



Product Information

PC3-ALLEGRO • *CompactPCI® PlusIO* CPU Card

3rd Generation Intel® Core™ i7 Processor

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PC3-ALLEGRO (Shown w. C48-M2 Dual M.2 SATA SSD Mezzanine)

The PC3-ALLEGRO is a rich featured high performance 4HP/3U CompactPCI® PlusIO CPU board, equipped with a 3rd Generation Intel® Core™ i7 Ivy Bridge + ECC (dual- or quad-core) mobile processor. The PC3-ALLEGRO front panel is provided with two Gigabit Ethernet jacks, two USB 3.0 receptacles, and two Mini-DisplayPort connectors for attachment of high resolution digital displays, configured e.g. as extended desktop (option VGA).

The PC3-ALLEGRO is equipped with up to 16GB RAM with ECC support. 8GB memory-down are provided for rugged applications, and another 8GB are available via the DDR3 ECC SO-DIMM socket. The PC3-ALLEGRO backplane connectors comply with the PICMG® CompactPCI® PlusIO system slot specification, suitable for a rear I/O module or hybrid CompactPCI® Serial systems. Several low profile mezzanine modules are available as mass storage solution.



PC3-ALLEGRO (Soldered Memory Visible)

Feature Summary

- ▶ **CompactPCI® PlusIO (PICMG® CPCI 2.30) System Slot Controller**
- ▶ J1 Connector for Full CompactPCI® Classic 32-Bit Support
- ▶ J2 Connector (UHM High Speed) for CompactPCI® PlusIO Support
- ▶ 4 x PCIe
- ▶ 4 x SATA
- ▶ 4 x USB
- ▶ 2 x GbE

- ▶ **Proven Intel® Mobile CPU Technology**
- ▶ 3rd Generation Intel® Core™ Mobile + ECC CPU, Code Name Ivy Bridge
- ▶ i7-3612QE Processor 2.1GHz • 35W TDP Standard Voltage Quad-Core
- ▶ i7-3555LE Processor 2.5GHz • 25W TDP Low Voltage Dual-Core
- ▶ i7-3517UE Processor 1.7GHz • 17W TDP Ultra Low Voltage Dual-Core
- ▶ *i5-3610ME Processor 2.7GHz • 35W TDP Standard Voltage Dual-Core*
- ▶ *i3-3120ME Processor 2.4GHz • 35W TDP Standard Voltage Dual-Core*
- ▶ *i3-3217UE Processor 1.6GHz • 17W TDP Ultra Low Voltage Dual-Core*
- ▶ Celeron® 1047UE Processor 1.4GHz • 17W TDP Ultra Low Voltage Dual-Core
- ▶ Intel® QM77 Panther Point Platform Controller Hub (PCH)

- ▶ **Integrated HD Graphics Engine, 3 Independent Displays, Enhanced Media Processing**
- ▶ Up to 3 Display Configuration (Front Panel: Dual mDP or Single VGA Connector Option)
- ▶ Max Resolution 2560 x 1600 (DisplayPort), 1920 x 1200 (VGA)
- ▶ 3rd Display via Side Card PCS-BALLET

- ▶ **Integrated Memory Controller up to 16GB DDR3 +ECC 1600**
- ▶ DDR3 +ECC Soldered Memory up to 8GB
- ▶ DDR3 +ECC SO-DIMM Memory Module Socket up to 8GB

- ▶ **SATA 6G & 3G for Mass Storage**
- ▶ 2 + 2 SATA Channels 6Gbps/3Gbps for Mezzanine Storage Modules (Connector HSE)
- ▶ CompactFlash® Card with C40-SCFA Mezzanine Module Option (4HP Maintained)
- ▶ CFast™ Card with C41-CFAST Mezzanine Module Option (4HP Profile Maintained)
- ▶ SATA 1.8-Inch Solid State Drive with C42-SATA Mezzanine Card Option (4HP Maintained)
- ▶ Dual mSATA Modules with C47-MSATA RAID Mezzanine Card Option (4HP Maintained)
- ▶ Dual M.2 SATA Modules with C48-M2 RAID Mezzanine Card Option (4HP Maintained)
- ▶ 4 x SATA RAID Channels to UHM Connector J2, for RIO Module or CPCI Serial Backplane Usage, limited to 3G SATA by CPCI PlusIO Specification
- ▶ Hardware RAID Enabled by Marvell 88SE9230 ARM Powered Subsystem
- ▶ RAID Configuration Level 0/1/10

