

# MXC-6300/6310/6320 Series

High Performance 3rd Generation Intel® Core™ i7/i5/i3 Processor-based Fanless Expandable Embedded Computer with PCI/PCIe Slots



MXC-6300/MXC-6320 Series



MXC-6310 Series

## Introduction

The Matrix MXC-6300/6310/6320 series is a high-performance fanless embedded computer integrating a 3rd generation Intel® Core™ i7/ i5/i3 processor and QM77 chipset to provide powerful computing and superior graphic performance. Graphic-intensive and computing-oriented applications including image and vision measurement, machine automation, maritime automation, surveillance and high-resolution medical imaging all benefit.

Increased PCI & PCI express (Gen2) expansion slots allow installation of a variety of PCI, PCIe x8 or PCIe x16 add-on cards, meeting the needs of application platform development environments. In addition, the MXC-6300/6310/6320 series offers 2 DisplayPort and one DVI-I port for three independent display support connections, four USB 3.0 and two USB 2.0 ports, and 2 GbE LAN ports with teaming function. The two 2.5" onboard SATA III ports with high speed SATA 6 Gb/s and RAID 0, 1 ensure all data in the RAID array is fully backed up. Built-in 16 CH isolated DIO provides overall industrial control.

Delivering high quality, durable and compact construction, the MXC-6300/6310/6320 series leverages a reliable fanless and cable-free configuration, optimal thermal dissipation, and easy installation for flexible and user-friendly system development and application implementation in harsh environments.

## Features

- Supports 3rd generation Intel® Core™ i7/i5/i3 processor + QM77 chipset
- 2 x DDR3 SO-DIMM socket, supporting up to 16 GB memory
- 1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16 for MXC-6300 series; 1 PCI + 1 PCIe x16 for MXC-6310 series, 3 PCI + 1 PCIe x16 for MXC-6320 series
- 3 independent display capability with onboard 2 DisplayPort + 1 DVI-I
- 6 external USB ports (4 USB 3.0 + 2 USB 2.0) + 1 internal USB 2.0
- 2 Intel® GbE ports with teaming function, Intel® iAMT 8.0
- 2 CFAST sockets, onboard SATA III for 2 x 2.5" HDD/SSD installation, SATA 6Gb/s and RAID 0,1 support
- Built-in 9 V<sub>DC</sub> to 32 V<sub>DC</sub> wide-range DC power input
- Rugged, up to -20°C to 60°C (-4°F to 140°F) fanless operation (w/ industrial SSD)

## Applications

- Factory Automation / Machine Vision
- Intelligent Transportation Systems / Surveillance
- Maritime Automation
- High Resolution Medical Imaging

## Software Support

### ■ OS Information

- Windows® 7/Embedded standard 7/XP/XP Embedded
- Linux
- \*Linux Distribution by Request

### ■ Easy-to-install Optional Fan Module

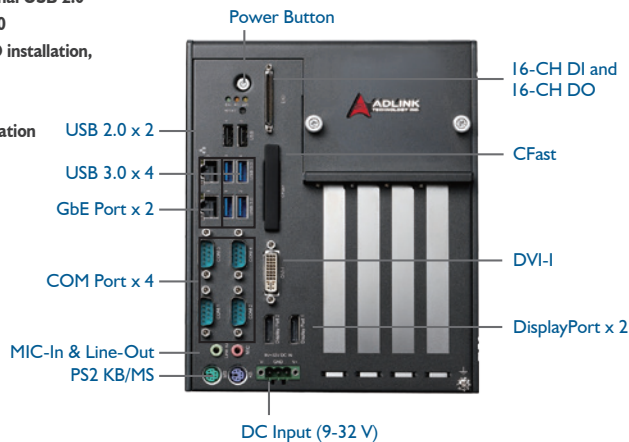


Withdraw the thumbscrew and remove the top cover



Seat the fan module cover and slide into place, the fan connects automatically

### ■ MXC-6300 Series Front Panel



### ■ Versatile Expansion

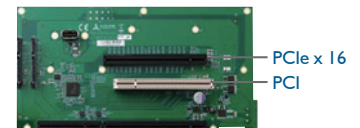
The MXC-6300 series offer various of expansion slot options for flexible function enhancement and easier system integration.

#### MXC-6300 (3 Slots)



Recommended expansion slot configuration options for MXC-6300:  
1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16

#### MXC-6310 (2 Slots)



#### MXC-6320 (4 Slots)



\*Extending the operating temperature is optional and requires use of an industrial solid-state drive storage device. Heat dissipation from inserted PCI/PCIe cards may affect thermal performance.

