Remote Power Manager (RPM) PDU Series

User Manual

◄ V1.0 ►

www.green-box.com.tw
www.data-av.com

Certifications

FCC

This equipment has been tested and found to comply with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:

(1) This device may not cause harmful interference
(2) This device must accept any interference received, including interference that may cause undesired operation.

CE

This equipment is in compliance with the requirements of the following regulations:
EN 55022: CLASS B

RoHS

All contents of this package, including products, packing materials and documentation comply with RoHS.

© 2009 by Green-Box
Green-Box Technology Co. Ltd. reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.
No part of this document may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of Green-Box Technology Co. Ltd.

Contents

1. Introduction 1
2. RPM Package 2
3. Features 3
4. Installation 4
5. Outlook 9
6. Telephone Access 11
7. Daisy Chaining 13
8. Option 15
9. Trouble Shooting 16
10. Specification 17
11. Abbr. Index 18
12. Remarks 19
13.Notice 19

1. Introduction

The RPM (Remote Power Manager) is an Internet ready device designed to allow administrators to remotely and individually control the AC power for up to eight connected devices, such as: servers, routers, modems and telephone networks. With the expandable function of allowing daisy chaining (cascading) of up to 15 client units, administrators can control a total of 128 devices.

The RPM offers easy set up and user-friendly communication and control methods. Most common connection of all is via the LAN using normal Ethernet connection. The other option is to connect an external modem to the built in RS 232 port to allow dialing up of the Internet. Once connected and properly set up, the administrator will be notified of a web IP address and the administrator can manage the power of the devices from anywhere in the world via the web browser.

The superiority of the RPM over other power management products is RPM gives you control through a telephone (tone signals) with no need of a modem connection. So even if networks lock up or Internet crashes, there is always a back up telephone control option for administrators to control devices. With such powerful features, administrators can be sure that they will always gain access to their devices no matter where they are in the world.

2. RPM Package

The standard RPM package contains a Remote Power Manager Unit with supporting hardware and software. The components of your package are:

- Remote Power Manager Unit.
- 2 piece of Rack mount Brackets.
- 1 piece of AC Power Cord.
- 8 piece of RJ-11 to RS232 NT Server Cables: For PC communication. (Option)
- 1 piece RJ-11 Cascade Cable: For RPM daisy chain.
- CD-ROM
  a. SNMP Utility: Configure SNMP card's IP address and upgrade firmware.
  b. MIB: Management Information Base for Network.
  c. User Guide (PDF document) for RPM and SNMP card.
  d. Linux safe shutdown utility.
  e. Adobe Acrobat Reader.

