

# UC-3100 Series

*Arm-based computing platform with wireless built in*



## Feature and Benefits

- Armv7 Cortex-A8 1000 MHz processor
- Integrated Wi-Fi 802.11a/b/g/n and LTE Cat. 1 for the US, EU, APAC, and AUS regions
- Bluetooth 4.2 support for the US region
- Industrial CAN 2.0 A/B protocols supported
- Robust root file system to prevent the system from being bricked due to a firmware update failure
- -30 to 70°C system operating temperature
- Meets the EN 61000-6-2 and EN 61000-6-4 standards for industrial EMC applications
- Moxa Industrial Linux with 10-year long-term support

## Certifications



## Introduction

Moxa's UC-3100 Series computers can be used as smart gateways in the field for data pre-processing and transmission, as well as for other embedded data-acquisition applications. The series includes 9 models, each supporting different wireless options and protocols. The UC-3100's advanced heat dissipation design makes it suitable for use in temperatures ranging from -30 to 70°C. In fact, the Wi-Fi and LTE connections can be used simultaneously in both cold and hot environments, allowing you to maximize the data pre-processing and data transmission capabilities of your applications in most harsh environments.

The UC-3100 is more than just a hardware solution. In order to offer a better user experience with a Moxa Arm-based computer, the UC-3100 supports the following software features, allowing you to use the most suitable configuration for your application.

- High VPN performance; more than 70 Mbps Ethernet throughput with AES-256 encryption
- Robust file system to prevent the system from being bricked due to a firmware upgrade failure
- Real COM mode to provide a control interface to Moxa's NPort products

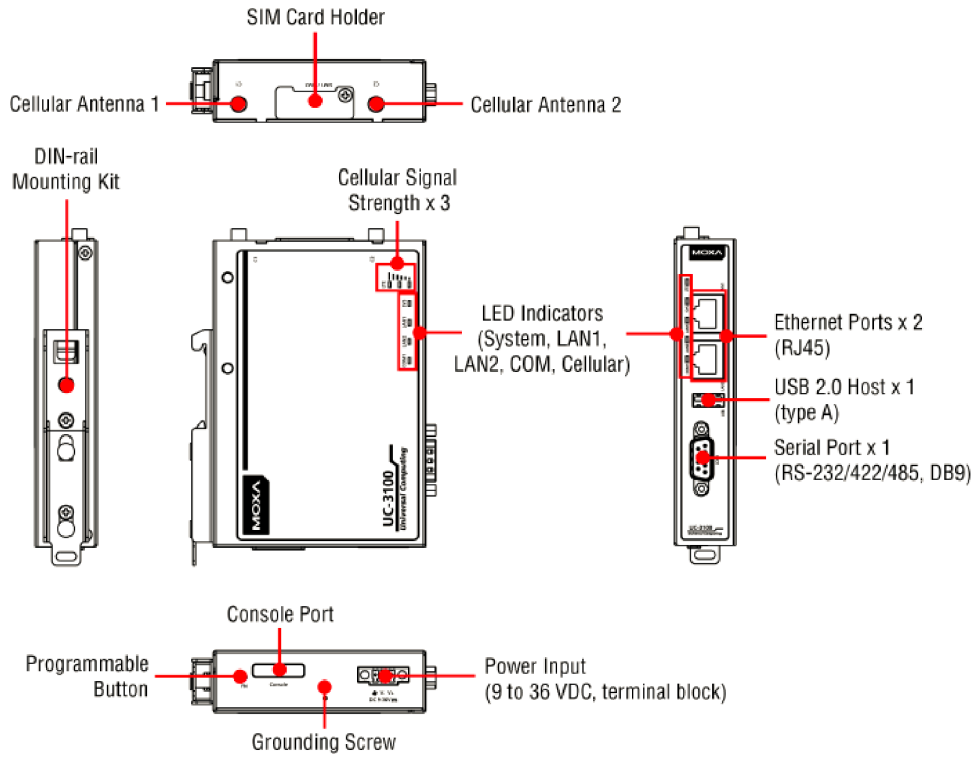
In addition, Moxa provides 10 years of Linux OS support. With a new version of the Debian repository released on an average every 2 to 3 years, you can create a reliable solution that will be supported now and long into the future.

