

# USER MANUAL

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## MODEL 450RC24

Ultra High Density  
G.703 Balun Panel  
(75-Ohm Coax to  
120-Ohm 50-pin Telco)



**PA PATTON**  
**Electronics Co.**



**An ISO-9001  
Certified  
Company**

Part # 07M450RC24-A  
Doc. # 019151U  
Released 6/25/01

SALES OFFICE  
(301) 975-1000  
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(301) 975-1007

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## 1.0 WARRANTY INFORMATION

**Patton Electronics** warrants all Model 450RC24 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 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 Union European (EU). A Certificate of Compliance is available by contacting Patton Technical Support.

### 1.2 SERVICE AND SUPPORT

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 Support at **+1 (301) 975-1007; [www.patton.com](http://www.patton.com); or [support@patton.com](mailto:support@patton.com).**

**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 450RC24. Technical Support hours: **8 AM to 5 PM 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**

- Connects 75-Ohm dual coax to 120-Ohm twisted pair
- Bi-directional signal conversion according to CCITT G.703
- Data rates up to **2.048 Mbps**
- 1 U high enclosed chassis
- Reversible cover with integrated mounting ears
- Mounts in standard 19-in. (48.3 cm) rack
- No AC power or batteries required
- 24 female BNC pairs
- Two 50-pin Telco connectors for 120-Ohm interface

## 2.2 DESCRIPTION

The Patton 450RC24 G.703 Telco balun panel (see Figure 1) matches 24 sets of dual 75-ohm coax connections to 120-ohm Telco connections. This function enables carriers to provide 120-ohm G.703 service to customers retaining 75-ohm CPE hardware. It also enables carriers who have standardized on 75-ohm coax to provide 120-ohm terminations to their customers (in keeping with European ONP requirements).

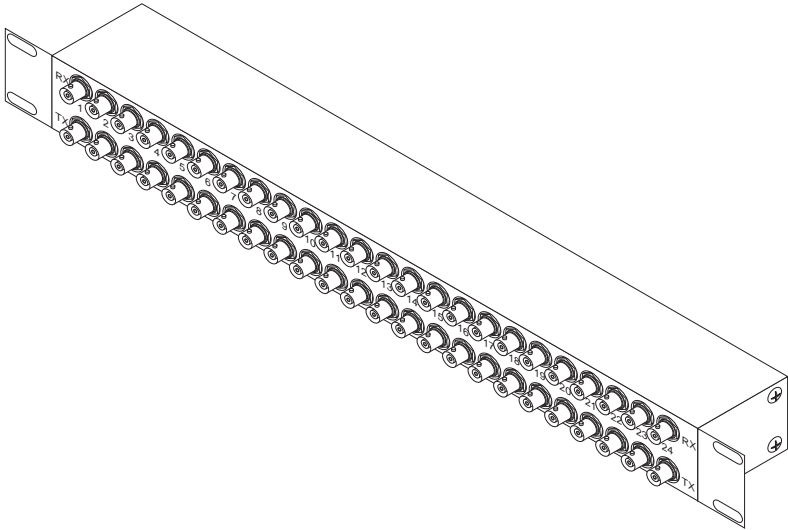


Figure 1. Model 450RC24

Supporting E1 data rates to 2.048 Mbps, the Patton 450RC24 panels bi-directionally match signal impedance and pulse shapes according to the CCITT G.703 standard. The Patton 450RC24 balun panels mount in a standard 19-in. (48.3 cm) rack.

### 3.0 INSTALLATION

This section describes how to connect to the twisted pair interface and the serial interface. This section also describes procedures to reverse the cover of the unit in order to mount the 50-pin Telco ports on the front of the unit.

#### 3.1 REVERSING THE COVER

The cover of the balun rack can be reversed in order to mount the 50-pin Telco ports on the front of the unit, flush with the mounting ears. To remove the cover of the unit, remove the four cover screws from each side of the unit (see Figure 2), lift the cover straight up, and re-attach the cover with the 50-pin Telco ports on the front of the unit.

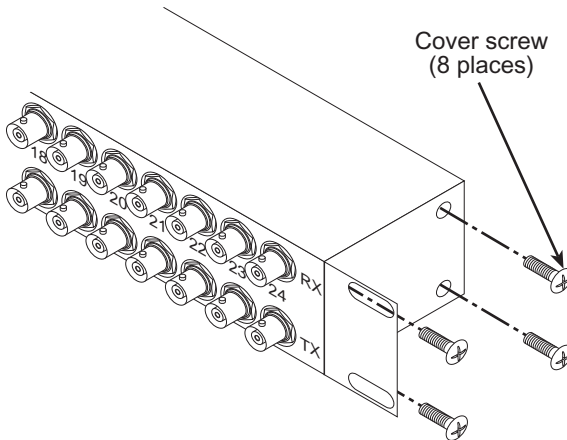
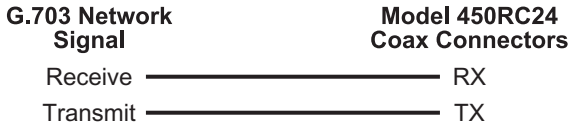


Figure 2. Removing the cover screws

### 3.2 CONNECTING THE 75-OHM BNC PORTS

The 75-Ohm BNC ports on the front of the balun rack are labeled TX (transmit data input) and RX (receive data output). Connect the G.703 lines as shown in Figure 3.



The number of each coax pair corresponds to the two 50-pin Telco connector s pin numbers on the rear panel. Coax pairs 1—12 terminate on Telco connector J1; 13—24 terminate on J2.

