brandywine communications

ISA-VI2

- **Dual Channel Video Inserter**
- **Single ½ length ISA module**
- **NTSC and PAL compatible**
- **Instrumentation amplifier Inputs**
- **Broadcast quality video processing**
- **Glitch-free pixel update**
- **Vertical Interval Interrupts**
- **I/O space addressing**

The Brandywine Communications ISA-VI2 is a dual-channel video character inserter. The ISA-VI2 is compatible with the standard ISA form factor.

Each of two ISA-VI2 channels superimposes a white pixel array and a black pixel array over composite video input signals. Each pixel of each array is accessible for both reading and writing over the ISA bus. Software maps the black, white and no pixels into any desired form, alphanumeric or graphics.

Pixel array access interleaving circuitry automatically synchronizes programmed reads and writes to pixel scanning for glitch free accesses. The scanning of the pixel arrays is synchronized ("genlocked") to the incoming video signal so that special sources that must be synchronized to the inserter scanning are not required.

The ISA-VI2 processes the incoming video in composite analog format. The inevitable degradation in S/N ratio and input resolution that occurs with frame grabber digitizing is eliminated.

An on-board push on jumper provides 75 Ohm input termination. The jumper may be removed for video bridging applications.

Two, 512 horizontal by 240 vertical, pixel arrays are provided for each channel. When the video input is PAL instead of NTSC the vertical component is increased to 256 pixels. The white pixel plane keys in a white level video signal wherever a bit is "1". The black pixel plane keys in a black video level wherever a bit is "1". If both planes have a bit of "0" the input video will be passed unchanged to the output.

Broadcast quality video processing components are used throughout the design resulting in the least possible degradation of the input video signal. Video instrumentation amplifier inputs eliminate almost all common mode ground noise.

The ISA-VI2 incorporates innovative features in the genlock logic resulting in improved genlock stability to consumer type VCRs. The "coast" feature allows the genlock phase-lock loop to coast during VCR head switching at the bottom of each video field. Coasting eliminates the genlock perturbations caused by head switching.

Straightforward programming generates both alphanumeric and graphic patterns by writing pixel patterns 8 pixels at a time into the white or black pixel video planes. The program first writes the row and column address of the 8 pixels in the row/column registers and then writes (or reads, then writes) the new data. The new data can be written to the data port using auto-increment of the row or column address. A control register bit selects black or white pixel priority to determine the insertion level when both pixels are set. Program samples are provided with the ISA-VI2.

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ISA-VI2 Specifications

General Input Specifications

Video Input Connectors	BNC, J1 and J3
Video Input Types	NTSC, PAL
Input Impedance	50 Ohm or high impedance, user select
Channel A termination	P6
Channel B termination	P8
Substitute video format	P2, selects composite video signal to be output when no input is available
NTSC	No jumper connection
Pal	P2-1 jumper
Selected by program	P2-3 jumper

General Output Specifications

Video Output connection	BNC, J2 and J4
Video Output	Same as input, ±5%
Output Impedance	75 Ohms
Vertical Sync Output	J3, 3 pin right angle connector
Channel A vertical sync	Pin 1, Low when asserted
Channel B vertical sync	Pin 3, Low when asserted
Ground	Pin 2

Bus Interface

I/O Mapped	
Base Address	300 to 360, shipped as 300
Configurable IRQ levels	4, 5, 10, 11, 12, 14, 15

Mechanical - Environmental

Size	½ length ISA card
Power	
+ 5 Vdc	400 mA maximum
+12 Vdc	100 mA maximum
-12 Vdc	50 mA maximum
Operating Temperature	0°C to +70°C
Storage Temperature	-40°C to +75°C
Humidity	To 95% non-condensing

Options

Operating temperature	-40°C to +85°C
Power off bypass	Connects video inputs to outputs when no power is applied to the board

Other brandywine communications products

Network Time Servers
VME, PCI, CPCI, PMC, ISA, VXI & PC/104 Computer Clock Synchronization Products
Frequency Generation and Distribution Instruments
Dual & Triple Redundant Systems

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