UNO-420

Intel® Atom™ PoE Powered Device Sensing Gateway with 3 x COM, 2 x LAN (1 x PoE), 8 x GPIO, HDMI, USB3.0, TPM2.0



WISE-DeviceOn

Features

- Intel Atom™ E3815 Processor with 2GB DDR3L onboard memory
- 2 x GbE (1 x PoE-IN), 1 x USB 3.0, 1 x HDMI, 1 x RS-485, 2 x RS-232/422/485, 8 x Programmable GPIO, TPM 2.0
- 32GB eMMC storage onboard
- Support dual wireless communication for WiFi/3G/4G/GPS
- Support one Ethernet cable for both data & power delivery
- Support Trusted Platform Module (TPM) 2.0 for cyber security
- System is certified for compatibility with Ubuntu Core, WISE-DeviceOn, Edgelink and WISE IoT Edge
- Edgelink support MQTT, LWM2M client for cloud communication
- EdgeLink supports more than 200 I/O Drivers
- EdgeLink supports user-defined acquisition period

Introduction

The new UNO-420 is ruggedized fanless design with Intel® Atom™ E3815 Processor, 3x COM port, 2x LAN port (one with Power Over Ethernet (PoE) technology), and 8 x Programmable GPIO. PoE allows you to add a device in awkward or remote locations where power cable may not equipment with. It supports one Ethernet cable for both data and power delivery. Ethernet cable, which appears in many existing infrastructures is considerably less expensive than fiber over the scope of an installation. UNO-420 features optimized I/O, PoE-IN, and wide operation temperature, which is suitable for machine data gateway in many industries.

Specifications

General

Certification	CE, FCC, CB, UL, CCC
Dimensions (W x D x H)	125 x 125 x 50 mm
Enclosure	Aluminum Housing
Mounting	Wall Mount (Optional Din-Rail)
Weight (Net)	1.5 kg
Power Requirement	10 ~ 30 V_{DC}
Power Consumption	12W (Typical), 20W (Max)

System Hardware

BIOS	AMI EFI64 Mbit
Watchdog Timer	Programmable 255 levels timer interval, from 1 to 255sec
Hardware Security	TPM 2.0
Processor	Intel Atom E3815 1.46GHz
System Chip	Intel Atom SoC integrated
Memory	2GB DDR3L 1066 MHz
Graphics Engine	Intel® HD Graphics
Ethernet Realtek	RTL8111E GbE, 802.10av
LED Indicators	LEDs for Power, Storage (M.2)
Storage	Onboard 32GB eMMC 1 x M.2 2242 (B key) (SATA)
Expansion	1 x Full-size mPCIe slot (USB/PCIe Signal) 1 x Half-size mPCIe slot (USB/PCIe Signal)

I/O Interfaces

Serial Ports	2 x RS-232/422/485, 0.15~115.2kbps, DB9 1 x RS-485, 0.15~115.2kbps, terminal block
LAN Ports	2 x RJ45 (1x PoE-IN IEEE 802.3at & 10/100/1000 Mbps IEEE 802.3u 1000Base-T Fast Ethernet)
Isolated GPIO	8 x GPIO (Programmable ADC, DAC 12bit), isolated protection, 2000 V_{DC} DI: logic 0: 0~ 1.5 V ; logic 1: 3.5V~5V DO: logic 0:0~0.4V ; logic 1: 4~5V AI: 12 bit ADC (0~5V scale; Integral Nonlinearity error: 2 Bit Max AO: 12 bit DAC (0~2.5V scale / 0~5V scale; Integral Nonlinearity error: 2 bit Max
USB Port	1 x USB 3.0
Display	1 x HDMI, supports 1920 x 1080 @ 60Hz
Power Connector	1 x 2 Pins, Terminal Block

Software

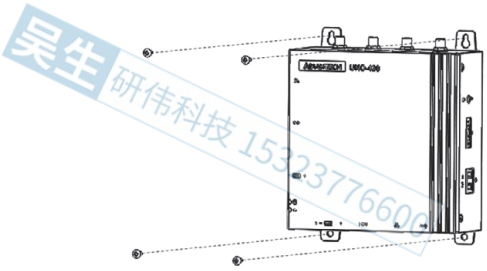
Operating System	Windows10 LTSC, Ubuntu 20.04, Ubuntu Core 20
Application Software	WISE-PaaS/EdgeLink Max Connection: 4 for uplink protocols (MQTT x 4, Modbus x 4...etc.) Max Tag: 3000 Tags

Environment

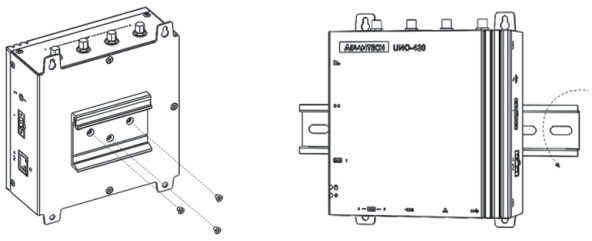
Operating Temperature	-20 ~ 60°C (-4~140 °F) @ 5 ~ 85% RH with 0.7 m/s airflow
Storage Temperature	-40 ~ 80°C (-40 ~ 180°F)
Relative Humidity	10 ~ 95% RH @ 40°C, non-condensing
Shock Protection	Operating, IEC 60068-2-27, 50G, half sine, 11 ms
Vibration Protection	Operating, IEC60068-2-6, 2 Grms, random, 5 ~ 500 Hz, 1hr/axis (M.2)

