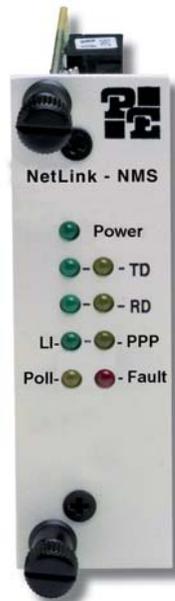


Model 1001MC

NetLink™

SNMP Management Card

Operations Guide



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About this guide

This guide describes installing and operating a Patton Electronics 1001MC NetLink™ SNMP Management Card. This section describes the following:

- Who should use this guide (see “Audience”)
- How this document is organized (see “Structure”)
- Typographical conventions and terms used in this guide (see “Typographical conventions used in this document” on page 7)

Audience

This guide is intended for use by qualified systems administrators and network engineers to configure and manage the Patton Electronics Model 1001MC and NetLink™ modems. Knowledge of basic networking concepts is assumed

Structure

This guide contains the following chapters:

- [Chapter 1](#) (on page 10) introduces the Model 1001MC and provides an overview of the management window
- [Chapter 2](#) (on page 15) describes how to install the Model 1001MC
- [Chapter 3](#) (on page 36) describes how to boot the Model 1001MC, install cables, set up the address range for NetLink modems, log into the HTTP/HTML administration pages, and save HTTP/HTML object changes
- [Chapter 4](#) (on page 47) describes how to manage a 1092ARC NetLink modem
- [Chapter 5](#) (on page 67) describes how to manage a 1094ARC NetLink modem
- [Chapter 6](#) (on page 89) describes how to manage a 1095RC NetLink modem
- [Chapter 7](#) (on page 129) describes how to manage a 2701RC NetLink modem
- [Chapter 8](#) (on page 167) describes how to manage a 2707RC NetLink modem
- [Chapter 9](#) (on page 187) describes how to manage a 3088RC G.SHDSL NTU rack card
- [Chapter 10](#) (on page 220) is the 1001MC-NMS HTTP/HTML web page reference
- [Chapter 11](#) (on page 276) contains troubleshooting and maintenance information
- [Chapter 12](#) (on page 286) contains information on contacting Patton technical support for assistance

Typographical conventions used in this document

This section describes the typographical conventions and terms used in this guide.

General conventions

The procedures described in this manual use the following text conventions:

Table 1. Text conventions

Convention	Meaning
Garamond blue type	Indicates a cross-reference hyperlink that points to a figure, graphic, table, or section heading. Clicking on the hyperlink jumps you to the reference. When you have finished reviewing the reference, click on the Go to Previous View button  in the Adobe® Acrobat® Reader toolbar to return to your starting point.
Futura bold type	Indicates the names of menu bar options.
<i>Italicized Futura type</i>	Indicates the names of options on pull-down menus.
Futura type	Indicates the names of fields or windows.
Garamond bold type	Indicates the names of command buttons that execute an action.
< >	Angle brackets indicate function and keyboard keys, such as <SHIFT>, <CTRL>, <C>, and so on.
Are you ready?	All system messages and prompts appear in the Courier font as the system would display them.
% dir *.*	Bold Courier font indicates where the operator must type a response or command

Mouse conventions

The following conventions are used when describing mouse actions:

Table 2. Mouse conventions

Convention	Meaning
Left mouse button	This button refers to the primary or leftmost mouse button (unless you have changed the default configuration).
Right mouse button	This button refers the secondary or rightmost mouse button (unless you have changed the default configuration)
Point	This word means to move the mouse in such a way that the tip of the pointing arrow on the screen ends up resting at the desired location.
Click	Means to quickly press and release the left or right mouse button (as instructed in the procedure). Make sure you do not move the mouse pointer while clicking a mouse button. Double-click means to press and release the same mouse button two times quickly
Drag	This word means to point the arrow and then hold down the left or right mouse button (as instructed in the procedure) as you move the mouse to a new location. When you have moved the mouse pointer to the desired location, you can release the mouse button.

Additional References

The Patton Electronics website (www.patton.com) provides 1001MC and NetLink modem application notes, which includes FAQ, startup notes, and test setups.

RFCs

Use a web browser to find online copies of the following requests for comments (RFC) documents:

- RFC 1643, *Definitions of Managed Objects for the Ethernet-like Interface Types*
- RFC 1155, *Structure and Identification of Management Information for TCP/IP-based Internets*
- RFC 1213, *Management Information Base for Network Management of TCP/IP-based Internets: MIB-II*
- RFC 1389, *RIP Version 2 MIB Extension*
- RFC 1643, *Definitions of Managed Objects for the Ethernet-like Interface Types*

Technical support

Patton Electronics offers a wide array of free technical services. If you have questions about any of our other products we recommend you begin your search for answers by using our technical knowledge base. Here, we have gathered together many of the more commonly asked questions and compiled them into a searchable database to help you quickly solve your problems.

- Online support—available at www.patton.com.
- E-mail support—e-mail sent to support@patton.com will be answered within 1 business day
- Telephone support—standard telephone support is available Monday through Friday, from 8:00 A.M. to 5:00 P.M. EST (8:00 to 17:00 UTC-5), Monday through Friday by calling +1 (301) 975-1007

Service

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Services at:

- Tel: **+1 (301) 975-1007**
- E-mail: **support@patton.com**
- URL: **<http://www.patton.com>**

Note Packages received without an RMA number will not be accepted.

Chapter 1 **Introduction**

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Introduction

The Model 1001MC NetLink™ SNMP Management Card (see [figure 1](#)) enables an SNMP workstation to configure and monitor multiple Patton NetLink cards racks and their connected standalone units.

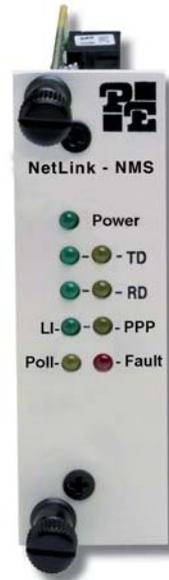


Figure 1. Model 1001MC NetLink Management Card

The management card has the following features:

- Connects to the SNMP workstation via a 10Base-T Ethernet (RJ-45) connection
- Uses a standard web browser (Internet Explorer or Netscape Navigator, for example) to configure the HTTP/HTML management screens.
- Supports generic network management software and MIB walking tools
- Functions as an SNMP proxy agent for Patton NetLink rack cards and their remote standalone units
- FLASH upgradeable through FTP connection
- User selectable traps on a per-card basis
- Compatible with the following rack cards:
 - Model 1092ARC KiloModem™ 2 or 4-wire Baseband Modem with 2B1Q Encoding
 - Model 1094ARC NetLink 1.152-Mbps HDSL Modem
 - Model 1095RC NetLink 2-wire, 2-Mbps mDSL Modem
 - Model 2701RC G.703/G.704 Network Termination Unit (NTU)
 - Model 2707RC G.703 NTU
 - Model 2710RC T1/FT1 CSU/DSU
 - Model 2715RC G.703/G.704 NTU

- Model 3088RC G.SHDSL V.35 - M34
- Model 3088RC G.SHDSL X.21 - DB15
- Model 3088RC G.SHDSL E1 - Dual BNC & RJ-45
- Model 3088RC G.SHDSL Ethernet BR - RJ-45

Note Your specific model of 1001MC may not support all of the models listed above.

The 1001MC front and rear cards (see [figure 2](#)) install into the Model 1001R14/16 NetLink Rack Chassis (see [figure 3](#)). The rack chassis accepts up to 15 cards and a 90–264 VAC or -12/-24/-48 VDC power supply module (redundant power supply configurations can be created by replacing two rack cards with a second power supply).

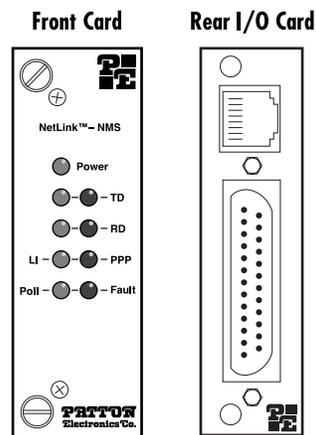


Figure 2. Model 1001MC front and rear cards

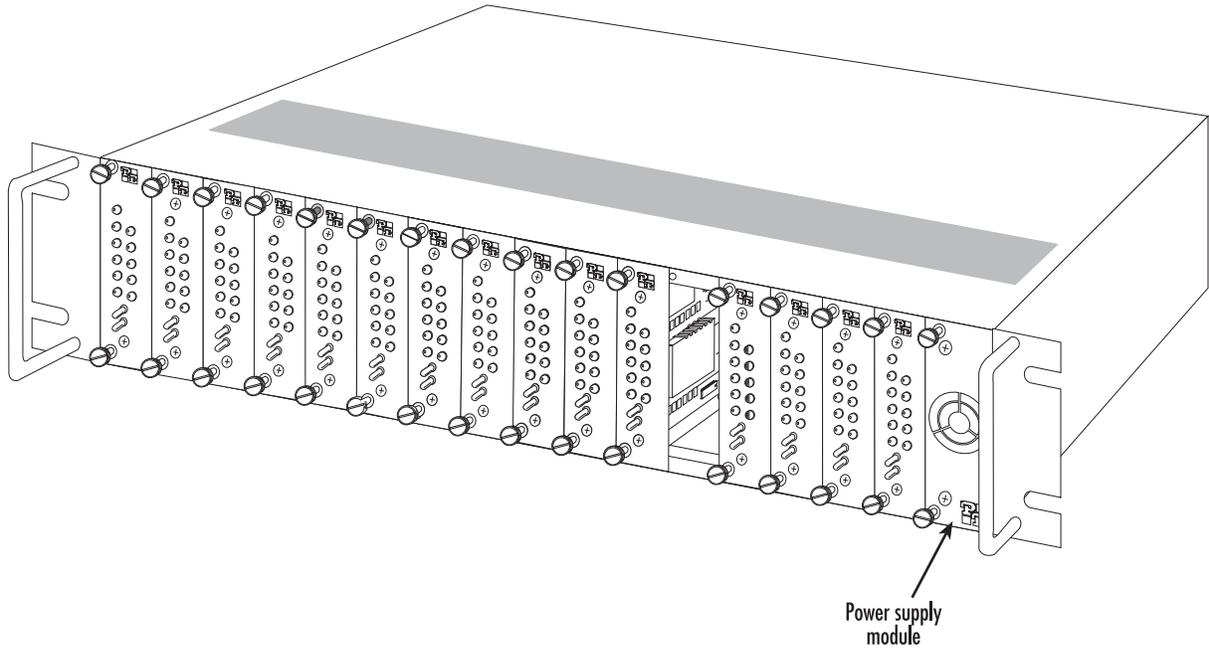


Figure 3. Model 1001R14/16 Rack Chassis with power supply

Model 1001MC management overview

The Model 1001MC uses a 10Base-T Ethernet port to connect to a local LAN (or to any location in the world via the Internet). Management can be performed using any SNMP station or web browser with the internal HTTP/HTML management screens. As shown in figure 4, the Model 1001MC can manage multiple racks of Patton NetLink modems using a daisy-chain configuration and a 1001CC in each additionally managed rack.

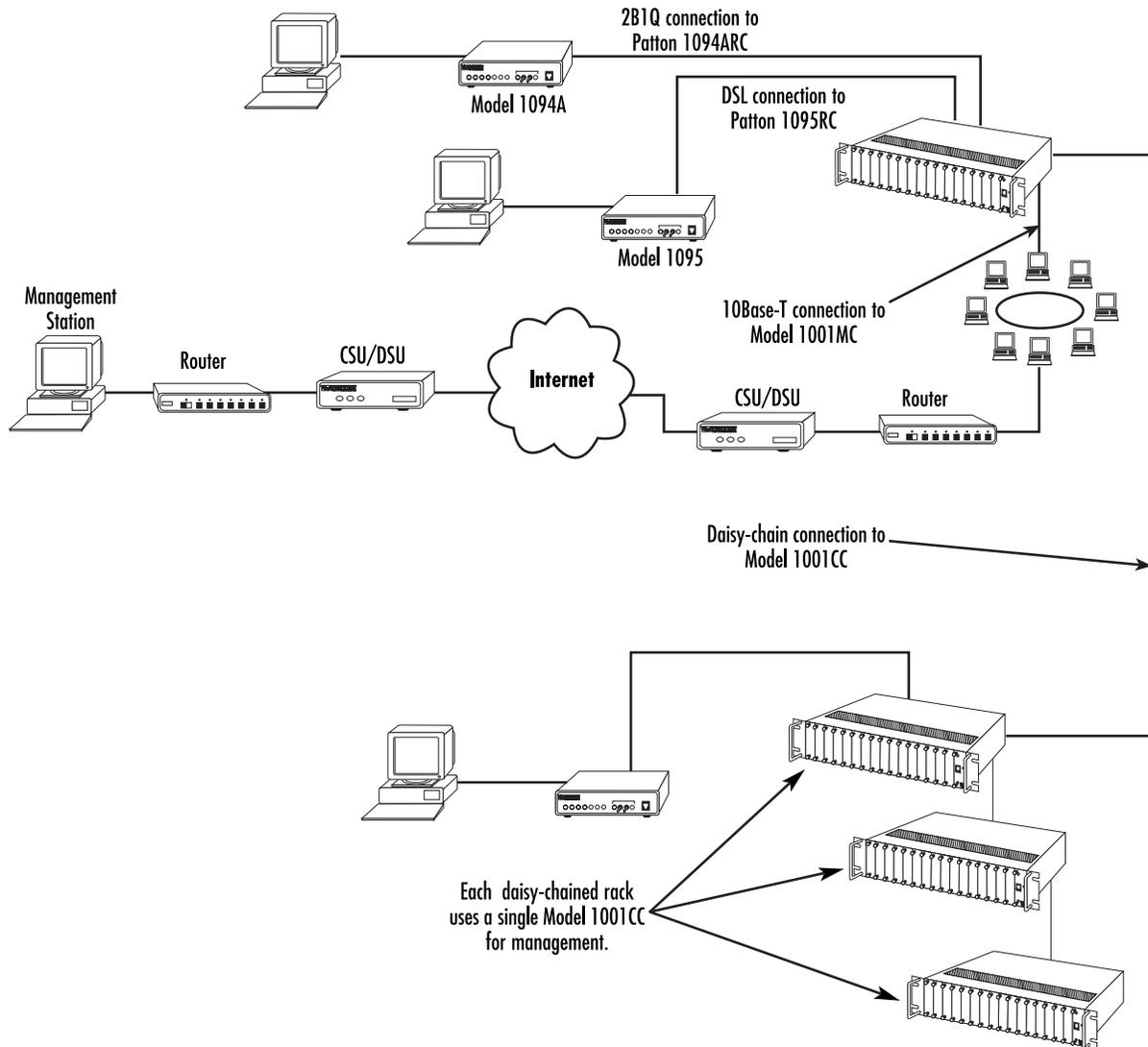


Figure 4. Network management through a network using a 10Base-T connection to Model 1001MC

Chapter 2 **Hardware installation**

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Introduction

Model 1001MC installation consists of the following:

- Installing the front and rear cards into the rack chassis (see section “Installing the Model 1001MC into the rack chassis” on page 18)
- Configuring and installing the NetLink modem cards (see section “Installing NetLink modem cards” on page 19)
- Installing the NetLink power supply (or supplies) (see section “Installing the power supplies” on page 31)
- Verifying that the 1001MC functions normally when power is applied (see section “Verifying 1001MC functioning” on page 31)
- Installing the interface cables (see section “Connecting the cables” on page 32)

When you finish installing the 1001MC, go to chapter 3, “Getting started” on page 36.

Before you install...

Before installing and configuring your Model 1001MC, make sure you have the following items at hand:

- A VT100 terminal or a VT100 terminal emulator for connection to the RS-232 configuration port
- A null modem or a null modem cable to connect your VT100 terminal to the Model 1001MC
- An Ethernet connection to your local LAN
- A locally connected workstation (e.g. PC) that you can use to *ping* the 1001MC
- An IP address for the Model 1001MC
- The network address space and netmask
- The IP address for the default gateway of your LAN

Checking the contents...

Verify that the shipping container holds the following items:

- 1001MC front and rear cards
- 1001MC CD-ROM that includes this manual

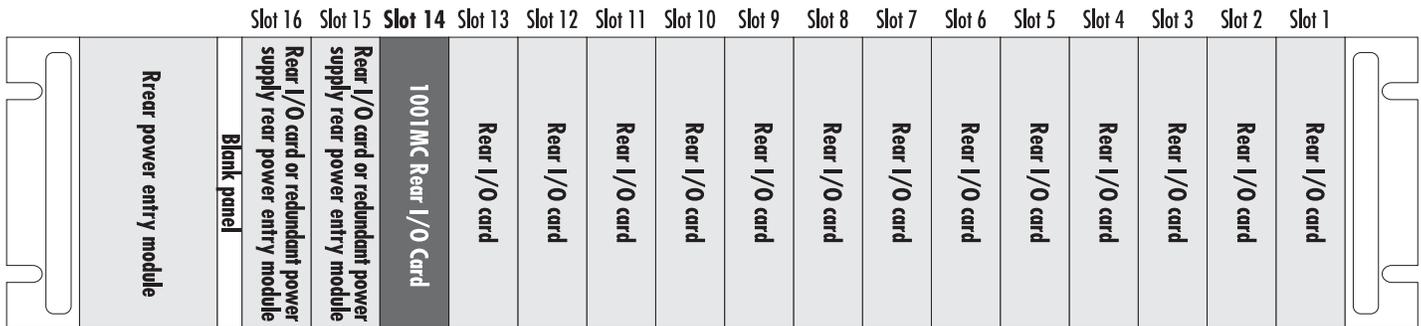


Figure 5. Rack chassis slot layout (rear view)

Installing the Model 1001MC into the rack chassis

The Model 1001MC consists of a front rack card and a rear input/output (I/O) card (see [figure 2](#) on page 12). The two cards meet inside the rack chassis and plug into each other by way of mating 50-pin card edge connectors. Do the following to install the Model 1001MC cards into the rack chassis:



There are no user-serviceable parts in the power supply section. Voltage setting changes and fuse replacement should only be performed by qualified service personnel. Contact Patton Electronics Technical support at (301) 975-1007 for more information.

Note The Model 1001MC is hot-swappable, which means that you can install it into the rack chassis without having to turn off power to the rack chassis. For the purpose of this procedure, though it is assumed that power to the rack is OFF at the beginning.

1. Slide the rear I/O card into rear chassis slot 14 (see [figure 5](#)) along the metal guide rails.

Note The Model 1001MC installs into rack chassis slot 14 because that slot provides information about the power supplies to the 1001MC. If the card is not installed in slot 14, the 1001MC will report power supply failure.

2. Secure the rear card using the captive fasteners.

- Slide the front rack card into the front chassis slot 14 (see figure 6) until it meets the rear card receptacle. When that happens, push the front card gently but firmly into the card-edge receptacle of the rear card, it should *click* into place.

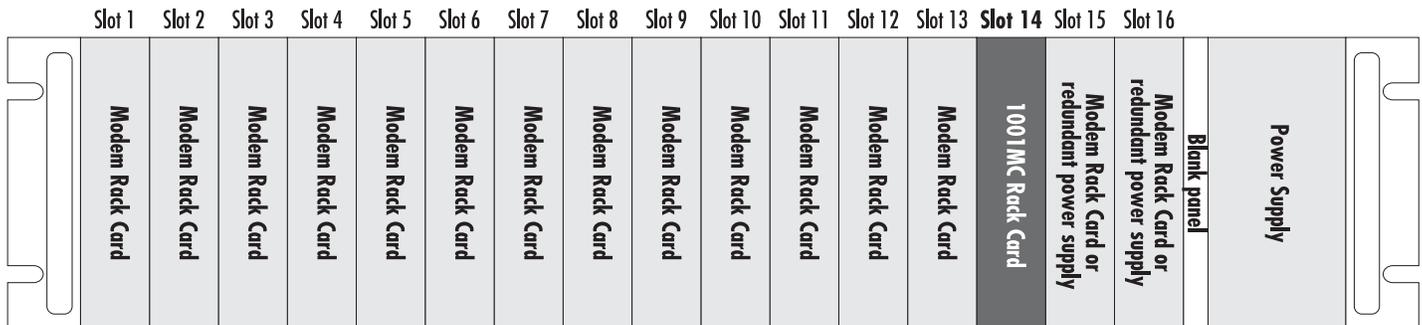


Figure 6. Rack chassis slot layout (front view)

- Secure the front rack card using the captive fasteners.

Installing NetLink modem cards

This section contains hardware installation information that affects the following NetLink modems:

- Model 1092ARC (see section “Hardware setup for a Model 1092ARC”)
- Model 1094ARC (see section “Hardware setup for a Model 1094ARC” on page 22)
- Model 1095RC (see section “Hardware setup for a Model 1095RC” on page 24)
- Model 2701RC (see section “Hardware setup for a Model 2701RC” on page 26)
- Model 2707RC (see section “Hardware setup for a Model 2707RC” on page 28)
- Model 2710RC (see section “Hardware setup for a Model 2710RC” on page 29)
- Model 2715RC (see section “Hardware setup for a Model 2715RC” on page 29)
- Model 2088RC (see section “Hardware setup for a Model 3088RC” on page 29)

Hardware setup for a Model 1092ARC

The following must be done to configure your Model 1092ARC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)
- Set the system address (see section “Setting the 1092ARC system address” on page 20)

When you are finished, install the Model 1092ARC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 1092ARC rear I/O card must have frame ground (GND) connected to signal GND through a

100-ohm resistor. This is done by configuring a jumper on the modem's rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Setting the 1092ARC system address

The manual that was shipped with the 1092ARC defines switch S2 as Address. This switch sets the address of the modem in the NetLink system. Each card in the chassis is given a unique address through the setting of switch S2.

Note Standalone units use the address of the rack card that they are connected to.

Polling overview. The Model 1001MC sends poll messages along the internal bus looking for cards installed in the system. Once a card is found it is placed online and communication with the management station can begin.

If the address of the NetLink modem is not configured or does not match the address range of the rack that it is installed in, the Model 1001MC may not recognize the card. The address range that is polled is determined by the configuration of the system. The system administrator must make sure that the software configuration within the Model 1001MC matches the hardware configuration of the system.

Polling rack #1 and daisy-chained racks. The Model 1001MC uses the number of power supplies in the system to determine what the address range of the individual racks will be. The number of power supplies installed in each rack is entered on the Modem Information page. If the system is set for two power supplies installed, the 1001MC will automatically set the number of slots available (displayed on the Modem Information page) in the chassis to 13. If the system is set for a single power supply installed, the 1001MC will automatically set the number of slots available in the chassis to 15.

Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy chained racks are set up in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

If the address is 0 (all ON position), then the unit will run completely from its DIP-switch configuration. This can be useful for testing circuits independently of the management system. If an address is placed on the switch, the unit will boot from its stored flash configuration and begin looking for poll commands from the Model 1001MC.

Switch S2 allows an 8 bit address to be assigned to a link. The following rules apply to setting the address. Bit S2-8 is the least significant bit. A bit set to *ON* is considered a *0*. A bit set to *OFF* is considered a *1*. Patton Electronics suggests that you set your addresses starting with address 1 at the far left of your rack (farthest away

from the power supplies) and increment the numbers by one as you go from left to right. Setting the addresses in this manner will make configuration easier as you start using the web page management. An example of this is shown below.

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - NMS - PS2 - PS1

Table 3 shows the bit setting to configure the address. Table 4 shows examples of address settings.

Table 3. Bit setting to configure the address

Upper (Lower) Nibble	(S2-4)	S2-7 (S2-3)	S2-6 (S2-2)	S2-5 (S2-1)
0	ON	ON	ON	ON
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	ON	ON	ON
9	OFF	ON	ON	OFF
A	OFF	ON	OFF	ON
B	OFF	ON	OFF	OFF
C	OFF	OFF	ON	ON
D	OFF	OFF	ON	OFF
E	OFF	OFF	OFF	ON
F	OFF	OFF	OFF	OFF

Table 4. Examples of address settings

Address in Hex (Dec.)	S2-7	S2-6	S2-5	S2-4	S2-3	S2-2	S2-1
0x01 (1)	ON	ON	ON	ON	ON	ON	OFF
0x02 (2)	ON	ON	ON	ON	ON	OFF	ON
0x10 (16)	ON	ON	OFF	ON	ON	ON	ON
0x35 (53)	ON	OFF	OFF	ON	OFF	ON	OFF

Hardware setup for a Model 1094ARC

The following must be done to configure your Model 1094ARC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)
- Set the system address (see section “Setting the 1094ARC system address”)

When you are finished, install the Model 1094ARC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 1094ARC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Setting the 1094ARC system address

The manual that was shipped with the 1094RC defines switch S1 as Address. This switch sets the address of the modem in the NetLink system. Each card in the chassis is given a unique address through the setting of switch S1.

Note Standalone units use the address of the rack card that they are connected to.

Polling overview. The Model 1001MC sends poll messages along the internal bus looking for cards installed in the system. Once a card is found it is placed online and communication with the management station can begin.

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Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from

address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy chained racks are set up in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

If the address is 0 (all ON position), then the unit will run completely from its DIP-switch configuration. This can be useful for testing circuits independently of the management system. If an address is placed on the switch, the unit will boot from its stored flash configuration and begin looking for poll commands from the Model 1001MC.

Switch S1 allows an 8 bit address to be assigned to a link. The following rules apply to setting the address. Bit S1-8 is the least significant bit. A bit set to *ON* is considered a *0*. A bit set to *OFF* is considered a *1*. Patton Electronics suggests that you set your addresses starting with address 1 at the far left of your rack (farthest away from the power supplies) and increment the numbers by one as you go from left to right. Setting the addresses in this manner will make configuration easier as you start using the web page management. An example of this is shown below.

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - NMS - PS2 - PS1

Table 5 shows the bit setting to configure the address. Table 6 shows examples of address settings.

Table 5. Bit setting to configure the address

Upper (Lower) Nibble	S1-1 (S1-5)	S1-2 (S1-6)	S1-3 (S1-7)	S1-4 (S1-8)
0	ON	ON	ON	ON
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	ON	ON	ON
9	OFF	ON	ON	OFF
A	OFF	ON	OFF	ON
B	OFF	ON	OFF	OFF
C	OFF	OFF	ON	ON
D	OFF	OFF	ON	OFF
E	OFF	OFF	OFF	ON
F	OFF	OFF	OFF	OFF

Table 6. Examples of address settings

Address in Hex (Dec.)	S1-1	S1-2	S1-3	S1-4	S1-5	S1-6	S1-7	S1-8
0x01 (1)	ON	OFF						
0x02 (2)	ON	ON	ON	ON	ON	ON	OFF	ON
0x10(16)	ON	ON	ON	OFF	ON	ON	ON	ON
0xB5(181)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF

Hardware setup for a Model 1095RC

The following must be done to configure your Model 1095RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)
- Set the system address (see section “Setting the 1094ARC system address”)

When you are finished, install the Model 1095RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 1095RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Setting the 1095RC system address

The manual that was shipped with the 1095RC defines switch S1 as Address. This switch sets the address of the modem in the NetLink system. Each card in the chassis is given a unique address through the setting of switch S1.

Note Standalone units use the address of the rack card that they are connected to.

Polling overview. The Model 1001MC sends poll messages along the internal bus looking for cards installed in the system. Once a card is found it is placed online and communication with the management station can begin.

If the address of the NetLink modem is not configured or does not match the address range of the rack that it is installed in, the Model 1001MC may not recognize the card. The address range that is polled is determined by the configuration of the system. The system administrator must make sure that the software configuration within the Model 1001MC matches the hardware configuration of the system.

Polling rack #1 and daisy-chained racks. The Model 1001MC uses the number of power supplies in the system to determine what the address range of the individual racks will be. The number of power supplies installed in each rack is entered on the Modem Information page. If the system is set for two power supplies installed, the 1001MC will automatically set the number of slots available (displayed on the Modem Information page) in the chassis to 13. If the system is set for a single power supply installed, the 1001MC will automatically set the number of slots available in the chassis to 15.

Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy chained racks are set up in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

If the address is 0 (all ON position), then the unit will run completely from its DIP-switch configuration. This can be useful for testing circuits independently of the management system. If an address is placed on the switch, the unit will boot from its stored flash configuration and begin looking for poll commands from the Model 1001MC.

Switch S1 allows an 8 bit address to be assigned to a link. The following rules apply to setting the address. Bit S1-8 is the least significant bit. A bit set to *ON* is considered a *0*. A bit set to *OFF* is considered a *1*. Patton Electronics suggests that you set your addresses starting with address 1 at the far left of your rack (farthest away from the power supplies) and increment the numbers by one as you go from left to right. Setting the addresses in this manner will make configuration easier as you start using the web page management. An example of this is shown below.

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - NMS - PS2 - PS1

Table 7 shows the bit setting to configure the address. Table 8 shows examples of address settings.

Table 7. Bit setting to configure the address

Upper (Lower) Nibble	S1-1 (S1-5)	S1-2 (S1-6)	S1-3 (S1-7)	S1-4 (S1-8)
0	ON	ON	ON	ON
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	ON
8	OFF	ON	ON	ON
9	OFF	ON	ON	OFF
A	OFF	ON	OFF	ON
B	OFF	ON	OFF	OFF
C	OFF	OFF	ON	ON
D	OFF	OFF	ON	OFF
E	OFF	OFF	OFF	ON
F	OFF	OFF	OFF	OFF

Table 8. Examples of address settings

Address in Hex (Dec.)	S1-1	S1-2	S1-3	S1-4	S1-5	S1-6	S1-7	S1-8
0x01 (1)	ON	OFF						
0x02 (2)	ON	ON	ON	ON	ON	ON	OFF	ON
0x10(16)	ON	ON	ON	OFF	ON	ON	ON	ON
0xB5(181)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF

Hardware setup for a Model 2701RC

The following must be done to configure your Model 2701RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)
- Set the system address (see section “Setting the 2701RC system address”)

When you are finished, install the Model 2701RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 2701RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Setting the 2701RC system address

The manual that was shipped with your NetLink-E1 unit specifies switch S3 for the card address in the NetLink System. Each card in the chassis is given a unique address through the setting of switch S3.

Note Standalone units use the address of the rack card that they are connected to.

Polling overview. The Model 1001MC sends “poll” messages along the internal bus looking for cards installed in the system. Once a card is found it is placed “online” and communication with the management station can begin.

If the address of the NetLink modem is not configured or does not match the address range of the rack that it is installed in, the Model 1001MC may not recognize the card. The address range that is polled is determined by the configuration of the system. The system administrator must make sure that the software configuration within the Model 1001MC matches the hardware configuration of the system.

Polling rack #1 and daisy-chained racks. The Model 1001MC uses the number of power supplies in the system to determine what the address range of the individual racks will be. The number of power supplies installed in each rack is entered on the Modem Information page. If the system is set for two power supplies installed, the 1001MC will automatically set the number of slots available (displayed on the Modem Information page) in the chassis to 13. If the system is set for a single power supply installed, the 1001MC will automatically set the number of slots available in the chassis to 15.

Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy chained racks are set up in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

The 2701RCs are shipped to use DIP switch configuration as default. Software configuration can be enabled through either the VT-100 screens or through the 1001MC NMS. To use the NMS, switch S2-7 must be set to the “OFF” position, otherwise the VT-100 port is active.

Switch S3 allows a decimal address to be assigned to a link. The following rules apply to setting the address:

- S3-1 is the LSB and S3-8 is the MSB
- Patton Electronics suggests that you set your addresses starting with address 1 at the far left of your rack (farthest away from the power supplies) and increment the numbers by one as you go from left to right. Setting the addresses in this manner will make configuration easier as you start using the web page management. An example of this is below.

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - NMS - PS2 - PS1

Figure 7 shows the bit setting to configure the address. Table 9 shows examples of address settings.

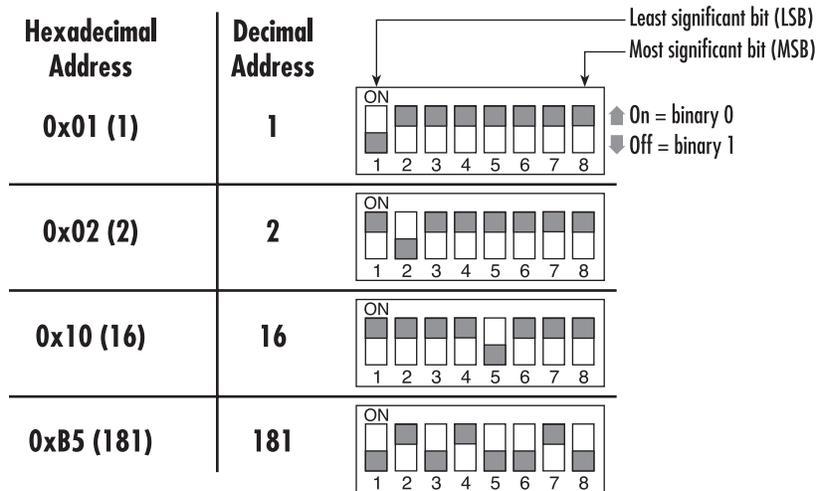


Figure 7. Bit setting to configure the address

Table 9. Examples of address settings

Hex Address (Decimal Address)	S3-8	S3-7	S3-6	S3-5	S3-4	S3-3	S3-2	S3-1
0x01 (1)	ON	OFF						
0x02 (2)	ON	ON	ON	ON	ON	ON	OFF	ON
0x10(16)	ON	ON	ON	OFF	ON	ON	ON	ON
0xB5(181)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF

Hardware setup for a Model 2707RC

The following must be done to configure your Model 2707RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)

When you are finished, install the Model 2707RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 2707RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Hardware setup for a Model 2710RC

The following must be done to configure your Model 2710RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)

When you are finished, install the Model 2710RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 2710RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Hardware setup for a Model 2715RC

The following must be done to configure your Model 2715RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)

When you are finished, install the Model 2715RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 2715RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Hardware setup for a Model 3088RC

The following must be done to configure your Model 3088RC hardware for use with the Model 1001MC network management station:

- Connect frame ground to signal ground (see section “Configuring frame ground”)
- Set the system address (see section “Setting the 2701RC system address”)

When you are finished, install the Model 3088RC front card and rear I/O card using the installation procedures in the manual that came with the modem.

Configuring frame ground

The Model 1001MC uses an internal bus to communicate with the NetLink modems installed in your system. The Model 3088RC rear I/O card must have frame ground (GND) connected to signal GND through a 100-ohm resistor. This is done by configuring a jumper on the modem’s rear I/O card. Refer to the installation manual that came with the rack card for more information on this jumper setting.

Setting the 3088RC system address

The manual that was shipped with your NetLink-E1 unit specifies switch S3 for the card address in the NetLink System. Each card in the chassis is given a unique address through the setting of switch S3.

Note Standalone units use the address of the rack card that they are connected to.

Polling overview. The Model 1001MC sends “poll” messages along the internal bus looking for cards installed in the system. Once a card is found it is placed “online” and communication with the management station can begin.

If the address of the NetLink modem is not configured or does not match the address range of the rack that it is installed in, the Model 1001MC may not recognize the card. The address range that is polled is determined by the configuration of the system. The system administrator must make sure that the software configuration within the Model 1001MC matches the hardware configuration of the system.

Polling rack #1 and daisy-chained racks. The Model 1001MC uses the number of power supplies in the system to determine what the address range of the individual racks will be. The number of power supplies installed in each rack is entered on the Modem Information page. If the system is set for two power supplies installed, the 1001MC will automatically set the number of slots available (displayed on the Modem Information page) in the chassis to 13. If the system is set for a single power supply installed, the 1001MC will automatically set the number of slots available in the chassis to 15.

Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy chained racks are set up in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

Switch S3 allows a decimal address to be assigned to a link. The following rules apply to setting the address:

- S3-1 is the LSB and S3-8 is the MSB
- Patton Electronics suggests that you set your addresses starting with address 1 at the far left of your rack (farthest away from the power supplies) and increment the numbers by one as you go from left to right. Setting the addresses in this manner will make configuration easier as you start using the web page management. An example of this is below.

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - NMS - PS2 - PS1

Figure 7 shows the bit setting to configure the address. Table 9 shows examples of address settings.

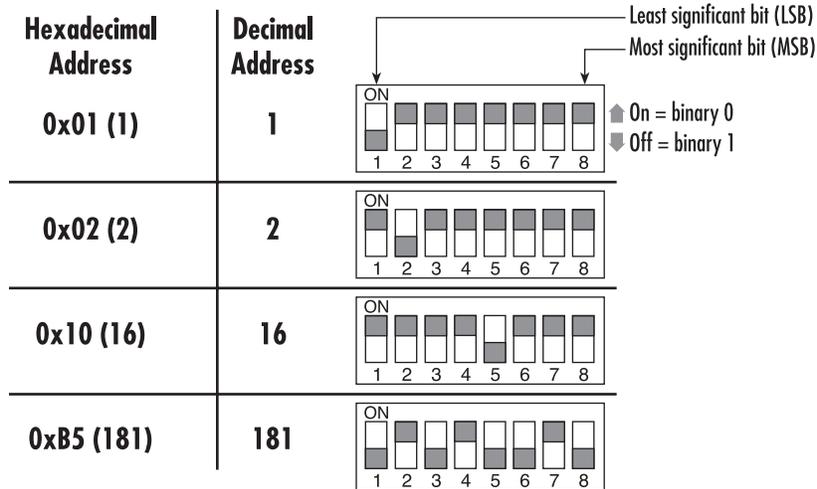


Figure 8. Bit setting to configure the address

Table 10. Examples of address settings

Hex Address (Decimal Address)	S3-8	S3-7	S3-6	S3-5	S3-4	S3-3	S3-2	S3-1
0x01 (1)	ON	OFF						
0x02 (2)	ON	ON	ON	ON	ON	ON	OFF	ON
0x10(16)	ON	ON	ON	OFF	ON	ON	ON	ON
0xB5(181)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF

Installing the power supplies

Refer to the installation manual that came with the power supply (or supplies) to install the supply and rear power entry module into the rack chassis.

Verifying 1001MC functioning

1. Apply power to the rack system, verify that the green *Power* LED on the Model 1001MC front card illuminates.
2. Turn off power to the rack system, verify that the green *Power* LED on the Model 1001MC front card extinguishes.

Connecting the cables

Installing 1001MC rear I/O card cables takes place in the following order:



Do not work on the system or connect or disconnect cables during periods of lightning activity.

1. Installing the 10Base-T Ethernet cable onto the 10Base-T port (see figure 9) (see “Installing the Ethernet cable” on page 32).
2. Installing the cable onto the RS-232 configuration/daisy-chain port (see figure 9) (see “Installing the RS-232 configuration/daisy-chain port cable” on page 34).

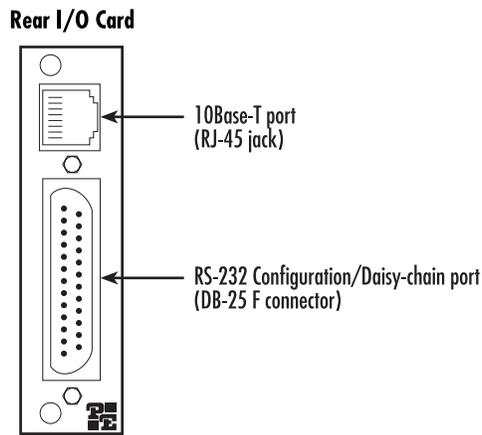


Figure 9. Rear I/O card ports

Installing the Ethernet cable

The RJ-45 Ethernet jack on the rear I/O card of the Model 1001MC is designed to connect directly to a 10Base-T network. Figure 10 shows the RJ-45 jack pin-out diagram. Refer to the following sections when constructing Ethernet cables to connect to the Patton Model 1001MC.

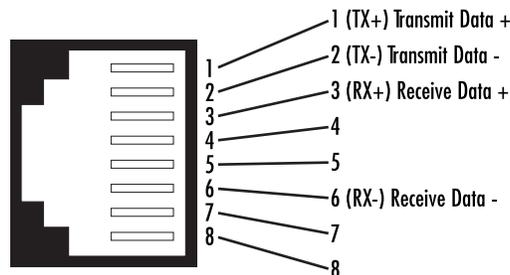


Figure 10. 1001MC 10Base-T Ethernet port pin-out diagram

Connecting a 10Base-T hub to the 1001MC

The Ethernet 10Base-T port on the rear of the 1001MC connects directly to a 10Base-T hub or repeater using RJ-45 unshielded twisted-pair cable that is wired straight-through (see [figure 11](#)).

Note Cable lengths should not exceed 330 feet (100 m) when using Type 4 or 5 cable.

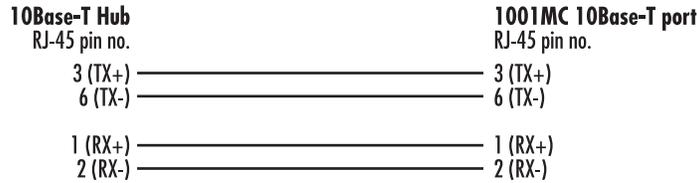


Figure 11. Hub wiring diagram

Connecting a 10Base-T workstation to the 1001MC

The 10Base-T port on the 1001MC connected to a workstation by means of a cross-connect cable. Refer to [figure 12](#) to build a cross-connect cable that connects between the 10Base-T port on a workstation's NIC and the 1001MC's 10Base-T port.

Note Cable lengths should not exceed 330 feet (100 m) when using Type 4 or 5 cable.

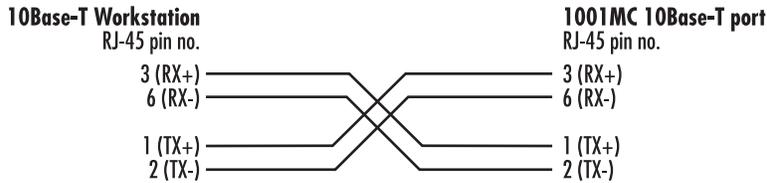


Figure 12. Workstation wiring diagram

Installing the RS-232 configuration/daisy-chain port cable

The DB-25 connector is a DTE-configured RS-232 port that is used to set up your IP address, subnet mask, and default configuration. After the system is set up, the configuration port can be used to connect to a Model 1001CC in a separate rack if you are daisy-chaining multiple racks.

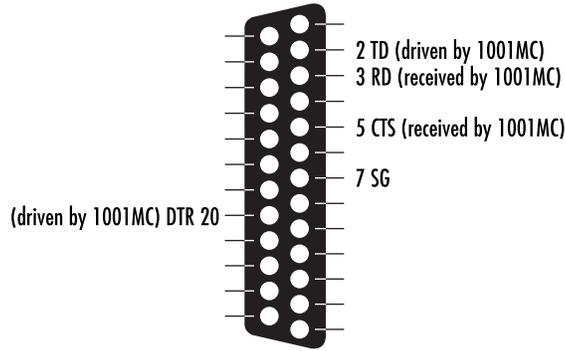


Figure 13. RS-232 DTE configuration port

Note The configuration port on your 1001MC, being a DTE, requires a null modem or equivalent cable when connecting to a terminal.

Using personal computer communications software (Procomm, Windows Terminal, BitCom, PC Anywhere, etc.), set the configuration of your communications software to the following parameters:

- **Data Rate:** 19,200 bps
- **Async. Character Format:** 8 Data Bits, 1 Stop Bit, No Parity
- **Terminal Emulation:** VT-100 (or similar) terminal emulation

LED indicators

The 1001MC front card has status LEDs (see figure 14) that display at-a-glance the current operational status of the 1001MC.

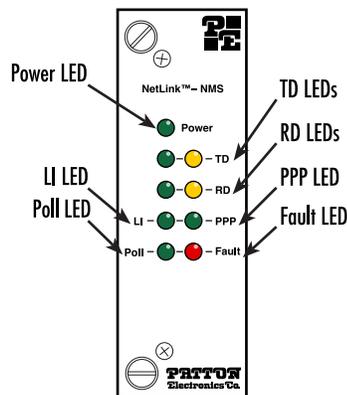


Figure 14. Front card LEDs

Ethernet LED indicators

The Ethernet LEDs convey transmit and receive data activity as well as the status of the link (see table 11).

Table 11. Ethernet LED indicators

LED	Color	Function	Description
LI	Green	Twisted pair link indication	On = Connected to active LAN Off = Not connected to active LAN
TD	Yellow/Green	Transmit data from 1001MC to LAN	Yellow = Idle condition Green = Toggles yellow/green with activity
RD	Yellow/Green	Receive data at 1001MC from LAN	Yellow = Idle condition Green = Toggles yellow/green with activity

Power LED indicator

The power LED shows the power status of the Model 1001MC (see table 12).

Table 12. Power LED indicator

LED	Color	Function	Description
Power	Green	Power status	On = Power is ON Off = Power is OFF

Heartbeat LED indicator

Table 13. Poll LED indicator

LED	Color	Function	Description
Poll	Yellow	Heartbeat	Toggles when packet TX is on the backplane bus

Fault LED indicator

Table 14. Fault LED indicator

LED	Color	Function	Description
Fault	Red	Fault condition	On = Signals hardware fault Off = No hardware fault

PPP LED indicator

Note The PPP capability will be included in future releases as a software upgrade to the 1001MC.

Where to go next

Congratulations, you have finished installing the Model 1001MC! Now go to chapter 3, “Getting started” on page 36.

Chapter 3 **Getting started**

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Introduction

To complete this section you will need the following:

- a VT-100 terminal or terminal emulator
- a null-modem cable
- an IP address for your box
- a subnet mask for your box
- the IP address of the default gateway for your LAN

Booting the Model 1001MC

Note If you are starting the Model 1001MC for the first time, you must log in via the rear panel RS-232 configuration port and set the IP address, subnet mask, and default gateway.

Note The configuration port on your 1001MC is a DTE, which requires a null modem or equivalent cable when connecting to a terminal.

1. Using personal computer communications software (Procomm, Windows Terminal, BitCom, PC Anywhere, etc.), set the configuration of your communications software to the following parameters:
 - **Data rate:** 19,200 bps
 - **Async. character format:** 8 data bits, 1 stop bit, no parity
 - **Terminal emulation:** VT-100 (or similar) terminal emulation
2. Connect the RS-232/V.24 port of the terminal to the rear panel RS-232 configuration port of the 1001MC through a null-modem. The RS-232 port is configured as *data terminal equipment* (DTE).
3. Apply power to the rack system. The Model 1001MC will begin a series of diagnostic tests to exercise the internal sub-systems in the unit. You must halt the power up sequence in order to enter a new IP address, mask, and default gateway into the box. Press the **b** key three times when you see the following:

```
DRAM:Configure Complete
FLASH:Configure Complete
Boot Version May 11 1999 14:44:24
Validating operation code
Valid operational code, Hit 'b' three times to stop operational boot
```

5. After pressing the *b* key three times the system will display the following:

```
Timer Started May 11 1999 14:44:24
Timer installed
Clock installed
Trying the console
```

```
---Ethernet Hardware---
Address: 00.a0.ba.00.01.71
---Current IP settings---
IP:192.168.200.1
Mask:255.255.255.0
Gateway:209.49.110.1
Change IP settings (y/n)?
```

4. Type **Y** to change the IP address. You will be prompted to enter a new IP address, mask, and default gateway as follows:

```
---Current IP settings---
IP:209.49.110.188
Mask:255.255.255.0
Gateway:209.49.110.1
Change IP settings (y/n)? y
User Set IP:209.49.110.188
User Set Mask:255.255.255.0
User Set Gateway:209.49.110.1
---Settings to save---
IP:209.49.110.188
Mask:255.255.255.0
Gateway:209.49.110.1
Save these settings (y/n)? Y
```

5. After entering the information, the system will prompt you to save the IP settings. Type **Y** to save the new settings.
6. The Model 1001MC will prompt you for changes to the hardware revision that your unit requires as follows:

```
---Hardware Initialization---
Current Hardware Revision B
Change Hardware Revision (y/n)? n
```

Note In most cases you should select *N* to keep the current revision. The hardware revision should only be changed if you are upgrading to the latest firmware release.

Note To RESET to factory configuration the user must type **e** three times anytime during the boot sequence upon power-up. The console will display the following messages:

```
Are you sure you want to erase current configuration (y/n)?y
```

If **y** is entered, the current configuration will be erased and the factory default configuration will be restored.

```
Are you sure you want to erase current configuration (y/n)?n
```

If **n** is entered, the boot sequence will continue without any changes to configuration.

7. Turn power off and on again reboot the system with the new settings. After your system reboots, log into the box using a standard web browser from your network.
8. Disconnect the cable from the rear panel RS-232 configuration port of the 1001MC.
9. If you are installing a daisy-chain cable to the RS-232 configuration port of the 1001MC, go to section “Installing the Model 1001MC RS-232 daisy-chain port cable”. Otherwise, go to section “Setting the address range for your NetLink modems”.

Installing the Model 1001MC RS-232 daisy-chain port cable

Using the Model 1001MC RS-232 Daisy Chain Port and an EIA-510 cable, your Model 1001MC can manage up to seven additional racks. Each daisy chained rack must have a Model 1001CC Controller Card installed. The Model 1001MC—in combination with the Model 1001CC—can control up to 120 NetLink rack card modems and their remote CPE devices. This section describes how to connect your Model 1001MC to additional racks.

Note If you plan to build your own RS-232-to-EIA-561 converter to connect the Model 1001MC to the Model 1001CC, refer to the Model 1001CC manual for EIA-561 interface pinouts.

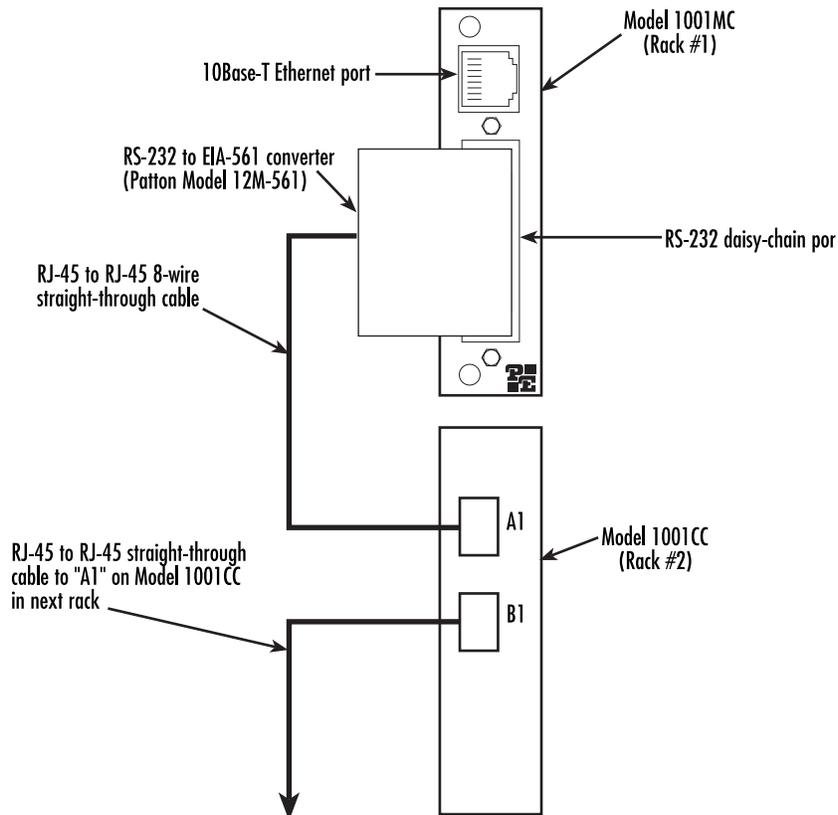


Figure 15. Configuring a daisy-chain network

Setting the address range for your NetLink modems

The Model 1001MC polls the system looking for NetLink modems. If the address of the NetLink modem is not configured or does not match the rack that it is installed in, the Model 1001MC may not find the card. The address range that is polled is determined by the configuration of the system. The system administrator must make sure that the software configuration within the Model 1001MC matches the hardware configuration of the system.

The Model 1001MC uses the number of power supplies in the system to determine what the address range of the individual racks will be. The number of power supplies installed in each rack is entered on the Modem Information page. If the system is set for two power supplies installed, the 1001MC will automatically set the number of *slots available* (displayed on the Modem Information page) in the chassis to 13. If the system is set for a single power supply installed, the 1001MC will automatically set the number of slots available in the chassis to 15.

Using this information, the Model 1001MC will poll the specified address range in each rack. Thus, in a single power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 15

Note The 1001MC is always address 0.

The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 16. In a redundant power supply system, the address range for rack #1 (the rack with the 1001MC installed) will be from address 1 to address 13. The 1001MC will then begin polling rack #2 on the daisy chain port starting from address 14.

The daisy-chained racks are setup in the same manner with 13 addresses being available in a redundant system and 15 addresses being available in single supply system. When you disable a rack the addresses are still set aside for that rack space. If a power supply is removed, the addressing will not change unless you make the change through the 1001MC web pages. This allows easy service of the power supplies.

Introduction to the internal HTTP/HTML management pages

This section explains how to configure the internal HTTP/HTML management pages to manage your Patton NetLink System. The system can also be managed by using an SNMP Network Management Station using a standard SNMP software package or MIB walking tool.

Logging into the HTTP/HTML administration pages

To log into the HTTP/HTML administration pages, you must enter the 4-octet Internet protocol (IP) address—in the format *http://your.server.ip.address* (for example, *http://201.168.15.12*)—as the universal resource locator (URL) into a World-Wide Web (WWW) browser. After you enter the IP address, the 1001MC will prompt for your user name and password as shown in figure 16.

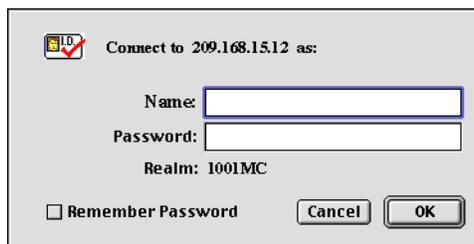


Figure 16. 1001MC login window

The Model 1001MC has two levels of password protection:

- *superuser*—The superuser password level lets you view statistics and make configuration changes to the system. To log in as a superuser, type the word *superuser*, all lower case, as the username and password
- *monitor*—The monitor level password enables you to view statistics, but it will not let you make any configuration changes. To log into the system at the monitor level, type *monitor*, all lower case, for the username and password.

Note The superuser and monitor passwords are set in the unit as the default passwords. For proper security, make sure that during your initial setup, you change the passwords (see section “System Information” on page 246 for information on how to change passwords).

HTTP/HTML and SNMP object format

In this document, we shall describe the variables found on each of the internal HTTP/HTML pages. This description will include brief definitions of the Patton Enterprise MIB or SNMP MIB II object identifiers wherever applicable. The format of the variables will resemble figure 17.

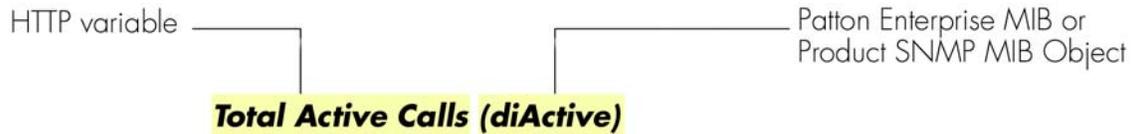


Figure 17. HTTP/HTML and SNMP object format

Saving HTTP/HTML object changes

Sometimes you will need to save changes that you have made in the HTTP/HTML pages. Do the following to make changes to read/write variables:

1. Select the appropriate Modify screen.
2. Make changes to the desired parameter.
3. Click on the **Submit** button.
4. Return to the HOME screen.
5. Click on the **Record Current Configuration** button.

