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MIO-5271 3.5" MI/O-Compact SBC, Intel® Core™ U-series (i5/Celeron®), DDR3L, VGA, HDMI/DP, 48-bit LVDS, 2 x GbE, 2 x Mini PCIe, mSATA, Fanless, iManager, MIOe

Startup Manual

Packing List

Before you begin installing your board, please make sure that the following items have been shipped:

- 1 x MIO-5271 SBC
- 1 x SATA Cable 30cm (P/N 1700006291)
- 1 x SATA Power Cable 35cm (P/N 1700018785)
- 1 x Audio Cable 20cm (P/N 1700019584)
- 2 x COM RS-232 Cable 22cm (P/N 1701200220)
- 1 x Mini Jumper(10pcs package) (P/N 9689000002)
- 1 x Startup Manual (P/N 2006527100)
- 1 x Heatsink (24mm) (P/N: 1960057432N001)
- 1 x SUSIAccess Pro V2.0 Package (P/N: 968EMLSAP1)

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Note1: For detailed contents of MIO-5271, please refer to information on the support website:
<http://www.emacinc.com/support/>

Note2: Adobe Reader is required to view any PDF file. Adobe Reader can be downloaded at: <http://get.adobe.com/tw/reader/otherversions/> (Adobe is the trademark of Adobe Systems Incorporated)

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For technical support and service, please visit our support website at:

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This manual is for the MIO-5271.

Part No. 2006527100
Printed in China

1st Edition
December 2013

Specifications

General

- **CPU:**
 - Intel® Core™ i5 4300U (Dual Core 1.9GHz): MIO-5271U-S9A1E
 - Intel® Celeron® 2980U (Dual Core 1.6GHz): MIO-5271U-S6A1E
- **System Memory:** 1 x 204-pin SODIMM DDR3L up to 8GB, 1600/1333 MHz
- **Intel® Smart Cache:**
 - i5 4300U: 3MB
 - Celeron® 2980U: 2MB
- **BIOS:** AMI uEFI 128-Mbit
- **Watchdog Timer:** 255 levels timer interval, programmable by software. Multi-level WDT (set by iManager)
- **Expansion Interface:**
 - 1 x Full-size Mini PCIe w/ SIM holder (Supports mSATA), 1 x Half-size Mini PCIe
 - MI/O Extension connector
- **Battery:** Lithium 3 V / 210 mAh
- **Audio:** Supports High Definition Audio (HD), line-in, line-out, Mic-in

Display

- **Controller:** Intel HD Graphics 4400 / Intel HD Graphics (Celeron)
- **Maximum Resolution:**
 - VGA: up to 1920 x 1200 with 60Hz
 - LVDS: 48-bit LVDS, up to 1920 x 1200 with 60Hz
 - HDMI / DisplayPort:
 - Supports Displayport 1.2a, up to 3200 x 2000 at 60 Hz
 - Supports HDMI with 3D, 4K, Deep Color, and x.v.Color, up to 4096 x 2304 at 24 Hz
- **Dual Independent Display:**
Any two combination between: VGA, LVDS, HDMI/DisplayPort
- **TripleIndependent Display:**
VGA+HDMI/DisplayPort+LVDS

Ethernet Interface

- **Speed:** 10/100/1000 Mbps
- **Chipset:** GbE1 - Intel i218, GbE2 - Intel i210
- **Ethernet Interface:** Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- **Connector:** RJ45 x2

Specifications

I/O

- **Internal I/O:** 2 x SATA 6Gb/s, 2 x RS-232, 2 x RS232/422/485, 8-bit GPIO, SMBus, HD Audio
- **Rear I/O:** 2 x USB 2.0, 2 x USB 3.0, HDMI/Displayport, VGA, 2 x RJ45 Ethernet, DC Jack (optional)
- **MIO Expansion:** SMBus, 3 USB 2.0, LPC, 1 PCIe x1, Audio line out, 5 Vsb/12 Vsb power, Power On, Reset, Displayport (support by request)
- **Power connector type:**
Default support 2 x 2 pin ATX power connector, DC Jack is supported by request

Mechanical and Environmental

- **Dimensions (L x W):** 146 x 102 mm (5.7 x 4 inches)
- **Power Supply Type:** ACPI support
- **Power Requirement:** +12 V \pm 10%
- **Power Consumption:**
- Max in HCT12:
MIO-5271U-S6A1E: 1.71 A @ 12 V (20.52 W)
MIO-5271U-S9A1E: 2.46 A @ 12 V (29.52 W)
- Typical: Idle mode in Windows 7
MIO-5271U-S6A1E: 0.38 A @ 12 V (4.56 W)
MIO-5271U-S9A1E: 0.39 A @ 12 V (4.68 W)
- **Operating Temperature:** 0–60°C (32–140°F)
- **Weight:** 0.84 kg (reference weight of total package)

Jumpers and Connectors

The board has a number of connectors and jumpers that allow you to configure your system to suit your application.

