

UNO-148 V2

Fanless DIN-Rail IPC with 13th Gen Intel® Core™ i CPU



Features

- Intel 13th Gen Core i7/i5/i3 Processor with 8GB DDR5 memory
- Port isolation for 8 x DI, 8 x DO, 4 x COM
- Supports M.2 M key 2280 NVMe SSD storage, and M.2 E Key 2230 wi-fi modules
- Supports Time-Sensitive Network (TSN) technology
- Microsoft Azure IoT Edge and AWS IoT Greengrass certified

Introduction

Advantech's UNO-100 series are DIN-rail integrated controller that feature a modular design for flexible configuration according to specific usage requirements.

UNO-148 V2 is equipped with an 13th Generation Intel® Core™ i Processor with 8GB DDR5 RAM, and 3 x LAN, 4 x COM, 3 x USB 3.2, 1 x USB 2.0, 8 x DI, 8 x DO, and 2 x DP 1.4. The controller also supports 1 x full-size mini PCIe, 2 x M.2 M Key, 1 x M.2 E key, and 1 x nano SIM card slot for convenient expansion to satisfy diverse industrial applications. Compliant with IEC 61010-1 safety requirements for industrial use, UNO-148 V2 can be equipped with an optional second-stack extension kit that supports Advantech's iDoor technology for integrating additional industrial Fieldbus, wireless communication, I/O, and peripheral modules.

Specifications

General

- Certification** CE, FCC, UL61010-2-201, CCC, BSMI
- Dimensions (W x D x H)** 53 x 140 x 200 (1.4 x 5.5 x 7.8 in)
- Form Factor** Regular size
- Enclosure** Aluminum housing
- Mount Option** DIN Rail
- Weight (Net)** 1.8 kg / 3.96 lb
- Power Requirement** TBC
- Power Consumption** 31W (typical), 55W (max.)
 - For UNO-148-IS2EA (iDoor+SATA): 61W max.
 - For UNO-148-P11EA (PCIe x4): 76W max.
- OS Support** Windows 10 2019 LTSC, Windows 11, AdvLinux (Ubuntu 22.04)

System Hardware

- BIOS** AMI UEFI 256Mbit
- Watchdog Timer** Programmable timer with 255 intervals (1 ~ 255 sec)
- Security** TPM2.0
- Processor** Intel® Core™ i7-1365UE dual-core, 1.7 GHz (up to 4.9 GHz)
Intel® Core™ i5-1335UE dual-core, 1.3 GHz (up to 4.5 GHz)
Intel® Core™ i3-1315UE dual-core, 1.2 GHz (up to 4.5 GHz)
- Memory** 8 GB DDR5 SODIMM-4800 (up to 64 GB with 2 x slots)
- Graphics Engine** Intel® Iris® X
- Ethernet** LAN A: Intel® i219-LM GbE, IEEE 802.3AZ/802.1AS
LAN B: Intel® i226-IT GbE, IEEE 802.3AZ/802.1AS
LAN C: Intel® i226-IT GbE, IEEE 802.3AZ/802.1AS
Supported via i225 LAN port
IEEE 802.1Qav/802.Qbv
- TSN**
- LED Indicators** 1 x Power, 1 x RTC battery, 1 x LAN (active, status), and 1 x programmable indicator
- Expansion** 1 x Full-sized mPCIe (PCIe/USB 2.0 signals)
1 x M.2 (E key) for 2230 Wi-Fi modules (PCIe signals)
2 x M.2 (M key) for 2280 NVMe (PCIe x4 signals)
1 x nano SIM card slot

