MXC-4000 Series

Intel® Atom™ Dual-Core Processor-based Fanless Expandable Embedded Computer with PCI/PCIe Slots



Features

- Intel® Atom™ D510 1.66 GHz processor + ICH8-M chipset
- Configurable, providing PCI and PCIe slots
- Rugged, -10°C to 60°C (-14°F to 140°F) fanless operation*
- Built-in 9 VDC to 32 VDC wide-range DC power input
- VGA + LVDS independent dual display
- Dual 1000/100/10 Mbps Ethernet ports
- Two RS-232 ports and two software-selectable RS-232/422/485 ports
- Two eSATA ports for storage expansion
- Built-in 12-CH isolated DI and 12-CH isolated DO

Applications

- Machine Automation
- Intelligent Transportation
- Factory Control
- Test Instrumentation
- Safety Surveillance
- Building Automation

Software Support

OS Information

- Windows® XP/XP Embedded/7
- Linux*

*Linux Distribution by Request

Introduction

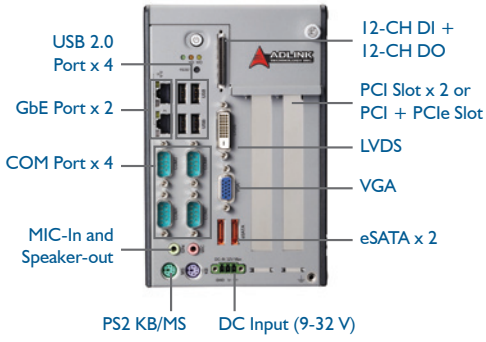
The Matrix MXC-4000 series is a fanless, expandable embedded computer based on the Intel® Atom™ D510 dual-core processor to offer greater computing power for your applications. The MXC-4000 inherits its exceptional fanless and cable-less design from existing Matrix C series, with the addition of innovative features, such as an eSATA interface, a LVDS output, and a hot-pluggable fan option.

The MXC-4000 series features an Intel® Atom™ D510 dual-core 1.66 GHz processor to boost its performance to almost twice that of the Atom™ N270 platform, while maintaining the same overall power consumption. Its PCI and PCIe slots give you the possibility to integrate off-the-shelf PCI/PCIe cards and develop a configurable application platform. Built-in isolated DIO channels are provided for general industrial control. Its LVDS output on the front panel allows you to directly connect to a LCD panel. The MXC-4000 series also provides two eSATA ports to enable the capability of either expanding storage capacity or using hot-swappable SATA drives.

Leveraging a reliable fanless and durable cable-less design, the MXC-4000 series exhibits excellent dependability in harsh environments, where severe temperature variation and vibration may exist. The MXC-4000 series provides an optional hot-pluggable fan module to dissipate heat generated within the system when high power consumption PCI/PCIe cards are installed. This ingenious mechanical design retains a cable-less structure which dramatically improves thermal stability when PCI/PCIe cards installed.

Combining a reliable design with more computing power and innovative features, the Matrix MXC-4000 series is the optimal choice to base your rugged application system on.

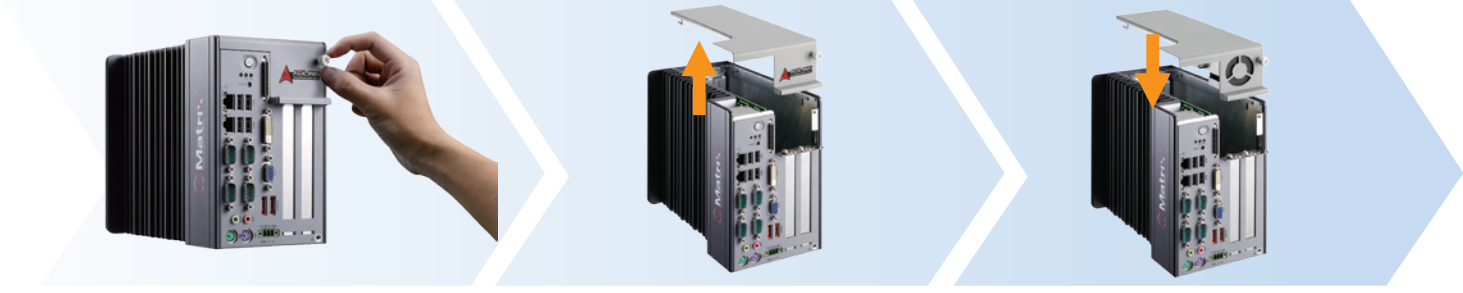
■ MXC-4000 Series Front Panel



■ Inside of the MXC-4000 Series



■ Easy-to-install Hot-pluggable Fan Module



1. Undo the thumbscrew by hand
2. Withdraw the thumbscrew and remove the top cover
3. Replace it by plugging the hot-pluggable fan module cover into the fan connector on CPU board

*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.

