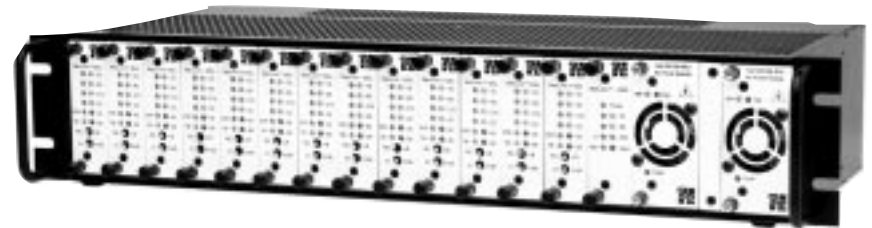


USER MANUAL

MODEL 1001CC RS-232 Rack Mount Controller Card



PT PATTON
Electronics Co.



An ISO-9001
Certified
Company

Part# 07M1001CC-B
Doc# 022030UB
Revised 02/21/00

SALES OFFICE
(301) 975-1000
TECHNICAL SUPPORT
(301) 975-1007
www.patton.com

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 1001CC components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE

The Model 1001CC generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. The Model 1001CC has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the Model 1001CC does cause interference to radio or television reception, which can be determined by turning the power off or disconnecting the RS-232 interface, the user is encouraged to try to correct the interference by one of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the European Union (EU). A Certificate of Compliance is available by contacting Technical Support.

1.3 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 Service at **(301) 975-1007**.

NOTE: Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 1001CC. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support at (301) 975-1007.

2.1 FEATURES

- Allows configuration and status monitoring of Patton NetLink DSL modems, CSU/DSUs and fiber modems
- Fits in Patton's rack chassis and Cluster Boxes
- Supports RS-232 terminal data rates to 19.2 Kbps
- Daisy chain capability lets one terminal control many racks
- Works in conjunction with Patton short range modem rack cards to provide remote daisy chain option

2.2 DESCRIPTION

The **Model 1001CC RS-232 Rack Mount Controller Card** fits in Patton's NetLink Rack Chassis and Cluster Boxes and allows the Patton NetLink Rack Cards to be controlled from an asynchronous RS-232 terminal.

Taking up one card slot, the Model 1001CC provides a modular port for connection of an RS-232 terminal, and a serial port for daisy-chaining between racks. The user wishing to "dial" or configure a particular NetLink card simply keys in an addressable command, which the Model 1001CC passes along to all the cards in the rack. The appropriate card recognizes its address and responds to the command.

Combining local and remote daisy chaining, a single RS-232 terminal can control a whole network of rack-mounted NetLink DSL modems, CSU/DSUs or fiber modems. The Model 1001CC has front panel LED indicators for Power, TD and RD.

3.0 CONFIGURATION

INSTALLATION NOTE: The Model 1001CC communicates with the function cards using an internal bus in the rack. In order to ensure proper communication between the cards, it is recommended that all rear cards, including the 1001CC rear card, are configured to have FRGND and SGND connected through a 1000 Ohm resistor. This is done by setting jumpers on the rear card. Please see the manual associated with your function cards for more information on installing these jumpers.

3.1 REAR CARD CONFIGURATION

The rear card supplied with the Model 1001CC is equipped with two modular RJ-45 jacks (see Figure 1, below). The jack labeled "A1" is for connection to the RS-232 terminal. If the Model 1001CC is being used in a daisy-chain application, port "B1" provides the link to the next Model 1001CC in the chain.

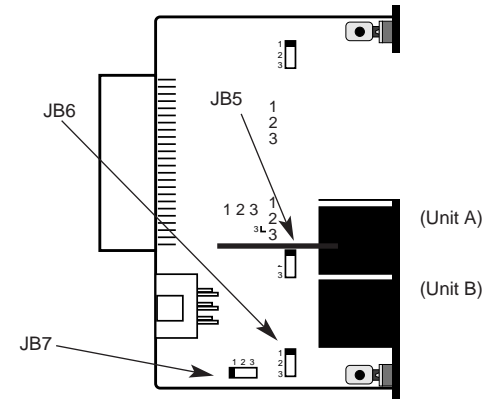


Figure 1. Strap locations for both rear cards showing jumper positions

3.1.1 REAR CARD STRAP SETTINGS

Figure 2 (below) shows the two possible settings for each strap. The PC board is labeled with the "123" orientation.

