

**PEP Testing Laboratory**

12-3FI, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,

Taipei Hsien, Taiwan, R. O. C.

TEL: 886-2-26922097 FAX: 886-2-26956236

REPORT NO. : E930528-1

**REVISION**

**REPORT NO. E930528-1**

**INSPECTION, TEST, AND EVALUATION**

**OF THE Universal Notebook Battery**

**RENDERED TO**

**AMERICAN POWER CONVERSION CORPORATION**

The following revisions have been made to Report No. E930528 for Universal Notebook Battery

<u>DATE</u>	<u>PAGE</u>	<u>DESCRIPTION</u>
		The Original Model No. (UPB80, UPB 80i )
OCT. 06, 2004		Add Model No. ( UPB80i )
OCT. 06, 2004	3 - 15	Test Model No. ( UPB80i )
OCT. 06, 2004	16 - 19	Photo Model No. ( UPB80i )

**PLACE THIS PAGE AT FRONT OF YOUR REPORT.**

Approved By :

BARRY MA

**PEP Testing Laboratory**

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**EUT DECLARATION FOR CE PERMISSIVE CHANGE**

We hereby declare that both of the major electrical design and construction of this requested model: UPB80i is identical to the original models: UPB80 and UPB 80i listed in PEP Report No. E930528 except that they are different in data cable. From technical point of view, we verified EUT by radiated emission test and ESD immunity test. We attached UPB80i in original report as additional model.

**Applicant** : AMERICAN POWER CONVERSION CORPORATION

**Address** : 132 FAIRGROUNDS ROAD WEST KINGSTON, RI 02892

**Signature** : \_\_\_\_\_  
KY WANG

**Date** : / /

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### Support Equipment Used

#### 1. DC Power Supply

**Manufacturer :** SCHMIDT

**Model Number :** EPS-3030SD (DC-0-30V)

#### 2. Resistance Load

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## **EN 55022 Radiated Disturbance Test**

Test Standard	Model No.	Result
EN 55022	UPB80i	Passed

## **Radiated Disturbance Test Setup Photos**

**CHARGE MODE**

**< FRONT VIEW >**



**< REAR VIEW >**



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**DISCHARGE MODE**

**< FRONT VIEW >**



**< REAR VIEW >**



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## Radiated Disturbance Test Data

**Model No.** : UPB80i  
**Frequency range** : 30MHz to 1GHz **Detector** : Quasi-Peak Value  
**Frequency range** : above 1GHz **Detector** : Quasi-Peak/Average Value  
**Temperature** : 27° C **Humidity** : 49 %  
**Memo** : CHARGE MODE

**Antenna polarization** : HORIZONTAL ; **Test distance** : 10m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
45.333	17.44	-12.56	30.00	25.32	11.01	0.61	19.50	210.0	4.0
86.000	15.97	-14.03	30.00	24.69	9.66	0.98	19.36	154.0	4.0
109.311	15.00	-15.00	30.00	21.80	11.48	1.05	19.33	126.0	4.0
124.800	24.17	- 5.83	30.00	30.05	12.53	1.10	19.51	56.0	4.0
134.822	26.76	- 3.24	30.00	30.99	13.97	1.10	19.30	324.0	4.0
152.978	26.80	- 3.20	30.00	28.40	16.67	1.30	19.57	179.0	4.0

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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**Model No.** : UPB80i  
**Frequency range** : 30MHz to 1GHz **Detector** : Quasi-Peak Value  
**Frequency range** : above 1GHz **Detector** : Quasi-Peak/Average Value  
**Temperature** : 27° C **Humidity** : 49 %  
**Memo** : CHARGE MODE

**Antenna polarization** : VERTICAL ; **Test distance** : 10m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
86.444	16.68	-13.32	30.00	25.34	9.73	0.99	19.38	112.0	1.0
108.889	18.89	-11.11	30.00	25.70	11.48	1.05	19.34	89.0	1.0
123.822	23.48	- 6.52	30.00	29.46	12.44	1.10	19.52	210.0	1.0
129.822	17.21	-12.79	30.00	22.38	13.05	1.10	19.32	154.0	1.0
138.344	22.64	- 7.36	30.00	26.39	14.57	1.10	19.42	286.0	1.0
149.522	20.02	- 9.98	30.00	21.76	16.54	1.29	19.57	30.0	1.0