Product Descriptions

- **RPM PDU**

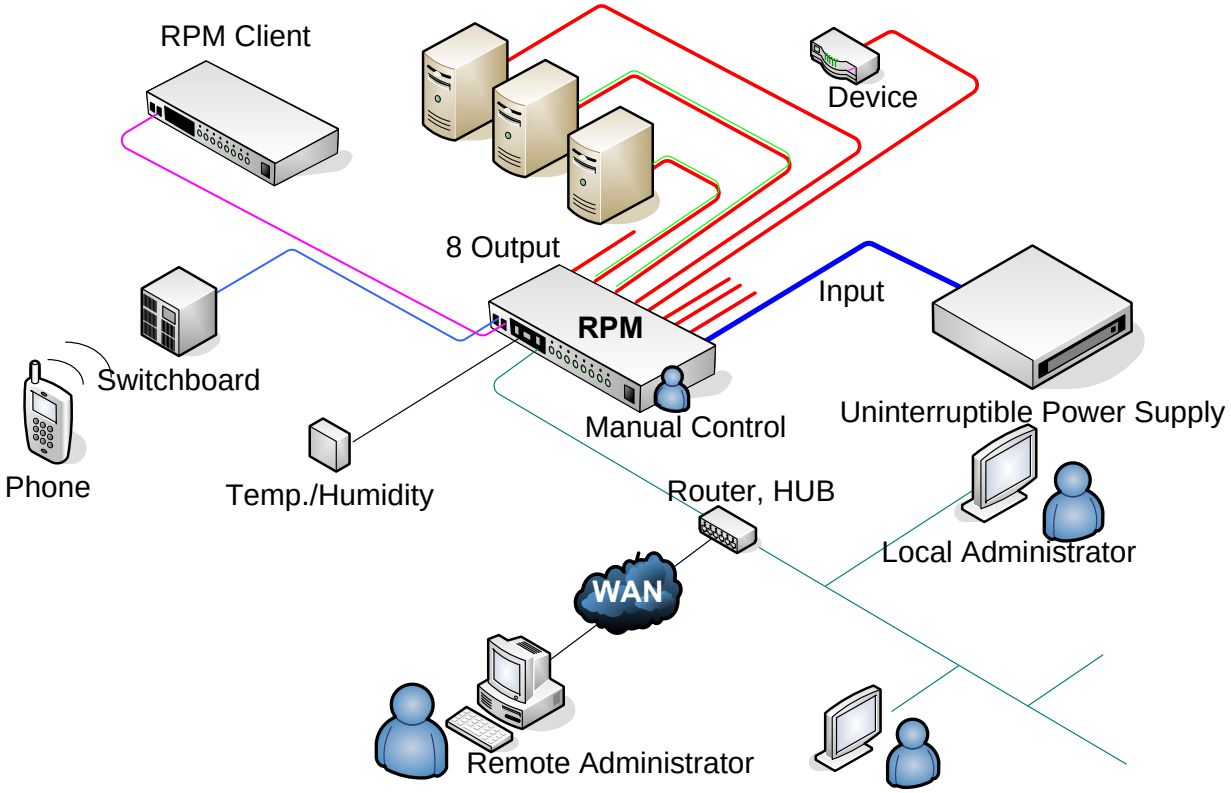
3. Features

- Turn ON/OFF all AC powered device via network and phone.
- Supports turn on or off connected equipment by manual.
- Circuits breaker protection
- Integral 10/100Base-T Ethernet port for connection to your TCP/IP network.
- Address-Specific IP security masks prevent unauthorized source from accessing the RPM menu through the network.
- Supports NMS to control RPM through MIB. User also can use MIB to develop their application interface.
- Download data and events log list to server.
- Daisy Chain expandable up to 16 units.
- Available in 115VAC, 230VAC models.
- When events occur, RPM can notify user by email and trap according to the pre-set conditions.
- Allows users to configure the sequence in which power is turned on or off for each outlet. This helps avoid in-rushes at start-up, which can cause overloaded circuits and dropped loads. Sequencing also allows users to predetermine which piece of equipment is turned on first so other equipment dependant on that unit will function properly.
- Supports Windows 2000、Windows XP 、Windows 2003 and Linux to execute safe shutdown and reboot.
- Customize and schedule to turn on or off the connected equipment.
- Can be attached the temperature and humidity detect sensor to protect equipment.
- Supports API. Users can develop their own control interface.

4. Installation

This section will guide you through the quick installation of the RPM.

■ Connection



■ Procedure

1. Install mounting brackets.

The RPM comes with brackets for mounting in a standard 19-inch rack. To mount the RPM into a rack performs the following procedure:

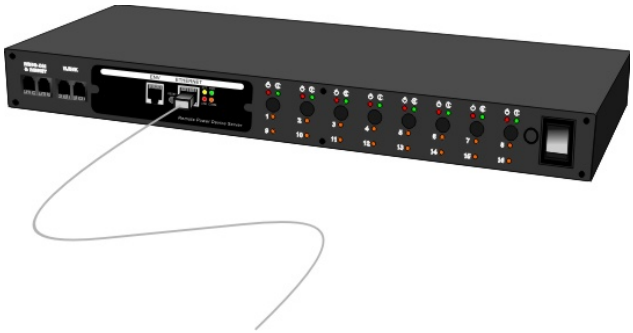
- Attach the mounting brackets to the unit as shown, using the four retaining screws provided for each of the brackets.
- Choose a location for the brackets. A notched hole on the vertical rail

denotes the middle of a U slot.

- Align the mounting holes of brackets with the notched hole on the vertical rail and attach with the retaining screws.

2. Connect all input and output connectors.

3. Connect Ethernet cable to RPM.



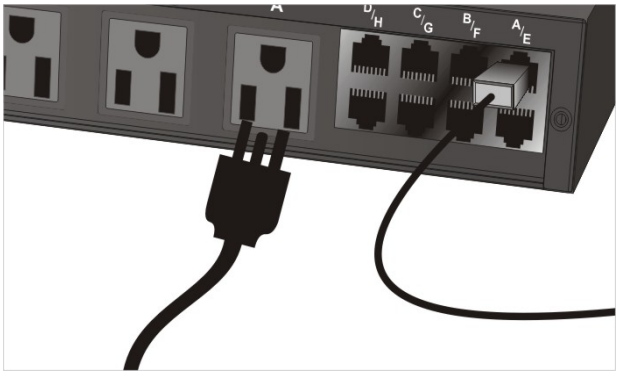
4. Program the IP address. (Please check the software user's guide).

5. Set RPM's front control buttons for Internet/remote on manually control. (Please check LED Table for the operation)

6. Use browser to monitor and control.

7. For NT shutdown setup, please use RJ11 to RS322 NT Server cable to connect with server
   3. Install the RJ11 to RS232 cable to server and RPM as shown.
   4. Connect the server power input to RPM output.
   5. Make sure the corresponding relation that Output A–Com. A，Output B – Com. B.

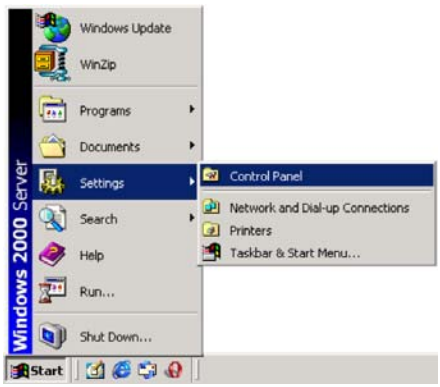
Note:
The OS must be set correctly, then the safe shutdown will work normally.



