TEST REPORT
IEC 60065
Audio, video and similar electronic apparatus - Safety requirements

Report Reference No. .....:	GZ10020149-2R1
Date of issue .....:	28 Feb 2012
Total number of pages .....:	41
Testing Laboratory.....:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Address .....:	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Applicant's name .....:	Shenzhen Huoniu Technology Co., Ltd.
Address .....:	Block No.5, The 4th Industrial Zone, Xitian Community, Gongming Town, Guangming New District, Shenzhen, Guangdong, P.R. China
Test specification:	
Standard.....:	IEC 60065:2001 (Seventh Edition) + A1:2005 + A2:2010
	EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011
	BS EN 60065:2002 + A1:2006
Test procedure .....:	GS, LVD
Non-standard test method……..:	N/A
Test Report Form No. .....:	IEC60065J
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF .....:	2009-06

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.

Test item description.....:	Switching power supply
Trade Mark.....:	
Manufacturer.....:	Same as applicant
Model/Type reference.....:	HN********, (see general product information for details)
Ratings.....:	Input: 100-240 Vac, 50-60 Hz, 0,60 A, Class II Output: 4,5 -24,0 Vdc, 0,1 -4,0 A, 24W max.

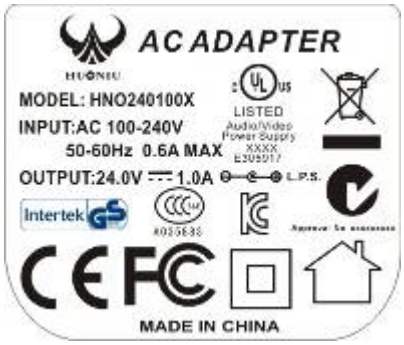
Testing procedure and testing location:			
☒	**Testing Laboratory:**	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch	
Testing location/ address.....:		Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China	
☐	**Associated CB Test Laboratory:**	N/A	
Testing location/ address.....:		N/A	
	Tested by (name + signature).....:	Spark He	Spark
	Approved by (+ signature).....:	Peter Lu	
☐	Testing procedure: TMP	N/A	
	Tested by (name + signature).....:		
	Approved by (+ signature)..... :		
Testing location/ address.....:			
☐	Testing procedure: WMT	N/A	
	Tested by (name + signature).....:		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature).....:		
Testing location/ address.....:			
☐	Testing procedure: SMT	N/A	
	Tested by (name + signature).....:		
	Approved by (+ signature).....:		
	Supervised by (+ signature).....:		
Testing location/ address .....:			
☐	Testing procedure: RMT	N/A	
	Tested by (name + signature).....:		
	Approved by (+ signature).....:		
	Supervised by (+ signature).....:		
Testing location/ address.....:			

Summary of testing:	
Tests performed (name of test and test clause): All applicable tests The appliance comply with the standard: EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011 BS EN 60065:2002 + A1:2006	**Testing location:** Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Summary of compliance with National Differences: Group and National differences for CENELEC members have been considered.	

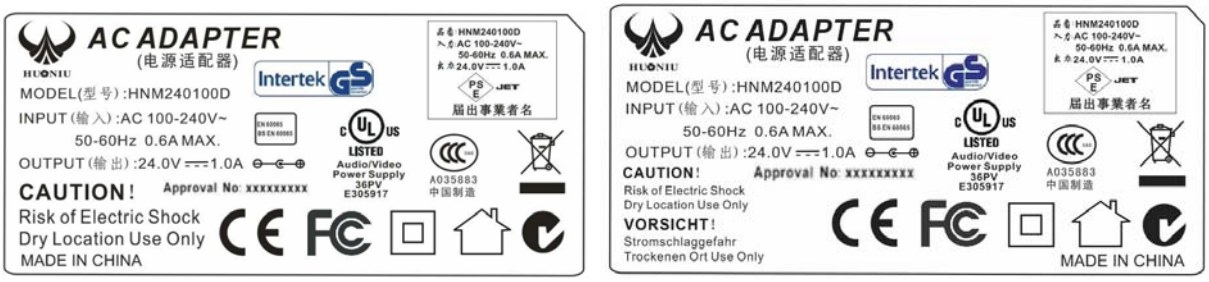
Copy of marking plate: (representative)

Marking for GS/LVD approval

Marking for CE approval



Marking for detachable plug unit



Marking for desktop type unit

Note: The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Test item particulars:	
Classification of installation and use ..... :	Portable
Supply connection ..... :	Direct plug in
..... :	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing.:	
Date of receipt of test items ..... :	5 Jan 2012
Date(s) of performance of tests ..... :	5 Jan 2012 – 6 Feb 2012

General remarks:

The test results presented in this report relate only to the object tested.
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"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report, a comma is used as the decimal separator.

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

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

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The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

This report is based on report GZ10020149-2, issued on 6 Sep 2010, with below modification:

1. A2:2010 of IEC/EN 60065 was considered;
2. A12:2011 of EN 60065 was considered;
3. Constructions of all detachable plugs were changed;
4. Address of applicant and factory was changed;
5. Add one X capacitor between L and N;
6. Add five alternative varistors;
7. Since insulation sheet is used as barrier, its thickness is changed to 0,3 mm.

Per evaluating, clause 8, clause 9, clause 13, clause 14, clause 15 and all detachable plug parts need to be considered.

This report should be used in conjunction with the report GZ10020149-2, issued on 6 Sep 2010.

General product information:

Model HN********

The 1st "*" of HN******** can be:
"O" represents direct plug in type unit, or
"M" (and the 8th "*" should be "D") represents desktop type unit.

The 2nd to 4th "*" represents output voltage "045" (4,5 Vdc) to "240" (24,0 Vdc).

The 5th to 7th "*" represents output current from "010" (0,1 A) to "400" (4,0 A).

The 8th "*" can be:

"E" represents European plug comply with EN 50075, or

"B" represents UK plug comply with BS 1363-3, or

"X" represents the detachable plug same as above.

There are 3 transformers used as T1, HNO024050-01VIS used for appliance with output voltage between 4,5V-8,9V dc, HNO024120-01VIS used for appliance with output voltage between 9,0-14,9Vdc, HNO024240-01VIS used for appliance with output voltage between 15,0-24,0Vdc,

Other than special remark in relevant clauses, models "HNO045400E", "HNO050400E", "HNO090267E" and "HNO240100E" are the representative testing models for series HNO*******

Other than special remark in relevant clauses, models "HNM045400D", "HNM050400D", "HNM090267D" and "HNM240100D" are the representative testing models for series HNM******D

Models HN******** same each other except the external enclosure structure.

All the models have the same PCB (including circuit, PCB layout and components) except the secondary winding (including turns, diameter) of the transformer T1 and the output voltage&current sampling element.

Manufacturing site: Shenzhen Huoniu Technology Co., Ltd.

