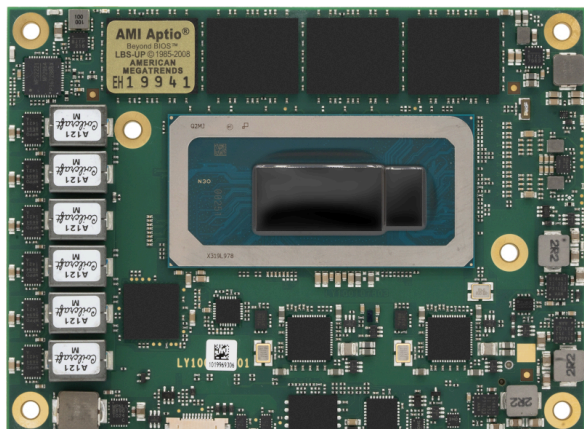


TRIA HMM-RLP

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, IBEC, ext. Temp., 24/7)
- LPDDR5-6400 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, 3 (optional)
- 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, 128GB, 256GB, optional two SATA 6Gb/s mass storage interfaces
- Two 2.5 Gb Ethernet ports (Intel® i226)
- Two UARTs

Technical Data

Technology	x86												
Formfactor / Interface	COM-HPC Mini												
CPU	13th Gen Intel® Core™ processors H-series Intel® Core™ i7-13800HE 6P+8E/20T, 2.5GHz, 96 EUs, 24MB L3, 45/35W cTDP Intel® Core™ i7-13800HRE 6P+8E/20T, 2.5GHz, 96 EUs, 24MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i5-13600HE 4P+8E/16T, 2.7GHz, 80 EUs, 18MB L3, 45/35W cTDP Intel® Core™ i5-13600HRE 4P+8E/16T, 2.7GHz, 80 EUs, 18MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i3-13300HE 4P+4E/12T, 2.1GHz, 48 EUs, 12MB L3, 45/35W cTDP Intel® Core™ i3-13300HRE 4P+4E/12T, 2.1GHz, 48 EUs, 12MB L3, 45/35W cTDP, TCC/TSN, IBECC, ET P-series Intel® Core™ i7-1370PE 6P+8E/20T, 1.9GHz, 96 EUs, 24MB L3, 28/20W cTDP Intel® Core™ i7-1370PRE 6P+8E/20T, 1.9GHz, 96 EUs, 24MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i5-1350PE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP Intel® Core™ i5-1350PRE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i5-1340PE 4P+8E/16T, 1.8GHz, 80 EUs, 12MB L3, 28/20W cTDP Intel® Core™ i3-1320PE 4P+4E/12T, 1.7GHz, 48 EUs, 12MB L3, 28/20W cTDP Intel® Core™ i3-1320PRE 4P+4E/12T, 1.7GHz, 48 EUs, 12MB L3, 28/20W cTDP, TCC/TSN, IBECC, ET, TCC/TSN, IBECC, ET U-series Intel® Core™ i7-1365UE 2P+8E/12T, 1.7GHz, 96 EUs, 12MB L3, 15/12W cTDP Intel® Core™ i7-1365URE 2P+8E/12T, 1.7GHz, 96 EUs, 12MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i5-1345UE 2P+8E/12T, 1.4GHz, 80 EUs, 12MB L3, 15/12W cTDP Intel® Core™ i5-1345URE 2P+8E/12T, 1.4GHz, 80 EUs, 12MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET Intel® Core™ i5-1335UE 2P+8E/12T, 1.3GHz, 80 EUs, 12MB L3, 15/12W cTDP Intel® Core™ i3-1315UE 2P+4E/8T, 1.2GHz, 64 EUs, 10MB L3, 15/12W cTDP Intel® Core™ i3-1315URE 2P+4E/8T, 1.2GHz, 64 EUs, 10MB L3, 15/12W cTDP, TCC/TSN, IBECC, ET Intel® Processor U300E 1P+4E/6T, 1.1GHz, 48 EUs, 8MB L3, 15/12W cTDP Note: P core base frequency at nominal TDP shown, other clock frequencies supported												
Chipset	Integrated into SoC												
RAM	LPDDR5 memory, up to 6400 MT/s (variant dependent); 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] Optional on-board NVMe, 128GB, 256GB, 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: For different bifurcation options, dedicated BIOS images 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. Config 3 on request Up to two DisplayPort/HDMI interface (DDI), DP 1.4a, HDMI 2.1 Up to two USB4/USB-C ports (DP tunneling, DP Alt Mode) 1x Embedded DisplayPort 1.4b <table><tr><td>Config 1</td><td>2x DDI</td><td>-</td><td>4x USB3</td></tr><tr><td>Config 2</td><td>1x DDI</td><td>1x USB4</td><td>4x USB3</td></tr><tr><td>Config 3</td><td>1x DDI</td><td>2x USB4</td><td>2x USB3</td></tr></table> Note: supported interfaces depending on COM-HPC carrier design.	Config 1	2x DDI	-	4x USB3	Config 2	1x DDI	1x USB4	4x USB3	Config 3	1x DDI	2x USB4	2x USB3
Config 1	2x DDI	-	4x USB3										
Config 2	1x DDI	1x USB4	4x USB3										
Config 3	1x DDI	2x USB4	2x USB3										

