ServLINK

Power Management Module

BLACK BOX®
NETWORK SERVICES

Customer Support Information:

FREE tech support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**.
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BLACK BOX
724-746-5500

POWER   CONNECTED DEVICE   STATUS

ServLINK

Power
Management
Module
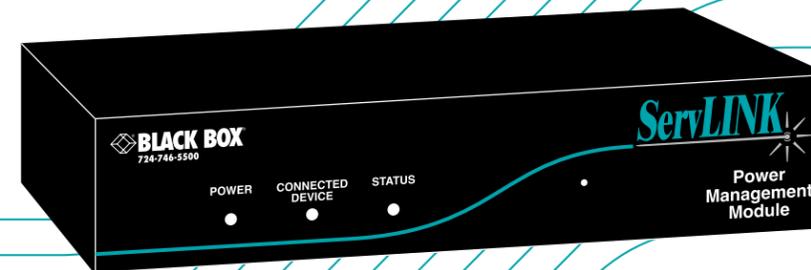
ACRPWR

Doc. No. 590-137-001 Rev. B

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Welcome to the ServSwitch™ Family!

Thank you for purchasing a remote-access accessory for use with your BLACK BOX® ServSwitch™ Brand KVM-switching system! We appreciate your business, and we think you'll appreciate the many ways that your enhanced ServSwitch system will save you money, time, and effort.

That's because our ServSwitch family is all about breaking away from the traditional, expensive model of computer management. You know, the one-size-fits-all-even-if-it-doesn't model that says, "One computer gets one user station, no more, no less." Why not a single user station (monitor, keyboard, and mouse) for multiple computers—even computers of different platforms? Why not a pair of user stations, each of which can control multiple computers? Why not multiple user stations for the same computer?

With our ServSwitch products, there's no reason why not. We carry a broad line of robust solutions for all these applications. Do you have just two PCs, and need an economical alternative to keeping two monitors, keyboards, and mice on your desk? Or do you need to share dozens of computers, including a mix of IBM® PC, RS/6000®, Apple® Macintosh®, Sun Microsystems®, and SGI® compatibles among multiple users with different access levels? Does your switch have to sit solidly on a worktable and use regular everyday cables? Or does it have to be mounted in an equipment rack and use convenient many-to-one cables? No matter how large or small your setup is, no matter how simple or how complex, we're confident we have a ServSwitch system that's just right for you.

The ServSwitch™ family from Black Box—the one-stop answer for all your KVM-switching needs!

✳

This manual will tell you all about your new ServLINK™ Power Management Module, including how to install, operate, and troubleshoot it. For an introduction to the Module, see **Chapter 2**. The Module product code covered in this manual is:

ACRPWR

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This equipment generates, uses, and can radiate radio-frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

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(a) Reorient or relocate the receiving antenna.

(b) Increase the separation between the equipment and the receiver.

(c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

(d) Consult the supplier or an experienced radio/TV technician for help.

This equipment has also been tested and found to comply with European standard EN50082-1:1992.
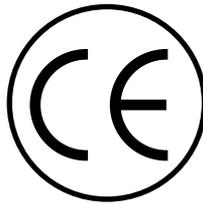
NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

Contents

1. Specifications

Compliance — EMI/RFI: CE (EN55022 Class A, EN50082); FCC Part 15 Subpart J Class A, IC Class/classe A; Electrical safety: UL® 1950, CSA C22.2 No. 950, EN60950

Interfaces — Power: IEC 320; Serial: EIA/TIA RS-232, proprietarily pinned on RJ-45 connectors

User Controls — Front-mounted recessed "default power" switch; All other functions are software-controlled

Indicators — (3) Front-mounted LEDs: POWER (power input), CONNECTED DEVICE (power output), and STATUS (serial communication with attached device); All other indications are software-based

Connectors — All rear-mounted; (1) IEC 320 male power inlet; (1) IEC 320 female power outlet; (3) RJ-45 female ports for serial communication

Power — 120 or 240 VAC (autosensing) at 50 to 60 Hz from utility-power (mains) outlet, through detachable power cord and IEC 320 inlet, to internal transformer; Consumption: Typically 30 watts

Maximum Altitude — 5000 ft. (1524 m)

Temperature Tolerance — Operating: 32 to 104˚F (0 to 40˚C); Storage: –4 to +158˚F (–20 to +70˚C)

Humidity Tolerance — Operating: 15 to 85% noncondensing; Storage: 5 to 90% noncondensing

Enclosure — Steel and high-impact plastic

Size — 1.8"H (1U) x 8.3"W x 4.9"D (4.4 x 21 x 12.4 cm)

Weight — 1.9 lb. (0.9 kg)

2. Introduction

NOTE

This manual is intended to be a basic hardcopy reference. For some features of the ServLINK Power Management Modules—especially for certain obscure and/or complex software-driven functions—the on-line help system of the ServLINK itself will provide more details.

2.1 Overview

The ServLINK™ itself (product code ACR3500A or ACR3600A) is a terrific tool for establishing keyboard, video, and mouse access to one or more PCs, routers, or other devices from a remote location. If you'd also like to remotely control AC power to the ServLINK and/or the attached devices, and have optional remote serial access as well, install one or more ServLINK Power Management Modules (product code ACRPWR) in your system. By daisychaining these Modules together, you can control and communicate with as many as 250 devices.

   Because the ServLINK operates completely independently of the attached devices' hardware, operating system, or application programs, you can use the Power Management Modules to cycle power to the devices even if they've crashed so badly that normal control is impossible. No on-site assistance is required; you control the devices' power sources just as if you were sitting in front of them.

   The Modules' remote serial access allows you to perform configuration or transfer files directly to or from an attached PC, router, etc., through its serial port, even if that device isn't attached to any local area network.

   A Power Management Module can be attached to any device that uses a detachable power cord with an IEC 320 type outlet. See the next chapter for full installation details.

2.2 The Complete Module Package

Your ServLINK Power Management Module package should include the following:

- The Module itself.
- One power patch cord with an IEC 320 female outlet on one end and an IEC 320 male inlet on the other. (The Module doesn't come with a cord that would run to the AC outlet—see below.)
- Two RJ-45 patch cables: one 3 ft. (1 m) long, one 8 ft. (2.4 m) long.
- Two RJ-45 female to DB9 female adapters.
- One RJ-45 female to DB9 male adapter.
- One DB9 female to DB25 male adapter.
- This manual.

If anything is missing or damaged, please call Black Box right away.

Normally you would run the Module's power patch cord from the Module to the power-controlled device, and run the *device's* power cord from the Module to the AC outlet. However, if the device's power cord isn't suitable for this purpose, we offer a number of power cords that can fit the bill. Cords are available for these countries:

- U.S. and Canada (our product code EPWR08)
- Japan (EPWR05)
- Australia (EPWR06)
- U.K. (EPWR04)
- Denmark (EPWR01)
- Italy (EPWR02)
- Switzerland (EPWR03)
- Other European nations (EPWR07)

IMPORTANT NOTE

Any power cords you use with Power Management Modules *must* be rated for 15 amps minimum.

