

# UC-2100-W Series

*Arm-based wireless-enabled palm-sized industrial computer*



## Features and Benefits

Preliminary

- Armv7 Cortex-A8 1000 MHz processor
- Integrated LTE Cat. M1/NB1 module with global band support
- Dual-SIM slots
- Moxa Industrial Linux with 10-year long-term support
- Dual auto-sensing Ethernet ports (10/100 Mbps and 10/100/1000 Mbps)
- Dual CAN ports with industrial CAN 2.0 A/B protocol supported
- microSD socket for storage expansion
- Programmable LEDs and a programmable button for easy installation and maintenance
- -40 to 75°C operating temperature range

## Certifications



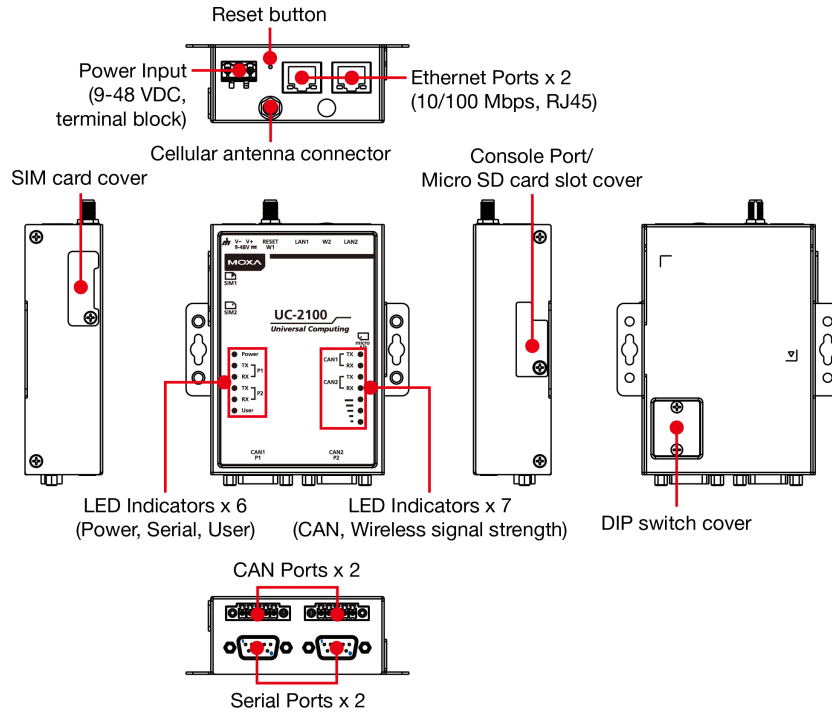
## Introduction

The UC-2100-W Series computing platform is designed for embedded data acquisition and processing applications. The computer comes with up to two software selectable RS-232/422/485 full-signal serial ports and single or dual LAN ports. This palm-sized series of Arm-based computing platforms includes a variety of models for a wide range of interface requirements, such as serial and LAN ports, and wireless connections. The versatile communication capabilities allow users to efficiently adapt the UC-2100-W Series for a variety of complex communications solutions running on a compact palm-sized computer.

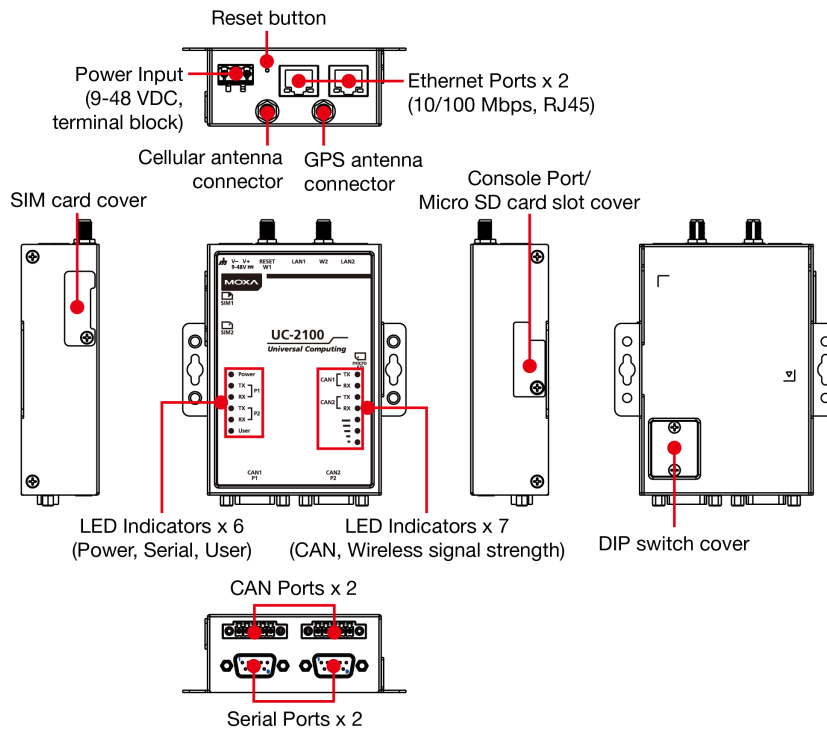
The UC-2100-W Series has a built-in Cortex-A8 Arm-based processor that has been optimized for a variety of industrial solutions. With flexible interface options, this tiny embedded computer is a reliable and secure gateway for data acquisition and processing at field sites and is a useful communication platform for many other large-scale deployments. Models designed for wide-temperature applications are available for extreme environments such as those found in the Oil and Gas industry. Furthermore, all models use Moxa's industrial-grade Linux platform, which provides optimized software features and superior long-term support.

