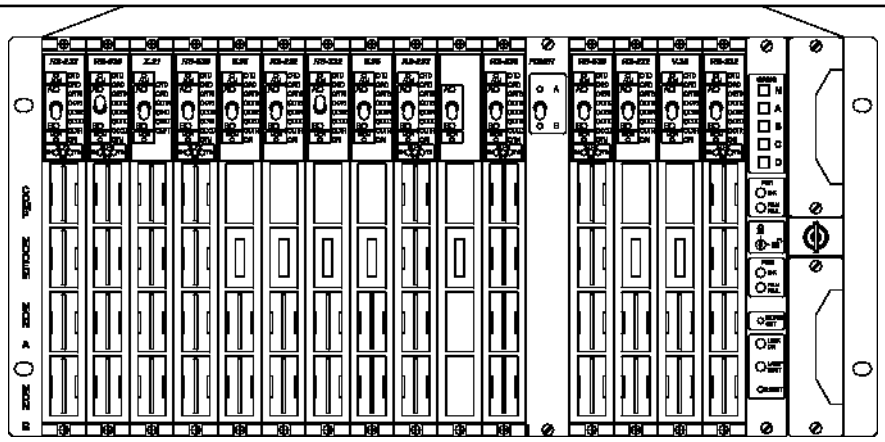
BLACK BOX®
NETWORK SERVICES

PRO SWITCHING SYSTEM



Create a custom managed network.

Key Features

- ***Supports multiple switching, backup, monitoring, and testing functions.***
- ***With each Chassis you can mix and match functions, interfaces, and connectors.***
- ***Unique card design separates the switching/patching circuitry from the cable interface.***
- ***Choose from five different management options.***

Manage your network hands-free with the Pro Switching System from Black Box. It *automatically* performs all switching and backup tasks, and allows you to remotely monitor and test any line in the system.

When a device generates an alarm and a backup device is available, the Pro Switching System automatically switches to the backup device and reports the problem to the management.

Choose from many management options, including HP® OpenView® Windows®. which is the de facto industry standard for network management software. Or use the Simple Network Management Protocol (SNMP), which is an Internet-approved standard network management protocol.

Because the Pro Switching System is modular, you can begin with a small system, such as a rackmount with a few line cards. Then, as your needs grow, you can add racks to create sites, and add sites to create a global network.

Each rack can accommodate a broad variety of functions, interfaces, and connectors. The Pro Switching System will be able to support new functions, interfaces, and connectors, as they become popular.

A unique card design separates the switching/patching circuitry from the cable interface. For example, to reduce the cost of cables in your network, you can use one type of cable (25-pin) in place of another more expensive type of cable (V.35, 34-pin). Also, you can insert and remove front cards without removing cables.

For users who expect their network bandwidth to grow, the System offers a very important feature: it has no bandwidth restrictions. This means that you can upgrade your network interfaces. For example, if you want to upgrade all lines to the T1 interface, simply add T1 cards to the system.

And upgrading firmware is a breeze. Instead of visiting each remote location, opening the hardware, and replacing the EPROM chips, use the Rackmount's flash memory. You can remotely program it from the HP OpenView management via a communication link.

Mix and match functions, interfaces, and connectors, in each Rackmount Chassis to create a custom managed network.

Technically Speaking

Manage the Pro Switching System via:

- HP OpenView Windows.
- SNMP.
- An async terminal.
- ASCII character strings.
- A watchdog timer.

OpenView

HP OpenView Windows allows you to control up to 256 sites, each of which can contain up to 256 rackmounts.

With OpenView, you can manage devices from different vendors. Simply draw a map of the network, using a supplied set of icons. A color code indicates the status of each device in the network.

The Rackmount Switch software provides realistic views of the front and rear of the rack and line cards, indicating the current state of all switches, LEDs, and connectors.

If you click on the display of a switch, the Pro Switching System software invokes the equivalent hardware operation at the rack.

The software also displays LEDs in real-time.

SNMP Agent

The Pro Switching System includes an SNMP agent. With the proprietary MIB, which can be compiled using any SNMP platform, multiple users can access the Pro Switching System racks throughout the network, and perform a variety of functions. These functions include switching, getting status, setting alarms, testing lines using the monitoring buses and more.