I/O

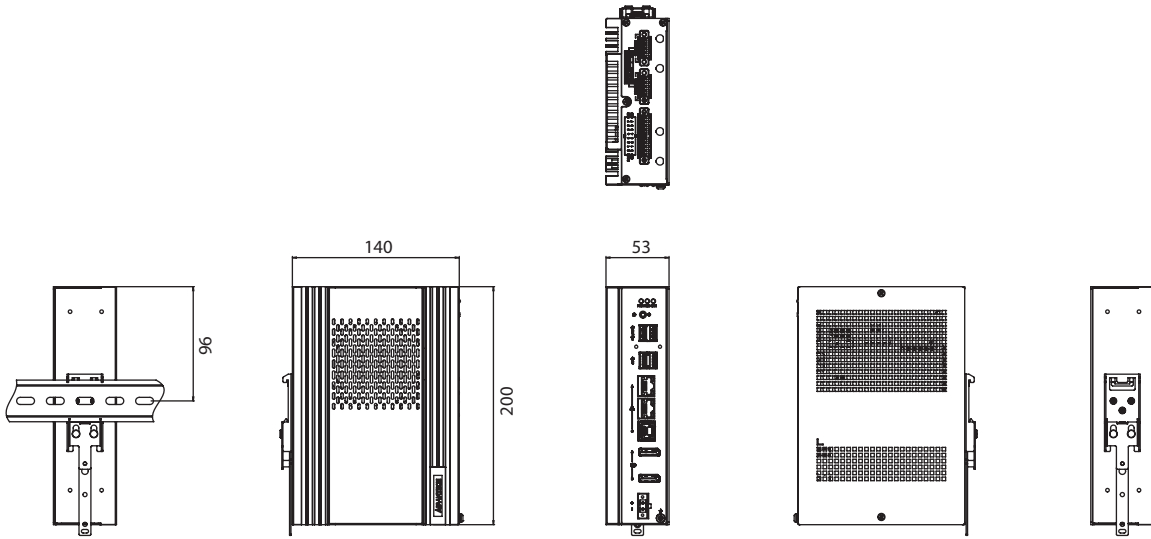
- Isolated Serial Ports** 4 x RS-232/422/485 (terminal block)
50 ~ 115.2 kbps (isolation protection: 2500 V_{DC})
- LAN** 1 x 10/100/1000BASE-T Fast Ethernet (RJ45)
2 x 10/100/1000/2500BASE-T Fast Ethernet (RJ45)
- USB** 3 x USB 3.2 (Gen 2), 1 x USB 2.0 (Type A)
- Isolated DI/O** 8 x Digital input channels with 2500 V_{DC} isolation protection
 - Wet contact: Logic 0: 10 ~ 30 V_{DC}/
Logic 1: 0 ~ 3 V_{DC}
 - Dry contact: Logic 0: Shorted to GND/
Logic 1: Open8 x Digital output channels
 - Output voltage: 5 ~ 30 V_{DC}
 - Output capability sink: 500 mA max./channel
- Displays** 2 x DP 1.4, up to 7680 x 3840 (8K) @ 60 Hz
- Power Connector** 1 x 2-pin terminal block

Environmental

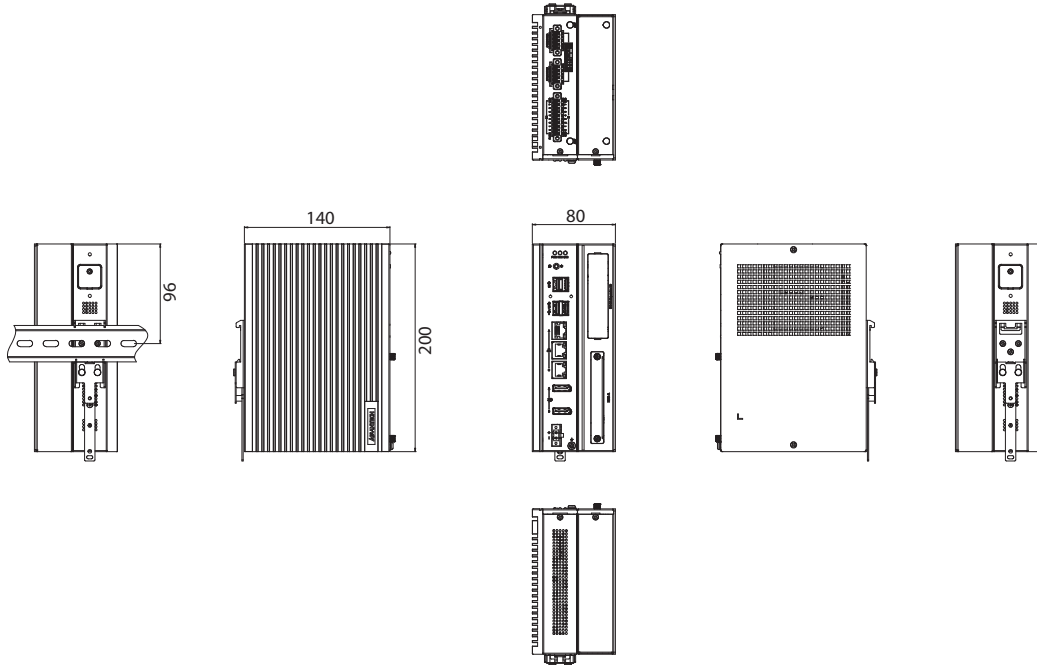
- Operating Temperature** For TDP @ 15W, -20 ~ 60 °C/-4 ~ 140 °F with 0.7 m/s airflow
For TDP @ 22W, -20 ~ 60 °C/-4 ~ 140 °F with fan kit
- Storage Temperature** -40 ~ 85 °C/-40 ~ 185 °F
- Relative Humidity** 95% RH @ 40 °C/104 °F, non-condensing
- Shock Protection** Operating, IEC 60068-2-27, 50G, half sine, 11ms
- Vibration Protection** Operating, IEC 60068-2-64, 4Grms, random, 5 ~ 500Hz, 1hr/axis (SSD)
Operating, IEC 60068-2-64, 0.3Grms, random, 5 ~ 500Hz, 1hr/axis (HDD)
- Ingress Protection** IP20

