

MIO-5373 3.5" MI/O-Compact SBC, 8th Gen. Intel® Core™ U-series (i7/i5/i3/Celeron®), DDR4, eMMC, HDMI, DP, 48-bit LVDS, 2 x GbE, M.2 B-key 2280, DC-in 12-24V, & iManager Startup Manual

Packing List

Please ensure the following items have been shipped before installing your board:

- 1 x MIO-5373 SBC
- 1 x Startup Manual (P/N: 2046537301)
- 1 x SATA Cable 30 cm/11.8 in (P/N: 1700006291)
- 1 x SATA Power Cable 35 cm/13.7 in (P/N: 1700018785)
- 1 x Audio JACK*3 Cable 20 cm/7.87 in (P/N: 1700019584)
- 1 x COM RS-232 Cable 20 cm/7.87 in (P/N: 1700030404-01)
- 1 x MIO-5373 Heatsink for 0 ~ 60 °C (32 ~ 140 °F) (P/N: 1960091427N001)
- 1 x MIO-5373 Heatsink for -40 ~ 85 °C (-40 ~ 185 °F) (P/N: 1960091427N011)
- 1 x Mini Jumper (P/N: 9689000002)

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

Note1: For detailed contents regarding MIO-5373, please refer to information on the support website: <http://support.advantech.com.tw/>.

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.)

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

<http://www.advantech.com>

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

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

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

This manual is for MIO-5373.

Part No. 2046537301
Printed in China

2nd Edition
November 2020

Specifications

General

- **CPU:**
 - Intel® Core™ i7-8665UE (Quad-Core, 1.70 GHz)
 - Intel® Core™ i5-8365UE (Quad-Core, 1.60 GHz)
 - Intel® Core™ i3-8145UE (Dual-Core, 2.20 GHz)
- **System memory:** Dual Channel/SODIMM DDR4-2400 MT/s, up to 32 GB
- **BIOS:** AMI EFI 256Mbit
- **Watchdog timer:** 65536 level, 0~65535 sec
- **TPM 2.0**
- **iManager 3.0:** Yes
- **Expansion interface:**
 - M.2:
 - 1 x M.2 E-key 2230
 - 1 x M.2 B-key 2280 (SATA or NVMe PCIe x2), 3042 LTE module (support USB 2.0 only), optional M-key 2280 NVMe PCIe x4.
 - MI/O Extension connector: 4 x PCIe x1, 1 x PCIe x4, USB 2.0, LPC, SMBus, Line-out, and 12V/5V Power supply
- **Battery:** Lithium 3 V/210 mAh
- **Audio:** Supports High Definition Audio (HD), line-in, line-out, and Mic-in

Display

- **Controller:** Intel® WHL-U SoC integrated, HDMI display output ALC-888S for 48-bit LVDS display output
- **Maximum resolution:**
 - LCD:
 - LVDS Dual Channel 48-bit up to 1920x1200
 - Option eDP 1.4 up to 4096x2304@60 Hz
 - HDMI/DP:
 - 1 x Port HDMI 1.4 up to 4096x2160@30/24 Hz
 - 1 x Port DP 1.2 up to 4096x2306@60 Hz
- **Multiple display:** Triple simultaneous displays by 48-bit LVDS/eDP+HDMI+DP

Ethernet Interface

- **Speed:** 10/100/1000 Mbps
- **Controller:** GbE1 - Intel i219, GbE2 - Intel i210-AT
- **Connector:** RJ45 x 2

I/O

- **Internal I/O:** 2 x SATA 6 Gb/s, 2 x USB 2.0, 1 x RS232/422/485, 16-bit GPIO, Inverter, SMBus, I2C*, HD Audio, LVDS, and System FAN
- **Rear I/O:** 4 x USB 3.1, HDMI, DP, 2 x RJ-45, 1 x RS232/422/485, 1 x DC-Jack (*optional)
- **MI/O expansion:** 4 x PCIe x1, 1 PCIe x4, USB 2.0, LPC, SMBus, Line-out, and 12 V/5 V Power supply
- **Power connector type:** Default support 2 x 2 pin ATX power connector, DC Jack is supported by request

Specifications (Cont.)

