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MIL-STD-1553 Multi-function IP Module IP-1553

Features

- Simultaneous Bus Controller, 31 Remote Terminals, and Bus Monitor
- Multi-function and single-function versions
- Supports MIL-STD-1553A and B Notice II
- Conditional BC branching on real-time message data or status
- I/O triggering and error injection/detection
- Extended operating temperature option
- Easy-to-use ***BusTools***/1553™ Windows-based GUI bus analyzer available
- Advanced, high-level software API
- 128 KB shared RAM
- Installs on multiple platforms
- Aperiodic message insertion
- IRIG/GPS synchronization capability



The Condor Engineering IP-1553 establishes a new level of MIL-STD-1553A/B interface technology. Designed for performance and flexibility, the dual redundant IP-1553 mezzanine board is a cross-platform solution that leverages powerful functionality with an easy-to-use programming interface. Standard features include IRIG/GPS synchronization capability, aperiodic message insertion, error injection/detection, conditional BC branching, 48-bit timetags and "Oneshot" BC operation. One or two independent IP-1553 modules can be mounted on PCI, CompactPCI, PC/AT, VME or VXI carriers.

Multi-function Interface

The IP-1553-M provides a multi-function 1553 interface that can operate simultaneously as a BC, up to 31 RTs and as a BM. It can completely emulate an entire dual redundant 1553 channel internally, eliminating the need for external hardware to simulate missing nodes.

Single-function Interface

The IP-1553-S is a single-function interface with all the features and functionality of the multi-function version, but only one major operational mode is enabled at a time. This interface functions as either a Bus Controller or 31 Remote Terminals or Bus Monitor.

Software

To speed application development, Condor includes a flexible, high-level, 1553 API in source code. Windows 2000, Me, NT, 98, 95, VxWorks, LabWindows/CVI, Visual Basic and DOS drivers are provided when an integrated carrier board solution is ordered. LabVIEW support and ***BusTools***/1553, Condor's GUI bus analysis and simulation solution for 1553, are optionally available. Condor's high performance and intuitive software solutions provide complete and simplified access to MIL-STD-1553 functionality for development, integration, test, embedded and maintenance applications.

CONDOR ENGINEERING

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MIL-STD-1553 Multi-function IP Module IP-1553

Specifications

Physical / Environmental

- Double-wide IP module (3.6" x 3.9")
- Standard operating temperature: 0°C to 70°C
- Extended operating temperature range: -40°C to 85°C

Software

- API - Source code API library provided
  - High-level API libraries for Windows 2000, Me, NT, 98, 95, DOS, VxWorks, Visual Basic, LabWindows/CVI available
- GUI - Optional BusTools/1553 GUI bus analyzer
- LabVIEW - Support optional

Multi-function Operational Modes (IP-1553-M)

- Simultaneous BC, 31 RTs and BM

Single-function Operational Modes (IP-1553-S)

- BC or 31 RTs or BM

Connections

- Direct or transformer coupling
- Input and output triggers
- Transition cabling to 1553 cable jacks available

Integrated Solutions Available

- 1/2 and full size PC/AT (ISA)
- Full size PCI
- 3U and 6U CompactPCI
- 3U and 6U VME
- 6U Intelligent VME
- C-size VXI

On-board Shared RAM

- 128 KB
- 2 KB sliding window access

Maximum Power

- +5 VDC: 1.3 A at 97% duty cycle

Warranty: 3 year limited hardware warranty

See our on-line Configuration Guide for a complete list of available configurations

Description

Bus Controller

- Programmable control over:
  - Major and minor frame content and timing
  - Intermessage gap times
  - Response time-out and late response
- Modify messages, data or setup while card is running
- Insert aperiodic messages into a running BC list
- "Oneshot" mode for simplified BC operation
- Conditional message sequencing based on real-time message data or status
- Selectable interrupt generation and status messages
  - Full range of system conditions
  - All detected errors
- Full error detection
  - Invalid word
  - Bit count error
  - High word
  - Low word
  - Inverted sync
  - Manchester
  - Late response
  - Early response
  - No response
  - Incorrect RT address
  - Parity error
- Extensive programmable error injection (on a per word basis)
- Synchronize BC operation to external time source

Remote Terminal

- Multiple RT simulation (up to 31 RTs)
- Programmable message content (linked message buffers)
- Modify data, status words or setup while card is running
- Programmable error injection (on a per word basis)
- Interrupts can be generated on a per message basis upon End of Message and error conditions

Bus Monitor

- Capture 100% fully loaded bus traffic with:
  - Time-tagging
  - Word status
  - RT response time
  - Error status
  - Message status
- Interrupts can be selected by RT / SA / WC
- Extensive filtering and triggering options
  - By individual RT/subaddress
  - Transmit, receive or broadcast mode codes
  - Internal or external triggering
  - Trigger output on user specified data
- Large on-board memory storage
- 48-bit, microsecond resolution timetagging
- IRIG/GPS synchronization

Available Configurations

Module Configurations

IP-1553-M	MIL-STD-1553 multi-function IP module
IP-1553-S	MIL-STD-1553 single-function IP module (with 31 RT support)
-R suffix	Ruggedized, extended operating temp option (-40°C to 85°C)

Optional Software

***BusTools*/1553**	MIL-STD-1553 bus analysis and simulation GUI software for Windows 2000, Me, NT, 98, 95
LV-1553	LabVIEW support for IP-1553

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