UNO-137 V3

Small-Size Integrated DIN-Rail IPC with Intel® Atom® x7433RE



Features

- Intel® Atom® x7433RE (1.5 GHz) processor
- Wide power input range (10 ~ 36 V_{DC})
- Wide operating temperature range (-40 ~ 70 °C/-40 ~ 158 °F)
- Port isolation for 8 x DI, 8 x DO, 2 x COM
- DP++ ensures HDMI/DVI compatibility
- Dual storage: 1 xM.2 M-key 2242 & 1 xM.2 B-key
- Onboard TPM 2.0 provides hardware-based security
- Modular design for optional iDoor extension
- Ruggedized DIN-rail kit
- Compliant with IEC 61010-1 safety requirements

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-137 V3 is equipped with an Intel® Atom® x7433RE processor (1.5 GHz), DD5 DRAM up to 16GB, and wide operating temperature range (-40 ~ 70 °C/-40 ~ 158 °F), as well as 2 x LAN, 2 x COM, 3 x USB 3.2, 1 x USB 2.0, 8 x DI, 8 x DO, and 2 x DP 1.4b. The controller also supports 1 x M.2 (B-key), 1 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-137 V3 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, UL 61010-2-201, CCC, BSMI
- **Dimensions (W x D x H)** 46.8 x 105 x 150 mm (1.9 x 4.1 x 5.9 in)
- **Form Factor** Small
- **Enclosure** Aluminum housing
- **Mounting** DIN-rail
- **Weight (Net)** 0.8 kg (1.7 lb)
- **Power Requirement** 10 ~ 36 V_{DC}
- **Power Consumption** 18W (typical), 62.8W (max.)
  *For USB iDoor (PCM-34U2U3-AE): 72W max.
- **OS Support** Win 10 2021 LTSC, Win 11 2024 LTSC, AdvLinux (Ubuntu 22.04)

System Hardware

- **BIOS** AMI 256 Mbit SPI
- **Watchdog Timer** Programmable timer with 255 intervals (1 ~ 255 sec)
- **Hardware Security** TPM2.0
- **Processor** Intel® Atom® x7433RE, 1.5 GHz (up to 3.4 GHz)
- **Memory** 262-pin DDR5 4800 MHz SODIMM (up to 16GB)
- **Graphics Engine** Intel® UHD Graphics Up to 32EUs
- **Ethernet** Intel® i226-IT 2.5G, IEEE802.1AS, 802.3az
- **LED Indicators** 1 x power LED, 1 x RTC battery LED, 1 x RUN LED, ERR/EX1/EX2
- **Storage** 1 x M.2 (B-key) 3052 (PCIex1/SATA signal)
  1 x M.2 (M-key) 2242 (PCIex2 signal)
- **Expansion** 1 x M.2 (B-key) 3052 (PCIex1/SATA/USB3.0 signal)
  1 x M.2 (M-key) 2242 (PCIex2 signal)
  1 x nano SIM card slot (come with M.2 M-key)
  1 x M.2 (E-key) 2230 Wi-Fi modules (PCIe x1 + USB2.0 signal)

*Storage and expansion functions share the same M.2 slots.

I/O

- **Isolated Serial Ports** 2 x RS-232/422/485 (terminal block)
  50bps ~115.2 kbps (isolation protection: 2500 V_{DC})
- **LAN** 2 x 10/100/1000/2500 Mbps Intel® I226-IT (RJ45)
- **USB** 3 x USB3.2 Gen2 (Type-A), 1 x USB2.0 (Type-A), 1 x USB3.2 Gen2 (Type-C)
- **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: Open

  8 x Digital output channels
  - Output voltage: 5 ~ 30 V_{DC}
  - Output capability sink: 500 mA max./channel
- **Displays** 1 x DP 1.4b, up to 4096 x 2160 @ 60Hz
- **Power Connector** 1 x 2-pin terminal block

