



# **EVA Series VGA Video and Audio Extender**

Quick Reference  
&  
Setup Guide



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# 1. Specifications

<b>Cable Required:</b>	Category 5, 5e, 6 twisted pair (UTP)
<b>Maximum Distance/ Maximum Resolution</b>	EVA500RXK 1920x1080 to 500 ft (110m)  EVA500RX 1920x1080 to 360 ft (110m) 1280x1024 to 500 ft (152m)  EVA360RX 1280x1024 to 360 ft (110m)
<b>Video Support:</b>	RGBHV
<b>Audio Support:</b>	Line Level Stereo
<b>Connectors:</b>	EVATX2: (2) DB15 , (2) RJ-45, (2) 3.5mm, (1) power EVATX4: (2) DB15 , (4) RJ-45, (2) 3.5mm, (1) power EVA360RX: (1) DB15 , (1) RJ-45, (1) 3.5mm, (1) power EVA500RX: (1) DB15 , (2) RJ-45, (1) 3.5mm, (1) power EVA500RXK: (1) DB15 , (2) RJ-45, (1) 3.5mm, (1) power (1) RCA audio, (1) optical audio
<b>Temperature Tolerance:</b>	Operating: 32 to 104°F (0 to 40°C); Storage: -4 to +140°F (-20 to +60°C)
<b>Humidity Tolerance:</b>	Up to 80% noncondensing
<b>Enclosure:</b>	Metal
<b>Size:</b>	EVATX2: 0.94"H x 4.81"W x 3.19"D (2.4 x 12.2 x 8.1 cm) EVATX4: 0.94"H x 4.81"W x 3.19"D (2.4 x 12.2 x 8.1 cm) EVA360RX: 0.94"H x 3.38"W x 3.19"D (2.4 x 8.6 x 8.1 cm) EVA500RX: 0.94"H x 3.38"W x 3.19"D (2.4 x 8.6 x 8.1 cm) EVA500RXK: 0.94"H x 4.81"W x 3.19"D (2.4 x 12.2 x 8.1 cm) (mounting tab included in above dimensions)
<b>Weight:</b>	EVATX2: 0.6 lb. (0.27 kg) - each unit EVATX4: 0.6 lb. (0.27 kg) - each unit EVA360RX: 0.5 lb. (0.23 kg) - each unit EVA500RX: 0.5 lb. (0.23 kg) - each unit EVA500RXK: 0.7 lb. (0.32 kg) - each unit
<b>Power:</b>	5 VDC (all units)

## 2. Introduction

### 2.1 Overview

The Cyan VGA Video extenders extend VGA video signals over Category 5/5e/6 cable.

### **WARNING**

*This equipment is not intended for, nor does it support, distribution through an Ethernet network. Do not connect these devices to any sort of networking or telecommunications equipment!*

### 2.2 Equipment You May Also Need

- DB15M-M video cables

### 2.3 Compatible Cabling

Cyan extender products are compatible with Cat5/5e/6 data cabling.

CAT5/5e/6 cabling for the Cyan series must be pinned to the TIA-EIA T568B wiring specification (see appendix A). We also highly recommend that all CAT5/5e/6 cables be pre-terminated and tested. Cables terminated on-site or in an existing infrastructure should be tested before use to ensure compliance with the TIA-EIA T568B specification. Using incorrectly terminated CAT5/5e/6 cables can damage the units.

CAT6 cable, due to the manufacture method, can exhibit much greater skew than standard CAT5/5e and may require skew compensation beyond what the standard product offers. Please contact Magenta Research for assistance.

## 3. Setup and Installation

### 3.1 Making the Connections

#### 3.1.1 CONNECTIONS AND SETUP IN GENERAL

This section contains figures showing connections with the specific Cyan Extenders. In general the connection and setup procedure at both transmitter and receiver ends is as follows:

*At the transmitter end:*

1. Connect the source video to the Cyan Extender Video In port.
2. Connect a Local display to the Local Out port
3. Connect the CAT5/5e/6 cables to the UTP connection.
4. Connect power supply

*At the receiver end :*

1. Connect the display to the Cyan Extender Video Out port.
2. Connect the CAT5/5e/6 cables to the UTP connection.
3. Turn EQ knob and Gain knob for best picture quality.
4. If using the EVA500RXK receiver, check the skew settings as per Section 3.3.
5. See also DDC/EDID section if there are image resolution issues.

