

Summary Test Report

Report No: GZES110400207801

Date: 2011-04-27

Applicant : **Xiamen Comfort Science & Technology Group Co., Ltd**
18 Long Shan South Road, Xiamen, Fujian Province, 361009, China

Attn. to: **Ms. Shen**

Manufacturing location : **Zhangzhou Easepal Industrial Co., Ltd**
228 Jiao Song Road, Long Chi Industrial Zone, Zhangzhou, Fujian, China

Test object / Model : **Switching Power Supply / EP-U-1220-EU, EP-U-1220-UK**

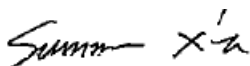
Test specifications / Test standard : EN 61558-2-16:2009 (Used in conjunction with EN 61558-1:2005 + A1:2009)

Purpose of examination : Test according to the test specification.
Inspection of the compliance with protective objectives of the following EC Directives:
- 2006/95/EC.

Test result : In the opinion of SGS-CSTC the presented unit was found to be in compliance with the test specification.

Remark : The EU plug was evaluated according to EN 50075: 1990.
The UK plug was evaluated according to BS 1363-1:1995 +A1 +A2 +A3.

This test report includes:
Annex 1: 5 pages of EU Plug test.
Annex 2: 8 pages of UK Plug test.



Summer Xia
Project Manager
Safety Laboratory



Holon Li
Project Engineer

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1. Function / Description :

Switching Power Supply

Both models are totally the same except for model No. and plug portion.

2. Ratings :

Model :	EP-U-1220-EU, EP-U-1220-UK
Rated Input :	200-240 VAC, 50/60 Hz, 0,3 A
Rated Output :	12 Vd.c., 1,6 A
Type of transformers	Safety insulating transformer
Application	portable
Protection against electric shock	Class II
Short-circuit protection	--
inherently short-circuit proof	Yes
non-inherently short-circuit proof	No
non short-circuit proof	No
fail safe:	No
Protection index	IP20
Other characteristics	Continuous operation
Rated ambient temperature t_a (°C)	25
Short-circuit voltage (V)	--
Supply connection :	Direct plug-in

3. Test :

The test was done in the Electrical Safety Laboratory of SGS-CSTC in Guangzhou.

20 samples were submitted for tests on 2011-02-24.

Tests were performed from 2011-03-10 to 2011-03-26.

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Test Result:

Clause	Requirement + Test	Result - Remark	Verdict
8	Marking and other information	See making plate	P
9	Protection against electric shock		P
10	Change of input voltage setting		N
11	Output voltage and output current under load	(see appended table)	P
12	No-load output voltage	(see appended table)	P
13	Short-circuit voltage		N
14	Heating	(see appended table)	P
15	Short-circuit and overload protection	(see appended table)	P
16	Mechanical strength		P
17	Protection against harmful ingress of water and moisture	IP20	P
18	Insulation resistance and electric strength		P
19	Construction		P
20	Components	(see appended table)	P
21	Internal wiring		P
22	Supply connection and external flexible cables and cords		P
23	Terminals for external conductors		P
24	Provision for protective earthing		N
25	Screws and connections		N
26	Creepage distances and clearances		P
27	Resistance to heat, fire and tracking		P
28	Resistance to rusting		N
E	ANNEX E , GLOW WIRE TEST		P
F	ANNEX F, REQUIREMENTS FOR MANUALLY OPERATED SWITCHES WHICH ARE PARTS OF THE TRANSFORMER		N
H	ANNEX H, ELECTRONIC CIRCUITS	(see appended table)	P
K	ANNEX K, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION		N
U	ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS		N

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Clause	Requirement + Test	Result - Remark	Verdict
V	ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS		N
Remark: Test case does not apply to the test object: N (not applicable) Test object does meet the requirement: P (pass)			

11 and 12	TABLE: OUTPUT VOLTAGE AND OUTPUT CURRENT UNDER LOAD; NO-LOAD OUTPUT VOLTAGE					P
Clause	11		12			
type/rated output/	rated voltage (V)	sec. voltage (V)	delta Usec (%)	Usec V no-load output	delta Usec no-load output %	further information
12 Vd.c., 1,6 A	12 Vd.c.	11,7 Vd.c.	- 2,6 %	12,04 Vd.c.	+ 3,3 %	Input: 200 V~
12 Vd.c., 1,6 A	12 Vd.c.	11,7 Vd.c.	- 2,6 %	12,04 Vd.c.	+ 3,3 %	Input: 240 V~