Note Make sure you follow steps 1 through 5 when modifying the HTTP/HTML pages. Otherwise, your changes will be lost when the 1001MC is power-cycled.

Help screens

The Model 1001MC web pages have built-in help screens that enable you to get information about the variables that are being described. Each web page contains several headings that describe the section that is being defined. Some of the headings are hyperlinks to the help screen for that page. The new window will automatically scroll to the help area that was requested. You may also scroll through this page to view help information about other sections of the page. In some cases, the headings for the tables will be shown as hyperlinks, these hyperlinks, work the same as was previously discussed, showing the help screen for that column of the table.

HTTP/HTML web page navigation

This section describes how to navigate the internal HTTP/HTML web pages on the Model 1001MC. The diagram below shows how all of the web pages are linked together. Following figure 18, there is a brief description of each page. For more detailed information about each web page, refer to chapter 10, "HTTP/HTML web page reference" on page 220.

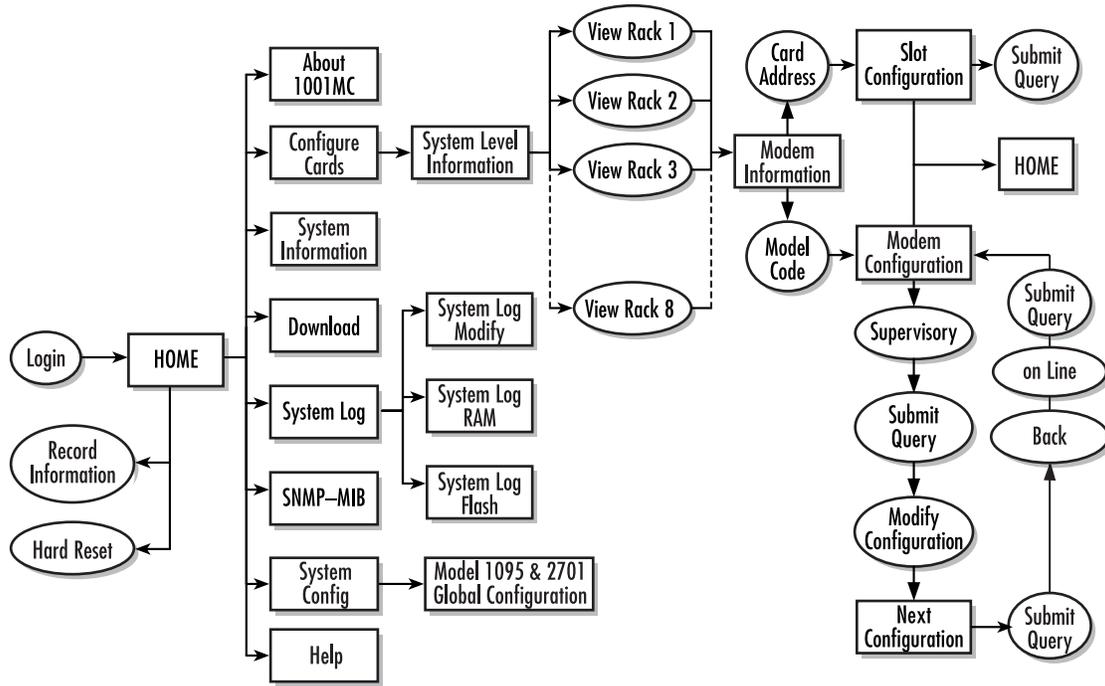


Figure 18. 1001MC command map

After logging in, the system displays the HOME page (see figure 19).

The screenshot shows the Patton Electronics HOME page. On the left is a vertical red navigation menu labeled '1001MC CONFIGURATION MENU' with links: HOME, About 1001MC, Import/Export, Configure Cards, System Info, Download, System Log, SNMP, System Config, and Help. The main content area includes the Patton Electronics Co. logo, a table of system information, a 'STATUS OF Support Unit' table, and 'IMMEDIATE ACTIONS' buttons for 'Record Current Configuration' and 'Hard Reset'.

Software Version:	2.5.1
Software Date Code:	Apr 15 2003 09:47:20
Box Name:	Support Unit
Box Contact:	Test Unit
Box Location:	Support Desk
Running Since Last Boot:	85 days 0 hrs 7 min 38 sec

STATUS OF Support Unit	
Total System Slots Available:	15
Total Active Slots:	5
Total System Warnings:	0
Total System Errors:	0

IMMEDIATE ACTIONS

Figure 19. HOME page

Home

The HOME page displays a quick overview of the system including; error and warning indications, software information, box names, number of modems installed, and so on.

On the left side of the HOME page is the Navigation View. The list on the left side of the screen allows you to navigate to any page from this point. The navigation page will always be available to you so you can change from one page to the next.

The **Record Current Configuration** button lets you store configuration changes made to the box.

Note If configuration changes are not stored into memory, they will be lost if the unit is powered down.

The **Hard Reset** button forces the 1001MC to perform a reset. This will not reset the individual cards in the rack only the 1001MC. If you would like to perform a hardware reset on the individual cards, refer to the Slot Configuration page. For more information, refer to section “HOME” on page 228.

About 1001MC

The About 1001MC page gives a more in-depth overview of the system that presented on the HOME page. This page also provides contact information about Patton Electronics. For more information, refer to section “About 1001MC” on page 231.

Configure Cards

Clicking on the Configure Cards hyperlink displays the System Level Information page. This page is the starting point for the configuration and management of your Patton NetLink modems. This page enables you to quickly identify potential problems and view statistics on a per-rack basis. You can also disable racks from this level. For more information, refer to section “” on page 249.

Download

Note Model 1094RC and 1095RC only.

The Download page enables you to perform software upgrades on the NetLink rack card modems installed in the system. New software for the modems can be obtained from Patton Electronics and uploaded into the 1001MC system via a file-transfer protocol (FTP) connection. For more information, refer to section “Download” on page 249.

System Log

The System Log page displays Syslog messages. Syslog messaging is a reporting tool used in the Model 1001MC to log run-time operations. There are several levels of messages and you can set the system to report only messages above a certain level. For more information, refer to section “System Log” on page 251.

SNMP

The SNMP web page enables you to download the Patton Enterprise MIBs for the Model 1001MC. These MIBs are required if you plan to manage the system using a network management station (NMS) instead of the web page manager. For more information, refer to section “SNMP” on page 258.

System Config

The System Config web page is where Model 1095RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 1095RC modems in multiple racks, or those in just one rack. For more information, refer to section “System Config” on page 259.

Help

The Help Menu page provides hyperlinks to help pages located within the 1001MC. For more information, refer to section “Help” on page 275.

Where to go next...

Refer to the following chapters as appropriate to manage the modem rack cards installed in your Model 1001 rack chassis:

- Chapter 4, “Model 1092ARC management” on page 47
- Chapter 5, “Model 1094ARC management” on page 67
- Chapter 6, “Model 1095RC management” on page 89
- Chapter 7, “Model 2701RC management” on page 129
- Chapter 8, “Model 2707RC management” on page 167
- Chapter 9, “Model 3088RC management” on page 187

For more detailed information about Model 1001MC management web pages, refer to chapter 10, “HTTP/HTML web page reference” on page 220.

Chapter 4 **Model 1092ARC management**

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Introduction

This chapter describes managing a Model 1092ARC NetLink iDSL modem using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink iDSL is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink iDSL modems using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 1092ARC:

- **Modem Information page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 50)
- **Model 1092 Configuration Slot page:** This page (along with the Model 1092 Configuration—Next Configuration page) enables you to make configuration changes to the Model 1092A and the remote CPE box (see section “[Displaying the Model 1092 Configuration Slot page](#)” on page 52)
- **Model 1092 Configuration—Next Configuration page:** This page (along with the Model 1092 Configuration Slot page) enables you to update configuration of modems installed in the system (see “[Displaying the Model 1092 Configuration—Next Configuration page](#)” on page 54)
- **Slot Configuration page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 1092 Configuration Slot page](#)” on page 52)

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Modem Information page

The Modem Information page (see figure 20) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.

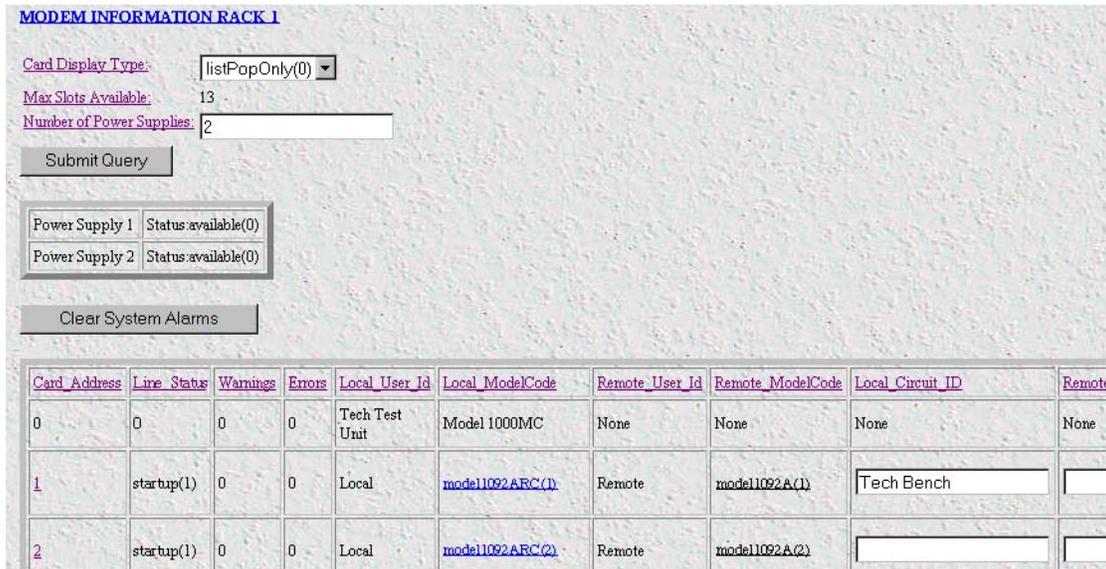


Figure 20. Modem Information page for the Model 1092ARC

Starting from the HOME page, to access the Modem Information page for the 1092ARC, click on the following links: *Configure Cards > View Rack 1*. Figure 21 on page 51 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information page, see “Displaying the Slot Configuration page” on page 56.

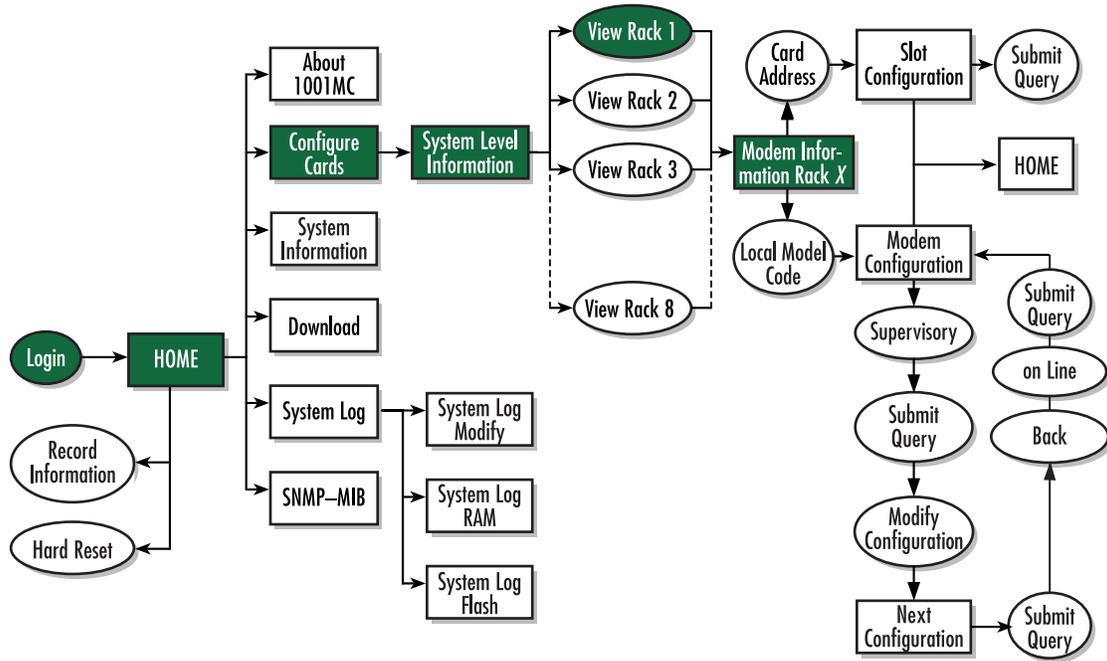


Figure 21. Web page navigation to Modem Information page

Displaying the Model 1092 Configuration Slot page

The Model 1092 Configuration Slot page (see figure 22) enables you to make configuration changes to the Model 1092A and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

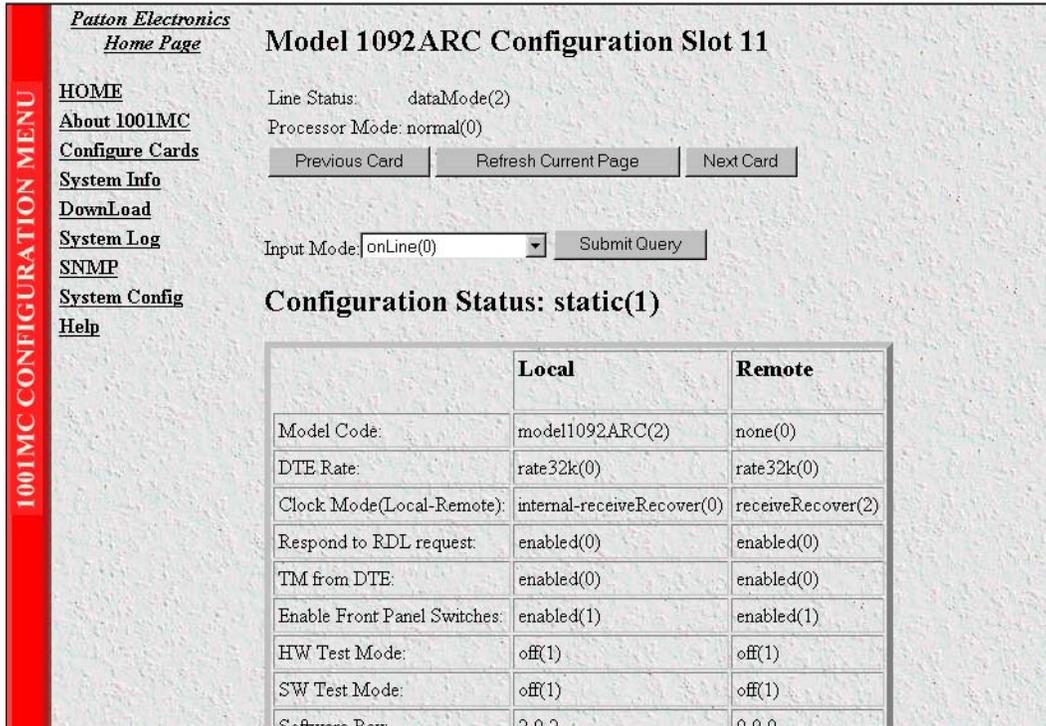


Figure 22. Model 1092 Configuration Slot page

Starting from the HOME page, to access the Model 1092 Configuration Slot page for the 1092ARC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1092ARC you wish to manage (in the example shown in figure 22, the 1092ARC was installed in slot 11). Figure 23 on page 53 shows the web page navigation required to get to this area of the system.

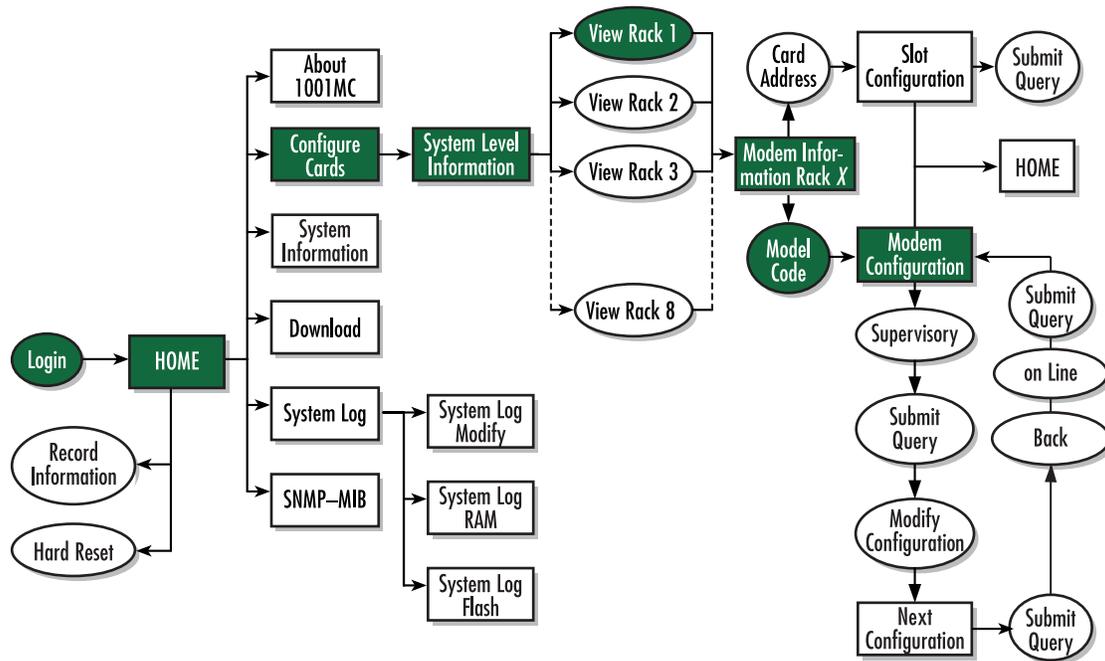


Figure 23. Web page navigation to Model 1092 Configuration Slot page

Making configuration changes to your 1092ARC NetLink modem

Do use the following to make configuration changes to your NetLink modem.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 1092 Configuration Slot page displayed, change the Input Mode (see figure 22) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 1092A Next Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 1092 Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 1092A will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 1092A processes the new information, the highlighting will be removed.

For more information about items on the Model 1092 Configuration Slot page, see “Model 1092 Configuration Slot page MIB variables description” on page 61.

Displaying the Model 1092 Configuration—Next Configuration page

The Model 1092 Configuration—Next Configuration page (see figure 24) enables you to make configuration changes to the Model 1092A and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

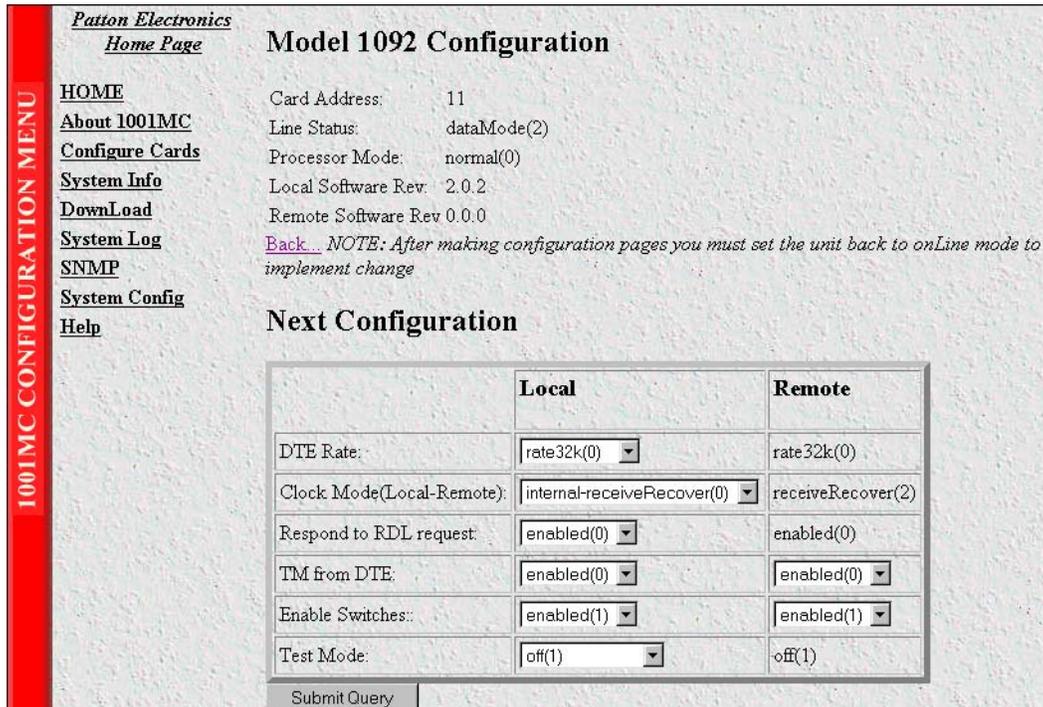


Figure 24. Model 1092 Configuration—Next Configuration page

Starting from the HOME page, to access the Model 1092 Configuration—Next Configuration page for the 1092ARC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1092ARC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisory-Mode*. Figure 25 on page 55 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 1092 Configuration—Next Configuration page, see “Model 1092 Configuration—Next Configuration page MIB variables description” on page 63.

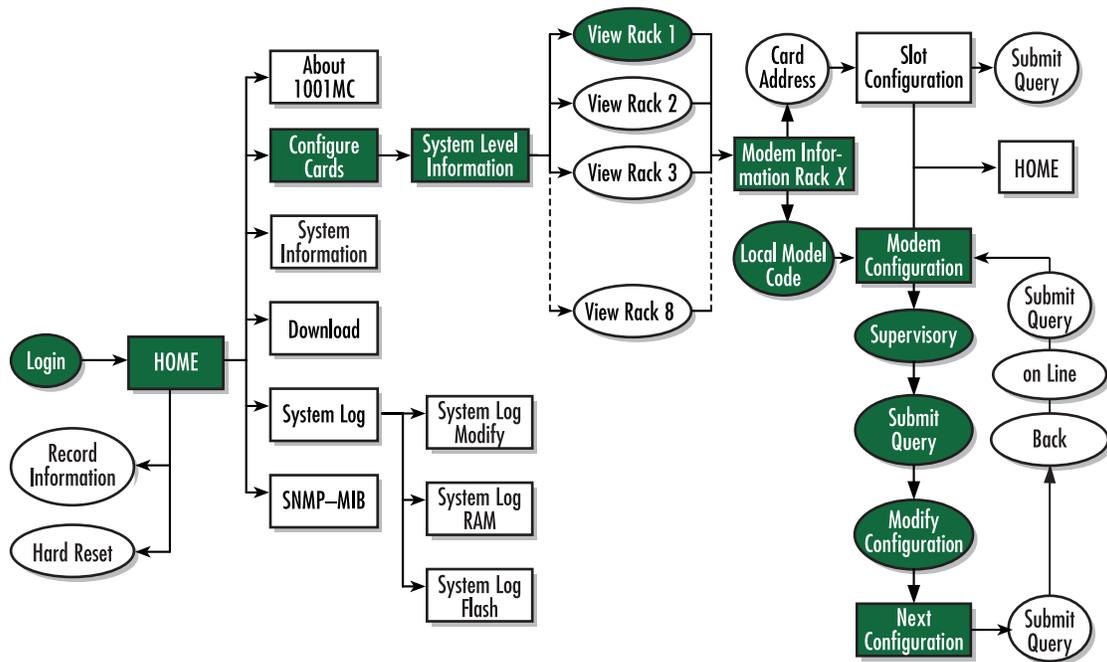


Figure 25. Web page navigation to Model 1092 Configuration—Next Configuration page

Displaying the Slot Configuration page

The Slot Configuration page (see [figure 26](#)) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

Patton Electronics
Home Page

SLOT CONFIGURATION PAGE

HOME Card Address: 1
 About 1001MC Local Model Code: model 1092ARC(1)
 Configure Cards [View Rack 1](#)
 System Info
 DownLoad
 System Log
 SNMP
 System Config
 Help

Card Identification Information

Local User ID:
 Remote User ID:

Card Identification Information

Local Circuit ID:
 Remote Circuit ID:

Alarm Information

Card Lost Indication:
 Line Down Indication:

Figure 26. Slot Configuration page

Starting from the HOME page, to access the Slot Configuration page for the 1092ARC, click on the following links: *Configure Cards* > *View Rack 1* > *Card Address* for the 1092ARC you wish to manage (in the example shown in [figure 26](#), the 1092ARC was installed in slot 1). [Figure 27](#) on page 57 shows the web page navigation required to get to this area of the system.

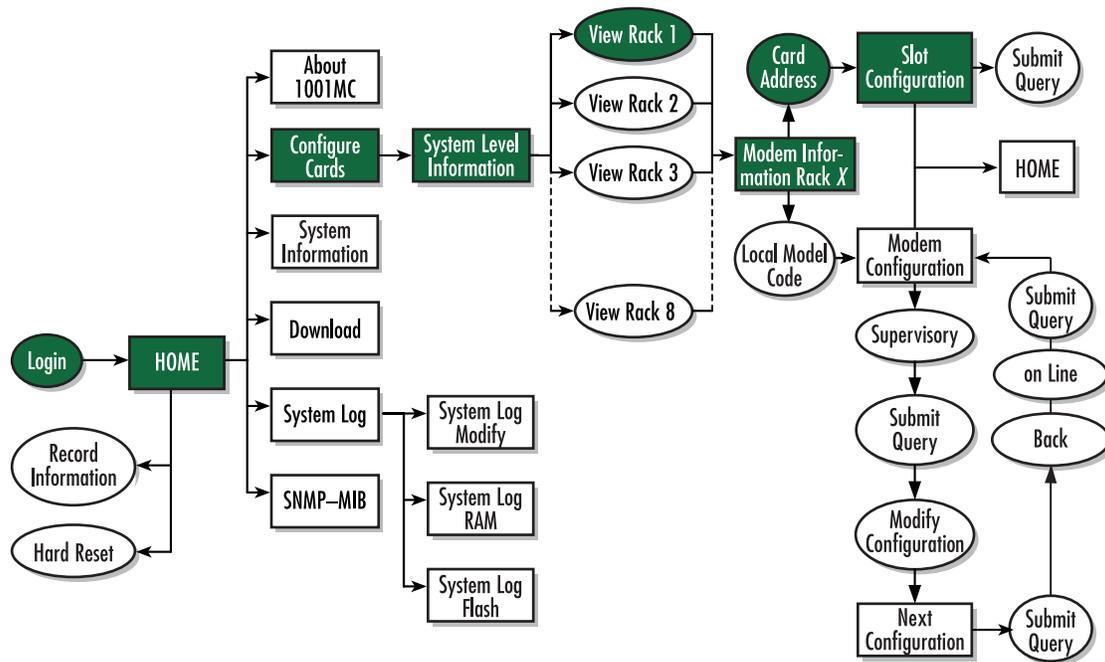


Figure 27. Web page navigation to Slot Configuration page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 65.

Modem Information page MIB variables description

This section describes the MIB variables that are available on the Modem Information page.

Slots Available (*totalConfigSlots*)

Displays the number of configurable slots available in the rack.

Modems Installed (*rackXCardsInstalled*)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (*rackXPowerSupplies*)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode

Note For Model 1095RC only.

If you want to protect all Model 1095RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status

Displays the current status of power supply 1 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Power Supply 2 Status

Displays the current status of power supply 2 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Clear Rack X Alarms (*clearAlarms*)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (*nmsSlotID*)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 1092ARC Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- startup(1)
- dataMode(2)—When the line status is *dataMode(2)*, the units are linked-up and ready to send data.

- testMode(3)

Warnings (warningCount)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (errorCount)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (remoteUserID)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, you ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Remote Model Code (remoteModelCode)

This column displays the model code of the Customer Premise NetLink modem at the far end of the link. This information is communicated from the CP box over the link to the CO Rack Card unit. The NetLink mDSL

rack card will then update the Model 1001MC. For this reason this information will not be available until after the link is made between the two modems.

Protected

Note For Model 1095RC and Model 2701RC.

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 1092 Configuration Slot page MIB variables description

This section describes the MIB variables that are available on the Model 1092 Configuration Slot page.

Model 1092A Model 1092 Configuration Slot (nmsSlotID)

Displays the address of the NetLink iDSL modem. The address is defined by the DIP-switch setting of S1 on the rack card. The remote standalone unit has no address specified, but uses that address of the rack card that it is connected to.

Line Status (lineStatusiDSL)

Displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)
- testMode(3)

When the line status is dataMode(2), the units are linked-up and ready to send data.

Processor Mode (processorModeiDSL)

Displays the status of the processor running on the NetLink-iDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink iDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-iDSL is setting up the configuration parameters within the Model 1001MC
- lineDown(3)

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-iDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Input Mode (mode1092A)

The following settings are available:

- onLine(0)
- superVisoryMode1)

To make configuration changes to the NetLink-iDSL modems, you must first set this bit to superVisoryMode1). When the Input Mode is set to superVisoryMode1), the Modify Configuration hyperlink will appear on the web page next to the Refresh Current Page hyperlink. Select the Modify Configuration hyperlink. The Model 1092A Configuration—Next Configuration page will appear (see section “[Model 1092 Configuration—Next Configuration page MIB variables description](#)” on page 63 for more information). After making configuration changes to the NetLink-iDSL modems in the Model 1092A Update Configuration page, return to this page and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-iDSL

configuration space. If this is not done, the NetLink-iDSL will not recognize the configuration changes that were made.

Model 1092 Configuration Slot page Configuration Status table description

The *Configuration Status* table shows the configuration for the set of units. There are columns for the local and remote units. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase, the NetLink-iDSL modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).
- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

Model Code (localModelCode/remoteModelCode)

These variables display the local and remote models codes for the units that were found in the specified address.

DTE rate (dteRateiDSL)

This variable displays the DTE rate for the link. Because the NetLink-iDSL modems are symmetrical (same rate in both direction), there is only one MIB variable that defines the DTE rate.

Clock Mode (Local-Remote)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode.

TM From DTE (dteTMiDSL/remotedeTMiDSL)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

HW Test Mode (testModelIndiDSL/remotetestModelIndiDSL)

These read-only variables notify you that the specified unit has been placed into a test mode through the hardware. This could have been done either through the front panel switches or from the DTE (if the TM from DTE is enabled). When a test mode is displayed, the field will be highlighted in blue to give you quick notification.

SW Test Mode (testModeSetiDSL/remotetestModeSetiDSL)

These variables notify you that the specified unit has been placed into a test mode through the management station. The management can place a unit into a test mode within the Model 1092A Update Configuration page explained in more detail below.

Software Rev (softVersioniDSL/remotesoftversioniDSL)

These read-only MIB variables display the current version of code that is running in the NetLink-iDSL modems. Check the Download page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-iDSL rack card. You can also update the software in the NetLink stand alone unit through the front panel control port on the unit.

Model 1092 Configuration—Next Configuration page MIB variables description

The Model 1092 Configuration—Next Configuration page enables you to update the configuration of the 1092ARC NetLink-iDSL modems that are installed in the system. After making changes to the configuration on this page, select Back to return to the Model 1092 Configuration Slot page, then select onLine as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network.

Note If the NetLink-iDSL modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 1092 Configuration—Next Configuration page.

Card Address (nmsSlotID)

Displays the address of the selected NetLink-iDSL modem.

Line Status (lineStatusiDSL)

This variable displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)—In this mode, the units are linked-up and ready to send data
- testMode(3)

Processor Mode (processorModeiDSL)

This variable displays the status of the processor running on the NetLink-iDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink - iDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-iDSL is setting up the configuration parameters within the Model 1001MC.
- lineDown(3).

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-iDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Local Software Rev (softVersioniDSL)

These read-only MIB variable displays the current version of code that is running in the NetLink-iDSL rack card modem. You should check the download web page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-iDSL rack card.

Remote Software Rev (remotesoftversioniDSL)

These read-only MIB variable displays the current version of code that is running in the NetLink-iDSL Customer Premise modem. You can update the software in the NetLink stand alone unit through the front panel control port on the unit. For more information regarding software downloads for standalone units, visit the Patton Electronics web site at www.patton.com.

Next Configuration table

This table shows the configurable MIB variables for the set of units. There are column for the local and remote units. In some cases a single variable applies to both the local and remote unit. In this case, a single configuration field is made available in the Local column and the Remote column is made a read-only field. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 1092 Configuration page.

The following sections explain the MIB variables that are shown in the Next Configuration table.

DTE rate (dteRateiDSL)

This variable displays the DTE rate for the link. Because the NetLink-iDSL modems are symmetrical (same rate in both direction), there is only MIB variable that defines the DTE rate. The Customer Premise box will automatically update its' configuration to the DTE rate that is set here.

Clock Mode (Local-Remote)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode as a single variable in the Local column. The Remote column displays a read only field showing the remote units clocking mode. This was done to avoid an illegal configuration of the NetLink-iDSL modems. For instance, both units CAN NOT be set to internal clock. The options list all possible clocking combinations.

TM From DTE (dteTMiDSL/remotedteTMiDSL)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

Test Mode (testModeSetiDSL/remotetestModeSetiDSL)

These variables allow you to place the NetLink-iDSL rack card into test modes. For more information on the test modes, please see the NetLink-iDSL Test Modes section below.

Submit Query button

After making configuration changes, select the **Back** link, then select *onLine*, and finally, select **Submit Query**. This will submit all the configuration information to the Model 1001MC. After this, the information is stored in volatile RAM until you place the Input Mode to *onLine(0)*. This will tell the 1001MC to copy all of the configuration information into the NetLink-iDSL configuration space.

Clear Changes

Once configuration changes have been made and you have selected the **Submit Query** button, if you decide not to implement these changes, select the **Clear Changes** button. This will set the configuration back to the settings that were there when this page was entered.

Set Default Configuration

Selecting this button will place the default configuration into the Next Configuration table.

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning.

Note The information contained here is also available in the Model 1001MC manual and is listed here for ease of use.

Card Address (*nmsSlotID*)

Displays the address of the card.

Local Model Code (*localModelCode*)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “[Modem Information Rack X](#)” on page 239 for more information).

Card Identification Information

*Local User Id (*localUserID*)*

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

*Remote User Id (*remoteUserID*)*

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, the User ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within this page.

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information

Clear Slot Alarms (resetStatus)

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (resetStatus)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (cardLostIndication)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- Error
- Warning
- None

Line Down Indication (lineDownIndication)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- Error
- Warning
- None

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Chapter 5 **Model 1094ARC management**

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Introduction

This chapter describes managing a Model 1094ARC NetLink HDSL modem using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink HDSL is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink HDSL modems using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 1094ARC:

- **Modem Information page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 70)
- **Model 1094 Configuration Slot page:** This page (along with the Model 1094 Configuration—Next Configuration page) enables you to make configuration changes to the Model 1094A and the remote CPE box (see section “[Displaying the Model 1094 Configuration Slot page](#)” on page 72)
- **Model 1094 Configuration—Next Configuration page:** This page (along with the Model 1094 Configuration Slot page) enables you to update configuration of modems installed in the system (see “[Displaying the Model 1094 Configuration—Next Configuration page](#)” on page 74)
- **Slot Configuration page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 1094 Configuration Slot page](#)” on page 72)
- **Download page:** This page is where you can download the latest version of 1001MC and 1094ARC software (see section “[Displaying the Download page](#)” on page 77)

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Modem Information page

The Modem Information page (see figure 28) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.

MODEM INFORMATION RACK 1

Card Display Type: ▾

Max Slots Available: 13

Number of Power Supplies:

Power Supply 1	Status:available(0)
Power Supply 2	Status:available(0)

Card Address	Line Status	Warnings	Errors	Local User Id	Local ModelCode	Remote User Id	Remote ModelCode	Local Circuit ID	Remote
0	0	0	0	Tech Test Unit	Model 1000MC	None	None	None	None
1	startup(1)	0	0	Local	model1094ARC(1)	Remote	model1094A(1)	<input type="text" value="Tech Bench"/>	<input type="text"/>
2	startup(1)	0	0	Local	model1094ARC(2)	Remote	model1094A(2)	<input type="text"/>	<input type="text"/>

Figure 28. Modem Information page for the Model 1094ARC

Starting from the HOME page, to access the Modem Information page for the 1094ARC, click on the following links: *Configure Cards* > *View Rack 1*. Figure 29 on page 71 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information page, see “*Displaying the Slot Configuration page*” on page 76.

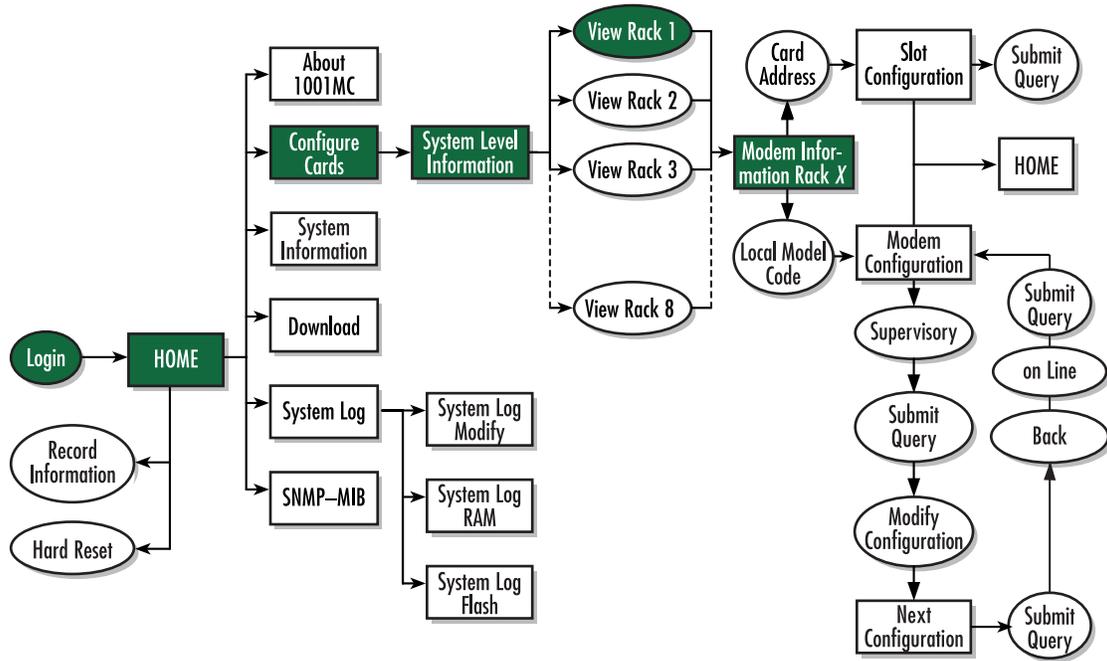


Figure 29. Web page navigation to Modem Information page

Displaying the Model 1094 Configuration Slot page

The Model 1094 Configuration Slot page (see figure 30) enables you to make configuration changes to the Model 1094A and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

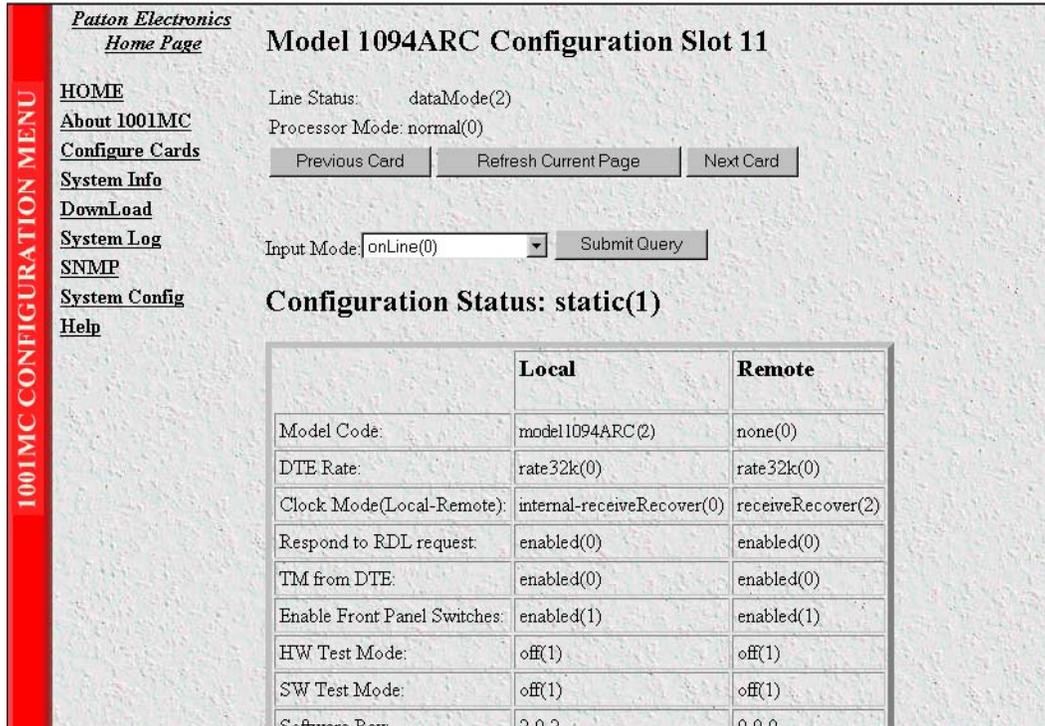


Figure 30. Model 1094 Configuration Slot page

Starting from the HOME page, to access the Model 1094 Configuration Slot page for the 1094ARC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1094ARC you wish to manage (in the example shown in figure 30, the 1094ARC was installed in slot 11). Figure 31 on page 73 shows the web page navigation required to get to this area of the system.

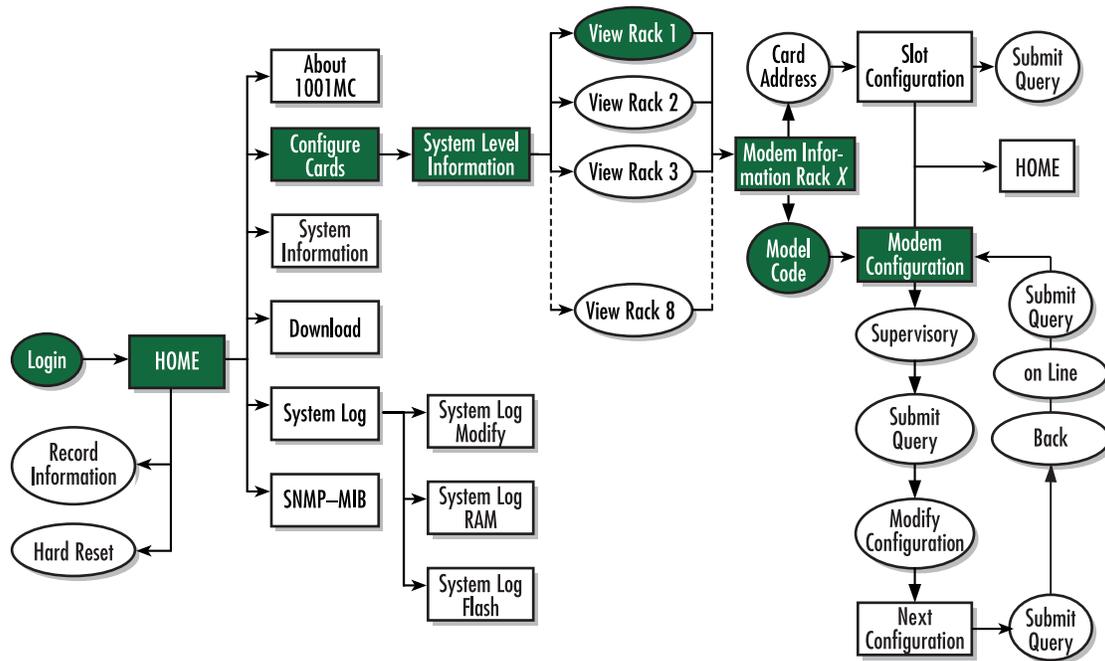


Figure 31. Web page navigation to Model 1094 Configuration Slot page

Making configuration changes to your 1094ARC NetLink modem

Do use the following to make configuration changes to your NetLink modem.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 1094 Configuration Slot page displayed, change the Input Mode (see figure 30) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 1094A Next Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 1094 Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 1094A will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 1094A processes the new information, the highlighting will be removed.

For more information about items on the Model 1094 Configuration Slot page, see “Model 1094 Configuration Slot page MIB variables description” on page 81.

Displaying the Model 1094 Configuration—Next Configuration page

The Model 1094 Configuration—Next Configuration page (see figure 32) enables you to make configuration changes to the Model 1094A and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

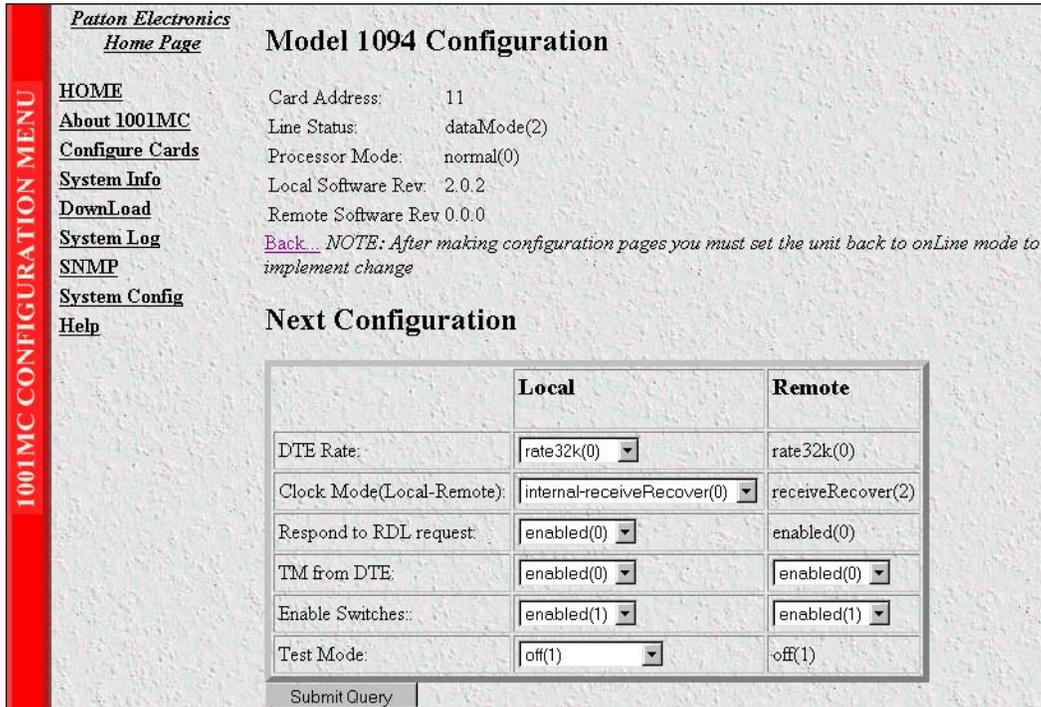


Figure 32. Model 1094 Configuration—Next Configuration page

Starting from the HOME page, to access the Model 1094 Configuration—Next Configuration page for the 1094ARC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1094ARC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisory-Mode*. Figure 33 on page 75 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 1094 Configuration—Next Configuration page, see “Model 1094 Configuration—Next Configuration page MIB variables description” on page 84.

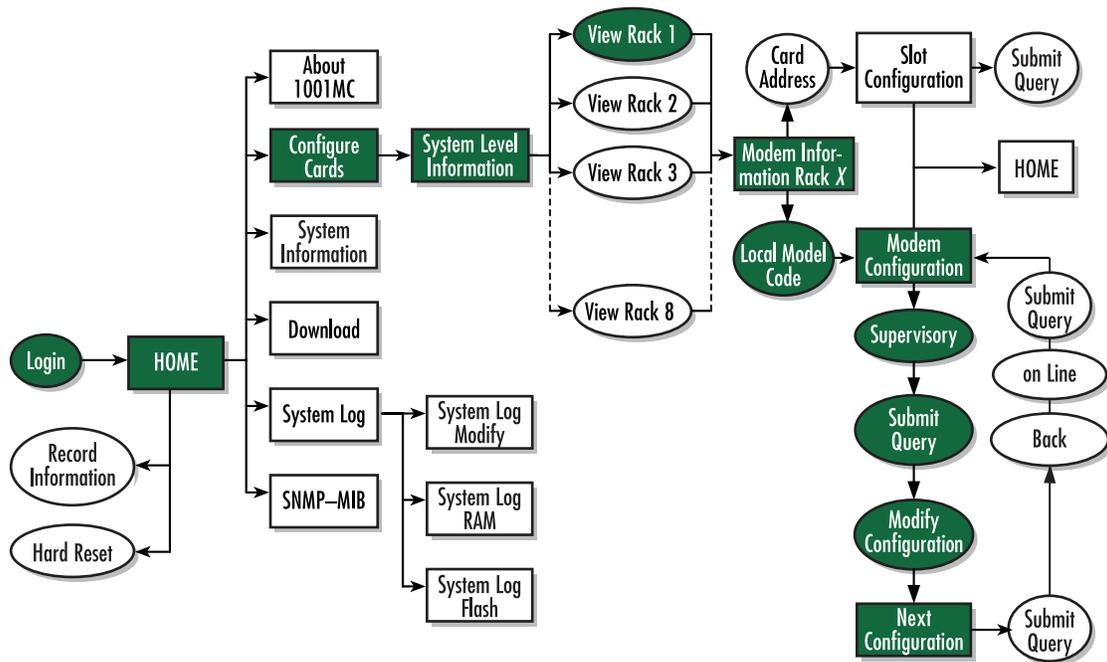


Figure 33. Web page navigation to Model 1094 Configuration—Next Configuration page

Displaying the Slot Configuration page

The Slot Configuration page (see [figure 34](#)) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

Patton Electronics
Home Page

SLOT CONFIGURATION PAGE

HOME Card Address: 1
 About 1001MC Local Model Code: model 1094ARC(1)
 Configure Cards [View Rack 1](#)
 System Info
 DownLoad
 System Log
 SNMP
 System Config
 Help

Card Identification Information

Local User ID:
 Remote User ID:

Card Identification Information

Local Circuit ID:
 Remote Circuit ID:

Alarm Information

Card Lost Indication:
 Line Down Indication:

Figure 34. Slot Configuration page

Starting from the HOME page, to access the Slot Configuration page for the 1094ARC, click on the following links: *Configure Cards* > *View Rack 1* > *Card Address* for the 1094ARC you wish to manage (in the example shown in [figure 34](#), the 1094ARC was installed in slot 1). [Figure 35](#) on page 77 shows the web page navigation required to get to this area of the system.

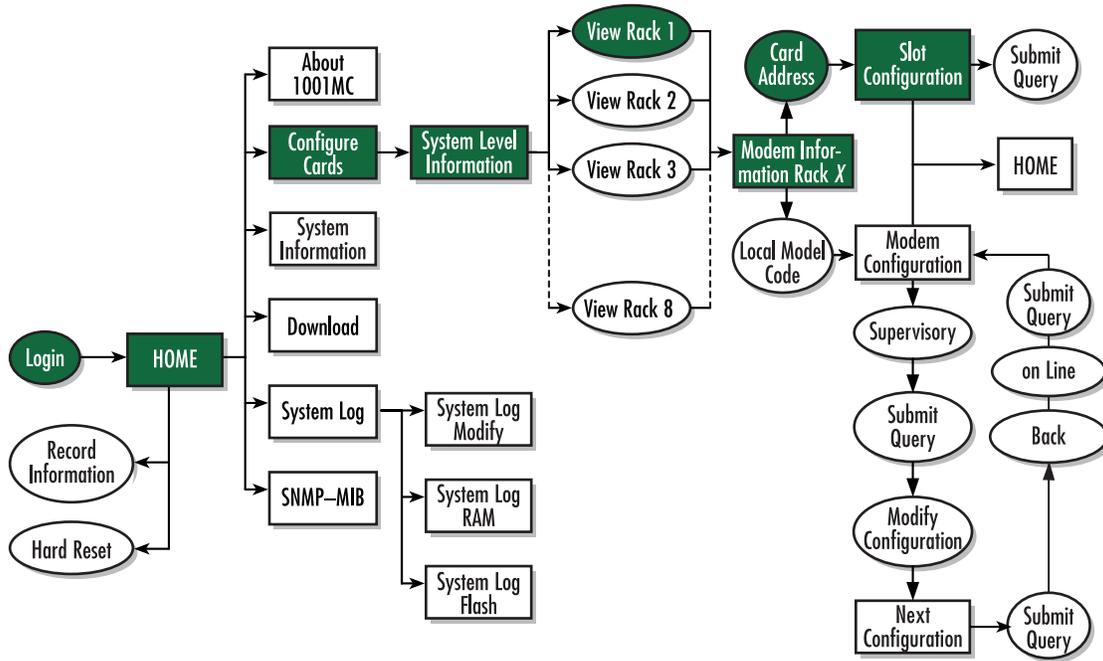


Figure 35. Web page navigation to Slot Configuration page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 86.

Displaying the Download page

The Download page (see figure 36) is where you can download the latest version of 1001MC and 1094ARC software.

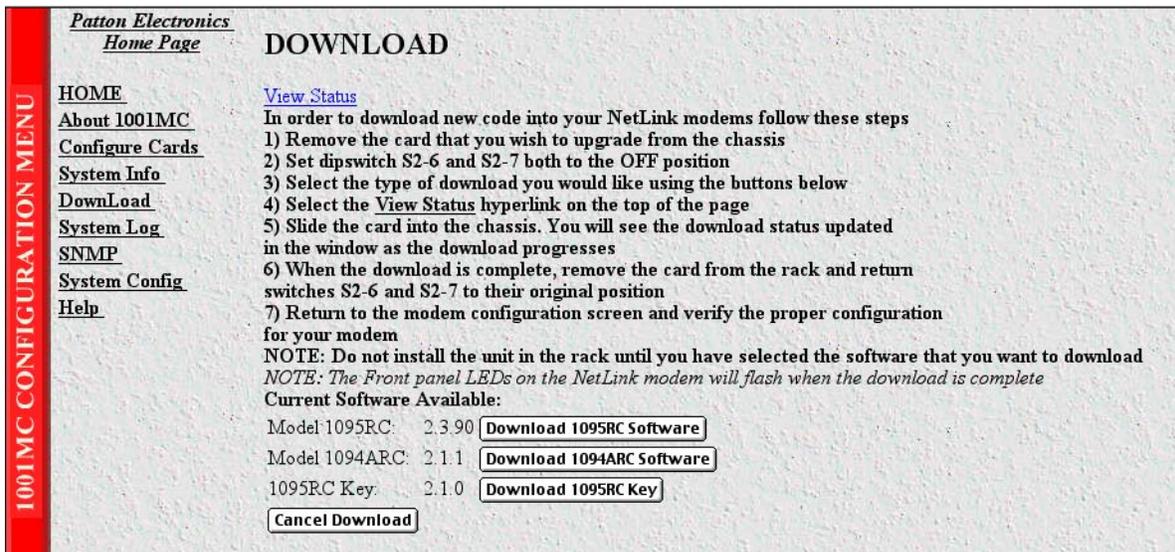


Figure 36. Download page

Starting from the HOME page, to access the Download page for the 1094ARC, click on the *Download* link. Figure 37 shows the web page navigation required to get to this area of the system.

