Quick Start Guide

Xtendview

Analog RGB Signal Distribution System

1 INTRODUCTION

The basic Xtendview RGB signal distribution system consists of a transmitter and receiver pair that provide transport of an analog RGB signal and audio signal over low cost UTP cable for distances up to 1500 ft.

2 SYSTEM SET UP

A simple point to point distribution system is shown in Figure 1 below: Refer to the Xtendview User Guide for other system configurations.

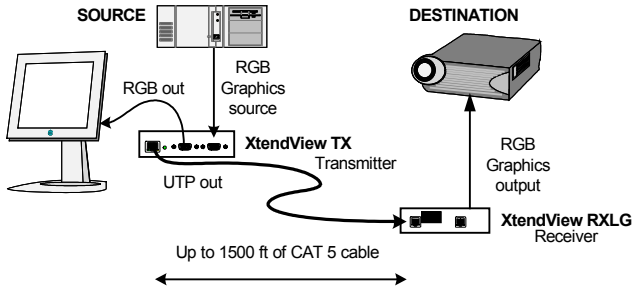

Figure 1. Xtendview point to point distribution system

Setting up the system is a simple four step procedure:

1. Connect signal source to Xtendview TX transmitter and connect CAT 5 cable to the UTP output
2. Connect destination device (display or projector) to the Xtendview RXLG receiver and connect CAT 5 cable from the transmitter
3. Apply power to the transmitter and receiver
4. Calibrate system

2.1 TRANSMITTER CONNECTIONS

The RGB video and UTP connections are located on the front of the Xtendview transmitter (**Figure 2**). Connect the RGB input from your source to the RGB input of the transmitter using a standard 15 pin RGB graphics cable.

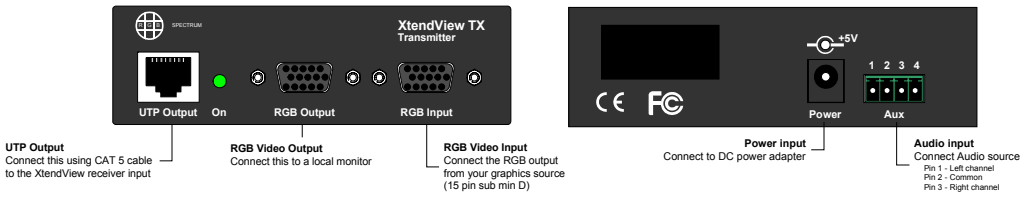

Figure 2. Xtendview TX connections

The audio and power connections for the Xtendview transmitter are located on the rear of the transmitter (**Figure 2**). Use shielded stereo cable to connect from the audio source to the four pin Aux connector. Connections are shown in the following table:

Xtendview TX Aux connector pin out				
Pin #	1	2	3	4
Signal	Left	Right	Common	Not used

2.2 RECEIVER CONNECTIONS

The UTP input connector is located on the front of the Xtendview receiver (**Figure 3**). Note that there is also a UTP output connector on this side of the receiver. The UTP output connector is used for multi-drop (daisy chain) operation, for more information please see the Xtendview User Guide.

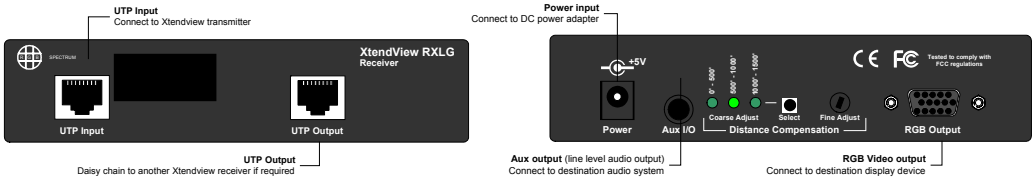

Figure 3. Xtendview RX connections

The RGB video, audio and power connections for the Xtendview receiver are located on the rear of the unit (**Figure 3**).