3. Installation

3.1 Installing the Module Controlling Power to the ServLINK

Take these steps to install any Power Management Module you'll be using to control power to the ServLINK itself:

1. If the ServLINK is powered, power it down.

2. Plug one of the RJ-45 cables included with the Management Module into the "DATA IN" port on the Module, as shown in Figure 3-1.

RJ-45 control cable to ServLINK
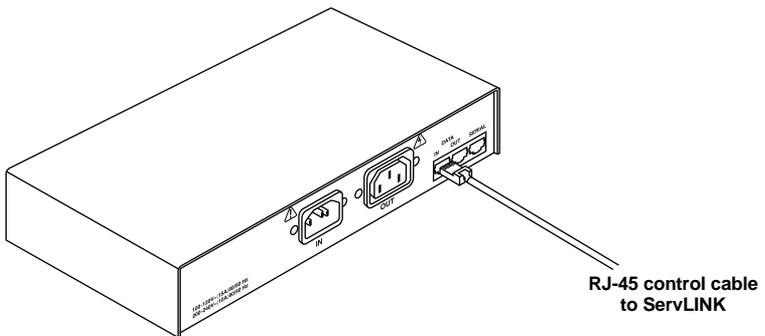
Figure 3-1. Attaching an RJ-45 cable to the Power Management Module.

3. Plug the other end of this cable into the port marked "DATA" on your ServLINK's Access Card, as shown in Figure 3-2. (This and other illustrations of the ServLINK in this chapter were done from a prototype unit; the rear panel of your unit might be arranged differently.)

RJ-45 control cable from Management Module
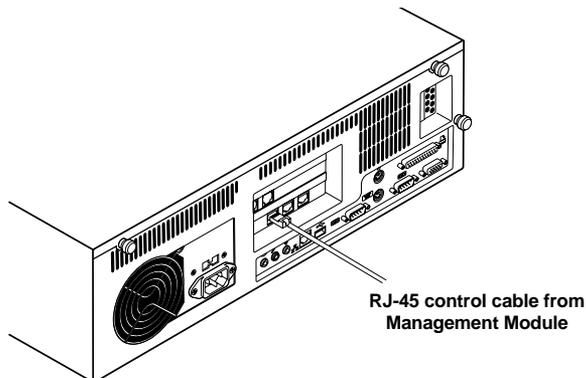
Figure 3-2. Attaching the same cable to the ServLINK.

4. Find the power patch cord that came with your Management Module. It will have a IEC 320 female connector on one end and an IEC 320 male connector on the other. Plug the male end of this cord into the power port marked "OUT" on the Module. Plug the other end of this cord into the power inlet on the ServLINK unit.

5. Finally, run the ServLINK's power cord from the Module's own inlet to a properly rated wall outlet. The ServLINK, the Module, and the wall outlet should now be interconnected, power-wise, as shown in Figure 3-3.
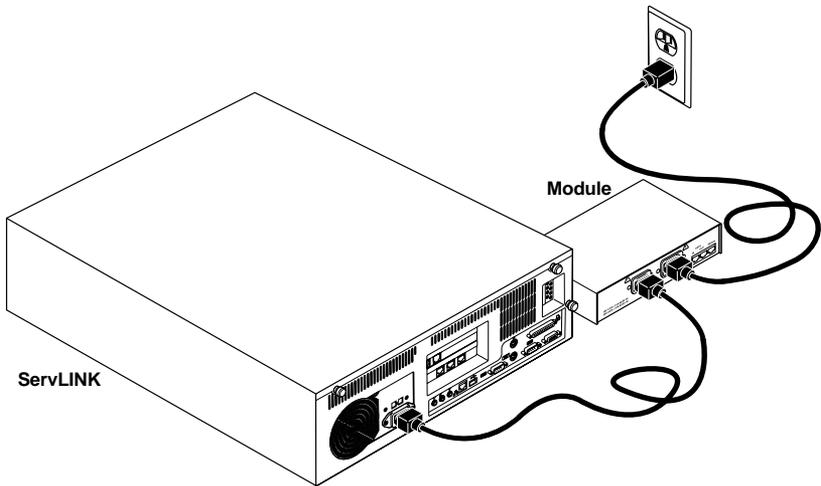
Figure 3-3. Attaching the power cords.

6. *Optional:* To ensure that you have constant dial-in reboot access to your ServLINK unit, you can connect a separate (external) modem and phone line to the Management Module, so that you have a secondary way to reboot the ServLINK in case the primary phone line is tied up or goes down.

   To do this, attach the RJ-45F-to-DB9M adapter included with the Management Module to the DB9F-to-DB25M adapter that's also included. Plug the DB25 male end of this assembly into the DB25 female "DTE" or "RS-232" port on the modem you'll be using. Run the other RJ-45 cable included with the Module from the Module's "DATA OUT" port to the RJ-45 jack on the adapter assembly, then run a standard RJ-11 phone cable (not included) from the modem's "Line" or "Telco" port to the second phone line's wall jack.

   For details about performing a reboot using this hardware, see **Section 4.3**.

3.2 Installing the Modules Controlling Power to the Attached Devices

Take these steps to install each of the Modules you'll be using to control power to the ServLINK's attached PC CPUs, routers, and other devices:

1. Power down the device that the Module will be power-controlling.

2. Plug one of the included RJ-45 cables into the "DATA IN" port on the Management Module.

3a. *If this is the first Management Module in the daisychain:* Use one of the RJ-45F-to-DB9F adapters included with the Module to connect the other end of this cable to one of the ServLINK's serial ports, as shown in Figure 3-4.
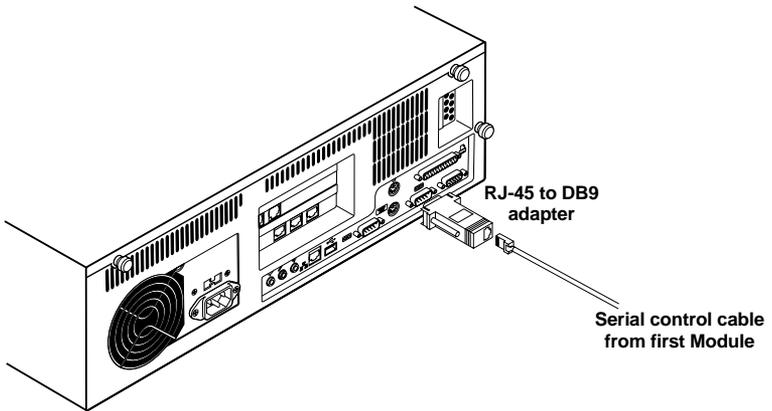
Figure 3-4. Attaching the cable from the first PC's Module to the ServLINK.

3b. *If this is **not** the first Management Module in the chain:* Connect the other end of the RJ-45 cable to the "DATA OUT" port on the previous Module in the chain.

