LVD TEST REPORT

For

DVB-T Receiver

Model Number: LV6TMPVR4

Report Number: WT093001905

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection
Site Location	:	Bldg. Metrology and Quality Inspection, Longzhu Road, Shenzhen, Guangdong, China
Tel	:	0086-755-26941636
Fax	:	0086-755-26941538
Website	:	www.smq.com.cn

TEST REPORT

EN 60 065

Audio, video and similar electronic apparatus Safety requirements

Report Reference No.	:	WT093001905
Tested by (+ signature)	:	Jolly Gu
Checked by (+ signature)	:	Flora Lee .....
Approved by (+signature)	:	Alvin An .....
Date of issue	:	2009-09-14
Testing laboratory Name	:	Shenzhen Academy of Metrology and Quality Inspection
Address	:	Bldg. Metrology &Quality Inspection,Longzhu Road, Shenzhen, Guangdong, China
Testing location	:	Shenzhen Academy of Metrology and Quality Inspection
Client Name	:	LIFEVIEW SRL
Address	:	Via Dell'Economia 11, 31033 Castelfranco Veneto (TV) Italy
Standard	:	EN 60065:2002+A1: 2006
Test procedure	:	CE
Non-standard test method	:	N.A.
Test item Description	:	DVB-T Receiver
Trademark	:	NOTONLYTV
Model and/or type reference	:	LV6TMPVR4
Manufacturer	:	LIFEVIEW SRL
Rating(s)	:	220-240V~, 50/60Hz, 10W

Test case verdicts

Test case does not apply to the test object	:	N(.A.)
Test item does meet the requirement	:	P(ass)
Test item does not meet the requirement	:	F(ail)

Testing

Date of receipt of test item	:	2009.08.27
Date(s) of performance of test	:	2009.08.08 to 2009.09.04

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.
The test results presented in this report relate only to the item(s) tested.
"(see appended table)" refers to a table appended to the report.
"(see remark #)" refers to a remark appended to the report.
"(see Annex #) refers to an annex appended to the report.
Throughout this report a period (coma) is used as the decimal separator.

Factory and address:

LIFEVIEW SRL

Via Dell'Economia 11, 31033 Castelfranco Veneto (TV) Italy

General product information:

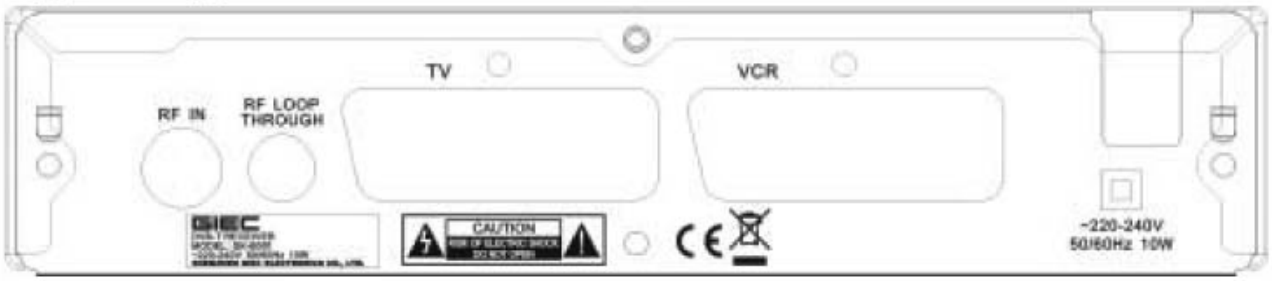
1. This report covers models: LV6TMPVR4

The LV6TMPVR4 is considered as basic model. All other models are the same as model LV6TMPVR4 in circuit diagram, construction and critical safety components. The differences between other models and the basic model are the color and the decoration of the enclsoure and the model number due to different client.

Summary of Testing and Conclusions

1. The sample(s) tested complies with the requirements of EN 60065:2002+A1: 2006
2. All tests are conducted on basic model LV6TMPVR4 to represent the others.

Copy of marking plate:



~220-240V
50/60Hz 10W

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
3	GENERAL REQUIREMENTS		P
	Safety class of the apparatus ..... :	Class II equipment	P
4	GENERAL CONDITIONS OF TESTS		P
4.1.4	Ventilation instructions require the use of the test box	No, tested according to the instruction in the user's manual	P
5	MARKING		P
	Comprehensible and easily discernible	The rating label is easily discernible.	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 ..... :	Trade mark: GIEC Model number: GK-B001	P
	Class II symbol if applicable	Marked on the rear enclosure	P
	Rated supply voltage and symbol ..... :	220V-240V	P
	Frequency if safety dependant	50/60Hz	P
	Rated current or power consumption ..... :	10W	P
5.2	Earth terminal	No earth terminal	N
	Hazardous live terminals	No hazardous live terminal	N
	Supply output terminals (other than mains)	No supply output terminal	N
5.3	Use of triangle with exclamation mark	Marked on the circuit diagram near every critical components	P
5.4	Instructions for use	Instruction for use provided in user's manual in English	P
5.4.1	Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	Stated in the user's manual	P
	Hazardous live terminals, instructions for wiring	No hazardous live terminals	N
	Instructions for replacing lithium battery	No battery	N
	Instructions for modem if fitted	No modem provided	N
	Class I earth connection warning	Not class I equipment	N
	Instructions for multimedia system connection		N
	Special stability warning for fixed installation	Not fixed installation	N
	Warning: battery exposure to heat	No battery	N
	Warning: protective film on CRT face	No CRT	N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.2	Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	Power plug used as disconnect device	P
	Instructions for permanently connected equipment	Not permanently connected equipment	N
6	HAZARDOUS RADIATION		N
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No ionizing radiation	N
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
6.2	Laser radiation, emission limits to IEC 60825-1 .... :	No laser radiation	N
	Emission limits under fault conditions ..... :		N
7	HEATING UNDER NORMAL OPERATING CONDITIONS		P
7.1	Temperature rises not exceeding specified values, no operation of fuse links	(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		N
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	The input current was less than 0.2A	N
8	CONSTRUCTIONAL REQUIREMENTS WITH REGARD TO THE PROTECTION AGAINST ELECTRIC SHOCK		P
8.1	Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare	Compliance checked by inspection	P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.	No voltage setting device. It is not possible for user to access fuse-links. No indicators and drawers used.	N
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No hygroscopic material used as insulation	P
8.4	No risk of electric shock following the removal of a cover which can be removed by hand	There is no risk of an electric shock from accessible parts	P
8.5	Class I equipment	Not class I equipment	N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	Basic insulation between hazardous live parts and earthed accessible parts		N
	Resistors bridging basic insulation complying with 14.1 a)		N
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	Reinforced or double insulation between hazardous live part and accessible parts	P
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3	Transformer T1 bridging primary and secondary circuit complying with 14.3	P
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.2.1 a)	No such capacitor used	N
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)	No such capacitor used	N
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	Y1 capacitor separately approved used	P
	Basic insulation bridged by components complying with 14.3.4.3	Not used	N
8.8	Basic or supplementary insulation > 0,4 mm (mm) :	The insulation of the primary wire: 0.4mm+0.42mm	P
	Reinforced insulation > 0,4 mm (mm) ..... :	Enclosure (plastic): 2.3mm min	P
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)		N
	Basic or supplementary insulation, at least two layers, each meeting 10.3		N
	Basic or supplementary insulation, three layers any two of which meet 10.3		N
	Reinforced insulation, two layers each of which meet 10.3		N
	Reinforced insulation, three layers any two which meet 10.3		N
8.9	Adequate insulation between internal hazardous live conductors and accessible parts	Primary internal wire separate from accessible parts by double insulation	P
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	Internal hazardous live parts separate form conductors connectors connected to accessible part by double insulation	P