Feature Summary

- ▶ **USB 3.0 XHCI SuperSpeed & USB 2.0 EHCI Support**

- ▶ 2 x USB 3.0 F/P Connectors
- ▶ 6 x USB 2.0 to Mezzanine Connectors
- ▶ 4 x USB 2.0 to J2 (Backplane)

- ▶ **Gigabit Ethernet Controllers**

- ▶ 2 x GbE F/P RJ-45 Jacks
- ▶ 2 x GbE to Backplane Connector J2

- ▶ **PCI Express® Based Design for Component Interconnect**

- ▶ PCI Express® for System Expansion by Mezzanine and Backplane or RIO
- ▶ 4 x PCI Express® Gen2 Lanes to CPCI PlusIO Backplane J2 Connector
- ▶ 4 x PCI Express® Gen2 Lanes to Mezzanine Connector

- ▶ **Set of Mezzanine Connectors for Storage Module or Side Card**

- ▶ Legacy I/O Mezzanine Expansion Connector EXP (USB, HD Audio, LPC)
- ▶ High Speed I/O Mezzanine Expansion Connector HSE (4 x SATA, 4 x USB)
- ▶ PCI Express® Mezzanine Expansion Connector PCIE (4 Lanes)
- ▶ Third Display Mezzanine Expansion Connector SDVO/DP
- ▶ Variety of Mezzanine Expansion Boards (Side Cards) Available
- ▶ Most Mezzanines Optionally Equipped with 2.5-Inch Single- or Dual-Drive
- ▶ Low Profile Storage Modules Maintain 4HP F/P Width
- ▶ Side Cards with Additional Front Panel I/O Connectors (8HP & 12HP Assembly)

- ▶ **Phoenix® UEFI (Unified Extensible Firmware Interface) with CSM***

- ▶ Fully customizable by EKF
- ▶ Secure Boot on request
- ▶ Windows®, Linux and other (RT)OS' supported

** CSM (Compatibility Support Module) emulates a legacy BIOS environment, which allows to boot a legacy operating system such as DOS, 32-bit Windows and some RTOS'*

- ▶ **Best Suited e.g. for Industrial, Transportation & Instrumentation Applications**

- ▶ Long Term Availability
- ▶ Rugged Solution
- ▶ Coating, Sealing, Underfilling Available on Request

Feature Summary

- ▶ **Regulation & Environmental**
 - ▶ RoHS compliant
 - ▶ EC Regulations EN55032, EN55024, EN60950-1 (UL60950-1/IEC60950-1)
 - ▶ Operating Temperature: 0°C to +70°C (Industrial Temperature Range on Request)
 - ▶ Storage Temperature: -40°C to +85°C, max. Gradient 5°C/min
 - ▶ Humidity 5% ... 95% RH non Condensing
 - ▶ Altitude -300m ... +3000m
 - ▶ Shock 15g 0.33ms, 6g 6ms
 - ▶ Vibration 1g 5-2000Hz
 - ▶ MTBF 104 x 10³ h (11.9 years) @ 50°C
 - ▶ Designed & Manufactured in Germany
 - ▶ ISO 9001 Certified Quality Management
-
- ▶ **RT OS Board Support Packages & Driver**
 - ▶ LynxOS - on request
 - ▶ On Time RTOS-32 - on request
 - ▶ OS-9 - on request
 - ▶ QNX 4.x, 6.x - on request
 - ▶ Real-Time Linux (RT Patch) - on request
 - ▶ RTX - on request
 - ▶ VxWorks 6.9 - under development
 - ▶ VxWorks 7.0 - on request
 - ▶ Others - on request