Address: Block No.5, The 4th Industrial Zone, Xitian Community, Gongming Town, Guangming New District, Shenzhen, Guangdong, P.R. China

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
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		P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.	No such changeable device	N/A
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No such material	P
8.4	No risk of electric shock following the removal of a cover which can be removed by hand	When the detachable plug was removed, no hazards	P
8.5	Class I equipment		N/A
	Basic insulation between hazardous live parts and earthed accessible parts		N/A
	Resistors bridging basic insulation complying with 14.1 a)		N/A
8.6	Class II equipment and Class II constructions within Class I equipment	Class II equipment	P
	Reinforced or double insulation between hazardous live parts and accessible parts	(See appended table)	P
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3	Transformer(T1)	P
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.1 a)		N/A
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)		N/A
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	CY1 reinforced insulation (between primary and secondary)	P
	Basic insulation bridged by components complying with 14.3.4.3		N/A
8.7	This clause is void		N/A
8.8	Basic or supplementary insulation > 0,4 mm (mm) :		N/A
	Reinforced insulation > 0,4 mm (mm) ..... :	Enclosure thickness: 2,0 mm min.	P
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)		P
	Basic or supplementary insulation, at least two layers, each meeting 10.3		N/A

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	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	1, Wrap on transformer 2, Wrap on primary heat-sink	P
	Reinforced insulation, three layers any two which meet 10.3		N/A
8.9	Adequate insulation between internal hazardous live conductors and accessible parts		P
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	Secondary lead wire cannot touch hazardous live part	P
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.		P
8.11	Detaching of wires		P
	No undue reduction of creepages or clearance distances if wires become detached	The internal wires are soldered on PCB and fixed by glue.	P
	Vibration test carried out .....:		N/A
8.12	This clause is void		N/A
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)		N/A
8.14	Adequate fastening of covers (pull test 50 N for 10 s)	Enclosure parts are fixed by ultrasonic welding	P
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges		P
8.16	Only special supply equipment can be used		N/A
8.17	Insulated winding wire without additional interleaved insulation	No such winding wire	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	Direct plug and approved inlet as part of the equipment is considered as the disconnect device	P
	All-pole switch or circuit breaker with >3mm contact separation		N/A
8.19.2	Mains switch ON indication	No mains switch	N/A
8.20	Switch not fitted in the mains cord	No switch	N/A

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
8.21	Bridging components comply with clause 14	No such bridging components	N/A
8.22	Non-separable thin sheet material	Not used as reinforced insulation	N/A
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 such high voltages	N/A
9.1.1.1	a) Open circuit voltages		P
	b) Touch current measured from terminal devices using the network in annex D .....:	U1: 0,492 Vpeak max U2: 0,093Vpeak max	P
	c) Discharge not exceeding 45 µC		P
	d) Energy of discharge not exceeding 350 mJ		N/A
9.1.1.2	Test with test finger and test probe		P
9.1.2	No hazardous live shafts of knobs, handles or levers	No such shafts	N/A
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin	No such holes	N/A
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	No such devices	N/A
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032		N/A
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 such pre-set controls	N/A
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s .....:	28 V max. under normal; 47,2 V max. when RS1 open.	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)		P
	b) Test hook of fig. 4 for 10 s (20 N)		P
	c) 30 mm diameter test tool for 5 s (100 or 250 N) :	Plastic enclosure	N/A
9.2	No hazard after removing a cover by hand	For detachable plug	P

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		P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
13.3	Clearances		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 appended table)	P
13.3.3	Circuits not conductively connected to the mains comply with table 10		N/A
13.3.4	Measurement of transient voltages		N/A
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)		N/A
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4		P
	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		N/A
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	No such parts	N/A
14	COMPONENTS		P
14.1	Resistors		N/A
	a) Resistors between hazardous live parts and accessible metal parts	No such resistors	N/A
	b) Resistors, other than between hazardous live parts and accessible parts		N/A
	Resistors separately approved ..... :		N/A
14.2	Capacitors and RC units	CY1, CX1	P
	Capacitors separately approved	CY1, CX1	P
14.2.1	Y capacitors tested to IEC 60384-14, 2nd edition .. :	CY1	P
14.2.2	X capacitors tested to IEC 60384-14, 2nd edition .. :	CX1	P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 ..... :		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 ..... :	Electrolytic capacitor with metal enclosure	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 ..... :		N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal ..... :		N/A
14.3	Inductors and windings		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 ..... :	Transformer: T1 Manufacturer name: Oten Technology Co., Ltd 1, model name: HNO024050-01VIS The label EE25 TR02 OTEN HNO024050-01VIS CLASSB.SBI4.2 2, model name: HNO024120-01VIS The label EE25 TR02 OTEN HNO024120-01VIS CLASSB.SBI4.2 3, model name: HNO024240-01VIS The label EE25 TR02 OTEN HNO024240-01VIS CLASSB.SBI4.2	P
	Transformers and inductors separately approved . :	Tested in appliance	N/A
14.3.2	General		P
	Insulation material complies with clause 20.1.4		P
14.3.3	Constructional requirements		P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
14.3.3.1	Clearances and creepage distances comply with 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)	(see appended table)	P
	Coil formers and partition walls > 0,4 mm	Approved triple insulation wire was used as secondary winding.	N/A
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		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)	Dielectric strength test between: Pri – sec: 4240 Vpeak Core – sec: 4240 Vpeak	P
	Coil formers and partition walls > 0,4 mm	Approved triple insulation wire was used as secondary winding.	N/A
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/A
	Winding wires connected to protective earth have adequate current-carrying capacity		N/A
14.4	High voltage components	No such high voltage	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	One current fuse: T2,0A, 250Vac was used as the protective devices	P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	(see appended table)	P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
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	No thermal links	N/A
	b) Thermal links tested as part of the submission		N/A
14.5.1.3	Thermal devices re-settable by soldering	No such devices	N/A
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	Fusing resistor was used.	P
14.5.2.2	Correct marking of fuse-links adjacent to holder ... :	The marking "T2,0AL/250V" adjacent to the part.	N/A
14.5.2.3	Not possible to connect fuses in parallel ..... :	Only one	N/A
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool ..... :	Not replaced	P
14.5.3	PTC-S thermistors comply with IEC 60730-1	No PTC	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		P
14.6	Switches	No switches	N/A
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/A
14.6.1 b)	Tested in the apparatus:		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		N/A

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and		N/A
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N/A
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 60058-1		N/A
	Socket outlet current marking correct		N/A
14.7	Safety interlocks	No such safety interlocks	N/A
	Safety interlocks to 2.8 of IEC 60950		N/A
14.8	Voltage setting devices and the like	No such devices	N/A
	Voltage setting device not likely to be changed accidentally		N/A
14.9	Motors	No motors	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 batteries	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	Approved optocoupler was used	P
	Optocouplers comply with Cl. 8		P
	Internal and external dimensions to 13.1. or alternatively 13.6 (jointed insulation)		P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
14.12	Surge suppression varistors	This part was optional, .	P
	Comply with IEC 61051-2		P
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus	Between L and N	P
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		P
15	TERMINALS		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Compliance with EN 50075, BS 1363-3, AS/NZS 3112 and appendix 4 of METI ordinance	P
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No socket outlets	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:		P
	No risk of insertion in mains socket-outlets		P
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2		N/A
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets		P
15.2	Provision for protective earthing		N/A
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II unit	N/A
	Protective earth conductors correctly coloured		N/A
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		N/A
	Protective earth terminal resistant to corrosion		N/A
	Earth resistance test: < 0,1 Ω at 25 A ..... :		N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply	No such terminals	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

