UNO-220

Introduction
UNO-220 is designed for customers using Raspberry Pi (RPi) single-board computers (SBCs) in unique IoT applications. Featuring a system-image OS equipped micro SD card, an RPi 4 HAT I/O board, additional RS-232/485 GPIOs, and an RTC battery backup for precise time keeping; the UNO-220 industrial-grade chassis transforms RPi 4 into an intelligent gateway. UNO-220 features pre-finished mounting holes and attachment screws enabling plug-and-play assembly with separately purchased RPi 4 SBCs. This system provides developers with a complete RPi-ready industrial-grade gateway kit ideal for rapid prototyping and mass deployment.

Specifications

General
- Certification: CE, FCC
- Dimensions (W x D x H): 100 x 70 x 32 mm (3.9 x 2.7 x 1.2 in)
- Form Factor: Micro
- Enclosure: Aluminum housing
- Mount Options: Wall mount, DIN rail (optional)
- Weight (Net): 0.5 kg (1.10 lbs)
- Power Consumption: 15 W (typical)
- OS Support: AdvRaspbian

System Hardware
- Watchdog Timer: Programmable 255 level timer interval (1 – 255 sec.)
- Hardware Security: TPM 2.0 (available upon request)
- Storage: 1 x Micro SD slot (dummy)
  (internal 8 GB SD card interchangeable with Raspberry Pi 4)

I/O Interfaces
- Serial Ports: 1 x RS232/485 (5-pin terminal block), automatic direction control, 300 – 115.2k bps
- GPIO: GPIO 0-3: VIH: 2 – 5V
  VIL: 0 – 0.8V
  GPIO 0-3: 0 – 5V

Environment
- Operating Temperature: 0 – 50 °C (32 – 122 °F) @ 5 – 85% RH without 0.7m/s airflow
- Storage Temperature: 20 – 60 °C (-4 – 140 °F)
- Relative Humidity: 10 – 95% RH @ 40 °C, non-condensing
- Ingress Protection: IP40

Features
- Automation kit featuring an industrial-grade I/O board for creating RPi-based IoT systems
- Industrial grade I/O board utilizing RS-232/485 and GPIO for flexible expansion
- Battery-backed RTC enabling fail-safe time keeping
- Included OS enables RPi identification of UNO-220, and automatically configures GPIOs and drivers for the board
- Easy 4-step RPi 4 installation
- Supports wall-mount and DIN rail installation for industrial applications
- Supports TPM hardware security upon request

Installation Scenario

DIN-Rail Mount Illustration

Stand Mount Illustration

Ordering Information

- UNO-220-P4N1AE: Industrial Raspberry Pi gateway kit with 1 x RS-232/485, 4 x GPIO, 8 GB SD card, and Raspbian OS
- UNO-220-P4N2AE: Industrial Raspberry Pi 4 Gateway Kit with POE function, TPM, 1 x RS-232/485, 8 x GPIO, 8 GB SD Card, and AdvRaspbian OS
- UNO220P4N22101-T: UNO-220-P4N2AE without SD card, Quick LT

Optional Accessories

- UNO-200-DMKA: Optional DIN-rail kit

Adapter and power cord

- XUNO-FSP015-DPAN3: 15V 5V USB-Type C connector
- 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)
Raspberry Pi4 Installation Guide

**Step 1**
- Insert the Raspberry Pi4 into the UnO-220
- Secure the Raspberry Pi4 with screws

**Step 2**
- Connect the power supply to the UnO-220
- Connect the HDMI cable to the Micro HDMI port on the Raspberry Pi4

**Step 3**
- Connect the Ethernet cable to the LAN port on the Raspberry Pi4
- Connect the RS-232/485 cable to the RS-232/485 port

**Step 4**
- Connect the Audio cable to the Audio port on the Raspberry Pi4
- Connect the GPIO pins to the GPIO port

### Dimensions

Unit: mm

- Front I/O View
  - 112 mm width
  - 70 mm height

- Side I/O View
  - 100 mm width
  - 53.1 mm height
  - 70 mm depth

### I/O Ports

- **RS-232/485**
- **Power (USB Type C)** (on Raspberry Pi4)
- **Audio (on Raspberry Pi4)**
- **Micro HDMI (on Raspberry Pi4)**
- **2 x USB 3.0 (on Raspberry Pi4)**
- **2 x USB 2.0 (on Raspberry Pi4)**
- **1 x LAN (on Raspberry Pi4)**

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