## Applications

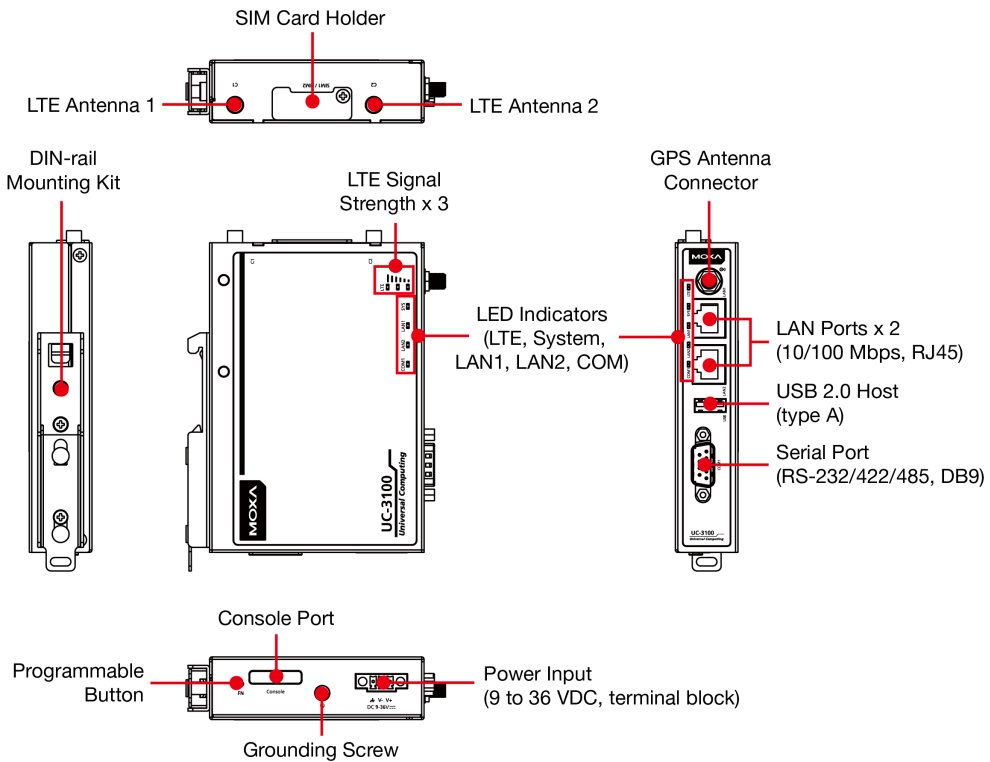
- Remote Terminal Unit (RTU)
- Data acquisition
- M2M communication (smart gateway)
- Digital signage
- Factory automation
- In-vehicle monitor/data logger (transportation)
- Programmable router
- Energy usage optimization
- Predictive maintenance
- Asset management

