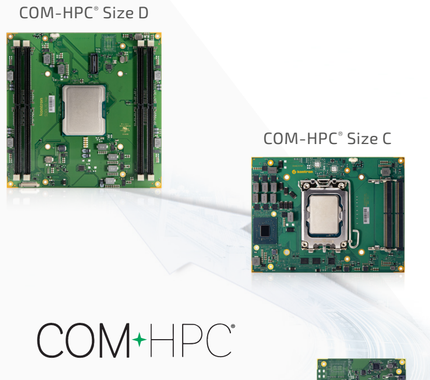
COM-HPC®

COM for High Performance Computing



- **Standardized high performance platforms for the embedded market**
- **COM-HPC®/Mini**
  Performance on a very small form factor
- **COM-HPC®/Client**
  High Performance general purpose computing
- **COM-HPC®/Server**
  Focus to high ethernet bandwiths and high PCIe lane count

Computer-on-Module for High Performance Computing

The usage of standardized Computer-on-Modules in the embedded market shows a long history of success – the best example is COM Express®, the successful and worldwide leading standard for Computer-on-Modules since 2005.

However, today the embedded market is facing new challenges.

Applications such as artificial intelligence, the upcoming 5G wireless standard come with enormous data hunger and require more computing power. Leading manufacturers in the industry, such as Kontron, have defined a new standard under the umbrellal of the PICMG standardization committee to make COMs fit for the future. Computer-On-Modules High Performance Computing - COM-HPC - is complementary to the existing COM Express® standard.

COMh-m7RP (E2)

COM-HPC®/Mini with 13th Gen Intel® Core™ Processors

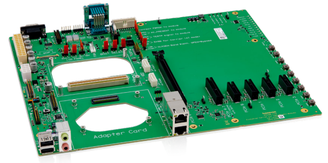
- Maximum performance on a mini form factor: 95mm x 70mm
- Up to 64 GByte LPDDR5 memory
- 8x PCIe Gen3 lanes + 8x PCIe Gen4 lanes / optional 8x PCIe Gen5 lanes (for high performance CPUs)
- Up to 2.5Gb Ethernet with TSN support
- Optional NVMe SSD onboard
- Industrial grade versions
- Rugged by design

COM-HPC® Evaluation Carrier

An evaluation carrier is essential for ensuring customers quickly become familiar with the new technology and properly assess the COM-HPC® platform as a potential solution for their own system applications.

COM-HPC®/Mini

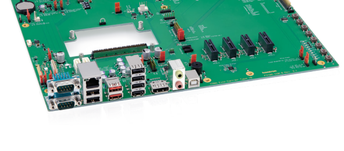
Evaluation Carrier



- Support of overall 16x PCIe lanes via various PCIe card connectors
- 2x 10/1GBase-T interface
- Connector interface supporting 8x SuperSpeed-Lanes including sideband signals and USB 2.0 #0-5 to connect versatile adapter cards for different interfaces
- eDP Display Interface

COM-HPC®/Client

Evaluation Carrier



- Support of 48 PCIe lanes via various PCIe and m.2 slots
- 2x 10/1GBase-T interface
- 2x USB Gen 4
- 2x USB 3.2 Gen 2x1
- 2x SATA
- 3x DisplayPort
- 1x eDP
- 2x MIPI-CSI
- BIOS POST-Code display

COM-HPC®/Server

Evaluation Carrier

- Support of 64 PCIe lanes via various PCIe and m.2 slots
- 8x SFP28 cages
- 1x 10/1GBase-T interface
- 4x USB 3.2 Gen2.1
- 2x SATA
- BIOS POST-Code display
- Slot for optional BMC-Controller

About JUMPtec®

JUMPtec specializes its technical expertise in designing both - standard and highly customized compute products. Our newly optimized structure enables us to take customers from prototyping and design through to mass production faster than ever before.

We are uniquely positioned to leverage our global design and manufacturing expertise alongside Kontron's extensive worldwide network. While JUMPtec remains a fully owned subsidiary of Kontron, we benefit from their global distribution capabilities and work closely with Kontron's other solution businesses. With more OEMs seeking to mitigate risk and outsource complex manufacturing, the shift to modular solutions is becoming more prevalent. JUMPtec, backed by Kontron, is well-positioned to support customers in implementing this modular approach, offering high-quality, scalable solutions without compromising on size or capability.

JUMPtec serves a diverse range of markets, providing innovative solutions tailored to the unique needs of each industry. Find out more about our offering!

For more information, please visit: **www.jumptec.com**

About the Intel® Partner Alliance

From modular components to market-ready systems, Intel and the over 1,000+ global member companies of the Intel® Partner Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Close collaboration with Intel and each other enables Alliance members to innovate with the latest IoT technologies, helping developers deliver first-in-market solutions.