## Appearance

### UC-2114



### UC-2116



## Specifications

### Computer

|                       |  |
|-----------------------|--|
| CPU                   | Armv7 Cortex-A8 1 GHz                        |
| DRAM                  | 512 GB DDR3                                  |
| Storage Pre-installed | 8 GB eMMC                                    |
| Pre-installed OS      | Moxa Industrial Linux (Debian 9, Kernel 4.4) |

## Computer Interface

|                            |   |
|----------------------------|---|
| Storage Slot               | Micro SD Slot x 1   |
| Ethernet Ports             | Auto-sensing 10/100 Mbps ports (RJ45 connector) x 1<br>Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 1 |
| Serial Ports               | RS-232/422/485 ports x 2, software-selectable (terminal block)  |
| CAN Ports                  | CAN 2.0 A/B x 2 (5-pin terminal block)  |
| Cellular Antenna Connector | SMA x 1   |
| GPS Antenna Connector      | SMA x 1   |
| Number of SIMs             | 2   |
| SIM Format                 | Nano  |
| Console Port               | RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)   |
| Buttons                    | Reset button  |

## Ethernet Interface

|                               |                   |
|-------------------------------|-------------------|
| Magnetic Isolation Protection | 1.5 kV (built-in) |
|-------------------------------|-------------------|

## Serial Interface

|                                   |  |
|-----------------------------------|--|
| Baudrate                          | 50 bps to 921.6 kbps   |
| Data Bits                         | 5, 6, 7, 8   |
| Stop Bits                         | 1, 1.5, 2  |
| Parity                            | None, Even, Odd, Space, Mark   |
| Pull High/Low Resistor for RS-485 | 1 kilo-ohm, 150 kilo-ohms  |
| ESD Protection                    | 4 kV, for all signals  |
| Flow Control                      | RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only) |

## 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                |

## CAN Interface

|                      |                                     |
|----------------------|-------------------------------------|
| Industrial Protocols | CAN 2.0A, CAN 2.0B                  |
| Baudrate             | 10 to 1000 kbps                     |
| Signals              | GND, CAN_L, CAN_SHLD, CAN_H, CAN_V+ |
| Isolation            | 2 kV (built-in)                     |

## Cellular Interface

|              |   |
|--------------|---|
| Band Options | LTE Bands: Band 1 (2100 MHz) / Band 2 (1900 MHz) / Band 3 (1800 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz) / Band 12 (700 MHz) / Band 13 (700 MHz) / Band 18 (850 MHz) / Band 19 (850 MHz) / Band 20 (800 MHz) / Band 25 (1900 MHz) / Band 26 (850 MHz) / Band 28 (700 MHz)<br><br>Carrier Approval: Verizon, AT&T, TELUS |
|--------------|---|

## LED Indicators

|                          |                               |
|--------------------------|-------------------------------|
| System                   | Power x 1<br>Programmable x 1 |
| LAN                      | 2 per port (10/100 Mbps)      |
| Serial                   | 2 per port (Tx, Rx)           |
| Wireless Signal Strength | 3                             |
| CAN                      | 2 per port (Tx, Rx)           |

## Power Parameters

|                   |                 |
|-------------------|-----------------|
| Input Current     | 450 mA @ 24 VAC |
| Input Voltage     | 9 to 48 VDC     |
| Power Consumption | 4 W             |

## Reliability

|                          |                                |
|--------------------------|--------------------------------|
| Alert Tools              | External RTC (real-time clock) |
| Automatic Reboot Trigger | External WDT (watchdog timer)  |

## Physical Characteristics

|                        |  |
|------------------------|--|
| Housing                | Metal  |
| Dimensions (with ears) | 111 x 99 x 34.5 mm (4.37 x 3.90 x 1.36 in)           |
| Weight                 | 396 g (0.87 lb)                                      |
| Installation           | Wall-mounting, DIN-rail mounting (with optional kit) |

