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EZsplitter Programmable Video Splitter

Splits a single video stream to multiple display heads, and/or converts a video feed into multiple video formats.



EZsplitter Programmable Video Splitter

The EZsplitter™ is a video processor that splits a video stream into one or more streams in various formats. Output module types are shown in the table below:

Output Module	Specification
A	TMDS / Analog RGB / RS170 / RS343, Composite* S-Video*
B	TMDS / Analog RGB / RS170 / RS343, Composite* Component (Y, Pb, Pr)
C	DVI-I Repeater
D	DVI-D Repeater

** NTSC or PAL, Other output module types are available. Please consult with our technical support team for more details.*

Configured for your Application

The EZsplitter can be ordered with up to (4) output modules. The number and type of output channels is specified directly in the part number, as follows (example ordering configurations):

- EZsplitter-AAB (3 output modules)
  A, A, and B in output slots 1, 2, 3 respectively
- EZsplitter-CABD (4 output modules)
  C, A, B, and D in output slots 1, 2, 3, 4 respectively
- EZsplitter-A (1 output module)
  A in output slot 1
- EZsplitter-///A (1 output module)
  A in output slot 4

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

Programmable Video Input

The input video format is programmed using the EZsplitter configuration utility. Many standard formats are available via a pull-down list. A custom format can be programmed by editing one of the standard formats.

Features

Input Features

- Digitization of TMDS (DVI), NTSC/PAL, Component Video, and Analog RGB with separate sync, composite sync, or sync-on-green
- 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

- (1) to (4) video output channels, plus DVI-D repeater output
- Multiple Output module types
- Each output can be assigned to any area of interest within the input resolution.
- Control port repeater: Control commands are available for downstream units via the RS-232 repeater output

Type A, B Output Modules

- Scaler on output card allows any rectangular input area-of-interest (AOI) to be mapped to any output rectangular AOI
- Resolutions up to WUXGA, pixel rates up to 162MHz
- Output is free running or synced (gen-locked) to input
- Programmable border colors for unused areas-of interest in the output
- Output can be rotated 90, 180, or 270 degrees
- Horizontal and vertical flip
- Digital contrast and brightness adjustments.

Type C DVI-I Repeater

- Video derived from selected input is duplicated onto the TMDS and Analog RGB (DVI-I) output.

Type D DVI-D Repeater

- Video derived from selected input is duplicated onto the TMDS (DVI-D) output.

Type E To be determined

- Contact Westar if you require a specific video format. We can discuss a new output module type for your application!

EZsplitter Configuration Utility

The EZsplitter comes with a configuration utility to define the input video format, and the output video mode for each output card. Each output card has individually programmed area-of-interest, scaling, and video rotation.

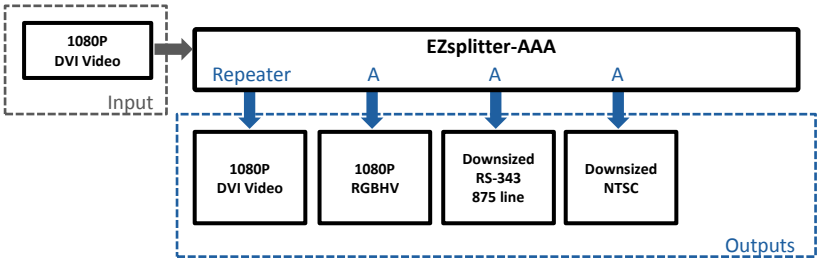
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Example Applications

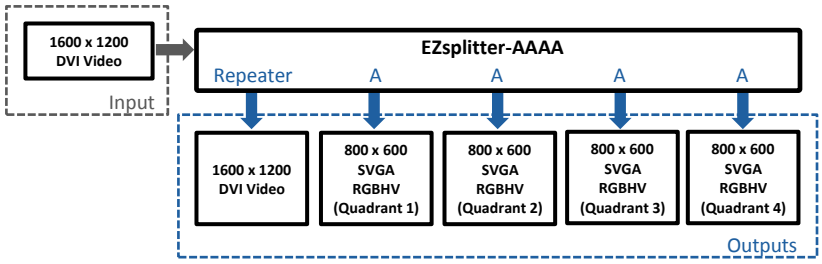
#1: Convert to multiple formats

A single video source is re-formatted into multiple video formats. For example, a single 1080P DVI video source can be output as a 1080P RGBHV, a downsized RS-343 875 line output, and a downsized NTSC output using a EZsplitter-AAA. In addition, the original 1080P source is available via the repeater output (DVI-D).



