



Swift™ PC/104-Plus NTDS Serial Type D and E

A high-performance serial NTDS module for PC/104 embedded computers

Powerful NTDS I/O capabilities in a stackable package

The Swift PC/104-Plus NTDS Serial card connects embedded computers to military computers and peripherals with MIL-STD-1397C Type D or E interfaces. The Swift PC/104-Plus provides reliable serial NTDS communications in the specialized or extreme embedded computing environments where this architecture is used. Unlike other computer architectures, the PC/104 form factor has no backplane, and instead modules are stacked together like building blocks. Multiple modules are fastened together with standoffs, resulting in a very rugged assembly. Sabtech's Swift conforms to the commercial PC/104-Plus specification, providing full support for the PCI bus and electrical pass-through for the ISA bus.

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.

- Industry Standard PC/104-Plus Module
- Full Duplex NTDS Channel
- Passive Tap Capability
- Test Without Disconnecting Cables

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 features or compensate for non-compliant interfaces. 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 boards
- Two software-controllable front panel User LEDs
- Supports receipt of multiple Forced Command words
- Programmable control frames for MIL-STD-1397B compatibility
- Software compatible with Serial Swift PCI, cPCI, and PCIe boards



Swift PC/104-Plus NTDS Serial Type E

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

Software Drivers Available*

- Choice of device driver included with board purchase:
Windows NT®, Windows 2000/XP®, Windows 7®,
VxWorks®, Solaris™, Linux®, LynxOS®, HP-UX

*Contact factory for new OS support

Options and Accessories

- Cable Assemblies
- Tap Accessories



Swift PC/104-Plus NTDS Serial Type E

Swift PC/104-Plus NTDS Serial Type D and E Technical Specs

NTDS Interface	MIL-STD-1397C Type D or E
PCI Bus Interface	PCI 2.2 Compliant 32-Bit, 33/66 MHz, Universal Card (3.3V or 5V I/O signaling)
ISA Bus Interface	Electrical pass-through only (not used onboard)
Input Buffer	64K x 32-Bit FIFO
NTDS I/O Connector	Type D: 2 coaxial connectors (Amphenol 31-10-75) Type E: 2 triaxial connectors (Trompeter BJ157)
Form Factor	PC/104-Plus compliant, 3.55 x 3.775 inches (90.17 x 95.89 mm)
Weight	2.8 oz
Power Consumption	Average +5V current draw: 0.58A Average +V/I/O current draw: 5mA Average Power Dissipated: 2.89W
Relative Humidity	0% to 90% (non-condensing)
Operating Temperature	0°C to +65°C

Model Numbers

PW-03102-00	Serial Type D, 64K FIFO
PW-04102-00	Serial Type E, 64K FIFO