The table below lists the function of each of the jumpers and connectors.

Jumpers

Label	Function
J2	Auto Power On Setting
J3	LCD Power
SW2	mPCIe & mSATA selection
SW3	Clear CMOS

Connector

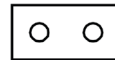
Label	Function
CN1	12V Power Input
CN5	Power Switch
CN6	EC Debug Port
CN7	Reset
CN8	GPIO
CN9	VGA
CN10	HDMI/DisplayPort
CN11	SATA2
CN12	SATA1

Jumpers and Connectors

CN13	SATA Power
CN14	Full-Size Mini PCIE w/ mSATA
CN15	SIM
CN16	External USB2.0+USB3.0
CN17	External USB2.0+USB3.0
CN18	COM1/COM2
CN19	COM3/COM4
CN21	Gigabit Ethernet 1 & 2
CN23	Audio
CN24	MIOe
CN25	Inverter Power Output
CN26	LVDS
CN29	SMBus
CN31	Half-Size Mini PCIE

J2: Auto Power On Setting

Setting	Function
Open	Power Button for Power On
(Close)*	Auto Power On



Open

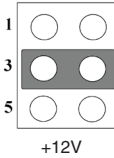
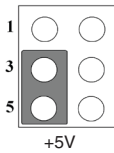
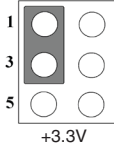


Closed

Jumpers and Connectors

J3: LCD Power

Setting	Function
(1-3)*	+3.3V
(3-5)	+5V
(3-4)	+12V



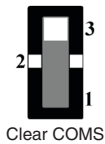
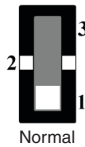
SW2: mPCIe & mSATA Selection

Setting	Function
(2 & 4)	Auto Detect
(3 & 4)	mPCIe
(1 & 2)*	mSATA



SW3: Clear CMOS

Setting	Function
(1-2)*	Normal
(2-3)	Clear COMS



Connector Locations

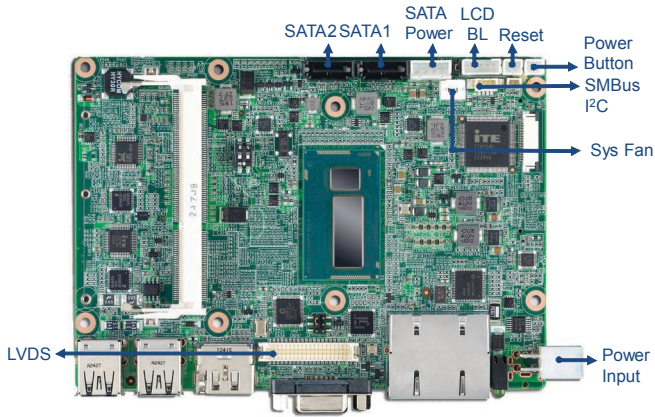


Figure 1: MIO-5271 Connector Locations (Top Side)

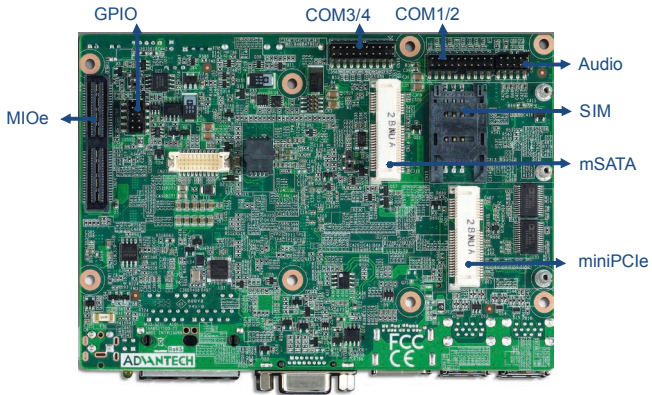


Figure 2: MIO-5271 Connector Locations (Bottom Side)

