

UC-5100 Series

Arm Cortex-A8 1 GHz IloT gateways with 1 mini PCIe expansion slot for wireless module, 4 serial ports, 2 CAN ports, 4 DI, 4 DOs



Features and Benefits

- Armv7 Cortex-A8 1000 MHz processor
- Dual auto-sensing 10/100 Mbps Ethernet ports
- 4 software-selectable RS-232/422/485 ports supporting all signals
- Dual CAN ports with industrial CAN 2.0 A/B protocol supported
- Moxa Industrial Linux with 10-year long-term support
- Mini PCIe socket for Wi-Fi/cellular module
- SD slot for storage expansion
- -40 to 85°C wide temperature range and -40 to 70°C with LTE enabled
- IEC 61000-6-2/6-4 standards for harsh industrial environments

Certifications

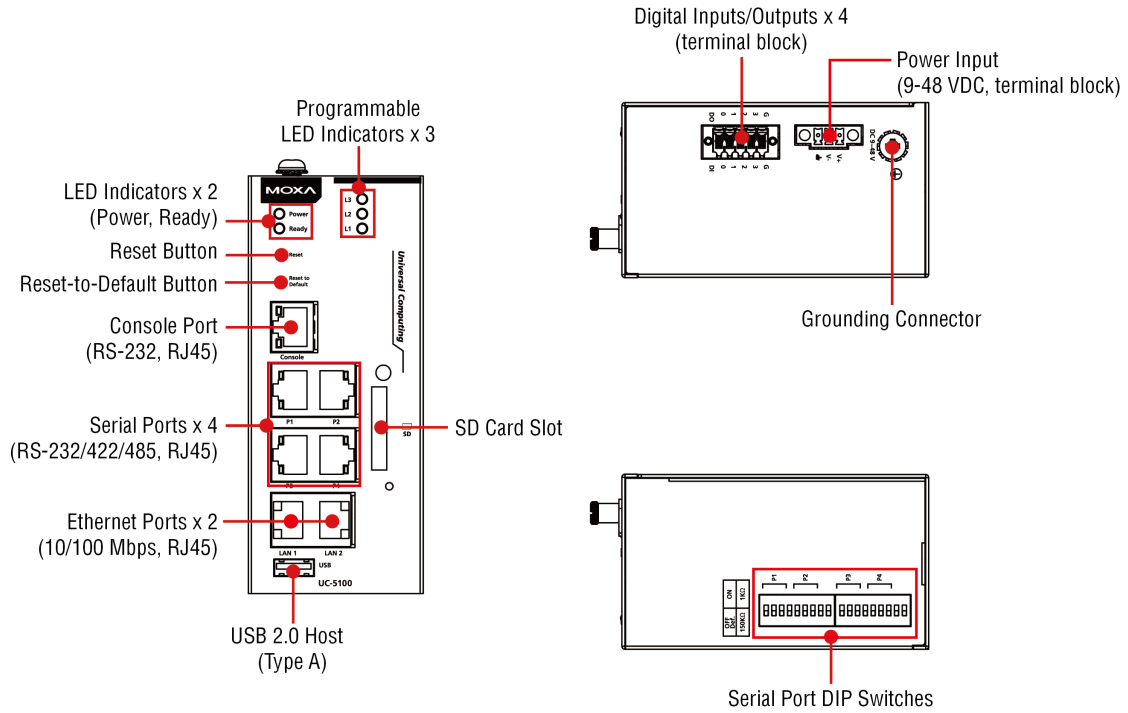


Introduction

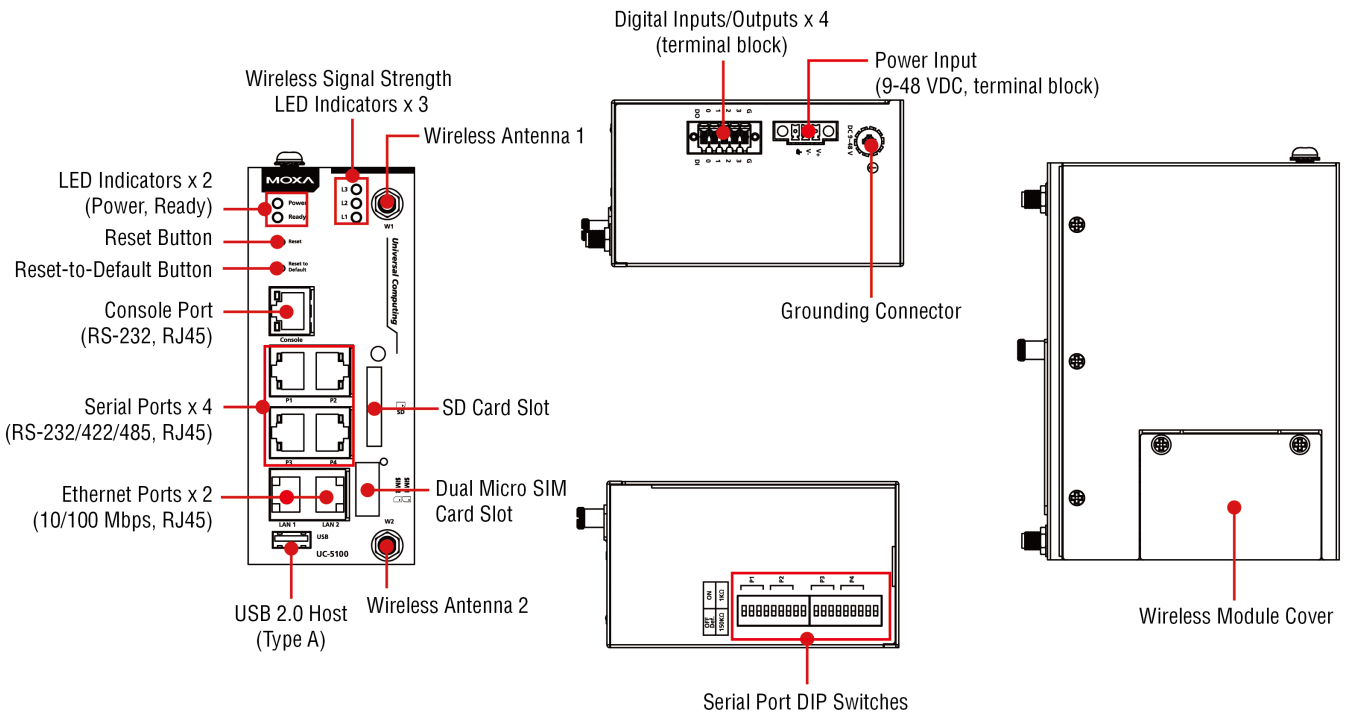
The UC-5100 Series embedded computers are designed for industrial automation applications. The computers feature 4 RS-232/422/485 full signal serial ports with adjustable pull-up/pull-down resistors, 2 CAN ports, 2 Ethernet ports, 4 digital input channels, 4 digital output channels, USB interface, and an SD slot in a compact, front-end access housing. To fulfill various industrial applications, the UC-5100 Series computing platform provides models with 2 CAN ports and a mini PCIe slot for wireless connections featuring a dual-SIM design for network redundancy. The UC-5100's vertical DIN-rail form factor makes it easy to install the computer in a small cabinet. This space-saving solution also facilitates easy wiring, making the UC-5100 a great choice as front-end embedded controllers for industrial applications. Furthermore, all models are equipped with Moxa Industrial Linux that comes with 10-year long-term support as well as optimized software features.

