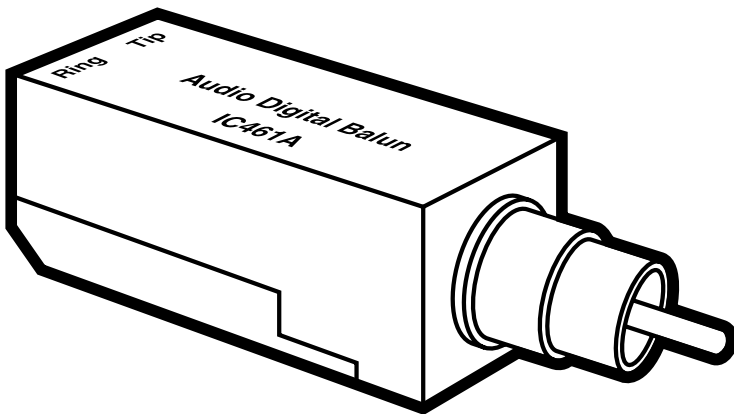




Audio Digital Balun



**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**

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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

This digital apparatus does not exceed the Class A 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 la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

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1. Specifications

System Requirements: Dolby Digital, Dolby Pro Logic, CTS, LOGIC7, THX Surround EX

Compatible Devices: DVDs, VCRs, camcorders, satellite receivers, home theaters, channel processors, amplifiers, D/A converters, MPEG encoders/decoders, switchers, and other commercial or consumer audio equipment supporting digital audio

Transmission: Transparent to the user

Bandwidth: DC to 25 MHz

Maximum Input: 1.1 V_{p-p}

Insertion Loss: Less than 1 dB per balun pair over the frequency range

Return Loss: Greater than 15 dB over the frequency range

Common Mode Rejection: Greater than 60 dB @ 10 MHz

Maximum Distance (UTP): Category 5 unshielded twisted pair: 600 ft. (182.9 m)

Cable: UTP: 24 gauge or lower solid copper twisted-pair wire impedance: 100 ohms at 1 MHz;

Maximum capacitance: 20 pF/ft.;

Attenuation: 6.6 dB/1000 ft. at 1 MHz

Pin Configuration: Tip—Signal, Ring—Ground

Impedance: Input: 75 ohms (RCA); Output: 100 ohms (screw terminals)

Connectors: (1) S/PDIF RCA male connector, (2) screw terminals

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

Humidity: Up to 95%, noncondensing

Enclosure: Fire-retardant plastic

Size: 2.3"H x 0.6"W x 0.6"D (5.8 x 1.5 x 1.5 cm)

Weight: 1.5 oz. (42.5 g)

2. Overview

Connect a DVD, VCR, or satellite receiver to a digital audio home theater using unshielded twisted-pair cable (UTP) instead of costly and bulky coaxial cable. The Audio Digital Balun allows the digital audio signals produced by these consumer or commercial audio devices to be transmitted via a single unshielded twisted-pair (UTP) cable.

Used in pairs, the Audio Digital Balun connects directly to the digital audio equipment. Connect the digital audio source up to 600 feet (182.9 m) away from a digital audio decoder/amplifier. The balun provides built-in cable strain relief for easy installation and reliable connectivity.

3. Installation

To install the Audio Digital Baluns, follow these steps:

1. Identify the balun's pin configuration (the screw terminal's pins are labeled Tip and Ring). One twisted pair is required. Although the Audio Digital Balun is not polarity sensitive, be sure to use straight-through wiring (Ring to Ring, Tip to Tip) to eliminate potential ground-loop problems.

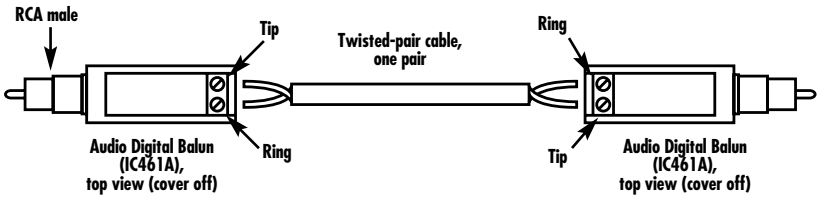


Figure 3-1. Straight-through polarity.

2. The Audio Digital Baluns work in pairs. Plug one balun into the digital audio source's digital audio output (RCA connector).
3. Plug the second balun into the digital audio decoder/amplifier's digital audio output (RCA connector) at the remote end.
4. Connect the two baluns together, using twisted pair cabling, as shown in Figure 3-2.

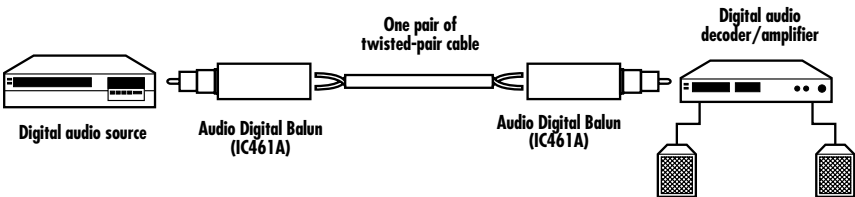


Figure 3-2. Typical installation.

5. Power on the digital audio equipment. Make sure that all audio channels are being received.

4. Troubleshooting

4.1 Potential Problems

Symptom: No audio.

Probable Causes/Solutions:

1. EMI interference. Check that the wiring is not too close to transformers or ballasts.
2. Maximum distance (600 ft. [182.9 m]) is exceeded. Verify the cable length between the two baluns.
3. Split pair. If the UTP pairs are split, correct the problem. Each signal pair must be twisted.
4. Power is off. Check the digital audio equipment's power supplies.

Symptom: Missing channels.

Probable Causes/Solutions: There is a cabling problem between the decoder/amplifier and the audio speakers. Check the audio speaker cabling.

Symptom: Intermittent static noise on one or more channels.

Probable Causes/Solutions: Distance (600 ft. [182.9 m]) exceeded or unusual cable attenuation. Check the cable distance and cable grade.

4.2 Calling Black Box

If you determine that your Audio Digital Balun is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box 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 components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

4.3 Shipping and Packaging

If you need to transport or ship your Audio Digital Balun:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the balun for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.