Model 75D4

3U cPCI HIGH DENSITY I/O CARD

Features

- Discrete, TTL, Serial and MIL-STD-1553
- 3-Axis Motion Controller w/ Enhanced Feedback
- 12-port Unmanaged Gig-E Switch, Layer 2+
- Single Slot 3U cPCI with up to 48 I/O Channels
- Integrated four port serial communications (option)
- cPCI Bus and/or Dual Gigabit Ethernet Interfaces
- Automatic Background Built-in-Test (BIT) (module-dependent)
- Front and/or Rear I/O Support
- Designed for Commercial and Rugged applications
- Software Support Kit and Library provided

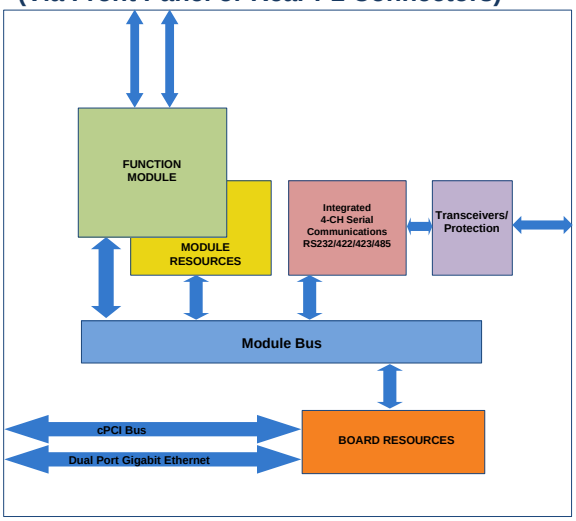
Convection Cooled

Conduction Cooled

Description

The 75D4 is a single slot, 3U cPCI, low-power/high-performance, high-density I/O board with an integrated option for four channels of serial communications functions (RS-232/422/423). A high-density module slot enables integrators to choose from a variety of high-density I/O and communications functions. These functions include Digital I/O (Discrete & TTL), full hand-shaking modem control synchronous / asynchronous RS232/422/423/485 or MIL-STD-1553. Additionally, a 12-Port (maximum) unmanaged Gigabit Ethernet switch is available. Module slots are standardized with a double-wide footprint and high-density channel count, enabling up to 48 channels of high functionality, feature-rich programmable discrete on a single 3U card. The 75D4 allows systems integrators to confidently tailor, manage, monitor and control a host of sensor interfacing and communications requirements using NAI's flexible, leading-edge, fully programmable and BIT- enabled function modules.

User Signals
(Via Front Panel or Rear P2 Connectors)



The 75D4 can be used alone or with NAI's 75DP3 Processor or 75C3 multi-function I/O boards in a system to provide a complete low-power/high-performance, programmable cPCI solution for sensor control/interfacing and communications. This unique, tailored COTS design offers a broad assortment of signal interfaces, including Digital I/O (Discrete, Differential, TTL/CMOS); Analog I/O (A/D, D/A, RTD, Strain Gage); Motion Control and Sensor Interfaces (Synchro/Resolver/LVDT/RVDT Measurement and Simulation, Encoder/Counter, 3-Axis Motion PWM/DAC Servo Motor Controller with enhanced feedback options); and Communications Interfaces (Serial RS-232/422/423/485, CANBus, MIL-STD-1553 and ARINC 429/575).

All sensor data is available on the cPCI bus or Gigabit Ethernet. API libraries, source code, documentation and test/sample applications are available for direct use or for porting to a variety of operating systems.

Advantages of using the 75D4 for board or system-level solutions:

- Sensor control/data available for immediate use by an external host system processor via cPCI and/or Gigabit Ethernet
- High Channel density data acquisition and control

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GENERAL BOARD SPECIFICATION

Power – +5VDC ●**Operating Temp** – 0° C to 70° C or -40° C to 85° C ●**Size** – 100mm x 20mm x 160mm (3U)

AVAILABLE FUNCTION MODULES

1 – Contact factory regarding availability

Discrete I/O	**Module**	**Channels**	**Input Range**	**Output Range**	**Programmable**	
	K9	48	0 – 60 VDC	0 – 60 VDC	Input or Output	
TTL	**Module**	**Channels**	**Input Range**	**Output level**	**Programmable**	
	D6[1]	48	0 – 5.5 V	TTL/CMOS	Input or Output	
MIL-STD-1553	**Module**	**Channels**	**Operational Modes**	**Onboard RAM**	**Coupled**	
	N3	2	BC,RT, BM, BM/RT	128Kbyte per ch	Transformer	
	N4	2	BC,RT, BM, BM/RT	128Kbyte per ch	Direct	
RS-232/422/485	**Module**	**Channels**	**Communication**	**Data rate (Sync)**	**Data rate (Async)**	**Tx/Rx Buffer Notes**
	P4	4	Async / Sync	8 Mbits/s per ch.	800 kbit/s per ch.	64 KB Full modem
	P5[1]	6	Async / Sync	4 Mbits/s per ch.	800 kbit/s per ch.	64 KB Full modem
Ethernet Switch	**Module**	**Ports**	**Type**	**Data rate**	**Architecture**	**Notes**
	H2	12	Un-managed	10/100/1000-B-T	DSA	Broadcom® BCM53312S
Motor Controller	**Module**	**Axis**	**Type**	**Servo loop rate**	**Output**	**Notes**
	M* [1]	3	DC, Stepper, PWM (MA-MH; see specifications for module option designation)	10Hz – 20KHz	PWM, ±10V DAC	12 CH synchronous A/D 256K word buffer w/ encoder position trigger

PART NUMBER DESIGNATION

75D4 – XX X X X X – XX
Slot # 1

MODULE (SLOT) 1 DEFINITION
Enter Module Designation (e.g., K9) for slot 1

MECHANICAL Note 1
F = Front Panel I/O only (no P2)
B = Front and Rear I/O (with P2)
P = Rear I/O only
W = P with Wedge locks

ENVIRONMENTAL
C = 0 TO 70 °C
H = -40 TO +85 °C with conformal coating
K = C with conformal coating

DUAL ETHERNET (Motherboard (MB) Only)
0 = No Ethernet
1 = (reserved)
2 = MB Port A to Rear I/O Connection (1 port)
3 = (reserved)
4 = MB Port A and Port B to Rear I/O Connection (2 ports)

Fitted w/H2
A = Reserved
B = MB Port A and H2 Port B to Rear I/O
C = H2 Port A and H2 Port B to Rear I/O
D = MB Port A to H2 Port A and H2 Port B to Rear I/O
9 = Custom/special Ethernet configuration Note 2

INTEGRATED SERIAL COMMUNICATIONS
0 = No Serial Communications
1 = (4) Port Serial Communications Note 2
9 = Custom Serial Communications Note 2

SPECIAL OPTION CODE (OR LEAVE BLANK)

Note 1: Only mechanical option 'F' can be utilized in a PXI chassis

Note 2: Integrated On-Board Serial Communications may have limited MB Ethernet (1 port) capability and I/O availability

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