Quad Serial FPDP Modules for High-Speed Digital Data Links

Pentek introduced two Quad Serial FPDP (Front Panel Data Port) modules with a Xilinx Virtex-6 FPGA--the Model 71611 XMC module and the Model

7811 native PCI Express card. These new Serial FPDP modules extend Pentek's Virtex-6 Cobalt® product line by providing four channels of serial communication with up to 1 Gbyte per second of aggregate data transfer capability.

Many applications need to deliver high-speed data between systems or from sensors to a data acquisition system over extended distances. As a popular industry standard, sFPDP offers a fast, efficient, bi-directional point-to-point interconnect solution. Applications such as military radar, signal intelligence and medical imaging can take advantage of this high-throughput, minimum latency protocol. These new products provide very competitive alternatives to other sFPDP products in the market. The inclusion of a user-configurable Virtex-6 FPGA allows customers to extend the factory installed sFPDP functions to perform custom signal processing for both inbound and outbound data streams.

"By offering both the 7811 and the 71611 sFPDP products, Pentek can satisfy a wide range of operational requirements, giving customers just what they need for their particular application," said Rodger Hosking, vice president of Pentek. "Customers looking for a basic, streamlined sFPDP solution at the lowest cost can choose the native PCIe 7811 board. If they need extra memory and other form factors, the 71611 XMC-based products would be best. In all cases, the user-configurable FPGA makes these products ideal for applications that need specialized data flow processing."

Unique Features Inside the sFPDP Modules

As an XMC module, the Model 71611 can be installed on any XMC carrier making this an attractive option for VPX, PCIe and CompactPCI platforms. The 71611 has 2GB of DDR3 SDRAM for FIFO memory buffering of DMA packets and an optional

PMC P14 connector for custom I/O through 20 pairs of LVDS connections to the FPGA.

The Model 7811 native PCI Express (PCIe) card can be installed on any motherboard with PCIe card slots. Both the 71611 and the 7811 support Gen2 PCIe and offer a range of Virtex-6 devices so developers can add additional FPGA IP to match custom processing requirements. The Virtex-6 is ideal for modulation/demodulation, encoding/decoding, encryption/decryption and channelization of signals for transmission and reception.

The Models 71611 and 7811 are fully compatible with the VITA 17.1 Serial FPDP specification in all modes and operational features. Supporting 1.0625, 2.125 and 2.5 Gbaud link rates and options for multi-mode and single-mode optical interfaces, the modules can work in virtually any system. Programmable modes include flow control in both receive and transmit directions, CRC support and copy/loop modes.

Supporting Products
For applications that require specialized functions, users can install their own custom IP for data processing. Pentek GateFlow FPGA Design Kits include source code for factory installed IP functions, so developers can easily add new functions by incorporating additional FPGA IP modules.

Pentek’s ReadyFlow board support packages, with high-level C-callable library functions and device drivers, are available for Windows, Linux and VxWorks operating systems.

Form Factors, Pricing and Availability
The Model 7811 Quad Serial FPDP PCI Express card starts at $6,495 USD. The Model 71611 is available in XMC, cPCI, PCIe and VPX form factors with options for rugged and conduction-cooled models. Delivery is 8 weeks ARO for all models.

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