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	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
	Terminals located and shielded: test with 8 mm strand		N/A
15.4	Devices forming a part of the mains plug	All plug constructions are tested	P
15.4.1	No undue strain on mains socket-outlets		P
15.4.2	Device complies with standard for dimensions of mains plugs		P
15.4.3	Device has adequate mechanical strength (tests a,b,c)		P

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

13	**TABLES: clearances and creepage distances**				**P**
Rated supply voltage:	100-240 V	Pollution degree:	2	Material Group:	IIIa, IIIb
2 N force on internal parts applied:				Considered	
30 N force on outside of conductive enclosure applied:				Considered	

Location	Operating Voltage		Clearance (mm)		Creepage (mm)	
	V rms	V peak	Min	Actual	Min	Actual
Circuits conductively connected to the mains (use Tables 8, 9 and 11): see note below.						
Line to Neutral before fuse (with detachable plug) (BI)	240	340	2,00	5,18	2,40	5,86
Two poles of fuse (BI)	240	340	2,00	3,08	2,40	3,08
Primary to secondary on PCB trace (RI)	266	588	4,60	5,9	5,50	6,5
Primary parts to secondary parts (RI)	266	588	4,60	6,2	5,50	8,5
Core to secondary parts (RI)	266	588	4,60	6,0	5,50	6,0
Live parts to accessible enclosure(with detachable plug) (RI)	240	340	4,00	6,0	4,80	6,0
Live parts to accessible enclosure of detachable plug (RI)	240	340	4,00	5,28	4,80	5,28

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.

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

14	TABLE: list of critical components and materials	P

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Enclosure	NAN YA PLASTICS CORP PLASTICS 4TH DIV	6410G5	Polyamide 66 (PA66),, V-0, 130°C, 2,0 mm min. thickness	Applicable parts of IEC/EN 60065	Tested in appliance
Plug holder	NAN YA PLASTICS CORP PLASTICS 4TH DIV	6410G5	Polyamide 66 (PA66), V-0, 130°C, 2,0 mm min. thickness	Applicable parts of IEC/EN 60065	Tested in appliance
Inlet (for model HNM******D, desktop unit only)	Rocke Electronics (Shenzhen) Co., Ltd	SC-13	2,5A, 250V, C8	EN 60320-1:2001	TUV
Inlet (for model HNM******D, desktop unit only) (Alternative)	Various	Various	2,5A, 250V, C8	EN 60320-1:2001	S or other EU certification
Input lead wire	Shenzhen Shi Yihuaxing Electron Co., Ltd.	1007	VW-1, 80°C min., 300Vac, min. 24AWG	Applicable parts of IEC/EN 60065	Tested in appliance
Input lead wire (Alternative)	--	1007	VW-1, 80°C min., 300Vac, min. 24AWG	Applicable parts of IEC/EN 60065	Tested in appliance
Output cord	Shenzhen Shi Yihuaxing Electron Co., Ltd.	2468	VW-1, 80°C min., 300Vac, min. 24AWG	Applicable parts of IEC/EN 60065	Tested in appliance
Output cord (Alternative)	--	2468	VW-1, 80°C min., 300Vac, min. 24AWG	Applicable parts of IEC/EN 60065	Tested in appliance
PCB	Shenzhen Zhong Luo Electronics Co., Ltd.	ZL-01	V-0, 130°C	UL 94	UL

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
PCB (Alternative)	Various	Various	V-0 or better, 130 °C	UL 94 or IEC 60707	ETL, UL or other certificate body
Fuse(FS1)	Ever Island Electric Co., Ltd. and Walter Electric	2010	T2.0A,250Vac	EN 60127-1 EN 60127-3	VDE
Fuse(FS1) (Alternative)	Various	Various	T2.0A,250Vac Break capacitance: 100A or high	EN 60127-1:2003 EN 60127-3:2003	S or other EU certification
Heat shrinkable tube	ShenZhen Woer Heat-Shrinkable Material Co., Ltd.	RSFR	VW-1, 600Vac, 125°C	Applicable parts of IEC/EN 60065	Tested in appliance
Varistor(VR1) (Optional)	Shaanxi Huaxing Varistor Factory	MYG20G10K471	Min. 300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Varistor (VR1) (Optional) (Alternative)	Thinking Electronic Industrial Co., Ltd.	07D471K	300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Varistor (VR1) (Optional) (Alternative)	Brightking Inc	471KD07	300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Varistor (VR1) (Optional) (Alternative)	Shantou High-New Technology	07D471K	300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Varistor (VR1) (Optional) (Alternative)	Xiamen wanming electronics co., ltd	07D471K	300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Varistor (VR1) (Optional) (Alternative)	Shantou High-New Technology	10D471	300 Vac	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
X-Cap CX1	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,15uF, Min. AC 275V, X2, 100 ℃	IEC 60384-14	VDE
X-Cap CX1 (Alternative)	Various	Various	Max. 0,15uF, Min. AC 275V, X2, 100 ℃	IEC 60384-14(ed.3)	VDE

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Optocoupler (U2)	KODENSHI KOREA CORP	PC-17K1	Int. CR / Ext. Cr / Dti: 6.4 / 8.0 / ≥ 0.40 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Optocoupler (U2) (Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817	Int. CR / Ext. Cr / Dti: 7.0 / 7.0 / > 0.4 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Optocoupler (U2) (Alternative)	LITE-ON SEMICONDUCTOR	LTV-817	Int. CR / Ext. Cr / Dti: 6.4 / 8.0 / ≥ 0.40 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Optocoupler (U2) (Alternative)	Everlight Electronics Co., Ltd.	EL817	Int. CR / Ext. Cr / Dti: 7,6 / 7,6 / ≥ 0.40 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Optocoupler (U2) (Alternative)	SHARP CORP	PC 817	Int. CR / Ext. Cr / Dti: 6,4 / 6,4 / ≥ 0.40 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Optocoupler (U2) (Alternative)	COSMO ELECTRONICS CORP.	K1010, KP1010, KP1110	Int. CR / Ext. Cr / Dti: 6.4 / 8.0 / ≥ 0.40 mm	DIN EN 60747-5-2 (VDE 0884 Teil 2)	VDE
Y-Cap	Walsin technology corporation	AH	Max.2200pF，250Vac, 125°C, Y1	IEC 60384-14	VDE
Y-Cap (Alternative)	Various	Various	Max.2200pF，250Vac, 125°C, Y1	IEC 60384-14(ed.3)	VDE
Insulation tape around the T1 core&heat sink	3M Company	1350-1, 1350F-1, 1351-1	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation tape around the T1 core&heat sink (Alternative)	Bondtec Pacific Co., Ltd.	371F+@	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation sheet	Formex,Div Of Il Tool Works Inc,Frmrly Fastex,Div Of Il Tool Works Inc	FORMEX GK-(a)(b)(f2)	V-0, 115°C, thickness: 0,3 mm min.	Applicable parts of IEC/EN 60065	Tested in appliance
Transformer component list					

