

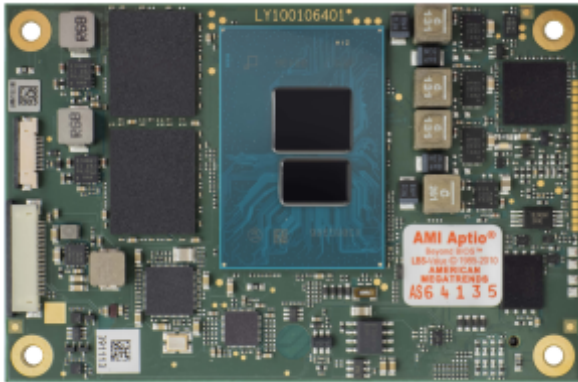
# COM Express Type 10



## TRIA C10M-ALN

Intel Atom® processors x7000E / Intel® Core™ i3 processor / Intel® Processors N Series

84 x 55



8 / 17W

0 - +60°C



## Highlights

- Up to eight processing cores
- Power efficient processors, TDP 6 to 15W
- Integrated Intel UHD Gen.12 graphics, max. 32 executing units
- Up to 16GB LPDDR5 SDRAM (IBECC for Atom SKU's)
- Up to 256GB eMMC 5.1 Flash (optional)
- 2x SATA-III interface (6Gbps)
- DisplayPort/HDMI/DVI interface
- LVDS/Embedded DisplayPort interface
- Dual Independent Display support
- MIPI-CSI Camera Interface
- 4x PCI Express x1 Gen. 3
- Two USB 3.2 Gen 2 (10Gb/s) and eight USB 2.0 interfaces
- One Gb Ethernet port (Intel® i226)
- TSN, TCC support
- UART, SPI, I2C, SMBus
- High Definition Audio (HD-A)
- UEFI Firmware
- Trusted Platform Module TPM 2.0

# COM Express Type 10



## Technical Data

<b>Technology</b>	x86
<b>Formfactor</b>	COM Express Mini
<b>CPU</b>	Intel® Core™ i3-N305, eight-core, 1.0GHz/1.8GHz, 32EU, 9/15W, PUC Intel Atom® x7425E, four-core, 1.5GHz, 24EU, TCC, 12W, EUC Intel Atom® x7213E, two-core, 1.7GHz, 16EU, TCC, 10W, EUC Intel Atom® x7211E, two-core, 1.0GHz, 16EU, TCC, 6W, EUC Intel® Processor N200, quad-core, 1.0GHz, 32EU, 6W, PUC Intel® Processor N97, quad-core, 2.0GHz, 24EU, 12W, PUC Intel® Processor N50, dual-core, 1.0GHz, 16EU, 6W, PUC EUC - Intel Embedded Use Conditions PUC - Intel PC Client Use Conditions
<b>Chipset</b>	SoC
<b>RAM</b>	Up to 16GB LPDDR5 SDRAM, up to 4800MT/s, IB ECC (only Atom SKU's), soldered
<b>Flash</b>	On-board eMMC mass storage option, scalable capacity up to 256GB
<b>Storage Interfaces</b>	2x SATA 6Gb/s
<b>USB</b>	2x USB 3.2 Gen 2 (10Gb/s) 8 x USB 2.0
<b>Serial Interfaces</b>	Two UARTS
<b>Bus Interfaces</b>	4x PCI Express x1 Gen 3 (1x PCI Express x4 Gen 3 on request) LPC bus (Low Pin Count bus; no DMA support) (eSPI on request)
<b>Display Controller</b>	Integrated Intel UHD Graphics (Gen12) Up to 32 execution units (EU)
<b>Display Interfaces</b>	Two independent displays supported: 1x Digital Display Interface (DP, HDMI) 1x Embedded DisplayPort (on variants without LVDS only); LVDS 24bit, single-channel (not on all variants); max. 1920 x 1200 @ 60Hz
<b>Network Interface</b>	10/100/1000Base-TX, 2.5G <sup>2</sup> based on Intel i226 <sup>2</sup> Available bandwidths depending on carrier design
<b>Audio Interface</b>	High Definition Audio(HD-A)
<b>Security Device</b>	TPM 2.0
<b>Miscellaneous</b>	Watchdog Timer: Initiates system reset RTC battery: external System Monitoring: voltage, temperature, system fan GPIO, GSPI (COM.0 Rev. 3.1)
<b>Feature Highlights</b>	Type 10 pin-out
<b>Firmware</b>	AMI Aptio UEFI
<b>OS Support</b>	Windows 10 IoT Enterprise 2021 LTSC Yocto Project (LTS kernel 2021)

# COM Express Type 10



<b>Power Requirement</b>	Wide range input +5 ... +20V, 5V Stby optional, 8W (typ.) up to 17W (typ.)
<b>Environment</b>	Temperature Range: Commercial: 0° ... 60°C (operating) -20° ... 85°C (storage) Humidity: 5 ... 95% (operating, non-condensing) 5 ... 95% (storage, non-condensing)
<b>Dimensions</b>	84x 55
<b>Certificates</b>	UL / CE
<b>Cooling</b>	Passive heat sink Heat spreader with threaded or non-threaded standoffs
<b>Carrier</b>	Small carrier board (Mini-ITX) as part of a starter kit

