

Dedicated Systems' News

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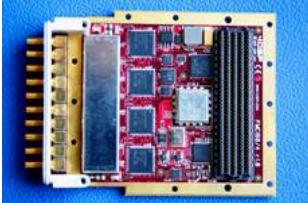
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4DSP expands its FMC Portfolio with Clock Distribution and A/D Modules

4DSP announced the release of two new FPGA Mezzanine Cards (FMC – VITA 57.1) for multi-channel data acquisition and high-speed signal processing and recording. The **FMC168** is a digitiser FMC featuring eight ADC channels with 16-bit resolution and 250 Mega samples per second sampling rate per channel. Using the newly released ADS42LB69 from Texas Instruments, the FMC168 offers an unparalleled level of performance for Software Defined Radio, beam-forming and wireless communication infrastructure equipment. The second released product, the **FMC408**, is a clock distribution FPGA Mezzanine Card with eight synchronized clock outputs and eight synchronized Pulse Per Second signals. Operating at frequencies up to 4GHz while preserving excellent jitter characteristics, the FMC408 makes it possible to build high-speed multi-channel solutions with ease.



The FMC408, combined with several FMC168, offers 64 fully synchronous A /D channels that can be enclosed in a single ruggedised chassis or 3U server. FMCs can be mounted on PCI-Express, VPX, CompactPCI or AMC FPGA carrier cards.



When coupled with a high-speed CPU and SSD array for storage, FMC-based solutions offer the flexibility, DSP power, scalability and ruggedisation levels associated with high-end systems in the Telecommunications, Aerospace and Defence industries.



AdaCore launches free, online Ada Educational Resource

AdaCore launched **AdaCore University** - a free, web-based resource center for anyone interested in learning about, or how to program in the Ada programming language. The new website offers pre-recorded courses and other learning materials on Ada with access to AdaCore's GNAT Ada toolset for writing and running example programs. It also utilises the latest in website design and learning tool features. Students at all levels of experience and expertise can begin writing programs quickly and can proceed at their own pace.

The initial curriculum includes two courses:

Ada 001, “Overview” – <http://university.adacore.com/courses/overview/> a module that presents an overall picture of the language and that allows students to write small programs; and

Ada 002, “Basic Concepts” – <http://university.adacore.com/courses/basic-concepts/> the first in a formal series of Ada classes, introducing basic Ada programming concepts and allowing students to write programs based on these features.

Both of these modules, and all future courses, provide sources and installation instructions for all learning materials and tools. The courses cover the latest version of the Ada language (Ada 2012), and students have access to AdaCore's GNAT Ada development environment and programming tools. The AdaCore University website also hosts a number of technical papers on Ada, offering insight into particular aspects of the language's design and usage.

AdaCore University is an ongoing, live project that will be expanded to include more advanced courses on Ada and SPARK 2014 – an Ada-based programming language designed for high-integrity.

WIND RIVER**Wind River unveils latest Software Platform for Internet of Things**

Wind River has introduced the latest version of **Wind River Intelligent Device Platform**, a complete software development environment used for building machine-to-machine (M2M) applications and devices that communicate with the cloud. The platform provides ready-to-use components to secure, manage, and connect Internet of Things (IoT) gateways.

Intelligent Device Platform is a scalable, sustainable, and secure solution that simplifies the development, integration, and deployment of IoT gateways. It is based on the Wind River market-leading operating systems, which are standards-compliant and fully tested, as well as Wind River development tools. The platform contains device security, smart connectivity, rich network options, and device management.

The latest version of Intelligent Device Platform includes the following key features:

Gateway security: Delivers security features designed to secure the communication channel, the data and the end device

Application enablement: Provides Lua, Java, and OSGi application environments to enable portable, scalable, and reusable application development on both resource-constrained and full-featured devices

Device connectivity: Embraces IoT protocol MQTT for data transportation and native support for Wi-Fi, Bluetooth, ZigBee, and short-range wireless protocols widely used in IoT devices

Remote device management: Supports well-established management protocols such as TR-069 and OMA DM

The Wind River Intelligent Device Platform is optimized for Intel architecture and is an integral part of the Intel-based family of intelligent gateway solutions, a packaged and pre-validated hardware and software product for gateways that connect legacy systems and provide common interfaces between devices and the cloud. The first set of solutions will be available in the first quarter of 2014.

