

USER MANUAL

MODEL 462 and 463 8 Mbps and 34 Mbps G.703 Baluns



PATTON
Electronics Co.



An ISO-9001
Certified Company

Part #07M462/3-A
Doc. #019101UA
Revised 1/18/99

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

WARRANTY

Patton Electronics warrants all Model 462 and 463 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.

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 Service at (301) 975-1007; <http://www.patton.com>; or, 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 462 and 463. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

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.

PRODUCT DESCRIPTION

The Patton Model 462 and 463 G.703 baluns allow 75 ohm coax hardware to communicate with 100 Ohm and 120 Ohm twisted pair equipment. The Model 462 and 463 present a ready solution to this termination mismatch. Supporting G.703 data rates to 8 Mbps, the Model 462 convert 75 Ohm signals and vice versa to 100 ohm twisted pair. Model 463 operates up to 34 Mbps and bi-directionally converts 75 ohm coax to 120 ohm twisted pair.

Model 462: 75 Ohm to 100 Ohm CAT-5 Single 8-Pin RJ-45 Jack,
Model 463: 75 Ohm to 120 Ohm CAT-5 single 8-Pin RJ45 Jack,

CONFIGURATION

The Model 462 and 463 are pre-set to work in most applications without additional configuration. The only parameter that is user-configurable is shield connection between the 75 Ohm coax and twisted pair interfaces. The diagram below shows how the shield is connected between the modular jack and dual BNCs. Removing the jumper breaks the connection.

<u>Coax BNC (75 Ohm</u>	<u>Jumper</u>	<u>RJ-45 (100/120)</u>
TX Shield	JP1	RJ-45 Shield, RJ-45 Pin 3
TX Shield	JP2	RJ-45 Shield, RJ-45 Pin 6

The factory setting leaves both jumpers JP1 and JP2 in place, thus passing both shield connections through. To break one or both of the shield connections, follow these instructions:

- 1) Insert a small flat blade screwdriver into the slot on the side of the Model 462 and 463 case and twist. The case will pop open, exposing the PC board.
- 2) Holding the PC board with the modular jack facing left, located jumper JP1 toward the top of the board and JP2 toward the bottom of the board. Remove the desired jumper(s) from the three pins on the right (for JP1) and from the three pins on the left (for JP2) to break one or both shield connections. **NOTE:** do not lose the jumper(s).
- 3) Re-align the case halves and end inserts and snap the case halves back together.

INSTALLATION

The Model 462 and 463 is easy to install and requires no AC power or batteries for operation. After making any necessary configuration changes (see above), simple plug in the modular and coax cables as indicated on the case. The pin assignments of the 100/120 Ohm RJ-45 and is shown below:

<u>RJ-45 Pin(s)</u>	<u>Function</u>
1 & 2	TX Pair
3	TX Shield
4 & 5	RX Pair
6	RX Shield

PATTON ELECTRONICS MODEL 462 and 463

SPECIFICATIONS

Transmission Medium:	Model 462: 75 ohm coax to 100 ohm shielded twisted pair (STP) Model 463: 75 ohm coax to 120 ohm shielded twisted pair (STP)
Transmission Rate:	Model 462: 8 Mbps Model 463: 34 Mbps
75 Ohm Connection:	Dual BNC Coax Connectors (female, 75 Ohm)
Power Supply	None Required
Dimensions:	6.9 x 4.3 x 2.0 cm (2.7" x 1.7" x 0.8")

PATTON ELECTRONICS MODEL 462

INSERTION LOSS MEASUREMENTS

G.703 8.448 Mbps Data (Model 462)

F(MHz)	~Actual loss each unit (dB)
0.2	0.665
0.211	0.6575
0.3	0.65
0.4	0.64
0.422	0.64
0.5	0.63
0.6	0.6225
0.7	0.61
0.8	0.6
0.9	0.5875
1	0.5825
2	0.53
3	0.5625
4	0.645
5	0.5575
6	0.53
7	0.5325
8	0.54
8.448	0.55
9	0.57
10	0.565
11	0.57
12	0.575
12.672	0.5575
13	0.575

PATTON ELECTRONICS MODEL 462

RETURN LOSS MEASUREMENTS

G.703 8.448 Mbps Data (Model 462)

F(MHz)	Rtrn Loss (dB)
0.2	24.79
0.211	25.29
0.3	27.39
0.4	27.85
0.422	28.77
0.5	29.42
0.6	29.95
0.7	29.7
0.8	30.78
0.9	30.78
1	30.98
2	31.43
3	31.6
4	31.03
5	29.49
6	28.56
7	27.47
8	26.56
8.448	25.65
9	25.3
10	24.76
11	24.02
12	23.38
12.672	22.54
13	21.97

PATTON ELECTRONICS MODEL 463

INSERTION LOSS MEASUREMENTS

G.703 34.368 Mbps Data (Model 463)

F(MHz)	~Actual loss each unit (dB)
0.86	0.225
1	0.215
1.72	0.1925
2	0.1975
4	0.195
6	0.21
8	0.2225
10	0.2425
15	0.275
20	0.2925
25	0.3225
30	0.59
34.368	0.345
40	0.3525
45	0.37
50	0.38
51.55	0.385

PATTON ELECTRONICS MODEL 463

RETURN LOSS MEASUREMENTS

G.703 34.368 Mbps Data (Model 463)

F(Mhz)	Return Loss (dB)
0.86	23.53
1	23.27
1.72	23.08
2	22.85
4	21.48
6	22.22
8	21.79
10	21.41
15	20.69
20	19.94
25	19.12
30	18.95
34.368	18.23
40	17.43
45	16.74
50	16.45
51.55	16.39