



~Introduction~

Thank you for buying this GEM product.

This VGA Balun offers an ideal link between data output equipment and VGA monitors using 4-pair Category 5 shielded cabling, eliminating the cost and clutter associated with heavier VGA cables. With this VGA Balun at both the transmission BLN-VGAPCS and receiving BLN-VGAMS ends of your setup you can enjoy an impressive transmission distance of up to 137 m (450 ft.) and a clear 640 X 480 pixel resolution. Designed for use with computers, LCD monitors and multimedia projectors, this VGA Balun is perfect for classrooms, public presentations and video information systems.

Shielded cable & connector must be used for this VGA balun.

~Installation~

[Step 1] Set Monitor Attribute

Since the VGA 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 set the monitor attributes to the required settings (i.e. resolution, color, etc). In order to achieve optimum results via twisted pair, set the contrast and brightness levels to maximum.

[Step 2] Cable Preparation

Run the shielded CAT5 cable between your video source (PC or laptop) and the output unit (monitor or projector) with proper length. Assemble the shielded RJ45 plug on CAT5 cable. Please refer to the following diagram (fig. 1) of standard connection order carefully. Mistakes are easy to make at this point. Please make sure that the cores slide into the RJ45 plug with correct order and all cores go to the end of the plug before crimping. The crimp tool will press the brass pins in to the individual cores and lock the plug on to the cable.

[Step 3] Connect VGA Balun to Your System

Connect the BLN-VGAPCS on the video source (PC) end with the prepared CAT5 STP cable. Connect the BLN-VGAMS on the display unit end (monitor or projector) with the prepared CAT5 STP cable.

[Step 4] Adjust the Display

Power on the PC & display monitor to set the brightness & contrast to the desired level.

~Important Notice for Installation~

1. The fig. 2 shows the connection order for standard CAT5 cable with RJ45 plug.
2. Strip the cable with proper length (10mm) will make the connection stronger and the CAT5 cable will be locked by the RJ45 plug.
3. In order to ensure reliable signal continuity between the equipment, shielded twisted pair (STP) cable terminated with shielded RJ45 connector is required.

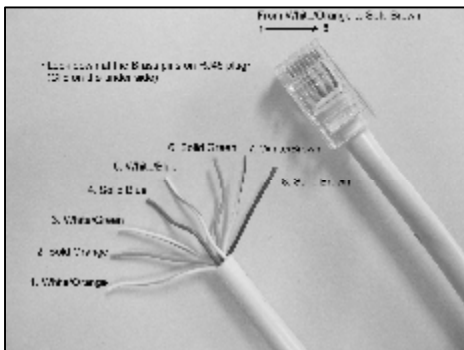


fig. 1

Looking down at the brass pins on the RJ45 plug
From Left to Right:

Pin	Color of Core
1 (Left)	White/Orange
2	Solid Orange
3	White/Green
4	Solid Blue
5	White/Blue
6	Solid Green
7	White/Brown
8 (Right)	Solid Brown

fig. 2



~Trouble Shooting~

If your equipment malfunctions with VGA baluns in place, follow the 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 the standard, as shown.
3. The maximum distances supported by VGA balun depend 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.

Specification:

Environment	Component Video (YPbPr), RGB Video (sync on green). 480i/p, 720p, 1080i/p.	
Devices	DVD players, satellite receivers, plasma displays, projectors, monitors, up-converters, amplifiers, switchers, home theatre and other equipment supporting HDTV component video and/or digital audio (Dolby Digital™ dts™).	
Bandwidth	DC to 60MHz	
Video Differential Gain	+/- 2%	
Video Differential Phase	+/- 2%	
Impedance	Input: RGB 75 ohms (DB15 HD) Unbalanced Output: RGB 100 ohms (RJ45 shielded) Balanced Horizontal and vertical sync: TTL standard	
Insertion loss	Less than 3 dB per pair over the frequency range.	
Video Signal Return loss	-15dB max from DC to 60MHz	
Common mode rejection (CMMR)	15kHz -60dB max. 100kHz to 10MHz -40dB max. 100MHz -20dB max.	
Connectors	RJ45 shielded BLN-VGAPCS: DB15 HD Plug (Connects to VGA output of PC), 6" lead BLN-VGAMS: DB15 HD Receptacle (Connects to VGA monitor input)	
Cable	Cat 5 shielded twisted pair (STP) is recommended	
Max. distance Cat 5 Twisted Pair	VGA: 640x480 pixels (15MHz) 450ft (137m) SVGA: 800x600 pixels (30MHz) 350ft (107m) XGA: 1024x768 pixels (60MHz) 250ft (76m) SXGA: 1280x1024 pixels (100MHz) 200ft (61m)	
RJ45 Pin Configuration Reverse Polarity Sensitive	R Video (Red) Pin 1 (+) G Video (Green) Pin 4 (+) B Video (Blue) Pin 7 (+) Horizontal Sync Pin 3	Pin 2 (-) Balanced Pin 5 (-) Balanced Pin 8 (-) Balanced Vertical Sync Pin 6
Environment required	Operating: 0 to 55°C. Storage:-20 to 85°C. Humidity: up to 95% non-cond.	

~Limited Lifetime Warranty~

Gem Electronics warrants that this product is to be free from defect in materials and workmanship, for the life of the product. The warranty given by Gem is in lieu of any other warranties, express or implied. This warranty does not apply to units abused through misuse or subjected to improper and/or excessive voltage, beyond our control. Gem assumes no responsibility for damages or penalties incurred resulting from the use of this product. Gem's liability under any warranties shall be discharged by replacing or repairing, at our option, the defective product. Gem's liability for any product shall not exceed a refund of the purchase price. The warranty listed here is intended only as a summary of your full and complete warranty. For a full and complete warranty of this product contact Gem Electronics.