

# UNO-137

**Intel® Atom E3940 processor, Small Size  
DIN-rail Controller, with 2 x LAN,  
2 x COM, 3 x USB 3.0, 1 x USB 2.0,  
2 x DP++, 8 x DI, 8 x DO, 1 x M.2,  
1 x mPCIe, TPM 2.0**



## Features

- Intel® Apollo Lake Atom E3940 1.6GHz processor with built-in 8GB DDR3L memory
- Wide-Range Power input (10-36V)
- Wide operating temperature range (-40~70°C)
- 2 x DP++ features high resolution and enables compatibility to HDMI/DVI via economy-priced adapter. (Passive adapter)
- Dual Storage type supported : M.2 2242 SSD and 2.5" HDD/SSD
- On board TPM 2.0 to provide hardware-based security
- M.2 3042/M.2 3052 module supported
- Modular Design for optional iDoor extension kit
- Bundle with New Din Rail Kit with more ruggedized and user-friendly design
- Proven by UL/IEC 61010 to meet industrial controller standard

## Introduction

Advantech's new UNO-1 series are automation embedded controllers with modular design that provides configuration flexibility for customers to optimize their demands in a more cost-efficient way. UNO-137 includes Intel Apollo Lake Atom E3940 1.6GHz processor with built-in 8GB DDR3L RAM. It features optimized connectivity, including 2 x LAN, 2 x COM, 3 x USB 3.0, 1 x USB 2.0, 8 x DI, 8 x DO, 2 x DP++. It also supports 1x full-size Mini PCIe slot, 1x M.2 B key and 1x Nano SIM card slot for expansion to fulfill various requirements for industrial applications. Positioned as a controller, UNO-137 is also certified by industrial automation controller standard UL/IEC-61010.

The optional 2nd stack extension kit can support 1 x iDoor module such as industrial Fieldbus, wireless communication, I/O and peripheral module, leaving the flexible expandability of control function to fit for the demands in industrial 4.0 era.

## Specifications

### General

- **Certification** CE, FCC, UL, CCC, BSMI
- **Dimensions (W x D x H)** 35 x 105 x 150 mm (1.4" x 4.1" x 5.9")
- **Form Factor** Small Size
- **Enclosure** Aluminum Housing
- **Mounting** DIN-rail
- **Weight (Net)** 0.8 kg (1.7lbs)
- **Power Requirement** 10 - 36V<sub>DC</sub>
- **Power Consumption** 21W (typical) , 47W (Max)  
\*For USB iDoor (PCM-24U2U3-BE): Max to 56W  
\*For PoE iDoor (PCM-24R2PE-AE): Max to 77W
- **OS Support** Win10 2019 LTSC, AdvLinux (Ubuntu 18.04)

### System Hardware

- **BIOS** AMI UEFI 128Mbit
- **Watchdog Timer** Programmable 255 levels timer interval, from 1 to 255 sec
- **Hardware Security** TPM2.0
- **Processor** Intel® Atom E3940 1.6GHz (up to 1.8GHz)
- **Memory** Built-in 8GB DDR3L 1600MHz (Up to 8GB)
- **Graphics Engine** Intel® HD Graphics
- **Ethernet** Intel® i210-IT GbE, IIEEE802.1AS, 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 B-key 2242 SSD (SATA/USB Signal)  
1 x 2.5" SSD/HDD (up to 9.5 mm height)
- **Expansion** 1 x Full size mPCIe slot (PCIe/USB Signal)  
1 x \*M.2 B-key for 3042 / 3052 card (SATA/USB Signal)  
1 x Nano SIM card slot

Note:

The M.2 B key can support either 2242 storage (w/SATA signal) or 3042/3052 Module (w/ USB signal)

