

MSC C10M-BT

Intel® Atom™ / Celeron® SOC
Type 10 Pin-out



Description

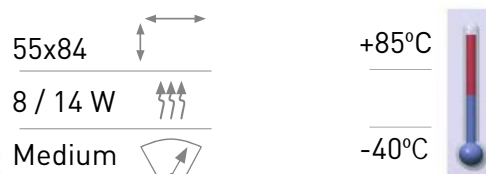
The MSC C10M-BT module is based on Intel's multi-core system-on-chip (SOC) Atom generation that integrates processor core, graphics, memory, and I/O interfaces into one solution. Based on 22nm processor technology it provides outstanding computing and graphics power and highest power efficiency.

The new MSC C10M-BT brings dual independent display support, DirectX 11.1 and fast DDR3L memory on a very compact, power saving and cost-efficient COM Express Mini 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 C10M-BT optionally offers hardware based security compliant to the requirements of TCG (Trusted Computing Group).

Type 10 pin-out offers USB 3.0 support and digital display interfaces like DisplayPort, HDMI 1.4a and DVI.

The rugged design with soldered memory, optional ECC support and extended temperature range opens new application areas.



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 4GB DDR3L SDRAM
- Two SATA 3Gb/s mass storage interfaces
- eMMC SSD (optional)
- DisplayPort/HDMI/DVI interface
- LVDS/Embedded DisplayPort 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
- Trusted Platform Module (option)
- Extended temperature variants

Technical Data – MSC C10M-BT

Module Standard

PICMG COM Express™ Standard COM.0

Type 10 compliant interface, “mini” 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

Up to 4GB DDR3L@1.35V SDRAM (DDR1333) soldered on board, ECC optional

Storage Interfaces

SATA

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

SSD

eMMC SD (optional)

SD Card Interface

SC Card on carrier board supported

Bus Interfaces

USB

1 x USB 3.0
4 x USB 2.0
3 x USB 2.0 (optional hub)

PCI Express™

Three x1 channels PCI Express Gen 2
Fourth channel available if no GbE is used

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, single-channel, 1366 x 768 @ 60Hz (shared with Embedded DisplayPort)

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

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 ... +20V, 5V Stby optional

Power Consumption

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

Environment

Ambient Temperature

0° ... 60° C (operating, commercial)
-40° ... 85° C (operating, industrial)
-40° ... 85° C (storage)

Humidity

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

Mechanical

Dimensions

84mm x 55mm

Order Reference – MSC C10M-BT

Order Number	Description	Reference	Cat. ¹⁾
49217	Intel Celeron J1900 quad-core 2.00/2.42GHz, 2MB L2, 10W TDP, 4GB DDR3 SDRAM, 16GB eMMC, 10/100/1000Base-TX, Type 10	MSC C10M-BT-20E7	tbd
49215	Intel Atom E3845 quad-core 1.91GHz, 2MB L2, 10W TDP, 4GB DDR3 ECC SDRAM, 16GB eMMC, TPM, 10/100/1000Base-TX, Type 10, -40 ... +85° C	MSC C10M-BT-33E5	tbd
49219	Intel Atom E3827 dual-core 1.75GHz, 1MB L2, 8W TDP, 4GB DDR3 SDRAM, 4GB eMMC, TPM, 10/100/1000Base-TX, Type 10, -40 ... +85° C	MSC C10M-BT-3164	tbd
49223	Intel Atom E3825 dual-core 1.33GHz, 1MB L2, 6W TDP, 4GB DDR3 SDRAM, 10/100/1000Base-TX, Type 10	MSC C10M-BT-2022	tbd
49213	Intel Atom E3815 single-core 1.46GHz, 512kB L2, 5W TDP, 2GB DDR3 SDRAM, 10/100/1000Base-TX, Type 10	MSC C10M-BT-2011	tbd
49221	Intel Atom E3815 single-core 1.46GHz, 512kB L2, 5W TDP, 2GB DDR3 SDRAM, 10/100/1000Base-TX, Type 10, -40 ... +85° C	MSC C10M-BT-2111	tbd
	¹⁾ PV = Preferred variant; OR = on Request (in OEM quantities only)		

Accessories

Order Number	Description	Reference
	Starter Kits	
tbd	COM Express Type 10 starter kit consisting of a Type 10 baseboard and an active heatsink with fan for the COM-Express Type 10 module. Please order separately the COM-Express C10M-BT module of your choice.	tbd
	Carrier Boards	
tbd	COM Express Type 10 Test and Evaluation Board	tbd
	Cooling	
tbd	Passive Heatsink for C10M-BT	tbd
1124457	Heatspreader for C10M-BT. Single-piece aluminum profile, standoffs without thread (2.8mm inner diameter) and thermopad for the thermal contact to SOC	MSC C10M-BT-01 HSP-001
1124458	Heatspreader for C10M-BT. Single-piece aluminum profile, standoffs with M2.5 thread and thermopad for the thermal contact to SOC	MSC C10M-BT-02 HSP-001



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