GPIO-HSD

FEATURES

- Device Mode and IBL Mode
- 32-Bit, 33 MHz PCI
- Built-In Self Tests
- Software Configuration of HSD/IBL Mode
- Plug-compatible with Existing HSD Devices
- Direct Interface to Visual Systems
- Comprehensive Software Package

BENEFITS

- Low Host Overhead
- Plugs into Existing Cables
- Quick Installation
- High Reliability
- Full Hardware and Software Support

Overview

The GPIO-HSD provides a full 32-bit parallel interface to a customer-designed device at rates up to 2,150K transfers per second. The GPIO-HSD includes a PCI interface to connect it to the host computer. It also includes a simple 32-bit bidirectional data bus and appropriate internal storage registers for exchanging data with the customer device.

The board includes a local microprocessor for controlling internal HSD data flow, PCI bus traffic, and the external I/O handshake interface. The high-speed inter-bus link (IBL) mode connects two HSD boards for high-speed, inter-system communication.

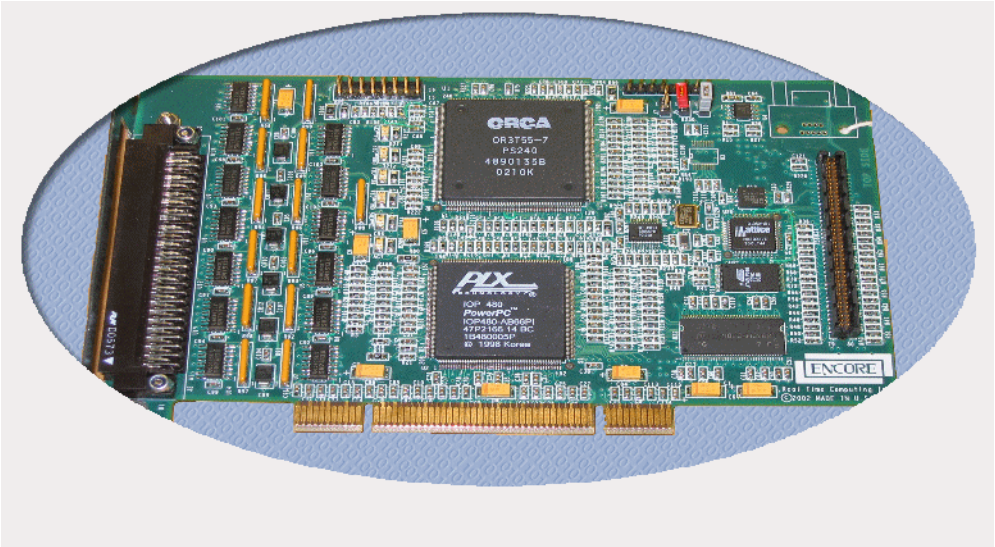
Physical Description

The GPIO-HSD is a multi-layer, universal, 32-bit PCI board that is approximately 4.2 inches high and 6.6 inches long. A 100-pin, high-density connector on the board's faceplate connects to two 2 X 50 pin standard HSD cables. An array of six LED indicators on the printed circuit board provides status information.

Functional Description

The GPIO-HSD exhibits the following characteristics:

- High-speed data transfers (up to 2,150K words per second; maximum rate of 465 nanoseconds per transfer)
- Up to 64K transfers per block
- Simple handshake protocol between HSD and customer-designed equipment
- Maximum data transfer rates for cable lengths up to 50 feet; slower rates for cable lengths up to 250 feet
- Standard IOCL commands including command chaining, data chaining, transfer-in-channel
- Automatic status posting
- Intercomputer Bus Link (IBL) capability



GPIO-HSD Board

Hardware

Standard Legacy SelBUS HSD Supported Features

The following legacy model 913x HSD features are supported on the GPIO-HSD:

- Up to 64K transfers (256 Kbytes) per block
- External Mode operation where the customer device has complete control over the HSD interface
- Maximum data transfer rates for cable lengths up to 50 feet; slower rates for cable lengths up to 250 feet
- On-board processor minimizes software overhead
- Full external mode support
- Ability to operate in Compatible mode and Intercomputer Bus Link (IBL) mode
- Interface compatible with current HSD cables
- Supports 44 valid I/O HSD Operation Code variations
- I/O Command Lists built up in host memory
- Automatic status posting
- PCI interrupts to report status information

GPIO-HSD Enhanced Features

- Transfer rates up to 8.5 Mbytes/sec
- Ability to operate in Internal Loopback mode and External Loopback mode
- Software-controlled multiplexers to change signal assignments for IBL modes with straight cables or crossed IBL cables
- 16 Mbytes of onboard memory
- Programmable interface clock rates to ensure operation with slower devices
- Memory Buffer Address Registers allow PCI transfers between other PCI boards and GPIO-HSD
- Queued interrupt structure practically prevents loss of interrupts
- Programmable external mode operation notification by PCI interrupt
- Software-controlled Online/Offline capability
- All “jumper” configuration accomplished via software
- State of HSD bus control signals accessible to software
- Built-in Self Test
- Remote HSD interrupt capability through IBL Link Request Acknowledge handshake

Software

- Linux operating system
- Supports all IOCB/IOCL commands
- Emulates Encore HSDI IOCB/IOCL data structures
- Post Program Controller Interrupt (PPCI) support
- Sample programs provided that can be used for installation verification and samples of programming techniques

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Pub. No. 204-303-03

Specifications

Physical		
	Height:	4.2 inches (10.67 centimeters)
	Length:	6.95 inches (17.65 centimeters)
	Weight:	1.2 pounds (0.54 kilograms)
Environmental		
Operating	**Temperature:**	32° F to 131° F (0° C to 55° C)
	Relative Humidity:	0% to 90% non-condensing
	Altitude:	0 to 10,000 feet AMSL (0 to 3,048 meters)
Storage	**Temperature:**	-40° F to 176° F (-40° C to 80° C)
	Relative Humidity:	0% to 90% non-condensing
	Altitude:	0 to 40,000 feet AMSL (0 to 12,192 meters)
Electrical		
	Voltage:	5.0 VDC ± 5%
		3.3 VDC ± 5%