#### 3.1.2 CONNECTIONS ON THE CYAN VIDEO EXTENDER:

The following figures show the Cyan EVA series connections.

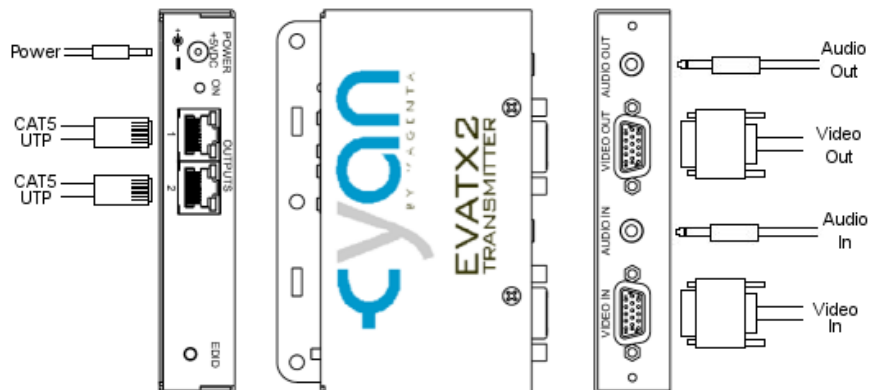


Figure 3-1. Connections on the Cyan EVA TX2 2 port Transmitter

### 3. Setup and Installation

#### 3.1 Continued

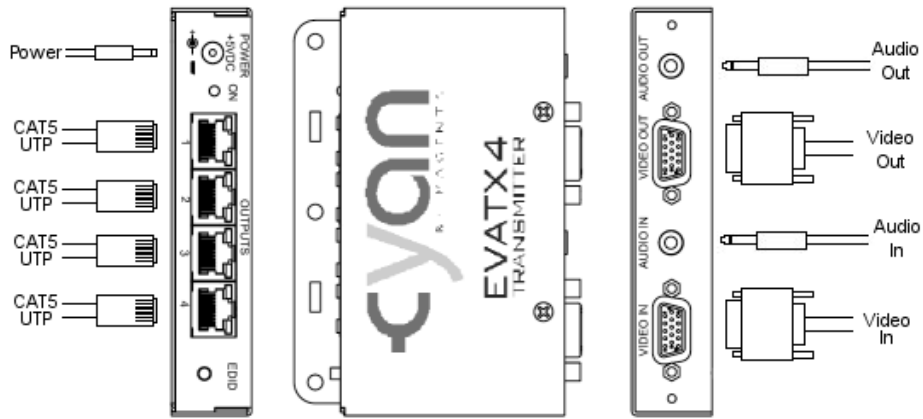


Figure 3-2. Connections on the Cyan EVA TX4 4 port Transmitter

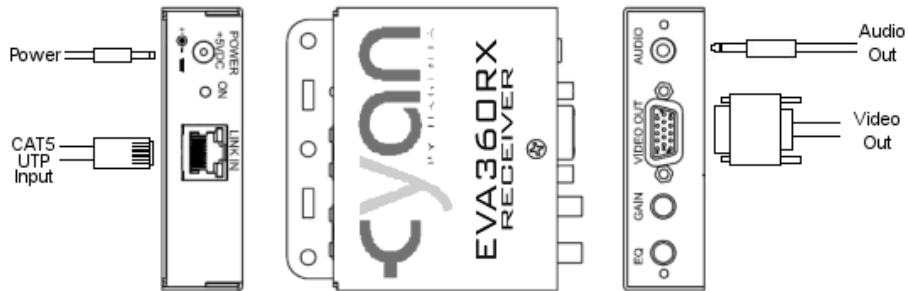


Figure 3-3. Connections on the Cyan EVA360RX daisy chain Receiver.