Your Contact

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Computer-on-Module

for High Performance Computing

	COMh-m7RP (E2)	COMh-ccAS	COMh-caRP (E2)	COMh-caAP	COMh-sdID (E2)	COMh-sdIL (E2)
COMPLIANCE	COM-HPC® Mini	COM HPC® Client, Size C	COM HPC® Client, Size A	COM HPC® Client, Size A	COM-HPC® Server, Size D	COM-HPC® Server, Size D small
DIMENSIONS	95 mm x 70 mm	160 mm x 120 mm	95 mm x 120 mm	95 mm x 120 mm	160 mm x 160 mm	120 mm x 160 mm
CPU (SoC)	Intel® 13th Generation Core™ family (U-Series, P-Series, H-Series)	12th, 13th, 14th Gen and Series 2 Intel® Core™ S Processors	Intel® Core™ processors (formerly Raptor Lake U/P/H)	Intel® Core™ processors (formerly Alder Lake P)	Intel Xeon® D-2700 / D-2800 processor family	Intel Xeon® D-1700 / D-1800 processor family
CHIPSET	Integrated in SOC	Intel® 600 Series Chipset Family	Intel® 600/700 Series Chipset Family - On-Package Platform Controller Hub	Intel® 600 Series Chipset Family - On-Package Platform Controller Hub	-	-
MAIN MEMORY	Up to 64 GByte LPDDR5 max 6000 MT/s memory down (In-Band ECC)	2x DDR5 SODIMM for up to 64 GByte ECC / non ECC on request: 4x DDR5 SODIMM for up to 128 GByte ECC / non ECC	2x DDR5 SODIMM dual channel up to 64 GByte non ECC	2x DDR5 SODIMM dual channel up to 64 GByte ECC or non ECC	4x DDR4 DIMM sockets for up to 256 GByte RDIMM (512 GByte planned)	Up to 64GB DDR4-2667 soldered memory - ECC, extended temp
GRAPHICS CONTROLLER	SOC: Intel® Iris® Xe Graphics on i7/i5 processors; Intel® UHD Graphics on i3/Pentium® processors	Intel® UHD Graphics 770 driven by Xe-architecture, with up to 32 EUs, 4 Independent Displays (up to 8K)	Intel® Iris Xe Graphics architecture with up to 96 EUs, 4 Independent Displays (up to 8K)	Intel® Iris Xe Graphics architecture with up to 96 EUs, 4 Independent Displays (up to 8K)	-	-
ETHERNET CONTROLLER	2x Intel® i226-IT	2x Intel® I226 or 1x Intel® I226, 1x integrated MAC with GPY215	Intel® i226	Up to 2x Intel® i226	Intel® I226-LM/IT Intel® 2x Quad 25GbE LAN integrated in SoC	Intel® I226-LM/IT Intel® 2x Quad 25GbE LAN integrated in SoC
ETHERNET	2x 2.5 Gb Ethernet with TSN	2x 2.5 Gb Ethernet with TSN & WOL support	Up to 2x 2.5 Gb Ethernet with TSN & WOL support (depending on SKU)	Up to 2x 2.5 Gb Ethernet with TSN & WOL support (depending on SKU)	1x 1/2.5 Gb Ethernet with TSN & WOL support 8x Ethernet ports supporting versatile configurations: 100GbE/2x 50GbE/4x 25GbE/2x 25GbE + 4x 10GbE/8x 10GbE	1x 1/2.5 Gb Ethernet with TSN & WOL support 8x Ethernet ports supporting versatile configurations: 100GbE/2x 50GbE/4x 25GbE/2x 25GbE + 4x 10GbE/8x 10GbE
STORAGE	Optional: 2x SATA 6Gb/s	2x SATA 6Gb/s	2x SATA 6Gb/s (optional)	2x SATA 6Gb/s	2x SATA 6Gb/s	2x SATA 6Gb/s
FLASH ONBOARD	Up to 1 TByte NVMe SSD (on request)	-	Up to 1 TByte NVMe SSD (on request)	Up to 1 TByte NVMe SSD (on request)	Up to 1 TByte NVMe SSD (on request)	Up to 1 TByte NVMe SSD (on request)
PCI Express®	8x PCIe Gen3 (8 x1 / 4 x2 / 2 x4) + 8x PCIe Gen4 (2 x4)	16x PCIe Gen 5.0 lanes (for high performance CPUs) + 8x PCIe Gen 4.0 lanes + 6x PCIe Gen 3.0 lanes	1x 8 PCIe Gen 5.0 (Raptor Lake H-Series, 35-45 W) 2x 4 PCIe Gen 4.0 -> 1x 4 shared with onboard NVMe 8x PCIe Gen3.0 Optional 1x PCIe for BMC	1x 8 PCIe Gen 4.0 (Alder Lake H-Series, 35-45 W) 2x 4 PCIe Gen 4.0 -> 1x4 shared with onboard NVMe 6+2x PCIe Gen 3.0 via HSIO (shared with SATA) Optional 1x PCIe for BMC	32x PCIe Gen4 (2 x16, 4 x8, 8 x4) 16x PCIe Gen3 (2 x8, 4 x4, 8 x2)	16x PCIe Gen4 (1 x16, 2 x8, 4 x4) 16x PCIe Gen3 (2 x8, 4 x4, 8 x2) 1x PCIe Gen3 for BMC