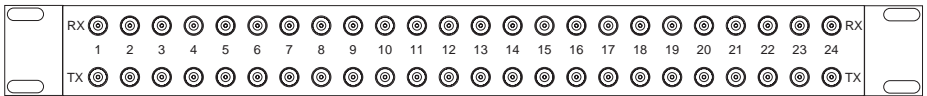


Figure 3. Model 450RC24 front panel

The numbers on each coax pair correspond to the 50-pin Telco ports on the rear of the unit.

### 3.3 CONNECTING THE 120 OHM 50-PIN TELCO PORTS

The 120-Ohm balanced pairs are accessed via the 50-pin Telco connectors J1 and J2.

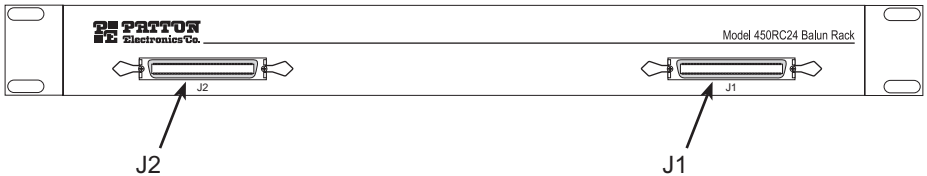


Figure 4. Model 450RC24 rear panel

**APPENDIX A**  
MODEL 450RC24 SPECIFICATIONS

**A.4 TRANSMISSION LINE**

CCITT G.703 (unstructured)

**A.5 DATA RATE**

2.048 Mbps

**A.6 75-OHM CONNECTION**

Dual coax female BNC

**A.7 120-OHM CONNECTION**

50-pin Telco connector

**A.8 POWER SUPPLY**

None required

**A.9 LINK-TO-DATA ISOLATION**

500 volts AC/DC

**A.10 TEMPERATURE RANGE**

32–122°F (0–50°C)

**1.11 DIMENSIONS (WITHOUT HANDLES)**

19.0 W x 3.5 H x 1.9 D inch (48.3 W x 8.9 H x 4.8 D cm)



## **APPENDIX B**

### MODEL 450RC24 FACTORY REPLACEMENT PART

<b>Model #</b>	<b>Description</b>
07M450RC24	Model 450RC24 User Manual
08450RC24	6-in. BNC Removal Tool

**APPENDIX C**  
MODEL 450RC24 BLOCK DIAGRAM

The pinouts on the 50-pin Telco connectors are as shown in Figure 5 and Figure 6 on page 11.

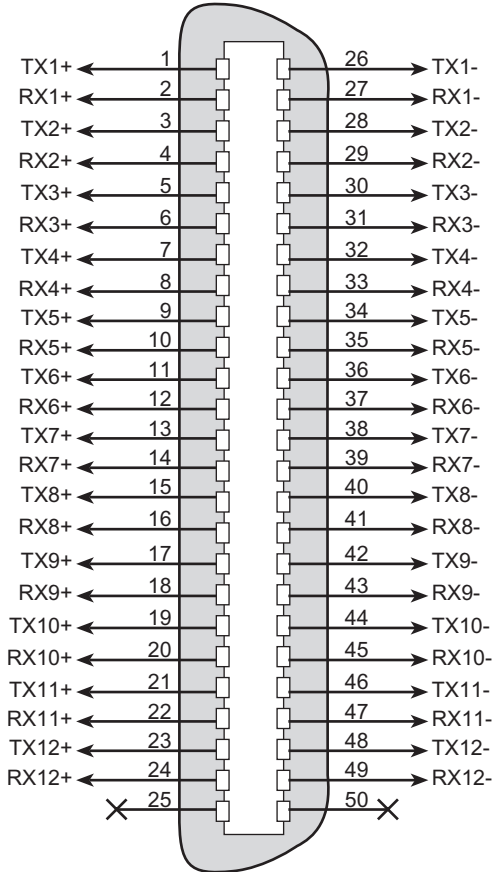


Figure 5. Connector J1 pinout diagram

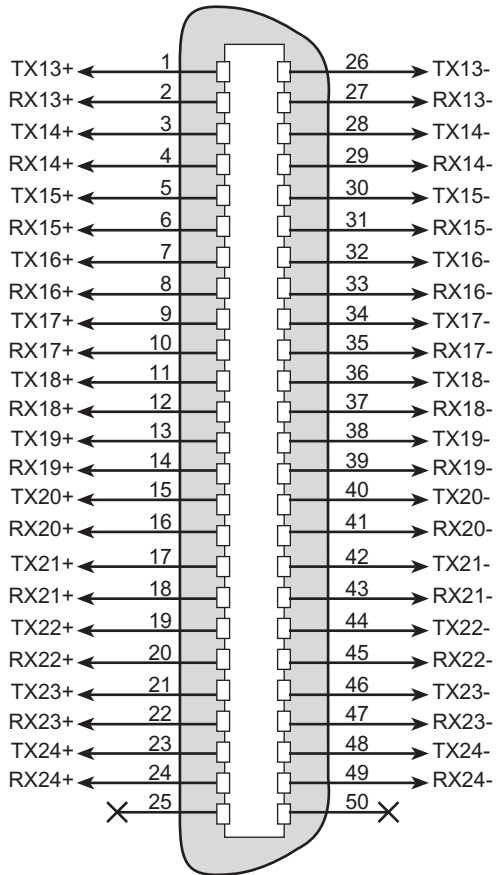


Figure 6. Connector J2 pinout diagram

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