Interface for VMEbus

FEATURES

1, 2 or 4 Independent MIL-STD-1553 Channels

› **Multi-function Features**
  - Simultaneous Bus Controller, 31 Remote Terminals, or Bus Monitor

› **Single-function Features**
  - Bus Controller, 31 Remote Terminals, or Bus Monitor

› **Bus Controller - BC**
  - BC->RT, RT->BC, RT->RT
  - Mode Codes, Broadcast and single-shot messaging
  - Programmable time delays
  - Major/Minor frames
  - Real-time conditional branching
  - Two aperiodic messaging methods

› **Remote Terminal - RT**
  - RT data wrapping
  - Multiple RT buffers
  - Dynamic Bus Control
  - Automatic Mode Code and status bit responses
  - Programmable response time

› **Bus Monitor - BM**
  - Full error detection
  - Multiple monitoring methods
  - 45-bit time-tagging
  - Adv. interrupts and triggers

› **Architecture**
  - BC & RT error injection/ detection
  - DYNAMIC architecture
  - BC & RT link list structures
  - 1 Mbyte RAM per channel
  - Direct & transformer coupling
  - Onboard diagnostic bus (non-ruggedized boards only)
  - Environmental options

› **Software Support**
  - Advanced, high-level API
  - Source code included
  - BusTools Analyzer supported

The VME-1553 provides new levels of performance and flexibility for MIL-STD-1553A and B Notice II on the VMEbus. Available in commercial, industrial and conductively cooled versions with one , two or four dual-redundant channels, the VME-1553 includes advanced API (Application Programming Interface) software that reduces application development time. Standard features include selectable transformer or direct coupling, 1 MB of RAM per channel, 45-bit message timetagging, triggers, extensive BC & RT link-list structures, error detection/insertion, advanced BC functionality, automatic/manual RT status bit and Mode Code responses. Provides host software synchronization to pulses from external timing sources (IRIG, GPS, etc). The VME-1553 Bus Monitor provides unparalleled error detection and 100% monitoring of fully loaded buses.

Multi-function Interfaces

VME-1553 multi-function interfaces are easily configured to operate with simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor.

Single-function Interfaces

Single-function VME-1553 interfaces have all the features and functionality of the multi-function versions, but only one major operational mode is enabled at a time. Each interface can emulate either a Bus Controller or 31 Remote Terminals or Bus Monitor.

Software

Condor provides our advanced 1553 API in source code, along with support for Windows XP, 2000, Me, NT, 98, 95, Linux and VxWorks. LabVIEW and Solaris support is available. Contact factory for other options. To access 1553 functionality without software development, *BusTools*/1553, Condor's MIL-STD-1553 bus analysis, simulation and data logging/monitoring solution is available using our integrated PCIMXI-2 support.

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1553

Interface for VMEbus

SPECIFICATIONS

Physical

- 6U VME card

Environmental

- Standard op. temperature range: 0° C to +70° C
- Extended temperature range:-40° C to +85° C
- 5 to 90% relative humidity (non-condensing)
- Conductively cooled format available

Software

- API - High-level libraries with source code included
  - Operating systems supported: Windows XP, 2000, Me, NT, 98, 95, Linux, VxWorks and other operating systems
- GUI - Optional support for *BusTools*/1553 GUI bus analyzer with PCI-MXI-2 (mf boards only)
- Solaris and LabVIEW support available

Connections

- Programmable direct or transformer coupling
- Transition cabling to BJ70 jacks included
- Input and output triggers: 2 BNC male connectors
- Variable output voltage available

Multi-function Operational Modes

- Simultaneous BC, 31 RTs and BM

Single-function Operational Modes

- BC or 31 RTs or BM

On-board Shared RAM

- 1 Mbyte per dual-redundant channel

Power (two channels, 86% duty cycle)

- +5 VDC: 10 W (avg)

Interface

- A16, A24, A32 addressing
- D16, D32 data transfer
- VXI MODID supported

Warranty: 3 year limited hardware warranty
No cost library and driver upgrades

AVAILABLE CONFIGURATIONS

VME-1553-M	MIL-STD-1553 multi-function, single channel, variable voltage, 6U VME interface board
VME-1553-MM	MIL-STD-1553 multi-function, two channel, variable voltage, 6U VME interface board
VME-1553-4M	MIL-STD-1553 multi-function, four channel, variable voltage, 6U VME interface board
VME-1553-SA	MIL-STD-1553 single-function, single channel, fixed voltage, 6U VME interface board
VME-1553-SSA	MIL-STD-1553 single-function, two channel, fixed voltage, 6U VME interface board

DESCRIPTION

Bus Controller

- Programmable control over:
  - Major and minor frame content and timing
  - Intermessage gap times
  - Response time-out and late response
  - Multiple BC retry
- 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	- Late response
- Bit count error	- Early response
- High word	- No response
- Low word	- Incorrect RT address
- Inverted sync	- 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 error injection (on a per word basis)
- Modify data, status words or setup while card is running
- Programmable message content (linked message buffers)
- 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	- Error status
- Word status	- Message status
- RT response time	

- 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
- Real-time bus playback with RT edit mode
- 45-bit, microsecond resolution timetagging
- Host software synchronization to external timing sources

VME-1553-4SA	MIL-STD-1553 single-function, four channel, fixed voltage, 6U VME interface board
-R suffix	Ruggedized*, extended operating temperature option (-40° C to +85° C)
-C suffix	Ruggedized*, extended operating temperature with conductive cooling option

A channel is a dual-redundant A/B pair.
* Ruggedized versions do not include onboard diagnostic bus.
See our on-line Military Products Configuration Guide for available configurations.
http://www.condoreng.com

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