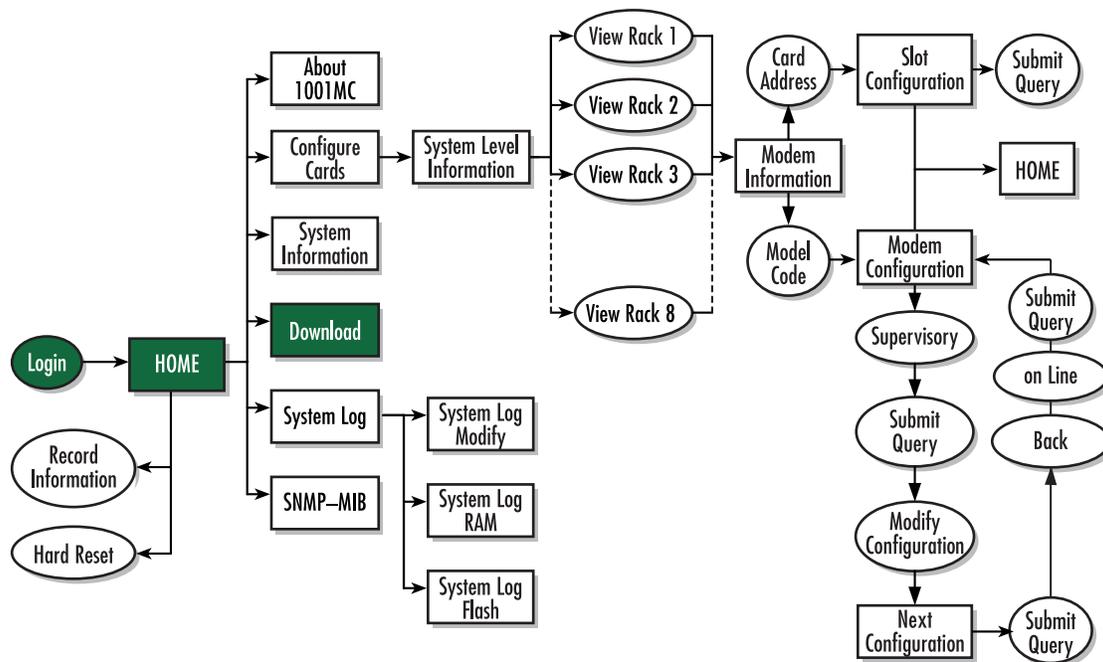


Figure 37. Web page navigation to Download page

For more information about items on the Slot Configuration page, see “Using the Download page to upgrade 1094ARC software” on page 87.

Modem Information page MIB variables description

This section describes the MIB variables that are available on the Modem Information page.

Slots Available (*totalConfigSlots*)

Displays the number of configurable slots available in the rack.

Modems Installed (*rackXCardsInstalled*)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (*rackXPowerSupplies*)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode

If you want to protect all Model 1095RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status

Displays the current status of power supply 1 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Power Supply 2 Status

Displays the current status of power supply 2 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Clear Rack X Alarms (*clearAlarms*)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (*nmsSlotID*)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 1095 Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- startup(1)
- dataMode(2)—When the line status is *dataMode(2)*, the units are linked-up and ready to send data.

- testMode(3)

Warnings (warningCount)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (errorCount)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (remoteUserID)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, you ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Remote Model Code (remoteModelCode)

This column displays the model code of the Customer Premise NetLink modem at the far end of the link. This information is communicated from the CP box over the link to the CO Rack Card unit. The NetLink mDSL

rack card will then update the Model 1001MC. For this reason this information will not be available until after the link is made between the two modems.

Protected

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 1094 Configuration Slot page MIB variables description

This section describes the MIB variables that are available on the Model 1094 Configuration Slot page.

Model 1094A Model 1094 Configuration Slot (nmsSlotID)

Displays the address of the NetLink HDSL modem. The address is defined by the DIP-switch setting of S1 on the rack card. The remote standalone unit has no address specified, but uses that address of the rack card that it is connected to.

Line Status (*lineStatus1094*)

Displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)
- testMode(3)

When the line status is dataMode(2), the units are linked-up and ready to send data.

Processor Mode (*processorMode1094*)

Displays the status of the processor running on the NetLink-HDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink HDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-HDSL is setting up the configuration parameters within the Model 1001MC
- lineDown(3)

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-HDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Input Mode (*mode1094*)

The following settings are available:

- onLine(0)
- superVisoryMode1)

To make configuration changes to the NetLink-HDSL modems, you must first set this bit to superVisoryMode1). When the Input Mode is set to superVisoryMode1), the Modify Configuration hyperlink will appear on the web page next to the Refresh Current Page hyperlink. Select the Modify Configuration hyperlink. The Model 1094A Configuration—Next Configuration page will appear (see section “[Model 1094 Configuration—Next Configuration page MIB variables description](#)” on page 84 for more information). After making configuration changes to the NetLink-HDSL modems in the Model 1094A Update Configuration page, return to this page and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-HDSL configuration space. If this is not done, the NetLink-HDSL will not recognize the configuration changes that were made.

Model 1094 Configuration Slot page Configuration Status table description

The *Configuration Status* table shows the configuration for the set of units. There are columns for the local and remote units. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase,

the NetLink-HDSL modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).

- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

Model Code (localModelCode/remoteModelCode)

These variables display the local and remote models codes for the units that were found in the specified address.

DTE rate (dteRate1094)

This variable displays the DTE rate for the link. Because the NetLink-HDSL modems are symmetrical (same rate in both direction), there is only one MIB variable that defines the DTE rate.

Clock Mode (Local-Remote)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode.

TM From DTE (dteTM1094/remotedteTM1094)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

HW Test Mode (testModelInd1094/remotetestModelInd1094)

These read-only variables notify you that the specified unit has been placed into a test mode through the hardware. This could have been done either through the front panel switches or from the DTE (if the TM from DTE is enabled). When a test mode is displayed, the field will be highlighted in blue to give you quick notification.

SW Test Mode (testModeSet1094/remotetestModeSet1094)

These variables notify you that the specified unit has been placed into a test mode through the management station. The management can place a unit into a test mode within the Model 1094A Update Configuration page explained in more detail below.

Software Rev (softVersion1094/remotesoftwareversion1094)

These read-only MIB variables display the current version of code that is running in the NetLink-HDSL modems. Check the Download page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-HDSL rack card. You can also update the software in the NetLink stand alone unit through the front panel control port on the unit.

Model 1094 Configuration—Next Configuration page MIB variables description

The Model 1094 Configuration—Next Configuration page enables you to update the configuration of the 1094ARC NetLink-HDSL modems that are installed in the system. After making changes to the configuration on this page, select **Back** to return to the Model 1094 Configuration Slot page, then select **onLine** as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network.

Note If the NetLink-HDSL modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 1094 Configuration—Next Configuration page.

Card Address (*nmsSlotID*)

Displays the address of the selected NetLink-HDSL modem.

Line Status (*lineStatus1094*)

This variable displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)—In this mode, the units are linked-up and ready to send data
- testMode(3)

Processor Mode (*processorMode1094*)

This variable displays the status of the processor running on the NetLink-HDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink - HDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-HDSL is setting up the configuration parameters within the Model 1001MC.
- lineDown(3).

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-HDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Local Software Rev (*softVersion1094*)

These read-only MIB variable displays the current version of code that is running in the NetLink-HDSL rack card modem. You should check the download web page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-HDSL rack card.

Remote Software Rev (remotesoftwareversion1094)

These read-only MIB variable displays the current version of code that is running in the NetLink-HDSL Customer Premise modem. You can update the software in the NetLink stand alone unit through the front panel control port on the unit. For more information regarding software downloads for standalone units, visit the Patton Electronics web site at www.patton.com.

Next Configuration table

This table shows the configurable MIB variables for the set of units. There are column for the local and remote units. In some cases a single variable applies to both the local and remote unit. In this case, a single configuration field is made available in the Local column and the Remote column is made a read-only field. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 1094 Configuration page.

The following sections explain the MIB variables that are shown in the Next Configuration table.

DTE rate (dteRate1094)

This variable displays the DTE rate for the link. Because the NetLink-HDSL modems are symmetrical (same rate in both direction), there is only MIB variable that defines the DTE rate. The Customer Premise box will automatically update its' configuration to the DTE rate that is set here.

Clock Mode (Local-Remote)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode as a single variable in the Local column. The Remote column displays a read only field showing the remote units clocking mode. This was done to avoid an illegal configuration of the NetLink-HDSL modems. For instance, both units CAN NOT be set to internal clock. The options list all possible clocking combinations.

Tx Data Sample Point (txdEdge1095/remotetxdEdge1095)

This variable defines the sampling point that is used by the NetLink-mDSL modems to read data from the DTE. In most situations it should always be set to normal(0). In high speed applications, there are situations that would require an inverted(1) sampling point.

TM From DTE (dteTM1094/remotedteTM1094)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

Test Mode (testModeSet1094/remotetestModeSet1094)

These variables allow you to place the NetLink-HDSL rack card into test modes. For more information on the test modes, please see the NetLink-HDSL Test Modes section below.

Submit Query button

After making configuration changes, select the **Back** link, then select *onLine*, and finally, select **Submit Query**. This will submit all the configuration information to the Model 1001MC. After this, the information is stored

in volatile RAM until you place the Input Mode to onLine(0). This will tell the 1001MC to copy all of the configuration information into the NetLink-HDSL configuration space.

Clear Changes

Once configuration changes have been made and you have selected the **Submit Query** button, if you decide not to implement these changes, select the **Clear Changes** button. This will set the configuration back to the settings that were there when this page was entered.

Set Default Configuration

Selecting this button will place the default configuration into the Next Configuration table.

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning.

Note The information contained here is also available in the Model 1001MC manual and is listed here for ease of use.

Card Address (nmsSlotID)

Displays the address of the card.

Local Model Code (localModelCode)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “Modem Information Rack X” on page 239 for more information).

Card Identification Information

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

Remote User Id (remoteUserID)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, the User ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within this page.

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information

Clear Slot Alarms (resetStatus)

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (resetStatus)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (cardLostIndication)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- Error
- Warning
- None

Line Down Indication (lineDownIndication)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- Error
- Warning
- None

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Using the Download page to upgrade 1094ARC software

Do the following to download new software into your NetLink modem:

1. Remove the card that you wish to upgrade from the rack chassis.
2. Make a note of the settings of DIP switches S2-6 and S2-7.
3. Set DIP switches S2-6 and S2-7 to the OFF position.

- Click on the **Download 1094ARC Software** button (see figure 38).

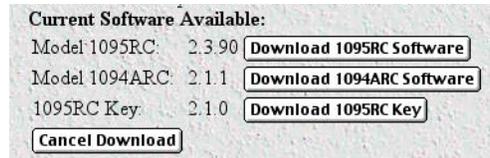


Figure 38. Download 1094ARC software button

Note Do not install the unit into the rack until you have selected the software that you want to download.

- Select the View Status hyperlink (see figure 39)

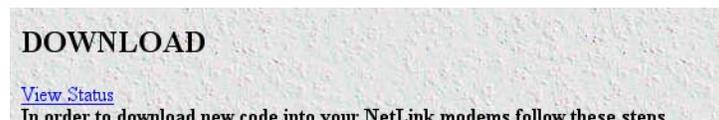


Figure 39. View Status link location

- Slide the card into the chassis. You will see the download status updated in the window as the download progresses.
- When the download is complete, remove the card from the rack and return DIP switches S2-6 and S-7 to their original positions.

Note The front panel LEDs on the NetLink modem will flash when the download is complete.

- Return to the modem configuration page and verify the proper configuration for your modem.

Congratulation! The software has been successfully upgraded.

Chapter 6 **Model 1095RC management**

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Introduction

This chapter describes managing a Model 1095RC NetLink mDSL modem using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink mDSL is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink mDSL modems using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 1095RC:

- **Global Configuration Menu page:** Model 1095RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 1095RC modems in multiple racks, or those in just one rack (see section “[Displaying the Global Configuration Menu page](#)” on page 93).
- **Modem Information page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 94).
- **Model 1095 Configuration Slot page:** This page (along with the Model 1095 Configuration—Next Configuration page) enables you to make configuration changes to the Model 1095RC and the remote CPE box (see section “[Displaying the Model 1095 Configuration Slot page](#)” on page 95).
- **Model 1095 Configuration—Next Configuration page:** This page (along with the Model 1095 Configuration Slot page) enables you to update configuration of modems installed in the system (see “[Displaying the Model 1095 Configuration—Next Configuration page](#)” on page 97).
- **Slot Configuration page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 1095 Configuration Slot page](#)” on page 95).
- **Download page:** This page is where you can download the latest version of 1001MC and 1095RC software (see section “[Displaying the Download page](#)” on page 100).

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Global Configuration Menu page

The Global Configuration Menu page (see figure 40) is where you can create templates that can globally configure the Model 1095RC. With this capability, you can globally configure some or all Model 1095RC modems in multiple racks, or just one rack.

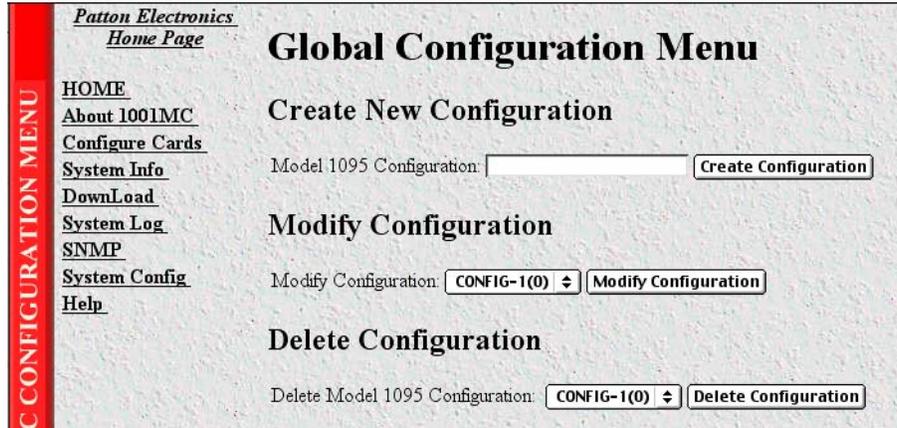


Figure 40. Global Configuration Menu page for the Model 1095RC

Starting from the HOME page, to access the Modem Information page for the 1095RC, click on the *System Config* link. Figure 41 shows the web page navigation required to get to this area of the system. For more information about items on the Global Configuration Menu page, see “Creating and modifying global configuration templates” on page 113.

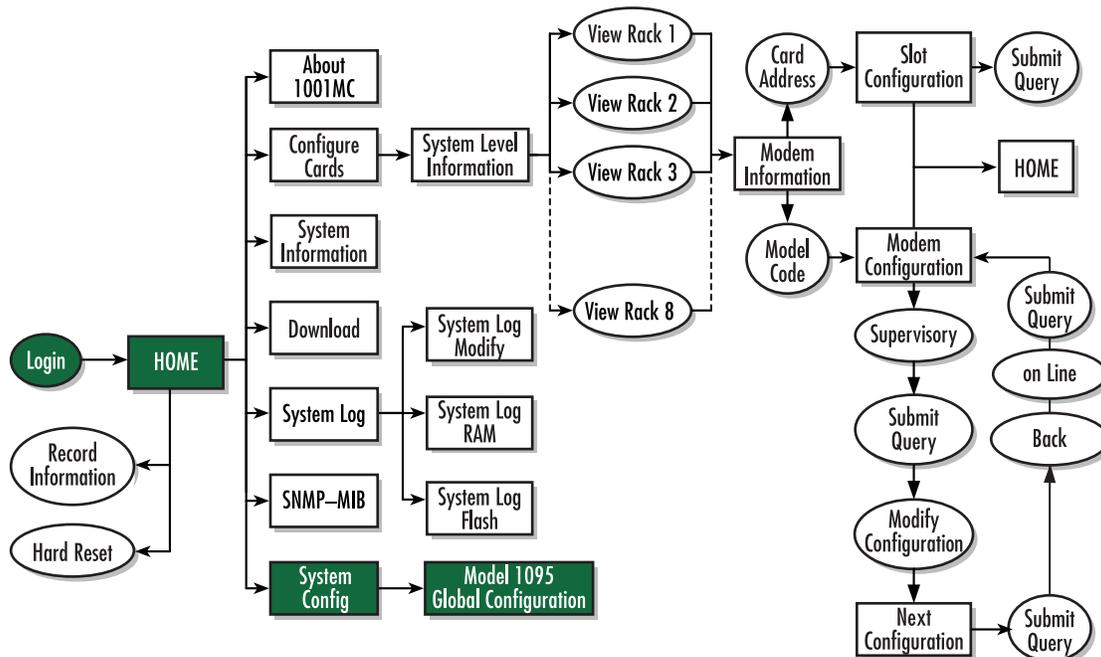


Figure 41. Web page navigation to Global Configuration Menu page

Displaying the Modem Information page

The Modem Information page (see figure 42) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.



Figure 42. Modem Information page for the Model 1095RC

Starting from the HOME page, to access the Modem Information page for the 1095RC, click on the following links: *Configure Cards* > *View Rack 1*. Figure 43 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information page, see “Displaying the Slot Configuration page” on page 99.

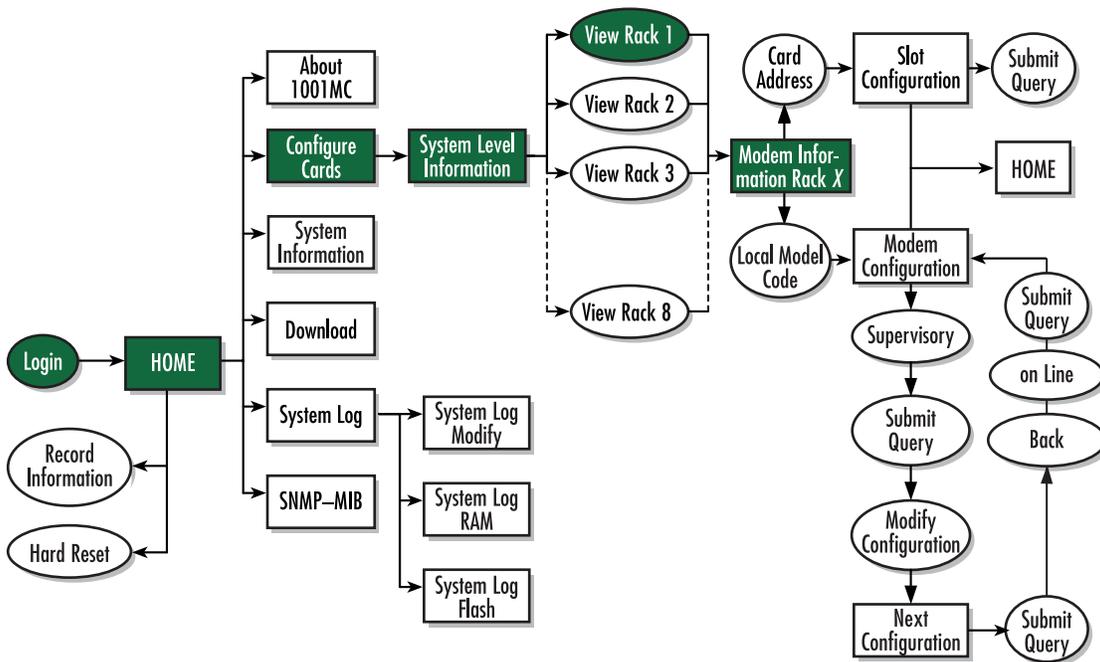


Figure 43. Web page navigation to Modem Information page

Displaying the Model 1095 Configuration Slot page

The Model 1095 Configuration Slot page (see figure 44) enables you to make configuration changes to the Model 1095RC and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

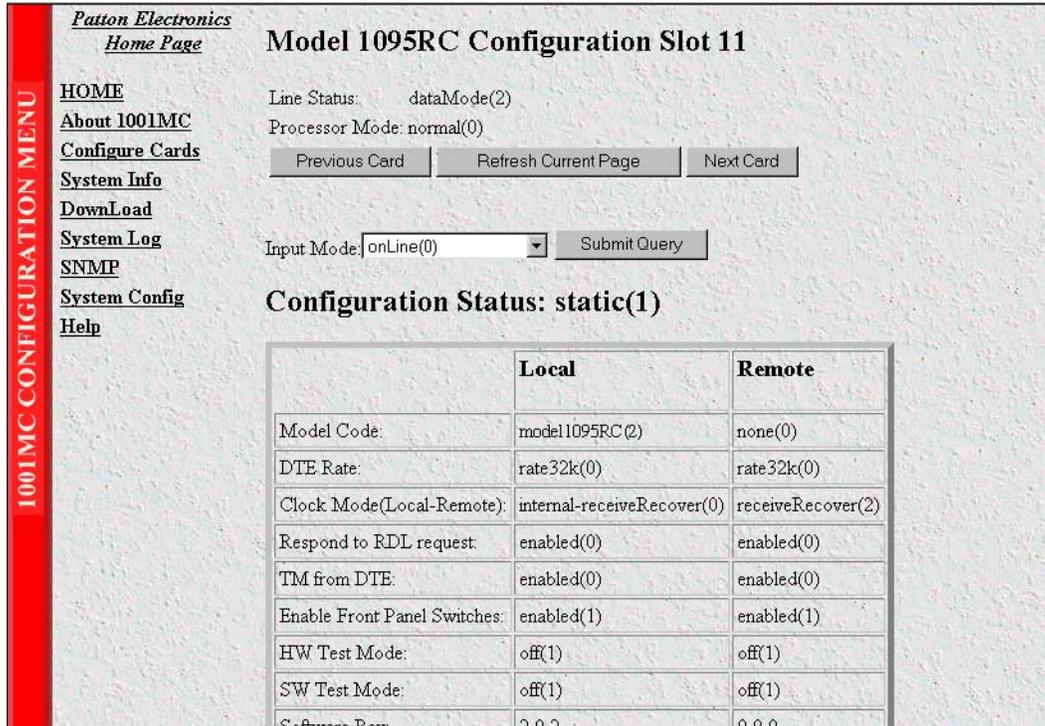


Figure 44. Model 1095 Configuration Slot page

Starting from the HOME page, to access the Model 1095 Configuration Slot page for the 1095RC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1095RC you wish to manage (in the example shown in figure 44, the 1095RC was installed in slot 11). Figure 45 on page 96 shows the web page navigation required to get to this area of the system.

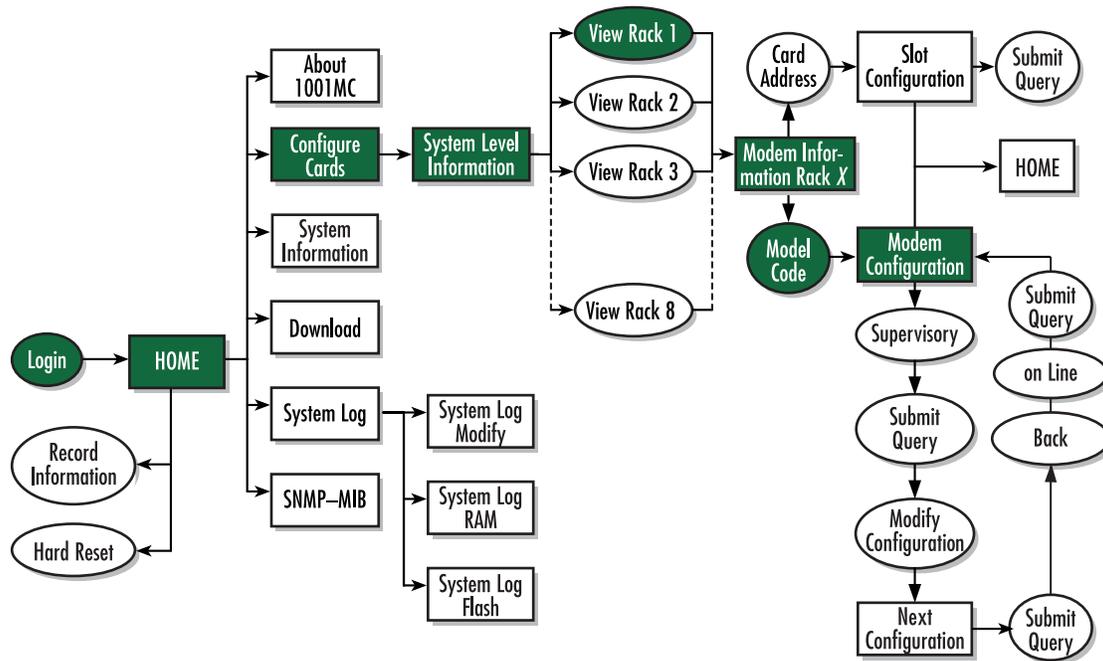


Figure 45. Web page navigation to Model 1095 Configuration Slot page

Making configuration changes to your 1095RC NetLink modem

Do use the following to make configuration changes to your NetLink modem.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 1095 Configuration Slot page displayed, change the Input Mode (see figure 44) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 1095RC Next Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 1095 Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 1095RC will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 1095RC processes the new information, the highlighting will be removed.

For more information about items on the Model 1095 Configuration Slot page, see “After submitting the remote circuit ID information, you must click on the Record Current Configuration button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).” on page 104.

Displaying the Model 1095 Configuration—Next Configuration page

The Model 1095 Configuration—Next Configuration page (see figure 46) enables you to make configuration changes to the Model 1095RC and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

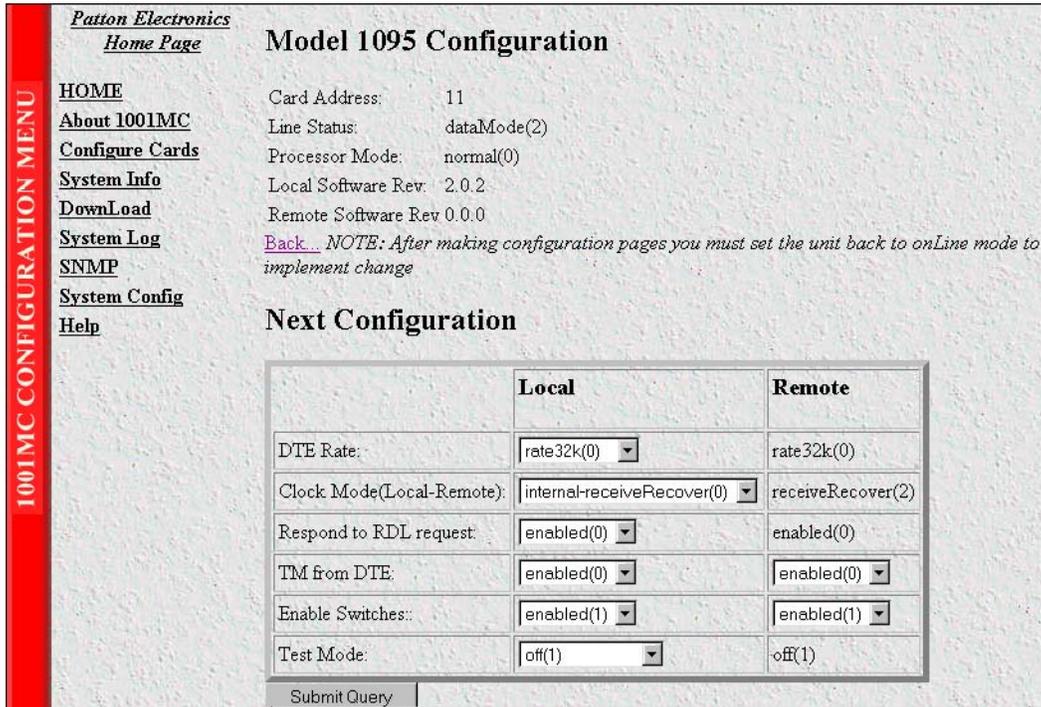


Figure 46. Model 1095 Configuration—Next Configuration page

Starting from the HOME page, to access the Model 1095 Configuration—Next Configuration page for the 1095RC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 1095RC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisoryMode*). Figure 47 on page 98 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 1095 Configuration—Next Configuration page, see “Model 1095 Configuration—Next Configuration page MIB variables description” on page 107.

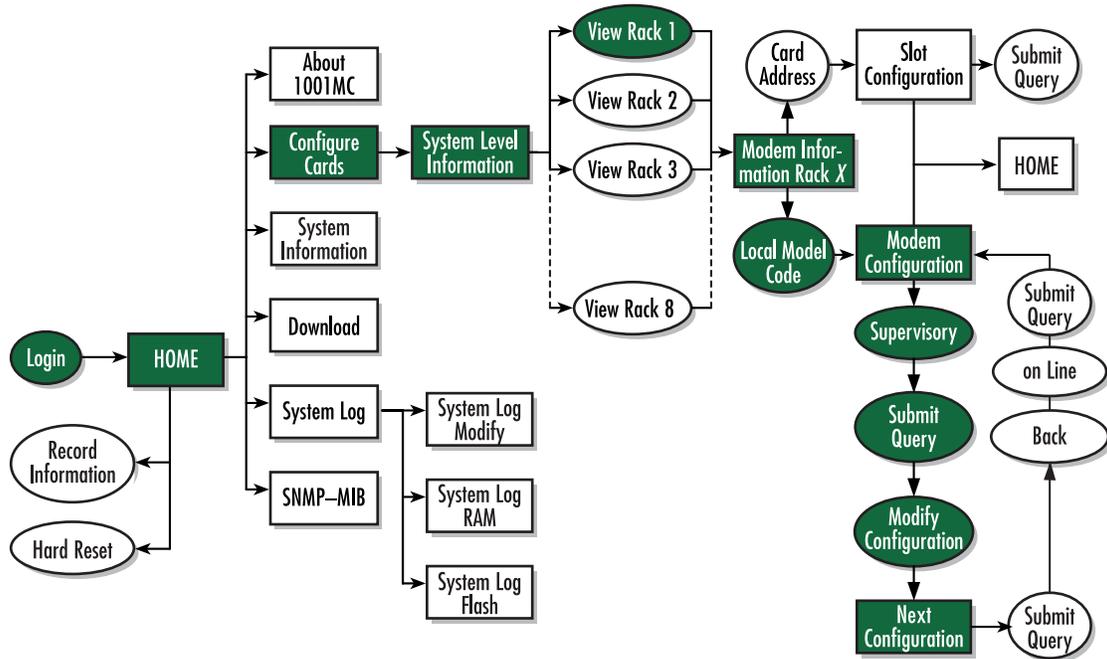


Figure 47. Web page navigation to Model 1095 Configuration—Next Configuration page

Displaying the Slot Configuration page

The Slot Configuration page (see figure 48) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

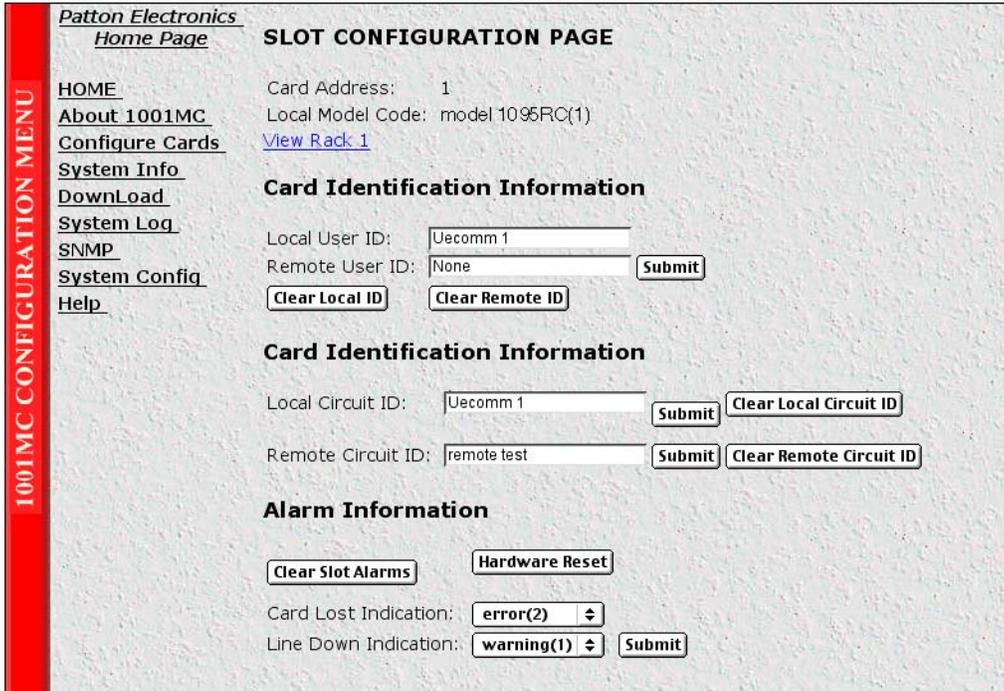


Figure 48. Slot Configuration page

Starting from the HOME page, to access the Slot Configuration page for the 1095RC, click on the following links: *Configure Cards* > *View Rack 1* > *Card Address* for the 1095RC you wish to manage (in the example shown in figure 48, the 1095RC was installed in slot 1). Figure 49 on page 100 shows the web page navigation required to get to this area of the system.

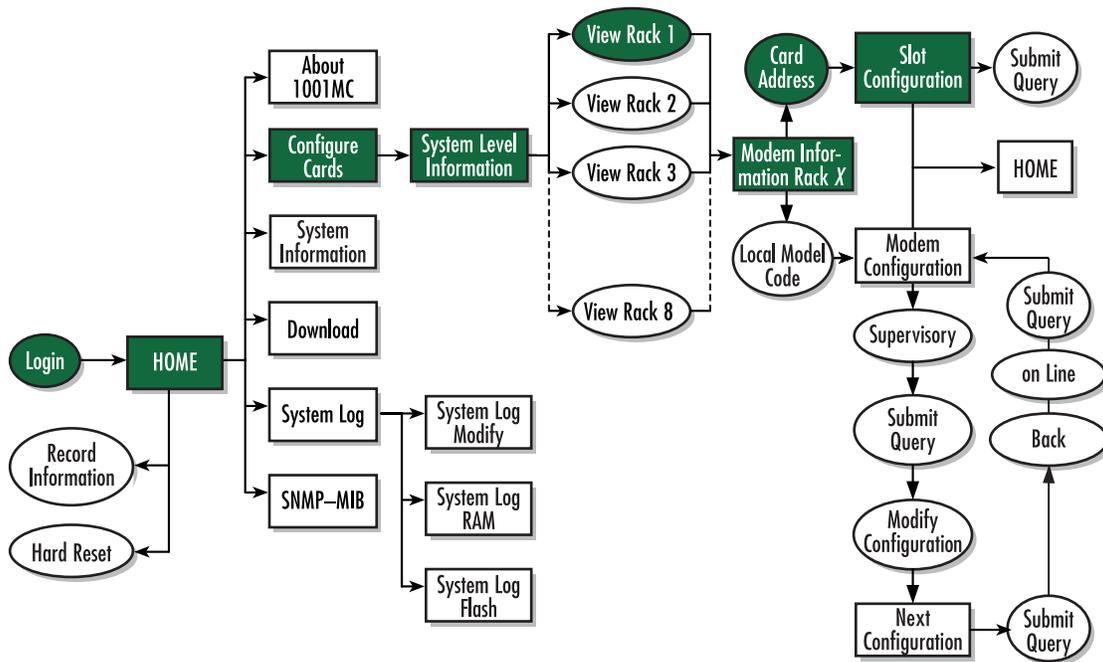


Figure 49. Web page navigation to Slot Configuration page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 110.

Displaying the Download page

The Download page (see figure 50) is where you can download the latest version of 1001MC and 1095RC software.

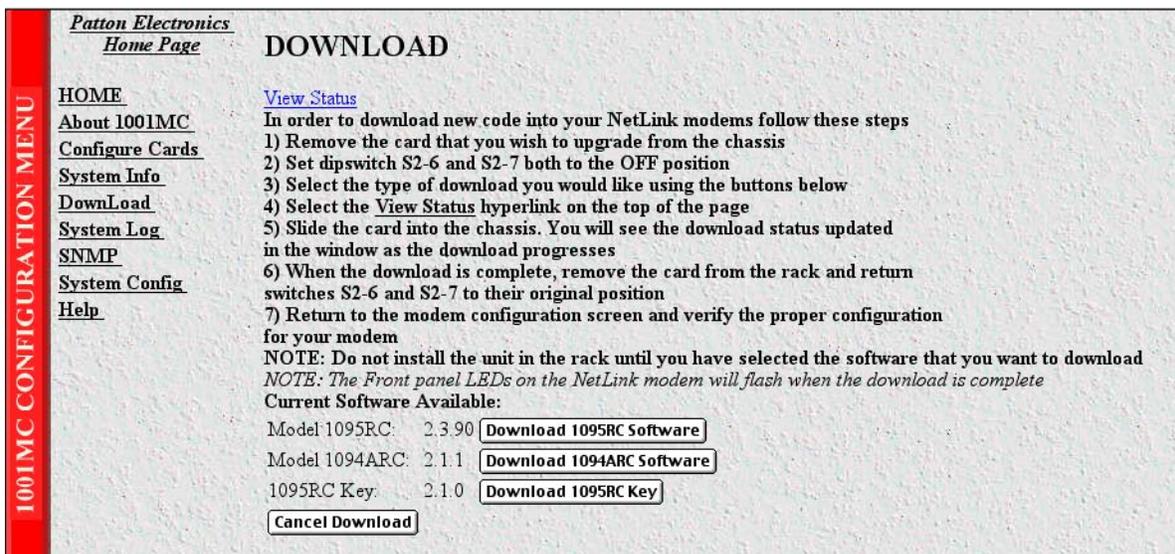


Figure 50. Download page

Starting from the HOME page, to access the Download page for the 1095RC, click on the *Download* link. Figure 51 shows the web page navigation required to get to this area of the system.

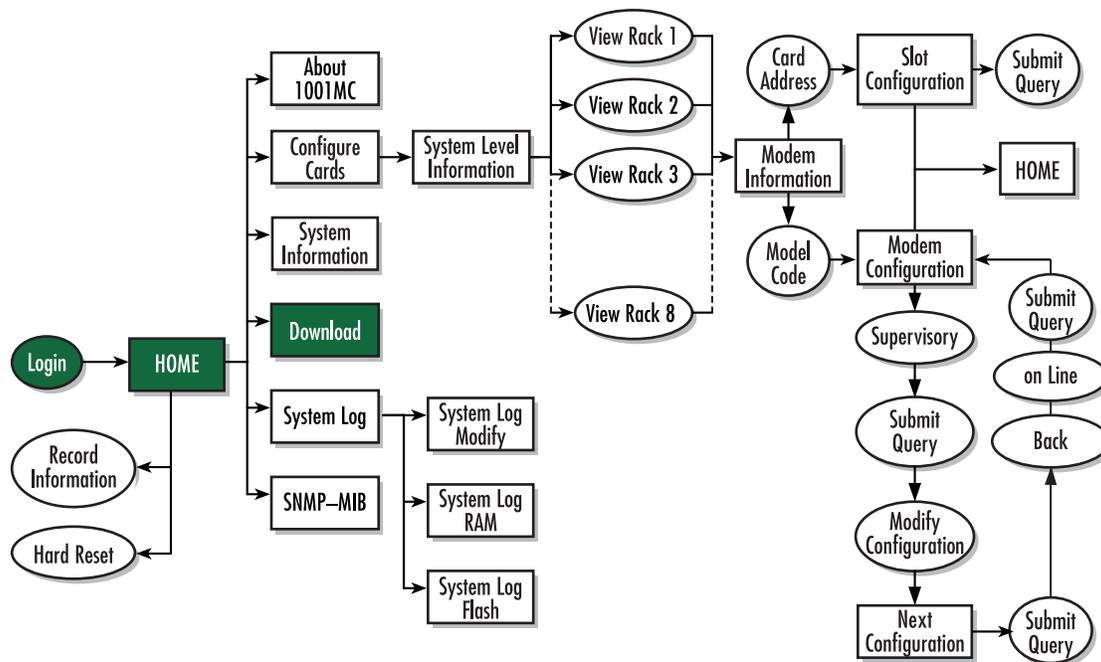


Figure 51. Web page navigation to Download page

For more information about items on the Download page, see “Using the Download page to upgrade 1095RC software” on page 111.

Modem Information page MIB variables description

This section describes the MIB variables that are available on the Modem Information page.

Slots Available (*totalConfigSlots*)

Displays the number of configurable slots available in the rack.

Modems Installed (*rackXCardsInstalled*)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (*rackXPowerSupplies*)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode

If you want to protect all Model 1095RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status

Displays the current status of power supply 1 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Power Supply 2 Status

Displays the current status of power supply 2 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Clear Rack X Alarms (*clearAlarms*)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (*nmsSlotID*)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 1095 Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- startup(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data.

- testMode(3)

Warnings (warningCount)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (errorCount)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (remoteUserID)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, you ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Remote Model Code (remoteModelCode)

This column displays the model code of the Customer Premise NetLink modem at the far end of the link. This information is communicated from the CP box over the link to the CO Rack Card unit. The NetLink mDSL

rack card will then update the Model 1001MC. For this reason this information will not be available until after the link is made between the two modems.

Protected

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 1095 Configuration Slot page MIB variables description

This section describes the MIB variables that are available on the Model 1095 Configuration Slot page.

Model 1095RC Model 1095 Configuration Slot (nmsSlotID)

Displays the address of the NetLink mDSL modem. The address is defined by the DIP-switch setting of S1 on the rack card. The remote standalone unit has no address specified, but uses that address of the rack card that it is connected to.

Line Status (*lineStatus1095*)

Displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)
- testMode(3)

When the line status is dataMode(2), the units are linked-up and ready to send data.

Processor Mode (*processorMode1095*)

Displays the status of the processor running on the NetLink-mDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink mDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-mDSL is setting up the configuration parameters within the Model 1001MC
- lineDown(3)

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-mDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Previous Card button

Click the **Previous Card** button to display the rack card configuration in the next occupied slot (in descending order).

Note Clicking on the **Previous Card** button before you have clicked the **Submit** button to save any changes will delete those changes.

Refresh Current Page button

Clicking the **Refresh Current Page** button displays updated configuration information.

Next Card button

Click the **Next Card** button to display the rack card configuration in the next occupied slot (in descending order).

Note Clicking on the **Next Card** button before you have clicked the **Submit** button to save any changes will delete those changes.

View Rack X hyperlink

Click on this link to display the Modem Information Rack X page. The Modem Information Rack page displays an overview of the NetLink rack that is being managed. For more information, refer to section “[Modem Information Rack X](#)” on page 239.

Input Mode (mode1095)

The following settings are available:

- onLine(0)
- superVisoryMode1)

To make configuration changes to the NetLink-mDSL modems, you must first set this bit to superVisoryMode1). When the Input Mode is set to superVisoryMode1), the Modify Configuration hyperlink will appear on the web page next to the Refresh Current Page hyperlink. Select the Modify Configuration hyperlink. The Model 1095RC Configuration—Next Configuration page will appear (see section “[Model 1095 Configuration—Next Configuration page MIB variables description](#)” on page 107 for more information). After making configuration changes to the NetLink-mDSL modems in the Model 1095RC Update Configuration page, return to this page and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-mDSL configuration space. If this is not done, the NetLink-mDSL will not recognize the configuration changes that were made.

Model 1095 Configuration Slot page Configuration Status table description

The *Configuration Status* table shows the configuration for the set of units. There are columns for the local and remote units. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase, the NetLink-mDSL modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).
- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

Model Code (localModelCode/remoteModelCode)

These variables display the local and remote models codes for the units that were found in the specified address.

DTE rate (dteRate1095)

This variable displays the DTE rate for the link. Because the NetLink-mDSL modems are symmetrical (same rate in both direction), there is only one MIB variable that defines the DTE rate.

Clock Mode (Local-Remote)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode.

Tx Data Sample Point (txdEdge1095/remotetxdEdge1095)

This variable defines the sampling point that is used by the NetLink-mDSL modems to read data from the DTE. In most situations it should always be set to normal(0). In high speed applications, there are situations that would require an inverted(1) sampling point.

TM From DTE (dteTM1095/remotedteTM1095)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

Framing Mode

This bit defines the mode of operation of the interface. For standard serial interfaces Framing Mode should be set to *normal*(3). Please refer to the user manual that came with the Model 1095RC for more information.

Note Framing mode was introduced into the Model 1095RC modems at software revision 2.2.0. If you have a modem with a software revision earlier than this it will ignore the framing mode bit. On the 1001MC web page the bit will always be highlighted in yellow showing that the bit is not being updated. Contact Patton Electronics for software upgrades for your units if you require this feature.

HW Test Mode (testModelInd1095/remotetestModelInd1095)

These read-only variables notify you that the specified unit has been placed into a test mode through the hardware. This could have been done either through the front panel switches or from the DTE (if the TM from DTE is enabled). When a test mode is displayed, the field will be highlighted in blue to give you quick notification.

SW Test Mode (testModeSet1095/remotetestModeSet1095)

These variables notify you that the specified unit has been placed into a test mode through the management station. The management can place a unit into a test mode within the Model 1095RC Update Configuration page explained in more detail below.

Software Rev (softVersion1095/remotesoftversion1095)

These read-only MIB variables display the current version of code that is running in the NetLink-mDSL modems. Check the Download page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-mDSL rack card. You can also update the software in the NetLink stand alone unit through the front panel control port on the unit.

Model 1095 Configuration—Next Configuration page MIB variables description

The Model 1095 Configuration—Next Configuration page enables you to update the configuration of the 1095RC NetLink-mDSL modems that are installed in the system. After making changes to the configuration on this page, select **Back** to return to the Model 1095 Configuration Slot page, then select **onLine** as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network.

Note If the NetLink-mDSL modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 1095 Configuration—Next Configuration page.

Card Address (*nmsSlotID*)

Displays the address of the selected NetLink-mDSL modem.

Line Status (*lineStatus1095*)

This variable displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)—In this mode, the units are linked-up and ready to send data
- testMode(3)

Processor Mode (*processorMode1095*)

This variable displays the status of the processor running on the NetLink-mDSL. There are four values that are significant to you:

- normal(0)—When the processor is in normal(0) mode, the NetLink - mDSL modem is monitoring itself and sending the status information to the Model 1001MC
- internalProcessing(1)—When the processor is in the internalProcessing(1) mode, it is either busy downloading code to the internal DSP or setting the data pump.
- negotiating(2)—When the processor is in the negotiating(2) mode, the card was just brought online and the NetLink-mDSL is setting up the configuration parameters within the Model 1001MC.
- lineDown(3).

At startup, all of the fields will be highlighted in yellow, signifying that they are *not* verified parameters. As the NetLink-mDSL sets up the parameters, the highlighting disappears, signifying that the display matches the setting of the card.

Local Software Rev (*softVersion1095*)

These read-only MIB variable displays the current version of code that is running in the NetLink-mDSL rack card modem. You should check the download web page to see if the Model 1001MC has a newer version of code available for downloading. Through the download web page, you can update the software that is running in the NetLink-mDSL rack card.

Remote Software Rev (*remotesoftwareversion1095*)

These read-only MIB variable displays the current version of code that is running in the NetLink-mDSL Customer Premise modem. You can update the software in the NetLink stand alone unit through the front panel control port on the unit. For more information regarding software downloads for standalone units, visit the Patton Electronics web site at www.patton.com.

Back... [hyperlink](#)

After making modifications, click the *Back* hyperlink, thereby returning the unit to *onLine* mode to implement the changes.

Next Configuration table

This table shows the configurable MIB variables for the set of units. There are column for the local and remote units. In some cases a single variable applies to both the local and remote unit. In this case, a single configuration field is made available in the Local column and the Remote column is made a read-only field. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 1095 Configuration page.

The following sections explain the MIB variables that are shown in the Next Configuration table.

DTE rate (*dteRate1095*)

This variable displays the DTE rate for the link. Because the NetLink-mDSL modems are symmetrical (same rate in both direction), there is only MIB variable that defines the DTE rate. The Customer Premise box will automatically update its' configuration to the DTE rate that is set here.

Clock Mode (*Local-Remote*)

This variable defines the clock mode for the NetLink modems. The display shows the Local clock mode (rack card) and then the remote clock mode as a single variable in the Local column. The Remote column displays a read only field showing the remote units clocking mode. This was done to avoid an illegal configuration of the NetLink-mDSL modems. For instance, both units CAN NOT be set to internal clock. The options list all possible clocking combinations.

Tx Data Sample Point (*txdEdge1095/remotetxdEdge1095*)

This variable defines the sampling point that is used by the NetLink-mDSL modems to read data from the DTE. In most situations it should always be set to normal(0). In high speed applications, there are situations that would require an inverted(1) sampling point.

TM From DTE (*dteTM1095/remotedteTM1095*)

These MIB variables define whether you would like the modems to accept test mode requests from the DTE that is connected. In normal applications this should be set to disable(1). When the application is using rear cards or interface modules that do not have loop back ability from the DTE, such as the IM2RC/IA Ethernet rear card, this variable must be set to disable(1). In most situations, if a DTE test mode is required, it should be enable only during the time that the test is needed.

Framing Mode

This bit defines the mode of operation of the interface. The following options are available:

- normal(3)
- slotted(1)

For standard serial interfaces Framing Mode should be set to *normal(3)*. Please refer to the user manual that came with the Model 1095RC for more information.

Note Framing mode was introduced into the Model 1095RC modems at software revision 2.2.0. If you have a modem with a software revision earlier than this it will ignore the framing mode bit. On the 1001MC web page the bit will always be highlighted in yellow showing that the bit is not being updated. Contact Patton Electronics for software upgrades for your units if you require this feature.

Test Mode (testModeSet1095/remotetestModeSet1095)

These variables allow you to place the NetLink-mDSL rack card into test modes. For more information on the test modes, please see the NetLink-mDSL Test Modes section below.

Submit Query button

After making configuration changes, select the **Back** link, then select *onLine*, and finally, select **Submit Query**. This will submit all the configuration information to the Model 1001MC. After this, the information is stored in volatile RAM until you place the Input Mode to onLine(0). This will tell the 1001MC to copy all of the configuration information into the NetLink-mDSL configuration space.

Clear Changes

Once configuration changes have been made and you have selected the **Submit Query** button, if you decide not to implement these changes, select the **Clear Changes** button. This will set the configuration back to the settings that were there when this page was entered.

Set Default Configuration

Selecting this button will place the default configuration into the Next Configuration table.

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning.

Card Address (nmsSlotID)

Displays the address of the card.

Local Model Code (localModelCode)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “Modem Information Rack X” on page 239 for more information).

Card Identification Information

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

Remote User Id (remoteUserID)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, the User ID will move to the new slot making it

useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within this page.

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information

Clear Slot Alarms (resetStatus)

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (resetStatus)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (cardLostIndication)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- Error
- Warning
- None

Line Down Indication (lineDownIndication)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- Error
- Warning
- None

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Using the Download page to upgrade 1095RC software

Do the following to download new software into your NetLink modem:

1. Remove the card that you wish to upgrade from the rack chassis.
2. Make a note of the settings of DIP switches S2-6 and S2-7.
3. Set DIP switches S2-6 and S2-7 to the OFF position.

- If you are upgrading Model 1095RC software, click on the **Download 1095RC Software** button (see figure 52). Otherwise, go to step 8 to download the latest version of the 1095RC Key software.

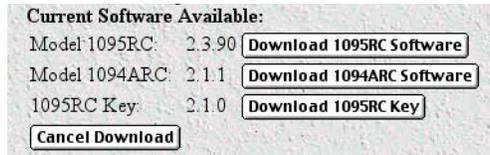


Figure 52. Download 1095RC software button

Note Do not install the unit into the rack until you have selected the software that you want to download.

- Select the View Status hyperlink (see figure 53).

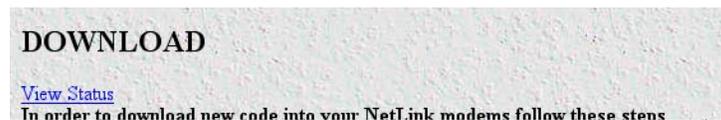


Figure 53. View Status link location

- Slide the card into the chassis. You will see the download status updated in the window as the download progresses.
- When the download is complete, if you are also going to download the latest 1095RC Key software go to step 8. Otherwise, go to step 12.
- Remove the card from the rack chassis.
- Click on the **Download 1095RC Key** button to download the 1095RC Key software.

Note Do not install the unit into the rack until you have selected the software that you want to download.

- Select the View Status hyperlink (see figure 53).
- Slide the card into the chassis. You will see the download status updated in the window as the download progresses.
- Remove the card from the rack and return DIP switches S2-6 and S-7 to their original positions.

Note The front panel LEDs on the NetLink modem will flash when the download is complete.

- Return to the modem configuration page and verify the proper configuration for your modem. Congratulations! The software has been successfully upgraded.

Creating and modifying global configuration templates

Model 1095RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 1095RC modems in multiple racks, or those in just one rack.

Note Due to the many different applications that are supported, care must be taken when setting the configuration of your modems that you avoid using combinations of variables that could cause problems with the modems if implemented incorrectly. Those variable combinations (referred to as *illegal combinations*) are described in this chapter.

This section contains the following information to help you configure and use templates:

- Protecting individual Model 1001 racks and 1095RC rack cards from global modification—You may not want all racks or modems to be modified when you apply the global template, so section “[Protecting Model 1001 racks and Model 1095RC modems from global modification](#)” describes how to protect individual 1001 racks and 1095RC modems from being globally configured.
- Creating a template (see section “[Creating a template](#)” on page 117)
- Modifying a template (see section “[Modifying a template](#)” on page 121)
- Deleting a template (see section “[”](#) on page 125)
- Applying a template (see section

Protecting Model 1001 racks and Model 1095RC modems from global modification

This section describes how to protect 1001 racks and 1095RC modem cards from being modified when a global modification is applied. This is useful if you are setting all but a few cards to the same configuration.

Select the appropriate option from following configuration choices:

- Protect a Model 1001 rack (see section “[Protecting a Model 1001 rack from global configuration](#)” on page 114)
- Protect a Model 1095RC rack card (see section “[Protecting a Model 1095RC rack card from global configuration](#)” on page 116)

Protecting a Model 1001 rack from global configuration

Do the following to protect a Model 1001 rack:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see figure 54. Figure 55 on page 115 shows the web page navigation required to get to this area of the system.

