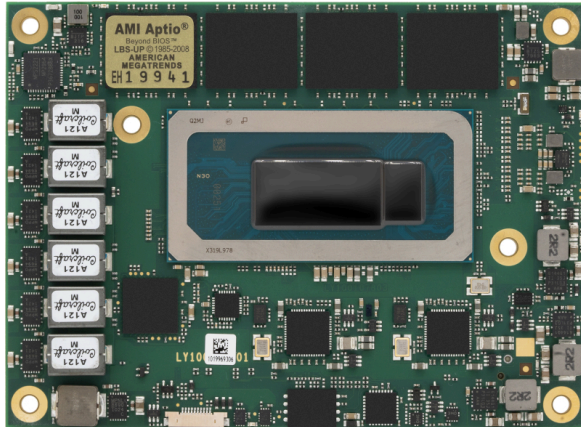


TRIA HMM-RLP

Intel® Core™ 13th Generation



95 x 70

tbd

-40 - +85°C



COM+HPC®

Highlights

- COM-HPC Mini module
- 13th Gen Intel® Core™ processors
- Scalable CPU performance, up to fourteen cores, twenty threads
- Industrial grading options (Intel® TCC, TSN, IB ECC, ext. Temp., 24/7)
- LPDDR5-6000 main memory, memory-down, up to 64GB, In-band ECC option
- Intel® Iris® Xe architecture Graphics, up to 96 EUs
- Up to four independent displays
- Embedded DisplayPort interface
- Supports COM-HPC Mini Config 1, 2
- Up to two DisplayPort/HDMI interface (DDI)
- Up to two USB4 port, up to four USB 3.2 Gen2x1, eight USB 2.0 ports
- PCI Express® Gen 3, up to 8 lanes with flexible bifurcation options, PCI Express® Gen 4, up to 2x4
- Dual MIPI-CSI
- Optional on-board NVMe SSD, up to 1TB
- Two 1 / 2.5 Gb Ethernet ports (Intel® i226)
- Optional two SATA 6Gb/s mass storage interfaces
- Two UARTs
- Trusted Platform Module TPM 2.0
- Long-term product availability

Technical Data

Technology	x86
Formfactor / Interface	COM-HPC Mini
CPU	<p>13th Gen Intel® Core™ processors</p> <p>H-series</p> <p>Intel® Core™ i7-13800HE 6P+8E/20T, 2.5GHz, 96 EUs, 24MB L3, 45/35W cTDP</p> <p>Intel® Core™ i7-13800HRE 6P+8E/20T, 2.5GHz, 96 EUs, 24MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i5-13600HE 4P+8E/16T, 2.7GHz, 80 EUs, 18MB L3, 45/35W cTDP</p> <p>Intel® Core™ i5-13600HRE 4P+8E/16T, 2.7GHz, 80 EUs, 18MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i3-13300HE 4P+4E/12T, 2.1GHz, 48 EUs, 12MB L3, 45/35W cTDP</p> <p>Intel® Core™ i3-13300HRE 4P+4E/12T, 2.1GHz, 48 EUs, 12MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET</p> <p>P-series</p> <p>Intel® Core™ i7-1370PE 6P+8E/20T, 1.9GHz, 96 EUs, 24MB L3, 28/20W cTDP</p> <p>Intel® Core™ i7-1370PRE 6P+8E/20T, 1.9GHz, 96 EUs, 24MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i5-1350PE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP</p> <p>Intel® Core™ i5-1350PRE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i5-1340PE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP</p> <p>Intel® Core™ i3-1320PE 4P+4E/12T, 1.7GHz, 48 EUs, 12MB L3, 28/20W cTDP</p> <p>Intel® Core™ i3-1320PRE 4P+4E/12T, 1.7GHz, 48 EUs, 12MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET, TCC/TSN, IBECC, ET</p> <p>U-series</p> <p>Intel® Core™ i7-1365UE 2P+8E/12T, 1.7GHz, 96 EUs, 12MB L3, 15/12W cTDP</p> <p>Intel® Core™ i7-1365URE 2P+8E/12T, 1.7GHz, 96 EUs, 12MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i5-1345UE 2P+8E/12T, 1.4GHz, 80 EUs, 12MB L3, 15/12W cTDP</p> <p>Intel® Core™ i5-1345URE 2P+8E/12T, 1.4GHz, 80 EUs, 12MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Core™ i5-1335UE 2P+8E/12T, 1.3GHz, 80 EUs, 12MB L3, 15/12W cTDP</p> <p>Intel® Core™ i3-1315UE 2P+4E/8T, 1.2GHz, 64 EUs, 10MB L3, 15/12W cTDP</p> <p>Intel® Core™ i3-1315URE 2P+4E/8T, 1.2GHz, 64 EUs, 10MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET</p> <p>Intel® Processor U300E 1P+4E/6T, 1.1GHz, 48 EUs, 8MB L3, 15/12W cTDP</p> <p>Note: P core base frequency at nominal TDP shown, other clock frequencies supported</p>
Chipset	Integrated into SoC
RAM	LPDDR5 memory, up to 6000 MT/s; memory-down Capacity options: 4GB, 8GB, 16GB, 32GB, 64GB
Storage Interfaces	2x SATA channels (up to 6Gb/s), optional, mutually exclusive with COM-HPC PCIe[6,7] Note: dedicated BIOS image required Optional on-board NVMe, 64GB to 1TB, mutually exclusive with COM-HPC PCIe[12:15]
USB	Up to two USB4 on COM-HPC SS Lane 2, 3 (mutually exclusive with DD1) and Lane 4, 5 (mutually exclusive with USB3 #2, #3) Two USB 3.2 Gen 2x1 on COM-HPC SS Lane 6, 7 (USB3 #0, #1) Up to two USB 3.2 Gen 2x1 on COM-HPC SS Lane 4, 5 (mutually exclusive with USB4 #1) 8x USB 2.0 on COM-HPC USB[0:7] Note: supported interfaces depending on COM-HPC carrier design. Config 3 on request
Serial Interfaces	2x high-speed serial ports
Bus Interfaces	PCI Express® Gen 4, up to 2x4 on COM-HPC PCIe[8:15], PCIe[12:15] mutually exclusive with on-board NVMe PCI Express® Gen 3, up to 8 lanes, flexible bifurcation options on COM-HPC PCIe[0:7], PCIe[6,7] mutually exclusive with COM-HPC SATA[0,1] Note: dedicated BIOS image required
Display Controller	Intel® Iris® Xe architecture Graphics, up to 96 execution units (EU) H.264/AVC, H.265/HEVC, AV1, MJPEG encode/decode/transcode
Display Interfaces	Up to four independent display streams Supports COM-HPC Mini Config 1, 2 Up to two DisplayPort/HDMI interface (DDI), DP 1.4a, HDMI 2.1, Config 1 Up to two USB4/USB-C ports (DP tunneling), 1x USB4 with Config 2 1x Embedded DisplayPort 1.4b Note: supported interfaces depending on COM-HPC carrier design. Config 3 on request