14	TABLE: HEATING						P
	ambient temperature (°C) : 25,3°C						--
type/rated output	r-cold Ω	r-warm Ω	temp. °C	ext. encl. °C	support °C	int. + ext. wire	further information
12 Vd.c., 1,6 A	--	--	75,7	47,2	29,2	43,1	Input: 180 V~
12 Vd.c., 1,6 A	--	--	76,8	47,0	28,8	41,4	Input: 264 V~

15	TABLE: SHORT-CIRCUIT AND OVERLOAD PROTECTION						P
	ambient temperature (°C) : 25,8°C						--
type/rated output	r-cold Ω	r-warm Ω	temp. °C	ext. encl. °C	support °C	int. + ext. wire	further information
12 Vd.c., 1,6 A	--	--	147,0	77,9	37,2	69,2	Input: 180 V~ Overload at 2,6 A
12 Vd.c., 1,6 A	--	--	126,0	65,9	33,9	56,1	Input: 264 V~ Overload at 2,9 A

20	TABLE: LIST OF CRITICAL COMPONENTS AND MATERIALS					P
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Component	Manufacturer /Trademark	Type/Model	Technical Data ²⁾	Standard	Approval/Reference ¹⁾
Primary lead	Various	1007	20 AWG, 80 °C, 300 V	--	UL
Output lead	Various	2725,1185, 2468, 2464	20 AWG, 80 °C, 300 V	--	UL
Heat shrinkable tube	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR	VW-1, 125 °C, 600 V	--	UL (E203950)
Fuse (FUSE)	XC Electronics (Shen Zhen) Co., Ltd.	3T-Serie(s)	T2AL, 250 VAC	EN 60127-1: 2006 EN 60127-3: 1996/A2:2003	VDE (40019614)
Alt.	Dongguan Better Electronic Technology Co., Ltd.	334	T2AL, 250 VAC	EN 60127-1: 2006 EN 60127-3: 1996/A2:2003	VDE (40025428)
Alt.	Conquer Electronic Technology Co., Ltd	PTU	T2AL, 250 VAC	EN 60127-1: 2006 EN 60127-3: 1996/A2:2003	VDE (40001462)
Alt.	Walter Electronic Co., Ltd.	ICP	T2AL, 250 VAC	EN 60127-1: 2006 EN 60127-3: 1996/A2:2003	VDE (40012824)
Alt.	Hollyland Co., Ltd.	30TS	T2AL, 250 VAC	EN 60127-1: 2006 EN 60127-3: 1996/A2:2003	VDE (40011830)
VDR (MOV)	Brightking (shenzhen) Co., Ltd.	471KD07	AC 470V, 1750 A, 8/20 us, 40/085/56	IEC 61051-1: 2007 IEC 61051-2: 1991 IEC 61051-2-2: 1991	VDE (40027827)
Alt.	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	STE-07D471K	AC 470V, 1200 A, 8/20 us, 40/085/21	IEC 61051-1: 2007 IEC 61051-2: 1991 IEC 61051-2-2: 1991	VDE (40023049)

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Alt.	Xiamen Wanming Electronics Co., Ltd.	07D471K	AC 470V, 1750 A, 8/20 us, 40/085/56	IEC 61051-1: 2007 IEC 61051-2: 1991 IEC 61051-2-2: 1991	VDE (40027412)
Alt.	Xiahua Advanced Sensitive	FNR-07K471	AC 470V, 1200 A, 8/20 us, 40/085/56	IEC 61051-1: 1991 IEC 61051-2: 1991 IEC 61051-2-2: 1991	VDE (40008242)
Alt.	Hongzhi Enterprises Ltd.	HEL-07D471K	AC 470V, 1750 A, 8/20 us, 40/085/56	IEC 61051-1: 1991 IEC 61051-2: 1991 IEC 61051-2-2: 1991	VDE (40008621)
X-cap. (CX1)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	275 VAC, 0,22 μ F, 40/100/21/C, X2 type	EN 60384-14: 2005	VDE (40024534)
Alt.	Xiamen Wanming Electronics Co., Ltd.	WPX, MPX, HQX, UTX	275 VAC, 0,22 μ F, 40/110/56/C, X2 type	EN 60384-14: 2005	VDE (40023119)
Alt.	Shantou High-new Technology Development Zone Songtian Enterprise Co., Ltd.	MPX	275 VAC, 0,22 μ F, 40/110/56/B, X2 type	EN 60384-14: 2005	TUV (R 50136379)
Alt.	Tenta Electric Industrial Co., Ltd.	MEX	275 VAC, 0,22 μ F, 40/100/21/C, X2 type	EN 60384-14: 2005	VDE (119119)
Alt.	Liaoning Diya Capacitor Co., Ltd.	MKP-X2	275 VAC, 0,22 μ F, 40/100/21/C, X2 type	EN 60384-14: 2005	VDE (40019857)
Alt.	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	280 VAC, 0,22 μ F, 40/100/21/C, X2 type	EN 60384-14: 2005	VDE (40008924)
Y-cap. (CY1, CY2)	Nanjing Yuyue Electronics Co., Ltd.	Series CT7	4700pF, 250Vac, 25/125/21/C, Y2 type	EN 60384-14: 2005	VDE (40008013)

