Baluns

High Speed Baluns

Baluns convert the G.703 interface from unbalanced 75-ohm to balanced 120-ohm terminations. Patton's baluns use dual BNC connectors (Models 460 and 464) or dual 1.6/5.6 coax connectors (Models 465 and 466) for the 75-ohm interface. An RJ-45/48C or terminal block are used for the 120-ohm or 100-ohm interfaces. Patton's balun products are available in standalone and 1U or 2U high 19-inch rack mounts (refer to the selection guides below).

Stand Alone Balun Selection Guide

	Coax Type						Twisted Pair Interface			
	BNC Male	BNC Female	BNC Male on 6 in. cable	1.6/5.6 Male	1.6/5.6 Female	1.6/5.6 Male on 6 in. cable	RJ-45/ 48C	Terminal Block	Impedance (ohm)	Model #
E1		✔					✔		120	460F
		✔						✔	120	460F-TBP
	✔						✔		120	460M
	✔							✔	120	460M-TBP
			✔				✔		120	460MC
			✔					✔	120	460MC-TBP
					✔		✔		120	465F
				✔			✔		120	465M
						✔	✔		120	465MC
E2		✔					✔		100	462F
	✔						✔		100	462M
E3		✔					✔		120	463F
	✔						✔		120	463M
155 Mbps		✔					✔		100	470F
		✔					✔		120	471F

Rack Mount Balun Selection Guide

Coax Interface (75 ohm)		Twisted Pair Interface (120 ohm)			General Characteristics			Model #
BNC Female	1.6/5.6 Female	RJ-48C	64-Pin Telco	50-Pin Telco	Modular	# of Ports	Height	
✔		✔			Yes	16	2U	460RC/16/F
	✔	✔			Yes	16	2U	465RC/16/F
✔		✔	✔		No	16	1U	464RC
	✔	✔	✔		No	16	1U	466RC
✔				✔	No	24	1U	450RC/24

A Dual Path to Interconnect

Single Port G.703/G.704 Baluns

Single Port E1/E2 IDC Krone Baluns

The new G.703/G.704 insulating displacement connecting (IDC) module Krone baluns are ideal for carriers seeking a cost-effective, space-efficient, and proven method of impedance matching 75-ohm coax to 120-ohm single-conductor connections. The baluns provide transparent bi-directional signal conversion with no AC or battery power required.

75 Ohm (Coax)								120 Ohm Twisted Pair	E1/E2 Balun Model #*
BNC male	BNC female	1.6/5.6 male	1.6/5.6 female	1.0/2.3 male	1.0/2.3 female	BT43 male	BT43 female	Toolless IDC Krone	
✔								✔	431M
	✔							✔	431F
		✔						✔	432M
			✔					✔	432F
				✔				✔	433M
					✔			✔	433F
						✔		✔	434M
							✔	✔	434F

*** CALL for additional models.**

In This Section

3270 Balun Selection Guide

Model	Coax Connector		Twisted Pair Connection			
	BNC Male*	BNC Male on 6 inch cable	RJ-11 Jack	Terminal Block	RJ-45 Jack	RJ-11 Plug on 6 feet cable
400M11	✔		✔			
400MTB	✔			✔		
400M11TB	✔		✔	✔		
400M11P	✔					✔
400M45	✔				✔	
400M45TB	✔			✔	✔	
400MC11		✔	✔			
400MCTB		✔		✔		
400MC11TB		✔	✔	✔		
400MC11P		✔				✔
400MC45		✔			✔	
400MC45TB		✔		✔	✔	

* **NOTE:** For **FEMALE BNC** connectors, use "F" instead of "M" in Model Number

IBM 3270

IBM 3270 is a star-cabled topology originally designed to be installed with 93-ohm coax cable. Cost, flexibility and space constraints combined with improved balun ("balanced" twisted pair/"unbalanced" coax) technology have made unshielded twisted pair the primary media today. The 400 Series are used to connect terminals and controllers to the 100-ohm twisted-pair cabling.

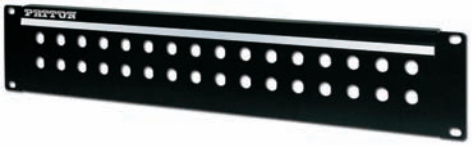
Single Port E1/E2 IDC Krone Baluns

Patton Model 430 Series G.703/G.704 Baluns

The Patton 430 Single Port E1/E2 Balun Series provides 75/120-ohm conversion in an ultra-miniature enclosure

The new G.703/G.704 insulating displacement connecting (IDC) module Krone baluns are ideal for carriers seeking a cost-effective, space-efficient, and proven method of impedance matching 75-ohm coax to 120-ohm single-conductor connections. The baluns provide transparent bi-directional signal conversion with no AC or battery power required.

Various industry standard types of coaxial connectors (75 ohm) are available including male and female combinations of BNC, 1.6/5.6, 1.0/2.3, and Type 43. The 3-pole IDC Krone connector used for wrapping single-conductor connections (120 ohm) utilizes a slit in the cable anchor to allow the cable to be inserted after termination. The IDC Krone connector is also offset so that a cable can be positioned between baluns on the DDF/patch panel as required. The IDC Krone connector is clearly labeled A, B, and G (Ground) to make installation more convenient.



The Patton Model 430R houses up to 32 individual IDC Krone baluns for 16 E1/E2 circuits. The 430R fits into standard 19-inch racks and includes a dry-erase tab for easy and clear marking.

FEATURES & BENEFITS

- ✔ Convert 75 ohm Coax to 120 ohm Twisted Pair—Resolves impedance mis-match between twisted pair equipment and coax cabling
- ✔ Ultra-miniature size—Provides maximum density when installed into a 19-inch (48.3cm) panel
- ✔ Industry Standard Coax Connectors—A host of coax connectors including BNC, 1.6/5.6, 1.0/2.3 and Type 43 are available
- ✔ Low Insertion Loss—Fully meets ITU-T (CTR-12) G.703 standards
- ✔ No Power Required—Operation is transparent to data, no AC/DC power is required

*I'm Ovidio, Patton's Regional Director of Latin America Operations. If you have any questions about products or applications using baluns, please call me at **+1 301.975.1000, x118**, or send e-mail to **ovidio@patton.com**.*

NEED Help?

