# UC-8100 Series

*Arm-based wireless-enabled DIN-rail industrial computers with 2 serial ports and 2 LAN ports*

### Features and Benefits

- Armv7 Cortex-A8 300/600/1000 MHz processor
- Dual auto-sensing 10/100 Mbps Ethernet ports
- Rich programmable LEDs and a programmable button for easy installation and maintenance
- Mini PCIe slot for cellular module
- Debian 9 open platform
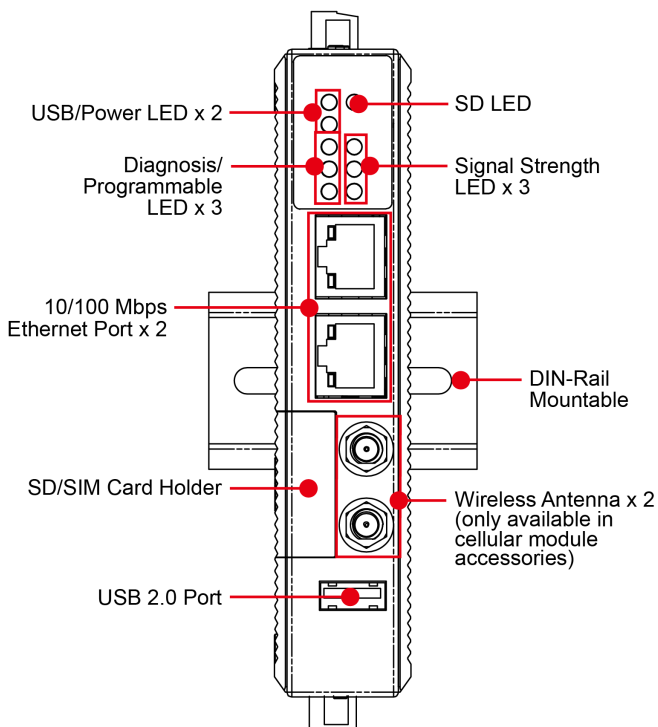- Cybersecurity functions

### Certifications

## Introduction

The UC-8100 computing platform is designed for embedded data-acquisition applications. The computer comes with one or two RS-232/422/485 serial ports and dual 10/100 Mbps Ethernet LAN ports, as well as a mini PCIe slot to support cellular modules. These versatile communication capabilities let users efficiently adapt the UC-8100 to a variety of complex communications solutions.
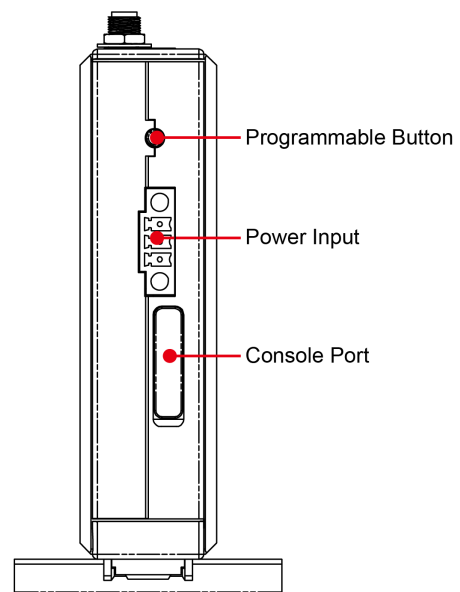
The UC-8100 is built around a Cortex-A8 RISC processor that has been optimized for use in energy monitoring systems, but is widely applicable to a variety of industrial solutions. With flexible interfacing options, this tiny embedded computer is a reliable and secure gateway for data acquisition and processing at field sites as well as a useful communication platform for many other large-scale deployments.
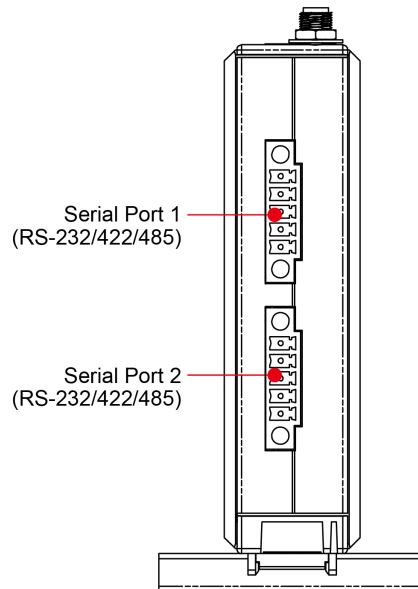
## Appearance