Technical Data for TRIA C10M-ALN

## Order Reference

Order No.	Description	Reference	Status*
113770	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7211E dual-core 1.0/3.2GHz, 6W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 2GB LPDDR5 SDRAM, in-band ECC; no eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7211E-1N201C PCBFTX	PV
113766	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Processor N50 dual-core 1.0/3.4GHz, 6W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 2GB LPDDR5 SDRAM, in-band ECC; no eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-N50-1N201C PCBFTX	OR
113764	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Processor N200 quad-core 1.0/3.7GHz, 6W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 4GB LPDDR5 SDRAM, in-band ECC; 16GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-N200-24201C PCBFTX	OR
113772	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7211E dual-core 1.0/3.2GHz, 6W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 4GB LPDDR5 SDRAM, in-band ECC; 16GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7211E-24201C PCBFTX	OR
113774	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7213E dual-core 1.7/3.2GHz, 10W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 4GB LPDDR5 SDRAM, in-band ECC; 16GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7213E-24201C PCBFTX	PV
113780	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7425E quad-core 1.5/3.4GHz, 12W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 8GB LPDDR5 SDRAM, in-band ECC; no eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7425E-3N201C PCBFTX	OR
113778	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7425E quad-core 1.5/3.4GHz, 12W TDP; Graphics: Intel UHD; DP/HDMI and eDP interfaces; Ethernet: 1Gbit; 8GB LPDDR5 SDRAM, in-band ECC; 16GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7425E-34101C PCBFTX	PV
113776	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7213E dual-core 1.7/3.2GHz, 10W TDP; Graphics: Intel UHD; DP/HDMI and eDP interfaces; Ethernet: 1Gbit; 8GB LPDDR5 SDRAM, in-band ECC; no eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7213E-3N101C PCBFTX	PV
113768	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Processor N97 quad-core 2.0/3.6GHz, 12W TDP; Graphics: Intel UHD; DP/HDMI and eDP interfaces; Ethernet: 1Gbit; 8GB LPDDR5 SDRAM, in-band ECC; no eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-N97-3N101C PCBFTX	OR
113762	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Core i3-N305 octal-core 1.8/3.8GHz, 15W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 16GB LPDDR5 SDRAM, in-band ECC; 32GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-i3-N305-45201C PCBFTX	PV

# COM Express Type 10



Order No.	Description	Reference	Status*
113791	COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom x7425E quad-core 1.5/3.4GHz, 12W TDP; Graphics: Intel UHD; DP/HDMI and LVDS interfaces; Ethernet: 1Gbit; 16GB LPDDR5 SDRAM, in-band ECC; 32GB eMMC; HD audio; TPM 2.0; 2x SATA, 2x USB3/2, 6x USB2, 2x UART; 4x PCIe x1; 0 ... +60°C;	MSC C10M-ALN-x7425E-45201C PCBFTX	PV

Ordering Information for TRIA C10M-ALN

\*PV = Preferred variant; OR = on Request (in OEM quantities only)

## Accessories

### Cooling Solutions

Order No.	Description	Reference
110195	Passive Heatsink for C10M-ALN and C10M-ASL (all versions), consisting of a single-piece aluminum pin cooler, standoffs without thread (2.7mm inner diameter) and thermopad for the thermal contact to SOC. With threaded mounting holes for an optional fan.	MSC C10M-ALN-01 HSI-001
110196	Heatspreader for C10M-ALN and C10M-ASL (all versions). Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter) and thermopad for the thermal contact to SOC.	MSC C10M-ALN-01 HSP-001
110197	Heatspreader for C10M-ALN and C10M-ASL (all versions). Single-piece aluminum profile, standoffs with M2.5 thread and thermopad for the thermal contact to SOC.	MSC C10M-ALN-02 HSP-001

Cooling Devices for TRIA C10M-ASL/ALN

### Carrier Board Options

Order No.	Description	Reference
67293	COM Express Type 10 Evaluation Carrier Board with PCI Express x4 slot, USB 3.0/2.0, GbE, SATA, DisplayPort, eDP/LVDS and HD audio interfaces; Mini PCI Express socket, SD card slot, ATX power connector and single 12V power jack. Dimensions: 170mm x 170mm (Mini-ITX form factor)	MSC C10-MB-EV-001 PCBFTX

Carrier Options TRIA C10M-ASL/ALN

### Starter Kit Options

Order No.	Description	Reference
115022	COM Express Type 10 Starterkit for all C10M-ALN and C10M-ASL modules; contains the C10-MB-EV platform for Type 10 modules (Mini-ITX format); includes suitable Heatspreader for C10M-ALN/-ASL modules, 12V power supply and cable kit	MSC C10-SK-ALN-ASL-EV-KIT001 BRDFTX

Starter Kits for TRIA C10M-ALN/ASL

# COM Express Type 10



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