Model 431F
Single Port BNC Female Panel Mount to IDC Krone Balun

Model 431M
Single Port BNC Male Panel Mount to IDC Krone Balun

Model 432F
Single Port 1.6/5.6 Female Panel Mount to IDC Krone Balun

Model 432M
Single Port 1.6/5.6 Male Panel Mount to IDC Krone Balun

Model 433F
Single Port 1.0/2.3 Female Panel Mount to IDC Krone Balun

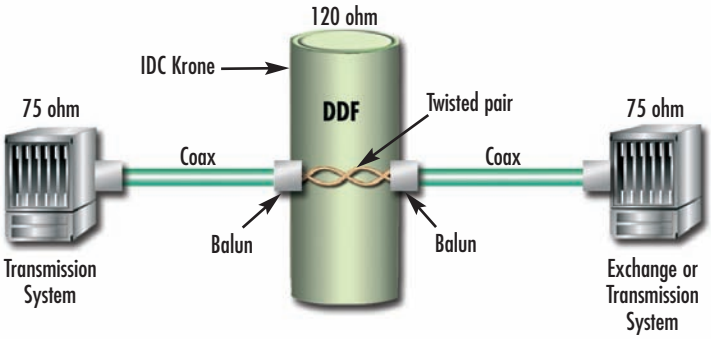
Model 433M
Single Port 1.0/2.3 Male Panel Mount to IDC Krone Balun

Model 434F
Single Port Type 43 Female Panel Mount to IDC Krone Balun

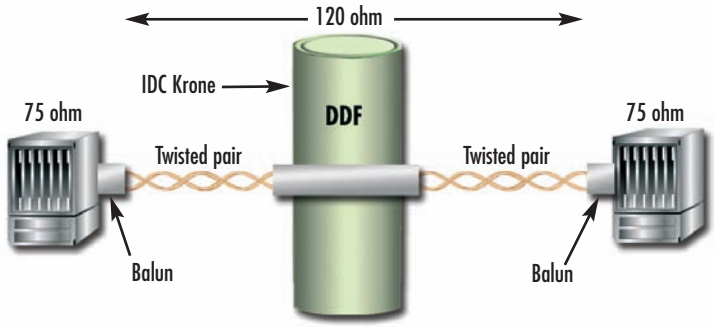
Model 434M
Single Port Type 43 Male Panel Mount to IDC Krone Balun

Balun applications

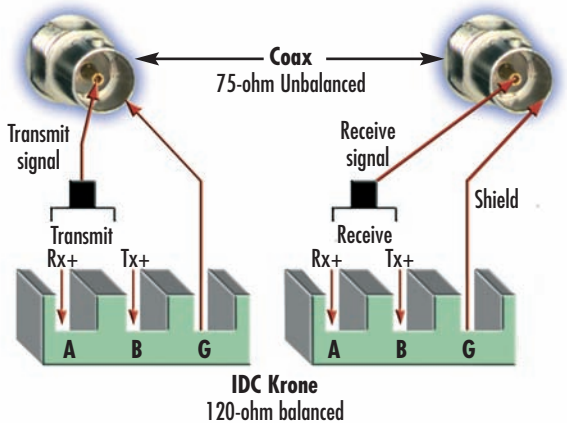
DDF jumper reconfiguration with 120 ohm



Typical DDF application



Patton's Ultra-miniature G.703 IDC Krone baluns are fully shielded and are ideal in telecom applications where space is a premium. The Model 430 Series can be panel mounted or cable mounted and feature IDC terminations which allow installation without the need of special tools. Converting your G.703 signal from coax to twisted-pair enables the use of high density IDC modules in the Digital Distribution Frames (DDF), which significantly increases the available density.



FEATURES

Patton's IDC Krone Connector

1. Specially designed tool-less IDC connector for easy connection of unterminated cable.
2. IDC Krone connector clearly marked *A, B* and *G* for easier installation
3. Slit in cable anchor allows cable to be inserted after termination.
4. Offset IDC allows cable to be positioned between baluns on DDF as required

With tool-free terminations, clearly marked connectors and well laid out spaces, the Patton IDC Krone connector makes installations a breeze.

ORDERING INFORMATION

- 431F: Single Port BNC Female Panel Mount to IDC Krone Balun
- 431M: Single Port BNC Male Panel Mount to IDC Krone Balun
- 432F: Single Port 1.6/5.6 Female Panel Mount to IDC Krone Balun
- 432M: Single Port 1.6/5.6 Male Panel Mount to IDC Krone Balun
- 433F: Single Port 1.0/2.3 Female Panel Mount to IDC Krone Balun
- 433M: Single Port 1.0/2.3 Male Panel Mount to IDC Krone Balun
- 434F: Single Port Type 43 Female Panel Mount to IDC Krone Balun
- 434M: Single Port Type 43 Male Panel Mount to IDC Krone Balun
- 430R: IDC Krone Mounting Panel

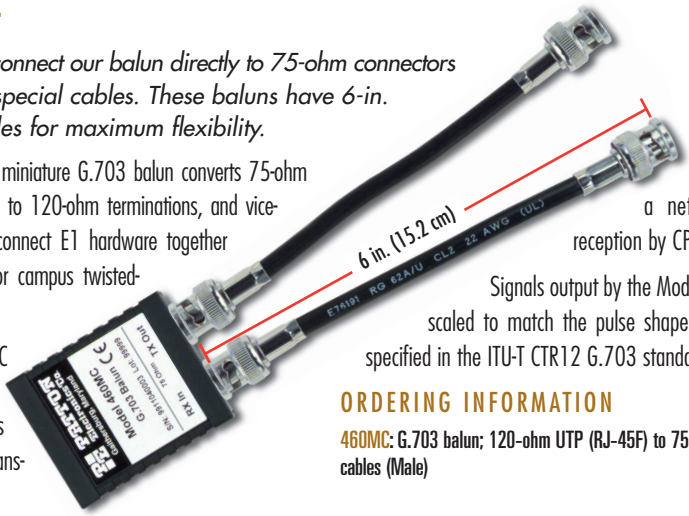
SPECIFICATIONS

Transmission Line: ITU-T G.703/G.704 2-8 Mbps
75-ohm Connection: BNC; 1.6/5.6, 1.0/2.3, or Type 43
120-ohm Connection: 3 pole IDC Krone
Insertion Loss: Max 0.2 dB at 2 Mbps; Max 0.3 dB at 8 Mbps
Cross Talk: Better than -80dV from 0.1 to 12 MHz between any two baluns on a DDF strip with 15 mm centers
Return Loss: -29 dB at 2 Mbps; -21 dB at 8 Mbps
Dimensions: 19L x 1.5W x 3.8H in. (48.3L x 48.3W x 8.9H cm)
Weight: 0.4 lbs (0.18 kg)

G.703 Balun (E1), 2 Mbps, With Built-in Cables (75-ohm to 120-ohm)

Model 460MC

Now you can connect our balun directly to 75-ohm connectors without using special cables. These baluns have 6-in. (15.2 cm) cables for maximum flexibility.



