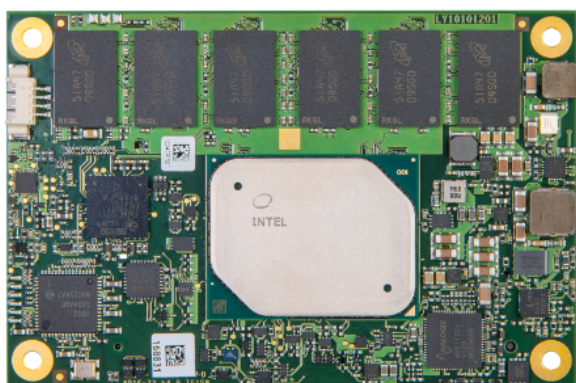


## TRIA C10M-AL

Intel® Atom™ E3900 Series / Pentium® / Celeron® SOC



84 x 55

7/ 14W

-40-+85

**COM**   
**Express**



## Highlights

- Intel Atom X7-E3950 quad-core 1.6/2.0GHz, 12W
- Intel Atom X5-E3940 quad-core 1.6/1.8GHz, 9.5W
- Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 6.5W
- Intel Pentium N4200 quad-core 1.1/2.5GHz, 6W
- Intel Celeron N3350 dual-core 1.1/2.4GHz, 6W
- Integrated Intel Gen. 9 HD graphics
- Up to 8GB DDR3L SDRAM (ECC option)
- Two SATA 6Gb/s mass storage interfaces
- eMMC option
- DisplayPort/HDMI/DVI interface
- LVDS/Embedded DisplayPort interface
- Two independent displays supported
- DirectX 12, OpenGL 4.3, OpenCL 2.0
- Two USB 3.0/2.0 and six USB 2.0 interfaces
- Two high-speed UARTs
- Up to four PCI Express™ x1 lanes
- UEFI Firmware
- Trusted Platform Module (option)
- Extended temperature variants

# COM Express Type 10



## Technical Data

|                           |                                                                                                                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>         | x86                                                                                                                                                                                                                                                                                                       |
| <b>Formfactor</b>         | COM Express Mini                                                                                                                                                                                                                                                                                          |
| <b>CPU</b>                | Intel Atom X7-E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 12W<br>Intel Atom X5-E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9.5W<br>Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 6.5W<br>Intel Pentium N4200 quad-core 1.1/2.5GHz, 18 EU GFX, 6W<br>Intel Celeron N3350 dual-core 1.1/2.4GHz, 12 EU GFX, 6W  |
| <b>Chipset</b>            | SOC                                                                                                                                                                                                                                                                                                       |
| <b>RAM</b>                | up to 8GB DDR3L@1.35V SDRAM soldered on board, ECC optional                                                                                                                                                                                                                                               |
| <b>Flash</b>              | eMMC option                                                                                                                                                                                                                                                                                               |
| <b>Storage Interfaces</b> | 2x SATA 6Gb/s                                                                                                                                                                                                                                                                                             |
| <b>USB</b>                | 2x USB 3.0,<br>6 x USB 2.0,<br>1 x USB 2.0/3.0 client                                                                                                                                                                                                                                                     |
| <b>Serial Interfaces</b>  | 2x HS UART                                                                                                                                                                                                                                                                                                |
| <b>Bus Interfaces</b>     | 4x PCI Express x1 Gen 2,<br>LPC bus (Low Pin Count bus)                                                                                                                                                                                                                                                   |
| <b>Display Controller</b> | Integrated Intel HD graphics Gen. 9<br>Up to 18 execution units (EU)<br>DirectX 12.0, OpenGL 4.3, OpenCL 2.0 Full Profile;<br>MPEG2, H.264 (L5.2), VC-1, WMV9,<br>VP8, JPEG/MJPEG, H.265 (HEVC),<br>VP9, MVC                                                                                              |
| <b>Display Interfaces</b> | Two independent displays supported:<br>1x Digital Display Interface (DP 1.2a (4096 x 2160 @ 60Hz), HDMI 1.4b (3840 x 2160 @ 30Hz)<br>1x Embedded DisplayPort 1.3 (on variants without LVDS only); 4096 x 2160 @ 60Hz,<br>LVDS 24bit, single-channel, 1366 x 768 @ 60Hz (shared with Embedded DisplayPort) |
| <b>Network Interface</b>  | 10/100/1000Base-TX (Intel i210)                                                                                                                                                                                                                                                                           |
| <b>Audio Interface</b>    | High Definition Audio                                                                                                                                                                                                                                                                                     |
| <b>Security Device</b>    | TPM 2.0 (option)                                                                                                                                                                                                                                                                                          |
| <b>Miscellaneous</b>      | Watchdog Timer:<br>Initiates system reset, programmable<br>RTC battery:<br>external<br>System Monitoring:<br>voltage, temperature, CPU fan, system fan                                                                                                                                                    |
| <b>Feature Highlights</b> | Type 10 pin-out                                                                                                                                                                                                                                                                                           |
| <b>Firmware</b>           | AMI Aptio UEFI                                                                                                                                                                                                                                                                                            |
| <b>OS Support</b>         | Windows 10 (embedded)<br>BSP for Linux on request<br>EAPI (HW Programming Interface)                                                                                                                                                                                                                      |
| <b>Power Requirement</b>  | Wide range input +5 ... +20V,<br>5V Stby optional,<br>7 W (typ.) up to 14 W (typ.)                                                                                                                                                                                                                        |

