

# UC-2100シリーズ

ワイヤレスモジュール用の1つのミニPCIe拡張スロットを搭載した手のひらサイズのARM Cortex-A8 600 MHzのIIoTゲートウェイ



## 機能とメリット

- Armv7 Cortex-A8 600-1000 MHzプロセッサ
- オートネゴシエーション対応10/100 Mbpsイーサネットポート x 1または2
- ギガビットイーサネットに対応 (UC-2112)
- ソフトウェアで選択可能なRS-232/422/485ポート x 最大2 (すべての信号に対応)
- Moxa Industrial Linuxを搭載 (10年間の超長期サポート付き)
- ストレージ拡張用のmicroSDソケット (UC-2111、UC-2112)
- Wi-Fi/セルラーモジュール (UC-2104) 用ミニPCIeソケット
- 危険区域認証を受け、-40～75°Cの広い温度モデルに対応

## 認証



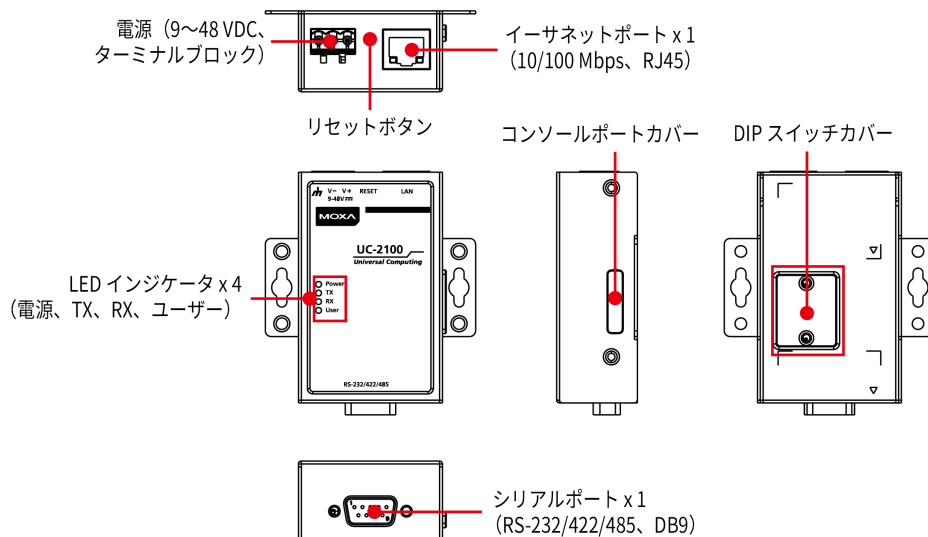
## 製品紹介

UC-2100シリーズのコンピューティングプラットフォームは、組み込みデータ収集および処理アプリケーション向けに設計されています。コンピュータには、ソフトウェアで選択可能な最大2つのRS-232/422/485フルシグナルシリアルポートと、シングルまたはデュアルイーサネットポートが搭載されています。手のひらサイズのARMベースのコンピューティングプラットフォームには、シングルまたはデュアルシリアル、イーサネットポート、ギガビットイーサネット、ワイヤレス接続など、広範囲のインターフェース要件に対応するさまざまなモデルが含まれています。汎用的な通信機能を備えており、ユーザーはUC-2100をさまざまな複雑な通信ソリューションに効率的に適応させることができます。