NOTE

Make careful notes of which devices you attach to which Modules, so that you can associate the two in the ServLINK's software later, and have accurate remote control. (The ServLINK's software will refer to the first Module in the daisychain as "001," the second as "002," and so forth.) See Section 5.1**.**

4. (Optional) Plug one end of the other RJ-45 cable included with the Module into the port marked "SERIAL" on the Module you're installing. Take the other end of this cable and attach one or more of the Module's included adapters to connect to a serial device or a device's serial port in any of these ways:

- *To connect to the serial port of the Module's attached PC, router, network switch, etc. (the standard application) or to the serial port of another such device:* Attach one of the included RJ-45F-to-DB9F adapters to the cable and plug the adapter into the device's DB9M serial port. (If the device has a DB25M serial port instead, you'll also need a non-included DB9M-to-DB25F adapter.)

- *To connect to a modem, multiplexor, or other RS-232 DCE with a DB25F connector:* Attach the included RJ-45F-to-DB9M adapter to the cable, then add the included DB9F-to-DB25M adapter. Plug the DB25M end of the adapter assembly into the device.

- *To connect to any other RS-232 device that can be connected to a PC's serial port:* Attach the included RJ-45F-to-DB9M adapter to the cable, then (if necessary) add the included DB9F-to-DB25M adapter. Get any cable, adapters, etc., that you'd run from a PC's DB9M or DB25M serial port to the device. Plug these into the DB9M or DB25M end of the Module's adapter assembly and run them to the device. (Keep in mind that the normal distance limit for RS-232 communication is 50 ft. [15.2 m].)

5. (Optional) *If this is the last Management Module in the daisychain:* Plug one end of an RJ-45 cable (the other included one if you didn't already use it in step 4, one just like it otherwise) into the "DATA OUT" port of this Module. Take the other end of this cable and attach one or more of the Module's included adapters (or identical ones if you've already used any that you need—call Black Box Tech Support for extras) to connect to a "pass-through" serial device that you can communicate with when none of the Power Management Modules are active. Refer to the "bullet points" in step 4 above for how to do this.

6. Connect the male (inlet) end of the included power patch cord to the port marked "POWER OUT" on the back of the Management Module.

7. Connect the female (outlet) end of this cord to the power inlet on the device that the Module will be controlling.

8. Finally, run the device's power cord from the Module's inlet to a properly rated wall outlet.

3.3 After Installing the Modules

Once you've installed all your Modules, cables, power cords, etc., your power-managed ServLINK system should be ready to be powered up. When you do so (see the next section), the ServLINK's control software will automatically sense that you've added the Power Management Modules. Refer to **Section 5.2** for instructions on configuring the Modules.

Figure 3-5 shows the logical layout of a ServLINK system that includes Power Management Modules, and Figure 3-6 (on the following page) shows the physical layout of such a system.
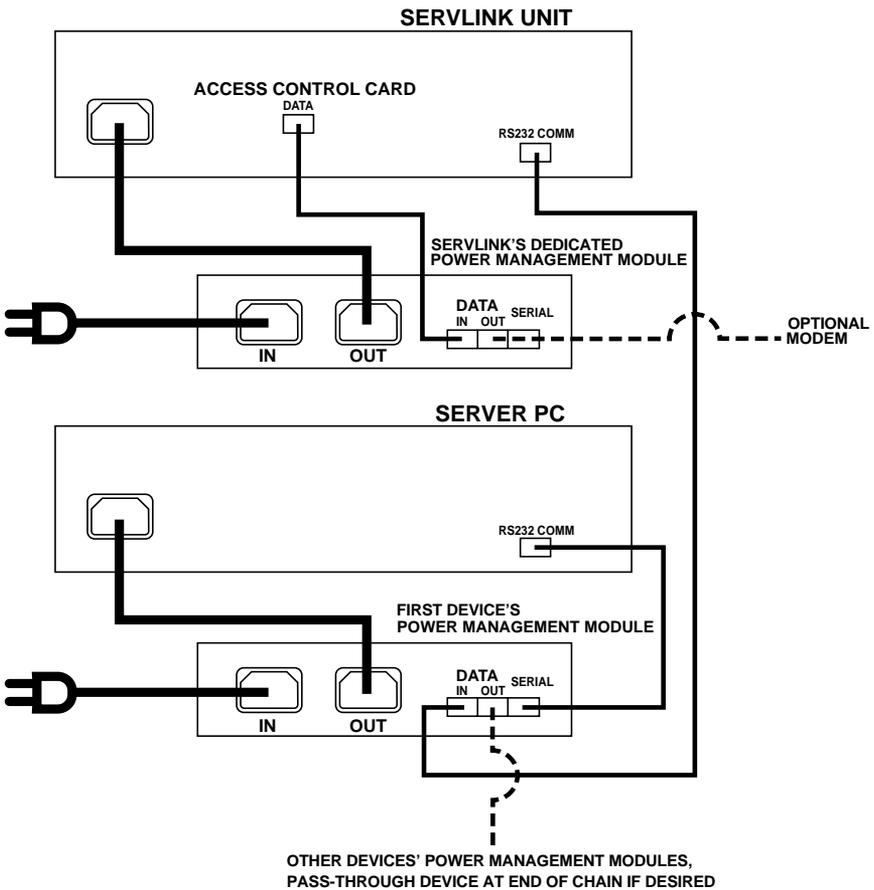
Figure 3-5. Management-Module connection logic.

To
optional
modem

To additional Power
Management Modules
attached to other devices,
and/or to an optional pass-
through serial device
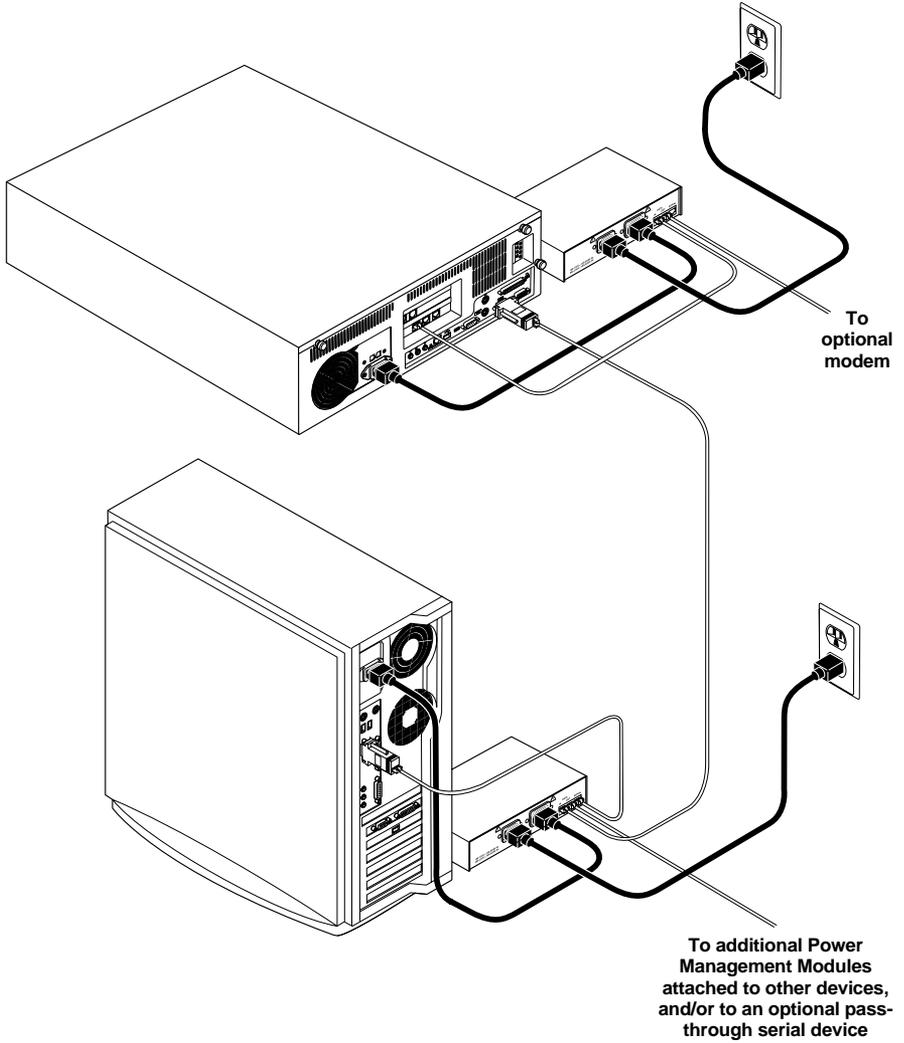
Figure 3-6. A ServLINK system with Management Modules installed.