Note :

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2. Over Limit = Level – Limit Line



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**Model No.** : UPB80i  
**Frequency range** : 30MHz to 1GHz **Detector** : Quasi-Peak Value  
**Frequency range** : above 1GHz **Detector** : Quasi-Peak/Average Value  
**Temperature** : 27° C **Humidity** : 49 %  
**Memo** : DISCHARGE MODE

**Antenna polarization** : HORIZONTAL ; **Test distance** : 10m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
86.472	26.02	- 3.98	30.00	34.68	9.73	0.99	19.38	246.0	4.0
117.547	25.60	- 4.40	30.00	32.15	11.88	1.09	19.52	186.0	4.0
122.762	25.72	- 4.28	30.00	31.88	12.29	1.10	19.55	152.0	4.0
138.318	21.96	- 8.04	30.00	25.71	14.57	1.10	19.42	265.0	4.0
152.089	20.83	- 9.17	30.00	22.46	16.65	1.30	19.58	148.0	4.0
165.356	25.96	- 4.04	30.00	28.20	15.83	1.33	19.40	95.0	4.0
172.244	19.55	-10.45	30.00	22.94	14.57	1.38	19.34	174.0	4.0

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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**Model No. : UPB80i**  
**Frequency range : 30MHz to 1GHz**      **Detector : Quasi-Peak Value**  
**Frequency range : above 1GHz**      **Detector : Quasi-Peak/Average Value**  
**Temperature : 27° C**      **Humidity : 49 %**  
**Memo : DISCHARGE MODE**

**Antenna polarization : VERTICAL ; Test distance : 10m ;**

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
86.378	18.53	-11.47	30.00	27.19	9.73	0.99	19.38	114.0	1.0
128.044	20.33	- 9.67	30.00	25.76	12.86	1.10	19.39	85.0	1.0
138.044	21.53	- 8.47	30.00	25.28	14.57	1.10	19.42	196.0	1.0
153.911	15.61	-14.39	30.00	17.18	16.69	1.30	19.56	214.0	1.0
165.956	14.51	-15.49	30.00	16.84	15.72	1.34	19.39	115.0	1.0
173.356	16.44	-13.56	30.00	20.03	14.38	1.39	19.36	210.0	1.0

Note :

3. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
4. Over Limit = Level – Limit Line

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## EN 61000-4-2 Electrostatic Discharge Test

Test Standard	Model No.	Result
EN 61000-4-2	UPB80i	A

**The test results shall be classified on the basis of the operating conditions and the functional specifications of the equipment under test , as in the following , unless different specifications are given by product committees or product specifications :**