DISPLAY	Default: 2x DDI:DP++; on request 1x DDI:DP++, 1x eDP	DDI1: DP++, DDI2: DP++, DDI3: DP++, eDP	DDI1: DP++, DDI2: DP++, DDI3: DP++, eDP (DSI, BIOS option), MIPI DSI	DDI1: DP++, DDI2: DP++, DDI3: DP++, eDP (DSI, BIOS option), MIPI DSI	-	-
USB	no USB 4.0, 4x USB 3.2 Gen2; (2x DDI)	4x (2x) USB 3.2	2x USB 4.0/ Thunderbolt ™; 2x USB 3.2; 8x USB 2.0	2x USB 4.0/ Thunderbolt ™; 2x USB 3.2; 8x USB 2.0	4x USB 3.0 / USB 2.0	4x USB 3.0 / USB 2.0
SERIAL	2x serial interface (RX/TX only)	2x serial interface	2x serial interface (RX/TX only)	2x serial interface	2x serial interface	2x serial interface
AUDIO	Intel® High Definition Audio	Soundwire	4x Soundwire, I2S (HW option: Option HD Audio instead of 2x sound wire)	4x Soundwire, I2S (HW option: Option HD Audio instead of 2x Soundwire)	-	-
OTHER FEATURES	CAN, (G) SPI, SMB, Fast I²C, Staged Watchdog, RTC	SPI, eSPI, Fast I²C, SMB, Staged Watchdog, RTC	(G) SPI, SMB, Fast I²C, Staged Watchdog, RTC	SPI, eSPI, Fast I²C, SMB, Staged Watchdog, RTC	SPI, eSPI, Fast I²C, SMB, Staged Watchdog, RTC	SPI, eSPI, Fast I²C, SMB, Staged Watchdog, RTC
SPECIAL FEATURES	Industrial grade temperature	TPM 2.0	TPM 2.0	TPM 2.0	TPM 2.0	TPM 2.0
FEATURES ON REQUEST	NVMe up to 1TByte, with H-Series: 8x PCIe Gen5 instead of Gen4	additional 3rd and 4th SODIMM socket, vPRO (AMT/TXT/AES Support), up to 2x PCIe x1 additional w/o Ethernet	vPRO (AMT/TXT/AES Support), up to 3x PCIe x1 additional w/o Ethernet & SATA, NVMe SSD, Fail Save via 2nd SPI Flash	vPRO (AMT/TXT/AES Support), up to 3x PCIe x1 additional w/o Ethernet & SATA, NVMe SSD	NVMe SSD, 1x PCIe Gen3 for BMC instead of 4th USB3.0	NVMe SSD
POWER MANAGEMENT	ACPI 6.0	ACPI 6.0	ACPI 6.0	ACPI 6.0	ACPI 6.0	ACPI 6.0
POWER SUPPLY	8.0 V – 20 V Wide Range, Single Supply Power	12 V ATX and/or Single Supply Power	Commercial Temperature: 8.0 V – 20 V Wide Range, Single Supply Power Industrial Temperature: 12 V ± 5%	8.5 V – 20 V Wide Range, Single Supply Power	12V DC	12V DC
BIOS	AMI Aptio V	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI
OPERATING SYSTEM	Windows 11 Enterprise LTSC (Linux)	Windows®10/11, Linux, VxWorks (on request)	Windows®10/11, Linux, VxWorks	Windows®10/11, Linux, VxWorks (on request)	Linux, Windows®10/11, Windows Server 2022	Linux, Windows®10/11, Windows Server 2022
TEMPERATURE	industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating	Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +85 °C non-operating Optional E1: -25 °C to +75 °C operating, -40 °C to +85 °C non-operating	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +80 °C non-operating Industrial temperature: -40 °C to +80 °C operating, -40 °C to +80 °C non-operating	Commercial temperature: 0 °C to +60 °C operating, -30 °C to +80 °C non-operating Industrial temperature: -40 °C to +85 °C operating, -40 °C to +85 °C non-operating
HUMIDITY	93% relative Humidity at 40°C, non-condensing (according to IEC 60068-2-78)	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)	93 % relative Humidity at 40 °C, non-condensing (according to IEC 60068-2-78)

Learn more about JUMPtec COM-HPC visit:
www.jumptec.com/comhpc

COM-HPC®
Typical Use Cases

› Server Modules

High performance multi-core processors combined with multi-LAN support up to 100Gb Ethernet for:
- Embedded servers ruggedized for field use
- Defence systems
- Test & Measurements applications

› Client Modules

Multiple PCIe lanes plus comprehensive graphics interfaces for:
- Medical applications
- High-end instrumentation
- Industrial control
- Transportation

› Mini Module

High performance on a small compact design for space constraint environments:
- Industrial automation applications
- Portable control equipment
- Network equipment