Related Information

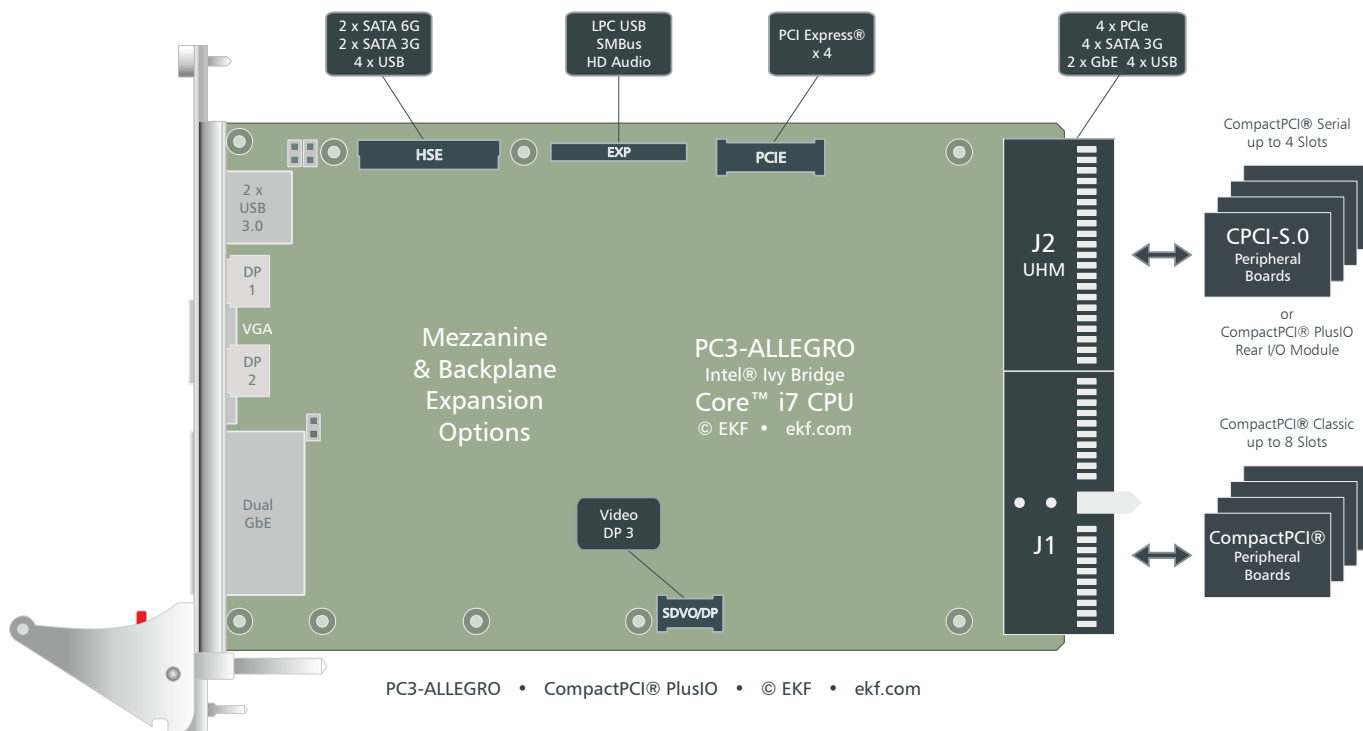
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|------------------------|--|
| PC3-ALLEGRO Home | www.ekf.com/p/pc3/pc3.html |
| PC3-ALLEGRO User Guide | www.ekf.com/p/pc3/pc3_ug.pdf |



PC3-ALLEGRO (SO-DIMM Loaded)

CompactPCI® PlusIO (PICMG® 2.30) is a standard for rear I/O across J2. High speed signal lines (PCI Express®, SATA, Gigabit Ethernet and USB) are passed from the PC3-ALLEGRO through the special UHM J2 connector to the backplane, for usage either with a PlusIO rear I/O transition module, or CompactPCI® Serial card slots.

