



MODEL:  
**AUPS Series**

**VESA Mount Intelligent UPS Module  
12 V DC Input or 9 V – 36 V DC Input  
Network Remote Management Support**

# User Manual

# Revision

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Date	Version	Changes
May 7, 2014	1.01	Added <b>Appendix A: Safety Precautions</b>
November 12, 2008	1.00	Initial release

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# Manual Conventions

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## **WARNING!**

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word “warning” is written as “**WARNING**,” both capitalized and bold and is followed by text. The text is the warning message. A warning message is shown below:

---



## **WARNING:**

This is an example of a warning message. Failure to adhere to warning messages may result in permanent damage to the AUPS Series or personal injury to the user. Please take warning messages seriously.

---



## **CAUTION!**

Cautionary messages should also be heeded to help reduce the chance of losing data or damaging the AUPS Series. Cautions are easy to recognize. The word “caution” is written as “**CAUTION**,” both capitalized and bold and is followed. The text is the cautionary message. A caution message is shown below:

---



## **CAUTION:**

This is an example of a caution message. Failure to adhere to cautions messages may result in permanent damage to the AUPS Series. Please take caution messages seriously.

---

A black triangle containing a yellow checkmark.

**NOTE:**

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes. Notes are easy to recognize. The word “note” is written as “**NOTE**,” both capitalized and bold and is followed by text. The text is the cautionary message. A note message is shown below:

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A black triangle containing a yellow checkmark.

**NOTE:**

This is an example of a note message. Notes should always be read. Notes contain critical information about the AUPS Series. Please take note messages seriously.

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Chapter

1

# Introduction

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## 1.1 AUPS Series Overview



Figure 1-1: AUPS Series UPS Module

The highly efficient, high-performance AUPS Series UPS (Uninterruptible Power Supply) module installed with a Li-ion battery to provide stable 12 V output and uninterruptible power to the IEI AFOLUX series panel PCs. The UPS module also receives either 12 V input or a wide range of inputs between 6 V and 36 V DC. The AUPS Series is built on an intelligent design and provides outstanding line and load regulations. The AUPS Series is capable of providing power for certain of time in power failure.

The AUPS Series UPS module comes with the utility software that provides information on current power source and battery status. With the AUPS software installed and network connected, the AUPS Series can be monitored and turned on/off through a remote computer.

## 1.2 AUPS Series UPS Module Features

- Rugged metal enclosure for standard VESA 75/100 mounting
- Wide range power input (9 V - 36 V) by DC jack or terminal block
- Network management through web-based interface in remote computer. No additional administration software installation is required.
- Supports PC-based utility for monitoring power and battery status
- Auto shut down when battery low
- Provides stable power to AFOLUX PPC during line sags and spikes.
- Absorb power surges and transients

## 1.3 External Overview

### 1.3.1 I/O interface panel (Standard)

The I/O interface panel of the AUPS Series (see **Figure 1-2**) has the following standard I/O interface connectors:

- 1 x 12 V DC output jack
- 1 x USB mini-B connector
- 1 x Network remote management port (RJ-45)
- 1 x DC output switch terminal block
- 1 x DC on/off button

The standard external I/O interface connector panel is shown in **Figure 1-2**.



Figure 1-2: AUPS Series Standard I/O Interface Connectors

### 1.3.1.1 AUPS-A10 Power Input Connector

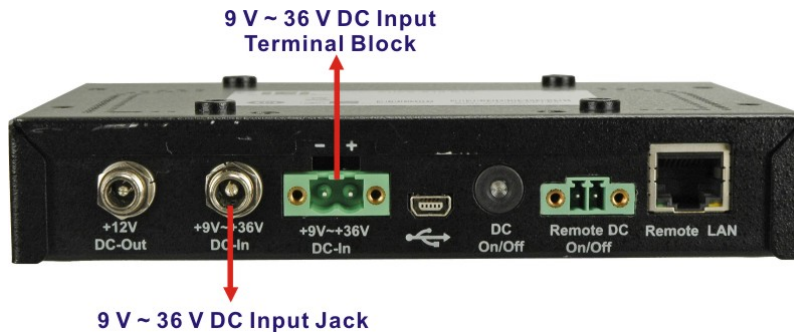
The AUPS-A10 has one power jack for +12 V DC input (**Figure 1-3**).



**Figure 1-3: AUPS-A10 Power Input Connector**

### 1.3.1.2 AUPS-A20 Power Input Connectors

The AUPS-A20 has one power jack and one terminal block for 9 V - 36 V DC inputs (**Figure 1-4**).



**Figure 1-4: AUPS-A20 Power Input Connectors**

### 1.3.1.3 AUPS-B10 Power Input Connector

The AUPS-B10 has one 4-pin power connector for +12 V DC input (Figure 1-5).



Figure 1-5: AUPS-B10 Power Input Connector

### 1.3.1.4 AUPS-B20 Power Input Connectors

The AUPS-B20 has one 4-pin power connector and one terminal block for 9 V – 36 V DC inputs (Figure 1-6).

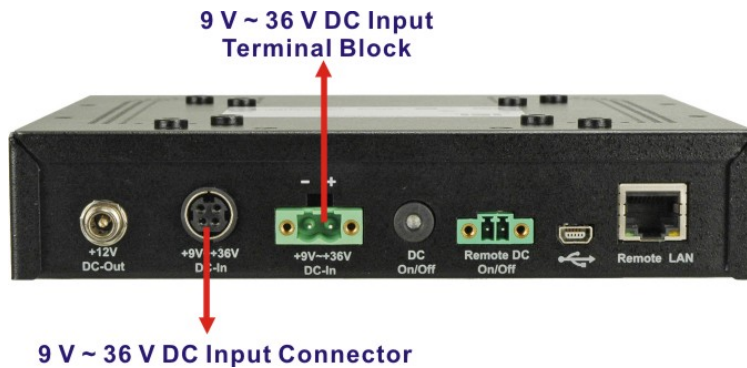
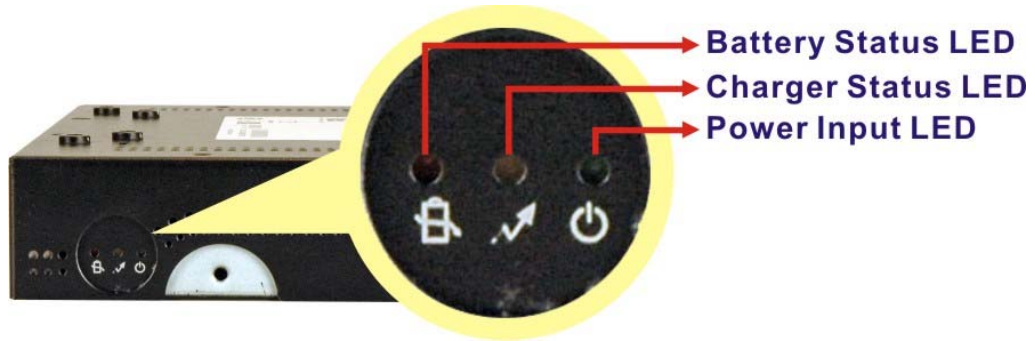


Figure 1-6: AUPS-B20 Power Input Connectors




**1.3.2 LED Indicators**

The side panel of the AUPS Series has three LED indicators to indicate the power and battery status (**Figure 1-7**).



**Figure 1-7: AUPS Series LED Indicators**

All the LED statuses are listed in **Table 1-1**.

	Power Input LED 	Charger Status LED 	Battery Status LED 
<b>Color</b>	Green	Yellow	Orange
<b>Off</b>	DC power out	--	--
<b>On</b>	DC power in	Discharging (battery full)	Battery discharging
<b>Blinking</b>	--	Charging	Battery low

**Table 1-1: LED Indicators**



## 1.4 AUPS Series Specifications

The AUPS Series UPS module technical specifications are listed in Table 1-2.

Model Name		AUPS-A10	AUPS-A20	AUPS-B10	AUPS-B20
VESA Type		VESA 75 mm x 75 mm		VESA 75 mm x 75 mm VESA 100 mm x 100 mm	
Output	Voltage	+12 V +/-5%	+12 V +/-5%	+12 V +/-5%	+12 V +/-5%
	Power	60 W	60 W	100 W	100 W
Input	Voltage	+12 V	+9 V ~ +36 V	+12 V	+9 V ~ +36 V
Battery	Type	Li-ion 2S2P	Li-ion 2S2P	Li-ion 4S2P	Li-ion 4S2P
	Normal Voltage	7.4 V	7.4 V	14.8 V	14.8 V
	Capacity	3800 mAH	3800 mAH	3800 mAH	3800 mAH
	Backup	60 W / 10 Min	60 W / 10 Min	100 W / 10 Min	100 W / 10 Min
Physical	Dimensions (LxWxH)	150 x 95 x 34 (mm)	150 x 95 x 34 (mm)	170 x 150 x 34 (mm)	170 x 150 x 34 (mm)
	Weight	1.2 kg	1.2 kg	1.8 kg	1.8 kg
LED	Green	DC power input	DC power input	DC power input	DC power input
	Yellow	Battery charging	Battery charging	Battery charging	Battery charging
	Orange	Battery discharging	Battery discharging	Battery discharging	Battery discharging
Temperature	Operating	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
	Storage	-20°C ~ 50°C	-20°C ~ 50°C	-20°C ~ 50°C	-20°C ~ 50°C

**Table 1-2: AUPS Series Specifications**

## 1.5 Battery Specifications

The AUPS Series comes with a Li-ion smart battery. Some of the Li-ion battery specifications are listed in **Table 1-3**.