## Specifications

Model Name	MXC-6301D/6311D/6321D	MXC-6302D/6312D/6322D	MXC-6303D/6313D/6323D	MXC-6305D <b>NEW</b>
<b>System Core</b>				
■ Processor	Intel® Core™ i7-3610QE, 2.3/3.3 GHz, 6M cache	Intel® Core™ i5-3610ME, 2.7/3.3 GHz, 3 M cache	Intel® Core™ i3-3120ME, 2.4 GHz, 3 M cache	Intel® Celeron I020E, 2.2 GHz, 2 M cache
■ Chipset	Intel® Mobile Platform Controller Hub (QM77)			
■ Video	Three independent display capability (2 DisplayPort + 1 VGA or 2 DisplayPort + 1 DVI-D) 1st DP: up to 2560x1600 / 2nd DP: up to 1920x1600 / DVI-I port: up to 1920x1200			
■ Memory	4 GB DDR3 1600 MHz SODIMM module (Max. capacity 16 GB with 2 SODIMM socket option)			
<b>I/O Interface</b>				
■ Expansion Slots	1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16 (MXC-6300 series), 1 PCI + 1 PCIe x16 (MXC-6310 series), 3 PCI + 1 PCIe x16 (MXC-6320 series)			
■ Ethernet	2 Intel® GbE ports (1 Intel® Springville WGI210IT + 1 82579LM) Support Teaming function, Intel iAMT 8.0, Wake On LAN			
■ Serial Ports	2 software-programmable RS-232/422/485 (COM 1&2) with autoflow control, 2 RS-232 (COM 3&4)			
■ USB	6 external USB ports (4 USB 3.0 + 2 USB 2.0) + 1 internal USB 2.0			
■ DIO	16-CH DI and 16-CH DO with 1.5KV isolation			
■ Audio	1 MIC-in and 1 Line-out			
■ KB/MS	1 PS/2 keyboard and 1 PS/2 mouse			
■ WDT	Supports a watchdog timer			
<b>Power Supply</b>				
■ DC Input	Built-in 9-32 V <sub>DC</sub> wide-range DC input pluggable connectors with latch (GND, V-, V+), 2-pin remote power on/off switch			
■ AC Input	Optional 160 W external AC-DC adapter for AC input			
<b>Storage Device</b>				
■ SATA HDD	2 onboard SATA-III for 2.5" HDD/SSD installation, SATA RAID 0, 1 & SATA 6 Gb/s support			
■ CompactFlash	2 CFast socket (1 external + 1 internal)			
<b>Mechanical</b>				
■ Optional Fan Module	Optional fan module for dissipating heat generated by PCI/PCIe card, Smart fan control			
■ Dimensions	MXC-6300/MXC-6320 series: 172.5 (W) x 225 (D) x 213 (H) mm (6.9" x 9" x 8.52"); MXC-6310 series: 154 (W) x 225 (D) x 213 (H) mm (6.16" x 9" x 8.52")			
■ Weight	MXC-6300/6320 series: 4.3 kg (9.5 lbs); MXC-6310 series: 3.8kg (8.39 lbs)			
■ Mounting	Wall-mount kit			
<b>Environmental</b>				
■ Operating Temperature	Standard: 0°C to 50°C (32°F to 122°F) Extended temperature option*: -20°C to 55°C (-4°F to 131°F) (w/Industrial SSD or CFast) for MXC-6301D/6311D -20°C to 60°C (-4°F to 140°F) (w/Industrial SSD or CFast) for MXC-6302D/6303D/6312D/6313D			
■ Storage Temperature	-40°C to 85°C (-40°F to 185°F) (excl. HDD/SDD/CFast)			
■ Humidity	~95% @ 40°C (104°F) (non-condensing)			
■ Vibration	Operating, 5 Grms, 5-500 Hz, 3 axes (w/ CFast or SSD) Operating, 0.5 Grms, 5-500 Hz, 3 axes (w/ HDD)			
■ ESD	Contact +/-4 KV and Air +/-8 KV			
■ Shock	Operating, 50 G, half sine 11 ms duration (w/ CFast or SSD)			
■ EMC	CE and FCC Class A			
■ Safety	UL/cUL, CB, KCC			

## Ordering Information

Model Name	Description	Expansion Slots	Memory	DIO
MXC-6301D	Intel® Core™ i7-3610QE fanless computer	1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6302D	Intel® Core™ i5-3610ME fanless computer	1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6303D	Intel® Core™ i3-3120ME fanless computer	1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6305D	Intel® Celeron I020E fanless computer	1 PCI + 2 PCIe x8 slots or 1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6311D	Intel® Core™ i7-3610QE fanless computer	1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6312D	Intel® Core™ i5-3610ME fanless computer	1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6313D	Intel® Core™ i3-3120ME fanless computer	1 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6321D	Intel® Core™ i7-3610QE fanless computer	3 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6322D	Intel® Core™ i5-3610ME fanless computer	3 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO
MXC-6323D	Intel® Core™ i3-3120ME fanless computer	3 PCI + 1 PCIe x16	4 GB DDR3	16 DI + 16 DO

## Optional Accessories

MXC-6300/6310 Optional Fan Module	Fan module for MXC-6300/6310 series
500 GB/1 TB HDD Option	Factory-installed 500 GB/1 TB SATA hard disk drive (0°C to 60°C, 32°F to 140°F)
32/64 GB SSD Option	Factory-installed 32/64 GB MLC SATA solid-state drive (0°C to 70°C, 32°F to 158°F)
160 W AC-DC Adapter	160 W industrial grade AC-DC adapter (-20°C to 70°C, -4°F to 158°F)

\*For more options regarding display and COM port cables, please refer to page I-28.