

## AXI1553-1 Single-channel (Dual Redundant) 1553 Card AXI1553-2 Dual-channel (Dual Redundant) 1553 Card

### Overview

The AXI1553-1/2 module is part of a new family of VXIbus cards offering full function test, simulation, monitoring and databus analyzer functions for MIL-STD-1553A/B applications. Two independent and dual redundant MIL-STD-1553A/B databus streams are provided on the AXI1553-2 module and one dual redundant MIL-STD-1553A/B databus stream is provided on the AXI1553-1. The AXI1553-1/2 can be used for protocol testing and simulation of MIL-STD-1553A/B Bus Controller, Multiple Remote Terminals and Chronological Monitoring at full bus load. All operations are performed concurrently with no degradation of performance in any operating mode. The AXI1553-1/2 module incorporates full protocol error injection and detection features with software programmable output amplitude and bus coupling modes of the electrical bus signals.

The module fully supports the protocol testing requirements defined by the RT and BC production test plans according to SAE-AS 4112/4114. An on-board IRIG-B time decoder and generator allows users to accurately synchronize single or multiple AXI1553-1/2 modules to a common time source.

The use of an Application Support Processor (ASP) executing the Driver Software allows user specific functions to be processed on-board, significantly off-loading the host processor. This new concept allows users to implement application-specific system level functionality on a single interface card. To provide I/O and processing expansion capabilities, a PMC slot is available on the AXI1553-1/2 module.

The AXI1553-1/2 uses a 'Common Core' hardware design utilizing multiple RISC processors. A Physical Bus Interface (PBI) daughter board provides MIL-STD-1553A/B bus connections including a resistive terminated bus network.

The AXI1553-1/2 module is a register based device and can be easily integrated into VXI systems as an off-the-shelf module supported by a VXI *plug&play* driver software package. Furthermore the AXI1553-1/2 operates with the optional PBA-2000 Databus Analyzer Software for Windows 95/98 and NT.

### Specifications

#### Bus Controller

- Autonomous operation including sequencing of minor/major frames
- Support for acyclic message insertion/deletion
- Programmable BC retry without host interaction



## Features

Single-slot VXIbus Module

Up to Two Independent Channels

SAE-AS 4112/4114 Production Test Plans

On-board IRIG-B

Extensive Error Insertion and Detection

Programmable Output Levels and Bus Coupling

Distributed Product. These Products are manufactured and supported by other leading suppliers

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- Full error injection down to word and bit level (AS 4112 compliant)
- Multi-buffering for data consistency and message multiplexing
- Synchronization of BC operation to external trigger inputs
- 4  $\mu$ s inter-message gaps

### Multiple Remote Terminal

- Programmable RT response time down to 4  $\mu$ s for each simulated RT
- Programmable and intelligent response to mode codes
- Full error injection down to word and bit level (AS 4112 compliant)
- Multi-buffering with real time data buffer updates

### Chronological Bus Monitor

- 100% data capture on two streams at full bus rates
- Autonomous message synchronization and full error detection
- Two static/dynamic complex triggers with up to 8 sequences
- Message filter and selective capture
- Bus activity recording independent from trigger and capture mode
- External trigger inputs and outputs
- Programmable response time out

### Specifications

#### Driver software execution on-board

#### Control of RS-232C debug port for firmware updates

#### Dynamic data generation

#### Automatic test sequence generation

<b>Processors:</b>	Two 32-bit strong ARM 200 MHz processors One 64-bit MIPS IDT 150 MHz processors
<b>Memory:</b>	2 MB Global RAM 16 MB ASP RAM
<b>Encoder/Decoder:</b>	One MIL-STD-1553A/B encoder/decoder per BIU with full error injection and detection capability
<b>Time Tagging:</b>	46-bit absolute IRIG-B time with 1 $\mu$ s resolution
<b>Physical Bus Interface:</b>	Dual MIL-STD-1553A/B Transceivers with variable output amplitude, programmable bus coupling and on-board terminated bus network and additional bus stub
<b>Connectors:</b>	4 Twinax Connectors (Bus & Stub) for bus connections Optional PBIs (-D): • 1 x 9 Way D-Sub for bus connections • 1 x 15 Way D-Sub for trigger and timecode I/O • 1 x 9 way D-Sub (common) for trigger and time code I/O and RS-232 I/F

### Ordering Information

<b>AXI1553-1</b>	Single Channel BC, MRT, Monitor
<b>AXI1553-2</b>	Dual Channel BC, MRT, Monitor
<b>AXI1553S-1</b>	Single Channel BC, MRT
<b>AXI1553S-2</b>	Dual Channel BC, MRT
<b>AXI1553M-1</b>	Single Channel BC, MRT, or Monitor (Specify One)
<b>AXI1553M-2</b>	Dual Channel BC, MRT, or Monitor (Specify One)
<b>PBA-2000-SS</b>	Bus Analyzer Software Package (Single Channel)
<b>PBA-2000-DS</b>	Bus Analyzer Software Package (Dual Channel)

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