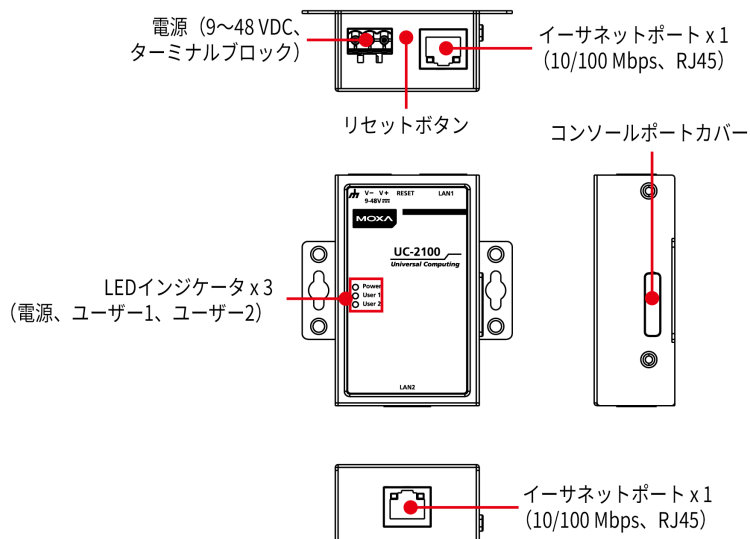
UC-2100シリーズには、Cortex-A8 ARMベースのプロセッサが内蔵されており、さまざまな産業ソリューション向けに最適化されています。柔軟なインターフェースオプションを備えたこの小型の組み込みコンピュータは、現場サイトでデータ取得と処理向けに信頼性と安全性の高いゲートウェイを提供し、多くの他の大規模な導入にも有効な通信プラットフォームです。広範囲の温度アプリケーションを想定したモデルは、石油・ガス業界などの過酷な環境での使用にも対応しています。さらに、すべてのモデルは、最適化されたソフトウェア機能と長期サポートを提供するMoxa Industrial Linuxプラットフォームを使用しています。