### 3. Setup and Installation

#### 3.1 Continued

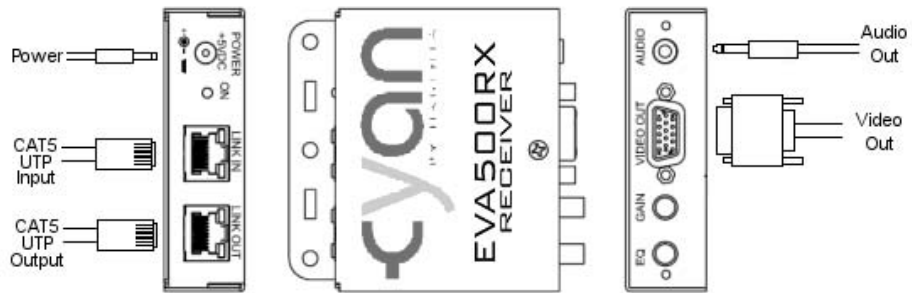


Figure 3-4. Connections on the Cyan EVA500RX daisy chain Receiver.

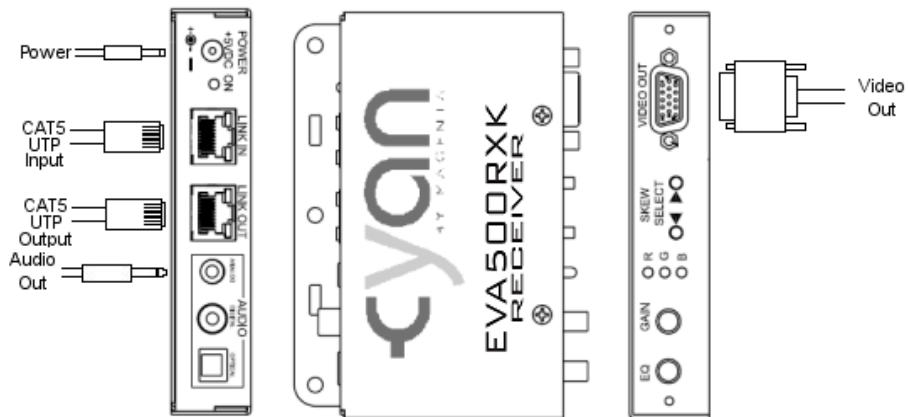


Figure 3-5. Connections on the Cyan EVA500RXK daisy chain Receiver with skew compensation. Note that all Audio connectors are active simultaneously.

## 3. Setup and Installation

### 3.2 EVA500RXK receiver Skew Compensation settings

The EVA500RXK receiver features integrated skew compensation to adjust for signal timing differences due to differing pair lengths within the CAT5 cable. Using the delay signals, skew may be compensated from 2 to 65 nanoseconds in 2 nanosecond increments on each individual color pair.

An Image Adjustment Utility is available for download from:

[http:// www.magenta-research.com/test](http://www.magenta-research.com/test)

Simply open in any image browser on a computer.

See Figure 3-8 for an example.

1. To adjust individual colors, press the Skew Select buttons simultaneously until the desired color LED is on for the R/G/B LED's. Use the individual Skew Select buttons to increment and decrement the skew settings per color channel. To change the color channel, press both Skew Select buttons at simultaneously.
2. Using the image utility, press buttons to add/subtract delay timing until a single vertically aligned line of red, green, blue is obtained.
3. When complete simply wait until all RGB LED's are off.

Not all colors will have the same delay settings.

#### Cable Skew Compensation Setting Utility

Adjust skew equalizer to align Red, Green and Blue lines so they are stacked one on top of the other. Next, check white and black lines. Make fine adjustments until there is a minimum of color fringing.