Installation Scenario

Wall Mount Illustration



DIN-rail Mount Illustration (Optional)

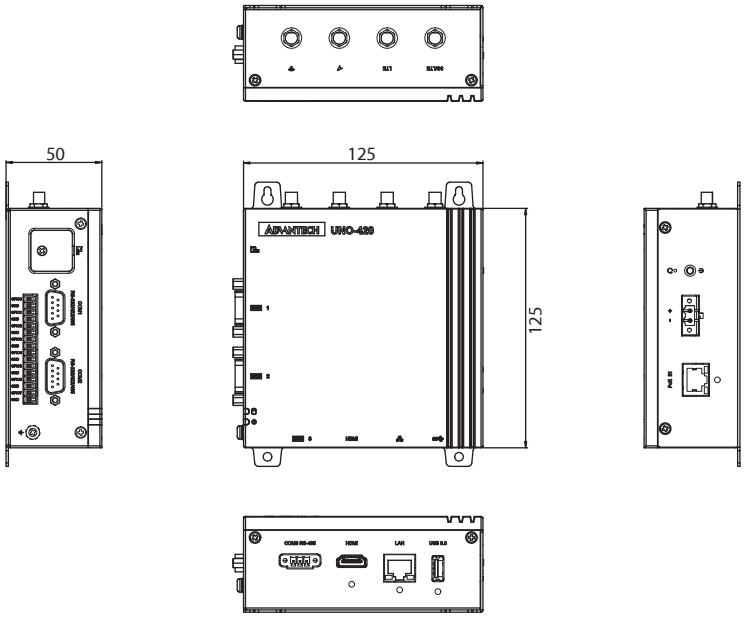


All product specifications are subject to change without notice.

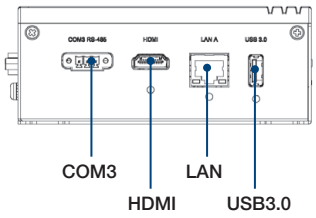
Last updated: 30-Mar-2022

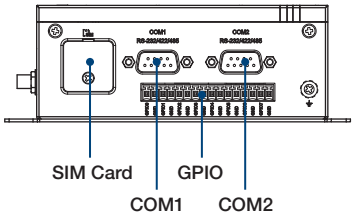
Dimensions

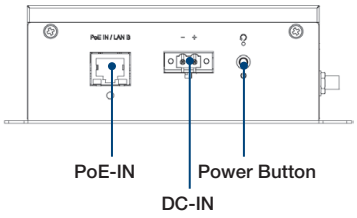
Unit: mm



Front I/O View







Ordering Information

- **UNO-420-E0A** Intel Atom E3815 1.46 GHz, 2GB, 2 x LAN, 3 x COM, 8 x GPIO, 1 x HDMI, 1x USB3.0
- **ESRP-PCS-UNO420** UNO-420-E0A with Advlinux & EdgeLink

Optional Accessories

- **UNO-400-DMKAE** UNO-4 series DIN rail Kit

Wi-Fi Solution

- **EWM-W193H01E** half size mPCIe module, 802.11 a/b/g/n/ac, Realtek, 2T2R, with BT4.2
- **1750002842** Antenna R-AN2450-5701RS R/P SMA.M10.9cm
- **1750009036-01** Cable Ant. SMA/F-R-BH MHF1/113 BLK L100mm

LTE Solution

- **968AD00589** Quectel EG25G CAT4 LTE module
- **1750008303-01** Antenna AN0727-64SP6BSM
- **1750006264** Antenna cable SMA(F)/MHF 15cm

LTE Solution for US

- **C-PCM-24S24G-420-1** MultiTech kit for UNO-420, LTE Cat. 4 for USA AT&T/Verizon

GPS Solution

- **EWM-G109H01E** Advantech GPS module, u-blox NEO-M8N multi-GNSS (GPS, Beidou, GLONASS, Galileo, QZSS and SBAS)
- **1750006426** Antenna 2 dBi SMA-Male L=171.5mm AN8921F-92B01SM
- **1750006264** Antenna SMA(F)/MHF 15cm SMALFN8-3150A-00X00R

Router

- **ICR-1601G** Industrial Cellular Router,GPS,EMEA,2x ETH,ACC
- **EKI-6333AC-A** IEEE 802.11 a/b/g/n/ac Wi-Fi AP

Adapter & Power Cable

- **96PSA-A60W24T2-3** A/D 100-240V 60W 24V C14 CORD END TERMINAL
- **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)

Embedded OS

- **20703WX9ES0003** WIN 10 IoT Enterprise 2019 LTSC
- **20703LEB1S0055** Image AdvLinuxTu V2.0.3 (Ubuntu 18.04)
- **20704U20DS0001** Image AdvLinuxTu V3.0.4 (Ubuntu 20.04)
- **20703U20CS0000** Ubuntu Core 20