EN 60065:2002+A1: 2006			
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.	Double insulation used	P
8.11	Detaching of wires	Wires are well secured. No wire is likely to become detached.	P
	No undue reduction of creepages or clearance distances if wires become detached	See above	N
	Vibration test carried out ..... :	See 12.1.2	P
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)	No such part	N
8.14	Adequate fastening of covers (pull test 50 N for 10 s)		P
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	Internal wire well secured and not likely to touch the hot parts or sharp edge	P
8.16	Only special supply equipment can be used	Not such equipment	N
8.17	Insulated winding wire without additional interleaved insulation	Triple insulation wire used as the secondary coil of the transformer	P
8.18	Endurance test as required by 8.17	The triple insulation wire has been separately approved	N
8.19	Disconnection from the mains	See below	P
8.19.1	Disconnect device	Power plug used as disconnect device	P
	All-pole switch or circuit breaker with >3mm contact separation	No switch	N
8.19.2	Mains switch ON indication		N
8.20	Switch not fitted in the mains cord		N
8.21	Bridging components comply with clause 14	No such component used	N
8.22	Non-separable thin sheet material	No such material used	N

9	ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITIONS		P
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	No voltage >1000 V ac or >1500 V dc	N
9.1.1.1	a) Open circuit voltages		P
	b) Touch current measured from terminal devices using the network in annex D ..... :	Results in appended table 9.1.1. The measuring network according to annex D.	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	c) Discharge not exceeding 45 µC	< 1µC	P
	d) Energy of discharge not exceeding 350 mJ	No voltage exceeding 15 kV dc.	N
9.1.1.2	Test with test finger and test probe	No hazard live parts accessible	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No hazardous live shafts	P
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin	No openings on top enclosure	N
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	No hazard live parts accessible	P
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	No hazard live parts accessible	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 pre-set controls	N
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s :	0V under normal condition 0V under single fault condition	P
	If C is not greater than 0,1 µF no test needed		N
9.1.7	a) Enclosure sufficiently resistant to external force		P
	Test probe 11 of IEC 61032 for 10 s (50 N)	No damage	P
	b) Test hook of fig. 4 for 10 s (20 N)	No damage	P
	c) 30 mm diameter test tool for 5 s (100 or 250 N) :	No damage	P
9.2	No hazard after removing a cover by hand	No removable cover by hand	N

