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32x32
Vision Switch
Hardware Reference Manual

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1. Introduction.

This version of Vision Switch supports 32 inputs and 32 outputs.

2. Related documents

AD8113 datasheet, Analog Devices.

3. Features.

The product is a PCI plug in card that allows routing of multiple video signals to cards inside the PC box.

4. Functional Description

4.1 Video inputs

The card uses two 26 pin high density DIN connectors to provide for 32 video input sources. Jumper links provide the option to terminate the source.

4.2 Video outputs

Eight 10 way pin headers provide the video outputs. Jumper links provide the option to terminate the outputs correctly.

4.2 Video switching

Four AD8113 devices implement a 32x32 cross-point array.

4.6 PCI Interface EPLD

The PCI interface is implemented by an EPLD which controls the switch matrix.

The EPLD responds to configuration accesses as follows (DWORD wise):

Address 0x00 : Device ID/Vendor ID
Returns: 0x0119DADA

Address 0x04 : Status/Command
Returns: 0x02000000 at reset. Bit 1 is set to enable memory I/O accesses.

Address 0x08 : Revision ID
Returns 0xFF0000XX, where XX is the Revision ID

Address 0x10: Non-prefetchable memory base
This claims 4096 bytes of non-prefetchable memory.

All other configuration accesses return zeros.

The cross-point control registers are located as memory mapped I/O ,as follows.

CROSSPOINT A connecting inputs 0-15 to outputs 0-15
membase + 0H Cross point switch o/p 0 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 4H Cross point switch o/p 1 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 8H and so on for 16 switch outputs
membase + 3CH Cross point switch o/p 15 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.

CROSSPOINT B connecting inputs 0-15 to outputs 16-31
membase + 40H Cross point switch o/p 0 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 44H Cross point switch o/p 1 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 48H and so on for 16 switch outputs
membase + 7CH Cross point switch o/p 15 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.

CROSSPOINT C connecting inputs 16-31 to outputs 0-15
membase + 80H Cross point switch o/p 0 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 84H Cross point switch o/p 1 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + 88H and so on for 16 switch outputs
membase + BCH Cross point switch o/p 15 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.

CROSSPOINT D connecting inputs 16-31 to outputs 16-31
membase + C0H Cross point switch o/p 0 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + C4H Cross point switch o/p 1 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.
membase + C8H and so on for 16 switch outputs
membase + FCH Cross point switch o/p 15 write only, data = 0-15 = switch input no to op. Bit 4 is output enable.

membase + 100H Write only register. Data doesn't matter. Transfers switch setting to switch matrices

membase + 104H 12 bit io port. r/w register. Writing 1 forces the op to zero. The outputs are o/c so when you read it back it may read back zero if someone else is driving it. Used for working out how multiple switches are configured. Not currently connected.

Bit 7 of IO port is used as a board enable bit (write 1 to enable – reads back as 0) and must be set before any access to the memory mapped registers.

membase + 105H General purpose inputs (top four bits). These are connected to jumper links.

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