

UNO-137

Small-Size Integrated DIN-Rail IPC with Intel® Atom® E3940

NEW



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 is equipped with an Intel® Atom® E3940 processor (1.6 GHz), 8 GB DDR3L RAM, and wide operating temperature range (-40 ~ 70 °C/-40 ~ 158 °F), as well as 2 x LAN, 2 x COM, 3 x USB 3.0, 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 (B-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 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.
Win 10 2019 LTSC, AdvLinux (Ubuntu 20.04)
- **OS Support**

System Hardware

- **BIOS** AMI UEFI (128 Mbit)
- **Watchdog Timer** Programmable timer with 255 intervals (1 ~ 255 sec)
- **Hardware Security** TPM2.0
- **Processor** Intel® Atom® E3940, 1.6 GHz (up to 1.8 GHz)
- **Memory** Built-in 8 GB DDR3L, 1600 MHz (Up to 8 GB)
- **Graphics Engine** Intel® HD Graphics
- **Ethernet** Intel® i210-IT GbE, 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 2.5" SSD/HDD (up to 9.5 mm height)
1 x M.2 B key 2242 SSD
- **Expansion** 1 x Full-size mPCIe (PCIe/USB signal)
1 x M.2 (B-key) 2242 SSD (SATA signal),
3042/3052 cellular module (USB signal)
1 x nano SIM card slot

I/O

- **Isolated Serial Ports** 2 x RS-232/422/485 (terminal block)
50bps ~115.2 kbps (isolation protection: 2500 VDC)
- **LAN** 2 x 10/100/1000 Mbps IEEE 802.3u 1000 BASE-T (RJ45)
- **USB** 3 x USB 3.2 Gen 1, 1 x USB 2.0 (Type A)

Features

- Intel® Atom® E3940 processor (1.6 GHz) with 8GB DDR3L memory
- Modular design for optional 1 x iDoor expansion
- Wide operating temperature range (-40~70°C/-40~158°F)
- Port isolation for 8 x DI, 8 x DO, 2 x COM
- Microsoft Azure IoT Edge and Amazon AWS IoT Greengrass certified

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

2 x DP 1.2, up to 4096 x 2306 @ 60 Hz

1 x 2-pin terminal block

Displays

Power Connector

Environment

Operating Temperature*

-40 ~ 70 °C/-40 ~ 158 °F with 0.7m/s airflow, with wide-temperature (-40 ~ 85 °C/-40 ~ 185 °F) peripherals (e.g., SSD, wireless modules)

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, 4 Grms, random, 5 ~ 500 Hz, 1hr/axis (SSD)
Operating, IEC 60068-2-64, 0.3 Grms, random, 5 ~ 500 Hz, 1hr/axis (HDD)

Ingress Protection

IP40

*Operating temperature with M.2 SSDs should be maintained under 60 °C/140 °F.

Installation Scenario

DIN-rail mounting installation



Ordering Information

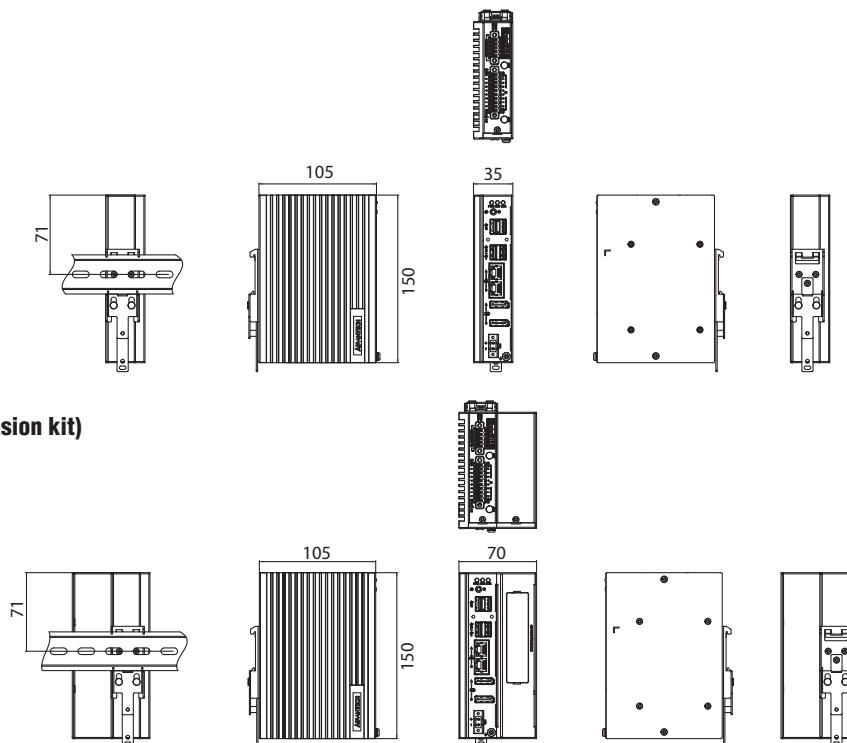
UNO-137-E13BA

Compact DIN-rail controller with Intel® E3940 CPU (1.6 GHz), 8 GB DDR3L, 2 x LAN, 2 x COM, 4 x USB, 8 x DI/O

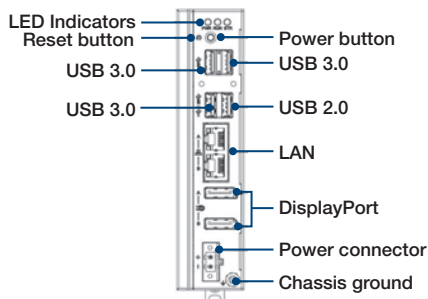
Dimensions

Unit: mm

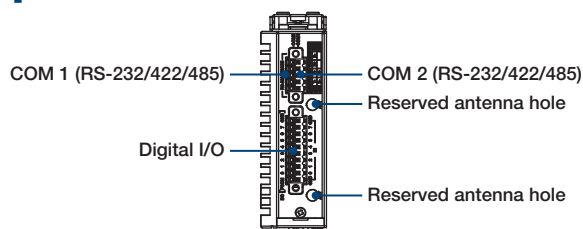
(With optional extension kit)



