BINARY

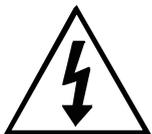| Owner's Manual	Binary™ VGA Extender over Single Cat-5

B-220-1CAT-VGA-A

1. Important Safety Instructions

Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

1. Read and follow all instructions and warnings in this manual. Keep for future reference.
2. Do not use this apparatus near water.
3. Clean only with a dry cloth.
4. Do not block any ventilation openings. Install according to manufacturer's instructions.
5. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
6. Do not override the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades - one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
7. Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where it exits from the apparatus.
8. Only use attachments/accessories specified by the manufacturer.
9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
10. DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.
11. TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.
12. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

⚠ CAUTION ⚡

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK.

DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equivalent triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Introduction

The B-220-1CAT-VGA-A extends VGA video with analog and digital audio signals over a single Cat5e cable up to 1000 feet with built-in equalization, signal gain control, and RGB delay control. The unit also support local audio/video out.

Thank you for purchasing the B-220-1CAT-VGA-A, and welcome to Binary™; one of the most highly regarded brands available today. This product is engineered to provide years of exceptional reliability. We appreciate your business and we stand committed to providing our customers with the highest degree of quality and service in the industry.

2. Contents

- (1) Transmitter
- (1) Receiver
- (2) 5V power adapters
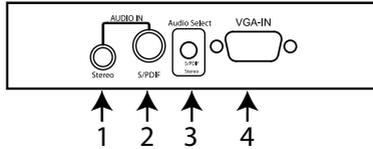- (4) Metal mounting screws
- (8) Rubber feet
- (1) Manual

3. Features

- VGA video and digital audio transmission with RGB Delay Control up to 1000 feet
- Built-in equalization
- Signal gain control
- Local audio/video output
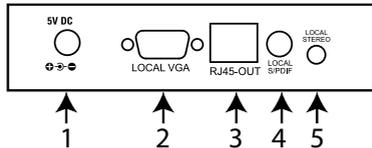
4. Installation Steps

4.1 Transmitter

4.1.1 Front Panel

1. **Stereo Audio In**

   Connect a stereo cable from the source to transmit signal

2. **S/PDIF Audio In**

   Connect a S/PDIF audio cable from the source to transmit signal

3. **Audio Select**

   Select between S/PDIF or stero Audio In

4. **VGA-IN**

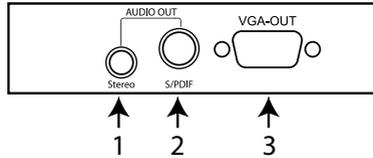   Connect a VGA input from a video source

4.1.2 Rear Panel

1. **+5V DC**

   Inter-locked power jack to connect to 5V DC power supply unit (included)

2. **Local VGA**

   VGA loop-out to a local VGA display or component video display via a VGA-component breakout cable

3. **RJ45-Out**

   Plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the receiving unit of the B-220-1CAT-VGA-A

4. **Local Stereo Audio Out**

   Loop out for stereo audio to a local audio receiver or display

5. **Local S/PDIF Audio Out**

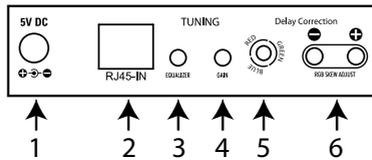   Loop out for S/PDIF audio to a local audio receiver or display

4.2 Receiver

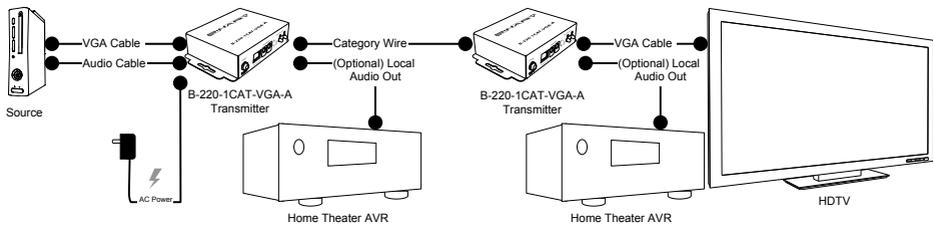#### 4.2.1 Front Panel

1. **Stereo Audio Out**

   Output stereo audio from the source

2. **S/PDIF Audio Out**

   Output S/PDIF audio from the source

3. **VGA OUT**

   Connect the VGA output to a video display

4.2.2 Rear Panel

1. **+5V DC power jack**

   Connect to the provided 5V DC power supply unit (included)

2. **RJ45-IN**

   Plug in a Cat-5/5e/6 cable here to be linked to RJ45-OUT of the transmitting unit of the B-220-1CAT-VGA-A

3. **Equalizer**

   Rotary control for signal equalization, ex. equalizing the waveform of video signal, to the chosen RGB channel

4. **Gain**

   Rotary control for gain control, ex. adjusting the amplitude of video signal, to the chosen RGB channel

5. **RGB Selector**

   For selecting the respective R/G/B color channel for de-skew correction of VGA/component signal

6. **RGB Skew Adjust "—"**

   Push-button adjustment to decrease delay control on respective R/G/B color channel that is chosen by the RGB selector (set in 2-nanosecond increments)

7. **RGB Skew Adjust "+"**

   Push-button adjustment to increase delay control on respective R/G/B color channel that is chosen by the RGB selector (set in 2-nanosecond increments)

5. Installation Steps

1. Connect the VGA source device to the transmitting unit of the B-220-1CAT-VGA-A. If connecting to a component video source, use a VGA-component breakout cable and link it between the video source and the transmitting unit of the B-220-1CAT-VGA-A.