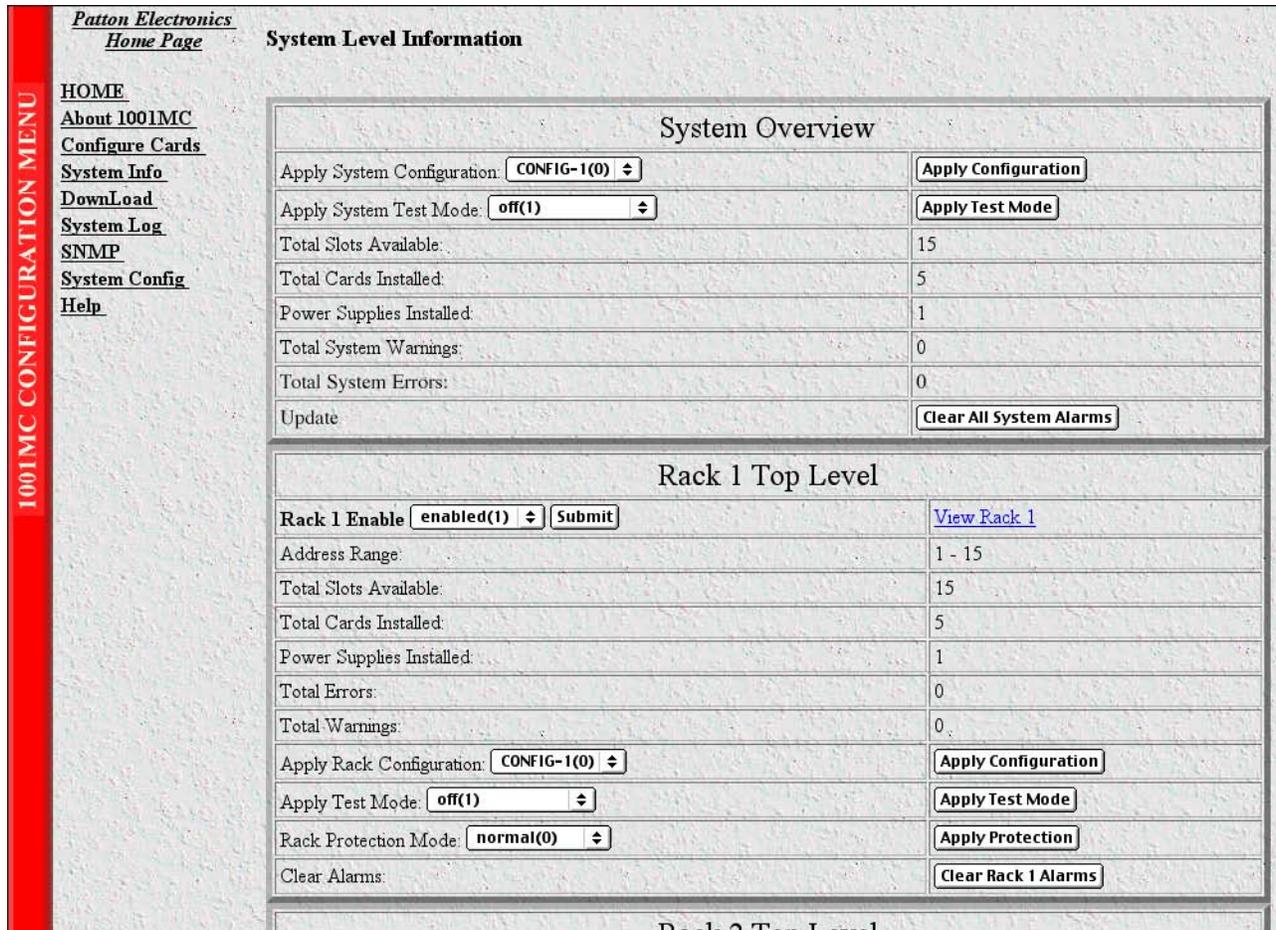


Figure 54. System Level Information page

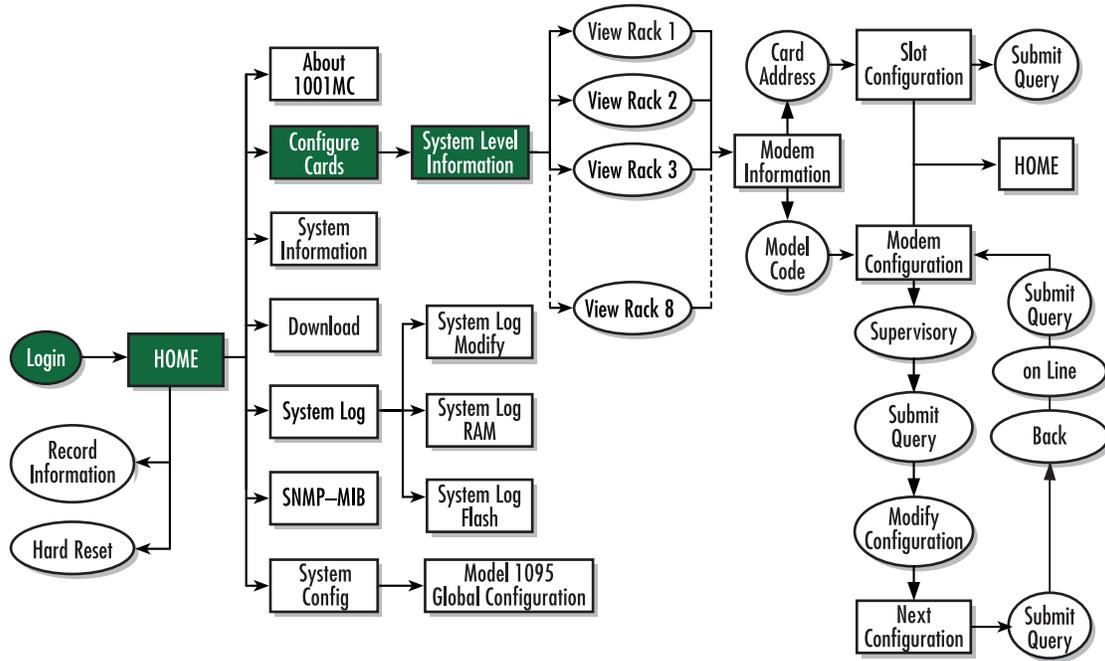


Figure 55. Web page navigation to System Level Information page

2. Use the *Rack Protection Mode* pop-up menu (see figure 54) to select *protected(1)*.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

3. Click the **Apply Protection** button.

The rack is now protected.

Protecting a Model 1095RC rack card from global configuration

Do the following to protect a single Model 1095RC rack card:

1. Starting from the HOME page, click on the following links: *Configure Cards* > *View Rack 1* (choose the rack you want to protect, in the example shown in figure 56, rack 1 was selected). Figure 57 shows the web page navigation required to get to this area of the system.



Figure 56. Modem Information Rack 1 page

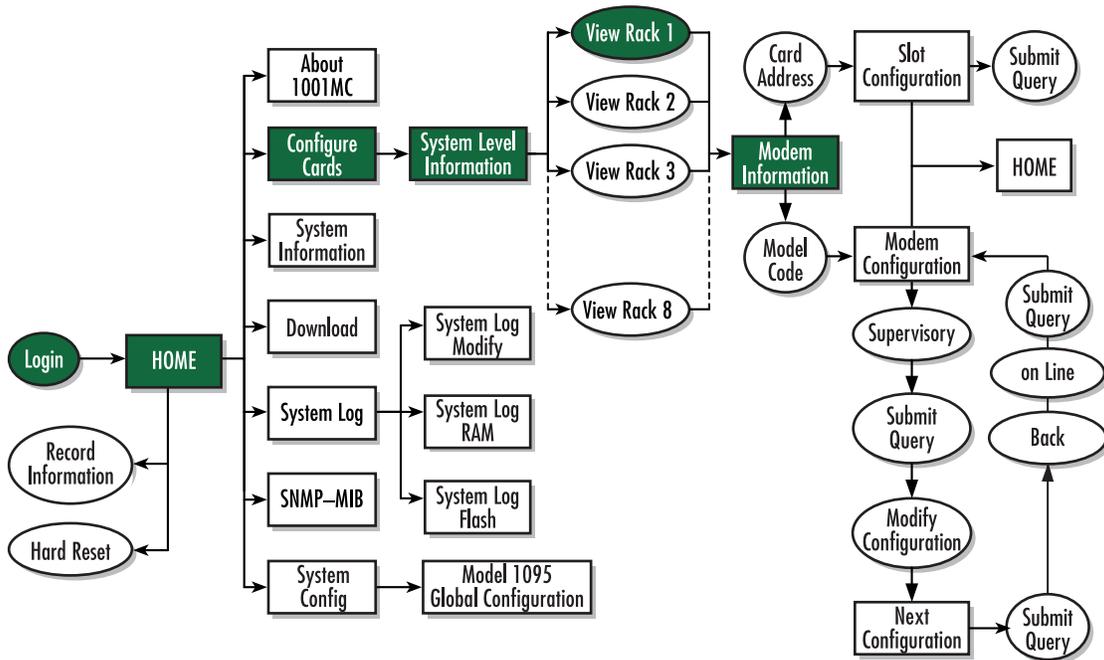


Figure 57. Web page navigation to Modem Information Rack 1 page

2. Locate the card address (see [figure 56](#) on page 116) of the Model 1095RC you want to protect.
3. Set the *Protected* pop-up menu (see [figure 56](#) on page 116) to *protected(1)*.

Note Setting the *Protected* option to *normal(0)* will enable the Model 1095RC to receive new configurations through the global configuration command.

4. Click the **Submit** button.

The rack card is now protected.

Creating a template

This section describes how to create a global configuration template. The Patton Model 1095 enables the Model 1001MC system administrator to configure the units for a wide variety of applications. Due to the many different applications that are supported, care must be taken when setting the configuration of your modems. There are several illegal combinations of variables that could cause problems with the modems if implemented incorrectly. Be sure to read the following information before creating a template:

- Configuration rules—Things to keep in mind when creating a template (see section “[Configuration rules](#)” on page 117)
- Notes on clock mode settings (see section “[Notes on clock mode settings](#)” on page 118)
- Notes on framing mode settings (see section “[Notes on framing mode settings](#)” on page 118)
- Illegal configuration messages (see section “[Illegal configuration messages](#)” on page 118)

After reviewing the rules and notes, go to section “[Procedure for creating a template](#)” on page 119 to learn how to create a template.

Configuration rules

Keep in mind the following when creating a template:

- If you have an IM2RC/K G.703/G.704 Rear Card installed with a 1095RC in your rack, the unit *must* have the Local Clock Mode set to *external* and the Framing Mode set to *slotted*.
- If you have an IM1/K G.703/G.704 Quick Connect Module installed with your 1095 at the remote site, the units *must* have the Clock Mode set to *external-external* and the Framing Mode for both the local and remote units *must* be set to *slotted*.
- If you have any other interface connected to your 1095RC or your 1095 modems, the Framing Mode *must* be set to *normal*.
- The system administrator should only set the Clock Mode to *external-external(4)* if there is an IM2RC/K installed in the 1095RC at the rack and an IM1/K installed in the 1095 standalone unit at the remote site.
- When setting a unit for the external clock mode, the unit *must* have an external clock source in order to make a link. When using either an IM2RC/K or an IM1/K, the *K* module will always provide the external clock for the unit, so it is not necessary to have a G.703/G.704 link available. When using any other type of serial interface, make sure that an external clock is provided by the DTE equipment or the modems will not link.

Notes on clock mode settings

The Clock Mode Setting determines the source of timing for the link. Most applications will use one of the following configurations:

- internal-receiveRecover(0)
- external-receiveRecover(1)

There are special situations which would require the use of the *external-external(4)* clock mode setting. This setting should only be used when the application has an IM2RC/K and a 1095RC in the rack system and a IM1/K and a 1095 standalone at the remote site. If you are using any other interface cards *do not use the external-external(4) configuration*.

Note When you are using the external-external(4) clock mode settings you *must* have the Framing Mode set to *slotted* for the local and remote units.

Notes on framing mode settings

The Framing Mode Setting notifies the card of the type of interface it will be connected to. When you are using an IM2RC/K with a 1095RC rack card, the system administrator should set the Local Clock Mode to *external* (either *external-receiveRecover(1)* or *external-external(4)*) and the Local Framing Mode to *slotted*. When you are using an IM1/K and a 1095 standalone at the remote site, the system administrator should set the Clock Mode to *external-external(4)* and the Remote Framing Mode to *slotted*.

Illegal configuration messages

If you are receiving an invalid configuration indication after creating a configuration, it is resulting from an illegal combination of variables. In most cases, the cause of the problem has to do with the Framing Mode variable. Patton DSL modems should only be set to the *slotted* mode when you are using an IM2RC/K with the 1095RC or an IM1/K with the 1095 standalone unit. Also, if you are using an IM2RC/K or IM1/K interface card, the 1095/1095RC must always be set to the external clock mode. Review the table below for a list of valid configurations that can be used with the 1095/1095RC.

Local Clock Mode	Local Framing Mode	Remote Clock Mode	Remote Framing Mode
Internal	Normal	Receive Recover	Normal
External	Normal	Receive Recover	Normal
External ^a	Slotted	Receive Recover	Normal
External ^a	Slotted	External ^a	Slotted
Receive Recover	Normal	Internal	Normal
Receive Recover	Normal	External	Normal

a. Denotes a unit that *must* have an IM2RC/K or IM1/K installed.

Procedure for creating a template

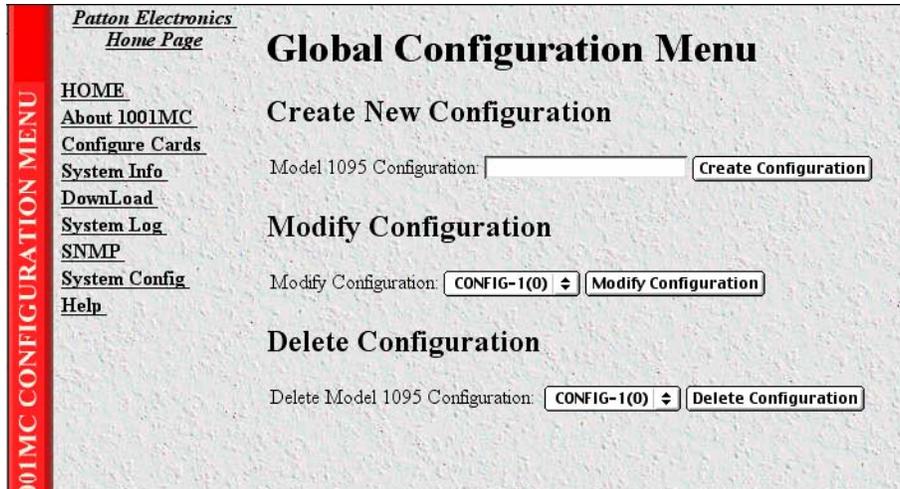


Figure 58. Global Configuration Menu page

Note You can create as many as five templates, if you need to delete a template to make room for another, refer to section “” on page 125).

Do the following to create a template:

1. Click in the Model 1095 Configuration text box (see figure 58) and type a short name (10 characters or less) for the new template, then click the **Create Configuration** button.

The Model 1095 Global Configuration window displays (see figure 59).

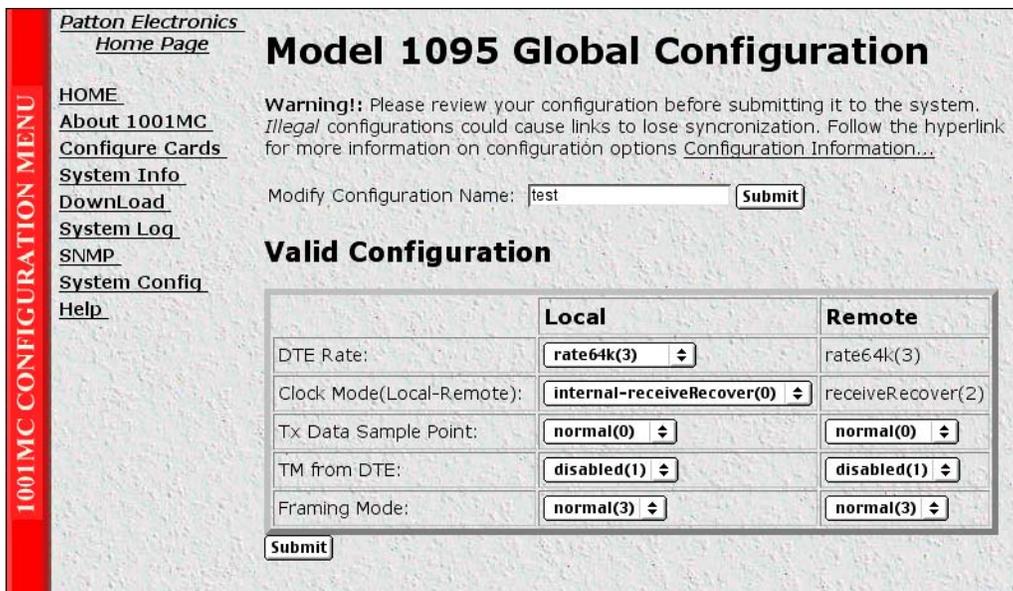


Figure 59. Model 1095 Global Configuration page

2. Use the *Local DTE Rate* pop-up menu to select local DTE rate. You have the following choices:
 - rate64k(3)
 - rate128k(4)
 - rate192k(5)
 - rate256k(6)
 - rate320k(7)
 - rate384k(8)
 - rate448k(9)
 - rate512k(10)
 - rate576k(11)
 - rate640k(12)
 - rate704k(13)
 - rate768k(14)
 - rate832k(15)
 - rate896k(16)
 - rate960k(17)
 - rate1024k(18)
 - rate1088k(19)
 - rate1216k(21)
 - rate1280k(22)
 - rate1344k(23)
 - rate1408k(24)
 - rate1472k(25)
 - rate1536k(26)
 - rate1600k(28)
 - rate1664k(29)
 - rate1728k(30)
 - rate1792k(31)
 - rate1856k(32)
 - rate1920k(33)
 - rate1984k(34)
 - rate2048k(35)
 - rate2112k(36)
 - rate2176k(37)
 - rate2240k(38)
 - rate2304k(39)
3. Use the *Local Clock Mode (Local-Remote)* pop-up menu to select the clock mode. You have the following choices:
 - internal-receiveRecover(0)
 - external-receiveRecover(1)
 - receiveRecover-internal(2)
 - receiveRecover-external(3)
 - external-external(4)
4. Use the *Local Tx Data Sample Point* pop-up menu to select the local transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
5. Use the *Remote Tx Data Sample Point* pop-up menu to select the remote transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
6. Configure the *Local TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
7. Configure the *Remote TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
8. Configure the *Local Framing Mode* pop-up menu using the following choices:
 - slotted(0)

- normal(3)
9. Configure the *Remote Framing Mode* pop-up menu using the following choices:
 - slotted(0)
 - normal(3)
 10. When you have finished setting the configuration, click on the **Submit** button to save the changes.

Note If you receive an *invalid configuration* error after creating a configuration, it is resulting from an illegal combination of variables. Refer to section “[Illegal configuration messages](#)” on page 118 for more information.

Refer to section “[Applying a template](#)” on page 125 to activate the template.

Modifying a template

This section describes how to modify a global configuration template. The Patton Model 1095 enables the Model 1001MC system administrator to configure the units for a wide variety of applications. Due to the many different applications that are supported, care must be taken when setting the configuration of your modems. There are several illegal combinations of variables that could cause problems with the modems if implemented incorrectly. Be sure to read the following information before creating a template:

- Configuration rules—Things to keep in mind when creating a template (see section “[Configuration rules](#)” on page 121)
- Notes on clock mode settings (see section “[Notes on clock mode settings](#)” on page 122)
- Notes on framing mode settings (see section “[Notes on framing mode settings](#)” on page 122)
- Illegal configuration messages (see section “[Illegal configuration messages](#)” on page 122)

After reviewing the rules and notes, go to section “[Procedure for modifying a template](#)” on page 123 to learn how to modify a template.

Configuration rules

Keep in mind the following when modifying a template:

- If you have an IM2RC/K G.703/G.704 Rear Card installed with a 1095RC in your rack, the unit *must* have the Local Clock Mode set to *external* and the Framing Mode set to *slotted*.
- If you have an IM1/K G.703/G.704 Quick Connect Module installed with your 1095 at the remote site, the units *must* have the Clock Mode set to *external-external* and the Framing Mode for both the local and remote units *must* be set to *slotted*.
- If you have any other interface connected to your 1095RC or your 1095 modems, the Framing Mode *must* be set to *normal*.
- The system administrator should only set the Clock Mode to *external-external*(4) if there is an IM2RC/K installed in the 1095RC at the rack and an IM1/K installed in the 1095 standalone unit at the remote site.
- When setting a unit for the external clock mode, the unit *must* have an external clock source in order to make a link. When using either an IM2RC/K or an IM1/K, the *K* module will always provide the external clock for

the unit, so it is not necessary to have a G.703/G.704 link available. When using any other type of serial interface, make sure that an external clock is provided by the DTE equipment or the modems will not link.

Notes on clock mode settings

The Clock Mode Setting determines the source of timing for the link. Most applications will use one of the following configurations:

- internal-receiveRecover(0)
- external-receiveRecover(1)

There are special situations which would require the use of the *external-external(4)* clock mode setting. This setting should only be used when the application has an IM2RC/K and a 1095RC in the rack system and a IM1/K and a 1095 standalone at the remote site. If you are using any other interface cards *do not use the external-external(4) configuration*.

Note When your are using the external-external(4) clock mode settings you *must* have the Framing Mode set to *slotted* for the local and remote units.

Notes on framing mode settings

The Framing Mode Setting notifies the card of the type of interface it will be connected to. When you are using an IM2RC/K with a 1095RC rack card, the system administrator should set the Local Clock Mode to *external* (either *external-receiveRecover(1)* or *external-external(4)*) and the Local Framing Mode to *slotted*. When you are using an IM1/K and a 1095 standalone at the remote site, the system administrator should set the Clock Mode to *external-external(4)* and the Remote Framing Mode to *slotted*.

Illegal configuration messages

If you are receiving an invalid configuration indication after creating a configuration, it is resulting from an illegal combination of variables. In most cases, the cause of the problem has to do with the Framing Mode variable. Patton DSL modems should only be set to the *slotted* mode when you are using an IM2RC/K with the 1095RC or an IM1/K with the 1095 standalone unit. Also, if you are using an IM2RC/K or IM1/K interface card, the 1095/1095RC must always be set to the external clock mode. Review the table below for a list of valid configurations that can be used with the 1095/1095RC.

Local Clock Mode	Local Framing Mode	Remote Clock Mode	Remote Framing Mode
Internal	Normal	Receive Recover	Normal
External	Normal	Receive Recover	Normal
External ^a	Slotted	Receive Recover	Normal
External ^a	Slotted	External ^a	Slotted
Receive Recover	Normal	Internal	Normal
Receive Recover	Normal	External	Normal

a. Denotes a unit that *must* have an IM2RC/K or IM1/K installed.

Procedure for modifying a template

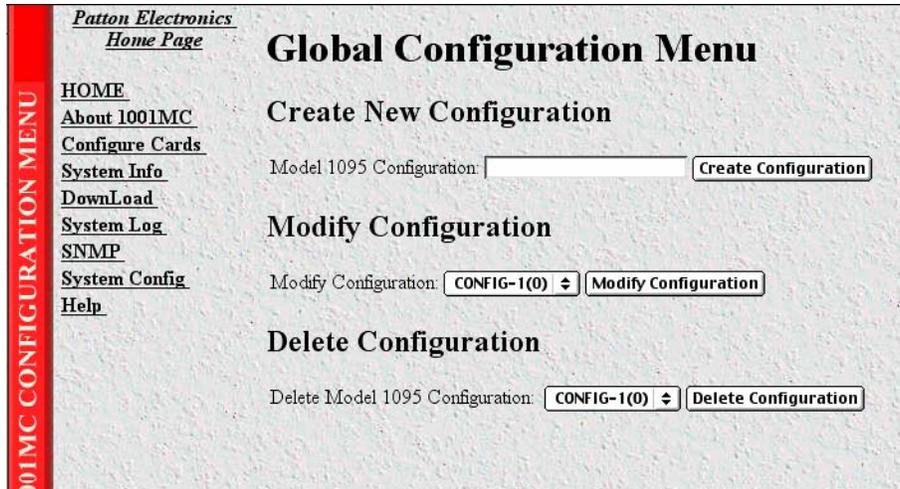


Figure 60. Global Configuration Menu page

Do the following to modify a template:

1. Select a template from the Modify Configuration pop-up menu (see figure 58), then click the **Modify Configuration** button.

The Model 1095 Global Configuration window displays (see figure 59).

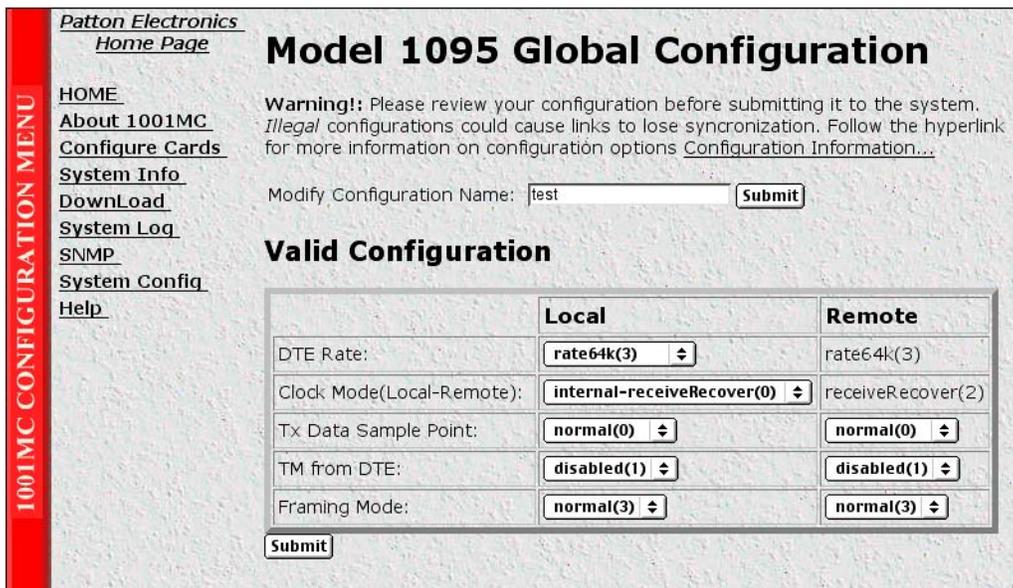


Figure 61. Model 1095 Global Configuration page

2. Use the *Local DTE Rate* pop-up menu to select local DTE rate. You have the following choices:
 - rate64k(3)
 - rate128k(4)
 - rate192k(5)
 - rate256k(6)
 - rate320k(7)
 - rate384k(8)
 - rate448k(9)
 - rate512k(10)
 - rate576k(11)
 - rate640k(12)
 - rate704k(13)
 - rate768k(14)
 - rate832k(15)
 - rate896k(16)
 - rate960k(17)
 - rate1024k(18)
 - rate1088k(19)
 - rate1216k(21)
 - rate1280k(22)
 - rate1344k(23)
 - rate1408k(24)
 - rate1472k(25)
 - rate1536k(26)
 - rate1600k(28)
 - rate1664k(29)
 - rate1728k(30)
 - rate1792k(31)
 - rate1856k(32)
 - rate1920k(33)
 - rate1984k(34)
 - rate2048k(35)
 - rate2112k(36)
 - rate2176k(37)
 - rate2240k(38)
 - rate2304k(39)
3. Use the *Local Clock Mode (Local-Remote)* pop-up menu to select the clock mode. You have the following choices:
 - internal-receiveRecover(0)
 - external-receiveRecover(1)
 - receiveRecover-internal(2)
 - receiveRecover-external(3)
 - external-external(4)
4. Use the *Local Tx Data Sample Point* pop-up menu to select the local transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
5. Use the *Remote Tx Data Sample Point* pop-up menu to select the remote transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
6. Configure the *Local TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
7. Configure the *Remote TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
8. Configure the *Local Framing Mode* pop-up menu using the following choices:
 - slotted(0)

- normal(3)
9. Configure the *Remote Framing Mode* pop-up menu using the following choices:
 - slotted(0)
 - normal(3)
 10. When you have finished setting the configuration, click on the **Submit** button to save the changes.

Note If you receive an *invalid configuration* error after creating a configuration, it is resulting from an illegal combination of variables. Refer to section “[Illegal configuration messages](#)” on page 122 for more information.

Refer to section “[Applying a template](#)” on page 125 to activate the template.

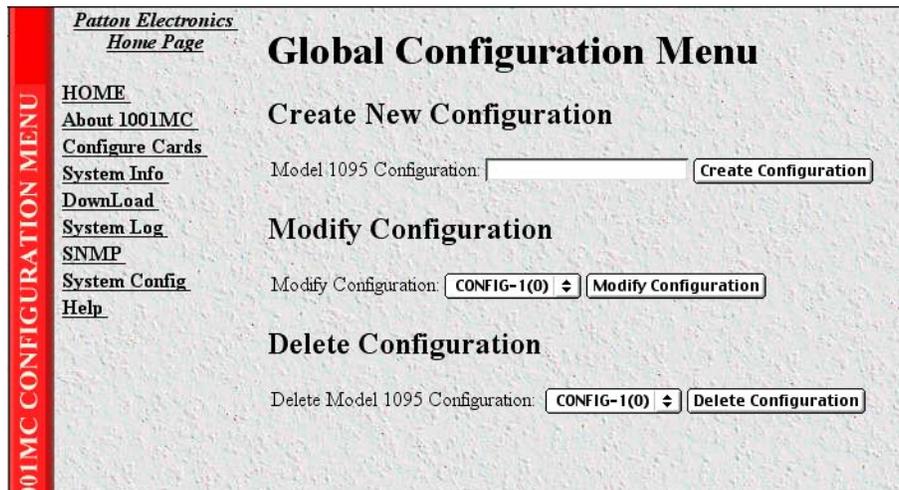


Figure 62. Global Configuration Menu page

Deleting a template

Do the following to delete a template:

Note When a template configuration is deleted, it cannot be recovered.

1. Select a template from the Delete Configuration pop-up menu (see [figure 62](#)).
2. Click the **Delete Configuration** button.

Applying a template

This section describes how to apply a global configuration to all Model 1095RC rack cards other than those that meet one of the following exceptions:

- Model 1095RC rack cards installed in Model 1001 racks that have had the Rack Protection Mode option set to *protected(1)* will not be configured if a global template is applied (see section “[Protecting a Model 1001 rack from global configuration](#)” on page 114 for more information).

- Model 1095RC rack cards that have had the Protected option set to *protected(1)* will not be configured if a global template is applied (see section “Protecting a Model 1095RC rack card from global configuration” on page 116 for more information).

Select the appropriate option from following configuration choices:

- Globally configure *all* Model 1095RC rack cards in *all* Model 1001 racks (see section “Configure all Model 1095RC rack cards in all Model 1001 racks” on page 126)
- Globally configure *all* Model 1095RC rack card in *one* Model 1001 rack (see section “Configure all Model 1095RC rack cards in one Model 1001 rack” on page 128)

Configure all Model 1095RC rack cards in all Model 1001 racks

Do the following to apply global configuration to all Model 1095RC rack cards in all Model 1001 racks:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see figure 63. Figure 64 shows the web page navigation required to get to this area of the system.

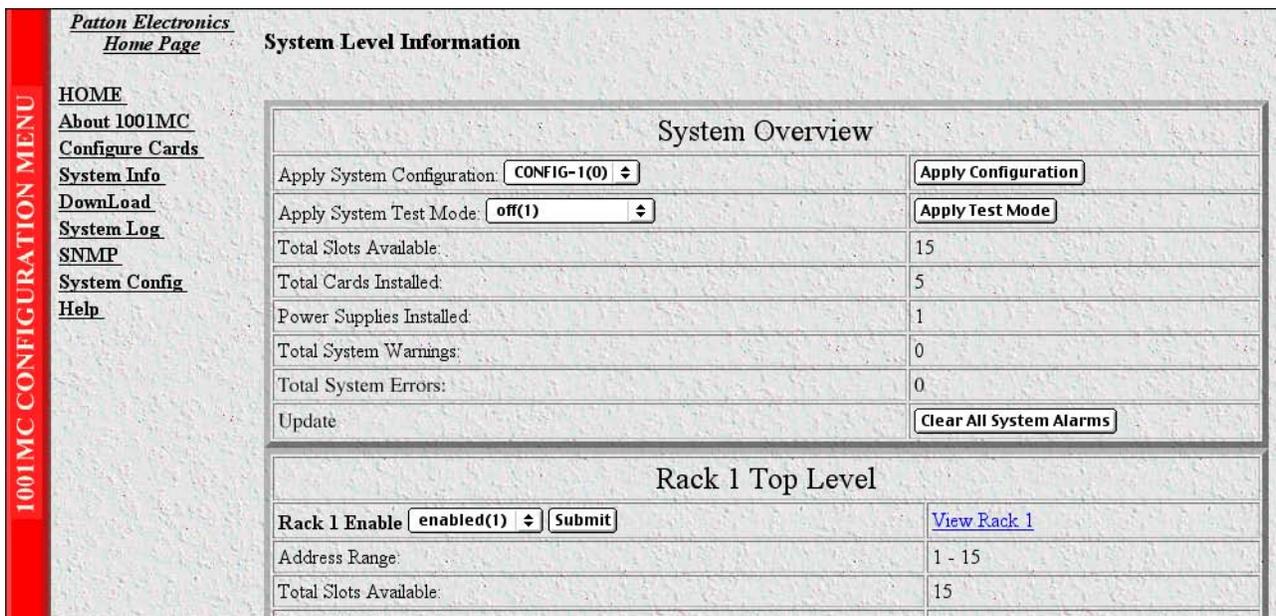


Figure 63. System Level Information page

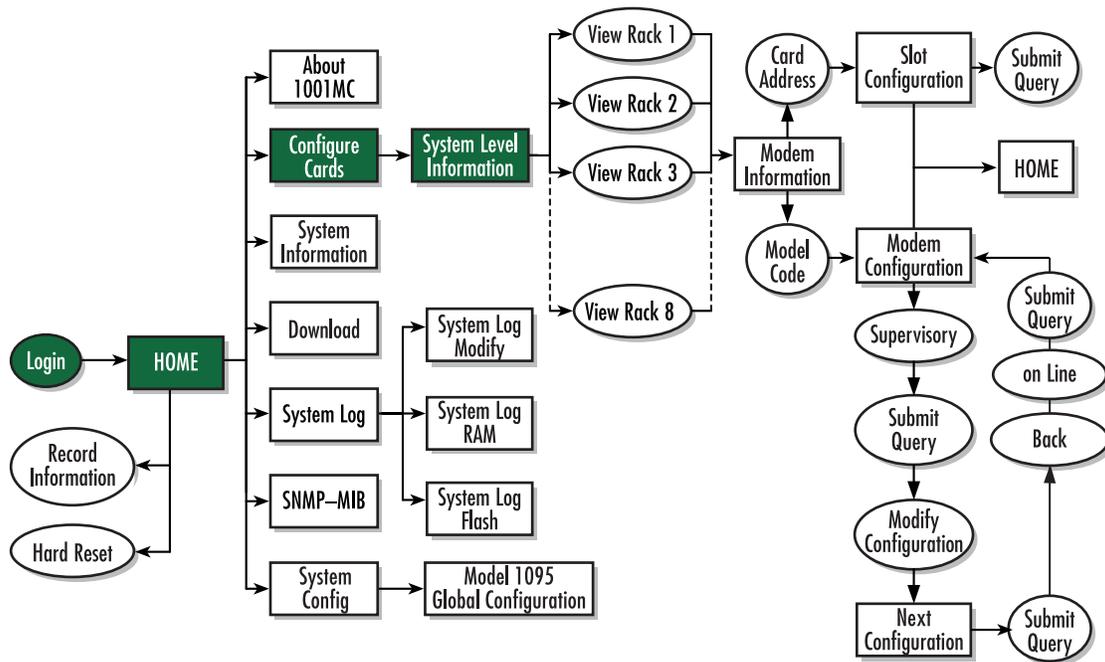


Figure 64. Web page navigation to System Level Information page

2. Use the *Apply System Configuration* pop-up menu (see figure 63) to select the template you want to apply.
3. Click the **Apply Configuration** button.

The template has been applied.

Configure all Model 1095RC rack cards in one Model 1001 rack

Do the following to apply global configuration to all Model 1095RC rack cards installed in one Model 1001 rack:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see [figure 65](#). [Figure 64](#) on page 127 shows the web page navigation required to get to this area of the system.

The screenshot shows the 'System Level Information' page. On the left is a vertical red bar labeled '1001MC CONFIGURATION MENU' and a navigation menu with links: HOME, About 1001MC, Configure Cards, System Info, Download, System Log, SNMP, System Config, and Help. The main content area is titled 'System Level Information' and contains three sections:

- System Overview:** A table with configuration options and status.

Apply System Configuration:	CONFIG-1(0) ↓	Apply Configuration
Apply System Test Mode:	off(1) ↓	Apply Test Mode
Total Slots Available:	15	
Total Cards Installed:	5	
Power Supplies Installed:	1	
Total System Warnings:	0	
Total System Errors:	0	
Update	Clear All System Alarms	
- Rack 1 Top Level:** A table with rack-specific configuration options and status.

Rack 1 Enable	enabled(1) ↓	Submit	View Rack 1
Address Range:	1 - 15		
Total Slots Available:	15		
Total Cards Installed:	5		
Power Supplies Installed:	1		
Total Errors:	0		
Total Warnings:	0		
Apply Rack Configuration:	CONFIG-1(0) ↓	Apply Configuration	
Apply Test Mode:	off(1) ↓	Apply Test Mode	
Rack Protection Mode:	normal(0) ↓	Apply Protection	
Clear Alarms:	Clear Rack 1 Alarms		
- Rack 2 Top Level:** The top of this section is visible at the bottom of the screenshot.

Figure 65. System Level Information page

2. Locate the rack section of the System Level Information page that you will configure (in [figure 65](#), *Rack 1 Top Level* is being modified).
3. Use the *Apply Rack Configuration* pop-up menu (see [figure 65](#)) to select the template you want to apply.
4. Click the **Apply Configuration** button.

The template has been applied.

Chapter 7 **Model 2701RC management**

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Introduction

This chapter describes managing a Model 2701RC NetLink-G.703/G.704 network termination unit (NTU) using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink-G.703/G.704 NTU is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink G.703/G.704 NTUs using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 2701RC:

- **Modem Information Rack X page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 133)
- **Model 2701 Configuration Slot X page:** This page (along with the Model 2701 Configuration page) enables you to make configuration changes to the Model 2701RC and the remote CPE box (see section “[Displaying the Model 2701RC Configuration Slot page](#)” on page 135)
- **Model 2701 Configuration page:** This page (along with the Model 2701 Configuration Slot page) enables you to update configuration of modems installed in the system (see “[Displaying the Model 2701 Configuration page](#)” on page 137)
- **Slot Configuration Page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 2701RC Configuration Slot page](#)” on page 135)

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Modem Information page

The Modem Information page (see figure 66) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.

Patton Electronics
Home Page

HOME
About 1001MC
Import/Export
Configure Cards
System Info
DownLoad
System Log
SNMP
System Config
Help

MODEM INFORMATION RACK 1

Slots Available: 15
Modems Installed: 10
Number of Power Supplies:
Rack Protection Mode:

Power Supply 1	Status:available(0)
Power Supply 2	Status:notInstalled(2)

Card	Address	LineStatus	Warnings	Errors	Local User Id	Local ModelCode	Remote User Id	Remote ModelCo
0		0	1	210	SNMP Mgr.	Model 1001MC	None	None
1		0	0	210	None	none(0)	None	none(0)
2		linedown(1)	0	0	None	model2701RC-ETH(11)	None	none(0)
3		linedown(1)	0	0	None	model2701RC-X21(10)	None	none(0)
4		dataMode(2)	1	0	ID_1Local	model2701RC-ETH(11)	None	none(0)

Figure 66. Modem Information page for the Model 2701RC

Starting from the HOME page, to access the Modem Information Rack X page for the 2701RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number]*. Figure 67 on page 134 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information Rack X page, see “Displaying the Slot Configuration Page” on page 139.

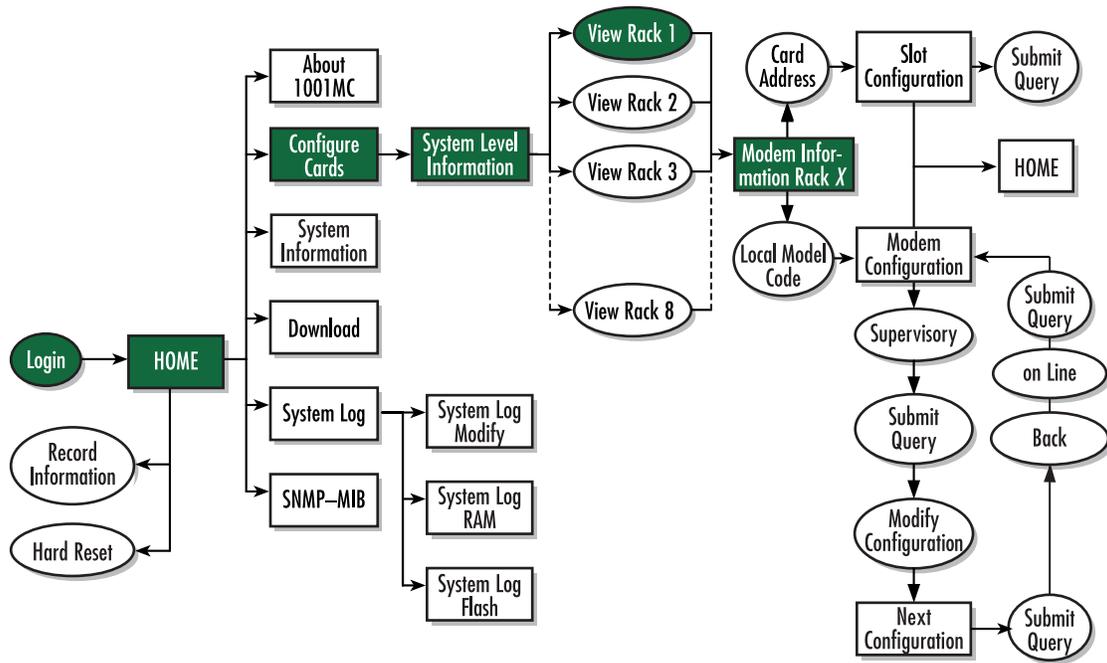


Figure 67. Web page navigation to Modem Information page

Displaying the Model 2701RC Configuration Slot page

The Model 2701RC Configuration Slot page (see [figure 68](#)) enables you to make configuration changes to the Model 2701RC and the remote NTU. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

Patton Electronics
Home Page

Model 2701RC Configuration Slot 4

Line Status: dataMode(2)

Previous Card Refresh Current Page Next Card

Alarm Counters

LOS:	0	AIS:	0
Flap Count:	0	CRC4 Error:	0

Clear Counters

CRC4 Error Alarm Threshold: Submit Query

[View Rack 1](#)

Unit must be set to superVisoryMode to make configuration changes

Input Mode: Submit Query

If unit is set to protected mode global configurations will not apply

Global Configuration Mode: Submit Query

Configuration Status: static(1)

Local Model Code:	model2701RC-ETH(11)		
Line Format:	frame-G704(1)	Clock Mode:	internal-CLK(1)
DTE Rate:	1792	Line Coding:	code-HDB3(0)
CRC Framing:	disabled(0)	CAS Multi Framing:	disabled(0)
Line Build Out:	lbo-120ohm(1)	Tx Clock Timing:	internal(1)
HW/SW Test Mode:	off(1)	SW Test Mode:	off(1)
RDL Response:	enabled(1)	FP Switches:	enabled(1)
Pattern Select:	five11(1)	Loop Time Out:	no-timeout(9)
RDL Type:	v54(2)	Configuration Type:	software-config(1)
TM from DTE:	disabled(0)	Software Version:	3.5.0

Reset Card

Figure 68. Model 2701RC Configuration Slot page

Starting from the HOME page, to access the Model 2701RC Configuration Slot page for the 2701RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model2701RC-xxx(x)* (in the *Local Model Code* column) for the 2701RC you wish to manage (in the example shown in [figure 68](#), the 2701RC was installed in slot 4). [Figure 69](#) on page 136 shows the web page navigation required to get to this area of the system.

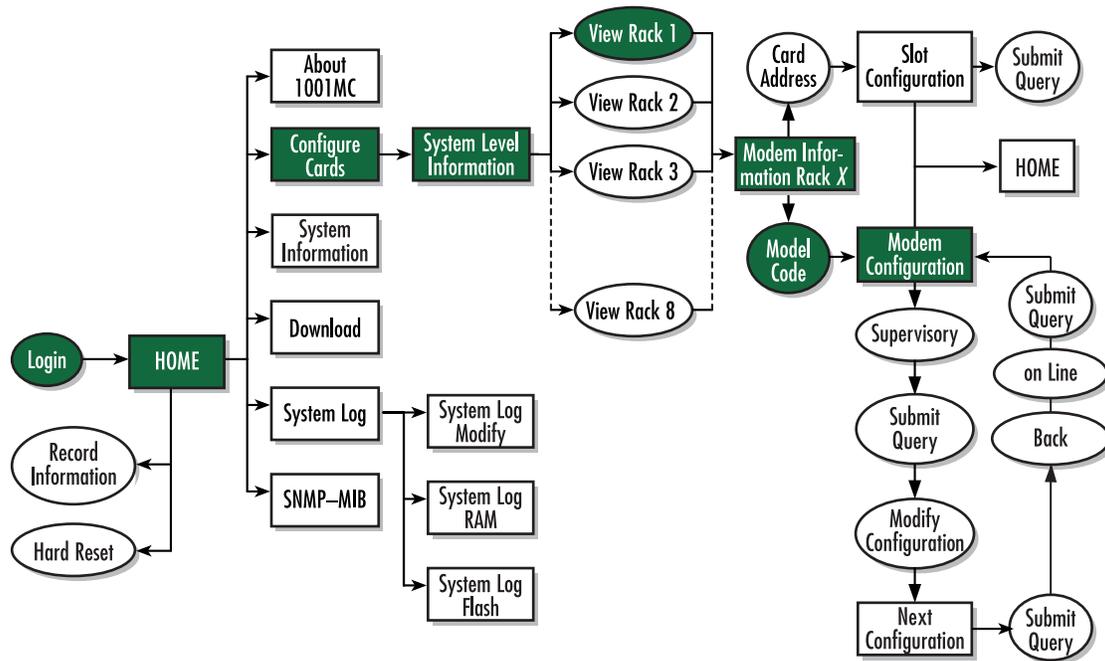


Figure 69. Web page navigation to Model 2701RC Configuration Slot page

Making configuration changes to your 2701RC NetLink NTU

Do use the following to make configuration changes to your NetLink NTU.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 2701 Configuration Slot page displayed, change the Input Mode (see figure 68) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 2701RC Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 2701 Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 2701RC will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 2701RC processes the new information, the highlighting will be removed.

For more information about items on the Model 2701 Configuration Slot page, see “Model 2701RC Configuration Slot X page MIB variables description” on page 143.

Displaying the Model 2701 Configuration page

The Model 2701 Configuration page (see figure 70) enables you to make configuration changes to the Model 2701RC and the remote CPE box.

The screenshot shows the Model 2701 Configuration page. On the left is a vertical red navigation menu with the text "1001MC CONFIGURATION MENU" and links: [Patton Electronics Home](#), [Page](#), [HOME](#), [About 1001MC](#), [Import/Export](#), [Configure Cards](#), [System Info](#), [DownLoad](#), [System Log](#), [SNMP](#), [System Config](#), and [Help](#).

The main content area is titled "Unit Configuration" and contains a table of configuration parameters:

Channel 14	active(0)	Channel 30	active(0)
Channel 15	active(0)	Channel 31	active(0)
Channel 16	active(0)	Channel 32	active(0)

Below this table is a "Submit Query" button. The "Unit Configuration" section contains a grid of parameters:

Line Format:	frame-G704(1)	Clock Mode:	internal-CLK(1)
DTE Rate:	1792	Line Coding:	code-HDB3(0)
CRC Framing:	disabled(0)	CAS Multi Framing:	disabled(0)
Line Build Out:	lbo-120ohm(1)	Tx Clock Timing:	internal(1)
HW Test Mode:	off(1)	Software Test Mode:	off(1)
RDL Response:	enabled(1)	FP Switch:	enabled(1)
Pattern Select:	five11(1)	Loop Timeout:	no-timeout(9)
RDL Type:	v54(2)	Config Type:	software-config(1)
Test Mode DTE:	disabled(0)	User ID:	ID_1Local

At the bottom of the configuration grid are three buttons: "Submit Query", "Clear Changes", and "Set Default Configuration".

Figure 70. Model 2701 Configuration page

Starting from the HOME page, to access the Model 2701 Configuration page for the 2701RC, click on the following links: *Home (menu)* > *Configure Cards (menu)* > *View Rack [rack number]* > *model2701RC-xxx(x)* (in the *Local Model Code* column) for the 2701RC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisoryMode*. Figure 71 on page 138 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 2701 Configuration page, see “Model 2701 Configuration page MIB variables description” on page 149.

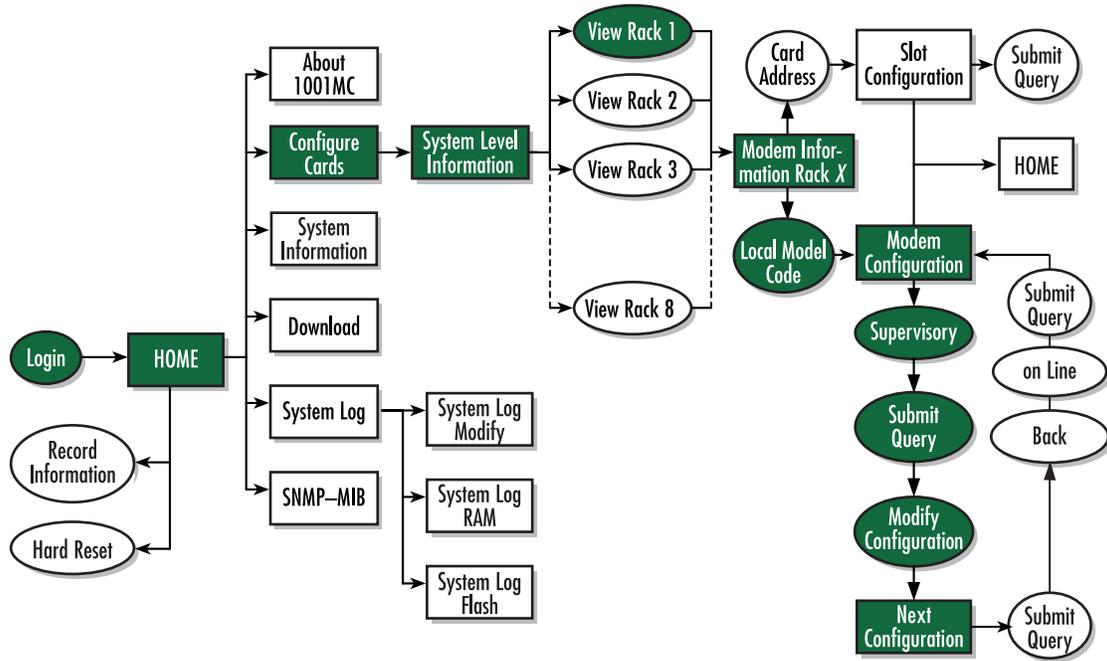


Figure 71. Web page navigation to Model 2701 Configuration page

Displaying the Slot Configuration Page

The Slot Configuration Page (see figure 72) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

Patton Electronics
[Home Page](#)

1001MC CONFIGURATION MENU

[HOME](#)
[About 1001MC](#)
[Import/Export](#)
[Configure Cards](#)
[System Info](#)
[DownLoad](#)
[System Log](#)
[SNMP](#)
[System Config](#)
[Help](#)

SLOT CONFIGURATION PAGE

Card Address: 4
Local Model Code: model2701RC-ETH(11)
[View Rack 1](#)

Card Identification Information

Local User ID:
Remote User ID:

Card Identification Information

Local Circuit ID:
Remote Circuit ID:

Alarm Information

Card Lost Indication:
Line Down Indication:

Figure 72. Slot Configuration Page

Starting from the HOME page, to access the Slot Configuration page for the 2701RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > X* in the *Card_Address* column for the 2701RC you wish to manage (in the example shown in figure 72, the 2701RC was installed in slot 4). Figure 73 on page 140 shows the web page navigation required to get to this area of the system.

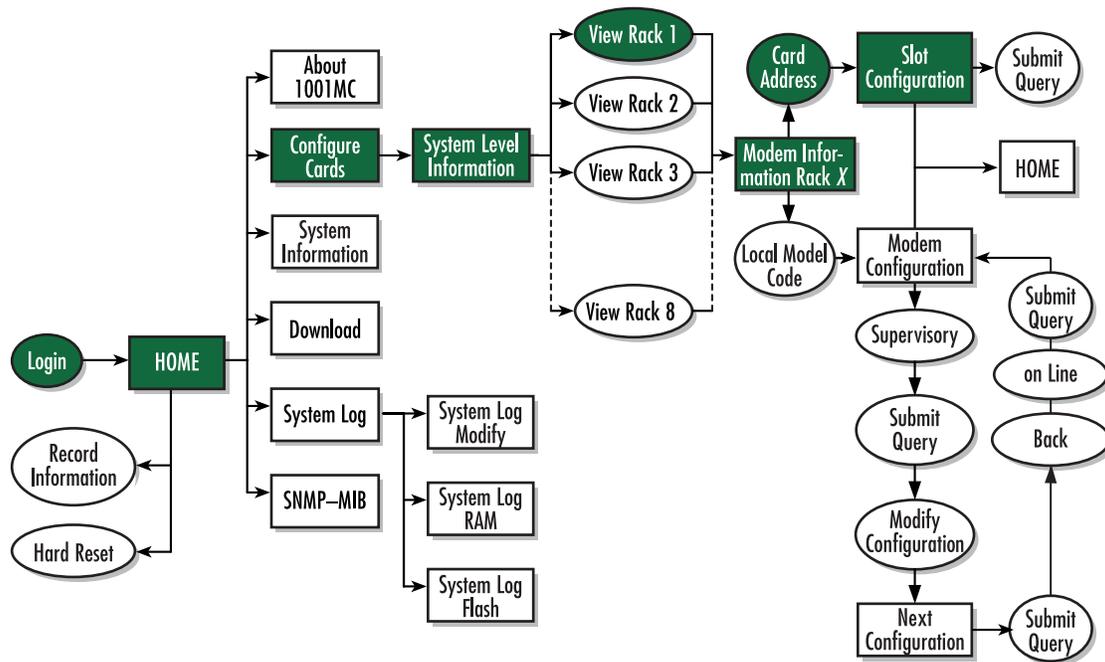


Figure 73. Web page navigation to Slot Configuration Page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 153.

Modem Information Rack X page MIB variables description

This section describes the MIB variables that are available on the Modem Information Rack X page. Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number]*.

Slots Available (totalConfigSlots)

Displays the number of configurable slots available in the rack.

Modems Installed (rackXCardsInstalled)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (rackXPowerSupplies)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode (rackXProtected)

If you want to protect all Model 2701RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the drop-down menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status (*rackXPower1Down*)

Displays the current status of power supply 1 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Power Supply 2 Status (*rackXPower2Down*)

Displays the current status of power supply 2 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Clear Rack X Alarms (*clearAlarms*)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (*nmsSlotID*)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 1095 Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status (*lineStatus*)

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- *startup(1)*
- *dataMode(2)*—When the line status is *dataMode(2)*, the units are linked-up and ready to send data.

- testMode(3)

Warnings (warningCount)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (errorCount)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (remoteUserID)

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Remote Model Code (remoteModelCode)

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Protected (disableGlobalConfig)

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 2701RC Configuration Slot X page MIB variables description

This section describes the MIB variables that are available on the Model 2701RC Configuration Slot X page. (See figure 68 on page 135). Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model2701RC-xxx(x)* (in the *Local Model Code* column).

Model 2701RC Configuration Slot (nmsSlotID)

Displays the address of the NetLink E1-G.703/G.704 NTU. The address is defined by the DIP-switch setting of S3 and S4 on the rack card.

Line Status (*lineStatus*)

Displays the status of the line. There are three possible values that can be displayed:

- linedown(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data
- testMode(3)

Alarm counters

For the four alarm counters, you may choose to do numerous actions upon detecting errors: nothing, increment the counter upon each occurrences of the error, send an SNMP trap, or send a Syslog message. The choice is determined by configuring the Line Down Indicator on the Slot Configuration Page. The following table clarifies what the parameter will do.

