a durable label attached on the mains cord: ”WARNING: This apparatus must be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the machine may cause injury/death.”	Apparatus less than 7kg.	N/A
20.2	**Fire enclosure**		N/A
20.2.1A	*Add the following clause:* Enclosure of apparatus containing high-voltage or projection lamps shall have a minimum flammability rating of category FV 1 according to IEC 60707 at the minimum thickness used.	No high-voltage or projection lamps.	N/A
Annex B	**Apparatus to be connected to the telecommunication networks** *Replace this annex with the following:* Apparatus intended for direct connection to a telecommunication network shall comply with a) Clause 19 ot CSA C22.2 No.1; or b) CAN/CSA-C22.2 No. 60950.	No TNV circuit.	N/A

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Report No. Draft

ATTACHMENT: MALAYSIA DIFFERENCES

Test results according to CB BULLETIN No. 110A, June 2006

Clause	Requirement - Test	Result - Remark	Verdict
Energy Commission circular no.1 year 2003 (no.1/2003) States that a Certificate of Approval is required for manufacturing, selling, Advertising, displaying or importing into Malaysia, electrical/electronic products Listed in Annex A			
	- The supply voltage in Malaysia is 240 Vac, at 50Hz.	Covered 240Vac, 50Hz.	P
	- Class 0 and 01 appliances are not allowed.	Class I apparatus.	N/A
	- 13A fused plug-tops shall comply to Malaysian standard (MS 589:Part1:1997), if applicable.	Not supplied with a cord set. See summary of testing.	N/A
	- 2-pin plug tops shall comply to Malaysian standard (MS 1578:2003) if applicable.	Not supplied with a cord set. See summary of testing.	N/A

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Report No. Draft

ATTACHMENT: US DIFFERENCES
Test results according to CB Bulletin 110A June 2006

Clause	Requirements – Test	Result – Remark	Verdict
1.1.1	- Scope clarification The standard also covers commercial and professional apparatus; professional apparatus may also be investigated using UL1419. Projection apparatus is not covered. Household games, household gaming and scoring machines, satellite receiver antenna positioners are covered by this standard but commercial games and commercial gaming and scoring machines, and other types of antenna positioners are covered by other standard. Add: Mains connected apparatus intended for filed installation requires compliance with the National Electrical Code, ANSI, NFPA 70.	Considered.	–
1.1.3	Protection against splashing water replaced with apparatus intended for outdoor use (See Annex A).	Not outdoor.	N/A
1.1.5	Add: Some equipment covered by these requirements may also be required to comply with applicable requirements in other standards.		N/A
1.2	Add references to ANSI, ASTM and UL standards.	Considered.	–
4.2.1	Add Note: In the U.S. the RATED SUPPLY VOLTAGE for single-phase apparatus is assumed to be 120V or 120/240V.	Covered.	P
4.2.4	Revision to sub-clause a): Minimum audio output is not less than 0.5W per channel unless the maximum audio output is less than 0.5W per channel.	Considered.	P
4.2.4.1	Add: ”An apparatus with multiple modes of operation, multiple signal input sources, or both, is to be operated using each mode of operation or signal input source separately, or in combination, according to the manufacturer’s instructions to produce the maximum power input”.		N/A
Table 2	External supply sources are assumed to be capable of delivering 30A, unless otherwise specified (no-load voltage and internal resistance values in the Table are modified).	Not supplied by other apparatus.	N/A
4.3.4	Add: PTC thermistors may also comply with UL 1434.	No PTC thermistor.	N/A

5.1	Add: Component power supplies and adapters complying with the construction and test requirements of UL 1310, UL1950, or UL 60950 fulfill the requirements of items ”a” through ”i” of this clause.	Considered.	P
5.1f	Add: Rated frequency is required for all apparatus.	Considered.	P
5.1g	Add: Rated current or power required on all apparatus.	Considered.	P
5.1j	Add: Date of manufacture ”marking” required on all apparatus.	Considered.	P
5.1k	Add: Manufacturing identification marking required.	Considered.	P
5.1l	Add: Combination of two graphical symbols and supplementary marking is required.	Considered.	P
5.1m	Add: Equipment rack marking required for audio/video systems.	No lack.	N/A
5.1n	Add: Units having leakage current levels greater than 0.75 MIU and = or <3.5 MIU must be marked with a high leakage current marking.	Leakage is < 0.75.	N/A
5.2c	Modification: Output terminals must be marked with voltage, frequency and current or power; output terminals installed or interconnected in the field must be marked with the class of wiring.		N/A
5.2d	Add: Audio output connections shall be marked ”Class I Wiring”, ”Class 2 Wiring” or ”Class 3 Wiring”. Operation manual shall discuss risks and proper connecting and insulating techniques when connecting a speaker.	No speaker terminal.	N/A
5.3	Add: An explanation and illustration of safety related graphical symbols used on the apparatus shall be included in the owner’s instructions preceding any operating instructions.		P
5.4	Add: Important Safety instructions are to be packed with each apparatus and shall be verbatim.		N/A
5.4.1	Add: Warning about Outdoor Use is required.		N/A
5.4.3	Add: When apparatus contains instructions for use by service personnel the instructions are separate in format and preceded by a precautionary warning statement.		N/A