2. If using stereo or S/PDIF audio, ensure that the toggle button is set correctly. Connect the stereo or S/PDIF audio cable to the input of the transmitter.

3. Connect the VGA display to the receiving unit of the B-220-1CAT-VGA-A. If connecting to a component video display, use a VGA-component breakout cable and link it between the video display and the receiving unit of the B-220-1CAT-VGA-A.

4. If audio is transmitted, connect an audio cable from the stereo or S/PDIF audio outputs of the receiving unit to the audio receiver or display.

5. Connect a Cat-5/5e/6 cable between the transmitting and receiving units, make sure it is properly connected and terminated to TIA-568B.

6. Plug in a 5V DC power supply unit to the power jack of the receiving unit of the B-220-1CAT-VGA-A. Plug in the other 5V DC power supply into the transmitting unit.

7. If the monitor is displaying blurred video or not displaying at all, adjust the EQ and Gain rotary controls to improve the picture. Use the GAIN rotary control to adjust the gain to an appropriate level for a range of input signal levels (brightness), and the EQ rotary control to equalize the wave form of the receiving video signal (sharpness). Begin with adjusting the EQ to get the input video displayed first, and then adjust the GAIN according to the video you see on the screen.

8. RGB delay control [De-skew] offers the flexible functionality to allow skew compensation in arrival time among the red, green, and blue color channels of the VGA signal due to long distance transmission or via low quality cable. Dial the rotary arrow to choose the RED, GREEN, or BLUE color channel, then use the push-in buttons to increase or decrease the delay correction for the selected channel. There are 31 steps in total. Each step represents a 2-nanosecond time difference for adjusting the delay between each color individually. Adjust RGB selector back and forth until the optimal visual quality is reached.
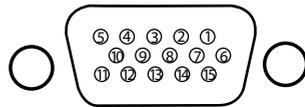
6. Pinout Configuration

Please visit our website for the latest tips, best practices & more information about the B-220-1CAT-VGA-A. If other wires need to be utilized for a component breakout cable or other applications, use the chart below for proper pinout configuration.

Pair of Cat-5/5e/6 Cable	Associated Definition
Blue	RED Channel of VGA
Orange	GREEN Channel of VGA
Brown	BLUE Channel of VGA

*Green pair n/a

Pin 1	RED	Red Video
Pin 2	GREEN	Green Video
Pin 3	BLUE	Blue Video
Pin 4	N/C	Not Connected
Pin 5	GND	Ground (HSync)
Pin 6	RED_RTN	Red Return
Pin 7	GREEN_RTN	Green Return
Pin 8	BLUE_RTN	Blue Return
Pin 9	SENSE	+5V DC from gfx adapter
Pin 10	GND	Ground (Vvsync, DDC)
Pin 11	N/C	Monitor ID
Pin 12	SDA	PC Data
Pin 13	HSync	Horizontal Sync
Pin 14	VSync	Vertical Sync
Pin 15	SCL	PC Clock

7. Specifications

Technical	
Transmission Distance	1000 Feet (330 m) (Cat5e)
Video Support	VESA
Video Bandwidth	350 MHz
Video Transmission	Up to WUXGA, 1920 x 1200, 60 Hz & Supports 720p component signal
Adjustable Equalization & Gain Control	Yes
Equalization Type	Analog
RGB Delay Control (De-Skew)	Yes
ESD Protection	Human Body (air gap): 19kV Human Body (contact): 12kV Internal Chipset: 8kV
Connections	
Audio Support	Digital Stereo and S/PDIF
RJ 45 Termination	EIA/TIA-568-B termination (T568B)
Tabeletop & Wall Mounting	Yes
Locking Power Jack	Yes
Mechanical	
Unit Dimensions (metal box without mounting tabs)	92mm (3.6") x 153mm (6") x 25mm (1")
Weight (stand alone box)	2.8
Power Supply	5V DC 2A
Power Consumption	5 Watts

8. Warranty

2-Year Limited Warranty
This Binary™ Product has a Two-Year Limited Warranty. This warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products which have been abused, modified or disassembled. Products to be repaired under this warranty must be returned to SnapAV or a designated service center with prior notification and an assigned return authorization number (RA).

9. Contacting Technical Support

Phone: (866) 838-5052
Email: Techsupport@snapav.com

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