# Appearance

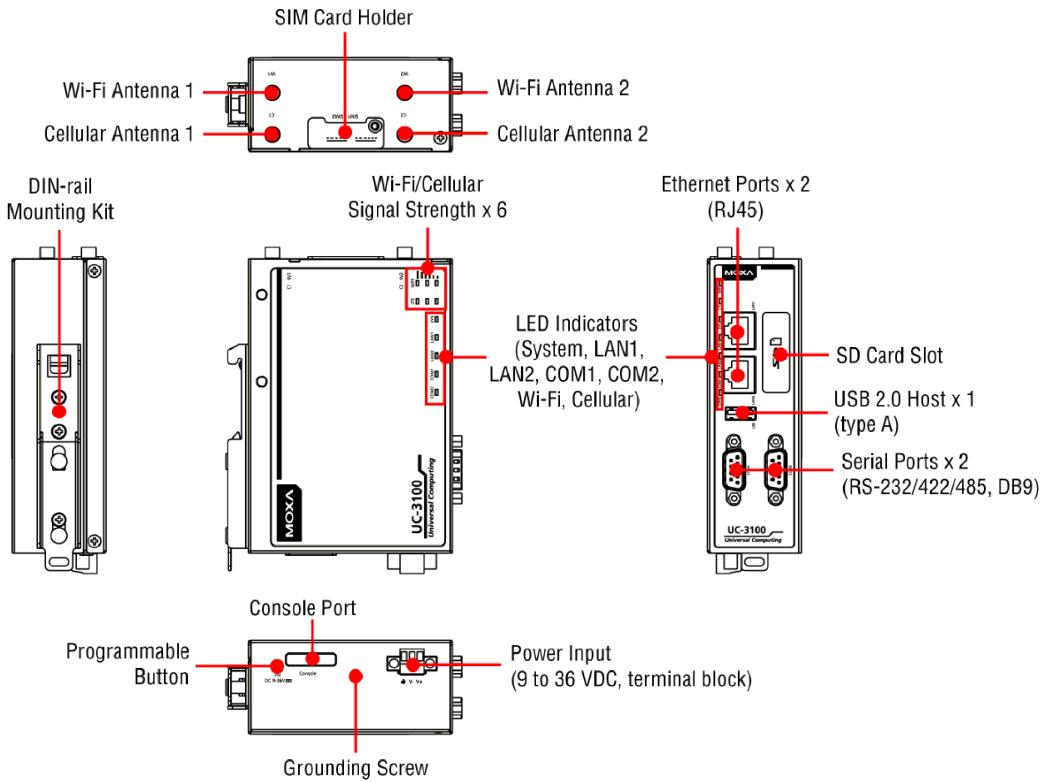
## UC-3101



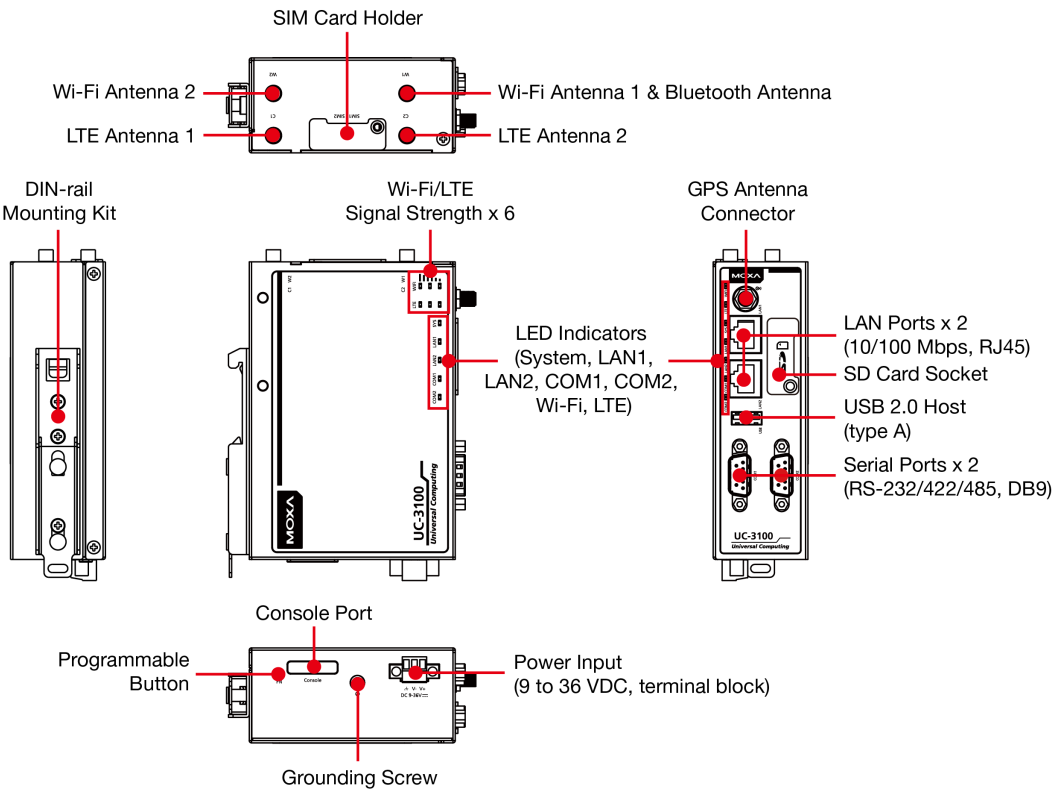
## UC-3101 (US Model)