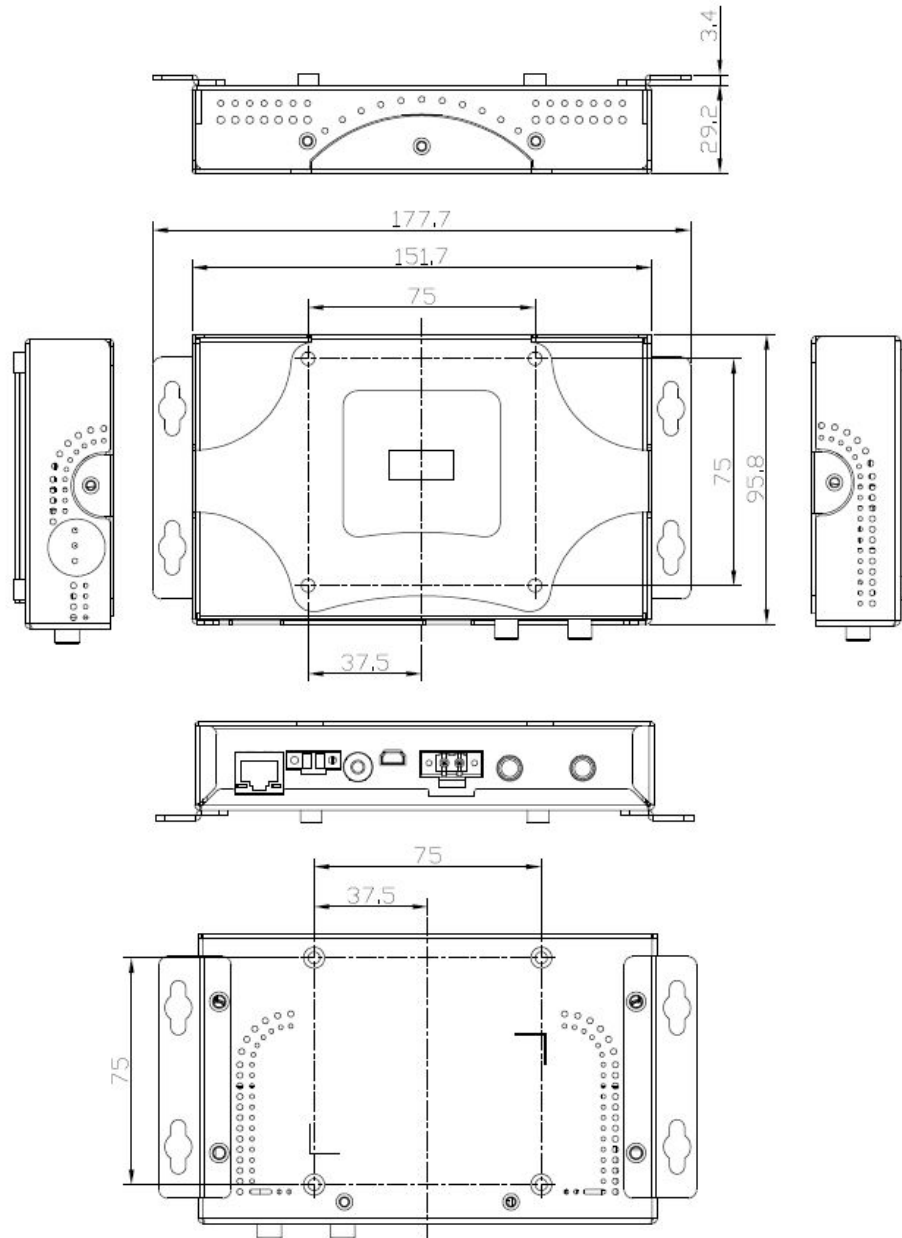
	<b>AUPS-A10/AUPS-A20</b>	<b>AUPS-B10/AUPS-B20</b>
<b>Battery Model</b>	BAT-LI-2S2P3800	BAT-LI-4S2P3800
<b>Battery Type</b>	Li-ion	Li-ion
<b>Nominal Capacity</b>	3800 mAh	3800 mAh
<b>Nominal Voltage</b>	7.4 V	14.8 V
<b>Max. Charge Voltage</b>	8.4 V	16.8 V
<b>Cut Off Voltage</b>	5.6 V	11.2 V
<b>Suggested Charge Current (Max.)</b>	2 A	2 A
<b>System Continuous Discharging Current (Max.)</b>	7.6 A	7.6 A
<b>The End of Charge Condition</b>	250 mA/min	200 mA/min
<b>Discharge Protection</b>	UVP/OCP	UVP/OCP
<b>Charge Protection</b>	OVP/OCP	OVP/OCP
<b>Self-discharge Rate</b>	340 uA ~ 440 uA	340 uA ~ 440 uA
<b>Dimensions</b>	139 mm x 47 mm x 26 mm	165 mm x 76 mm x 26 mm
<b>Ambient Temperature</b>	0°C ~ +40°C	0°C ~ +40°C
<b>Storage Temperature</b>	-20°C ~ +60°C	-20°C ~ +60°C
<b>Backup</b>	60 W/10 min	100 W/ 10 min

**Table 1-3: Battery Specifications**

## 1.6 AUPS Series Dimensions

### 1.6.1 AUPS-A10/AUPS-A20 Dimensions

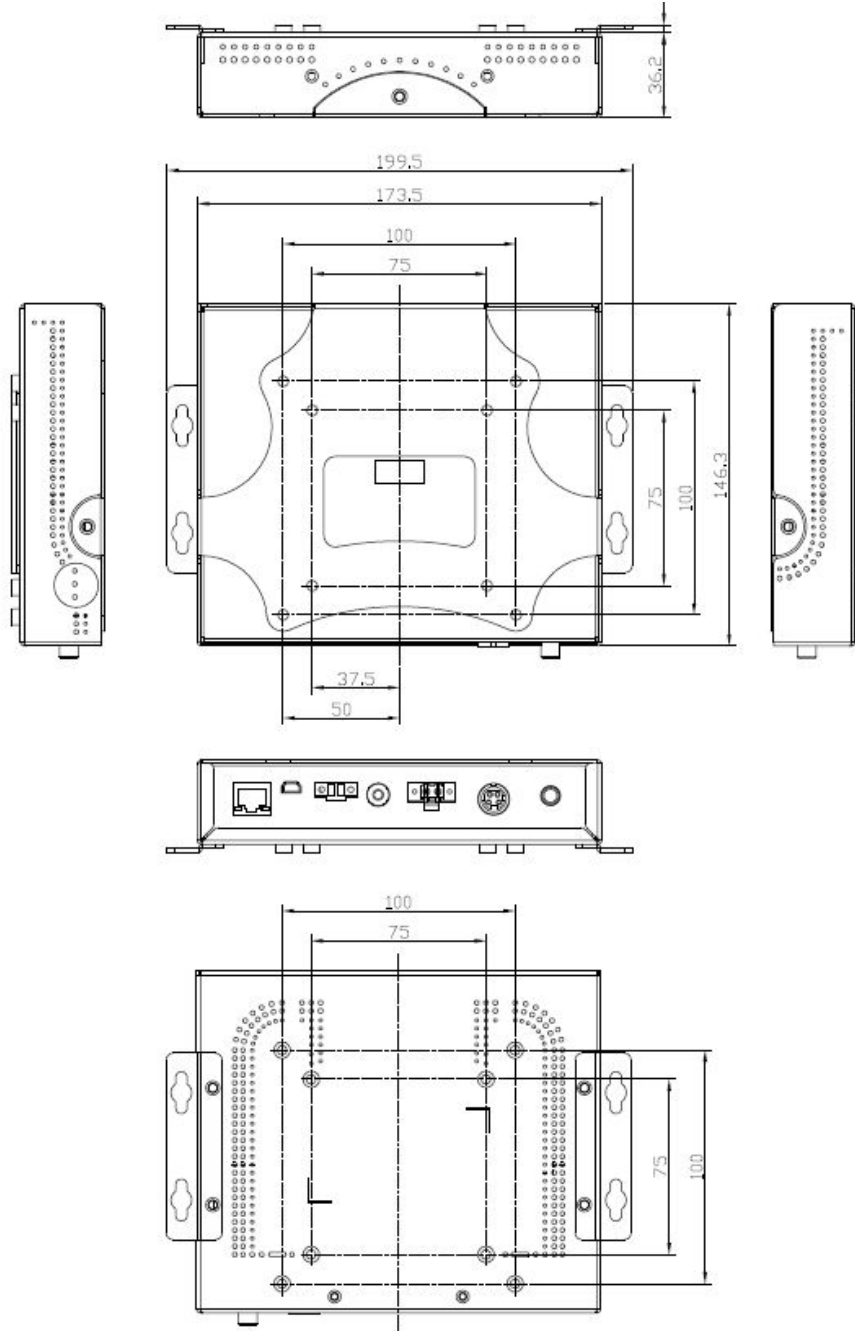
The AUPS-A10 and AUPS-A20 dimensions are shown in **Figure 1-8**.