CompactPCI® Serial (PICMG® CPCIS.0) defines a completely new card slot, based on PCI Express®, SATA, Gigabit Ethernet and USB serial data lines. On a hybrid backplane, both card styles can reside, CompactPCI® and CompactPCI® Serial, with the PC3-ALLEGRO in the middle as controller for both backplane segments.



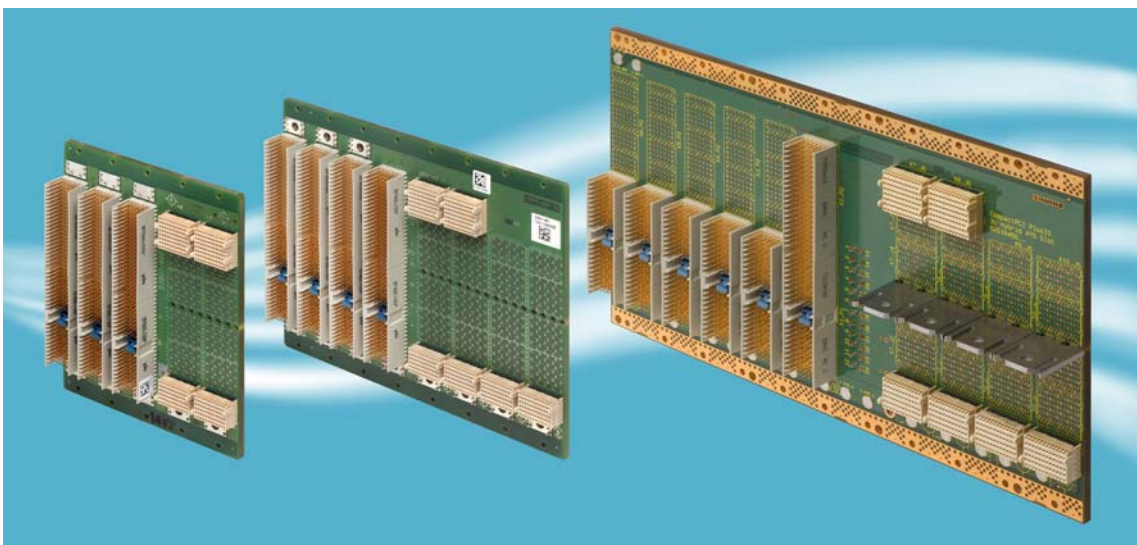
PC3-ALLEGRO • System Expansion Options

| Related Documents CompactPCI® Serial & CompactPCI® PlusIO | |
|---|--|
| CompactPCI® Serial & PlusIO Overview | www.ekf.com/s/smart_solution.pdf |
| CompactPCI® PlusIO Home | www.ekf.com/p/plus.html |
| CompactPCI® Serial Home | www.ekf.com/s/serial.html |

| Related Documents Mezzanine Modules and Side Cards | |
|--|--|
| C40 ... C48 Series Mezzanine Storage Modules | www.ekf.com/c/ccpu/c4x_mezz_ovw.pdf |
| PCL-CAPELLA Mezzanine Side Card | www.ekf.com/p/pcl/pcl.html |
| PCS-BALLET Mezzanine Side Card | www.ekf.com/p/pcs/pcs.html |



CompactPCI® PlusIO Racks Available



Hybrid Backplanes Available

The PC3-ALLEGRO is equipped with a set of local expansion interface connectors, which can be optionally used to attach a mezzanine side board. A variety of expansion cards is available, e.g. providing legacy I/O and additional PCI Express® based I/O controllers such as SATA, USB 3.0 and Gigabit Ethernet, or a third video output. Most mezzanine side cards can accommodate in addition a 2.5-inch drive.

Typically, the PC3-ALLEGRO and the related side card would come as a readily assembled 8HP unit. As an alternate, low profile Flash based mezzanine storage modules are available that fit on the PC3-ALLEGRO while maintaining the 4HP profile. The C48-M2 module e.g. is equipped with two fast M.2 embedded SATA Solid State Drives (SSD), suitable for installation of any popular operating system.



