CompactPCI Serial
Empowering the next generation of CompactPCI

SYSTEM PLATFORMS
BACKPLANES
ENCLOSURES
ROTARY SWITCHES
COMPONENTS
Elma. Embedding CompactPCI Serial.

CompactPCI is embarking upon a new era with the CompactPCI Serial technology. CompactPCI Serial supports high-speed data transmission of up to 12 GB/s. This means excellent computing power in your applications and incredible precision for automated work processes. Elma offers you the professional expertise you need to eliminate sources of error during the transition and startup phases of your project, from the first screw all the way to a fully integrated computer. You get everything you need from a single source: excellent craftsmanship, reliable products and cost-effective prices.

CompactPCI Serial provides you with new ways to work effectively with your specific application. What’s more, it allows you to do so with the very first system that you integrate into your existing processes. The tried and tested IEEE 1101.1 mechanical standard from the PICMG 2.0 CompactPCI specification was expanded to include the USB2, USB3, SATA, PCI Express and Ethernet protocols. This wide range of options enables you to run high-speed processes. With the help of CompactPCI Serial, you can modernise your existing system without having to deal with costly downtime.

The transition to new technology has never been so easy. And never before has it been so easy to integrate new components into your existing system. Now, you no longer have to completely replace your system or dispose of any components to update your working system to meet the latest standards. You can simply add your CompactPCI PlusIO system to the mix. The transition can take place slowly or quickly – you choose the pace.

CompactPCI has always been perfectly suited for use in the areas of industry and transportation. And that has not changed. On the contrary, you can now use the remote maintenance feature to check the status of processes on manufacturing lines from anywhere in the world. Passengers enjoy an even wider range of entertainment options. On-board climate control is even more reliable. And diagnostic sensors are capable of delivering even more precise results. In addition, this technology offers additional potential in the areas of security, communication and building technologies.
We engineer reliable electronic equipment for aerospace, telecommunication, industrial applications and science. We know what „mission-critical” means. We guarantee functionality even under the most challenging circumstances. We are ready for the next project.
We are ready for your project.
At Elma, customization is the standard. With an extensive offering of modular standard products as a base, we are able to leverage existing solutions and proven design concepts to meet any custom application. This approach ensures that Elma provides quality, compliant solutions with significantly reduced lead time, cost and risk. Combined with our integration capability for both Single Board- and modular computers, we provide a single solution to your outsourcing needs. Allow us to take your latest product from prototype to production quickly, cost-efficient and safe.

Elma has been a leader in design innovation for over 50 years. We use advanced design software and equipment to perfect your design. We can utilize our pool of experienced designers and engineers from facilities all over the world. The result is a superb design solution built to your specifications in a timely and cost-efficient manner. From base components to fully integrated computing systems, Elma can be your solution partner every step of the way. With production and assembly facilities worldwide, we can meet nearly any need – whether prototypes or high volumes, quick-turn deliveries, or highly complex custom designs.
CompactPCI Serial
One system slot for the CPU and eight peripheral slots provide the optimum conditions for symmetrical multi-processing and redundant systems.
- Advanced EMC shielded 9 slot CompactPCI Serial system platform with vertical 3 U backplane
- 1 x CompactPCI Serial System Slot (CPU) and 8 x CompactPCI Serial Peripheral Slots
- High-speed connectors, supporting Data Transfer rates up to 12 Gb/s for all nine slots
- Full Mesh Topology for ETHERNET, Single Star Topology for Serial Interfaces such as PCI Express, SATA, USB2 + USB3
- System Management interface on the backplane

CompactPCI PlusIO
CompactPCI PlusIO connects the two generations. You can continue using old systems along with next-generation systems. This way you can make a smooth transition to CompactPCI Serial with a reduced risk of downtime.
- Advanced EMC shielded 8 slot CompactPCI PlusIO system platform with vertical 3 U backplane
- 1 x CompactPCI PlusIO System Slot (CPU), 4 x CompactPCI Serial Peripheral Slots, 3 x CompactPCI Legacy Peripheral Slots
- High-speed connectors, supporting Data Transfer rates up to 12 Gb/s for all nine slots
- Single Star Topology for Serial Interfaces such as PCI Express, SATA, ETHERNET, USB2
- System Management interface on the backplane

