PCI325

Multiport Serial Adapter, PCIe x4

PCI325

Key Features

- Multi-Channel Synchronous/Asynchronous RS-422 communication
- 24 – RS-422 input pairs
- 30 – RS-422 output pairs
- Supports ternary, binary, or other grouping of input/output pairs into multiple serial ports
- Input clock to synchronise baud rate generators to an external clock reference
- Clock Jitter cleaner on board
- Baud rate is programmable per port
- Holdover capability without external clock
- Module can be programmed to handle the most complex synchronous/asynchronous serial protocols
- PCIe x4 Gen2 to the host CPU

Benefits

- All communication overhead is handled in hardware
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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PCI325

The PCI325 is an RS-422 synchronous/asynchronous multiport serial adapter. The module can accept a clock input to synchronize the baud rate generators of each port to an external clock. All the protocol management overhead is taken care of in the hardware so that the host CPU is offloaded from managing the detailed serial protocol.

The hardware is re-programmable which enables the board to be re-purposed for different types of synchronous and asynchronous serial applications. The hardware takes care of all bit-serial receive/transmit activity and uses a convenient, high-performance, low-overhead, packet-based interface to the host CPU which supports batching and queuing of input/output bits.

An I/O breakout box may be connected to the high-density connectors of the PCI325 to provide multiple DB25, DB9, or other serial connectors for easy integration to your system or an octopus-style breakout cable may be used. The I/O breakout box may include many different status LEDs which can be tailored to your protocol/application. The PCI325 provides the breakout box with power so that it does not require any additional power cabling.

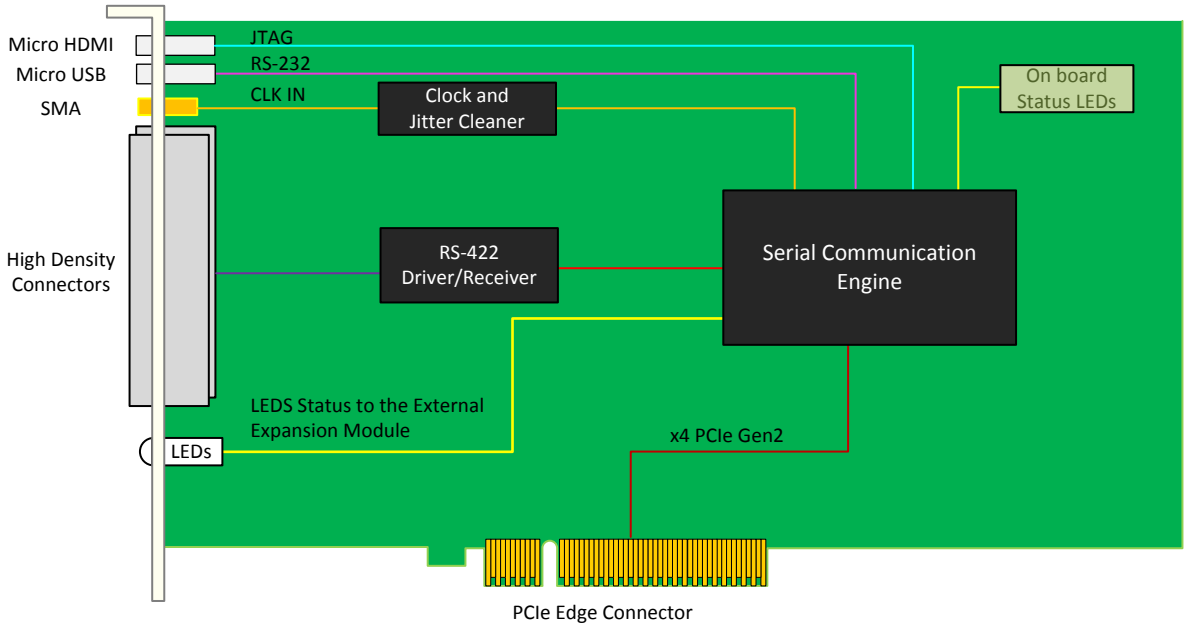
Protocol Load Ordering Option (Option A=0)

The initial protocol load supported for the PCI325 implements a total of eleven synchronous serial ports: four bi-directional ternary ports, four bi-directional binary ports, and three output-only binary ports. A ternary port is made up of a clock and three data pairs in each direction. A binary port is made up of a clock and single data pair in each direction. Baud rates up to 2Mbps are supported on binary ports. This protocol load is capable of detecting on a per-bit basis whether the received line clock was valid or not (i.e. stopped or too slow of baud rate) and provides this indication to the host CPU as part of the data packet. This protocol load may be used with the VadaTech VT987 break-out box which is a 19” rack-mount unit providing eleven DB25 serial ports and includes port RX/TX activity, port clock valid, and other status LED indicators.