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Alt.	Xiamen Wanming Electronics Co., Ltd.	HM-Series	4700pF, 250Vac, 25/85/21/C, Y2 type	EN 60384-14: 2005	VDE (40000263)
Alt.	Zonkas Electronic Co., Ltd.	ZE...	4700pF, 300Vac, 25/125/21/C, Y2 type	EN 60384-14: 2005	VDE (40020372)
Alt.	Shaanxi Huaxing Electronic Development Co., Ltd.	CT7	4700pF, 400Vac, 40/85/21/C, Y2 type	EN 60384-14: 2005	VDE (133203)
Alt.	Shantou High-new Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE-Series	4700pF, 250Vac, 25/125/21/C, Y2 type	EN 60384-14: 2005	VDE (40025748)
Optocoupler (PH1)	Everlight Eletronics Co., Ltd	EL817	Int. CR / Ext. CR / Dti. >7,6 mm / >7,6 mm / >0,4 mm, 55/110/21	EN 60747-5-2: 2003	VDE (132249)
Alt.	Bright Led Electronics Corp.	BPC 817	Int. CR / Ext. CR / Dti. >7,6 mm / >7,6 mm / >0,4 mm, 30/100/21	EN 60747-5-2: 2003	VDE (40007240)
Alt.	Sharp Corporation	PC817	Int. CR / Ext. CR / Dti. (mm) ≥ 6,4 / ≥ 6,4 / > 0,4	EN 60747-5-2: 2003	VDE (40008087)
Alt.	Lite-On Technology Corporation	LTV-817	Int. CR / Ext. CR / Dti. ≥6,5 mm / ≥6,5 mm / >0,4 mm	EN 60747-5-2: 2003	VDE (40015248)
Line filter (LF1)	XIAMEN TONG KUN INDUSTRY & TRADE CO., LTD.	UU9.8	N1, N2: Φ0,23 mm / 110T	EN 61558-2-16:2009 (Used in conjunction with EN 61558-1:2005 + A1:2009)	Tested with appliance
-- bobbin	CHANG CHUN PLASTICS CO LTD	T375H	150 °C, V-0	--	UL (E59481)

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Transformer (TR)	Zhang Zhou easepal Industrial Co., Ltd.	BCK-PQ2016-02	PQ2016 Pri. winding: NP1: $\Phi 0,30$ mm / 42T NP2: $\Phi 0,30$ mm / 42T NB: $\Phi 0,27$ mm / 16T	EN 61558-2-16:2009 (Used in conjunction with EN 61558-1:2005 + A1:2009)	Tested with appliance
-- bobbin	CHANG CHUN PLASTICS CO LTD	T375J	150 °C, V-0	--	UL (E59481)
--Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-xx	Min. 2 layers, 130 °C	--	UL (E246820)
-- alt. Insulation tape	JIANGSU YONGLONG GLUE INDUSTRY CO LTD	YL-168	Min. 2 layers, 130 °C	--	UL (E306163)
-- alt. Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT	Min. 2 layers, 130 °C	--	UL (E165111)
--TIW (Sec. winding)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	130° C (Class B), 600V, $\Phi 0,45$ mm / 11T	--	UL (E249037)
--alt. TIW (Sec. winding)	DAH JIN TECHNOLOGY CO LTD	TLW-B	130° C (Class B), 1,4kV, $\Phi 0,45$ mm / 11T	--	UL (E236542)
--alt. TIW (Sec. winding)	TA YA ELECTRIC WIRE & CABLE CO LTD	TILW-B	130° C (Class B), 1kV, $\Phi 0,45$ mm / 11T	--	UL (E225803)
--alt. TIW (Sec. winding)	E&B TECHNOLOGY CO LTD	E&B-XXXB	130° C (Class B), 1kV, $\Phi 0,45$ mm / 11T	--	UL (E315265)
PWB	Various	Various	V-0, min. 105 °C	--	UL
Insulation sheet under power board	CHANGZHOU ISOVOLTA ELECTRICAL INSULATION MATERIALS LTD	MP	V-0, 130 °C	--	UL (E196078)
Insulation tape in heat sink	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-xx	Min. 2 layers, 130 °C	--	UL (E246820)

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Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min. 2 layers, 130 °C	--	UL (E246950)
Pin holder (EU)	Zhang Zhou easepal Industrial Co., Ltd.	EP-U-1220-EU	--	EN 50075:1990	Tested with appliance
Pin holder (UK)	Zhang Zhou easepal Industrial Co., Ltd.	EP-U-1220-UK	--	BS 1363-1:1995 +A1 +A2 +A3	Tested with appliance
Enclosure	XIAMEN JAU WEI PLASTICS CO LTD	J01F02B	V-0, 60 °C, ABS/PC	--	UL (E255636)

¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance.

²⁾ Description to include adjacent markings for critical fuse/s.

Annex H		TABLE: ELECTRONIC CIRCUIT TEST					P
		Ambient temperature (°C)				25,0	--
		Power source for EUT: Manufacturer, model/type, output rating				--	--
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
EC4	s-c	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
EC4	s-c	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
D7	s-c	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
D7	s-c	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
PH1	s-c c/e	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
PH1	s-c c/e	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	
PH1	s-c diode	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.	

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PH1	s-c diode	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.
Q1	s-c d/s	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.
Q1	s-c d/s	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.
Q1	s-c d/g	180	--	2	7,2	Q1, R9, R10, R11,R12 broke immediately. Fuse FUSE opened immediately. No hazard.
Q1	s-c d/g	264	--	2	9,3	Q1, R9, R10, R11,R12 broke immediately. Fuse FUSE opened immediately. No hazard.
Q1	s-c s/g	180	--	2	7,1	Q1, R9, R10, R11,R12 broke immediately. Fuse FUSE opened immediately. No hazard.
Q1	s-c s/g	264	--	2	9,0	Q1, R9, R10, R11,R12 broke immediately. Fuse FUSE opened immediately. No hazard.
EC1	s-c	180	--	2	7,2	Fuse FUSE opened immediately. No hazard.
EC1	s-c	264	--	2	9,4	Fuse FUSE opened immediately. No hazard.
D2	s-c	180	--	2	7,2	Fuse FUSE opened immediately. No hazard.
D2	s-c	264	--	2	9,4	Fuse FUSE opened immediately. No hazard.
Output	s-c	180	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.
Output	s-c	264	--	--	--	Circuit protected immediately. No obviously temperature rising. No hazard.
Remark: Dielectric strength test after heating test, Pass						

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4. Photo document

Details of: EP-U-1220-EU



Details of: EP-U-1220-EU



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Date: 2011-04-27

Details of: EP-U-1220-EU

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Summary Test Report

Report No: GZES110400207801

Date: 2011-04-27

Details of: EP-U-1220-EU

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Details of: EP-U-1220-EU

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Summary Test Report

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Date: 2011-04-27

Details of: EP-U-1220-EU

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Details of: EP-U-1220-EU

View:

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Details of: EP-U-1220-UK



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Details of: EP-U-1220-UK

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Details of: EP-U-1220-UK

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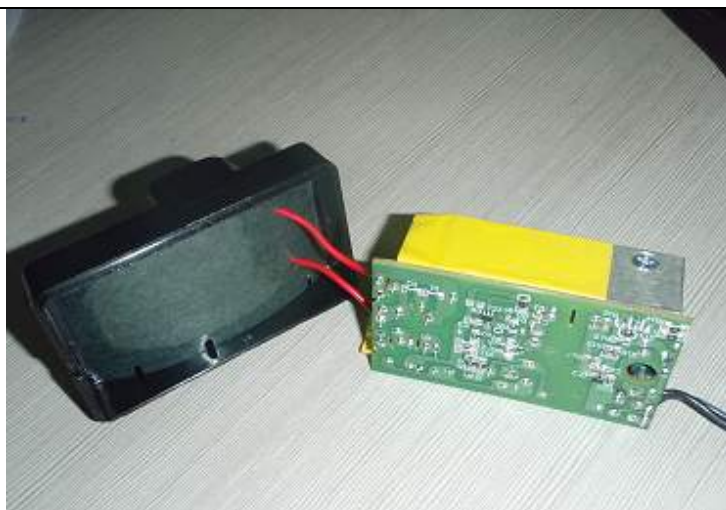
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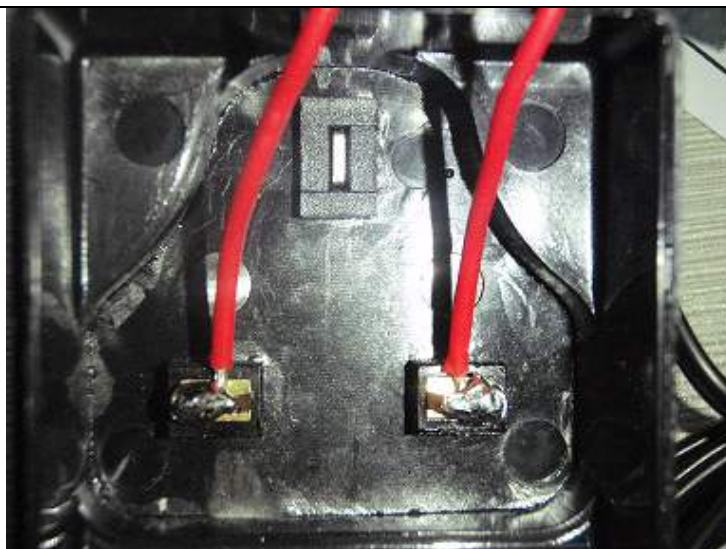
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Details of: EP-U-1220-UK

