» CPS-ASM4 «

Integrated Card Cages for 3U CompactPCI® Serial

» Rich portfolio 84/42HP, backplanes, fans, PSU
» Simple migration path from classic CPCI
» Rear-I/O option also for system slot
» EMI protected and CE compliant

The pulse of innovation

CPS-ASM4
Integrated Card Cages for 3U CompactPCI® Serial

The complete portfolio
Kontron's initial portfolio offer for CompactPCI® Serial system infrastructure already enables most system platform solutions. Card cages 84HP and 42HP rack-/wallmount and 44HP tabletop, with AC or DC Power Supplies, backplanes of different slot count, with system slot right or left, with rear-I/O options for peripheral slots and for the system slot.

Saving the investments into CompactPCI®:
No change for housing, cooling, installation
The mechanical design of the serial CPS-ASM4 portfolio is backward compatible with Kontron's classic 3U CompactPCI® system portfolio. It retains the proven 19" mechanics of the IEC 60297 and IEEE 1101.x. This means that housing and cooling all stay the same. The option of using rear transition modules remains as well, so that the environment like cabling for rackmount installations can be re-used when the next generation application will be based on CompactPCI® Serial systems.

Saving the investments into CompactPCI®:
### CompactPCI® periphery can be re-used
The OEM may have invested in his own very specific peripheral CompactPCI® board. Vendors being experts in I/O technology or fieldbusses may have a portfolio of several form factors but not yet CompactPCI® Serial. Kontron offers a direct migration path to save these investments.

"Hybrid" chassis:
Migration from classic CompactPCI® cannot be simpler
Migrating from CompactPCI® to CompactPCI® Serial is easy: The so-called "Hybrid" card cage is equipped with two usual backplanes, one which carries classic CPCI boards and the other CompactPCI® Serial boards. The only additionally needed building block is a PCIe-to-PCI bridge from CompactPCI® Serial to CompactPCI® as an optional feature (variant) of the processor board's I/O extension card, as shown in the figure. The PCIe-to-PCI bridge realizes a classic CPCI interface and routes all signals via the J1 and J2 connectors to the CPCI backplane of the system. This makes it possible to control up to four 32-bit/66MHz classic CompactPCI® peripheral boards in one fully-fledged CompactPCI® Serial system. With all the mechanics remaining compatible with IEEE 1101, engineers can choose this flexible layout option as a very convenient migration path to serial system designs.

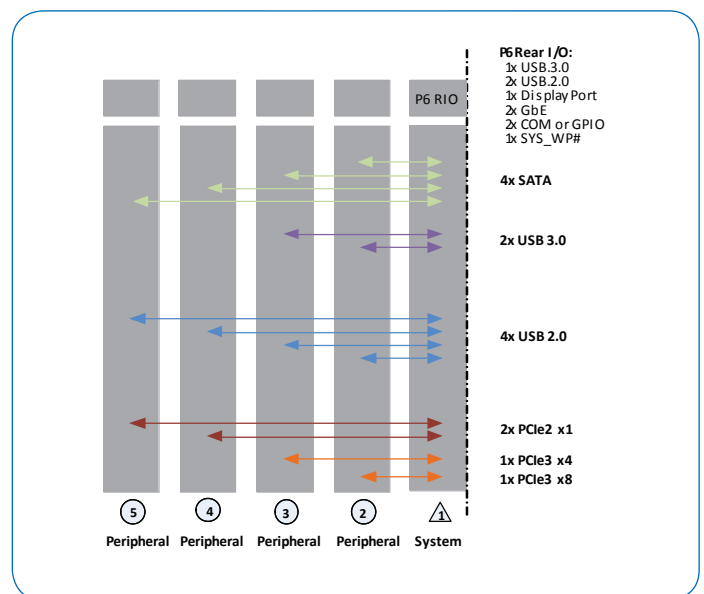CPCI S.0 Part ← → CompactPCI® Part
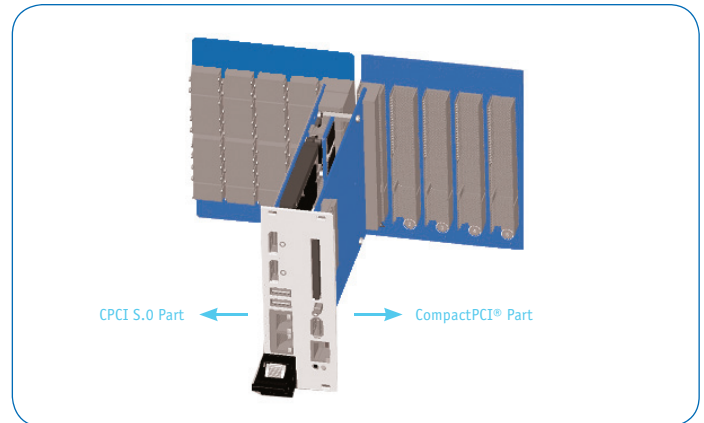
With the help of a CompactPCI® Serial to CompactPCI® bridge, engineers can simply use two backplanes which carry both classic CompactPCI® boards as well as serial CompactPCI® boards.