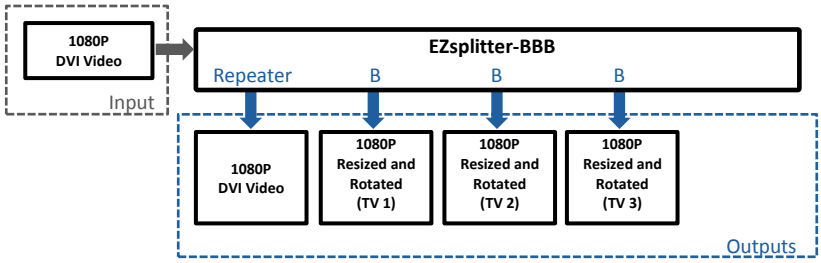
#2: Partition video to multiple displays

A single video source is divided into multiple video streams, each with a programmable area-of-interest. For example, a single 1600x1200 DVI video source can be divided into (4) 800x600 SVGA (RGBHV) quadrants, using a EZsplitter-AAAA. In addition, the original 1600x1200 source is available via the repeater output. All the video and splitting functions are done in a 1U device, reducing extra cabling and rackspace!



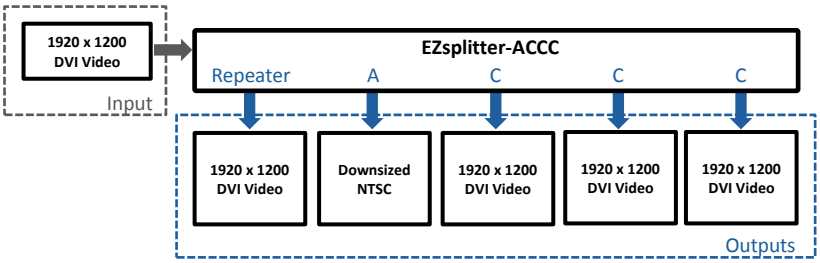
#3: Limited Video Wall Controller

A single 1080P signal is intended to drive (3) adjacent portrait mounted TV's to form a large video wall using a EZsplitter-BBB. Each Type B board is programmed to a specific area-of-interest within the input video stream. This area of interest is resized and rotated to create the required 1080P output for the wall of TV's, in either HDMI or Component video format.



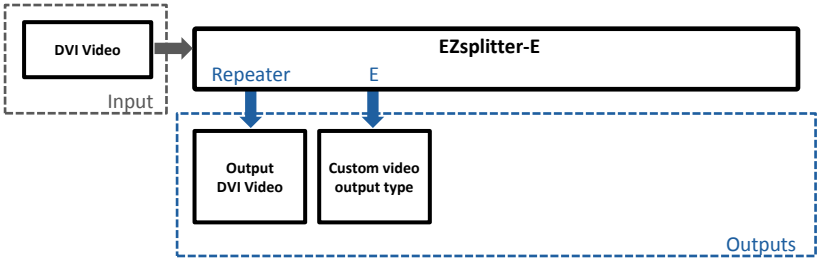
#4: Splitter plus

A single 1920x1200 DVI video source needs to be split to (4) destinations, plus down-sized and converted to NTSC for a video recording function. A EZsplitter-ACCC will create the down-sized NTSC signal (A), plus the (3) C cards combined with the standard digital repeater output will create (4) 1920x1200 DVI outputs.



#5: Video converter for custom video type

A EZsplitter can be a solution to convert standard video to your unique video type. Please contact Westar if you have a specific video format to be generated from a standard video format.



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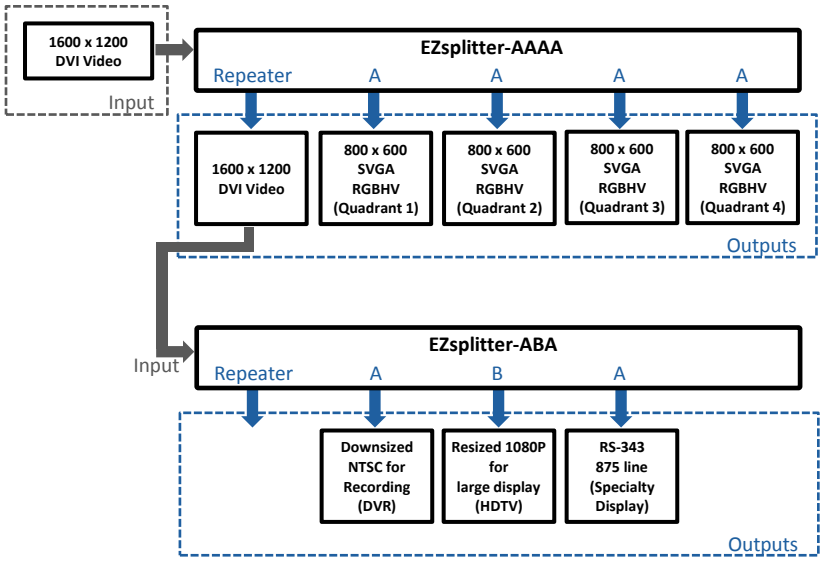
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#6: Hybrid

A single video source is divided into multiple video streams using two EZsplitters.