The Model 460MC miniature G.703 balun converts 75-ohm coaxial terminations to 120-ohm terminations, and vice-versa. It can also connect E1 hardware together over inter-building or campus twisted-pair wiring.

The Model 460MC receives 75-ohm signals and converts to 120-ohm for transmission over a network or for reception by CPE equipment.

Signals output by the Model 460MC are scaled to match the pulse shape requirements specified in the ITU-T CTR12 G.703 standard.

ORDERING INFORMATION

460MC: G.703 balun; 120-ohm UTP (RJ-45F) to 75-ohm dual-BNC cables (Male)

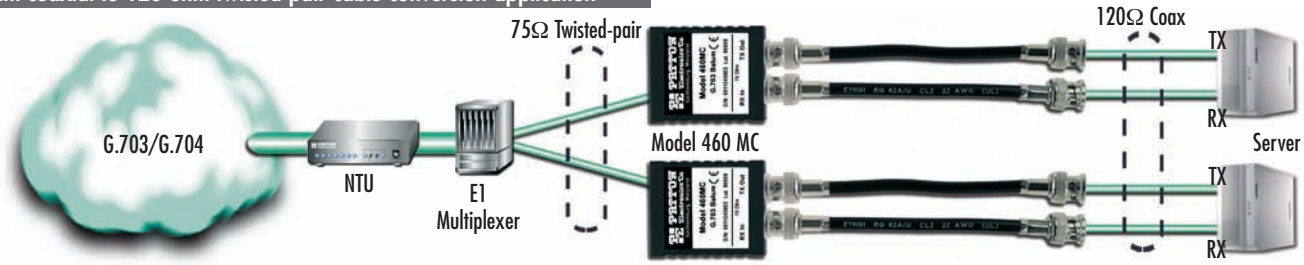
FEATURES & BENEFITS

- ✔ Solves G.703 termination mis-matches
- ✔ Includes short cables that connect directly to equipment
- ✔ Enables G.703 equipment to use RJ-11 wall plates and operate over standard building wiring
- ✔ Low insertion loss, meets ITU-T (CTR12) G.703 standards
- ✔ Customized versions available upon request
- ✔ Enclosed in flame retardant housings.
- ✔ Baluns are 100% tested for reliability and durability

SPECIFICATIONS

Transmission line: ITU-T CTR12 G.703
Data rate: 2.048 Mbps (models available for rates up to 155 Mbps, call for details)
Link-to-data isolation: 500 volts AC/DC
Op. Temp.: 32–122°F (0– 50°C)
Dimensions: 0.8H x 1.7W x 2.7D in. (2.0H x 4.3W x 6.9D cm)

75-ohm coaxial to 120-ohm twisted-pair cable conversion application



G.703 (E1, E2, E3) Baluns (75-ohm to 120-ohm)

Models 460, 462, & 463

Now you can solve mismatches between coax and twisted pair G.703 terminations!

These devices are miniature G.703 baluns that enable 75-ohm coax hardware to communicate with 120-ohm twisted-pair equipment.

The baluns address ONP requirement that European PTTs offer 120-ohm twisted-pair terminations to their customers. Some PTTs and private carriers are standardized on 75-ohm coax, or have customers whose CPE has only 75-ohm coax connections. Our baluns presents a ready solution to this termination mismatch. A balun receives 75-ohm signals and converts them to 120-ohm for transmission over a network or reception by a CPE.

The output signals from the baluns are scaled to match the pulse shape requirements specified by the CCITT G.703 standard. These baluns can perform 120-ohm to 75-ohm signal conversion as well, thereby fulfilling a dual role.

ORDERING INFORMATION

460F: 2 Mbps, 75-ohm dual-coax (BNC female): to 120-ohm UTP (RJ-45)

460M: Male BNC version of 460

460F-TBP: 2 Mbps, 75-ohm dual-coax (BNC female): to 120-ohm UTP (Terminal Block)

460M-TBP: Male BNC version of 460-TBP

462F: 8 Mbps, 75-ohm dual-coax (BNC female): to 100-ohm UTP (RJ-45)

462M: Male BNC version of 462

463F: 34 Mbps, 75-ohm dual-coax (BNC female): to 120-ohm UTP (RJ-45)

463M: Male BNC version of 463

FEATURES & BENEFITS

- ✔ Data rates to 34 Mbps
- ✔ Available in E1, E2, and E3 varieties
- ✔ 75-ohm dual-coax to 120-ohm twisted-pair
- ✔ Bi-directional signal conversion
- ✔ No AC power or batteries required
- ✔ Male or female coax BNC connectors available
- ✔ Ultra-miniature enclosure

SPECIFICATIONS

Transmission Line: CCITT G.703 (unstructured)
Data Rate: Model 460 to 2 Mbps; Model 462 to 8 Mbps; Model 463 to 34 Mbps
Power Supply: none required
75-ohm Connection: Dual coax BNC connectors, male or female (RG 59 or 2002 coax)
120-ohm Connection: Shielded mRJ-45 jack (internal terminal block included)
Link-to-Data Isolation: 500 volts AC/DC
Op. Temp.: 0–50°C (32–122°F)
Dimensions: 2.7L x 1.7W x 0.8D in. (6.86L x 4.32W x 2.03D cm)

G.703 (E1) Balun, 2 Mbps (1.6/5.6 Connectors)

Models 465 & 465MC

These new G.703 baluns feature 1.6/5.6 coaxial connectors and provide connection for TX and RX connections on a single twisted-pair wire.

