

# USER MANUAL

---

**MODEL 464RC & 466RC**  
**Rack-Mounted G.703 Coax to**  
**Twisted Pair**  
**Adapters (BALUNs)**



**PE PATTON**  
**Electronics Co.**



*An ISO-9001  
Certified Company*

Part # 07M464RC-A  
Doc. # 019151U  
Revised 12/06/00

SALES OFFICE  
(301) 975-1000  
TECHNICAL SUPPORT  
(301) 975-1007  
<http://www.patton.com>

## 1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 464RC & 466RC 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 (301) 975-1007; <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 464RC & 466RC. Technical Support 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

- 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" (48.3 cm) rack
- No AC power or batteries required
- Female BNC coax or 1.6/5.6 connectors (466RC)
- RJ-45 or 64 pin amp champ 120 Ohm interface

### 2.2 DESCRIPTION

The Patton 464RC & 466RC G.703 balun panel matches 16 sets of dual 75 ohm coax connections to 120 ohm twisted pair connections. This function allows carriers to provide 120 ohm G.703 service to customers retaining 75 ohm CPE hardware. It also allows carriers who have standardized on 75 ohm coax to provide 120 ohm terminations to their customers (in keeping with European ONP requirements).

Supporting E1 data rates to 2.048 Mbps, the Patton 464RC & 466RC panels bi-directionally match signal impedance and pulse shapes according to the CCITT G.703 standard. The Patton 464RC & 466RC balun panels mount in a standard 19" (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 RJ-45 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 RJ-45 ports on the front of the unit, flush with the mounting ears. To remove the cover of the unit, remove the eight screws on the sides of the unit, lift the cover straight up, and re-attach the cover with the RJ-45 ports on the front of the unit.



#### 3.2 CONNECTING THE 75 OHM BNC OR 1.6/5.6 COAX PORTS

The 75 Ohm BNC or 1.6/5.6 coax ports on the front of the Balun Rack are labeled "TX" (Transmit Data Input) and "RX" (Receive Data Output). Simply connect the G.703 lines as follows:

<u>G.703 Network Signal</u>	<u>Model 464RC &amp; 466RC Coax Connectors</u>
Receive _____	RX
Transmit _____	TX

The numbers on each coax pair correspond to the RJ-45 ports on the rear of the unit.

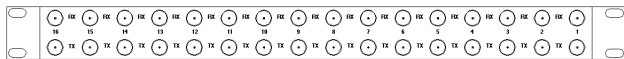


Figure 2. Model 464RC/466RC front panel

### 3.3 CONNECTING THE 120 OHM RJ-45 PORTS

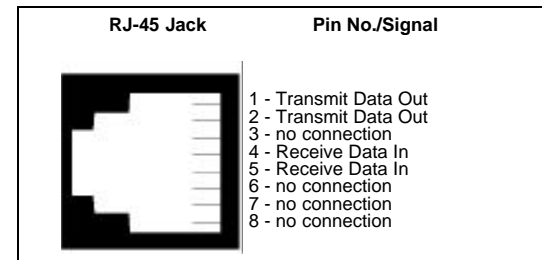
The 120 Ohm balanced pairs can be accessed either by the RJ-45 ports or the 64 pin AMP Champ connector. Because RJ-45 ports and the Amp Champ connections are in parallel, only one type of connection should be used at a time.



Figure 3. Model 464RC/466RC rear panel.

#### 3.3.1 Connecting the RJ-45 Ports

The number on each RJ-45 port corresponds to the BNC pair numbers on the front of the unit. The pin configuration of the 120 Ohm twisted pair RJ-45 port is shown below:



### 3.3.2 CONNECTING THE 64 PIN AMP CHAMP PORT

The 120 Ohm balanced pairs can be accessed via the 64 pin AMP Champ connector. The pins on this connector are wired directly to the RJ-45 ports. The AMP Champ pinout is shown below.

