

# Specifications

<b>Environment</b>	VGA, VESA VP&D 1.0, VIP ver 2.0.
<b>Devices</b>	VGA monitors, laptops, multimedia projectors, PCs, flat panels displays
<b>Bandwidth</b>	DC to 60MHz
<b>Input Signals</b>	Video: 1.1Vp-p Horiz & Vert Sync: TTL standard, 300kHz max. bandwidth
<b>Insertion Loss</b>	Less than 3 dB per pair over the frequency range.
<b>Common Mode Rejection (CMMR)</b>	15kHz -60dB max. 100kHz to 10MHz -40dB max. 100MHz -20dB max.
<b>Video Signal Return Loss</b>	-15dB max from DC to 60MHz
<b>Video Differential Gain</b>	+/- 2%
<b>Video Differential Phase</b>	+/- 2%
<b>Connectors</b>	RJ45 shielded Send: DB15 HD Plug & 6" lead (Connects to VGA output of PC) Receive: DB15 HD Receptacle (Connects to VGA input of monitor)
<b>Max. Distance via Cat 5 UTP</b>	640x480 pixels (15MHz) 450ft (137m) 800x600 pixels (30MHz) 350ft (107m) 1024x768 pixels (60MHz) 250ft (76m) 1280x1024 pixels (100MHz) 200ft (61m)
<b>RJ45 Pin Configuration</b> <i>Reverse Polarity Sensitive</i>	R Video (Red) Pin 1 (+) Pin 2 (-) Balanced G Video (Green) Pin 4 (+) Pin 5 (-) Balanced B Video (Blue) Pin 7 (+) Pin 8 (-) Balanced Horiz Sync Pin 3 Vert Sync Pin 6 Horiz. & Vert Sync Return: STP cable: Shield. UTP cable: NC
<b>Cable</b>	<b>Cat 5 shielded twisted pair (STP)</b>
<b>Impedance</b>	Input: RGB 75 ohms (DB15 HD) Unbalanced Output: RGB 100 ohms (RJ45 shielded) Balanced Horizontal and vertical sync: TTL standard
<b>Temperature</b>	Operating: 0 to 55 C. Storage: -20 to 85 C. Humidity: up to 95% non-cond.
<b>Enclosure</b>	ABS fire retardant plastic
<b>Dimensions</b>	2.40" x 2.25" x 1.00"
<b>Mounting</b>	Freestanding. Separate Velcro mounting pad included
<b>Warranty</b>	2 years
<b>Order Information</b>	VGA2, VGA2-PAC

\*Specifications subject to change without notice.



## Intelix LLC

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# Intelix VGA2 VGA Balun

## Quick Installation Guide



### Overview

The Intelix VGA2 Balun allows VGA video signals to be transmitted up to 450ft (132m) via 4-pair Cat 5 twisted pair cable for cost-effective and versatile cabling. The VGA2 eliminates costly and bulky VGA cable, connecting VGA monitors over extended distances from the PC via standard Cat 5 twisted pair cable. The VGA Balun transmits the RGB video, horizontal and vertical synchronization pulses. Since the VGA2 is a passive device and uses only 8 wires, it does not support VGA handshaking/control signals.

**In order to ensure reliable signal continuity between the equipment, shielded twisted pair (STP) cable terminated with shielded RJ45 connectors is required.**

### Applications

The Intelix VGA2 Balun allows pre-existing twisted pair cable to be used in such applications as classroom video distribution, overhead projector systems, PC-training systems, and tradeshow PC-demo systems.

## Installation

To install the VGA2 Balun, perform the following steps:

**Caution:** Do not attempt to open the housing. There are no user-serviceable parts inside the VGA2. Opening the unit will void your warranty.