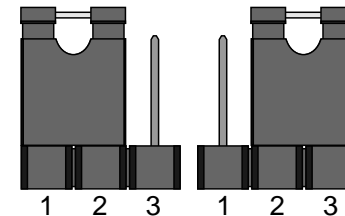


Figure 2. Orientation of interface card straps

SGND & FRGND (JB5)

In the connected (closed) position, this strap links signal ground and frame ground. In the open (disconnected) position, pin 1 is "lifted" from frame ground.

JB5

Position 1&2 = SGND and FRGND Connected (*Default*)

Position 2&3 = SGND and FRGND Not Connected

DTE as DSR or RI (JB6 & JB7)

Because this rear card is designed to function in more applications than the Model 1001CC, this jumper must be installed only in one position. Place the jumper across pins 1&2 so that the terminal (DTE) sees DSR as high when the DTE raises DTR. The other positions, across pins 2&3, are for Ring Indicate as defined by EIA/TIA-561. The RI function is irrelevant (and on the Model 1001CC is also disconnected) and can cause improper operation if the jumper is installed incorrectly.

JB6 & JB7

Position 1&2 = DSR (*default*)

Position 2&3 = N/A

4.0 INSTALLATION

This section describes the functions of the Model 1001R14P rack chassis, tells how to install front and rear Model 1001CC cards into the chassis and provides diagrams for wiring up the interface connections correctly.

4.1 THE MODEL 1001R14P RACK CHASSIS

The Model 1001R14P Rack Chassis (Figure 3, below) has sixteen short range modem card slots, plus its own power supply. Measuring only 3.5" high, the Model 1001R14P is designed to occupy only 2U in a 19" rack. Sturdy front handles allow the Model 1001R14P to be extracted and transported conveniently.

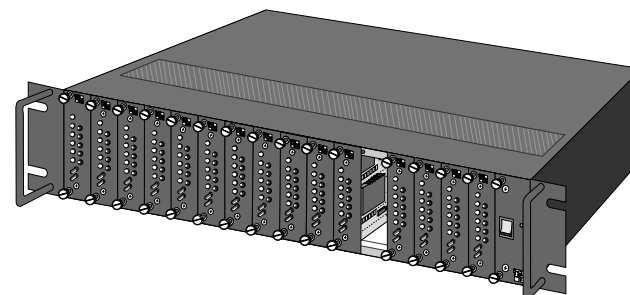


Figure 3. Model 1001R14P Rack Chassis with power supply

4.1.1 THE RACK POWER SUPPLY

The power supply included in the Model 1001R14P rack uses the same mid-plane architecture as the modem cards. The front card of the power supply slides in from the front, and the rear card slides in from the rear. They plug into one another in the middle of the rack. The front card is then secured by thumb screws and the rear card by conventional metal screws.

Powering the 1001R14P Rack

The power supplies that come with the 1001R14P rack system are equipped with a power entry connector on the rear card. The power supplies are *Hot-Swappable*. Therefore, you are not required to remove power before removing or re-inserting cards into the rack.

4.4.2 REMOTE DAISY CHAIN TOPOLOGY

In some applications it may be desirable to control a local rack and a remote rack using the same local RS-232 terminal. This can be accomplished using two of Patton's RS-232 short range modem cards in addition to the Model 1001CCs.

Figure 5 (below) shows how a remote daisy chain set-up might look. It is also possible to combine this remote daisy chaining method with the local daisy chaining method described in Section 4.4.1.

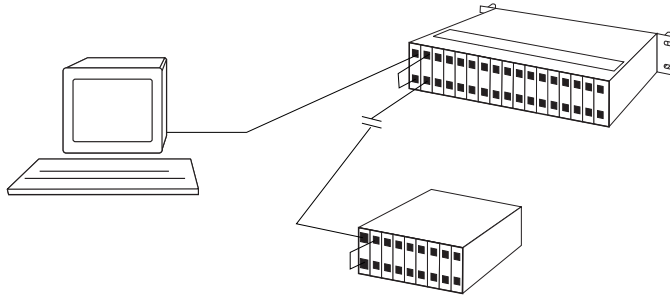


Figure 5. Remote daisy chain

To wire up a remote Model 1001CC daisy chain connection, follow these steps:

- 1) Using a straight through modular cable, connect the serial port of the RS-232 terminal to Port A1 of the local Model 1001CC.
- 2) Using a *straight through* modular cable, connect Port B1 of the local Model 1001CC to port A1 to the RS-232 port of a Patton asynchronous short range modem card (ex. the Model 1000RC).
- 3) Following the instructions in the User Manual for the particular Patton short range modem card you are using, connect the "line" port of the local short range modem card to "line" port of the remote short range modem card. This connection should be made in the normal manner, using twisted pair cable.
- 4) Connect the serial (RS-232) port of the remote Patton short range modem card to Port A1 of the remote Model 1001CC. Since both ports are configured as DCE, you will need to use a modular RJ-45 *crossover* cable pinned in the following manner:

