



AV Connectivity, Distribution And Beyond...

VIDEO WALLS VIDEO PROCESSORS
VIDEO MATRIX SWITCHES
EXTENDERS SPLITTERS WIRELESS
CABLES & ACCESSORIES

VGA / Audio Extender Single CAT5 / CAT6 with RGB Delay Control & EQ



Model #: VGA-C5A-R

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Product Application & Market Sectors



Corporate



House Of Worship



Military



Residential



Education



Industrial



Medical



Aviation



TABLE OF CONTENTS

1.	GETTING STARTED	1
1.1	IMPORTANT SAFEGUARDS.....	1
1.2	SAFETY INSTRUCTIONS	1
1.3	REGULATORY NOTICES FEDERAL COMMUNICATIONS COMMISSION (FCC)	2
2.	INTRODUCTION	3
2.1	PACKAGE CONTENTS	3
2.2	BEFORE INSTALLATION	4
2.3	PANEL DESCRIPTION	5
2.3.1	INPUT PANEL (Receiver, VGA-C5A-R).....	5
2.3.2	OUTPUT PANEL (Receiver, VGA-C5A-R)	5
3.	INSTALLATION	6
4.	GENERAL TROUBLESHOOTING.....	6
5.	SPECIFICATIONS	7



SECTION I: GETTING STARTED

I.1 IMPORTANT SAFEGUARDS

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
- Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
- Repair or attempted repair by anyone not authorized by us.
- Any damage of the product due to shipment.
- Removal or installation of the product.
- Causes external to the product, such as electric power fluctuation or failure.
- Use of supplies or parts not meeting our specifications.
- Normal wear and tear.
- Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

I.2 SAFETY INSTRUCTIONS

The Avenview VGA-C5A-R, VGA and Audio Extender over Single CAT5/CAT6 with RGB Delay Control has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the VGA-C5A-SET should be used with care. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.





- ⚠ Do not dismantle the housing or modify the module.
- ⚠ Dismantling the housing or modifying the module may result in electrical shock or burn.
- ⚠ Refer all servicing to qualified service personnel.
- ⚠ Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards
- ⚠ Keep the module away from liquids.
- ⚠ Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- ⚠ Have the module checked by a qualified service engineer before using it again.
- ⚠ Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



1.3 REGULATORY NOTICES FEDERAL COMMUNICATIONS COMMISSION (FCC)

This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

Warning symbols	Description
	ONLY USE THE PROVIDED POWER CABLE OR POWER ADAPTER SUPPLIED. DO NOT TAMPER WITH THE ELECTRICAL PARTS. THIS MAY RESULT IN ELECTRICAL SHOCK OR BURN.
	DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.
	THE VIDEO BOARDS ARE VERY SENSITIVE TO STATIC. PLEASE ENSURE IF RACK MOUNTED OR INSTALLED ON A SURFACE, IT SHOULD BE IN A GROUNDED ENVIROMENT.
	⚠ WARNING Read & understand user guide before using this device. Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.


2. INTRODUCTION

With only one cost effective CAT-5e cable, the Avenview VGA-C5A-R lets you extend VGA (WUXGA) to cover the distance up to 300m (1,000ft). With built-in EQ and GAIN control, the transmission path can be adjusted to adapt the cable quality and video bandwidth. Furthermore, the VGA RGB delay control [de-skew] function provides the compensation among R, G, B signals due to long transmission or through normal LAN cable. Analog stereo audio signals can be sent along with high quality VGA signal over long distance LAN cable. Compatible with the VGA-C5-SP8

- Supports up to WUXGA (1920x1200@60) to 300m (1,000ft)
- Supports Analog Stereo Audio and S/PDIF Digital Audio
- Adjustable equalization and gain control on Receiver unit
- De-skew compensation available for RGB delay control
- Wall mounting case for better fixedness

2.1 PACKAGE CONTENTS

Before you start the installation of the converter, please check the package contents.