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Transformer (T1)	Oten Technology Co., Ltd	1) HNO024050-01VIS (for output:4,5V-8,9V) 2) HNO024120-01VIS (for output:9V-14,9V) 3) HNO024240-01VIS (for output:15V-24V)	Class B	Applicable parts of IEC/EN 60065	Tested in appliance
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9630, PM-9820	Phenolic, V-0, 150°C,	Applicable parts of IEC/EN 60065	Tested in appliance
Bobbin (Alternative)	Chang Chun Plastic Co., Ltd.	T375J	Phenolic, V-0, 150°C,	Applicable parts of IEC/EN 60065	Tested in appliance
Magnet wire	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Triple insulation wire	Furukawa Electric Co., Ltd.	TEX-E	Class B	EN 60950-1	VDE
Triple insulation wire (Alternative)	Totoku Electric Co., Ltd.	TIW-2	Class B	EN 60950-1	VDE
Teflon tube	Zeus industrial products inc	TFE-TW-300, TFE-SW-600	300V/600V 200°C	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation tape around the T1 core	3M Company	1350-1, 1350F-1, 1351-1	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation tape around the T1 core (Alternative)	Bondtec Pacific Co., Ltd.	371F+@	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Line choke (LF1) component list					

IEC 60065			
Clause	Requirement – Test	Result - Remark	Verdict

Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference
Line choke (LF1)	Shenzhen Huoniu Technology Co., Ltd.	HNK024001-01A	Class B	Applicable parts of IEC/EN 60065	Tested in appliance
Magnet wire	Pacific Electric Wire & Cable (Shenzhen) Co., Ltd.	UEW/U	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9630, PM-9820	Phenolic, V-0, 150°C,	Applicable parts of IEC/EN 60065	Tested in appliance
Bobbin (Alternative)	Chang Chun Plastic Co., Ltd.	T375J	Phenolic, V-0, 150°C,	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation tape	3M Company	1350-1, 1350F-1, 1351-1	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
Insulation tape (Alternative)	Bondtec Pacific Co., Ltd.	371F+@	130°C	Applicable parts of IEC/EN 60065	Tested in appliance
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

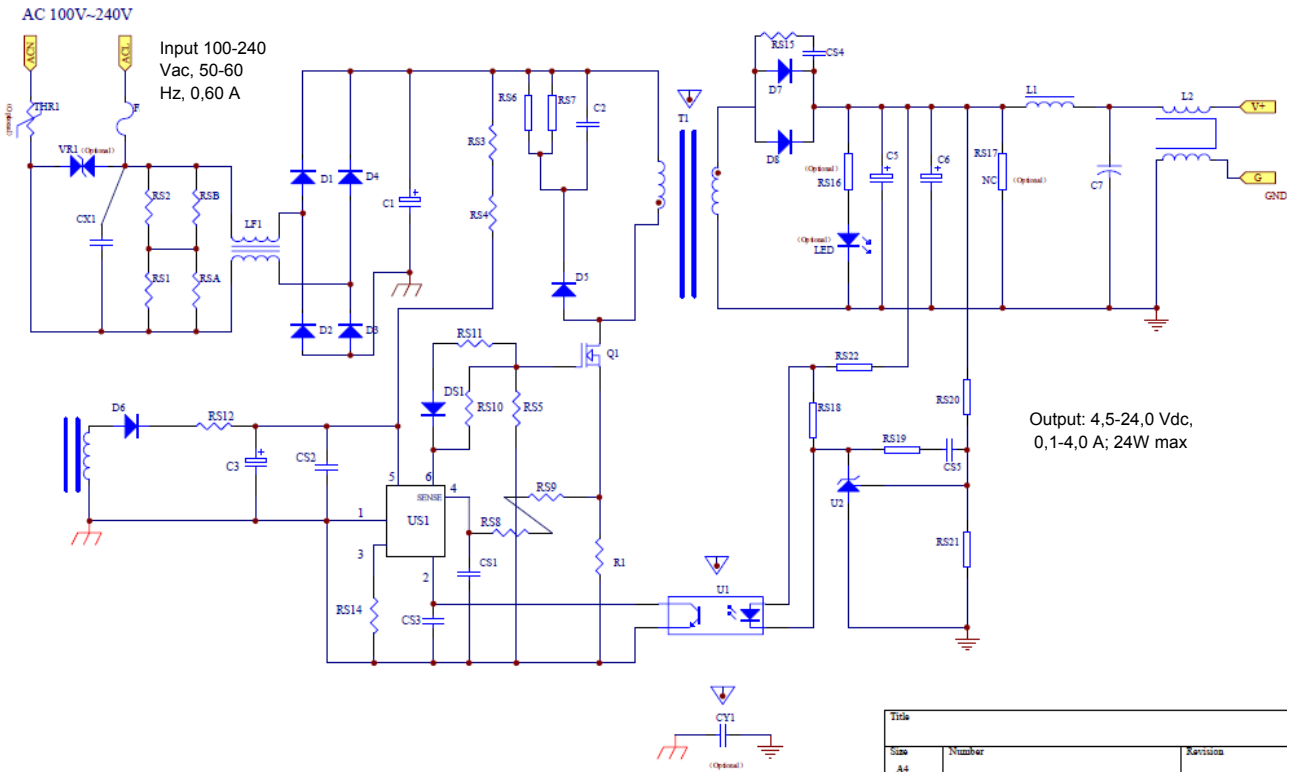
A2 of IEC 60065 / EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
5.1	h) Rated current or power consumption for apparat-us intended for connection to an a.c. mains supply.:		P
	Measured current or power consumption .....:		P
	Measured current or power consumption for Television set .....:		N/A
	Deviation % (max 10%) .....:		P
5.2	c) Markings on supply output terminals		N/A
5.3	b) marking on loudspeaker grille, IEC 60417-5036		N/A
5.4	Instructions for use With additional general requirement		P
6.2	Updated IEC 60825-1 standard version		N/A
7	Minor change in words		P
9.1.1	Special requirement for For PROFESSIONAL EQUIPMENT		N/A
9.1.6	Change the specification of test instrument		P
9.2	No hazard after removing a cover by hand		N/A
11.2.1	Measurement of temperature rises		P
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation		P
11.2.6	Temperature rise of printed boards shall not exceed the limits of table 3 by max. 100 K for max. 5 min		N/A
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):		N/A
	a) Temperature rise of printed circuit boards 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 exceeding the limits of table 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		N/A
	Class I protective earthing maintained		N/A