Appearance

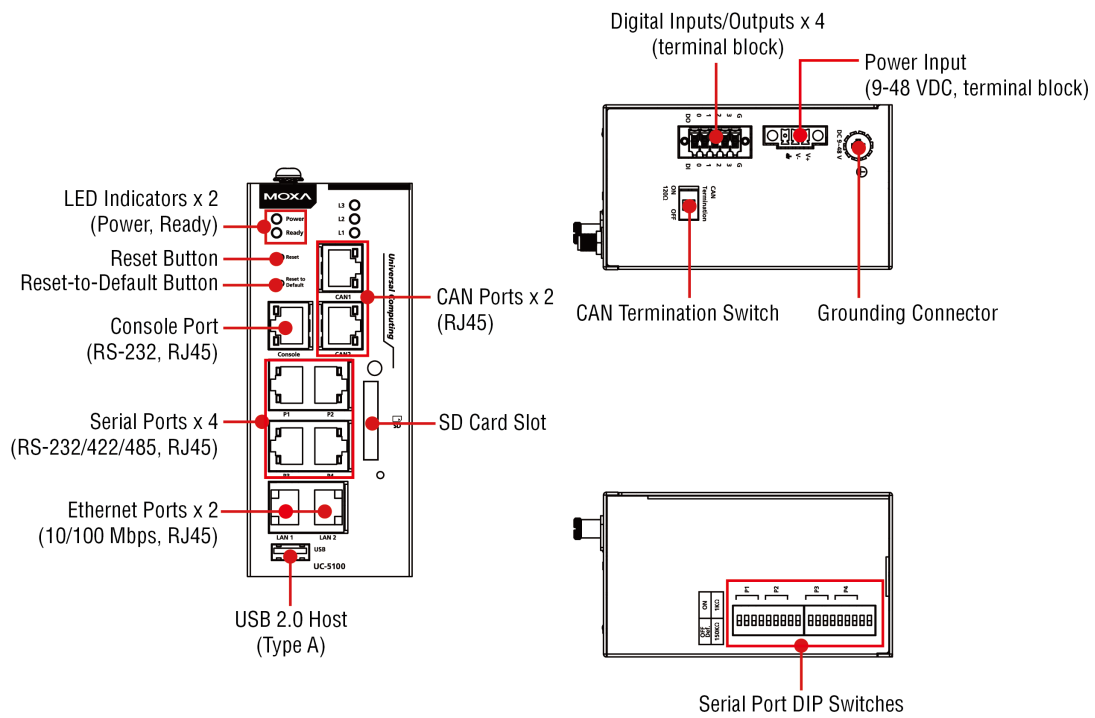
UC-5101



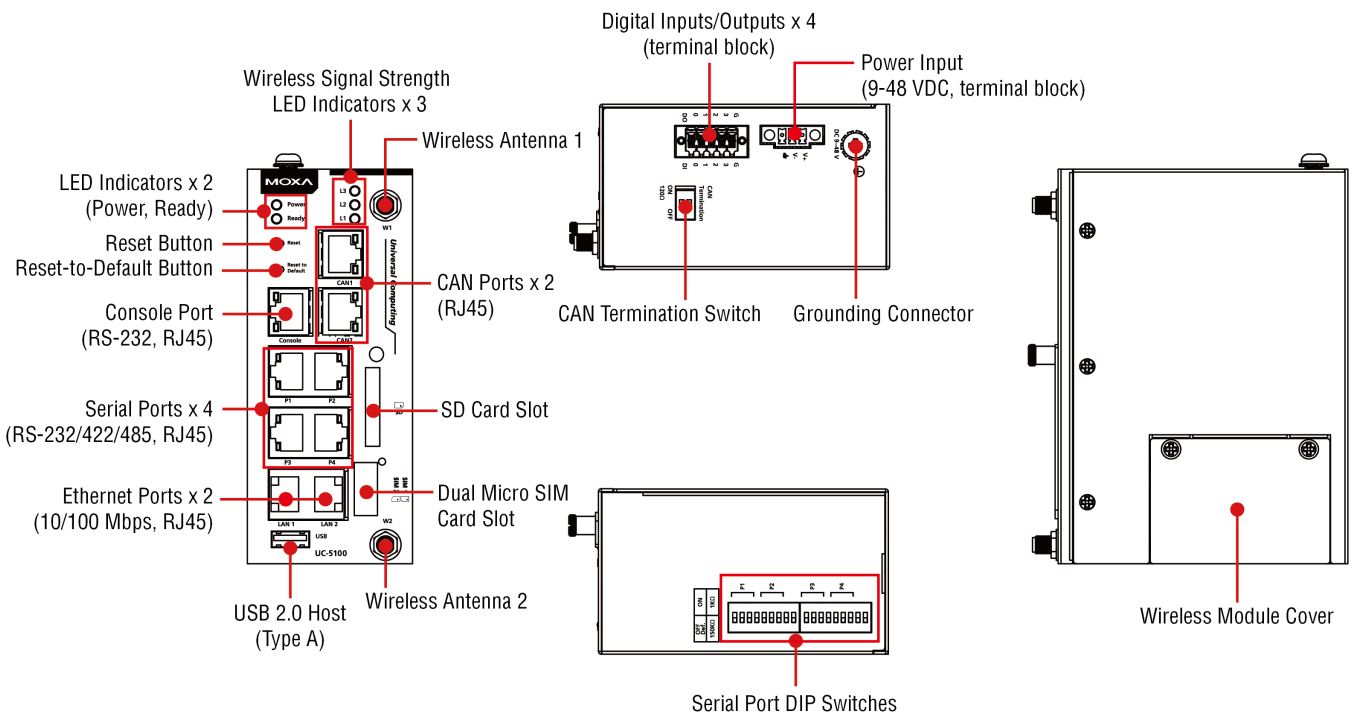
UC-5102



UC-5111



UC-5112



Specifications

Computer

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

| | |
|-------------------------------|--|
| Storage Slot | SD slots x 1 |
| Expansion Slots | UC-5102-LX: mPCIe slots x 1 UC-5112-LX: mPCIe slots x 1 UC-5102-T-LX: mPCIe slots x 1 UC-5112-T-LX: mPCIe slots x 1 |
| Computer Interface | |
| USB 2.0 | USB 2.0 hosts x 1, type-A connectors |
| Number of SIMs | 2 |
| SIM Format | Micro |
| Serial Ports | RS-232/422/485 ports x 4, software selectable (RJ45) |
| Digital Input | DIs x 4 |
| Digital Output | DOs x 4 |
| Buttons | Reset button, DIP switch for serial and CAN port configuration |
| Console Port | RS-232 (TxD, RxD, GND), RJ45 output (115200, n, 8, 1) |
| Ethernet Interface | |
| Ethernet Ports | Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2 |
| Magnetic Isolation Protection | 1.5 kV (built-in) |
| Serial Interface | |
| Serial Ports | 4 x RS-232/422/485 |
| 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 |
| CAN Interface | |
| No. of Ports | UC-5111-LX: 2 UC-5111-T-LX: 2 UC-5112-LX: 2 UC-5112-T-LX: 2 |
| Signals | UC-5111-LX: CAN_L, CAN_H, CAN Signal GND UC-5111-T-LX: CAN_L, CAN_H, CAN Signal GND UC-5112-LX: CAN_L, CAN_H, CAN Signal GND UC-5112-T-LX: CAN_L, CAN_H, CAN Signal GND |
| Terminator | UC-5111-LX: N/A, 120 ohms (by DIP) UC-5111-T-LX: N/A, 120 ohms (by DIP) UC-5112-LX: N/A, 120 ohms (by DIP) UC-5112-T-LX: N/A, 120 ohms (by DIP) |