Environment

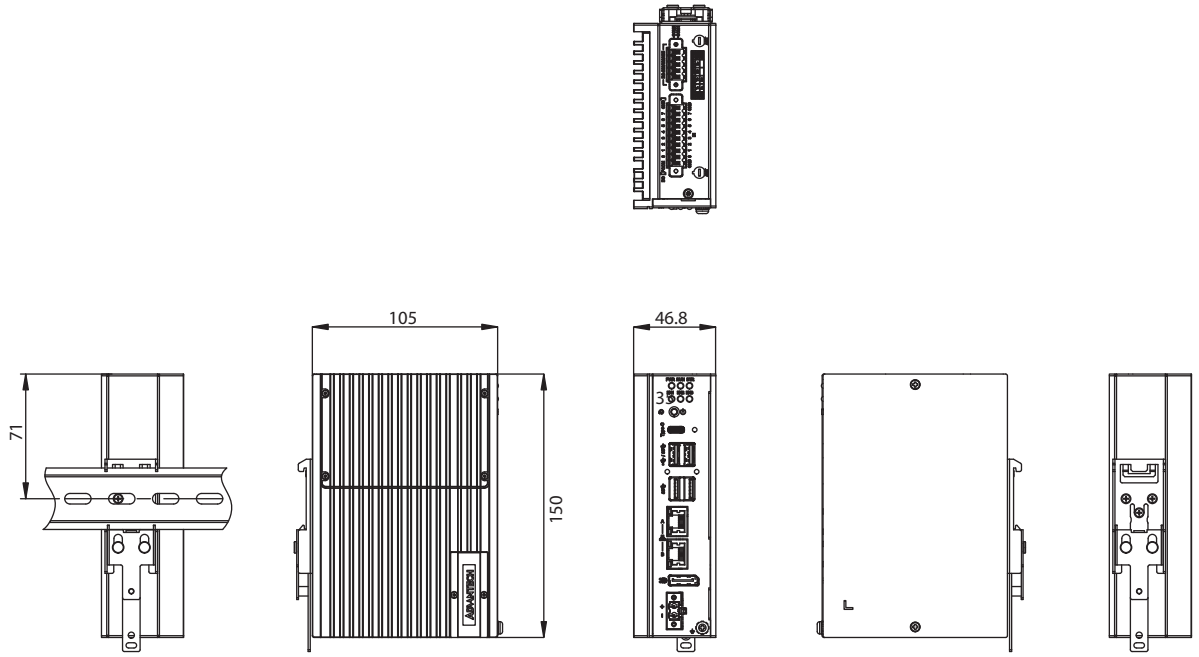
- **Operating Temperature*** -40 ~ 70 °C/-40 ~ 158 °F with 0.7m/s airflow, with wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals
  -40 ~ 50 °C without airflow, with wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals
- **Storage Temperature** - 40 ~ 85 °C/-40 ~ 185 °F
- **Relative Humidity** 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, 2 Grms, random, 5 ~ 500 Hz, 1hr/axis
- **Ingress Protection** IP30

* Recommend to use wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals like SSD and memory

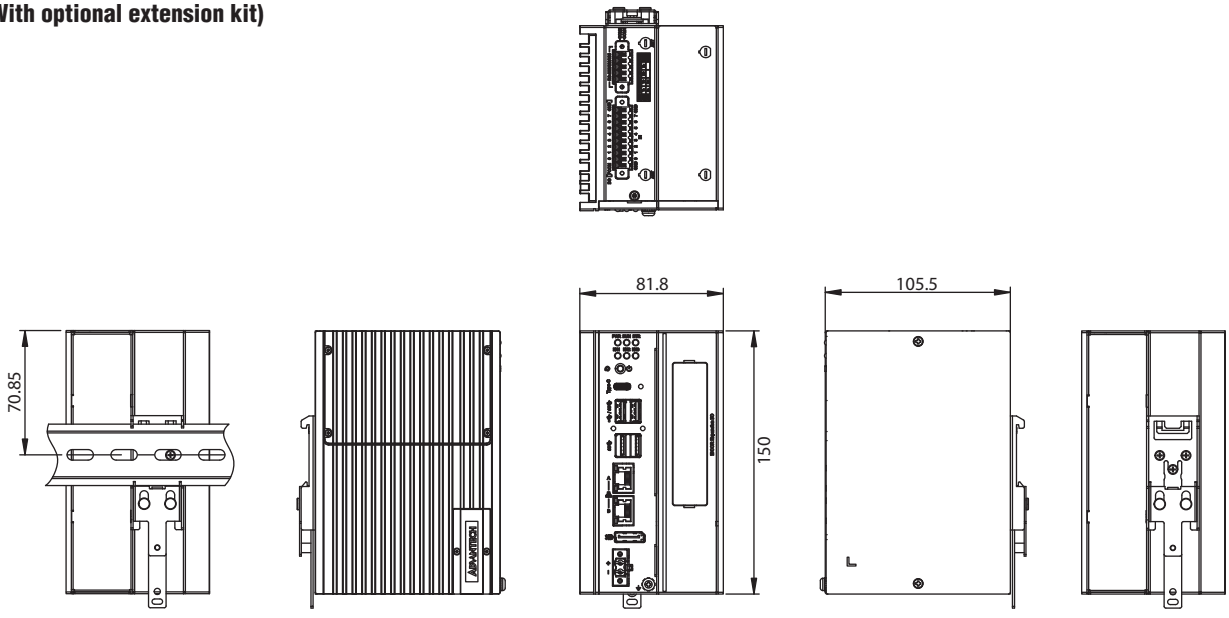
All product specifications are subject to change without notice.