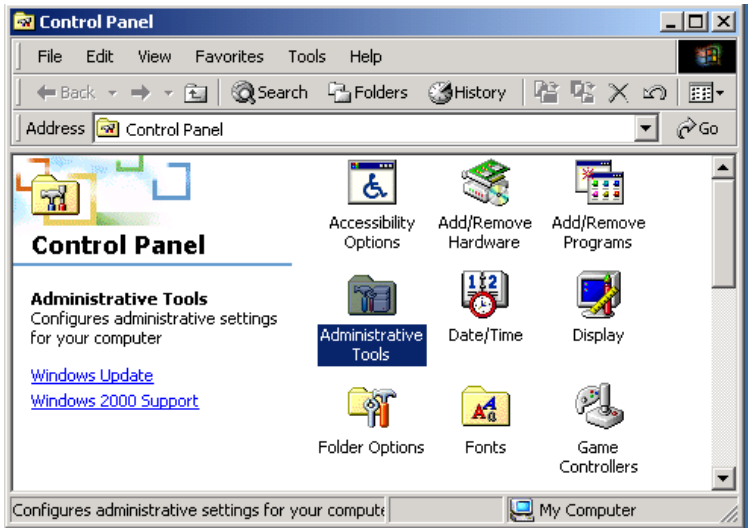
8. Use the following instruction to setup safe down in Linux.
   3. Decompress the RPM 1Linux.tar.gz
   4. Run Setup.
   5. Type "yes" to accept the license agreement.
   6. Select a correct serial port that NT cable connected.
   7. Install successfully.

9. Use the following instruction to configure control panel/UPS in Windows OS.

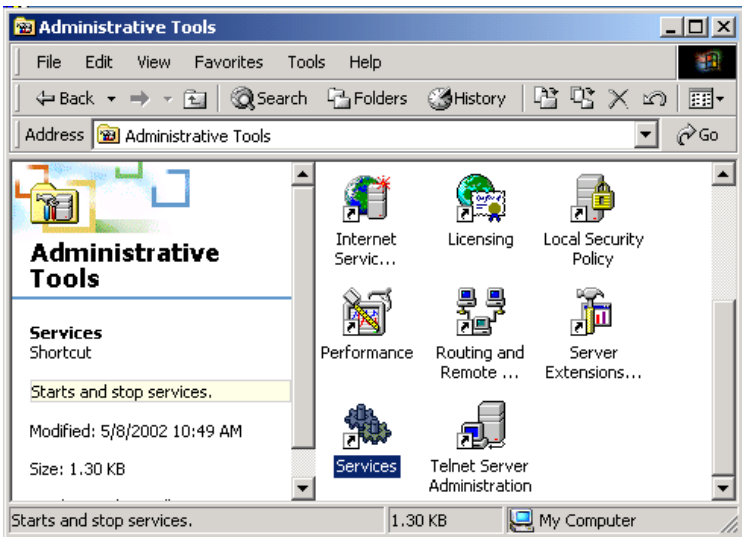
   3. Open your Windows 2000 Control Panel by clicking on **“Start”**, **“Setting”**, **“Control Panel”**.



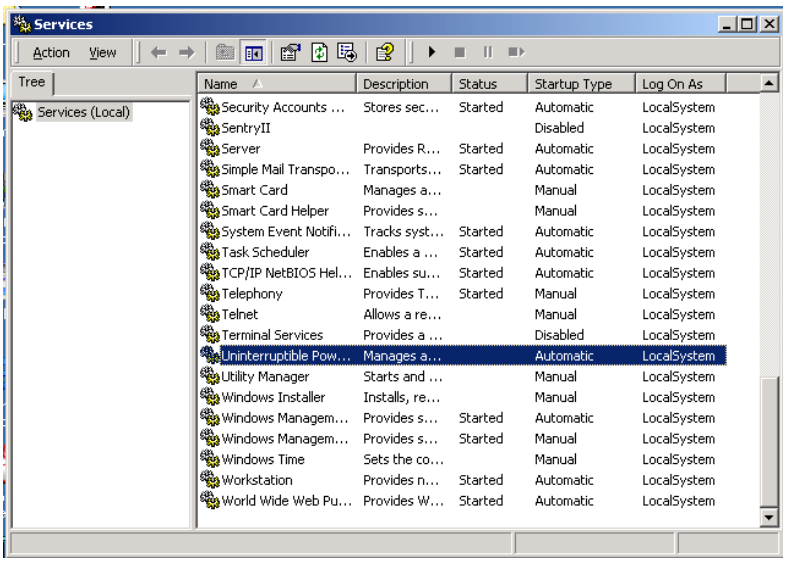
4. Double-click on the Control Panel's "Administrative Tools" icon.



