

MSC C6C-BT

Intel® Atom™ / Celeron® SOC
Type 6 Pin-out



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 new 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 new 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.

95x95



8 / 14 W



Medium



Highlights

- 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 Celeron N2930 quad-core 1.83/2.16GHz, 7.5W TDP
- Intel Celeron J1900 quad-core 2.00/2.42GHz, 10W TDP
- 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 3.0/2.0 and up to seven USB 2.0 interfaces
- Up to five PCI Express™ x1 lanes
- Trusted Platform Module (option)
- Extended temperature variants

Technical Data – MSC C6C-BT

Module Standard

PICMG COM Express™ Standard COM.0

Type 6 compliant interface, “compact” form factor

Core Logic, Memory

CPU

Intel Atom E3845 quad-core 1.91GHz, 2MB L2, 10W TDP
Intel Atom E3827 dual-core 1.75GHz, 1MB L2, 8W TDP
Intel Atom E3826 dual-core 1.46GHz, 1MB L2, 7W TDP
Intel Atom E3825 dual-core 1.33GHz, 1MB L2, 6W TDP
Intel Atom E3815 single-core 1.46GHz, 512KB L2, 5W TDP
Intel Celeron N2930 quad-core 1.83/2.16GHz, 2MB L2, 7.5W TDP
Intel Celeron J1900 quad-core 2.00/2.42GHz, 2MB L2, 10W TDP

Intel® Technologies: Intel® 64, Intel® Virtualization Technology, AES-NI

Chipset

Integrated in SOC

Memory

2x 204-pin SO-DIMM socket for up to 8GB DDR3L@1.35V SDRAM (DDR1333)

Storage Interfaces

SATA

2x SATA channels (up to 3 Gb/s)

SSD

MicroSD card socket, bootable

Bus Interfaces

USB

1 x USB 3.0/2.0
7 x USB 2.0

PCI Express™

Five x1 channels PCI Express Gen 2

LPC

Low Pin Count bus for legacy interfaces

Display Interfaces

Graphics Controller

Integrated Intel HD graphics Gen. 7

3D Acceleration (DirectX® 11, OpenGL 3.2, OpenCL 1.1)
Video decoded hardware acceleration including support for H.264, MPEG2, MVC, VC-1, WMV9 and VP8 formats.

Dual independent display support

Video Memory

UMA

LCD Interface

LVDS 24bit, dual-channel (shared with Embedded DisplayPort)
1920 x 1200 @ 60Hz

VGA Interface

Resolution up to 2560 x 1600 @ 60Hz

Display Port and HDMI 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

Miscellaneous

Watchdog Timer

Initiates system reset, programmable

Fan Supply

4-pin header for CPU fan, PWM speed controlled
PWM speed control for system fan supported via carrier board

Real-Time Clock

Integrated in SOC, battery external

System Monitoring

Voltage, temperature, CPU fan, system fan

Network Interface

Ethernet

10/100/1000Base-TX (Intel® i210)

Audio Interface

HD audio

Security Device

Infineon Trusted Platform Module (Option)

Firmware, Software

UEFI Firmware

AMI Aptio®

Security

TPM 1.2 support, TCG compliant (on request)

Power Management

ACPI
Active fan control

USB

USB legacy support (keyboard, mouse, storage)

Video

Intel Video BIOS

HW Programming I/F

EAPI

Board Support Package (BSP)

Microsoft Windows® Embedded Standard 7, Linux (on request)

Power Supply

Power Supply Voltage

Wide range input +5 ... +17V, 5V Stby optional

Power Consumption

8W (typ.) up to 14W (typ.)

Environment

Ambient Temperature

0° ... 60° C (operating, C-Temp),
-40° ... +85° C (operating, I-Temp),
-25° ... 85° C (storage)

Humidity

5 ... 95% (operating, non-condensing)
5 ... 95% (storage, non-condensing)

