

Embedded FPGA and DSP Computing

Unitronix actually supplies Australia's widest range of FPGA, DSP embedded computing cards and black box systems, covering the whole applications market for high end embedded FPGA and signal processing solutions. Cards on PMC, XMC, VME, VXS, VPX 3U and 6U, "Ether to Ethernet" black box solutions, and specialised development software for FPGAsystems utilised in embedded applications. We have a 20 year long history of providing embedded image and signal processing solutions to Australian application developers. As such Unitronix can be relied upon to be knowledgeable and helpful to design Engineers looking into signal processing applications. After all it's not easy designing embedded systems full stop, it's defiantly more tricky with signal processing solutions and when this all needs to be ruggedised and miniaturised into a field deployable solution then you really need to be talking to people that have experience in this field. Unitronix can help, with data flow architectures, computational element resource management, wider systems architecture and data structures. In addition and as an example, Curtiss Wright (one of our suppliers), have the worlds most comprehensive and easy to use resource/ systems management software tools that will be of huge utility to Engineers when developing a larger signal array and processing capability. For more details on these products please contact UNITRONIX on (02) 49773511, or sales@unitronix.com.au.

VME – VPX Based Solutions:



Curtiss Wright CHAMP-AV8 Quad Core:

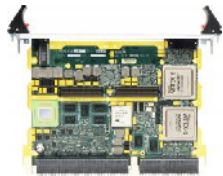
The CHAMP-AV8 multi-processing board brings the floating-point performance of the quad-core Intel® Core™ i7-2715QE processor to the OpenVPX form factor standard. Utilising a pair of processors, the CHAMP-AV8 delivers performance rated at up to 269 GFLOPs. With a 21GB/s (peak) DDR3 memory subsystem connected directly to the processor, the Intel® Core™ i7-2715QE is able to maximise the throughput of its Intel AVX vector processing units and process larger vectors at peak rates significantly greater than was possible with previous AltiVec™-based systems.

Talk to Tim about the performance of the i7!



Curtiss Wright CHAMP-AV5 Two Intel Dual Core i7s at 2.53GHz:

The CHAMP-AV5 multi-processing board brings the floating-point performance of the Intel® Core i7™ architecture to VME64x form factor standard. Utilizing a pair of 2.53GHz dual-core Core i7 processors, the CHAMP-AV5 delivers up to 81 GFLOPs of performance. The 17GB/s (peak) DDR3 memory sub-system supports applications with high memory utilisation and streaming data I/O.



Curtiss Wright CHAMP FX3 with Dual Xilinx V6s with MPC8640D:

The CHAMP-FX3 (VPX6-472) is the next generation in Curtiss-Wright Controls Embedded Computing's family of user-programmable FPGA-based computing products, designed to meet the needs of challenging embedded high-performance digital signal and image processing applications.

Heterogeneous Architecture!

Also available from Unitronix, SBCs and chassis for the VME –VPX to build full systems.

VXS RF Digitisers with Three (3) Large FPGA resources on board:

TEKMICRO High Speed Digitisers:

The QuiXilica-V6 VME/VXS signal processing board is another industry first for Tekmicro, providing the industry's first 6U solution using Xilinx Virtex 6 FPGA technology. By combining this new board with our existing range of QuiXmodules, customers can rapidly create coherent high channel count signal acquisition and generation solutions using ADCs and DACs from 160 MSPS up to 5 GSPS, with twice the FPGA processing density than other solutions on the market.

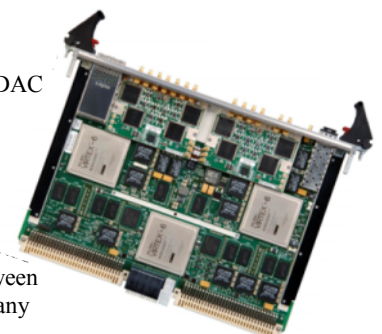
There are four cards in the QuiXilica Virtex 6 range,

- 1). Pallene-V6 Eight 12-bit Channels at up to 550 MSPS
- 2). Proteus-V6 Two 10-bit Channels at up to 5 GSPS
- 3). Atlas-V6 Eight Channels: 12-bit ADC Input at 1 GSPS Each
- 4). Titan-V6 Eight Channels: Four 12-bit ADC Inputs at 1 GSPS Each. Four 14-bit DAC Output at 1.2 GSPS Each

The QuiXilica-V6 VME/VXS baseboard provides a modular COTS product architecture with support for deployed environments. With the QuiXilica-V6 architecture, users may combine the widest range of off-the-shelf ADC and DAC options with the most advanced FPGA technology on the market today to solve critical problems in defence and intelligence applications such as radar, software defined radio, multi-INT fusion and persistent surveillance. Future products will continue to add more ADC and DAC options as well support for other form factors such as OpenVPX while maintaining firmware and software compatibility across the QuiXilica product range.

