

WBIP News

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Your Solution Partner

Rugged CISCO Routers and Switches

Cisco certified rugged, mobile routing and switching plus the packaging and integration know how of Elma Electronic.

As a qualified Solution Technology Integrator (STI partner) for Cisco, Elma now offers a range of rugged, embedded computing systems designed for deployment in harsh environments, incorporating the reliability and unmatched performance of Cisco's 5915 embedded router and 2020 switch for mobile applications. Featuring Cisco IOS® Software and complemented by Cisco Mobile Ready Net capabilities each system enables highly secure data, voice, and video communications to stationary and mobile network nodes across wired and wireless links.



cisco Technology

Systems ranging from ultra rugged to light industrial meet the critical need for on-demand network connectivity for industrial, commercial, military, security, and emergency-response applications. Choose from basic router only configurations to fully configured compute platforms that also include leading edge CPU and application I/O feature sets.

[Read more about Rugged CISCO Routes and Switches here.](#)



VME Component Obsolescence prompts Thoughts of Alternatives

A GE Intelligent Platforms perspective on embedded military electronics trends

A supplier of a small but important VME component recently announced that the part will go obsolete this year. In all probability, the manufacturer plans to move on from VME to something in greater demand from the commercial world. Although the move was hardly surprising in the larger scheme of things, it made news in the corner of the electronics market devoted to the embedded-computing systems used in military and aerospace platforms.

Yet even in that sector, the news of a key component's imminent demise was far from a death knell for VME. Although the bus-based technology peaked at hundreds of megabits per second on the backplane, it remains an attractive alternative for systems like command and control, which stress board-level compute power more than board-to-board bandwidth. The latest VME designs, moreover, can compete successfully for slots in more demanding signal-processing applications such as radar and sonar. VME can claim all this, despite being directly descended from technology invented – and adopted by military programs – long before the official advent of the commercial off-the-shelf (COTS) era in 1994.

[Read the complete article here.](#)



DESY Develops MTCA.4 Components for Beam Control at Particle Accelerators

Broad Alliance for MTCA in Research and Industry



The operation of particle accelerators requires high-performance electronics for beam diagnostics, data acquisition and machine control. DESY's ambitious standards regarding signal processing performance, redundancy options, remote management capabilities and timing stability called for the development of an entirely new generation of modules based on the latest MicroTCA.4 standard: High-Frequency Down-Converters, Low-level RF-Controllers, Analog/Digital Converters have been developed with a view to meet the unprecedented demands of the European XFEL, a multi-national free-electron laser X-ray facility currently under construction in Northern Germany.

To make its MicroTCA.4-compliant systems available to other users in equally challenging application domains (e.g. automotive testing, medical technology, industrial process control and aerospace), DESY has initiated an extensive licensing program that was designed to remove the barriers to accessing MicroTCA.4 and

make further technology development as inclusive as possible. It is the goal of this initiative to foster the applications of MicroTCA.4 in research and industry.

[Read more about DESY and MTCA here.](#)



SD4—CPCI Serial M.2 SATA SSD Modules Carrier Board

The SD4-SWEEP is a peripheral slot card for CompactPCI® Serial systems, equipped with a quad-channel PCI Express® to SATA 6Gbps controller, and four on-board sockets for M.2 solid state drives (SSD). available with 1024GB as of current, M.2 is a fast emerging embedded storage module form factor. The Marvell® SATA 3.0 controller allows RAID or non RAID operation.

The SD4-SWEEP fits into any CompactPCI® Serial peripheral slot that is PCIe enabled. For optimum performance a fat pipe slot may be chosen. Hardware RAID operation is supported, running with an enhanced ARM-based processor to offload the host CPU. Thanks to the four M.2 sockets provided on the SD4-SWEEP, a JBOD or hardware RAID level 0/1/10 system can be easily configured.



- Marvell® PCI Express® 2.0 to SATA III host controller
- Four SATA 6Gbps interface ports (backward support 3Gbps and 1.5Gbps)
- Native Command Queuing
- Hardware RAID 0/1/10
- On-the-fly AES encryption 128/256-bit
- Designed according to PCI Express® M.2 Specification (aka NGFF)
- Up to four on-board M.2 SSD modules (must be ordered separately)
- Various brands of M.2 SSDs available (e.g. Intel, Micron, Samsung)
- Hardware RAID option for dual or triple/quad device configuration
- Long term availability
- Rugged solution (coating, sealing, under-filling on request)
- RoHS compliant 2002/95/EC
- Operation temperature 0°C to +70°C (commercial temperature range)
- Operation temperature -40°C to +85°C (industrial temperature range) on request
- Storage temperature -40°C to +85°C
- Humidity 5% ... 95% RH non condensing
- Shock 15g 0.33ms, 6g 6ms
- Vibration 1g 5-2000Hz



NATIVE-mini

Smallest MicroTCA-Chassis for Industrial Applications

The **NATIVE-mini** is the youngest member of the N.A.T. family of MicroTCA chassis, targeting cost-sensitive applications like digital video and image editing, automation or electronic signal processing with the need for one or two payload slots only.

With its compact dimensions of 260 mm width, 43 mm height (1U) and 302 mm depth the EMC-shielded **NATIVE-mini** is designed for the insertion of up to two single full-size or mid-size AMC modules (Advanced Mezzanine Card) and therefore aims for applications which require just one or two AMC modules.