10	INSULATION REQUIREMENTS		P
10.1	Insulation resistance (MΩ) at least 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation ..... :	Surge test with 50 discharges at a rate of maximum 12/min from a 1nF capacitor charged to 10 kV performed. Measured greater than 4M ˙ between the circuit connect to hazards parts and circuit not connect to hazards parts.	P
10.2	Humidity treatment 48 h or 120 h ..... :	48h	P
10.3	Insulation resistance and dielectric strength between mains terminals		P
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class 1)		N
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	(see appended table)	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
11	FAULT CONDITIONS		P
11.1	No shock hazard under fault condition	No electric shock during fault operation.	P
11.2	Heating under fault condition	No excessive temperature	P
	No hazard from softening solder	No solder softened during the test.	N
	Flames extinguish within 10 seconds	No flames in fault condition tests	P
	Soldered terminations not used as protective mechanism		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	PCB temperature rise didn't exceed the limits of table 3.	N
	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
	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
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N
	Class I protective earthing maintained	Not class I equipment	N
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	(see appended table)	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	(see appended table)	P
12	MECHANICAL STRENGTH		P
12.1.1	Bump test where mass >7 kg	Less than 7 kg	N
12.1.2	Vibration test	No damage	P
12.1.3	Impact hammer test	0.5J, three times. No damage	P
	Steel ball test	2J on top, side back and front enclosure. No damage.	P
12.1.4	Drop test for portable apparatus where mass < 7 kg	Not portable apparatus	N
12.1.5	Thermoplastic enclosures strain relief test	70°C for 7h. No hazard live part become accessible	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
12.2	Fixing of knobs, push buttons, keys and levers		N
12.3	Remote controls with hazardous live parts	No such remote controls	N
12.4	Drawers (pull test 50 N, 10 s)	No drawer	N
12.5	Antenna coaxial sockets providing isolation	No antenna coaxial socket providing isolation	N
12.6	Telescoping or rod antennas construction	No such device	N
12.6.1	Telescoping or rod antennas securement	No such device	N
13	CLEARANCE AND CREEPAGE DISTANCES		P
13.1	Clearances in accordance with 13.3		P
	Creepage distances in accordance with 13.4		P
13.2	Determination of operating voltage	Considered	P
13.3	Clearances	(see appended table)	P
13.3.1	General		P
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9		P
13.3.3	Circuits not conductively connected to the mains comply with table 10		P
13.3.4	Measurement of transient voltages		N
13.4	Creepage distances	(see appended table)	P
	Creepage distances greater than table 11 minima		P
13.5	Printed boards		P
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		P
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)	No such printed board used	N
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4	No such part	N
	Conductive parts along reliably cemented joints comply with 8.8		N
	Temperature cycle test and dielectric strength test		N
13.7	Enclosed, enveloped or hermetically sealed parts: not conductively connected to the mains: clearances and creepage distances as in table 12		N
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	Optocoupler separately approved	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
14	COMPONENTS		P
14.1	Resistors		N
	a) Resistors between hazardous live parts and accessible metal parts	No such component	N
	b) Resistors, other than between hazardous live parts and accessible parts		N
	Resistors separately approved ..... :		N
14.2	Capacitors and RC units		P
	Capacitors separately approved		P
14.2.1	Y capacitors tested to IEC 60384-14, 2nd edition .. :	Y capacitors separately approved	P
14.2.2	X capacitors tested to IEC 60384-14, 2nd edition .. :	X capacitors separately approved	P
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 ..... :		N
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 ..... :	No such capacitor	N
	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 ..... :		N
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal ..... :		N
14.3	Inductors and windings		P
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4	Tested with the equipment	N
14.3.1	Transformers and inductors marked with manufacturer's name and type ..... :	Marked with the code	P
	Transformers and inductors separately approved :	Tested in unit	N
14.3.2	General		P
	Insulation material complies with clause 20.1.4	Refer to 20.1.4	P
14.3.3	Constructional requirements		P
14.3.3.1	Clearances and creepage distances comply with clause 13	See clause 13	P
14.3.3.2	Transformers meet the constructional requirements		P
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation)	Primary separately from secondary coil by reinforced insulation	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	Coil formers and partition walls > 0,4 mm	Bobbin of T1: > 0.9 mm	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	Class II transformer	N
14.3.4.3	Separating transformers with at least basic insulation	No separating transformer	N
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)	Primary separately from secondary coil by reinforced insulation	P
	Coil formers and partition walls > 0,4 mm	Bobbin of T1: > 0.9 mm	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		N
	Winding wires connected to protective earth have adequate current-carrying capacity		N
14.4	High voltage components	No high voltage component	N
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		N
	Component meets category V-1 of IEC 60707		N
14.4.1	High voltage transformers and multipliers tested as part of the submission		N
14.4.2	High voltage assemblies and other parts tested as part of the submission		N
14.5	Protective devices		P
	Protective devices used within their ratings		P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	See clause 13	P
14.5.1.1	a) Thermal cut-outs separately approved	No thermal cut-out	N
	b) Thermal cut-outs tested as part of the submission		N
14.5.1.2	a) Thermal links separately approved	No thermal link	N
	b) Thermal links tested as part of the submission		N
14.5.1.3	Thermal devices re-settable by soldering	No such device	N
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	Fuse link separately approved	P
14.5.2.2	Correct marking of fuse-links adjacent to holder ... :	“T 630mAL250V” marked near the fuse link on the PCB board	P
14.5.2.3	Not possible to connect fuses in parallel ..... :		P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool ..... :	Tools need to replace the fuse link	N
14.5.3	PTC-S thermistors comply with IEC 60730-1	No PTC-S thermistor	N
	PTC-S devices (15 W) category V-1 or better		N
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked		N
14.6	Switches	No switch	N
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		N
14.6.1 b)	Tested in the apparatus:		N
	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
	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
	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
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		N
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		N
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 60058-1		N
	Socket outlet current marking correct	No socket outlet	N
14.7	Safety interlocks	No such devices.	N
	Safety interlocks to 2.8 of IEC 60950		N
14.8	Voltage setting devices and the like	No such devices.	N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	Voltage setting device not likely to be changed accidentally		N
14.9	Motors	No motor	N
14.9.1	Endurance test on motors		N
	Motor start test		N
	Dielectric strength test		N
14.9.2	Not adversely affected by oil or grease etc.		N
14.9.3	Protection against moving parts		N
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
14.10	Batteries	No battery used	N
14.10.1	Batteries mounted with no risk of accumulation of flammable gases		N
14.10.2	No possibility of recharging non-rechargeable batteries		N
14.10.3	Recharging currents and times within manufacturers limits		N
	Lithium batteries discharge and reverse currents within the manufacturers limits		N
14.10.4	Battery mould stress relief		N
14.10.5	Battery drop test		N
14.11	Optocouplers	Separately approved	P
	Optocouplers comply with Cl. 8		P
	Internal and external dimensions to 13.1. or alternatively 13.6 (jointed insulation)		P
14.12	Surge suppression varistors	No surge suppression varistor	N
	Comply with IEC 61051-2		N
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N
15	TERMINALS		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Mains plug separately approved according to the appropriate standard	P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No mains socket outlet	N
	Overloading of internal wiring prevented if the apparatus has mains socket outlets	No mains socket outlet	N
15.1.2	Connectors for antenna, earth, audio, video or data:		P
	No risk of insertion in mains socket-outlets	None of mismatch of connectors to AC mains occurred.	P
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2	No sockets indicated with the symbol.	N
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets	No such device	N
15.2	Provision for protective earthing		N
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II equipment	N
	Protective earth conductors correctly coloured		N
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		N
	Protective earth terminal resistant to corrosion		N
	Earth resistance test: < 0,1 Ω at 25 A ..... :		N
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		P
15.3.1	Adequate terminals for connection of permanent wiring	Not permanent connected equipment	N
15.3.2	Reliable connection of non-detachable cords:		P
	Not soldered to conductors of a printed circuit board		P
	Adequate clearances and creepage distances between connections should a wire break away	No wire is likely to break away	P
	Wire secured by additional means to the conductor		P
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar		N
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means		N
	Clamping of conductor and insulation if not soldered or held by screws		N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment		N
15.3.6	Terminals to 15.3.3 have sizes required by table 16		N
15.3.7	Terminals clamp conductors between metal and have adequate pressure		N
	Terminals designed to avoid conductor slipping out when tightened or loosened		N
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		N
15.3.8	Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic		N
15.3.9	Termination of non-detachable cords: wires terminated near to each other		P
	Terminals located and shielded: test with 8 mm strand		N
15.4	Devices forming a part of the mains plug	Not direct plug-in equipment	N
15.4.1	No undue strain on mains socket-outlets		N
15.4.2	Device complies with standard for dimensions of mains plugs		
15.4.3	Device has adequate mechanical strength (tests a,b,c)		N
16	EXTERNAL FLEXIBLE CORDS		P
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords ..... :	VDE approved IEC 60227 PVC cord used	P
	Non-detachable cords for Class I have green/yellow core for protective earth	Class II equipment	N
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment	0.5mm^2, the length of the power supply cord is less than 2m	P
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	No such flexible cords.	N
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)	No such flexible cords.	N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions	No such flexible cord	N
16.5	Adequate strain relief on external flexible cords		P
	Not possible to push cord back into equipment		P
	Strain relief device unlikely to damage flexible cord		P
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor	Class II equipment	N
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use		P
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1	Not transportable musical instrument	N
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord		N
17	ELECTRICAL CONNECTIONS AND MECHANICAL FIXINGS		P
17.1	Torque test to table 20:		P
	- screws into metal: 5 times	Enclosure fixing and PCB fixing screws: Φ3.0mm, tested with 0.5Nm torque	P
	- screws into non-metallic material: 10 times		N
17.2	Correct introduction into female threads in non-metallic material		N
17.3	Cover fixing screws: captive	No captive screw used	N
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter	No clearance and creepage distance will reduce to below the requirement.	P
17.4	No loosening of conductive parts carrying a current > 0,2 A		N
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A		N
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder		N
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	No cover	N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
17.8	Fixing devices for detachable legs or stands provided	No such device	N
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected		N
18	MECHANICAL STRENGTH OF PICTURE TUBES AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N
	Picture tube separately approved to IEC 61965:	No picture tube	N
	Picture tube separately approved to 18.1 ..... :		N
18.1	Picture tubes > 16 cm intrinsically protected		N
	Non-intrinsically protected tubes > 16 cm used with protective screen		N
	Protective film as part of implosion protection: edges covered by enclosure		N
18.2	Intrinsically protected tubes: tests on 12 samples		N
18.2.1	Samples subject to ageing: 6		N
18.2.2	Samples subject to implosion test: 6		N
18.2.3	Samples subject to mechanical strength test (steel ball): 6		N
18.3	Non-intrinsically protected tubes tested to 18.3		N
19	STABILITY AND MECHANICAL HAZARDS		P
	Mass of the equipment exceeding 7 kg ..... :	Less than 7 kg	N
	Apparatus intended to be fastened in place – suitable instructions		N
19.1	Test on a plane, inclined at 10^{o} to the horizontal		N
19.2	100 N force applied vertically downwards		N
19.3	100 N force, or 13% of weight, applied horizontally to point of least stability.		N
19.4	Edges or corners not hazardous	Edges and corners are smoothed	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
19.6	Wall or ceiling mountings adequate		N
20	RESISTANCE TO FIRE		P
20.1	Electrical components and mechanical parts		P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60707 with openings not exceeding 1 mm in width		N
	b) Exemption for small components as defined in 20.1	Some small components mounted on UL listed PCB with flammability of V-0.	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	Considered complied for adapter itself.	P
20.1.2	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, not contributing to the spread of fire	Internal wiring working at voltages not exceeding 4kV.	N
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400V (peak) a.c. or d.c. meets V-1 or better to IEC60707, unless used in a fire enclosure	V-0 PCB used	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	See above	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	See clause 14	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
20.2	Fire enclosure		N
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 > 4 kV.	N
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
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure		N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
A	APPENDIX A, ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER		N
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N
A.10.2.1	Enclosure provides protection against splashing water		N
A.10.2.2	Humidity treatment carried out for 7 days		N
B	APPENDIX B, APPARATUS TO BE CONNECTED TO THE TELECOMMUNICATION NETWORKS		N
	Complies with IEC 62151 clause 1		N
	Complies with IEC 62151 clause 2		N
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N
	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
	Complies with IEC 62151 cause 5 but with 5.3.1 modified in accordance with annex B of this standard		N
	Complies with IEC 62151 clause 6		N
	Complies with IEC 62151 clause 7		N
	Complies with IEC 62151 annex A, B and C		N
L	APPENDIX L, ADDITIONAL REQUIREMENTS FOR ELECTRONIC FLASH APPARATUS FOR PHOTOGRAPHIC PURPOSES.		N
L5.4	Marking and Instructions		N
L9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE		N
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
L14.6.6	Mains switch characteristics appropriate to its function under normal conditions		N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict

GROUP DIFFERENCES (CENELEC common modifications) and special national conditions according to CB Bulletin No. 112A, December 2006 EN 60065:2002+A1:2006 (IEC Publication 60065:2001+A1:2005)			P
EXPLANATION FOR ABBREVIATIONS C=CENELEC common modification, S=Special national conditon P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right			
CONTENT	Add the following annexes: Annex ZA (normative) Other international publications quoted in this standard with the references of the relevant European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations		P
2.6.1	S(DK) The following is added: 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. Justification: Heavy Current Regulations, Section 107	Class II equipment	P
3.1	C: Add the following indent at the end of the list: exposure to excessive sound pressures from headphones or earphones. NOTE A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment- Maximum sound pressure level measurement methodology and limit consideration- Part 1: General method for “one package equipment”, and in EN 50032-2, Sound system equipment: Headphones and earphones associated with portable audio equipment- Maximum sound pressure level measurement methodology and limit considerations- Part 2: Gudielines to associate sets with headphones coming from different manufactures.		N
4.1.1	C: Replace the text of the note by: NOTE For ROUTINE TEST reference is made to EN 50333		N
5	S(DE) The following marking are required: In case of intrinsically ionizing radiation safe cathode-ray tubes with accelerating voltages betwwen 20kV and 30kV:	No cathode-ray tube	N