Baluns are adapters for connecting mixed cable types or devices with mis-matched interfaces. They enable carrier and large-enterprise customers to standardize on twisted-pair wiring, even though some equipment may have unique E1 terminations.

The Model 465 has the 1.6/5.6 coax connectors used extensively in telephone exchange sites. The balun has two interfaces, so that both the TX and RX coax signals can be carried over a single length of twisted-pair cabling (which is far less costly than any kind of coaxial cable).

ORDERING INFORMATION

465F: G.703 balun; 120-ohm UTP (RJ-45F) to 75-ohm dual-coax female 1.6/5.6 plugs

465M: G.703 balun; 120-ohm UTP (RJ-45F) to 75-ohm dual-coax male 1.6/5.6 plugs

465MC: G.703 Balun with 120-ohm UTP (RJ-45F) to 75-ohm 1.6/5.6 plugs 6-in. (15.2 cm) cables

FEATURES & BENEFITS

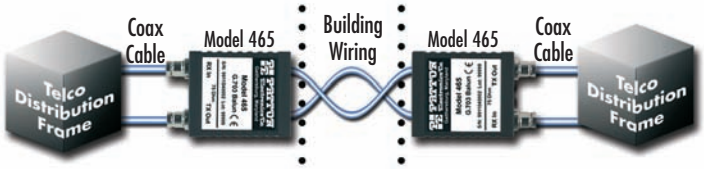
- ✔ Use 120-ohm twisted-pair wiring with unbalanced coaxial equipment
- ✔ No more buying expensive and space-hungry hardware for patching and distributing G.703 connections
- ✔ Low cost model supports rates of 2 Mbps
- ✔ Low insertion loss, fully meets ITU-T (CTR12) G.703 standards
- ✔ Standard twisted-pair terminations
- ✔ Enclosed in flame retardant housings
- ✔ Baluns are 100% tested for reliability and durability
- ✔ Customized versions available upon request

SPECIFICATIONS

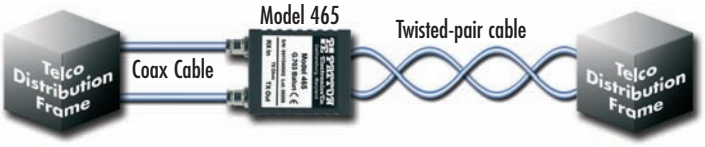
Transmission line: ITU-T CTR12 IG.703
Data rate: 2.048 Mbps
Link-to-data isolation: 500 volts AC/DC
Op. Temp.: 32° to 122°F (0° to 50°C)

Dimensions:
0.8H x 1.7W x 2.7D in.
(2.0H x 4.3W x 6.9D cm)

Coax to twisted-pair building wiring conversion



Coax to twisted-pair cable conversion



155-Mbps ATM Baluns Swap Coax for Twisted Pair

Models 470, 471, & 472

Match 75-ohm dual-coax with a 100-, 120-, or 150-ohm twisted-pair wiring

These baluns enable you to match the connectors, impedance, and signal characteristics of a wide variety of connections. The Models 470 (100-ohm) and 471 (120-ohm) provide RJ-45 for twisted-pair. The Model 472 (150-ohm) provides an IBM data connector on a pigtail.

ORDERING INFORMATION

470F: ATM Balun (75-ohm Dual-Coax BNC female to 100-ohm shielded RJ-45 jack)

471F: ATM Balun (75-ohm Dual-Coax BNC female to 120-ohm UTP RJ-45 jack)

472F: ATM Balun (75-ohm Dual-Coax BNC female to 150-ohm IDC on pigtail)

FEATURES & BENEFITS

- ✔ Support for data rates to 155 Mbps
- ✔ Bi-Directional signal conversion
- ✔ 75-ohm dual-coax BNC (female)
- ✔ Model 470 (100 ohm) & Model 471 (120 ohm) provide RJ-45 for twisted-pair; Model 472 (150 ohm) provides IBM data connector on pigtail

SPECIFICATIONS

Data rate: Up to 155 Mbps
Link-to-data isolation: 500 volts AC/DC
Op. Temp.: 32–122°F (0–50°C)

Dimensions:
0.8H x 1.7W x 2.7D in.
(2.0H x 4.3W x 6.9D cm)

TeleMatch™ G.703 (E1) Balun Panels (75 to 120-ohm)

Models 460RC & 465RC

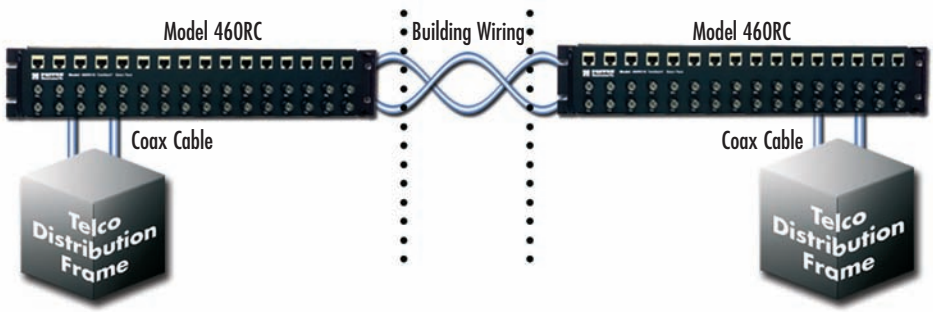
Modular Construction Lets You Add up to 16 Separate G.703 Balun Modules

The TeleMatch G.703 rack mount balun panels let you match the connectors, impedance and signal characteristics of up to 16 dual coax connections (75 ohm) with up to 16 twisted pair connections (120 ohm). Operating in compliance with the CCITT G.703 specification, the panels occupy only 2U (3.5 in./8.9 cm) of vertical rack space in a 19 in. (48.3 cm) rack—allowing for efficient multiport matching.

The Model 460RC rack mount balun panel comes with 16 dual coax BNC connectors. The Model 465RC has the 1.6/5.6 coax connectors used extensively in telephone exchange sites.

