A high-performance serial NTDS module for PMC slots

Powerful NTDS I/O capabilities in a small package

The Swift PMC NTDS Serial card connects computers with PCI Mezzanine Card (PMC) slots to military computers and peripherals with MIL-STD-1397C Type D or E interfaces. The Swift PMC is a daughter card that installs in an industry standard PMC slot on a host CPU or PMC carrier, providing full-featured NTDS I/O capabilities in a small 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.

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, PCIe, and PC/104-Plus versions of the Swift. Device driver software is available for the most commonly-used operating systems.

For maintenance and reliability, Swift NTDS Serial boards have an internal loopback path that allows it 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 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**

- Fully MIL-STD-1397C Type D or E compliant
- Full-duplex 32-bit NTDS transfers
- Interrupt, PIO & DMA operation
- Independent NTDS sink and source channels
- Field Programmable Gate Array (FPGA) technology
- Separate word counters and time-outs for command and data words on inputs and outputs
- PCI master and slave operation
- Internal loopback test without disconnecting NTDS cables
- Software enabled SIF (for NTDS type E)
- Software enabled time stamp on input words with 125ns resolution
- Time stamps can be synchronized across multiple interfaces
- Two software-controllable front panel User LEDs
- Supports receipt of multiple Forced Command words
- Control frame programmability for MIL-STD-1397B compatibility
- Software compatible with Serial Swift PCI, cPCI, PCIe, and PC/104-Plus 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
- Single word or burst mode (NTDS type E)
- Passive tap mode

**Output Mode Features**
- Concurrent data and command buffer operation
- Single word or burst mode (NTDS type E)

**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

---

**Swift PMC NTDS Serial Type D and E Technical Specs**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Type D</th>
<th>Type E</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTDS Interface</td>
<td>MIL-STD-1397C Type D or E</td>
<td>Type D: 2 coaxial connectors (Amphenol # 31-10-75)</td>
</tr>
<tr>
<td>PCI Bus Interface</td>
<td>PCI 2.2 Compliant 32-Bit, 33/66 MHz, Universal Card (3.3V or 5V I/O signaling)</td>
<td>Type E: 2 triaxial connectors (Trompeter # BJ157)</td>
</tr>
<tr>
<td>Input Buffer</td>
<td>64K x 32-Bit FIFO</td>
<td></td>
</tr>
<tr>
<td>NTDS I/O Connector</td>
<td></td>
<td>Form Factor: IEEE 1386 Single Size CMC (149mm x 74mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3oz</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Average +5V current draw: 0.58A</td>
<td>Average Power Dissipated: 2.89W</td>
</tr>
<tr>
<td></td>
<td>Average +VI/O current draw: 5mA</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0% to 90% (non-condensing)</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to +65°C</td>
<td></td>
</tr>
</tbody>
</table>

---

**Software Drivers Available***
- Choice of driver included with board purchase:
  - Windows NT®, Windows® 2000/XP, VxWorks®, Solaris™,
  - Linux®, LynxOS®, HP-UX

*Contact factory for new OS support

**Options and Accessories**
- Cable Assemblies
- Tap Accessories

---

**Model Numbers**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-03101-00</td>
<td>Serial Type D, 4K FIFO</td>
</tr>
<tr>
<td>SP-03102-00</td>
<td>Serial Type D, 64K FIFO</td>
</tr>
<tr>
<td>SP-04101-00</td>
<td>Serial Type E, 4K FIFO</td>
</tr>
<tr>
<td>SP-04102-00</td>
<td>Serial Type E, 64K FIFO</td>
</tr>
</tbody>
</table>