QuiXilica-V6 Raises the Bar on FPGA Density

The QuiXilica-V6 VME/VXS baseboard has three, highly connected, Xilinx Virtex 6 FPGA sites. The two front-end FPGAs are attached directly to the QuiXmodule sites, providing a simple and direct high speed connection between the ADC and DAC devices and the FPGA. The third FPGA can be used to support additional processing, and also any required protocol support for either front panel or backplane interfaces.



Also available from Unitronix, SBCs and chassis for VXS to build complete systems.

PCIe FPGA & FMC Carrier Card for Industrial Signal Processing:



Delphi PCE-315/475:

DEG's highest performance PCI-Express DSP carrier board. With the ability to host XMC, PMC and FMC mezzanine cards, the PCE-315/475 sets the benchmark for versatility in the embedded PCI-Express market. Coupling this flexibility with a Xilinx Virtex-6 SX315T or SX475T, the PCE-315/475 enables both high-speed digital acquisition and extensive digital signal processing all within a single PCI-Express slot. To take full advantage of the Virtex-6 DSP48E slices, DEG engineers included the ability to add up to two banks of 8GB DDR2 SDRAM.

PMC – XMC and 3U VPX Based Solutions:



Curtiss Wright AD1520:

The AD1520 is a second generation 1.5GSPS ADC XMC module and follows on from the AD1500. The AD1520 uses a newer generation ADC device and key benefits include increase full power bandwidth (from 1.5 to over 2GHz) and general improvement in ENOB, SFDR and SNR. The AD1520 closely couples a high performance Xilinx Virtex-5 FPGA to a dual channel high-speed analog input

Curtiss Wright VPX3-450 3U VPX:

Utilising the massive parallelism and rapid reconfigurability of FPGAs, combined with the flexibility of an AltiVec-enabled dual-core PowerPC™ processor, the VPX3-450 platform is well suited to replace either dedicated ASIC-based hardware or large arrays of processors for front-end signal or image processing.



TEKMICRO Jazz Fiber SFPDP PMC:

The JazzFiber-V5™ Serial FPD I/O Module provides a high speed connection between one or more external sensors and a processing or recording system using an open standard modular I/O architecture. Each JazzFiber-V5 module supports four fibre optic interfaces.

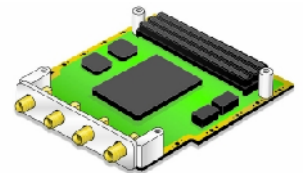


Curtiss Wright FPGA-05D PMC/ XMC, Virtex5:

The XMC-FPGA05D is a high density I/O PMC/XMC module, supported by a user programmable Virtex-5 FPGA. The board may be used as a PMC with a 64-bit, 133MHz PCI-X interface to the host or as an XMC module supporting an x8 PCI Express interface to the host.



FMC, VITA57 FPGA Mezzanine Card Solutions:



Delphi range of FMC ADC & DAC Boards:

- ADF-2500 2.5GSPS, 10-bit FMC A to D Converter
- ADF-D1600 Dual 1.6GSPSs, 12-bit A to D Converter
- ADF-Q40 QUAD 400 MSPS, 14-bit FMC A to D Conv.
- ADF-Q55 QUAD 550MSPS, 12-bit FMC A to D Conv.
- ADF-QSIG QUAD 260MSPs, 16-bit FMC A to D Conv.
- DAC-2500 Dual 2.5GSPS, 14-bit D to A Converter



Curtiss Wright range of VITA 57 FMC FPGA Mezzanine Cards:

- FMC-516 Quad Channel 250 MS/s 16-bit Analogue Input FMC-
- 518 Quad Channel 500 MS/s 14-bit Analogue Input
- ADC 510 Dual Channel Analogue input FMC module, TI ADS5463, 12bit @ 500MSPS
- ADC 511 Dual Channel Analogue input FMC module, TI ADS5474, 14bit @ 400MSPS
- ADC 512 Dual Channel Analogue input FMC module, National ADC083000, 8bit @ 3GSPS
- ADC 513 Dual Channel Analogue input FMC module, National ADC08D1520, 8bit @ 1.5GSPS

D-TA Ether to Ethernet 10 Gigabit Sensor Processing:

D-TA Systems Inc. with a mandate to simplify high-end Sensor Processing system development for Sonar, Radar, Communications, Signal Intelligence and Test and Measurement markets. Leveraging the latest technologies and many decades of experience in designing Acoustic and Radio systems, D-TA Systems has developed a complete slate of Sensor Interface and Processing solutions that drastically cut deployment time and cost.

Single channel demo model available from Unitronix!



- Tenable RF to 6 GHz
- Accurately Synchronised channels
- Precision Analogue Signal Conditioning
- High Speed Data Conversion
- FPGA based DSP
- Super high Speed Gateways to connect sensors to computer.
- Customisation with low NRE

For further information on these products or for technical support call:

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