Mechanical and Environmental

- **Dimensions (L x W):** 146 x 102 mm (5.7 x 4 in)
- **Power supply type:** ACPI support for ATX only
- **Power requirement:** Vin: 12 V-24 V +/- 10%
- **Power consumption:**
 - Max:
i7-8665UE: 65.59 W (12 V) / 74.06W (24 V)
i5-8365UE: 71.28 W (12 V) / 74.04W (24 V)
i3-8145UE: 35.70 W (12 V) / 38.68W (24 V)
 - Typical: Idle mode in Windows 10
i7-8665UE: 6.68 W (12 V) / 8.71W (24 V)
i5-8365UE: 7.55 W (12 V) / 7.55W (24 V)
i3-8145UE: 7.03 W (12 V) / 8.18W (24 V)
- **Operating temperature:** 0 ~ 60 °C (32 ~ 140 °F)
- **Weight:** 0.67 kg/1.47 lb (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
J1	AT/ATX mode selection
J2	RI# 5V/12V selection pin for CN9
J3	Panel Voltage Selection
J4	LVDS JEIDA and VESA mode Selection
SW1	Clear CMOS

Jumpers and Connectors (Cont.)

Connector	
Label	Function
CN1	DDR4 SODIMM 260P/H5.2mm
CN2	DDR4 SODIMM 260P/H9.2mm
CN3	DC Input Connector
CN5	RTC Battery Connector
CN8	Power/LED/Case Open/Buzzer Connector
CN9	COM Port Connector (RS232+RS422+RS485)
CN10	COM Port Connector (RS232+RS422+RS485)
CN11	RJ45 Connector (2 port)
CN12	Inverter Connector
CN13	LVDS Connector
CN14	eDP Connector
CN15	HDMI and DP++ Connector
CN16	Key E Connector
CN17	Key B and Key M (option) Connector
CN20	SIM Card Connector
CN22	USB 3.1 Connector (2 ports)
CN23	USB 3.1 Connector (2 ports)
CN24	Internal USB Connector
CN25	HDD Power Connector
CN26	HDD Connector
CN27	HDD Connector
CN28	GPIO/RS232 Connector
CN29	Audio Connector
CN30	GPIO/RS232 Connector
CN30A1	MIOe Connector
CN31	I2C Bus Connector
CN32	System FAN Connector
CN35	CANBus Connector
CN36	SMBus Connector
CN37	DC Input Connector (Adapter)




Jumpers and Connectors (Cont.)

J1: ATX/AT Mode Selection

Function	Jumper Settings
AT Mode (Default)	
ATX Mode	

Pin	Signal Pin Definitions
1	AT_DET#
2	GND




J2: RI# 5V/12V selection pin for CN9

Function	Jumper Settings
COM (CN9) voltage settings: +V5	
COM (CN9) voltage settings: +V12	
Panel voltage settings: RI# (Default)	

Pin	Signal Pin Definitions
1	+V5
2	CN9_RI#
3	COM_RI#
4	CN9_RI#
5	+V12
6	CN9_RI#

Jumpers and Connectors (Cont.)

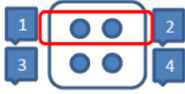
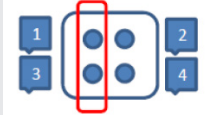
J3: Panel Voltage Selection

Function	Jumper Settings
Panel Voltage Setting: +V3.3 (Default)	
Panel Voltage Setting: +V5	
Panel Voltage Setting: +V12	

Pin	Signal Pin Definitions
1	+V3.3
2	NC
3	+V_CH7511B_LCD
4	+V12
5	+V5
6	NC

Jumpers and Connectors (Cont.)

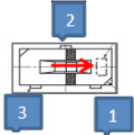
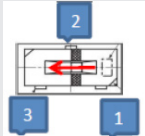
J4: LVDS JEIDA and VESA mode selection

Function	Jumper Settings
JEIDA mode Setting: +V3.3	
VESA mode Setting: GND (Default)	

Pin	Signal Pin Definitions
1	LVDS1_VCON
2	LVDS1_VCC
3	GND
4	NC

Jumpers and Connectors (Cont.)

SW1: Clear CMOS

Function	Jumper Settings
Keep COMS Data (Default)	
Clear CMOS Date	

Pin	Signal Pin Definitions
1	RTC_a_RST#
2	RTC_RST#
3	GND

Caution

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



Connector Locations

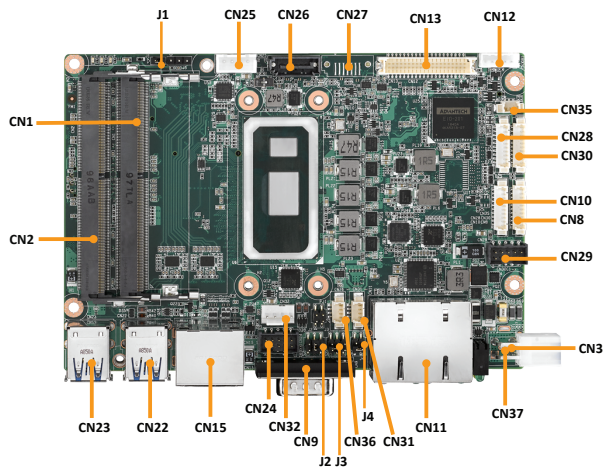


Figure 1: MIO-5373 Connector Locations (Top Side)

