

# MXC-6400 Series

## Processor-Based Fanless Embedded Computer with Intel® Core™ i7/i5/i3

### Features

- 6th Gen Intel® Core™ i7/i5/i3 Processors and QM170 chipset
- 2 DDR4 SO-DIMM sockets support up to 32 GB memory
- 1 PCI and 2 PCIe Gen3 x8 (or 1 PCIe Gen3 x16) slots
- Support for 3 independent displays via 2 DisplayPort and 1 DVI-I ports with resolution up to 4K UHD
- 6 USB 3.0 ports and 1 internal USB 2.0 wafer connector
- 2 hot-swappable SATA III trays on the front panel and 2 internal SATA III ports with RAID 0/1/5/10 support
- Remote power on/off switch connector on the front panel
- Rugged construction provides fanless -20°C to 70°C operability (with industrial grade SSD/CFast)
- Built-in SEMA 3.0



### Introduction

The Matrix MXC-6400 series is a line of high-performance fanless embedded computers, integrating 6th generation Intel® Core™ i7/i5/i3 processors and the QM170 chipset for more powerful computing and graphics performance with minimal power consumption.

Features include 3 PCI/PCIe expansion slots allowing installation of a variety of off-the-shelf PCI/PCIe cards for configurable applications, 2 internal mPCIe, and 1 USIM slot for 4G/3G communication. In addition, the MXC-6400 series offers independent digital display support from DisplayPort and DVI-I with resolution up to 4K UHD, as well as 6 USB 3.0 and 3 GbE LAN ports with Intel® iAMT 11.0 and teaming function. The 2 hot-swappable SATA III trays support 2.5" storage in the front panel with high speed SATA 6.0 Gb/s and 2 internal SATA III ports carry RAID 0, 1, 5, 10 support. 16 channel isolated DI/O with digital filter meets the needs of general purpose industrial automation.

Features with the integrated 6th Generation Intel® Core™ i7/i5/i3 processor, 4x 2.5" SATA III (6Gb/s) ports, fanless rugged construction, operating shock tolerance up to 50G, withstanding vibration up to 5Grms and extended operating temperatures of -20°C to 70°C (with industrial grade SSD/CFast), the MXC-6400 Series fully satisfies all the needs of Intelligent Transportation System as railway rolling stock, maritime, in-vehicle infotainment, and high-speed data processing and mission critical industrial automation.

### Software Support

- Win10/Win7/Embedded Standard 7
- Linux® Ubuntu 16.04 LTS

### Ordering Information

- **MXC-6401D**  
Intel® Core™ i7-6820EQ, 4GB DDR4 SODIMM
- **MXC-6402D**  
Intel® Core™ i5-6440EQ, 4GB DDR4 SODIMM
- **MXC-6403D**  
Intel® Core™ i3-6100E, 4GB DDR4 SODIMM

### Optional Accessories

- **MXC-6400 Optional Fan Module**  
P/N: 91-95199-0010
- **8/16/32 GB DDR4 Option**  
Upgrade to 1x 8GB/ 2x 8GB/ 2x 16GB DDR4 SODIMM
- **2.5" SATA HDD/SSD & CFast**  
Factory-installed and test
- **160W AC-DC Adapter**  
160W industrial grade AC-DC adapter (-20 to 70°C. -4°F to 158°F)
- **Extended Temperature Option\***  
Optional screening service to extended operating temperature (20 to 70°C)
- **Kit for Internal USB Wafer Connector**  
P/N: 91-95199-100E (including 2 sets)  
A cable for type A USB connector, bracket and screws for fixing the cable

# MXC-6400 Series

## Specifications

| Model Name            | MXC-6401D   | MXC-6402D   | MXC-6403D  |
|-----------------------|---|---|--|
| <b>System Core</b>    |   |   |  |
| Processor             | Intel® Core™ i7-6820EQ<br>4 Core/8 Threads, 2.8GHz, 8M Cache<br>(Max Turbo Frequency 3.5 GHz)   | Intel® Core™ i5-6440EQ<br>4 Core/4 Threads, 2.7GHz, 6M Cache<br>(Max Turbo Frequency 3.4 GHz) | Intel® Core™ i3-6100E<br>2 Core/4 Threads, 2.7 GHz, 3M Cache |
| Chipset               | Intel® QM170  |   |  |
| Video                 | 2 DisplayPort (4K2K resolution)<br>1 DVI-I  |   |  |
| Memory                | 2x DDR4 SODIMM up to 32GB   |   |  |
| <b>I/O Interface</b>  |   |   |  |
| Expansion slots       | 1 PCI +2 PCIe Gen3 x8 or 1 PCI + 1 PCIe Gen3 x16 (auto switched)  |   |  |
| Mini PCIe             | 2x full size Mini PCIe  |   |  |
| USIM                  | 1 USIM  |   |  |
| Ethernet              | 3x GbE (2 Intel I210IT + 1 I219 PHY)  |   |  |
| Serial Ports          | COM1/2: RS-232/422/485<br>COM3/4: RS-232  |   |  |
| USB                   | 6 USB 3.0 2 w/ 1600 mA, 4 w/ 900 mA<br>1 internal USB 2.0 wafer connector   |   |  |
| DIO                   | Isolated 16x DI + 16x DO  |   |  |
| Audio                 | ALC262, Line-out/ Mic-in  |   |  |
| KB/MS                 | 1 PS/2 keyboard and 1 PS/2 mouse  |   |  |
| <b>Manageability</b>  |   |   |  |
| Security              | TPM1.2  |   |  |
| WDT                   | Watch Dog Timer supported   |   |  |
| <b>Storage Device</b> |   |   |  |
| 2.5" SATA             | 2x removable drive bays<br>2x internal<br>(RAID 0/ 1/ 5/ 10)  |   |  |
| CompactFlash          | 1 type II CFast   |   |  |
| <b>Power Supply</b>   |   |   |  |
| DC Input              | Built-in 9-32 VDC wide-range DC input<br>3 pluggable connectors with latch (GND, V-, V+)<br>3-pin remote power on/off switch on the front |   |  |
| AC Input              | Optional 160 W external AC-DC adapter   |   |  |
| <b>Mechanical</b>     |   |   |  |
| Optional Fan Module   | Optional hot-pluggable fan module, smart fan control  |   |  |
| Dimensions            | 170 (W) x 225 (D) x 200 (H) mm  |   |  |
| Weight                | 4 kg (8,82 lbs)   |   |  |
| Mounting              | Wall-mount kit  |   |  |
| <b>Environmental</b>  |   |   |  |
| Operating Temperature | Standard: 0°C to 50°C (32°F to 122°F) (w/HDD)<br>Extended option*: -20°C to 70°C (-4°F to 158°F) (w/Ind. SSD or CFast)                    |   |  |
| Storage Temperature   | -40°C to 85°C (-40°F to 185°F) (excl. HDD/SSD/CFast)  |   |  |
| Humidity              | approx. 95% @ 40°C (104°F) (non-condensing)   |   |  |
| Vibration             | Operating, 5 Grms, 5-500 Hz, 3 axes (w/ CFast or SSD)<br>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   |   |  |

\*Extended operating temperature is optional and requires use of an industrial solid-state drive storage device or CFast card.

\*\*Other Linux Distribution support by request