## 外観

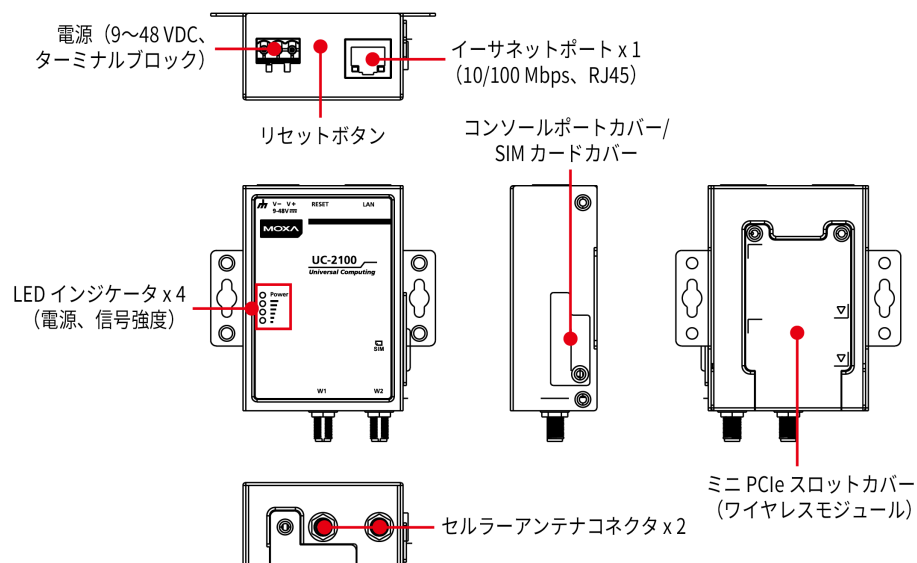
### UC-2101



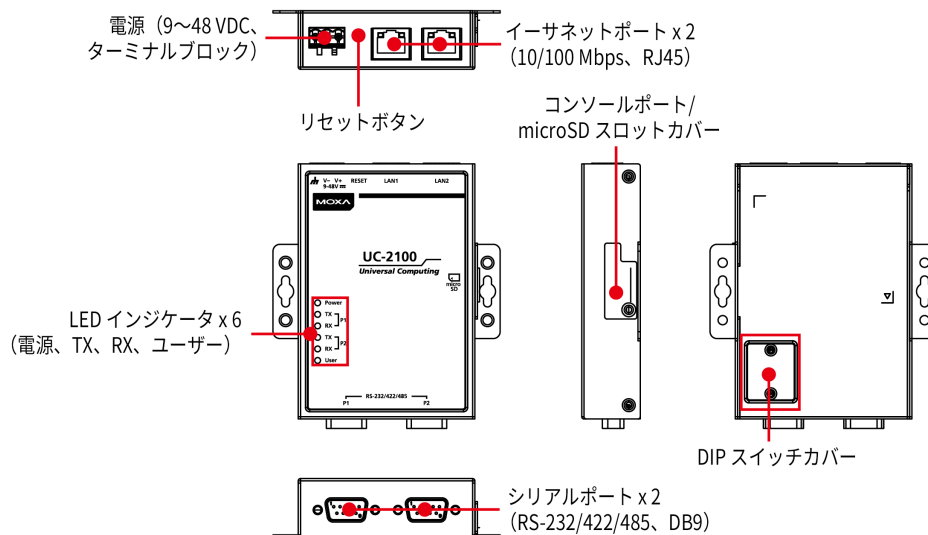
### UC-2102



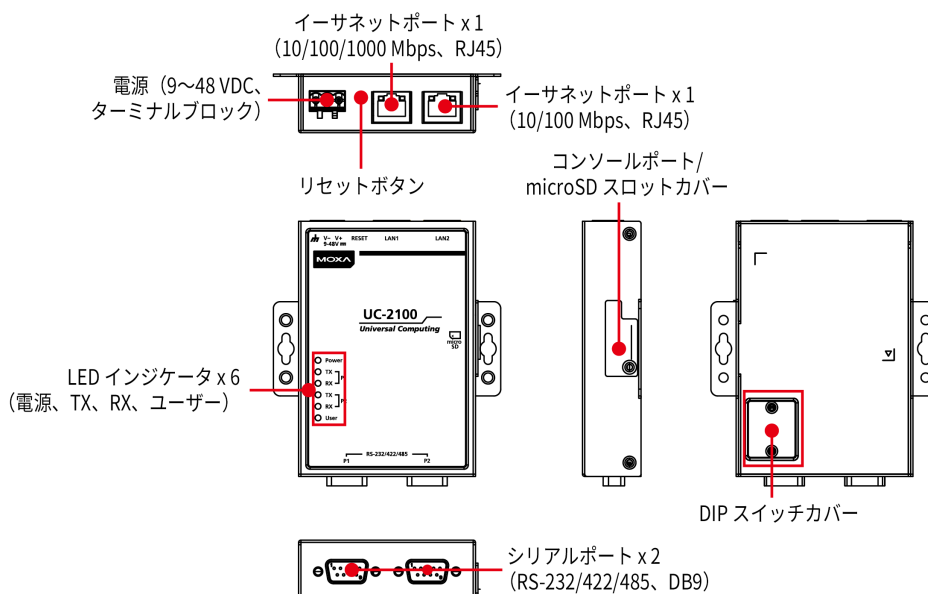
### UC-2104



## UC-2111



## UC-2112



## 仕様

### Computer

|                       |                                                                                                                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                   | UC-2101-LX: Armv7 Cortex-A8 600 MHz<br>UC-2102-LX: Armv7 Cortex-A8 600 MHz<br>UC-2104-LX: Armv7 Cortex-A8 600 MHz<br>UC-2111-LX: Armv7 Cortex-A8 600 MHz<br>UC-2112-LX: Armv7 Cortex-A8 1 GHz<br>UC-2112-T-LX: Armv7 Cortex-A8 1 GHz |
| DRAM                  | UC-2101-LX: 256 MB DDR3<br>UC-2102-LX: 256 MB DDR3<br>UC-2104-LX: 256 MB DDR3<br>UC-2111-LX: 512 MB DDR3<br>UC-2112-LX: 512 MB DDR3<br>UC-2112-T-LX: 512 MB DDR3                                                                     |
| Storage Pre-installed | 8 GB eMMC                                                                                                                                                                                                                            |
| Pre-installed OS      | Linux Debian 9 kernel 4.4 (Moxa Industrial Linux)                                                                                                                                                                                    |

|              |                                                                                                      |
|--------------|------------------------------------------------------------------------------------------------------|
| Storage Slot | UC-2111-LX: Micro SD slots x 1<br>UC-2112-LX: Micro SD slots x 1<br>UC-2112-T-LX: Micro SD slots x 1 |
| Supported OS | Moxa Industrial Linux (Debian 9)                                                                     |

