Swift™ PCIe NTDS Serial Type D and E

High performance serial NTDS for PCI Express

A versatile serial NTDS channel for standard and low profile PCIe bus servers and workstations

The Swift PCIe NTDS Serial card connects computers with PCI Express (PCIe) slots to military computers and peripherals with MIL-STD-1397C Type D or E interfaces. The Swift PCIe is compatible with x1, x2, x4, x8 or x16 PCIe slots, allowing it to be used in the widest range of servers and workstations. NTDS cable connections are backward compatible with Sabtech's Swift Serial PCI board, allowing an easy upgrade to the PCIe version without the need to change cabling. It can be configured to fit in standard or low profile enclosures by changing the faceplate.

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.

- Compatible with PCIe x1, x2, x4, x8 or x16 slots
- 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 PCIe, PCI, PMC, cPCI, and PC/104-Plus versions of the Swift. Device driver software is available for the most commonly-used operating systems.

For maintenance and reliability, an internal loop-back path allows the Swift to be tested without disconnecting cables. Swift Serial Type E boards fully implement all the System Integrity Features (SIF) specified in MIL-STD-1397C. 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

- 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
- 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
- Supports receipt of multiple Forced Command words
- Control frame programmability for MIL-STD-1397B compatibility
- Software compatible with Serial Swift PCI, cPCI, PMC, and PC/104-Plus boards

Swift PCIe NTDS Serial Type D with standard profile faceplate

Swift PCIe NTDS Serial Type E with low profile faceplate

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 Feature
- 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 driver included with board purchase: Windows® NT, Windows® 2000/XP, Windows® Vista, Windows® 7, VxWorks®, Solaris™, Linux®, LynxOS®, HP-UX, FreeBSD
  Contact factory for new OS support

Swift PCIe NTDS Serial Type D/E with low profile faceplate

Swift PCIe NTDS Serial Type D/E with standard profile faceplate

Swift PCIe NTDS Serial Technical Specs

NTDS Interface	MIL-STD-1397C Serial Type D or E
PCIe Bus Interface	PCI Express Base Specification, Revision 1.0a
Input Buffer	64K x 32-bit FIFO
NTDS I/O Connectors	Type D: 2 coaxial connectors (Amphenol# 31-10-75) Type E: 2 triaxial connectors (Trompeter# CBBJR79T L)
Form Factor	Standard or low profile, half length PCIe With standard profile faceplate: 4.13" X 6.6" (104.9mm X 167.65mm) With low profile faceplate: 2.53" X 6.6" (64.26mm X 167.65mm)
Weight	4.1 oz.
Power Consumption	Average +3.3V current draw: 0.788A Average +12V current draw: 0.092A Average Power Dissipated: 3.70W
Temperature	Operating: 0°C to +55°C Storage: -41°C to +71°C
Shock	MIL-STD-810F, method 516.4, procedure VI (bench handling)
Vibration	Random: 20-200Hz/0.01 g²/Hz Sine Peak: 5-28Hz/1g
Relative Humidity	0% to 95% (non-condensing)
Altitude	Operating: 5000 ft. Storage: 26,250 ft.

Model Numbers

SE-03102-00	NTDS Type D, Standard Profile Faceplate
SE-03202-00	NTDS Type D, Low Profile Faceplate
SE-04102-00	NTDS Type E, Standard Profile Faceplate
SE-04202-00	NTDS Type E, Low Profile Faceplate

Options and Accessories

CA-01058-XX	Type D Coax, UPL20-2 to UPL20-2 Cable Set**
CA-EA03U-XX	Type D Coax, UPL20 to UPL20 Cable Set**
CA-01001-XX	Type E Triax, PL74-7 to PL74-7 Cable Set**
CA-00119-XX	Type E Triax, PL74-7 to BJ89-7 Cable Set**
CA-00158-XX	Type E Triax, PL74-32 to PL155-32 Cable Set**
CA-EA04U-XX	Type E Triax, PL80-7 to PL80-7 Cable Set**
AN-ST013-00	NTDS Type D Serial Isolation Tap
AN-ST012-00	NTDS Type E Serial Isolation Tap

** Contact factory for length