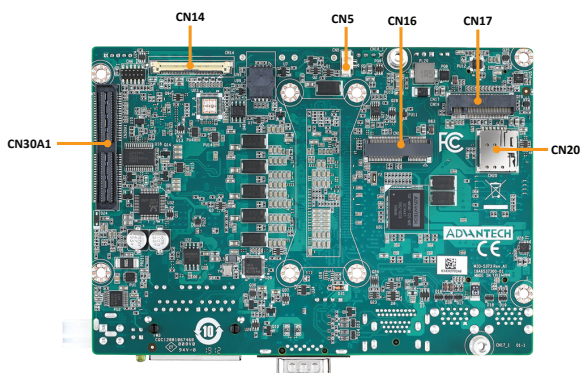


Figure 2: MIO-5373 Connector Locations (Bottom Side)



Figure 3: MIO-5373 Connector Locations (Coastline)



Figure 4: MIO-5373 Connector Locations With Single Layer HDMI (Coastline)

Mechanical Diagram

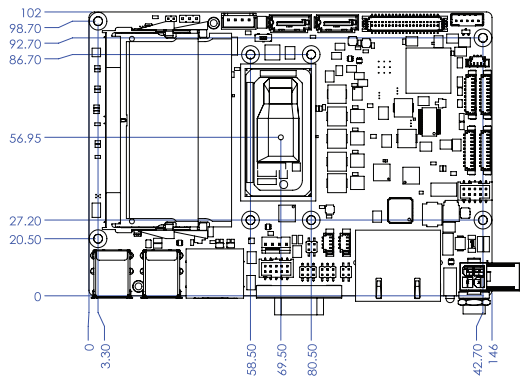


Figure 1: MIO-5373 Mechanical Diagram (Top Side)

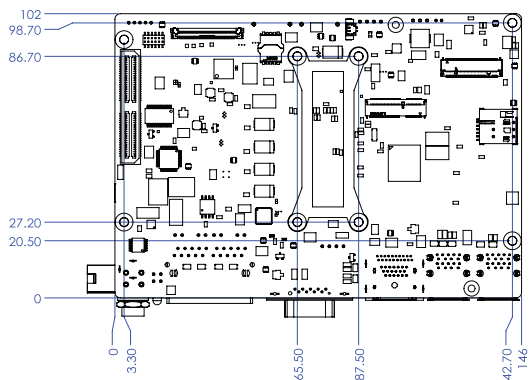


Figure 2: MIO-5373 Mechanical Diagram (Bottom Side)

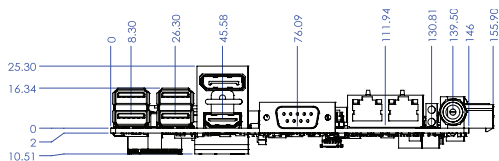


Figure 3: MIO-5373 Mechanical Diagram (Coastline)

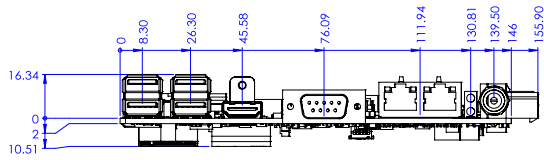


Figure 4: MIO-5373 Mechanical Diagram for Single Layer Display HDMI Connector (Coastline)

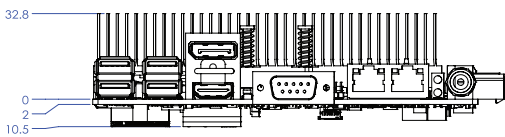


Figure 5: MIO-5373 Mechanical Diagram (with Heatsink)

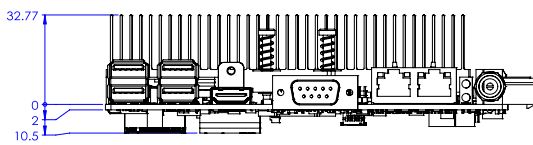
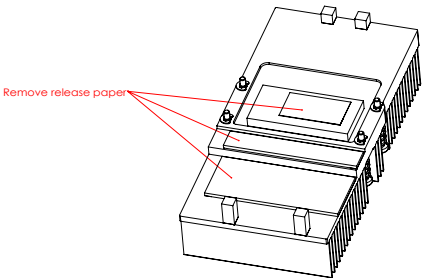


Figure 6: MIO-5373 Mechanical Diagram for Single Layer Display HDMI Connector (with Heatsink)

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 four screws inside the white box, follow the installaion sequence demonstrated below to secure the heatsink:

