Single or dual MIL-STD-1553B channels on a single PMC

The IXI Technology 1553 PMC I/O Interface module installs in an industry standard PCI Mezzanine Card (PMC) slot providing a MIL-STD-1553B (Notice 2) Multiplex Data Bus interface. Depending on the model, the 1553 interface features one or two independent 1553B channels on a single PMC module. On two-channel models, both channels can operate independently with full performance and programmability.

MIL-STD-1553B Features
Each channel provides dual-redundant connections (bus A and B), allowing systems to implement failover capability for enhanced survivability. Each channel can be programmatically configured as a Bus Controller (BC), Remote Terminal (RT), Bus Monitor (BM), or Monitor Terminal (MT).

To support the widest range of applications, connection to the 1553 bus is software selectable for direct or transformer coupling. Transformer coupling provides better fault tolerance and impedance matching of the bus, and consequent reduction in reflections.

The 1553 interface can be used as a timestamp Master or Slave, providing a method of synchronizing its timestamp with other IXI 1553 interfaces, or with signals from some other external device.

The 1553 interface can be updated in the field by reconfiguring its Field Programmable Gate Array (FPGA) logic to add features or compensate for non-compliant interfaces. FPGA technology reduces component obsolescence, enabling the 1553 device to be deployed and supported for years to come.

The 1553 device is supported by an extensive application programming interface (API) library and device driver. Device driver software is available for the most commonly-used operating systems. Source code for sample applications is also provided.

Product Overview
- One or two dual-redundant MIL-STD-1553 channels
- 64K words (128K bytes) of RAM for message I/O buffering
- Programmable for Bus Controller (BC), Remote Terminal (RT), Bus Monitor (BM), or Monitor Terminal (MT) modes
- Supports highly autonomous bus controller operations with built-in message sequencer
- PCI interrupt generation for a robust set of 1553 bus and hardware events
- Software controlled direct or transformer bus coupling
- Optional rear I/O through PN4
- PnP (Plug ‘n Play) compliant
- Onboard timestamp with external time sync support
- Programmable big or little endian memory access
General Product Features
- PCI 2.2 compliant (supports plug and play)
- PCI master and slave operation
- Field Programmable Gate Array (FPGA) technology
- Interrupt, PIO & DMA operation
- 33 or 66 MHz operation

MIL-STD-1553B Modes
- Bus Controller (BC)
- Remote Terminal (RT)
- Bus Monitor (BM)
- Monitor Terminal (MT)

Message I/O Scheduling
- Bulk data transfer
- Data block double buffering
- Asynchronous messages
- Retries and bus switching

Remote Terminal Buffering Options
- Single buffering
- Double buffering
- Circular buffering based on sub-address
- Global circular buffering

Software Drivers Available*
- Choice of driver included with board purchase
- Driver and run-time library software support for FreeBSD, Linux®, and Windows® 2000/XP/Vista/7

*Contact factory for new OS support

1553 PMC Technical Specs

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>PCI Bus Interface</td>
<td>PCI 2.2 Compliant 32-Bit, 33MHz, Universal Card (3.3V or 5V I/O Signaling)</td>
</tr>
<tr>
<td>1553 Interface</td>
<td>MIL-STD-1553B Notice 2, Dual Redundant Bus</td>
</tr>
<tr>
<td>1553 I/O Connector</td>
<td>Trompeter BJ157 Concentric Triaxial BNC</td>
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<tr>
<td>Form Factor</td>
<td>IEEE 1386 Single Size CMC (149mm x 74mm)</td>
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<tr>
<td>Power Consumption</td>
<td>Average +5V current draw: 1.5A Average +V I/O current draw: 5mA Average Power Dissipated: 7.5W</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0% to 95% (non-condensing)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to +55°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td>Shock</td>
<td>MIL-STD-810F, method 516.4, procedure VI (bench handling)</td>
</tr>
<tr>
<td>Vibration</td>
<td>Random: 20-200Hz/0.01 g/Hz Sine (g Peak) 5-28Hz/1g</td>
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<tr>
<td>MTBF</td>
<td>&gt;250,000 hours calculated per MIL-HDBK 217-F @ 30°C, Ground Benign</td>
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Model Numbers
- FP-553000-S0-01  1553 I/O Interface, PMC, 1-CH 1553, TRIAX
- FP-553553-D0-01  1553 I/O Interface, PMC, 2-CH 1553, TRIAX

Options and Accessories
- CA-00256-01  CABLE, 1553 INTERFACE LOOPBACK, TRIAX, 1 FT
- CA-00256-02  CABLE SET, 1553 INTERFACE LOOPBACK, TRIAX, 1 FT