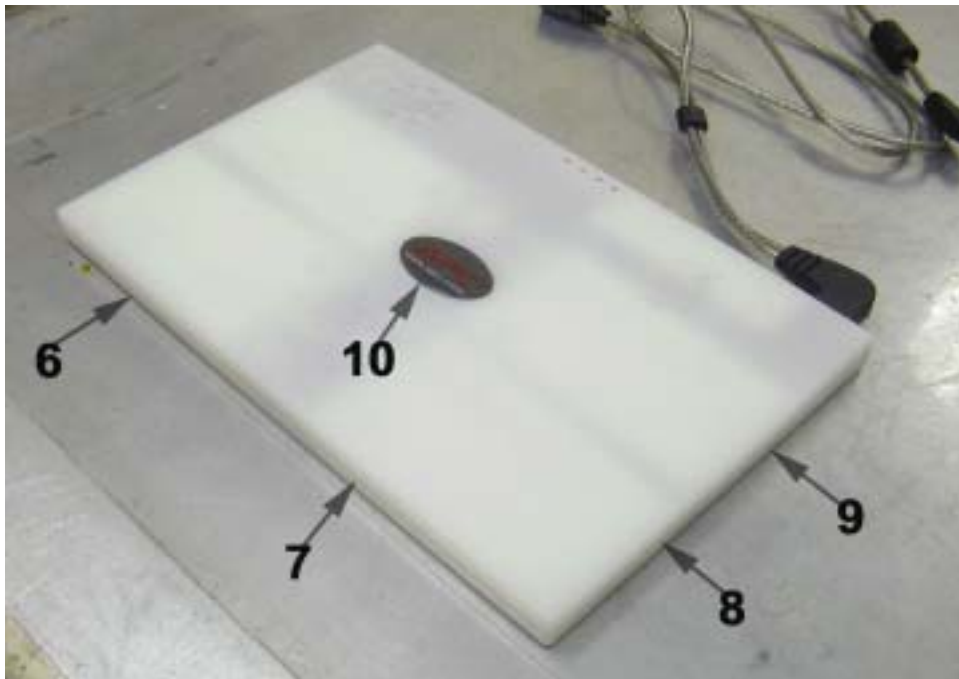
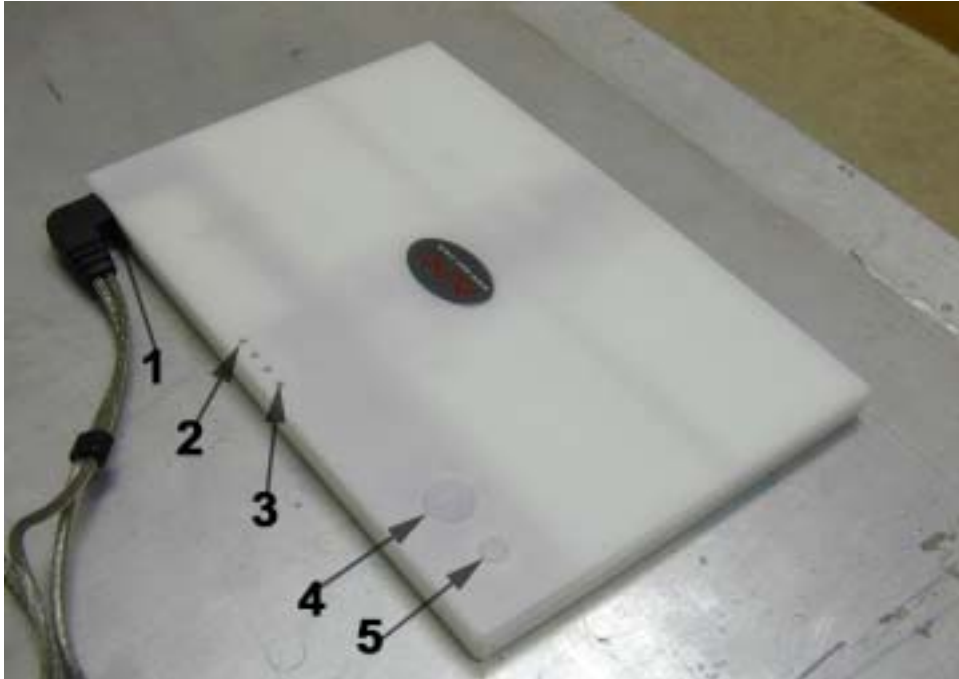
***Performance Criterion :***