1	VGA-C5A-R	X 1	
2	POWER ADAPTER (+5VDC)	X 1	
3	USER'S MANUAL	X 1	

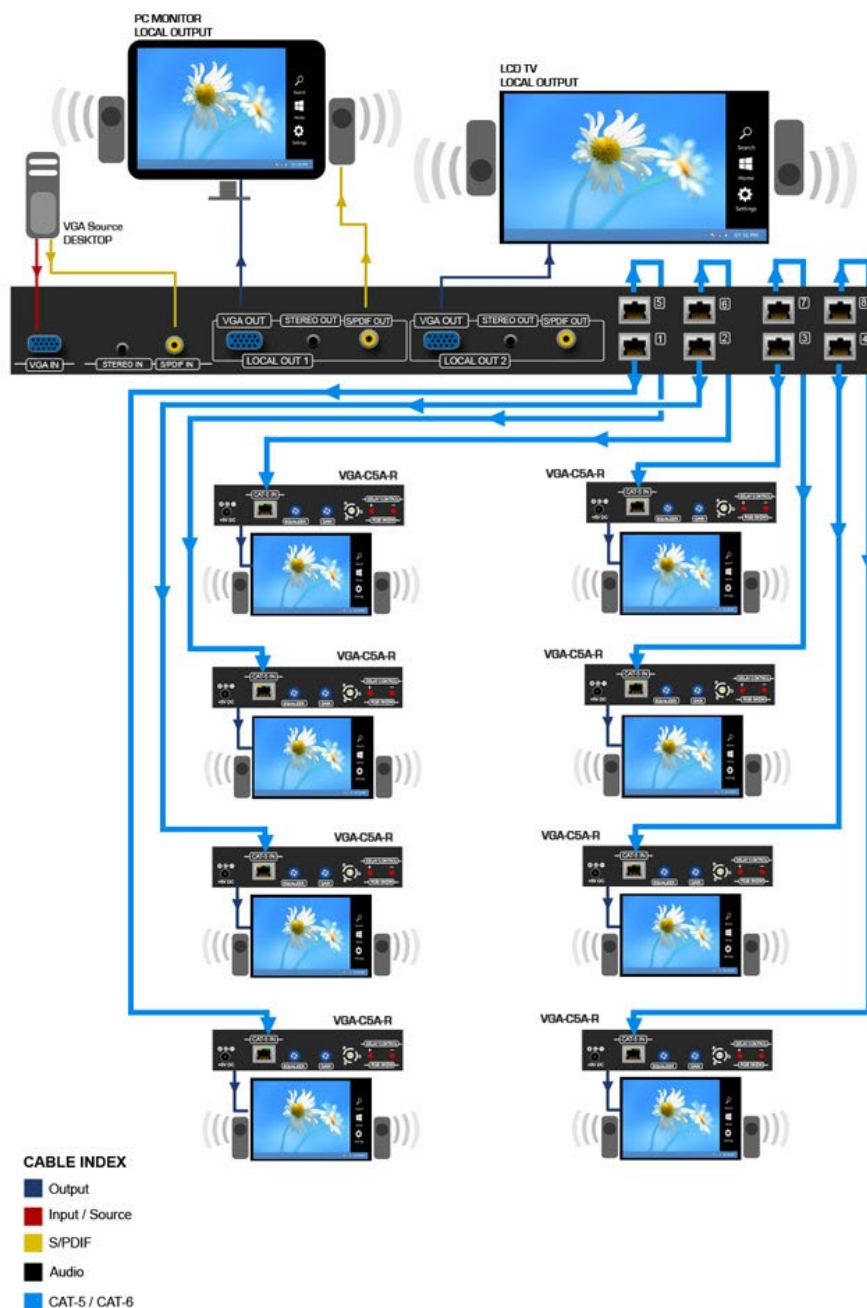


2.2 BEFORE INSTALLATION

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don't place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull the ends of the UTP cable. It can cause malfunction.

