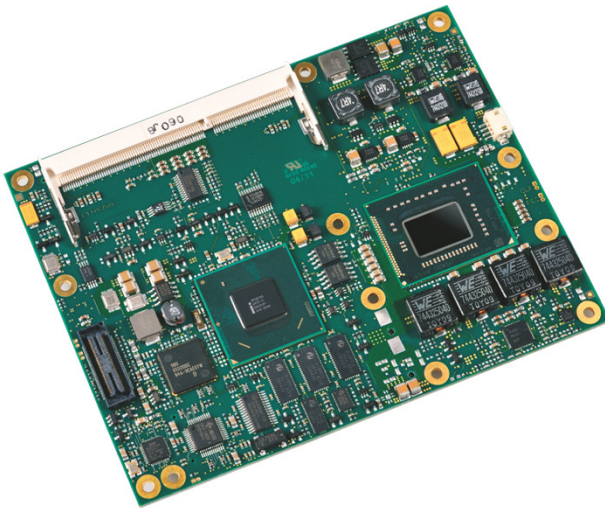


## MSC CXB-6S

Intel® Core™ - 2nd Generation






### Description

The design of the MSC CXB-6S module is based on Intel's 32nm dual and quad core CPU technology enabling highest performance levels for embedded applications.

Different Core i3, i5, i7 and Celeron processors are supported by this design. Besides an extensive set of interfaces and features, the MSC CXB-6S offers turbo boost capabilities for CPU and graphics controller, accelerated video encoding / decoding and hardware based security compliant to the requirements of TCG (Trusted Computing Group).

The widely adopted "Basic" form factor together with standard voltage processor models and dual channel DDR3 memory allow powerful system designs at reasonable costs.



95x125   
35 / 65 W   
High 

### Highlights

- Intel® Celeron® 827E (single core 1.4GHz), Intel® Celeron® 847E (1.1GHz), Intel® Celeron® B810E (1.6GHz), Intel® Core™ i3-2310E (2.1GHz), Intel® Core™ i5-2515E (2.5GHz), Intel® Core™ i7-2610UE (1.5GHz), Intel® Core™ i7-2655LE (2.2GHz), Intel® Core™ i7-2715QE (quad core, 2.1GHz)
- Intel® HD Graphics 2000 / 3000
- Intel® QM67 or HM65 PCH
- Up to 16GB DDR3 SDRAM, dual channel
- Four SATA-300, one PATA mass storage interfaces
- LVDS (24 Bit, dual channel) and CRT interface
- Resolution up to 2560 x 1600
- Five PCI Express™ x1 lanes
- Eight USB 2.0 interfaces
- UEFI Firmware

# Technical Data – MSC CXB-6S

## Module Standard

### PICMG COM Express™ Standard COM.0

Type 2 compliant interface, "basic" form factor

## Core Logic, Memory

### CPU

Intel® Celeron® 827E (1.4GHz, 2MB L3, 17W TDP),  
Intel® Celeron® 847E (1.1GHz, 2MB L3, 17W TDP),  
Intel® Celeron® B810E (1.6GHz, 2MB L3, 35W TDP),  
Intel® Core™ i3-2310E (2.1GHz, 3MB L3, 35W TDP),  
Intel® Core™ i5-2515E (2.5GHz, 3MB L3, 35W TDP),  
Intel® Core™ i7-2610UE (1.5GHz, 4MB L3, 17W TDP),  
Intel® Core™ i7-2655LE (2.2GHz, 4MB L3, 25W TDP),  
Intel® Core™ i7-2715QE (quad core, 2.1GHz, 6MB L3, 45W TDP)

Intel® Technologies: AMT 7.0\*, Intel® 64,  
Intel® Virtualization Technology\*, VT-d Virtualized I/O Support\*,  
Intel® Trusted Execution Technology\*,  
Intel® Advanced Vector Extensions, Intel® Adv. Encryption  
Standard,  
Enhanced Processor Core Turbo Boost

\* not on all models

### Chipset

Intel® QM67 (with i5 and i7) or  
Intel® HM65 (with i3 and Celeron)

### Memory

2x 204-pin SO-DIMM socket for up to 16GB DDR3 SDRAM  
(DDR1066/1333); dual channel operation

## Storage Interfaces

### SATA

4x SATA-2 channels (up to 300MB/s)

### PATA

1x Enhanced IDE port (UDMA6, 133MB/s)

### Silicon Disk (option, on request)

1x 8GB NAND Flash SSD on SATA interface

## Bus Interfaces

### USB

8 x USB 2.0

### PCI Express™

Five channels PCI Express x1,  
one PCI Express Graphics (PEG) x 16

### PCI Bus

32 Bit, 33MHz standard interface (PCI 2.3)

### LPC

Low Pin Count bus for legacy interfaces

## Display Interfaces

### Graphics Controller

Intel® HD Graphics 3000 ((with i5 and i7) or  
HD Graphics 2000 (with Celeron); on processor die  
*Graphics Turbo Boost*  
*Accelerated Encode/Decode*  
DirectX 10.1 and OpenGL 3.0 supported