Dimensions

Unit: mm

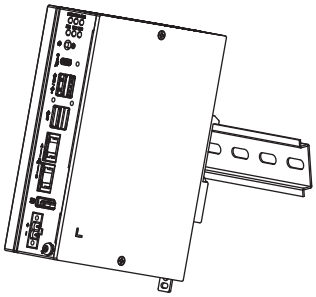


(With optional extension kit)

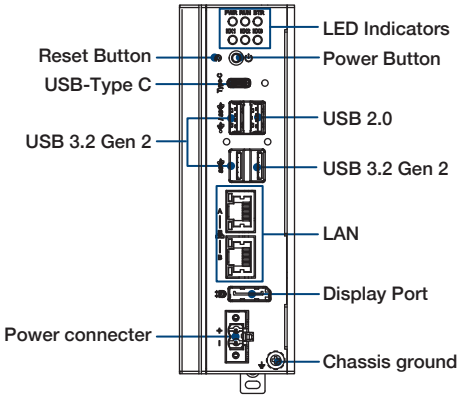


Installation Scenario

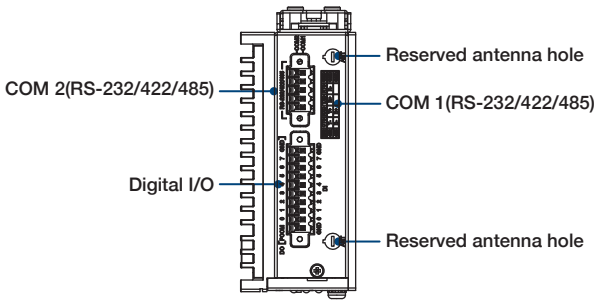
DIN-rail mounting installation



Front I/O



Top I/O



Ordering Information

- **UNO-137V3-X74NA1E** Compact DIN-rail controller with Intel® x7433RE CPU (1.5 GHz), 2 x LAN, 2 x COM, 4 x USB, 8DI/8DO, 1 x Type C
- **UNO-137V3-ID1EC** UNO-137 second stack extension kit with 1 x iDoor slot

Embedded OS

- **20701WLE1S0031** Img W11 LTSC v7.04 B002 UNO-137V3 Entry
- **TBC** Img WIN10 LTSC x64 v6.08 B061 UNO-137_V3 Entry
- **TBC** Image AdvLinuxTu-IOTG_x64 V4.0.4 for UNO series

Optional Accessories

- **1990034408N010** Thermal Pad for CPU
- **1990026727N000** Thermal Pad for RAM
- **98R1137V300** UNO-137V3 Thermal kit for B key
- **98R1137V301** UNO-137V3 Thermal kit for E key

DIN-Rail Power Supply

- **PSD-A60W24** A/D 100~240V, 60W, 24V (ADV)
- **PSD-A120W24** A/D 100 ~ 240V, 120W, 24V(ADV) (recommended for use with PoE iDoor module)