**Figure 1-8: AUPS-A10/A20 Dimensions (mm)**

**1.6.2 AUPS-B10/AUPS-B20 Dimensions**

The AUPS-B10 and AUPS-B20 dimensions are shown in **Figure 1-8**.



**Figure 1-9: AUPS-B10/B20 Dimensions (mm)**

Chapter

2

# Unpacking

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## 2.1 Anti-static Precautions

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### WARNING:

Failure to take ESD precautions during the installation of the AUPS Series may result in permanent damage to the AUPS Series and severe injury to the user.

---

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AUPS Series. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AUPS Series, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband:** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- **Self-grounding:** Before handling the board touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- **Use an anti-static pad:** When configuring the AUPS Series, place it on an anti-static pad. This reduces the possibility of ESD damaging the AUPS Series.
- **Only handle the edges of the PCB:** When handling the PCB, hold the PCB by the edges.

## 2.2 Unpacking

### 2.2.1 Unpacking Precautions

When the AUPS Series is unpacked, please do the following:

- Follow the anti-static precautions outlined in **Section 2.1**.
- Make sure the packing box is facing upwards so the AUPS Series does not fall out of the box.
- Make sure all the components shown in **Section 2.3** are present.

## 2.3 Unpacking Checklist












### NOTE:

If some of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the AUPS Series from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to [sales@ieiworld.com.tw](mailto:sales@ieiworld.com.tw).

### 2.3.1 Package Contents

The AUPS Series is shipped with the following components:

Quantity	Item	Image
1	AUPS Series UPS module	
1	Li-ion battery pack	
1	Mounting bracket	
1	DC output cable	
1	DC output switch cable	

1	USB Type A to mini-B cable	
1	Screw kit	
2	Wall mount bracket	
1	Utility software CD	

**Table 2-1: Package List Contents**



Chapter

**3**

# Installation

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### 3.1 Anti-static Precautions

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**WARNING:**

Failure to take ESD precautions during the maintenance of the AUPS Series may result in permanent damage to the AUPS Series and severe injury to the user.

---

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the AUPS Series. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the AUPS Series is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** - Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding:*** - Before handling the board touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** - When configuring the AUPS Series, place it on an anti-static pad. This reduces the possibility of ESD damaging the AUPS Series.
- ***Only handle the edges of the PCB:*** - When handling the PCB, hold the PCB by the edges.

### 3.2 Installation Precautions

When installing the power module, please follow the precautions listed below:

- **Power turned off:** When installing the power module, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers:** Only certified engineers should install and modify onboard functionalities.

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- **Anti-static Discharge:** If a user open the top cover of the power module, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear an anti-static wristband.

### 3.3 Installation and Configuration Steps

The following installation steps must be followed.

**Step 1:** Unpack the UPS module

**Step 2:** Install the battery pack

**Step 3:** Mount UPS module to the AFOLUX panel PC

**Step 4:** Connect the UPS module to the AFOLUX panel PC

### 3.4 Battery Pack Installation

The battery pack must be installed to enable the UPS module. To install the battery pack, follow the steps below.

- Step 1:** Remove the four top cover retention screws (**Figure 3-1** and **Figure 3-2**) and lift the top cover off the AUPS Series module.

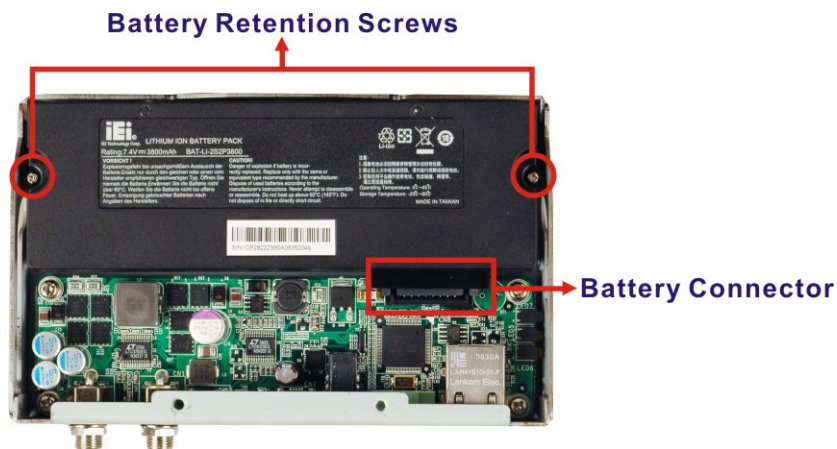


**Figure 3-1: Top Cover Retention Screws (Rear Panel)**



**Figure 3-2: Top Cover Retention Screws (Top Panel)**

**Step 2:** Install the battery pack into the AUPS Series. Make sure the battery pack is connected to the battery connector on the board. (**Figure 3-3**)



**Figure 3-3: Battery Pack Installation**

**Step 3:** Secure the battery pack with two retention screws.

**Step 4:** Replace the top cover.

### 3.5 Mounting the AUPS Series

To mount the AUPS Series onto the rear panel of the AFOLUX panel PC, follow the steps below.

**Step 1:** Install the mounting bracket onto the rear panel of the AFL panel PC. Align the screw holes in the mounting bracket with the VESA screw holes in the rear of

## AUPS Series Power Module User Manual

the panel PC. Secure the mounting bracket to the panel PC with four retention screws (Figure 3-4).



Figure 3-4: Mounting Bracket Installation

**Step 2:** Place the AUPS Series onto the mounting bracket. Secure the AUPS Series to the bracket with three retention screws, one on the top panel and one on each side panel (Figure 3-5).

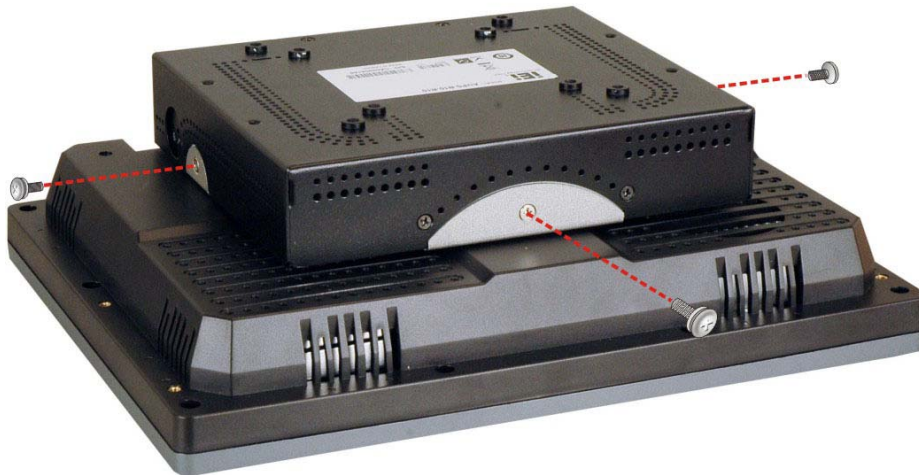
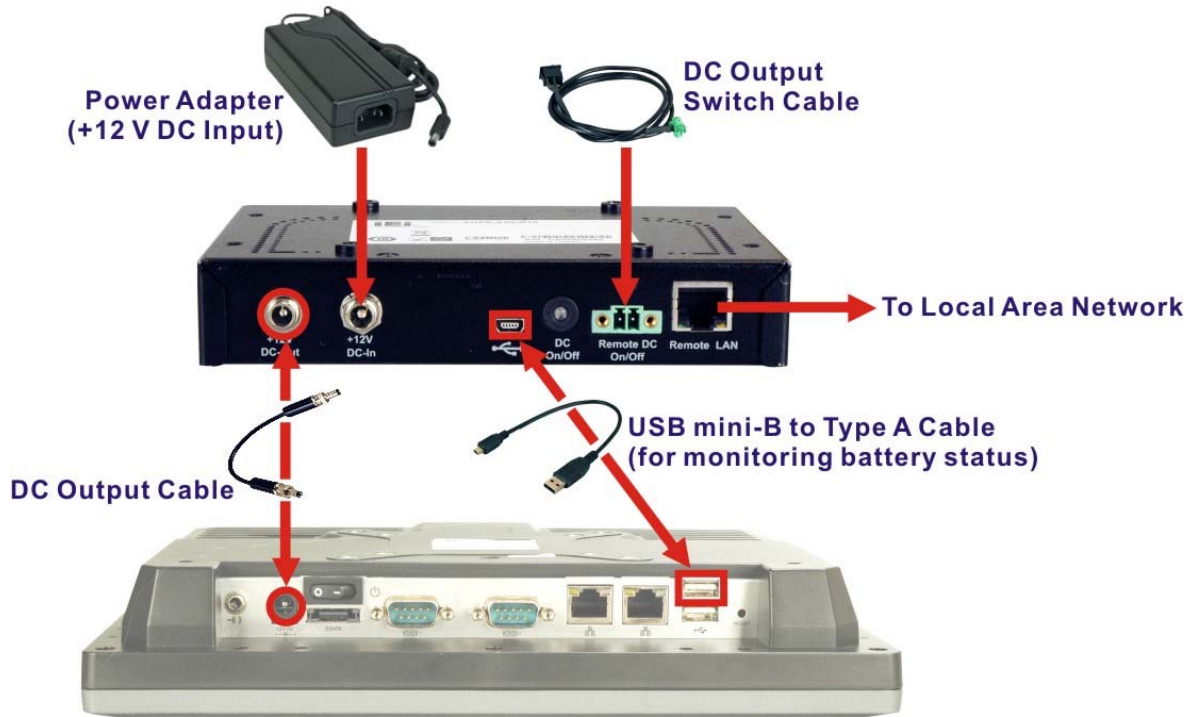


Figure 3-5: Mounting the AUPS Series

### 3.6 Connecting the AUPS Series

To support the UPS function to the panel PC, the AUPS Series must be connected to the power source and to the panel PC. **Figure 3-6** shows the connections.