What's more, the Model 460RC is modular, meaning that each balun can be added separately. Purchase an entire panel fully populated with 16 balun modules (Model 460RC/16/F or 465RC/16/F). Or purchase the chassis separately (Model 460R/16) and add balun modules (Model 460RC/F or 465RC/F) as you need them. On individual twisted pair ports, shield-to-pin and shield-to-ground connections are strap selectable. So you are not locked into the same configuration for every balun in the panel. If you need to do multiple 75 ohm to 120 ohm conversions, the Model 460RC is definitely the way to go!

Coax to twisted-pair building wiring conversion



Coax to twisted-pair cable conversion

FEATURES & BENEFITS

- ✔ Connects 75-ohm dual coax to 120-ohm twisted pair (or visa versa)
- ✔ Use 120-ohm twisted-pair wiring with unbalanced coaxial equipment
- ✔ Dual female coax BNC connectors (Model 460RC)
- ✔ Uses 1.6/5.6 coaxial connectors (Model 465RC)
- ✔ Bi-directional signal conversion according to CCITT G.703
- ✔ Supports rates of 2 Mbps (E1)
- ✔ Strap-selectable grounding option
- ✔ Low profile design
- ✔ Mounts in standard 19 in. (48.3 cm) rack
- ✔ No AC power or batteries required
- ✔ Strap-selectable modular (RJ-45) pinouts
- ✔ No more buying expensive and space-hungry hardware for patching and distributing G.703 connections
- ✔ Low insertion loss, fully meets ITU-T (CTR12) G.703 standards
- ✔ Standard twisted-pair terminations
- ✔ Baluns are 100% tested for reliability and durability

SPECIFICATIONS

Transmission Line:
Model 460RC—CCITT G.703 (unstructured)
Model 465RC—ITU-T CTR12 G.703
Data Rate:
Model 460RC—2.048 Mbps
Model 465RC—2.048 Mbps
120 ohm Connection: Shielded RJ-45 jack
Power Supply: none required

75-ohm Connection:
Model 460RC—Dual female BNC connectors
Model 465RC—Dual female 1.6/5.6 connectors
Link-to-Data Isolation: 500 Volts AC/DC
Op. Temp.: 32–122°F (0–50° C)
Dimensions:
19.0W x 3.5H x 1.9D in.
(48.3W x 8.9H x 4.8D cm)

ORDERING INFORMATION

460RC/16/F: 16-Port G.703 Balun Panel (RJ-45 Jack to Dual BNC Female)

460R/16*: Balun Chassis (Empty)

460RC/F: G.703 Balun Module, RJ-45 to Dual BNC Female

465RC/16/F: 16-port G.703 Balun Panel, RJ-45 to Dual 1.6/5.6 Female

465RC/F: G.703 Balun Module, RJ-45 to Dual 1.6/5.6 Female

Ultra High Density G.703 (E1) Balun Panel

Model 450RC24

The Patton Model 450RC24 Ultra High-Density 24 Port Balun Provides Flexible 75/120-ohm Telco Interfacing Solutions for E1 Networks

The Patton 450RC24 G.703 balun panel matches 24 sets of dual 75-ohm coax connections to 120-ohm 50-pin telco connections. This feature allows network & datacom equipment manufacturers who are selling equipment for use in COs with only 120-ohm telco interfaces to offer their equipment to G.703 countries using 75-ohm connections. This eliminates the mismatch with coax legacy equipment in many COs.

Supporting E1 data rates to 2.048 Mbps, the Patton 450RC24 panel bi-directionally matches signal impedance and pulse shapes according to the CCITT G.703 standard. The Patton 450RC24 balun panel mounts in a standard 19-inch (48.3-cm) rack, occupies only 1U of rack space, and includes a reversible top cover for front-facing BNCs or 50-pin telco connectors.

FEATURES & BENEFITS

- ✔ Connects 24 75-ohm dual BNC to 120-ohm dual 50-pin telco connectors
- ✔ Bi-directional signal conversion according to CCITT G.703
- ✔ Data rates up to 2.048 Mbps
- ✔ 1U high chassis, mounts in standard 19-in. rack
- ✔ Reversible cover with integrated mounting ears
- ✔ No AC power or batteries required
- ✔ 24 female BNC coax pairs
- ✔ Dual 50-pin telco 120-ohm connectors
- ✔ 6-inch BNC removal tool

I'm Jose, Patton's Technical Solutions Manager for Latin America. If you have any questions about products or applications using these technologies, please call me at ***+1 301.975.1000, x142****, or send e-mail to* ***jose@patton.com****.*

Typical application

SPECIFICATIONS

Electrical Characteristics
Averaged between 1 MHz and 3 MHz
Avg. Cross Talk: Better than 54.4 dB (Between adjacent channels (TX and RX)
Avg. Insertion Loss: Less than .30dB
Avg. Return Loss: Better than 31.5dB

Physical Specifications
Transmission Line: CCITT G.703 (unstructured)
Data Rate: 2.048 Mbps
75 ohm Connection: Dual coax female BNC connectors
120 ohm Connection: Dual 50-pin Telco connectors

Power Supply: none required
Link-to-Data Isolation: 500 volts AC/DC
Op. Temp.: 32–122°F (0–50°C)
Relative Humidity: 5–95% RH, non-condensing
Altitude: 0–15,000 feet (3,048 meters)

Dimensions (without handles): 19W x 3.5H x 1.9D in. (48.3W x 8.9H x 4.8D cm)
Weight: 4.46 lbs (2.02 kg)

ORDERING INFORMATION

450RC/24: E1/G.703 Ultra High Density 24-port, Dual 50-pin Telco Balun Chassis (BNC Coax)

High Density, E1/G.703 Balun Panels

Models 464RC & 466RC

Matches 16 sets of dual 75-ohm coax connections to 120-ohm twisted pair connections

The Patton 464RC & 466RC G.703 balun panels match 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 and 466RC panels bi-directionally match signal impedance and pulse shapes according to the CCITT G.703 standard. The Patton 464RC and 466RC balun panels mount in a standard 19-in. (48.3 cm) rack. Includes a reversible top cover for front-facing BNC or front-facing RJ-45/AMP Champ connectors.