PC3-ALLEGRO w. Low Profile Mass-Storage Mezzanine Module 4HP Assembly



PC3-ALLEGRO w. PCS-BALLET Side Card 8HP Assembly



PC3-ALLEGRO w. PCS-BALLET Side Card 8HP Assembly



PC3-ALLEGRO w. PCL-CAPELLA Side Card 8HP Assembly



PC3-ALLEGRO w. PCL-CAPELLA Side Card 8HP Assembly



PC3-ALLEGRO w. C41-CFAST Storage Module



PC3-ALLEGRO w. C42-SATA Storage Module



PC3-ALLEGRO w. C43-SATA Connector Module

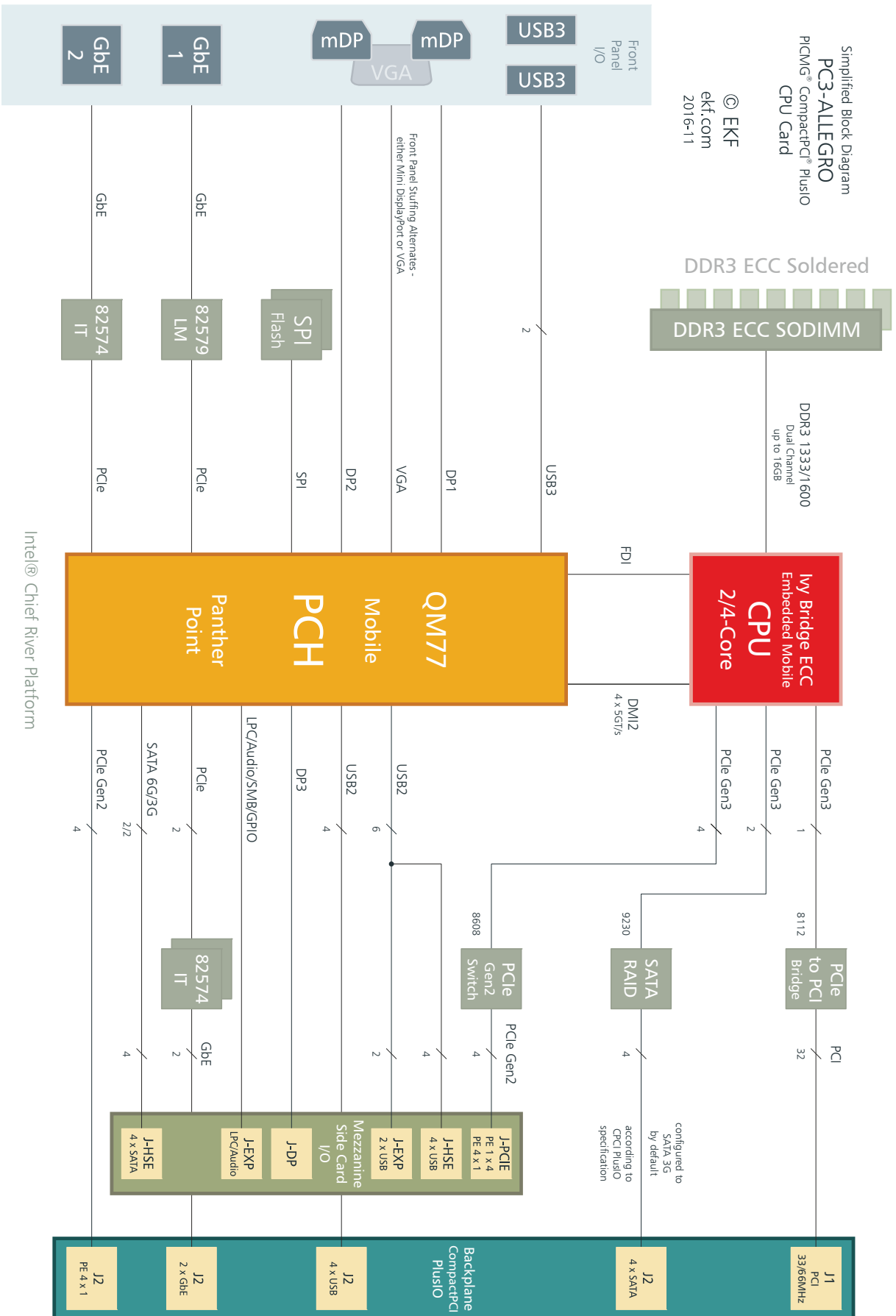


PC3-ALLEGRO w. C44-SATA Mezzanine Side Card 8HP Assembly

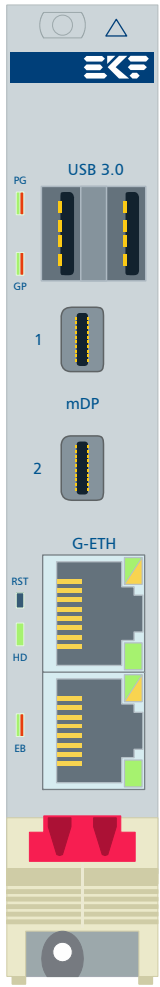


PC3-ALLEGRO w. C47-MSATA Dual SSD Mezzanine Storage Module

Block Diagram



Front Panel Options

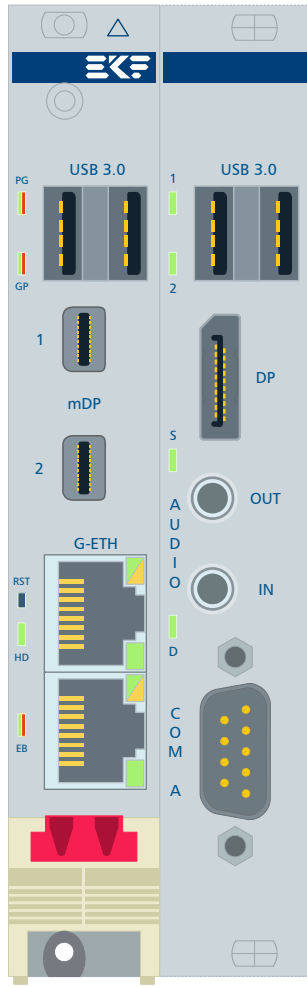


PC3-ALLEGRO
Dual - mDP