### I/O Interfaces

- **Isolated Serial Ports** 2 x RS-232/422/485 (terminal block)  
50 ~115.2 kbps (Isolation Protection: 2500 V<sub>DC</sub>)
- **LAN Ports** 2 x 10/100/1000 Mbps IEEE 802.3u 1000BASE-T Fast Ethernet (RJ-45)
- **USB Ports** 3 x USB 3.2 Gen 1 , 1 x USB 2.0 (Type A)
- **Isolated DIO** 8-ch digital input , 8-ch digital output (Isolation Protection: 2500 V<sub>DC</sub>)
- **Displays** 2 x DP 1.2, up to 4096 x 2306 @ 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-temp (-40 ~ 85 °C) peripherals (e.g. Memory, storage, wireless modules)  
- 40 ~ 85°C ( -40 ~ 185°F)
- **Storage Temperature** - 40 ~ 85°C ( -40 ~ 185°F)
- **Relative Humidity** 95% RH @ 40°C, 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** IP40

\*It is recommended to use 2.5" SSD under the temperature of 70°C.

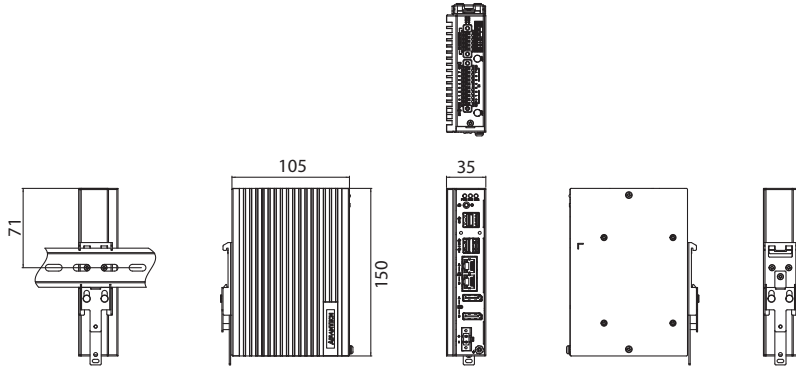
## Installation Scenario

### Din-Rail mounting installation

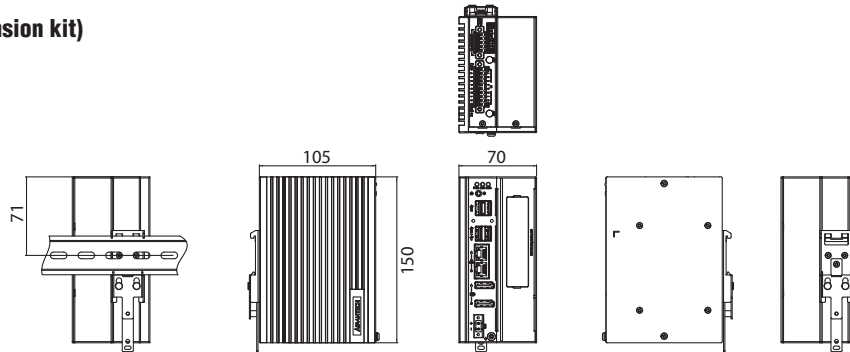


**Dimensions**

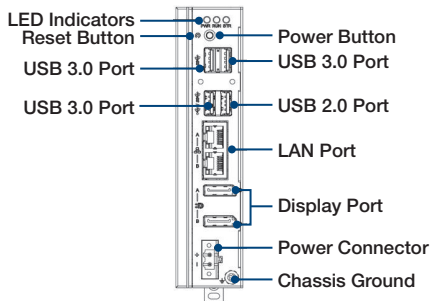
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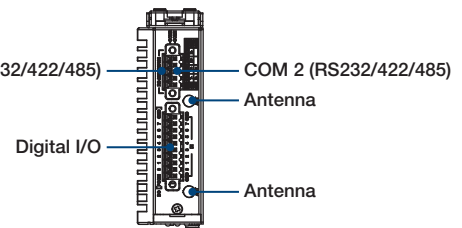
(With Optional Extension kit)



**Front I/O View**



**Top I/O View**



**Ordering Information**

- **UNO-137-E13BA** Intel E3940, 1.60GHz, 8G DDR3L, 2LAN, 2COM, 4USB, 8DI/O

**Extension Kit Selection**

- **UNO-137-ID1EA** UNO-137 2nd Stack Extension Kit, 1 iDoor

\*Please refer to extension kit datasheet for more details.