A2 of IEC 60065 / EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".		P
12.1.3	Add considered of dangerous moving parts		N/A
12.1.4	Add considered of dangerous moving parts		N/A
12.1.5	Add considered of dangerous moving parts		N/A
13.2	Determination of working voltage		P
13.3	Clearances		P
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4		P
	Conductive parts along reliably cemented joints comply with 8.8		N/A
	Temperature cycle test and dielectric strength test		N/A
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety		N/A
14.2.5	Capacitors with volume exceeding 1750 mm³, where short-circuit current exceeds 0,2 A: compliance with IEC 60384-1, 4.38 category B or better .....:		N/A
	Capacitors with volume exceeding 1750 mm³, mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60384-1, 4.38 category B or better .....:		N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal .....:		N/A
14.5.3	PTC thermistors comply with IEC 60730-1:2007		N/A
	PTC devices (15 W) category V-1 or better		N/A
14.11	Optocouplers		P
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A
	b) Comply with IEC 60747-5-5:2007		P
	Alternative to a) and b) optocoupler comply with 13.8		P
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A

A2 of IEC 60065 / EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
15.1.2	Connectors for antenna, earth, audio, video or data		P
	No risk of insertion in mains socket-outlets		P
	No risk of insertion into audio- or video- outlets marked with the symbol of 5.2		N/A
18	**Mechanical strength of picture tubes and protection against the effects of implosion**		N/A
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		N/A
20.1	Electrical components and mechanical parts		P
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 IEC 60707, unless used in a fire enclosure		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		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		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
	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		N/A

A12:2011 of EN 60065:2002			
Clause	Requirement – Test	Result - Remark	Verdict
Modify the following in the existing standard and amendments			
2.2	In EN 60065:2002/A11:2008 Delete the definition 2.2.Z1		N/A
3.1	In EN 60065:2002 Delete the addition of indent regarding excessive sound pressure		N/A
5.4.1	In EN 60065:2002/A1:2006 and EN 60065:2002/A11:2008 Delete the modification in indent za)		N/A
Add the following clause and annex to the existing standard and amendments			
Zx.	Protection against excessive sound pressure from personal music players		N/A
Zx.1	General		N/A
Zx.2	Equipment requirements		N/A
Zx.3	Warning		N/A
Zx.4	Requirements for listening devices (headphones and earphones)		N/A
Zx.4.1	Wired listening devices with analogue input		N/A
Zx.4.2	Wired listening devices with digital input		N/A
Zx.4.3	Wireless listening devices		N/A
Zx.5	Measurement methods		N/A
Annex Zx	Annex Zx (informative) Significance of $L_{Aeq,T}$ in EN 50332-1 and additional information		N/A

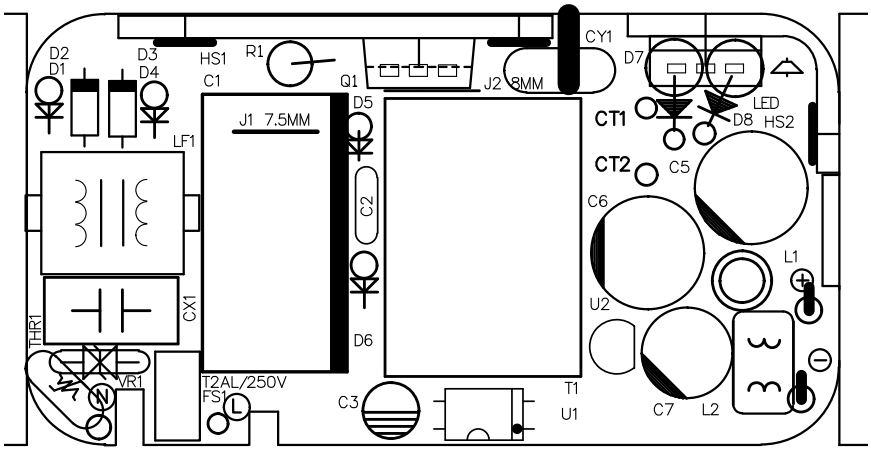
Circuit

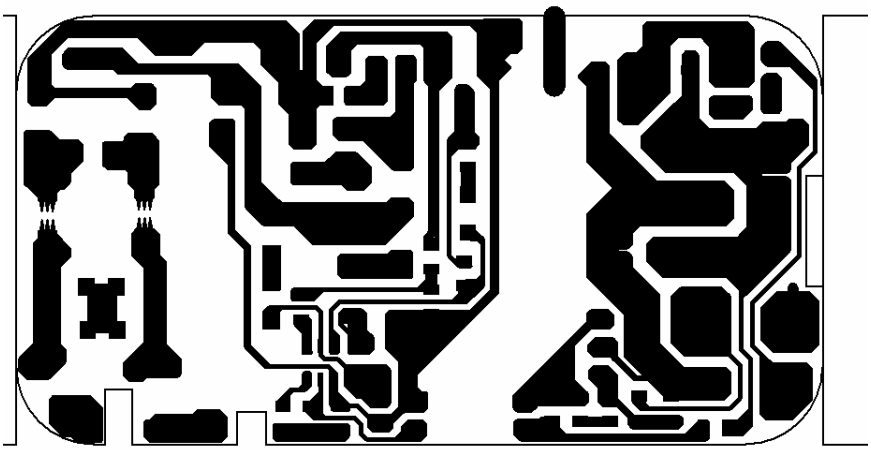


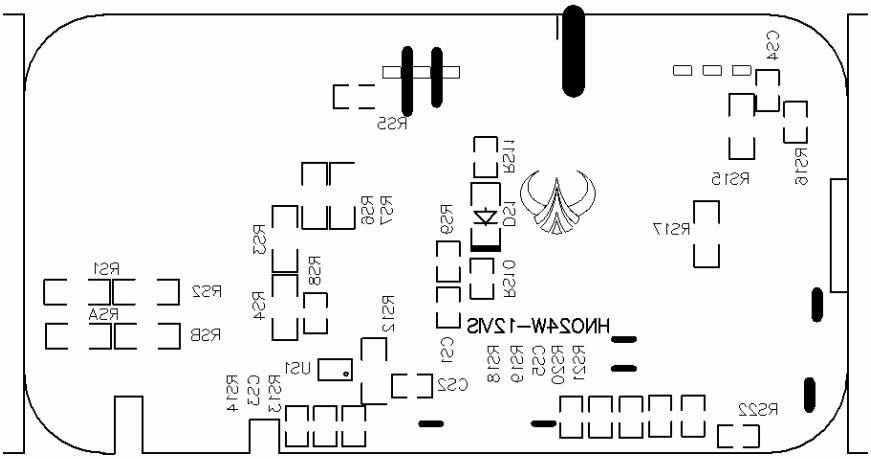
Note:

1, The optional component MOV1 are NIL on the actual sample, if it was used, the adequate rating shall be considered, including the rating temperature.