Connect the RGB output signal to the destination display device using a standard RGB cable. Use a standard stereo audio cable (3.5 mm stereo plug) to connect to the destination audio system.

2.3 APPLY POWER

Connect the power adapter for both the Xtendview receiver and transmitter to a 120 or 240 VAC outlet. The power indicator should be illuminated on the transmitter, and on the receiver one of the three distance compensation indicators should be illuminated.

2.4 CALIBRATION

Picture quality is affected by the length and quality of the CAT 5 cable connecting the transmitter to the receiver. The Xtendview receiver provides controls that can be used to optimize the picture quality for cable lengths from 0 – 1500 ft. Note that the transmitter does not require any calibration or set up.

Calibration is a simple 3 step process as described below:

1. Display the supplied alignment image on your source device (supplied with the Xtendview system CD ROM)
2. Compensate for the signal loss by using the Distance Compensation adjustment
3. Compensate for the differential delay (skew) between the Red, Green and Blue channels by using the optional skew compensation.

Distance compensation

The receiver has both coarse and fine adjustment controls as shown in figure 4 below.

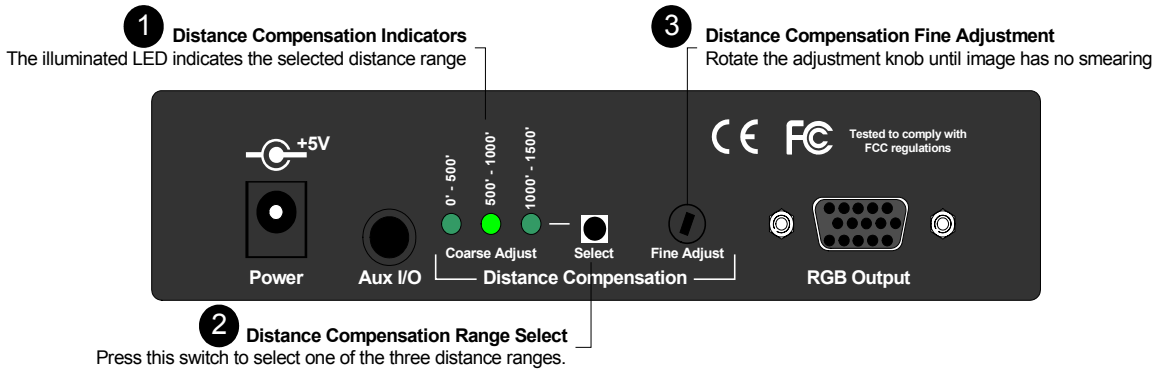

Figure 4. Distance compensation adjustments (receiver rear panel)

To adjust the distance compensation use the following procedure:

1. Display the alignment image (see Figure 5 on the next page) on the PC output that you have connected to the input of the Xtendview transmitter. A copy of the alignment image can be found on the Xtendview CD ROM supplied with your system.
2. View the alignment image on a display device connected to the output of the Xtendview receiver
3. Using a pencil tip or other small blunt device, press the select button (2) sequentially to select the appropriate distance range. The current setting is indicated by three LEDs (1) adjacent to the select switch. If you do not know the approximate length of the cable, first select the minimum distance (0 – 500 ft.) and turn the fine adjustment control (3) fully counterclockwise. Note that you may not see a recognizable image until the set up procedure is complete.
4. View the alignment image on the display connected to the Xtendview receiver, and adjust the fine adjustment rotary control clockwise to provide the best picture. The optimum setting is obtained when the shadowing effect to the right of the black box is minimized. If it is not possible to optimize the picture at this range setting then repeat step 3 selecting the next distance range (500-1000 ft.). If necessary complete steps 3 and 4 using the maximum distance range (1000-1500 ft.)