- In order to ensure reliable signal continuity between the equipment, shielded twisted pair (STP) cable terminated with shielded RJ45 connectors is required.**
- Since the VGA2 does not support VGA handshaking and control signals it is necessary to set the monitor attributes prior to installing the baluns. In order to do this, first connect the standard VGA cable directly from the PC to the monitor and then set the monitor attributes to the required settings (i.e., resolution, color, etc). Also, in order to achieve optimum results via twisted pair, set the contrast and brightness levels to maximum.
- Turn off power and disconnect the PC and VGA display equipment by following the manufacturer's instructions.
- Make certain that modular outlets and cross connects to which you will connect the VGA2 are configured properly and labeled appropriately to identify the circuit.

**Caution:** Do not connect the VGA2 to a telecommunication outlet wired to unrelated equipment. Making such a connection may damage the equipment and/or the balun. Please ensure that all wiring is "straight-through" twisted pair.

5. Verify the desired twisted pairs are not being used for other LAN or telephone equipment.
6. Connect the send balun to the VGA port of the PC or VGA splitter/booster. Tighten the mounting screws on each balun.
7. **Caution:** Do not mount the balun over equipment ventilation openings. Covering the openings may cause the equipment to overheat.
8. Connect a 4-pair Cat 5 cable from the RJ45 8-position modular jack of the VGA2 to the twisted pair cabling of the building.
9. Connect the receive end to the VGA display screen.
10. Connect a 4-pair Cat 5 cable from the RJ45 connector of the VGA2 to the appropriate modular wall outlet. See typical application below.
11. Power on the PC and VGA monitor.
12. Set monitor contrast and brightness to the desired levels.



## Troubleshooting

If your equipment malfunctions with VGA2 Baluns in place, follow the troubleshooting procedures below:

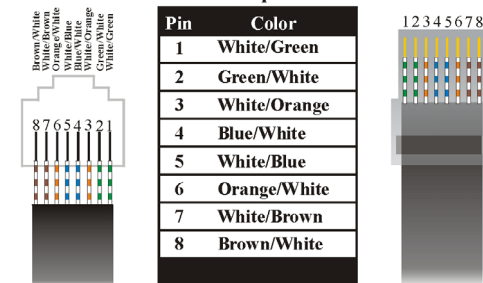
1. Perform diagnostics on your video equipment by following the manufacturer's instructions.
2. Check all the connections and verify the pin configuration. Verify the RJ45 crimp pattern conforms to either EIA/TIA 568A or 568B standards, as shown at right.
3. The maximum distances supported by the VGA Balun are dependent on the type of STP cable and image resolution of the PC's VGA interface. Ensure that the maximum recommended operational distances have not been exceeded.
4. Check that only shielded twisted pair patch cords are being used.

5. Replace the VGA Balun with another VGA2 balun that is known to be working.
6. If you still cannot diagnose the problem, visit [www.intelx.com](http://www.intelx.com) or call Intelix directly at 608-831-0880 to find a qualified distributor.

## Application Tips

1. **For proper operation, the VGA source and VGA display must share a common ground. When the signal ground between the VGA source and VGA display is not common, then Category 5 shielded twisted pair cable and shielded RJ45 connectors must be used.**
2. The VGA2 does not support the VGA handshaking and control signals as required by certain video monitors. Before installing the VGA2 Baluns, connect the standard VGA cable between the VGA source and destination and set the monitor to the desired attributes. Then install the VGA2 and the twisted pair cable.
3. For optimum results and maximum distance performance, first set the brightness and contrast levels on the monitor to the maximum settings. Then install the VGA2 and the monitor in its final location. After the monitor is installed in its final location, adjust the brightness and contrast to the desired levels.
4. If the video image is not present or is poorly synchronized, there may be a grounding problem or a high level of noise on the line. To correct the problem, verify ground continuity on the transmitting and receiving ends of the units or use shielded twisted pair (STP) cable between the VGA Baluns.

EIA/TIA 568A Crimp Pattern Standard



EIA/TIA 568B Crimp Pattern Standard