PCB layout


D2
D1
D3
D4
HS1
C1
R1
Q1
J2 8MM
CY1
D7
J1 7.5MM
D5
LED
D8
HS2
CT1
CT2
C5
C6
C2
L1
U2
LF1
CX1
THR1
D6
VR1
T2AL/250V
FS1
C3
T1
U1
C7
L2



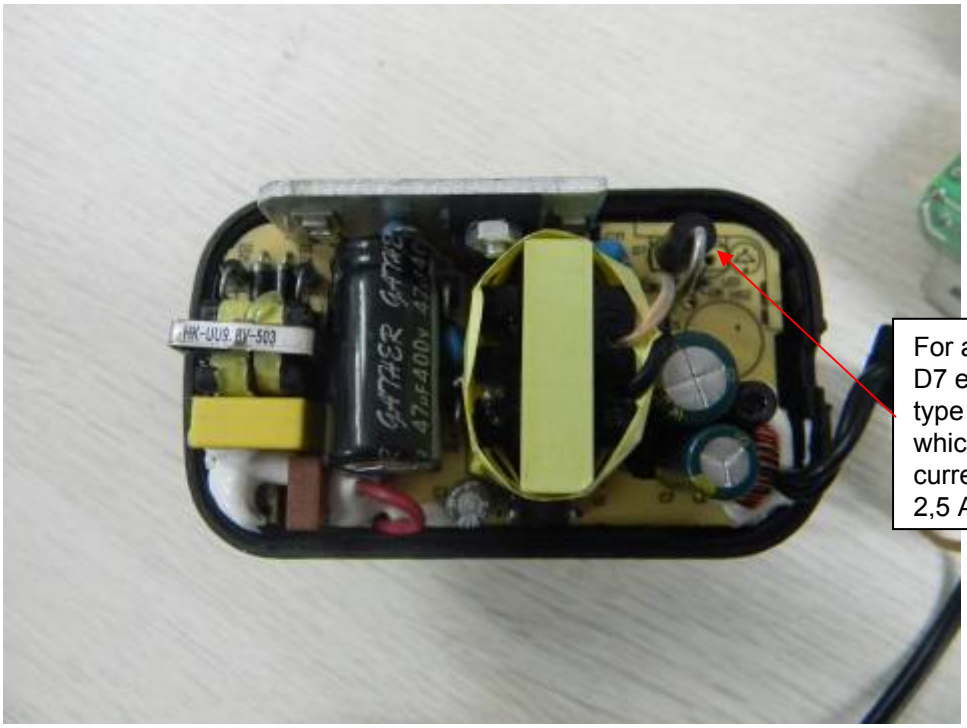


Photos:

Overview

Overview of detachable plug

Photos:



Inside view

Photos:

Inside view

Equipment's combined with two-pole plug (Class II)

Supplementary tests on plug portion according to EN 50075 or IEC 60884-1

	Requirement - Test	References to clause in		Result-Remark	Comply
		IEC 60884-1	EN 50075		
1	**Plug portion**				**P**
	CEE 7 Standard Sheet			XVI	P
	EN 50 075				P
2	**Dimensions**				**P**
	Checking dimensions by measuring and by gauges according to Standard sheet				P
	The edges of the metal-pins, Chamfered or rounded off				P
3	**Protection against electric shock**				**P**
a	Test finger (75N, 1 min in 35°C) or Applicable appliance standard	10.1	8.1		P
b	Single pole insertion. Checked with gauge: Fig 4 or C19A or C19B (CEE 7)	 9.2	8.2		P
c	Compression test 150 N, 5 min.	10.1	13.1		P
d	External parts made of insulating material	10.4	8.3		P
4	**Construction**				**P**
a	Test on pins which are not solid	14.2	9.3		N/A
b	Pins shall be locked against rotation 0.4 Nm 1 min.	24.2	13.2		P