Rear-I/O option for peripheral and system slots
Kontron card cages are available which either only have Rear-I/O support (RIO) for peripheral slots or for both the peripheral slots as well as for the system slot. In order to have RIO for the system slot as well, the J6/P6 area – which is usually used for designs of fully meshed Ethernet configurations – has been opened up to an alternative rear I/O use.

A backplane variant with five slots for instance supports the P6 RIO option at the system slot. The system slot is at the right side, so the backplane can optionally be used for "hybrid" solutions. The legend of the graphics below describes the rear pinout for the CPS3003 CPU blade, for which a respective rear transition module is available. The picture also shows the entire backplane routing as used with CPS3003. The first two peripheral slots, so-called fat-pipes, are prepared to support a higher bandwidth PCI-Express 3.0 as well as USB3.0. All peripheral slots support SATA and USB2.0., the last two slots PCI-Express 2.1.

P6 RIO

P6 Rear I/O:
1x USB.3.0
2x USB.2.0
1x Display Port
2x GbE
2x COM or GPIO
1x SYS_WP#

4x SATA

2x USB 3.0

4x USB 2.0

2x PCIe2 x1
1x PCIe3 x4
1x PCIe3 x8

⑤ ④ ③ ② ⚠
Peripheral Peripheral Peripheral Peripheral System

Backplane CPS-BP5-SR-RIOS: PinOut use with CPS3003 CPU blade

CompactPCI® Serial – The Advantages

The natural upgrade of CompactPCI®
» 1 and 10 Gigabit Ethernet, PCI-Express® 3.0, USB3.0, SATA 6Gb/s via backplane
» Protecting CPCI system know-how
» Enabling CPCI for another decade
» Will co-exist with classic CompactPCI
» Migration paths save investments into proven legacy periphery

CompactPCI® Serial and CompactPCI®
» Open
» Modular
» Robust
» Proven
» Long-lasting

CPS-ASM4 Platforms – The Advantages

A rich portfolio
» Card cages rack/wall mount and table-top, PSUs, backplanes, entire platforms
» Simple bridge option to classic CompactPCI® slots for market-available CompactPCI® peripherals like I/O, fieldbus
» Related products: newest CPU Blades and a set of peripheral boards which open up the High Speed capabilities

A direct migration path
» Simply by use of a bridge option CPCI-S to CompactPCI®
» No additional bridge boards needed besides the CPU-Extension
» No need for intermediate standards like CPCI-PlusIO
» No special backplane needed

Rear-I/O option for peripheral and system slots
» Connector P6 is alternatively used for RIO signals

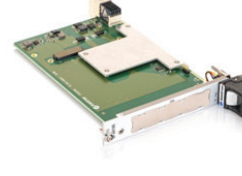## Related Products (please see separate datasheets)

CPS3003-SA
3rd Gen Intel® Core™ i7 CPU board

CPS3402
Dual 10GBASE-T Controller

CPS3410
Quad GbE Controller

CPS3105
XMC Carrier

CPS3101
HDD/SSD Carrier

Dedicated Project Management

Ask for a customized platform: A Kontron project manager is assigned for you. As a global company, Kontron has knowledgeable teams to support you in your region. Through your local project manager you have worldwide access to immense specialist know-how. Your project manager guides you securely through the entire design-in process to production-ready product by means of a precise gate project plan. This allows you to concentrate on your core business and still retain an overview and full control of development, documentation, and production, including unique test processes, systems and procedures.

Technical Information

* All systems described in the ordering list are conform to or better than.