CompactPCI Serial
Fully equipped with Elmas know-how in ruggedisation, this platform is ready for travelling.
- Advanced EMC shielded 3U CompactPCI Serial Platform
- Equipped with two segments - both with Power Unit and two CPCI Serial backplanes with five slots each
- Segment 1: RAID-System, Segment 2: Passenger information system
- System slots on the right side without connectors for RTMs

19” SYSTEM PLATFORMS
Elma offers a broad range of standard chassis, all ready to be customised whenever it is required. New developments are possible any time as well.
CompactPCI Serial
A cost-efficient CompactPCI Serial System Platform for industrial applications.
- Highly cost-efficient system platform for industrial automation
- 5 slots: 1 x CPCI-S.0 System Slot (CPU) and 4 x CPCI-S.0 Peripheral Slots
- System slot on the right side
- Supports 4 TE and 8 TE CPUs
- 300 W PSU

CompactPCI Serial start-up chassis 5 slots
With the new five slot backplane Elma Electronic has taken an important step towards the downsizing of CompactPCI Serial. With this platform, Elma gets CompactPCI Serial ready for environments where shock and vibration matter.
- Advanced EMC shielded 5 slot CompactPCI Serial system platform with vertical 3 U backplane
- 1 x CompactPCI Serial System Slot (CPU) and 4 x CompactPCI Serial Peripheral Slots
- Full Mesh Topology for ETHERNET, Single Star Topology for Serial Interfaces such as PCI Express, SATA, USB2 + USB3
- System Management interface on the backplane

CompactPCI Serial start-up chassis 9 slots
- Advanced EMC shielded 5 slot CompactPCI Serial system platform with vertical 3 U backplane
- 1 x CompactPCI Serial System Slot (CPU) and 8 x CompactPCI Serial Peripheral Slots
- Full Mesh Topology for ETHERNET, Single Star Topology for Serial Interfaces such as PCI Express, SATA, USB2 + USB3
- System Management interface on the backplane

CompactPCI PlusIO start-up chassis
- Advanced EMC shielded 8 slot CompactPCI PlusIO system platform with 3 U boards
- 1 x CompactPCI PlusIO System Slot (CPU), 4 x CompactPCI Serial Peripheral Slots, 3 x CompactPCI Legacy Peripheral Slots
- Single Star Topology for Serial Interfaces such as PCI Express, SATA, ETHERNET, USB2
- System Management interface on the backplane
System slot left or right?
Besides its three-, five- and nine-slot versions with left-sided system slot, the backplane specialist Elma Electronic now also offers a five-slot CompactPCI-serial backplane with right-sided system slot. This perfectly fits into the product range as it offers even more variability when designing systems with the increasingly important CompactPCI-Serial technology. Even double-width CPUs can be used without having to make constructional changes. Moreover, compared to the version with right-sided system slot, it does not cover additional slots.

The shortest path from idea to reality
Elma is an expert on speed. And not just when it comes to supplying our clients in the transportation sector or providing high-speed bus boards: We also know our way around speed when it comes to product availability. Whether standard or custom, Elma guarantees the best manufacturing times at the highest standard of quality.
SOPHISTICATED TECHNOLOGY FOR BEST RESULTS

High-speed connectors for fast performance
The most important factor behind CompactPCI Serials incredible performance is its high-speed connectors. The serial point-to-point connectors replace the old bus technology. These connectors are equipped with 184 signal pairs on a 3U backplane. This facilitates transmission rates of up to 12 GB/s. The ‘female’ end of the connector is attached to the backplane in order to reduce the risk of malfunctions in the backplane. The connectors are attached on four sides, making them very robust. They are easy to use, even in demanding working environments. The rear I/O utilises the same connectors.

Complete control of your system
Elma systems are also equipped with two interesting product features: a new fan controller and a new system monitor. The new system monitor now uses protocols such as TCP/IP, HTTP, TFTP, SNMP, DHCP and Telnet. This enables the user to control the system remotely. Using remote access, the user can check the voltage, temperature and fan speed of the system and set up special ‘events’. The new fan controller enables the user to adjust system ventilation parameters, which had been static up until now. Thanks to the integrated microcontroller, the user is now able to set the temperature adjustment behaviour and connection times of the fan using the serial interface. The user can view and monitor the necessary measured values via I2C and the serial interface. In addition, users can operate digital temperature sensors via the fan controller or connect an LCD display in order to view the current temperature and speed of the fans in the system.