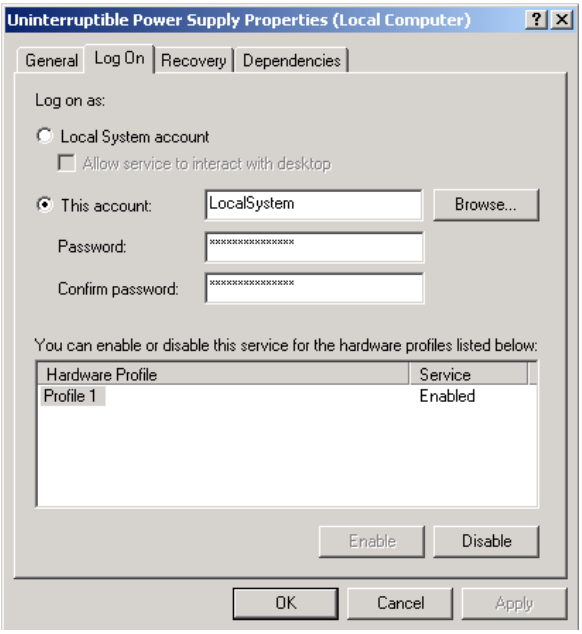
5. Double-click the "Services" icon.



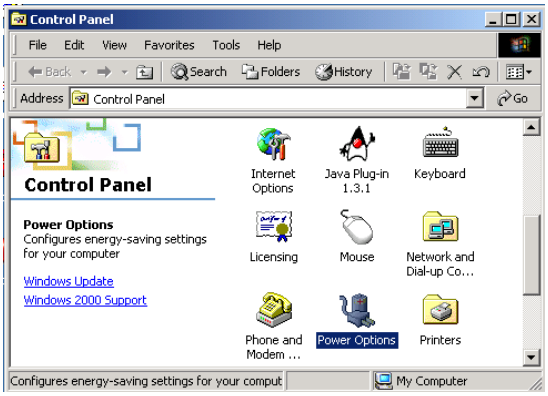
6. Double-click on the Uninterruptible Power Supply service



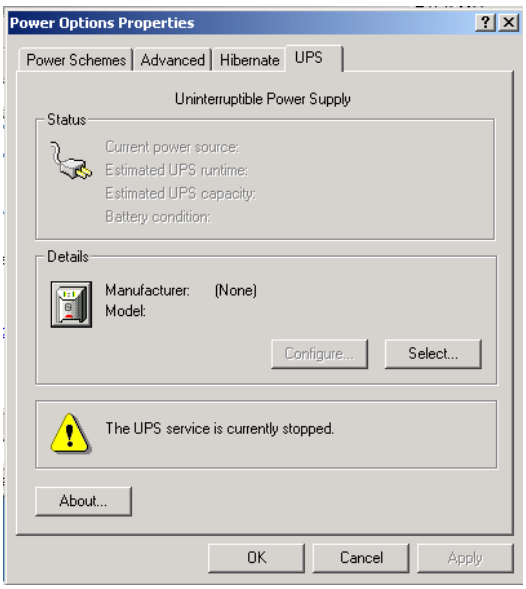
7. Select the “Log On As: This Account” button, input the appropriate account information, and then click “OK”.



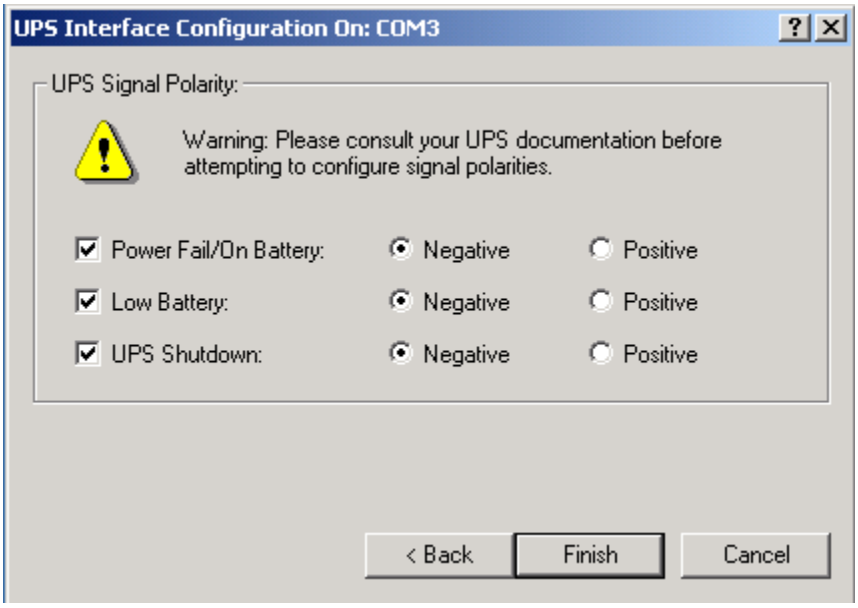
8. Double-click on the Control Panel’s “Power Options” icon.