FEATURES & BENEFITS

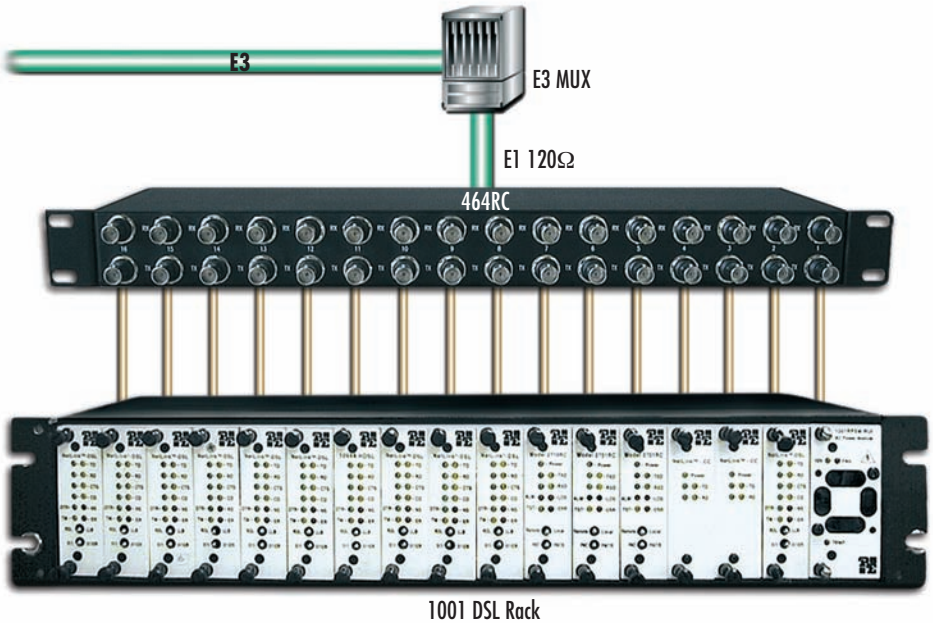
- ✔ Connects 16 75-ohm dual coax to 120-ohm twisted pair channels
- ✔ Bi-Directional signal conversion according to CCITT G.703
- ✔ Data Rates up to 2.048 Mbps
- ✔ 1U-high enclosed chassis
- ✔ Reversible cover with integrated mounting ears
- ✔ Mounts in standard 19 in. (48.3 cm) rack
- ✔ No AC power or batteries required
- ✔ Female BNC coax (Model 464RC)
- ✔ Female 1.6/5.6 connectors (Model 466RC)
- ✔ RJ-45 and 64 pin AMP Champ 120-ohm interface

ORDERING INFORMATION

464RC: High density 16-port, 19-inch, 1U (4.44 cm) balun chassis. BNC coax connector for 75-ohm connections. G.703 rack-mount

466RC: High density 16-port, 19-inch, 1U (4.44cm) balun chassis. 1.6/5.6 coax connector for 75-ohm connections. G.703 rack-mount

Typical application



1001 DSL Rack
(see page 134)

SPECIFICATIONS

Transmission Line: CCITT G.703 (unstructured)
Data Rate: 2.048 Mbps
75 ohm Connection: Dual coax female BNC (464) 1.6/5.6 series (466) connectors
120 ohm Connection: RJ-45 jack or 64 pin AMP Champ
Power Supply: none required
Link-to-Data Isolation: 500 volts AC/DC
Op. Temp.: 32-122°F (0-50°C)
Dimensions (without handles): 19.0 W x 1.75 H x 1.9 D in. (48.3 W x 4.45 H x 4.8 D cm)

IBM 3270 Coax to Twisted Pair Baluns

Model 400

Why run expensive coax cable when you can use twisted pair?

With a pair of Patton Model 400 baluns, any IBM 3270 Type A device can be connected over one twisted pair telephone line at distances up to 1,200 feet (365 m). This can result in significant savings over coax!

FEATURES & BENEFITS

- ✔ Communicate over existing telephone lines or other twisted pair
- ✔ Connect twisted pair using RJ-11, RJ-45 or terminal block
- ✔ Available with 6-in (0.15 m) coax and/or 6-ft (1.8m) twisted-pair pigtails (custom lengths are also available)
- ✔ Distances to 1,200 feet (365 m) on 24 AWG wire (1,500 ft on 22 AWG wire)

Model 400MC11 Coax Balun with RJ-11 Jack

Model 400M11P Coax Balun with RJ-11 Plug on a 6-ft (1.8 m) Modular Cable

ORDERING INFORMATION

Balun with BNC Male Coax Connector; twisted pair connection is shown below

400M11: RJ-11 Jack
400MTB: Terminal Block (TB)
400M11TB: RJ-11 Jack and TB
400M11P: RJ-11 Plug on 6-ft (1.8 m) Cable
400M45: RJ-45 Jack
400M45TB: RJ-45 Jack and TB

Balun with BNC Male Coax Connector on 6-in. (1.8 m) cable; twisted pair connection is shown below

400MC11: RJ-11 Jack
400MCTB: Terminal Block
400MC11TB: RJ-11 Jack and TB
400MC11P: RJ-11 Plug on 6-ft (1.8 m) Cable
400MC45: RJ-45 Jack
400MC45TB: RJ-45 Jack and TB

Note: For female BNC coax connectors, replace "M" with "F" in Model Number when ordering–**Same Prices!**

*I'm Jen, one of Patton's Sales Associates. Call me at **+1 301.975.1000** when you want to purchase Patton products or if you have questions about our products. You can also send e-mail to **sales@patton.com**.*

Twinax to Twisted Pair Adapter (Balun)

Models 410

Use twisted pair instead of expensive Twinax!

Twinax cable for IBM Systems 34/36/38 and AS/400 is not only cumbersome to install, it is also costly. With the Patton Model 410, you can use standard, inexpensive twisted pair telephone wire instead of Twinax cable. It is less expensive and much easier to handle.

FEATURES & BENEFITS

- ✔ Connects Twinax AS/400 to inexpensive twisted pair
- ✔ Supports distances of 1,000 feet (3,048 m) on 24 AWG wire

ORDERING INFORMATION

Twinax Balun with 75-ohm Dual-Coax BNC (Female); twisted pair connection is shown below

410M11: RJ-11 jack
410MTB: Terminal block (TB)
410M11TB: RJ-11 jack and TB
410M11P: RJ-11 plug on 6 ft (1.8 m) cable
410M45: RJ-45 jack
410M45TB: RJ-45 jack and TB

CCTV Passive Baluns

Model 310 Series

Why use expensive and difficult-to-manage coax cabling when you can use inexpensive twisted-pair?