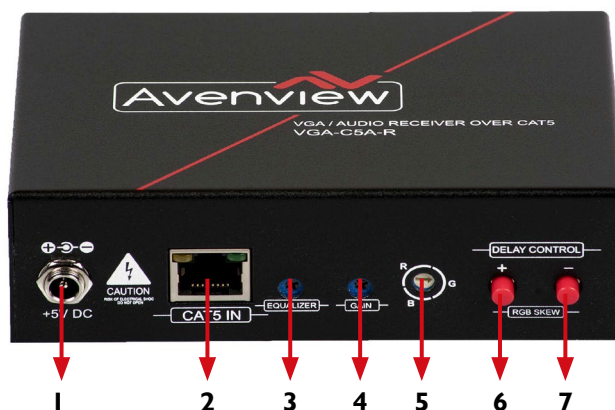
VGA-C5-SP8

720p = 330m (1083 feet) CAT5E
 UXGA(1600X1200@60) = 300m (1000 feet) CAT6
 1080p60(WUXGA1920X1200@60) = 300m (1000 feet) CAT5E
 1080p60(WUXGA1920X1200@60) = 310m (1015 feet) CAT6



2.3 PANEL DESCRIPTION

2.3.1 INPUT PANEL (Receiver, VGA-C5A-R)



1. 5V 2A DC Power Connector	2. RJ45 IN for CAT5 cable
3. EQ: Rotary Control for equalization of R, G, B respectively	4. GAIN: Rotary control for Gain Control of R, G, B respectively
5. Rotary Control: R=0~2, G=3~5, B=6~7 for de-skew compensation on respective color channel	6. Push button to increase level of de-skew compensation
7. Push button to decrease level of de-skew compensation	

2.3.2 OUTPUT PANEL (Receiver, VGA-C5A-R)



1. Audio OUT	2. S/PDIF OUT
3. VGA OUT	



3. INSTALLATION

1. Connect VGA and audio source to Transmitter (VGA-C5-SP8)
2. Connect VGA display and speakers to Receiver (VGA-C5A-R)
3. Connect CAT5/CAT6 cable between Transmitter (VGA-C5-SP8) and Receiver (VGA-C5A-R)
4. Ensure that cables are tightly connected
5. Plug in 5V 2ADC power adapter to the power jack of the Receiver VGA-C5A-R.
6. Plug in 5V 4ADC power adapter to the power jack of the Transmitter VGA-C5-SP8.

4. GENERAL TROUBLESHOOTING

Problem	Possible Solution
NO IMAGE	<ul style="list-style-type: none">• Check if connection to the source and the display are correct.• Ensure that display device supports the resolution that is being output.
Common Video Problems	
GHOSTING	<ul style="list-style-type: none">• This product supports up to WUXGA (1920x1200) resolution.• Check the VGA and CAT5 connection• If outputting from a PC. Check the maximum resolution range of the graphics card.
NOISE	<ul style="list-style-type: none">• Adjust Skew + - (#6,7)for Horizontal Synchronization
COLOR MISMATCH	<ul style="list-style-type: none">• Adjust the Gain(#4) or Color Channels RGB(#5)
SMEARING OF VIDEO	<ul style="list-style-type: none">• Adjust the EQ (#3 see Section 3)

Gain rotary controls - are designed for gain control.

EQ rotary controls - are designed for equalizing the wave form of the receiving video signal.

RGB Delay Control [de-skew] - offers the flexible functionality to allow skew compensation among VGA RGB signals due to long transmission or thru low quality cable.

NOTE: It is suggested to begin with adjusting the rotary control of EQ to get the input video displayed first, and then the gain according to the video you see on the screen.

When adjusting the rotary switch first choose R, G or B color channel, second use the push buttons to increase or decrease the delay in the corresponding color channel. There are totally 31 steps, each step with 2nanoseconds (ns) difference, for adjusting the delay between each color individually. Then the graphics quality can be further assured.