**Figure 3-6: AUPS Series and Panel PC Connection**

Chapter

**4**

# Software Application

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## 4.1 Introduction

The IEI AUPS Battery Status Monitor application detects the information of the smart battery and monitors the battery status. It is recommended to execute this AUPS application in Windows XP SP2 environment.

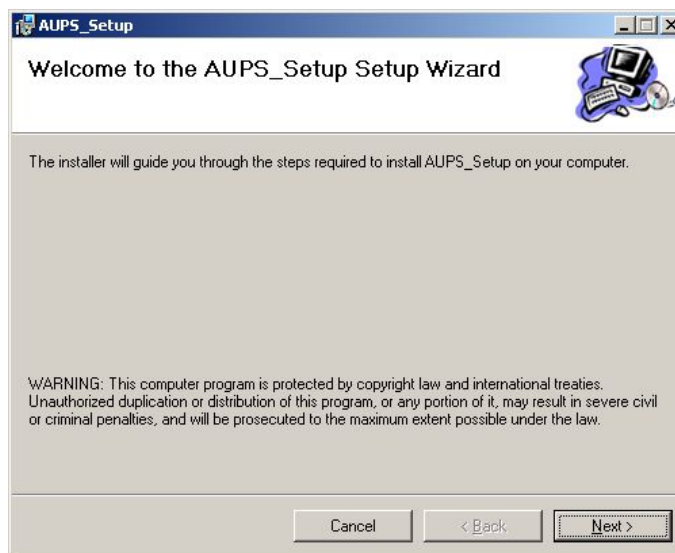
## 4.2 Monitoring DC Power and Smart Battery

### 4.2.1 Application Installation

Follow the steps below to install the AUPS Battery Status Monitor application.

**Step 1:** Insert the driver CD into the system. Open the **x:\AUPS\_Setup\AUPS\_SetupV1.4** directory. Double click the **Setup.exe** icon.

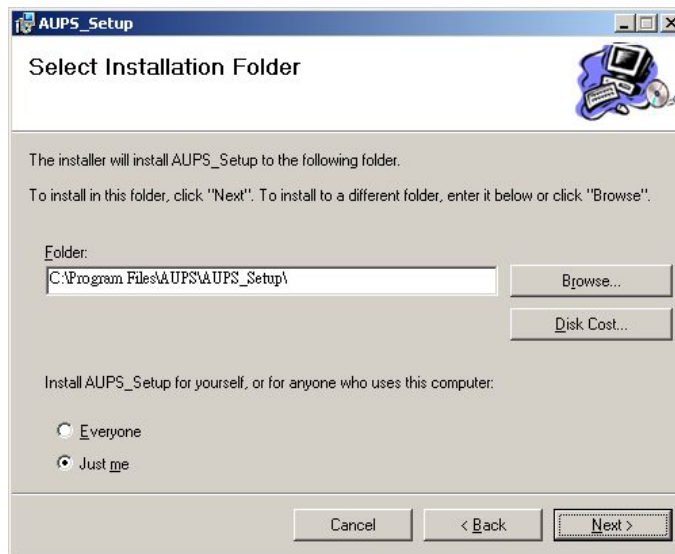
**Step 2:** A welcome screen appears (**Figure 4-1**). To continue the installation process click **NEXT**.



**Figure 4-1: Welcome Screen**

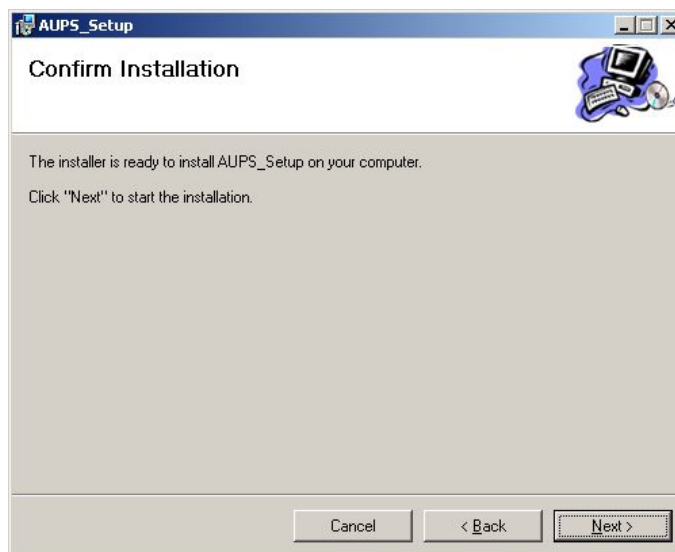
**Step 3:** The Select Installation Folder window appears (**Figure 4-2**). Select a folder to install the application.





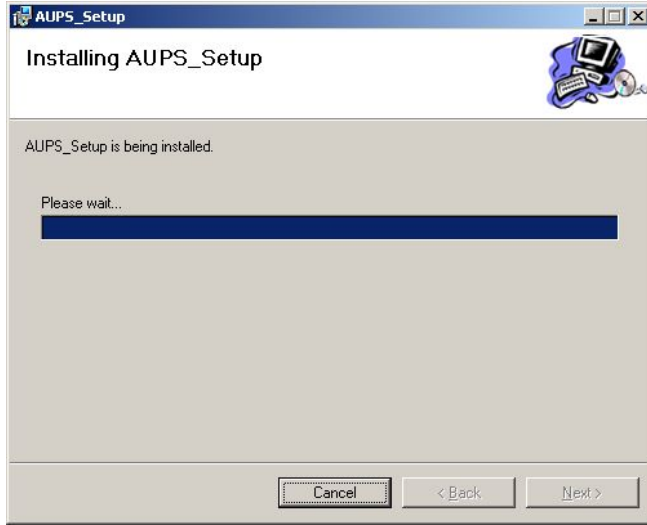
**Figure 4-2: Select Installation Folder**

**Step 4:** Click **NEXT** and the Installshield Wizard is ready to install the program (**Figure 4-3**).



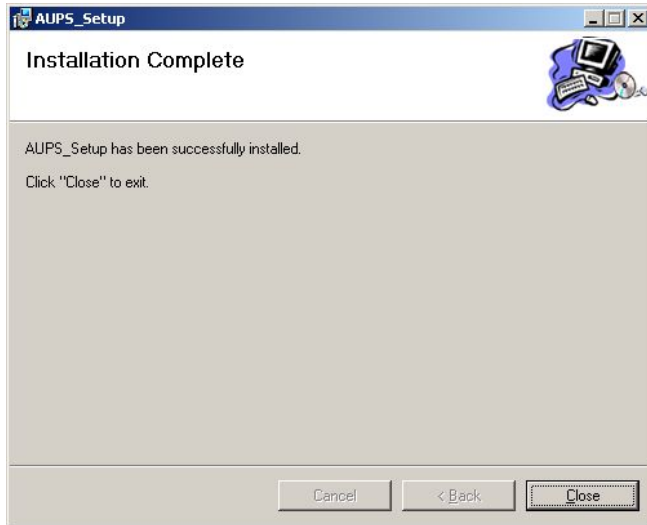
**Figure 4-3: Ready to Install the Program**

**Step 5:** Click **NEXT** to continue. The Installing AUPS\_Setup screen appears as the program is installed (**Figure 4-4**).



**Figure 4-4: Installing AUPS**

**Step 6:** The Installation Complete window appears (Figure 4-5). Click **Close** to exit.



**Figure 4-5: Installation Complete**

**Step 7:** To launch the application, double click the shortcut (Figure 4-6) on the desktop



**Figure 4-6: AUPS Battery Status Monitor Application**

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### 4.2.2 Status Information

The IEI AUPS Battery Status Monitor application shows the DC power status and battery status (**Figure 4-7**). The following sections describe the status information in details.

