

MIO-5376 3.5" MI/O-Compact SBC, AMD Ryzen™ Embedded R2000 Series, DDR4, 3xGbE, PoE 802.3af, HDMI, DP, CANBus, M.2 2230/80, M.2 3042/52, DC-In 12-24V, & iManager Startup Manual

Packing List

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

1. 1 x SATA cable, 30 cm (P/N: 1700006291)
2. 1 x SATA power cable, 35 cm (P/N: 1700031583-01)
3. 1 x USB 2.0 cable, 20 cm (P/N: 1700030406-01)
4. 1 x USB 3.2 cable, 35 cm (P/N: 1700032181-01)
5. 1 x Audio cable, 20 cm (P/N: 1700019584-01)
6. 2 x COM RS-232/422/485 cables, 20 cm (P/N: 1700030404-01)
7. 2 x COM RS-232 cables, 20 cm (P/N: 1700031582-01)
8. 1 x Heatsink for 12W/15W (P/N: 1970005548T001)
9. 1 x Screw kit (2 sets of screws for the M.2 device & 4 sets of screws and stand-off for the heatsink/cooler)

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

Note 1: For detailed contents of MIO-5376, please refer to information on the support website: <http://support.advantech.com.tw>

Note 2: Adobe Reader is required to view any PDF file. Adobe Reader can be downloaded at: <http://get.adobe.com/tw/reader/otherversions>. (Adobe is a trademark of Adobe Systems Incorporated.)

For more information about this and other Advantech products, visit our website at:

<http://www.advantech.com>

<http://www.advantech.com/eplatform>

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

<http://support.advantech.com.tw>

This manual is for the MIO-5376 series.

Part No. 2046537600
Printed in China

Edition 1
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Specifications

General

- **CPU:**
 - R2314 SoC with AMD Radeon™ Graphics
 - R2514 SoC with AMD Radeon™ Graphics
- **System Memory:** Dual Channel/SODIMM DDR4-2666 MT/s, up to 32GB
- **BIOS:** AMI EFI 256 Mbit
- **Watchdog timer:** 65536 levels, 0~65535 sec
- **iManager 3.0:** Yes
- **Battery:** Lithium 3V/210mAh
- **Audio:** Supports High Definition Audio (HD), Line-In, Line-Out, and Mic-In.

Expansion Interface

- 1x M.2 E-Key 2230 module (PCIe x1, USB 2.0 to support a wireless module)
- 1 x M.2 B-Key 3042/3052 module (PCIe x1, USB 3.2/2.0 to support a 5G_GNSS/LTE module)
- 1 x M.2 M-Key 2280 module (PCIe Gen3 x4, optional SATA)

Display

- **Controller:** Integrated AMD Radeon Graphics
- **Maximum resolution:**
 - 1 x LVDS dual channel 18/24-bit LVDS up to 1920 x 1200
 - 1 x HDMI2.0 up to 4Kx2Kx24 bpp @60Hz
 - 1 x DP1.4 up to 4096x2304x36 bpp @60Hz
- **Multiple displays:** 3 simultaneous displays

Ethernet Interface

- **Max. Speed:** 2.5Gbe/port
- **Controller:** 3 x Intel® i226
- **PoE (Optional):** LAN2 & LAN3 port features PoE support 802.3af 15.4W/port with optional MIOe-PSE power module.

I/O

- **Internal I/O:** 1 x SATA, 2 x USB 2.0, 2 x USB 3.2, 2 x RS-232/422/485, 2 x RS-232, 1x I2C/SMB (optional), 8-bit GPIO, Inverter, HD Audio, 1 x CANBus 2.0
- **Rear I/O:** 3 x RJ-45, 1 x HDMI, 2 x USB 3.2, 1 x DP
- **Power connector type:** 2-pin phoenix connector

Mechanical and Environmental

- **Dimensions (L x W):** 146 x 102 mm (5.7" x 4")
- **Power requirement:** Vin: 12 V-24 V ±10%
- **Operating temperature:**
 - **Standard:** 0 ~ 60 °C (32 ~ 140 °F)
 - **Extended:** -40 ~ 85° C (-40 ~ 185 °F)

Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of each of the jumpers and connectors.

