

# UC-8100 Series

Arm Cortex-A8 300 MHz/600 MHz/1 GHz IIoT gateway with 1 mini PCIe expansion slot for a wireless module, -10 to 60°C operating temperature



## 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
- Debian 9 open platform
- Cybersecurity functions

## Certifications



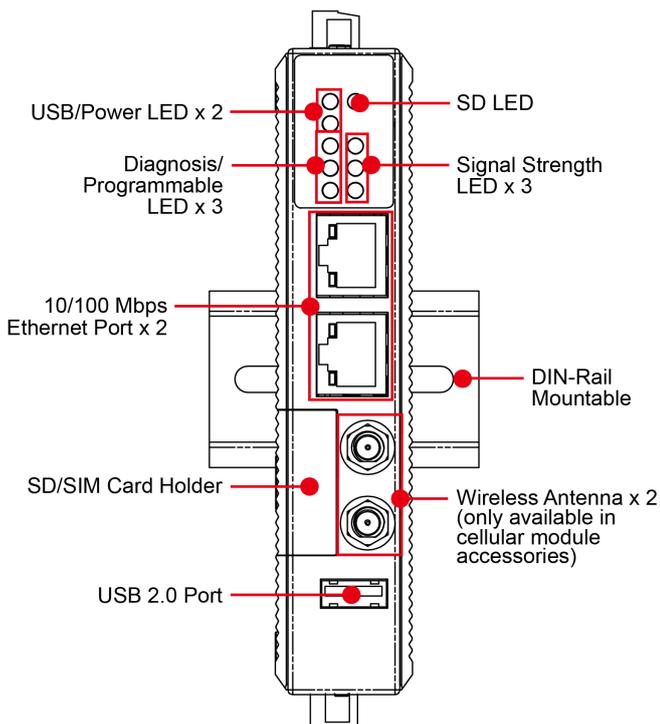
## Introduction

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.

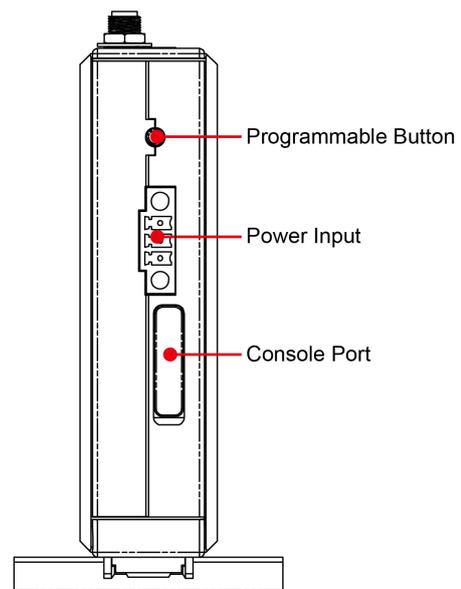
The UC-8100 is built around a Cortex-A8 Arm-based processor that has been optimized for use in energy monitoring systems, but is widely applicable to a variety of industrial solutions. With flexible interfacing options, this tiny embedded computer is a reliable and secure gateway for data acquisition and processing at field sites as well as a useful communication platform for many other large-scale deployments.

## Appearance

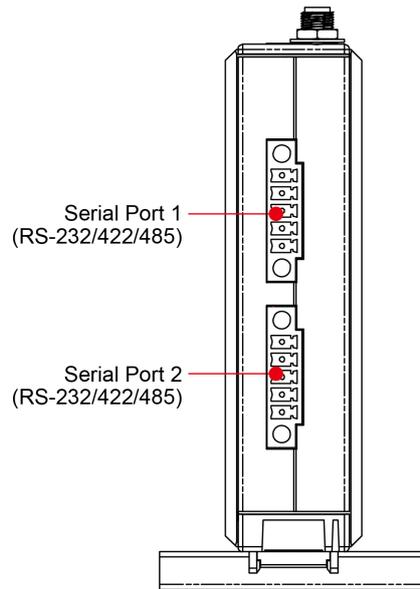
### Front View



### Top View



## Bottom View



## Specifications

### Computer

CPU	UC-8131-LX: Armv7 Cortex-A8 300 MHz UC-8132-LX: Armv7 Cortex-A8 300 MHz UC-8162-LX: Armv7 Cortex-A8 600 MHz UC-8112-LX: Armv7 Cortex-A8 1 GHz
DRAM	UC-8112-LX: 512 MB DDR3 UC-8131-LX: 256 MB DDR3 UC-8132-LX: 256 MB DDR3 UC-8162-LX: 512 MB DDR3
Supported OS	Linux Debian 9 kernel 4.4 (Moxa Industrial Linux)
Storage Pre-installed	8 GB eMMC
Storage Slot	SD slots x 1

### Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-8112-LX: RS-232/422/485 ports x 2, software-selectable (terminal block) UC-8162-LX: RS-232/422/485 ports x 2, software-selectable (terminal block) UC-8131-LX: RS-232/422/485 ports x 1, software-selectable (terminal block) UC-8132-LX: RS-232/422/485 ports x 2, software-selectable (terminal block)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Expansion Slots	UC-8112-LX: mPCIe slot x 1 UC-8132-LX: mPCIe slot x 1 UC-8162-LX: mPCIe slot x 1
Number of SIMs	UC-8112-LX: 1 UC-8132-LX: 1 UC-8162-LX: 1
SIM Format	Mini
Buttons	Reset button
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)

## Ethernet Interface

Magnetic Isolation Protection	1.5 kV (built-in)
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## Serial Interface

Data Bits	5, 6, 7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2
Baudrate	300 bps to 921.6 kbps

## 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

## LED Indicators

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

## Power Parameters

Input Voltage	12 to 24 VDC
Input Current	480 mA @ 12 VAC 225 mA @ 24 VAC
Power Consumption	5.4 W

## Reliability

Alert Tools	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 USB devices attached)
Shock	IEC 60068-2-27

## Standards and Certifications

Safety	UL 60950-1
EMC	EN 55032/24, KC (UC-8162)
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Green Product	RoHS, CRoHS, WEEE

## MTBF

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

## Warranty

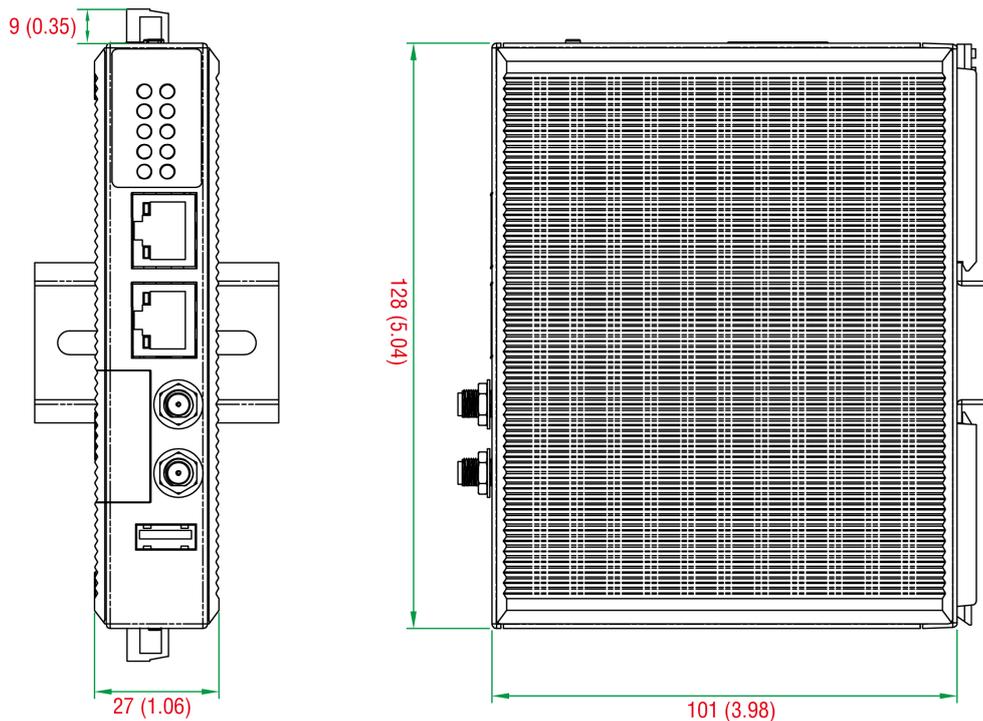
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x UC-8100 Series computer
Cable	1 x console cable
Installation Kit	1 x power jack
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## 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
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### 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
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### Antennas

ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
ANT-LTE-OSM-03-3m BK	Multi-band antenna that covers 700-2700 MHz. Specially designed for 2G, 3G, and 4G applications. Magnetic mounting is available.
ANT-LTE-ASM-05 BK	LTE stick antenna that covers 704-960/1710-2620 MHz with a gain of 5 dBi.
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi
ANT-LTE-OSM-06-3m BK MIMO	Multi-band antenna that covers 700-2700/2400-2500/5150-5850 MHz frequencies. Screw-fastened mounting and full IP67 waterproofing are available.
ANT-LTE-ASM-04 BK	LTE Stick antenna that covers 704-960/1710-2620 MHz providing omnidirectional radiation with a gain of 4.5 dBi.
ANT-GPS-OSM-05-3M BK	Active GPS antenna, 26 dBi, 1572 MHz, L1 band antenna for GPS

#### 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
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