	Send a Syslog message	Increment the Alarm Counter on the web page	Send an SNMP trap
None	✓		
Warning	✓	✓	
Error	✓	✓	✓

LOS (*losAlarm*)

Displays the number of times Loss of Sync on the E1 line is detected. It is incremented when synchronization to the E1 stream is lost. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

AIS (aisAlarm)

Displays the number of times an Alarm Indication Signal on the E1 line is detected. This should be set when an unframed all ones code is received at RPOSI and RNEGI. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

Flap Count (lineDownCnt)

Displays the number of times the E1 line has been up and then becomes down. This should be set when the E1 line is up and becomes down. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

CRC4 Error (crc4Error)

Displays the number of CRC4 errors received by the E1 interface. This is an error counter that records word errors in the CRC4. The counter is disabled during loss of sync. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

The Clear Counter button

This button clears all alarm counters.

CRC4 Error Alarm Threshold (*crc4Threshold*)

The valid setting for the threshold is 0 to 255. By setting a threshold, the CRC4 Alarm counter will not issue the error/warning, Syslog, and SNMP Trap message unless the accumulating CRC4 Error Counter is greater than the threshold. The **Record Current Configuration** button will store the setting of the alarm threshold.

Input Mode (*mode2701RC*)

The following settings are available:

- onLine(0)
- superVisoryMode(1)

To make configuration changes to the NetLink-E1 NTUs, you must first set this bit to superVisoryMode(1). When the Input Mode is set to superVisoryMode(1), the Modify Configuration hyperlink will appear. Select the Modify Configuration hyperlink. The Model 2701 Configuration page will appear (see section “[Model 2701 Configuration page MIB variables description](#)” on page 149 for more information). After making configuration changes to the NetLink-E1 NTUs in the Model 2701RC Configuration page, return to this page by clicking on the Back... hyperlink and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-E1 NTU configuration space. If this is not done, the NetLink-E1 NTU will not recognize the configuration changes that were made.

Model 2701 Configuration Slot page Configuration Status table description

The *Configuration Status* table shows the configuration for the set of units. There are columns for the local and remote units. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase, the NetLink-E1 NTU modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).
- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

Configuration Status (configStatus2701RC)

This is the title of the status table and displays the configuration status of the rack card. The following status can be displayed:

- Negotiating(0)—The 1001MC is receiving the rack card’s configuration for the first time
- Static(1)—The 1001MC is showing the updated and correct configuration for the 2701RC
- ImplementingChanges(2)—The 1001MC is updating configuration changes to the 2701RC.

Local Model Code (localModelCode/remoteModelCode)

These variables display the local and remote models codes for the units that were found in the specified address.

Line Format (lineFormat)

The following status variables can be displayed:

- unframe-G703(0)—Sets the line format to G.703 unframed
- frame-G704(1)—Sets the line format to framed G.704

Clock Mode (clockMode2701RC)

This variable defines the clock mode for the NetLink-E1 modems. The following status variables can be displayed:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2)

DTE Rate (dteRate2701RC)

This variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

Line Coding (lineCoding2701RC)

The following status variables can be displayed:

- AMI line coding
- HDB3 line coding.

CRC4 Framing (crc)

This displays if CRC-4 framing is enabled or disabled.

CAS Multiframing (casMF)

This displays if CAS multiframing is enabled or disabled.

Line Build Out (lineBuildOut)

This displays the selected line build out: either 75 ohm or 120 ohm.

Tx Clock Timing (txClock)

This displays whether the serial transmit data coming from the DTE is clocked in using the DCE provided transmit clock or DTE provided external clock.

SW/HW Test Mode (testModeSetInd)

This displays any test mode invoked from the toggle switches, DTE test mode lines, or from the web management page. This option will be highlighted in blue if the unit is in test mode. In the status of the parameter, *SW* means initiated via the web management page or *HW* means initiated from the toggle switches or DTE test mode interface signals on the remote standalone unit.

- off(1)
- pat(2)
- pate(3)

- lal(4)
- lalWithpat(5)
- lalWithpate(6)
- rdl-v54(7)
- rdl-v54Withpat(8)
- rdl-v54Withpate(9)
- rdl-csu(10)
- rdl-csuWithpat(11)
- rdl-csuWithpate(12)
- rdl-remote(13)

SW Test Mode (testModeSet2701RC)

This displays any test mode invoked through the NMS. See next configuration for information about invoking test modes through the NMS. This option will be highlighted in blue if the unit is in test mode.

- off(1)—No test mode in process
- pat(2)—Pattern generator (511) turned on
- pate(3)—HPattern generator with errors (511/E) turned on
- lal(4)—Local loopback test
- lalWithpat(5)—Local loopback test with (511) pattern generator
- lalWithpate(6)—Local loopback test with (511/E) pattern generator with errors
- rdl-v54(7)—Remote loopback test from V54
- rdl-Withpat(8)—Remote loopback test with 511 from V54
- rdl-Withpate(9)—Remote loopback test with errors (511E) from V54

RDL Response (v54Loop)

This displays if the unit will respond to a V.54 loop up command (enabled) or if the unit will ignore a V.54 loop up command (disabled).

FP Switches (frntSwitch)

This displays if the front panel toggle switches used for loopbacks and pattern generators are enabled or disabled.

Pattern Select (patternSelect)

This displays the pattern (511, 2047, QRSS) that is used when the pattern generator and detector are turned on.

Loop Time Out (loopTo)

This displays the amount of time that the unit responding to a Remote Loop command will remain in test mode when the RL test mode is invoked. If the unit is not taken out of test mode by the menu within this time

period, the unit will automatically time out and return to normal data mode. The timeout does not apply for loops selected via the front panel switches.

RDL type (rdlType)

This displays the selected remote loopback type that will be used when initiating a remote loopback. The two loopback types are *CSU* and *RDL*.

Configuration Type (configType)

This displays if the 2701RC is using the DIP switch control or software control for its configuration.

TM from DTE (testModeDTE)

This displays if the 2701RC responds to the LL and RDL signals coming from the DTE.

Software Version (softVersion2701RC)

This displays the software version of code in the 2701RC.

Reset button

Software reset the E-carrier function card on its next poll from 1001MC.

Model 2701 Configuration page MIB variables description

The Model 2701 Configuration page enables you to update the configuration of the 2701RC NetLink-E1 NTU modems that are installed in the system. After making changes to the configuration on this page, select Back to return to the Model 2701 Configuration Slot page, then select onLine as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network. Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model2701RC-xxx(x)* (in the *Local Model Code* column) > change input mode to *Supervisory* > *Modify Configuration*.

Note If the NetLink-E1 NTU modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 2701 Configuration—Configuration page.

Line Status (lineStatus2701RC)

This variable displays the status of the line. There are three possible values that can be displayed:

- startup(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data
- testMode(3)

Software Version (softVersion2701RC)

This read-only MIB variable displays the current version of code that is running in the NetLink-E1 rack card modem.

Configuration Type (*configType*)

This displays if the 2701RC is using the DIP switch control or software control for its configuration.

Channel Assignment (*dsoEnableCh1...dsoEnableCh31*)

If the 2701RC is operating in G.704 channelized mode, a configurable Channel Assignment table appears. When line format is set to frame-G704(1), individual channels can be either enabled(1) or disabled(0). These options cannot be accessed if line format is set to frame-G703(0).

Note Timeslot 0 (Channel 1) is reserved for synchronization when G.704 is enabled therefore, this channel cannot be accessed. Also, if CAS multiframing is enabled, Channel 16 cannot be accessed because it is used for signaling with CAS is enabled.

Unit Configuration table

This table shows the configurable MIB variables for the set of units. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 2701 Configuration page.

The following sections explain the MIB variables that are shown in the Unit Configuration table.

Line Format (*lineFormat*)

This option is used to set the line format to the following:

- frame-G703(0)—G.703 unframed
- frame-G704(1)—framed G.704

Clock Mode (*clockMode2701RC*)

This variable defines the clock mode for the NetLink-E1 modems. The following options are available:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2).

DTE Rate (*dteRate2701RC*)

This read-only variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

Line Coding (*lineCoding2701RC*)

This variable is used to select the G.703 line coding. The following options are available:

- code-HDB3(0)—HDB3
- code-AMI(1)—AMI

CRC4 Framing (crc)

This variable is used to enable or disable CRC-4 framing. The following options are available:

- disable(0)
- enable(1)

Note This setting should be the same as the G.703/G.704 network.

CAS Multiframing (casMF)

This variable is used to enable or disable CAS multiframing. The following options are available:

- disable(0)
- enable(1)

Note This setting should be the same as the G.703/G.704 network.

Line Build Out (lineBuildOut)

This is used to select the line build out. The following options are available:

- lbo-75ohm(0)—75 ohm
- lbo-120ohm(1)—120 ohm

Tx Clock Timing (txClock)

The following options are available:

- external(0)—serial transmit data coming from the DTE is clocked in using the DTE provided external clock
- internal(1)—serial transmit data coming from the DTE is clocked in using the DCE provided transmit clock

H/W Test Mode (testModeSetInd)

This read-only variable displays any test mode invoked from the toggle switches and DTE test mode lines. If the unit is in a test mode, this option will be highlighted in blue.

- off(1)
- pat(2)
- pate(3)
- lal(4)
- lalWithpat(5)
- lalWithpate(6)
- rdl-v54(7)
- rdl-v54Withpat(8)
- rdl-v54Withpate(9)
- rdl-csu(10)
- rdl-csuWithpat(11)

- rdl-csuWithpate(12)
- rdl-remote(13)

Software Test Mode (testModeSet2701RC)

This is used to invoke test modes through the NMS. Available options are:

- off(1)—No test mode in process
- pat(2)—Pattern generator (511) turned on
- pate(3)—HPattern generator with errors (511/E) turned on
- lal(4)—Local loopback test
- lalWithpat(5)—Local loopback test with (511) pattern generator
- lalWithpate(6)—Local loopback test with (511/E) pattern generator with errors
- rdl(7)—Remote loopback test from V54
- rdl-Withpat(8)—Remote loopback test with 511 from V54
- rdl-Withpate(9)—Remote loopback test with errors (511E) from V54

RDL Response(v54Loop)

The following options are available:

- enabled(1)—The unit will respond to a V.54 loop up command
- disabled(0)—The unit will ignore a V.54 loop up command

FP Switches (frntSwitch)

This selects if the front panel toggle switches used for loopbacks and pattern generators are:

- enabled(1)
- disabled(0).

Pattern Select (patternSelect)

The following options are available:

- qrss(0)—QRSS is the pattern that is used when the pattern generator and detector are turned on
- five11(1)—511 is the pattern that is used when the pattern generator and detector are turned on
- two047(2)—2047 is the pattern that is used when the pattern generator and detector are turned on

Loop Timeout (loopTo)

This selects the amount of time that the unit will remain in test mode when the remote test mode is invoked. If the responding unit is not taken out of test mode within this time period, the unit will automatically time out and return to normal data mode.

RDL Type (*rdlType*)

This displays the selected remote loopback type that will be used when initiating a remote loopback. Available options are:

- csu(1)
- v54(2)

Config Type (*configType*)

The following options are available:

- switch-config(0)—The 2701RC is using the DIP switch control for its configuration
- software-config(1)—The 2701RC is using the software control for its configuration

Test Mode from DTE (*testModeDTE*)

When enabled, the 2701RC will respond to LL and RDL signals coming from the DTE.

Note Only applies to 2701RC rack cards with an X.21 or V.35 interface.

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning. Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > X* (in the *Card Address* column).

Card Address (*nmsSlotID*)

Displays the address of the card.

Local Model Code (*localModelCode*)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “Modem Information Rack X” on page 239 for more information).

Card Identification Information

Local User Id (*localUserID*)

User supplied string that defines the NetLink NTU installed in the rack. The string is stored in non-volatile flash within the NetLink NTU and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

Remote User Id (*remoteUserID*)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, the User ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within this page.

Local Circuit ID (*localCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (*remoteCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information**Clear Slot Alarms (*resetStatus*)**

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (*resetStatus*)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (*cardLostIndication*)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- None(0)
- Warning(1)
- Error(2)

Line Down Indication (*lineDownIndication*)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- None(0)
- Warning(1)
- Error(2)

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Creating and modifying global configuration templates

Model 2701RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 2701RC NTUs in multiple racks, or those in just one rack.

This section contains the following information to help you configure and use templates:

- Protecting individual Model 1001 racks and 2701RC rack cards from global modification—You may not want all racks or NTUs to be modified when you apply the global template, so section “Protecting Model 1001 racks and Model 2701RC NTUs from global modification” describes how to protect individual 1001 racks and 2701RC NTUs from being globally configured.
- Creating a template (see section “Creating a template” on page 158)
- Modifying a template (see section “Modifying a template” on page 163)
- Deleting a template (see section “Deleting a template” on page 164)
- Applying a template (see section “Applying a template” on page 164)

Protecting Model 1001 racks and Model 2701RC NTUs from global modification

This section describes how to protect 1001 racks and 2701RC NTU cards from being modified when a global modification is applied. This is useful if you are setting all but a few cards to the same configuration. You may protect an entire rack or only selected individual rack cards.

- To protect an entire Model 1001 rack, see the section “Protecting an entire Model 1001 rack from global configuration” on page
- To protect a selected Model 2701RC rack card, see section “Protecting a Model 2701RC rack card from global configuration” on page

Protecting an entire Model 1001 rack from global configuration

Do the following to protect a Model 1001 rack:

1. Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see [figure 74](#).

The screenshot shows the 'System Level Information' page. On the left is a vertical red bar labeled '1001MC CONFIGURATION MENU' with links: HOME, About 1001MC, Import/Export, Configure Cards, System Info, Download, System Log, SNMP, System Config, and Help. The main content area is titled 'System Level Information' and contains two main sections: 'System Overview' and 'Rack 1 Top Level'.

System Overview

Apply 1095 System Configuration: <input type="text" value="None Created"/>	<input type="button" value="Apply Configuration"/>
Apply 1095 System Test Mode: <input type="text" value="off(1)"/>	<input type="button" value="Apply Test Mode"/>
Apply 2701RC System Configuration: <input type="text" value="(0)"/>	<input type="button" value="Apply Configuration"/>
Apply 2701RC System Test Mode: <input type="text" value="off(1)"/>	<input type="button" value="Apply Test Mode"/>
Total Slots Available:	28
Total Cards Installed:	11
Power Supplies Installed:	3
Total System Warnings:	0
Total System Errors:	0
Update:	<input type="button" value="Clear All System Alarms"/>

Rack 1 Top Level

Rack 1 Enable <input type="text" value="enabled(1)"/> <input type="button" value="Submit Query"/>	<input type="button" value="View Rack 1"/>
Address Range:	1 - 15
Total Slots Available:	15
Total Cards Installed:	10
Power Supplies Installed:	1
Power Supply 1 Status:	Status:available(0)
Total Errors:	0
Total Warnings:	0
Apply 1095 Rack Configuration: <input type="text" value="None Created"/>	<input type="button" value="Apply Configuration"/>
Apply 1095 Test Mode: <input type="text" value="off(1)"/>	<input type="button" value="Apply Test Mode"/>
Apply 2701RC Rack Configuration: <input type="text" value="(0)"/>	<input type="button" value="Apply Configuration"/>
Apply 2701RC Test Mode: <input type="text" value="off(1)"/>	<input type="button" value="Apply Test Mode"/>
Rack Protection Mode: <input type="text" value="normal(0)"/>	<input type="button" value="Apply Protection"/>
Clear Alarms:	<input type="button" value="Clear Rack 1 Alarms"/>

Figure 74. System Level Information page

2. Use the Rack Protection Mode pop-up menu (see [figure 74](#)) to select protected(1).

Note Setting the Rack Protection Mode to normal(0) will enable the rack to receive new configurations through the global configuration command.

3. Click the **Apply Protection** button.

The rack is now protected.

Protecting a selected Model 2701RC rack card from global configuration

Do the following to protect a single Model 2701RC rack card:

1. Starting from the HOME page, click on the following links: Configure Cards > View Rack 1 (choose the rack you want to protect, in the example shown in [figure 75](#), rack 1 was selected). [Figure 75](#) shows the web page navigation required to get to this area of the system.

Figure 75. NTU Information Rack 1 page

2. Locate the card address (see [figure 55](#) on page 119) of the Model 2701RC you want to protect.
3. Set the Protected pop-up menu (see [figure 55](#) on page 119) to protected(1).

Note Setting the Protected option to normal(0) will enable the Model 2701RC to receive new configurations through the global configuration command.

4. Click the **Submit** button.

The rack card is now protected.

Creating a template

This section describes how to create a global configuration template.

Patton Electronics
Home Page

Global Configuration Menu

Create New Configuration

Model 1095 Configuration:

Model 2701RC/2707RC Configuration:

Modify Configuration

Modify 1095 Configuration:

Modify 2701RC/2707RC Configuration:

Delete Configuration

Delete Model 1095 Configuration:

Delete Model 2701RC/2707RC Configuration:

1001MC CONFIGURATION MENU

HOME
About 1001MC
Import/Export
Configure Cards
System Info
DownLoad
System Log
SNMP
System Config
Help

Figure 76. Global Configuration Menu page

Note You can create as many as five templates, if you need to delete a template to make room for another, refer to section “[Deleting a template](#)” on page 164).

Do the following to create a template:

1. In the Create New Configuration section, type a short name (10 characters or less) in the text box named Model 2701RC/2707RC Configuration: (see [figure 76](#)). Clicking on the **Create Configuration** button, creates the new template and displays the Model 2701RC Global Configuration window with two parts.

The first table is the Channel Assignment section for activating the DS0 time slots you need (see figure 77). The two options for each channel are:

- Active(0)
- Inactive(1)

The screenshot shows the 'Model 2701RC Global Configuration' web interface. On the left is a vertical red navigation menu with the text '1001MC CONFIGURATION MENU'. The main content area includes a header with 'Patton Electronics Home Page' and 'Model 2701RC Global Configuration'. Below the header is a 'Modify Configuration Name' field containing 'test' and a 'Submit Query' button. The 'Channel Assignment' section features a table with 32 channels, each with a dropdown menu set to 'active(0)'. A sidebar on the left contains navigation links: HOME, About 1001MC, Import/Export, Configure Cards, System Info, DownLoad, System Log, SNMP, System Config, and Help.

Channel 1		Channel 2	active(0)	Channel 3	active(0)
Channel 4	active(0)	Channel 5	active(0)	Channel 6	active(0)
Channel 7	active(0)	Channel 8	active(0)	Channel 9	active(0)
Channel 10	active(0)	Channel 11	active(0)	Channel 12	active(0)
Channel 13	active(0)	Channel 14	active(0)	Channel 15	active(0)
Channel 16	active(0)	Channel 17	active(0)	Channel 18	active(0)
Channel 19	active(0)	Channel 20	active(0)	Channel 21	active(0)
Channel 22	active(0)	Channel 23	active(0)	Channel 24	active(0)
Channel 25	active(0)	Channel 26	active(0)	Channel 27	active(0)
Channel 28	active(0)	Channel 29	active(0)	Channel 30	active(0)
Channel 31	active(0)	Channel 32	active(0)		

Figure 77. Channel Assignment table

The second part is the Unit Configuration section (see [figure 78](#)) for the configuration of the E1 link parameters. There are 16 configurable parameters. What follows is a description of them with the available options for each.

Unit Configuration			
Line Format:	frame-G703(0)	Clock Mode:	internal-CLK(1)
DTE Rate:	2048	Line Coding:	code-HDB3(0)
CRC Framing:	disabled(0)	CAS Multi Framing:	disabled(0)
Line Build Out:	lbo-120ohm(1)	Tx Clock Timing:	internal(1)
V54 Loop:	enabled(1)	FP Switch:	enabled(1)
Pattern Select:	five11(1)	In Band Loops:	enabled(1)
Loop Timeout:	time-out-5min(0)	RDL Type:	v54(2)
Config Type:	software-config(1)	Test Mode DTE:	disabled(0)
Submit Query			

Figure 78. Unit Configuration section of the web management table

- Line Format
 - frame-G703(0)—This is called either Clear Channel or Transparent mode. The DTE Rate is always 2.408 Mbps and the Channel Assignment table does not affect the configuration when this option is chosen.
 - frame-G704(1)—This is channelized mode. When selected, the Channel Assignment table directly determines the DTE Rate.
- DTE Rate
 - There are no configurable options for this parameter, however it is affected by two configurable parameters: the Line Format and the Channel Assignment table.
- CRC Framing—Is applicable when the “frame-G704(1)” Line Format is chosen.
 - disabled(0)
 - enabled(1)
- Line Build Out—This selects the electrical characteristics for the types of electrical connections, un-balanced 75-Ohm coaxial cable or balanced 120-Ohm twisted pair cable.
 - lbo-75Ohm(0), when using dual coaxial connections
 - lbo-120Ohm(1), when using twisted pair as the transmission medium
- V54 Loop, enables or disables the 2701RC’s ability to respond to a V.54 remote loop initiation pattern
 - disabled(0)
 - enabled(1)
- Pattern Loop

- qrss(0)—Quasi-random-signal-source
- five11(1)—The 511-bit length pseudo-random test pattern
- two047(2)—The 2047-bit length pseudo-random test pattern
- Loop Timeout, determines the length of the in-band loop test. If the test is not of indefinite length, it will automatically terminate the loop session.
 - time-out-5min(0)—5 minutes
 - time-out-10min(1)—10 minutes
 - time-out-15min(2)—15 minutes
 - time-out-30min(3)—30 minutes
 - time-out-45min(4)—45 minutes
 - time-out-60min(5)—60 minutes
 - time-out-90min(6)—90 minutes
 - time-out-120min(7)—120 minutes
 - time-out-180min(8)—180 minutes
 - no-time-out(9)—the loop runs indefinitely and must be turned off manually by the user.
- Config Type
 - Switch-config(0)—The 2701RC gets its configuration from the DIP switches on the card
 - Software-config(1)—The 2701RC gets its configuration via the software configuration and not the DIP switches.
- Clock Mode, this selects the source of the clock used for the Transmit signal on the E1 channel. Please note the difference from “Tx Clock Timing” described below.
 - network-CLK(0)—derived from the received signal from the network
 - internal-CLK(1)—driven by the internal oscillator in the 2701RC NTU
 - external-CLK(2)—provided by DTE External Transmit Clock signal
- Line Coding, the two commonly used types of line coding on E1 circuits
 - code-HDB3(0)—most common
 - code-AMI(1)—primarily in legacy equipment
- CAS Multi Framing, refers to an E1 circuit which is using bit-oriented signaling in the multi-frame made of 16 x 256-bit frames
 - Disabled(0)
 - Enabled(1)

- Tx Clock Timing, this selects the source of the DTE Transmit Clock signal. Note that Clock Mode above is for the transmitted E1 signal.
 - external(0)—Use only when the Clock Mode is set to external-CLK(2).
 - internal(1)—Use when the Clock Mode is set to either internal-CLK(1) or network-CLK(0).
- FP Switch (Front Panel)
 - disabled (0)—disables the toggle switches on the front panel of the 2701RC rack card
 - enabled(1)—enables the ability to use the front panel toggle switches
- In Band Loops, the two in-band loops are the CSU loop and the V.54 loop.
 - disabled(0)—neither loop can be enabled.
 - enabled(1)—one of the in-band loops can be enabled depending on the selection of the RDL Type.
- RDL Type
 - csu(1)—Selects the in-band loop which is initiated as the standard CSU loopback.
 - v54(2)—functions as defined by the V.54 remote Loopback.
- Test Mode DTE, refers to the initiation of loopbacks via one of the DTE signals.
 - disabled(0)—no loopbacks can be initiated by a DTE signal
 - enabled(1)—Loopbacks can be initiated by a DTE signal.

Refer to section “[Applying a template](#)” on page 164 to activate the template.

Modifying a template

This section describes how to modify a global configuration template.

Patton Electronics
Home Page

Global Configuration Menu

Create New Configuration

Model 1095 Configuration:

Model 2701RC/2707RC Configuration:

Modify Configuration

Modify 1095 Configuration:

Modify 2701RC/2707RC Configuration:

Delete Configuration

Delete Model 1095 Configuration:

Delete Model 2701RC/2707RC Configuration:

Figure 79. Global Configuration Menu page

Do the following to modify a template:

1. Select a template from the Modify Configuration pop-up menu (see [figure 79](#)), then click the **Modify Configuration** button.

Patton Electronics
Home Page

Model 2701RC Global Configuration

Modify Configuration Name:

Channel Assignment

Channel 1		Channel 2	active(0)	Channel 3	active(0)
Channel 4	active(0)	Channel 5	active(0)	Channel 6	active(0)
Channel 7	active(0)	Channel 8	active(0)	Channel 9	active(0)
Channel 10	active(0)	Channel 11	active(0)	Channel 12	active(0)
Channel 13	active(0)	Channel 14	active(0)	Channel 15	active(0)
Channel 16	active(0)	Channel 17	active(0)	Channel 18	active(0)
Channel 19	active(0)	Channel 20	active(0)	Channel 21	active(0)
Channel 22	active(0)	Channel 23	active(0)	Channel 24	active(0)
Channel 25	active(0)	Channel 26	active(0)	Channel 27	active(0)
Channel 28	active(0)	Channel 29	inactive(1)	Channel 30	active(0)
Channel 31	active(0)	Channel 32	inactive(1)		

Figure 80. Model 2701RC Global Configuration page

2. Change the parameters requiring modification (see [figure 80](#)). When you have finished changing the configuration, click on the **Submit** button to save the changes.

Refer to section “[Applying a template](#)” on page 164 to activate the template.

Deleting a template

Do the following to delete a template:

Note When a template configuration is deleted, it cannot be recovered.

1. Select a template from the Delete Configuration pop-up menu (see [figure 79](#) on page 163).
2. Click the **Delete Configuration** button.

Applying a template

This section describes how to apply a global configuration to all Model 2701RC rack cards. Model 2701RC cards which will not be configured to the selected Global Configuration are:

- Those installed in a Model 1001 rack that has the entire rack set to be protected(1)
- Those that are individually set to protected(1) mode

Instructions for protecting either an entire rack or individual 2701RC cards are given earlier in this chapter.

The template can be applied to:

- All 2701RC NTUs in ALL Model 1001 racks
- All 2701RC NTUs in just ONE Model 1001 rack

To configure all Model 2701RC rack cards in **all** Model 1001 racks

Complete the following steps.

1. Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see [figure 81](#).

The screenshot shows the 'System Level Information' page. On the left is a vertical red navigation menu with the text '1001MC CONFIGURATION MENU'. The main content area is titled 'System Overview' and contains the following elements:

- Apply 1095 System Configuration: None Created (dropdown) [Apply Configuration]
- Apply 1095 System Test Mode: off(1) (dropdown) [Apply Test Mode]
- Apply 2701RC System Configuration: Example1(0) (dropdown) [Apply Configuration]
- Apply 2701RC System Test Mode: off(1) (dropdown) [Apply Test Mode]
- Total Slots Available: 13
- Total Cards Installed: 11
- Power Supplies Installed: 2
- Total System Warnings: 0
- Total System Errors: 221** (highlighted in red)
- Update: [Clear All System Alarms]

Figure 81. System Level Information page—System Overview section

2. Use the Apply 2701Rc System Configuration pop-up menu (see [figure 81](#)) to select the template you want to apply.
3. Click the **Apply Configuration** button.

The template has been applied.

To configure all Model 2701RC rack cards in just **one** Model 1001 rack Complete the following steps:

1. Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see figure 82.

Rack 1 Top Level	
Rack 1 Enable	enabled(1) <input type="button" value="Submit Query"/> View Rack 1
Address Range:	1 - 13
Total Slots Available:	13
Total Cards Installed:	11
Power Supplies Installed:	2
Power Supply 1 Status:	available(0)
Power Supply 2 Status:	available(0)
Total Errors:	221
Total Warnings:	0
Apply 1095 Rack Configuration:	None Created <input type="button" value="Apply Configuration"/>
Apply 1095 Test Mode:	off(1) <input type="button" value="Apply Test Mode"/>
Apply 2701RC Rack Configuration:	Example1(0) <input type="button" value="Apply Configuration"/>
Apply 2701RC Test Mode:	off(1) <input type="button" value="Apply Test Mode"/>
Rack Protection Mode:	normal(0) <input type="button" value="Apply Protection"/>
Clear Alarms:	<input type="button" value="Clear Rack 1 Alarms"/>

Figure 82. System Level Information page—Rack section

2. Locate the rack section of the System Level Information page that you will configure (in figure 82, Rack 1 Top Level is being modified).
3. Use the Apply Rack Configuration pop-up menu (see figure 82) to select the template you want to apply.
4. Click the **Apply Configuration** button.

The template has been applied.

Chapter 8 **Model 2707RC management**

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Introduction

This chapter describes managing a Model 2707RC NetLink-G.703 network termination unit (NTU) using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink-G.703 NTU is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink G.703 NTUs using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 2707RC:

- **Modem Information Rack X page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 170)
- **Model 2707RC Configuration Slot page:** This page (along with the [Model 2707RC Configuration—Configuration page](#)) enables you to make configuration changes to the Model 2707RC and the remote CPE box (see section “[Displaying the Model 2707RC Configuration Slot page](#)” on page 172)
- **Model 2707RC Configuration—Next Configuration page:** This page (along with the [Model 2707RC Configuration Slot page](#)) enables you to update configuration of modems installed in the system (see “[Displaying the Model 2707RC Configuration—Configuration page](#)” on page 174)
- **Slot Configuration page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 2707RC Configuration Slot page](#)” on page 172)

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Modem Information page

The Modem Information page (see figure 83) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.



Figure 83. Modem Information page for the Model 2707RC

Starting from the HOME page, to access the Modem Information page for the 2707RC, click on the following links: *Configure Cards > View Rack 1*. Figure 84 on page 171 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information page, see “Displaying the Slot Configuration page” on page 176.

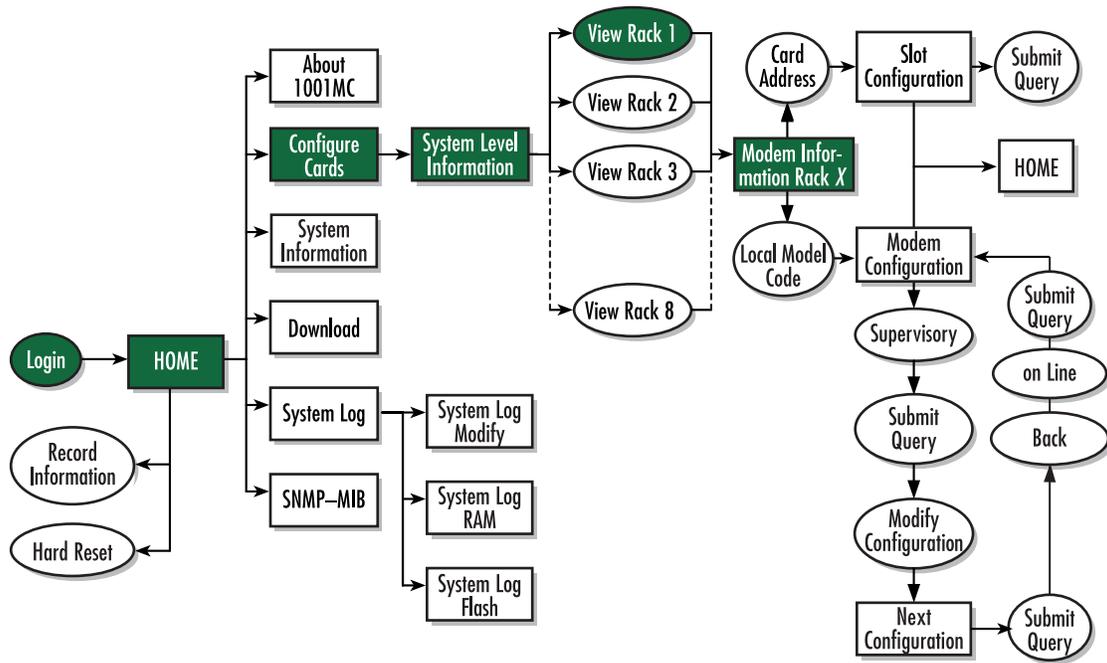


Figure 84. Web page navigation to Modem Information page

Displaying the Model 2707RC Configuration Slot page

The Model 2707RC Configuration Slot page (see figure 85) enables you to make configuration changes to the Model 2707RC and the remote NTU. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

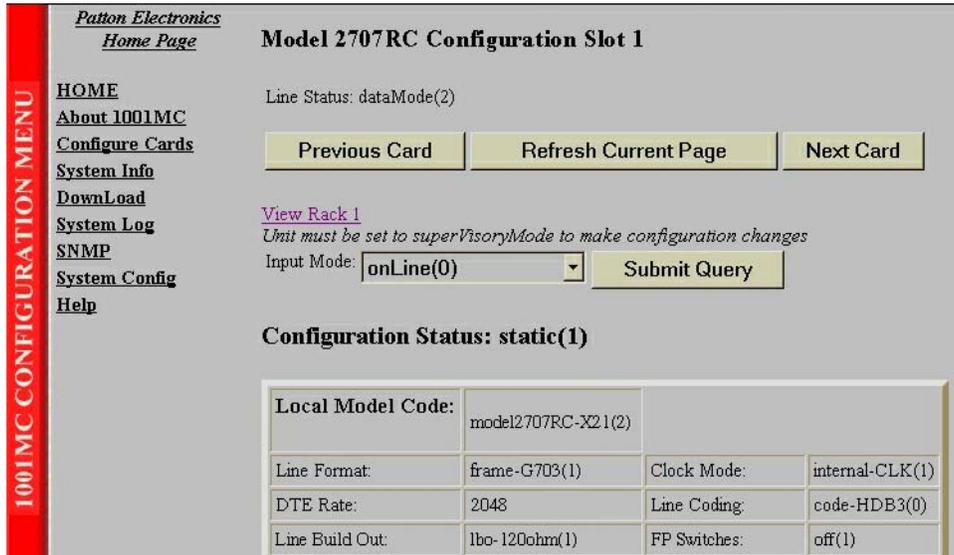


Figure 85. Model 2707RC Configuration Slot page

Starting from the HOME page, to access the Model 2707RC Configuration Slot page for the 2707RC, click on the following links: *Configure Cards > View Rack 1 > Local_Model_Code* for the 2707RC you wish to manage (in the example shown in figure 85, the 2707RC was installed in slot 1). Figure 86 on page 173 shows the web page navigation required to get to this area of the system.

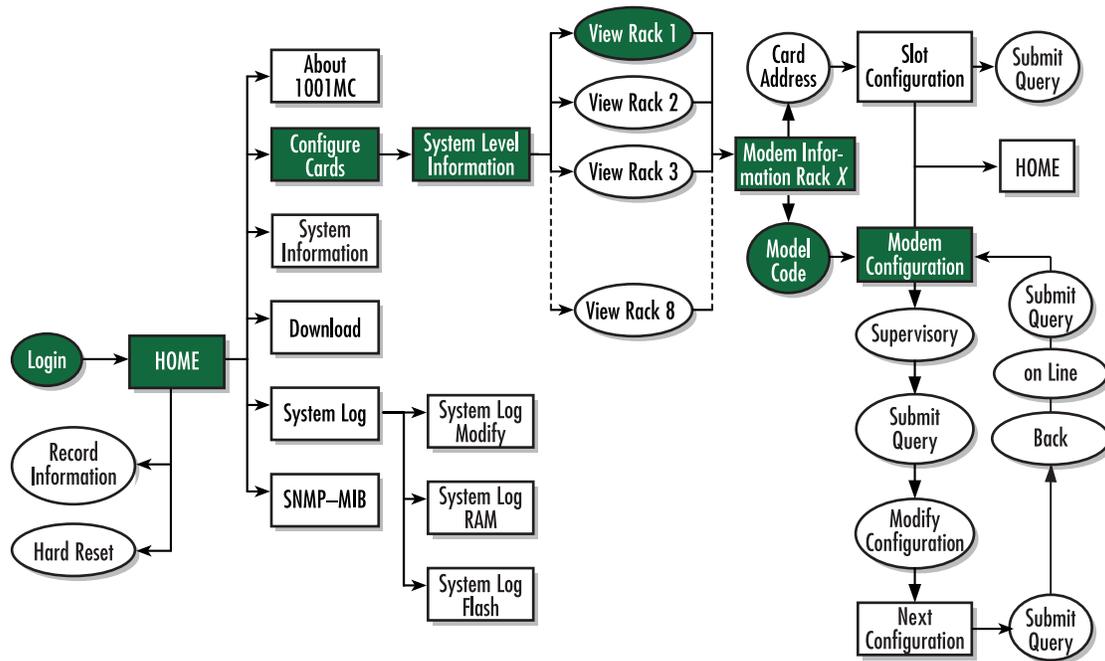


Figure 86. Web page navigation to Model 2707RC Configuration Slot page

Making configuration changes to your 2707RC NetLink NTU

Do use the following to make configuration changes to your NetLink NTU.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 2707RC Configuration Slot page displayed, change the Input Mode (see figure 85) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 2707RC Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 2707RC Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 2707RC will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 2707RC processes the new information, the highlighting will be removed.

For more information about items on the Model 2707RC Configuration Slot page, see “Model 2707RC Configuration Slot page MIB variables description” on page 181.

Displaying the Model 2707RC Configuration—Configuration page

The Model 2707RC Configuration—Configuration page (see figure 87) enables you to make configuration changes to the Model 2707RC and the remote CPE box. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

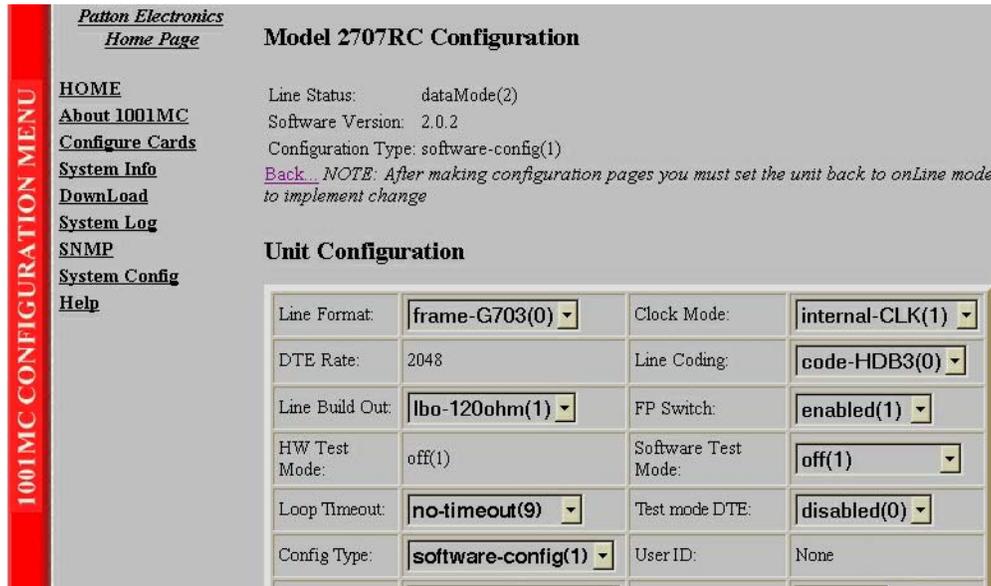


Figure 87. Model 2707RC Configuration—Configuration page

Starting from the HOME page, to access the Model 2707RC Configuration—Configuration page for the 2707RC, click on the following links: *Configure Cards* > *View Rack 1* > *Local_Model_Code* for the 2707RC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisoryMode*). Figure 88 on page 175 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 2707RC Configuration—Configuration page, see “Model 2707RC Configuration—Configuration page MIB variables description” on page 183.

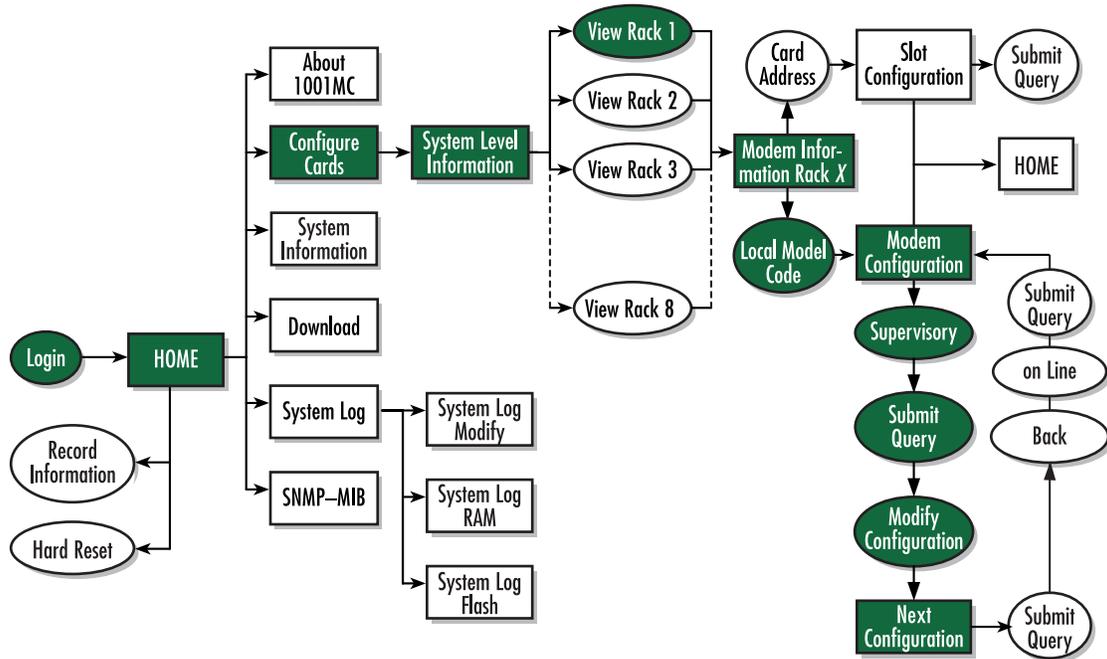


Figure 88. Web page navigation to Model 2707RC Configuration—Next Configuration page

Displaying the Slot Configuration page

The Slot Configuration page (see figure 89) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

Patton Electronics
Home Page

SLOT CONFIGURATION PAGE

HOME Card Address: 1
 About 1001MC Local Model Code: model2707RC-X21(1)
 Configure Cards [View Rack 1](#)
 System Info
 DownLoad
 System Log
 SNMP
 System Config
 Help

Card Identification Information

Local User ID:
 Remote User ID:

Card Identification Information

Local Circuit ID:
 Remote Circuit ID:

Alarm Information

Card Lost Indication:
 Line Down Indication:

Figure 89. Slot Configuration page

Starting from the HOME page, to access the Slot Configuration page for the 2707RC, click on the following links: *Configure Cards* > *View Rack 1* > *Card Address* for the 2707RC you wish to manage (in the example shown in figure 89, the 2707RC was installed in slot 1). Figure 90 on page 177 shows the web page navigation required to get to this area of the system.

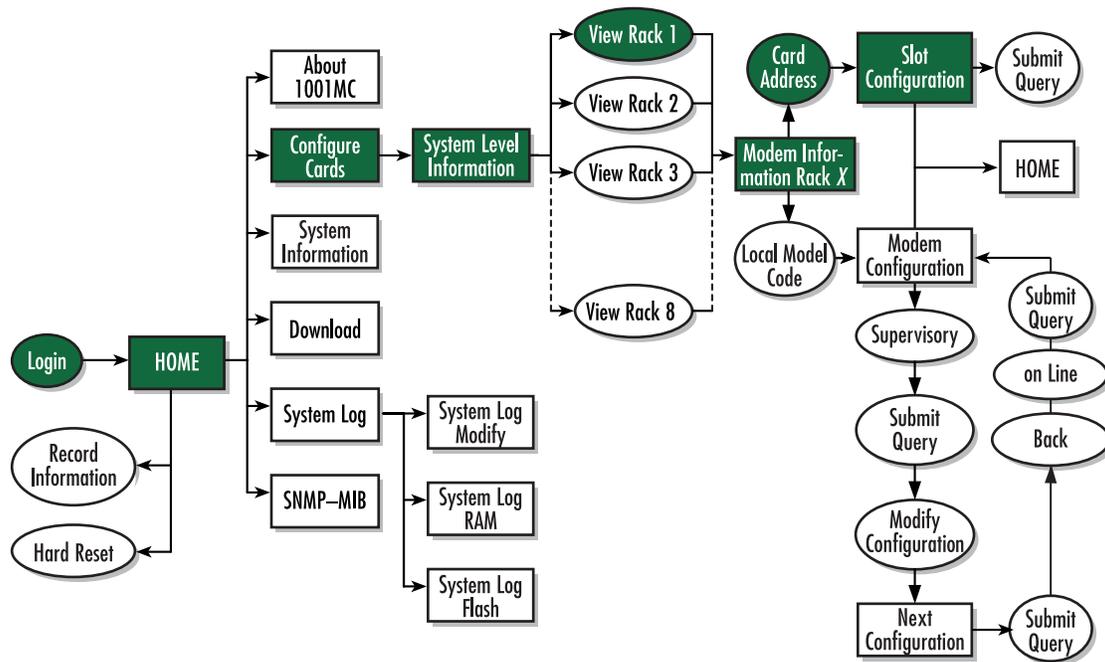


Figure 90. Web page navigation to Slot Configuration page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 185.

Modem Information page MIB variables description

This section describes the MIB variables that are available on the Modem Information page.

Slots Available (*totalConfigSlots*)

Displays the number of configurable slots available in the rack.

Modems Installed (*rackXCardsInstalled*)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (*rackXPowerSupplies*)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode

If you want to protect all Model 2707RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status

Displays the current status of power supply 1 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Power Supply 2 Status

Displays the current status of power supply 2 as one of the following:

- available(0)—The power supply is working normally.
- down(1)—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- notInstalled(2)—The power supply has not been installed.

Clear Rack X Alarms (clearAlarms)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (nmsSlotID)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 2707RC Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- startup(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data.
- testMode(3)

Warnings (*warningCount*)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (*errorCount*)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (*localUserID*)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (*localModelCode*)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (*remoteUserID*)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, you ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Remote Model Code (*remoteModelCode*)

This column displays the model code of the Customer Premise NetLink modem at the far end of the link. This information is communicated from the CP box over the link to the CO Rack Card unit. The NetLink mDSL

rack card will then update the Model 1001MC. For this reason this information will not be available until after the link is made between the two modems.

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Protected

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 2707RC Configuration Slot page MIB variables description

This section describes the MIB variables that are available on the Model 2707RC Configuration Slot page.

Model 2707RC Configuration Slot (*nmsSlotID*)

Displays the address of the NetLink E1-G.703 NTU. The address is defined by the DIP-switch setting of S3 and S4 on the rack card.

Line Status (*lineStatus*)

Displays the status of the line. There are three possible values that can be displayed:

- linedown(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data
- testMode(3)

Input Mode (*mode2707RC*)

The following settings are available:

- onLine(0)
- superVisoryMode(1)

To make configuration changes to the NetLink-E1 NTUs, you must first set this bit to superVisoryMode(1). When the Input Mode is set to superVisoryMode(1), the Modify Configuration hyperlink will appear on the web page next to the Refresh Current Page hyperlink. Select the Modify Configuration hyperlink. The Model 2707RC Configuration—Configuration page will appear (see section “[Model 2707RC Configuration—Configuration page MIB variables description](#)” on page 183 for more information). After making configuration changes to the NetLink-E1 NTUs in the Model 2707RC Configuration page, return to this page and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-E1 NTU configuration space. If this is not done, the NetLink-E1 NTU will not recognize the configuration changes that were made.

Model 2707RC Configuration Slot X page Configuration Status table description

The *Configuration Status* table shows the configuration for the 2707RC card. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase, the NetLink-E1 NTU modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).
- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

Configuration Status (configStatus2707RC)

Displays the configuration status of the rack card. The following status can be displayed:

- Negotiating(0)—The 1001MC is receiving the rack card's configuration for the first time
- Static(1)—The 1001MC is showing the updated and correct configuration for the 2707RC
- ImplementingChanges(2)—The 1001MC is updating configuration changes to the 2707RC.

Model Code (localModelCode/remoteModelCode)

These variables display the local and remote models codes for the units that were found in the specified address.

Line Format (lineFormat)

The following status variable can be displayed:

- unframe-G703(0)—Sets the line format to G.703 unframed

Clock Mode (clockMode2707RC)

This variable defines the clock mode for the NetLink-E1 modems. The following status variables can be displayed:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2)

DTE rate (dteRate2707RC)

This variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

Line Coding (lineCoding2707RC)

The following status variables can be displayed:

- AMI line coding
- HDB3 line coding.

Line Build Out (lineBuildOut)

This displays the selected line build out: either 75 ohm or 120 ohm.

FP Switches (frntSwitch)

This displays if the front panel toggle switches used for loopbacks and pattern generators are enabled or disabled.

H/W Test mode (testModeSetInd)

This displays any test mode invoked from the toggle switches and DTE test mode lines. This option will be highlighted in blue if the unit is in test mode.

S/W Test mode (testModeSet2707RC)

This displays any test mode invoked through the NMS. See next configuration for information about invoking test modes through the NMS. This option will be highlighted in blue if the unit is in test mode.

Loop Time Out (loopTo)

This displays the amount of time that the unit responding to a Remote Loop command will remain in test mode when the RL test mode is invoked. If the unit is not taken out of test mode by the menu within this time period, the unit will automatically time out and return to normal data mode. The timeout does not apply for loops selected via the front panel switches.

TM from DTE (testModeDTE)

This displays if the 2707RC responds to the LL and RDL signals coming from the DTE.

Configuration Type (configType)

This displays if the 2707RC is using the DIP switch control or software control for its configuration.

Software Version (softVersion2707RC)

This displays the software version of code in the 2707RC.

Model 2707RC Configuration—Configuration page MIB variables description

The Model 2707RC Configuration—Configuration page enables you to update the configuration of the 2707RC NetLink-E1 NTU modems that are installed in the system. After making changes to the configuration on this page, select Back to return to the Model 2707RC Configuration Slot page, then select onLine as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network.

Note If the NetLink-E1 NTU modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 2707RC Configuration—Configuration page.

Line Status (lineStatus2707RC)

This variable displays the status of the line. There are three possible values that can be displayed:

- lineDown(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data
- testMode(3)

Software Version (softVersion2707RC)

This read-only MIB variable displays the current version of code that is running in the NetLink-E1 rack card modem.

Configuration Type (configType)

This displays if the 2707RC is using the DIP switch control or software control for its configuration.

Unit Configuration table

This table shows the configurable MIB variables for the 2707RC card. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 2707RC Configuration page.

The following sections explain the MIB variables that are shown in the Unit Configuration table.

Line Format (lineFormat)

This option should be set to G.703 unframed: frame-G703(0).

Clock Mode (clockMode2707RC)

This variable defines the clock mode for the NetLink-E1 modems. The following options are available:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2).

DTE Rate (dteRate2707RC)

This read-only variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

Line Coding (lineCoding2707RC)

This variable is used to select the G.703 line coding. The following options are available:

- code-HDB3(0)—HDB3
- code-AMI(1)—AMI

Line Build Out (lineBuildOut)

This is used to select the line build out. The following options are available:

- lbo-75ohm(0)—75 ohm
- lbo-120ohm(1)—120 ohm

FP Switches (frntSwitch)

This selects if the front panel toggle switches used for loopbacks and pattern generators are enabled(1) or disabled(0).

H/W Test mode (testModeSetInd)

This read-only variable displays any test mode invoked from the toggle switches and DTE test mode lines. If the unit is in a test mode, this option will be highlighted in blue.

S/W Test mode (testModeSet2707RC)

This is used to invoke test modes through the NMS. The only valid options for the 2707RC are:

- off(0)
- lal(4)—Local loopback

Loop Timeout (loopTo)

This selects the amount of time that the unit will remain in test mode when the remote test mode is invoked. If the responding unit is not taken out of test mode within this time period, the unit will automatically time out and return to normal data mode.

Test Mode from DTE (testModeDTE)

When enabled, the 2707RC will respond to the LL signal coming from the DTE.

Config Type (configType)

The following options are available:

- switch-config(0)—The 2707RC is using the DIP switch control for its configuration
- software-config(1)—The 2707RC is using the software control for its configuration

User Id (UserID)

Displays the user-supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning.

Note The information contained here is also available in the Model 1001MC manual and is listed here for ease of use.

Card Address (nmsSlotID)

Displays the address of the card.

Local Model Code (localModelCode)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “Modem Information Rack X” on page 239 for more information).

Card Identification Information

Local User Id (localUserID)

User supplied string that defines the NetLink NTU installed in the rack. The string is stored in non-volatile flash within the NetLink NTU and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

Remote User Id (*remoteUserID*)

This feature is not supported by the Model 2707RC NTU.

Local Circuit ID (*localCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (*remoteCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information**Clear Slot Alarms (*resetStatus*)**

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (*resetStatus*)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (*cardLostIndication*)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- Error(2)
- Warning(1)
- None(0)

Line Down Indication (*lineDownIndication*)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- Error(2)
- Warning(1)
- None(0)

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Chapter 9 **Model 3088RC management**

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Introduction

This chapter describes managing a Model 3088RC NetLink-G.SHDSL network termination unit (NTU) using the Model 1001MC NetLink-NMS internal HTTP/HTML web engine and a standard web browser. This chapter is meant to be used in addition to the manual that came with your unit.

NetLink-NMS description

Specifically designed for use in the Patton NetLink system, when the NetLink-G.SHDSL NTU is coupled with the Model 1001MC NetLink-NMS and the Patton Model 1001 rack system, the modem is fully SNMP manageable. SNMP management can be performed on both the local and remote units using a standard SNMP network management station (NMS) or by using a standard web browser and the Model 1001MC's built-in web server. You can view and change configuration variables, view statistical variables, and view error and warning indications.

Configuration and management

This section describes the configuration and management of your NetLink G.SHDSL NTUs using a Model 1001MC NetLink-NMS with built in HTTP/HTML web server. If you plan to manage your units using a standard network management station you can download the Patton Enterprise MIBs either through the SNMP web page on the Model 1001MC or obtain them from the Patton web site at www.patton.com.

The following pages are used to configure and manage the Model 3088RC:

- **Modem Information Rack X page:** This page displays a list of the cards that are installed in your system and a quick view of any errors or warnings associated with your modems (see section “[Displaying the Modem Information page](#)” on page 191)
- **Model 3088RC Configuration Slot X page:** This page (along with the Model 3088RC Configuration page) enables you to make configuration changes to the Model 3088RC and the remote CPE box (see section “[Displaying the Model 3088RC Configuration Slot page](#)” on page 193)
- **Model 3088RC Configuration page:** This page (along with the Model 3088RC Configuration Slot page) enables you to update configuration of modems installed in the system (see “[Displaying the Model 3088RC Configuration page](#)” on page 195)
- **Slot Configuration Page:** This page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors or warnings (see section “[Displaying the Model 3088RC Configuration Slot page](#)” on page 193)

Note For information about other Model 1001MC pages, refer to chapter 10, “[HTTP/HTML web page reference](#)” on page 220.

Displaying the Modem Information page

The Modem Information page (see figure 91) displays the cards installed in the system and a quick view of any errors or warnings associated with your modems.

1001MC CONFIGURATION MENU

- [HOME](#)
- [About 1001MC](#)
- [Import/Export](#)
- [Configure Cards](#)
- [System Info](#)
- [DownLoad](#)
- [System Log](#)
- [SNMP](#)
- [System Config](#)
- [Help](#)

MODEM INFORMATION RACK 1

Slots Available: 13
 Modems Installed: 3
 Power Supplies:
 Protection Mode:

Power Supply 1 Status: down(1)
Power Supply 2 Status: down(1)

Card	Address	LineStatus	Warnings	Errors	Local User Id	Local ModelCode	Remote User Id	Remote ModelCode
0		0	0	0	SNMP Mgr.	Model 1001MC	None	None
<u>1</u>		0	0	0	None	none(0)	None	none(0)
<u>2</u>		startup(1)	0	0	None	model3088RC(12)	None	model3088-C(31)
<u>3</u>		0	0	0	None	none(0)	None	none(0)

Figure 91. Modem Information page for the Model 3088RC

Starting from the HOME page, to access the Modem Information Rack X page for the 3088RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number]*. Figure 92 on page 192 shows the web page navigation required to get to this area of the system. For more information about items on the Modem Information Rack X page, see “Displaying the Slot Configuration Page” on page 197.