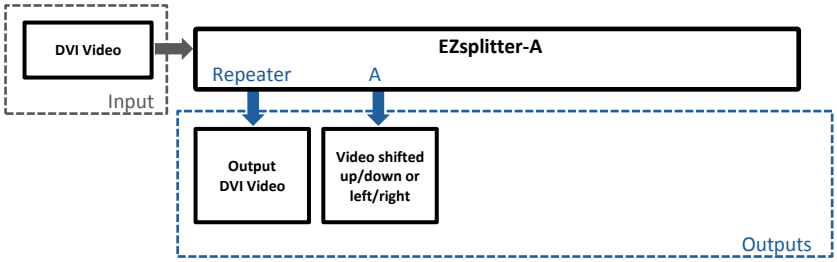
For example, a single 1600x1200 DVI video source can be divided into (4) 800x600 SVGA (RGBHV) quadrants, using a EZsplitter-AAAA. In addition, the original 1600x1200 source video is output to another EZsplitter via the repeater output.

The second EZsplitter-ABA can downsize the source video to NTSC for DVR recording, resize to 1080P for a large format HDTV (HDMI or Component), and output one of the quadrants to an RS-343 875 line specialty display.



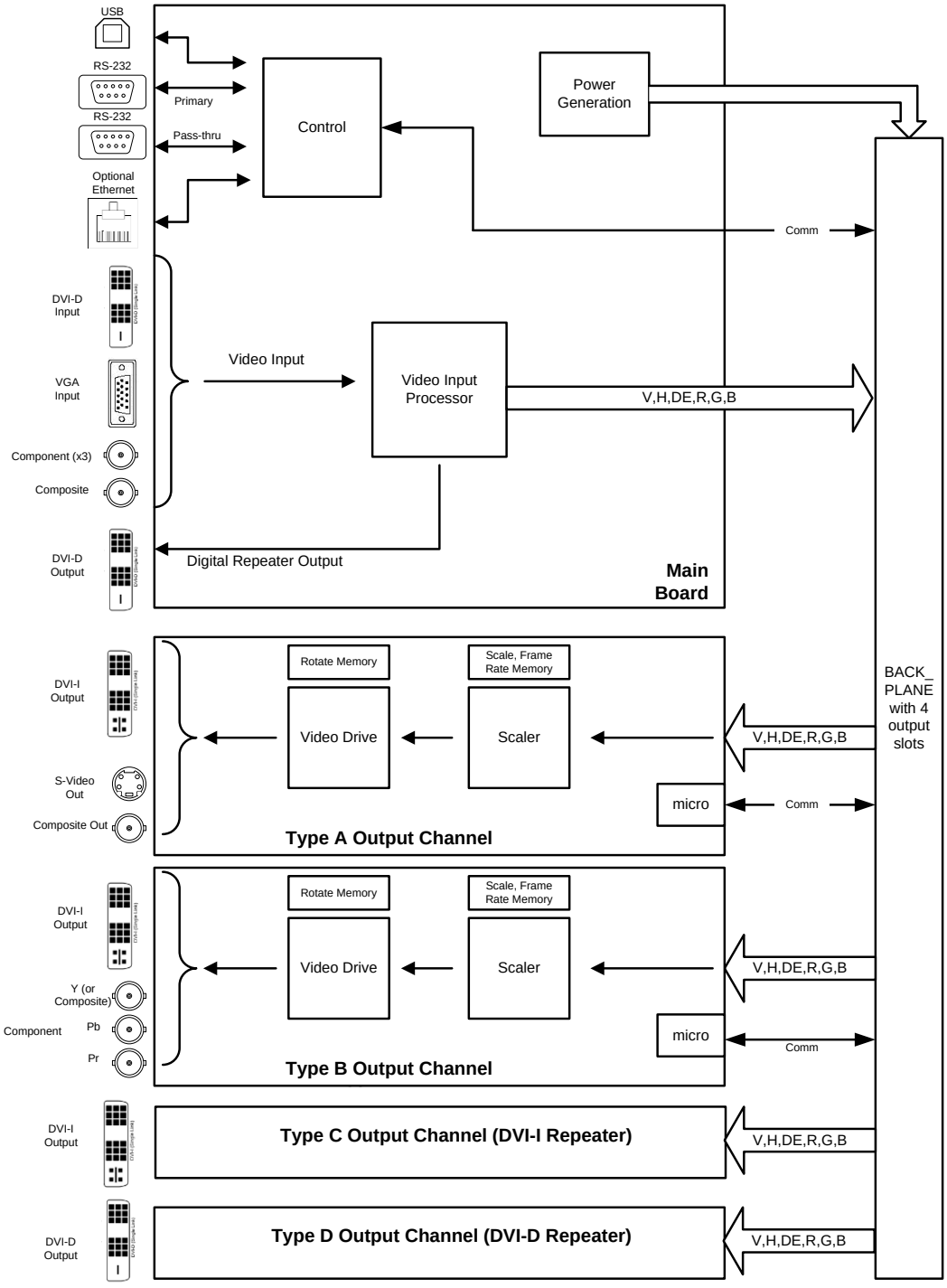
#7: Video horizontal / vertical shift (for left eye / right eye applications)

