

UNO-137 V2

Small-Size Integrated DIN-Rail IPC with Intel® Atom® x6413E and x6425RE

NEW



Features

- Intel® Atom® x6413E (1.5 GHz) and x6425RE (1.9GHz) processor with 8GB DDR4 memory
- 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 x M.2 M-key 2242 PCIe/NVMe or SATA/SSD and 1 x mSATA
- 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 V2 is equipped with an Intel® Atom® x6413E processor (1.5 GHz) & optional x6425RE (1.9 GHz), 8 GB DDR4 RAM, 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 1.2. The controller also supports 1 x full-size mini PCIe, 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 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, UL 61010-2-201, CCC, BSMI
- Dimensions (W x D x H)** 35 x 105 x 150 mm (1.4 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** 21W (typical), 47W (max.)
*For USB iDoor (PCM-24U2U3-BE): 56W max.
*For PoE iDoor (PCM-24R2PE-AE): 77W max.
- OS Support** Win 10 2021 LTSC, Win 11, AdvLinux (Ubuntu 20.04)

System Hardware

- BIOS** AMI 256 Mbit SPI
- Watchdog Timer** Programmable timer with 255 intervals (1 ~ 255 sec)
- Hardware Security** TPM2.0
- Processor** Intel® Atom® x6413E, 1.5 GHz (up to 3.0 GHz)
Intel® Atom® x6425RE, 1.9 GHz
- Memory** Built-in 8 GB DDR4, 3200 MHz (Up to 32 GB)
*Be sure to select thermal pad for CPU/RAM for RAM capacity expansion
- Graphics Engine** Intel® UHD Graphics for 10th Gen Intel® Processors
- Ethernet** Intel® i226-IT 2.5G, IEEE802.1AS, 802.3az
- LED Indicators** 1 x Programmable LED, 1 x power LED, 1 x RTC battery LED, and LAN (active, status)
- Storage** 1 x M.2 M key 2242 SSD (PCIe/x2/SATA signal)
1 x M.2 E key 2230 SSD (PCIe x2 signal)
- Expansion** 1 x Full-size mPCIe (PCIe/USB2.0/SATA signal)
1 x nano SIM card slot (come with mPCIe)
1 x M.2 (E-key) 2230 Wi-Fi modules (PCIe x2 + USB2.0 signal)

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 (RJ45)

- USB** USB (Type A): 2 x USB 3.2 Gen2, 1 x USB 3.2 Gen1 and 1 x USB 2.0
- Isolated DI/O** 8 x Digital input channels with 2500 V_{DC} isolation protection
 - Wet contact: Logic 0: 0 ~ 3 V_{DC}/
Logic 1: 10 ~ 30 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 1.2, up to 4096 x 2160 @ 60Hz
- Power Connector** 1 x 2-pin terminal block

Environment

- Operating Temperature*** (CPU x6413e)-40 ~ 70 °C/-40 ~ 158 °F with 0.7m/s airflow, with wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals
(CPU x6425RE) -40 ~ 60 °C/-40 ~ 140 °F with 0.7m/s 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** IP20

