

## VP4E Video Processing Module



**VP4E Video Processor**

The VP4E Video Processing Module interfaces with 3ATI displays and other commercial TFT panels requiring a small form factor. The VP4E allows you to use RGB PC video as a source for your display. Other video formats are supported as well. For special applications that require video to be rotated, the VP4E supports video rotation in 90 degree increments.

**Features:** The VP4E capabilities include:

- programmable area of interest is captured from larger active area in source video
- incoming video gain and offset adjustments
- optional power conversion boards for ancillary power or special connectors
- frame buffering allows the display to be driven at a different pixel clock rate than the source video
- fine phase clock adjustment for pixel sampling
- video rotation in 90 degree increments
- video flip (horizontal and vertical)
- programmable input and output discreties

### Configured for your requirements:

We sell our VP products directly to the customer. You can set up the board for your requirements using VP4configure software. Our application engineers can assist you via phone or e-mail. In many cases, our customers can share the detailed timing of their video source, and we "pre-set" the configuration for the customer!

### A specific example

The VP4 has broad capabilities needed to interface to many 3ATI display devices. The table below shows several 3ATI devices on the market today:

## VP4E

- Analog RGB input video
- Drives commercial AMLCD's and special 3ATI displays
- Adjustments via utility software
- Supports re-configuration in-the-field
- Supports up to SXGA video rates
- Supports windowing and re-timing
- Horizontal and Vertical flip
- 90, 180, and 270 degree rotate

3ATI Manufacturer	Display Model #
American Panel Corporation (APC)	APC 340
International Display Consortium (IDC)	3ATI
Korry	KDM-340

Few video sources supply the video timing and resolution required by the display devices listed above, as well as other small format displays. That's where the VP4E comes in! The VP4E digitizes analog video from a standard PC and enables the user-defined window onto the output digital video stream to your display.

In some cases, such as the IDC 3ATI display, the VP4E can directly drive the display. Westar offers an ancillary power board to drive the APC 340 display.

For example, a customer may want to use a 1024x768 (XGA) source to drive a small format panel with a 480x480 resolution.

Figure #1 (on the back of this sheet) shows the selection of the VESA standard XGA input timing.

Figure #2 (on the back of this sheet) shows the definition of a custom 480x480 output timing, based on industry standard VGA. [Horizontal active pixels were reduced from 640 to 480.]

Figure #3 (on the back of this sheet) shows the selection of the upper left 480x480 window as the area of interest in the 1024x768 source video. This 480x480 area of interest is mapped to the active area of the output video.

You can imagine how a single image generator can be used to generate the image content for (2) or more displays. The upper left 480x480 could be mapped to Display #1, and the upper right 480x480 could be mapped to Display #2. If one of the images needs to be rotated, a simple rotate selection is made, as shown in Figure #4.

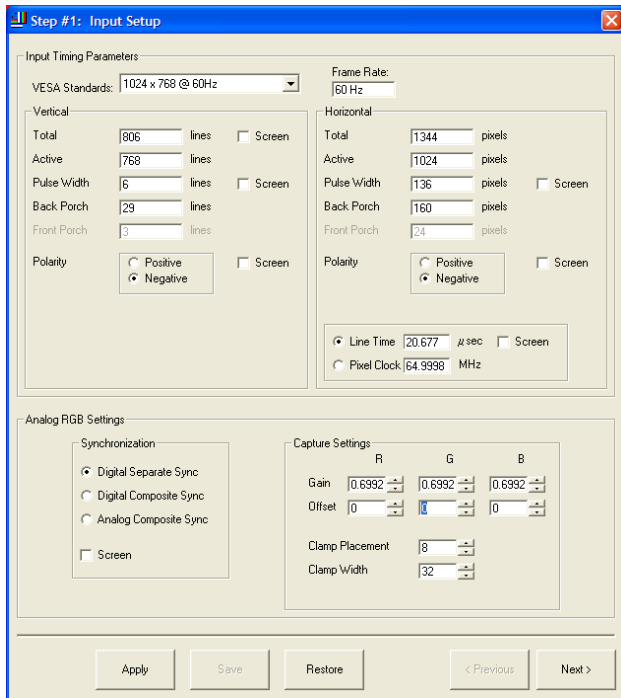


Figure 1

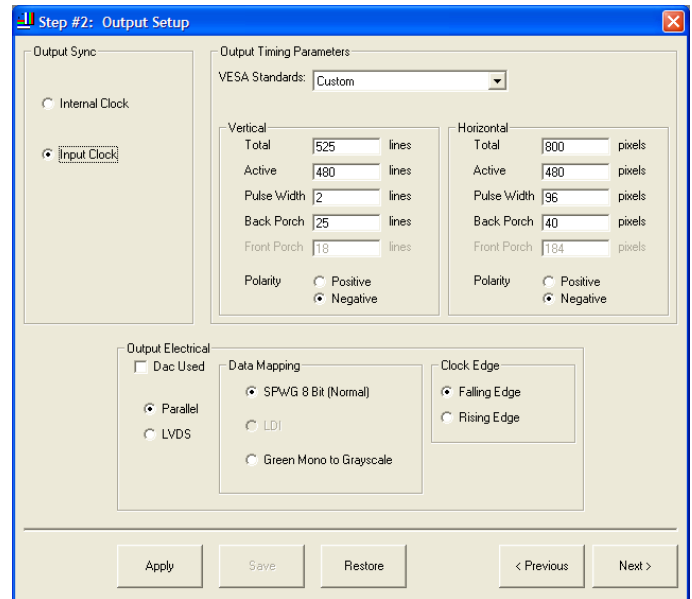


Figure 2



Figure 3

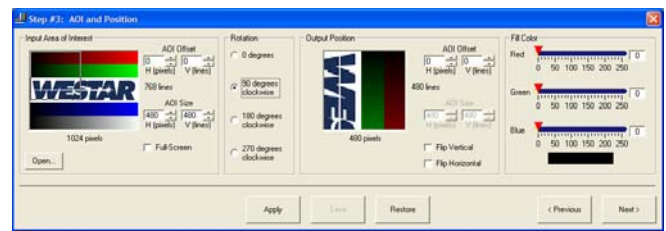


Figure 4

### How to get started

Please contact us at (636) 300-5164. An outline drawing of the VP4E is available upon request.

<b>Physical Dimensions</b>	3.1" x 3.1" x 0.7" (approx)
<b>Temperature Range</b>	Operating: 0° C to +50° C Storage: -20° C to +70° C
<b>Video Inputs</b>	Up to SXGA resolutions (110 MHz pixel clock) Standard and custom timing Separate sync or sync-on-green
<b>Video Outputs</b>	single (24 bit) bus panels, 3.3 or 5 VDC panels (up to 110 MHz) single link LVDS (up to 85 MHz)
<b>Input Voltage</b>	9 – 28 VDC
<b>Optional Features</b>	Mating power supply module for multi-voltage AMLCDs (with control for proper power up & power down sequencing)
<b>Control Interface</b>	RS-232