## Computer Interface

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet Ports             | UC-2101-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 1<br>UC-2102-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2<br>UC-2104-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 1<br>UC-2111-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2<br>UC-2112-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 1, Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 1<br>UC-2112-T-LX: Auto-sensing 10/100 Mbps ports (RJ45 connector) x 1, Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 1 |
| Serial Ports               | UC-2101-LX: RS-232/422/485 ports x 1, software selectable (DB9 male)<br>UC-2111-LX: RS-232/422/485 ports x 2, software selectable (DB9 male)<br>UC-2112-LX: RS-232/422/485 ports x 2, software selectable (DB9 male)<br>UC-2112-T-LX: RS-232/422/485 ports x 2, software selectable (DB9 male)                                                                                                                                                                                                                                       |
| Console Port               | RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Expansion Slots            | UC-2104-LX: mPCIe slot x 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cellular Antenna Connector | UC-2104-LX: SMA x 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Number of SIMs             | UC-2104-LX: 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SIM Format                 | UC-2104-LX: Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Buttons                    | Reset button, DIP switch for serial port configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Ethernet Interface

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

## Serial Interface

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

## Serial Signals

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

## LED Indicators

|        |                          |
|--------|--------------------------|
| System | Power x 1                |
| LAN    | 2 per port (10/100 Mbps) |

|                          |                                                                                                                                            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                          | UC-2112-LX, UC-2112-T-LX: 2 per port (10/100/1000 Mbps)                                                                                    |
| Serial                   | UC-2101-LX: 2 per port (Tx, Rx)<br>UC-2111-LX: 2 per port (Tx, Rx)<br>UC-2112-LX: 2 per port (Tx, Rx)<br>UC-2112-T-LX: 2 per port (Tx, Rx) |
| User Programmable        | UC-2101-LX: User x 1<br>UC-2102-LX: User x 2<br>UC-2111-LX: User x 1<br>UC-2112-LX: User x 1<br>UC-2112-T-LX: User x 1                     |
| Wireless Signal Strength | UC-2104-LX: Cellular/Wi-Fi x 3                                                                                                             |

## Physical Characteristics

|                           |                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Housing                   | Metal                                                                                                                                                                                                                                                                                                                                               |
| Installation              | Wall mounting, DIN-rail mounting (with optional kit)                                                                                                                                                                                                                                                                                                |
| Weight                    | UC-2101-LX: 190 g (0.42 lb)<br>UC-2102-LX: 190 g (0.42 lb)<br>UC-2104-LX: 220 g (0.49 lb)<br>UC-2111-LX: 290 g (0.64 lb)<br>UC-2112-LX: 290 g (0.64 lb)<br>UC-2112-T-LX: 290 g (0.64 lb)                                                                                                                                                            |
| Dimensions (with ears)    | UC-2101-LX: 73 x 80 x 28 mm (2.87 x 3.15 x 1.10 in)<br>UC-2102-LX: 73 x 80 x 28 mm (2.87 x 3.15 x 1.10 in)<br>UC-2104-LX: 80 x 80 x 30.8 mm (3.15 x 3.15 x 1.21 in)<br>UC-2111-LX: 99 x 111 x 25.5 mm (3.90 x 4.37 x 1.00 in)<br>UC-2112-LX: 99 x 111 x 25.5 mm (3.90 x 4.37 x 1.00 in)<br>UC-2112-T-LX: 99 x 111 x 25.5 mm (3.90 x 4.37 x 1.00 in) |
| Dimensions (without ears) | UC-2101-LX: 50 x 80 x 28 mm (1.97 x 3.15 x 1.10 in)<br>UC-2102-LX: 50 x 80 x 28 mm (1.97 x 3.15 x 1.10 in)<br>UC-2104-LX: 57 x 80 x 30.8 mm (2.24 x 3.15 x 1.21 in)<br>UC-2111-LX: 77 x 111 x 25.5 mm (3.03 x 4.37 x 1.00 in)<br>UC-2112-LX: 77 x 111 x 25.5 mm (3.03 x 4.37 x 1.00 in)<br>UC-2112-T-LX: 77 x 111 x 25.5 mm (3.03 x 4.37 x 1.00 in) |