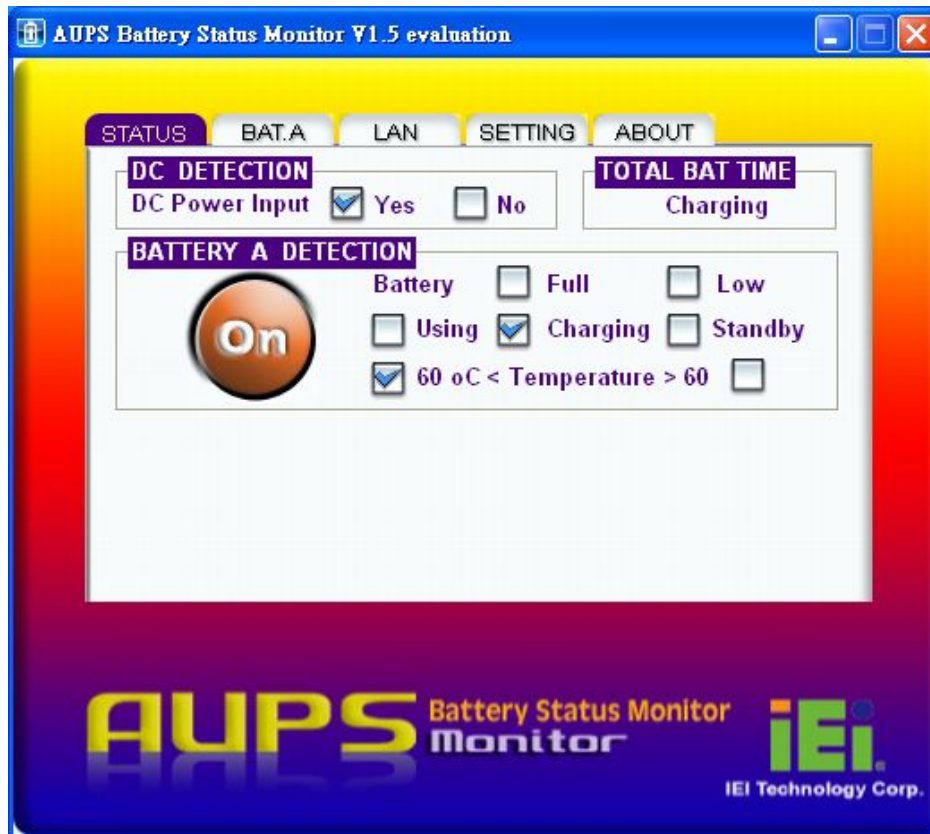


Figure 4-7: Status Information

#### 4.2.2.1 DC Detection

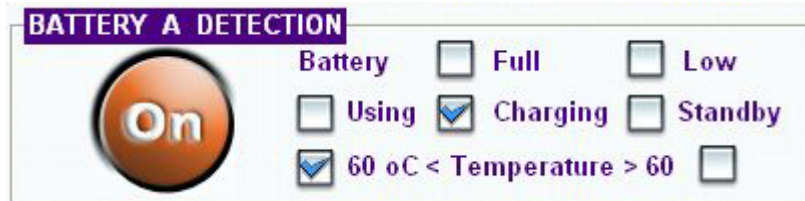
When the DC power is connected to the AUPS series power module, the AUPS Battery Status Monitor detects it and shows in the screen as **Figure 4-8**.




Figure 4-8: DC Detection

### 4.2.2.2 Battery Detection

When the smart battery is connected to the AUPS series power module, the AUPS Battery Status Monitor detects it and shows in the screen as **Figure 4-9**. Two batteries can be connected to the AUPS series power module at the same time. The second battery information is shown in the **Battery A Detection** section if connected.



**Figure 4-9: Battery Detection**

	The battery is connected to the AUPS series.
Off	The battery is not connected to the AUPS series.
<b>Battery</b> <input type="checkbox"/> Full <input type="checkbox"/> Low	
Full	The battery is fully charged.
Low	The battery is low.
<input type="checkbox"/> Using <input checked="" type="checkbox"/> Charging <input type="checkbox"/> Standby	
Using	The battery is being used.
Charging	The battery is being charged.
Standby	The battery is fully charged and ready to be used anytime.
<input checked="" type="checkbox"/> 60 oC < Temperature > 60 <input type="checkbox"/>	
>60 C	The battery temperature is above 60°C.
<60 C	The battery temperature is below 60°C.

### 4.2.2.3 Total Battery Time

The total battery time is shown in the top right corner (**Figure 4-10**) of the status screen to indicate the total battery remaining time.



Figure 4-10: Total Battery Time

### 4.2.3 Battery Information

Click on the **BAT. A** tab to view the information of battery. The listed information includes battery type, capacity, output voltage, temperature, charging rate, discharging rate and battery status (Figure 4-11). The values listed are updated per second.

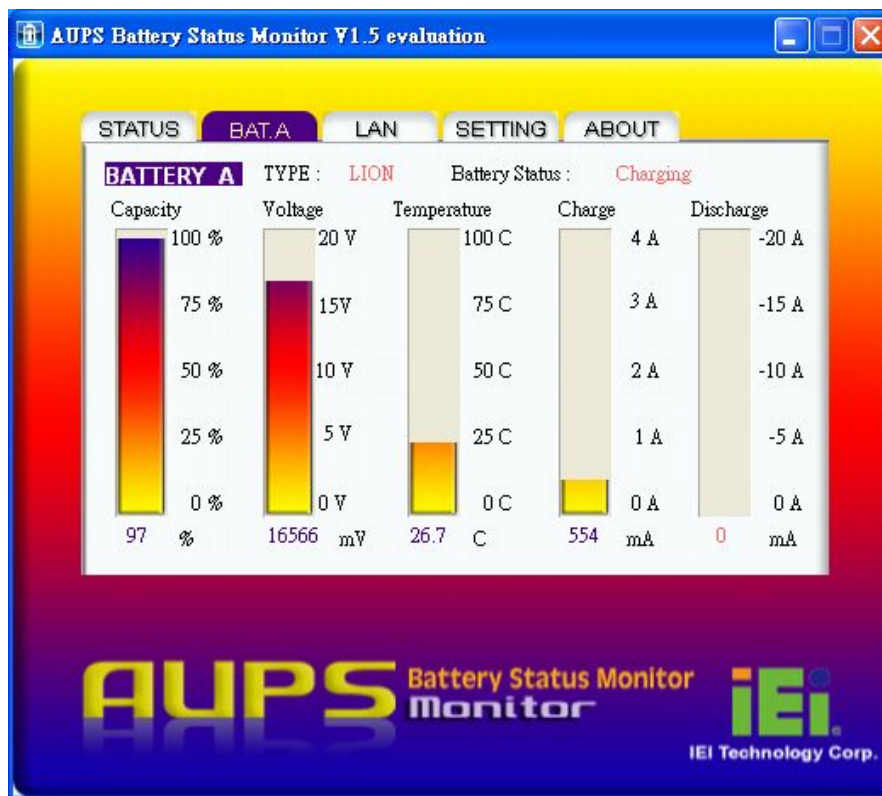




Figure 4-11: Battery Information

### 4.2.4 LAN Setting

The LAN Setting page is where to configure the Remote LAN settings for power on/off remote control and battery monitoring. To save the modified parameters of this page, click the  button. To load the default settings, click  button.

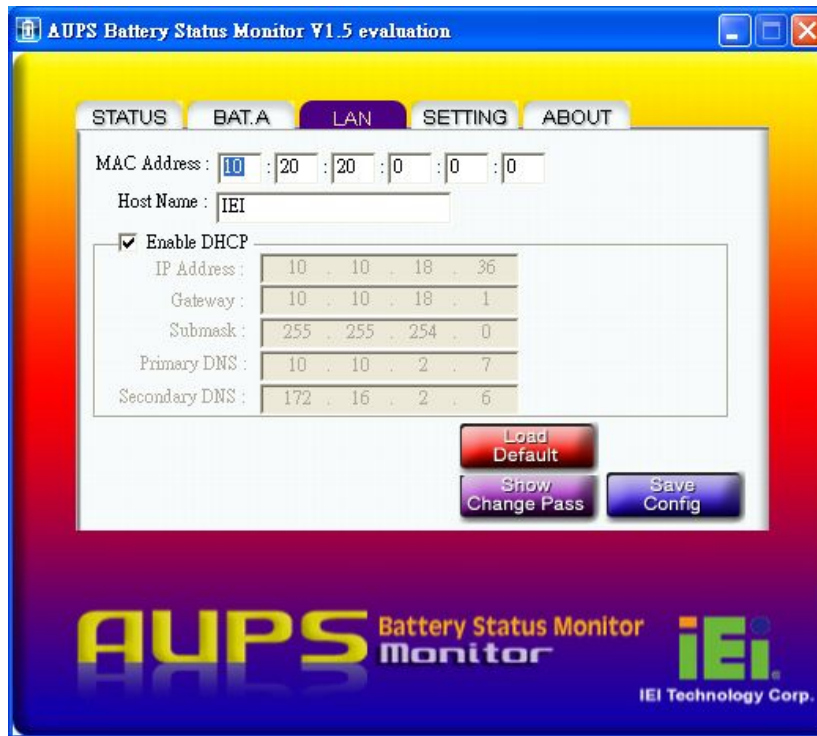




Figure 4-12: LAN Setting

The LAN Setting page can also setup the user name and password for remote monitoring.