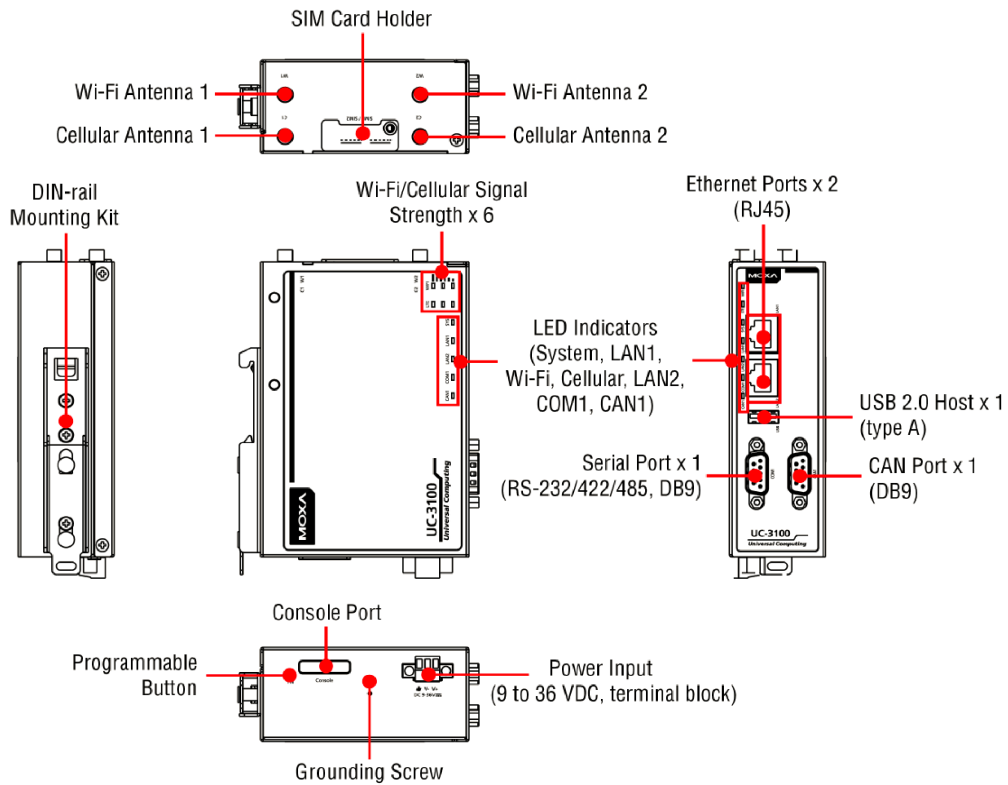
**UC-3111**



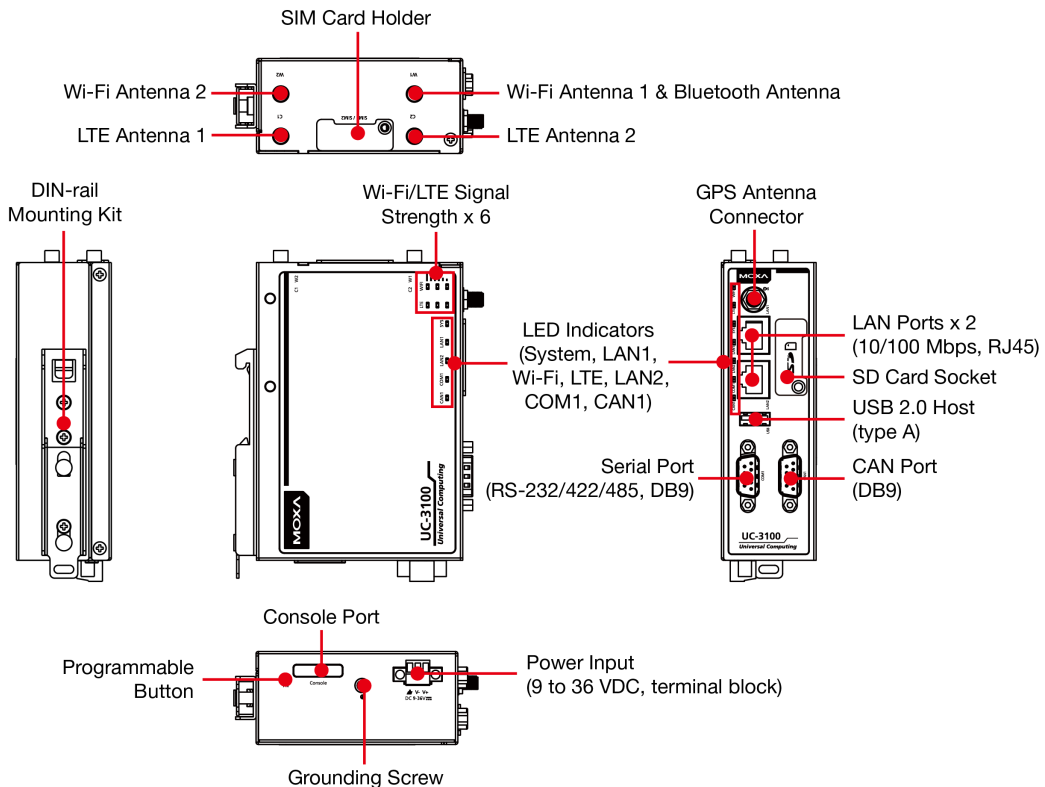
**UC-3111 (US Model)**



## UC-3121



## UC-3121 (US Model)



## Specifications

### Computer

CPU	Armv7 Cortex-A8 1 GHz
DRAM	1 GB DDR3 for all US models 512 MB DDR3 for all EU and AU models

Supported OS	Linux Debian 9 kernel 4.4 (Moxa Industrial Linux)
Storage Pre-installed	8 GB eMMC for all US models 4 GB eMMC for all EU and AU models
Storage Slot	UC-3111-T-US-LX: SD slots x 1 UC-3121-T-US-LX: SD slots x 1 UC-3111-T-EU-LX: SD slots x 1 UC-3111-T-AU-LX: SD slots x 1

#### Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-3101/3121: RS-232/422/485 ports x 1, software-selectable (DB9) UC-3111: RS-232/422/485 ports x 2, software-selectable (DB9)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Cellular Antenna Connector	SMA x 2
SIM Format	Nano
Number of SIMs	2
GPS Antenna Connector	SMA x 1 (US models only)
Wi-Fi Antenna Connector	RP-SMA x 2 for UC-3111/UC-3121 only
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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#### Cellular Interface

Band Options	<p>US models: LTE Bands: Band 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) / Band 12 (700 MHz) / Band 13 (700 MHz) / Band 14 (700 MHz) / Band 66 (1700 MHz) / Band 71 (600 MHz) UMTS Bands: 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) Carrier Approval: Verizon, AT&amp;T</p> <p>EU models: LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 8 (900 MHz) / Band 20 (800 MHz) / Band 28 (700 MHz) GSM Bands: 900 MHz / 1800 MHz</p> <p>AU models: LTE Bands: 3 (1800 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz) / Band 28 (700 MHz) UMTS Bands: 1 (2100 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz)</p>
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#### WLAN Interface