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Clause	Requirement – Test	Result - Remark	Verdict

	- On the cathode-ray tube itself the wording: Eigensichere Kathodenstrahlröhre nach Anlage III Röntgen-verordnung - Inside the apparatus: the maximum allowed accelerating voltage in kV, and the maximum allowed beam current in mA. - On the outer of the apparatus: a notice in German language that produced X-rays are sufficiently shielded by the intrinsically safe cathode-ray tube. In case of approval of the whole TV receiver with an accelerating voltage exceeding 20 kV: - On the outer of the apparatus: the licence number .../.../.../Rö, and the following text: Die in diesem Gerät entstehende Röntgenstrahlung ist ausreichend abgeschirmt. Beschleunigungsspannung: max: ... kV. - Supplied with the apparatus: a copy of the "Zulassungsschein", together with the notices required there. In case of TV receivers with accelerating voltages not exceeding 20 kV: Die in diesem Gerät entstehende Röntgenstrahlung ist ausreichend abgeschirmt. Beschleunigungsspannung: max: ... kV. Justification: German ministerial decree against ionizing radiation (Röntgenverordnung), dated 1987-01-08. NOTE The German ministerial decree (Röntgenverordnung) is under revision.		
	S(DE) Annex ZC Delete the A-deviation for Clause 5 for Germany and add the following new A-deviation: Clause National deviation Germany	No cathode-ray tube	N

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Clause	Requirement – Test	Result - Remark	Verdict

	6.1 The following requirement applies: For the operation of the any cathode ray tube intended for the display of visual images Operating at an acceleration voltage exceeding 40kV, authorization is required, or Application of type approval (Bauartzulassung) and marking. Justification: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Tchnische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-513-592-6320, Internet: http:// www.ptb.de		
5.1	IT: additional marking on the outside of the TV receiver in Italian language	Not TV receiver	N
	IT: user instructions in Italian language including a conformity declaration		N
	IT: certificatino number on the back cover		N
5.1.i)	C: Replaced the note by: NOTE For RATED POWER CONSUMPTION measurements of TVs reference is made to EN 62087. Measurements are done in the ON (play) operating mode.		N
5.4.1	C: Add the following indent: Za) A warning that excessive sound pressure from earphones and headphones can cause hearing loss	No earphone or headphone	N

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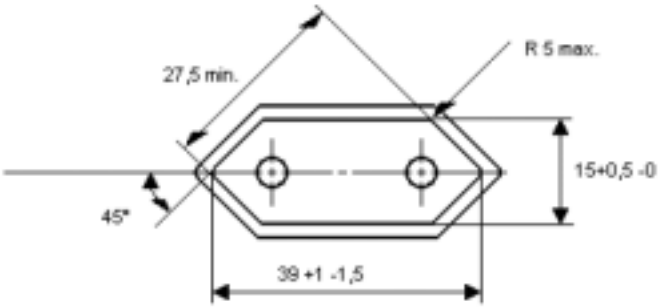
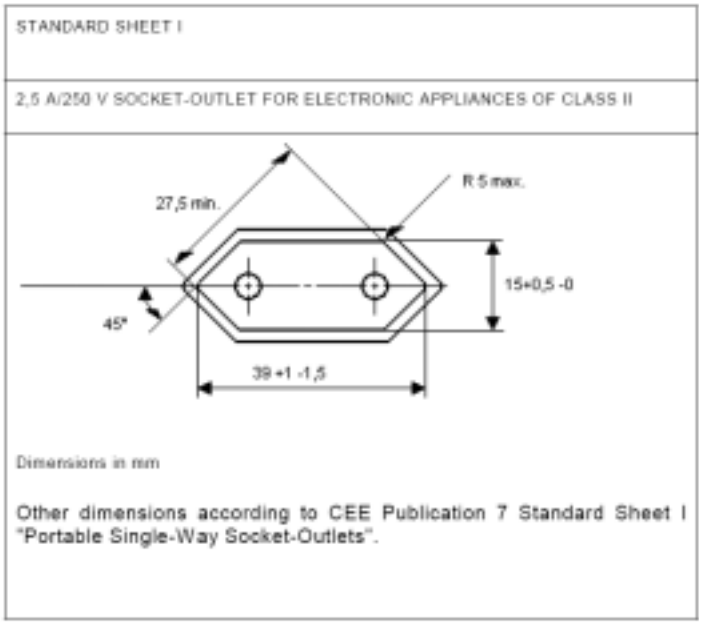
Clause	Requirement – Test	Result - Remark	Verdict

6.1	C: Replace the subclause by: 6.1 Ionizing radiation Equipment that might produce ionizing radiation is checked by measuring the amount of radiation. The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1000m2 or by measuring equipment of other types giving equivalent result. Measurements are made with the equipment on test operating at the most unfavourable supply voltage (see 4.2) and with operator controls and service controls adjusted so as to give maximum radiation whilst maintainning the equipment operative for normal use. Internal preset controls not intended to be adjusted during the lifetime of the equipment are not considered to be serivce controls. At any point 100mm from the surface of the operator access area, the dose-rate shall not exceed 1 μSv/h (0.1 mR/h) (see Note). Account shall be taken of the background level. NOTE These values appear in Directive 96/29/Euratom	No ionizing radiation	N
13.3.1	C: Delete note 4		P
13.3.1	S (NO) To the second paragraph the following is added: In Norway, due to the 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 will remain 230V in case of a single earth fault. Justification: Based on a use in Norway of an IT power distribution system where the neutral is not provided.	Considered	P
14	C: Delete not 4 and not 5.		P
15.1.1	C: Delete note 1 and note 2.		P
15.1.1	S (DK) To the first paragraph the following is added: In Denmark, supply cords of single phase appliances having a rated current not exceeding 13A shall be provided with a plug according to the Heavy Current Refulations Section 107-2-D1. Appliances of CLASS I provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with the Heavy Current Regulations, Section	No socket outlet used	N

	107-2-D1 standard sheet DK 2-1a. To the second paragraph the following is added: Socket outlets intended for providing power to CLASS II apparatus with a rated current of 2,5 A shall have the following dimensions:  Dimensions in mm Other dimensions shall be in compliance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DKA 1-3 for portable socket-outlets. Shutters are not required. To the third paragraph the following is added: Mains socket-outlets with earthing contact shall be in compliance with Heavy Current Regulations Section 107-2-D1, Standard sheet DK 1-3a, DK 1-5a or DK 1-7a Justification: Heavy Current Regulations, Section 107		

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict

15.1.1	S(NO) Mains socket-outlets mounted on CLASS II apparatus shall comply with the specifications given in CEE Publ. 7 as far as applicable, with the following amendments: § 8 Dimensions a 2,5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.  § 24 Mechanical strength a 2,5 A, 250 V socket-outlets for CLASS II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested Justification: Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).	No socket-outlets	N
15.2	C: Delete note 2.		N
16.1	C: Delete note 1.		N
16.2	C: Delete the note.		N
20	C: Delete note 2.		N
Annex B	C: Replace not 1 by: In the CENELEC countries listed in IEC 62151, special national conditons apply. Add the following: All subclauses given below are subclauses of IEC 62151		N

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	(ref. corrigenda 1 and 2 to IEC 62151). Subclause 4.1.1 (corrigendum 2): Add after the first paragraph: NOTE In Finland, Norway and Sweden, CLASS I equipment 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, has a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: “Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan” In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: "Apparaten skall anslutas till jordat uttag" Subclause 4.1.4 (corrrigendum 1) Add at the end of the subclause: NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1. Subclause 4.2.1.2 (corrigendum 1) Add at the end of the subclause: NOTE 3 In Norway, for requirements see 5.3.1, note 1. Subclause 4.2.1.3 (corrigendum 2) Add at the end of the subclause: NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1. Subclause 4.2.1.4 (corrigendum 1) Number the existing note as NOTE 1 and add at the end of the subclause the following NOTE 2: NOTE 2 In Norway, for requirements see 4.1.1, note and 5.3.1, note 1. Subclause 5.3.1 (corrigendum 1) Add after the first test specifications paragraph: NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation. Renumber the existing note as NOTE 2.		