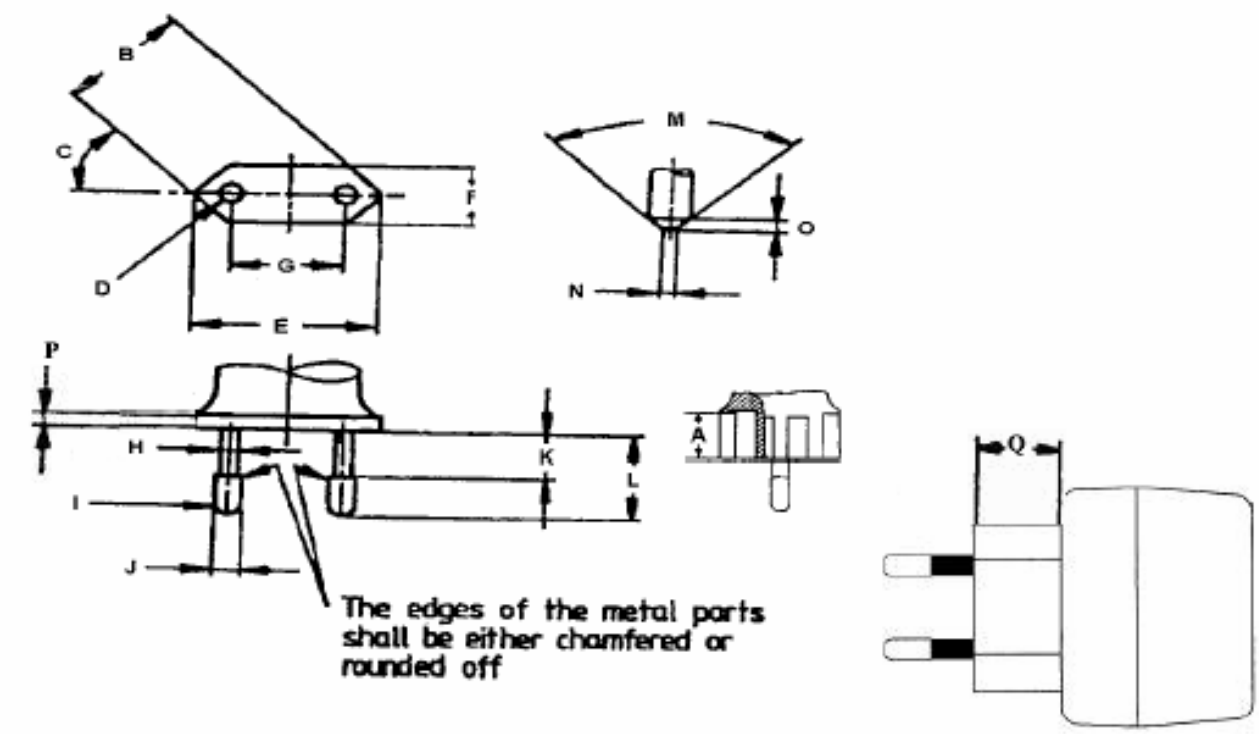
Plug portion(EN 50075)_detachable plug

	Requirement - Test	References to clause in		Result-Remark	Comply
		IEC 60884-1	EN 50075		
c	Pins shall be adequately fixed in the body 1 min. Temperature 70°C 40 N for plugs < 2,5 A 50 N for plugs > 2,5 A	24.10	13.4		P
d	Pins of copper or copper alloy min 58% copper or equivalent	26.5-26.6	15.3	> 58%	P
e	Plug shall not impose undue strain on fixed socket-outlets, 0,25 Nm	14.23.2		For detachable Plug Normal: 0,049 Nm max. Reverse:0,050Nm max.	P
f	Abrasion test on the insulating sleeves 20 000 movements	24.7	13.3		P
5	**Resistance of insulating material to abnormal heat, to fire and to tracking**				**P**
a	Compression test 1 h in 80°C	25.4	14.1.2		N/A
b	Glow-wire test 750°C	26.1.1	17		P
c	Resistance to tracking 175V (other than ordinary)	28.2			N/A

Plug portion(EN 50075)_detachable plug

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



For detachable plug unit

Symbol	Requirement (mm)	Measured (mm)
A	≥ 16.5	--
B	25.6 - 26.6	25,93
C	45 °	45 °
D	R 5.0 – 6.0	R 5,5
E	34.6 – 36.0	35,15
F	13.0 – 14.4	14,06
G	Engagement 18.0 – 19.2	18,16
G	End 17.0 – 18.0	17,15
H	Within 4 mm from engagement face≤ 4.0mm	4,00
	Above 4 mm from engagement face≤ 3.8mm	3,51

Symbol	Requirement (mm)	Measured (mm)
I	--	--
J	3.94 – 4.06	3,98
K	10.0 – 11.0	10,22
L	18.5 – 19.5	19,31
M	≤ 90 °	--
N	0.7 – 1.7	--
O	≤ 2.0	1,47
P	≥ 4.0	--
Q	≥ 18.0	18,33

Plug portion (BS-1363) _detachable plug

Equipment combined with BS-plug

Supplementary tests on plug portion according to BS1363: Part 3 + Amd 9543 + Amd 14225 + Amd 14540 + Amd 17437

Clause	Requirement - Test	Result-Remark	Comply
12.1	Dimensions (Checked according to figure 4)		P
12.2	Outline of plug shall not exceed the dimension shown in Figure 4 for a distance of not less than 6.35 mm from the engagement surface		P
	Pin disposition, length and body outline shall be checked by use of the gauge shown in Figure 5		P
12.3	L/N pin was more than 9.45 mm from the periphery of the plug measured along the engagement surface		P
12.7	The base and cover of rewirable plugs shall be adaptor plugs having the cover fixed by screws shall be firmly secured to each other, It shall not be possible to remove the cover unless the adaptor is completely withdrawn from the socket-outlet. Fixing screws shall be captive. The test is carried out using apparatus similar to that shown in Figure 6		N/A
12.9	After the temperature rise test (clause 16). Use test probe 11 of BS EN 61032:1998 is applied a force 30 -5/0 N. During and after the test, it was not possible to touch the live parts		P
12.11	Adaptor plug pins shall be constructed of brass, except for sleeves of pins as specified in 12.18		P
	All exposed surfaces of the adaptor plug pins shall be smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket contacts or shutters		P
	Those surfaces of the non-solid adaptor plug pins which are visible when the adaptor is correctly assembled shall be free of apertures		N/A
	All seams and joints of non-solid adaptor plug pins shall be closed over their entire length		N/A
	For solid pins and ISODs, conformity shall be checked by 12.11.4.1		P
	For non-solid pins, compliance shall be checked by 12.11.4.2		N/A
	For ISODs, compliance shall be checked by		N/A

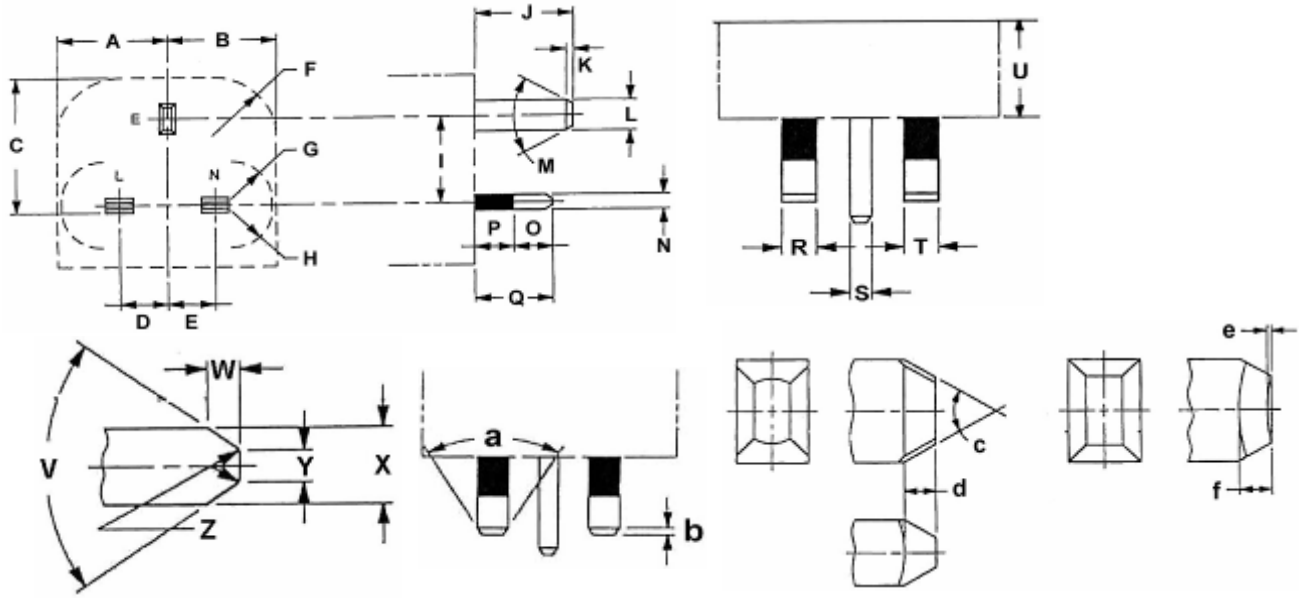
	12.11.4.3		
	Adaptors with non-solid pins and/or ISODs shall not cause excessive wear to socket contacts or shutters of socket-outlets in accordance with BS 1363-2:1995		N/A
	Adaptor plug pins shall have adequate mechanical strength to ensure that they cannot be distorted by twisting. Apply a torque 1N.m ± 10% for 60 +5/0 S. After each pin has been separately twisted, the plug was fit the gauge in fig. 5. Repeated with opposite direction		P
12.13	Adaptors shall be so designed that when fully assembled the pins are adequately retained in position such that there is no likelihood of them becoming detached from the adaptor during normal use		P
	Each pin is subjected for 60 +5/0 S to a pull of 100 -2/0 N without jerks in the direction of the major axis. The plug is mounted using the steel plate shown in fig.7. The apparatus is placed within an oven and the pull is applied at least 1 h after the plug body has attained the test temperature of 70°C ± 5°C while maintained at this temperature. After the test, the plug pin shall fit into the gauge and comply with 12.2.1		P
12.14	The degree of flexibility of mounting of the plug pins or the angular movement of the pins in the base shall be not greater than 3° 30'. See fig. 8		P
	Test procedure refers to standard. During each test, the declination from the horizontal measured on the scale was not exceed 3° 30' and comply with 12.2.1		P
12.18	Live and neutral adaptor plug pins shall be fitted with insulating sleeves. See fig.4. Sleeves shall not fitted to any earthing adaptor plug pin		P
12.19.3	Abrasion test – 10 000 times in each direction(20 000 movements) at a rate of 25 movements to 30 movements per min. (fig. 9) After the test, the sleeve shall show no damage and also shall not have been penetrated or creased, satisfy the tests in 12.19.2		P
13.10	The total mass of the equipment with all specified connectors shall not exceed 800 g. The torque exerted on a socket shall not exceed 0,7 N·m.		P