**Embedded OS**

- (TBD)

**Optional Accessories**

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

**Din-rail Power Supply**

- **UNO-IPS2460-AE** 60Watts Compact Size 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 (Suggest to use it when PoE iDoor is installed)

**Adapter & Power Cable**

- **XARK-ADP-90MDH** ADP A/D 100-240V 90W 19V W/PFC C6 END CORD 2 PIN
- **96PSA-A120W19T2-3** ADP A/D 100-240V 120W 19V C14 CORD END 62368 (Suggest to use it when PoE iDoor is installed)
- **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)

# Extension Kit

## UNO-137-ID1EA

2nd stack Extension Kit to support 1 x iDoor on  
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")
Weight	0.2 kg (0.4lbs)

\* The system operating temperature can keep 60 °C with most of the iDoor modules.  
(Exception: PoE iDoor, USB 3.0 iDoor)

### Ordering Information

Part Number	Description
UNO-137-ID1EA	UNO-137 2nd stack extension kit for 1 iDoor

### Supported iDoor Modules

iDoor Industrial Fieldbus Communication	
PCM-26D2CA-AE	2-port isolated CANBus mPCIe, CANopen, DB9
PCM-26D1DB-MAE/SAE	1-port Hilscher netX100 FieldBus mPCIe, PROFIBUS, DB9, Master/Slave
PCM-26R2PN-MAE/SAE	2-Port Hilscher netX100 FieldBus mPCIe, PROFINET, RJ45, Master/Slave
PCM-26R2EC-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, EtherCAT, RJ45, Master/Slave
PCM-26R2EI-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, EtherNet/IP, RJ45, Master/Slave
PCM-26R2S3-MAE/SAE	2-port Hilscher netX100 FieldBus mPCIe, Sercos III, RJ45, Master/Slave
PCM-26R2PL-SAE	2-port Hilscher netX100 FieldBus mPCIe, POWERLINK, RJ45
iDoor Smart Digital/ Analog I/O	
PCM-24D2R4-BE	2-port Isolated RS-422/485, mPCIe, DB9
PCM-24D2R2-BE	2-port Isolated RS-232, mPCIe, DB9
PCM-24D4R4-BE	4-port non-isolated RS-422/485 mPCIe, DB37 cable
PCM-24D4R2-BE	4-port nonisolated RS-232 mPCIe, DB37 cable
PCM-24R1TP-AE	1-port Gigabit Ethernet, Intel® 82574L, mPCIe, RJ45
PCM-24R2PE-AE	2-port Gigabit Ethernet, IEEE 802.3af (PoE)- compliant, mPCIe, RJ45
PCM-24R2GL-AE	2-port Gigabit Ethernet, Intel® i350, mPCIe, RJ45
PCM-27D24DI-AE	24-ch isolated digital I/O with counter mPCIe, DB37
iDoor CORE	
PCM-2300MR-AE	MR4A16B, MRAM, 2 MB, mPCIe
PCM-23C1CF-BE	1 CFast Slot with cover protection
PCM-23U1DG-CE	USB slot w/ lock for USB dongle, half-size mPCIe
PCM-24U2U3-BE	2-port USB 3.0, mPCIe, USB-A type
PCM-27J3AU-AE	3-port audio stereo, mPCIe, 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 mPCIe, antennas
PCM-24S33G-AE	3.75G HSPA/GPS, full-size mPCIe, front-accessible dual SIM card slots, 3G/GPS antennas
PCM-24S34G-EBE	LTE/HSPA+/GPRS and GPS, full-size mPCIe, 4G/GPS antennas, for EMEA/APAC
C-PCM-24S24G-4AV-1	MultiTech iDoor module, LTE Cat. 4 for AT&T/Verizon
C-PCM-24S24G-1A-1	MultiTech iDoor module, LTE Cat. 1 for AT&T
C-PCM-24S24G-1V-1	MultiTech iDoor module, LTE Cat. 1 for Verizon
C-PCM-24S24G-MAV-1	MultiTech iDoor module, LTE Cat. M1 for AT&T/Verizon

### Front I/O View