System integration
Trust and experience is a good combination. Thanks to a team of highly experienced system integration engineers, Elma can offer fully integrated and application-ready customised hard- and software. Upon request, we can even brand it for you and send it straight to its destination. This could even be the end customer who will receive the package as if it came directly from you. In other words: Feel free to take us as your virtual factory, allowing you to concentrate on your core business. Our integration services are enabled by best knowledge of markets, purposes and technology, starting from the single architectures over components like fans, SBCs, I/O boards and drivers, operating systems, specific software and much more. The result is an application-ready product with perfectly matched components.
COMPACTPCI SERIAL CARDS - PRESENTED BY KONTRON

**CPS3003-SA - 3rd Gen. Intel® Core™ i7 3U**
- CompactPCI Serial CPU Board
  - Intel® Core™ technology, quad- and dual-core processors
  - Up to 16 GB DDR3 memory with ECC
  - Up to 32 GB SATA NAND Flash
  - SATA 6 Gb/s, USB 3.0 and PCI Express® 3.0
  - Up to 3x independent graphics outputs
  - TPM support
  - Version for the ext. temp. range E2 (-40°C up to +85°C)

**CPS3410 - 3U CompactPCI Serial Quad**
- Gigabit Ethernet Controller
  - Latest Ethernet technology - Intel® I350 Quad GbE Controller
  - x4 PCI Express® 2.0 interface to the backplane
  - Rugged design, optionally with P6 for improved mechanical stability
  - Version for the ext. temp. range E2 (-40°C up to +85°C)

**CPS3402 - 3U CompactPCI Serial Dual 10GBASE-T Ethernet Controller**
- Dual 10GBASE-T based on Intel® X540 Controller
  - x8 PCI Express® 2.1 interface to the backplane
  - Highly integrated single-chip solution
  - RJ-45 connectors for copper cabling
  - Rugged design, optionally with P6 for improved mechanical stability
  - Version for the ext. temp. range E2 (-40°C up to +85°C)

**CPS3105 - 3U CompactPCI Serial XMC Carrier**
- Cost-effective carrier board for a wide range of applications
- XMCs up to x8 PCI Express® 2.1 supported
- Service-friendly design - hot swap capability and power LED
  - Version for the ext. temp. range E2 (-40°C up to +85°C)

**CPS3101 - 3U CompactPCI Serial Carrier for 2.5" SATA HDD/SSD**
- SATA 6 Gb/s and USB 3.0 compliant
- LEDs for status indication
- Hot swap support
- Rugged design, optionally with P6 for improved mechanical stability
  - Version for the ext. temp. range E2 (-40°C up to +85°C)
COMPACTPCI SERIAL CARDS - PRESENTED BY MEN

G22 – 3U CompactPCI® Serial SBC with Intel® Core™ i7-610E, 2.53 GHz
- Intel® Core™ i7, 3rd Gen Quad-core 64-bit processor
- 4 HP system master and peripheral slot
- 4 or 8 GB DDR3 DRAM soldered, ECC
- mSATA and microSD™ card slots
- Standard front I/O: 2 DisplayPorts, 2 GbE, 2 USB 2.0
- Standard rear I/O: 7 PCIe®, 4 USB 2.0, 4 USB 3.0, 5 SATA, DisplayPort®/HDMI
- Rear I/O via mezzanine board: up to 8 GbE
- Intel® Turbo Boost, Hyper-Threading, AMT 8.0
- Open CL support

GM1 – Quad Gigabit Ethernet Mezzanine Card
- Mezzanine card for CompactPCI® Serial SBCs
- Four 10/100/1000Base-T Ethernet channels
- Support of full mesh and star architecture
- TCP/IP checksum offload
- -40 to +85°C screened

COMPACTPCI PLUSIO CARDS - PRESENTED BY MEN

F19P – 3U CompactPCI® PlusIO Intel® Core™ 2 Duo SBC
- Intel® Core™ 2 Duo SP9300, 2.26 GHz
- Dual-core 64-bit processor
- 4 HP system master or stand-alone
- 32-bit CompactPCI® and PICMG 2.30 PlusIO
- Up to 4 (8) GB DDR3 DRAM soldered, ECC
- CompactFlash® and microSD™ card slots
- Standard front I/O: VGA, 2 Gb Ethernet, 2 USB
- Standard rear I/O: 4 PCIe®, 4 USB, 4 SATA, 1 Gb Ethernet
- Other I/O (onboard, side card): SATA, SDVO, HD audio, USB, UART etc.
- -40 to +85°C screened version