3.4 Initial Power-Up

When all of your equipment is in place, take these steps to power up the devices at your local site:

1. Turn the Power Management Modules ON.

2. Turn ON the ServLINK by pressing the large button marked ◆ on the ServLINK's front panel. The ServLINK will begin booting (it runs Microsoft® Windows NT®).

3. Turn ON the attached monitor and any other powered attached devices and peripherals.

4. If you're connected to a network, follow your normal operating procedures to log into your network as usual. You should be able to start working with the ServLINK right away: It ships with the default Windows NT user name "Administrator" and no password, so until you change these settings, you can simply press [Enter] to log in.

   Once you've logged in, pcANYWHERE® loads, followed by the ServLINK application. Once the system has completely booted, you should see the line "ServLINK Remote Control System - Main Menu" at the top of your screen. See **Section 5.1**.

   (Please note that ServLINK ships with only the TCP/IP network protocol installed and is configured with a static IP address. Consult with your network administrator about how to configure the network to support the ServLINK.)

5. Turn ON any attached KVM switches.

6. Turn ON your CPUs.

Your system should now be ready for initial configuration.

NOTE

Before having the ServLINK serviced—if you ever need to—power it down by turning it OFF and unplugging it, or by shutting OFF power to it through its Power Management Module. (Also power down all of the attached computers if possible.)

4. Operation

4.1 Controls and Connectors

The front panel of the ServLINK Power Management Module, shown in Figure 4-1, uses three LEDs to keep you informed of the Module's status at all times:

- The green "POWER" LED will light while the Module is receiving power.

- The green "CONNECTED DEVICE" LED will light while power is being passed through the Module to whatever device it is powering.

- The green "STATUS" LED will light while the ServLINK is communicating with the Module.

The Power Management Module also has an unmarked recessed power-output switch on its front panel. By inserting a paper clip, pin, etc., and pressing the switch, you can manually toggle the Module's power output ON or OFF. The CONNECTED DEVICE LED will light or go dark accordingly. (The Module's "Power" reading in the ServLINK's main Control Module Processing dialog box— see **Section 5.1.1**—will also change accordingly once you repoll your Modules. Be aware that you can always toggle the Module's power ON and OFF through the Control Module Processing: Settings dialog box; see **Section 5.1.2**.)
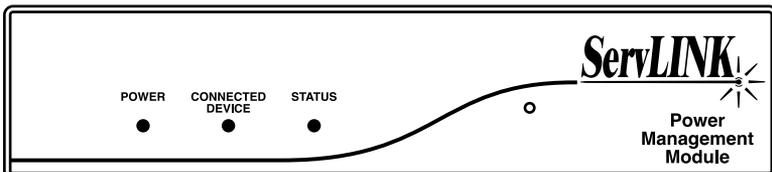
Figure 4-1. The Module's front panel.

The rear panel of the ServLINK Power Management Module, shown in Figure 4-2, has three RJ-45 jacks for control and communication:

- The "DATA IN" jack receives control information from the ServLINK, through any lower-numbered Modules.

- The "DATA OUT" jack sends data to, and receives data from, higher-numbered Modules in the daisychain or the optional pass-through device at the end of the chain.

- The "SERIAL" jack can be used to send data or files through the ServLINK to the attached power-controlled device (or any other RS-232 device), or to receive data or files through the ServLINK from the device.

There are also two IEC 320 connectors on the rear panel:

- The male inlet marked "IN" is for input power from a wall outlet, UPS, etc. The Module's own power cord should be attached to this.

- The female outlet marked "OUT" is for output power to the attached power-controlled device. The Module's power patch cord should run from this connector to the device's inlet.
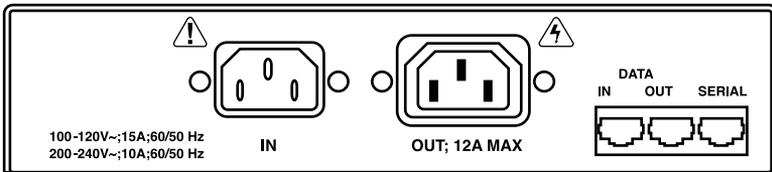
Figure 4-2. The Module's rear panel.

4.2 Rebooting the ServLINK Itself

4.2.1 PRIMARY (RING-RESET) REBOOTING

The most common use for the ServLINK Power Management Modules is for remote or automatic rebooting of the ServLINK system. If you've installed a Power Management Module to control power to the ServLINK itself, as described in **Section 3.1**, you can dial in to the ServLINK from anywhere in the world and cycle the ServLINK's power: When you let the phone ring more than a certain preset number of times, independent circuitry inside the ServLINK will send a command to the Power Management Module to perform an automatic power cycle; this will reset the ServLINK if it has locked up.

Select Reset Options from the Other menu in the ServLINK's application program—see **Section 5.4**—to tell the ServLINK to count the number of incoming rings on the attached phone line. A typical setting for the ring-reset option would be "Enable Reboot on less than 3 rings" and "Enable Reboot on more than 6 rings." Because the ServLINK's internal modem will normally answer on the fourth ring, you can call, allow the line to ring twice, and hang up to trigger a reboot. If this attempt fails—which you'll know, apart from any other indication, if you call back a few minutes later and the modem doesn't answer or can't answer on the fourth ring—you can allow the line to ring more than 6 times and *then* hang up to trigger a reboot.