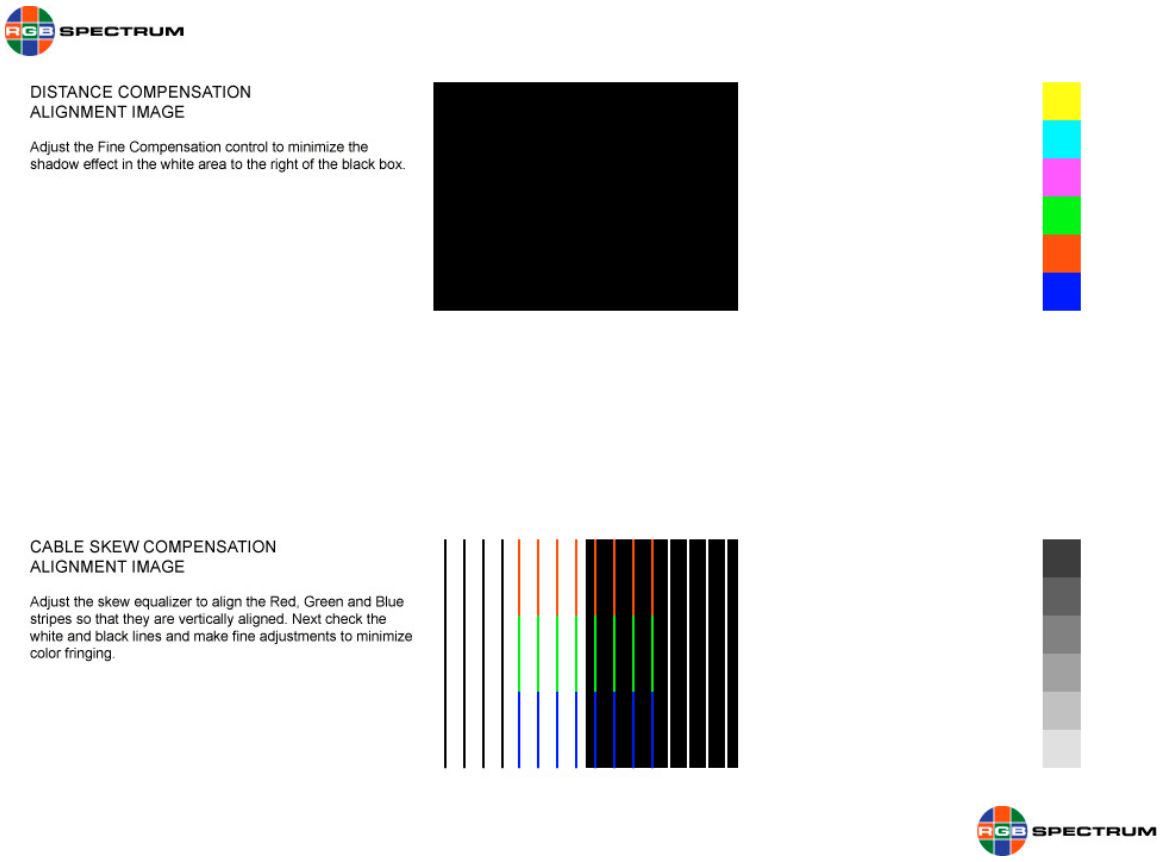

Figure 5. Distance and Skew Compensation Alignment image

Skew alignment

The alignment image has a set of Red, Green and Blue vertical stripes over a white and black background. These stripes are used to show the relative delay of the Red, Green and Blue channels to each other. Figure 6 shows the arrangement of the stripes for a correctly aligned system.