### Video Memory

UMA, up to 384MB

### LCD Interface

LVDS 18/24 Bit, dual channel

### CRT Interface

Resolution up to 2048 x 1536

### SDVO Interface

Single SDVO interface multiplexed on PEG signals

### Display Port and HDMI Interfaces

Multiplexed on PEG signals; resolution up to 2560 x 1600

## Miscellaneous

### Watchdog Timer

Initiates system reset, programmable

### Fan Supply

4-pin header (12V), PWM fan speed control

### Real-Time Clock

Integrated in PCH, battery external

### System Monitoring

Voltage, temperature, CPU fan

## Network Interface

### Ethernet

10/100/1000Base-TX (integrated in PCH, Intel® 82579LM PHY)

## Audio Interface

HD audio

## Security Device

Infineon Trusted Platform Module

## Firmware, Software

### UEFI Firmware

AMI Aptio®

### Security

TPM 1.2 support, TCG compliant

### 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® XP embedded, Linux (on request)

## Power Supply

### Power Supply Voltage

+12V +/-10%, 5V Stby optional

### Power Consumption

35W (typ.) up to 65 W (typ.)

## Environment

### Ambient Temperature

0° ... 60° C (operating)  
-25° ... 85° C (storage)

### Humidity

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

## Mechanical

### Dimensions

125mm x 95mm x13mm

## Order Reference – MSC CXB-6S

Order Number	Description	Reference	Cat. <sup>1)</sup>
39991	Intel® Celeron B810E, HM65, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-001	OR
40490	Intel® Celeron 847E, HM65, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-002	PV
39088	Intel® Core™ i3-2310E, HM65, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-004	OR
39090	Intel® Core™ i5-2515E, QM67, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-005	PV
39092	Intel® Core™ i7-2610UE, QM67, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-006	PV
39094	Intel® Core™ i7-2655LE, QM67, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-007	OR
39096	Intel® Core™ i7-2715QE, QM67, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-008	PV
39993	Intel® Celeron 827E, HM65, 10/100/1000Base-TX, TPM 1.2	MSC CXB-6S-009	PV
	<sup>1)</sup> PV = Preferred variant; OR = on Request (in OEM quantities only)		

## Accessories

Order Number	Description	Reference
	<b>Carrier Boards</b>	
32367	COM Express Industrial Platform with PCI and PCI Express x1; Dual LAN, VGA/DVI, Quad USB, COM1/2, HD-Audio; MiniPCI, SATA, CF onboard, 170x170mm (mini-ITX)	MSC CX-MB-IP1 PCBFTX
	<b>Cooling</b>	
40152	Passive Heatsink for CXB-6S with spring mounted self aligning cooler element connecting the processor die.	MSC CXB-6S-01 HSI-001
40661	Heatspreader for CXB-6S, consisting of a single-piece aluminum profile, pressed in standoffs without thread (2.7mm inner diameter), screws and thermo pads.	MSC CXB-6S-01 HSP-001
40663	Heatspreader for CXB-6S, consisting of a single-piece aluminum profile, pressed in standoffs with thread M2.5, screws and thermo pads.	MSC CXB-6S-02 HSP-001
40867	Active Heatsink for CXB-6S with spring mounted self aligning cooler element connecting the processor die. Extruded aluminum plate; distance sleeves (2.7mm inner diameter); screws and thermo pads for PCH. PWM fan 80x80x15mm, 4000 U/min. Height over PCB = 50,4 mm.	MSC CXB-6S-01 HSF-001
	<b>Memory Modules<sup>2)</sup></b>	
1085451	DDR3 SODIMM, 1 GB, 128Mx64, unb. PC1333, CL7, 128Mx8 based, 1rank, 1.5V	HMT112S6DFR8C-H9N0
1077754	DDR3 SODIMM, 2GB/1333, 256Mx64, CL7, 256Mx8 based, 1rank, 1.5V	HMT325S6BFR8C-H9N0
1081140	DDR3 SODIMM, 2GB, 256Mx64, PC1333	M471B5773DH0-CH9
1087922	DDR3 SODIMM 4GB PC1333 512Mx64, based on 256Mx8 2rank, 1,5V	HMT351S6CFR8C-H9N0
1080971	DDR3 SODIMM 4GB PC1333, 512Mx64, 204pin, 1.5V, 256Mx8 based, 2rank	NT4GC64B8HB0NS-CG
	<sup>2)</sup> Pre-qualified memory modules for the CPU product above	

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