6.1	Starting from second paragraph replace all by: ”Compliance is checked in accordance with the requirements in the U.S. Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, and 1020.10 by measuring the radiation produced by the apparatus employing a design center chassis.”	No ionizing radiation.	N/A
6.2	Starting from second paragraph replace all by: ”Apparatus shall be classified and labelled in accordance with the Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, 1040.10 and 1040.11.”		N/A
6.2.2	Deletes Table 3: Temperature limits added for various classes of insulation systems. Add to Note a): ”materials rated in accordance with UL 746B may be used at their rated higher temperature.”		N/A
7.2	Add: A material temperature rating can be accepted in lieu of the softening temperature. The softening test need not be performed on materials used in UL listed or Recognized parts.	Considered.	P
8.1	Add: ”A metal part that is not inherently resistant to corrosion shall be protected against corrosion when corrosion of that part is capable of contributing to or resulting in a risk of fire, shock, or injury to persons.”	No critical metal parts.	N/A
8.9.1	Add: ”Sleeving, tape, tubing, and wire insulation are suitable for the conditioning of use, such as voltage and temperature, and comply with UL 224, UL 510, and UL 1441, as applicable.”	Tape CSA/UL, Tubing CSA/UL.	P
8.10	Add: ”Component power supplies and their internal insulation complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.”		P
8.12	Modification: Conductors and internal wiring connecting mains socket-outlets shall comply with the wire size requirements in clause 16.2 based on the marked rating of the outlet but shall not be less than 18 AWG.	No mains socket outlet.	N/A
8.17	Add: As an option, winding wire insulation may comply with the requirements in UL Subject 2353.	Considered.	P
8.19.1	Modification: An all-pole switch or circuit breaker is not required to have contact separation of 3 mm.	No switch or circuit breaker.	N/A

8.22	Add: ”Printed wiring boards involved with the risk of electric shock shall comply with the requirements in UL 796.”	PCB complied with UL 796.	P
9.1.1.1	Replaced: For Class I apparatus the r.m.s. TOUCH-CURRENT to earth shall not be more than 3.5 MIU.		P
9.1.1.1a	2nd dash replaced by: ”For audio signals of professional and commercial apparatus, 120 V r.m.s.” 3rd dash replaced by: ”For audio signals other than professional and commercial apparatus, 71 V r.m.s.”	Considered.	P
9.1.1.1b	Modification: Touch current shall comply with the American National Standard for Leakage Current for Appliances, ANSI C101 and not exceed 0.5 MIU FOR Class II. Delete Note 2.	Considered.	P
9.1.1.2.	UL articulated finger replaces IEC 61032 test probe B. Delete 3rd paragraph.	Considered.	–
Table 5	Add Note 1: ”With respect to mains voltages in the range of 105-130V (r.m.s.), the test voltages are considered to be 1414 V peak for basic and supplementary insulation and 2828 V peak for reinforced insulation.”	Considered.	–
11	Add: ”Component power supplies and their power transformers complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.”	Considered.	P
11.1	Modification: The permissible touch current for terminal contacts has been increased to twice the value given in 9.1.1.1.	No leakage increased.	N/A
11.2.1	Modification: Additional fuse testing not required if the temperature is limited by fuses.		N/A
12	Add: ”Component power supply adaptors and their enclosures complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.”	Considered.	P
12.1.3	Delete the first two paragraphs, Impact test uses the 50 mm steel sphere only.	Covered.	P
Table 6	Replace title with ”Apparatus impact test.” Modified to provide impact test criteria detailing impact location, impact energy and additional pass/fail results.”		–