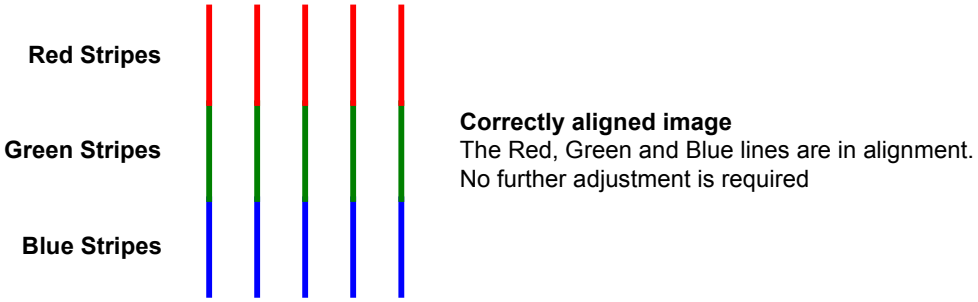

Figure 6. Alignment image correctly aligned

If the alignment image does not appear as shown above then cable skew adjustment is required. The adjustments of the optional skew compensator are located on the top of the Xtendview receiver as shown in the following figure.

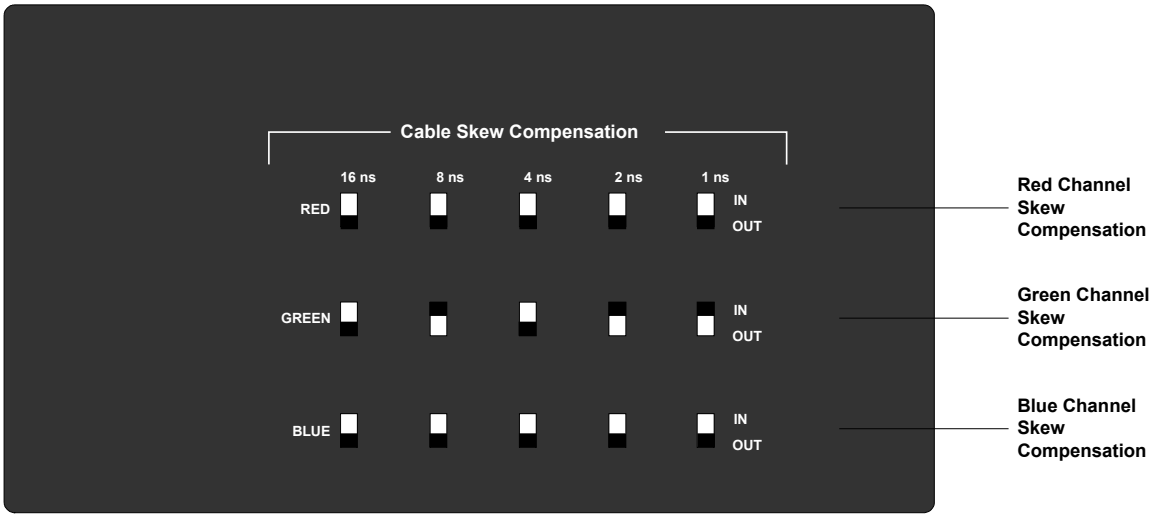

Figure 7. Xtendview RXL top view showing optional skew adjustments

Skew compensation is independently adjustable for each color channel. The controls consist of a set of five slide switches for each color channel. The slide switches have two positions, labeled IN and OUT. When a switch is set to the IN position it adds a delay of the amount shown at the top of the associated column. Each switch adds a different amount of delay, with the total delay being the sum of all the switches associated with each channel. For example the total delay of the Green channel in Figure 6 above is 8 + 2 + 1 = 11 nanoseconds (ns).

If the cable has significant time offset (skew) between components, the arrangement of stripes will not be as shown in the Figure 6. An example of a misaligned system is shown in the following figure.

