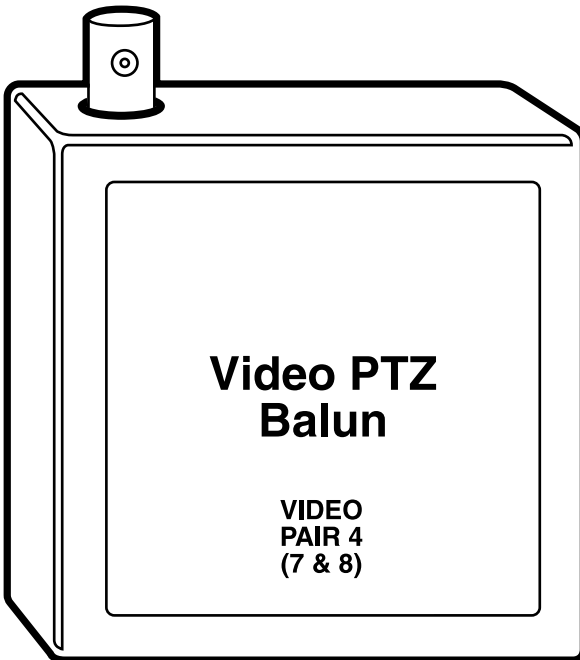




Video PTZ Balun



**CUSTOMER
SUPPORT
INFORMATION**

Order toll-free in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA

RADIO-FREQUENCY INTERFERENCE STATEMENTS

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.


Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables are required to connect this device to other Class B certified devices.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

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Vicon and Vicoax are registered trademarks of Vicon Industries, Inc.

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**NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT**

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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1. Specifications

Cable Required:	<p>Between Balun pairs: Unshielded twisted pair (UTP): Construction Standard: Category 3 or higher; Gauge: 24 AWG or lower; Termination: RJ-45 plugs; Pairs: 1 or more (2 wires used); Impedance: 100 ohms at 1 MHz; Maximum Capacitance: 20 pF/ft. (6.1 pF/m); Maximum Attenuation: 6.6 dB/1000 ft. (2 dB/km);</p> <p>To attached devices: Balun normally attaches to equipment directly or with included BNC M/M patch cable; if other cabling must be used, it must be standard 75-ohm RG59/U coaxial cable with a BNC connector on the Balun end, and a maximum of 25 ft. (7.6 m) of coax cabling is allowed for the entire end-to-end link</p>
Compliance:	FCC Class B, IC Class/classe B; CISPR Pub. 22
Devices Supported:	CCTV cameras and Pan, Tilt, Zoom (PTZ) controllers supporting one video and one PTZ signal over the same coaxial cable; works with Pelco™ Coaxitron™, Vicon® Vicoax®, Videoalarm™ Coaxlynx™, and other digital coax Pan, Tilt, Zoom control systems
Compatibility:	CCTV equipment for security and surveillance, NTSC, PAL, SECAM, Coaxitron, RS-232, RS-422, Manchester, 24 VAC, 20 mA
Transmission:	Transparent to the user (no delay or video processing)
Impedance:	Coaxial side: 75 ohms; UTP side: 100 ohms
Video Bandwidth:	DC to 8 MHz
Maximum RF Input:	1.1 volts peak-to-peak at 60 Hz
Insertion Loss:	Less than 2 dB over the DC-to-8-MHz frequency range
Return Loss:	Greater than 15 dB over the DC-to-8-MHz frequency range

VIDEO PTZ BALUN

Common-Mode

Rejection: Greater than 40 dB at 8 MHz

Maximum

Distance: With Category 3 cable: 875 ft. (266.7 m) for color video,
980 ft. (298.7 m) for black & white video;
With Category 5 cable: 1250 ft. (381 m) for color video,
1400 ft. (426.7 m) for black & white video

Connectors: (1) RJ-45 female, (1) BNC female; (1) BNC M/M coax cable included

RJ-45 Pins Used: 7 (Ring) and 8 (Tip), reverse-polarity-sensitive

Temperature

Tolerance: Operating: 32 to 131°F (0 to 55°C);
Storage: -4 to +185°F (-20 to +85°C)

Humidity

Tolerance: Up to 95% noncondensing

Enclosure: Fire-retardant plastic with included optional VELCRO® mounting material

Size: 2.4"H x 2.3"W x 1"D (6.1 x 5.8 x 2.5 cm)

Weight: With included cable: 4.2 oz. (119.1 g);
Without included cable: 3 oz. (85.1 g)

2. Introduction

With the Video PTZ Balun, you can transmit CCTV video and Pan, Tilt, Zoom (PTZ) control signals via a single unshielded twisted-pair (UTP) cable.

The Baluns must be used in pairs. They let you integrate CCTV security and surveillance equipment into structured cabling systems. You can use convenient modular wall outlets to connect digital coax PTZ and video.

Figure 2-1 shows a typical application for the Video PTZ Balun.