To change the user name and password, click  button. Enter the new user name and password (**Figure 4-13**). Click  button to save the settings. The default user name and password for the LAN setting page are:

- User name: admin
- Password: IEI

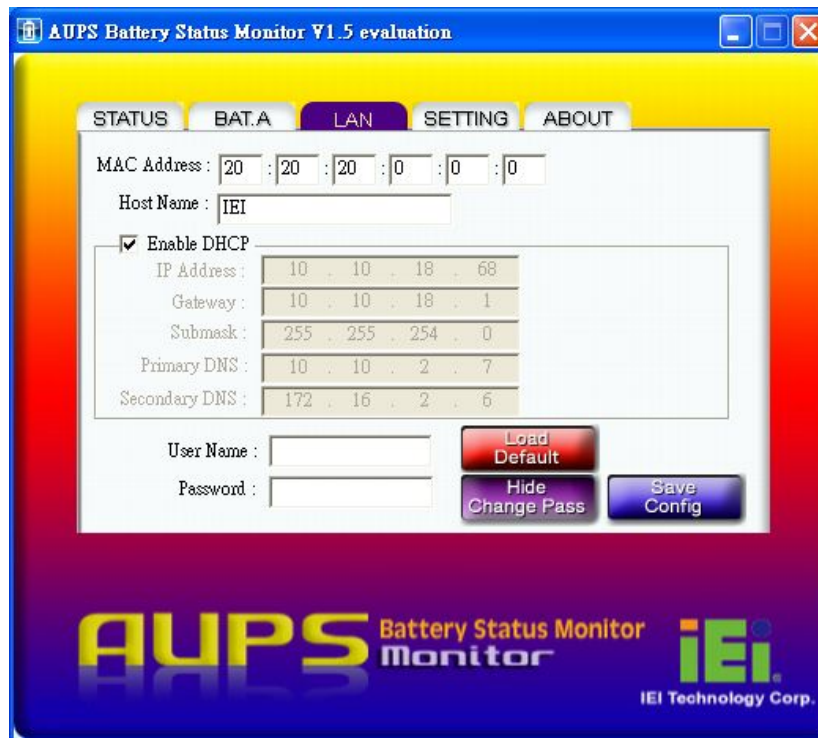
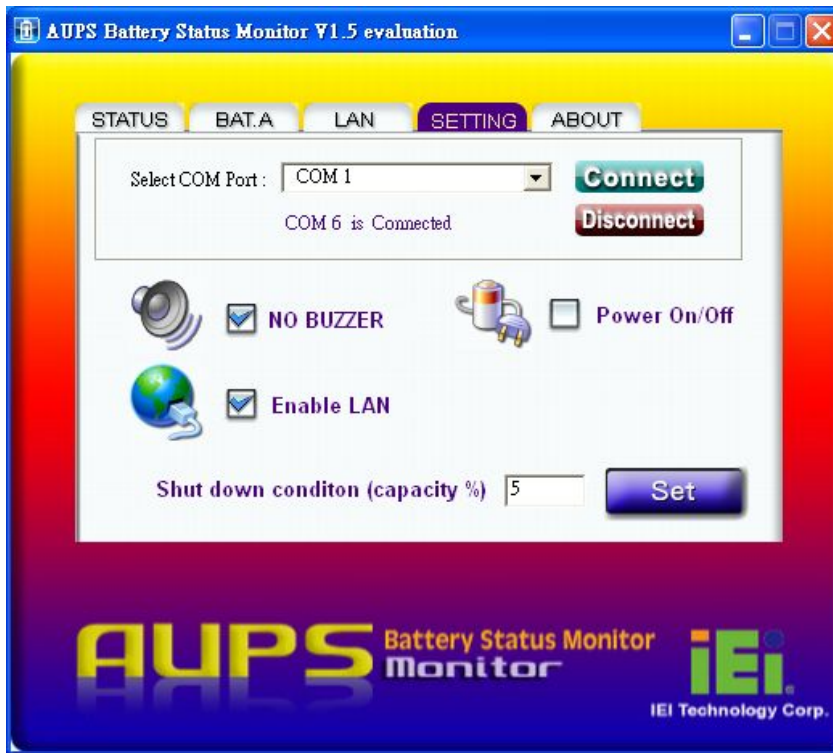


Figure 4-13: LAN Setting – Change Password

#### 4.2.5 Setting

Click on the SETTING tab to select the COM port, enable/disable buzzer, LAN and DC output (Figure 4-14).



**Figure 4-14: Application Setting**

When the AUPS Battery Status Monitor application starts up, it automatically scans all COM port (COM1 - COM16) and shows the valid COM port. **Figure 4-15** shows the AUPS application is communicating with AUPS Series through COM 6. To change the serial port to communicate, select a proper port number from the list and click Connect. Before changing, please make sure the selected serial port is not used by other devices.






**Figure 4-15: COM Port Status**



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Other functions can be set in the SETTING tab include

 <input checked="" type="checkbox"/> <b>NO BUZZER</b>	Check to disable the buzzer that warns when the system is switching to use battery power.
 <input checked="" type="checkbox"/> <b>Enable LAN</b>	Check to enable the LAN for remote monitoring function.
 <input type="checkbox"/> <b>Power On/Off</b>	Check to enable the remote computer to turn the system power on or off. (This function is not available at this stage.)
<b>Shut down conditon (capacity %)</b> <input type="text" value="5"/> <input type="button" value="Set"/>	
Set the battery capacity parameter for the system to shut down automatically. In this case, the system will shut down automatically when the battery capacity is below 5%.	

### 4.3 Remote Control and Monitoring

The AUPS Series can be controlled (power on/off) and monitored the battery status through a remote computer located in the same subnet with the AUPS Series. To control and monitor the AUPS Series remotely, follow the steps below.

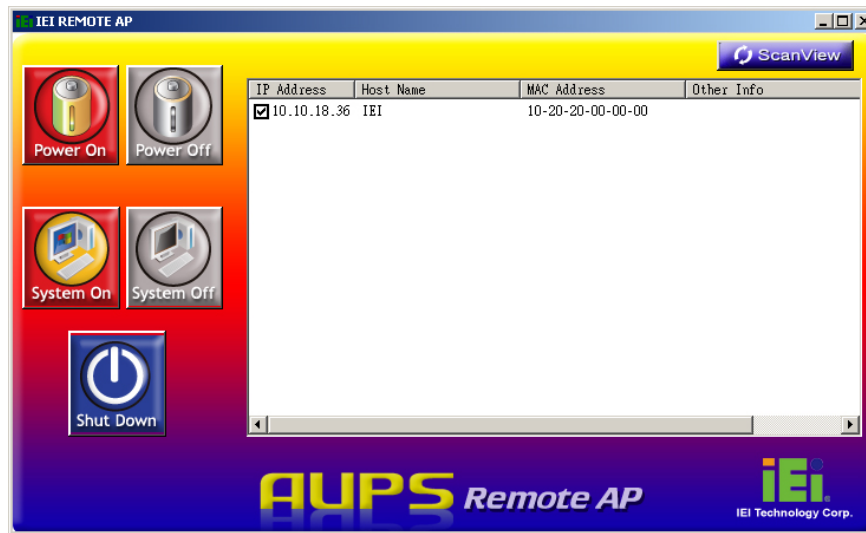
**Step 1:** Connect the RJ-45 remote LAN connector on the bottom panel of the AUPS Series (**Figure 4-16**) to a local area network connector.



Figure 4-16: RJ-45 Remote LAN Connector

**Step 2:** In a remote computer, install the IEI REMOTE AP. Double click the setup.exe file in the `x:\Other\AUPS REMOTE AP` directory. Follow the steps to install the IEI REMOTE AP. After installation, launch the AP. If there is a problem to launch the tool, execute the dotnetfxRedist20.exe first (located in the same directory of the driver CD).

**Step 3:** The IEI REMOTE AP tool appears (**Figure 4-17**). All the AUPS Series module in the same subnet with this remote computer are shown in the list on the right. Click the function buttons on the left to control the AUPS Series.



**Figure 4-17: IEI REMOTE AP**

**Step 4:** To access the web interface for advanced monitoring and functions, double click the IP address of the connected AUPS Series (**Figure 4-18**).