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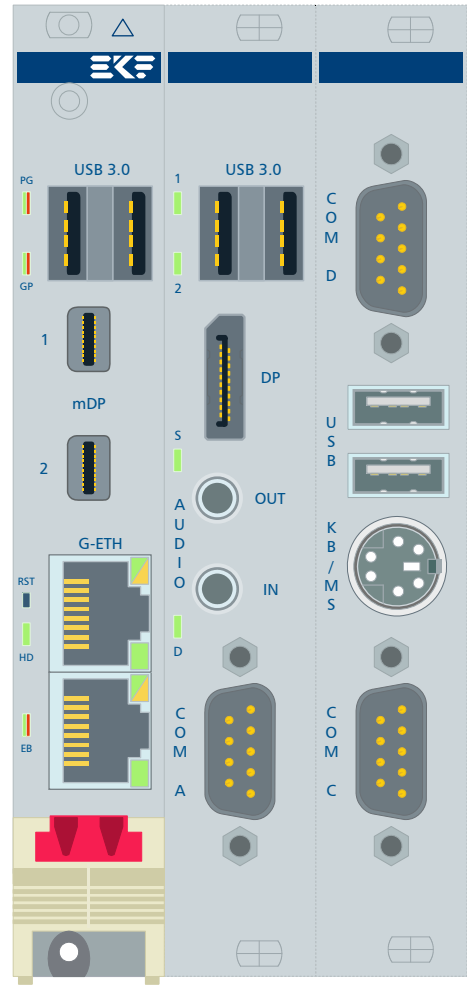


PC3-ALLEGRO
VGA



PC3-ALLEGRO
Dual - mDP PCS-BALLET
RS-232

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PC3-ALLEGRO
Dual - mDP PCS-BALLET
RS-232 C32-FIO

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Ordering Information

For popular PC3-ALLEGRO SKUs please refer to www.ekf.com/liste/liste_21.html#PC3

For popular Mezzanine Side Cards please refer to www.ekf.com/liste/liste_20.html#C40

Screw Locking Option for mDP Connectors

Opposite to the Standard DisplayPort cable connectors, mDP connectors are not provided with a latching device. For rugged applications with need for a connector locking mechanism, EKF offers two methods of fixing.