***A) normal performance within the specification limits ;***

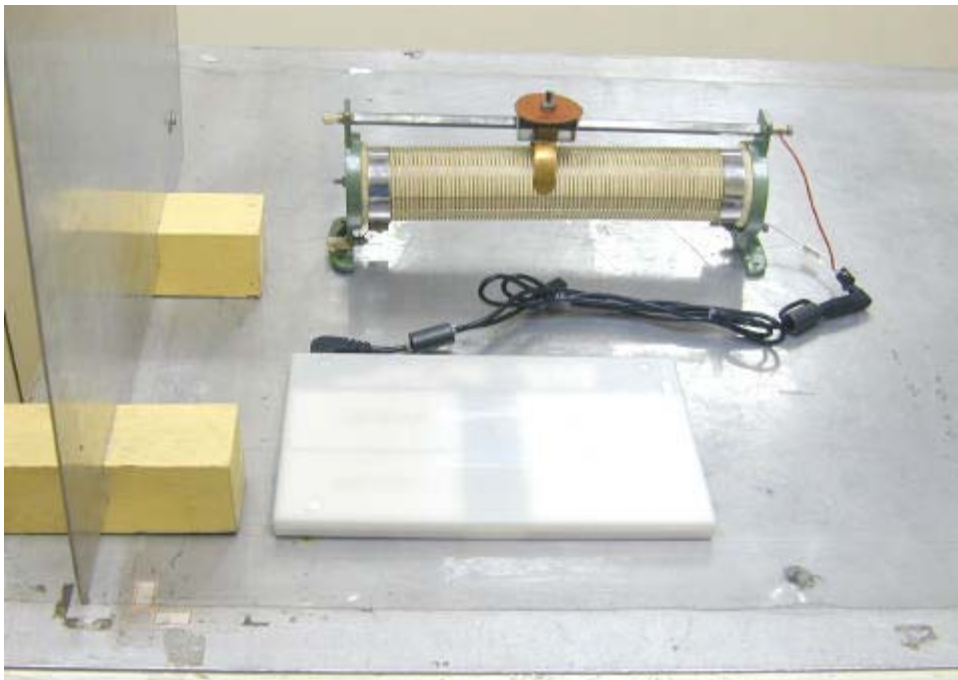
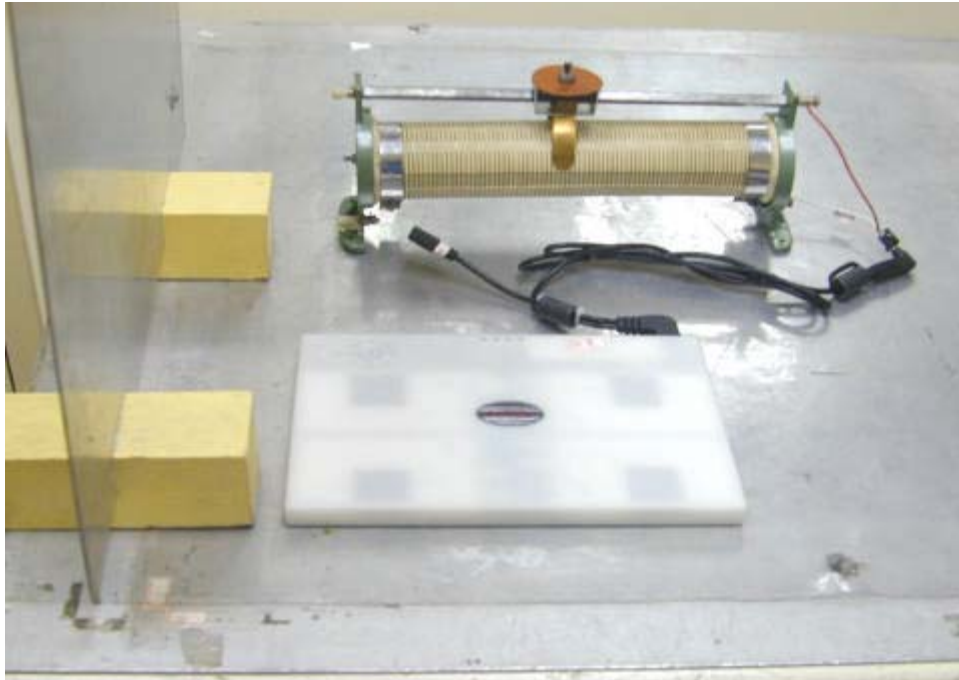
***B) temporary degradation or loss of function or performance which is self-recoverable ;***

***C) temporary degradation or loss of function or performance which requires operator intervention or system reset ;***

## Direct Discharge Test Drawing



## Indirect Discharge Test Drawing



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**Electrostatic Discharge Test Data (Direct Discharge)**

Model No. : \_\_\_\_\_ UPB80i

Test Item : <b>Direct Discharge</b>								Instrument : NoiseKen ESS-100L								
Temperature : <u>26</u> °C								Relative Humidity : <u>47</u> %RH								
Storage Capacitor : 150 pf								Discharge Resistor : 330 Ohm								
Discharge Rate : < 1 / Sec																
	<b>Contact Discharge</b>								<b>Air Discharge</b>							
	2 KV		4 KV		6 KV		8 KV		2 KV		4 KV		6 KV		10 KV	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
1	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
2	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
3	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
4	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
5	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
6	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
7	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
8	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
9	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P
10	/	/	/	/	/	/	/	/	P	P	P	P	P	P	P	P

1. " P " - - - - means the EUT function is correct during the test. \_\_\_\_\_
2. " / " - - - - no test. \_\_\_\_\_