AMP Champ Pin Out

RJ-45 Port and Pin#	J1 Pin #	RJ-45 Port and Pin#	
Port 1 Pin 1	1	33	Port 1 Pin 2
Port 1 Pin 4	2	34	Port 1 Pin 5
Port 2 Pin 1	3	35	Port 2 Pin 2
Port 2 Pin 4	4	36	Port 2 Pin 5
Port 3 Pin 1	5	37	Port 3 Pin 2
Port 3 Pin 4	6	38	Port 3 Pin 5
Port 4 Pin 1	7	39	Port 4 Pin 2
Port 4 Pin 4	8	40	Port 4 Pin 5
Port 5 Pin 1	9	41	Port 5 Pin 2
Port 5 Pin 4	10	42	Port 5 Pin 5
Port 6 Pin 1	11	43	Port 6 Pin 2
Port 6 Pin 4	12	44	Port 6 Pin 5
Port 7 Pin 1	13	45	Port 7 Pin 2
Port 7 Pin 4	14	46	Port 7 Pin 5
Port 8 Pin 1	15	47	Port 8 Pin 2
Port 8 Pin 4	16	48	Port 8 Pin 5
Port 9 Pin 1	17	49	Port 9 Pin 2
Port 9 Pin 4	18	50	Port 9 Pin 5
Port 10 Pin 4	19	51	Port 10 Pin 2
Port 10 Pin 4	20	52	Port 10 Pin 5
Port 11 Pin 4	21	53	Port 11 Pin 2
Port 11 Pin 4	22	54	Port 11 Pin 5
Port 12 Pin 4	23	55	Port 12 Pin 2
Port 12 Pin 4	24	56	Port 12 Pin 5
Port 13 Pin 4	25	57	Port 13 Pin 2
Port 13 Pin 4	26	58	Port 13 Pin 5
Port 14 Pin 4	27	59	Port 14 Pin 2
Port 14 Pin 4	28	60	Port 14 Pin 5
Port 15 Pin 4	29	61	Port 15 Pin 2
Port 15 Pin 4	30	62	Port 15 Pin 5
Port 16 Pin 4	31	63	Port 16 Pin 2
Port 16 Pin 4	32	64	Port 16 Pin 5

### APPENDIX A

#### PATTON ELECTRONICS MODEL 464RC & 466RC SPECIFICATIONS

<b>Transmission Line:</b>	CCITT G.703 (unstructured)
<b>Data Rate:</b>	2.048 Mbps
<b>75 Ohm Connection:</b>	Dual coax female BNC (464) dual coax female 1.6/5.6 (466)
<b>120 Ohm Connection:</b>	RJ-45 jack or 64 pin AMP Champ
<b>Power Supply:</b>	none required
<b>Link-to-Data Isolation:</b>	500 volts AC/DC
<b>Temperature Range:</b>	32-122°F (0-50°C)
<b>Dimensions (w/o handles):</b>	19" Wide x 3.5" High x 1.9" Deep (48.3 x 8.9 x 4.8 cm)

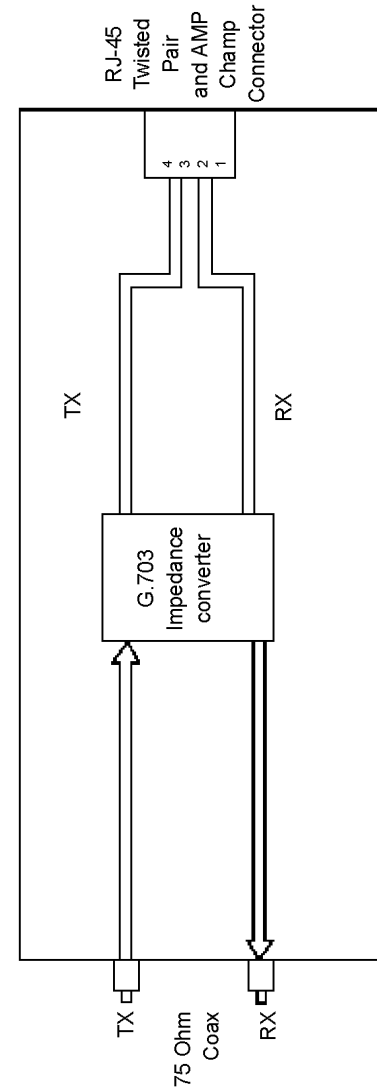
**APPENDIX B**

**PATTON ELECTRONICS MODEL 464RC & 466RC  
FACTORY REPLACEMENT PART**

<u>Model #</u>	<u>Description</u>
07M464RC & 466RC	Model 464RC & 466RC User Manual

**APPENDIX C**

**PATTON ELECTRONICS MODEL 464RC & 466RC  
BLOCK DIAGRAM**



© Copyright 2000  
Patton Electronics Company  
All Rights Reserved