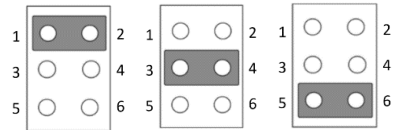
Jumpers	
Label	Function
J1	AT mode / Load BIOS default
VDD1	LCD Power Setting

No.	Location	Description
1	CN2	I2C/SMBus Internal Connector
2	FAN1	Smart FAN Internal Connector
3	COM3	COM-Port Internal Connector 3
4	COM4	COM-Port Internal Connector 4
5	USB1	USB3.2 Dual-Port Connector
6	DIMM2	DDR4 SODIMM Connector 2
7	DIMM1	DDR4 SODIMM Connector 1
8	HDMI1	HDMI Connector
9	DP1	Display Connector
10	LAN3	RJ-45 LAN Port Connector 3 (Alt POE)
11	LAN2	RJ-45 LAN Port Connector 2 (Alt POE)
12	POE_PWR1	POE Power Internal Connector
13	LAN1	RJ-45 LAN Port Connector 1
14	DCIN1	DC Power Input Connector
15	COM1	COM-Port Internal Connector 1
16	COM2	COM-Port Internal Connector 2
17	CN1	Front Panel Internal Connector
18	GPIO1	GPIO Internal Connector
19	USB3	USB 2.0 Dual-Ports Internal Connector
20	AUDIO1	Audio Internal Connector
21	CN3	CANBus Internal Connector
22	SATA_PWR1	SATA Power Connector
23	BL1	Panel Inverter Connector
24	USB2	USB 3.2 Dual-Port Internal Connector
25	SATA1	SATA Connector
26	LVDS1	LVDS Connector
27	VDD1	Panel Voltage Selection Jumper
28	J1	Miscellaneous Selection Jumper
29	BAT1	RTC Battery Connector

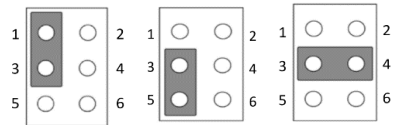
Jumpers and Connectors (Cont.)

30	M2_E1	M.2 E-Key Connector
31	M2_M1	M.2 M-Key Connector
32	M2_B1	M.2 B-Key Connector [3042/3052 Co-Lay]
33	SIM1	SIM (Subscriber Identity Module) Card

J1	AT Mode / Load BIOS Default
Setting	Function
1-2	On: AT mode* (default) Off: ATX mode
3-4	On: Reserved* (default) Off: Reserved
5-6	On: Load BIOS default Off: Normal* (default)



VDD1	LCD Power Settings
Setting	Function
1-3	+3.3V (*default)
3-5	+5V
3-4	+12V



Caution! The computer is provided with a battery-powered real-time clock circuit. Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



Connector Locations

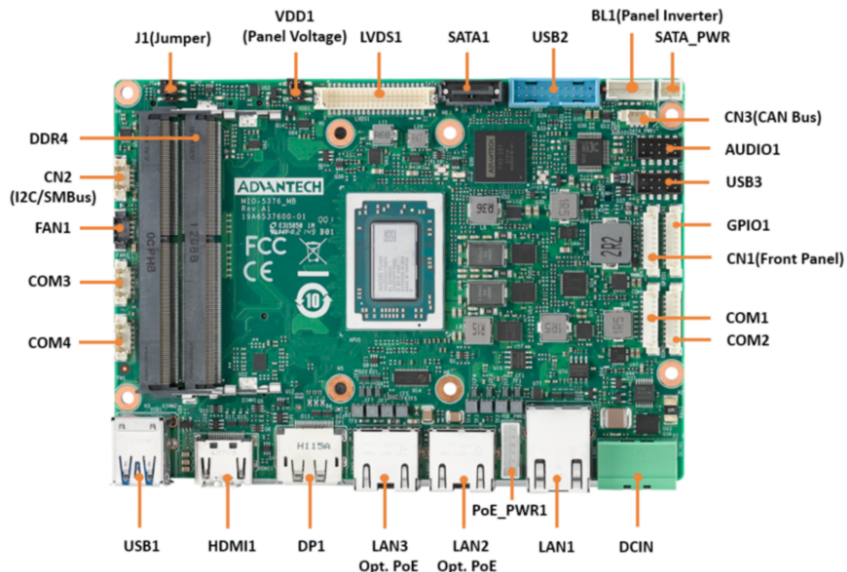


Figure 2: MIO-5376 Connector Locations (Top Side)

