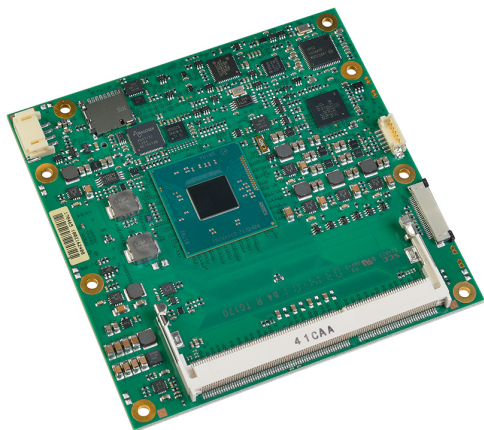




MSC C6C-BT

Intel® Atom™ / Celeron® SOC



 95 x 95

 8 / 14W

 -40 +85



IoT Solutions
Alliance

COM  Express

Description

The MSC C6C-BT module is based on Intel's multi-core system-on-chip (SOC) Atom generation that integrates next generation Intel processor core, graphics, memory, and I/O interfaces into one solution. Based on 22nm processor technology this multi-core Atom processor provides outstanding computing and graphics power and is more power efficient compared to its predecessors. The MSC C6C-BT brings dual independent display support, DirectX 11.1, fast DDR3L memory and USB 3.0 on a compact, power saving and cost-efficient module. Different SOC's with single-, dual- and quad-core processors are supported by this design. Besides an extensive set of interfaces and features, the MSC C6C-BT optionally offers hardware based security compliant to the requirements of TCG (Trusted Computing Group). The Type 6 pin-out allows direct access to the latest digital display interfaces like DisplayPort, HDMI 1.4a and DVI. USB 3.0 interfaces support the fastest peripheral devices currently available.

Highlights

- Intel Atom E3845 quad-core 1.91GHz, 10W
- Intel Atom E3827 dual-core 1.75GHz, 8W
- Intel Atom E3826 dual -core 1.46GHz, 7W
- Intel Atom E3825 dual -core 1.33GHz, 6W
- Intel Atom E3815 single-core 1.46GHz, 5W
- Intel Atom E3805 dual-core 1.33GHz, 3W (no graphics)
- Intel Celeron N2807 dual-core 1.58/2.16GHz, 4.3W
- Intel Celeron N2930 quad-core 1.83/2.16GHz, 7.5W
- Intel Celeron J1900 quad-core 2.00/2.42GHz, 10W
- Integrated Intel Gen. 7 HD graphics
- Up to 8GB DDR3L SDRAM, dual-channel
- Two SATA 3Gb/s mass storage interfaces
- MicroSD card socket
- DisplayPort/HDMI/DVI interface
- LVDS/Embedded DisplayPort interface
- VGA interface
- Two independent displays supported
- DirectX 11.1, OpenGL 3.2, OpenCL 1.1
- One USB 3.0 and up to seven USB 2.0 interfaces
- Two UARTs
- Up to five PCI Express™ x1 lanes
- UEFI Firmware
- Trusted Platform Module (option)
- Extended temperature variants

Technical Data - MSC C6C-BT

Technology	x86
Formfactor	COM Express Compact
CPU	Intel Atom E3845 quad-core 1.91GHz, 10W TDP Intel Atom E3827 dual-core 1.75GHz, 8W TDP Intel Atom E3826 dual-core 1.46GHz, 7W TDP Intel Atom E3825 dual-core 1.33GHz, 6W TDP Intel Atom E3815 single-core 1.46GHz, 5W TDP Intel Atom E3805 dual-core 1.33GHz, 3W TDP (no graphics) Intel Celeron N2807 dual-core 1.58/2.16GHz, 4.3W TDP Intel Celeron N2930 quad-core 1.83/2.16GHz, 7.5W TDP Intel Celeron J1900 quad-core 2.00/2.42GHz, 10W TDP
Chipset	SOC
RAM	up to 8GB DDR3L (1333), 2x 204 pin SO-DIMM
Flash	MicroSD card socket
Storage Interfaces	2x SATA 3Gb/s
USB	1x USB 3.0, 4x USB 2.0, 3x USB 2.0 (optional hub)
Serial Interfaces	1x PCU UART 1x HS UART
Bus Interfaces	Up to 5x PCI Express x1 Gen 2, LPC bus (Low Pin Count bus)
Display Controller	Integrated Intel HD graphics Gen. 7
Display Memory	UMA
Display Interfaces	1x Digital Display Interface (DP 1.1a (2560 x 1600), DVI/HDMI 1.4a (1920 x 1080)), 1x Embedded DisplayPort 1.3 (shared with LVDS) 2560 x 1600 @ 60Hz, Analog up to 2560 x 1600 @ 60Hz, LVDS 24 bit, dual channel (shared with Embedded DisplayPort), 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-TX (choice of Intel i210 or i225)
Audio Interface	High Definition Audio
Security Device	TPM 1.2
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