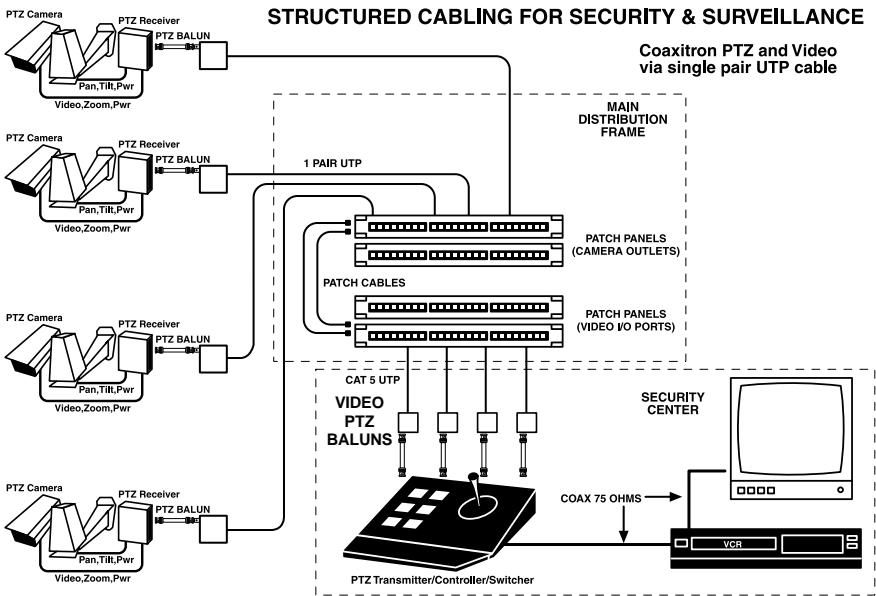


Figure 2-1. Typical application.

3. Installation

1. Power off the equipment that you want to interconnect.

NOTES

The Video PTZ Balun has no user-serviceable parts inside. Opening the housing may damage the Balun.

The PTZ Balun works in pairs.

2. Verify that the balun's pin configuration corresponds to the pin configuration of your modular outlets and plugs: The factory default is RJ-45 Pins 7 and 8 active.

NOTE

The PTZ Balun has a BNC female connector. A coax cable with a BNC male connector on each end comes with the balun, so you can use it with equipment that has a BNC female connector. See Figure 3-1.

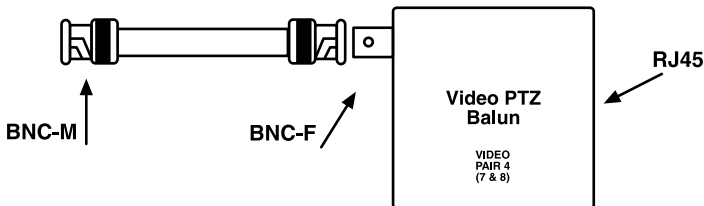


Figure 3-1. The Balun and its included cable.

3. Install one PTZ Balun at the PTZ controller near the camera. Each Balun comes with VELCRO® mounting pads. If you want to mount a Balun to a surface, first make sure that that surface is free of dust, oil, etc., so the VELCRO will adhere to it. Then peel off the adhesive backing, attach one side of the pads to the Balun, and attach the other side to the surface.

NOTE

Do NOT mount the Balun on top of equipment's ventilation openings.

4. Install the second PTZ Balun on the PTZ transmitter near the security center or wiring-distribution center.

5. *If you're running the line through your site wiring:* Connect both ends of the same 4-pair UTP building cable to the RJ-45 jacks of each PTZ Balun. You may use UTP patch cords if needed.

If you're using a UTP cable that isn't part of your site wiring: Connect both ends of the same UTP cable to the RJ-45 jacks of each Balun. Make sure that the pins match up on both ends. Remove any bridge taps from the line.

NOTES

To avoid signal interference, keep CCTV equipment, baluns, and cables away from fluorescent lights, generators, motors, high-voltage lines, and other devices that emit high-frequency signals.

Make sure that you use a twisted pair to transmit the signal. Do not split the twisted pair.

6. Power on the PTZ transmitters and receivers and test the system according to the equipment vendor's instructions.

4. Troubleshooting

4.1 Things to Try If Problems Occur

If you have problems with the Video PTZ Balun, try these potential remedies:

- Make sure that the PTZ transmitter and receiver are functioning correctly.
- Check all cables and connections and eliminate any split pairs or polarity problems. The PTZ Balun is reverse-polarity-sensitive. Pin 7 must go to Pin 7 and Pin 8 to Pin 8.
- Verify that the UTP cable is high-quality and securely connected.
- Make sure that distance limitations have not been exceeded.
- Verify that the equipment, Baluns, and cables are away from sources of electromagnetic interference (EMI).
- Replace the questionable Baluns with known-working units if possible.
- If the above steps fail to identify/fix your problem, call Black Box Technical Support as described in **Section 4.2**.

4.2 Calling Black Box

If you determine that your Video PTZ Balun is malfunctioning, *do not attempt to alter or repair it*. It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem;
- when the problem occurs;
- the configuration of your system;
- the components involved in the problem—cables, devices, etc.;
- any particular application that, when used, appears to create the problem or make it worse; and
- the results of any testing you've already done.

4.3 Shipping and Packaging

If you need to transport or ship your Video PTZ Balun:

- Package it carefully. We recommend that you use the original container.
- Before you ship the Balun back to Black Box for repair or return, contact us to get a Return Authorization (RA) number.



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