To learn more about how Wind River is addressing the opportunities and challenges created by the Internet of Things visit <http://windriver.com/iot/>.

**RTI assists Joy Global Underground Mining in supporting next generation Underground Mining Equipment**

Real-Time Innovations (RTI), the real-time infrastructure software company, announced that Joy Global Underground Mining has implemented the RTI Connext™ modular infrastructure for its upgradeability, future maintainability and real-time data analytics.

Joy Global is the leader in the development, manufacture, distribution and service of surface and underground mining machinery for the extraction of coal and other minerals. Prior to RTI, Joy Global wrote its own middleware and had legacy hardware, which was about to end-of-life. Joy Global evaluated several vendors, including RTI, and also considered building its own solution in-house.

Ultimately, Joy Global chose RTI because of the company's strong solution set and services. The RTI Connext product family was easy to integrate and supported multiple operating systems. With RTI, Joy Global can now gather information and seamlessly forward it to the top of the mine for data analysis to deliver enhanced Joy Global Smart Services that are preemptive and predictive, ultimately maximising the assets of Joy Global's customers by providing better machine availability, utilisation, minimal downtime and reduced costs.

"Having Joy branded mining machines continuously operating is the key to our success; second only to providing a safety-first work environment. RTI offered a comprehensive solution that ran across our entire platform and enabled us to add new applications and functionality to our machines quickly and easily," said Arun Kesavan, Joy Mining's Global Director – Controls and Automation. "From the beginning, RTI acted as a true partner and with the Connext solution on board, we have improved our ability to monitor, control and collect real-time equipment analytics to prevent future safety issues."



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Tech Source adds VxWorks support to H.264 XMC video card to target safety critical markets



Tech Source, Inc., an independent supplier of high performance embedded video, graphics and high end computing solutions, has successfully added driver support for Wind River® VxWorks® to its low power Condor VC100x H.264 video capture and compression card.

By adding support for the leading RTOS, Tech Source will be able to target those developing mission and safety critical video streaming applications for aerospace and defence customers, such as unmanned aerial vehicles.

"The Condor VC100x enables a rapid upgrade to legacy systems, and, when combined with open standards like OpenGL, POSIX, Linux, FACE, and ARINC 653, can rapidly deploy enhanced video across a wide range of aerospace systems," states Chip Downing, senior director of aerospace and defense at Wind River. "The combination of Condor and VxWorks enables Tech Source and Wind River customers to leverage the broad range of powerful capabilities built into both products."

Tech Source's XMC form factor module - featuring an H.264 video encoder with baseline, main and high profile support up to Level 4.1 - supports up to 4 composite video inputs (NTSC/PAL/SECAM) or up to 2 SDI inputs (SD-SDI/HD-SDI), all of which are selectable through the provided API. The

VC100x also has 2 stereo or 4 mono audio inputs.

The Condor VC100x card is available in various ruggedised levels and performs H.264 encoding in hardware to minimize CPU usage. Video data is captured and stored in files and made available to customer applications for processing, analysis or display on a local graphics card.

Tech Source has been developing graphics solutions for air traffic control, military and embedded applications for over 25 years. The ISO9001:2008 certified company offers a range of commercial-off-the-shelf (COTS) products, including graphics processors - targeted at general purpose graphics processing unit (GPGPU) applications, input solutions, video compression and streaming boards, imaging cards, recording solutions and software libraries.

ELMA
Your Solution Partner

Single Slot 3U VPX Board with more than 2TB Storage

Dual SATA drive capacity provides build block for high-speed storage array

Elma Electronic Inc. now offers a dual drive, VPX storage module that provides more than 2 terabytes (TB) of storage, yet requires only one slot. The new 533x family comes with either solid state SLC, MLC or 2.5" rotating drives to match both the environmental attributes and functionality requirements of specific applications. Designed for rugged use, the high capacity storage modules reliably perform in harsh conditions found in many defence operations, ranging from ground to shipborne and airborne systems.

The 5330/1 boards feature a 4-port PCIe to SATA II 3 Gb/s controller supporting two on-board and up to four external drives, allowing the boards to be implemented as part of a multi-slot storage array using Elma's 5332/3 series dual drive storage carriers. The large number of drives supported on a single board makes the series ideal for building high-speed, high capacity systems.