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	For additional requirements for the insulation in Finland, Norway and Sweden in NOTE 1 the following text is added between the first and the second paragraph (this text is identical to the corresponding EN 60950-1:2001): NOTE 1 In Finland, Norway and Sweden, if this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in the accordance with the compliance clause below and in addition: • passes the test and inspection criteria of 13.6 with an electric strength test of 10.3 using the test voltage of 1,5 kV multiplied by 1,6, and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV (for performance of the test see N.2.1). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in IEC 62151, Subclause 6.2.1; • the additional testing shall be performed on all the test specimens as described in EN 132400; • the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 in the sequence of tests as described in EN 132400. Subclause 5.3.2 (corrigendum 1) Add after the fourth dash: NOTE In Finland, Norway and Sweden, exclusions are applicable for equipment which is intended for connection to the building installation wiring using screw terminals or other reliable means, and for equipment which is intended for		

	connection to the building installation wiring via an industrial plug and socket -outlet or an appliance coupler, or both, complying with EN 60309 or with a comparable national standard.		
	S(SE) 14 The following is added: Switches containing mercury such as thermostats, relays and level controllers are not allowed. Justification: Ordinance (1990:944) on Prohibition in Connection with Handling, Importation and Exportation of Chemical Products (Certain Cases)		N
Annex G	C: Delete the note		N
Annex J.2	C: Delete the notes of Table J.1.		N
J.2	After Table J.1 the following is added: In Norway, due to the 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 230 V in case of a single earth fault. Justification: Based on a use in Norway of an IT power distribution system where the neutral is not provided		N
Annex N	C: Add after the introduction: For ROUTINE TEST reference is made to EN 50333.		N
Bibliography	C: Add the following standards: EN 50332-1: 2000, Sound system equipment: Headphones and earphones associated with portable audio equipment- Maximum sound pressure level measurement methodology and limit considerations- Part 1: General method for “one package equipment”. EN 50332-2:2003, Sound system equiment: Headphones and earphones associated with portable audio equipemnt- Maximum sound pressure level measurement method and limit considerations-Part 1: General method for “one package equipemnt”. EN 50332-1: 2003, Sound system equipment: headphones and earphones associated with portable audio equipment- Maximum sound pressure level measruement- Maximum sound pressure level measurement methodology and limit consideration- Part 2: Matching of sets with headphones if either or both are offered separately EN 60065:2002/A1:2006 Add the following notes for the standards indicated:		P

EN 60065:2002+A1: 2006			
Clause	Requirement – Test	Result - Remark	Verdict
	IEC 60130 (all parts) NOTE: Parts 9 and 17:1998 are harmonized as ENs (not modified). IEC 60169 (all parts) NOTE: Partly harmonized in the EN 60169/HD 134 series (not modified). IEC 60173:1964 NOTE: Harmonized as HD 27 S1:1978 (not modified). IEC 60335-2-56:1997 NOTE: Harmonized as EN 60335-2-56:1997 (not modified). IEC 60335-2-82:1999 NOTE: Harmonized as EN 60335-2-82:2000 (not modified). IEC 60410:1973 NOTE: Harmonized as EN 61040:1992 (not modified). IEC 60695 (all parts) NOTE: Harmonized as EN 60695 series (not modified). IEC 61040:1990 NOTE: Harmonized as EN 61040: 1992 (not modified) IEC 61558-2-1:1997 NOTE: Harmonized as EN 61558-2-1:1997 (not modified). IEC 61558-2-4:1997 NOTE: Harmonized as EN 61558-2-4:1997 (not modified). IEC 61558-2-6:1997 NOTE: Harmonized as EN 61558-2-6:1997 (not modified). IEC 61558-2-9: NOTE: Hamonized as EN 60598-2-9:1989+A1:1994 (not modified) IEC 61558-2-17 NOTE: Harmonized as EN 60598-2-17: 1989+A2:1991 (not modidied).		
Annex ZA	C: other international plublications quoted in this standard with the reference of the relevant European publications This European Standard incorporateds by dated or undated referenece. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when iincorporated in it by amendment or revision. For undated references the lasted edition of the publication refered to applies (including amendments). NOTE When an international standard has been modified by common modification, indicated by (mod), the relevant EN/HD applies.		P

Publication	Date	Title	EN/HD	Date
-	-	Audio, video and similar electronic apparatus – Routine electrical safety testing in production	EN 50333	2001
IEC 60027	series	Letter symbols to be used in electrical technology	HD 60027	series
IEC 60038	2002	IEC standard voltages	-	-
IEC 60068-2-6 + corr. March	1995 1995	Environmental testing Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995
IEC 60068-2-32	1975	Environmental testing Part 2: Tests - Test Ed: Free fall	EN 60068-2-32 [1)]	1993
IEC 60068-2-75	1997	Environmental testing Part 2: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60068-2-78	2001	Environmental testing Part 2: Tests – Test Cab: Damp heat, steady state	EN 60068-2-78	2001
IEC 60085	2004	Thermal evaluation and classification of electrical insulation	EN 60085	2004
IEC 60086-4	2000	Primary batteries Part 4: Safety of lithium batteries	EN 60086-4	2000
IEC 60112	2003	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	EN 60112	2003
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60167	1964	Methods of test for the determination of the insulation resistance of solid insulating materials	HD 568 S1	1990
IEC 60216	series	Electrical insulating materials - Properties of thermal endurance	HD 611 EN 60216	series series
IEC 60227 (mod) [2)]	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60245 (mod) [3)]	series	Rubber insulated cables – Rated voltages up to and including 450/750	-	-
IEC 60249-2	series	Base materials for printed circuits Part 2: Specifications	EN 60249-2	series
IEC 60268-1	1985	Sound system equipment Part 1: General	HD 483.1 S2 [4)]	1989

	IEC 60317	series	Specifications for particular types of winding wires	EN 60317	series	
	IEC 60320	series	Appliance couplers for household and similar general purposes	EN 60320	series	
	IEC 60335-1 (mod) A1	2001 2004	Safety of household and similar electrical appliances Part 1: General requirements	EN 60335-1 A1 + A11	2002 2004 2004	
	IEC 60384-1 (mod)	1999	Fixed capacitors for use in electronic equipment Part 1: Generic specification	EN 60384-1	2001	
	IEC 60384-14 A1	1993 1995	Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 132400 [5]	1994	
	IEC 60417	data-base	Graphical symbols for use on equipment	-	-	
	IEC 60454	series	Specifications for pressure-sensitive adhesive tapes for electrical purposes	EN 60454	series	
	IEC 60529 A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May A1	1991 1993 2000	
	IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003	

	IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems Part 3: Use of coatings to achieve insulation coordination of printed board assemblies	EN 60664-3	2003	
	IEC 60691	2002	Thermal links – Requirements and application guide	EN 60691	2003	
	IEC 60695-2-2	1991	Fire hazard testing Part 2: Test methods Section 2: Needle-flame test	EN 60695-2-2	1994	
	IEC 60695-11-10 A1	1999 2003	Fire hazard testing Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10 A1	1999 2003	
	IEC 60707	1999	Flammability of solid non-metallic materials when exposed to flame sources – List of test methods	EN 60707	1999	
	IEC 60730 (mod)	series	Automatic electrical controls for household and similar use	EN 60730	series	
	IEC 60825-1 + corr. December A1 A2	1993 1994 1997 2001	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February A1 A2 + A2/corr. April	1994 1995 2002 2001 2004	
	IEC 60851	series	Winding wires – Test methods	EN 60851	series	
	IEC 60884	series	Plugs and socket-outlets for household and similar purposes	-	-	
	IEC 60885-1	1987	Electrical test methods for electric cables Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V	-	-	
	IEC 60906	series	IEC system of plugs and socket-outlets for household and similar purposes	-	-	
	IEC 60950 (mod) + corr. January	1999 2000	Safety of information technology equipment	EN 60950 + corr. February	2000 2002	
	IEC 60990	1999	Methods of measurement of touch-current and protective conductor current	EN 60990	1999	
	IEC 60998-2-2 (mod)	2002	Connecting devices for low-voltage circuits for household and similar purposes Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	2004	