## Environmental Limits

|                           |                                                                                                                                                                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature     | UC-2101-LX: -10 to 60°C (14 to 140°F)<br>UC-2102-LX: -10 to 60°C (14 to 140°F)<br>UC-2104-LX: -10 to 70°C (14 to 158°F)<br>UC-2111-LX: -10 to 60°C (14 to 140°F)<br>UC-2112-LX: -10 to 60°C (14 to 140°F)<br>UC-2112-T-LX: -40 to 75°C (-40 to 167°F) |
| Storage Temperature       | UC-2101-LX: -20 to 70°C (-4 to 158°F)<br>UC-2102-LX: -20 to 70°C (-4 to 158°F)<br>UC-2104-LX: -20 to 70°C (-4 to 158°F)<br>UC-2111-LX: -20 to 70°C (-4 to 158°F)<br>UC-2112-LX: -20 to 70°C (-4 to 158°F)<br>UC-2112-T-LX: -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing)                                                                                                                                                                                                                             |
| Shock                     | IEC 60068-2-27                                                                                                                                                                                                                                        |
| Vibration                 | 2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without USB devices attached)                                                                                                                                                          |

## Power Parameters

|                   |                                  |
|-------------------|----------------------------------|
| Input Voltage     | 9 to 48 VDC                      |
| Input Current     | 0.084 A @ 9 VDC, 0.45 A @ 48 VDC |
| Power Consumption | 4 W                              |

## MTBF

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time      | UC-2101-LX: 1,360,496 hrs<br>UC-2102-LX: 1,652,339 hrs<br>UC-2104-LX: 1,577,995 hrs<br>UC-2111-LX: 985,911 hrs<br>UC-2112-LX: 982,882 hrs<br>UC-2112-T-LX: 982,882 hrs |
| Standards | Telcordia (Bellcore) Standard TR/SR                                                                                                                                    |

## Reliability

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

## Standards and Certifications

|                     |                                                                                                                                                                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety              | EN 60950-1, IEC 60950-1, 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; Signal: 1 kV<br>IEC 61000-4-6 CS: 3 V<br>IEC 61000-4-8 PFMF |
| Hazardous Locations | UC-2112-LX, UC-2112-T-LX: Class I Division 2, IECEx Zone 2, ATEX Zone 2                                                                                                                                                                      |
| Green Product       | RoHS, CRoHS, WEEE                                                                                                                                                                                                                            |

## Warranty

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

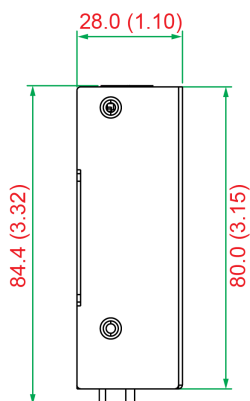
## Package Contents

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

## 寸法

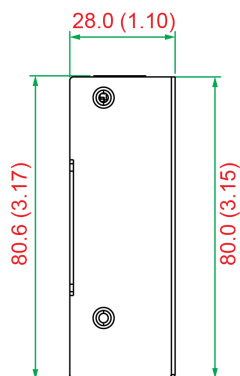
### UC-2101

単位：mm（インチ）



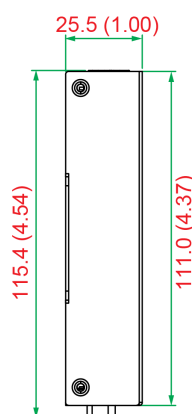
### UC-2102

単位：mm（インチ）



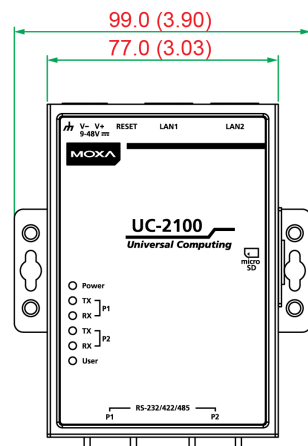
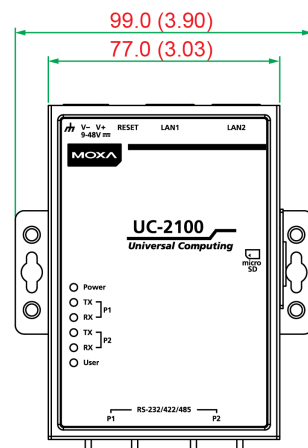
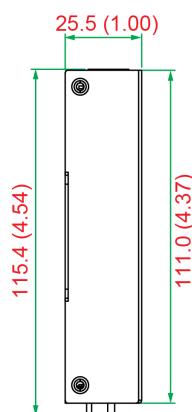
### UC-2111