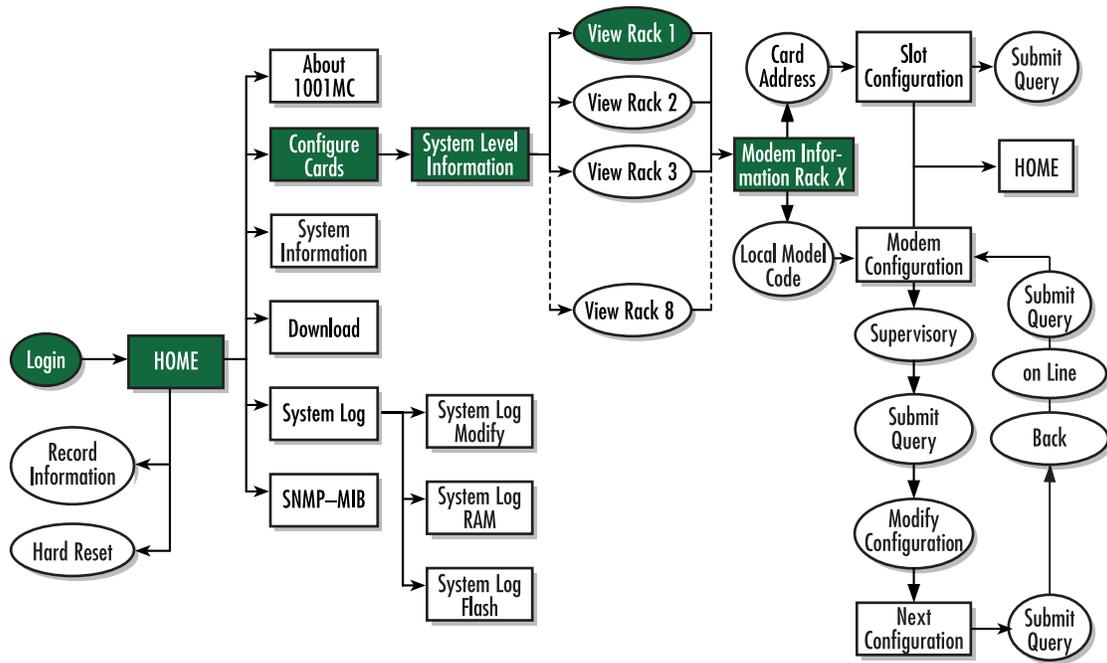


Figure 92. Web page navigation to Modem Information page

Displaying the Model 3088RC Configuration Slot page

The Model 3088RC Configuration Slot page (see [figure 93](#)) enables you to make configuration changes to the Model 3088RC and the remote NTU. When the page displays, the unit is set to the *onLine* state and the current configuration is displayed.

[Patton Electronics](#)
[Home Page](#)

[HOME](#)
[About 1001MC](#)
[Import/Export](#)
[Configure Cards](#)
[System Info](#)
[DownLoad](#)
[System Log](#)
[SNMP](#)
[System Config](#)
[Help](#)

Unit must be set to supervisoryMode to make configuration changes

Input Mode:

If unit is set to protected mode global configurations will not apply

Global Configuration Mode:

Configuration Status: static(1)

	Local	Remote
Model Code:	model3088RC(12)	model3088-K(32)
<i>DSL variables:</i>		
DTE Rate:	rate2048k(32)	rate2048k(32)
Clock Mode(Local-Remote):	external-receiveRecover(1)	internal(0)
Tx Clock Invert:	disable(1)	disable(1)
DSL Link Enable:	disable(1)	disable(1)
Line Probe:	disable(1)	disable(1)
Annex Type:	annexB(1)	annexB(1)
SW Test Mode:	none(0)	none(0)
Software Rev:	2.3.0	2.3.0
<i>Card variables:</i>		
Front Panel Switches:	enable(0)	disable(1)
Response to Test Mode:	disable(1)	disable(1)
Serial Interface Type:	e1(1)	normal(0)
<i>3088/K/T:</i>		
Timeslot Map:		Not Implement
Line Type:		t1-unframed(0)
Line Code Selection:		arni(0)
Line Built Out:		e175Ohm(4)

Figure 93. Model 3088RC Configuration Slot page

Starting from the HOME page, to access the Model 3088RC Configuration Slot page for the 3088RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model3088RC-xxx(x)* (in the *Local Model Code* column) for the 3088RC you wish to manage (in the example shown in [figure 93](#), the 3088RC was installed in slot 4). [Figure 94](#) on page 194 shows the web page navigation required to get to this area of the system.

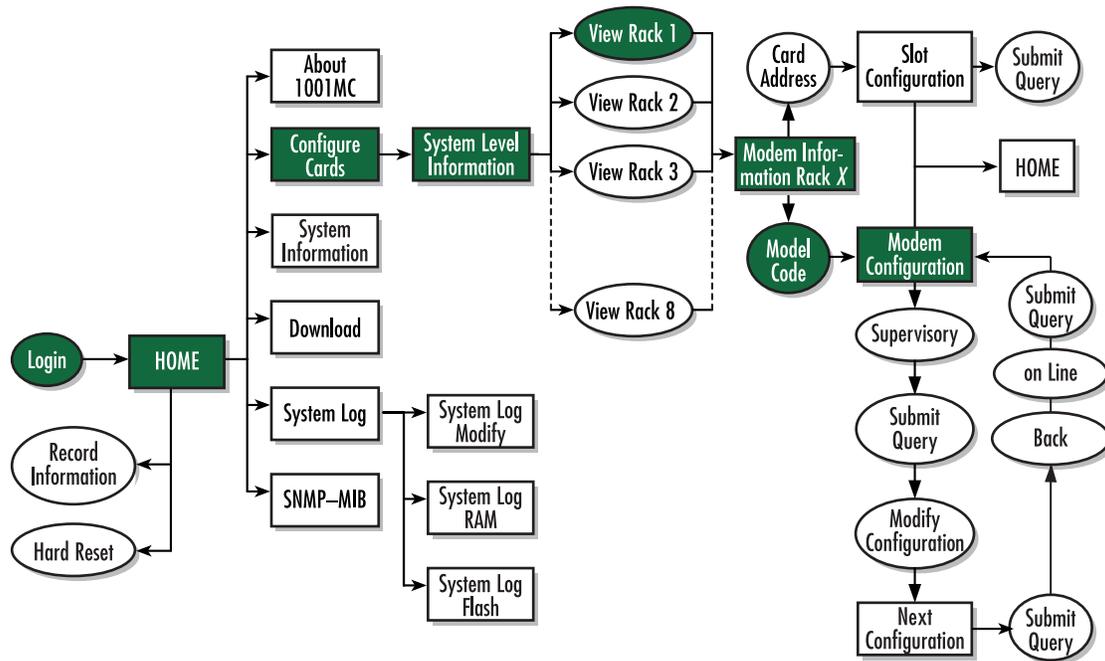


Figure 94. Web page navigation to Model 3088RC Configuration Slot page

Making configuration changes to your 3088RC NetLink NTU

Do use the following to make configuration changes to your NetLink NTU.

Note You must be logged in as superuser to perform the following procedure.

1. With the Model 3088RC Configuration Slot page displayed, change the Input Mode (see figure 93) to superVisoryMode. The Modify Configuration hyperlink will appear.
2. Click on the Modify Configuration hyperlink to display the Model 3088RC Configuration page.
3. Make your configuration changes or select the **Set Default Configuration** button.
4. Select the **Submit Query** button to place the changes into the 1001MC's temporary memory. If you decide that you do not want your changes implemented, you can select the **Clear Changes** button.
5. Select the Back hyperlink to return to the Model 3088RC Configuration Slot page.
6. Change the Input Mode back to onLine and select the **Submit Query** button. When the unit returns to the online state, the 3088RC will begin implementing the configuration changes.

Note The variables that you changed are now highlighted in yellow. After the 3088RC processes the new information, the highlighting will be removed.

For more information about items on the Model 3088RC Configuration Slot page, see “Model 3088RC Configuration Slot X page MIB variables description” on page 201.

Displaying the Model 3088RC Configuration page

The Model 3088RC Configuration page (see figure 95) enables you to make configuration changes to the Model 3088RC and the remote CPE box.

Model 3088 Global Configuration

Warning! Please review your configuration before submitting it to the system. *Illegal* con synchronization. Follow the hyperlink for more information on configuration options [Configu](#)

Modify Configuration Name:

Valid Configuration

	Local	Remote
DTE Rate:	rate64k(1) ▾	rate64k(1)
Clock Mode(Local-Remote):	internal-receiveRecover(0) ▾	internal(0)
Tx clock Invert :	disable(1) ▾	disable(1) ▾
DSL Link Enable :	disable(1) ▾	disable(1) ▾
Line Probe :	disable(1) ▾	disable(1) ▾
Annex Type:	annexA(0) ▾	annexA(0)
Front Panel Switches:	disable(1) ▾	disable(1)
Response to Test Mode:	disable(1) ▾	disable(1)
Serial Interface Type:	normal(0) ▾	normal(0)

Figure 95. Model 3088RC Configuration page

Starting from the HOME page, to access the Model 3088RC Configuration page for the 3088RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model3088RC-xxx(x)* (in the *Local Model Code* column) for the 3088RC you wish to manage > *Modify Configuration* (you first have to change input mode from *onLine* to *superVisoryMode*. Figure 96 on page 196 shows the web page navigation required to get to this area of the system.

For more information about items on the Model 3088RC Configuration page, see “Model 3088RC Configuration page MIB variables description” on page 206.

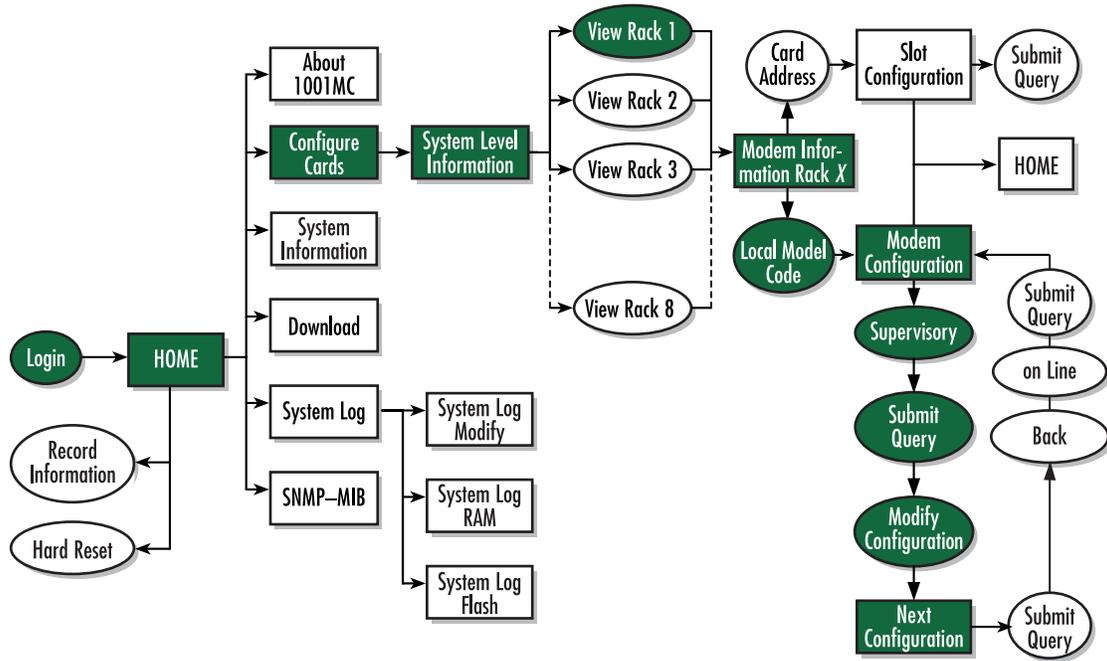


Figure 96. Web page navigation to Model 3088RC Configuration page

Displaying the Slot Configuration Page

The Slot Configuration Page (see figure 97) is used to set slot-specific information related to the system and how the system treats that slot in the case of errors or warnings.

Patton Electronics
[Home Page](#)

1001MC CONFIGURATION MENU

[HOME](#)
[About 1001MC](#)
[Import/Export](#)
[Configure Cards](#)
[System Info](#)
[DownLoad](#)
[System Log](#)
[SNMP](#)
[System Config](#)
[Help](#)

SLOT CONFIGURATION PAGE

Card Address: 2
 Local Model Code: model3088RC(12)
[View Rack 1](#)

Card Identification Information

Local User ID:
 Remote User ID:

Card Identification Information

Local Circuit ID:
 Remote Circuit ID:

Alarm Information

Card Lost Indication:

Figure 97. Slot Configuration Page

Starting from the HOME page, to access the Slot Configuration page for the 3088RC, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > X* in the *Card_Address* column for the 3088RC you wish to manage (in the example shown in figure 97, the 3088RC was installed in slot 4). Figure 98 on page 198 shows the web page navigation required to get to this area of the system.

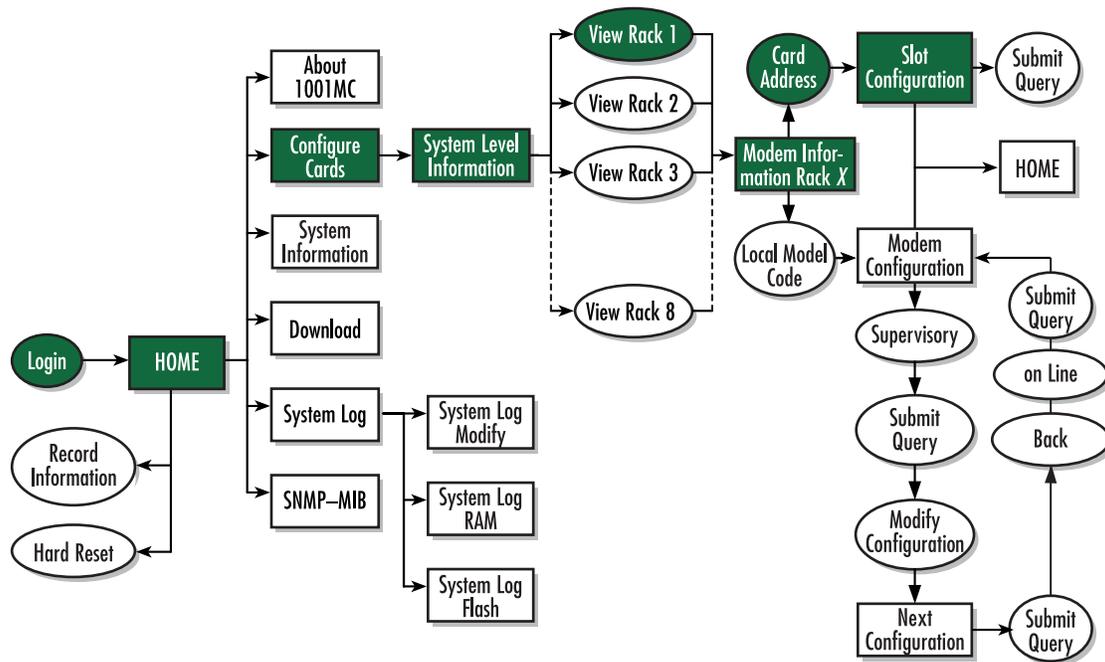


Figure 98. Web page navigation to Slot Configuration Page

For more information about items on the Slot Configuration page, see “Slot Configuration page MIB variables description” on page 209.

Modem Information Rack X page MIB variables description

This section describes the MIB variables that are available on the Modem Information Rack X page. Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number]*.

Slots Available (totalConfigSlots)

Displays the number of configurable slots available in the rack.

Modems Installed (rackXCardsInstalled)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (rackXPowerSupplies)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Rack Protection Mode (rackXProtected)

If you want to protect all Model 3088RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the drop-down menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “System Config” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status (*rackXPower1Down*)

Displays the current status of power supply 1 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Power Supply 2 Status (*rackXPower2Down*)

Displays the current status of power supply 2 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Clear Rack X Alarms (*clearAlarms*)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Note The following information describes each column of the modem table. Each table heading is a hyperlink to a help page that contains information about the column.

Card Address (*nmsSlotID*)

This variable defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the *Card Address* column. If a modem is found with the same address, it will be displayed in that row. The address of the card is set up using the DIP-switches on the card. The address is also a hyperlink to the Model 1095 Configuration Slot page. This page can be used to set slot-specific information about the card.

Line Status (*lineStatus*)

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- *startup(1)*
- *dataMode(2)*—When the line status is *dataMode(2)*, the units are linked-up and ready to send data.

- testMode(3)

Warnings (warningCount)

This field displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warning for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the warnings even after the number is cleared. The warning count listed in the Model 1001MC column is the sum of all warnings for the system, including the individual modems.

Errors (errorCount)

This field displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page.

Note The System Log will still display the errors even after the number is cleared. The error count listed in the Model 1001MC column is the sum of all errors for the system, including the individual modems.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page.

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration page for the NetLink modem and its remote unit. The model code information is passed to the Model 1001MC after the card is placed online. The Model 1001MC is auto-sensing, meaning that when a card is found or lost, the information will automatically be updated in the system. You are not required to setup the Model Code information for each slot. When a card is removed from the system, the Model Code will be erased and an error or warning will be displayed for the slot (this depends on the settings in the Slot Configuration page)

Remote User Id (remoteUserID)

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Remote Model Code (remoteModelCode)

Note This feature is not supported by Model 270XRC network termination units (NTUs).

Protected (disableGlobalConfig)

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed within the Configure Cards page or from the Slot Configuration page. After clicking the **Submit Query** button to input the string to the management system, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards web page or from the Slot Configuration page.

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Model 3088RC Configuration Slot X page MIB variables description

This section describes the MIB variables that are available on the Model 3088RC Configuration Slot X page. (See figure 93 on page 193). Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model3088RC-xxx(x)* (in the *Local Model Code* column).

Model 3088RC Configuration Slot (nmsSlotID)

Displays the address of the NetLink E1-G.SHDSL NTU. The address is defined by the DIP-switch setting of S3 and S4 on the rack card.

Line Status (*lineStatus*)

Displays the status of the line. There are three possible values that can be displayed:

- linedown(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data
- testMode(3)

Alarm counters

For the four alarm counters, you may choose to do numerous actions upon detecting errors: nothing, increment the counter upon each occurrences of the error, send an SNMP trap, or send a Syslog message. The choice is determined by configuring the Line Down Indicator on the Slot Configuration Page. The following table clarifies what the parameter will do.

	Send a Syslog message	Increment the Alarm Counter on the web page	Send an SNMP trap
None	✓		
Warning	✓	✓	
Error	✓	✓	✓

LOS (*losAlarm*)

Displays the number of times Loss of Sync on the E1 line is detected. It is incremented when synchronization to the E1 stream is lost. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

AIS (aisAlarm)

Displays the number of times an Alarm Indication Signal on the E1 line is detected. This should be set when an unframed all ones code is received at RPOSI and RNEGI. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

Flap Count (lineDownCnt)

Displays the number of times the E1 line has been up and then becomes down. This should be set when the E1 line is up and becomes down. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

CRC4 Error (crc4Error)

Displays the number of CRC4 errors received by the E1 interface. This is an error counter that records word errors in the CRC4. The counter is disabled during loss of sync. This number is accumulating in the 1001MC.

Note Alarm counters severity level is controlled by the “Line Down Indication” level. The following options are available:

- **none**—Only Syslog message will be sent
- **warning**—Syslog message will be sent beginning with “box\box.c: Warning:” and web page warning counter will be incremented
- **error**—Syslog message will be sent beginning with “box\box.c: Error:”, the web page error counter will be incremented, and an SNMP trap message will be sent

The Clear Counter button

This button clears all alarm counters.

CRC4 Error Alarm Threshold (*crc4Threshold*)

The valid setting for the threshold is 0 to 255. By setting a threshold, the CRC4 Alarm counter will not issue the error/warning, Syslog, and SNMP Trap message unless the accumulating CRC4 Error Counter is greater than the threshold. The **Record Current Configuration** button will store the setting of the alarm threshold.

Input Mode (*mode3088RC*)

The following settings are available:

- onLine(0)
- superVisoryMode(1)

To make configuration changes to the NetLink-E1 NTUs, you must first set this bit to superVisoryMode(1). When the Input Mode is set to superVisoryMode(1), the Modify Configuration hyperlink will appear. Select the Modify Configuration hyperlink. The Model 3088RC Configuration page will appear (see section “[Model 3088RC Configuration page MIB variables description](#)” on page 206 for more information). After making configuration changes to the NetLink-E1 NTUs in the Model 3088RC Configuration page, return to this page by clicking on the Back... hyperlink and place the Input Mode variable back to onLine(0). This will notify the Model 1001MC that the configuration has completed and will cause it to copy the new configuration into the NetLink-E1 NTU configuration space. If this is not done, the NetLink-E1 NTU will not recognize the configuration changes that were made.

Model 3088RC Configuration Slot page Configuration Status table description

The *Configuration Status* table shows the configuration for the set of units. There are columns for the local and remote units. If a field is highlighted in yellow, it signifies one of two possible conditions:

- At start up, the Model 1001MC will display a default configuration for the card and all fields will be highlighted in yellow, notifying you that the information has not been verified. During the negotiation phase, the NetLink-E1 NTU modem will update the configuration in the Model 1001MC with its last set of stored parameters. As these fields are updated in the Model 1001MC, the yellow highlighting will disappear, signifying that the information has been updated. After the local and remote units are linked, the units will begin updating the remote information in the table, and Line Status set to datamode(2).
- If a rack card is installed in the rack without a customer premise unit connected, the remote information will be left as either none or highlighted in yellow, notifying you that the information has not been verified.

The following sections define the MIB variables that are shown in the Configuration Status table.

*Configuration Status (*configStatus3088RC*)*

This is the title of the status table and displays the configuration status of the rack card. The following status can be displayed:

- Negotiating(0)—The 1001MC is receiving the rack card’s configuration for the first time
- Static(1)—The 1001MC is showing the updated and correct configuration for the 3088RC
- ImplementingChanges(2)—The 1001MC is updating configuration changes to the 3088RC.

*Local Model Code (*localModelCode/remoteModelCode*)*

These variables display the local and remote models codes for the units that were found in the specified address.

DTE Rate (dteRate3088RC)

This variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

Clock Mode (clockMode3088RC)

This variable defines the clock mode for the NetLink-E1 modems. The following status variables can be displayed:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2)

TX Clock Invert (tcClockInvert3088RC)

- enable(0)
- disable(1)

DSL Link Enable (dslLinkEnable3088RC)

- enable(0)
- disable(1)

Line Probe (lineProbe3088RC)

Enables or disables the Line Probe feature to negotiate the optimal rate for current line conditions

- enable(0)
- disable(1)

Annex Type (annexType3088RC)

Sets the DSL annex type

- annexA(0)
- annexB(1)

SW Test Mode (testModeSet3088RC)

This displays any test mode invoked through the NMS. See next configuration for information about invoking test modes through the NMS. This option will be highlighted in blue if the unit is in test mode.

- none(0)-No test mode in process
- lal(1)-Local loopback test
- rdl(2)-Remote loopback

Front Panel Switches (frontPannelSwitches3088RC)

- This variable allows or disallows the front panel switches to cause the unit to go into test mode.
- enable(0)
- disable(1)

Response to Test Mode (responseToTestMode3088RC)

This variable allows or disallows test modes to be initiated front both the front panel or from the remote unit.

- enable(0)
- disable(1)

Software Version (softVersion3088RC)

This displays the software version of code in the 3088RC.

Reset button

Software reset the E-carrier function card on its next poll from 1001MC.

Model 3088RC Configuration page MIB variables description

The Model 3088RC Configuration page enables you to update the configuration of the 3088RC NetLink-E1 NTU modems that are installed in the system. After making changes to the configuration on this page, select Back to return to the Model 3088RC Configuration Slot page, then select onLine as the Input Mode, and finally, select **Submit Query** to send the new information to the Model 1001MC over the network. Starting from the HOME page, click on the following links: *Home (menu) > Configure Cards (menu) > View Rack [rack number] > model3088RC-xxx(x)* (in the *Local Model Code* column) > change input mode to *Supervisory* > *Modify Configuration*.

Note If the NetLink-E1 NTU modems are not connected, and changes made to the remote configuration will be lost after the units link-up. All parameters in the Local column can be changed at any time.

The following sections describes the MIB variables that are available on the Model 3088RC Configuration—Configuration page.

DSL Link State (lineStatus3088)

This variable displays the status of the line. There are three possible values that can be displayed:

- success(1) -When the line status is dataMode(2), the units are linked-up and ready to send data
- deactivated (2)
- in-progress (3)

DSL Link State (dSLSyncState3088)

This variable displays the status of the line. There are three possible values that can be displayed:

- acquiring-sync (1)
- in-sync (2)
- losing-sync (3)

Software Version (softVersion3088RC)

This read-only MIB variable displays the current version of code that is running in the NetLink-E1 rack card modem.

Configuration Type (*configType*)

This displays if the 3088RC is using the DIP switch control or software control for its configuration.

Unit Configuration table

This table shows the configurable MIB variables for the set of units. After changes are made, select the **Submit Query** button at the bottom of the table and then place the Input Mode back to onLine(0) in the Model 3088RC Configuration page.

The following sections explain the MIB variables that are shown in the Unit Configuration table.

Clock Mode (*clockMode3088RC*)

This variable defines the clock mode for the NetLink-E1 modems. The following options are available:

- network-CLK(0)
- internal-CLK(1)
- external-CLK(2).

DTE Rate (*dteRate3088RC*)

This read-only variable displays the DTE rate for the link. This is the Nx64 kbps data rate selected by the number of activated channels.

TX Clock Invert (*tcClockInvert3088RC*)

- enable(0)
- disable(1)

DSL Link Enable (*dslLinkEnable3088RC*)

- enable(0)
- disable(1)

Line Probe (*lineProbe3088RC*)

Enables or disables the Line Probe feature to negotiate the optimal rate for current line conditions

- enable(0)
- disable(1)

Line Coding (*lineCoding3088RC*)

This variable is used to select the G.703 line coding. The following options are available:

- code-HDB3(0)—HDB3
- code-AMI(1)—AMI

Line Build Out (*lineBuildOut*)

This is used to select the line build out. The following options are available:

- lbo-75ohm(0)—75 ohm
- lbo-120ohm(1)—120 ohm

Tx Clock Timing (txClock)

The following options are available:

- external(0)—serial transmit data coming from the DTE is clocked in using the DTE provided external clock
- internal(1)—serial transmit data coming from the DTE is clocked in using the DCE provided transmit clock

Software Test Mode (*testModeSet3088RC*)

This is used to invoke test modes through the NMS. Available options are:

- *lal*(4)—Local loopback test
- *rdl*(7)—Remote loopback test from V54

RDL Response(*v54Loop*)

The following options are available:

- *enabled*(1)—The unit will respond to a V.54 loop up command
- *disabled*(0)—The unit will ignore a V.54 loop up command

FP Switches (*frntSwitch*)

This selects if the front panel toggle switches used for loopbacks and pattern generators are:

- *enabled*(1)
- *disabled*(0).

Slot Configuration page MIB variables description

This section describes the MIB variables that are available on the Slot Configuration page. From the Modem Information page, the address column creates a list of hyperlinks to the Slot Configuration page associated with the specified address. The Slot Configuration page can be used to set slot-specific information related to the system and how the system treats the slot in the case of errors and warning. Starting from the HOME page, click on the following links: *Home (menu)* > *Configure Cards (menu)* > *View Rack [rack number]* > *X* (in the *Card Address* column).

Card Address (*nmsSlotID*)

Displays the address of the card.

Local Model Code (*localModelCode*)

Displays the model code of the NetLink modem installed at the specified address.

View Rack X hyperlink

Click on the *View Rack X* link to display the Modem Information Rack X window (see section “Modem Information Rack X” on page 239 for more information).

Card Identification Information

Local User Id (*localUserID*)

User supplied string that defines the NetLink NTU installed in the rack. The string is stored in non-volatile flash within the NetLink NTU and is useful for hardware identification. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within this page.

Remote User Id (*remoteUserID*)

User supplied string that defines the Customer Premise box at the far end of the link. The string is stored in non-volatile flash within the CP unit. If the unit is moved, the User ID will move to the new slot making it useful for hardware identification. The string can be up to 10 bytes long and can be changed or reset within this page.

Local Circuit ID (*localCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Remote Circuit ID (*remoteCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC.

Alarm Information**Clear Slot Alarms (*resetStatus*)**

Selecting this push button erases the alarms (errors and warning) associated with the specified slot.

Note The errors and warning will still be listed in the System Log.

Hardware Reset (*resetStatus*)

Selecting this push button will force the associated modem to perform a hardware reset.

Card Lost Indication (*cardLostIndication*)

This variable allows you to choose what type of indication will be made if a modem is removed from the management system. Three choices are available:

- None(0)
- Warning(1)
- Error(2)

Line Down Indication (*lineDownIndication*)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. Three choices are available:

- None(0)
- Warning(1)
- Error(2)

Note Line Down Indication must be set to *error(2)* line up and line down SNMP trap messages to be sent.

Creating and modifying global configuration templates

Model 3088RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 3088RC NTUs in multiple racks, or those in just one rack.

This section contains the following information to help you configure and use templates:

- Protecting individual Model 1001 racks and 3088RC rack cards from global modification—You may not want all racks or NTUs to be modified when you apply the global template, so section “Protecting Model 1001 racks and Model 3088RC NTUs from global modification” describes how to protect individual 1001 racks and 3088RC NTUs from being globally configured.
- Creating a template (see section “Creating a template” on page 214)
- Modifying a template (see section “Modifying a template” on page 216)
- Deleting a template (see section “Deleting a template” on page 217)
- Applying a template (see section “Applying a template” on page 217)

Protecting Model 1001 racks and Model 3088RC NTUs from global modification

This section describes how to protect 1001 racks and 3088RC NTU cards from being modified when a global modification is applied. This is useful if you are setting all but a few cards to the same configuration. You may protect an entire rack or only selected individual rack cards.

- To protect an entire Model 1001 rack, see the section “Protecting an entire Model 1001 rack from global configuration” on page
- To protect a selected Model 3088RC rack card, see section “Protecting a Model 3088RC rack card from global configuration” on page

Protecting an entire Model 1001 rack from global configuration

Do the following to protect a Model 1001 rack:

- Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see figure 99.

1001MC CONFIGURATION MENU

[Patton Electronics Home Page](#)

[HOME](#)

[About 1001MC](#)

[Import/Export](#)

[Configure Cards](#)

[System Info](#)

[DownLoad](#)

[System Log](#)

[SNMP](#)

[System Config](#)

[Help](#)

Apply 3088RC System Configuration: (0) ▼	<input type="button" value="Apply Configuration"/>
Apply 3088RC System Test Mode: none(0) ▼	<input type="button" value="Apply Test Mode"/>
Total Slots Available:	104
Total Cards Installed:	3
Power Supplies Installed:	16
Total System Warnings:	0
Total System Errors:	2
Update:	<input type="button" value="Clear All System Alarms"/>

Rack 1 Top Level	
Rack 1 Enable: enabled(1) ▼ <input type="button" value="Submit Query"/>	View Rack 1
Address Range:	1 - 13
Total Slots Available:	13
Total Cards Installed:	3
Power Supplies Installed:	2
Power Supply 1 Status:	down(1)
Power Supply 2 Status:	down(1)
Total Errors:	0
Total Warnings:	0
Apply 1095 Rack Configuration: Patton Electronics Comp	<input type="button" value="Apply Configuration"/>
Apply 1095 Test Mode: Patton Electronics Comp	<input type="button" value="Apply Test Mode"/>
Apply 2701RC Rack Configuration: None Created ▼	<input type="button" value="Apply Configuration"/>
Apply 2701RC Test Mode: off(1) ▼	<input type="button" value="Apply Test Mode"/>
Apply 3088 Rack Configuration: (0) ▼	<input type="button" value="Apply Configuration"/>
Apply 3088 Test Mode: none(0) ▼	<input type="button" value="Apply Test Mode"/>
Rack Protection Mode: normal(0) ▼	<input type="button" value="Apply Protection"/>
Clear Alarms:	<input type="button" value="Clear Rack 1 Alarms"/>

Figure 99. System Level Information page

- Use the Rack Protection Mode pop-up menu (see figure 99) to select protected(1).

Note Setting the Rack Protection Mode to normal(0) will enable the rack to receive new configurations through the global configuration command.

3. Click the **Apply Protection** button.

The rack is now protected.

Protecting a selected Model 3088RC rack card from global configuration

Do the following to protect a single Model 3088RC rack card:

1. Starting from the HOME page, click on the following links: Configure Cards > View Rack 1 (choose the rack you want to protect, in the example, rack 1 was selected).
2. Locate the card address (see figure 55 on page 119) of the Model 3088RC you want to protect.
3. Set the Protected pop-up menu (see figure 55 on page 119) to protected(1).

Note Setting the Protected option to normal(0) will enable the Model 3088RC to receive new configurations through the global configuration command.

4. Click the **Submit** button.

The rack card is now protected.

Creating a template

This section describes how to create a global configuration template.

Patton Electronics
Home Page

Global Configuration Menu

Create New Configuration

1095: Patton Electronics Comp Create Configuration
 2701RC/2707RC: Create Configuration
 3088RC: Create Configuration

Modify Configuration

1095: Patton Electronics Comp Modify Configuration
 2701RC/2707RC: None Created Modify Configuration
 3088RC: (0) Modify Configuration

Delete Configuration

1095: Patton Electronics Comp Delete Configuration
 2701RC/2707RC: None Created Delete Configuration
 3088RC: (0) Delete Configuration

1001MC CONFIGURATION MENU

HOME
About 1001MC
Import/Export
Configure Cards
System Info
DownLoad
System Log
SNMP
System Config
Help

Figure 100. Global Configuration Menu page

Note You can create as many as five templates, if you need to delete a template to make room for another, refer to section “[Deleting a template](#)” on page 217).

Do the following to create a template:

1. In the Create New Configuration section, type a short name (10 characters or less) in the text box named Model 3088RC/2707RC Configuration: (see [figure 100](#)). Clicking on the **Create Configuration** button, creates the new template and displays the Model 3088RC Global Configuration window.

Figure 101 is the Unit Configuration section (see figure 101) for the configuring E1 link parameters. There are 16 configurable parameters. What follows is a description of them with the available options for each.

Valid Configuration

	Local	Remote
DTE Rate:	rate64k(1) ▾	rate64k(1)
Clock Mode(Local-Remote):	internal-receiveRecover(0) ▾	internal(0)
Tx clock Invert :	disable(1) ▾	disable(1) ▾
DSL Link Enable :	disable(1) ▾	disable(1) ▾
Line Probe :	disable(1) ▾	disable(1) ▾
Annex Type:	annexA(0) ▾	annexA(0)
Front Panel Switches:	disable(1) ▾	disable(1)
Response to Test Mode:	disable(1) ▾	disable(1)
Serial Interface Type:	normal(0) ▾	normal(0)

Submit Query

Figure 101. Unit Configuration section of the web management table

- **DTE Rate**
Use the dropdown menu to select an available DTE rate
- **Clock Mode**, this selects the source of the clock used for the Transmit signal on the E1 channel. Please note the difference from “Tx Clock Timing” described below.
 - network-CLK(0)—derived from the received signal from the network
 - internal-CLK(1)—driven by the internal oscillator in the 3088RC NTU
 - external-CLK(2)—provided by DTE External Transmit Clock signal
- **DSL Link Enable** (dslLinkEnable3088RC)
 - enable(0)
 - disable(1)
- **Line Probe** (lineProbe3088RC)
Enables or disables the Line Probe feature to negotiate the optimal rate for current line conditions
 - enable(0)
 - disable(1)
- **Annex Type** (annexType3088RC)
Sets the DSL annex type
 - annexA(0)
 - annexB(1)

- **SW Test Mode** (testModeSet3088RC)
This displays any test mode invoked through the NMS. See next configuration for information about invoking test modes through the NMS. This option will be highlighted in blue if the unit is in test mode.
 - none(0)-No test mode in process
 - lal(1)-Local loopback test
 - rdl(2)-Remote loopback
- **FP Switch** (Front Panel)
 - disabled (0)—disables the toggle switches on the front panel of the 3088RC rack card
 - enabled(1)—enables the ability to use the front panel toggle switches
- **Response to Test Mode**, refers to the initiation of loopbacks via one of the DTE signals.
 - disabled(0)—no loopbacks can be initiated by a DTE signal
 - enabled(1)—Loopbacks can be initiated by a DTE signal.

Refer to section “Applying a template” on page 217 to activate the template.

Modifying a template

This section describes how to modify a global configuration template.

The screenshot shows the 'Global Configuration Menu' page. On the left is a red vertical sidebar with the text '1001MC CONFIGURATION MENU'. The main content area is titled 'Global Configuration Menu' and contains three sections:

- Create New Configuration**:

1095:	<input type="text" value="Patton Electronics Comp"/>	<input type="button" value="Create Configuration"/>
2701RC/2707RC:	<input type="text"/>	<input type="button" value="Create Configuration"/>
3088RC:	<input type="text"/>	<input type="button" value="Create Configuration"/>
- Modify Configuration**:

1095:	<input type="text" value="Patton Electronics Comp"/>	<input type="button" value="Modify Configuration"/>
2701RC/2707RC:	<input type="text" value="None Created"/>	<input type="button" value="Modify Configuration"/>
3088RC:	<input type="text" value="(0)"/>	<input type="button" value="Modify Configuration"/>
- Delete Configuration**:

1095:	<input type="text" value="Patton Electronics Comp"/>	<input type="button" value="Delete Configuration"/>
2701RC/2707RC:	<input type="text" value="None Created"/>	<input type="button" value="Delete Configuration"/>
3088RC:	<input type="text" value="(0)"/>	<input type="button" value="Delete Configuration"/>

Figure 102. Global Configuration Menu page

Do the following to modify a template:

1. Select a template from the Modify Configuration pop-up menu (see [figure 102](#)), then click the **Modify Configuration** button.
2. Change the parameters requiring modification (see [figure 103](#)). When you have finished changing the configuration, click on the **Submit** button to save the changes.

Refer to section “Applying a template” on page 217 to activate the template.

Deleting a template

Do the following to delete a template:

Note When a template configuration is deleted, it cannot be recovered.

1. Select a template from the Delete Configuration pop-up menu (see [figure 102](#) on page 216).
2. Click the **Delete Configuration** button.

Applying a template

This section describes how to apply a global configuration to all Model 3088RC rack cards. Model 3088RC cards which will not be configured to the selected Global Configuration are:

- Those installed in a Model 1001 rack that has the entire rack set to be protected(1)
- Those that are individually set to protected(1) mode

Instructions for protecting either an entire rack or individual 3088RC cards are given earlier in this chapter.

The template can be applied to:

- All 3088RC NTUs in ALL Model 1001 racks
- All 3088RC NTUs in just ONE Model 1001 rack

*To configure all Model 3088RC rack cards in **all** Model 1001 racks*

Complete the following steps.

1. Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see [figure 103](#).

1001MC CONFIGURATION MENU

[Patton Electronics Home Page](#)

[HOME](#)

[About 1001MC](#)

[Import/Export](#)

[Configure Cards](#)

[System Info](#)

[Download](#)

[System Log](#)

[SNMP](#)

[System Config](#)

[Help](#)

System Level Information

System Overview

Apply 1095 System Configuration: Patton Electronics Comp	<input type="button" value="Apply Configuration"/>
Apply 1095 System Test Mode: Patton Electronics Comp	<input type="button" value="Apply Test Mode"/>
Apply 2701RC System Configuration: None Created ▾	<input type="button" value="Apply Configuration"/>
Apply 2701RC System Test Mode: off(1) ▾	<input type="button" value="Apply Test Mode"/>
Apply 3088RC System Configuration: (0) ▾	<input type="button" value="Apply Configuration"/>
Apply 3088RC System Test Mode: none(0) ▾	<input type="button" value="Apply Test Mode"/>
Total Slots Available:	104
Total Cards Installed:	3
Power Supplies Installed:	16
Total System Warnings:	0
Total System Errors:	2
Update:	<input type="button" value="Clear All System Alarms"/>

Figure 103. System Level Information page—System Overview section

2. Use the Apply 3088RC System Configuration pop-up menu (see [figure 103](#)) to select the template you want to apply.
3. Click the **Apply Configuration** button.

The template has been applied.

To configure all Model 3088RC rack cards in just **one** Model 1001 rack
Complete the following steps:

1. Starting from the HOME page, click on the Configure Cards link to display the System Level Information page see figure 104.

The screenshot displays the 'Rack 1 Top Level' configuration page. On the left is a vertical red '1001MC CONFIGURATION MENU' with links: HOME, About 1001MC, Import/Export, Configure Cards, System Info, DownLoad, System Log, SNMP, System Config, and Help. The main content area is titled 'Rack 1 Top Level' and contains the following information:

Rack 1 Enable	enabled(1) <input type="button" value="Submit Query"/>	View Rack 1
Address Range:	1 - 13	
Total Slots Available:	13	
Total Cards Installed:	3	
Power Supplies Installed:	2	
Power Supply 1 Status:	down(1)	
Power Supply 2 Status:	down(1)	
Total Errors:	0	
Total Warnings:	0	
Apply 1095 Rack Configuration:	Patton Electronics Comp	<input type="button" value="Apply Configuration"/>
Apply 1095 Test Mode:	Patton Electronics Comp	<input type="button" value="Apply Test Mode"/>
Apply 2701RC Rack Configuration:	None Created	<input type="button" value="Apply Configuration"/>
Apply 2701RC Test Mode:	off(1)	<input type="button" value="Apply Test Mode"/>
Apply 3088 Rack Configuration:	(0)	<input type="button" value="Apply Configuration"/>
Apply 3088 Test Mode:	none(0)	<input type="button" value="Apply Test Mode"/>
Rack Protection Mode:	normal(0)	<input type="button" value="Apply Protection"/>
Clear Alarms:	<input type="button" value="Clear Rack 1 Alarms"/>	

Figure 104. System Level Information page—Rack section

2. Locate the rack section of the System Level Information page that you will configure (in figure 104, Rack 1 Top Level is being modified).
3. Use the Apply Rack Configuration pop-up menu (see figure 104) to select the template you want to apply.
4. Click the **Apply Configuration** button.

The template has been applied.

Chapter 10 HTTP/HTML web page reference

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Local Model Code (localModelCode)	243
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Clear Remote ID button	244
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- *monitor*—The monitor level password enables you to view statistics, but it will not let you make any configuration changes. To log into the system at the monitor level, type *monitor*, all lower case, for the username and password.

Note The superuser and monitor passwords are set in the unit as the default passwords. For proper security, make sure that during your initial setup, you change the passwords.

After logging in, the system displays the HOME page (see figure 107).

The screenshot shows the Patton Electronics HOME page. On the left is a vertical red bar with the text '1001MC CONFIGURATION MENU'. The main content area includes the Patton Electronics logo, a table of system information, a 'STATUS OF Support Unit' table, and 'IMMEDIATE ACTIONS' buttons.

Software Version:	2.5.1
Software Date Code:	Apr 15 2003 09:47:20
Box Name:	Support Unit
Box Contact:	Test Unit
Box Location:	Support Desk
Running Since Last Boot:	85 days 0 hrs 7 min 38 sec

STATUS OF Support Unit	
Total System Slots Available:	15
Total Active Slots:	5
Total System Warnings:	0
Total System Errors:	0

IMMEDIATE ACTIONS

Figure 107. HOME page

HOME

The HOME page displays a quick overview of the system including; error and warning indications, software information, box names, number of modems installed, and so on.

On the left side of the HOME page is the Navigation View. The list on the left side of the screen allows you to navigate to any page from this point. The navigation page will always be available to you so you can change from one page to the next.

The **Record Current Configuration** button lets you store configuration changes made to the box.

Note If configuration changes are not stored into memory, they will be lost if the unit is powered down.

The **Hard Reset** button forces the 1001MC to perform a reset. This will not reset the individual cards in the rack only the 1001MC. If you would like to perform a hardware reset on the individual cards, refer to the Slot Configuration page.

See section “[HOME](#)” on page 228 for more information.

About 1001MC

The About 1001MC page gives a more in-depth overview of the system that presented on the HOME page. This page also provides contact information about Patton Electronics. See section “[About 1001MC](#)” on page 231 for more information.

Import/Export

The Import/Export function enables you to make a backup (or export) copy of the 1001MC rack’s configuration parameters. By exporting the configurations, the saved files can quickly be loaded, or imported, into a replacement 1001MC rack—greatly speeding up the installation process should a rack need to be replaced. Additionally, you may have multiple racks requiring the same configuration. This simplifies and accelerates the installation.

Note All actions for Import/Export require superuser access privileges.

IMPORT / EXPORT

EXPORT CURRENT FLASH CONFIGURATION

The current power up settings as stored in the system flash will be dumped to your screen. You may then save them in a file using the "save as" function in your web browser for later import back into the system. When performing the "save as" function, make sure that the file is saved in text format.

Note that the information which is exported is the current hard storage settings, NOT the currently running settings. You may want to issue a "Record Current Configuration" on the home page before dumping the configuration.

[Export Flash...](#)

IMPORT FLASH CONFIGURATION FROM FILE

If you have previously exported the system configuration to a file then you can submit that file below and the system will update its flash configuration from the data saved in the file.

After this operation the system should be rebooted to activate the new settings. The configuration is loaded directly into the flash and so does NOT immediately modify any settings.

WARNING: This operation will erase whatever settings you currently have in the system.

Figure 108. The Import/Export web management page.

Configure Cards

Clicking on the Configure Cards hyperlink displays the System Level Information page. This page is the starting point for the configuration and management of your Patton NetLink modems. This page enables you to quickly identify potential problems and view statistics on a per-rack basis. You can also disable racks from this level. For more information, see section “[System Level Information](#)” on page 235.

From this page, you can select a View Rack hyperlink that will display the Modem Information Page for the selected rack.

Modem Information Page

The Modem Information Page consists of a table that displays top level information about the cards installed in the selected rack. These items include; model codes, user IDs, errors and warning, and circuit IDs. This page also allows you to gain information about the number of cards and power supplies in the rack. (See section “[Modem Information Rack X](#)” on page 239 for more information).

From this page there are two hyperlinks that can be selected that will give you detailed information about a specific modem. These are the Slot Configuration hyperlink, shown as the address of the card in the table, and the Modem Statistics hyperlink, shown as the local model code.

Slot Configuration. The Slot Configuration page enables you to enter information about the modem installed. From the page, you can change the User IDs, Circuit IDs, and the Error and Warning Indications. From this page, you can also clear errors and warning and perform a hardware reset on the modem installed in the rack (see section “[Slot Configuration](#)” on page 243 for more information).

Modem Statistics. The Modem Statistics page shows the current configuration and statistical state of the local and remote modem installed at the selected address. From this page, you can place the card into the superVisoryMode. Once the card is in this mode, the web page will display a hyperlink that will allow you to enter the Modem Configuration Page.

Modem Configuration Page. The Modem Configuration page allows you to change the configuration of the local and remote modems installed at the selected address. This page can also be used to place the cards into test modes. Once the configuration has been setup, submit the changes, then return to the Modem Statistics page to place the modem into the *onLine* state.

Note The configuration changes that are made will not be implemented in the cards until the unit is placed back into the onLine state.

System Information

You can navigate to the System Information page by selecting the hyperlink along the left side of any page. The System Information page enables you to setup the IP information, box information, and password information for the system. It is recommended that you change your passwords immediately after installing your Model 1001MC to ensure security for your network (see section “[System Information](#)” on page 246 for more information).

Download

The Download page enables you to perform software upgrades on the 1001MC itself, and the 1094ARC and 1095RC NetLink rack card modems installed in the system. New software can be obtained from Patton Electronics via a file-transfer protocol (FTP) connection (see section “[Download](#)” on page 249 for more information).

System Log

The System Log page displays Syslog messages. Syslog messaging is a reporting tool used in the Model 1001MC to log run-time operations. There are several levels of messages and you can set the system to report only messages above a certain level. From this page, you can reach the Syslog—Modify, Modify—Volatile Memory, and Modify—Non-Volatile Memory web pages. See section “[System Log](#)” on page 251 for more information about the System Log page.

Syslog—Modify

The Syslog—Modify web page allows you to setup the configuration for the Syslog messaging system. You can set variables such as the IP address of a Syslog Daemon and priority levels for each of the messaging facilities (see section “System Log—Modify” on page 252 for more information).

Syslog—Volatile Memory

The Syslog—Volatile Memory page displays Syslog messages that have been sent to the Volatile Memory section of the messaging system. The messages stored here will be lost if the system is re-booted (see section “System Log—Volatile Memory” on page 256 for more information).

Syslog—Non-Volatile Memory

The Syslog—Non-Volatile Memory page displays Syslog messages that have been sent to the Non-Volatile Memory section of the messaging system. The messages stored here will be stored in Flash memory and will be available if the system is re-booted or power is lost (see section “System Log—Non-Volatile Memory” on page 257 for more information).

SNMP

The SNMP web page enables you to download the Patton Enterprise MIBs for the Model 1001MC. These MIBs are required if you plan to manage the system using a network management station (NMS) instead of the web page manager.

HOME

The HOME page is the first HTTP/HTML screen that you will reach after you log into the Model 1001MC (see figure 107 on page 225). From the HOME page you may monitor the current system status, save any system changes or reset the system without powering off the rack system.

Box information

Software Version:	2.5.1
Software Date Code:	Apr 15 2003 09:47:20
Box Name:	Support Unit
Box Contact:	Test Unit
Box Location:	Support Desk
Running Since Last Boot:	85 days 0 hrs 7 min 38 sec

Figure 109. Box information

There are six system variables which describe information about the 1001MC. These variables are shown in figure 109, and are described in the following sections.

Software Version (boxSoftwareVersion)

This variable defines the version of the software currently running in the Model 1001MC. The Model 1001MC can be software upgraded using an FTP download.

Software Date Code (boxDateCode)

This variable defines the date and time the software was compiled.

Box Name (*boxName*)

This variable displays a user defined string that represents the name of the box. This variable can be changed by the user in the System Info web page.

Box Contact (*boxContact*)

This variable displays a user defined string that represents the contact for the box. You can change this variable in the System Info web page.

Box Location (*boxLocation*)

This variable displays a user defined string that represents the location of the box. You can change this variable in the System Info web page.

Running Since Last Boot (*boxUpTime*)

This variable tells you how long the Model 1001MC has been running since it was last reset.

Total System Slots Available:	15
Total Active Slots:	5
Total System Warnings:	0
Total System Errors:	0

Figure 110. Operating status variables

Operating status variables

There are four system variables which describe the immediate operating status of the NetLink modems installed in the rack. These variables are shown in [figure 110](#) and are described in the following sections.

Total System Slots Available (*totalConfigSlots*)

This read-only variable defines the largest address that the system will POLL (address 1 to *totalConfigSlots*). Any NetLink modem with an address outside of this range will not be found by the Model 1001MC.

Total Active Slots (*totalActiveSlots*)

This read-only variable defines the number of NetLink modems currently installed in the system. As the Model 1001MC brings the modems online this number is incremented. After a card is removed from the system, this number is decremented.

Total System Warnings (*boxWarningNumber*)

This variable defines the number of warnings that are currently outstanding in the system. This number includes warnings that have been generated from the NetLink modems as well as the Model 1001MC itself. If this number is greater than zero, this field will be highlighted in yellow to notify you that the warning exists. Warnings are cleared through the Configure Cards web page for the system, or the Slot Configuration page for the individual modems. You can view the System Log page to examine the source of the warnings.

Total System Errors (*boxErrorNumber*)

This variable defines the number of errors that are currently outstanding in the system. This number includes errors that have been generated from the NetLink modems as well as the Model 1001MC itself. If this number is greater than zero, this field will be highlighted in red to notify you that the errors exist. Errors are cleared

through the Configure Cards web page for the system, or the Slot Configuration page for the individual modems. You can view the System Log page to examine the source of the warnings.

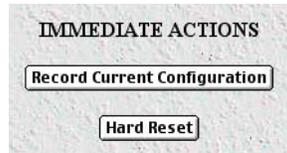


Figure 111. Immediate actions

Immediate Actions

There are several immediate actions which can be executed on the Model 1001MC, when in superuser mode (see [figure 111](#)), which will cause the box to act according to the following:

- **Record Current Configuration**—Selecting the **Record Current Configuration** button causes the current configuration to be stored in Flash memory. Any changes made to the Model 1001MC configuration are stored in non-volatile RAM first. This allows you to set the box up with a working configuration before making the configuration permanent. Changes become permanent when you select **Record Current Configuration**. You will lose all changes not stored to Flash the next time the 1001MC is re-booted unless you store them.
- **Hard Reset**—Clicking the **Hard Reset** button causes the 1001MC to restart. When you select **Hard Reset**, the 1001MC confirms that you want to execute this command. Then, the 1001MC will re-initialize the interfaces, and re-load configuration parameters from Flash.

Note Clicking the **Hard Reset** only restarts the 1001MC, it will not perform a hardware reset on the modems in the system. This can be done in the slot configuration web page for the individual cards.

1001MC CONFIGURATION MENU

Patton Electronics
Home Page

HOME
About 1001MC
Import/Export
Configure Cards
System Info
DownLoad
System Log
SNMP
System Config
Help

CURRENT SYSTEM INFORMATION

IP Address: 192.168.200.21
IP Mask: 255.255.255.0
Current Gateway 192.168.200.148

Modifying the IP addressing

IP Address:
IP Mask:
Gateway:

Box Contact Information

Box Location:
Box Name:
Box Contact:

SNMP and HTTP Password Information

Superuser Password:
Superuser Password Verification:
User Password:
User Password Verification:

Background Information

Web Page Refresh Rate:
Web Background Enabled:

Figure 113. System Level Information page

Import Export

The Import/Export function enables you to make a backup (or *export*) copy of your Model 1001MC's configuration parameters. By exporting the configurations, the saved files can quickly be loaded, or *imported*, into a replacement Model 1001MC—greatly speeding up the installation process should the Model 1001MC need replacing.

Note All actions for Import/Export require superuser access privileges.

To import or export a configuration, click on Import/Export under the Configuration Menu to display the Import/Export main window (see figure 114).

IMPORT / EXPORT

EXPORT CURRENT FLASH CONFIGURATION

The current power up settings as stored in the system flash will be dumped to your screen. You may then save them in a file using the "save as" function in your web browser for later import back into the system. When performing the "save as" function, make sure that the file is saved in text format.

Note that the information which is exported is the current hard storage settings, NOT the currently running settings. You may want to issue a "Record Current Configuration" on the home page before dumping the configuration.

[Export Flash...](#)

IMPORT FLASH CONFIGURATION FROM FILE

If you have previously exported the system configuration to a file then you can submit that file below and the system will update its flash configuration from the data saved in the file.

After this operation the system should be rebooted to activate the new settings. The configuration is loaded directly into the flash and so does NOT immediately modify any settings.

WARNING: This operation will erase whatever settings you currently have in the system.

Figure 114. Import/Export main window

Export Configuration

Note The exported configuration file is a text-format file. Do not try, however to edit the operating characteristics contained in the file.