WLAN Standards	802.11a/b/g/n: UC-3111-T-LX and UC-3121-T-LX models Bluetooth 4.2 compliance: UC-3111-T-LX and UC-3121-T-LX models
Frequency Band	2.4 GHz/5 GHz: UC-3111-T-LX and UC-3121-T-LX models

#### Serial Interface

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

Baudrate	UC-3121-T-US-LX: 10 to 1000 kbps UC-3121-T-EU-LX: 10 to 1000 kbps UC-3121-T-AU-LX: 10 to 1000 kbps
Connector	UC-3121-T-US-LX: DB9 male UC-3121-T-EU-LX: DB9 male UC-3121-T-AU-LX: DB9 male
Isolation	UC-3121-T-US-LX: 2 kV (built-in) UC-3121-T-EU-LX: 2 kV (built-in) UC-3121-T-AU-LX: 2 kV (built-in)
Signals	UC-3121-T-US-LX: CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND UC-3121-T-EU-LX: CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND UC-3121-T-AU-LX: CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND

## LED Indicators

System	Power x 1
CAN	UC-3121-T-US-LX: 1 per port (Tx, Rx) UC-3121-T-EU-LX: 1 per port (Tx, Rx) UC-3121-T-AU-LX: 1 per port (Tx, Rx)
Serial	1 per port (Tx, Rx)
LAN	1 per port (10/100 Mbps)
Wireless Signal Strength	UC-3101: 3 x cellular UC-3111/UC-3121: 3 x cellular and 3 x Wi-Fi

## Power Parameters

Power Consumption	UC-3101: 6 W (max.) UC-3111/UC-3121: 8 W (max.)
Input Current	500 mA @ 12 VDC
Input Voltage	9 to 36 VDC

## Physical Characteristics

Housing	Metal
Installation	DIN-rail mounting Wall mounting (with optional kit)
Dimensions (without ears)	128.5 x 89.1 x 26 mm (5.06 x 3.51 x 1.02 in) for UC-3101 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) for UC-3111/UC-3121
Weight	Product only: 550 g (1.22 lb)

## Environmental Limits

Operating Temperature	US Models: -40 to 70°C (-40 to 158°F) All other models: -30 to 70°C (-22 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)

Ambient Relative Humidity	5 to 95% (non-condensing)
Vibration	5 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

EMC	EN 61000-6-2/-6-4 EN 55032/24
EMI	CISPR 22, 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: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Cellular Standards	EN 301511 EN 301908-1 EN 62311(MPE SAR) EN 301489-1/-52 EN 301489-1/17
Radio Frequency	FCC PTCRB RCM
Safety	IEC 60950-1 IEC 62368-1 UL 62368-1 UL 60950-1
WLAN Standards	EN 301489-1-17 EN 300328 EN 301893
Green Product	RoHS, CRoHS, WEEE
Hazardous Locations	Class I Division 2 IECEX ATEX

#### MTBF

Time	UC-3101-T-US-LX : 702,846 hrs UC-3101-T-EU-LX : 585,775 hrs UC-3101-T-AU-LX : 585,775 hrs UC-3111-T-US-LX : 465,569 hrs UC-3111-T-EU-LX : 416,081 hrs UC-3111-T-AU-LX : 416,081 hrs UC-3121-T-US-LX : 474,796 hrs UC-3121-T-EU-LX : 428,931 hrs UC-3121-T-AU-LX : 428,931 hrs
Standards	Telcordia (Bellcore) Standard
Warranty	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

