AMC327

Multiport Serial Adapter, PCIe and/or 1GbE/10GbE

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 onboard
- 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 and/or 1GbE/10GbE to move the data

Benefits

- All communication overhead is handled in hardware
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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AMC327

The AMC327 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 AMC327 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 AMC327 provides the breakout box with power to avoid the need for any additional power cabling.

Protocol Load Ordering Option (Option A=0)

The initial protocol load supported for the AMC327 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 2 Mbps 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

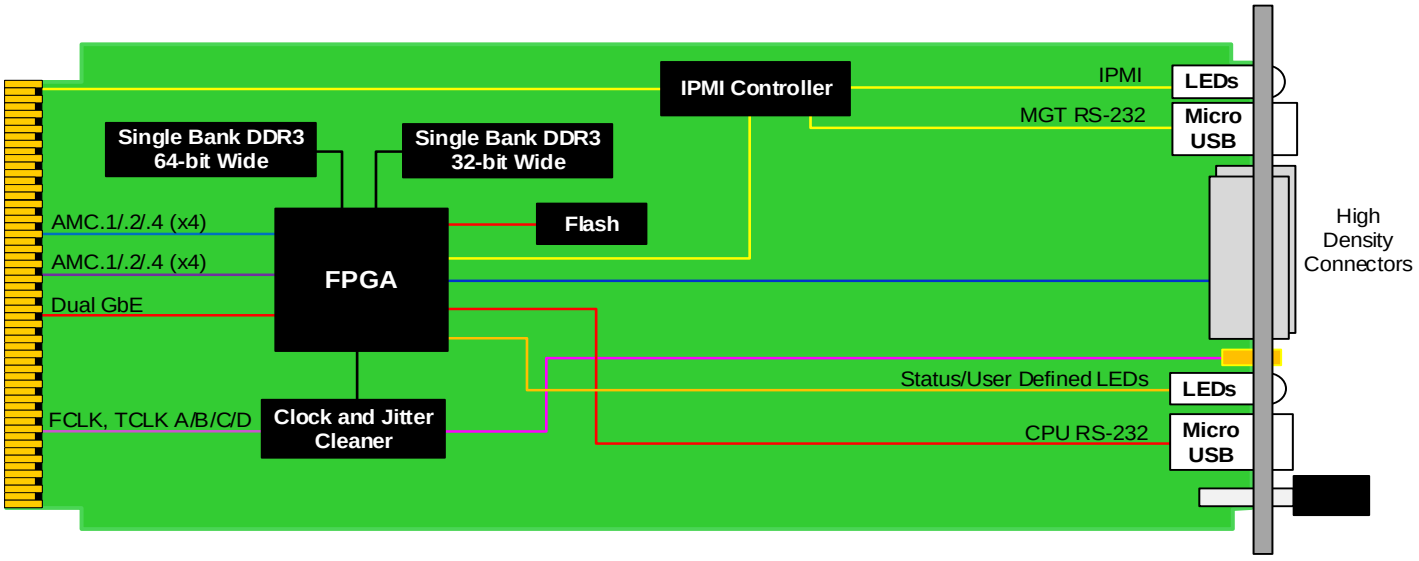


Figure 1: AMC327 Functional Block Diagram

Front Panel

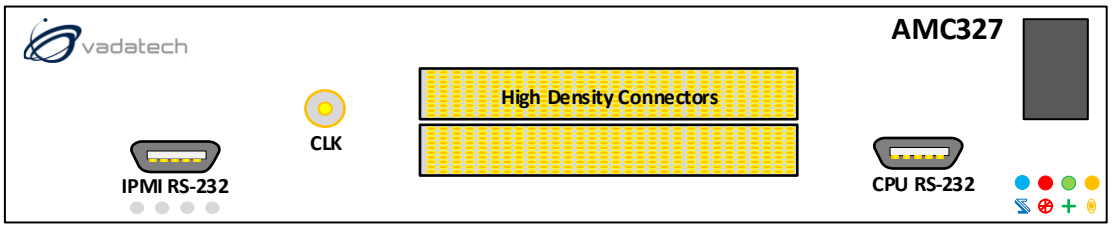


Figure 2: AMC327 Front Panel

Specifications

Architecture		
Physical	**Dimensions**	Single module, full-size
		Width: 2.89” (73.5 mm)
		Depth 7.11” (180.6 mm)
Type	**Serial Communication**	Programmable in hardware
Standards		
PCIe/1GbE/10GbE	**Lanes**	Ports 0-1, 4-8 and 8-11 are routed
Configuration		
Power	**AMC327**	20W
Environmental	**Temperature**	See Ordering Options and Environmental Spec Sheet
		Storage Temperature: –40° to +85°C
	Vibration	Operating 9.8 m/s^2 (1G), 5 to 500 Hz on each axis
	Shock	Operating 30Gs on each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	**Interface Connectors**	High density connector
		SSMC for CLK IN
		JTAG and Micro USB for RS-232
	LEDs	Status and Activity
Software Support	**Operating System**	Linux, Windows and VxWorks
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 ISO9001:2015 and AS9100D standards	
Warranty	Two (2) years, see VadaTech Terms and Conditions	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), 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.

Ordering Options

AMC327 – ABC-000-00J

A = Protocol		
0 = 11-Port Synchronous (4x Ternary, 4x Bidirectional binary, 3x Output-only binary) 1 = Asynchronous on all Ports 2 = Reserved 3 = Reserved 4 = Reserved		
B = Back plane protocol*		
0 = None (only GbE on Ports 0-1 are used) 1 = PCIe on Ports 4-7/XAUI on Ports 8-11 2 = XAUI on Ports 4-7/PCIe on Ports 8-11 3 = PCIe on Ports 4-7 and 8-11 4 =XAUI on Ports 4-7 and 8-11		
C = Front panel size		**J = Temperature Range and Coating**
1 = Reserved 2 = Reserved 3 = Full-size		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 6 = Extended (–40° to +85°C), Humiseal 1A33 Polyurethane** 7 = Extended (–40° to +85°C), Humiseal 1B31 Acrylic**

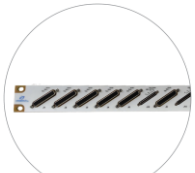
Notes:

*The dual GbE is on Port 0,1 for all Option B

**Conduction cooled; temperature is at edge of module. Consult factory for availability.

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

VadaTech Corporate Office

198 N. Gibson Road, Henderson, NV 89014
Phone: +1 702 896-3337 | Fax: +1 702 896-0332

Asia Pacific Sales Office

7 Floor, No. 2, Wenhu Street, Neihu District, Taipei 114, Taiwan
Phone: +886-2-2627-7655 | Fax: +886-2-2627-7792

VadaTech European Sales Office

VadaTech House, Bulls Copse Road, Southampton, SO40 9LR
Phone: +44 2380 016403

info@vadatech.com | www.vadatech.com

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