V1121

Dual-Port XMC FPGA Card

Benefits

Provides high bandwidth 10 Gigabit Ethernet communications for next generation radar and signal intelligence systems.

Supports real time data streaming directly from sensors.

Adapts with evolving application requirements providing a technology contingency plan.

A COTS solution reduces system size, power footprint and cost.

Features

Two 10 Gigabit Ethernet SFP+ optical ports

Available with UDP offload engine for real time communication

Built-in PCI Express and XAUI host interfaces

Supports PCI Express and XAUI host interfaces

Available with streaming front-end FPGA core for quick sensor integration

Available with advanced APIs that support multi-core and multiprocessor architectures

Thermal sensors for monitoring card temperature

Available in air and conduction-cooled XMC form factor

Overview

The V1121 is the industry's leading XMC solution that is designed to provide a real time high-bandwidth network interface for next-generation radar and signal intelligence systems. The V1121 features two 10 Gigabit Ethernet SFP+ optical interfaces and supports the UDP, ARP and ICMP communication protocols. Its advanced architecture and built-in Ethernet offload capabilities provide data transfer at sustained rates exceeding 9.2Gbps.

Unique in its ability to directly transfer data between 10 Gigabit Ethernet networks and FPGA devices, the V1121 minimizes the size and power footprint of systems by obviating the need to introduce additional processors solely to run Ethernet communications. A Streaming Front End (SFE), which is a small core that resides on the FPGA device, provides an independent interface to each 10 Gigabit Ethernet channel on the V1121. The FPGA device communicates with the V1121 over XAUI running across the Pn5 connector, as per VITA 42.6 standard.

In addition, the V1121 is uniquely suited to system architectures involving multiple processing cards on a common switched data plane. Specifically, the V1121 supports shared access from multiple host processors, enabling it to function as a costeffective, high-performance 10 Gigabit Ethernet gateway. This feature enables a single high-speed pipe to carry multiple virtual channels in systems that need to spread or load balance sensor data across processor farms. When used as a gateway, the V1121 supports PCI Express over the Pn5 connector for processor communication and comes with high level APIs for control and data transfer resulting in a simplified programming model.
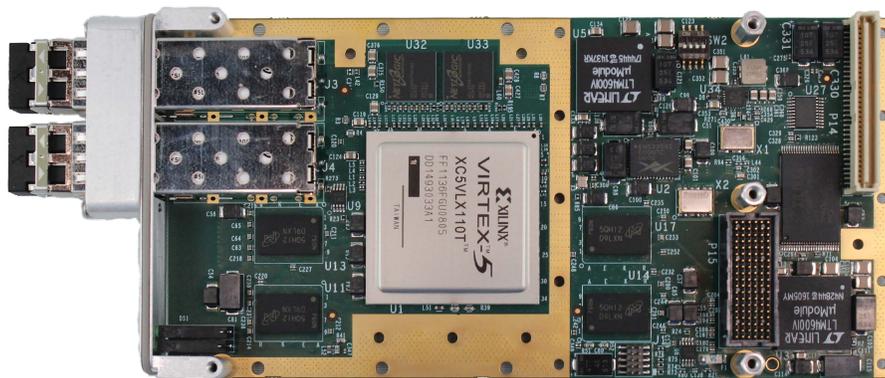
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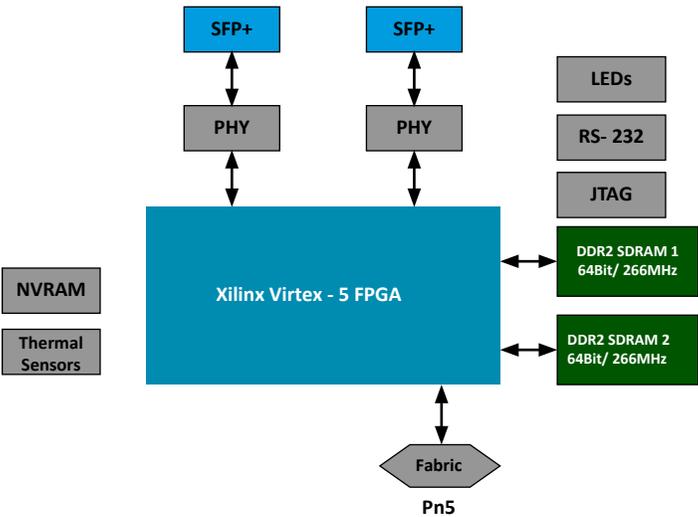
> **> V1121 Dual Channel XMC Block Diagram**

Technical Specifications

NETWORK INTERFACE
Two 10GBASE-SR or 10GBSASE-LR SFP+ optical ports

ETHERNET PROTOCOLS
UDP, ARP, ICMP, Multicast, Broadcast

FPGA DEVICE
Xilinx Virtex-5 LX110T or LX155T

MEMORY
Two banks of 0.5GB or 1GB 64-bit 266MHz DDR2 SDRAM

FLASH
Two 32MB memory for storing a default configuration image and a recovery image

HOST INTERFACE
PCI Express x8 or two XAUI over Pn5

EXTERNAL INTERFACE
42 user I/O on Pn4 (8 single-ended plus 17 differential pairs)

THERMAL SENSORS
2 digital temperature sensors

COMPLIANCE
VITA 42.3
VITA 42.6
IEEE 802.3ae 2002 LAN

DIMENSIONS
74 mm (width) x 149 mm (length)

POWER REQUIREMENTS
Maximum 20W

TEMPERATURE
Operating: -10˚ C to 70˚ C
Storage: -40˚ C to 85˚ C

MTBF
175,000 Hours MIL-HDBK-217F

Our Commitment

New Wave DV is committed to providing the latest innovations in technology, architectures, and techniques to keep our customers one step ahead of the rest. Our products, complete with expressXG Development Framework, are intended to offer our customers an entirely unique out-of-the-box experience.

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