Plug portion (BS-1363) _detachable plug

	The test apparatus as Figure 37		
	Additional: Products with torque exceeding 0,25Nm do not comply with the main standard hence full compliance with the main standard cannot be claimed	For detachable Plug Normal: 0,034 Nm max. Reverse:0,034Nm max.	N/A
Additional test for ISODs according to BS1363: Part 1 + Amd 9541 + Amd 14539 + Amd 17435			
12.9.1	All exposed surfaces of plug pins shall be smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket contacts or shutters		P
12.9.4	Apply a force of 400 +10/0N at a rate 10 ± 2 mm/min. Deflection shall not exceed 1,5 mm. After this test the plug should fit the gauge to fig. 5		P
12.9.6	ISODs shall have adequate mechanical strength to ensure that they cannot be distorted by twisting. Apply a torque 1N.m ± 10% for 60 +5/0 S. After each pin has been separately twisted, the plug shall fit the gauge in fig. 5. Repeated with opposite direction		P

Plug portion (BS-1363) _detachable plug

UK Plug Checking Form according to Figure 4 of BS1363-3



For detachable plug unit

Symbol	Requirement (mm)	Measured (mm)
A	25,37 max.	24,56
B	25,37 max.	24,56
C	34,6 max.	33,58
D	11,05-11,18	11,10
E	11,05-11,18	11,10
F	R 15 min.	--
G	R 9,5 min.	10,27
H	R 9,5 min.	10,27
I	22,10-22,36	22,21
J	22,23-23,23	22,85
K	1,35-1,85	1,51
L	7,80-8,05	8,02
M	58°-62°	--
N	3,90-4,05	3,98 / 4,01
O	9,2 max.	8,58
P	9,5 max.	9,32

Symbol	Requirement (mm)	Measured (mm)
Q	17,2-18,2	17,90
R	6,22-6,48	6,32 / 6,35
S	3,90-4,05	4,04
T	6,22-6,48	6,32 / 6,35
U	6,35 min.	10,83
V	60°-80°	--
W	1,35-1,85	1,51
X	3,90-4,05	4,02
Y	1,2-2,0	1,66
Z	R 0,1-1,0	--
a	58°-62°	--
b	1,35-1,85	1,48
c	58°-62°	--
d	1,35-1,85	1,48
e	0,2 max.	--
f	1,35-1,85	--

Manual (representative):

INSTRUCTION MANUAL

Please keep observed safety notes before use：
Techinsche daten (Technical data)
Model: HNO240100E
Input: 100-240VAC, 50-60Hz, 0,60A; Output: 24Vdc, 1,0 A
Allgemeines(General)
To comply with the published safety standards, the following must be observed when using this adaptor.
Um den zur Zeit gültigen Sicherheitsbestimmungen zu entsprechen, müssen die nachestehenden Maβnahmen beim Einsatz dieser Netzgeräte berücksichtigt werden.

1. The appliance is used for audio, video and similar electronic apparatus.. It is certified according to the relevant safety standards IEC 60065 and EN60065.
   Das Gerät ist für Audio-, Video-und ähnliche elektronische Geräte verwendet. Es ist geprüft nach den einschlägigen Bestimmungen IEC 60065 und EN60065.
2. The output power taken from the supply must not exceed the rating given on the switching power supply.
   Die Ausgangsleistung darf die auf dem Schaltnetzteil angegebenen Werte nicht übersteigen.
3. The appliance is not intended to be repaired by service personnel in case of failure or component defect (unit can be thrown away).
   Im Fehlerfalle werden Teile des Gerätes, bzw. das Gerät selbst, nicht durch den Kundendienst repariert werden. Das Gerät muss entsorgt werden.
4. The external flexible cable or cord of this transformer cannot be replaced; If the cord is damaged, the transformer should be scrapped.
   Das Netzkabel kann nicht ersetzt werden. Wenn das Netzkabel defekt ist, sollte das Schaltnetzteil entsorgt werden.
5. Mains plug or approved inlet was used as the disconnect device, which shall remain readily operable.
   Netzstecker oder Haupt-Einlauf wurde als Trennvorrichtung, die frei zugänglich bleiben müssen verwendet werden.
   Mains plug or main inlet was used as the disconnect device, which shall remain readily operable.
6. The appliance shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the appliance.
   Das Gerät darf nicht Spritzwasser oder tropfenden Flüssigkeiten ausgesetzt werden. Keine mit Wasser gefüllten Gefäße auf dem Gerät abstellen.
7. DISPOSAL：Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
   Gebrauchte Geräte sollten nicht mit dem Haushaltsabfall vermischt entsorgt werden.
   Bringen Sie das Gerät separat zu einer entsprechenden Sammelstelle.

Korrekte Entsorgung dieses Produkts	
	Innerhalb der EU weist dieses Symbol darauf hin, dass dieses Produkt nicht über den Hausmüll entsorgt werden darf. Altgeräte enthalten wertvolle recyclingfähige Materialien, die einer Wiederverwertung zugeführt werden sollten und um der Umwelt bzw. der menschlichen Gesundheit nicht durch unkontrollierte Müllbeseitigung zu schaden. Bitte entsorgen Sie Altgeräte deshalb über geeignete Sammelsysteme oder senden Sie das Gerät zur Entsorgung an die Stelle, bei der Sie es gekauft haben. Diese wird dann das Gerät der stofflichen Verwertung zuführen.
Correct Disposal of this product	
	This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

Manufacturer: Shenzhen Huoniu Technology Co., Ltd.
Address: Block No.5, The 4th Industrial Zone, Xitian Community, Gongming Town, Guangming New District, Shenzhen, Guangdong, P.R. China