Network Interface	Two 10/100/1000Base-TX, 2.5G ¹ based on Intel i226, TSN support ¹ Available bandwidths depending on carrier design I-Temp variants: Intel® i226-IT C-Temp variants: Intel® i226-LM
Audio Interface	High Definition Audio (HDA) Optional SoundWire (COM-HPC SNDW[2:3] mutually exclusive with HDA)
Security Device	TPM 2.0
Miscellaneous	2x MIPI CSI camera interface on FFC connectors Watchdog Timer: Initiates system reset, programmable Fan Supply: 4-pin header for CPU fan, PWM speed controlled and PWM speed control for system fan supported RTC battery: external System Monitoring: voltage, temperature, CPU fan, system fan User space in EEPROM
Firmware	UEFI Firmware: AMI Aptio® V Security: TPM 2.0 support, TCG compliant Power Management: ACPI Active fan control USB: USB legacy support (keyboard, mouse, storage) Monitoring: System Monitoring Health Monitoring MSC Adv. Boot Device Selection: Boot device priority setting based on physical interfaces
OS Support	Windows 11 IoT Enterprise LTSC BSP for Linux (Yocto)
Power Requirement	Voltage: +8V to +20V, +3V RTC voltage Power Consumption: tbd W to tbd W (typ.)
Environment	Ambient Temperature: 0° ... 60°C (operating) -25° ... 85°C (storage) Extended temp. variants: -40 ... +85°C (operating) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	95mm x 70mm
Certificates	UL / CE

Technical Data for TRIA HMM-RLP

Order Reference

Order No.	Description	Reference	
tdb	COM-HPC Mini module (95mm x 70mm); CPU: Intel i7-13800HRE 14C/20T, vPro, 1.8GHz, 35W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-IT Gbit, TSN; HD audio; TPM 2.0; 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6000 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-13800HRE-4N03 1I PCBFTX	OR
tdb	COM-HPC Mini module (95mm x 70mm); CPU: Intel i5-1350PRE 12C/16T, vPro, 1.8GHz, 28/20W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-IT Gbit, TSN; HD audio; TPM 2.0; 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6000 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-1350PRE-4N031I PCBFTX	OR
tdb	COM-HPC Mini module (95mm x 70mm); CPU: Intel i3-1315URE 6C/8T, 1.2GHz, 15/12W cTDP; Graphics: Intel® UHD 64 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-IT Gbit, TSN; HD audio; TPM 2.0; 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-1315URE-3N031I PCBFTX	OR

Ordering Information for TRIA HMM-RLP *PV = Preferred variant; OR = on Request (in OEM quantities only)

Accessories

Carrier Boards

Order No.	Description	Reference
tbd	COM-HPC Mini Carrier Board	MSC HM-MB-EV BRDFTX

Carrier Options for TRIA COM-HPC Mini modules

Cooling Solutions

Order No.	Description	Reference
tbd	Fan kit for Heatsink HMM-RLP PWM fan.	MSC HMM-FANKIT-01 HSF-001

Fan Kit for COM-HPC Mini Heatsinks

Order No.	Description	Reference
tbd	Passive heatsink for HMM-RLP consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HMM-RLP-01 HSI-001
tbd	Heatspreader for HMM-RLP. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HMM-RLP-01 HSP-001
tbd	Heatspreader for HMM-RLP. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HMM-RLP-02 HSP-001

Cooling Options for TRIA HMM-RLP

COM-HPC Mini



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