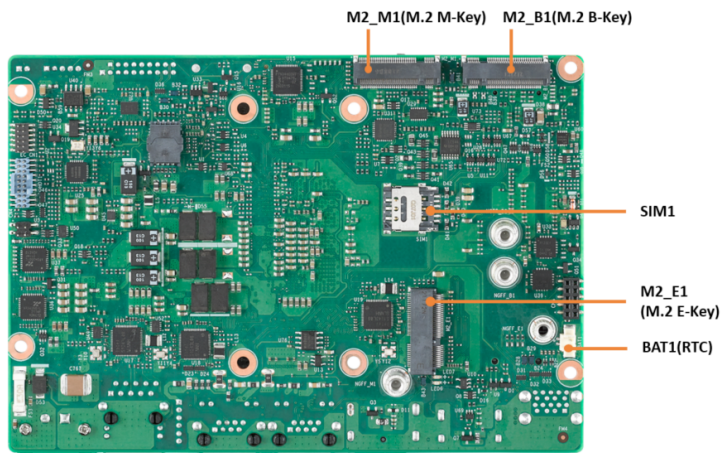


Figure 2: MIO-5376 Connector Locations (Bottom Side)



Figure 3: MIO-5376 Connector Locations (Coastline)

Mechanical Diagram

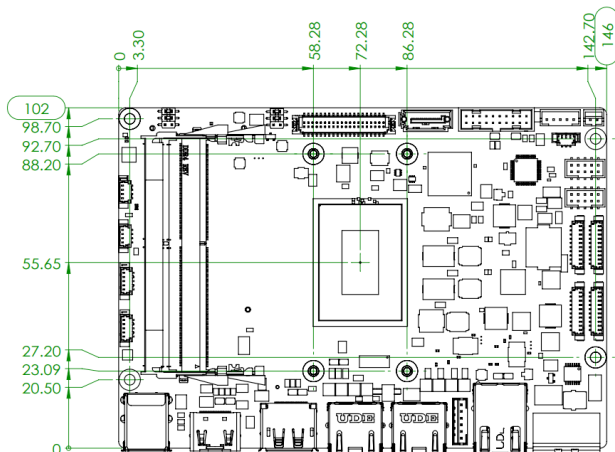


Figure 4: MIO-5376 Mechanical Diagram (Top Side)

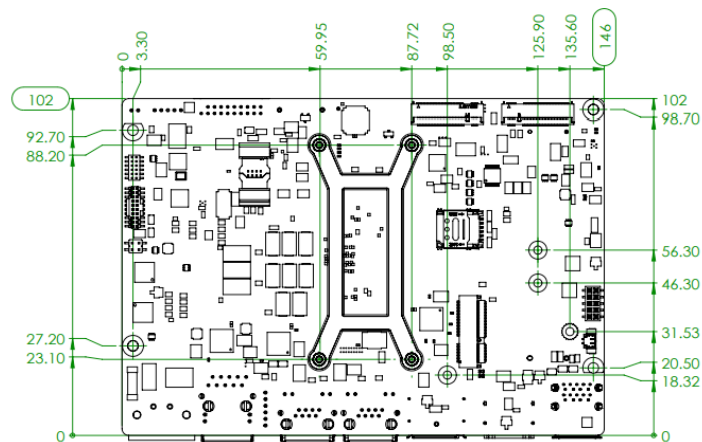


Figure 5: MIO-5376 Mechanical Diagram (Bottom Side)

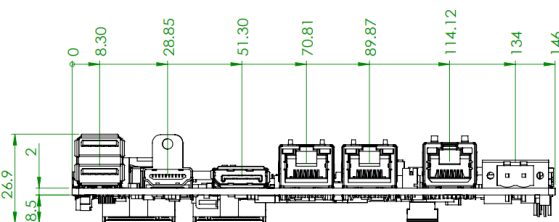


Figure 6: MIO-5376 Mechanical Diagram (Coastline)

Mechanical Diagram (Cont.)

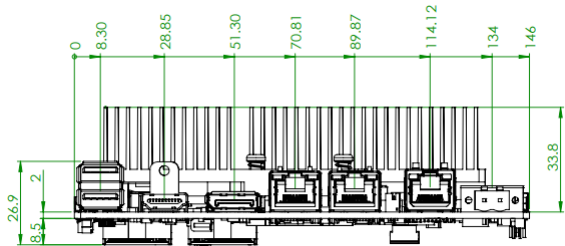


Figure 7: MIO-5376 Mechanical Diagram (with Heatsink)

