

Phoenix VPF2



Freescale MPC8641D and Dual Virtex-5 FPGA Based VXS Processor



FPGA and PowerPC based processing

Balance of performance with ease of programming

PowerPC MPC8641D

Powerful and sophisticated dual core processor

Dual Virtex-5 LX110T/SX95T FPGAs

Maximum DSP and high-bandwidth communications

VXS/VITA 41

High-speed system interconnect fabric

XMC/PMC Site

Latest generation of local I/O

Air or conduction cooled rugged versions

For deployment in severe environments

Overview

The Phoenix VPF2 is a high-performance heterogeneous processing engine coupling a dual PowerPC AltiVec CPU with two latest generation Xilinx Virtex-5 FPGAs. The combination of devices provides leading edge performance with flexible high-bandwidth I/O. This VXS board is available in both air-cooled and conduction cooled versions, with VxWorks or Linux board support packages. The Phoenix VPF2 also supports the TransComm toolkit of FPGA firmware blocks for implementing the communication fabric needed in applications running on systems of interconnected FPGAs.

Applications

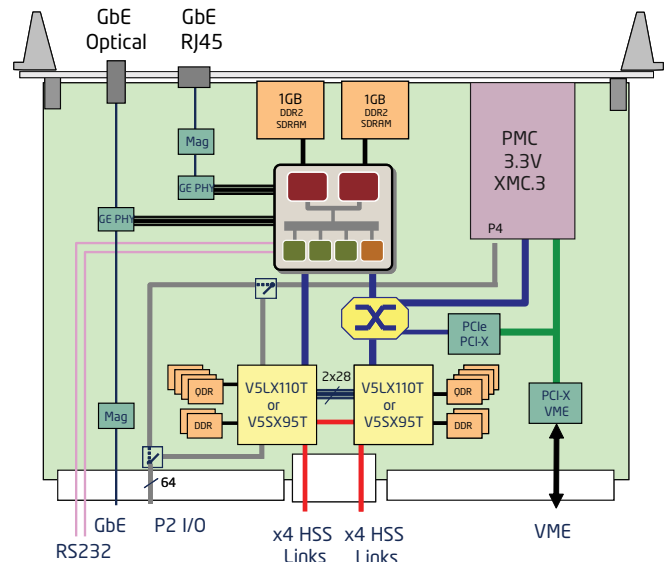
- Electronic warfare
- Signal intelligence (SigInt)
- Surveillance



Specification

| | |
|-----------------------|--|
| PowerPC CPU | |
| Device | Freescale MPC8641D |
| Speed | 1.25 GHz |
| Memory | 1 Gbyte per core DDR-II SDRAM (inc. ECC) |
| FLASH | 32 Mbytes |
| FPGA Nodes | |
| Device | Xilinx Virtex-5 LX110T or SX95T (speed grade 2) |
| Number of FPGAs | 2 |
| Memory (per FPGA) | 4x 72 Mbit QDR-II SRAM (36 MB) 2x 64Mbyte x 16-bit DDR-II SDRAM 32 MB FLASH |
| Connectivity | x8 PCI Express to CPU per FPGA 4x RocketIO between FPGAs 4x RocketIO per FPGA for VXS 60 signals between FPGAs (single-ended) VME P2 (user defined I/O - 64 signals) |
| Clock References | 2 sources, selectable from TBA |
| Configuration | JTAG or by MPC8641D |
| Ethernet | |
| Device | Embedded within MPC8641D |
| Speed | 10/100/1000 Mbps |
| Front Panel (Copper) | 1 channel: 10/100-TX, 1000-T |
| Front Panel (optical) | 1000-SX |
| Backplane (VME P2) | 1 channel, 10/100-TX, 1000-T |
| Serial I/O | |
| Device | DUART embedded within MPC8641D |
| Channels | 2x RS232 (routed to VME P2) |
| PCI Express | |
| Device | PEX8532 |
| Connectivity | FPGA A (x8), FPGA B (x8), 8641 (x8), XMC (x8) and VME (x8) via PCIe/PCI-X bridge |
| VME | |
| Device | Tundra Tsi148 |

| | |
|-------------------|---|
| Compliance | 2eSST, VME64, master/slave |
| VXS | |
| Compliance | VITA 41.0, payload |
| Protocol | FPGA defined |
| PMC/XMC Site | |
| PCI Compliance | PCI (33/66 MHz), PCI-X (66/100/133 MHz) 3.3V signaling |
| XMC (VITA 42) | P15 x8 PCI Express channel |
| Software/Firmware | |
| Operating System | VxWorks 6.5, Linux (MPC8641D CPUs) |
| Utilities | FLASH programming, diagnostics |
| Firmware | Examples (memory, PCIe, VXS) TransComm Communications Toolbox |
| Misc. | |
| Power | VXS/VME64x 3.3V (TBA W), 5V (TBA W), +12V (TBA W), -12V (TBA W) |



Warranty

All products have a one year warranty. Specifications are subject to change without notice.

Please contact your VMETRO representative for more information or a product demonstration.

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