The Model 310M CCTV Modular Balun allows a single composite CCTV video signal to be transmitted via a single unshielded twisted pair for more versatile security and surveillance cabling. Used in pairs, the CCTV Balun eliminates costly and bulky coax cable.

FEATURES & BENEFITS

- ✔ Communicate over existing telephone lines or other twisted pair media
- ✔ Connect twisted pair using RJ45 or terminal block
- ✔ Distances up to 2,230 feet (680 meters) over Cat5 cable
- ✔ No AC or power required and supports bi-directional signal conversion

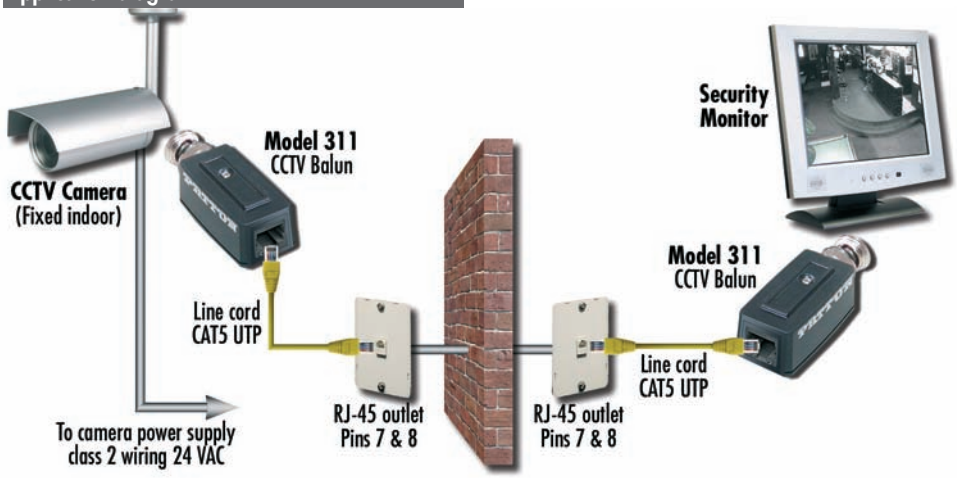
SPECIFICATIONS

UTP: 24 gauge or lower, twisted pair
Impedance: 100 ohm at 1 MHz
Max. Capacitance: 20 pf/ft
Attenuation: 6.6 dv/1000 feet at 1 MHz
BNC: Impedance: 75 ohm at 1 MHz (RG-59)
Bandwidth: Video DC to 8 MHz
Maximum Input: 1.1 Vp-p
Impedance: 75 to 100 ohm
Insertion Loss: Max 2 dB per pair over frequency range from DC to 8 MHz
Return Loss: Greater than 15 dB over the frequency range from DC to 8 MHz
Common mode rejection: Greater than 40 dB at 8 MHz
Active Pins: 8+ 7-

ORDERING INFORMATION

310M: CCTV BNC male to TB/RJ45; wiring 8+,7-
310F: CCTV BNC female to TB/RJ45; wiring 8+,7-
311M: CCTV std type balun for indoor BNC male to RJ45
312M: CCTV std type balun for outdoor BNC male to RJ45

Application diagram

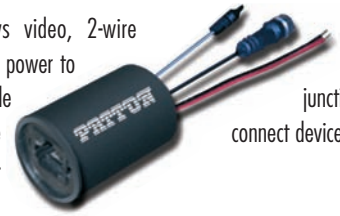


CCTV Passive Pass-Thru Baluns

Model 320 Series

Pass power, PTZ, and video over a single Cat 5 cable.

Patton's CCTV Pass-Thru Balun allows video, 2-wire pan/tilt/zoom (PTZ) control and remote power to be transmitted via one 4-pair Cat5 cable eliminating the need to install multiple cables in the CCTV security and surveillance environment. The pass-thru balun may be used in pairs or in conjunction with standard twisted pair cross-connect devices and other Patton CCTV baluns.



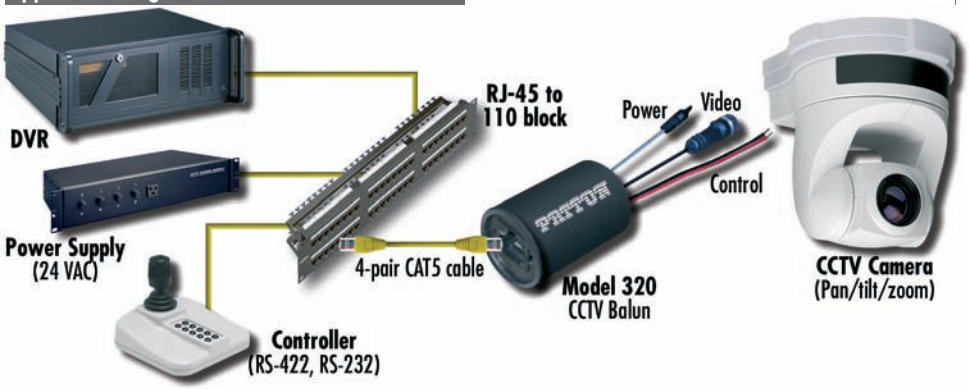
FEATURES & BENEFITS

- ✔ Distances up to 2,230 feet (680 meters) over Cat5 cable

SPECIFICATIONS

Except for the following, specifications are the same for Model 320 and Model 310
Max. Distance: 24 VAC via three pairs with 10% voltage drop at camera
5VA: 519 feet (170 meters)
10VA: 258 feet (85 meters)
20VA: 130 feet (43 meters)
30VA: 86 feet (28 meters)
Max Input Voltage: 50V (AC RMS/DC)
Max Current Rating: 4.5A (AC RMS/DC)
Active Pins:
Model 320: 8+ 7- (video), 1 2 3 4 5 6 (power)
Model 321: 8+ 7- (video), 1 2 3 6 (power), 4, 5 (data, PTZ control)
Model 322: 8+ 7- (video), 4 5 3 6 (data, speed dome)