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Specifications

Model Name	MXC-4002D	MXC-4011D
System Core		
Processor	Intel® Atom™ D510 1.66 GHz Dual-Core CPU	
Chipset	Intel® I/O Control Hub 8 Mobile (ICH8-M)	
Video	Analog CRT, supports QXGA (2048 X 1536) resolution 18-bit LVDS output by DVI-D connector for LCD panel	
Memory	1 GB DD2 667 MHz SODIMM module	
I/O Interface		
Expansion Slots	2 PCI slots	1 PCI slot and 1 PCIe x1 slot
Ethernet	2 GbE ports (Intel® 82574L)	
DIO	12-CH isolated DI + 12-CH isolated DO	
Serial Port	2 software-programmable RS-232/422/485 (COM1 & COM2) 2 RS-232 (COM3 & COM4)	
USB	4 USB 2.0 ports	
Audio	1 mic-in and 1 line-out	
KB/MS	1 PS/2 keyboard and 1 PS/2 mouse	
WDT	Supports a watchdog timer	
Power Supply		
DC Input	Built-in 9-32 VDC wide-range DC input with over-voltage protection 3P pluggable connector with latch (GND, V-, V+)	
AC Input	Optional 60 W external AC-DC adapter for AC input	
Storage Device		
SATA HDD	On-board SATA port for 2.5" HDD/SSD installation	
eSATA	2 eSATA interface connectors for external storage expansion	
CompactFlash	1 type II CF socket, supporting PIO and DMA modes for HDD replacement	
Mechanical		
Optional Fan Module	Optional, hot-pluggable fan module for dissipating heat generated by PCI/PCIe card	
Dimensions	118 mm (W) x 219 mm (D) x 183 mm (H) (4.6" x 8.6" x 7.2")	
Weight	2.8 kg (6.17 lbs)	
Mounting	Wall-mount kit	
Environmental		
Operating Temperature*	Standard: 0°C to 50°C (32°F to 122°F) Extended temperature option*: -10°C to 60°C (-14°F to 140°F) (w/industrial SSD)	
Storage Temperature	-40°C to 85°C (-40°F to 185°F) (excl. HDD/SSD/CF)	
Humidity	~95% @ 40°C (104°F) (non-condensing)	
Vibration	Operating, 5 Grms, 5-500 Hz, 3 axes (w/ CF or SSD) Operating, 0.5 Grms, 5-500 Hz, 3 axes (w/ HDD)	
Shock	Operating, 50 G, half sine 11 ms duration (w/ CF or SSD)	
EMC	CE and FCC Class A	

*Without PCI/PCIe card installation

Ordering Information

Model Name	Description	PCI	PCIe x1	GbE	eSATA	COM	USB	Memory	DIO
MXC-4002D	Intel® Atom™ D510 fanless expandable embedded computer	2	0	2	2	4	4	1 GB DDR2	12 DI+12 DO
MXC-4011D	Intel® Atom™ D510 fanless expandable embedded computer	1	1	2	2	4	4	1 GB DDR2	12 DI+12 DO

Optional Accessories

MXC-4000 Optional Fan Module	Hot-pluggable fan module for the MXC-4000 series
2 GB DDR2 Upgrade	Upgrade to 2 GB DDR2 memory
500 GB HDD Option	Factory-installed 500 GB SATA hard disk drive (0°C to 60°C, 32°F to 140°F)
32 GB SSD Option	Factory-installed 32 GB SATA solid-state drive (0°C to 70°C, 32°F to 158°F)
80 W AC-DC Adapter	80 W industrial-grade AC-DC adapter (-20°C to 70°C, -4°F to 158°F)
90 W AC-DC Adapter	90 W commercial grade AC-DC adapter (0°C to 50°C, 32°F to 122°F)
Extended Temperature Option*	Optional Screening to extend the operating temperature of the MXC-4000 series to -10°C to 60°C (-14°F to 140°F)

*For more options regarding display and COM port cables, please refer to page 1-28.

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