fb4XG@V7 FPGA Card

Quad Port SFP+ 1/10 Gigabit Ethernet PCI Express FPGA Card

Product Description

The fb4XG@7 series is a high performance OEM hardware platform for 10 Gigabit Ethernet with quad port SFP+ network interface. The standard configuration is based on Xilinx Virtex7 VX690T FPGA.

The card is also offered with a variety of different FPGAs to provide flexibility for the intended application.

As an optional feature, the card can be fitted with two SATA connectors which can provide connectivity to a wide range of standard storage devices directly to the FPGA card.

Key Features

Host Interface:

- Physical bus connector: 8-lane PCIe
- PCIe bus type: 1-8 lane PCIe Gen1/Gen2/Gen3

Network Interface:

- IEEE standard: IEEE 802.3 10 Gbit/s Ethernet
- Physical interface: 4 x SFP+ ports
- Supported SFP+ modules: Multimode SR (850 nm), singlemode LR (1310 nm), multimode LRM (1310 nm), singlemode ER (1550 nm) or Direct Attached Copper (Twinax)
- Data rate: 4 x 10 Gbit/s
- Ethernet PHY directly embedded in FPGA for full packet control

Configuration:

- 16 bit fast parallel programming interface from supporting preprogrammed controller
- Configuration flash supports two boot images with automatic fallback to fail safe image if first image fails
- Support for encrypted FPGA bit file (optional)
- Upload of FPGA configuration to flash via PCIe

Technical Specifications

General Technical Specifications	
On Board Clock:	PCIe clock: 100MHz 125 MHz oscillator 156.25 MHz oscillator 150 MHz oscillator for SATA (optional)
On Board Memory:	2 x 64 bit DDR3@1600MT/s 4GB (total 8GB memory) 1 MB user configurable space in flash for permanent storage 1 x 36 bit QDRII+@2200MT/s 144 Mb / 288 Mb / 576 Mb (optional)
FPGA:	fB4XG@V7690: Xilinx Virtex7 XC7VX690T-2 fB4XG@V7693: Xilinx Virtex7 XC7VX690T-3 fB4XG@V7330: Xilinx Virtex7 XC7VX330T-2 Xilinx Virtex7 XC7VX415T (optional)
Environment:	
Physical dimensions:	half length, standard height PCIe
Power consumption:	less than 6W with uninitialized FPGA
Operating temperature:	0 – 55°C, 30 – 130°F
Operating humidity:	20 – 80%
Hardware compliance:	RoHS, CE
Passive cooling:	no on-board fan required
Active cooling:	optional
Additional Board Support:	On board temperature sensor Board status LED 2 user configurable dual color LED FPGA controlled Link and Activity LED for each port PPS clock synchronization connector 2 x SATA connector (optional)
Optional Intellectual Property Support:	Flash configuration I/F 8 lane PCIe DDR3 Memory controller QDRII+ Memory controller

	Fast Ethernet MAC (optional)
	MDIO controller (optional)
	I2C controller (optional)
	SPI master I/F (optional)
	TCP-offload engine (optional)

Order Information

P/N	Description	Notes
fb4XG@V7	Quad port SFP+ card supporting 4x1GE/10GE, PCIe Gen3 x8 lanes, optional SATA connectors	RoHS Compliant

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