Feature Highlights	Type 6 pin-out
Firmware	AMI Aptio UEFI
OS Support	Windows 7, 8, 8.1 (embedded), note: i210 only BSP for Linux on request EAPI (HW Programming Interface)
Power Requirement	Wide range input +5 ... +17V, 5V Stby optional, 8 W (typ.) up to 14 W (typ.)
Environment	Ambient Temperature; 0° ... 60°C (operating), -25° ... 85°C (storage) Extended temperature variants possible on request Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	95mm x 95mm
Certificates	UL / CE

Order Reference - MSC C6C-BT

Order Number	Description	Reference	Cat*
46755	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3815 single-core 1.46GHz, 512 kB L2, 5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket.	MSC C6C-BT-001 PCBFTX	OR
46757	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3825 dual-core 1.33GHz, 1MB L2, 6W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket.	MSC C6C-BT-002 PCBFTX	OR
46759	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3826 dual-core 1.46GHz, 1MB L2, 7W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket.	MSC C6C-BT-003 PCBFTX	OR
46761	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3827 dual-core 1.75GHz, 1MB L2, 8W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket.	MSC C6C-BT-004 PCBFTX	OR
46763	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3845 quad-core 1.91GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket.	MSC C6C-BT-005 PCBFTX	OR
46765	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N2930 quad-core 1.83/2.16GHz, 2MB L2, 7.5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-006 PCBFTX	PV
46767	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron J1900 quad-core 2.42GHz, 2MB L2, 10 TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-007 PCBFTX	PV

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Order Reference - MSC C6C-BT

Order Number	Description	Reference	Cat*
65881	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3815 single-core 1.46GHz, 512 kB L2, 5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket, -40°... +85°C (I-Temp)	MSC C6C-BT-101 PCBFTX	PV
65883	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3825 dual-core 1.33GHz, 1MB L2, 6W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket, -40°... +85°C (I-Temp)	MSC C6C-BT-102 PCBFTX	PV
65885	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3826 dual-core 1.46GHz, 1MB L2, 7W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket, -40°... +85°C (I-Temp)	MSC C6C-BT-103 PCBFTX	OR
65887	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3827 dual-core 1.75GHz, 1MB L2, 8W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket -40°... +85°C (I-Temp)	MSC C6C-BT-104 PCBFTX	PV
65889	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3845 quad-core 1.91GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket, -40°... +85°C (I-Temp)	MSC C6C-BT-105 PCBFTX	PV

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Order Reference - MSC C6C-BT

Order Number	Description	Reference	Cat*
69934	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3845 quad-core 1.91GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 1x USB3, 7x USB2, 1x PCU UART, 1x HS UART, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM; MicroSD card socket, -40°... +85°C (I-Temp)	MSC C6C-BT-115 PCBFTX	OR
91831	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N2930 quad-core 1.83/2.16GHz, 2MB L2, 7.5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 1x USB3/2, 7x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-036 PCBFTX	OR
91915	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron J1900 quad-core 2.00/2.42GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 1x USB3/2, 7x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-037 PCBFTX	OR
91916	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3815 single-core 1.46GHz, 512 kB L2, 5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 1x USB3/2, 7x USB2, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket. Industrial temp. -40 to +85°C	MSC C6C-BT-131 PCBFTX	OR
91917	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3845 quad-core 1.91GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i210 Gbit; no +5V STDBY; HD audio; 2x SATA, 1x USB3/2, 7x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket. Industrial temp. -40 to +85°C	MSC C6C-BT-135 PCBFTX	OR
95551	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N2930 quad-core 1.83/2.16GHz, 2MB L2, 7.5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i225 Gbit; no +5V STBY; HD audio; 2x SATA, 1x USB3/2, 4x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-03611 PCBFTX	OR

