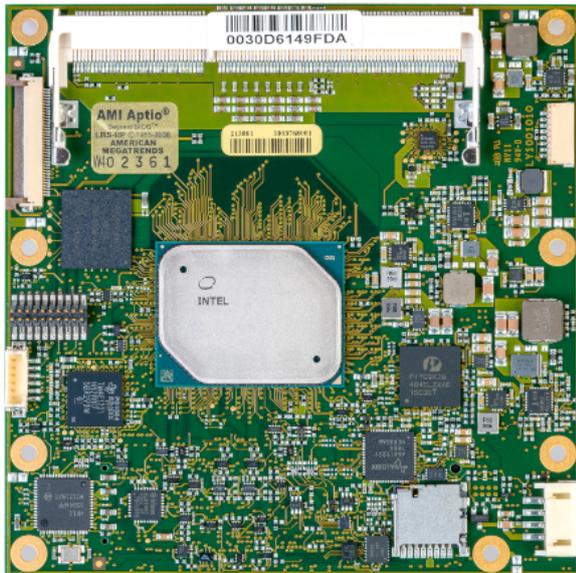# COM Express Type 6

TRIA
AN AVNET COMPANY

TRIA C6C-AL

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

📏 95 x 95

⚡ 7 / 14W

🌡 -40-+85

COM Express

intel.

Highlights

- Intel Atom E3950 quad-core 1.6/2.0GHz, 12W
- Intel Atom E3940 quad-core 1.6/1.8GHz, 9.5W
- Intel Atom 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, dual-channel
- Two SATA 6Gb/s mass storage interfaces
- MicroSD card socket, eMMC option
- DisplayPort/HDMI/DVI interface
- LVDS/Embedded DisplayPort interface
- Three independent displays supported
- DirectX 12, OpenGL 4.3, OpenCL 2.0
- Dual MIPI-CSI (option)
- Four USB 3.0/2.0 and four USB 2.0 interfaces
- Two high-speed UARTs
- Up to five PCI Express™ x1 lanes
- UEFI Firmware
- Trusted Platform Module
- Extended temperature variants

COM Express Type 6

Technical Data

Technology	x86
Formfactor	COM Express Compact
CPU	Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 12W Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9.5W Intel Atom E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 6.5W Intel Pentium N4200 quad-core 1.1/2.5GHz, 18 EU GFX, 6W Intel Celeron N3350 dual-core 1.1/2.4GHz, 12 EU GFX, 6W
Chipset	SOC
RAM	2x 204-pin SO-DIMM socket for up to 2x 4 GB (dual channel operation) or 1x 8 GB (single channel operation); DDR3L-1866
Flash	MicroSD card socket eMMC option
Storage Interfaces	Up to 2x SATA 6Gb/s
USB	4x USB 3.0/2.0, 4x USB 2.0
Bus Interfaces	Up to 5x PCI Express x1, LPC bus (Low Pin Count bus; no DMA support)
Display Controller	Integrated Intel HD graphics Gen. 9 Up to 18 execution units (EU) DirectX 12.0, OpenGL 4.3, OpenCL 2.0 Full Profile; MPEG2, H.264 (L5.2), VC-1, WMV9, VP8, JPEG/MJPEG, H.265 (HEVC), VP9, MVC
Display Interfaces	Three independent displays supported: 2x Digital Display Interface (DP 1.2a (4096 x 2160 @ 60Hz), HDMI 1.4b (3840 x 2160 @ 30Hz) 1x Embedded DisplayPort 1.3 (on variants without LVDS only); 4096 x 2160 @ 60Hz, LVDS 24bit, dual-channel (not on all variants); 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-T (Intel i210) or 10/100/1000Base-T (Intel i225) Note: see product descriptions for supported network controller
Audio Interface	High Definition Audio
Security Device	TPM 2.0
Miscellaneous	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 Dual MIPI-CSI (on feature connector, optional)
Feature Highlights	Type 6 pin-out
Firmware	AMI Aptio UEFI
OS Support	Windows 10 (embedded) BSP for Linux on request EAPI (HW Programming Interface)
Power Requirement	Wide range input +5 ... +20V, 5V Stby optional, 7 W to 14 W (typ.)

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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 95mm
Certificates	UL / CE
Cooling	Passive heat sink Active heat sink with fan Heat spreader with threaded or non-threaded standoffs
Carrier	Small carrier board (Mini-ITX) as part of a starter kit; Evaluation board in ATX form factor

Technical Data for TRIA C6C-AL

COM Express Type 6

Order Reference

Order No.	Description	Reference	Status*
69668	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3930-NN261I PCBFTX	OR
69670	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3940-NN261I PCBFTX	OR
85980	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 3x PCIe x1; TPM; no microSD, no MIPI-CSI; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3940-NN201I PCBFTX	OR
69672	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 12W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3950-NN261I PCBFTX	OR
86022	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 3x PCIe x1; TPM; no microSD, no MIPI-CSI; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3950-NN201I PCBFTX	OR