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Details of: EP-U-1220-UK

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Details of: EP-U-1220-UK

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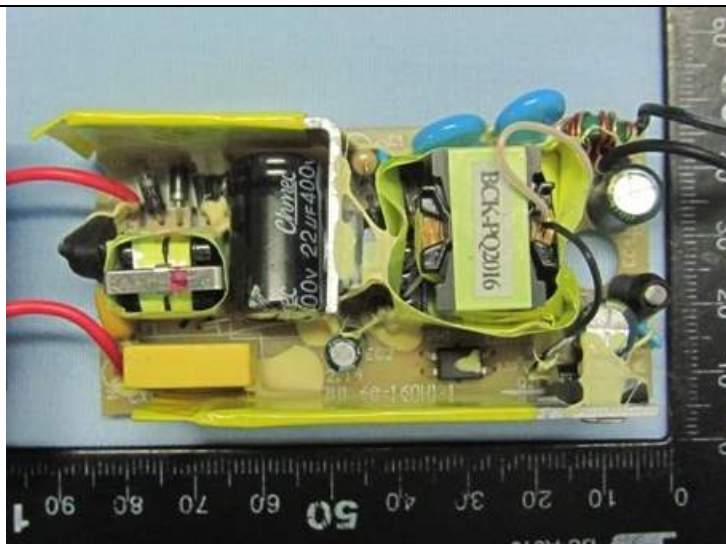
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Details of: PWB

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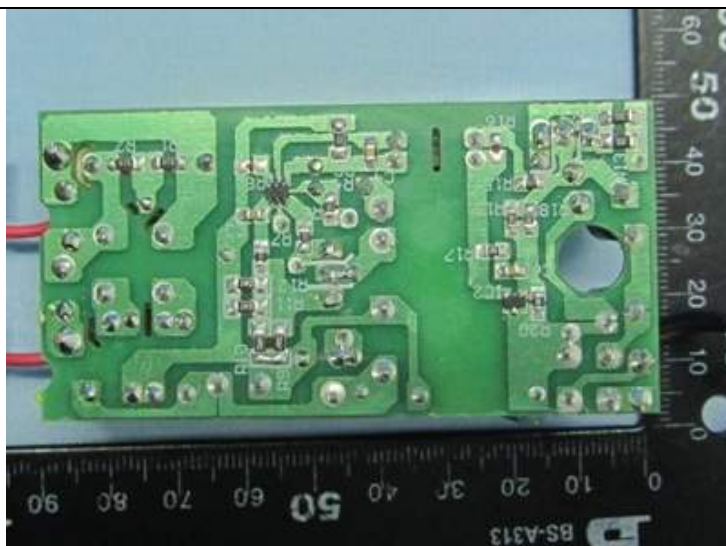
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Details of: PWB

View:

- ☐ general
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Summary Test Report

Report No: GZES110400207801

Date: 2011-04-27

Details of: EP-U-1220-EU, marking plate

View:	
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Details of: EP-U-1220-UK, marking plate

View:	
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NOTES TO THIS TEST REPORT

1. The following language(s) of marking(s) and instruction sheets were submitted during the test application:

- English

According to the standard, instruction sheets and other texts required by the standard should be written in the official language(s) of the country in which the product is to be sold. The applicant should ensure that the product in future production fulfils the receptive standard requirements.

2. The components performed satisfactorily during testing and are considered to be suitable for use in the sample tested. Acceptances of the safety critical components and materials were based on:

- the certification record(s) and/or test report submitted by the applicant; or
- component / material tested with the appliance

Detail shall be referred to the component list on the appendix of this test report.

3. Plug (and socket) used in this product must be compiled with the local plug and socket regulation of the respective country.

- - - End of Report - - -