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

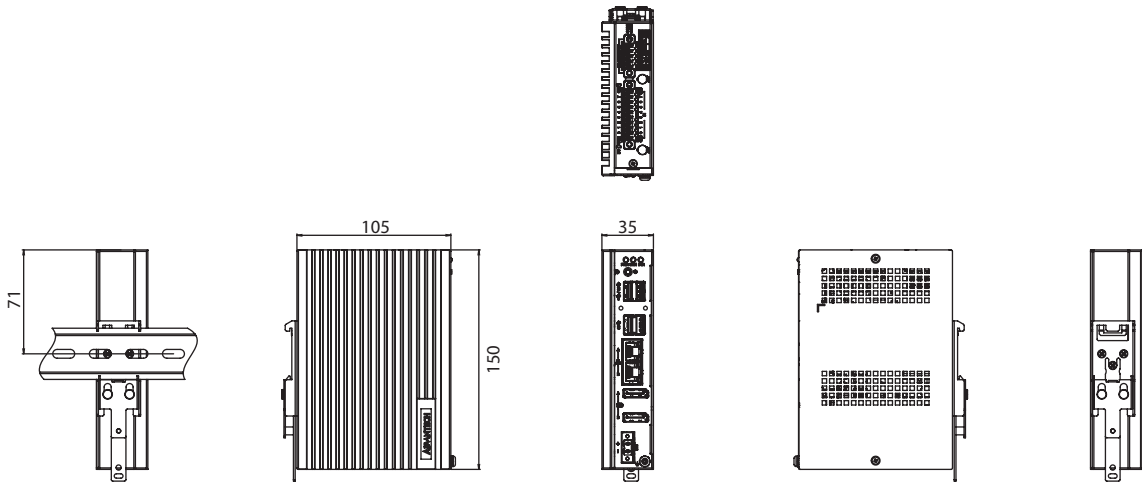
Installation Scenario

DIN-rail mounting installation

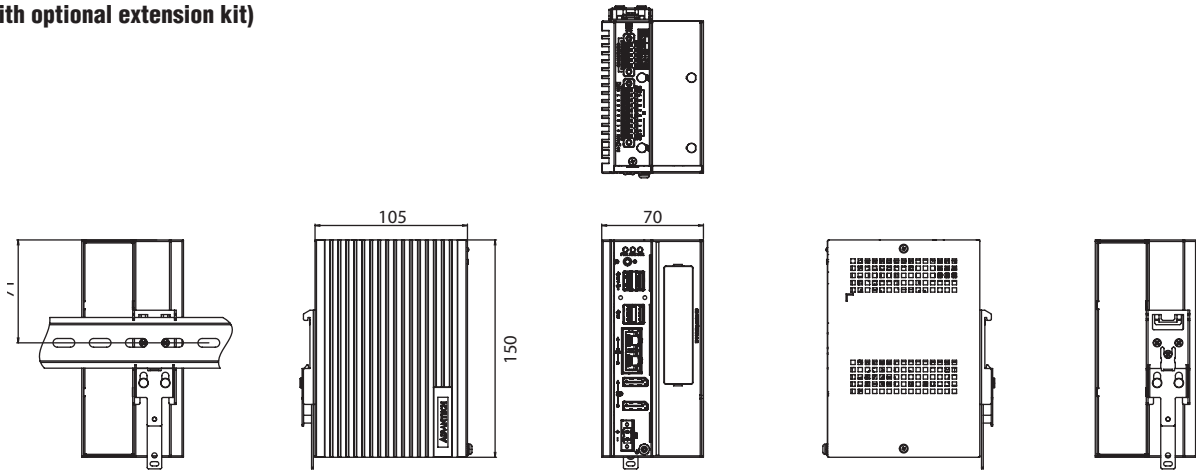


Dimensions

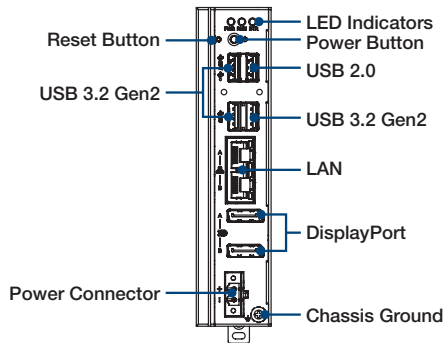
Unit: mm



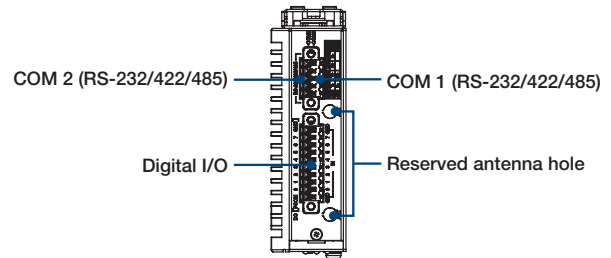
(With optional extension kit)



Front I/O



Top I/O



Ordering Information

- **UNO-137-E23BA** Compact DIN-rail controller with Intel® x6413E CPU (1.5 GHz), 8 GB DDR4, 2 x LAN, 2 x COM, 4 x USB, 8 x DI/O
- **UNO-137-I23BA** Compact DIN-rail controller with Intel® x6425RE CPU (1.9 GHz), 8 GB DDR4, 2 x LAN, 2 x COM, 4 x USB, 8 x DI/O
- **UNO-137-ID1EC** UNO-137 second stack extension kit with 1 x iDoor slot

Embedded OS

- **20701WLE1S0008** Img WIN11 LTSC x64 v7.01 B011 UNO-137_V2 Entry
- **20701WX1ES0002** Img WIN10 LTSC x64 v6.08 B061 UNO-137_V2 Entry
- **20701U22DS0001** Image AdvLinuxTu-IOTG_x64 V4.0.4 for UNO series

Optional Accessories

- **UNO-137-VEGA330** Accessory kit for VEGA-330
- **1990034408N010** Thermal Pad for CPU
- **1990026727N000** Thermal Pad for RAM