Note The parameters that will be exported are the power-up settings as they are stored in flash memory and *may not* be the current operating parameters. To ensure that you export the most current parameters, go to HOME, then click on the **Record Current Configuration** button under Immediate Actions.

To export the flash configuration, click on the Export Flash link on the Import/Export main page. The Model 1001MC will display text configuration information resembling that shown in figure 115.

```

*****
Flash configuration data for: 1001MC

The data below is the current hexadecimal representation
of your configurable data in the system. Select the
File/Save As option to save the data to a file. This
file can be reloaded into your system at a later date.

You may edit and comment the top portion of this file
but do not modify any data after the "at" symbol. Also,
do not put an "at" symbol in the comment area.

START CONFIGURATION DATA
@

fconfigData.5 = "0x01:00:00:00:04:04:04:04:04:04:04:04:08:08:08:08:08:08:04:04:04:04
:04:04:04:04:08:08:08:08:08:08:08:08:04:04:04:04:04:04:04:04:08:08:08
:08:08:08:08:04:04:04:04:04:08:08:08:08:08:08:08:08:08:00:00:00:00

fconfigData.6 = "0x01:00:00:00:04:04:04:04:04:04:04:04:08:08:08:08:08:08:08:04:04:04:04
:04:04:04:04:08:08:08:08:08:08:08:08:04:04:04:04:04:04:04:08:08:08
:08:08:08:08:04:04:04:04:04:08:08:08:08:08:08:08:08:08:08:08:00:00:00:00
    
```

Figure 115. Typical access server flash memory configuration data

To save the displayed data as a text file, select the **Save** option on your browser (see figure 116). For example, under Netscape, select **File > Save As**. A dialog box will display enabling you to save the contents of the export parameters to a text file. Select the location where you want the file stored, type a file name, and click **Save**.

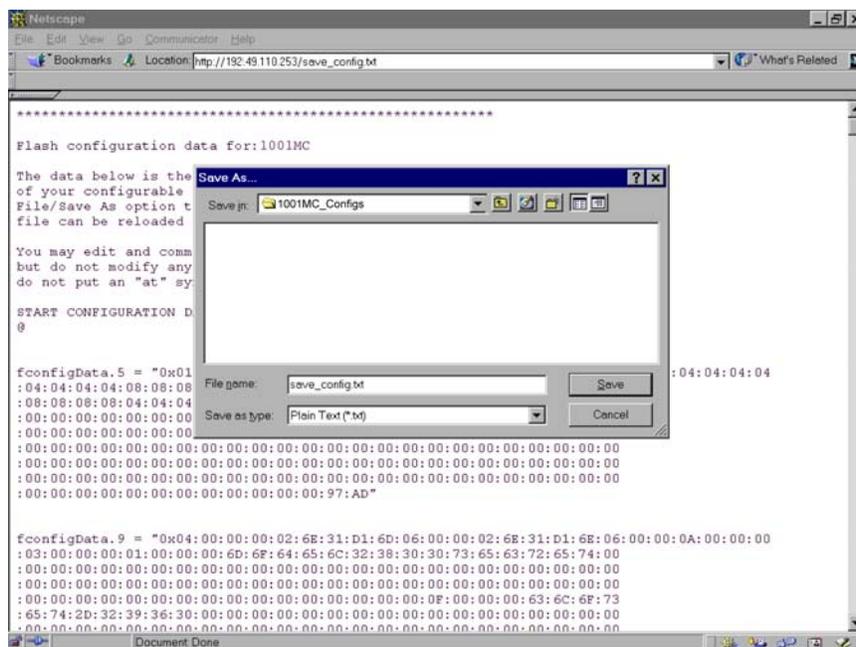


Figure 116. Saving the access server flash memory configuration data as a text file

Import Configuration

To import a configuration file into the access server, type the complete path and filename for the configuration file you wish to load or click on the **Browse...** button to select the desired file, then click on the **Submit Query** button (see figure 114 on page 233).

Upon successfully importing the file, the access server will display *Configuration Load Complete*, indicating that the new operating parameters have been loaded into flash memory.

Click on HOME under the Configuration Menu, then click on the **Hard Reset** button under Immediate Actions.

Note Do not select **Record Current Configuration** after importing configuration parameters.

System Level Information



Clicking the Configure Cards hyperlink on the HOME page displays the System Level Information page.

Figure 113 displays a portion of the information page for the NetLink system being managed. The System Level Information page contains statistical information about the entire system and explains how that information is broken down among the racks. Each rack can be enabled or disabled from this level. When a rack is disabled, the 1001MC stops polling the addresses contained in the specified rack. The 1001MC's ability to stop polling is useful when installing less than eight racks or when taking cards offline in order to perform servicing. The modems installed in the system will continue to operate at the last setting provided. This page also allows you to clear alarms on a per-rack or system basis. Each rack view also contains a View Rack hyperlink to the Modem Information page (see section "Modem Information Rack X" on page 239 for more information). The following sections describe the variables contained within the System Level Information page.

System Overview

This section of the System Level Information window (see figure 113 on page 232) does the following:

- Displays status information compiled from all Model 1001 racks in the system
- Provides several test patterns for use when running diagnostics in system test mode
- Enables you to apply global system configurations to Model 1095RC, 2701RC, and 2707RC rack cards installed in the system

Apply System Configuration

If you are applying a global configuration to all Model 1095RC, 2701RC, and 2707RC rack cards in the system, select the desired template from the pop-up menu, then click the **Apply Configuration** button. For more information about the system configuration feature (including how to protect rack cards and racks from being modified), refer to section "System Config" on page 259.

Apply System Test Mode

If you are going to be running in system test mode, select one of the following test patterns from the pop-up menu, then click the **Apply Test Mode** button.

Note The Model 2707RC operates only in the local loopback lal(4) mode.

- off(0)
- five11(2)—511 is the pattern that is used when the pattern generator and detector are turned on
- five11er(3)—511 with errors is the pattern that is used when the pattern generator and detector are turned on
- lal(4)—Local loopback
- lalWith511(5)—Local loopback with pattern generator set to output 511 pattern
- lalWith511er(6)—Local loopback with pattern generator set to output 511 pattern with errors
- rdl(7)—Remote digital loopback
- rdlWith511(8)—Remote digital loopback with pattern generator set to output 511 pattern
- rdlWith511er(9)—Remote digital loopback with pattern generator set to output 511 pattern with errors

Total Slots Available (*totalConfigSlots*)

Displays the number of configurable slots available in the system.

Total Cards Installed (*totalActiveSlots*)

Displays the number of cards the system has found.

Power Supplies Installed (*boxPowerSupplies*)

Displays the number of power supplies installed in the system.

Total System Warnings (*boxWarningNumber*)

Displays the number of warnings that have been generated by the system.

Total System Errors (*boxErrorNumber*)

Displays the number of errors that have been generated by the system.

Clear All System Alarms (*clearAlarms*)

Click on this button to clear alarms for the entire system.

Note The System Log will still display the errors after the **Clear All System Alarms** button is clicked.

Rack X Top Level

The following variables are used by each rack in the system. Replace the *X* shown in the variable name with the appropriate rack number to label the specific variable name (i.e. *rack2Enable*).

Rack X Enable (rackXEnable)

This is where you can enable or disable a rack for use by the system. You will almost always want to have the rack enabled, but it can be useful to disable a rack if:

- Your system configuration has fewer rack cards than will fill the number of installed racks, in which case all un-installed racks should be disabled. The 1001MC will not poll the address range for a rack that is disabled, so this will shorten the time needed to poll the system.
- You would like to remove cards from the rack without generating an alarm. Disabling the rack prevents it from sending alarms to the 1001MC.

View Rack X hyperlink

Click on this link to display the Modem Information Rack X page. The Modem Information Rack page displays an overview of the NetLink rack that is being managed. For more information, refer to section “[Modem Information Rack X](#)” on page 239.

Address Range

Displays the addresses (in groups of 15) that will be polled for the defined rack (for example, the address range for rack 1 would be 1-15, rack 2 would be 16-30, and so on).

Total Slots Available (rackXSlotsAvailable)

Displays the number of slots available for the rack (based on the number of power supplies installed in the rack).

Total Cards Installed (rackXCardsInstalled)

Displays the number of cards that the system has found.

Power Supplies Installed (rackXPowerSupplies)

Displays the number of power supplies installed in the rack (this value determines the addressing range for the rack).

Total Errors (rackXErrorNumber)

Displays the number of errors that have been reported by the system for this rack.

Total Warnings (rackXWarningNumber)

Displays the number of warnings that have been reported by the system for this rack.

Apply Rack Configuration

If you are applying a global configuration to Model 1095RC, 2701RC, and 2707RC rack cards installed in the rack, select the desired template from the pop-up menu, then click the **Apply Configuration** button. For more information about the system configuration feature (including how to protect rack cards from being modified), refer to section “[System Config](#)” on page 259.

Apply Test Mode

If you are going to be running in test mode, select one of the following test patterns from the pop-up menu, then click the **Apply Test Mode** button.

- `off(0)`
- `five11(2)`—511 is the pattern that is used when the pattern generator and detector are turned on
- `five11er(3)`—511 with errors is the pattern that is used when the pattern generator and detector are turned on
- `lal(4)`—Local loopback
- `lalWith511(5)`—Local loopback with pattern generator set to output 511 pattern
- `lalWith511er(6)`—Local loopback with pattern generator set to output 511 pattern with errors
- `rdl(7)`—Remote digital loopback
- `rdlWith511(8)`—Remote digital loopback with pattern generator set to output 511 pattern
- `rdlWith511er(9)`—Remote digital loopback with pattern generator set to output 511 pattern with errors

Rack Protection Mode

If you want to protect all Model 1095RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Apply Protection** button. For more information about the system configuration feature, refer to section “[System Config](#)” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Clear Rack X Alarms (clearAlarms)

Click on this button to clear alarms reported by the system for this rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Modem Information Rack X



The Modem Information Rack X page displays an overview of the NetLink rack that is being managed. This page will display statistical information, such as errors and warnings on a per-card basis, and identification information, such as model codes and user IDs. Figure 117 shows the Modem Information page, a description of each variable follows.

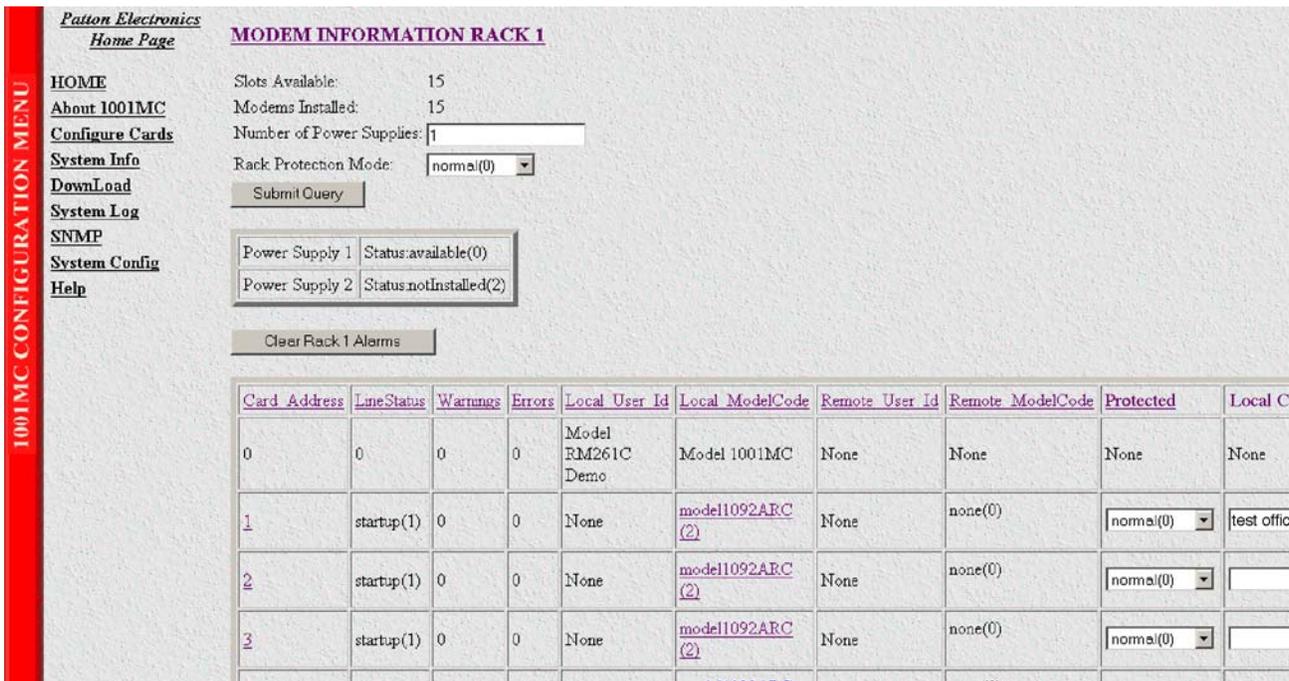


Figure 117. Modem Information page

Slots Available (totalConfigSlots)

Displays the number of configurable slots available in the rack.

Modems Installed (rackXCardsInstalled)

Displays the number of modem cards installed in the rack that the system has found.

Number of Power Supplies (rackXPowerSupplies)

This is where you specify the number of power supplies installed in the rack (this value determines the addressing range for the rack). In the case of a redundant power supply system, you should set this variable to 2, this will inform the Model 1001MC that there should be 2 power supplies in the system.

Note The 1001MC does not automatically detect the number of installed power supplies. It must be configured here.

Rack Protection Mode

If you want to protect all Model 1095RC, 2701RC, and 2707RC rack cards installed in the current rack from being globally configured, select *protected(1)* from the pop-up menu, then click the **Submit** button. For more information about the system configuration feature, refer to section “[System Config](#)” on page 259.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

Submit button

After you have defined the number of power supplies installed in the rack and the rack protection mode, click on the **Submit** button to save the changes.

Power Supply 1 Status

Displays the current status of power supply 1 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Power Supply 2 Status

Displays the current status of power supply 2 as one of the following:

- *available(0)*—The power supply is working normally.
- *down(1)*—If the status is shown as *down*, it means the 1001MC is unable to detect the power supply. This status listing will also be highlighted in red.
- *notInstalled(2)*—The power supply has not been installed.

Clear Rack X Alarms (clearAlarms)

Click on this button to clear alarms for the current rack.

Note The System Log will still display the errors after the **Clear Rack X Alarms** button is clicked.

Card Address (nmsSlotID)

Defines the address of the card. The Model 1001MC will poll the cards using the addresses listed in the Card Address column. If a modem is found with the same address, it will be displayed in that row. The address of the card is setup using the DIP-switches on the card. For more information about setting the address of a card, please refer to the appropriate NMS version of the manual for the specific NetLink modem. The address is also a hyperlink to the Slot Configuration page (see section “[Slot Configuration](#)” on page 243 for more information). This page can be used to set slot specific information about the card.

Line Status

The line status column on each View Rack page shows the current line status of each card. Keep in mind that the more cards the 1001MC is managing, the longer it will take for the line status field to update. Displays the status of the line. The following values can be displayed:

- startup(1)
- dataMode(2)—When the line status is dataMode(2), the units are linked-up and ready to send data.
- testMode(3)

Warnings (warningCount)

Displays the warnings that are associated with each modem installed in the system. When warnings are present, this field will be highlighted in yellow and the number of warnings will be listed. For more information on the cause of the warning, you should view the System Log. Warnings will be highlighted in yellow in the log. The warnings for the slot can be erased in the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Note The System Log will still display the warnings even after the number is cleared.

Errors (errorCount)

Displays the errors that are associated with each modem installed in the system. When errors are present, this field will be highlighted in red and the number of errors will be listed. For more information on the cause of the error, you should view the System Log. Errors will be highlighted in red in the log. The errors for the slot can be erased in the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Note The System Log will still display the errors even after the number is cleared.

Local User Id (localUserID)

User supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile flash within the NetLink modem. If the address of the modem is changed, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Local Model Code (localModelCode)

This column displays the model code of the NetLink modem installed at the specified address. The Model Code is also a hyperlink into the configuration of the NetLink modem and its remote unit. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Remote User Id (remoteUserID)

User supplied string that defines the unit at the end of the link. The string is stored in non-volatile flash within the unit. If the unit is moved, the User ID will move to the new slot. The string can be up to 10 bytes long and can be changed or reset within the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Remote Model Code (*remoteModelCode*)

This column displays the model code of the NetLink modem at the far end of the link.

Protected

You can protect individual rack cards from being globally configured by setting the pop-up menu from *normal(0)* to *protected(1)*. After you have set the protection option, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note Setting the protection to *normal(0)* will enable the rack card to receive new configurations through the global configuration command.

Note After submitting the protection setting, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Local Circuit ID (*localCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards page or from the Slot Configuration page (see section “Slot Configuration” on page 243 for more information). After you have set the local circuit ID, if you are finished making changes to the current rack card, click on the **Submit** button (located at the right side of the rack card's row in the table) to save the changes.

Note After submitting the local circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Remote Circuit ID (*remoteCircuitID*)

The circuit ID is a 40-byte string that is stored in non-volatile flash within the Model 1001MC. This string can be changed from the Configure Cards page or from the Slot Configuration page (see section “Slot Configuration” on page 243 for more information).

Submit button

Click the **Submit** button to input the changes to the management system. After clicking the **Submit** button, you are required to select the **Record Current Configuration** button on the Model 1001MC button on the Model 1001MC HOME page. This will store the information into flash making it available after a re-boot or power cycle.

Note After submitting the remote circuit ID information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Slot Configuration



The Slot Configuration page (see figure 118) enables you to make slot specific configuration changes that are not product specific. The following sections describe each variable.

Figure 118. Slot Configuration Page

Card Address (*nmsSlotID*)

Displays the address of the card.

Local Model Code (*localModelCode*)

Displays the model code of the NetLink modem installed at the specified address.

View Rack *X* hyperlink

Click on the *View Rack X* link to display the Modem Information Rack *X* window (see section “Modem Information Rack *X*” on page 239 for more information).

Card Identification Information

Local User Id (*localUserID*)

10-byte user-supplied string that defines the NetLink modem installed in the rack. The string is stored in non-volatile Flash within the NetLink modem. If the address of the modem is changed, the User ID will move to the new slot.

To configure the local user ID, type the ID into the Local User ID text box, then click the **Submit** button {located next to the Remote User ID text box) to save the changes.

Note After submitting the card identification information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Clear Local ID button. If you want to delete the local ID information, click on the **Clear Local ID** button, then click on the **Submit** button.

Remote User Id (remoteUserID)

10-byte user supplied string that defines the remotely connected modem. The string is stored in non-volatile Flash within the NetLink modem.

Note The remote user ID is only used with Patton xDSL rack cards.

To configure the remote user ID, type the ID into the Remote User ID text box, then click the **Submit** button {located next to the Remote User ID text box) to save the changes.

Note After submitting the card identification information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Clear Remote ID button. If you want to delete the remote ID information, click on the **Clear Remote ID** button, then click on the **Submit** button.

Local Circuit ID (localCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile Flash within the Model 1001MC.

To configure the local circuit ID, type the ID into the Local Circuit ID text box, then click the **Submit** button {located next to the Local Circuit ID text box) to save the changes.

Note After submitting the card identification information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Clear Local Circuit ID button. If you want to delete the local circuit ID information, click on the **Clear Local Circuit ID** button, then click on the **Submit** button.

Remote Circuit ID (remoteCircuitID)

The circuit ID is a 40-byte string that is stored in non-volatile Flash within the Model 1001MC.

Note The remote circuit ID is only used with Patton xDSL rack cards.

To configure the remote circuit ID, type the ID into the Remote Circuit ID text box, then click the **Submit** button (located next to the Remote Circuit ID text box) to save the changes.

Note After submitting the card identification information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Clear Remote Circuit ID button. If you want to delete the remote circuit ID information, click on the **Clear Remote Circuit ID** button, then click on the **Submit** button.

Alarm Information

Clear Slot Alarms (*resetStatus*)

Selecting this push button erases the alarms (errors and warnings) associated with the specified slot.

Note Errors and warnings will still be listed in the System Log.

Hardware Reset (*resetStatus*)

Selecting this button will force the current rack card modem to perform a hardware reset.

Card Lost Indication (*cardLostIndication*)

This variable lets you choose what type of indication will be made if a modem is removed from the management system. The following options are available:

- none(0)
- warning(1)—If a card lost situation occurs, it will be displayed in yellow highlighting as a warning on the HOME, System Level Information, and Modem Information Rack pages.
- error(2)—If a card lost situation occurs, it will be displayed in red highlighting as an error on the HOME, System Level Information, and Modem Information Rack pages

Line Down Indication (*lineDownIndication*)

This variable allows you to choose what type of indication will be made if a modem reports a line down scenario. The following options are available:

- none(0)
- warning(1)—If a line down situation occurs, it will be displayed in yellow highlighting as a warning on the HOME, System Level Information, and Modem Information Rack pages.
- error(2)—If a line down situation occurs, it will be displayed in red highlighting as an error on the HOME, System Level Information, and Modem Information Rack pages

Note Line Down Indication must be set to *error(2)* in order for line-up and line-down SNMP trap messages to be sent.

System Information



The System Information page (see figure 119) displays the current setting for the system. This page allows you to setup parameters defining password protection and the network address. A description of each variable follows figure 119.

Patton Electronics
Home Page

CURRENT SYSTEM INFORMATION

HOME IP Address: 192.168.148.7
 About 1001MC IP Mask: 255.255.255.0
 Configure Cards Current Gateway: 192.168.148.148
 System Info
 DownLoad
 System Log
 SNMP
 System Config
 Help

Modifying the IP addressing

IP Address:
 IP Mask:
 Gateway:

Box Contact Information

Box Location:
 Box Name:
 Box Contact:

SNMP and HTTP Password Information

Superuser Password:
 Superuser Password Verification:
 User Password:
 User Password Verification:

Background Information

Web Background Enabled:

Figure 119. System Information

Current System Information

IP Address (*boxIpAddress*)

Displays the IP address of the box.

IP Mask (*boxIpMask*)

Displays the IP mask of the box.

Current Gateway (*boxGateway*)

Displays the current gateway for the network.

Modifying the IP addressing

IP Address (boxIpAddress)

This parameter defines the IP address of the box. Type the address into the text box, then, if you have no other IP addressing entries to make, click the **Submit** button.

IP Mask (boxIpMask)

This parameter defines the IP mask of the box. Type the address into the text box, then, if you have no other IP addressing entries to make, click the **Submit** button.

Gateway (boxGateway)

This parameter defines the current gateway for the network. Type the address into the text box, then, if you have no other IP addressing entries to make, click the **Submit** button.

Note After submitting the IP addressing information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Box Contact Information

Box Location (boxLocation)

User defined string that represents the location of the box. This variable is displayed on the HOME page.

Type the box location into the text box, then, if you have no other box contact entries to make, click the **Submit** button.

Box Name (boxName)

User defined string that represents the name of the box. This variable is displayed on the HOME page.

Type the box name into the text box, then, if you have no other box contact entries to make, click the **Submit** button.

Box Contact (boxContact)

User defined string that represents the contact for the box. This variable is displayed on the HOME page.

Type the box contact information into the text box, then, if you have no other box contact entries to make, click the **Submit** button.

Note After submitting the box contact information, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

SNMP and HTTP Password Information

Superuser Password (boxSnmpMasterPassword)

This password will allow full access rights to the box (read-write). Change the password by typing the new password into the *Superuser Password* and *Superuser Password Verification* fields, then click the **Submit** button.

Note After submitting the new superuser password, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

User Password (boxSnmpMonitorPassword)

This password will allow monitor access rights to the box (read-only). Change the password by typing the new password into the *User Password* and *User Password Verification* fields, then selecting the **Submit** button.

Note After submitting the new password, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Background Information (boxBackgroundFlag)

The Model 1001MC contains a background image that can be used while viewing the web pages. You can choose to enable or disable the background image, then click on the **Submit** button to apply the change.

Web Page Refresh Rate (BoxWebRefreshRate)

The user may choose to refresh certain web configuration pages at various rates or no automatic refresh. The following pages are refreshed at the rate selected:

- 1095RC configuration page
- 1094RC configuration page
- 2701RC configuration page
- 2707RC configuration page
- iDSL configuration page
- Rack view page

The user's selection of auto refresh rates are:

- none(0)—no auto refresh. The user must refresh the web page manually
- rate5sec(5)—5 seconds between auto refreshing
- rate10sec(10)—10 seconds
- rate15sec(15)—15 seconds
- rate30sec(30)—30 seconds
- rate1min(60)—1 minute
- rate2min(120)—2 minutes
- rate3min(180)—3 minutes
- rate5min(300)—5 minutes

Web Background Enabled (*boxBackgroundFlag*)

The Model 1001MC contains a background image that can be used while viewing the web pages. You can choose to enable or disable the background image, then click on the Submit button to apply the change. The two options are:

- `disableGraphics(0)`—there is no background image. The background is white.
- `enableGraphics(1)`—the background image is visible.

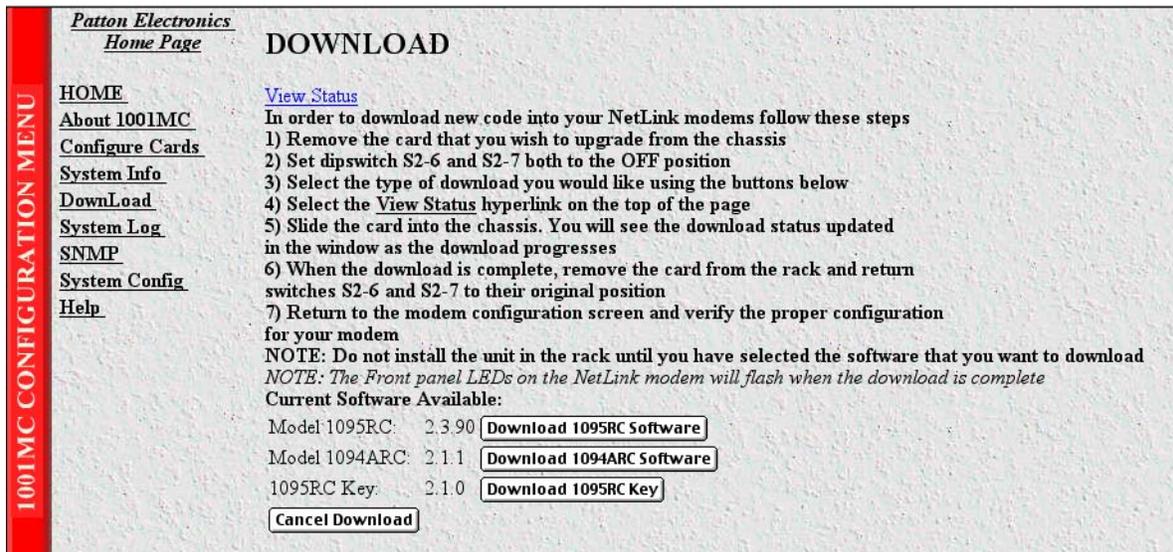


Figure 120. Download page

Download



The Model 1001MC has the facilities to download new Flash software into itself and the following NetLink modems:

- 1094ARC (see section “Using the Download page to upgrade 1094ARC software” on page 87 for information on upgrading the Flash software)
- 1095RC (see section “Using the Download page to upgrade 1095RC software” on page 111 for information on upgrading the Flash software)

Upgrading 1001MC software via FTP download

This section describes how to upgrade the Flash memory in the Model 1001MC. You will need the following:

- PC with FTP utility installed.

- 1001MC with access to the LAN.

Note For help, type *help* at the FTP prompt for a list of the commands.

1. At the `C:\>` DOS prompt on the PC, type the following:

```
ftp <IP ADDRESS>
```

where *<IP ADDRESS>* is the IP address of the 1001MC.

The 1001MC will respond with the following:

```
Connected to <IP ADDRESS>
220 Code download service ready
User ( < IP ADDRESS > (none)):
```

2. To download 1001MC operational code enter the username as *KillImage* (1001MC commands are case-sensitive so type it exactly as shown).

The 1001MC will respond with the following:

```
331 User name okay, need password.
Password:
```

3. Enter the superuser password for the box—the default password is *superuser*, but it may have been changed by the system administrator, in which case, use the new password.

The 1001MC will respond with the following:

```
230 User logged in, proceed.
```

4. The type of file being downloaded needs to be specified, type the following at the prompt:

```
FTP> "type image"
```

The 1001MC will respond with the following:

```
200 Command okay.
```

5. Send the file by typing the following: FTP> "send <filename>" where *<filename>* is the full filename of the file to be downloaded, including the directory (for example: *c:\temp\1001MC.img*).

The 1001MC will respond with the following:

```
Response: 200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
Connection closed by remote host.
```

There will be a few second delay after the data connection is opened while the file is being transferred, then the connected will be closed. The 1001MC will automatically install the new software.

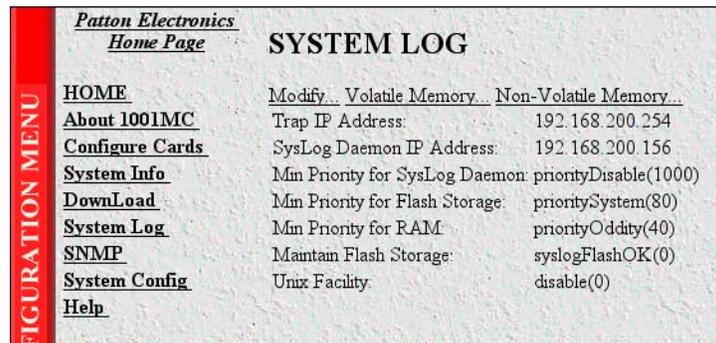


Figure 121. System Log

System Log



The System Log page (see [figure 121](#)) displays an overview of the system logging functions. The system log is a messaging system that stores information about the system as it is running. The following hyperlinks are available for modifying and viewing system log messages:

- **System Log—Modify:** This page enables you to modify the system log parameters. You can choose which messages will be sent to the available message logging functions (see section “[System Log—Modify](#)” on page 252 for more information).
- **System Log—Volatile Memory:** This page contains a log of messages that have been sent to the RAM storage area using the Min Priority for RAM variable in the Syslog Modify page. Messages stored here will be lost if the box reboots (see “[System Log—Volatile Memory](#)” on page 256 for more information).
- **System Log—Non-Volatile Memory:** This page contains a log of messages that have been sent to the Flash storage area using the Min Priority for Flash Storage variable in the Syslog Modify page. Messages stored here will be saved even if the box reboots (see “[System Log—Non-Volatile Memory](#)” on page 257 for more information).

Patton Electronics
Home Page

SYSTEM LOG:Modify

HOME
[About 1001MC](#)
[Configure Cards](#)
[System Info](#)
[DownLoad](#)
[System Log](#)
[SNMP](#)
[System Config](#)
[Help](#)

Daemons

SysLog Daemon IP Address:
System Trap IP Address:

Priority

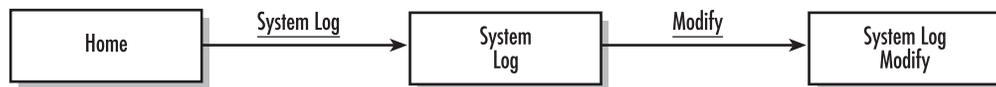
Min Priority for SysLog Daemon:
Min Priority for Flash Storage:
Min Priority for RAM:
Unix Facility:

Maintenance

Maintain Flash Storage:

Figure 122. System Log—Modify

System Log—Modify



The System Log—Modify page (see [figure 122](#)) allows you to modify the system log parameters. You can choose which messages will be sent to the available message logging functions.

Daemons

Syslog Daemon IP Address (syslogDaemonIP)

The Model 1001MC can send messages over a network to a Syslog Daemon. This variable specifies the IP address that will be running the Syslog Daemon. Type the IP address into the text box, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

SNMP Trap Daemon IP Address (*syslogTrapIP*)

SNMP traps are generated for *line down*, *line up*, *card lost*, *power supply 1 fail*, and *power supply 2 fail* events. The specific trap numbers are as follows:

Trap Description	Specific Trap Number
TRAP_ID_POWER_ONE_FAIL	1
TRAP_ID_POWER_TWO_FAIL	2
TRAP_ID_CARD_LOST	3
TRAP_ID_LINE_UP	4
TRAP_ID_LINE_DOWN	5

The Trap IP address is assigned on the System Log page. If the IP address is assigned, SNMP traps will be sent to that IP address. For line up and line down traps, *Line down indication* has to be set to *error(2)* on the Slot Configuration page for each card (see section “[Slot Configuration](#)” on page 243).

The line up, line down, and card lost trap messages will include the box name, rack number, card number in that rack, and local circuit ID in the trap string followed by a description of the trap. For example, the string in a line up trap will resemble: *Model 1001MC Demo, Rack Number: 1, Card Number: 12, Local Circuit ID: Test Circuit, Line Up Addr: 12.*

Type the IP address into the text box, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “[HOME](#)” on page 228 for more information).

Priority

Min Priority for SysLog Daemon

Specify the minimum priority for a message that will be sent to the SysLog Daemon. The following options are available:

- priorityVerbose(5)
- priorityDebug(10)
- priorityInfo(20)
- priorityOddity(40)
- priorityService(60)
- prioritySystem(80)
- priorityDisable(1000)

For most situations, set the outputs that are being used to *prioritySystem(80)*. For unused output mechanisms, set the priority to *priorityDisable(1000)*. Select the priority setting from the pop-up menu, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Min Priority for Flash Storage

Specify the minimum priority for a message that will be sent to Flash storage. The following options are available:

- priorityVerbose(5)
- priorityDebug(10)
- priorityInfo(20)
- priorityOddity(40)
- priorityService(60)
- prioritySystem(80)
- priorityDisable(1000)

For most situations, set the outputs that are being used to prioritySystem(80). For unused output mechanisms, set the priority to priorityDisable(1000). Select the priority setting from the pop-up menu, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

Min Priority for RAM

Specify the minimum priority for a message that will be sent to RAM. The following options are available:

- priorityVerbose(5)
- priorityDebug(10)
- priorityInfo(20)
- priorityOddity(40)
- priorityService(60)
- prioritySystem(80)
- priorityDisable(1000)

For most situations, set the outputs that are being used to prioritySystem(80). For unused output mechanisms, set the priority to priorityDisable(1000). Select the priority setting from the pop-up menu, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the config-

uration changes into memory (see “HOME” on page 228 for more information).

Unix Facility

Specify the minimum priority for a message that will be sent to Flash storage. The following options are available:

- disable(0)
- user(1)
- mail(2)
- daemon(3)
- auth(4)
- syslog(5)
- lpr(6)
- news(7)
- uucp(8)
- cron(9)
- authpriv(10)
- ftp(11)
- local0(16)
- local1(17)
- local2(18)
- local3(19)
- local4(20)
- local5(21)
- local6(22)
- local7(23)

Select the facility setting from the pop-up menu, then click the **Submit** button.

Note After submitting the change, you must click on the **Record Current Configuration** button located on the HOME page to store the configuration changes into memory (see “HOME” on page 228 for more information).

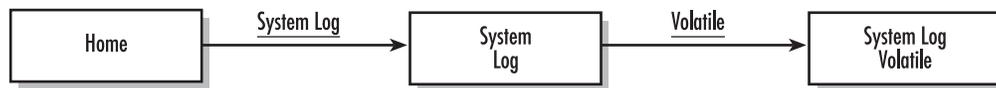
Maintenance

Maintain Flash Storage (*syslogFlashClear*)

This variable is used to notify you about the status of the flash storage area. The following options are available:

- *syslogFlashOK*(0)
- *syslogFlashFull*(1)—If the flash storage area is full this variable will read *syslogFlashFull*
- *syslogFlashClear*(2)—The flash storage area can be erased by setting this variable to *syslogFlashClear* and selecting the **Submit Query** button

System Log—Volatile Memory



The System Log—Volatile Memory page (see [figure 123](#)) contains a log of messages that have been sent to the RAM storage area using the Min Priority for RAM variable in the Syslog Modify page. Messages stored here will be lost if the box reboots.

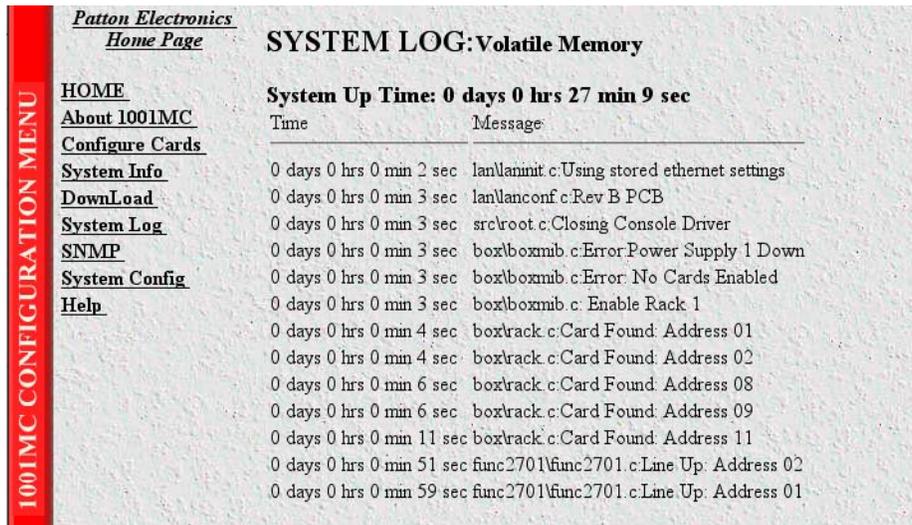
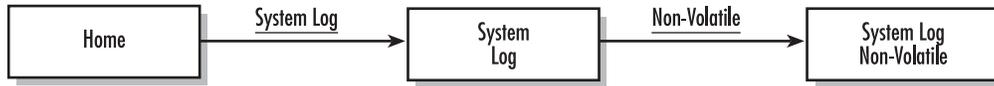


Figure 123. System Log—Volatile Memory

System Log—Non-Volatile Memory



The System Log—Volatile Memory page (see figure 124) contains a log of messages that have been sent to the flash storage are using the Min Priority for Flash Storage variable in the Syslog Modify page. Messages stored here will be saved even if the box reboots. This page will show warnings highlighted in yellow and errors highlighted in red. When an error or warning is displayed somewhere in the web pages, this page will give a description of the error/warning. All information on this page is read-only except a single push button at the top of the page which is described in more detail below.

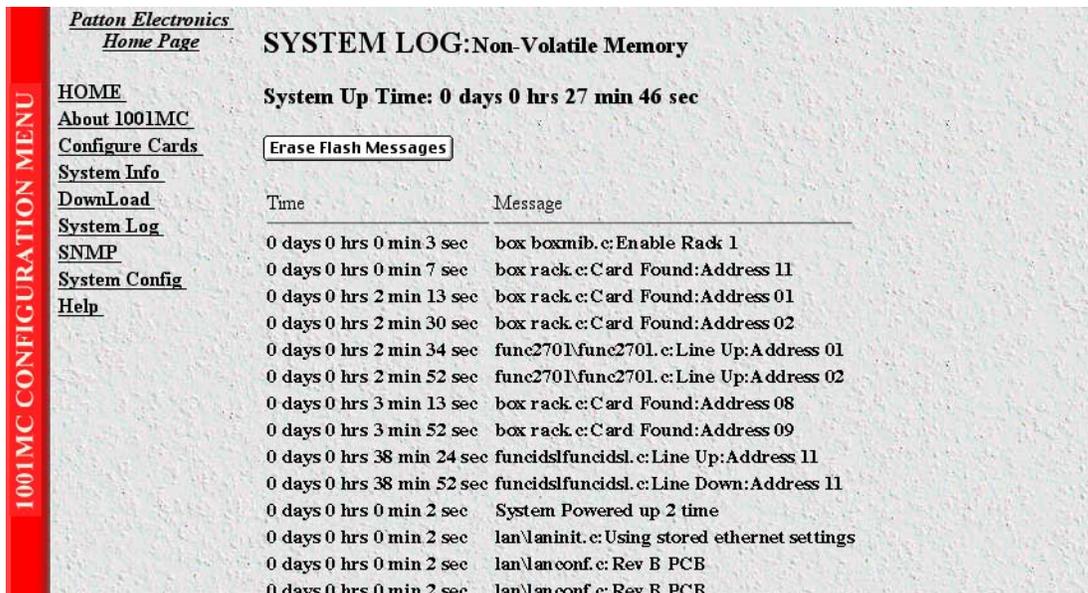


Figure 124. System Log—Non-Volatile Memory

Erase Flash Messages (*syslogFlashClear*)

Clicking on this button clears messages listed on the page. This function can also be performed from the Syslog Modify page.

Note When message are erased they cannot be recovered.

SNMP



The SNMP Support Page (see figure 125) is where you can download the MIBs used by the 1001MC. You will need the MIBs if you will be using an SNMP Network Management Station and a standard SNMP software package or MIB walking tool to manage your Patton NetLink System instead of the built-in NetLink-NMS HTTP/HTML management pages.

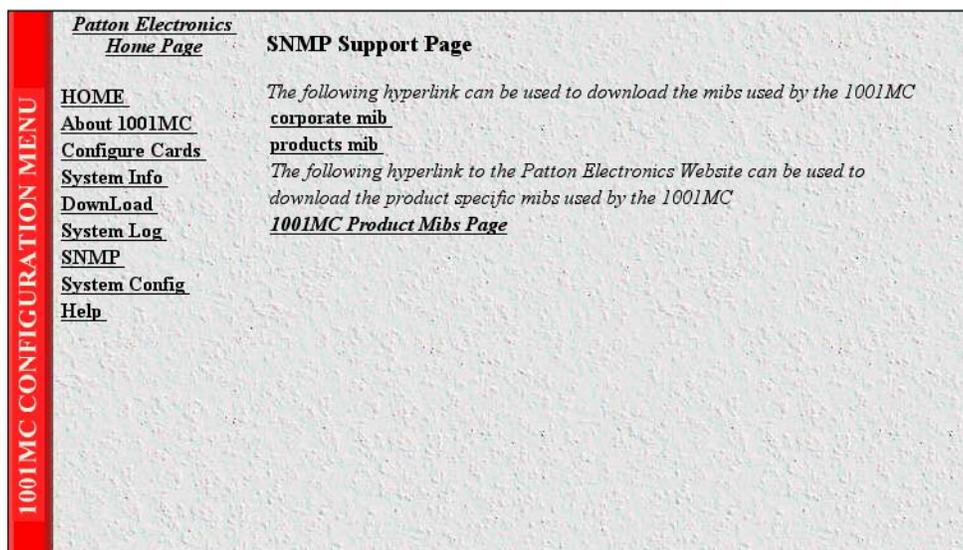


Figure 125. SNMP Support Page

The following options are available:

- corporate mib—Click on this link to download the corporate MIB file (corporat.mib)
- products mib—Click on this link to download the products MIB file (product.mib)
- 1001MC Products Mibs Page—Click on this link to view (and download) the product-specific MIBs used by the 1001MC

System Config



Model 1095RC, 2701RC, and 2707RC rack cards can be configured globally by templates you create. If you use this capability, you have the option to globally configure some or all Model 1095RC, 2701RC, and 2707RC modems in multiple racks, or those in just one rack.

Note Due to the many different applications that are supported, care must be taken when setting the configuration of your modems that you avoid using combinations of variables that could cause problems with the modems if implemented incorrectly. Those variable combinations (referred to as *illegal combinations*) are described in this chapter.

This section contains the following information to help you configure and use templates:

- Protecting individual Model 1001 racks and 1095RC rack cards from global modification—You may not want all racks or modems to be modified when you apply the global template, so section “[Protecting Model 1001 racks and Model 1095RC modems from global modification](#)” describes how to protect individual 1001 racks and 1095RC modems from being globally configured.
- Creating a template (see section “[Creating a template](#)” on page 263)
- Modifying a template (see section “[Modifying a template](#)” on page 267)
- Deleting a template (see section “[Deleting a template](#)” on page 271)
- Applying a template (see section “[Applying a template](#)” on page 271)

Note For information on configuring and using templates for the Model 2701RC, see chapter 7, “[Model 2701RC management](#)” on page 129. For the Model 2707RC, see chapter 8, “[Model 2707RC management](#)” on page 167.

Protecting Model 1001 racks and Model 1095RC modems from global modification

This section describes how to protect 1001 racks and 1095RC modem cards from being modified when a global modification is applied. This is useful if you are setting all but a few cards to the same configuration.

Select the appropriate option from following configuration choices:

- Protect a Model 1001 rack (see section “[Protecting a Model 1001 rack from global configuration](#)” on page 260)
- Protect a Model 1095RC rack card (see section “[Protecting a Model 1095RC rack card from global configuration](#)” on page 262)

Protecting a Model 1001 rack from global configuration

Do the following to protect a Model 1001 rack:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see figure 126. Figure 127 on page 261 shows the web page navigation required to get to this area of the system.

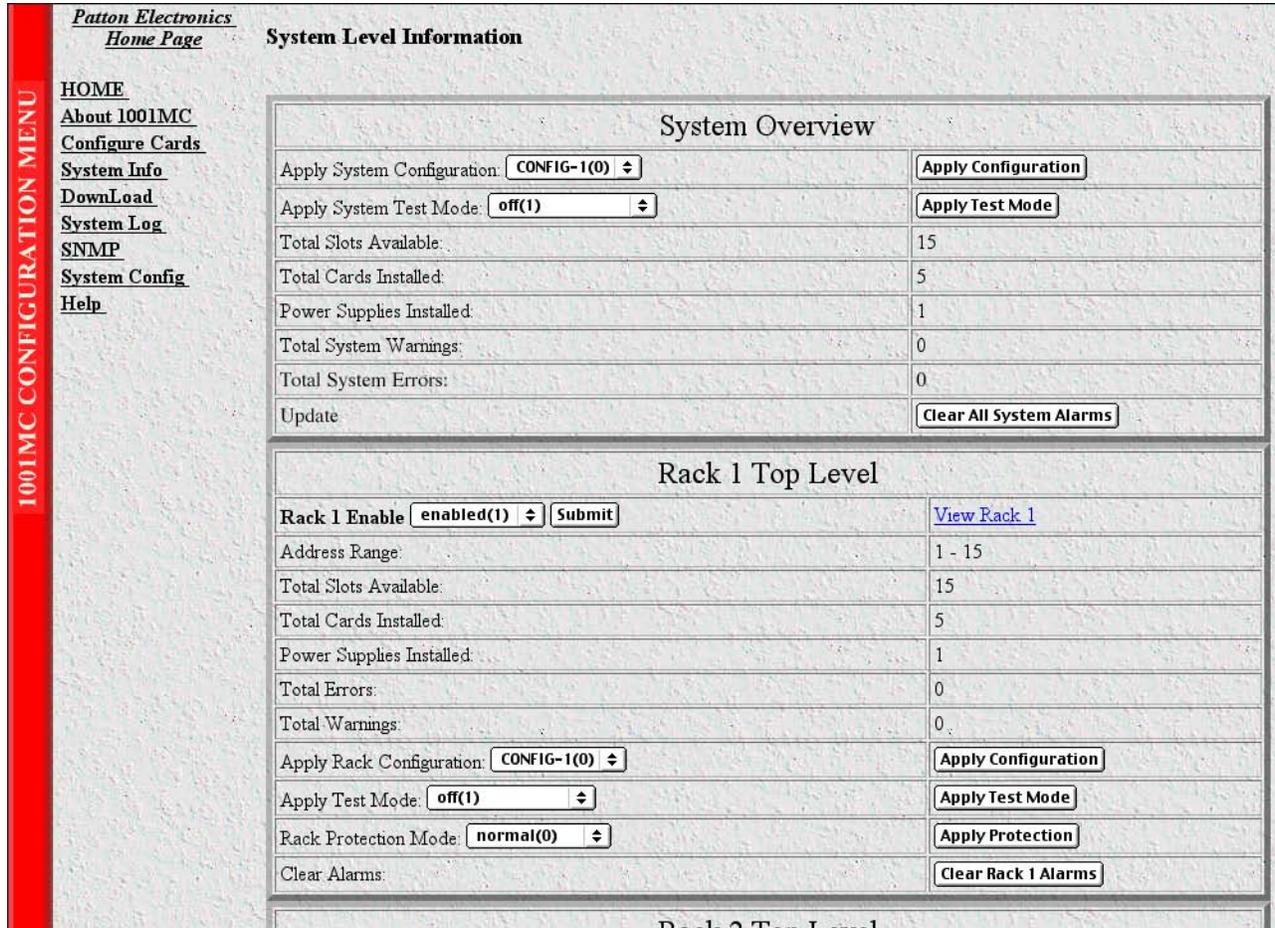


Figure 126. System Level Information page

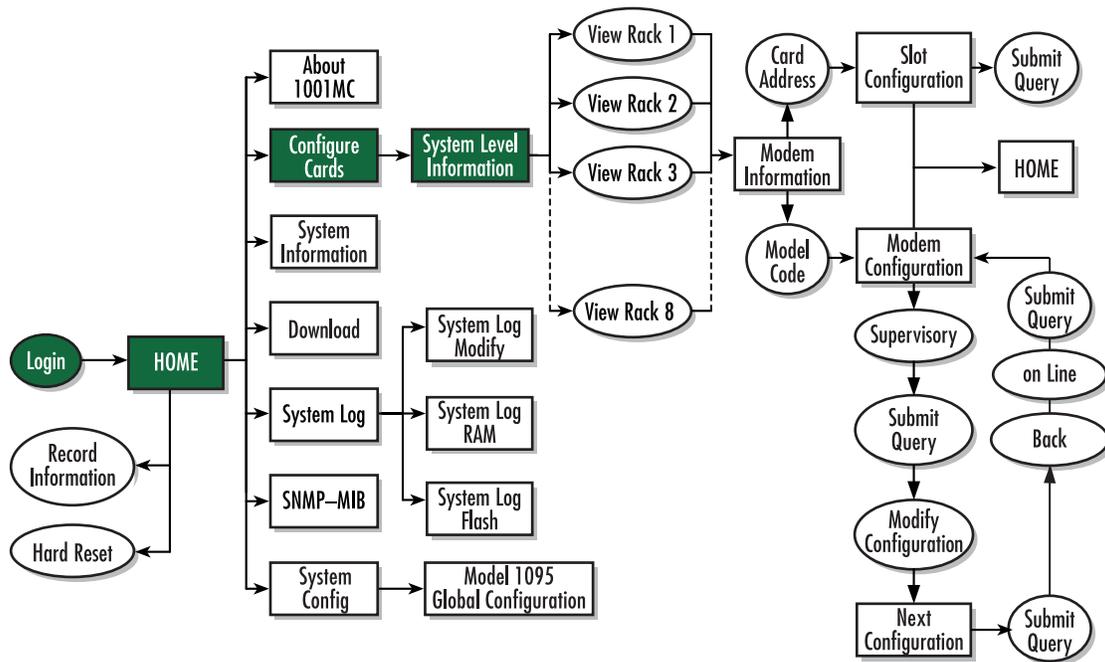


Figure 127. Web page navigation to System Level Information page

2. Use the *Rack Protection Mode* pop-up menu (see figure 126) to select *protected(1)*.

Note Setting the *Rack Protection Mode* to *normal(0)* will enable the rack to receive new configurations through the global configuration command.

3. Click the **Apply Protection** button.

The rack is now protected.

Protecting a Model 1095RC rack card from global configuration

Do the following to protect a single Model 1095RC rack card:

1. Starting from the HOME page, click on the following links: *Configure Cards* > *View Rack 1* (choose the rack you want to protect, in the example shown in figure 128, rack 1 was selected). Figure 129 shows the web page navigation required to get to this area of the system.

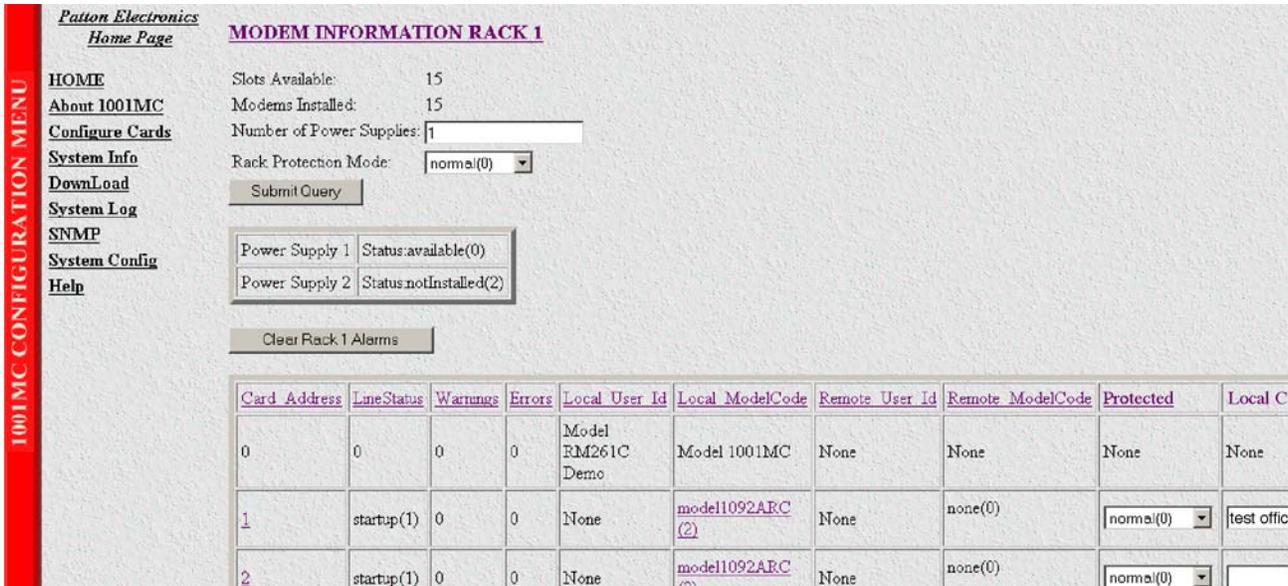


Figure 128. Modem Information Rack 1 page

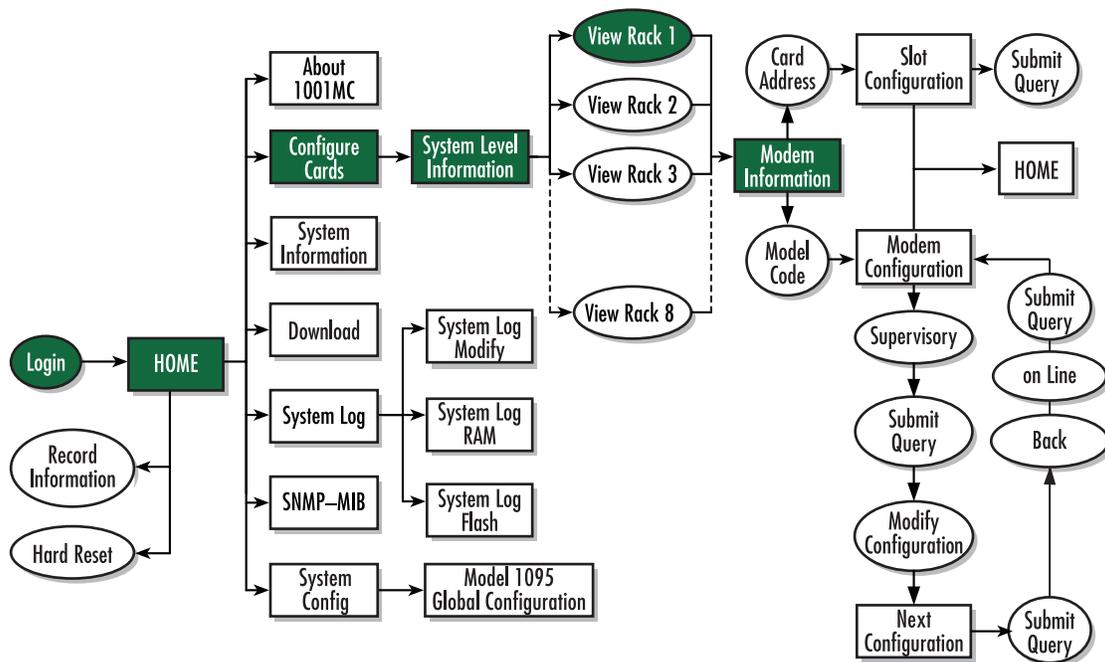


Figure 129. Web page navigation to Modem Information Rack 1 page

2. Locate the card address (see [figure 128](#) on page 262) of the Model 1095RC you want to protect.
3. Set the *Protected* pop-up menu (see [figure 128](#) on page 262) to *protected(1)*.