	IEC 60999-1	1999	Connecting devices – Safety requirements for screw-type and screwless-type clamping units Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)	EN 60999-1	2000	
	IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998	
	IEC 61051-2	1991	Varistors for use in electronic equipment Part 2: Sectional specification for surge suppression varistors	-	-	
	IEC 61058-1 + A1 (mod)	2000 2001	Switches for appliances Part 1: General requirements	EN 61058-1	2002	
	IEC/TR2 61149	1995	Guide for safe handling and operation of mobile radio equipment	-	-	
	IEC 61260	1995	Electroacoustics – Octave-band and fractional-octave-band filters	EN 61260	1995	
	IEC 61293	1994	Marking of electrical equipment with ratings related to electrical supply – Safety requirements	EN 61293	1994	
	IEC 61558-1 (mod) A1	1997 1998	Safety of power transformers, power supply units and similar Part 1: General requirements and tests	EN 61558-1 A1 + A11 + corr. April	1997 1998 2003 2003	
	IEC 61558-2-17	1997	Safety of power transformers, power supply units and similar Part 2-17: Particular requirements for transformers for switch mode power supplies	EN 61558-2-17	1997	
	IEC 61965	2003	Mechanical safety of cathode ray tubes	EN 61965	2003	
	IEC 62087	2002	Methods of measurement for the power consumption of audio, video and related equipment	EN 62087	2003	
	IEC 62151	2000	Safety of equipment electrically connected to a telecommunication network	-	-	
	IEC Guide 104	1997	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-	
	ISO 261	1973	ISO general purpose metric screw threads - General plan	-	-	

	ISO 262	1973	ISO general purpose metric screw threads - Selected sizes for screws, bolts and nuts	-	-	
	ISO 306	1994	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)	EN ISO 306 [6]	1996	
	ISO 7000	1989	Graphical symbols for use on equipment - Index and synopsis	-	-	
	ITU-T Recommendation K17	1988	Tests on power-fed repeaters using solid-state devices in order to check the arrangements for protection from external interference	-	-	
	ITU-T Recommendation K21	1996	Resistibility of telecommunication equipment installed in customer's premises to overvoltages and overcurrents	-	-	

7.1	TABLE: temperature rise measurements		P
	Power consumption in the OFF/Stand-by	2.43W	--
	Position of the functional switch (W) ..... :	--	—

Operating conditions			
Normal working			
Un (V)	In (mA)	Pn (W)	Pout(W)
198V/50Hz	63.2	6.17	--
220V/50Hz	61.5	6.30	--
240V/50Hz	69.2	6.44	--
264V/50Hz	56.0	6.63	--
198V/60Hz	63.3	6.16	--
220V/60Hz	63.0	6.29	--
240V/60Hz	71.3	6.29	--
264V/60Hz	56.4	6.66	--

	Loudspeaker impedance (Ω)	--	—
	Several loudspeaker systems	--	--
	Marking of loudspeaker terminals	--	

Monitored point:	dT (K)		Limit dT (K)
	198V/50Hz	264V/50Hz	
Power cord insulation	15.0	14.0	60
Connector CN6	16.6	15.5	For reference
X2 cap C15	17.9	17.0	65
LF1 coil	21.9	21.2	75
PCB near D17	32.3	35.3	85
E-cap C123	34.7	38.2	70
PCB near U9	55.5	68.1	85
T1 coil	41.8	44.8	75
T1 bobbin	40.1	43.2	For reference
PCB near D19	36.3	36.3	85
Optocoupler U10	34.4	36.6	65
Y-cap C133	34.9	37.5	70
PCB near U3	38.7	36.6	85
Top enclosure (metal)	11.3	10.2	40
Front enclosure (plastic)	7.7	6.3	60
Key	6.2	4.3	50

Operating conditions					
	Winding temperature rise measurements				N
	Ambient temperature t1 (°C) ..... :	24.1(198V), 24.3(264V)			—
	Ambient temperature t2 (°C) ..... :	24.4(198V), 25.3(264V)			—
Temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit dT (K)	Insulation class
Note:					

7.2	TABLE: softening temperature of thermoplastics			N
Temperature T of part	T - normal conditions (°C)	T - fault conditions (°C)	T softening (°C)	

9.1.1	TABLE: Electric shock hazard under normal condition			P
Measured between:	U1 (V)	Required U1 (Vpk)	U2 (V)	Required U2 (Vpk)
L/N and metal enclosure	0.190	35	0.168	0.35
L/N and signal terminal	0.196	35	0.172	0.35

10.3	TABLE: insulation resistance measurements	P
Insulation resistance R between:	R (MΩ)	Required R (MΩ)
L and N (fuse open)	＞100	≥2
L/N and signal terminal	＞100	≥4
Primary and secondary coil of the T1	＞100	≥4
Secondary coil and the core of the T1	＞100	≥4

10.3	TABLE: electric strength measurements	P
Test voltage applied between:	Test voltage (V)	Breakdown
L and N (switch open)	1500	No
L/N and signal terminal	3000	No
Primary and secondary coil of the T1	3000	No
Secondary coil and the core of the T1	3000	No

11.2	TABLE: summary of fault condition tests		P
	Voltage (V) 0,9 or 1,1 times rated voltage ..... :	See below	—
	Ambient temperature (°C) ..... :	25 °C-27 °C	—

fault condition, state component short- or open circuited and components whose temperature rises are measured	supply voltage	result, state effect of fault condition and the duration of the test
Opening block Transformer T1 coil: 52.2K PCB: 75.4K Enclosure (metal): 17.3K Enclosure (plastic): 13.2K	264V/50Hz	Work until got steady state. No excessive temperature rise. No hazard. Test last for 2h
USB overload Transformer T1 coil: 52.5K PCB: 85.2K Enclosure (metal): 13.6K Enclosure (plastic): 9.1K	264V/50Hz	Overload to 0.3A, input current: 76mA, input power: 8.62W. Work until got steady state. No excessive temperature rise. No hazard. Test last for 1.5h
USB short circuit Transformer T1 coil: 40.6K PCB: 64.3K Enclosure (metal): 9.8K Enclosure (plastic): 5.6K	264V/50Hz	Input current: 55mA, input power: 6.17W. Work until got steady state. No excessive temperature rise. No hazard. Test last for 2h
E45 short circuit	264V/50Hz	Input current: 22-46mA, input power: 0.19-1.23W. Circuit protected. Unit shut down immediately. No hazard. Test last for 15min
D19 short circuit	264V/50Hz	Input current: 22mA, input power: 0.32W. Circuit protected. Unit shut down immediately. No hazard. Test last for 15min
U10 pin3-4 short circuit	264V/50Hz	Input current: 22mA, input power: 0.29W. Circuit protected. Unit shut down immediately. No hazard. Test last for 15min
U10 pin1-2 short circuit	264V/50Hz	Input current: 22-41mA, input power: 0.32-1.27W. Circuit protected. Unit shut down immediately. No hazard. Test last for 15min
U9 pin1-8 short circuit	264V/50Hz	Fuse opened immediately. Fuse current: 2.4A.
U9 pin1-8 short circuit	198V/50Hz	Fuse opened immediately. Fuse current: 2.6A.
C123 short circuit	264V/50Hz	Fuse opened immediately. Fuse current: 2.4A.
C123 short circuit	198V/50Hz	Fuse opened immediately. Fuse current: 2.6A.

