A high-performance NTDS module for conduction cooled PMC slots

Powerful NTDS I/O capabilities in a compact package

The Swift Parallel Conduction Cooled PCI Mezzanine Card (CCPMC) connects to military computers and peripherals with MIL-STD-1397C Parallel Type A, B, C or H interfaces. The Swift CCPMC is a daughter card that installs in a standard or conduction cooled PMC slot on a host CPU or PMC carrier, providing robust NTDS I/O capabilities in a compact form factor.

Sabtech's Swift is easy to program and offers a variety of input and output modes to support any NTDS protocol. Hardware-independent input and output channels allow the Swift to perform simultaneous input and output (full duplex) operations. NTDS type is software-selectable allowing quick reconfiguration without the use of hardware jumpers or switch settings.

Swift boards can be used for passive tap applications as well as normal NTDS I/O. An on-board time stamp generator tags individual input words with 125 ns resolution. Time stamping is software-selectable and can be used with active or passive communications.

All boards in the Swift family are software-compatible making it easy to mix parallel and serial NTDS boards in the same system as well as allowing transparent migration of applications between PCI, PMC, cPCI, PC/104-Plus, and PCIe versions of the Swift. Device driver software is available for the most commonly-used operating systems.

For maintenance and reliability, Swift NTDS Parallel boards use short-circuit protected outputs to prevent failures due to improper cabling or NTDS type mismatch. An internal loop-back path allows the Swift to be tested without disconnecting cables. The Swift can be updated in the field by reconfiguring its Field Programmable Gate Array (FPGA) logic to add features or compensate for non-compliant interfaces. Using FPGA technology reduces component obsolescence, enabling the Swift to be deployed and supported for years to come.

Product Overview

- MIL-STD-1397C Type A, B, C, and H compliant
- Full-duplex NTDS transfers
- 8- or 16-bit NTDS I/O via PMC PN4 connector
- Interrupt, PIO & DMA operation
- Independent NTDS input and output channels
- Field Programmable Gate Array (FPGA) technology
- Separate word counters and time-outs for EI/EF words and data words on inputs and outputs
- PCI master and slave operation
- Short-circuit protected, tri-state drivers
- Internal loopback test without disconnecting NTDS cables
- Software enabled time stamp on input words with 125ns resolution
- Time stamps can be synchronized across multiple interfaces
- Supports receipt of multiple Forced EF’s
- Software compatible with Swift Parallel PCI, PMC, cPCI, PC/104-Plus, and PCIe boards
General Product Features

Input Mode Features
• Separate or combined data and command word buffers
• Input command words, stop on data word
• Input data words, stop on command word
• Passive tap mode

Output Mode Feature
• Concurrent data and command buffer operation

Time-out Mode Features
• Time-out values in 10µs or 1ms increments
• Time-out between words and/or total transfer times
• Start time-out at beginning of operation or upon transfer of the first word

Software Drivers Available*
• Choice of driver included with board purchase:
*Contact factory for new OS support

Options and Accessories
• Adapter Modules
• Cable Assemblies
• Tap Accessories

Swift CCPMC NTDS Parallel Technical Specs

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTDS Interface</td>
<td>MIL-STD-13997C Type A, B, C and H</td>
</tr>
<tr>
<td>PCI Bus Interface</td>
<td>PCI 2.2 Compliant 32-Bit, 33/66MHz, Universal Card</td>
</tr>
<tr>
<td>Input Buffer</td>
<td>64K x 16-bit FIFO</td>
</tr>
<tr>
<td>NTDS I/O Connector</td>
<td>PMC PN4 Docking Connector, 16-bit NTDS I/O</td>
</tr>
<tr>
<td>Form Factor</td>
<td>ANSI/VITA 20-2001 Conduction Cooled PCI Mezzanine Card (CCPMC), single-width (149mm x 74mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Average +5V current draw: 1.0A</td>
</tr>
<tr>
<td></td>
<td>Average +V/I/O current draw: 5mA</td>
</tr>
<tr>
<td></td>
<td>Average Power Dissipated: 5.1W</td>
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<tr>
<td>Relative Humidity</td>
<td>0% to 95% (non-condensing)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

Model Numbers

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-01602-14-CCLRIO</td>
<td>Swift CCPMC, 64K FIFO</td>
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