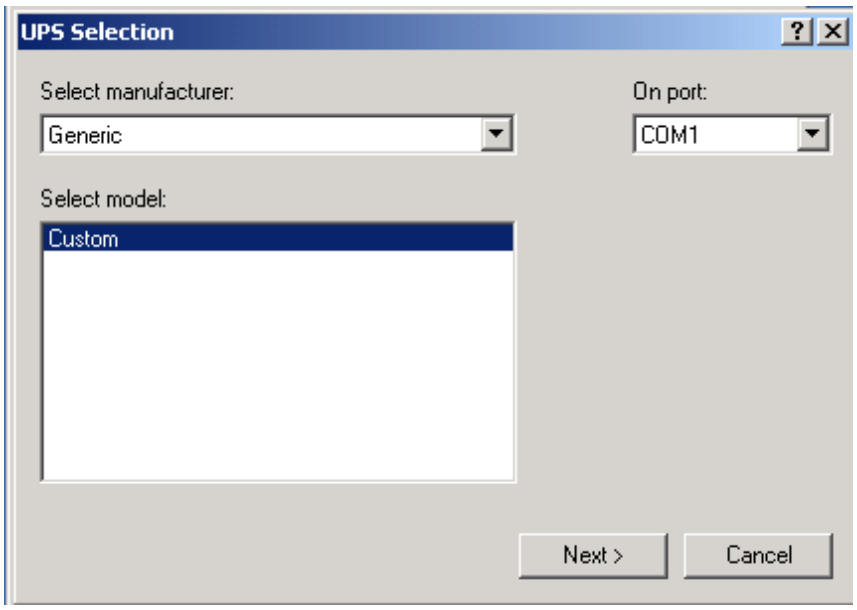
9. Select the UPS page, and then click on “Select...”



10. Choose the correct manufacturer from the “Select manufacturer” pull-down list, choose the correct COM port, and then click on “Next”.



11. Click on the boxes, as shown, and then choose “Negative” for the three voltage settings. Click on “Finish” to keep these settings.



12. Click “OK” at bottom of the “Power Options Properties” window to finish.

Note:
Please check the SNMP card user manual for the other functions

5. Outlook

■ RPM-SM Series Front Panel

1. Phone Control Port
2. Daisy Chain Link Port
3. Temperature & Humidity Port
4. SNMP Card Reset Key
5. RJ45 ETHERNET Port
6. LED
7. Daisy Chain LED
8. Manual Switch
9. Power LED
10. Remote Control LED
11. Circuit Breaker(A)
12. Main Switch

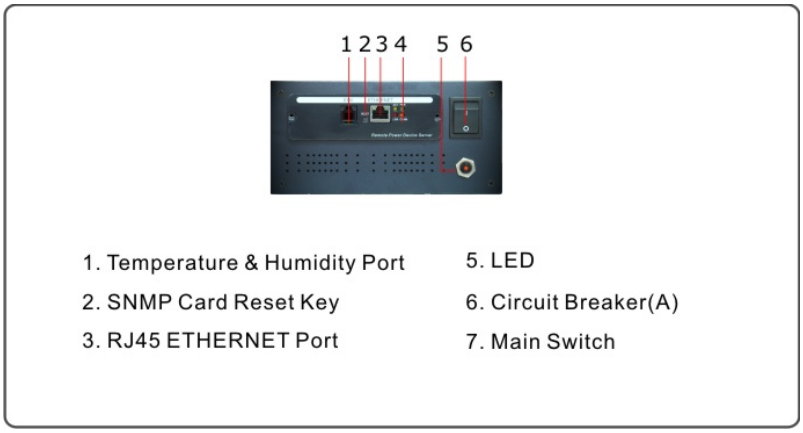
■ RPM-DM Series Back Panel

1. AC Input B
2. Circuit Breaker B
3. AC Iutput A
4. Output
5. Communication port

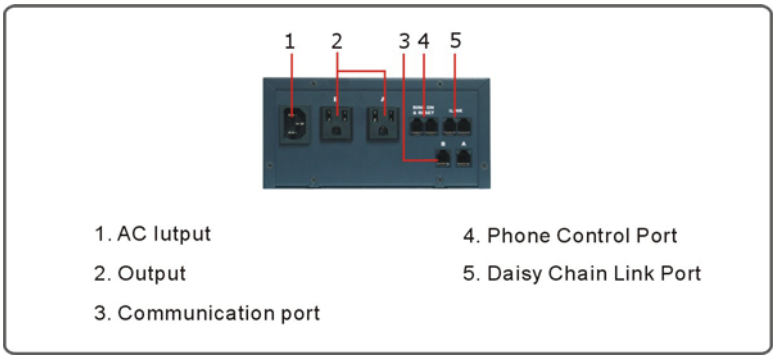
■ RPM-SM Series Back Panel

1. AC Input
2. Output
3. Communication Port

■ RPM-SM1511-0201 Front Panel



■ RPM-SX1511-0201 Back Panel



RPM LED Table

LED	ON	OFF	Flashing
Green	The momentary switch is disabled and the output receptacle is programmed for remote control.	The momentary switch is active and the receptacle may be turned on or off by pressing and releasing the switch	Pressing and holding the momentary switch for three seconds will change the state from remote to local control.
Red	The receptacle is on and providing power to devices	The receptacle is off and doesn't provide power.	The receptacle has internal fault.
Yellow	Indicate the RPM ID number. The master one-plugged with SNMP card, will display all the connected RPM ID numbers	It means the RPM ID is RPM 00.	