Mechanical

Dimensions

95mm x 95mm x 13mm

Order Reference – MSC C6C-BT

Order Number	Description	Reference	Cat. ¹⁾
46763	Intel Atom E3845 quad-core 1.91GHz, 2MB L2, 10W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6	MSC C6C-BT-005	PV
46761	Intel Atom E3827 dual-core 1.75GHz, 1MB L2, 8W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6	MSC C6C-BT-004	PV
46759	Intel Atom E3826 dual-core 1.46GHz, 1MB L2, 7W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6	MSC C6C-BT-003	OR
46757	Intel Atom E3825 dual-core 1.33GHz, 1MB L2, 6W TDP, 10/100/1000Base-TX, MicroSD slot, 1x SODIMM socket, Type 6	MSC C6C-BT-002	OR
46755	Intel Atom E3815 single-core 1.46GHz, 512kB L2, 5W TDP, 10/100/1000Base-TX, MicroSD slot, 1x SODIMM socket, Type 6	MSC C6C-BT-001	PV
46765	Intel Celeron N2930 quad-core 1.83/2.16GHz, 2MB L2, 7.5W TDP, 10/100/1000Base-TX, 2x SODIMM socket, Type 6	MSC C6C-BT-006	OR
46767	Intel Celeron J1900 quad-core 2.00/2.42GHz, 2MB L2, 10W TDP, 10/100/1000Base-TX, 2x SODIMM socket, Type 6	MSC C6C-BT-007	PV
65889	Intel Atom E3845 quad-core 1.91GHz, 2MB L2, 10W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6, -40° ... +85° C (I-Temp)	MSC C6C-BT-105	OR
65887	Intel Atom E3827 dual-core 1.75GHz, 1MB L2, 8W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6, -40° ... +85° C (I-Temp)	MSC C6C-BT-104	OR
65885	Intel Atom E3826 dual-core 1.46GHz, 1MB L2, 7W TDP, 10/100/1000Base-TX, MicroSD slot, 2x SODIMM socket, Type 6, -40° ... +85° C (I-Temp)	MSC C6C-BT-103	OR
65883	Intel Atom E3825 dual-core 1.33GHz, 1MB L2, 6W TDP, 10/100/1000Base-TX, MicroSD slot, 1x SODIMM socket, Type 6, -40° ... +85° C (I-Temp)	MSC C6C-BT-102	OR
65881	Intel Atom E3815 single-core 1.46GHz, 512kB L2, 5W TDP, 10/100/1000Base-TX, MicroSD slot, 1x SODIMM socket, Type 6, -40° ... +85° C (I-Temp)	MSC C6C-BT-101	OR
	¹⁾ PV = Preferred variant; OR = on Request (in OEM quantities only)		

Accessories

Order Number	Description	Reference
	Starter Kits	
tbh	COM Express Type 6 starter kit consisting of a Type 6 baseboard, the active heatsink with fan for the COM-Express Type 6 module, and two DDR3 SO-DIMM memory modules. Please order separately the COM-Express C6C-BT module of your choice.	MSC C6-SK-BT-T6T2-KIT001
	Carrier Boards	
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; ATX power connector. Also usable as Type 6 to Type 2 converter on MSC CX-MB-EVA2. Dimensions: 140 x 184 mm	MSC C6-AD-T6T2
41857	COM Express Type 6 Evaluation board with various PCI Express interfaces, SATA and mSATA, USB 2.0/3.0, Display Port and eDP, HDMI/DVI, HD-Audio, POST code display. ATX form factor	MSC C6-MB-EVA
	Cooling	
1119053	Passive Heatsink for C6C-BT and CXC-BT, consisting of a single-piece aluminum profile with fins, pressed in standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-BT-01 HSI-001
1120173	Active Heatsink for C6C-BT and CXC-BT, consisting of a single-piece aluminum profile with fins, pressed in 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
1122653	Heatspreader for C6C-BT and CXC-BT. Single-piece aluminum profile, pressed in threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-BT-02 HSP-001
1122654	Heatspreader for C6C-BT and CXC-BT. Single-piece aluminum profile, pressed in standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-BT-01 HSP-001
	Memory Modules²⁾	
1110591	DDR3 SODIMM, 2GB/1600, 256Mx64, CL9, 256Mx8 based, 1rank, 1.35V	HMT325S6EFR8A-PBN0
1102661	DDR3 SODIMM 4GB PC1600, 512Mx64, based on 512Mx8, single rank, 1,35V	HMT451S6AFR8A-PBN0
	²⁾ Pre-qualified memory modules for the CPU product above	

MSC Technologies GmbH
Industriestrasse 16
76297 Stutensee / Germany

Tel. +49 - 7249 - 910-0
Fax +49 - 7249 - 78 93
info@msc-technologies.eu
www.msc-technologies.eu

