



PART NUMBER: 3U-CPU-E3

- CompactPCI® Serial (PICMG® CPCI-S.0) CPU card
- Single size Eurocard - 3U mounting height
- 2 x USB3
- 2 x DisplayPort
- 2 x GbE
- Backplane communication via PCI Express® Gen3, SATA 6G, USB 3.0, gigabit Ethernet
- Local mezzanine expansion option, COTS and custom specific boards

SPECIFICATION

Processor	<ul style="list-style-type: none"> • Intel® Kaby Lake-H mobile platform with ECC (CM238 mobile workstation PCH) • Intel® Xeon® processor E3 v6 family (mobile workstation) <ul style="list-style-type: none"> • Xeon E3 1505M v6 • 3/4GHz • 8M • 4C/8T • DDR4 2400 ECC • 45/35W • GT2 - P630 • vPRO™ • Xeon E3 1505L v6 • 2.2/3GHz • 8M • 4C/8T • DDR4 2400 ECC • 25W • GT2 - P630 • vPRO™ • Xeon E3 1501M v6 • 2.9/3.6GHz • 6M • 4C/8T • DDR4 2400 ECC • 45/35W • GT2 - P630 • vPRO™ • Xeon E3 1501L v6 • 2.1/2.9GHz • 6M • 4C/8T • DDR4 2400 ECC • 25W • GT2 - P630 • vPRO™ • 7th Generation Intel® Core™ mobile processor <ul style="list-style-type: none"> • i3 7100E • 2.9GHz • 3M • 2C/4T • DDR4 2400 ECC • 35W • GT2 - 630 • i3 7102E • 2.1GHz • 3M • 2C/4T • DDR4 2400 ECC • 25W • GT2 - 630
Firmware	<ul style="list-style-type: none"> • Phoenix® UEFI (Unified Extensible Firmware Interface) with CSM* • Fully customizable • Secure Boot and Measured Boot supported - meeting all demands as specified by Microsoft® • Windows®, Linux and other (RTOS) supported • Intel® AMT supported for Intel® Xeon® E3 v6 (disabled by default, must be enabled via BIOS setup) • *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'
Main Memory	<ul style="list-style-type: none"> • Integrated memory controller up to 32GB DDR4 2400 ECC +ECC • DDR4 +ECC soldered memory up to 16GB • DDR4 +ECC SO-DIMM memory module socket up to 16GB
Graphics	<ul style="list-style-type: none"> • Integrated HD Graphics Engine, 3 symmetric independent displays • 3D HW acceleration DirectX12, OpenCL 2.x, OpenGL 4.3/4.4, ES 2.0 • HW video decode/encode HEVC10b 10-bit, VP9 10-bit, JPEG • HDR (High Dynamic Range) Rec. 2020 Wide Color Gamut • Content protection • UHD premium content playback • Front panel options: Dual DisplayPort (DP) connectors • 3rd DisplayPort optional via Type-C connector on low profile mezzanine card • Max resolution 4096 x 2304 @60Hz (any DisplayPort, concurrent operation) • DisplayPort™ 1.2 Multi-Stream Transport (MST) - display daisy chaining • MST max resolution via single DP connector 2880x1800@60Hz (2 displays), 2304x1440@60Hz (3 displays) • Integrated audio (3 independent audio streams)
Networking	<ul style="list-style-type: none"> • Up to 10 networking interfaces in total - 2 x front RJ45 GbE, option 8 x backplane or 4 x M12-X front • 1000BASE-T, 100BASE-TX, 10BASE-T connections • Front port 1 - I219LM with Intel® AMT support • Front port 2 - Intel® I210-IT -40°C to +85°C operating temperature GbE NIC w. integrated PHY • IPv4/IPv6 checksum offload, 9.5KB Jumbo Frame support, EEE Energy Efficient Ethernet • IEEE 802.1Qav Audio-Video-Bridging (AVB) enhancements for time-sensitive streams • IEEE 1588 and 802.1AS packets hardware-based time stamping for high-precision time synchronization • Backplane Gigabit Ethernet option w. S80-P6 mezzanine module - Marvell Peridot switch • Backplane Gigabit Ethernet option w. S82-P6 mezzanine module - 4 x Intel® I210-IT NIC • Option quad front panel RJ45 2.5GbE ports with SCJ-VEENA side card (8HP front panel width) • Option quad front panel M12 X-coded GbE ports with SCL-RHYTHM side card (8HP front panel width)
Chipset	<ul style="list-style-type: none"> • Intel® CM238 Mobile Workstation Platform Controller Hub (PCH) <ul style="list-style-type: none"> • PCIe Gen3 8GT/s • SATA 6G • USB3 • GbE • LPC, Audio, Legacy
On-Board Building Blocks	<ul style="list-style-type: none"> • Additional on-board devices, PCIe® based • 1 x Gigabit Ethernet controller Intel® I210IT • 1 x Gigabit Ethernet PHY Intel® I219LM • IEEE 1588-2008 Precision Time Protocol supported including PPS and PPM signals • SATA 6G RAID controller Marvell® 88SE9230 ARM powered subsystem for host CPU offload

