

V1152

12-Port XMC FPGA Card

Benefits

High density FPGA XMC card for next generation data distribution and signal intelligence systems

Supports 1/10/25/40/100G Ethernet, 1/2/4/16/32G Fibre Channel, 1/2/2.5/10G sFPDP, ARINC 818-2

A COTS solution optimized for SWaP (size, weight and power)

Next generation host interface connection bandwidths

A programmable FPGA with a powerful development framework

Real-time data streaming directly from sensors

Features

Three QSFP28 ports accommodate either:

- 3x 100G Ethernet
- 3x 40G Ethernet
- 12x 25G Ethernet
- 12x 10G Ethernet
- 12x 1G Ethernet
- 12x 1/2/4/8/16/32G Fibre Channel
- 12x 1/2/2.5/10G sFPDP
- 12x ARINC 818-2

Xilinx Virtex/Kintex UltraScale+ FPGA

Supports PCIe Gen3 x 16 and Gen4 x 8

PPS time synchronization with μ Sec resolution

Thermal sensors for monitoring card temperature

Robust FPGA development framework

Advanced APIs that support multi-core and multi-processor architectures

Optimized Linux drivers and libraries

UDP offload engine for real time communication

Streaming front-end FPGA core for quick sensor integration

Available in air and conduction-cooled XMC form factors

Overview

Reducing system size, weight and power (SWaP), while increasing performance, is critical for operational life and budgetary constraints of military radar and remote sensing systems. The requirement for increasingly higher port density, bandwidth, and processing power to support larger arrays, while still staying within SWaP and budget requirements, is a significant challenge to engineering architects. New Wave DV satisfies these requirements with the V1152 XMC Card — dramatically increasing bandwidth while providing plenty of FPGA resources to process data and support PCIe host connectivity.

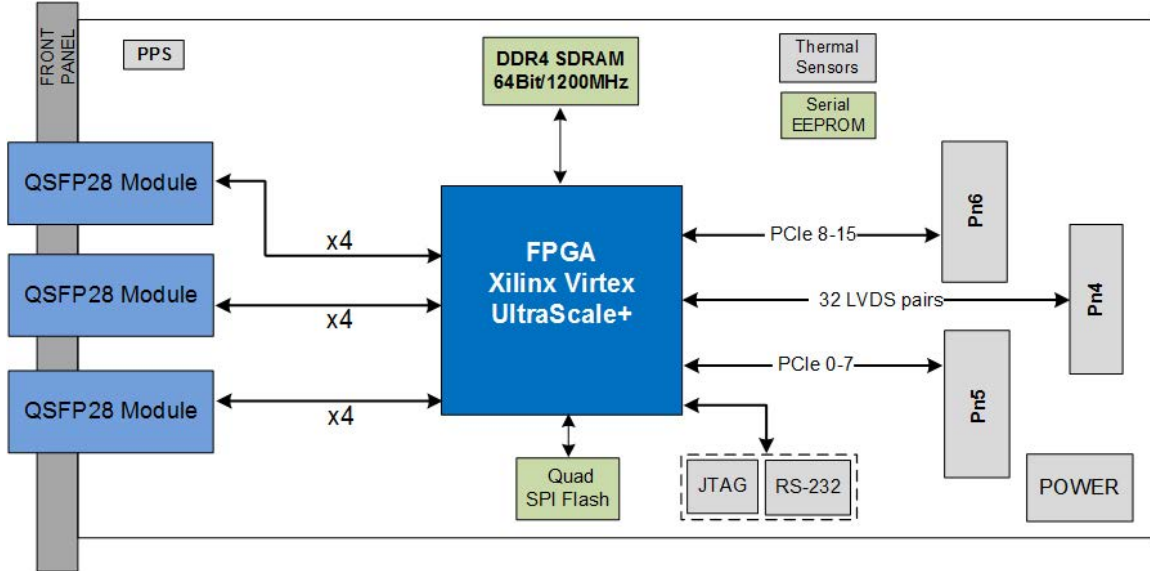
Increased Bandwidth & Flexibility

The V1152 is the industry's most advanced XMC solution designed to provide a real time high-bandwidth network interface and processing module for next generation radar and signal intelligence systems. It comes with a range of Xilinx Virtex/Kintex UltraScale+ FPGAs, different memory configurations to meet application requirements, and support for different carrier boards host interfaces using PCIe, Ethernet, and XAUI. Design flexibility to meet application requirements results in optimized SWaP, shorter development cycle, and enhanced performance.



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> V1152 XMC Block Diagram

Simplified Programmability Framework

The V1152 can optionally ship with a Development Framework, a fully-integrated and flexible toolset that provides the infrastructure necessary to ensure rapid deployment of custom applications. The framework abstracts the details of the protocol and interfaces, memory controllers and host fabric interfaces, thereby reducing the development effort and schedule for designers to implement custom solutions.

Optional Offload Engines

The V1152 has built-in support for UDP, ARP and ICMP communication protocols. When used as a gateway, the V1152 supports PCI Express over the Pn5 (and optionally Pn6) connector for processor communication and comes with high level APIs for control and data transfer resulting in a simplified programming model.

Multi-Processor Multi-Core Support

The V1152 is uniquely suited to system architectures involving multiple processing cards on a common switched data plane. Specifically, the V1152 supports shared access from multiple host processors, enabling it to function as a cost-effective, high-performance 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.

Operation Customization

The V1152 is an FPGA-based network card that can be customized to fit your requirements. New Wave provides access to the FPGA for customers to customize, however New Wave can also modify existing cores or develop new cores for your applications. If you have specific networking requirements, New Wave can help you accomplish your goals.