5. SPECIFICATIONS

ITEM	DESCRIPTION	
UNITS		VGA-C5A-R
UNIT DESCRIPTION		VGA Receiver with RGB Delay Control
VIDEO BANDWIDTH	350MHz	
VIDEO SUPPORT	VESA	
SUPPORTED RESOLUTIONS	Up to WUXGA (1920 x 1200)	
RESOLUTION AND DISTANCE	WUXGA 1920x 1200 at 300 meters (1000 feet)	
AUDIO SUPPORT	Stereo	
EQUALIZATION	Continuous Analog Control	
INPUT VIDEO SIGNAL	1.2 Volts (peak-to-peak)	
RGB DELAY CONTROL	-	Yes
ESD PROTECTION	- Human body — $\pm 19\text{kV}$ (air-gap discharge) & $\pm 12\text{kV}$ (contact discharge) - Core chipset — $\pm 8\text{kV}$	
INPUT		1 x RJ45
OUTPUT		1 x VGA 1 x 3.5mm + 1 x RCA
VGA CONNECTOR	HD-15 (15 pin D-sub Female)	
RJ45 CONNECTOR	WE/SS 8P8C with 2 LED indicators	
3.5MM AUDIO CONNECTOR	Earphone jack for Analog Stereo Audio or IR Cable	
RCA CONNECTOR	S/PDIF Digital Audio	
DIMENSIONS (L X W X H)	4.8" x 3.7" x 1"	
POWER SUPPLY	5V 2A DC	
POWER CONSUMPTION	5 Watt (max)	

Environmental

OPERATING TEMPERATURE	32° ~ 104°F (0° to 40°C)
STORAGE TEMPERATURE	-4° ~ 140°F (-20° ~ 60°C)
RELATIVE HUMIDITY	20~90% RH (no condensation)



Notice

1. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.









3. The transmission length is largely affected by the type of category cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m or 1000ft bulk cable) can transmit a lot longer signals than stranded UTP cables (usually in the form of patch cords). Shielded STP cables are better suit than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid cables are your only choice.

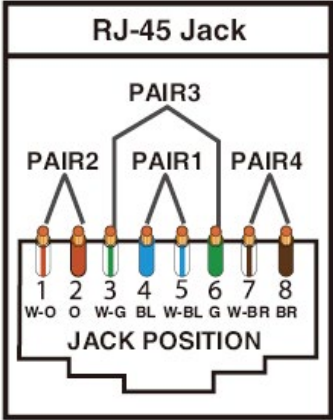
4. EIA/TIA-568-B termination (T568B) for category cables is recommended for better performance.

5. To reduce the interference among the unshielded twisted pairs of wires in category cable, you can use shielded STP cables to improve EMI problems.

6. The quality of UTP/STP cables can affect the transmission distance.

7. The video quality is subject to the resolution of the source, also the connected display should be compatible with the resolution of the source

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	 W-O	TX0-
2	 O	TX0+
3	 W-G	TX1-
4	 BL	TX2-
5	 W-BL	TX2+
6	 G	TX1+
7	 W-BR	TXC-
8	 BR	TXC+



PERFORMANCE GUIDE FOR HDMI OVER CATEGORY CABLE TRANSMISSION

PERFORMANCE RATING		TYPE OF CATEGORY CABLE		
WIRING	SHIELDING	CAT5	CAT5E	CAT6
SOLID	UNSHIELDED (UTP)	★★★	★★★★	★★★★★
	SHIELDED (STP)	★★★	★★★★	★★★★★
STRANDED	UNSHIELDED (UTP)	★	★★	★★
	SHIELDED (STP)	★	★	★★
TERMINATION		PLEASE USE EIA/TIA-568-B TERMINATION (T568B) AT ANY TIME		





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