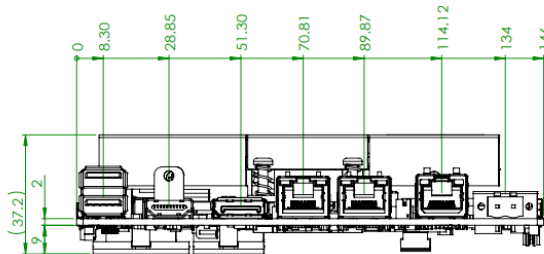
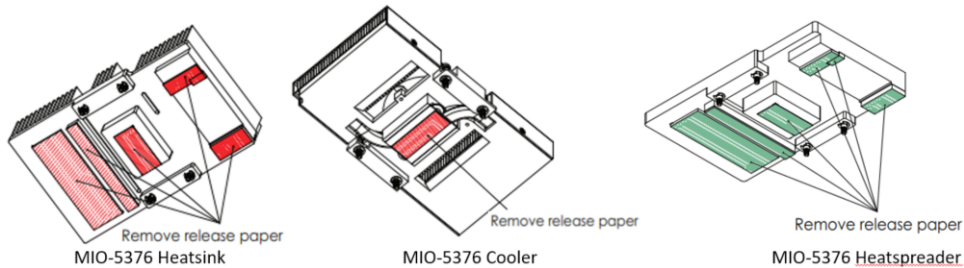


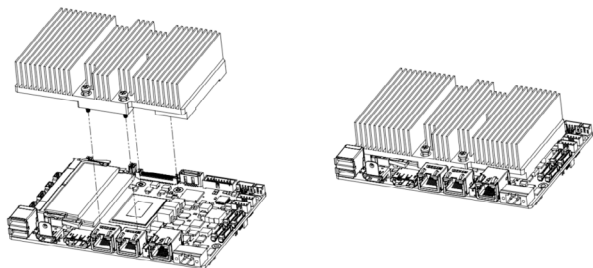
Figure 8: MIO-5376 Mechanical Diagram (with Optional Cooler)

Quick Installation Guide

1. Retrieve the Heatsink from the accessory box. Remove the release paper from the thermal pads.



2. There are four screws on the Heatsink/Cooler/Heat Spreader. Follow the installation sequence demonstrated below to secure the heatsink:



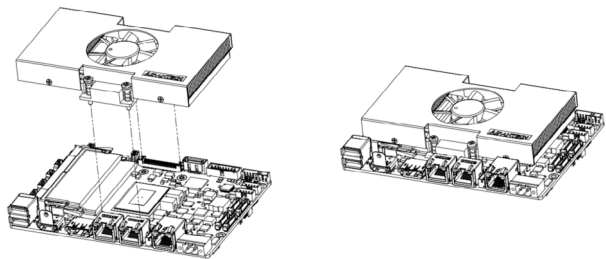


Figure 9: MIO-5376 Cooler Assembly Guide

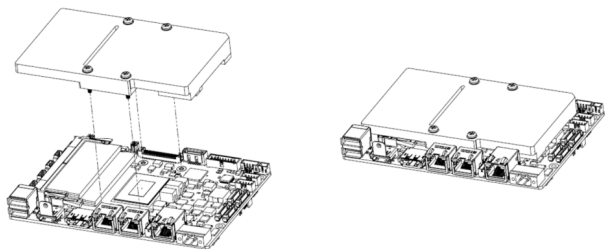


Figure 10: MIO-5376 Heat Spreader Assembly Guide (Optional)

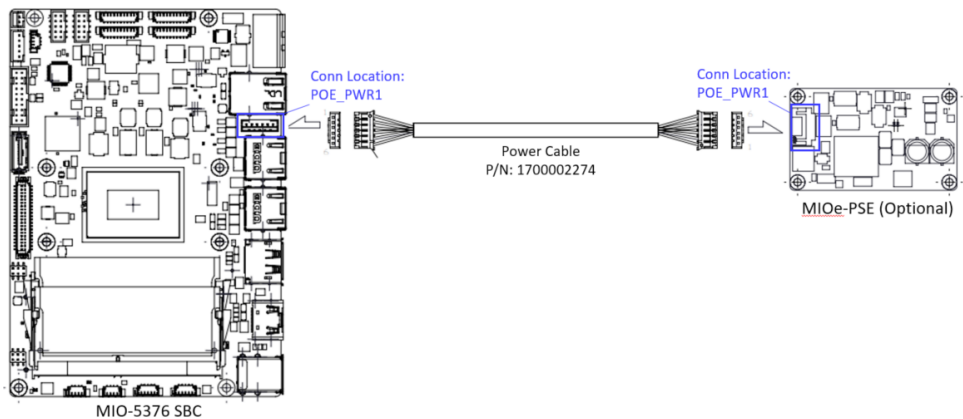


Figure 11: MIO-5376 PoE Module Assembly Guide (Optional MIOe-PSE module)