D14 short circuit	264V/50Hz	Fuse opened immediately. Fuse current: 2.5A.	
D14 short circuit	198V/50Hz	Fuse opened immediately. Fuse current: 2.5A.	
	Winding temperature rise measurements		N
	Ambient temperature t1 (^{o}C) ..... :	--	—
	Ambient temperature t2 (^{o}C) ..... :	--	—
Note(s): --			

Clause 13.3 Clause 13.4	TABLE: Creepage distance and clearance				P
Rated supply voltage:	220-240V	Pollution degree:	II	Material Group:	IIIb
30 N force on outside of conductive enclosure applied.....:			Applied		
30 N force on outside of conductive enclosure applied.....:			Applied		

Locations between:	Operating voltage		Clearance (mm)		Creepage (mm)		CTI
	V peak	V rms	Min	Actual	Min	Actual	< 175
L and N (before the fuse)	339	240	2.0	4.2	2.5	4.2	< 175
L and N (under the fuse)	339	240	2.0	3.0	2.5	3.0	< 175
PCB trace between primary and secondary circuit under T1	460	240	4.2	6.8	4.8	6.8	< 175
PCB trace between primary and secondary circuit under U10	436	240	4.2	7.2	4.8	7.2	< 175
PCB trace between primary and secondary circuit under C48	339	240	4.0	7.1	4.8	7.1	< 175
Primary and secondary of the T1	460	240	4.2	＞6.0	4.8	＞6.0	< 175
Core and secondary of the T1	460	240	4.2	4.6	4.8	＞5.0	< 175
Transformer core and secondary of C133	460	240	4.2	＞4.4	4.8	＞5.0	< 175
Primary and metal enclosure	339	240	4.0	7.0	4.8	8.0	< 175

Notes:
1. Secondary circuits of Class II apparatus which have connector terminals that could be earthed (e.g. antenna signal input), are subjected to the requirements for circuits conductively connected to the mains in Tables 8 and 9.
2. Floating secondary circuits of Class I apparatus which have connector terminals that could be earthed (e.g. antenna signal input), are subjected to the requirements for circuits conductively connected to the mains in Tables 8 and 9 unless the floating secondary circuit is separated from the primary circuits by an earthed metal screen (e.g. in the power transformer), or the floating secondary circuit is connected to earth via a component such as a capacitor.
3. For insufficient clearances and creepage distances from secondary to secondary circuits and from secondary circuits to earth, see Cl.
4.3.1, 4.3.2 and 11.2.
4. If the minimum creepage distance in Table 11 is less than the minimum required clearance in Tables 8, 9 or 10 as required, then the value for clearance is used as the minimum creepage distance.

"Min" = minimum required.
"Actual = Actual dimensions measured.

14	TABLE: list of critical components and materials	P

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Power cord (EU)	Shenzhen Baohing Electric Wire & Cable Manufacture Co., Ltd.	H03VVH2-F	2×0.5mm^2	VDE 0281-5	VDE 103727
Power plug (EU)	Ching Cheng Wire Material Co., Ltd.	EL-207	2.5A 250V	VDE 0620	VDE 40002990
(alt.)	Shenzhen Hong Yun	HYP-201	2.5A/250V～	VDE 0620	VDE 40021944
Power cord (BS)	Phino Electric Co., Ltd	H03VVH2-F	2×0.75mm^2	VDE 0281-5	VDE 113841
Power plug (BS)	Phino Electric Company Limited	PHP-318	250V~, 13A	BS 1363: Part 1+A1+A2	KM 69214
Fuse in BS plug	Dongguan Cooper Electrionics Co., Limited	TDC 180	240V~, 3A	BS 1362+A1+A2	ASTA 658
(alt.)	Taller GmbH	ATLAS	240V~, 3A	BS 1362+A1+A2	KM70570
Connector (CN6)	Zhejiang Jinda Electronics Co., Ltd	--	VH-3A2-7.8MM	UL 1977	UL E237523
X2 capacitor (C15 & C49)	Tenta Electric Industrial Co.,Ltd	MEX	0.1uF/275VAC	IEC 60384-14	VDE 119119
(alt.)	Shenzhen Shengxin Capacitor Co., Ltd.	MEX-X2	0.1uF/280VAC	IEC 60384-14	VDE 123934
Y1 capacitor (C31, C48 & C33)	Hsuan Tai Electronics Co.,Ltd	CY	1000pF, 400VAC, Y1	IEC 60384-14	VDE118413
(alt.)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD	1000pF, 400VAC, Y1	IEC 60384-14	VDE118413
Fuse	XC Electronics(Shenzhen) Corp Ltd	3T	T630mA L250V	EN 60127-1 EN 60127-2	VDE 40019614

Line filter (LF1)	Hua Yu Electrical Factory	UU9.8	85mH	EN 60065	Test in unit
Transformer T1	Hua Yu Electrical Factory	EE25	Class B	EN 60065	Test in unit
-Primary Wire	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	130°C	UL 1446	UL E85640
-Bobbin	Chang Chun Plastic Co., Ltd	T375J	150°C, V-0	UL 94	UL E59481
(alt.)	Various	Various	150°C, V-0	UL 94	UL
-Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT280	130°C	UL 510	UL E165111
(alt.)	Various	Various	130°C	UL 510	UL
-Tube	Changyuan Electronics (Shenzhen) Co Ltd	CB-TT-T	600V, 200°C	UL 224	UL E180908
-Triple insulated wire	SHANGHAI CHUANYE ELECTRONIC TECHNOLOGY CO LTD	GPX-B	130°C	UL 60950-1	UL E243712
Optocoupler U10	Bright LED Electronics Corp	BPC-817B	Reinforce insulation	EN 60747-5-2	VDE 40007240
(alt.)	Sharp Corp Electronics Components Group	PC817	Reinforce insulation	EN 60747-5-2	VDE 40008087
PCB	Xing Da Printed Circuit Board Mfr	XD-105	V-0, 130°C	UL 94	UL E193079
(alt.)	Various	Various	V-0, 130°C	UL 94	UL
Plastic enclosure	Formosa Chemicals & Fibre Corp Plastics Div	AG15A1	HB	UL 94	UL E162823
Heat shrinkable tube	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	300V, 125°C	UL 224	UL E180908
(alt.)	Various	Various	300V, 125°C	UL 224	UL