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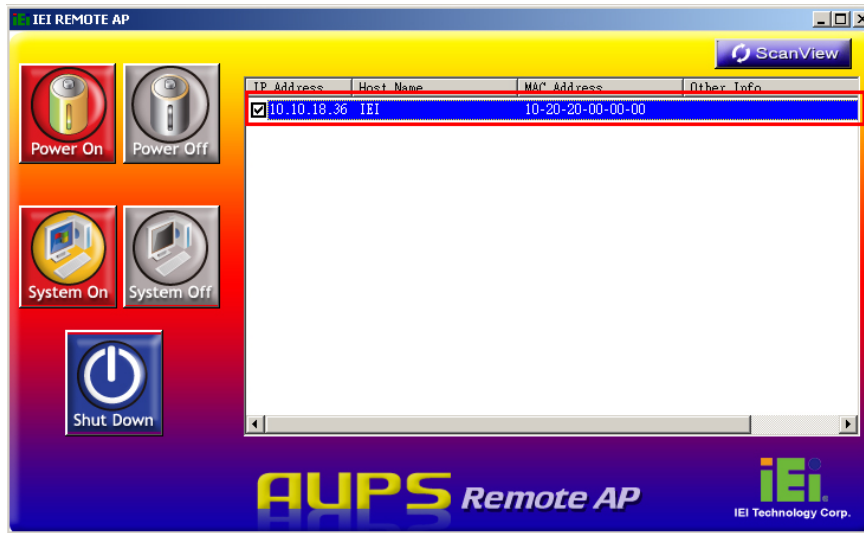


Figure 4-18: IEI REMOTE AP – IP Address

Step 5: Figure 4-19 shows in a web browser.

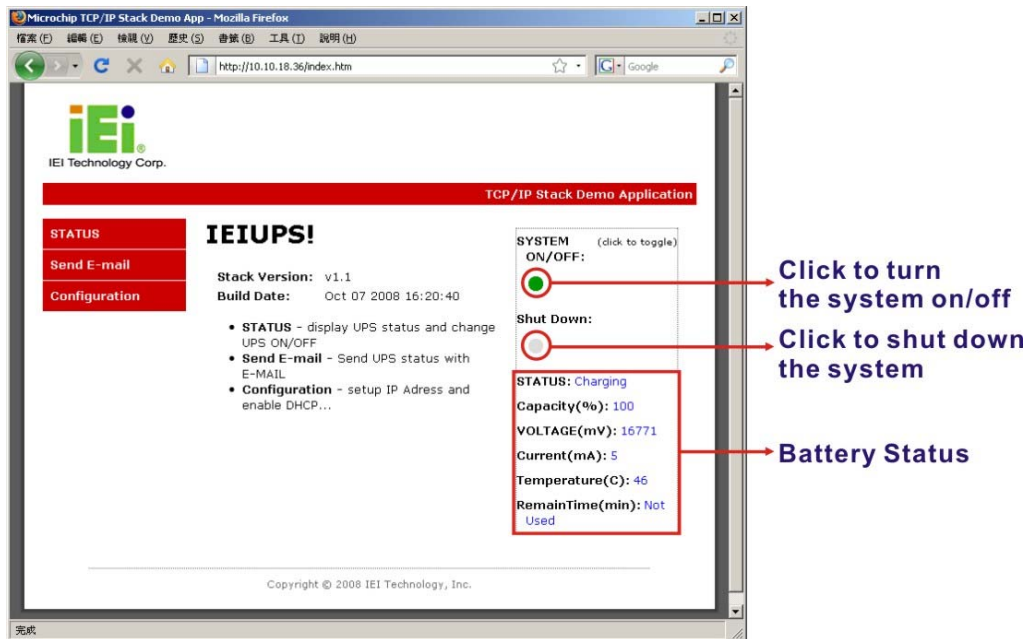
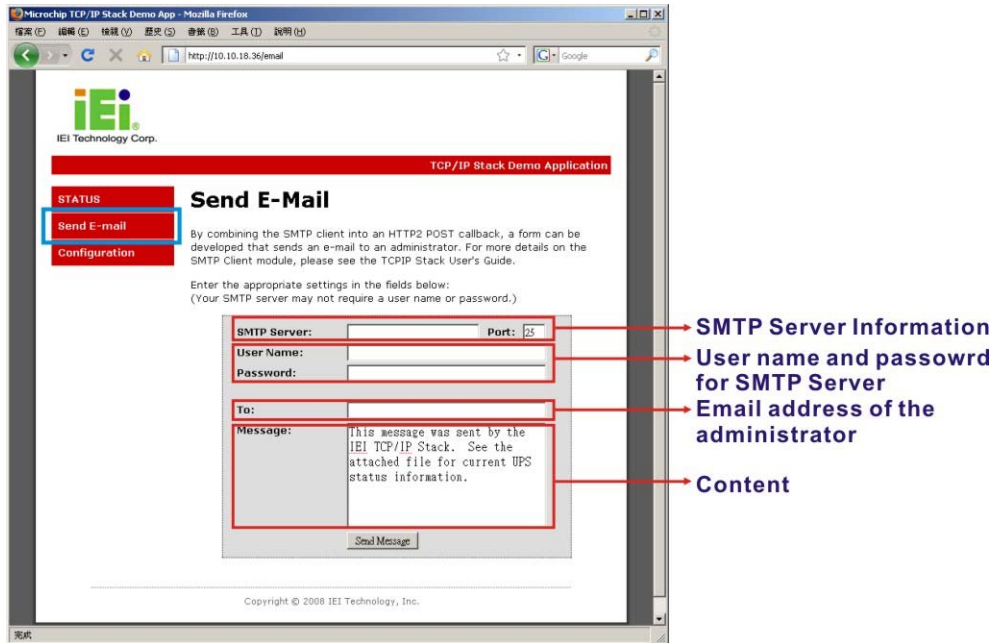


Figure 4-19: Remote Management Web Interface - Status

Step 6: To send an email to an administrator through the SMTP server, click Send E-mail button on the left. Fill out the information as indicated in Figure 4-20. Click the **Send Message** button to send the email.



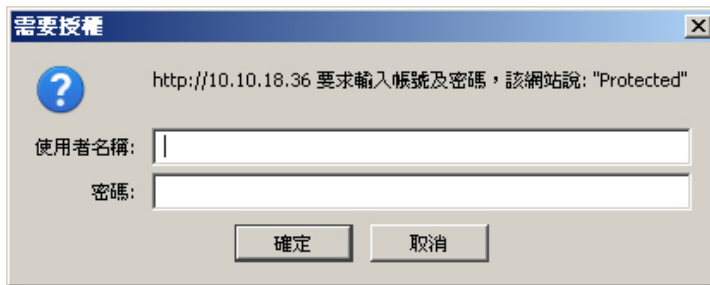
**Figure 4-20: Remote Management Web Interface - Send Email**

**Step 7:** To configure the AUPS Series network setting, click the **Configuration** button on the left.

**Step 8:** A window prompts for the user name and password. The default user name and password for the LAN setting page are:

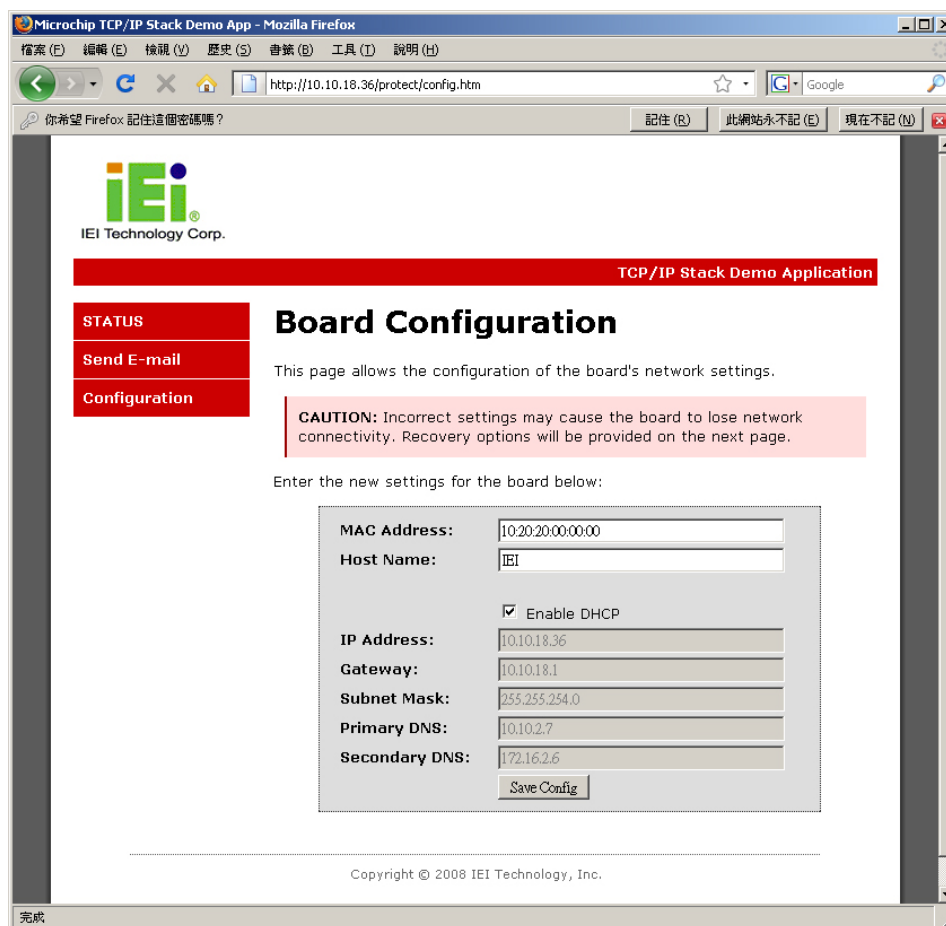
- User name: admin
- Password: IEI

If the user name and password has been change as described in **Section 4.2.4**, enter the new user name and password.