**Front View**

**Top View**

**Bottom View**



Serial Port 1
(RS-232/422/485)

Serial Port 2
(RS-232/422/485)

# Specifications

## Computer

| | |
|---|---|
| CPU | UC-8131-LX: Armv7 Cortex-A8 300 MHz<br>UC-8132-LX: Armv7 Cortex-A8 300 MHz<br>UC-8162-LX: Armv7 Cortex-A8 600 MHz<br>UC-8112-LX: Armv7 Cortex-A8 1 GHz |
| DRAM | UC-8112-LX: 512 MB DDR3<br>UC-8131-LX: 256 MB DDR3<br>UC-8132-LX: 256 MB DDR3<br>UC-8162-LX: 512 MB DDR3 |
| Pre-installed OS | Linux Debian 9 (Linux kernel v4.4) |
| Storage Pre-installed | 8 GB eMMC |
| Storage Slot | SD slots x 1 |

## Computer Interface

| | |
|---|---|
| USB 2.0 | USB 2.0 hosts x 1, type-A connectors |
| Expansion Slots | UC-8112-LX: mPCIe slot x 1<br>UC-8132-LX: mPCIe slot x 1<br>UC-8162-LX: mPCIe slot x 1 |
| Number of SIMs | UC-8112-LX: 1<br>UC-8132-LX: 1<br>UC-8162-LX: 1 |
| SIM Format | Mini |
| Buttons | Reset button |

## Ethernet Interface

| | |
|---|---|
| Ethernet Ports | Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2 |
| Magnetic Isolation Protection | N/A, 1.5 kV (built-in) |

## LED Indicators

| | |
|---|---|
| System | Power x 1<br>SD slots x 1<br>Programmable x 3 |
| Wireless Signal Strength | Cellular/Wi-Fi x 3 |

## Serial Interface

| | |
|---|---|
| Serial Ports | 2 x RS-232/422/485 |
| Console Port | 1 x 4-pin header to DB9 console port |
| Data Bits | 5, 6, 7, 8 |
| Parity | None, Even, Odd, Space, Mark |
| Stop Bits | 1, 1.5, 2 |

## Serial Signals

| | |
|---|---|
| RS-232 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND |
| RS-422 | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-2w | Data+, Data-, GND |
| RS-485-4w | Tx+, Tx-, Rx+, Rx-, GND |

## Power Parameters

| | |
|---|---|
| Input Voltage | 12 to 24 VDC |
| Input Current | 480 mA @ 12 VAC<br>225 mA @ 24 VAC |
| Power Consumption | 5.4 W |

## Reliability

| | |
|---|---|
| Alert Tools | Built-in buzzer and RTC (real-time clock) |
| Automatic Reboot Trigger | Built-in WDT |

## Physical Characteristics

| | |
|---|---|
| Housing | Plastic |
| Dimensions | 101 x 27 x 128 mm (3.98 x 1.06 x 5.04 in) |
| Weight | 224 g (0.5 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

## Environmental Limits

| | |
|---|---|
| Operating Temperature | -10 to 60°C (14 to 140°F) |
| Storage Temperature (package included) | -20 to 80°C (-4 to -176°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |
| Vibration | 2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without any USB devices attached) |
| Shock | IEC 60068-2-27 |

## Standards and Certifications

| | |
|---|---|
| Safety | UL 60950-1 |
| EMC | EN 55032/24 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m<br>IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV<br>IEC 61000-4-5 Surge: Power: 0.5 kV<br>IEC 61000-4-6 CS: 3 V<br>IEC 61000-4-8 PFMF |
| Green Product | RoHS, CRoHS, WEEE |