F21P – 3U CompactPCI® PlusIO Intel® Core™ i7 SBC
- Intel® Core™ i7-2715QE, 2.1 GHz
- Quad-core 64-bit processor
- 4 HP system master or stand-alone
- 32-bit CompactPCI® and PICMG 2.30 PlusIO
- Up to 4 (8) GB DDR3 DRAM soldered, ECC
- CompactFlash® mSATA and microSD™ card slots
- Standard front I/O: VGA, 2 Gb Ethernet, 2 USB
- Standard rear I/O: 4 PCIe®, 4 USB, 4 SATA, 1 Gb Ethernet
- Other I/O (onboard, side card): SATA, SDVO, HDMI/Display Port, HD audio, USB, UART etc.
- Intel® Turbo Boost 2.0, Hyper-Threading

GM2 – Octal Gigabit Ethernet Mezzanine Card
- Mezzanine card for CompactPCI® Serial SBCs
- Eight 10/100/1000Base-T Ethernet channels
- Support of full mesh and star architecture
- TCP/IP checksum offload
- -40 to +85°C screened

F50P – 3U CompactPCI® PlusIO MPC8548 SBC
- MPC8548 (or MPC8543), up to 1.5 GHz
- 32-bit CompactPCI® and PICMG 2.30 PlusIO
- 8 HP or 12 HP with front I/O
- Up to 2 GB (ECC) DDR2 SDRAM
- Up to 128 KB FRAM, 2 MB SRAM
- Up to 16 GB SSD Flash
- Standard front I/O: 2 Gb Ethernet, 2 USB
- Standard rear I/O: 4 USB, 2 SATA
- FPGA for user-defined I/O functions (option)
- -40 to +70°C (8 HP) (screened)
PERIPHERAL CARDS - PRESENTED BY MEN

**G501 – 3U CompactPCI® Serial SATA HDD/SSD Shuttle**
- Hard disk drive or solid state drive shuttle
- 2.5" SATA HDD/SSD slot
- -40 to +85°C with qualified components
- Compliant with EN 50155

**G212 – CompactPCI® Serial PCIe® MiniCard Carrier**
- Up to 2 PCI Express® MiniCards (full-size)
- Optional 2 Express Cards 34 or 54
- For cards with internal PCIe® and USB interface
- For HF applications [WLAN, UMTS, GPS, GSM, HSDPA]
- -40 to +85°C screened

**G213 – 3U CompactPCI® Serial XMC Carrier**
- 1 XMC slot (PCIe® 2 x4 links) or 1 PMC slot (32/64 bits, 33/66/133MHz, PCI-X)
- -40 to +85°C screened

**G214 – 3U CompactPCI® Serial Multi-Display Controller**
- Graphics Processor Radeon E6760, 600 MHz
- SIMD, FPU, ATI display engine
- PCIe® x8 CPU interface
- Up to 6x DisplayPort® (4x DP 1.2, 2x DP 1.1a)
- DirectX® 11, OpenGL® 4.1, OpenCL™ 1.1

**G211 – 3U CompactPCI® Serial Quad Gigabit Ethernet Interface**
- Four 10/100/1000Base-T Ethernet channels
- Alternatively two redundant channel pairs
- Full-duplex or half-duplex
- RJ45 or robust M12 connectors
- 1500 V isolation voltage
- -40 to +85°C screened

**G211F – 3U CompactPCI® Serial Quad Fiber Optics Interface**
- Four optical transceiver channels 1000Base-SX
- Alternatively two redundant channel pairs
- Full-duplex or half-duplex depending on transceiver
- -40 to +85°C screened (without transceivers)

**G100 – CompactPCI® Serial to CompactPCI® Interface Card**
- For operation together with F100 system slot card for CompactPCI®
- 1 PCI Express® x1 link
- -40 to +85°C with qualified components

**F100 – CompactPCI® to CompactPCI® Serial Interface Card**
- Replaces system slot card in CompactPCI® systems
- For operation together with G100 peripheral slot card for CompactPCI® Serial
- 1 PCI Express® x1 link
- -40 to +85°C with qualified components