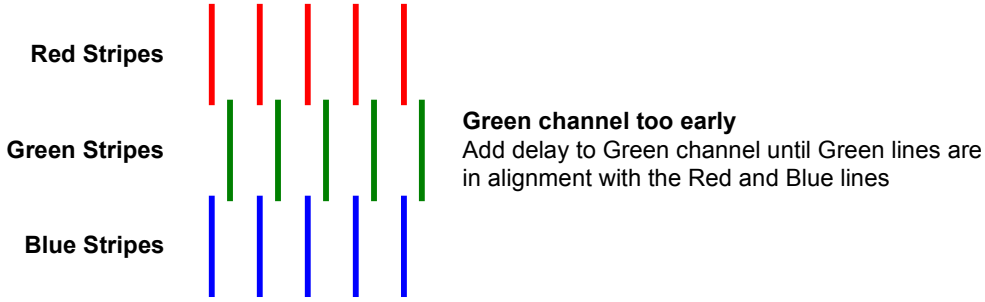

Figure 8. Alignment image with Green channel misaligned

All signals suffer delay as they travel down the cable, but the delay for the individual color channels is not always identical. This differential delay is also known as Cable Skew and causes the image to have colored edges particularly visible in areas with fine detail.

The strategy for cable skew compensation is to identify the channel (or channels) with the worst delay, and then to add delay to the channels with less to match the delay of the channel with the longest cable delay. After the procedure is complete, the reference channel (the channel with the longest cable delay) will have no (zero) compensation and the other channels will have compensation added to align them to the reference channel.

To make cable skew compensation adjustments you will be inserting delay using the compensation switches located on the top of the Xtendview receiver. These are two position slide switches that are recessed to prevent accidental operation. Use a blunt device to move a switch fully to either the IN or OUT position. If you inadvertently place a switch in the mid position incorrect operation of the Xtendview receiver may result.

Use the following procedure to adjust the cable skew compensation:

1. Display the alignment image on the PC connected to the input of the Xtendview transmitter
2. View the alignment image on a display connected to the output of the Xtendview receiver
3. Set the delay for all three color channels to zero by setting each compensation switch to the OUT position. The compensation switches are two position slide switches.
4. Establish which colored strip is offset to the left of the other channel(s). This will be your reference channel. You will not add any delay to this color channel.
5. Choose one of the other channels and use the compensation switches for that channel in order to add delay. Switch the leftmost switch to the IN position to add the maximum delay increment (16 ns). If the stripe moves too far to the left, return this switch to the OUT position and switch in delay using the next switch to the right. Continue with this procedure until the color stripe is in vertical alignment with the reference channel.
6. Repeat step 5 for the other channel as needed.

For the example shown in Figure 8 above you would need to add delay to the Green channel only. However you may need to add delay to two channels to match the third channel as you will see in the next example.

Always use the channel that is at the left of the group of stripes as your reference. For example in Figure 9 the channel that should not require any delay is the Red channel. In this example both the Green and Blue channels have suffered less cable delay than the Red channel. Since the Blue and Green channels have different delays, they will need to be delayed differently from each other in order to match the Red Channel.

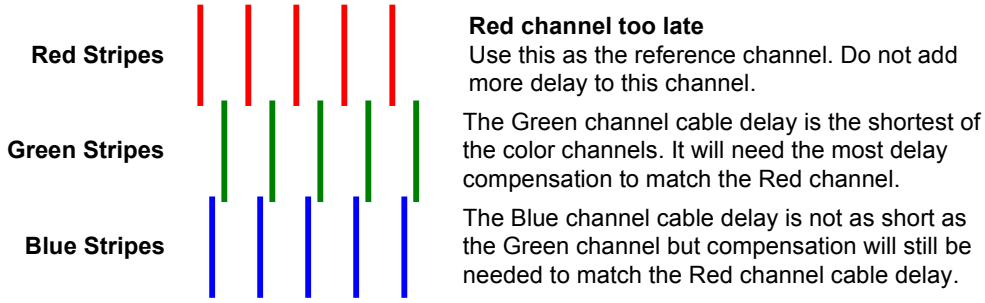

Figure 9. Alignment image with Green and Blue channels misaligned

If you have correctly made the distance and skew compensation adjustments the alignment procedure is complete and you should have excellent picture quality.