12.1.4	Add to the end of the 1st paragraph: ”As an alternative, any number form one to three samples are permitted to be used in any combination that results in a total of three drops.”		PA
12.1.6	Add: handle strength test requirements.		N/A
12.7	Add: Wall and ceiling mounting means test requirements.	Not for wall and ceiling mounting.	N/A
12.8	Add test for enclosure, barriers, components and leads that rely on adhesive.	Considered.	P
12.8.1	Add test for conductive labels secured in place by adhesive.	Considered.	P
13	Add: ”Component power supplies and their power transformers complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.”	Considered.	P
13.4	Modification: A material group is verified according to UL 746A.	Considered.	P
13.5.1	Change standard reference from IEC 60249-2 to UL 796.	Considered.	P
13.5.2	Modification: Coated printed wiring boards shall comply with requirements in UL 746C.	Not used.	N/A
Table 12	Note 3 revised to refer to UL 746A.	Considered.	–
14	Delete Note 2. Add reference to Annex Y and additional component requirements.	Considered.	P
14.1, 14.2, 14.3	Add: ”Component power supplies and their resistors complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements of the Clause 14.1 and 14.2	Considered.	P
14.1, 14.2, 14.3	Add: ”Component power supplies and their resistors complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements of the Clause 14.1,14.2.1 – 14.5.2 and 14.2.2. Add: ”As an alternative a component such as a capacitor, a combination capacitor and resistor, a varistor, or a suppressor shall comply with the requirements for Across-the Line, Antenna-Coupling, or Double Protection in UL 1414.”	Considered.	P

14.2.4	Replaced text with: ”Components subjected to the requirements in 14.2.1 and 14.2.2 shall also comply with the enclosure requirements of UL 1414.”	Considered.	P
14.4	Add to Note 2: ”High voltage materials shall be 94V-2 minimum.” Modification: Compliance is checked by meeting requirements for category V-2 according to UL94. Moreover the requirements are added for arcing, component part flame that high-voltage isolating component tests.	No high voltage.	N/A
14.4.1	Replace with High Voltage arcing test.		N/A
14.4.2	Deleted.		P
14.4.3	Add: High voltage component part flame test.		N/A
14.4.4	Add: High voltage isolation component insulation test.		N/A
14.5.1	Delete reference to 14.5.1.3	No thermal releases or thermal link.	N/A
14.5.1.1	Replace text with: ”Thermal cutouts shall comply with UL 873, UL 8730-2-9 or UL 60730-2-9.		N/A
14.5.1.2	Replace text with: ”Thermal links shall comply with UL 1020 or IEC 60691.		N/A
14.5.1.3	Delete.		N/A
14.5.2.1	Modification: Fuse links shall comply with UL 248-14.	Considered.	–
14.5.2.2	Delete reference to IEC 60127 and breaking capacity marking requirements.	Marked.	N/A
14.5.3	Add: As an option, a PTC thermistor may complying with UL 1434. Delete the 3rd and 4th paragraphs.	No PTC thermistor.	N/A
14.5.3A	Add: Protective devices connected to the mains shall have adequate breaking capacity and comply with UL 873, UL 1416, UL 1417 and UL 2111 as applicable.	Considered.	P
14.5.4	Reference to fuse-links is deleted.	Considered.	–

14.6.1	Add: ”Switches and relays shall comply with UL 1054, UL 61058-1, or UL 508 as applicable. Mains switch or relay shall be rated for the total current through the switch or relay contacts.” Replace remaining text with: ” A rating of mains switch or relay, provided on a audio apparatus intended for commercial use, is to be equal to or greater than the maximum steady state current it controls under normal operating conditions except the audio output is adjusted to 1/3 maximum undistorted output or at 1/3 of the manufacturer’s rated output power, which is greater.”	No switch.	N/A
14.6.2 - 4	Delete requirement		N/A
14.6.5	Modification: ”A switch and relay that controls a mains socket-outlet shall have a rating equal to the rated current consumption of the apparatus plus the current rating of the socket-outlet.		N/A
14.6.6	Add: A mains switch shall comply with (a), (b) or (c). The contacts of a mains relay shall comply with (a), (b) or (d). A switch that controls a mains receptacle shall comply with (b) and a relay that controls a mains receptacle shall comply with (b) or (d).		N/A
14.6.6a	Add: Switch or relay contacts to have current rating equal to or greater than 1.414 times the inrush current of the apparatus.		N/A
14.6.6b	Add: Switch or relay to be TV-rated.		N/A
14.6.6c	Add: Switch is located on the back of apparatus and is not operable from a remote control.		N/A
14.6.6d	Add: Relay is to be subjected to the endurance test.		N/A
14.6.6.1	Add: Peak inrush current test.		N/A
14.6.6.2	Add: Relay endurance test.		N/A
14.6.7	Add: Double pole switch controlling a.c. and d.c. circuits shall be suitable for the application.		N/A
14.7	Add to the end of 2nd paragraph ”... except that the jointed test finger in 9.1.1 is used to determine accessibility (IEC 60950, 2.8.2) and interlock operation (IEC 60950, 2.8.3).”	No safety interlocks.	N/A
14.10.6	Add: ”An apparatus intended for use with an external battery shall be provided with an overcurrent protective device in the battery-supply circuit.”	No battery.	N/A