Security	<ul style="list-style-type: none"> • Trusted Platform Module • TPM 2.0 for highest level of certified platform protection • Infineon Optiga™ SLB 9665 cryptographic processor • Conforming to TCG 2.0 specification • AES hardware acceleration support (Intel® AES-NI)
Front Panel I/O (4HP)	<ul style="list-style-type: none"> • 2 x Gigabit Ethernet RJ45 (1 = PCH & I219LM - Intel® AMT, 2 = I210IT) • 2 x DisplayPort (from processor integrated HD graphics engine, standard latching DP receptacles) • 2 x USB 3.0 • Option 2 x Type-C USB 3.1 Gen1 (requires low profile mezzanine expansion card w. front panel I/O) • Support for Type-C locking plugs (dual screw) according to the 'Locking Connector Spec. Rev. 1.0' • Option DisplayPort Alt Mode on lower Type-C connector (3rd video monitor output)
CompactPCI® Serial Backplane Resources	<ul style="list-style-type: none"> • PICMG® CPCI-S.0 CPU card & system slot controller • 16 x PCIe Gen3 8GT/s (2 links x 8 for two fat pipe slots, derived directly from the Intel® Xeon® or Core™ CPU) • 6 x PCIe Gen3 8GT/s (6 links x 1 for peripheral slots) • 2 x SATA 6G (from CM238 PCH) • 4 x SATA 6G (Marvell hardware RAID controller) • 5 x USB2, 3 x USB3 (from CM238 PCH) • Option 8 x Gigabit Ethernet Marvell 88E6390 switch, requires S80-P6 low profile mezzanine expansion card • Option 4 x Gigabit Ethernet Intel® I210-IT NIC, requires S82-P6 low profile mezzanine expansion card
Local Expansion & Mezzanine Mass Storage Options	<ul style="list-style-type: none"> • Mezzanine side card connectors for local expansion • Low profile mezzanine modules available (4HP front panel) and also side cards (8HP F/P assembly) • P-EXP - Legacy (from PCH) • P-HSE1 - configurable as 4 x SATA 6G or 4 x PCIe (from CM238 PCH), 1 x USB3 • P-HSE2 - 4 x PCIe (from CM238 PCH) & 3rd DisplayPort (from CPU) • 4HP Low profile mezzanine module preferred options: <ul style="list-style-type: none"> • C47-MSATA Mezzanine module - 2 x mSATA SSD sockets • C48-M2 Mezzanine module - 2 x M.2 2280 SATA SSD sockets • S20-NVME Mezzanine module - 1 x M.2 2280 NVMe SSD socket, 1 x Type-C USB F/P connector • S40-NVME Mezzanine module - 1 x M.2 2280 NVMe SSD socket, 1 x M.2 2280 SATA SSD socket, 2 x Type-C USB F/P Connector (1 connector enabled for DisplayPort alternate mode) • S42-MC Mezzanine module - 1 x M.2 2280 NVMe SSD socket, 2 x Minicard sockets • S48-SSD Mezzanine Module - 2 x M.2 2280 NVMe SSD sockets, 1 x USB Type-C • S80-P6 Mezzanine module - 1 x M.2 2280 NVMe SSD socket, 8 x Gigabit Ethernet via P6 backplane connector (TSN/AVB switch based solution) • S82-P6 Mezzanine module - M.2 NVMe SSD & 4 x GbE NIC via P6 backplane connector • Custom specific storage & I/O mezzanine module design • 8HP/12HP Mezzanine side card options <ul style="list-style-type: none"> • SCJ-VEENA Quad RJ45 2.5GbE NIC & M.2 SSD storage • SCL-RHYTHM Quad M12-X GbE NIC & M.2 SSD storage • SCZ-NVM Dual M.2 NVMe SSD, quad UART • P01-M12 Replacement for RJ45 GbE jacks by M12-X receptacles • PCU-P400-UPTEMPO Dual M.2 SATA SSD, HD-Audio, 2 x RS-232, USB2 • Custom specific side card design - I/O and storage • Special purpose mezzanine side card option: <ul style="list-style-type: none"> • SCX-PCIE CompactPCI® Serial backplane doubling • ECX-PCIE Backplane coupler CompactPCI® Serial to CompactPCI® Express
Environmental & Regulatory	<ul style="list-style-type: none"> • Suitable e.g. for industrial, transportation & instrumentation applications • Designed & manufactured in Germany • ISO 9001 certified quality management • Long term availability • Rugged solution • Coating, sealing, underfilling on request • Lifetime application support • RoHS compliant • Operating temperature 0°C to +70°C • Operating temperature -40°C to +85°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 21.2 years • EC Regulatory EN55024, EN55032, EN62368-1
RT OS Board Support Packages & Drive	<ul style="list-style-type: none"> • LynxOS - on request • On Time RTOS-32 - on request • OS-9 - on request • QNX • Real-Time Linux (RT Patch) - on request • RTX - on request • VxWorks 5.5 & 6.9 - on request • VxWorks 7.0 - on request • Others - on request

The Power to Outperform

Would you like to find out more? Be sure to speak to our on-stand team or contact us via the details here and we would be happy to help.

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