Terminal

An async terminal provides the most economical management option. It allows you to control up to 64 racks.

The terminal uses a system of ergonomically designed menus, with extensive online help. The status display screens are updated in real-time. Also, each screen includes summary information about the system.

ASCII Control (Character Strings)

ASCII control allows the operator to use ASCII character strings to control the racks. The racks receive the ASCII strings via a serial interface. You can use the ASCII strings to write your own controlling software. ASCII control provides a very flexible option, allowing you to customize the control to your needs.

Watchdog Timer

The Watchdog Timer automatically monitors two mainframe or mini-computer systems and connects users to one of the systems. If the system fails, the Watchdog Timer switches all users to the other system. The Watchdog Timer does not require a controlling terminal or PC.

Alarms

You can define alarm conditions for the primary and redundant channels of each line in the system. Specify:

- A signal (TD, RD, etc.)
- A condition (MARK, SPACE, etc.)
- A duration (in seconds)

When the signal remains in the specified condition for the specified duration, the system generates an alarm.

Switching and Backup

You can switch an individual line, all the lines in a rack, or a group of lines. A group of lines can consist of lines from various racks at various sites.

Switching options are as follows:

- AB
- ABCD
- Crossover
- Substitution (2:1, 4:1, or other)
- Modem sparing

To manually switch a line, you can use switches on the front of the line card. A key switch on the rack enables or disables the manual switching of lines.

To remotely switch a line, you can use the management. You can perform default, scheduled, and alarm-triggered switching.

Switching uses latching relays. If the power fails, the relays remain in the last switched position and continue to pass data.

Alarm-Triggered Switching

Alarm-triggered switching allows you to set up the Pro Switching System so that it automatically performs a specified switching operation when a specified alarm is generated. Simply define the alarm condition, the restore/stay time and the switching operation. The switching operation can be for a single line or for a group of lines.

Monitoring and Testing

You can use patch cavities on the front of the line card to manually monitor or test a line. A line card can have none, two, three, or four patch cavities.

Cards with switching circuits can have none, two, or four patch cavities. Cards with two patch cavities allow you to monitor the A and B lines (that is, the primary channel and the redundant channel).

Cards with four patch cavities allow you to monitor the A and B lines as well as test the line toward the DTE or the DCE.

You can use the management to remotely monitor or test a line.

Monitoring and testing options are as follows:

- Bridge to a line
- Break to DTE
- Break to DCE

The monitoring buses use nonlatching relays, which disengage if the power fails.

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support.

Recognise any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.

According to a recent survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Specifications

Chassis:

Interface — Digital: RS-232, RS-530, V.35; Analogue: RJ-11, RJ-45

Power — From the power supply module (SM750A): 115/230 VAC, auto-selectable; 48-VDC power supply available on request

Size — 22.23H x 48.26W x 33.66Dcm

Weight — (45 lb.20.4 kg) fully populated

Cards:

Connectors —
Rear interface switch cards:
SM720C: (3) DB25 female;
SM721C: (3) M/34 female;
SM722C: (3) DB15 female;
SM723C: (3) RJ-11;
SM724C: (3) RJ-45

Indicators — SM705C-SM707C: (8) LEDs for transition activity

Power — From the Rack Chassis

Ordering Information

ITEM	CODE
Pro Switching System	
Rackmount Chassis	SM700A
Power Supply Module	SM750A
Application Software	SM701A
CPU Cards	
CPU card—SNMP to 10BASE-T	SM701C
CPU card—VT-100	SM702C
Front Cards	
RS-232 Switch Card	SM705C
V.35 Switch Card	SM706C
RS-530 Switch Card	SM707C
DB15 Switch Card	SM708C
RJ-11 Switch Card	SM709C
RJ-45 Switch Card	SM710C
Rear Cards	
DB25 Rear Switch Card	SM720C
V.35 Rear Switch Card	SM721C
DB15 Rear Switch Card	SM722C
RJ-11 Rear Switch Card	SM723C
RJ-45 Rear Switch Card	SM724C
Blank Covers	
for unused rear slot	SM730
for unused front slot	SM740