A EZsplitter can an area-of-interest vertically or horizontally to allow one IG channel to be used with two different horizontal or vertical offsets. This is advantageous in many near eye display applications.



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Note: All DVI-style connectors are actually DVI-I connectors. The figure above depicts a DVI-D connector if the interface supports single link TMDS only; and a DVI-I connector if the interface supports single link TMDS and analog RGB

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Inputs

Inputs	Specification
Video Type	• Analog RGB (0.7V levels, Non-Interlaced) • TMDS • NTSC/PAL, Component, RS-343, others
Pixel Rate	Up to 162 MHz
Clocks per Line	Up to 4096
Lines per Frame	Up to 2048
Sync Type	HV, Composite Sync, Sync-on-Green
Phase Adjustments	Sample clock can be adjusted to ensure center sampling
Connectors	• DVI-I (with TMDS only) • HD15 • S-Video* • BNC (3 component, composite*)

Outputs

Output Type A	Specification
Video Type	• Analog RGB (0.7V levels, 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, Sync-on-Green
Connectors	• DVI-I (DVI to HD15 adapter included) • S-Video* • BNC (composite*)

Output Type B	Specification
Video Type	• Analog RGB (0.7V levels, Non-Interlaced) • TMDS • Component
Pixel Rate	Up to 162 MHz
Clocks per Line	Up to 4096
Lines per Frame	Up to 2048
Sync Type	HV, Composite Sync, Sync-on-Green
Connectors	• DVI-I (DVI to HD15 adapter included) • BNCx3 (Y/composite*, Pb, Pr),

Output Type C (Repeater)	Specification
Video Type	• Analog RGB (0.7V levels, Non-Interlaced) • TMDS
Connectors	DVI-I (DVI to HD15 adapter included)

Output Type D (Repeater)	Specification
Video Type	TMDS
Connectors	DVI-I

*** NTSC or PAL**

System

Electro Mechanical	Specification
Input Power	IEC Connector, 100-240 VAC, 47-63 Hz, less than 75 Watts with 1 Type A output card
Dimensions	Width: 17.5” Benchtop or 19” Rackmount Height: 1U Rackmount (add 0.5” for Benchtop) Depth: 13.75”
Weight	Less than 7 pounds.

Control Port	Specification
Interface	RS-232 or USB, plus RS-232 repeater port

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

Warranty	Specification
Warranty	One year

Functional	Specification
Specialty Features	• Single video input to multiple video outputs • Each output can be gen-locked to the input
Color Processing Depth	10 bits per color processing
Latency	Up to 1.2 frames without rotation. Up to 2.2 frames with video rotation. Low latency (less than 1 frame) possible in gen-locked mode

EZsplitter Operation

Typically, the EZsplitter operates as follows:

1. Upon power up, the EZsplitter configures itself based on the internal parameters pre-programmed into non-volatile memory and drives a user-defined color in each output channel.
2. When a valid input video signal is detected, the EZsplitter digitizes the incoming video per its pre-defined settings and each Type A, B output card re-generates video per the pre-defined area-of-interest and video formats, while Type C, D repeater cards output the captured video in a digital and analog (Type C) or digital only (Type D) format.

What’s Included

- EZsplitter per ordered configuration
- (1) DVI to VGA adapter for each Type A, B, or C output card
- EZsplitter configuration utility software

Additional Resources

To view our full line of Video Processors or other products, visit us at:

www.westardisplaytechnologies.com

Contact Us to Get Started

Call us for additional product info and pricing.

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