4.2.2 SECONDARY (PASSWORD) REBOOTING

If for some reason the ServLINK's modem doesn't hang up the phone line when the ServLINK locks up, or if that phone line goes down, or if you want to disrupt a user's session for security reasons, you can use an alternate reboot method: As described in step 6 of **Section 3.1**, connect an external modem (attached to a different phone line) to the ServLINK's Power Management Module. Use any terminal communications program to call this modem and type in a 10-character password to trigger a power cycle. Set the password using the Reset Options dialog box available from the ServLINK's Other menu; see **Section 5.4**.

4.3 Rebooting the Attached Devices

You can also connect one or more ServLINK Power Management Modules to one of the ServLINK's serial ports in order to control power to servers, routers, or other devices, whether they're otherwise administered through the ServLINK or not. Control information from the ServLINK, by way of any lower-numbered Modules, is received on a Module's "DATA IN" port and passed automatically through its "DATA OUT" port to any higher-numbered Modules, so it's easy to link and access as many as 250 Modules.

You can use the ServLINK's application program to reboot any device properly connected to a Power Management Module. Dial into the ServLINK—or connect to it through a LAN—and select Control Module Processing from the Switch menu. When you do, the program will poll the ServLINK's serial port and identify and list any Modules attached to it. You can activate any Module in the list—only one Module can be active at any given time—and send commands to that Module to power ON, power OFF, or reboot the attached device. For more details, see **Section 5.2**.

Additionally, each Power Management Module has a port labeled "SERIAL" that you can connect to the serial port of a power-controlled PC or router, or to any other RS-232 serial device. Any time you activate a given Module, the ServLINK system can communicate directly with the attached serial device (control it through a terminal emulator, transfer files to and from it, etc.) as if it were directly connected to one of the ServLINK's own serial ports. For full instructions, see **Section 4.4**.

4.4 Transferring Files To and From the Attached Devices

Here's an example of the typical steps used to transfer files from a remote PC to a local PC through a daisychain of ServLINK Power Management Modules:

1. Transfer all required files from the remote PC to a temporary directory on the ServLINK using pcANYWHERE (or other supported remote-access package).

2. Pull down the Switch menu at the ServLINK application's Main Menu, then select the Control Module Processing option. The Control Module Processing dialog box appears (see **Section 5.2**). Select the Management Module connected to the local PC to which the files need to be transferred. Activate that Management Module if you haven't already done so; this will open up a direct link from the ServLINK's serial port to the PC's serial port through the Module chain. Click the "Exit" button to close the Control Module Processing box.

3. Pull down the Switch menu again; select Switch PCs this time. The main Switch PCs dialog box appears. Move the highlight bar to the Host PC you want to transfer the files to and double-click it to select it. The ServLINK will go into Host Mode and you will be able to directly control that PC.

4. Start up a file-transfer program such as pcANYWHERE or HyperTerminal on the Host PC. Note the program's settings for the PC's serial port—data (baud) rate, stop bits, flow control, etc.—so you can make sure that these settings agree with those for the ServLINK's own serial port, which you'll be configuring (if necessary) in step 6.

5. Switch back to the Menu Mode and minimize the ServLINK application's window.

6. From the Windows® desktop initiate a file-transfer program on the ServLINK that is compatible with the file-transfer program initiated on the active PC in step 4 above. For example, if pcANYWHERE was initiated in a Host mode in step 4 above, initiate pcANYWHERE in a remote mode on the ServLINK. Make sure that the program's settings for the ServLINK's serial port agree with the settings for the PC's serial port as noted in step 4 above.

7. Use the file-transfer software to transfer all files from the temporary directory in the ServLINK, where you put them in step 1, to the active PC.

8. Delete the transferred files from the ServLINK's temporary directory.

9. Terminate file-transfer processing on the ServLINK and maximize the ServLINK application's window again.

10. Switch to Host Mode and then terminate file-transfer processing on the active PC.

11. Resume normal ServLINK processing.

Take steps almost identical to these to transfer files from the active Local PC to a Remote PC; the only difference is that you would transfer the files from the active Local PC to the ServLINK's temporary directory *first, then* transfer them using pcANYWHERE (or other supported remote access package) from the ServLINK to the Remote PC.

The ServLINK doesn't monitor file transfers, and won't be able to tell you whether a given transfer succeeded or failed. Most file-transfer programs will be able to do so themselves, however.

NOTE

If you have a single Host PC attached to the ServLINK, and serial file transfers between it and the ServLINK repeatedly fail, check the pinning of the serial cable that runs between them and the pinning of any attached adapters. The end-to-end pinning must be correctly crossed for null-modem DTE-to-DTE communication; if it isn't, you'll need to use a different cable and/or adapters.

Please contact Black Box Technical Support for further information.

5. The ServLINK Menu System

Except for the recessed "default power" switch on their front panel (see
Section 4.1), the ServLINK Power Management Modules are configured and
controlled entirely through the menu system of the ServLINK's application
program. This program will run automatically when you power up the ServLINK,
and after any necessary login procedure—see the start of **Chapter 6** in your
ServLINK manual—the ServLINK's Main Menu will appear, as shown in Figure 5-1.

Figure 5-1. The Main Menu.

As you can see, you have seven primary menus to choose from; these are described in **Sections 6.1** through **6.7** of the ServLINK manual. Four options accessible through this menu system concern the Power Management Modules:

- Control Module Processing in the Switch menu. Use this option to trigger power ON, power OFF, and reboot actions. See **Section 5.1** of this manual.

- Control Module Configuration in the Switch menu. Use this option to configure the Modules in different ways. See **Section 5.2**.

- Users in the Security menu. Use this option to specify which users are allowed to access which Modules. See **Section 5.3**.

- Reset Options in the Other menu. Use this option to set up dialup rebooting of the ServLINK itself. See **Section 5.4**.

5.1 Control Module Processing

NOTE

Before activating Control Module Processing for the first time, select Control Module Configuration (see Section 5.2**) and specify which of the ServLINK's COM ports that the daisychain of Power Management Modules is attached to. The default COM port will be COM1 if you don't specify a COM port; obviously, if that isn't the correct port, the ServLINK won't detect the Modules at all.**

5.1.1 THE MAIN DIALOG BOX

When you select "Control Module Processing" from the Switch menu, the dialog box shown in Figure 5-2 appears.
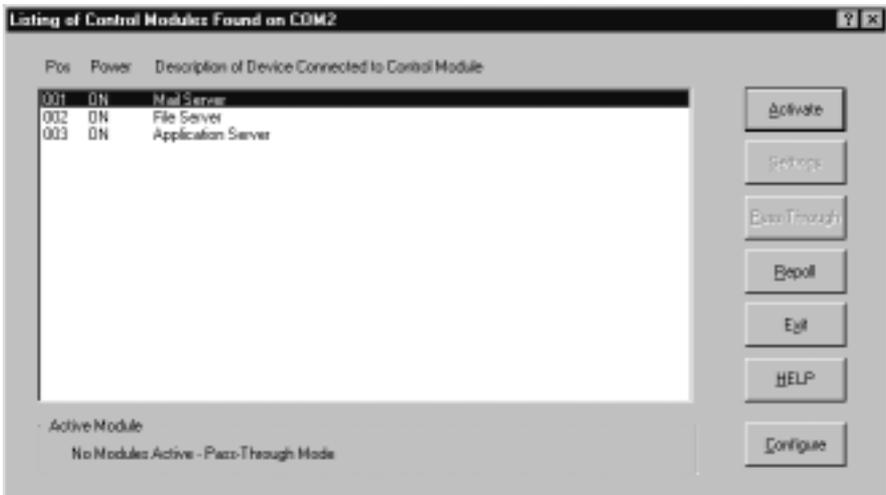
Figure 5-2. The Control Module Processing main dialog box.