The integrated "**embedded**"**MCH** (MicroTCA Carrier Hub) makes the **NATIVE-mini** a standard compliant MicroTCA system providing an easy migration to larger systems. In relation to the system's dimensions the **eMCH** is an optimised version of its bigger family member, the NAT-MCH, taking over monitoring and management of all system components such as the 150W power supply (input voltage range 90 - 264 VAC) or the cooling units which ensure a cooling power of 150 W at an operating temperature of +55°C. By means of error detection and isolation the system management provides the system reliability which MicroTCA is known for.

eMCH

The system integrated "embedded" MCH enables the communication between the AMC modules and the monitoring of the system, including the power and cooling management. The eMCH provides via its 1GbE switch direct access to both AMCs and the system management via the 1GbE-Uplink at the chassis front. The 1GbE switch also allows the direct integration of the system components in an existing network infrastructure. Hereby it is also possible to simply integrate the **NATIVE-mini** in existing management architectures like e.g. SNMP. The eMCH is fully compatible with the NAT-MCH and therefore offers a natural migration path to bigger systems.

Application areas

Despite its compact design the **NATIVE-mini** is compliant to the open MicroTCA standard MTCA.0 and therefore every standard compliant, single full-size or mid-size AMC module can be integrated. The service-friendly design aims for applications which are on the one hand cost-sensitive and get along with only few AMC-modules and on the other hand want to benefit from the proven technological benefits that are offered by MicroTCA (e.g. error detection and isolation, open system management and monitoring, etc.). Due to the fact that the chassis is stackable or mountable in a 19" rack the **NATIVE-mini** is multi-purpose and usable e.g. for the following applications:

- digital video and image editing
- automation and machine control
- electronic signal processing
- security
- Gateway



[Article: Now is the time to change your VME and CPCI computing platform to MTCA](#)

Multi Wheel Miniature Rotary Switch provides accurate One-Finger Control

Hall effect encoder offers incremental positions and center push-disc joystick function

Elma Electronic now offers a miniature rotary encoder that includes an illuminated 8+1 joystick, enabling seamless, accurate control using just one finger. The new Multi Wheel Encoder features Hall effect sensed incremental encoder output and 12 detents with magnetic indexing to ensure proper alignment and positioning through the life of the encoder.

The rotary encoder comes standard with IP66 sealing, with an outer O-ring ensuring secure front panel sealing. Measuring 10.5 mm x 30 mm, the switch incorporates a low profile design for easy incorporation in space constrained environments.

The compact, reliable and long-life Multi Wheel is ideal for test and measurement in outdoor environments as well as for use in industrial control environments. It is also well suited for aviation cockpits and for transportation and construction applications.

Front or rear mounting is easily accomplished using two self-tapping screws that are driven into the switch's hard polycarbonate body. The front end is metal with clear or black matte plating for a sleek, durable finish.

The encoder's communication interface incorporates a UART output that sends an 8-bit command for every encoder step and joystick actuation, as well as an LED control input with a proprietary protocol.

The independently-controlled, backlit LED offers full color RGB spectrum with different brightness levels.

Encoder life is 1 million revolutions and joystick life is 500,000 actuations. Operating temperature is -20°C to +70°C and a 3 VDC power supply is required for proper Hall sensor operation.

[Find more information here.](#)



A huge range of 3U and 6U OpenVPX Backplanes

Elma Electronic is the undisputed leader in VPX (VITA 46) and OpenVPX (VITA 65) products. Their experts developed the industry's first VPX backplane and proposed the first VME pinouts to the VITA 46 subcommittee. Since then, Elma has developed various VPX and OpenVPX configurations with and without VME64x legacy slots. VPX presents design challenges with higher layer-count backplanes and more demanding power and cooling requirements. Elma Electronic tackles these problems with signal integrity analysis, thermal simulation and testing.

OpenVPX has opened up new definitions for VPX backplanes and systems. This includes defined module, slot and backplane profiles as well as high speed fabric options, control planes and secondary expansion fabrics. Elma

Electronic offers a comprehensive portfolio of OpenVPX backplanes and chassis, designed to meet almost any application. OpenVPX defines an easier way to ensure the Interoperability between the VPX Modules from different vendors, but also the compatibility between certain Slot configurations with similar VPX Modules.

[Find the 3U VPX Profile List here.](#)

[Find the 6U VPX Profile List here.](#)

6U Backplane Profiles*		Baseboard PN		Number of Subsystems		Total # Slots		Payload Slots		Switch/Rewire		Select Type		Termination/Pins		Control/Pins	
BKP6-DIS04-11.2.AN-6	10VX604GZM-1X01R	D	4	4													
BKP6-CEN05-11.2.5-1	10VX605FX1-1X01R	D															
BKP6-CEN05-11.2.5-3	10VX605FX3-1X01R	D															
BKP6-DIS05-11.2.16-3	10VX605MX4-1X01R	D															
BKP6-CEN06-11.2.8-1	10VX606TX1-1X01R	R															
BKP6-DIS06-11.2.10-3	10VX606BX6-1X01R	D															
BKP6-CEN06-11.2.11.2.AN-6	10VX606HZM-1X01R	D															
BKP6-CEN07-11.2.5x-1	10VX6092464-0000†	D															
BKP6-HYB07-11.2.20-1	10VX607EX1-1201R	D															
BKP6-CEN09-11.2.13-1	10VX609VX1-1X01R	D															
BKP6-CEN10-11.2.4-3	10VX610LX6-1X01R	D															
BKP6-CENTO-11.2.6-3	10VX610WX6-1X01R	D															
BKP6-CEN12-11.2.9-1	10VX612HXL-1X01R	D															
BKP6-CEN11-11.2.AN-6	10VX612FZM-1X01R	D															
BKP6-CEN11-11.2.2-3	10VX616GX6-1X01R	D															
BKP6-HYB17-11.2.11-1	10VX617NX1-1321R	D	17	12	2	3	4	3		4 x FP mesh x 3			4 x VME/VPX slots			2 x TP (RTM)	