# COM Express Type 10



|             |                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment | Ambient Temperature;<br>0° ... 60°C (operating, commercial),<br>-40° ... 85°C (operating, industrial),<br>-40° ... 85°C (storage)<br>Humidity:<br>5 ... 95% (operating, non-condensing),<br>5 ... 95% (storage, non-condensing) |
| Dimensions  | 84mm x 55mm                                                                                                                                                                                                                     |

Technical Data for TRIA C10M-AL

## Order Reference

| Order No. | Description                                                                                                                                                                                                                                                                                                                                        | Reference                         | Status* |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------|
| 70334     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3950 quad-core 1.6/2.0GHz, 2MB L2, 12W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L ECC SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                      | MSC C10M-AL-E3950-3412011 PCBFTX  | PV      |
| 70260     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3940 quad-core 1.6/1.8GHz, 2MB L2, 9.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and eDP interfaces; Ethernet: Intel i210 Gbit; 4GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                          | MSC C10M-AL-E3940-2401011 PCBFTX  | PV      |
| 70332     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3940 quad-core 1.6/1.8GHz, 2MB L2, 9.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 4GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                         | MSC C10M-AL-E3940-2402011 PCBFTX  | PV      |
| 70258     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 2MB L2, 6.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 4GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                         | MSC C10M-AL-E3930-2402011 PCBFTX  | PV      |
| 70340     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Pentium N4200 quad-core 1.1/2.5GHz, 1MB L2, 6W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and eDP interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; 0 ... +60°C;                             | MSC C10M-AL-N4200E-340101C PCBFTX | OR      |
| 70344     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Pentium N4200 quad-core 1.1/2.5GHz, 1MB L2, 6W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L SDRAM; 32GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; 0 ... +60°C;                            | MSC C10M-AL-N4200E-350201C PCBFTX | OR      |
| 70342     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Celeron N3350 dual-core 1.1/2.4GHz, 2MB L2, 6W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and eDP interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L SDRAM; 32GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; 0 ... +60°C;                             | MSC C10M-AL-N3350E-350101C PCBFTX | OR      |
| 70338     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Celeron N3350 dual-core 1.1/2.4GHz, 2MB L2, 6W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; 0 ... +60°C;                            | MSC C10M-AL-N3350E-340201C PCBFTX | OR      |
| 70336     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3950 quad-core 1.6/2.0GHz, 2MB L2, 12W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and eDP interfaces; Ethernet: Intel i210 Gbit; 8GB DDR3L ECC SDRAM; 32GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                       | MSC C10M-AL-E3950-3511011 PCBFTX  | OR      |
| 70346     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 2MB L2, 6.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 2GB DDR3L SDRAM; no eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                           | MSC C10M-AL-E3930-1N02011 PCBFTX  | OR      |
| 70348     | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 2MB L2, 6.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and eDP interfaces; Ethernet: Intel i210 Gbit; 4GB DDR3L SDRAM; 16GB eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C                          | MSC C10M-AL-E3930-2401011 PCBFTX  | OR      |
| 111748    | COM Express Type 10 Mini module (84mm x 55mm); CPU: Intel Atom X5-E3930 dual-core 1.3/1.8GHz, 2MB L2, 6.5W TDP; Graphics: integrated Intel HD Gen 9; DP/HDMI and LVDS interfaces; Ethernet: Intel i210 Gbit; 4GB DDR3L SDRAM; no eMMC; HD audio; TPM; 2x SATA, 2x USB3/2, 6x USB2, 2x HS UART; 4x PCIe x1; -40 ... +85°C (FAN connector assembled) | MSC C10M-AL-E3930-2N02011 PCBFTX  | PV      |

Ordering Information for TRIA C10M-AL

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

## Accessories

### Cooling Solutions

| Order No. | Description                                                                                                                                                                                                                                                     | Reference              |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1137520   | Heatspreader for C10M-AL (Pentium/Celeron versions only). Single-piece aluminum profile, standoffs with M2.5 thread and thermopad for the thermal contact to SOC.                                                                                               | MSC C10M-AL-04 HSP-001 |
| 1137519   | Heatspreader for C10M-AL (Pentium/Celeron versions only). Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter) and thermopad for the thermal contact to SOC.                                                                          | MSC C10M-AL-03 HSP-001 |
| 1137517   | Heatspreader for C10M-AL (Atom versions only). Single-piece aluminum profile, standoffs with M2.5 thread and thermopad for the thermal contact to SOC.                                                                                                          | MSC C10M-AL-02 HSP-001 |
| 1137518   | Passive Heatsink for C10M-AL (Pentium/Celeron versions only), 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-AL-02 HSI-001 |
| 1137516   | Heatspreader for C10M-AL (Atom versions only). Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter) and thermopad for the thermal contact to SOC.                                                                                     | MSC C10M-AL-01 HSP-001 |
| 1137515   | Passive Heatsink for C10M-AL (Atom versions only), 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-AL-01 HSI-001 |

Cooling Devices for TRIA C10M-AL

### Starter Kits

| Order No. | Description                                                                                                                                                                                                                                                                                             | Reference               |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 70810     | COM Express Type 10 Starterkit for C10M-AL modules with Intel Apollo Lake processors; uses the C10-MB-EV Mini-ITX platform for Type 10 modules; includes suitable Heatsinks for C10M-AL modules, 12V Power Supply and cable kit. Please order separately the COM Express C10M-AL module of your choice. | MSC C10-SK-AL-EV-KIT001 |

Starter Kits for TRIA C10M-AL

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