Application diagram



ORDERING INFORMATION

320P: CCTV Balun RJ45 Power-thru type Male w/DC power plug, 8+7- (video), 123456 (power)
320J: CCTV Balun RJ45 Power-thru type Male w/DC power Jack, 8+7- (video), 123456 (power)
320: CCTV Balun RJ45 Power-thru type Male w/o DC power Plug and Jack, 8+7- (video), 123456 (power)
321P: CCTV Balun RJ45 Power-thru type Male w/DC power plug, 8+7- (video), 1236 (power), 4,5 (data, PTZ control)
321J: CCTV Balun RJ45 Power-thru type Male w/DC power jack, 8+7- (video),1236 (power), 4, 5 (data, PTZ control)
322: CCTV Balun RJ45 Power-thru type Male w/o DC power Jack, 8+7- (video), 4536 (data, speed dome)

CATV Passive Baluns

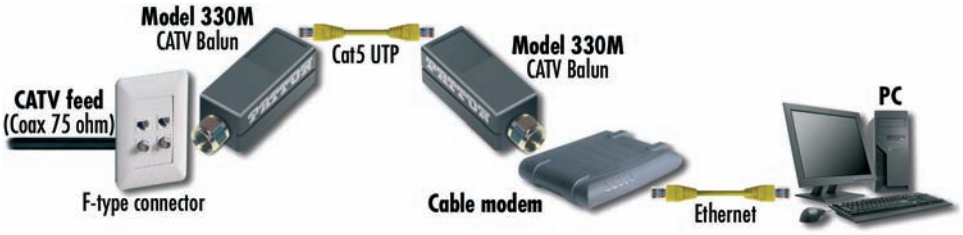
Model 330 Series

Model 330MP shown

Why use expensive and hard-to-manage coax cables when you can use inexpensive twisted-pair?

Patton's 330 Series CATV Baluns enable one CATV, VHF, and FM video signal to be transmitted via one twisted-pair cable in a point-to-point connection. The CATV balun saves the cost of installing expensive and bulky coax cable and is a smart, fast way of connecting RF video equipment to TVs, monitors, and other RF equipment.

Application diagram



FEATURES & BENEFITS

- ✔ Communicate over existing telephone lines or other twisted pair media
- ✔ Connect twisted pair using R-J45 or terminal block
- ✔ Distances up to 328 feet (528 meters) over Cat5 cable

SPECIFICATIONS

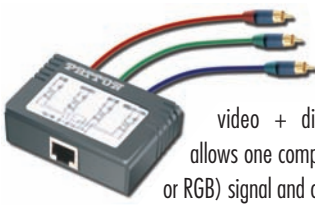
UTP: 24 gauge or lower, twisted pair
Impedance: 100 ohm
Pins: 7 & 8
F Connector: Impedance: 75 ohm
Bandwidth: 5 to 862 MHz
Insertion Loss: Less than 3 dB (5 dB max. for CATV 2-27)
Return Loss: More than 18 dB from 10 to 862 MHz
Common mode rejection: More than 20 dV from 40 to 862 MHz
Max. Distance: 197 feet (60 meters) over Cat5; 328 feet (100 meters) with amplifier

ORDERING INFORMATION

330F: F Male to RJ45 Jack, wiring 8+/7-
330MP: PAL Male to RJ45 Jack, wiring 8+/7-
331F: F Female to Toolless IDC with cover
331M: F Male to Toolless IDC with cover
331FP: PAL Female to Toolless IDC with cover
331MP: PAL Male to Toolless IDC with cover

Component Video Balun

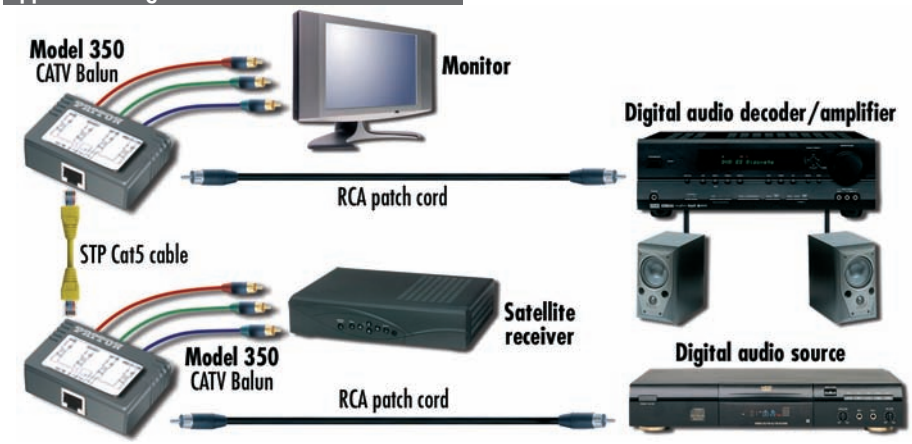
Model 350



Simplify and extend your audio/video signals over a single Cat 5 cable.

Patton component video + digital audio balun allows one component video (YPbPr or RGB) signal and one digital audio signal to be transmitted via one Category 5 Shielded twisted pair cable for more cost-efficient cabling. Used in pairs, the Model 350AV supports 480i/p, 720p and 1080i/p video formats for hi-definition (HDTV) video applications.

Application diagram



FEATURES & BENEFITS

- ✔ Communicate over existing telephone lines or other twisted pair media
- ✔ Supports 480i/p, and hi-definition (HDTV) formats 720p, 1080i, and 1080p
- ✔ Distances up to 1,000 feet (305 meters) over Cat5 cable

SPECIFICATIONS

UTP: 24 gauge or lower solid copper twisted pair wires impedance: 100 ohms at 1 MHz
Max. capacitance: 20 pf per foot. Attenuation: 6.6 dB/1000 ft at 1 MHz
Coax (RCA): Impedance: 75 ohms at 1 MHz 30VA: 86ft (28m)
Connectors: Three RC A-M connectors: Green (Y), Blue (Pb) , Red (Pr), One (1) RCA-F connector for digital audio to RJ45 Socket for twisted pair
Pin Configuration: Red (Pr): Pins 7+, 8- Green (Y): Pins 6+, 3-; Blue (Pb): Pins 2+, 1-;Digital Audio: Pins 5+, 4-
Distance: 480i/p: 1,000 feet (305 meters). 720p and 1080i: 500 feet (152 meters). Digital Audio: 600 feet (182 meters)

ORDERING INFORMATION

350: Component Video Balun