## MTBF

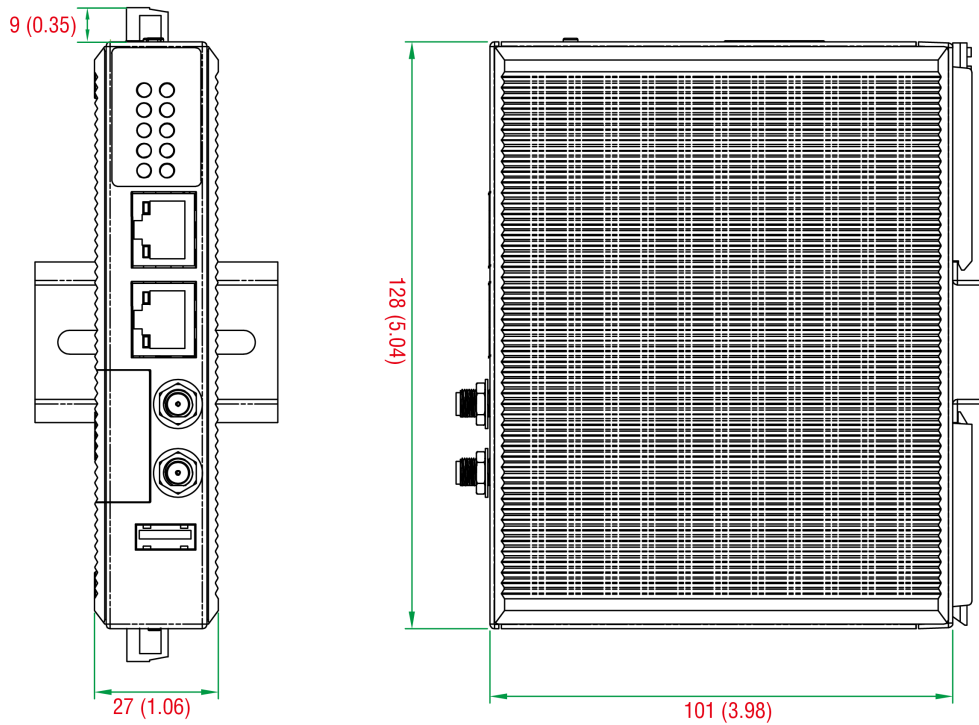| | |
|---|---|
| Time | UC-8131-LX: 1,465,546 hrs<br>UC-8132-LX/8162-LX: 1,195,173 hrs<br>UC-8112-LX: 1,149,242 hrs |
| Standards | Telcordia (Bellcore) Standard |

## Warranty

| | |
|---|---|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

## Package Contents

| | |
|---|---|
| Device | 1 x UC-8100 Series computer |
| Cable | 1 x Console cable |
| Installation | 1 x power jack |
| Documentation | 1 x quick installation guide<br>1 x warranty card |

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## Dimensions

Unit: mm (inch)

9 (0.35)
128 (5.04)
27 (1.06)
101 (3.98)

## Ordering Information

| Model Name | CPU | RAM | Storage | Storage Slots | Mini PCIe Socket for Wireless Module |
|---|---|---|---|---|---|
| UC-8131-LX | Armv7 Cortex-A8 300 MHz | 256 MB | 8 GB eMMC | SD Card | – |
| UC-8132-LX | Armv7 Cortex-A8 300 MHz | 256 MB | 8 GB eMMC | SD Card | 1 |
| UC-8162-LX | Armv7 Cortex-A8 600 MHz | 512 MB | 8 GB eMMC | SD Card | 1 |
| UC-8112-LX | Armv7 Cortex-A8 1 GHz | 512 MB | 8 GB eMMC | SD Card | 1 |

## Accessories (sold separately)

### Power Adapters

| | |
|---|---|
| PWR-24270-DT-S1 | Power adapter, input voltage 90 to 264 VAC, output voltage 24 V with 2.5 A DC load |

### Power Cords

| | |
|---|---|
| PWC-C7AU-2B-183 | Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m |
| PWC-C7CN-2B-183 | Power cord with two-prong China (CN) plug, 1.83 m |
| PWC-C7EU-2B-183 | Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m |
| PWC-C7UK-2B-183 | Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m |
| PWC-C7US-2B-183 | Power cord with United States (US) plug, 10A/125V, 1.83 m |

### Wi-Fi Wireless Modules

| | |
|---|---|
| WiFi-BGN | 802.11ac/a/b/g/n Wi-Fi module x1, i-PEX MHF male connector to RP-SMA female connector x2, ANT-WDB-ARM-02 x1, M2 screw x2 |

### Antennas

| ANT-WDB-ARM-02 | 2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male) |

**Cables**

| CRF-MHF/SMA(M)-14.2 | i-PEX MHF male connector on a Wi-Fi module to RP-SMA female connector for installing a Wi-Fi antenna |
| CBL-F9DPF1x4-BK-100 | Console cable with 4-pin connector, 1 m |

**Wall-Mounting Kits**

| WALLMOUNT-8100-01 | Wall-mounting kit for the UC-8100 with screws |

www.moxa.com