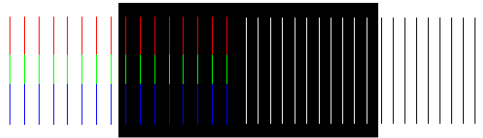


Figure 3-6: Image Adjustment Utility—Skew

## 4. Troubleshooting

### 4.1 Common Problems

In most cases, nearly every issue with the Cyan Extenders can be resolved by checking the CAT5/5e/6 termination and making sure that it's pinned to the T568B wiring specification. However, there may be other problems that cause the system to not perform as it's designed. Below are solutions to the most common installation errors. There are no internal settings or jumpers that can be set. There are no user serviceable parts inside.

**Problem:** No video signal at the receiver.

**Solution:**

- Check that both units are powered.
- **Ensure Cable Length Compensation EQ and Gain are set correctly.**
- Make sure the CAT5 cable is terminated correctly per the 568B wiring specification.
- Is the display device powered on and functioning?

**Problem:** Poor video quality.

**Solution:**

- Check all cable connections.
- **Ensure Cable Length Compensation EQ and Gain are set correctly.**
- The video signal's refresh rate may be set too high for the display. Reset to a lower refresh rate in your monitor configuration menu.
- There may be a delay skew issue. See Section on Skew. Applies To EVA500RXK receiver only.

**Problem:** Poor audio quality:

**Solution:**

- Powered speakers are required. Make sure speaker power is ON.
- Check input source levels from the source device. Make sure the audio source is not overdriven or underdriven.
- Audio is line level.

**Problem:** **Notes on Daisy Chaining:**

**Solution:** When daisy chaining, the maximum cable distance is not increased beyond the rated distance of the receiver used. For example, an EVA500RX can only daisy chain within 500 ft of the transmitter.

- A maximum of 3 units may be daisy chained within the rated cable length of the receiver.

Appendix A. Cabling Pinouts

**T568B CAT5 Specification**

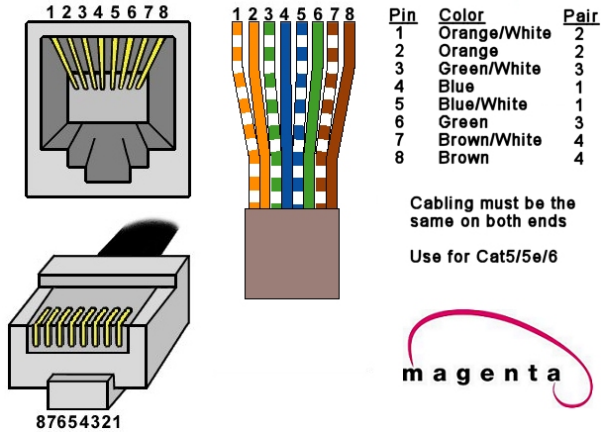


Table A-1. T568B CAT5 pinout

## Appendix B. DDC Modes

The Cyan EVA series transmitters feature the ability to send DDC/EDID display identifiers to the video source in order to determine display capabilities. The DDC is a data communication channel used in plug and play devices to accurately report a displays capabilities and identify the manufacturer. If this data is not available, the video source may revert to a low resolution or not display at all.

The Cyan EVA series transmitters feature the ability to report a Universal Display that supports most popular VESA standards in standard or widescreen formats as well as the ability to clone an actual displays DDC information copied from an actual display.

### Mode 1: DDC Mock Mode

This is the default mode which uses generic DDC information stored within the transmitter and reports this to the video source when requested. To restore this mode, press the EDID button until the Blue power LED flashes, then release the button. The right side yellow LED on the RJ45 connectors should be OFF.

### Mode 2: DDC from Local Monitor Port

The DDC information is transferred from a display connected to the local port of the transmitter back to the video source. To copy the DDC information from a display connected to the local output, connect and power on the display, then press the EDID button until the Blue power LED flashes, then release the button. The right side yellow LED on the RJ45 connectors should be ON.

To restore to factory defaults, remove power from the unit, press and hold the EDID button, then re-apply power. Release EDID button when the Blue power LED flashes.



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