Note Setting the *Protected* option to *normal(0)* will enable the Model 1095RC to receive new configurations through the global configuration command.

4. Click the **Submit** button.

The rack card is now protected.

Creating a template

This section describes how to create a global configuration template. The Patton Model 1095 enables the Model 1001MC system administrator to configure the units for a wide variety of applications. Due to the many different applications that are supported, care must be taken when setting the configuration of your modems. There are several illegal combinations of variables that could cause problems with the modems if implemented incorrectly. Be sure to read the following information before creating a template:

- Configuration rules—Things to keep in mind when creating a template (see section “[Configuration rules](#)” on page 263)
- Notes on clock mode settings (see section “[Notes on clock mode settings](#)” on page 264)
- Notes on framing mode settings (see section “[Notes on framing mode settings](#)” on page 264)
- Illegal configuration messages (see section “[Illegal configuration messages](#)” on page 264)

After reviewing the rules and notes, go to section “[Procedure for creating a template](#)” on page 265 to learn how to create a template.

Configuration rules

Keep in mind the following when creating a template:

- If you have an IM2RC/K G.703/G.704 Rear Card installed with a 1095RC in your rack, the unit *must* have the Local Clock Mode set to *external* and the Framing Mode set to *slotted*.
- If you have an IM1/K G.703/G.704 Quick Connect Module installed with your 1095 at the remote site, the units *must* have the Clock Mode set to *external-external* and the Framing Mode for both the local and remote units *must* be set to *slotted*.
- If you have any other interface connected to your 1095RC or your 1095 modems, the Framing Mode *must* be set to *normal*.
- The system administrator should only set the Clock Mode to *external-external(4)* if there is an IM2RC/K installed in the 1095RC at the rack and an IM1/K installed in the 1095 standalone unit at the remote site.
- When setting a unit for the external clock mode, the unit *must* have an external clock source in order to make a link. When using either an IM2RC/K or an IM1/K, the *K* module will always provide the external clock for the unit, so it is not necessary to have a G.703/G.704 link available. When using any other type of serial interface, make sure that an external clock is provided by the DTE equipment or the modems will not link.

Notes on clock mode settings

The Clock Mode Setting determines the source of timing for the link. Most applications will use one of the following configurations:

- internal-receiveRecover(0)
- external-receiveRecover(1)

There are special situations which would require the use of the *external-external(4)* clock mode setting. This setting should only be used when the application has an IM2RC/K and a 1095RC in the rack system and a IM1/K and a 1095 standalone at the remote site. If you are using any other interface cards *do not use the external-external(4) configuration*.

Note When you are using the external-external(4) clock mode settings you *must* have the Framing Mode set to *slotted* for the local and remote units.

Notes on framing mode settings

The Framing Mode Setting notifies the card of the type of interface it will be connected to. When you are using an IM2RC/K with a 1095RC rack card, the system administrator should set the Local Clock Mode to *external* (either *external-receiveRecover(1)* or *external-external(4)*) and the Local Framing Mode to *slotted*. When you are using an IM1/K and a 1095 standalone at the remote site, the system administrator should set the Clock Mode to *external-external(4)* and the Remote Framing Mode to *slotted*.

Illegal configuration messages

If you are receiving an invalid configuration indication after creating a configuration, it is resulting from an illegal combination of variables. In most cases, the cause of the problem has to do with the Framing Mode variable. Patton DSL modems should only be set to the *slotted* mode when you are using an IM2RC/K with the 1095RC or an IM1/K with the 1095 standalone unit. Also, if you are using a IM2RC/K or IM1/K interface card, the 1095/1095RC must always be set to the external clock mode. Review the table below for a list of valid configurations that can be used with the 1095/1095RC.

Local Clock Mode	Local Framing Mode	Remote Clock Mode	Remote Framing Mode
Internal	Normal	Receive Recover	Normal
External	Normal	Receive Recover	Normal
External ^a	Slotted	Receive Recover	Normal
External ^a	Slotted	External ^a	Slotted
Receive Recover	Normal	Internal	Normal
Receive Recover	Normal	External	Normal

a. Denotes a unit that *must* have an IM2RC/K or IM1/K installed.

Procedure for creating a template

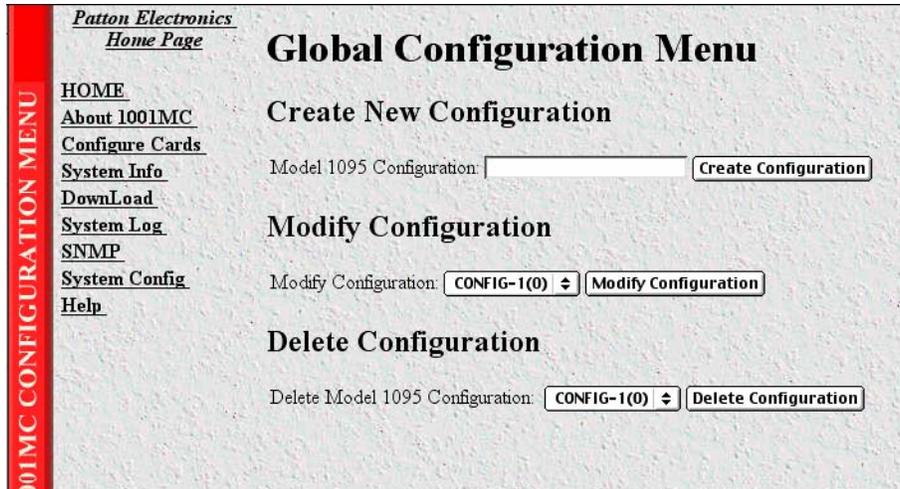


Figure 130. Global Configuration Menu page

Note You can create as many as five templates, if you need to delete a template to make room for another, refer to section “” on page 271).

Do the following to create a template:

1. Click in the Model 1095 Configuration text box (see figure 130) and type a short name (10 characters or less) for the new template, then click the **Create Configuration** button.

The Model 1095 Global Configuration window displays (see figure 131).

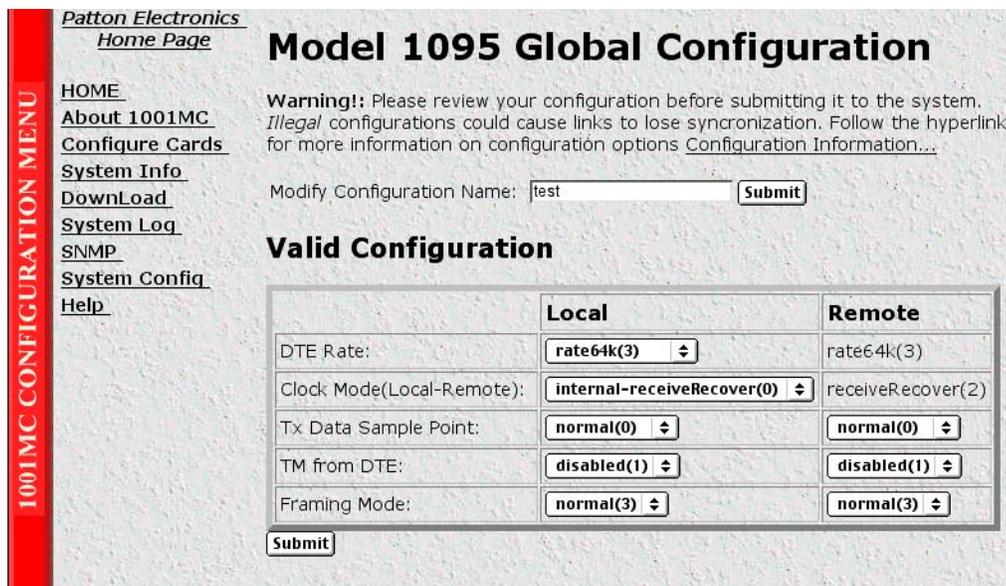


Figure 131. Model 1095 Global Configuration page

2. Use the *Local DTE Rate* pop-up menu to select local DTE rate. You have the following choices:
 - rate64k(3)
 - rate128k(4)
 - rate192k(5)
 - rate256k(6)
 - rate320k(7)
 - rate384k(8)
 - rate448k(9)
 - rate512k(10)
 - rate576k(11)
 - rate640k(12)
 - rate704k(13)
 - rate768k(14)
 - rate832k(15)
 - rate896k(16)
 - rate960k(17)
 - rate1024k(18)
 - rate1088k(19)
 - rate1216k(21)
 - rate1280k(22)
 - rate1344k(23)
 - rate1408k(24)
 - rate1472k(25)
 - rate1536k(26)
 - rate1600k(28)
 - rate1664k(29)
 - rate1728k(30)
 - rate1792k(31)
 - rate1856k(32)
 - rate1920k(33)
 - rate1984k(34)
 - rate2048k(35)
 - rate2112k(36)
 - rate2176k(37)
 - rate2240k(38)
 - rate2304k(39)
3. Use the *Local Clock Mode (Local-Remote)* pop-up menu to select the clock mode. You have the following choices:
 - internal-receiveRecover(0)
 - external-receiveRecover(1)
 - receiveRecover-internal(2)
 - receiveRecover-external(3)
 - external-external(4)
4. Use the *Local Tx Data Sample Point* pop-up menu to select the local transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
5. Use the *Remote Tx Data Sample Point* pop-up menu to select the remote transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
6. Configure the *Local TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
7. Configure the *Remote TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
8. Configure the *Local Framing Mode* pop-up menu using the following choices:
 - slotted(0)

- normal(3)
9. Configure the *Remote Framing Mode* pop-up menu using the following choices:
- slotted(0)
 - normal(3)
10. When you have finished setting the configuration, click on the **Submit** button to save the changes.

Note If you receive an *invalid configuration* error after creating a configuration, it is resulting from an illegal combination of variables. Refer to section “[Illegal configuration messages](#)” on page 264 for more information.

Refer to section “[Applying a template](#)” on page 271 to activate the template.

Modifying a template

This section describes how to modify a global configuration template. The Patton Model 1095 enables the Model 1001MC system administrator to configure the units for a wide variety of applications. Due to the many different applications that are supported, care must be taken when setting the configuration of your modems. There are several illegal combinations of variables that could cause problems with the modems if implemented incorrectly. Be sure to read the following information before creating a template:

- Configuration rules—Things to keep in mind when creating a template (see section “[Configuration rules](#)” on page 267)
- Notes on clock mode settings (see section “[Notes on clock mode settings](#)” on page 268)
- Notes on framing mode settings (see section “[Notes on framing mode settings](#)” on page 268)
- Illegal configuration messages (see section “[Illegal configuration messages](#)” on page 268)

After reviewing the rules and notes, go to section “[Procedure for modifying a template](#)” on page 269 to learn how to modify a template.

Configuration rules

Keep in mind the following when modifying a template:

- If you have an IM2RC/K G.703/G.704 Rear Card installed with a 1095RC in your rack, the unit *must* have the Local Clock Mode set to *external* and the Framing Mode set to *slotted*.
- If you have an IM1/K G.703/G.704 Quick Connect Module installed with your 1095 at the remote site, the units *must* have the Clock Mode set to *external-external* and the Framing Mode for both the local and remote units *must* be set to *slotted*.
- If you have any other interface connected to your 1095RC or your 1095 modems, the Framing Mode *must* be set to *normal*.
- The system administrator should only set the Clock Mode to *external-external*(4) if there is an IM2RC/K installed in the 1095RC at the rack and an IM1/K installed in the 1095 standalone unit at the remote site.
- When setting a unit for the external clock mode, the unit *must* have an external clock source in order to make a link. When using either an IM2RC/K or an IM1/K, the *K* module will always provide the external clock for

the unit, so it is not necessary to have a G.703/G.704 link available. When using any other type of serial interface, make sure that an external clock is provided by the DTE equipment or the modems will not link.

Notes on clock mode settings

The Clock Mode Setting determines the source of timing for the link. Most applications will use one of the following configurations:

- internal-receiveRecover(0)
- external-receiveRecover(1)

There are special situations which would require the use of the *external-external(4)* clock mode setting. This setting should only be used when the application has an IM2RC/K and a 1095RC in the rack system and a IM1/K and a 1095 standalone at the remote site. If you are using any other interface cards *do not use the external-external(4) configuration*.

Note When your are using the external-external(4) clock mode settings you *must* have the Framing Mode set to *slotted* for the local and remote units.

Notes on framing mode settings

The Framing Mode Setting notifies the card of the type of interface it will be connected to. When you are using an IM2RC/K with a 1095RC rack card, the system administrator should set the Local Clock Mode to *external* (either *external-receiveRecover(1)* or *external-external(4)*) and the Local Framing Mode to *slotted*. When you are using an IM1/K and a 1095 standalone at the remote site, the system administrator should set the Clock Mode to *external-external(4)* and the Remote Framing Mode to *slotted*.

Illegal configuration messages

If you are receiving an invalid configuration indication after creating a configuration, it is resulting from an illegal combination of variables. In most cases, the cause of the problem has to do with the Framing Mode variable. Patton DSL modems should only be set to the *slotted* mode when you are using an IM2RC/K with the 1095RC or an IM1/K with the 1095 standalone unit. Also, if you are using a IM2RC/K or IM1/K interface card, the 1095/1095RC must always be set to the external clock mode. Review the table below for a list of valid configurations that can be used with the 1095/1095RC.

Local Clock Mode	Local Framing Mode	Remote Clock Mode	Remote Framing Mode
Internal	Normal	Receive Recover	Normal
External	Normal	Receive Recover	Normal
External ^a	Slotted	Receive Recover	Normal
External ^a	Slotted	External ^a	Slotted
Receive Recover	Normal	Internal	Normal
Receive Recover	Normal	External	Normal

a. Denotes a unit that *must* have an IM2RC/K or IM1/K installed.

Procedure for modifying a template

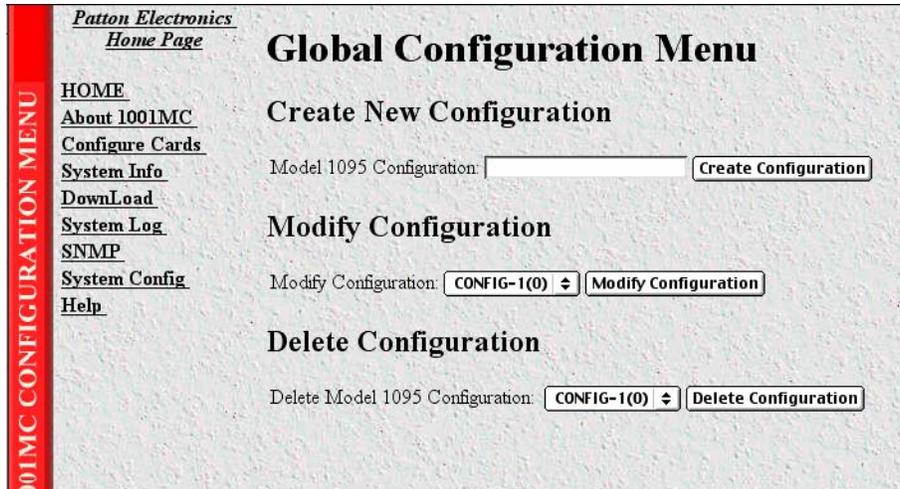


Figure 132. Global Configuration Menu page

Do the following to modify a template:

1. Select a template from the Modify Configuration pop-up menu (see figure 130), then click the **Modify Configuration** button.

The Model 1095 Global Configuration window displays (see figure 131).

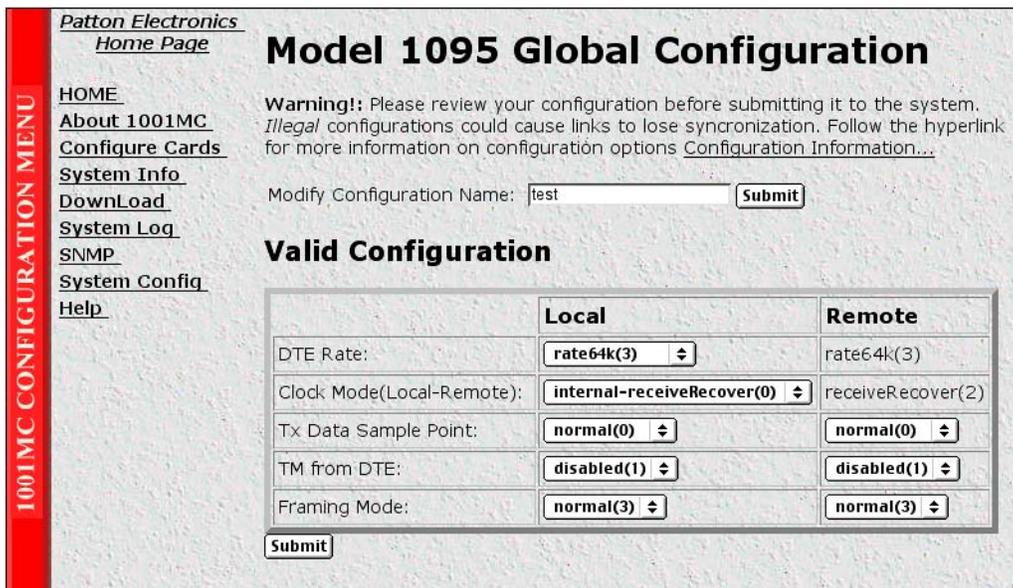


Figure 133. Model 1095 Global Configuration page

2. Use the *Local DTE Rate* pop-up menu to select local DTE rate. You have the following choices:
 - rate64k(3)
 - rate128k(4)
 - rate192k(5)
 - rate256k(6)
 - rate320k(7)
 - rate384k(8)
 - rate448k(9)
 - rate512k(10)
 - rate576k(11)
 - rate640k(12)
 - rate704k(13)
 - rate768k(14)
 - rate832k(15)
 - rate896k(16)
 - rate960k(17)
 - rate1024k(18)
 - rate1088k(19)
 - rate1216k(21)
 - rate1280k(22)
 - rate1344k(23)
 - rate1408k(24)
 - rate1472k(25)
 - rate1536k(26)
 - rate1600k(28)
 - rate1664k(29)
 - rate1728k(30)
 - rate1792k(31)
 - rate1856k(32)
 - rate1920k(33)
 - rate1984k(34)
 - rate2048k(35)
 - rate2112k(36)
 - rate2176k(37)
 - rate2240k(38)
 - rate2304k(39)
3. Use the *Local Clock Mode (Local-Remote)* pop-up menu to select the clock mode. You have the following choices:
 - internal-receiveRecover(0)
 - external-receiveRecover(1)
 - receiveRecover-internal(2)
 - receiveRecover-external(3)
 - external-external(4)
4. Use the *Local Tx Data Sample Point* pop-up menu to select the local transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
5. Use the *Remote Tx Data Sample Point* pop-up menu to select the remote transmit data sample point. You have the following choices:
 - normal(0)
 - inverted(1)
6. Configure the *Local TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
7. Configure the *Remote TM from DTE* pop-up menu using the following choices:
 - disabled(0)
 - enabled(1)
8. Configure the *Local Framing Mode* pop-up menu using the following choices:
 - slotted(0)

- normal(3)
9. Configure the *Remote Framing Mode* pop-up menu using the following choices:
 - slotted(0)
 - normal(3)
 10. When you have finished setting the configuration, click on the **Submit** button to save the changes.

Note If you receive an *invalid configuration* error after creating a configuration, it is resulting from an illegal combination of variables. Refer to section “[Illegal configuration messages](#)” on page 268 for more information.

Refer to section “[Applying a template](#)” on page 271 to activate the template.

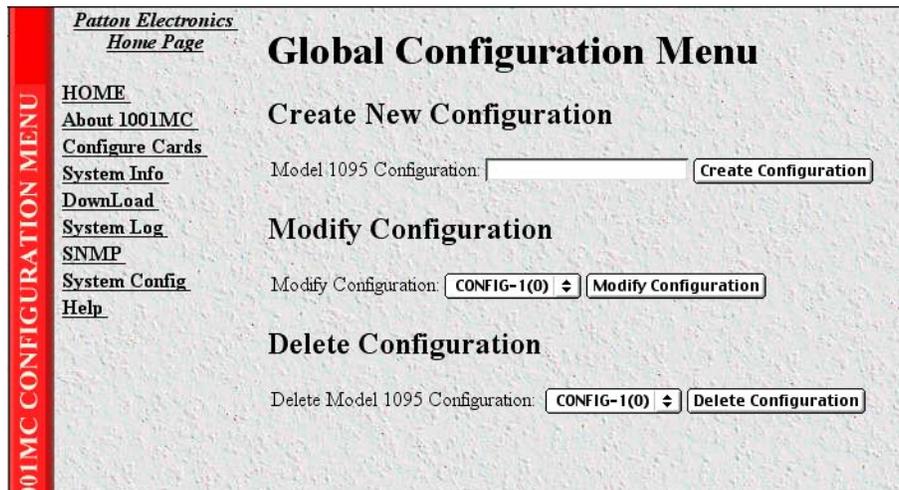


Figure 134. Global Configuration Menu page

Deleting a template

Do the following to delete a template:

Note When a template configuration is deleted, it cannot be recovered.

1. Select a template from the Delete Configuration pop-up menu (see [figure 134](#)).
2. Click the **Delete Configuration** button.

Applying a template

This section describes how to apply a global configuration to all Model 1095RC rack cards other than those that meet one of the following exceptions:

- Model 1095RC rack cards installed in Model 1001 racks that have had the Rack Protection Mode option set to *protected(1)* will not be configured if a global template is applied (see section “[Protecting a Model 1001 rack from global configuration](#)” on page 260 for more information).

- Model 1095RC rack cards that have had the Protected option set to *protected(1)* will not be configured if a global template is applied (see section “Protecting a Model 1095RC rack card from global configuration” on page 262 for more information.

Select the appropriate option from following configuration choices:

- Globally configure *all* Model 1095RC rack cards in *all* Model 1001 racks (see section “Configure all Model 1095RC rack cards in all Model 1001 racks” on page 272)
- Globally configure *all* Model 1095RC rack card in *one* Model 1001 rack (see section “Configure all Model 1095RC rack cards in one Model 1001 rack” on page 274)

Configure all Model 1095RC rack cards in all Model 1001 racks

Do the following to apply global configuration to all Model 1095RC rack cards in all Model 1001 racks:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see figure 135. Figure 136 shows the web page navigation required to get to this area of the system.

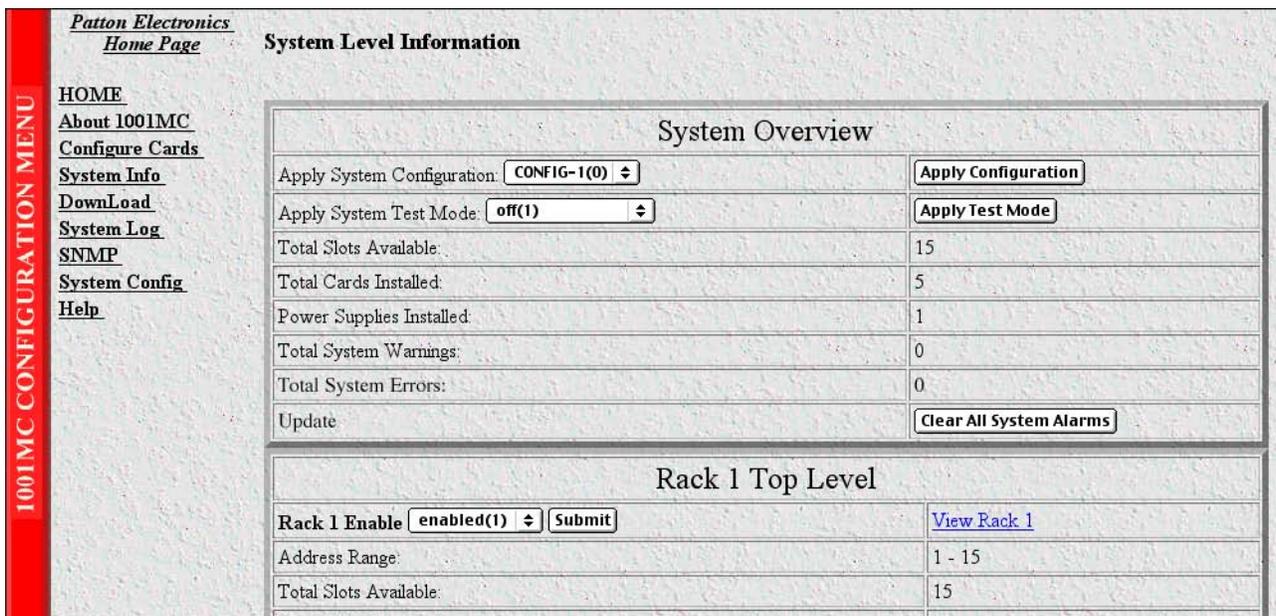


Figure 135. System Level Information page

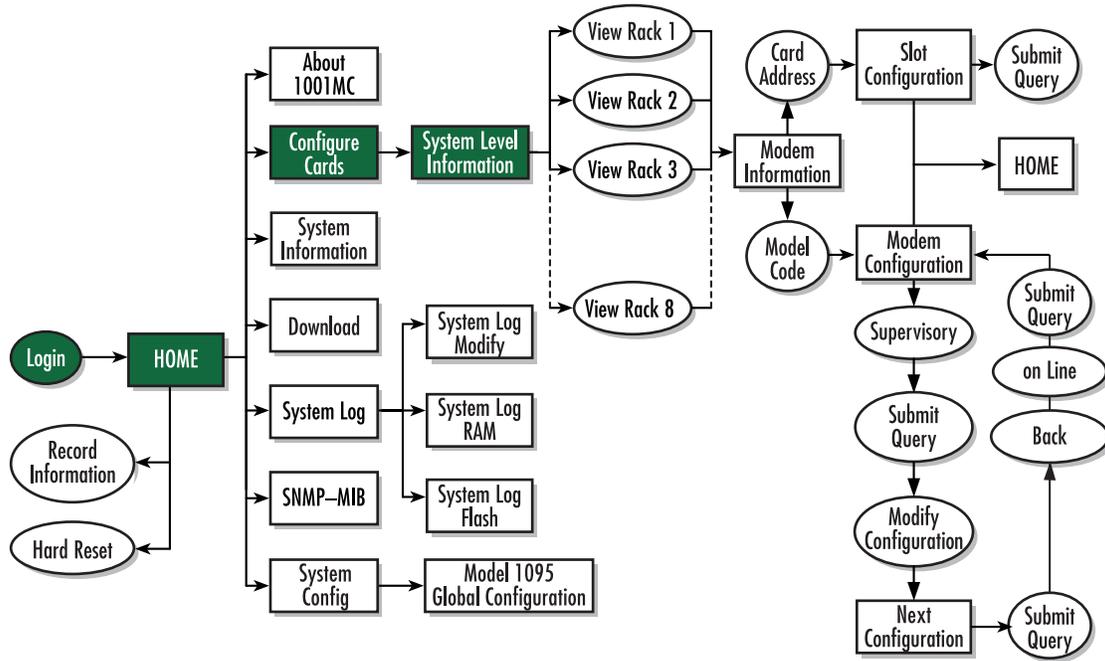


Figure 136. Web page navigation to System Level Information page

2. Use the *Apply System Configuration* pop-up menu (see figure 135) to select the template you want to apply.
3. Click the **Apply Configuration** button.

The template has been applied.

Configure all Model 1095RC rack cards in one Model 1001 rack

Do the following to apply global configuration to all Model 1095RC rack cards installed in one Model 1001 rack:

1. Starting from the HOME page, click on the *Configure Cards* link to display the System Level Information page see figure 137. Figure 136 on page 273 shows the web page navigation required to get to this area of the system.

The screenshot shows the 'System Level Information' page. On the left is a vertical red bar with the text '1001MC CONFIGURATION MENU'. Below it are navigation links: HOME, About 1001MC, Configure Cards, System Info, Download, System Log, SNMP, System Config, and Help. The main content area is titled 'System Level Information' and contains two sections: 'System Overview' and 'Rack 1 Top Level'.

System Overview

Apply System Configuration:	CONFIG-1(0) ↓	Apply Configuration
Apply System Test Mode:	off(1) ↓	Apply Test Mode
Total Slots Available:	15	
Total Cards Installed:	5	
Power Supplies Installed:	1	
Total System Warnings:	0	
Total System Errors:	0	
Update	Clear All System Alarms	

Rack 1 Top Level

Rack 1 Enable	enabled(1) ↓	Submit	View Rack 1
Address Range:	1 - 15		
Total Slots Available:	15		
Total Cards Installed:	5		
Power Supplies Installed:	1		
Total Errors:	0		
Total Warnings:	0		
Apply Rack Configuration:	CONFIG-1(0) ↓	Apply Configuration	
Apply Test Mode:	off(1) ↓	Apply Test Mode	
Rack Protection Mode:	normal(0) ↓	Apply Protection	
Clear Alarms:	Clear Rack 1 Alarms		

Figure 137. System Level Information page

2. Locate the rack section of the System Level Information page that you will configure (in figure 137, *Rack 1 Top Level* is being modified).
3. Use the *Apply Rack Configuration* pop-up menu (see figure 137) to select the template you want to apply.
4. Click the **Apply Configuration** button.

The template has been applied.

Help



The Help Menu page (see [figure 138](#)) provides hyperlinks to help pages located within the 1001MC. Applications notes are also available on the Model 1001MC CD-ROM or by contacting Patton Electronics Technical Support.

Patton Electronics
Home Page

Help Menu

The following table provides hyperlinks to help pages located within the 1001MC. Applications notes are also available on the Model 1001MC CD-ROM or by contacting Patton Electronics Technical Support.

configuration_info	This page gives information about setting the configuration for the cards in your system. This page gives helpful hints to aid in the proper configuration of your system.
rack_help	This page gives information about the rack level configuration. Including information on how to setup each rack for use by the system.
system_help	This page gives information about the system level configuration. Including how to set your IP address, IP mask, and Gateway.
about	This page gives information about the system. Including software revision of the box, total errors, total warning, and tech support contact information.

Figure 138. Global Configuration Menu page

The following hyperlinks are available:

- [configuration_info](#)—This link displays information about setting the configuration for the cards in your system. It provides helpful hints to aid in the proper configuration of your system.
- [rack_help](#)—This link displays information about the rack level configuration. It includes information on how to set up each rack for use by the system.
- [system_help](#)—This link displays information about the system level configuration. It includes information on how to set your IP address, IP mask, and Gateway.
- [about](#)—This link displays information about the system including the software revision of the box, total errors, total warning, and tech support contact information.

Chapter 11 **Troubleshooting and maintenance**

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Introduction

This chapter describes troubleshooting and fault analysis that can be performed by the operator. This section contains the following sections to help you troubleshoot the 1001MC rack card and NetLink rack cards:

- Troubleshooting the 100MC rack card (see page 277)
- Troubleshooting network malfunctions (see page 278)
- Running test mode diagnostics (see page 282)
- Replacing a 1001MC rack card (see page 284)

If you require more help, refer to chapter 12, “Contacting Patton for assistance” on page 286.

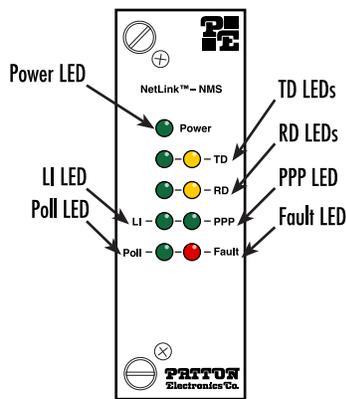
Troubleshooting the 1001MC rack card

Refer to table 15 for 1001MC LED locations and definitions, then refer to table 16 on page 278 for a list of common symptoms and suggested remedies.

Note The following information assumes that there is only one failure involving the Model 1001MC and that if you perform the corrective action listed, it will solve the problem. If you are unable to correct a failure, refer to chapter 12, “Contacting Patton for assistance” on page 286.

Note When replacing the 1001MC, follow the procedures cited in section “Replacing the Model 1001MC” on page 284.

Table 15. LED indicators



LED	Color	Function	Description
Power	Green	Power status	On = Power is ON Off = Power is OFF
LI	Green	Ethernet: Twisted-pair link indication	On = Connected to active LAN Off = Not connected to active LAN
TD	Yellow/ Green	Ethernet: Transmit data from 1001MC to LAN	Yellow = Idle condition Green = Toggles yellow/green with activity
RD	Yellow/ Green	Ethernet: Receive data at 1001MC from LAN	Yellow = Idle condition Green = Toggles yellow/green with activity
Poll	Yellow	Heartbeat indicator	Toggles when packet TX is on the backplane bus
Fault	Red	Fault condition	On = Signals hardware fault Off = No hardware fault

Table 16. Symptoms and remedies

Problem	Corrective Action
Power LED (green) is not lit	<ul style="list-style-type: none"> • Verify that power is being supplied to the Model 1001MC • Verify that at least one chassis power supply module is installed in the 1001 rack chassis and functioning normally • Replace the 1001MC (see section “Replacing the Model 1001MC” on page 284)
Fault LED (red) is lit	The 1001MC has detected a hardware fault, do the following: TBD.
LI LED (green) is not lit	A valid Ethernet link has not been detected, do the following: TBD.

Troubleshooting network malfunctions

Using the Model 1001MC to troubleshoot a network problem generally involves the following steps:

1. Receiving notification that there is a problem.
2. Verifying that the problem exists.
3. Checking the Home, About 1001MC, or System Level Information pages to see if errors or warnings are listed (see section “[Checking 1001MC web pages for warnings or errors](#)”).
4. Reviewing the System Log: Non-Volatile Memory page for information on what may have caused the problem (see section “[Using the System Log to check for network problems](#)” on page 282).
5. Checking rack card LEDs to see if one is displaying a fault condition (refer to the user manual that came with each rack card for information on using front-panel LEDs to troubleshoot problems).
6. Performing diagnostics tests with an external analyzer to isolate the problem (see section “[1001MC test mode diagnostics](#)” on page 282).

If you require more help, refer to chapter 12, “[Contacting Patton for assistance](#)” on page 286.

Checking 1001MC web pages for warnings or errors

Do the following:

1. After verifying the existence of a network problem, check one of the following 1001MC web pages to see if errors or warnings are listed:

Note Warnings are highlighted in yellow and errors are highlighted in red.

- Home page (see [figure 139](#) on page 279)
 - About 1001MC page (see [figure 140](#) on page 279)
 - System Level Information page (see [figure 141](#) on page 280)
2. If no warnings or errors are listed, check rack card front-panel LEDs to see if one is displaying a fault condition (refer to the user manual that came with each rack card for information on using front-panel LEDs to troubleshoot problems). Otherwise, (if you are not already at the System Level Information page) go to the HOME page and click on the *Configure Cards* link to display the System Level Information page. Look at the Top Level rack information for each rack to see if any are also showing warnings or errors (see [figure 141](#) on page 280).

- If no Top Level racks are showing warnings or errors, go to section “Using the System Log to check for network problems” on page 282 to review the System Log: Non-Volatile Memory page for information on what may have caused the problem. Otherwise, click on the *View Rack X* link (where *X* is the number of the rack showing warnings or errors, in the example shown in figure 141 on page 280, you would click on *View Rack 1*).

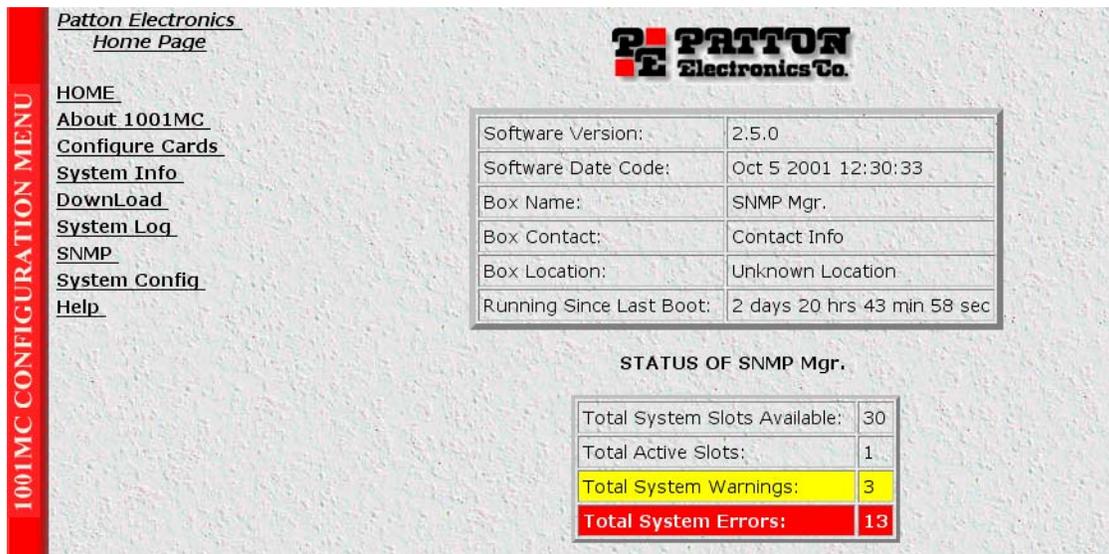


Figure 139. Home page displaying warnings and errors

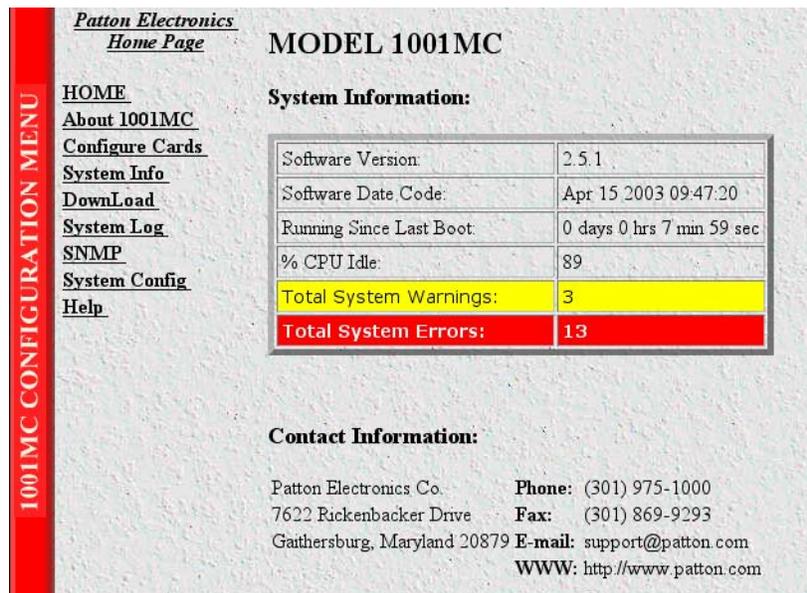


Figure 140. About 1001MC page displaying warnings and errors

1001MC CONFIGURATION MENU

Patton Electronics
Home Page

System Level Information

HOME
About 1001MC
Configure Cards
System Info
Download
System Log
SNMP
System Config
Help

System Overview

Apply System Configuration: <input type="text" value="CONFIG-1(0)"/> ↕	<input type="button" value="Apply Configuration"/>
Apply System Test Mode: <input type="text" value="off(1)"/> ↕	<input type="button" value="Apply Test Mode"/>
Total Slots Available:	15
Total Cards Installed:	5
Power Supplies Installed:	1
Total System Warnings:	3
Total System Errors:	13
Update	<input type="button" value="Clear All System Alarms"/>

Rack 1 Top Level

Rack 1 Enable <input type="text" value="enabled(1)"/> ↕ <input type="button" value="Submit"/>	View Rack 1
Address Range:	1 - 15
Total Slots Available:	15
Total Cards Installed:	5
Power Supplies Installed:	1
Total Errors:	13
Total Warnings:	3
Apply Rack Configuration: <input type="text" value="CONFIG-1(0)"/> ↕	<input type="button" value="Apply Configuration"/>
Apply Test Mode: <input type="text" value="off(1)"/> ↕	<input type="button" value="Apply Test Mode"/>
Rack Protection Mode: <input type="text" value="normal(0)"/> ↕	<input type="button" value="Apply Protection"/>
Clear Alarms:	<input type="button" value="Clear Rack 1 Alarms"/>

Rack 2 Top Level

Rack 2 Enable <input type="text" value="disabled(0)"/> ↕ <input type="button" value="Submit"/>	View Rack 2
Address Range:	16 - 30
Total Slots Available:	15
Total Cards Installed:	0
Power Supplies Installed:	1
Total Errors:	0
Total Warnings:	0
Clear Alarms:	<input type="button" value="Clear Rack 2 Alarms"/>

Figure 141. System Level Information page displaying warnings and errors

4. Make a note of which rack cards or power supplies are showing errors or warnings (see figure 142). Then go to section “Using the System Log to check for network problems” on page 282 to review the System Log: Non-Volatile Memory page for information on what may have caused the problem.

The screenshot shows the 'MODEM INFORMATION RACK 1' page. On the left is a vertical red bar with the text '1001MC CONFIGURATION MENU'. Below it is a navigation menu with links: HOME, About 1001MC, Configure Cards, System Info, DownLoad, System Log, SNMP, System Config, and Help. The main content area includes:

- Slots Available: 15
- Modems Installed: 0
- Number of Power Supplies: 1 (with a text input field)
- Rack Protection Mode: normal(0) (with a dropdown menu)
- Submit button
- Power Supply 1 Status: down(1) (highlighted in red)
- Power Supply 2 Status: not installed(2)
- Clear Rack 1 Alarms button
- A table with columns: Card Address, LineStatus, Warnings, Errors, Local User Id, Local ModelCode, Remote User Id, Remote I.

 The table shows error counts for various card addresses, with addresses 6, 8, 9, and 11 having error counts of 6, 1, 1, and 1 respectively, highlighted in red.

Card Address	LineStatus	Warnings	Errors	Local User Id	Local ModelCode	Remote User Id	Remote I
0	0	0	6	Support Unit	Model 1001MC	None	None
1	0	0	1	None	none(0)	None	none(0)
2	0	0	2	None	none(0)	None	none(0)
3	0	0	0	None	none(0)	None	none(0)
4	0	0	0	None	none(0)	None	none(0)
5	0	0	0	None	none(0)	None	none(0)
6	0	0	0	None	none(0)	None	none(0)
7	0	0	0	None	none(0)	None	none(0)
8	0	0	1	None	none(0)	None	none(0)
9	0	0	1	None	none(0)	None	none(0)
10	0	0	0	None	none(0)	None	none(0)
11	0	0	1	None	none(0)	None	none(0)
12	0	0	0	None	none(0)	None	none(0)
13	0	0	0	None	none(0)	None	none(0)
14	0	0	0	None	none(0)	None	none(0)
15	0	0	0	None	none(0)	None	none(0)

Figure 142. Modem Information Rack page displaying errors

Using the System Log to check for network problems

The System Log (see figure 143) is a messaging system that stores information about the system as it is running. Do the following to display the System Log: Non-Volatile Memory page for help in troubleshooting a problem:

1. From the HOME page, click on the System Log, then Non-Volatile Memory... links to display the System Log: Non-Volatile Memory page (see figure 143).

Patton Electronics
Home Page

SYSTEM LOG: Non-Volatile Memory

System Up Time: 0 days 0 hrs 27 min 46 sec

Erase Flash Messages

Time	Message
0 days 0 hrs 0 min 3 sec	box boxmib.c: Enable Rack 1
0 days 0 hrs 0 min 7 sec	box rack.c: Card Found: Address 11
0 days 0 hrs 2 min 13 sec	box rack.c: Card Found: Address 01
0 days 0 hrs 2 min 30 sec	box rack.c: Card Found: Address 02
0 days 0 hrs 0 min 3 sec	box\boxmib.c: Error: Power Supply 1 Down
0 days 0 hrs 0 min 3 sec	box\boxmib.c: Error: No Cards Enabled
0 days 0 hrs 3 min 13 sec	box rack.c: Card Found: Address 08
0 days 0 hrs 3 min 52 sec	box rack.c: Card Found: Address 09
0 days 0 hrs 38 min 24 sec	funcidslfuncidsl.c: Line Up: Address 11
0 days 0 hrs 38 min 52 sec	funcidslfuncidsl.c: Line Down: Address 11
0 days 0 hrs 38 min 52 sec	box\box.r: Warning: Line Down Address 11
0 days 0 hrs 0 min 2 sec	System Powered up 2 time
0 days 0 hrs 0 min 2 sec	lan\laninit.c: Using stored ethernet settings
0 days 0 hrs 0 min 2 sec	lan\lanconf.c: Rev B PCR

Figure 143. System Log: Non-Volatile Memory page displaying warnings and errors

2. Examine the page for error or warning are entries (warnings are highlighted in yellow and errors are highlighted in red).

If you are able to determine the cause of the problem by using the System Log, apply appropriate remedies to resolve the situation. (If the remedy includes replacing a NetLink modem, refer to the user manual that came with the rack card for the procedure on replacing the defective rack card.)

Otherwise, check rack card LEDs in the malfunctioning rack to see if one is displaying a fault condition (refer to the user manual that came with each rack card for information on using front-panel LEDs to troubleshoot problems).

If you are still unable to determine the source of the problem, refer to section “1001MC test mode diagnostics” for information on performing diagnostics tests to isolate the problem.

1001MC test mode diagnostics

The Model 1001MC provides the following diagnostics tests and loops that are very helpful when troubleshooting NetLink modems connections:

- **five11 (511)**—When this test is applied, it causes the V.52 bit error rate (BER) test pattern generator built into the NetLink modem to output (using a mathematical polynomial) a psuedo-random bit pattern of 511 bits. The receiving NetLink modem decodes the received bits using the same polynomial. If the received

bits match the agreed upon pseudo-random pattern, then the NetLink modems and the communication link are functioning properly.

- **five11er** (511 with errors)—After successfully concluding a five11 test, use the five11er test (which randomly adds errors to the 511 bit pattern to verify that the receiving modem detects the errors).
- **lal** (local loopback)—The local loopback test checks the operation of the local NetLink modem. Any data sent to the local NetLink modem in this test mode will be echoed (returned) back to the originating device (i.e., characters typed on the keyboard of a terminal will appear on the terminal screen) (see figure 144).

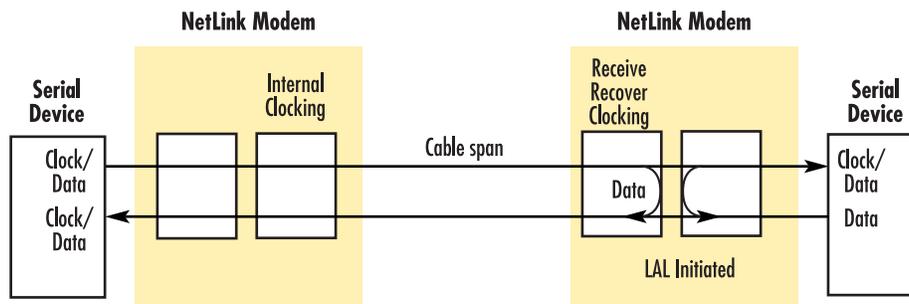


Figure 144. Local loopback diagram

- **lalWith511** (local loopback with 511)—This test functions the same way as the lal test, but it adds a 511 pattern from the BER generator.
- **lalWith511er** (local loopback with 511 and errors)—This test functions the same way as the lalWith511 test, but it adds a 511 pattern from the BER generator that includes errors to verify that the modems can detect the errors.
- **rdl** (remote loopback)—The remote loopback test checks the performance of the local and remote NetLink modems. Any data sent to the remote NetLink modem in this test mode will be echoed (returned) back to the originating device (i.e., characters typed on the keyboard of a terminal will appear on the terminal screen) (see figure 145).

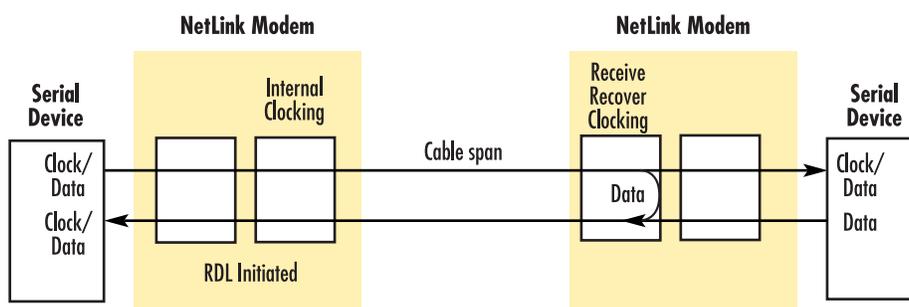


Figure 145. Remote loopback diagram

- **rdlWith511** (remote loopback with 511)—This test functions the same way as the rdl test, but it adds a 511 pattern from the BER generator.

- **rdlWith511er** (remote loopback with 511 and errors)—This test functions the same way as the **rdlWith511** test, but it adds a 511 pattern from the BER generator that includes errors to verify that the modems can detect the errors.

Note Refer to [table 17](#) to see which 1001MC diagnostics tests are supported by the NetLink modems.

Table 17. Model 1001MC test mode diagnostics supported by NetLink modem rack cards

	five11	five11er	lal	lalWith511	lalWith511er	rdl	rdlWith511	rdlWith511er
1092ARC	✓	✓	✓	✓	✓	✓	✓	✓
1094ARC	✓	✓	✓	✓	✓	✓	✓	✓
1095RC	✓	✓	✓	✓	✓	✓	✓	✓
2701RC	✓	✓	✓	✓	✓	✓	✓	✓
2707RC			✓					

Running test mode diagnostics

Test mode diagnostics can be performed as follows:

- On the entire system—To test the entire system, go to the System Level Information page and locate the System Overview section. Select the desired test from the Apply System Test Mode pop-up menu, then click on the **Apply Test Mode** button to initiate the test.
- On an individual rack—To test a rack, go to the System Level Information page and locate the Top Level rack section for the rack you will be testing. Select the desired test from the Apply Test Mode pop-up menu, then click on the **Apply Test Mode** button to initiate the test.

Note An analyzer (*ParaScope 3000 WAN Analyzer* or equivalent) will help you to isolate the problem.

Maintenance

Periodic maintenance

Consult the rack chassis user manual for information on preventative maintenance (such as cleaning the chassis air cooling vents to remove accumulated dust).

Calibration

The Model 1001MC requires no calibration.

Replacing the Model 1001MC

If you isolate a problem to the Model 1001MC, replace the front and rear cards as follows.

1. Remove the replacement Model 1001MC front and rear cards from their shipping container and place them near the chassis in which the malfunctioning Model 1001MC is located.

Note The Model 1001MC is hot-swappable, so it is not necessary to deactivate the rack chassis before replacing the cards.

2. Disconnect from the malfunctioning Model 1001MC and label the 10Base-T Ethernet cable and RS-232 configuration/daisy-chain cable (if installed).
3. Loosen the captive fasteners located on the front card until it is not longer attached to the rack chassis, when that happens, remove the malfunctioning Model 1001MC by pulling the card gently but firmly from its slot in the chassis. Place the removed card in the container the replacement Model 1001MC came in so you can return the defective Model 1001MC for repair.
4. Loosen the captive fasteners located on the rear card until it is not longer attached to the rack chassis, then remove the card and place it in the container with the front card.
5. Slide the replacement rear I/O card into rear chassis slot 14 along the metal guide rails.
6. Secure the rear card using the captive fasteners.
7. Slide the front rack card into the front chassis slot 14 until it meets the rear card receptacle. When that happens, push the front card gently but firmly into the card-edge receptacle of the rear card, it should *click* into place.
8. Secure the front rack card using the captive fasteners.
9. Verify that the green POWER LED on the Model 1001MC front card illuminates.
10. Verify that the LI LED is lit, indicating that the Ethernet connection is nominal.

The Model 1001MC is operational.

Chapter 12 **Contacting Patton for assistance**

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Introduction

This chapter contains the following information:

- “Contact information”—describes how to contact Patton technical support for assistance.
- “Warranty Service and Returned Merchandise Authorizations (RMAs)”—contains information about the RAS warranty and obtaining a return merchandise authorization (RMA).

Contact information

Patton Electronics offers a wide array of free technical services. If you have questions about any of our other products we recommend you begin your search for answers by using our technical knowledge base. Here, we have gathered together many of the more commonly asked questions and compiled them into a searchable database to help you quickly solve your problems.

- Online support—available at www.patton.com.
- E-mail support—e-mail sent to support@patton.com will be answered within 1 business day
- Telephone support—standard telephone support is available Monday through Friday, from 8:00 A.M. to 5:00 P.M. EST (8:00 to 17:00 UTC-5), Monday through Friday by calling +1 (301) 975-1007

Warranty Service and Returned Merchandise Authorizations (RMAs)

Patton Electronics is an ISO-9001 certified manufacturer and our products are carefully tested before shipment. All of our products are backed by a comprehensive warranty program.

Note If you purchased your equipment from a Patton Electronics reseller, ask your reseller how you should proceed with warranty service. It is often more convenient for you to work with your local reseller to obtain a replacement. Patton services our products no matter how you acquired them.

Warranty coverage

Our products are under warranty to be free from defects, and we will, at our option, repair or replace the product should it fail within one year from the first date of shipment. Our warranty is limited to defects in workmanship or materials, and does not cover customer damage, lightning or power surge damage, abuse, or unauthorized modification.

Out-of-warranty service

Patton services what we sell, no matter how you acquired it, including malfunctioning products that are no longer under warranty. Our products have a flat fee for repairs. Units damaged by lightning or elephants may require replacement.

Returns for credit

Customer satisfaction is important to us, therefore any product may be returned with authorization within 30 days from the shipment date for a full credit of the purchase price. If you have ordered the wrong equipment or you are dissatisfied in any way, please contact us to request an RMA number to accept your return. Patton is not responsible for equipment returned without a Return Authorization.

Return for credit policy

- Less than 30 days: No Charge. Your credit will be issued upon receipt and inspection of the equipment.
- 30 to 120 days: We will add a 20% restocking charge (crediting your account with 80% of the purchase price).
- Over 120 days: Products will be accepted for repairs only.

RMA numbers

RMA numbers are required for all product returns. You can obtain an RMA by doing one of the following:

- Completing a request on the RMA Request page in the *Support* section at www.patton.com
- By calling +1 (301) 975-1000 and speaking to a Technical Support Engineer
- By sending an e-mail to returns@patton.com

All returned units must have the RMA number clearly visible on the outside of the shipping container. Please use the original packing material that the device came in or pack the unit securely to avoid damage during shipping.

Shipping instructions

The RMA number should be clearly visible on the address label. Our shipping address is as follows:

Patton Electronics Company

RMA#: xxxx

7622 Rickenbacker Dr.

Gaithersburg, MD 20879-4773 USA

Patton will ship the equipment back to you in the same manner you ship it to us. Patton will pay the return shipping costs.