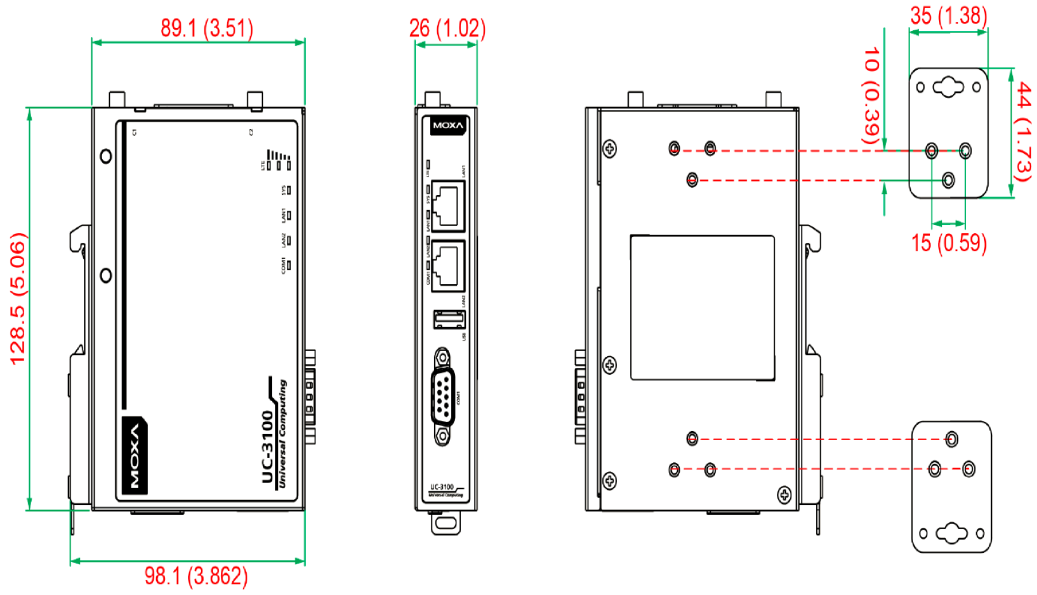
## Package Contents

Device	1 x UC-3100 Series computer
Cable	1 x terminal block to power jack converter
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

### UC-3101

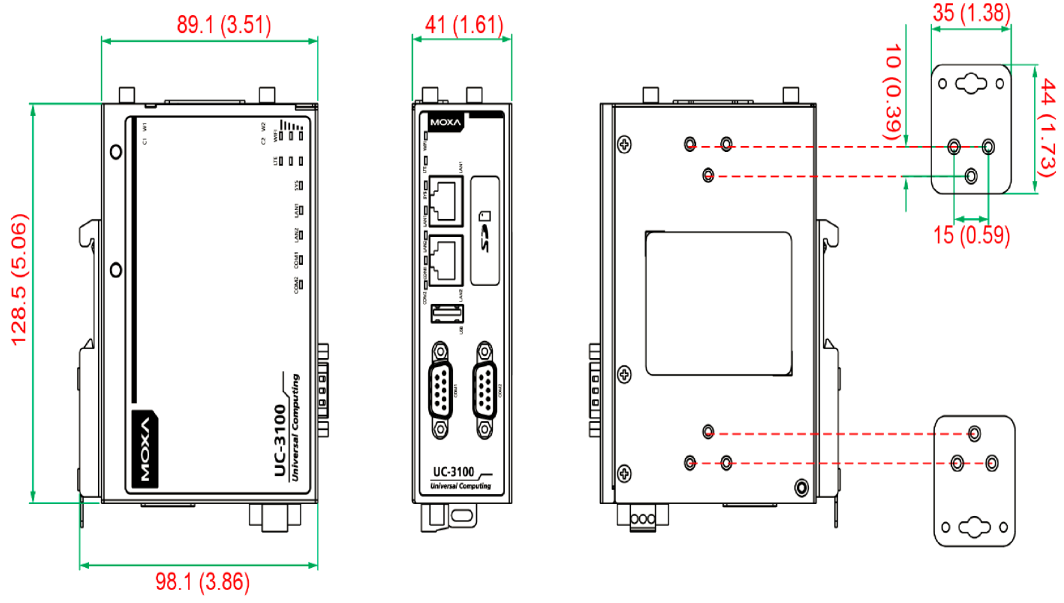
Unit: mm (inch)