14.11	Add: ”Component power supplies and their optocouplers complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.” Optocouplers bridging reinforced insulation shall comply with requirements for double protection as specified in UL 1577. 4th paragraph reads: ”External clearances and creepage distances of optocouplers shall comply with 13.1.”	The optocouplers comply with relevant IEC standard. See List of Critical Components and Materials.	P
14.12	Replace ”IEC 61051-2” with ”UL 1449” and ” UL 60707” with ”UL 94”. Delete all references to ”IEC 60151”.	Considered.	P
15.1.1	Add: ”Attachment plug shall have a current rating no less than 125% of the current drawn under normal operating conditions and a voltage rating appropriate for the voltage of the apparatus. Attachment plug for use on more than one supply voltage by means of a voltage selector shall be rated for the voltage, which the apparatus is intended to be connected when it is shipped from the factory. Attachment plug cap shall be polarized when the apparatus is providing with a manually operated, line connected, single-pole switch; Edison-base lampholder; or a 15 or 20 A socket outlet.		N/A
15.1.2	Delete reference to “Banana” plug in the note.		N/A
15.1.3.1	Add: An audio amplifier having an open-circuit audio output voltage not limited to 120V that is permanently connected to the mains shall be provided with a means for connection complying with U.21.1.1 - U21.1.7 and wire-binding screws No. 6-32 or larger complying with U21.3.1 - U21.3.5, or quick-connect terminals, or leads. Quick Connect Terminal shall comply with the following: a) Male tabs firmly mounted in place, b) Mating female connectors shall be provided with the apparatus, c) Strain Relief Test of Clause 16.5, d) Installation construction shall be provided for assembly of terminal to a conductor and strain relief, e) Terminals shall be appropriate for use with the size and type of the wire specified.”		N/A

15.1.3.2	Add: ”Audio amplifiers having an audio output not limited to 120V that are connected to the mains by a flexible cord have suitable cord or provided for field installation or a receptacle for plug-in connections.”		N/A
15.2	Add after 3rd paragraph: ”The earthing conductor in supply cord, or in an interconnecting cable shall have an equivalent or larger cross-sectional area than the current-carrying conductors in the supply cord or cable. With reference to earthing conductors, the insulation color may be green or green/yellow.		N/A
15.3.5	Revised 2nd paragraph: ”For rated currents exceeding 13A, reference is made to Article 310 of the National Electrical Code, ANSI/NFPA 70.”		N/A
Table 15	Replace with: ”Nominal cross-sectional area AWG” and modify values.		N/A
15.4	Add: ”Component power supply adaptors complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, and UL 60950 are considered to fulfill the test requirements on the clause.”		N/A
16.1	Modification: Mains supply flexible cords shall comply with UL 817, be marked VW-1, and have an ampacity not less than the current drawn by the apparatus. Delete references to IEC 60227, 60245 and 60173.		N/A
Table 17A	Add: Types of cords and cord lengths for various types of apparatus.		N/A
16.2	An integral earthing conductor shall be at least the same size as the other cord conductors. Substitute ”IEC 60950, table 3B” with ”Article 400 of the National Electrical Code.”		N/A
Table 18	Replace with ”Wire sizes of external flexible cord” Upper current limit in column 1 increased from 16 to 30 A and ”AWG” wire size added.		N/A
16.3	Add: c) Flexible cords not complying with 16.1, used as connection between the apparatus and other apparatus used in combination with it, shall be marked VW-1.		N/A