Adapter & Power Cable

- **XARK-ADP-90MDH** ADP A/D 100-240V 90W 19V W/PFC C6 END CORD 2 PIN
- **1700001524** Power Cord UL 3P 10A 125V 183cm for US
- **170203183C** Power Cord EU 3P 2.5A 250V 183cm for EU
- **170203180A-01** Power Cord ASTA 3P 2.5A 250V 183cm
- **1700019146** Power Cord CCC 3P 2.5A 250V 183cm for CN
- **1700018553** Power Cord SAA 3P 2.5A 250V 183cm for AU
- **1700008921-11** Power Cord PSE 3P 7A 125V 183cm for AJP
- **96PSA-A120W24T2-4** ADP A/D 100-240V 120W 24V C14 CORD END 62368 (recommended for use with PoE iDoor module)
- **1702002600** Power cable US plug, 1.8 M (industrial grade)
- **1702002605** Power cable EU plug, 1.8 M (industrial grade)
- **1702031801-11** Power cable UK plug, 1.8 M (industrial grade)
- **1700000596-11** Power cable China/Australia plug, 1.8 M (industrial grade)
- **1700000237-31** Power cable Japan plug, 1.8 M (industrial grade)

5G module and Antenna

- **EWM-351DQGI2** 5G NR RF1, M.2 3052 Key B
- **AIW-356** 5G Sub6+GNSS M.2 3052 Key B
- **1751000633-01** RF Cable SMA/F MHF4L/113 BLK L200mm

WIFI module and Antenna

- **AIW-173BQ-GI1** Qualcomm WCN7851 Wi-Fi 7 M.2 2230 BT-USB
- **AIW-170BQ-001** Qualcomm WiFi6E M.2 2230 E key
- **2 x AIW-512**
- **2 x AIW-513**
- **1750008717-01** Dipole Ant. D.B 2.4/5G WIFI 3dBi SMA/M-R BLK
- **1751000635-01** RF Cable SMA/F-R MHF4L/113 BLK L200mm

Please note: If some optional modules are offered with the system, additional system certificates may be required in certain regions/countries.
Please contact Advantech for certificate compliance.

Extension Kit



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

UNO-137V3-ID1EC

Second-stack extension kit with 1 x iDoor slot

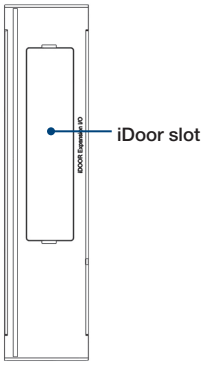


Specifications

General	
Ports	1x iDoor slot
Dimensions (W x D x H)	35 x 105 x 150 mm (1.4 x 4.1 x 5.9 in)
Weight	0.2 kg (0.4 lb)

Note: The system operating temperature can be maintained at 60 °C/140 °F with most iDoor modules (excluding PoE and USB 3.0 modules)

Front I/O



Ordering Information

Part Number	Description
UNO-137V3-ID1EC	UNO-137 V3 second-stack extension kit with 1 x iDoor slot

Supported iDoor Modules

iDoor Smart Digital/Analog I/O	
PCM-34D2R2-AE	Isolated RS-232, DB9 x2, M.2 Bkey(2242, USB)
PCM-34D2R4-AE	Isolated RS-422/485, DB9 x2, M.2 Bkey(2242, USB)
PCM-34D4R2-AE	Non-Isolated RS-232, DB37x1, M.2 Bkey(2242, USB)
PCM-34D4R4-AE	Non-Isolated RS-422/485,DB37x1,M.2 Bkey 2242,USB
PCM-34R1TP-AE	Intel I225, 2.5Gb/s, IEEE 1588, TSN, RJ45*1, M.2
PCM-34R2GL-AE	2 Port Giga LAN Intel i350, M.2 B+M key
PCM-37D24DI-AE	24ch Isolation Digital I/O, 16DI/ 8DO, DB37 x1
iDoor CORE	
PCM-3300MR-AE	MRAM, 2MByte, M.2 B+M key (3052, PCIex1)
PCM-34U2U3-AE	2-Port USB 3.0, M.2 B+M key (3042, PCIex1)