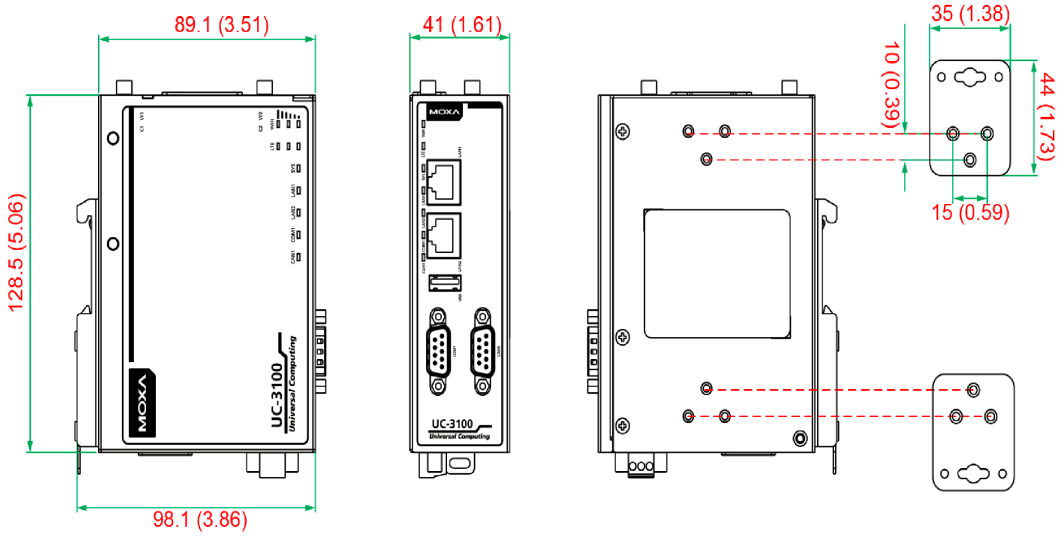
# UC-3111

Unit: mm (inch)



# UC-3121

Unit: mm (inch)



## Ordering Information

Model Name	Carrier Approval	Wi-Fi	CAN	SD Slot	Serial	CPU	RAM	eMMC	USB	LTE	BLT	SIM Slots
UC-3101-T-US-LX	AT&T, Verizon	-	-	-	1	1 GHz	1 GB	8 GB	1	Cat. 1	-	2
UC-3111-T-US-LX	AT&T, Verizon	✓	-	1	2	1 GHz	1 GB	8 GB	1	Cat. 1	✓	2
UC-3121-T-US-LX	AT&T, Verizon	✓	1	1	1	1 GHz	1 GB	8 GB	1	Cat. 1	✓	2
UC-3101-T-EU-LX	-	-	-	-	1	1 GHz	512 MB	4 GB	1	Cat. 1	-	2
UC-3111-T-EU-LX	-	✓	-	1	2	1 GHz	512 MB	4 GB	1	Cat. 1	-	2
UC-3121-T-EU-LX	-	✓	1	-	1	1 GHz	512 MB	4 GB	1	Cat. 1	-	2
UC-3101-T-AU-LX	-	-	-	-	1	1 GHz	512 MB	4 GB	1	Cat. 1	-	2
UC-3111-T-AU-LX	-	✓	-	1	2	1 GHz	512 MB	4 GB	1	Cat. 1	-	2
UC-3121-T-AU-LX	-	✓	1	-	1	1 GHz	512 MB	4 GB	1	Cat. 1	-	2

## 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 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

### Cables

CBL-F9DPF1x4-BK-100	Console cable with 4-pin connector, 1 m
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### DIN-Rail Mounting Kits

UC-3100 DIN-Rail Kit	DIN-rail kit with screws
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### Wall-Mounting Kits

UC-3100 Wall-Mounting Kit	Wall-mounting kit with screws
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### Antennas

ANT-LTE-ASM-02	GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 2 dBi
ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi

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