Network Interface	Two 10/100/1000Base-TX, 2.5Gb 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 Tria 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

Technical Data for TRIA HMM-RLP

Order Reference

Order No.	Description	Reference	
120723	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; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6400 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-13800HRE-4N03 1I PCBFTX	PV
120725	COM-HPC Mini module (95mm x 70mm); CPU: Intel i7-1370PRE 14C/20T, vPro, 1.9GHz, 28/20W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-IT Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 32GB LPDDR5-6400 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-1370PRE-5N031I PCBFTX	OR
122144	COM-HPC Mini module (95mm x 70mm); CPU: Intel i7-1370PRE 14C/20T, vPro, 1.9GHz, 28/20W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-IT Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6400 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-1370PRE-4N031I PCBFTX	PV
120727	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; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6400 memory; -40...+85°C, recommended for 24/7 operation.	MSC HMM- RLP-1350PRE-4N031I PCBFTX	OR
120729	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; 2x SATA, 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-3N031 I PCBFTX	PV
120731	COM-HPC Mini module (95mm x 70mm); CPU: Intel i5-1345UE 10C/12T, vPro, 1.4GHz, 15/12W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-6400 memory; 0...+60°C.	MSC HMM- RLP-1345UE-4N031C PCBFTX	OR
120733	COM-HPC Mini module (95mm x 70mm); CPU: Intel i3-1315UE 6C/8T, 1.2GHz, 15/12W cTDP; Graphics: Intel® UHD 64 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-5200 memory; 0...+60°C.	MSC HMM- RLP-1315UE-4N031C PCBFTX	PV
120735	COM-HPC Mini module (95mm x 70mm); CPU: Intel Processor U300E 5C/6T, 1.1GHz, 15/12W cTDP; Graphics: Intel® UHD 48 EUs; 2x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC HMM-RLP- U300E-3N031C PCBFTX	PV

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

Accessories

Carrier Boards

Order No.	Description	Reference
121630	COM-HPC Mini Carrier Board	MSC HM-MB-EV BRDFTX

Carrier Options for TRIA COM-HPC Mini modules

Cooling Solutions

Order No.	Description	Reference
116871	Fan kit for Heatsink MSC HMM-xxxx-xx HSI-xxx PWM fan.	MSC HMM-FANKIT-01 HSF-001

Fan Kit for COM-HPC Mini Heatsinks

Order No.	Description	Reference
116849	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
116850	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
116851	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

Tria Technologies GmbH
Industriestr. 16
76297 Stutensee
info@tria-technologies.com
tria-technologies.com

Copyright © 2024 Tria Technologies GmbH. All data is for information purposes only and is subject to change without notice. No guarantee for legal purposes is implied. Information in this document has been carefully checked, however, no responsibility for inaccuracies has to be assumed. All brand or product names may be trademarks and property of their respective owners.