6. Telephone Access

This section will guide you through telephone to control RPM

Note:
Please first check the “RPM Setting” in the web page if the function is enabled.

1. Dial up the RPM.

2. After three rings the RPM will respond by sending out two short beeps to the caller. Then the RPM waits for the user to enter the password.

3. The user enters an access password (default password is 123456789#).

4. The RPM will send out 2 short beeps to confirm a successful login, or one long beep to deny access.

5. Once logged in, the remote user can punch in 4-8 digits. The first two digits specify which RPM, the next digit specifies which output receptacle and the next digit specifies which command. The last four digits specify the amount of time:
   1) Command format: XXNA#:
   2) XX - 01—16 is the RPM’s device number for a daisy chain, if there is no daisy chain, then any number is accepted.
   3) N - Outlet number: 1(A)—8(H), 9 controls all the outlets.
   4) A - Action type: 0=off, 1=on, 2=reset.
   5) I.E. 0111# RPM01 turn on Outlet A.
   6) I.E. 0120# RPM01 turn off Outlet B.
   7) I.E. 0212# RPM02 reset outlet A.
   8) The following commands can not be overlapped to execute.
   9) I.E. 01113600# means turn A on after 3600 minutes.
   10) I.E. 01103600# means turn A off after 3600 minutes.
   11) I.E. 01123600# means reset A after 3600 minutes.

6. Use the "*" key to cancel a command at any time.

7. To change the password. **The default password is 123456789#**. The user has to enter the previous password in order to change their password.
   Note:
   The Password has to have a minimum of 7 digits and can have a maximum of 10 digits.

8. The user enters 888#. Then the RPM responds with long beeps acknowledging access granted. The user then enters the new password as follows: 888XXXXXXXXXX#, and the RPM acknowledges with 2 short beeps. Then user inputs 888XXXXXXXXXX# the second time to re-confirm the new password. The RPM acknowledges with 4 short beeps, indicating that the password has been changed.
9. Forgot telephone interface password? Please do the following steps to

restore the default password.

1) Dial up the RPM.
2) After three sequence rings, the RPM will respond by sending out 3 short beeps to the caller and waiting for user to enter password. Then pressing the button A and H simultaneously on the RPM within twenty seconds.
3) When the LED A and H blinking, release the two buttons, the RPM will respond by sending out 4 short beeps to the caller. The password will be restored to default.

10. The RPM is in a waiting loop to receive the command string. Each command string should be entered within 20 seconds. After 180 seconds without any user input, the RPM will logout the user.

11. The 9 command set is for the administrator:
    1) 0190# to turn every port off.
    2) 0191# to turn every port on.
    3) 0192# to reset every port with a delay of 8 seconds, which will allow safe shutdowns.

12. The user enters 000# that can force to break connection with RPM.

13. Please dial “000” to log out the line.

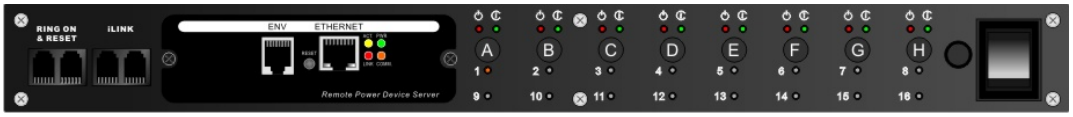
7. Daisy Chaining

The RPM can be Daisy Chained up to a maximum of sixteen units. Each RPM in the Daisy Chain must have its own unique identification number. The default ID# is “0“. The first RPM must have the Internet Power Management Card install and must be configured before you can begin Daisy chaining any additional RPM.

Note:
Only the first RPM requires the Internet Power Management Card. All of the other RPM in the Daisy Chain do not require that the Internet Power Management Card be installed.

Follow the procedure below to Daisy Chain the RPM:

- **Figure 1 - First RPM**



1. Make sure that the Terminator is plugged into the first RPM's iLink port (see Figure 1).

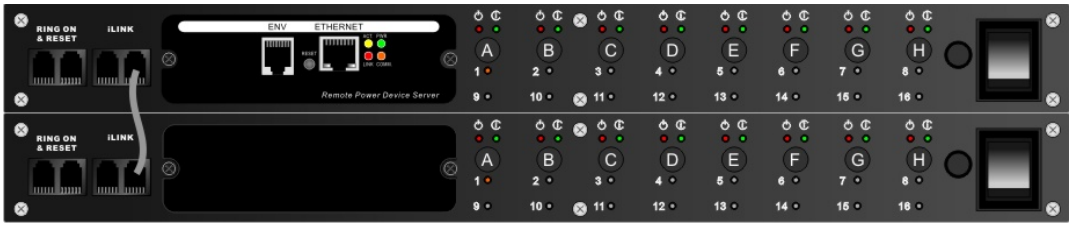
2. Plug the first RPM's power cord into utility power.

