Frequently Asked Questions

How do I expose the individual pairs in Cat 5 cabling?
There is no single method when exposing the four individual pairs in twisted pair cabling, such as Cat 5 and Cat 6; however, it does help to have a cable stripping tool designed to strip the cable jacket/insulation.

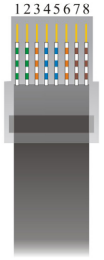
Begin by stripping back the cable's outer jacket/insulation about an inch (or more depending on whether multiple baluns will be connected to the pairs of a single cable) so that the internal wires are exposed. Be careful not to cut the internal wires when stripping the insulation/ jacket. Eight twisted wires and a string should now be visible; the string is unnecessary and may be removed. These eight wires, which when combined form four pairs, connect directly to the baluns. Typical protocol pairs similar colors; the important thing is to verify the same color-coded pairs are used on each end.

How do I crimp an unshielded RJ45 connector onto Cat 5?
Crimping an RJ45 connector onto Cat 5 is a fairly straight forward task, assuming you have the proper tools. Keep in mind that baluns require either the EIA/TIA 568A or 568B crimp pattern, which are the industry standards for networking.

1. First, strip a portion of the insulation about 3/4" to expose the four twisted pairs.
2. Next, untwist the wires and fan them out so that they match either EIA/TIA 568A or 568B pattern.
3. Evenly trim the wires to about 1/2". Most RJ45 crimp tools feature a built-in wire trimmer.
4. Insert the trimmed wires into the RJ45 connector so that each wire is in its individual slot. Verify each wire is completely inserted.
5. Finally, insert the RJ45 connector into the crimp tool and squeeze firmly.
6. Repeat the above steps on the other end of the Cat 5 cable and verify pinout is identical on each end.

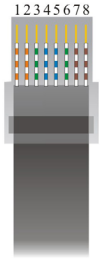
EIA/TIA 568A Crimp Pattern Standard

Pin	Color
1	White/Green
2	Green/White
3	White/Orange
4	Blue/White
5	White/Blue
6	Orange/White
7	White/Brown
8	Brown/White



EIA/TIA 568B Crimp Pattern Standard

Pin	Color
1	White/Orange
2	Orange/White
3	White/Green
4	Blue/White
5	White/Blue
6	Green/White
7	White/Brown
8	Brown/White



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Intelix DIGI-VGA-F VGA and Audio over Cat 5 Balun Set
Installation Manual

The Intelix DIGI-VGA-F balun set transmits high-definition VGA video and high-fidelity analog audio extended distances over inexpensive structured pair cabling, such as Cat 5 and Cat 6. The DIGI-VGA-F balun set includes a DIGI-VGA-S-F send balun, a DIGI-VGA-R-F receive balun, two power supplies, and a USB power cable. The kit is powered on both the send and receive end with either 12 VDC power supplies or optional USB power on the send end. The send balun provides a local audio/video outputs for added versatility, whereas the receive balun features dual amplified audio/video outputs for linking. In addition, the DIGI-VGA-R-F receive balun provides brightness, contrast, and overall picture quality adjustment for skew-free performance over standard Cat 5 cabling.

The Intelix DigiCat Series of baluns is the ideal solution for sending high-performance audio and video signals over structured cabling. **When signal quality matters, choose Intelix.**

Installation

> **Caution:** Do not attempt to disassemble or alter the balun housing. There are no user-serviceable parts inside the DIGI-VGA-F. Modifying the unit will void your warranty.

To install a DIGI-VGA-F balun kit, perform the following steps:

1. Turn off power and disconnect the source and destination equipment by following the device manufacturer's instructions.
2. Make certain that outlets and cross connects to which you will connect the DIGI-VGA-F are configured properly and labeled appropriately to identify the circuit.

> **Caution:** Do not connect the DIGI-VGA-F to a telecommunication outlet wired to unrelated equipment. Making such a connection may damage the equipment and/or balun. Please ensure all wiring is "straight-through."

3. Verify the desired twisted pairs are not being used for other LAN or telephony equipment.
4. Connect the VGA and audio outputs from the source equipment to the DIGI-VGA-S-F send balun. If desired, connect a local monitor and audio outputs.

> **Caution:** Do not mount the balun over equipment ventilation openings. Covering the openings may cause the equipment to overheat.

5. Connect the VGA and audio inputs from the destination equipment to the DIGI-VGA-R-F receive balun.
6. Connect the two baluns with a structured cable with RJ45 connectors, such as Cat 5. Verify the cable's pinout conforms to EIA/TIA 568A or 568B pattern standards.
7. Power on the source and destination equipment and test for correct operation.
8. If required, adjust the brightness and contrast settings on the DIGI-VGA-R-F receive balun.