| Digital Inputs | |
|---------------------------|--|
| Voltage | 0 to 0.8 VDC 2.0 to 5.5 VDC |
| Digital Outputs | |
| Current Rating | 24 mA per channel |
| Voltage | 0 to 0.55 VDC 2.5 to 3.3 VDC |
| LED Indicators | |
| System | Power x 1 System Ready x 1 |
| LAN | 2 per port (10/100 Mbps) |
| Serial | 2 per port (Tx, Rx) |
| CAN | UC-5111-LX: 2 per port (Tx, Rx), UC-5112-LX: 2 per port (Tx, Rx), UC-5111-T-LX: 2 per port (Tx, Rx), UC-5112-T-LX: 2 per port (Tx, Rx) |
| Wireless Signal Strength | UC-5112-LX: Cellular/Wi-Fi x 3 UC-5102-LX: Cellular/Wi-Fi x 3 UC-5102-T-LX: Cellular/Wi-Fi x 3 UC-5112-T-LX: Cellular/Wi-Fi x 3 |
| Physical Characteristics | |
| Housing | Metal |
| Weight | 600 g (1.32 lb) |
| Dimensions | 57 x 136 x 100 mm (2.24 x 5.35 x 3.94 in) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |
| Power Parameters | |
| Input Voltage | 9 to 48 VDC |
| Input Current | 0.95 A @ 9 VDC, 0.23 A @ 48 VDC |
| Power Consumption | 11 W |
| Environmental Limits | |
| Operating Temperature | Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: Product only: -40 to 85°C (-40 to 185°F) With LTE accessory: -40 to 70°C (-40 to 158°F) With Wi-Fi accessory: -10 to 70°C (14 to 158°F) |
| Storage Temperature | UC-5101-LX: -20 to 70°C (-4 to 158°F) UC-5102-LX: -20 to 70°C (-4 to 158°F) UC-5111-LX: -20 to 70°C (-4 to 158°F) UC-5112-LX: -20 to 70°C (-4 to 158°F) UC-5101-T-LX: -40 to 85°C (-40 to 185°F) UC-5102-T-LX: -40 to 85°C (-40 to 185°F) UC-5111-T-LX: -40 to 85°C (-40 to 185°F) UC-5112-T-LX: -40 to 85°C (-40 to 185°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

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|---------------|--|
| Safety | UL 60950-1, EN 60950-1, IEC 60950-1 |
| EMC | EN 55032/24, EN 61000-6-2/-6-4 |
| 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: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF |
| Green Product | RoHS, CRoHS, WEEE |

Reliability

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

MTBF

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|-----------|--|
| Time | UC-5101-LX: 728,216 hrs UC-5101-T-LX: 728,216 hrs UC-5102-LX: 704,409 hrs UC-5102-T-LX: 704,409 hrs UC-5111-LX: 584,470 hrs UC-5111-T-LX: 584,470 hrs UC-5112-LX: 568,997 hrs UC-5112-T-LX: 568,997 hrs |
| Standards | Telcordia (Bellcore) Standard TR/SR |

Warranty

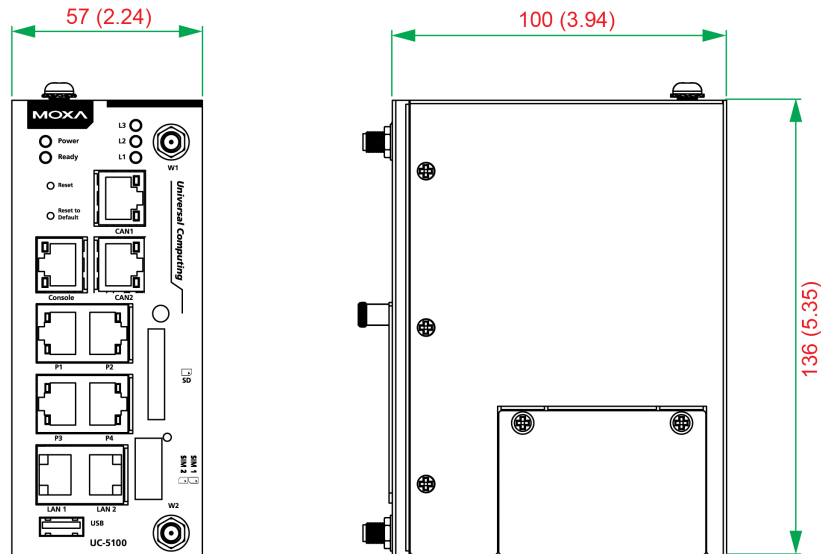
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| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

