SABTECH INDUSTRIES
TACTICAL DATA LINK SPECIALISTS

Hawke-2P™ VME NTDS Parallel Type A, B, C and H

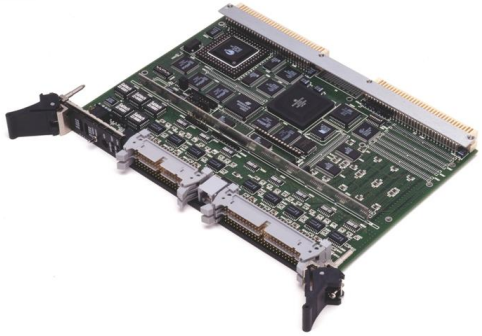
A new generation of NTDS parallel interfaces for the VMEbus

Versatile single board computer with a parallel NTDS I/O channel

The Parallel Hawke™ family of VME NTDS boards covers a range of powerful and versatile 32-bit interfaces between the VMEbus and NTDS or NATO STANAG 4146 input/output devices. Front panel NTDS cable pin-outs on all parallel Hawke™ NTDS boards are identical, allowing easy interchangeability of cables and accessories.

- Supports Distributed Processing
- On-board Monitor and Debugger
- EPROM for User Applications

The Hawke-2P A, B, C and H is a new generation of NTDS parallel interfaces for the VMEbus. The Hawke-2P is a form, fit and functional replacement for earlier models, such as the Hawke- X™ and C-Hawke™. The new Hawke-2P uses surface mount technology, a rotary switch for address select, field modifiable flash EPROM, board stiffeners to enhance ruggedness, and access to front panel mounted connectors for full 32-bit NTDS I/O. The Hawke-2P also features selectable 16- or 32-bit NTDS I/O access through the VMEbus P2 connector. A paddleboard mounted on the rear of the VMEbus's P2 connector converts to the identical NTDS cable pin-outs found on the front of the board. The Hawke-2P has short circuit protected tri-state drivers, differential receivers, front panel LEDs for all NTDS handshake lines, slow rate control, and is user-selectable for NTDS Types A (slow), B (fast), C (ANEW) or H (high throughput parallel) I/O.



Hawke-2P VME NTDS Parallel Type A, B, C and H

Product Overview

- Full-duplex 8-,16- or 32-bit NTDS transfers
- Computer, Intercomputer, Peripheral, or Interperipheral modes
- User-programmable MC68020 CPU
- Standard VMEbus Interface Controller (VIC) for 100% VMEbus compatibility
- High speed, 32-bit Block Mode VME transfer
- 512KB RAM for NTDS I/O, CPU, and VMEbus access
- Dynamically allocate RAM for NTDS I/O or onboard programs
- User EPROM socket supports up to 1MB of user programs
- Parallel access to NTDS data and status words
- Receive and transmit multiple Forced EFs without loss
- Independent word count registers and time-out counters for NTDS input and output
- Operates as an A32/A24/A16:D32/D16/D8 bus master and A32/A24:D32/D16/D8 or A16/D8 slave
- Independent transmit and receive transaction cancel
- Built-in Test (BIT) on power up or reset
- Built-in menu-driven System Monitor program links
- Hawke to PC or terminal via RS-232C port
- Built-in Assembler/Disassembler and Debugger
- Perform loopback and basic NTDS operations from a menu-driven interface
- Front panel LEDs for Reset, Bus Error, User, Halt, Test and Watchdog Timer
- Up to 16 Hawke boards may be used in a single VMEbus system

Software Drivers for Hawke-2P VME NTDS Parallel Type A, B, C and H*

- SNAPS™
- PowerIO: (Operating Systems supported by PowerIO drivers and includes: Windows NT®, VxWorks®, Solaris™, Linux®, HP-UX)
- Contact factory for new OS support

Interface Features

- Onboard MC68020 CPU executes system firmware, built in monitor software, built in assembler/disassembler/debugger, and also supports execution of user code contained in an EPROM (installed in the user EPROM socket) or downloaded over the VMEbus into the onboard RAM
- 512KB of onboard RAM is available for NTDS I/O buffers, system and user program & data storage, and is also accessible over the VMEbus
- Uses an industry standard VMEbus Interface Controller (VIC) for 100% VMEbus compatibility
- Operates as an A32/A24/A16:D32/D16/D8 bus master and A32/A24:D32/D16/D8 or A16/D8 slave
- Supports high speed 32-bit block mode VME transfer
- Up to 16 Hawke boards may be used in a single VMEbus system
- Built-in Test (BIT) executed on power up or reset
- Front panel LEDs for Reset, Bus Error, User, Halt, Test and Watchdog, as well as for the NTDS handshakes
- User EPROM socket is available (supporting up to 1MB of user programs) for installing user code which can be executed on power-up, or initiated via software accesses over the VMEbus

NTDS Features

- MIL-STD-1397C Type A, B, C and H compatible
- Supports transfers at MIL-STD-1397C maximum rate
- True full-duplex operation
- Independent NTDS input and output channels, with independent word count registers
- Differential receivers and single ended drivers (per NTDS spec.)
- Software (or hardware) configurable for Type A, B, C and H
- Software configurable for 8, 16, or 32-bit transfers
- Built-in menu-driven System Monitor provides easy control of NTDS operations (without requiring the development of user software) for quick checkout and test of NTDS cables and communications

NTDS Input Features/Output Features

- Input data & command words to a single buffer, or separate buffers
- Input just data words
- Input data words and command words
- Input data words and stop on command word received
- Input command words and stop on data word received
- Allow forced commands to be received
- Command words can be sent as normal or forced commands
- Send just data words
- Send just command words
- Send just forced command words
- Send just data & command words
- Send just data & forced command words

NTDS Time-Out Features

- Time-out values in 1ms increments
- Separate time-out counters for inputs and outputs
- Start time-out at beginning of operation or upon transfer of the first word

Hawke-2P VME NTDS Parallel Type A, B, C and H Technical Specs

NTDS interface	MIL-STD-1397C, type A/B/C/H
VMEbus interface	VME revision C.1 (IEEE P1014)
Processor	MC68020, 32 bit CPU
RAM	512KB
NTDS I/O connector	Dual 50 pin and 34 box headers or VMEbus P2 connector
RS-232C connector	RJ-12 w/ DB9 male adapter
Form factor	Single-wide 6U eurocard
Weight	13 oz
Power consumption	+5Vdc @ 2.3A
	+12Vdc @ 350mA
	-12Vdc @ 390mA
Relative humidity	0% to 90% (non-condensing)
Operating temperature	0°C to +55°C
User EPROM	8KB to 1MB supported