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Order Reference - MSC C6C-BT

Order Number	Description	Reference	Cat*
95603	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron J1900 quad-core 2.00/2.42GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i225 Gbit; no +5V STDBY; HD audio; 2x SATA, 1x USB3/2, 4x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM.	MSC C6C-BT-03711 PCBFTX	OR
95605	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3815 single-core 1.46GHz, 512 kB L2, 5W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i225 Gbit; no +5V STBY; HD audio; 2x SATA, 1x USB3/2, 4x USB2, 5x PCIe x1; 1x socket for DDR3L SO-DIMM; MicroSD card socket. Industrial temp. -40 to +85°C	MSC C6C-BT-13111 PCBFTX	OR
95607	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel E3845 quad-core 1.91GHz, 2MB L2, 10W TDP; Graphics: integrated Intel HD Gen 7; various display interfaces; Ethernet: Intel i225 Gbit; no +5V STBY; HD audio; 2x SATA, 1x USB3/2, 4x USB2, 5x PCIe x1; 2x socket for DDR3L SO-DIMM; MicroSD card socket. Industrial temp. -40 to +85°C	MSC C6C-BT-13511 PCBFTX	OR

*COM products are divided in two categories, „PV“ (preferred variant) and „OR“ (on request).

Accessories

Order Number	Description	Reference
Carrier Options		
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
Cooling Options		
1120173	Active Heatsink for C6C-BW, C6C-BT and CXC-BT, 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-BT-01 HSF-001
1119053	Passive Heatsink for C6C-BW, C6C-BT and CXC-BT, 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-BT-01 HSI-001
1122654	Heatspreader for C6C-BW, C6C-BT and CXC-BT. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-BT-01 HSP-001
1122653	Heatspreader for C6C-BW, C6C-BT and CXC-BT. Single-piece aluminum profile, threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-BT-02 HSP-001
Memory Options		
66204	2GB DDR3-1600 SoDimm / 2Gb based / ind. Temp. / 1.35V	MOD SODIMM DDR3 2GB PC3-12800 CL11 1B
79966	2GB SoDimm, DDR3L-1866, 256x8 based, sorting wide Temp	MOD SODIMM DDR3 2GB PC3-14900 CL13 1B
73461	2GB SoDimm, DDR3L-1866, 256Mx8 based	MOD SODIMM DDR3 2GB PC3-14900 CL13 1B
79962	4GB DDR3-1600 SoDimm, 4Gb based, ind. Temp., Low Voltage	MOD SODIMM DDR3 4GB PC3-12800 CL11 1B
79964	4GB SoDimm, DDR3L-1866, 512Mx8 based, wide Temp.	MOD SODIMM DDR3 4GB PC3-14900 CL13 1B

Accessories

Order Number	Description	Reference
79967	4GB SoDimm, DDR3L-1866, 512x8 based, sorting wide Temp	MOD SODIMM DDR3 4GB PC3-14900 CL13 1B
72004	4GB SoDimm, DDR3L-1866, 512Mx8 based	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
79963	8GB SoDimm, DDR3L-1866, 512Mx8 based	MOD SODIMM DDR3 8GB PC3-14900 CL13 2B
Starter Kits		
67555	COM Express Type 6 Starterkit for all C6C-BT and C6C-BW modules; uses the C6-MB-EV platform for Type 6 modules in Mini-ITX format; includes 2x DDR3 memory modules, suitable Heatspreader for C6C-BT and -BW modules and 12V Power Supply with Power Cable; includes Resource Drive with drivers, tools and documentation. Please order separately the COM Express C6C-BT or C6C-BW module of your choice.	MSC C6-SK-BT-EV-KIT001

Avnet Embedded GmbH
Industriestr. 16
76297 Stutensee

AvnetEmbedded@avnet.com
avnet.com/embedded

Copyright © 2023 Avnet. 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.