Package Contents

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|------------------|---|
| Device | 1 x UC-5100 Series computer |
| Documentation | 1 x quick installation guide 1 x warranty card |
| Installation Kit | 1 x DIN-rail kit (preinstalled) 1 x power jack |
| Cable | 1 x RJ45-to-DB9 console cable |

Dimensions

Unit: mm (inch)



Ordering Information

| Model Name | CPU | RAM | Storage | Ethernet | Serial | CAN | SD | USB | Mini PCIe | Operating Temp. |
|--------------|-------|--------|---------|----------|--------|-----|----|-----|---------------------|-----------------|
| UC-5101-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | - | 1 | 1 | - | -10 to 60°C |
| UC-5102-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | - | 1 | 1 | 1 (dual-SIM socket) | -10 to 60°C |
| UC-5111-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | 2 | 1 | 1 | - | -10 to 60°C |
| UC-5112-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | 2 | 1 | 1 | 1 (dual-SIM socket) | -10 to 60°C |
| UC-5101-T-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | - | 1 | 1 | - | -40 to 85°C |
| UC-5102-T-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | - | 1 | 1 | 1 (dual-SIM socket) | -40 to 85°C |
| UC-5111-T-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | 2 | 1 | 1 | - | -40 to 85°C |
| UC-5112-T-LX | 1 GHz | 512 MB | 8 GB | 2 | 4 | 2 | 1 | 1 | 1 (dual-SIM socket) | -40 to 85°C |

Accessories (sold separately)

Power Adapters

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| 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

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|-----------------|---|
| PWC-C7AU-2B-183 | Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m |
| PWC-C7CN-2B-183 | Power cord with three-prong China (CN) plug, 2.5A/250V, 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

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| 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 |
|-------------|---|

Cellular Wireless Modules

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|----------------|---|
| UC-LTE-CAT1-EU | LTE cellular module with 2 M2 and 2 M2.5 mounting screws for EMEA bands 1, 3, 7, 8, 20, 28A |
| UC-LTE-CAT1-AP | LTE cellular module with 2 M2 and 2 M2.5 mounting screws for APAC bands 1, 3, 5, 8, 9, 18(26), 19, 28 |
| UC-LTE-CAT4-CN | LTE cellular module with 2 M2 and 2 M2.5 mounting screws for LTE (FDD) bands B1, B3, B8 and LTE (TDD) bands B39, B40, B41(38) |

Antennas

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|---------------------------|--|
| 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 | 700-2700 MHz, multi-band antenna, specifically designed for 2G, 3G, and 4G applications, 3 m cable |
| ANT-LTE-ASM-04 BK | 704-960/1710-2620 MHz, LTE omni-directional stick antenna, 4.5 dBi |
| ANT-LTE-ASM-05 BK | 704-960/1710-2620 MHz, LTE stick antenna, 5 dBi |
| ANT-LTE-OSM-06-3m BK MIMO | Multiband antenna with screw-fastened mounting option for 700-2700/2400-2500/5150-5850 MHz frequencies |

DIN-Rail Mounting Kits

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| DK-UC-5000 | DIN-rail mounting kit with screws for the UC-5000 Series |
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Wall-Mounting Kits

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| WM-UC-5000 | Wall-mounting kit with screws for the UC-5000 Series |
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