**Figure 4-21: Enter User Name and Password**

**Step 9:** The Board Configuration window appears. Configure the network settings and click the **Save Config** button. Incorrect settings may cause the board to lose network connectivity. Recovery options are provided on the next page.



**Figure 4-22: Board Configuration**

Appendix

**A**

# Safety Precautions

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**DANGER!****1. Disassemble and Reconstruction**

*“Do not disassemble or reconstruct battery”*

The battery pack has safety function and protection circuit to avoid the danger. If they have serious damage, it will cause the generating heat, smoke, rupture or flame.

**2. Short-circuit**

*“Do not short-circuit battery”*

Do not connect the + and – terminals with metals (such as wire). Do not carry or store the battery with metal objects (such as wire, necklace or hairpins). If the battery is short-circuited, excessive large current will flow and then the generating heat, smoke, rupture of flame will occur. And also, it causes generating heat at metals.

**3. Incineration and Heating**

*“Do not incinerate or heat the battery”*

These occur the melting of insulator, damage of gas release vent or safety function, or ignition on electrolyte. Above mentioned matters cause the generating heat, smoke, rupture or flame.

**4. Use Nearby Heated Place**

*“Do not use or leave battery nearby the fire, stove or heated place (more than 80 °C)”*

In case that separator made of polymer is melted by high temperature, the internal short-circuit occurs in individual cells and then it causes the generating heat, smoke, rupture or flame. In addition, do not use the battery under the heated place (more than 80 °C) for same reason.

**5. Immersion**

*“Do not immerse the battery in water or sea water, or get it wet”*

If the protection circuit included in the battery is broken, the battery will be charged at extreme current or voltage and the abnormal chemical reaction occurs in it. And then it causes the generating heat, smoke, rupture or flame.

**6. Charge Nearby Heated Place**

*“Do not charge battery nearby the fire or under the blazing sun”*

If the protection circuit to avoid the danger works under high temperature or it is broken, the battery will be charged at abnormal current (or voltage) and abnormal chemical reaction will occur. It caused the generating heat, smoke, rupture or flame.

**7. Charger and Charge Condition**

*“Do use the specified charger and observe charging requirement”*

If the battery is charged with unspecified condition (under high temperature over the regulated value, excessive high voltage or current over regulated value, or remodeled charger), there

are cases that it will be overcharged or the abnormal chemical reaction will occur in cells. It caused the generating heat, smoke, rupture or flame.

#### **8. Penetration**

*“Do not drive a nail into the battery, strike it by hammer, or tread it”*

As the battery might be broken or deformed and then it will be short-circuited, it caused the generating heat, smoke, rupture or flame.

#### **9. Impact**

*“Do not give battery impact or throw it”*

The impact might cause leakage, heat, smoke, rupture, and/or fire of cell in the battery. And also if the protection circuit in the battery is broken, the battery will be charged at abnormal voltage or current, and abnormal chemical reaction might occur. It might cause leakage, heat, smoke rupture, and/or fire.

#### **10. Deformation**

*“Do not use the battery with conspicuous damage or deformation”*

It causes the generating heat, smoke, rupture or flame.

#### **11. Soldering**

*“Do not make the direct soldering on battery”*

As the insulator is melted by heat or the gas release vent (or safety function) is broken, it caused the generating heat, smoke, rupture or flame.

#### **12. Reverse Charge and Overdischarge**

*“Do not reverse polarity (and terminals)”*

On charging, the battery is reverse-charged and abnormal chemical reaction occurs. And also, there may be case that unexpected large current flows on discharging. These cause the generating heat, smoke, rupture or flame.

#### **13. Reversed Polarity Use**

*“Do not reverse-charge or reverse-connect”*

The battery has polarity. In case the battery is not connected with charger or equipment smoothly, do not force them to connect and do check polarity of battery. If the battery is connected to opposite polarity with charger, it will be reverse-charged and abnormal chemical reaction will occur. It causes the generating heat, smoke, rupture or flame.

#### **14. Connect Battery to the Plug**

*“Do not connect battery to the plug socket or car-cigarette-plug”*

Added high voltage to the battery, the excessive current will flow in it and then it will cause the generating heat, smoke, rupture or flame.



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### 15. Inappropriate Use for Other Equipment

*“Do not use battery for other equipment”*

If the battery is used for unspecified equipment, it will deteriorate its performance and cycle-life.

At worst, abnormal current will flow or battery may generate heat, smoke, rupture or flame.

### 16. Leakage

*“Do not touch a leaked battery directly”*

in case the leaked electrolyte gets into eyes, wash them with fresh water as soon as possible without rubbing eyes. And then, see a doctor immediately.

If leave damaged eyes undone, it will cause eye-trouble.



### WARNING:

#### 1. Mixed Use

*“Do not use Lithium ion battery in mixture”*

Do not use Lithium ion battery with the primary batteries or secondary batteries whose capacity kind or maker is different, if do that, the battery will be discharged or charged excessively in use. And it may cause the generating, smoke, rupture or flaming because of the abnormal chemical reaction in cells.

#### 2. Ingestion

*“Keep the battery away from babies”*

Keep the little battery out of the reach of babies in order to avoid troubles by swallowing. In case of swallowing the battery, see a doctor immediately.

#### 3. Charging Time

*“Do not continue to charge battery over specified time”*

If the battery is not finished charging over regulated time, let it stop charging. There is possibility that the battery might generate, smoke, rupture or flame.

#### 4. Store

*“Do not get into a microwave or a high pressure container”*

It causes the generating, smoke, rapture or flaming because of a sudden heat or damage of sealing condition of battery.

#### 5. Leakage

*“Do not use a leaked battery nearby fire”*

If the liquid leaks from the battery (or the battery gives out bad smell), let the battery leave from flammable objects immediately. Unless do that, the electrolyte leaked from battery will catch fire and it will cause the smoke, flaming or rupture of it.

## 6. Rust, Changing Color and Deformation

*“Do not use an abnormal battery”*

In case the battery has bad smell or is generated its changing color or deformation or causes something wrong in using (includes charging and storage), let it take out from equipment or charger and do not use it. If an abnormal battery is used, it will generate, smoke, rupture or flame.



### CAUTION:

#### 1. Use Under Strong Sunshine

Do not use or leave the battery under the blazing sun (or heated car by sunshine). The battery may generate heat, smoke or flame. And also, it might cause the deterioration of battery's characteristics or cycle life.

#### 2. Static Electricity

The battery has the protection circuit to avoid the danger. Do not use nearby the place where generates static electricity (more than 100 V) which gives damage to the protection circuit. If protection circuit were broken, the battery would generate, smoke, rupture or flame.

#### 3. Charging Temperature Range

Charging temperature range is regulated 0°C and 40°C. Do not charge the battery out of recommended temperature range. Charging out of recommended range might cause the generating heat or serious damage of battery. And also, it might cause the deterioration of battery's characteristics and cycle life.

#### 4. Manual

Please read the manual before using the battery and keep it after reading.

#### 5. Charging Method

Please read the manual of specified charger about charging method.

#### 6. First Time Use

When the battery has rust, bad smell or something abnormal at first-time-using, do not use the equipment and bring the battery to the shop from which it was purchased.

#### 7. Used By Children

In case younger children use the battery, their parents teach how to use batteries according to the manual with care. And also, when children are using the batteries, pay attention to use it according to that or not.

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### **8. Keep Battery Away From Children**

Keep the battery out of the reach of younger children. And also, pay attention when the battery is taken out from the charger or equipment by little children.

### **9. Leakage**

If the skin or cloth is smeared with liquid from the battery, wash with fresh water. It may cause the skin inflammation.

Appendix

**B**

# Hazardous Materials Disclosure

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## **B.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury**

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
<b>Housing</b>	○	○	○	○	○	○
<b>Display</b>	○	○	○	○	○	○
<b>Printed Circuit Board</b>	○	○	○	○	○	○
<b>Metal Fasteners</b>	○	○	○	○	○	○
<b>Cable Assembly</b>	○	○	○	○	○	○
<b>Fan Assembly</b>	○	○	○	○	○	○
<b>Power Supply Assemblies</b>	○	○	○	○	○	○
<b>Battery</b>	○	○	○	○	○	○

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

## AUPS Series Power Module User Manual

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯 醚 (PBDE)
壳体	○	○	○	○	○	○
显示	○	○	○	○	○	○
印刷电路板	○	○	○	○	○	○
金属螺帽	○	○	○	○	○	○
电缆组装	○	○	○	○	○	○
风扇组装	○	○	○	○	○	○
电力供应组装	○	○	○	○	○	○
电池	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。  
 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-006 标准规定的限量要求。