**G215 – 3U CompactPCI® Serial Universal Interface Board**
- 8 HP CompactPCI® Serial with 5 interfaces at the front
- Physical layers via SA-Adapters™
- For protocols/physical layers like RS232/422/485, HDLC, CAN bus, binary I/O, IBIS, GPS
- Standard configuration: 2 CAN, 2 UART, 1 binary I/O port (8-bit)
- Other functions via FPGA IP cores
- -40 to +85°C with qualified components

**G301 – 3U CompactPCI® Serial Unmanaged 4+1-Port Eth. Switch**
- 4 Gb Ethernet ports on RJ45 or M12 connectors
- Power over Ethernet (PoE) PSE (all ports)
- LEDs for link and activity status
- 1 Gb Ethernet on rear I/O (optional)
- -40 to +85°C screened

**G201 – 3U CompactPCI® Serial USB 3.0 Interface**
- 4 USB 3.0 host interfaces
- 4 HP CPCIS.0
- -40 to +85°C screened
CPC510 - 3U CompactPCI Serial Intel Core i7
- Intel IvyBridge processors (2/4 Cores, up to 2.5 GHz)
- Up to 8 GB soldered, dual channel DDR3 SDRAM with ECC
- 2 DisplayPort up to 2560 x 1600 at 60 Hz at the front panel, 1 DisplayPort up to 2560 x 1600 at 60 Hz is routed to the mezzanine module
- 2 x Gigabit Ethernet ports (front panel)
- 2 x USB 2.0 (front panel)
- Intermodule communication (PICMG CPCI-S.0 CompactPCI® Serial): two x8 FatPipe PCI_E 2.0; four x4 PCI_E 2.0; 8 USB2.0 or 4 USB2.0 + 4 USB3.0; 2 SATA II and 2 SATA III
- SD card slot with USB 2.0 interface
- Increased heatsink versions for passive cooling
- Protective coating (optional)
- −40 to +85°C or 0 to +70°C
- Windows 7 Embedded, Linux 2.6

CPC508 - 3U CompactPCI PlusIO Intel Atom based CPU board
- Intel Atom N450 or DS10 CPU, soldered
- 512 MB or 1 GB DDR2 SDRAM soldered
- VGA up to 2048 x 1536
- 2 GbEthernet front/rear switchable
- PICMG 2.30: PCI 32/33, PCIExpress 4x1, 2 SATA II, 4 USB
- CF and SD interfaces, 1 or 2 GB Flash SSD soldered
- Mezzanine 1: 2 USB, 2 RS232, 2 RS485 isolated, 2 CAN 2.0 isolated, HD Audio, LVDS
- Mezzanine 2: 2 USB, 4 RS232, 2 RS485, PS/2, HD Audio

KIC550 - 3U CompactPCI Serial Peripheral Storage Module for Connection of 2.5" HDD
- Compliance with PICMG 2.30 and PICMG S.0 standards
- Place for mounting a 2.5" disk with SATA interface
- USB 2.0 at the front panel or USB 3.0 via on-board connector
- Operating temperature: −40 to +85°C
Headquartered in Wetzikon, Switzerland, Elma Electronic AG is a leader in servicing the worldwide electronic industry with precision coded switches, encoders and selector switches as well as electronic packaging solutions.

Founded in 1960, our core competence is the design and manufacturing of switches for the most demanding applications. Elma’s world-renowned quality, reliability and cost effectiveness have always been the hallmark of our products and services.

We have the ability to respond rapidly, with superior solutions to our various customers’ technical and logistical requirements in Aerospace, Defense, Communications, Security, Medical, Transportation, Research & Science and Industrial Automation.

We utilize local R&D, production and marketing capabilities in Switzerland, US, Germany, UK, France, Israel, China and Romania and we maintain a worldwide network of distribution partners in more than 22 countries.

Elma’s Six Sigma quality level is reached through continuing improvement and adaptation of our methods, processes and procedures to meet the demand of our customers’ ever changing requirements.

WHY CHOOSE ELMA?

Product Quality
The world leaders in their respective industries who set the standards for their markets choose Elma products for their designs.

Customization
Our proven business model is to perfectly adapt our products to the customers’ exact requirements.

Global Resources
Our local presence on five continents ensures a close relation in the discourse of engineering, customization and marketing service.

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Our long term relationships with industry leading customers have solidified our understanding of the varied requirements of each marketplace.

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