単位：mm（インチ）



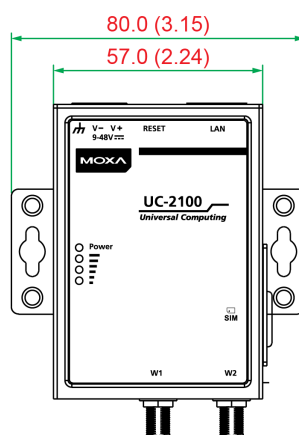
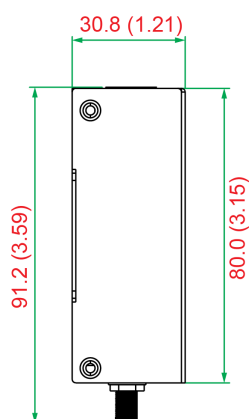
### UC-2112

単位：mm（インチ）



### UC-2104

単位：mm（インチ）



## 注文情報

| Model Name | CPU     | RAM    | Storage | Serial | Ethernet | MicroSD | Mini PCIe | Operating Temp. |
|------------|---------|--------|---------|--------|----------|---------|-----------|-----------------|
| UC-2101-LX | 600 MHz | 256 MB | 8 GB    | 1      | 1        | –       | –         | -10 to 60°C     |
| UC-2102-LX | 600 MHz | 256 MB | 8 GB    | –      | 2        | –       | –         | -10 to 60°C     |

| Model Name   | CPU      | RAM    | Storage | Serial | Ethernet       | MicroSD | Mini PCIe | Operating Temp. |
|--------------|----------|--------|---------|--------|----------------|---------|-----------|-----------------|
| UC-2104-LX   | 600 MHz  | 256 MB | 8 GB    | –      | 1              | –       | 1         | -10 to 60°C     |
| UC-2111-LX   | 600 MHz  | 512 MB | 8 GB    | 2      | 2              | 1       | –         | -10 to 60°C     |
| UC-2112-LX   | 1000 MHz | 512 MB | 8 GB    | 2      | 2 (1 Giga LAN) | 1       | –         | -10 to 60°C     |
| UC-2112-T-LX | 1000 MHz | 512 MB | 8 GB    | 2      | 2 (1 Giga LAN) | 1       | –         | -40 to 75°C     |

## アクセサリ（別売）

### 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-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-C7US-2B-183 | Power cord with United States (US) plug, 10A/125V, 1.83 m       |
| PWC-C7CN-2B-183 | Power cord with two-prong China (CN) plug, 1.83 m               |

### Cellular Wireless Modules

|                 |                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| UC-LTE-CAT1-EU  | LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for Asia and Europe bands 1, 3, 8, 20, 28                            |
| UC-LTE-CAT1-AUS | LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for Australia and New Zealand bands 3, 5, 8, 28                      |
| UC-LTE-CAT4-CN  | LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for LTE (FDD) bands B1, B3, B8 and LTE (TDD) bands B39, B40, B41(38) |

### Wi-Fi Wireless Modules

|             |                                                                             |
|-------------|-----------------------------------------------------------------------------|
| UC-WiFi-USB | 802.11 a/b/g/n/ac, 2.4/5 GHz Wi-Fi module with 2 each of M2 and M2.5 screws |
|-------------|-----------------------------------------------------------------------------|

### Antennas

|                           |                                                                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| ANT-WDB-ARM-0202 plus ADP | 2.4/5 GHz omni-directional antenna, 2/2 dBi, RP-SMA-type (male) connector                                                                       |
| 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-04 BK         | LTE Stick antenna that covers 704-960/1710-2620 MHz providing omnidirectional radiation with a gain of 4.5 dBi.                                 |
| ANT-LTE-ASM-05 BK         | LTE stick antenna that covers 704-960/1710-2620 MHz with a gain of 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-GPS-OSM-05-3M BK      | Active GPS antenna, 26 dBi, 1572 MHz, L1 band antenna for GPS                                                                                   |
| A-ADP-SM-RF Golden        | SMA adapter for UC-2104 and UC-5100 Series                                                                                                      |
| ANT-LTEUS-ASM-01          | GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi                                                                        |

### DIN-Rail Mounting Kits

|       |                              |
|-------|------------------------------|
| DK35A | DIN-rail mounting kit, 35 mm |
|-------|------------------------------|

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