Specifications

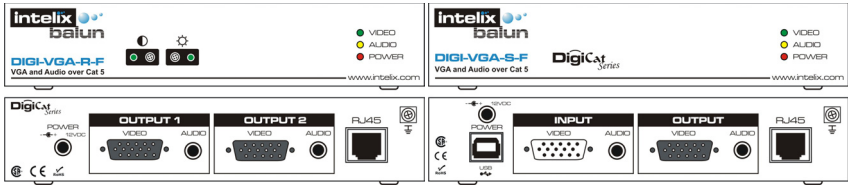
Specifications subject to change without notice.

Maximum Distance*	1920 x 1200 resolution	250 feet
	1600 x 1200 resolution	350 feet
	1280 x 1024 resolution	500 feet
	1024 x 768 resolution	700 feet
	800 x 600 resolution	850 feet
Video Bandwidth	*DIGI-VGA-R-F* receive unit (250 feet): 120 MHz	
	DIGI-VGA-R-F receive unit (850 feet): 50 MHz	
	DIGI-VGA-S-F send unit: 350 MHz	
Input Video Signal	1.2V p-p	
Audio Frequency Response	20 Hz to 20 kHz	
Audio Impedance	600 ohm	
Audio Nominal Level	0-1.0V	
Common Mode Rejection	60 dB	
Unshielded Twisted Pair Cabling Specifications (24 gauge or lower solid copper)	Maximum capacitance: 20 pf/foot Impedance: 100 ohms @ 1 MHz Attenuation: 6.6 dB/1000 ft. @ 1 MHz *Cat 5, Cat 5e, Cat 6, Cat 7 compatible*	
Send Unit Connectors	One male HD15 input, one female HD15 output, one 1/8" mini audio input, one 1/8" mini audio output, one shielded RJ45 output, one USB type-B power connector, one DIN mini power connector	
Receive Unit Connectors	Two female HD15 outputs, two 1/8" mini audio outputs, one shielded RJ45 input, one DIN mini power connector	
Max Units for Linking	3	
Max Distance Between Links	Distance based on resolution	
Temperature	Operating: 32 to 131 F (0 to 55 C) Storage: -4 to 185 F (-20 to 85 C) Humidity: up to 95%	
Power Consumption	*DIGI-VGA-R-F* receive unit: 12V/0.5A or 6W	
	DIGI-VGA-S-F send unit: 12V/0.2A or 2.4W	
Brightness	Front panel trim-pot on DIGI-VGA-R-F receive unit	
Contrast (skew adj.)	Front panel trim-pot on DIGI-VGA-R-F receive unit	
Status	Front panel video, audio, and power LEDs on both the DIGI-VGA-R-F receive and DIGI-VGA-S-F send units	

* Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches. Intelix specifications are based on straight-through cabling with standard-grade Cat 5.

Specifications

Enclosure	Metal
Dimensions	*DIGI-VGA-R-F* receive unit: 6.25" x 1.25" x 3.25"
	DIGI-VGA-S-F send unit: 6.25" x 1.25" x 3.25"
Shipping Weight	*DIGI-VGA-F*: 4.0 lbs.
Ordering Information	*DIGI-VGA-F*: includes one DIGI-VGA-S-F send balun, one DIGI-VGA-R-F receive balun, two DC power supplies, and one USB power cable
	DIGI-VGA-R-F: includes one DIGI-VGA-R-F receive balun and one DC power supply
	DIGI-VGA-S-F: includes one DIGI-VGA-S-F send balun, one DC power supply, and one USB power cable
Warranty	2 years



DIGI-VGA-R-F
Receive Unit

DIGI-VGA-S-F
Send Unit

Troubleshooting

If your equipment malfunctions with DIGI-VGA-F baluns in place, follow the troubleshooting procedures below:

1. Perform diagnostics on your equipment by following the manufacturer's instructions.
2. Check all the connections and the structured cabling system. Verify the RJ45 crimp pattern conforms to either EIA/TIA 568A or 568B standards.
3. Check the pin configuration on the structured cable.
4. The maximum operational distances over which the DIGI-VGA-F balun kit can be transmitted is dependant on the equipment used and cable. Ensure that the maximum recommended operational distances have not been exceeded.
5. Check that only twisted pair patch cords are being used.
6. Replace the DIGI-VGA-F balun kit with another DIGI-VGA-F balun kit that is known to be working.
7. Adjust the brightness and contrast setting on the DIGI-VGA-R-F receive balun.
8. If you still cannot diagnose the problem, contact Intelix for support.