Software RAID provides better data protection and access speed, and the extreme temperature and shock resistance ensure the 533x series will continue to perform under critical environmental stresses.

The convection-cooled versions operate from -40°C to +85°C and the conduction-cooled versions operate from -40°C to +75°C, with -40°C to +80°C available in a conduction-cooled, solid state drive configuration. Operating shock of all boards is 40 Gs at 11 ms, half-sine wave; vibration is 2 Gs from 15 Hz to 2,000 Hz.





BittWare announces 6U OpenVPX System for Electronic Warfare and Radar Development

BitWare, the leader in Altera-based FPGA COTS boards, announced the availability of their Electronic Warfare (EW) and Radar Development System. The single-slot 2U OpenVPX system features BitWare's S5-6U-VPX (S56X) FPGA COTS board based on the high-density Altera Stratix® V GX and GS FPGAs and two VITA-57 FPGA Mezzanine Cards (FMCs) with direct data connections to the on-board FPGAs: an ADC FMC (A/D Converter) providing up to four 8-bit A/D channels at 1.25 to 5 GSPS, and a DAC FMC (D/A Converter) providing two 14-bit D/A channels at 5.6 GSPS. Along with the dual Stratix V FPGAs, the 6U VPX board also contains an ARM Cortex-A8 for control plane interface and processing. The EW & Radar Development System provides a complete, fully-tested and configured Stratix V development environment with high-speed data conversion ideal for time-critical military applications.

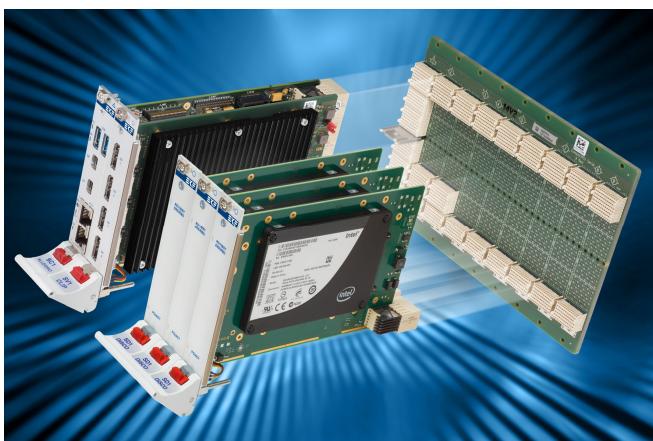
With complete software support including BitWare's ATLANTiS FrameWork, which enables reconfigurable data routing, the development system allows users to fully design and debug in a flexible environment. Hardware-in-the-loop support for Simulink provides an additional layer of flexibility, allowing rapid control prototyping and other real-time testing.

EW & Radar Development System Specifications:

- 19" 2U rack-mount
- Single-slot VITA 46.1 backplane
- BitWare S5-6U-VPX
- Two Altera Stratix V GX or GS FPGAs implementing BitWare ATLANTiS FrameWork
- 48 multi-gigabit transceivers
- Additional I/O: LVDS, GigE, 10/100 Ethernet, RS-232, JTAG
- High-speed A/D: 1, 2, or 4 channels 8-bit, up to 5 GSPS
- High-speed D/A: 2 channels 14-bit, up to 5.6 GSPS
- Optional rear transition module with 8 QSFP, 2 SFP, 2 RJ-45, JTAG, PCIe x1, SATA, and Ref Clk input
- Optional debug I/O breakout board with USB, JTAG, RS-232, and Ethernet access
- BitWorks II Toolkit providing host, command, and debug tools for BitWare hardware
- ATLANTiS FrameWork FPGA framework for Altera Stratix V FPGAs
- Altera Quartus II tools for Stratix V FPGAs



All you need to know— CompactPCI® Serial Basics



Driven by increasing demand for latest technologies in modular industrial computer systems, CompactPCI® Serial will eventually supersede CompactPCI®. Market-ready products from renowned suppliers enable smart solutions for a wide range of applications.

All you need to know - the CompactPCI® Serial basics and also the smooth migration via CompactPCI® PlusIO has been illustrated on a topical publication issued by EKF .

Download your copy here: [CPCI Serial Smart Solution](#)