COM Express Type 6

Order No.	Description	Reference	Status*
69640	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3350 dual-core 1.1/2.3GHz, 12 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-AL-N3350E-NN261C PCBFTX	OR
69662	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium N4200 quad-core 1.1/2.5GHz, 18 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-AL-N4200E-NN261C PCBFTX	OR
69674	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3930-NN161I PCBFTX	OR
69676	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3940-NN161I PCBFTX	OR
69678	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 12W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C (recommended for 24/7 use cases)	MSC C6C-AL-E3950-NN161I PCBFTX	OR
69664	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3350 dual-core 1.1/2.3GHz Burst, 12 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-AL-N3350E-NN161C PCBFTX	OR
69666	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium N4200 quad-core 1.1/2.5GHz, 18 EU GFX, 6W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-AL-N4200E-NN161C PCBFTX	OR

COM Express Type 6

Order No.	Description	Reference	Status*
91850	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 5.5W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3930-NN2E1I PCBFTX	OR
91862	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3940-NN2E1I PCBFTX	OR
91868	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3950-NN2E1I PCBFTX	OR
91864	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; eDP; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3950-NN1E1I PCBFTX	OR
91866	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 3x PCIe x1; TPM; no microSD, no MIPI-CSI; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3950-NN281I PCBFTX	OR
95841	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3930 dual-core 1.3/1.8GHz, 12 EU GFX, 5.5W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i225 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3930-NN2V1I PCBFTX	OR

COM Express Type 6

Order No.	Description	Reference	Status*
96003	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3940 quad-core 1.6/1.8GHz, 12 EU GFX, 9W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i225 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3940-NN2V1I PCBFTX	OR
96007	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i225 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3950-NN2V1I PCBFTX	OR
96005	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom E3950 quad-core 1.6/2.0GHz, 18 EU GFX, 13W Graphics: integrated Intel HD Gen 9; 2x DP/HDMI; LVDS; Ethernet: Intel i225 Gbit; no +5V STDBY; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 3x PCIe x1; TPM; no microSD, no MIPI-CSI; 2x socket for DDR3L SO-DIMM. -40...+85°C	MSC C6C-AL-E3950-NN2P1I PCBFTX	OR

Ordering Information for TRIA C6C-AL

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

COM Express Type 6

Accessories

Carrier Options

Order No.	Description	Reference
67295	COM Express Type 6 Evaluation Carrier Board with PCI Express x4/x16 slot, USB 3.0/2.0, GbE, SATA, DisplayPort, eDP/LVDS, VGA 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 C6-MB-EV-001 PCBFTX
41857	COM Express Type 6 Evaluation Carrier Board with various PCI Express x1, x4 and x16 slots, USB 3.0/2.0, GbE, SATA, DisplayPort, HDMI, LVDS, eDP, VGA, HD audio interfaces; mSATA and Mini PCI Express sockets, POST code display, ATX power connector. Dimensions: 305 x 244 mm (ATX form factor)	MSC C6-MB-EVA PCBFTX

Carrier Board TRIA C6B-KLH/CFLR/CFLH/TRIA C6C-TLU/WLU/KLU/EL/AL/BT

Cooling Solutions

Order No.	Description	Reference
1135097	Active Heatsink for C6C-AL (Atom variants only), consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to SOC. PWM fan 80x80x15mm.	MSC C6C-AL-01 HSF-001
1135098	Passive Heatsink for C6C-AL (Atom versions only), consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-01 HSI-001
1135099	Heatspreader for C6C-AL (Atom versions only). Single-piece aluminum profile with standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-01 HSP-001
1135205	Active Heatsink for C6C-AL (Pentium/Celeron variants only), consisting of a single- piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to SOC. PWM fan 80x80x15mm.	MSC C6C-AL-02 HSF-001
1135206	Passive Heatsink for C6C-AL (Pentium/Celeron versions only), consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-02 HSI-001
1135100	Heatspreader for C6C-AL (Atom versions only). Single-piece aluminum profile with threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-02 HSP-001
1135207	Heatspreader for C6C-AL (Pentium/Celeron versions only). Single-piece aluminum profile with standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-03 HSP-001
1135208	Heatspreader for C6C-AL (Pentium/Celeron versions only). Single-piece aluminum profile with threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-AL-04 HSP-001

Cooling Devices for TRIA C6C-AL

COM Express Type 6

Memory Options

Order No.	Description	Reference
79964	4GB SoDimm, DDR3L-1866, 512Mx8 based, wide Temp.	MOD SODIMM DDR3 4GB PC3-14900 CL13 1B
79965	8GB SoDimm, DDR3L-1866, 512Mx8 based, wide Temp.	MOD SODIMM DDR3 8GB PC3-14900 CL13 2B

 Memory Options for TRIA C6C-AL. Please contact your Tria Technologies representative for information on supported memory options.

Starter Kits

Order No.	Description	Reference
70503	COM Express Type 6 Starter kit for all C6C-AL modules; uses the C6-MB-EV platform for Type 6 modules in Mini-ITX format; includes 2x DDR3L memory modules, suitable Heatsinks for C6C-AL modules and 12V Power Supply with power cable. Please order separately the COM Express C6C-AL module of your choice.	MSC C6-SK-AL-EV-KIT001

Starter Kits for TRIA C6C-AL

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