Dimensions

84HP card cage	483 x 177 x 282mm / 84HP, 4U, 275mm, including 1U fan tray
42HP card cage	220 x 133 x 242mm / 42HP, 4U, 235mm, including 1U fan tray
44HP Tabletop card cage	190 x 245 x 297mm / 44HP, 4U, including two 12VDC radial ventilators

Power Supply

300W AC
CPS3-SVE-S300AC (more details: separate datasheet)
» Input: 90-264 VAC
» Max Output: 12V/24.0A, 5VSB/2.5A
» Dimension: 3U, 8HP
» Cooling: Forced airflow mandatory
» Operating temperature: -40°C to +70°C full rating
» Hold-Up Time: 20msec minimum
» Characteristics: full featured CPCI-S.0 recommended

250W AC
CPS3-SVE-250AC (more details: separate datasheet)
» Input: 85-264 VAC
» Max Output: 12V/21A, 5V/0.3A
» Dimension LxWxH: 225 x 122 x 128.7 mm (3U 24HP)
» Cooling: Convection
» Operating temperature: -25°C to +70°C (derating)
» Hold-Up Time: 16 ms
» Characteristics: non-pluggable

200W AC, for Hybrid systems
CP3-SVE-200AC (more details: separate documentation)
» Input: 85-264 VAC
» Max Output: 5V/40A, 3.3V/40A, 12V/5.5A, -12V/1.5A
» Dimension 3U, 8HP
» Cooling: Forced airflow mandatory
» Operating temperature: up to 55°C full load, above: derating
» Hold-Up Time: 20msec minimum
» Characteristics: redundant, hot pluggable, P47 connector

CPCI-S.0 Backplane

5 slot, RIO on all slots	CPS3-BP5-SR-RIOPS	» System slot: right, P6 with RIO
5 slot, RIO on system slot	CPS3-BP5-SR-RIOS	» System slot: right, P6 with RIO
9 slot, no RIO, ETH single star	CPS3-BP9-SL-ESS	» System slot: left, P6 for ETH single star
Power backplane	CPS3-BPP	» One slot, power connector as recommended for CPCI-S.0

Fan Tray

84HP/1U-275mm / 3.6W	CP-MKIT-FAN-84-3	» Power consuption: 12 VDC/3x 1.2 Watt fans	» Airflow: 3x 95m³/h (56cfm)/average of 1.25 m/s (250lfm)
84HP/1U-275mm / 10W	CP-MKIT-FAN-84-10	» Power consuption: 12 VDC/2x 5 Watt fans	» Airflow: 2x 170m³/h (100cfm)/average of 2.5 m/s (500lfm)
42HP/1U-235mm / 1.2W	CP-MKIT-FAN-42-1	» Power consuption: 12 VDC/1x 1.2 Watt fan	» Airflow: 1x 95m³/h (56cfm)/average of 0.8 m/s (160lfm)

General *

Ambient temperature	0°C to +50°C
Humidity	Up to 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)
Protection	IP20
Over voltage category	2
Protection class	1
EMI	EN55022 / EN55024
Safety	EN60950-1

Ordering Information

Article	Description
CPS-ASM4R-84F-200AC-B0500-STD	84HP chassis, AC PSU min. 200W, 5 slot backplane, system slot right, rear-I/O on all slots. Included: CPS3-SVE-250AC, CPS3-BP5-SR-RIOPS, CP-MKIT-FAN-84-3
CPS-ASM4-42F-S300AC-B0500-STD	42HP, AC PSU 300W plugable, 5 slot backplane, system slot right, no rear-I/O. Included: CPS3-SVE-S300AC, CPS3-BP5-SR-RIOS, CP-MKIT-FAN-42-1
CPS-ASM4R-44F-S300AC-B0500-STD-TT	44HP Tabletop chassis, AC PSU 300W plugable, 5 slot backplane, system slot right, rear-I/O on all slots. Included: CPS3-SVE-S300AC, CPS3-BP5-SR-RIOPS
CPS-CP-ASM4R-84F-200AC-2B0500-STD	84HP Hybrid chassis, AC PSU 200W, for CPU with bridge option, rear-I/O on all slots, and 4x serial and 4x classic peripheral slots. Included: CP3-SVE-P200AC, CPS3-BP5-SR-RIOPS
CPS-ASM4-84F-300AC-B0900-STD	84HP chassis, AC PSU 300W, 9 slot backplane, system slot left, no rear-I/O. ATX PSU only for this article, with EMI Emission Class A. Included: CPS3-BP9-SL-ESS

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