## Environmental Limits

|  |                            |
|--|----------------------------|
| Operating Temperature                  | -40 to 75°C (-40 to 167°F) |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity              | 5 to 95% (non-condensing)  |

## Standards and Certifications

|        |   |
|--------|---|
| EMC    | EN 55032/24   |
| EMI    | CISPR 32, FCC Part 15B Class A  |
| EMS    | IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF<br>IEC 61000-4-5 Surge: Power: 1 kV |
| Safety | UL 60950-1  |
| Shock  | IEC 60068-2-27  |

|                     |  |
|---------------------|--|
| Vibration           | 2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without any USB devices attached) |
| Hazardous Locations | Class I Division 2, IECEx, ATEX  |
| Green Product       | RoHS, CRoHS, WEEE  |

#### MTBF

|           |  |
|-----------|--|
| Time      | UC-2114-T-LX : 533,149 hrs<br>UC-2116-T-LX : 496,650 hrs |
| Standards | Telcordia (Bellcore) Standard                            |

#### Warranty

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

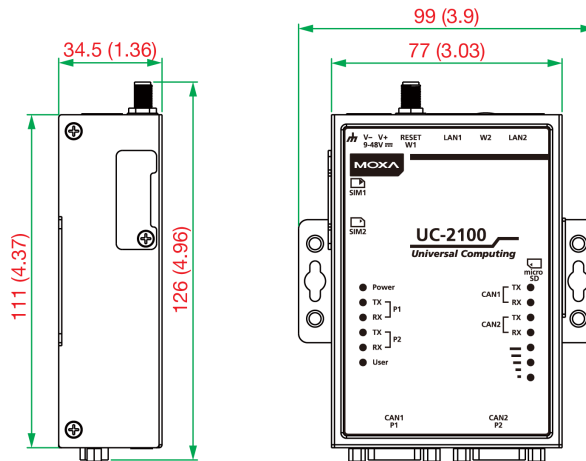
#### Package Contents

|                  |   |
|------------------|---|
| Device           | 1 x UC-2100-W Series computer                     |
| Installation Kit | 1 x power jack                                    |
| Cable            | 1 x console cable                                 |
| Documentation    | 1 x quick installation guide<br>1 x warranty card |

## Dimensions

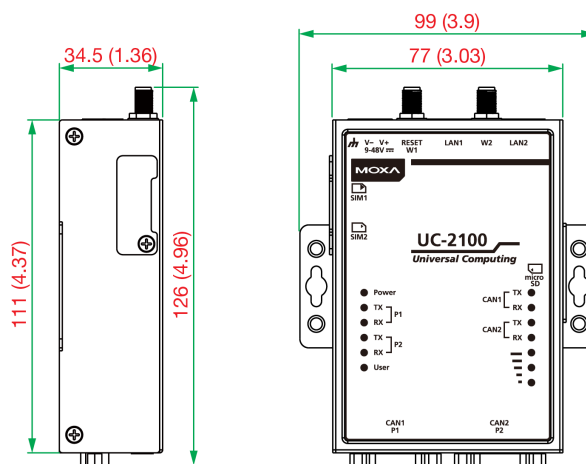
### UC-2114

Unit: mm (inch)



### UC-2116

Unit: mm (inch)



## Ordering Information

| Model Name   | CPU      | RAM    | Storage | Serial | Ethernet       | Mini PCIe | Cellular      | GPS | Operating Temp. |
|--------------|----------|--------|---------|--------|----------------|-----------|---------------|-----|-----------------|
| UC-2114-T-LX | 1000 MHz | 512 MB | 8 GB    | 2      | 2 (1 Giga LAN) | –         | NB-IoT/CAT M1 | –   | -10 to 60°C     |
| UC-2116-T-LX | 1000 MHz | 512 MB | 8 GB    | 2      | 2 (1 Giga LAN) | –         | NB-IoT/CAT M1 | Yes | -40 to 75°C     |

## 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-C7US-2B-183 | Power cord with United States (US) plug, 10A/125V, 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-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               |

### Cables

|                     |   |
|---------------------|---|
| CBL-F9DPF1x4-BK-100 | Console cable with 4-pin connector, 1 m |
|---------------------|---|

## Antennas

|                           |   |
|---------------------------|---|
| ANT-LTEUS-ASM-01          | GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi  |
| ANT-GPS-OSM-05-3M BK      | Active GPS antenna, 26 dBi, 1572 MHz, L1 band antenna for GPS   |
| 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-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-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.   |

## DIN-Rail Mounting Kits

|       |  |
|-------|--|
| DK35A | DIN-rail mounting brackets x 2, screws x 4 |
|-------|--|

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