DIN-Rail Power Supply

- **PSD-A60W24** A/D 100~240V, 60W, 24V (ADV)
- **96PSD-A120W24-MN** A/D 100 ~ 240V, 120W, 24V NDR
- **PSD-A120W24** A/D 100 ~ 240V, 120W, 24V(ADV) (recommended for use with PoE iDoor module)

Adapter & Power Cable

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** Power Cord BSI 3P 2.5A 250V 183cm for UK
- **1700019146** Power Cord CGC 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** Power cable UK plug, 1.8 M (industrial grade)
- **1700000596** Power cable China/Australia plug, 1.8 M (industrial grade)
- **1700000237-31** Power cable Japan plug, 1.8 M (industrial grade)

WiFi module and Antenna

- **EWM-W165M203E** Intel 6E AX210 noVpro, WiFi6+BT5.3,-40~85 degree
- **1750008717-01** Dipole Ant. D.B 2.4/5G WiFi 3dBi SMA/M-R BLK
- **1750008799-01** Cable Ant.SMA/F-R-BH MFH4/113 BLK L170

mPCIe for mSATA on 2nd stack

PN	Description	Qty
1960110994N000	Bracket M.2 LV2 for UNO-137 V2	1
1930001361	Screw M3x4L S/S D=5 H=1.2 (2+) ST Ni NK	4
1960111055N000	Spreader M.2 2242 for UNO-137 V2	1
1990040611N000	Thermal pad GR25B-0H 27.8x18x4.0mm K=2.5	1
1930008481	Screw M3x4L F/S D=6.6 H=1.0 (2+) ST Ni	2
2170000093-01	GREASE X23-7762 0.5+/- 0.15g	1
2190508560	Zipper bag 85x60x0.04Tmm #2 clear	1
2110002870T000	Box 160Lx138Wx54H (o) mm ADV P	1
2163103000	Bubble Bag 120x150+50mm black	1

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-137-ID1EC

Second-stack extension kit with 1 x iDoor slot (for UNO-137-E23BA and UNO-137-I23BA)

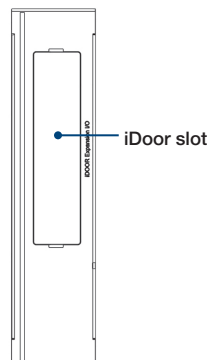


Specifications

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



Supported iDoor Modules

iDoor Industrial Fieldbus Communication	
PCM-26D2CA-BE	SJA1000 CANBus, Lattice, CANOpen, DB9 x 2
PCM-26D2CA-CE	USB CANBus, CANOpen, DB9 x 2
PCM-26D1DB-MAE/SAE	1Port, PROFIBUS, Hilscher FieldBus mPCIe, MainDv/Sub-Dv
PCM-26R2PN-MAE/SAE	2Port, PROFINET, Hilscher FieldBus mPCIe, MainDv/ Sub-Dv
PCM-26R2EC-MAE/SAE	2Port, EtherCAT, Hilscher FieldBus mPCIe, MainDv/ Sub-Dv
PCM-26R2EI-MAE/SAE	2Port, EtherNet/IP, Hilscher FB mPCIe, MainDevice/ Sub-Dv
iDoor Smart Digital/Analog I/O	
PCM-24D2R4-BE	Isolated RS-422/485, DB9 x 2, (USB type)
PCM-24D2R2-BE	Isolated RS-232, DB9 x 2, (USB type)
PCM-24D4R4-BE	Non-Isolated RS-422/485, DB37 x 1 (USB Type)
PCM-24D4R2-BE	Non-Isolated RS-232, DB37 x 1 (USB Type)
PCM-24R1TP-BE	Intel i225, 2.5Gb/s, IEEE 1588, TSN, RJ45*1
PCM-24R2PE-AE	Intel i350, GbE, PoE IEEE 802.3af, PD, RJ45 x 2
PCM-24R2GL-AE	2 Port Giga LAN Intel i350 PCIe mini card
PCM-27D24DI-AE	Digital I/O, 16 DI / 8 DO, Isolation, DB37 x 1
iDoor CORE	
PCM-2300MR-BE	MR4A16B MRAM, 4MByte, Lattice
PCM-23U1DG-CE	Internal locked USB Slot for USB Dongle, mPCIe
PCM-24U2U3-BE	PCM-24U2U3, 2-Port USB 3.0, mPCIe

Ordering Information

Part Number	Description
UNO-137-ID1EC	UNO-137 V2 second-stack extension kit with 1 x iDoor slot