Front I/O



Top I/O



Extension Kit

- UNO-137-ID1EA UNO-137 second stack extension kit with 1 x iDoor slot

Embedded OS

- 20703WX9ES0045 Img WIN10LTSC x64 v6.06 B010 UNO-137/410 Entry
- 20704U20DS0005 Image AdvLinuxTu V3.2.2 for UNO series

Optional Accessories

- UNO-137-VEGA330 Accessory kit for VEGA-330

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

- 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 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

- 1702002600 ADP A/D 100-240V 120W 24V C14 CORD END 62368 (recommended for use with PoE iDoor module)
- 1702002605 Power cable US plug, 1.8 M (industrial grade)
- 1702031801 Power cable EU plug, 1.8 M (industrial grade)
- 1700000596 Power cable UK plug, 1.8 M (industrial grade)
- 1700000237-31 Power cable China/Australia plug, 1.8 M (industrial grade)
- Power cable Japan plug, 1.8 M (industrial grade)

Wireless Solution

- AIW-355DQ-C01 5G(Sub-6G)/LTE/WCDMA module, GNSS, for China
- AIW-355DQ-E01 5G(Sub-6G)/LTE/WCDMA module, GNSS, for Europe
- AIW-355DQ-N01 5G(Sub-6G)/LTE/WCDMA module, GNSS, for US
- UNO-M2-3052HS M.2B 3052 Heatsink for AIW-355 5G module
- 1750008569-01 Cable Ant. SMA/F-BH MHF4/113 BLK L300mm
- 1750008879-01 Cable Ant. SMA/F-BH MHF4/113 BLK L150mm
- 1750009372-01 Dipole antenna, 5G(Sub-6G)/LTE/WCDMA full band, 167 mm

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-ID1EA

Second-stack extension kit with 1 x iDoor slot (for UNO-137-E13BA)

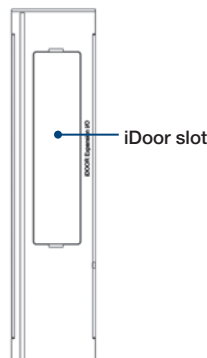


Specifications

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-137-ID1EA	UNO-137 second-stack extension kit with 1 x iDoor slot

Supported iDoor Modules

iDoor Industrial Fieldbus Communication	
PCM-26D2CA-AE	2-port isolated CANBus mPCle, CANopen, DB9
PCM-26D1DB-MAE/SAE	1-port Hilscher netX100 FieldBus mPCle, PROFIBUS, DB9, Master/Slave
PCM-26R2PN-MAE/SAE	2-Port Hilscher netX100 FieldBus mPCle, PROFINET, RJ45, IO-Controller / IO-Device
PCM-26R2EC-MAE/SAE	2-port Hilscher netX100 FieldBus mPCle, EtherCAT, RJ45, MainDevice (abbreviated MDevice) / SubordinateDevice (abbreviated SubDevice)
PCM-26R2EI-MAE/SAE	2-port Hilscher netX100 FieldBus mPCle, EtherNet/IP, RJ45, Scanner / Adapter
PCM-26R2PL-MAE/SAE	2-port Hilscher netX100 FieldBus mPCle, POWERLINK, RJ45
iDoor Smart Digital/Analog I/O	
PCM-24D2R4-BE	2-port isolated RS-422/485, mPCle, DB9
PCM-24D2R2-BE	2-port isolated RS-232, mPCle, DB9
PCM-24D4R4-BE	4-port non-isolated RS-422/485 mPCle, DB37 cable
PCM-24D4R2-BE	4-port non-isolated RS-232 mPCle, DB37 cable
PCM-24R1TP-AE	1-port Gigabit Ethernet, Intel® 82574L, mPCle, RJ45
PCM-24R2PE-AE	2-port Gigabit Ethernet, IEEE 802.3af (PoE)- compliant, mPCle, RJ45
PCM-24R2GL-AE	2-port Gigabit Ethernet, Intel® i350, mPCle, RJ45
PCM-27D24DI-AE	24-channel isolated digital I/O with counter mPCle, DB37
iDoor CORE	
PCM-2300MR-AE	MR4A16B, MRAM, 2 MB, mPCle
PCM-23C1CF-BE	1 x CFast slot with cover protection
PCM-23U1DG-CE	USB slot w/ lock for USB dongle, half-size mPCle
PCM-24U2U3-BE	2-port USB 3.0, mPCle, USB-A type
PCM-27J3AU-AE	3-port audio stereo, mPCle, 3.5-mm jack
iDoor Wired/Wireless Communication	
PCM-24S2WF-BE	Wi-Fi 802.11 a/b/g/n 2T2R w/Bluetooth 4.0, half-size mPCle, antennas
PCM-24S34G-EBE	LTE/HSPA+/GPRS and GPS, full-size mPCle, 4G/GPS antennas for EMEA/APAC
C-PCM-24S24G-4AV-1	Cellular iDoor module, LTE Cat. 4 for AT&T/Verizon
C-PCM-24S24G-1A-1	Cellular iDoor module, LTE Cat. 1 for AT&T
C-PCM-24S24G-1V-1	Cellular iDoor module, LTE Cat. 1 for Verizon
C-PCM-24S24G-MAV-1	Cellular iDoor module, LTE Cat. M1 for AT&T/Verizon