3. Turn the master power switch on.

4. Setup the RPM (see Setup Procedure page 9).

5. Configure the first RPM's ID number (each RPM must have it's own unique ID#, the default ID# is "0").

- **Figure 2 - First and second RPM**



6. Make sure that the second RPM has the Terminator plugged into the iLink port (see Figure 2).

7. Connect the first and second RPM together with the iLink cable.

8. Plug the second RPM power cord into utility power.

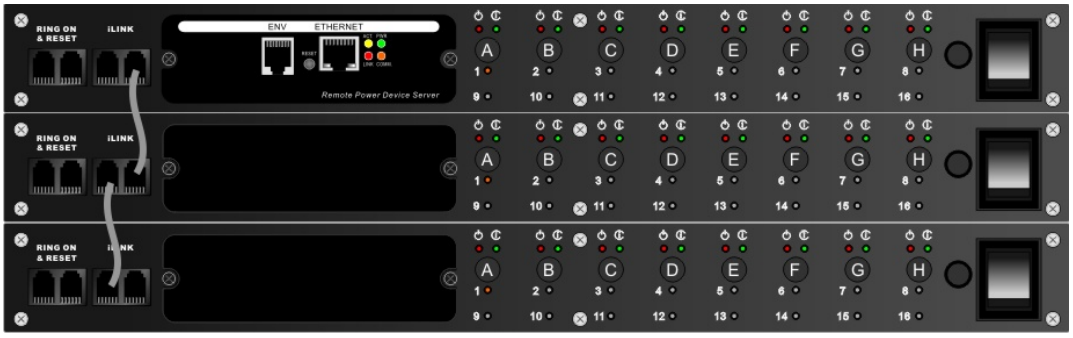
9. Turn the master power switch on.

10. Configure the second RPM ID number (each RPM must have it's own unique ID#, the default ID# is "0").

11. If there are only two RPM's required for this application, then this completes the Daisy Chaining procedure and the RPMs are ready for use.

12. If your application requires additional RPM's, then continue on with the Daisy Chaining procedure.

- **Figure 3 - First, second and third RPM**



13. Make sure that the third RPM has the Terminator plugged into the iLink port (see Figure 3).

14. Remove the Terminator from the second RPM.

15. Connect the second and third RPM together with the iLink cable.

16. Plug the third RPM's power cord into utility power.

17. Turn the master power switch on.

18. Configure the third RPM ID number (each RPM must have it's own unique ID#, the default ID# is "0").

19. If there are only three RPMs required for this application, then this completes the Daisy Chaining procedure and the RPM are ready for use.

20. If your application requires additional RPM's (maximum of sixteen), then repeat steps 13-19 of the Daisy Chaining procedure.

8. Option

■ Telephone Control

Use the dial tone to control the RPM.

■ ENV(Temperature and Humidity probe) connection

Plug the ENV to the ENV port in the front panel of RPM.

9. Trouble Shooting

Symptom	Possible Cause	What To Do
Fail to control the RPM via Phone.	Setup problem	1.Check the phone line if connected well? 2.If the phone line is busy? 3.If the option of Phone Controllable is set to “Yes” in the web page of RPM Setting?
Fail to access the RPM via browser.	1.Setup problem 2.RPM malfunction.	1-1. Check the IP address via SNMP utility? 1-2. Check the port number via SNMP Utility? 1-3. Try to access the other web site to check if the network is available. 1-4. If the access is blocked by the firewall? 2-1. Press the “Reset” Key to reset SNMP card. 2-2. Turn off RPM and wait 1 minute then just to turn on the RPM.
Server shutdown causeless	Setup Problem	1.Make sure this is not a schedule shutdown for server。 2.Check the RJ11 to RS232 cable if it is plugged right and well。 3.Check the com port selection if right in the OS?
All Leds are off	Power failure	1.Turn on the main switch. 2.Check the circuit breaker.
Forget the password for phone control		Please simultaneously press the button of A and H after three beeps and do not release until the A and H LED flash.
Forget the ID or password for web control		Before power on the RPM. Press the “reset” button and then turn on the RPM. Wait around 30 seconds and then just release the “reset” key. Then, ID and password will be reset.