Annex 1 Photo Document

Photo 3 Enclosure

Photo 4 Inside

Annex 1 Photo Document

Photo 5 Power supply and function board

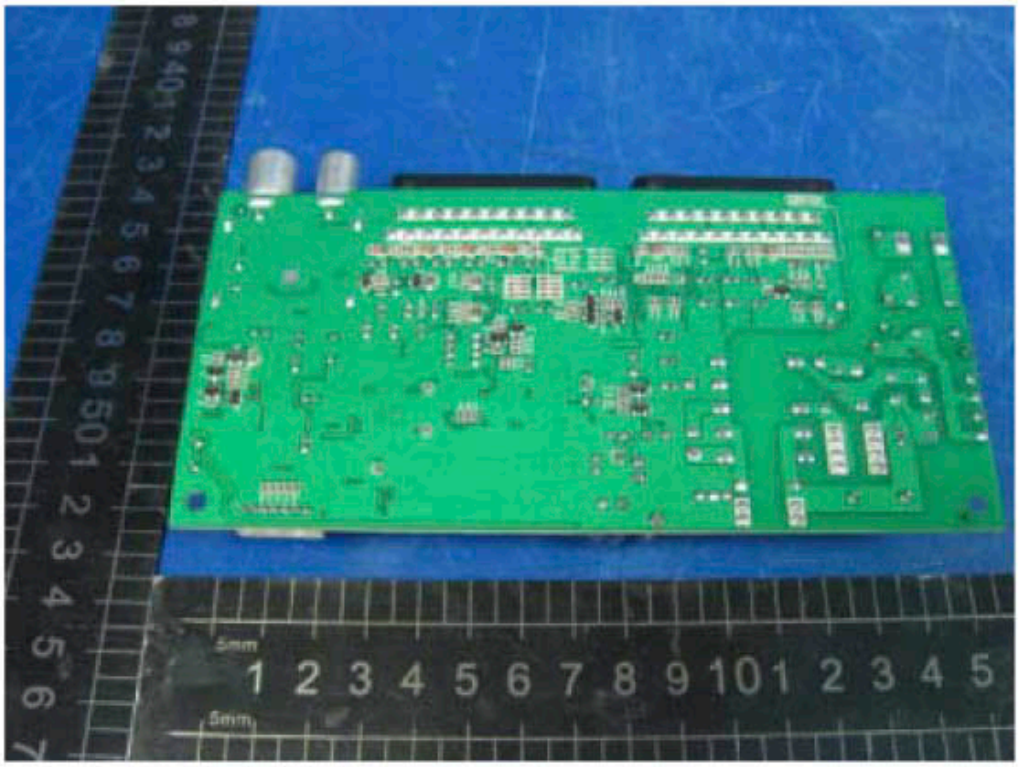


Photo 6 Power supply and function board

Annex 1 Photo Document

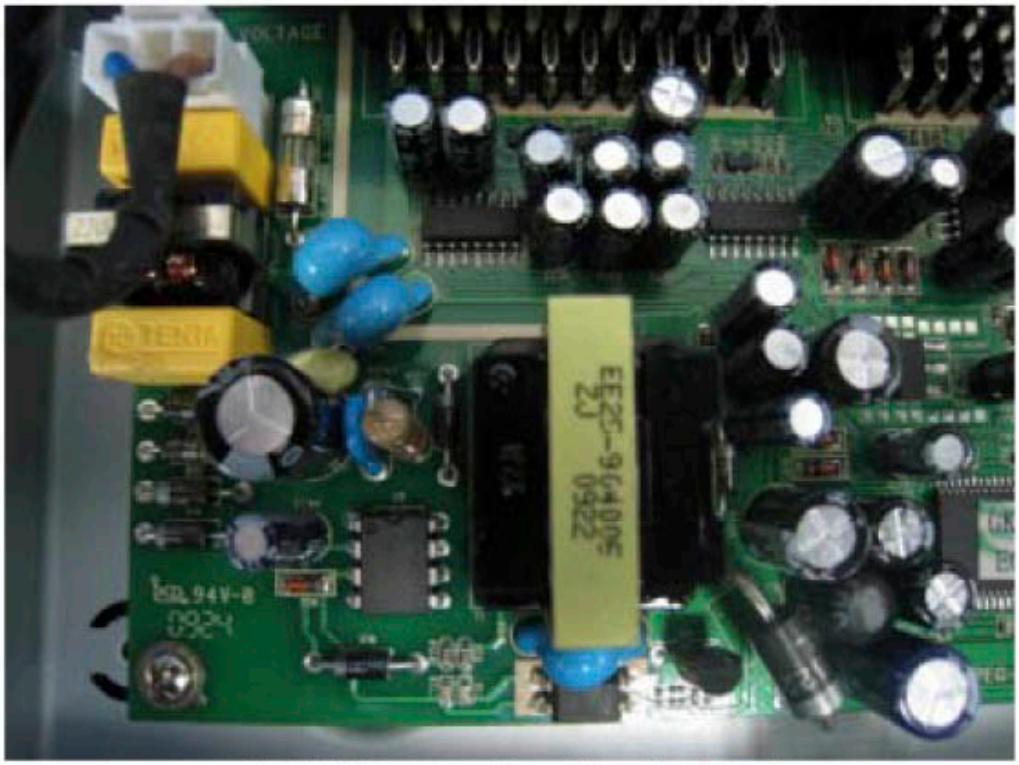
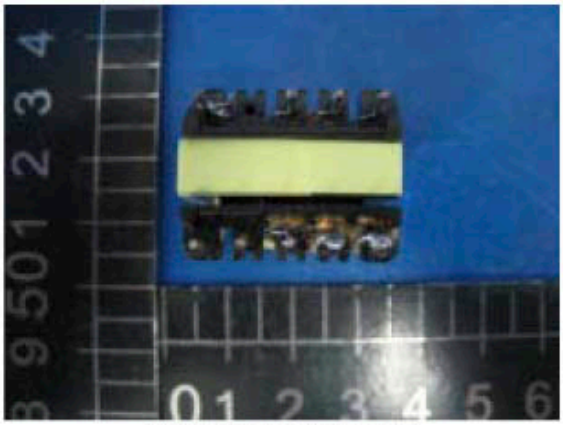
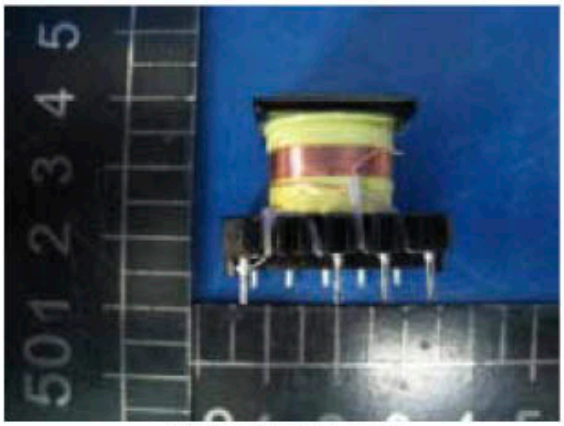
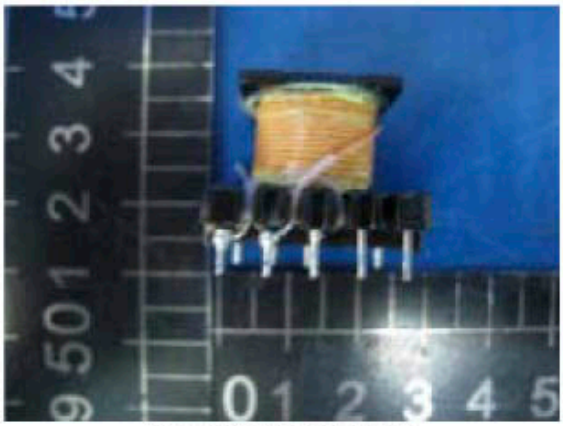
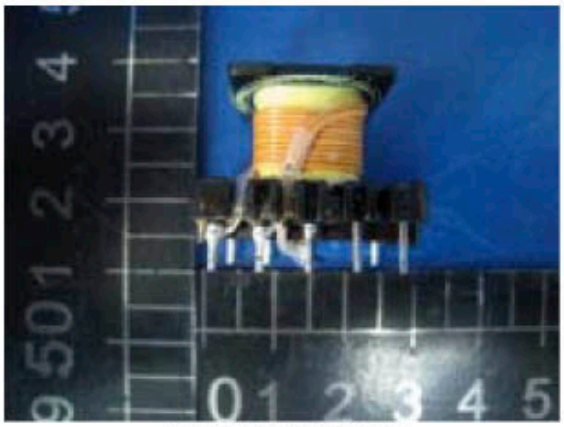
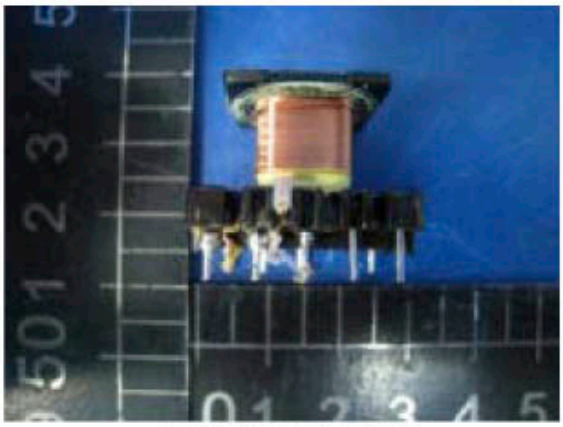
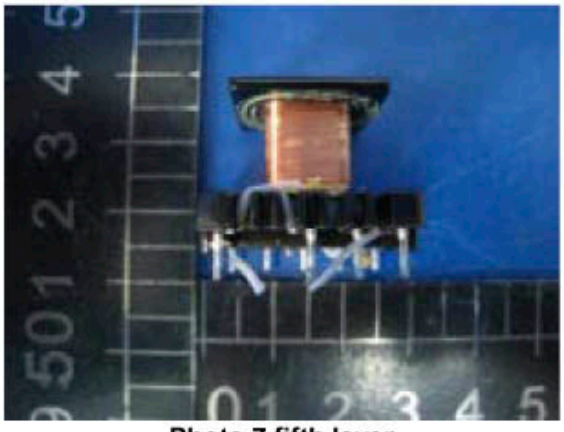


Photo 7 Power supply and function board

Transformer T1	
 Photo 1 Top view	 Photo 2 Bottom view

Annex 1 Photo Document

Transformer T1	
 Photo 3 First layer	 Photo 4 Second layer
 Photo 5 Third layer	 Photo 6 fourth layer
 Photo 7 fifth layer	