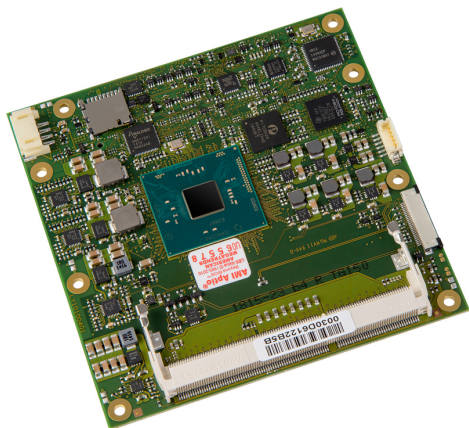


MSC C6C-BW

Intel® Atom™ / Pentium® /
Celeron® SOC



95 x 95



7 / 9W



0 +60



IoT Solutions
Alliance

COM  Express

Description

The MSC C6C-BW 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 14nm 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-BW brings triple 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 dual- and quad-core processors are supported by this design. Besides an extensive set of interfaces and features, the MSC C6C-BW 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 1.4b and DVI. USB 3.0 interfaces support the fastest peripheral devices currently available.

Highlights

- Intel Pentium N3710 quad-core 1.6/2.56GHz, 6W
- Intel Celeron N3160 quad-core 1.6/2.24GHz, 6W
- Intel Celeron N3060 dual-core 1.6/2.48GHz, 6W
- Intel Celeron N3010 dual-core 1.04/2.24GHz, 4W
- Intel Atom x5-E8000 quad-core 1.04/2.0GHz, 5W
- Integrated Intel Gen. 8 HD graphics
- Up to 8GB DDR3L SDRAM, dual-channel
- Two SATA 6Gb/s mass storage interfaces
- MicroSD card socket
- DisplayPort/HDMI/DVI interface
- LVDS/embedded DisplayPort interface
- Three independent displays supported
- DirectX 11.1, OpenGL 4.2, OpenCL 1.2
- Four USB 3.0 and four USB 2.0 interfaces
- Up to five PCI Express™ x1 lanes
- Trusted Platform Module

Technical Data - MSC C6C-BW

Technology	x86
Formfactor	COM Express Compact
CPU	Intel Pentium N3710 quad-core 1.6/2.56GHz, 2MB Cache, 6W TDP, Intel Celeron N3160 quad-core 1.6/2.24GHz, 2MB Cache, 6W TDP, Intel Celeron N3060 dual-core 1.6/2.48GHz, 2MB Cache, 6W TDP, Intel Celeron N3010 dual-core 1.04/2.24GHz, 2MB Cache, 4W TDP, Intel Atom x5-E8000 quad-core 1.04/2.0GHz, 2MB Cache, 5W TDP
Chipset	SOC
RAM	up to 8GB DDR3L (1333), 2x 204 pin SO-DIMM
Flash	MicroSD card socket
Storage Interfaces	2x SATA 6Gb/s
USB	4x USB 3.0/2.0, 4x USB 2.0
Bus Interfaces	Up to 5x PCI Express x1 Gen 2, LPC bus (Low Pin Count bus)
Display Controller	Integrated Intel HD graphics Gen. 8
Display Interfaces	2x Digital Display Interface (DP 1.1a (2560 x 1600 @ 60Hz or 3840x2160 @ 30Hz), DVI/HDMI 1.4b (2560 x 1600 @ 60Hz or 3840x2160 @ 30Hz)), 1x LVDS 24 bit, dual channel, 1920 x 1200 @ 60Hz 1x Embedded DisplayPort 1.4 (option, alternatively to LVDS), 2560 x 1600 @ 60Hz
Network Interface	10/100/1000Base-T (Intel i210)
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) BSP for Linux on request EAPI (HW Programming Interface)
Power Requirement	Wide range input +5 ... +17V, 5V Stby optional, 7 W (typ.) up to 9 W (typ.)

Environment	Ambient Temperature; 0° ... 60°C (operating), -25° ... 85°C (storage) 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 as part of a starter kit; Evaluation board in ATX form factor
Memory	DDR3L SODIMMS 2GB or 4GB

Order Reference - MSC C6C-BW

Order Number	Description	Reference	Cat*
66840	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3010 dual-core 1.04/2.24GHz, 2MB L2, 4W TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-001 PCBFTX	OR
66852	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3060 dual-core 1.6/2.48GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-002 PCBFTX	PV
66854	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3160 quad-core 1.6/2.24GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-003 PCBFTX	OR
66856	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium N3710 quad-core 1.6/2.56GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-004 PCBFTX	PV
68625	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x5-E8000 quad-core 1.04/2.0GHz, 2MB L2, 5W TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; LVDS; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-005 PCBFTX	PV
69399	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3010 dual-core 1.04/2.24GHz, 2MB L2, 4W TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-021 PCBFTX	PV
69401	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3060 dual-core 1.6/2.48GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-022 PCBFTX	OR

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

Order Reference - MSC C6C-BW

Order Number	Description	Reference	Cat*
69403	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron N3160 quad-core 1.6/2.24GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-023 PCBFTX	PV
69405	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium N3710 quad-core 1.6/2.56GHz, 2MB L2, 6 TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-024 PCBFTX	OR
69407	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x5-E8000 quad-core 1.04/2.0GHz, 2MB L2, 5W TDP; Graphics: integrated Intel HD Gen 8; various display interfaces; eDP; Ethernet: Intel i210 Gbit; HD audio; 2x SATA, 4x USB3/2, 4x USB2, 5x PCIe x1; TPM; 2x socket for DDR3L SO-DIMM.	MSC C6C-BW-025 PCBFTX	PV

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

Accessories

Order Number	Description	Reference
Carrier Options		
41886	COM Express Type 6 Small Test and Evaluation Board with one PCI Express socket, USB 3.0, GbE, SATA, DisplayPort, HDMI, VGA and HD audio interfaces	MSC C6-AD-T6T2 PCBFTX
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		
73461	2GB SoDimm, DDR3L-1866, 256Mx8 based	MOD SODIMM DDR3 2GB PC3-14900 CL13 1B
72004	4GB SoDimm, DDR3L-1866, 512Mx8 based	MOD SODIMM DDR3 4GB PC3-14900 CL13 1B
79963	8GB SoDimm, DDR3L-1866, 512Mx8 based	MOD SODIMM DDR3 8GB PC3-14900 CL13 2B
Starter Kits		

Accessories

Order Number	Description	Reference
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

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