Dimensions

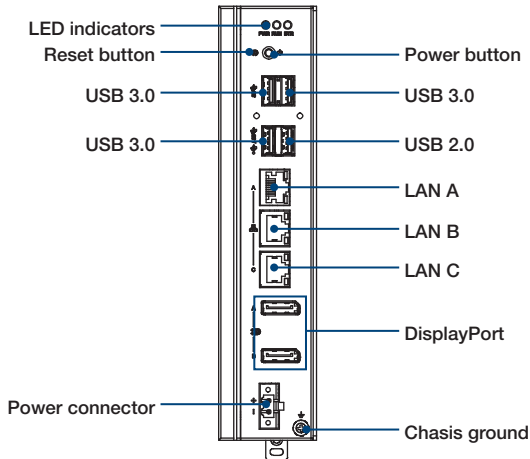
Unit: mm



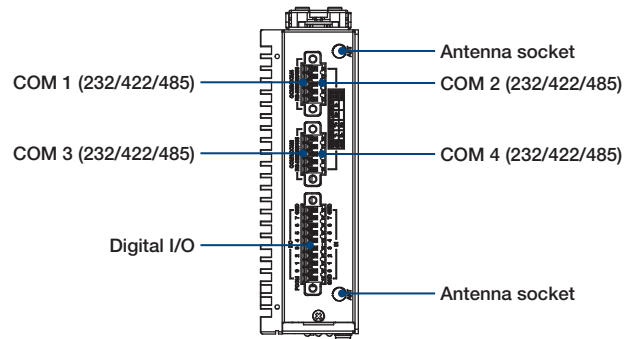
(With optional extension kit)



Front I/O



Top I/O



Ordering Information

- **UNO-148-D73BA** DIN-rail controller with Intel® Core™ i7-1365UE dual-core (up to 4.9 GHz), 8 GB DDR5, 3 x LAN, 4 x COM, 4 x USB, 8 x DI/O
- **UNO-148-D53BA** DIN-rail controller with Intel® Core™ i5-1335UE dual-core (up to 4.5 GHz), 8 GB DDR5, 3 x LAN, 4 x COM, 4 x USB, 8 x DI/O
- **UNO-148-D33BA** DIN-rail controller with Intel® Core™ i3-1315UE dual-core (up to 4.5GHz), 8 GB DDR5, 3 x LAN, 4 x COM, 4 x USB, 8 x DI/O

Extension Kit

- **UNO-148-IS2EA** Extension kit with 1 x iDoor slot + 2.5" SSD/HDD Storage slot
 - **UNO-148-P11EA** Extension kit with 1 x PCIe x4 slot
- (Refer to the extension kit datasheet for more details)

Optional Accessories

DIN-Rail Power Supply

- **96PSD-A120W24-MN** A/D 100 ~ 240V, 120W, 24V NDR DIN rail
- **PSD-A120W24** DIN rail A/D 100 ~ 240V, 120W, 24V

Adapter & Power Cable

- **96PSA-A120W19T2-3** Adaptor A/D 100-240V 120W 19V C14 cord end 62368
- **1702002600** Power cable US plug, 1.8 M (industrial grade)
- **1702002605** Power cable EU plug, 1.8 M (industrial grade)
- **1702031801** Power cable UK plug, 1.8 M (industrial grade)
- **1700000596-11** Power cable China/Australia plug, 1.8 M (industrial grade)

System FAN KIT

- **UNO-148-FANKIT** Accessory for cooling HS

Extension kit



Advantech offers an optional second-stack extension kit for expanding the system functionalities

UNO-148-IS2EA

2nd Stack extension kit with 1 x iDoor slot + 1 x 2.5" SSD/HDD slot



Specifications

General	
Ports	1 x iDoor Slot 1 x 2.5 SSD/HDD
Interface (signal)	mPCIe (PCIe / USB2.0) 2.5"SSD/HDD (SATA)
Dimensions (W x D x H)	35 x 140 x 200 mm/1.4 x 5.5 x 7.8 in
Weight	0.4 kg (0.8 lb)

Ordering Information

Part Number	Description
UNO-148-IS2EA	UNO-148 2nd-stack extension kit with 1 x iDoor + 1 x 2.5" SSDHDD

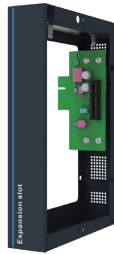
Extension kit



Advantech offers an optional second-stack extension kit for expanding the system functionalities

UNO-148-P11EA

Second-stack extension kit with 1 x PCIe x4 expansion kit



Specifications

General	
Ports	1 x PCIe x4 slot
Dimensions (W x D x H)	45 x 140 x 200mm (1.4 x 5.5 x 7.8 in)
Weight	0.5 kg/1.1 lb

Notes

1. When UNO-148-P11EA is installed, the PCIe signals of the mPCIe port (Mini1) and SATA signals of the M.2 B-key (CN14) socket are occupied by the expansion kit and cannot be used.
2. Because of the power used by PCIe x4, the recommended power input for UNO-148 is 24 V_{DC} ($\pm 20\%$).

Ordering Information

Part Number	Description
UNO-148-P11EA	UNO-148 Second-stack Extension kit, 1 PCIe x4 slot