As soon as it displays the box, the ServLINK immediately polls the COM port specified in Control Module Configuration (see **Section 5.2**) for an attached daisychain of Power Management Modules. (If you've installed a Management Module that controls power to the ServLINK itself, it's attached differently and can't be accessed from here. It only responds to dial-in reboot requests—see **Section 5.4**.) The polling process takes about one second per Module. During the polling process, the ServLINK determines if (1) new Power Management Modules have been added to the chain, (2) Modules have been deleted from the chain, or (3) the physical positions of any Modules have changed, since the last time the daisychain was polled. If any of these events have occurred, applicable messages are displayed on the screen at the end of the polling process and the changes are

recorded in the ServLINK event log. Also, any active Power Management Modules are cleared (deactivated) during the polling process, which puts the daisychain into "pass-through mode."

If no Power Management Modules are detected during the polling process, an appropriate message is displayed, and the Activate, Settings, and Pass Through buttons on the right of the window are grayed out. When this occurs, it is likely the wrong COM port has been specified, another device in the ServLINK (often the mouse) is interfering with access to the COM port, or the daisychain is not properly installed.

Note that when ServLINK user security is enabled and the current user doesn't have access rights to all of the Power Management Modules in a daisychain, then only those Modules for which the user has access rights appear here in the Module list. For information about setting users' access rights to the Power Management Modules, see **Section 5.3**.

Here's what the components of the main Control Module Processing box are for:

- **Pos**
  This column lists the "position numbers" of the Power Management Modules in your Module daisychain. The "first" Module—the one controlling power to the first computer, and attached directly to the serial port of the ServLINK itself—is number 001. The second one, attached to the first's IN port, is number 002, and so on.

- **Power**
  This column indicates whether the Module is supplying power to the device it's attached to(ON) or not (OFF).

- **Description of Device...**
  This column lists any description entered for the device attached to this Module in the matching field in the "Control Module Processing: Settings" window (see **Section 5.1.2**).

- **Activate**
  Highlighting an entry and selecting this option will allow you to activate the selected Power Management Module, so that it's ready to receive commands or data from the ServLINK. Only one Module can be active at a time.

- **Settings**
  Highlighting an entry and selecting this option will bring up the "Control Module Processing: Settings" window (see **Section 5.1.2**), at which you can cause this Power Management Module to turn its device ON or OFF or reboot it, or set up conditions under which this will happen automatically.

- **Pass-Through**
  Selecting this option will clear any active Power Management Module and allow serial data to pass through to and from any "pass-through device" you've installed at the end of the Power Management Module daisychain (see step 5 in **Section 3.2**).

- **Repoll**
  Selecting this option will cause the ServLINK to recheck the currently specified COM port for attached Power Management Modules.

- **Exit**
  Click this button to return to the Main Menu.

- **Help**
  Click this button to get on-line help for this box.

- **Configure**
  Selecting this option will bring up the Control Module Configuration dialog box (see **Section 5.2**), at which you can change some of the ServLINK's configuration options that apply to Power Management Modules.

5.1.2 THE SETTINGS DIALOG BOX

When you click "Settings" at the Control Module Processing box, the dialog box shown in Figure 5-3 appears.
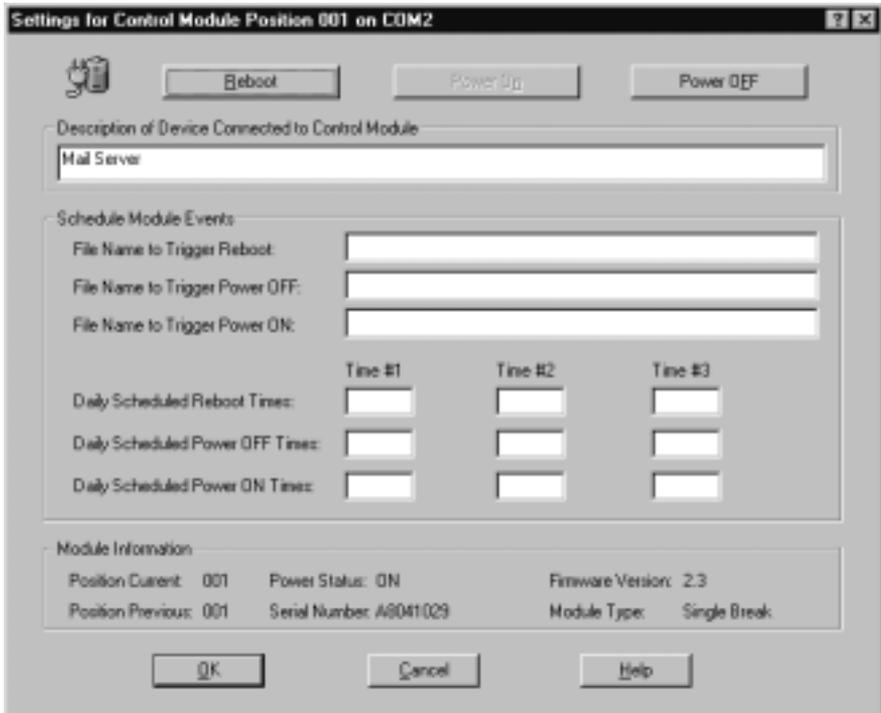
Figure 5-3. The Control Module Processing: Settings dialog box.

Here's what the components of the "Control Module Processing: Settings" box are for:

- **Reboot**
  Click this button to reboot the PC or other device attached to this Power Management Module. If "Require Reasons for Power OFF actions" is checked in the Control Module Configuration window (see **Section 5.2**), you will be required to give a reason for doing this.

- **Power ON**
  Click this button to turn ON power to the PC or other device attached to this Power Management Module. (If the power is already ON, this option will be grayed out.) If "Require Reasons for Power ON actions" is checked in the Control Module Configuration window (see **Section 5.2**), you will be required to give a reason for doing this.

- **Power OFF**
  Click this button to turn OFF power to the PC or other device attached to this Power Management Module. (If the power is already OFF, this option will be grayed out.) If "Require Reasons for Power OFF actions" is checked in the Control Module Configuration window (see **Section 5.2**), you will be required to give a reason for doing this.

NOTE

Keep in mind that any time you need to quickly turn a Module's power output to the attached device ON or OFF, you can do so by pressing the recessed power-output switch on the Module's front panel; see Section 4.1**.**

- **Description of Device...**
  You can enter a description in this field up to 40 characters long for the PC or other device attached to the Power Management Module.

- **Schedule Module Events**
  In these fields, you can specify two things that can cause the ServLINK to signal the Power Management Module to reboot, power OFF, or power ON the attached PC or other device:

  – In the "Daily Scheduled..." fields, you can enter as many as three separate clock times (in military-time format) at which events will occur daily. For example, you can set the Module to power ON a PC at 0600 (6 a.m.) at the start of each day, reboot it at 1730 (5:30 p.m.), and power it OFF every night at 0200 (2 a.m.).

  – In the "Files to Trigger..." fields, you can enter the full pathnames of "trigger files" that the ServLINK will watch for. When the files appear, the ServLINK will delete them, then tell the associated Module to perform the specified action.

    For example, if you've entered the pathname "C:\POWER\ON.TXT" in the "File to Trigger Power ON" field for a given Module, then whenever a file named "ON.TXT" appears in the "C:\POWER" directory, the ServLINK will delete ON.TXT, then command that Module to turn ON its power output.

    You can use this feature to trigger events in several ways:

    - *On a schedule:* Perhaps you've specified "C:\POWER\ON.TXT" as the "File to Trigger Power ON" for a Module, as in our example above. You could use a Windows NT "at" command to schedule an automatic task that writes the file ON.TXT to the C:\POWER directory—triggering the ServLINK to have the Module power ON its attached device—every day at 8:00 a.m.:

      ```
      at 0800 cmd /c copy c:\temp\on.txt c:\power
      ```

- *As a response to another event:* Let's say you have a batch file on one of your admin PCs called "SHUTDOWN.BAT" that your SNMP program runs whenever it traps serious policy violations on a certain server. If you specify "C:\MODULE\SHUTDOWN.BAT" as the "File to Trigger Power OFF" for that server's Module, you can insert a final line in SHUTDOWN.BAT that instructs the batch file to copy itself across the network to the ServLINK's C:\MODULE directory. Once the ServLINK sees the copy of the file there, the ServLINK will delete the copy and tell the Module to power the server OFF.

- *Immediately:* If you've entered "C:\REBOOT.TXT" in the "File to Trigger Reboot" field for a Module, and at some later point for whatever reason you need to reboot the Module's attached device but you don't have quick access to the ServLINK application, you can copy any file at all to the ServLINK's main C: directory and rename the *copy* "REBOOT.TXT". The ServLINK polls for these trigger files every few seconds; moments after you rename the copy, the ServLINK will delete it and will command the Module to reboot the device.

- **Module Information**
  Tells you at a glance which position in the daisychain this Module holds, which other position (if any) it was in most recently, whether it is currently providing power (ON) or not (OFF), and its serial number, firmware version, and type.

- **OK**
  Click this button to save any changes you've made and return to the main Control Module Processing box.

- **Cancel**
  Click this button to abort any changes you've made and return to the main Control Module Processing box.

- **Help**
  Click this button to get on-line help for this box.

5.2 Control Module Configuration

When you select "Control Module Configuration" from the Switch menu, or when you click "Configuration" at the Control Module Processing box, the dialog box shown in Figure 5-4 appears.
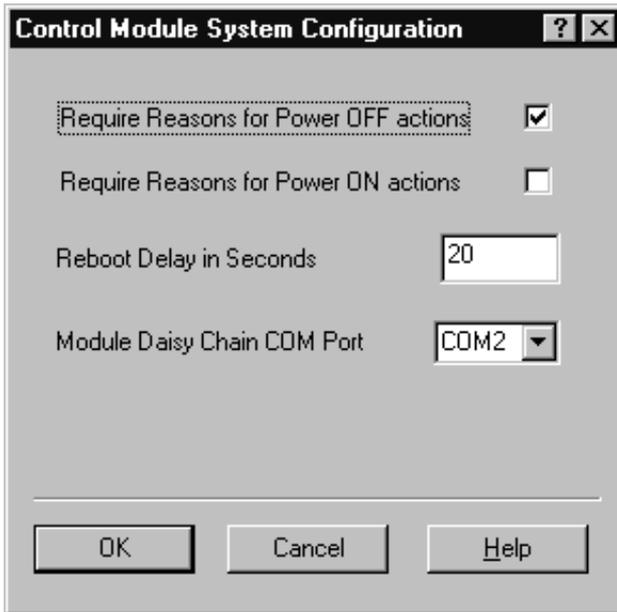
Figure 5-4. The Control Module Configuration dialog box.

This box is for configuring some of the ServLINK's systemwide Power Management Module settings. Here's what the components of this box are for:

- **Require Reasons for Power OFF Actions**
  When this box is checked, users are required to provide a reason whenever they reboot or power down any device connected to a Power Management Module from the "Control Module Processing: Settings" window (see **Section 5.1.2**). The justification may contain up to two lines of 50 characters per line, and is saved in the ServLINK's event log.

- **Require Reasons for Power ON Actions**
  When this box is checked, users are required to provide a reason whenever they power on any device connected to a Power Management Module from the "Control Module Processing: Settings" window (see **Section 5.1.2**). The reason entered may contain up to two lines of 50 characters per line, and is saved in the ServLINK's event log.

- **Reboot Delay in Seconds**
  Use this option to configure the number of seconds that power is temporarily shut off to the device connected to a Power Management Module when the Reboot option is selected at the "Control Module Processing: Settings" window (see **Section 5.1.2**). This option also controls how long the Module attached to the ServLINK itself cuts power to the ServLINK when someone dials in on the secondary external link to reboot it (see **Section 5.4**). The default setting is 20 seconds; possible settings range from 10 to 999 seconds (over 16 minutes).

- **Module Daisy Chain COM Port**
  This option is used to designate which of the ServLINK's COM ports the Power Management Modules are attached to. If there's only one Module attached to the ServLINK, this option only needs to be be set once. Management Modules must be installed on COM1 or COM2 (or, if you install extra ports, COM3 or COM4), and they cannot share an IRQ with any other device. You may select the "AUTO" option if you want the ServLINK to automatically scan COM1 through COM4 to locate the module daisychain. Once you make this selection, the chosen COM port will appear in the header bar of the Control Module Processing windows.

CAUTION!

In some cases, automatically scanning the COM ports with the AUTO setting could possibly interfere with other devices and/or lock up the ServLINK—some mice in particular don't react well to being queried.

- **OK**
  Click this button to save any changes you've made and return to the Main Menu.

- **Cancel**
  Click this button to abort any changes you've made and return to the Main Menu.

- **Help**
  Click this button to get on-line help for this box.

5.3 Users

When you select "Users" from the Security menu, the dialog box shown in Figure 5-5 appears.
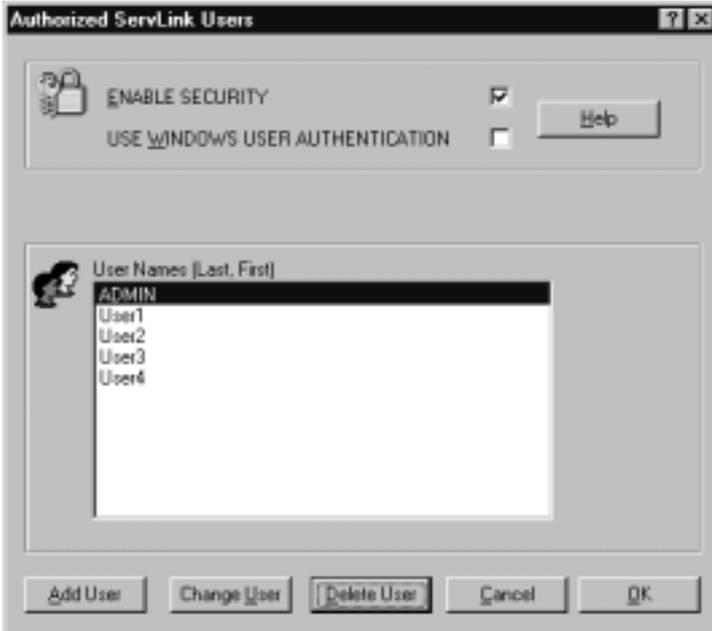
Figure 5-5. The Users dialog box.

To configure Power Management Module access rights (and other security) for a new user, click the Add User button. To change these rights for an existing user, highlight that user's entry in the User Names column and click the Change User button. Either way, the Add Users dialog box shown in Figure 5-6 on the next page will appear.

Figure 5-6. The Add Users dialog box.

For descriptions of how to use the User Names, User Settings, and Host PC Access Rights areas of this box, see **Section 6.2.1** of your ServLINK manual. To set the Non-Supervisor Control Module [that is, Management Module] Access Rights, click the Add button. A small box will appear that prompts you to enter a Module position number; type in the three-digit number of any Module you want to make off-limits to this user, and that number will appear in the Pos column of the "Deny access" area to the right. Continue typing in numbers until the "Deny" list for this user is complete. (Remember that position "001" is the first Module in the chain— the Module attached to the ServLINK's serial port that controls power to the first PC, *not* the Module that controls power to the ServLINK itself—and "002" is the second module in the chain, etc.) Modules on the Deny list for a user will not even appear in the main Control Module Processing dialog box for that user.

To restore a user's access to a Module, highlight its entry in the "Deny" list and click the Delete button. An "Are you sure?" box will appear. When you confirm your action, the Module will be removed from the list and the user will have access to it.

If the user has Supervisor access, both these buttons will be grayed out, because supervisors automatically have access to all Modules.

5.4 Reset Options

When you select "Reset Options" from the Other menu, the dialog box shown in Figure 5-7 appears.
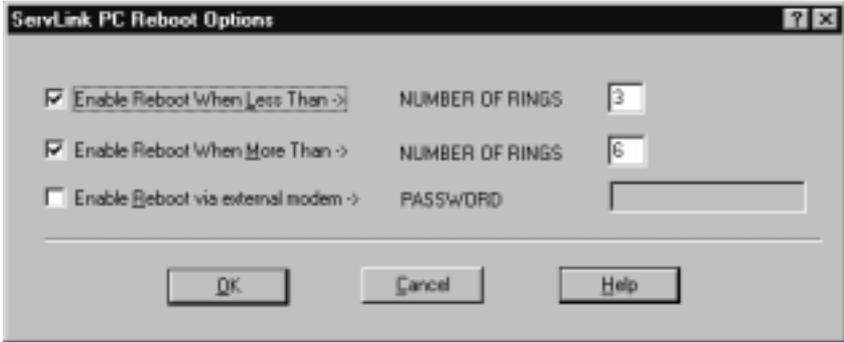
Figure 5-7. The Reset (Reboot) Options dialog box.

Use this option if you have a Power Management Module controlling power to the ServLINK itself. (If you don't, this box is irrelevant.) This Module should be attached to the ServLINK's modem through the ServLINK's Access Control Card, as described in **Section 3.1**. The one and only function of this Module is to reboot the ServLINK (by cutting power and then restoring it after a preset delay—see **Section 5.2**) when it receives a call with the characteristics specified here.

Two of these characteristics are mutually interdependent—either they both have to be enabled or both disabled:

- Click the "Enable Reboot When Less Than" box to trigger a reboot on a call with just a few rings. The default value is fewer than 3 rings; available values are 3 to 9 rings. This is the preferred reboot method.

- Click the "Enable Reboot When More Than" box to trigger a reboot on a call that rings many times—the default value is more than 6 rings; available values are 5 to 14 rings. The ServLINK's modem is set to answer calls on the fourth ring; if the few-rings reboot doesn't work, and the modem fails to answer, letting the call ring for the number of times specified here should trigger a reboot anyway.

  This brings up an interesting feature: Even though pcANYWHERE hangs up after the tenth ring, this option can be set to more than 10 rings. This allows you to effectively disable the "reboot on many rings" option if you ever find that badly mistaken or malicious people are dialing up the ServLINK, crashing the modem, and then rebooting the ServLINK by calling back and letting it ring.

If the Module is also attached to a secondary external modem as described in step 6 of **Section 3.1**, you can call the secondary modem to trigger a reboot if the primary line is dead, busy, or not responding for whatever reason:

- To set up this option, click the "Enable Reboot via external modem" box to cue the Module to respond to calls on the secondary line, and set a password for this feature in the field to the right. This password must be exactly ten alphanumeric characters and cannot contain spaces. (You'll also need to set the secondary modem to auto-answer.)

  To trigger this kind of reboot, dial the secondary modem from a PC running terminal emulation; when the modem answers, type in "reset" and press [Enter]. The Module will prompt you for the reboot password; if you enter it correctly, the Module will hang up and cut power to the ServLINK for 20 seconds—or for whatever "Reboot Delay in Seconds" is set in the Control Module Configuration box (see **Section 5.2**)—then power the ServLINK back up.

At any time, you can click "Help" to get on-line help for this box. When you're finished, you can click "OK" to save your changes or "Cancel" to abort them.

6. Troubleshooting

If you ever have a problem with the ServLINK Power Management Modules, our first recommendation is to check the entries for "Control Modules" in the Frequently Asked Questions topic in the ServLINK's on-line help. The FAQ discusses what to do about many difficulties that people sometimes have with the ServLINK. If this doesn't help, call Black Box as directed in **Section 6.1**.

6.1 Calling Black Box

If you determine that a ServLINK Power Management Module is malfunctioning, *do not attempt to alter or repair the unit.* It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem;

- when the problem occurs;

- the components involved in the problem (PCs, cables, etc.);

- any particular application that, when used, appears to create the problem or make it worse;

- the results of any testing you've already done.

6.2 Shipping and Packaging

If you need to transport or ship your ServLINK Power Management Module:

- Package it carefully. We recommend that you use the original container.

- If you are shipping the Module for repair, make sure you include its power patch cord and any of its cables and adapters that you're using in your application.

- If you are returning the Module, make sure you include everything you received with it.

Before you ship, contact Black Box to get a Return Authorization (RA) number.