CONDUANT

PXIe FPGA Board

PXIe Optical FPGA Board
HSS-8324

- PXI Express single slot form factor
- PXI Instrument signals (triggers, clocks, etc.)
- 8-lane PCI Express Gen 3.0 (Max 8 GB/s)
- Xilinx Kintex Ultrascale FPGA
  XCKU095-FFVB1760-2-E (others avail.)
  Dual Interlaken cores
- 24 optical channels up to 14 Gbps per channel, 850nm
- Dual 24 fiber MPO/MTP fiber connectors
- Optional high speed serial copper cable instead of optical fiber
- 8GB DDR3 SDRAM (28 GB/s)
- 8MB QDR SRAM
- Xilinx eFUSE or battery-backed 256-bit AES bitstream encryption
- UART interface (3 wire, LVTTL compatible)
- Dual SMA connectors
- User programmable LEDs
- 128 MB Configuration Flash
- Power and FPGA configuration status LEDs
- JTAG interface for programming Flash and FPGA debug
- Microcontroller based power sequencing and monitoring

The Conduant HSS-8324 Optical FPGA board provides the user with a hardware platform that is able to sustain full-duplex high-bandwidth transfers through its 8-lane Gen3 PXI Express (PXIe) interface and its 24-lane optical interface. The PXIe interface provides a theorretical maximum throughput of 8GB/s (simultaneous in and out). Each optical lane provides up to 14 Gbps per direction (simultaneous in and out).

The board provides both 8GB of high-speed DDR3 SDRAM and 8MB of QDR SRAM. At the center of the design is a Xilinx Kintex Ultrascale (XCKU095-FFVB1760-2-E) FPGA which interconnects all ports and other devices while supplying the additional resources that are available within the FPGA. Other models of Kintex or Virtex Ultrascale FPGA's may be available, check with your sales representative.

With 48 optical fibers available, the board can be used for numerous applications that require high speed data connectivity. Each lane of optical fiber (transmit or receive) can operate independently. There are also dual Interlaken cores available in the FPGA which can be used to create dual 150 Gbps Interlaken connections (12 x 12.5 Gbps). Other optical protocols (i.e. Serial FPDP, Aurora, etc.) can also be used and a copper cabling option is also an available option.

At power-on, the Kintex Ultrascale FPGA is quickly configured with the user program by using dual serial flash memory devices. This provides the fast wake-up required for PCI Express. The user content can be encrypted using a key that is either permanently programmed in a non-volatile manner into the FPGA (eFUSE) or can be preserved in a volatile manner so long as the on-board battery is not removed. This feature makes this product particularly attractive for applications where protecting the FPGA intellectual property from cloning or reverse engineering is important.

The board includes a microcontroller for power management and an on-board I2C interface connecting the uC, FPGA and optical transceivers.

For users who need more FPGA resources than are available in the XCKU095-FFVB1760-2-E, the pinout has been chosen to support migration to other, pin-compatible, Virtex/Kintex Ultrascale components. These variations can be provided by request.

Specifications	
PXI Express	Revision 1.0 ECN 1
Interlaken	Revision 1.2
Form factor	PXI Express hybrid or timing slot (1 slot required)
Power	TBD
DRAM	8 GB DDR3 SDRAM 2x512Mx64b @ 934 MHz
SRAM	8MB QDR 2+Extreme SRAM 2Mx36b @ 450MHz
External connectors	2x MTP/MPO 24 fiber (optional) 2x SMA 50 ohm
FPGA	Xilinx Kintex Ultrascale XCKU095-FFVB1760-2-E

Warranty

Conduant hardware products are backed by a limited one year warranty. All software includes a 90 day warranty. Maintenance and priority support is available on a yearly subscription basis. Please contact your Conduant sales representative for more details.

Customer Support

Customer support is provided through a comprehensive web portal at www.conduant.com/support. Private logins and trouble ticket management are provided along with technical downloads, knowledge base and other support tools.

Options:

FPGA Options:
Contact Conduant for Availability

High speed serial:
Copper or Optical fiber, 12 and 24 lane

Battery backup for Encrypted FPGA Configuration support

Extended Temperature

Software:
Contact your Conduant sales representative for software availability

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