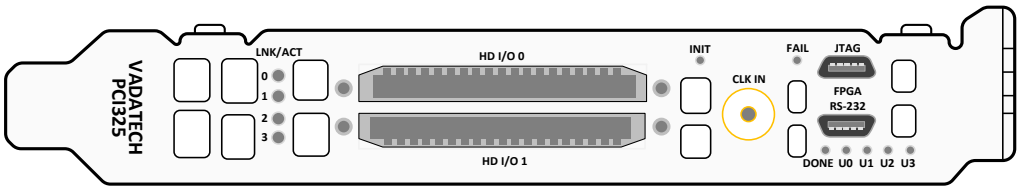
Other Protocol Loads / Breakout Boxes

Since the hardware is reprogrammable, many other serial protocols are possible. Please contact your VadaTech sales representative with your serial protocol needs to discuss how a unique protocol load can be developed to support your application if one does not already exist.

Block Diagram



Rear Panel



Specifications

Architecture		
Physical	**Dimensions**	Standard PCIe edge type, Half length, full-height
		Length: 6.6" (167/65 mm)
		Height: 4.37" (111.2 mm)
Type	**Serial Communication**	Programmable in hardware
Standards		
PCIe	**Lanes**	x4 Gen 2 via Edge connector
Configuration		
Power	**PCI325**	15W
Environmental	**Temperature**	Operating temperature: -5° to 45° C (55°C for limited time, performance restrictions may apply), industrial and extended versions also available (See environmental spec sheet)
		Storage Temperature: –40° to +85°C
	Vibration	Operating 9.8 m/s^2 (1G), 5 to 500Hz on each axis
	Shock	Operating 30Gs on each axis
	Relative Humidity	5 to 95 per cent, non-condensing
Front Panel	**Interface Connectors**	High density connector
		SMA for CLK IN
		Micro HDMI for JTAG and micro USB for RS-232
	LEDs	Status and Activity
Software Support	**Operating System**	Linux, Windows and VxWorks
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
Other		
MTBF	MIL Hand book 217-F@ TBD hrs	
Certifications	Designed to meet FCC, CE and UL certifications, where applicable	
Standards	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards	
Warranty	Two (2) years	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and µTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

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Ordering Options

PCI325 – A00-000-00J

A = Protocol		
0 = 11-port Synchronous (4x Ternary, 4x Bidirectional binary, 3x Output-only binary) 1 = Reserved 2 = Reserved 3 = Reserved		
		J = Temperature Range and Coating
		0 = Commercial (–5° to +55° C), No coating 1 = Commercial (–5° to +55° C), Humiseal 1A33 Polyurethane 2 = Commercial (–5° to +55° C),Humiseal 1B31 Acrylic 3 = Industrial (–20° to +70° C), No coating 4 = Industrial (–20° to +70° C), Humiseal 1A33 Polyurethane 5 = Industrial (–20° to +70° C), Humiseal 1B31 Acrylic

Related Products

VT987

- 11 serial port expansion through DB25 connectors
- 19” rack mountable
- RX/TX activity, port clock valid, and other status LEDs

PCI123

- PCIe Gen3 (x16) Bus Expansion module
- Connects to root complex node board using up/down stream ports
- Options for (1x) of x16 PCIe, (2x) of x8 PCIe or (4x) of x4 PCIe utilizing SFF-8644 connectors

AMC339

- Comprehensive multi-protocol support
- Support for MIL-STD-1553A/B, MIL-STD-1760
- Support for ARINC 429, ARINC 575, ARINC 717, ARINC 825

Contact

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