

EZwindow™ Video Windowing Device



EZwindow, Front View

EZwindow, Back View (-5 configuration)



I/O resolutions up to WUXGA

1U rackmount enclosure (2 – 5 video input channels)

Each input is assigned to foreground layer or background layer

- Rectangular area-of interest on each input is mapped to a rectangular area of interest in an output layer, with independent horizontal and vertical scaling
- “Key” processing (RGB key, Luma key, chroma key) on foreground layer
- Programmable fill colors for foreground and background layers

EZwindow™ configuration utility supports user-defined:

- input timing, output timing, electrical formats
- window sizes, priorities, keying scheme

Inputs: DVI-I standard (TMDS and Analog RGB), NTSC/PAL

- Analog RGB inputs can be interlaced (RS-170, RS-343) or non-interlaced

Outputs: DVI-I standard (TMDS and Analog RGB)

The EZwindow™ provides a wide range of video windowing functions for 2-5 input channels.

The actual number of input channels is specified directly in the part number, as follows:

- EZwindow-3 supports 3 input channels.
- EZwindow-5 supports 5 input channels.

EZwindow is delivered with uninstalled rackmount ears and feet. For rackmount applications, please install the ears, For benchtop applications, please install the feet.

Input Features:

- digitization of computer-generated video sources with separate sync, composite sync, or sync-on-green
- digitization and de-interlacing of interlaced video formats, including RS170, RS343, NTSC and PAL
- resolutions up to WUXGA with pixel rates up to 162MHz
- incoming video gain and offset adjustments
- fine phase clock adjustment for pixel sampling

Output Features:

- TMDS and Analog RGB Outputs
- resolutions up to WUXGA with pixel rates up to 162MHz
- digital contrast and brightness adjustments on output

Windowing Features:

- For each input, user-defined input area of interest is mapped to a rectangular area in the foreground or background layer.
- Each input is assigned a priority for overlapping regions.
- “Window only” applications use background layer.
- “Overlay” applications use keying logic to combine the foreground and background layers.

- Both foreground and background layers have programmable fill colors for unmapped regions.
- Where active foreground windows are defined, the resulting output image is a combination of foreground and background, per the key definition. One alpha value applies within the key, and another alpha value applies outside the key.
- Where active foreground windows are not defined, the resulting output image is a programmable alpha combination of background and foreground layers, typically 100% background.

EZwindow™ Operation

After configuration, the EZwindow™ typically operates as follows:

1. Upon power up, the EZwindow™ configures itself based on the internal parameters pre-programmed into non-volatile memory.
2. Prior to detection of valid video on an input channel, the EZwindow™ can drive a user-defined color in the corresponding output window.
3. When a valid video signal is detected on any of the inputs, the EZwindow™ converts the incoming video per its pre-defined settings and places the image in the output window per the pre-programmed settings.

How to get started

Please contact us at (636) 300-5164 to discuss your application. EZwindow™ customers receive the following with their delivery:

- EZwindow™ per ordered configuration,
- EZwindow™ configuration utility,
- Sufficient DVI to VGA adapters

Input Specifications (Subject to change without notice)

Video Type	Analog RGB (0.7 Volt levels, Interlaced or Non-Interlaced), TMDS, NTSC/PAL
Pixel Rate	Up to 162 MHz
Clocks per Line	Up to 4096
Lines per frame	Up to 2048
Sync Type	HV, Composite Sync, or Sync-on-Green
Phase Adjustments	Sample clock can be adjusted to ensure center sampling
Connectors	DVI-I (DVI to HD15 adapters included in delivery), S-Video, BNC

Output Specifications

Video Type	Standard: Analog RGB (0.7 Volt levels, Interlaced or Non-Interlaced), TMDS
Pixel Rate	Up to 162 MHz
Clocks per Line	Up to 4096
Lines per frame	Up to 2048
Sync Type	HV, Composite Sync, or Sync-on-Green
Connectors	DVI-I (DVI to HD15 adapters included in delivery)

Electro Mechanical

Input Power	IEC Connector, 100-240 VAC, 47-63 Hz, less than 60 Watts
Control	RS-232 or USB
Size	Width: 17.5" Benchtop or 19" Rackmount Height: 1U Rackmount (add 0.5" for feet in Benchtop) Depth: 13.75"
Weight	Less than 7 lbs.

Control Port

RS-232 or USB

Environmental

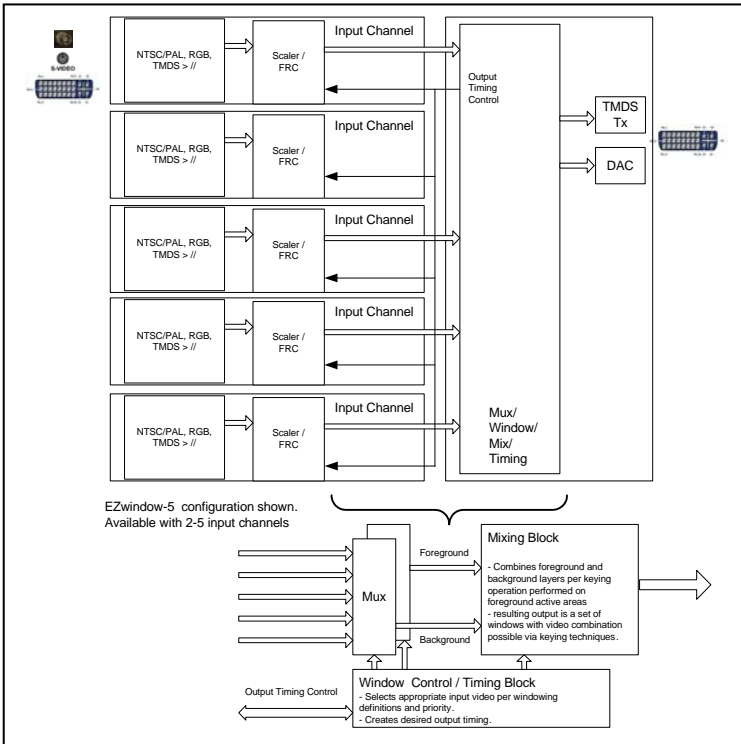
Temperature	Operating 0°C to +50°C; Storage -20°C to +70°C
Relative Humidity	0 to +95%, non-condensing

Warranty

One year

Functional

Specialty Features	Multiple video inputs are combined to a single output, supporting multiple windows, and keying between foreground and background layers.
Color processing depth	8 bits per color processing
Re-sizing limits	none



The figure on the left shows the basic data flow for the EZwindow. The figure below shows EZwindow's unique approach of assigning inputs to 1 of 2 layers, and then combining layers per a user-defined keying technique.