Option Screw-Lock Plate for mDP Cable Connectors

1. The front panel is provided with a threaded hole for fixing a removable H-shape retainer plate, which is available from EKF as accessory (image above).
2. As an alternate, the customer can use cable assemblies with screw-locked mDP connectors (image below). The front panel has to be modified however for this solution (two threaded holes in addition, please specify when ordering).



Screw-Locked mDP Connector Cable Assembly (Delock)



PC3-ALLEGRO (VGA Option)



PC3-ALLEGRO (VGA Option)



PC3-ALLEGRO w. PCS-BALLET Side Card



PC3-ALLEGRO w. PCS-BALLET Side Card



PC3-ALLEGRO w. PCL-CAPELLA Side Card 8HP Assembly



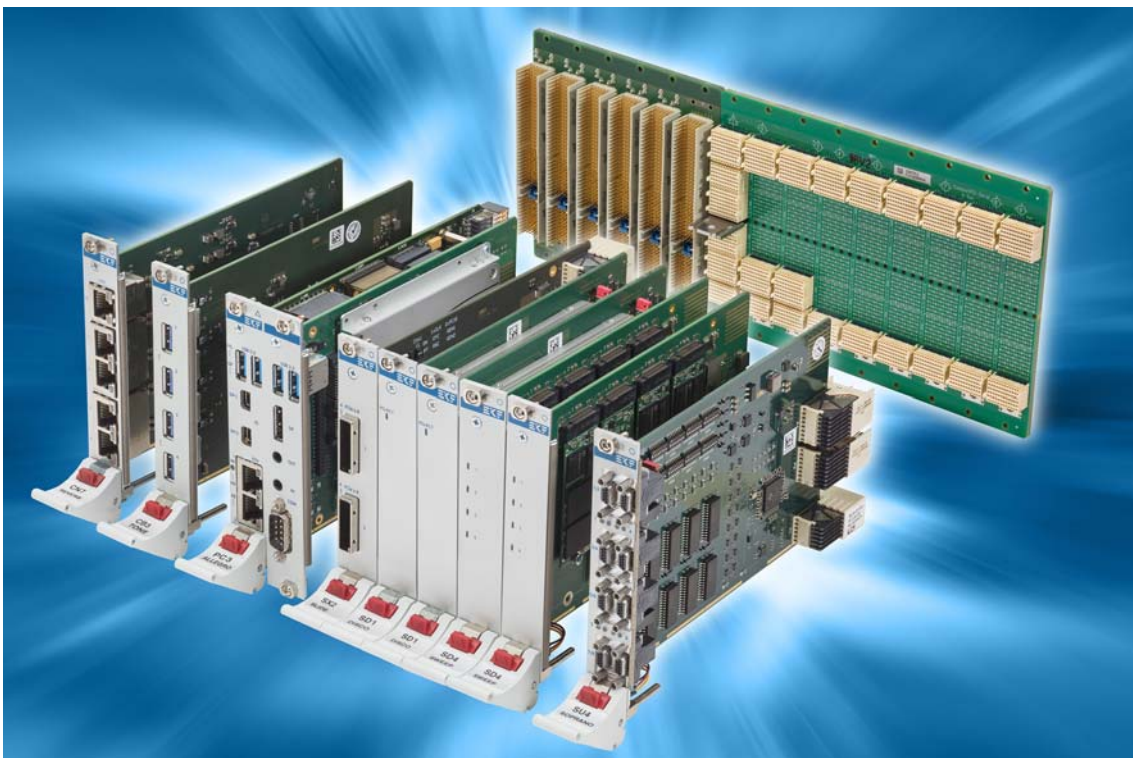
PC3-ALLEGRO w. PCS-BALLET & C32-FIO 12HP Assembly



PC3-ALLEGRO w. PR1-RIO Rear I/O Module



PC3-ALLEGRO Configuration Options





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