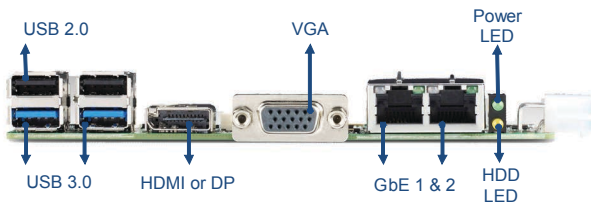


Figure 3: MIO-5271 Connector Locations (Coastline)

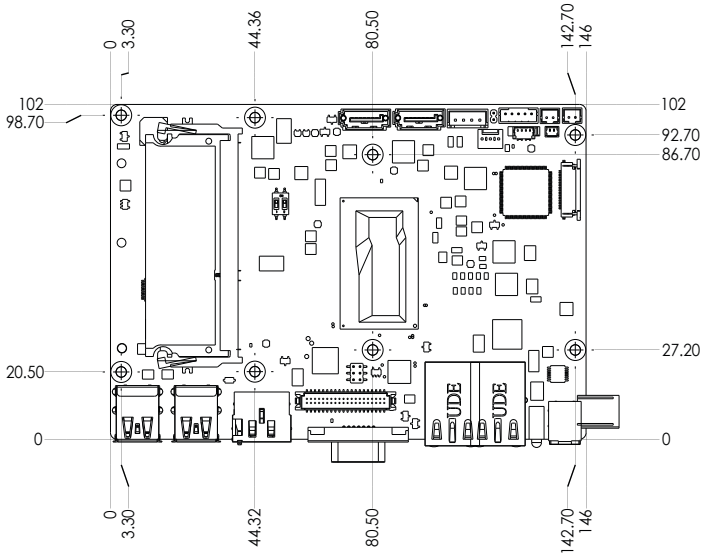


Figure 4: MIO-5271 Mechanical Drawing (Top Side)

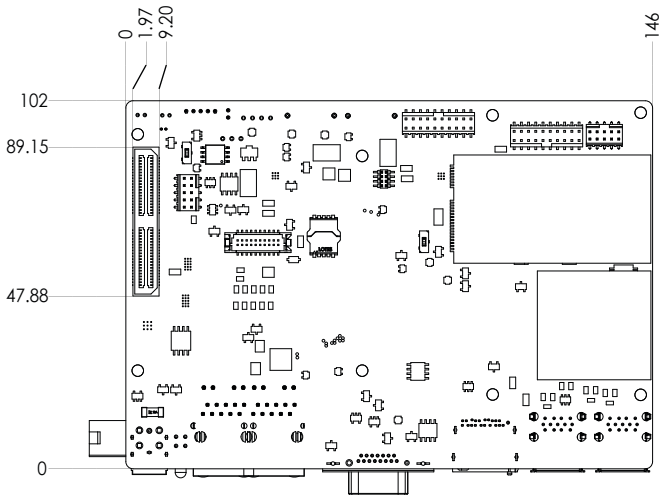


Figure 5: MIO-5271 Mechanical Drawing (Bottom Side)

Mechanical Drawing

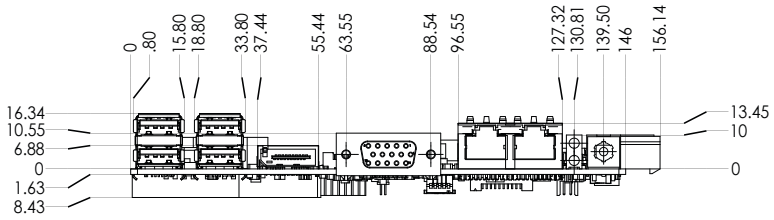
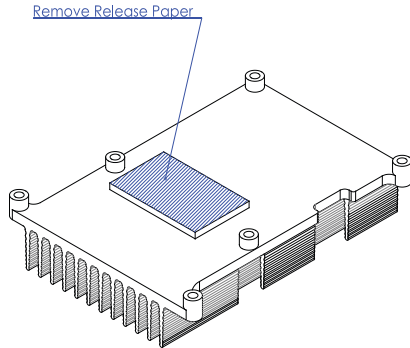


Figure 6: MIO-5271 Mechanical Drawing (Coastline)

Quick Installation Guide

1. There is a Heatsink in the white box, please take it out and remove the release paper from the thermal pads.



2. There are eight screws, six studs and two nuts inside the white box, please install the heatsink into place as per illustration below:

