Dual Fixed and Floating Point C6670 Multicore DSP Processing Engine

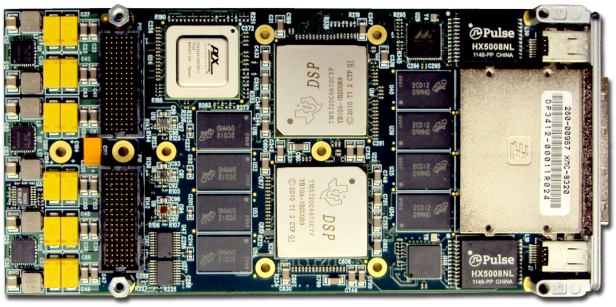
VPX-8320

Product

VPX

Description

Powerful, high-performance fixed-point and floating-point DSP signal processing engine in an OpenVPX form factor (VITA 65).



Key Features

- Two TI quad-core TMS320C6670 DSPs
- Fixed and floating point up to 26.6 GMacs per core @ 1 GHz / 16 GFlops per core @ 1 GHz
- 1 GB of DDR3 SDRAM per DSP
- High-speed 40 Gbit TI Hyperlink interprocessor communications (between DSPs)
- VPX module supporting PCI Express x4 Gen 2 (VITA 42.3) (2 GB/s full-duplex)
- Front panel I/O: AIF (2 ports, 4 lanes each)* and GigE* (2 ports)
- VPX P2 High-speed serial I/O: SRIO* (6 lanes), AIF* (2 lanes) and SGMII* (2 lanes)
- VPX P2 Single-ended I/O: GPIO (14 pins), RS-232
- C6670 is binary backwards compatible with C67xx, C64x andC62x

Sample Applications

- Satellite Communications (SATCOM) including satellite earth stations
- LTE/WiMAX development and test
- Industrial Control
- Signals Intelligence (SIGINT-COMINT/ELINT)
- Software Defined Radio (SDR)
- Cellular base station development and test
- High density DSP processing

Features of the C6670 DSP

- Please refer to TI datasheets for full details: http://www.ti.com/product/tms320c6670
  - 4 cores
  - Wireless coprocessor (Integrated Viterbi, Turbo, and FTT)
  - Antenna interface for OBSAI/CPRI

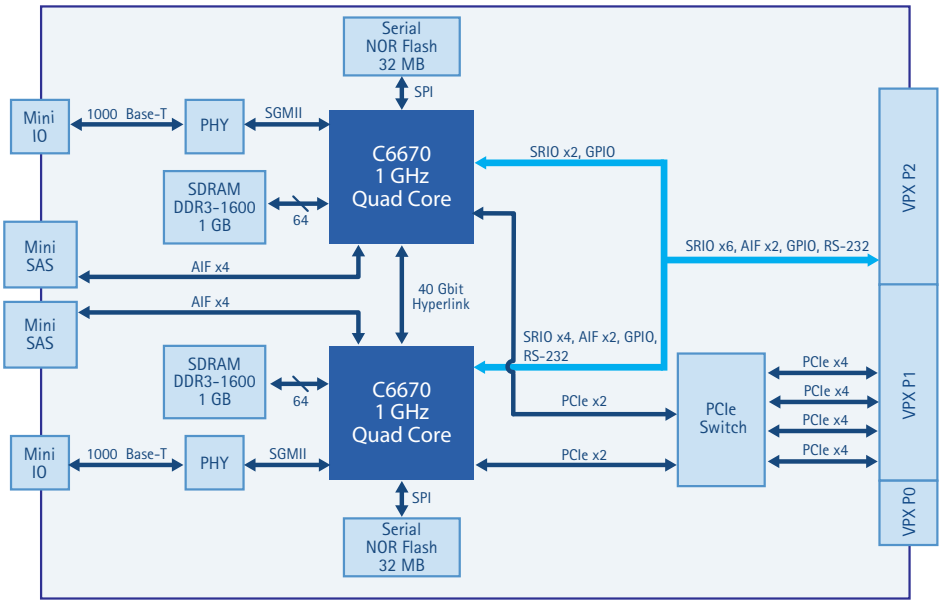


Figure 1. VPX-8320 block diagram

*see "Future Options" section

Specifications

[general]	Form Factor	3U OpenVPX (VITA 65) Module Compatible with Slot Profiles MOD3-PAY-1D-16.2.6-1, MOD3-PAY-1D-16.2.6-2, MOD3-PAY-2F-16.2.7-1, and MOD3-PAY-2F-16.2.7-2
	Processors	Two 1 GHz TMS320C6770 fixed-point and floating-point DSPs from Texas Instruments
	Memory	1 GB of DDR3 SDRAM per DSP
	DSP Clock Speed	1 GHz
[external interfaces]	PCIe	From each DSP to PCIe switch: PCIe x2 Gen 2 From PCIe switch to VPX P1 connector: 4 ports of PCIe x4 Gen 2 (2 GB/s full duplex) (VITA 42.3)
	I/O	VPX P2 serial: SRIO* (6 lanes), AIF* (2 lanes), RS-232 VPX P2 single-ended GPIO: 30 (8 dedicated pins from each DSP, plus 14 pins factory configurable to connect to DSPs or PCIe switch Front panel: AIF (2 ports Mini SAS connector, 4 lanes each) and GigE (2 ports Mini IO)
	JTAG Connection	Available for debug support via connector accessible on solder side of the board
[onboard fabric]	Between DSPs	High-speed 40 Gbit TI hyperlink interprocessor communications
[performance]		2 DSPs per XMC module, 4 cores per DSP For more details, please refer to the TI C6670 datasheet
	Fixed point	up to 26.6 GMacs per core @ 1 GHz
	Floating point	up to 16 GFlops per core @ 1 GHz
[host requirements]	Supported Host OS	RedHat Enterprise Linux 5.9 on INTEL i7 SBC GHS INTEGRITY 11.0.4 on CES RIOV-2473JE SBC
[development software]	quicComm	The quicComm software suite supports on both the host and target processors. quicComm provides functions for: • Configuration and control • Initiating PCIe DMA data transfers It also provides a complete set of examples
[other software]	Debug Support	Support for TI's Code Composer Studio via JTAG emulator is provided (JTAG emulator sold separately)
[electrical]	Supply Voltage (DC)	+3V and +5V
	Power Estimate	TBD
[mechanical]	Size	Standard VITA 46 VPX 3U (100mm(high) x 160mm(deep), 0.8 or 1.0 inch pitch)
[environmental]	Operating Temperature range	0 to 50° C forced air
	RoHS	5 of 6 compliant
[future options]	Operating Temperature range	-40 to 70° C forced air
	RoHS	6 of 6 compliant
	Interfaces	Software support for AIF, GigE, SRIO
	Hyperlink	Speed increase to 50 Gbps (when available on the C6670 DSP)

*see "Future Options" section

Spectrum Signal Processing by Vecima tel +1/604.676.6700 or +1/800.663.8986 fax +1/604.421.1764 www.spectrumsignal.com

SPECTRUM SIGNAL PROCESSING by Vecima

Rev 2013.12.02_NJ

Individual specifications on this datasheet are subject to change without notice. Please contact your Spectrum Signal Processing sales representative to determine the configuration and performance that best matches your application. Spectrum reserves the right to modify or discontinue any product or piece of literature at anytime without prior notice. All Trademarks are property of their respective owners. Compliance with export control laws: Various export control laws of Canada, the United States or other counties may restrict or prohibit the export to certain countries of products sold by Spectrum. Spectrum shall not be liable for anything arising from compliance, or efforts to comply, with export control laws.
** This in no way obligates Vecima Networks Inc. or its subsidiaries to provide such options at a future date.