17.8	Expanded to include all cart/stand parts supplied by the manufacturer, such as casters and brackets. Suitable assembly instructions required. Add: ”Relevant fixing means are not required when installation is to be done by a skilled person.”	The input supply cord is not provided. No detachable parts.	N/A
17.10	Add: Aluminium conductors used as internal wiring shall be terminated be a method capable of being used in the combination of metals involved at the connection point.		N/A
17.11	Add: An accessory shall be investigated to determine that: a) The accessory, and the combination of the accessory and the apparatus shall present no hazard in the sense of this standard and b) The accessory is provided with installation instructions.	No accessory provided.	N/A
17.11.1	Add: The installation of an accessory of a skilled person shall be such that: a) The mechanical positioning is accomplished by means of tools normally available or by means of special tools provided by the organization responsible for providing the apparatus as part of the installation kit, and b) The electrical connections are made by using existing terminals and connections in the apparatus or the building wiring.		N/A
18	Modification: ”Non-intrinsically protected picture tubes shall comply with 18.1, 18.2.2 and 18.3 Intrinsically protected picture tubes shall comply with UL 1418 or UL 61965. Add: ” A bulb of picture tube having a face diameter of 7.5 cm or more shall be mounted in an enclosure. The enclosure shall have no opening that exceeds 130 mm ² unless the minor dimension of the opening is 10 mm or less.”	No picture tube.	N/A
18.1	All tubes shall be mounted such that the enclosure of the apparatus protects the tube against the effects of implosion. Delete reference to clause 18.2.		N/A
18.2 - 3	Clauses deleted .		N/A

19	Add reference to 19.2.1. The tests of 19.3 is conducted on 1) apparatus with direct view CRT with 48 cm diagonal min., 2) apparatus, other than a speaker, with a mass greater than 47 kg, and 3) apparatus, other than a speaker, with a mass or 25 kg or greater and a height of 1 m or more. The tests in 19.1, 19.2, 19.3 shall not cause the apparatus to overturn. During the test of 19.2.1, the apparatus shall not slide.	The apparatus is less than 7kg. No CRT.	N/A
19.2.1	Add: Slide test requirements.		N/A
19.3	Replace by Horizontal force stability test requirements.		N/A
Table 20	Add values for horizontal force test.		N/A
19.6	Add: ”or equipment rack mounting.		N/A
20.1a	Delete.	Considered.	–
20.1b	Replace ”IEC 6070” with ”UL94”. Add: ”-parts such as protection TV lenses, loudspeaker parts, external accessories, and fibrous materials less then 0.25 mm thick.”	Considered.	P
20.1.2	Revise text to: ”Sleeving, extruded tubing and insulation on wiring shall be rated VW-1 under following conditions: a) wiring located in a circuit that is considered a potential ignition source” or b) wiring not located in a circuit that is a potential ignition source but is in contact with wiring located in a circuit that is a potential ignition source. ”Tape should be flame retardant.” Delete Note and test: ”Tape in contact with parts of circuits that are potential ignition sources shall be flame retardant.”	Sleeving and tubing complies with VW-1 requirement.	P
20.1.3	Replace 1st paragraph with: ”Base material of printed wiring boards, on which the available power as the connection exceeds 15 W or the operating voltage exceeds 50 V a.c. or d.c. under normal operating conditions, shall be flammability category V-1 or better according to UL 94.” In 2nd paragraph replace ”IEC 60707” with ”UL94” and remove exception for printed boards housed in metal enclosures. In 3rd paragraph replace ”IEC 60707” with ”UL94” and delete option to use Clause G.1 of Annex G.	PCB rated V-0 min.	P

20.1.4	Replace with: ” Components and parts shall comply with the relevant flammability category according to UL 94 as specified in Table 21. Add: ”Component power supplies complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”	Considered.	–
20.2.1	Modification: 1 st paragraph: ”Fire enclosure required for 1) circuits and components where the available power exceeds 15W, 2) inductors and windings conductively connected to the mains and 3) high-voltage products. The fire enclosure shall comply with the flammability requirements of Table 22 according to UL 94 and 746c. 2nd, 3rd and 4th paragraphs are deleted. In 5th paragraph replace ”IEC 60707or clause G.1 of Annex G” with ”UL 94 or UL 746C.”		N/A
Table 22	Add: ”Flammability categories for fire enclosure.”		N/A
20.2.2	Revise text to: ”Internal fire enclosures shall not have openings that permit accessibility to components, wiring, connections, or printed wiring board conductive patterns where available power exceeds 15 W and to inductors and windings conductively connected to the mains and shall comply with the material requirements in Table 22. Compliance is checked by inspection and measurement and using the jointed test finger.”		N/A
20.2.3	Modification: Outer enclosures shall have a minimum flammability rating HB, per UL 94, when an internal fire enclosure is provided.		N/A
	Modifications to Figures: Fig 14 - Illustrates the articulated finger probe. Fig 15 - Illustrates the shock hazard marking and associated graphical symbols. Fig 16 - Illustrates the shock hazard graphical symbols. Fig 17 – Illustrates portable cart marking. Fig 18 – High voltage spacing graph. Fig 19 – Class 105 insulation aging temperature graph. Fig 20 – Flowchart for horizontal force test.		N/A

