PCI 53B

PCI interface for MIL-STD 1553B

Description

PCI 53B is a full-height, single-slot PCI interface (80 MB/s) for MIL-STD 1553B. The board supplies one bus controller, one bus monitor, and thirty-one remote terminals (RTs); all run concurrently and independently. Also provided onboard are two EDT-programmable Xilinx FPGAs and one embedded processor (SPARC) with local memory.

The board features a dual-redundant 1553B bus interface and serial debug interface. It has powerful capabilities for real-time scheduling and error insertion / detection; direct or transformer coupling to 1553B bus; and all mode codes for dual redundant operation. It also has an extensive built-in test facility.

The PCI 53B is programmable for multiple 1553 protocols (A or B by user, others by EDT). The board supports the full 1553B standard, but can be configured to detect any standard command or subcommand as illegal.

After initialization, the application program can configure the board as required. EDT provides FPGA configuration files, drivers for supported operating systems, and a software development kit that includes C language libraries, examples, and utilities.

Features

PCI interface (80 MB/s, full height, single slot) for 1553B

Supplies a bus controller, a bus monitor, and thirty-one remote terminals (RTs), all running concurrently and independently

Provides two EDT-programmable FPGAs (Xilinx) and one embedded processor (SPARC) with local memory

Has dual-redundant 1553B bus interface and serial debug interface

Allows real-time scheduling and error insertion / deletion

Supports direct or transformer coupling to 1553B bus

Provides extensive built-in test facility

Can be configured by user to work with any 1553A or 1553B protocol, or to detect any standard command or subcommand as illegal

Applications

MIL-STD 1553B communications

Specifications

Product Type	PCI 53B is a PCI interface for MIL-STD 1553B; it provides DMA, memory, embedded processor, and FPGA resources.	
FPGA & Processing Resources	Two EDT-programmable FPGAs One embedded processor (onboard)	Xilinx XC4013E and XC4010E SPARClite MB86832
Other Resources	One bus monitor One bus controller Thirty-one remote terminals (RTs) User-programmable register to select direct or transformer coupling to 1553B bus	
Memory (on Processor)	SRAM DRAM Flash ROM	0 4 MB 512 KB
Interfaces	PCI bus MIL-STD 1553B bus Serial debug	One; data rate = 80 MB/s One (dual redundant, all mode codes supported); data rate = full bus bandwidth One
PCI Compliance	PCI version Direct memory access (DMA) Number of slots	2.1 Yes One
1553B Compliance	Fully compliant	
Connectors	MIL-STD 1553B Serial debug	Two King 1994-1-9 Triax Lemo 7-pin
Cabling	Cabling is purchased separately; consult EDT for options.	
Physical	Weight Dimensions	6 oz. typical 7.0 x 4.2 x 0.5″
Environmental	Temperature Humidity	Operating 10° to 40° C Non-operating -20° to 60° C Operating 20% to 80%, non-condensing at 40° C Non-operating 95%, non-condensing at 40° C
System and Software	System must have a PCI or PCI-X bus, 33 MHz or faster. Software is included for Windows and Linux; for versions, see our website.	

Ordering Options

Ask about custom options.