

Product Features

- AMD Kintex Ultrascale XCKU095 FPGA
- PCI Express Gen 3 x8 (max 8 GB/s)
- PXIe Single Slot compatible
- 24 High-Speed Serial lanes (48 fibers)
- Lane rates up to 16.3 Gbps
- Dual MPO optical ports (24 fiber, 850nm)
- 8 GB DDR3 SDRAM
- 8 MB QDR SRAM
- Fractional divide clock synthesis
- 4x MMCX external connectors



Advanced Capabilities

The Conduant HSS-8324 Optical FPGA board provides a hardware platform that is able to sustain high-bandwidth transfers through its 8-lane Gen3 PXI Express (PXIe) interface and its 24-lane optical interface. The PXIe interface provides a theoretical maximum throughput of 8 GB/s.

At the center of the design is a AMD Kintex Ultrascale FPGA which interconnects all ports and other devices while supplying the additional resources within the FPGA. The board provides both 8 GB of high-speed DDR3 SDRAM and 8 MB of QDR II+ SRAM.

With up to 48 optical fibers available, the board can be used for numerous applications that require high speed data connectivity. Each lane of optical fiber (transmit + 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 (Serial FPDP, AMD Aurora, etc.) can also be used.

The FPGA is quickly configured with the user program using the SPI x4 serial flash memory device. This provides the fast wake-up required for PCI Express. The user content can be encrypted using a key permanently programmed in a non-volatile manner into the FPGA (eFUSE) or can be preserved using on-board battery. This feature is particularly attractive for applications requiring FPGA intellectual property protection.

The board also includes a microcontroller (uC) for power management, There is also a Skyworks clock synthesis part that supports both integer and fractional divides. An internal I2C bus can be used to initialize these components and connects the uC, FPGA, clock synthesis and optical transceivers.



Specifications

FPGA	AMD Kintex Ultrascale XCKU095
Encryption	AMD eFuse or battery-backed 256-bit AES bitstream
PXI Express Revision	1.0 ECN 1
PXIe Backplane	PCIe Gen3 x8 (8 GB/s) PXI signals (triggers, clocks, etc.)
Form Factor	PXI Express hybrid, peripheral or timing slot
High Speed Serial (HSS)	24 lanes with line rates up to 16.3 Gbps each
HSS Connectors	Dual MTP/MPO 12 lane/24 fiber connectors using Samtec Firefly optical transceivers
Additional External Connectors	4x MMCX 50 Ω for clock, trigger, or other signal IO JTAG for AMD programming or debug
Clock Generation	Skyworks clock generator with integer and fractional divide
Dimensions	6.1875" (D) x 0.787" (W) x 5.0" (H)
Weight	< 1 lb (0.5 kg)
DRAM	8 GiB DDR3 SDRAM 2x512Mx64b @ 932 MHz
SRAM	8 MiB QDR II+ Extreme SRAM 4Mx18b @ 632 MHz
IO Interface	UART Interface (3 wire, RS232 compatible)
User programmable LEDs	Dual front panel, 8 internal (back of board)
Flash memory	Micron 512 GiB configuration flash (SPI 4 bits)

FPGA software included

- VHDL source code for board self-test which can also be used as a programming example
- VHDL source code that instantiates Xilinx cores and names and assigns pins and clock constraints

Warranty & Customer Support

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 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

Battery backup for encrypted FPGA configuration support

Extended temperature

Custom software | *Contact your Conduant sales representative for custom software availability*