10. Specification

Model Number	**RPM-SM/SN/DM/DN15xx series**	
SNMP Card Interface		
LAN Interface	(1) 10/100Mbps, RJ45	
ENV Interface	(1) RJ11, Temp./Humidity probe	
RPM Interface		
iLink Interface	(1) input & (1) output, connect to UPS, RPM; RJ11	
Phone Interface	(1) input & one output, RJ11	
NT Ports	(8) ports, RJ11	
Power Switch Button	RPM-SM/SN15XX series	(1) master switch & (8) switches for (8) output outlets
	RPM-DM/DN15XX series	
	RPM 2 port series	(1) master switch
Internet Mode Button	RPM-SM/SN15XX series	(8) internet mode switches for (8) output outlets
	RPM-DM/DN15XX series	
	RPM 2 port series	n/a
Power Output Outlets	RPM-SM/SN15XX series	(8) NEMA 5-15R [(8) IEC320R]
	RPM-DM/DN15XX series	
	RPM 2 port series	(2) NEMA 5-15R [(2) IEC320R]
Power Input	RPM-SM/SN15XX series	(1) NEMA 5-15P to IEC320P detachable power cord [(1) input power connector IEC320P]
	RPM-DM/DN15XX series	(2) NEMA 5-15P to IEC320P detachable power cord [(2) input power connector IEC320P]
	RPM 2 port series	(1) NEMA 5-15P to IEC320P detachable power cord [(1) input power connector IEC320P]
LED Indicator (RPM 2 port series without LED)		
On/Off Status	(8) red LEDs for (8) outlets	
Control Mode	(8) green LEDs for internet/non internet control	

ID of iLink Cascade	(16) yellow LEDs to indicate the ID of iLink cascade	
Operation & Environment		
Nominal Input Voltage	100-120 Vac [220-240Vac]	
Input Voltage Range	85 - 160Vac [170-300Vac]	
Nominal Input Frequency	50/60HZ full range	
Safety Output Capacity	RPM-SM/SN15XX series	12Amp [7 Amp]
	RPM-DM/DN15XX series	(2) 12Amp [(2) 7 Amp]
	RPM 2-Port series	12Amp [7 Amp]
Input Protection	RPM-SM/SN15XX series	15 Amp [10 Amp] circuit breaker
	RPM-DM/DN15XX series	(2) 15 Amp [(2) 10 Amp] circuit breaker
	RPM 2 port series	15 Amp [10 Amp] circuit breaker
Operating Temperature	0 TO 40 ºC	
Storage Temperature	-15 TO 50ºC (5 TO 122 ºF)	
Relative Humidity	0 - 95% non-condensing	
Net Dimensions H X W X D (mm)	RPM-SM/SN15XX series	1.7 x 17 x 6.4 inches 44 x 431.5 x 162.5 mm
	RPM-DM/DN15XX series	
	RPM 2 port series	3.5 x 7.2 x 7.5 inches 88 x 180 x 185 mm
Net Weight	RPM-SM/SN15XX series	5.5 (lbs) 2.5 (kgs)
	RPM-DM/DN15XX series	
	RPM 2 port series	3.0 (lbs) 1.8 (kgs)

11. Abbr. Index

ACPI	Advanced Configuration and Power Interface
AES	Advanced Encryption Standard
API	Application Programming Interface
APM	Advanced Power Management
BOOTP	Bootstrap Protocol
DDE	Dynamic Data Exchange
DFS	Distributed File System
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DSU	Data Service Unit
DTE	Data Terminal Equipment
FTP	File Transfer Protocol
GMT	Greenwich Mean Time
HTTP	Hypertext Transfer Protocol
ICMP	Internet Control Message Protocol
IGMP	Internet Group Management Protocol
IIS	Internet Information Server
IP	Internet Protocol
ISP	Internet Service Provider
LAN	Local Area Network
LLC	Logical Link Control
MAC Address	Media Access Control Address
MIB	Management Information Base
MIS	Management Information System
NAS	Network Attached Storage
NMS	Network Management System
PAP	Password Authentication Protocol
PCI	Peripheral Component Interconnect
PDC	Primary Domain Controller
PPP	Point-to-Point Protocol
PPPoE	Point-to-Point Protocol over Ethernet
RAS	Remote Access Service
RCP	Remote Copy Protocol
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
UDP	User Datagram Protocol
UPS	Uninterruptible Power Supply
WAN	Wide-Area Network

12. Remarks

I. Please read this operation manual carefully before operating the device.

II. To prevent potential power damage do not use 2-wire extension cords. Ensure DC outlets at PCs and displays are on the same phase and have correct and common grounding.

III. Limited Warranty:

(1) In no events shall the vendor's liability for direct or indirect, special, incidental or consequential damages, loss of profit, loss of business, or financial loss which hay be caused by the use of the product exceeds the price paid for the product.

(2) The vendor makes no warranty or representation, expressed or implied with respect to the contents or use of this documentation, and especially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

(3) The vendor also reserves the right to revise or update the product or documentation without obligation to notify any user of such revisions or updates. For further information please contact your vendor.

13. Notice

1. All other company or product names mentioned herein are trademarks or registered trademarks of their respective companies.
2. Specifications are subject to change without notice.
3. Please read user manual carefully before operating the device
4. Please use the power adaptor accompanied with this product. Warranty does not cover for damages caused by pairing other power adaptor
5. Please check all connecting devices are properly grounded to avoid electric failure
6. This product has limited warranty for one year from defects in material and workmanship. Items that are physically damaged, misused, tempered with or altered are void of warranty. For further details please contact your distributor. In case warranty sticker is damaged or missing, warranty is void. For further details please contact your distributor.