RJ-45 Crossover Cable (4-Wire)

<u>SIGNAL</u>	<u>PIN#</u>	<u>PIN#</u>	<u>SIGNAL</u>
DSR	2-----	4	DTR
DTR	4-----	2	DSR
RD	6-----	7	TD
TD	7-----	6	RD
GND	5-----	5	GND

5.0 OPERATION

Once you have configured each Model 1001CC and connected the cables, you are ready to operate the unit. Section 5.0 describes the LED status monitors, the power-up procedure, and use of the Model 1001CC.

5.1 LED STATUS MONITORS

The Model 1001CC features five front panel LEDs that indicate the condition of the modem and communication link. These LEDs operate as follows:

- The green "PWR" LED glows when power is applied to the modem through its mid-plane chassis connection.
- The green "TD" and "RD" LEDs show positive state data activity. The red "TD" and "RD" LEDs show negative state data activity. A solid red light indicates an idle state.

5.2 POWER-UP

There is no power switch on the Model 1001CC: Power is automatically applied to the 1001CC when its card-edge connector touches the chassis' mid-plane socket, or when the chassis' power is turned on. *Note: The 1001CC is a "hot swappable" card—it will not be damaged by plugging it in or removing it while the rack is powered up.*

APPENDIX A SPECIFICATIONS

Transmission Format: Asynchronous, RS-232

Data Rate: 0 to 19.2 Kbps

RS-232 Connections: dual RJ-45 jacks (one input, one daisy chain output)

Temperature Range: 0-50°C (32-122°F)

Altitude: 0-15,000 feet

Humidity: Up to 95% non-condensing

Dimensions: 0.95"w x 3.1"h x 5.4"l

**APPENDIX B
FACTORY REPLACEMENT PARTS**

The Patton Model 1001R14P rack system features interchangeable rear half cards, power cords/fuses for international various operating environments and other user-replaceable parts. Model numbers and descriptions for these parts are listed below:

<u>Patton Model #</u>	<u>Description</u>
1001RPEM-RAC	120/240V Rear Power Entry Module
1001RPSM-RUI.....	120/240V Front Power Supply Module
1001RPEM-RDC.....	DC Rear Power Entry Module
1001RPSM-R48A.....	48V Front Power Supply Module
1000RPEM.....	120/240V Rear Power Entry Module
1000RPSM-2.....	120/240V Front Power Supply Module
1000RPEM-DC	DC Rear Power Entry Module
1000RPSM-48A	48V Front Power Supply Module
12M-561*	Serial DB-25 (male) to RJ-45 adapter
12F-561**	Serial DB-25 (female) to RJ-45 adapter
10-561S***	RJ-45 to RJ-45 adapter cable, 6 ft.
0805US	American Power Cord
0805EUR.....	European Power Cord CEE 7
0805UK	United Kingdom Power Cord
0805AUS.....	Australia/New Zealand Power Cord
0805DEN.....	Denmark Power Cord
0805FR	France/Belgium Power Cord
0805IN.....	India Power Cord
0805IS.....	Israel Power Cord
0805JAP.....	Japan Power Cord
0805SW	Switzerland Power Cord
0516FPB1	Single Width Blank Front Panel
0516FPB4	4-Wide Blank Front Panel
0516RPB1.....	Single Width Blank Rear Panel
0516RPB4.....	4-Wide Blank Rear Panel
0821R4.....	400 mA Fuse (5x20mm) Littelfuse 239.400 or equivalent
0821R2.....	200 mA Fuse (5x20mm) Littelfuse 239.200 or equivalent
056S1.....	Set of 16 #4 pan head screws/washers

* Wired according to EIA-561 Standard
 ** Wired according to EIA-561 Standard
 *** Wired straight through (use with adapters listed above)

**APPENDIX C
MODULAR INTERFACE PIN-OUTS**

MODULAR INTERFACE - 10 Wire RJ-45 (EIA-561)		
Contact Number	Circuit	Description
1	N/A	Not Used
2	107	DSR
3	109	Received Line Signal Indicator (CD)
4	108 / 2	DTE Ready (DTR)
5	102	Signal Common
6	104	Received Data
7	103	Transmitted Data
8	106	Clear to Send
9	105 / 133	Request to Send / Ready for Receiving
10	N/A	Not Used

Pins 2-9 conform to the EIA/TIA-561 eight position non-synchronous interface standard.