

MSC C6B-8SB

Intel® Core™ - 5th Generation
Type 6 Pin-out



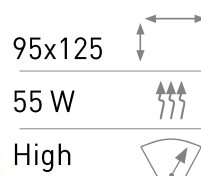
Description

The MSC C6B-8SB module is based on Intel's 5th generation of Core™ processors manufactured in 14 nm technology. It supports triple independent displays, DirectX 11.1, fast low-power DDR3L-1600 memory and USB 3.0 on a COM Express module.

This product family brings a significant gain in computing and graphics performance compared to its predecessor.

This design supplements the 4th generation platform at the high end with two quad-core i7 processors. Besides an extensive set of interfaces and features, the MSC C6B-8SB 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 Type 6 pin-out allows direct access to the latest digital display interfaces like DisplayPort, HDMI and DVI. Four USB 3.0 interfaces support the fastest peripheral devices currently available.



Highlights

- Intel® Core™ i7-5850EQ (quad-core, 2.7/3.4GHz), Intel® Core™ i7-5700EQ (quad-core, 2.6/3.4GHz)
- Intel® HD Graphics GT2 or GT3e
- Intel® 8-Series chipset
- Up to 16GB DDR3L-1600 SDRAM, dual channel
- Four SATA mass storage interfaces, up to 6Gb/s
- Three DisplayPort/HDMI/DVI interfaces
- Two Embedded DisplayPort interfaces
- LVDS (24 Bit, dual channel) and CRT interface
- Triple independent display support
- DirectX 11.1, OpenGL 3.2, OpenCL 1.2
- Resolution up to 4096 x 2304
- Seven PCI Express™ x1 lanes
- Four USB 3.0/2.0 and four USB 2.0 interfaces
- UEFI Firmware
- Intel® Intelligent Systems Framework Ready

Technical Data – MSC C6B-8SB

Module Standard

PICMG COM Express™ Standard COM.0

Type 6 compliant interface, "basic" form factor

Core Logic, Memory

CPU

Intel® Core™ i7-5850EQ (quad-core, 2.7/3.4GHz, 6MB L3, 47W),
Intel® Core™ i7-5700EQ (quad-core, 2.6/3.4GHz, 6MB L3, 47W)

Intel® Technologies: AMT 9.0, Intel® 64,
Intel® Virtualization Technology*, VT-d Virtualized I/O Support*,
Intel® Trusted Execution Technology*,
Intel® Advanced Vector Extensions, Intel® Adv. Encryption Standard
AES-NI*, Intel® Turbo Boost Technology 2.0**

* not on all models

Chipset

Intel® 8-Series Platform Controller Hub (PCH) QM87

Memory

2x 204-pin SO-DIMM socket for up to 16GB DDR3L SDRAM (DDR3L-1333/1600); dual channel operation

Storage Interfaces

SATA

4x SATA channels (up to 6Gb/s)

Bus Interfaces

USB

4 x USB 3.0/2.0
4 x USB 2.0

PCI Express™

Seven channels PCI Express x1, Gen. 2
one PCI Express Graphics (PEG) x 16, Gen. 3

LPC

Low Pin Count bus for legacy interfaces

Display Interfaces

Graphics Controller

Intel® HD Graphics GT2 or GT3e; on processor die with i7 processors (supporting Graphics Turbo Boost and Accelerated Encode/Decode)

DirectX 11.1, OpenGL 3.2 and OpenCL 1.2 supported
Triple independant display support

Video Memory

UMA

LCD Interface

LVDS 18/24 Bit, dual channel; shared with Embedded DisplayPort interface

CRT Interface

Resolution up to 1920 x 2000

Display Port and HDMI/DVI Interfaces

3x Digital Display Interface, usable as DisplayPort 1.2, two are also usable as HDMI or DVI
Resolution up to 4096 x 2304 @ 60Hz

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® Embedded Standard 7, Linux (on request)

Power Supply

Power Supply Voltage

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

Power Consumption

55 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 x 13mm

Order Reference – MSC C6B-8SB

Order Number	Description	Reference	Cat. ¹⁾
65565	Intel® Core™ i7-5850EQ, 47W TDP, GbE, TPM 1.2, Type 6	MSC C6B-8SB-011	tbd
65563	Intel® Core™ i7-5700EQ, 47W TDP, GbE, TPM 1.2, Type 6	MSC C6B-8SB-008	tbd
	¹⁾ PV = Preferred variant; OR = on Request (in OEM quantities only)		

Accessories

Order Number	Description	Reference
	Starter Kits	
46417	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 C6B-8S or C6B-8SB module of your choice.	MSC C6-SK-8S-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	
1110030	Passive Heatsink for C6B-8S, 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 CPU and chipset.	MSC C6B-8S-01 HSI-001
1111682	Active Heatsink for C6B-8S, 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 CPU and chipset. PWM fan 80x80x15mm.	MSC C6B-8S-01 HSF-001
1120478	Heatspreader for C6B-8S and CXB-8S. Single-piece aluminum profile, pressed in standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU and chipset. No fan, no SO-DIMM cutout.	MSC C6B-8S-01 HSP-001
1120479	Heatspreader for C6B-8S and CXB-8S. Single-piece aluminum profile, pressed in standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU and chipset. No fan, no SO-DIMM cutout.	MSC C6B-8S-02 HSP-001
	Memory Modules	
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



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