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**Electrostatic Discharge Test Data (Indirect Discharge)**

Model No. : \_\_\_\_\_ UPB80i

Test Item : <b>Indirect Discharge</b>								Instrument : NoiseKen ESS-100L								
Temperature : <u>26</u> °C								Relative Humidity : <u>47</u> %RH								
Storage Capacitor : 150 pf								Discharge Resistor : 330 Ohm								
Discharge Rate : < 1 / Sec																
	<b>Contact Discharge</b>								<b>Air Discharge</b>							
	2 KV		4 KV		6 KV		8 KV		2 KV		4 KV		6 KV		8 KV	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
1	P	P	P	P	P	P	P	P	/	/	/	/	/	/	/	/
2	P	P	P	P	P	P	P	P	/	/	/	/	/	/	/	/
3	P	P	P	P	P	P	P	P	/	/	/	/	/	/	/	/
4	P	P	P	P	P	P	P	P	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
8	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

1. " P " - - - - means the EUT function is correct during the test. \_\_\_\_\_
2. " / " - - - - no test. \_\_\_\_\_

## EUT Photos

MODEL NO. : UPB80i



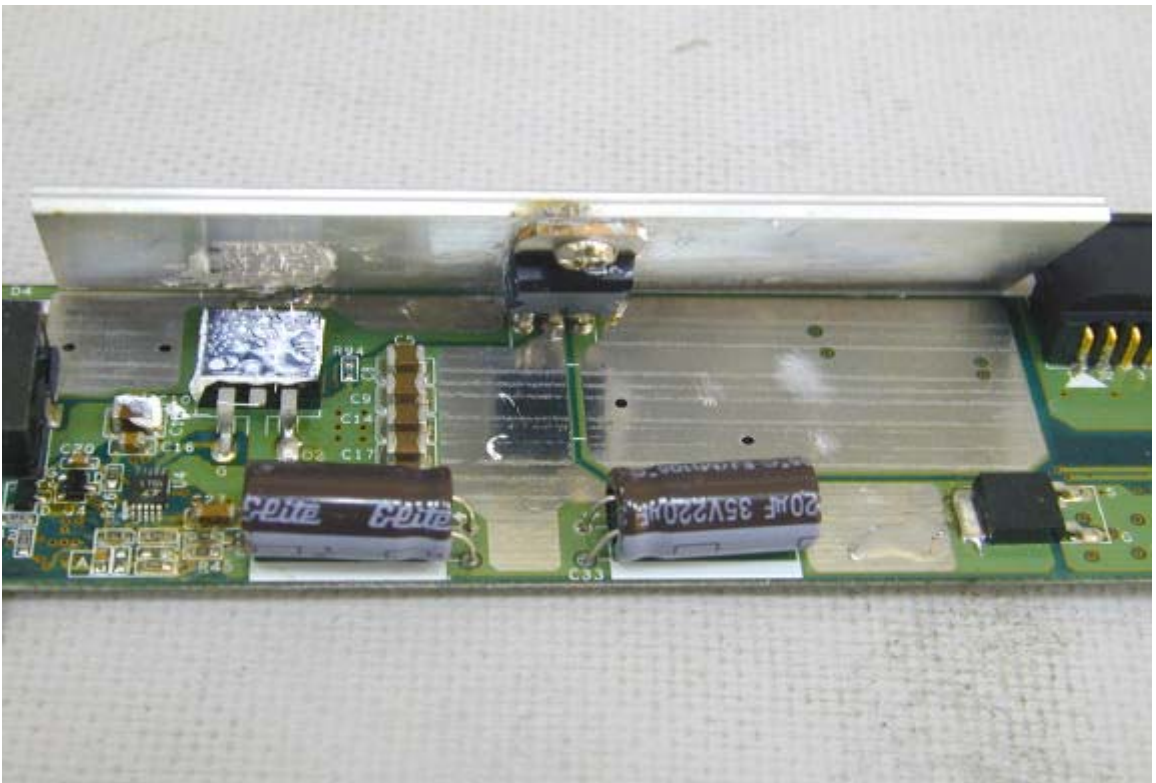


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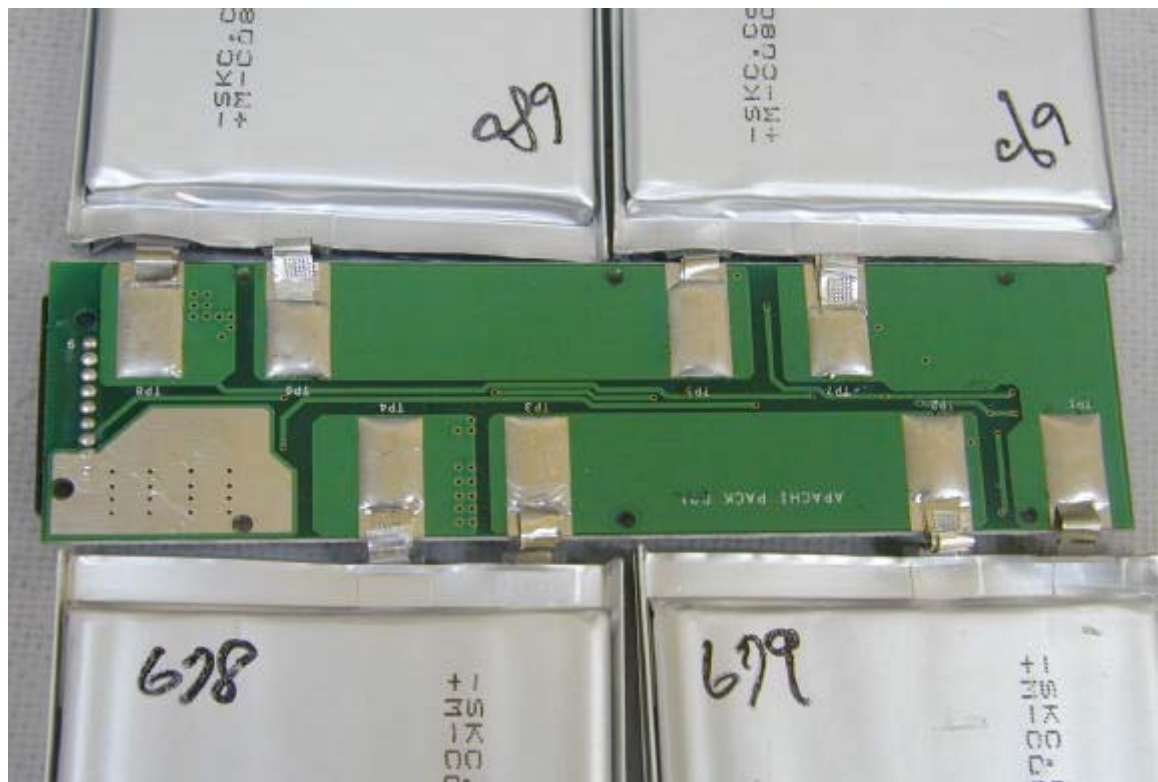
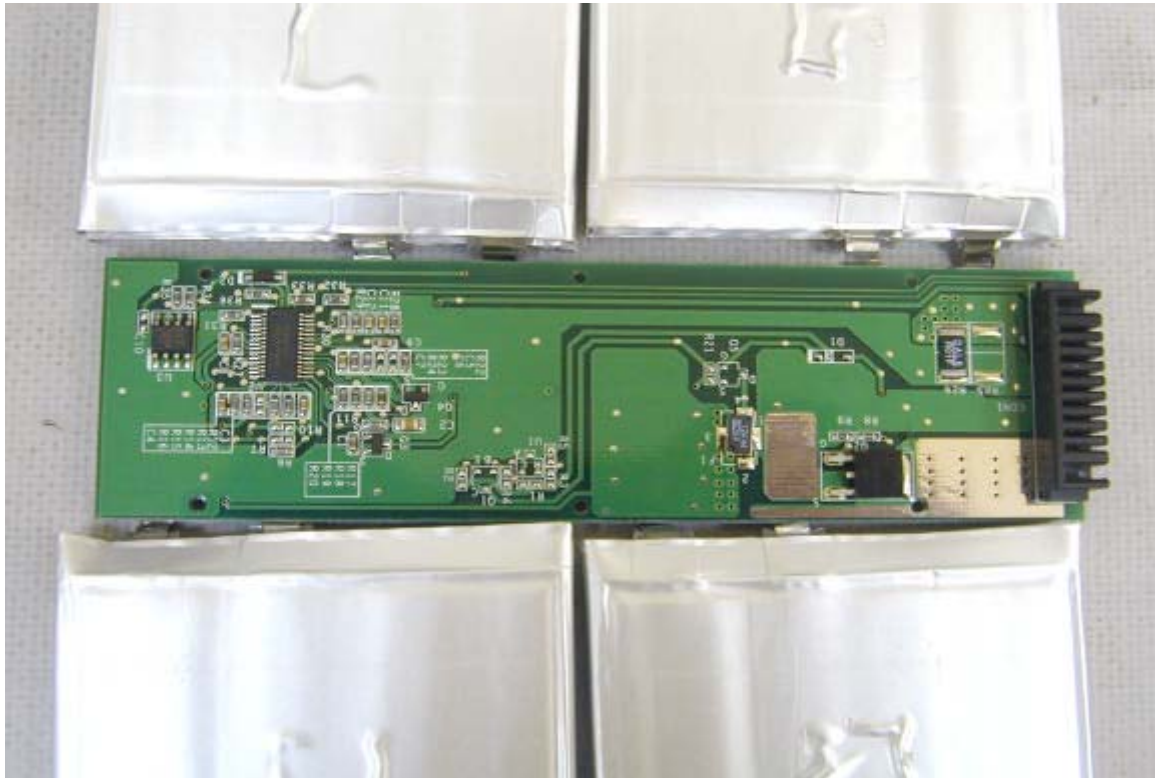