Annex A	Modification: Apparatus intended for outdoor use or wet locations has any of the following attributes: a) provided with a means to make it transportable, b) has a mass les than 35 kg, c) can be battery operated, d) associated literature states or implies such use. Add: Apparatus in a), b), c) above is not considered for outdoor use or in wet locations if marked as specified in 5.4,. A.5, A.5.1 and A.5.4 are deleted.		N/A
Annex A.9.1.1	Add: Touch current test shall be conducted after the water spray test described in A.11.1.1 and the touch current shall not be more than 0.5 MIU when the open-circuit potential between any accessible part and earth or any other accessible part is more than 21.2 V peak.		N/A
Annex A.10, A.10.2, A.10.2.1, A.10.2.2	Deleted.		N/A
Annex A.11.1.1	Add: Apparatus shall be subjected to the water spray test according to UL 1571.		N/A
Annex A.16.1	Add: Flexible cords shall be suitable for outdoor use.		N/A
Annex A.20.2.1	Add: Enclosures for an apparatus intended for permanent outdoor location shall comply with requirements for Type 3 enclosures in UL 50.		N/A

Annex B	5th paragraph add reference to clause 4.2.1 in IEC 62151. Add to 21th paragraph: ” The requirements of 4.2.1.1 shall be replaced by the requirements or 2.3.1 of UL 60950, Third Edition. 13 th paragraph, 2nd dash replace with: ”In the event of a single insulation fault, the voltages on the TNV-0 circuits, TNV-1 circuits and accessible conductive parts shall not exceed the values given in clause 9.1.1.1a of this standard for more than 0.2s. Moreover, the limits values as given in 11.1 shall not be exceeded. After 0.2s the voltage limits of 4.1.2 (35V peak, or 60 V d.c.) shall apply.” Add to 19th paragraph: ”Apparatus intended to be connected to telecommunication networks and having ringing voltages applied to the apparatus is subjected to touch current limits in accordance with clause 5.1.8.1.1 of UL 60950, Third Edition”. Add to 21th paragraph: ”Telecommunication network that uses outside cable shall comply with the requirements for protection against overvoltage from power line crosses per 6.4 of ll 60950, Third Edition.” Add to 22nd paragraph: ”Acoustic tests per 6.5 of UL 60590, Third Edition for apparatus containing earphone held against the ear.” Add to 24th paragraph: ”Apparatus shall be provided with appropriated markings and instructions as described in Annex NAA of UL 60950, Third Edition.”	No TNV cirucit.	N/A
Annex D	Figure D.1 & Note delete reference to IEC 60990 and add reference to ANSI C101. Add touch current value in MIU where MIU = U2 x 2 (r.m.s. value)	Considered.	–
Annex G	Deleted.	Not used.	N/A
Annex Q	Add: Safety requirements for video apparatus for use in health care facilities.	Not an video apparatus.	N/A
Annex R	Add: Safety requirements for undercabinet apparatus.		N/A
Annex S	Add: Safety requirements for in-wall mounted apparatus.	Not for in-wall mounted.	N/A
Annex T	Add: Safety requirements for apparatus with projection lamps.	No lamps.	N/A
Annex U	Add: Safety requirements for permanently connected apparatus.	Not for permanently connected.	N/A

Annex V	Add: Safety requirements for carts, stands, and similar apparatus for use with specified apparatus covered by this standard.		N/A
Annex W	Add: Construction details for a 0.02-ohm shunt for use in the peak inrush-current measurement described in 14.6.11.1	No switch.	N/A
Annex X	Add: Manufacturing and protection-line tests.	Not used.	N/A
Annex Y	Add: Normative standards for components.	Considered.	P