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# Declaration of Conformity

The following

**Applicant** : **AMERICAN POWER CONVERSION CORPORATION**

**Equipment** : **Universal Notebook Battery**

**Model No.** : **UPB80, UPB 80i, UPB80i**

**Report No.** : **E930528-1**

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility(89/336/EEC) and the amendments in the Council Directive 92/31/EEC, 93/68/EEC.

For the evaluation of above mentioned Directives, the following standards were applied:

- 1) EN 55022: 1998+A1 : 2000 Class B
- 2) EN 61000-3-2 : 2000
- 3) EN 61000-3-3 : 1995+A1: 2001
- 4) EN 55024 : 1998+A1 : 2001
  - EN 61000-4-2 : 1995+A2: 2001
  - EN 61000-4-3 : 1996+A2: 2001
  - EN 61000-4-4 : 1995+A2: 2001
  - EN 61000-4-5 : 1995+A1: 2001
  - EN 61000-4-6 : 1996+A1: 2001
  - EN 61000-4-8 : 1993+A1: 2001
  - EN 61000-4-11 : 1994+A1: 2001

The following manufacturer is responsible for this declaration:

**SINBON ELECTRONICS CO., LTD.**

**NO. 582, KUO HWA RD., MIAOLI,  
TAIWAN, R. O. C.**

TAIWAN / OCT. 06, 2004

Place and Date

\_\_\_\_\_  
Signature of responsible Person

# VERIFICATION

## of conformity with European EMC Directive

No. E930528-1

*Document holder:* AMERICAN POWER CONVERSION CORPORATION  
*Type of equipment:* Universal Notebook Battery  
*Type designation:* UPB80, UPB 80i, UPB80i

A sample of the equipment has been tested for CE-marking according to the EMC Directive, 89/336/EEC. & 92/31/EEC & 93/68/EEC *Standard(s) used for showing compliance with the essential requirements of the directive:*

*EMC Standard(s):*

EN 55022: 1998 + A1: 2000  
EN 61000-3-2: 2000  
EN 61000-3-3: 1995

Class B

EN 55024: 1998 + A1: 2001

EN 61000-4-2: 1995 + A2: 2001  
EN 61000-4-3: 1996 + A1: 1998  
EN 61000-4-4: 1995 + A2: 2001  
EN 61000-4-5: 1995  
EN 61000-4-6: 1996  
EN 61000-4-8: 1993  
EN 61000-4-11: 1994

*Performance Criterion*

A

B

The referred test report(s) show that the product fulfills the requirements in the EMC Directive for CE marking. On this basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify compliance with the EMC Directive.

Signed for and on behalf of  
**PEP Testing Laboratory**



*M. Y. Tsui*

Date: OCT. 06, 2004

M. Y. Tsui / President