

# UC-3100 Series

Arm Cortex-A8 1 GHz IIoT gateway with built-in LTE Cat. 1 and Wi-Fi modules



## Features and Benefits

- Armv7 Cortex-A8 1000 MHz processor
- Integrated Wi-Fi 802.11a/b/g/n and LTE Cat. 1 for the US, EU, and APAC regions
- Bluetooth 4.2 support
- LTE-ready computer with Verizon/AT&T certification and industrial-grade CE/FCC/UL certifications
- Industrial CAN 2.0 A/B protocols supported
- -40 to 70°C operating temperature range
- Meets the EN 61000-6-2 and EN 61000-6-4 standards for industrial EMC applications
- Long-term Linux support until 2027; includes bug fixes and security patches

## 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 a diverse set of 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 -40 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 data pre-processing and transmission capabilities of your applications in harsh operating environments.

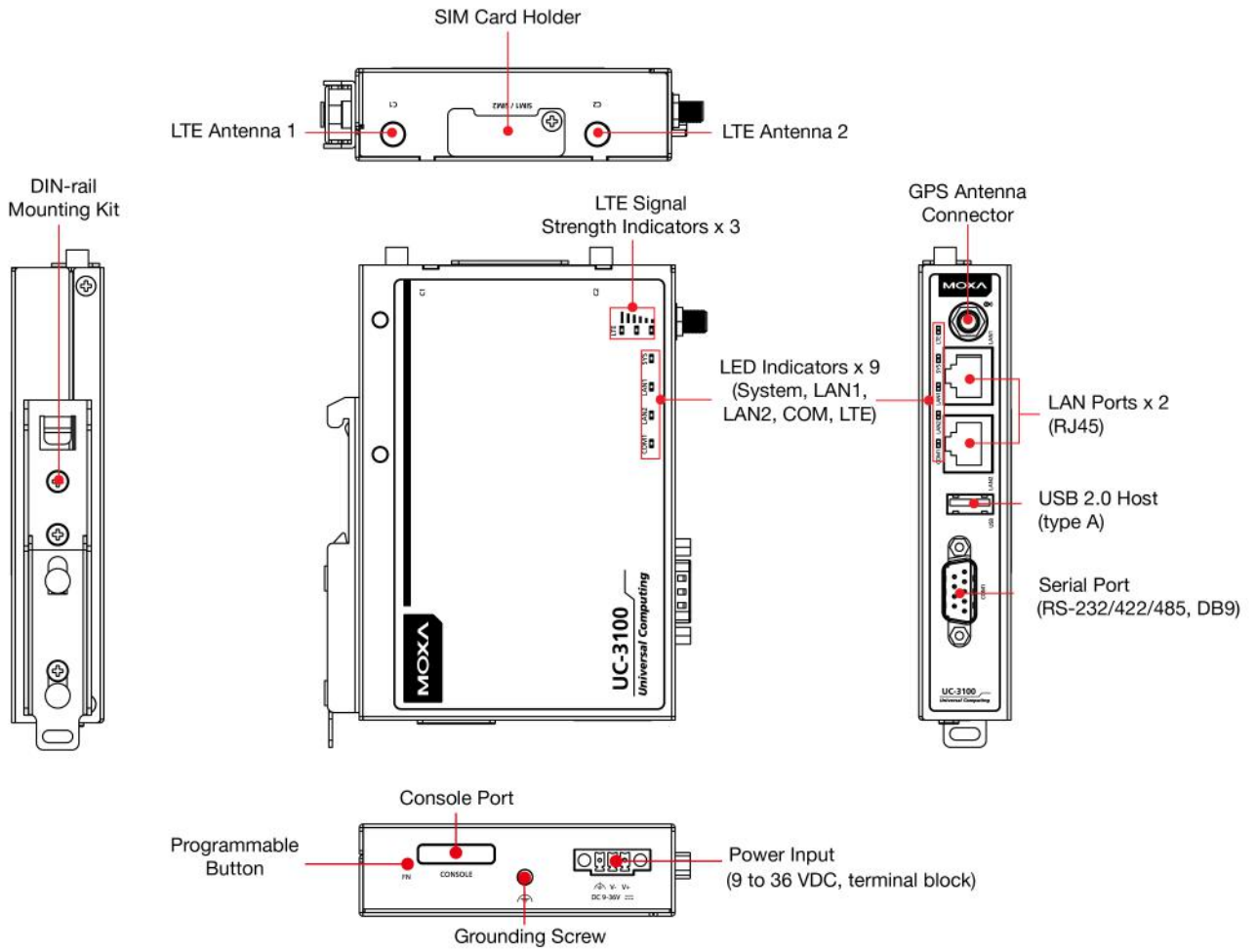
The UC-3100 is more than just a hardware solution. In order to offer a better user experience with a Moxa Arm-based computer, the UC-3100 comes equipped with Moxa Industrial Linux, a high-performance industrial-grade Linux distribution with long-term support that is developed by Moxa.

## Applications

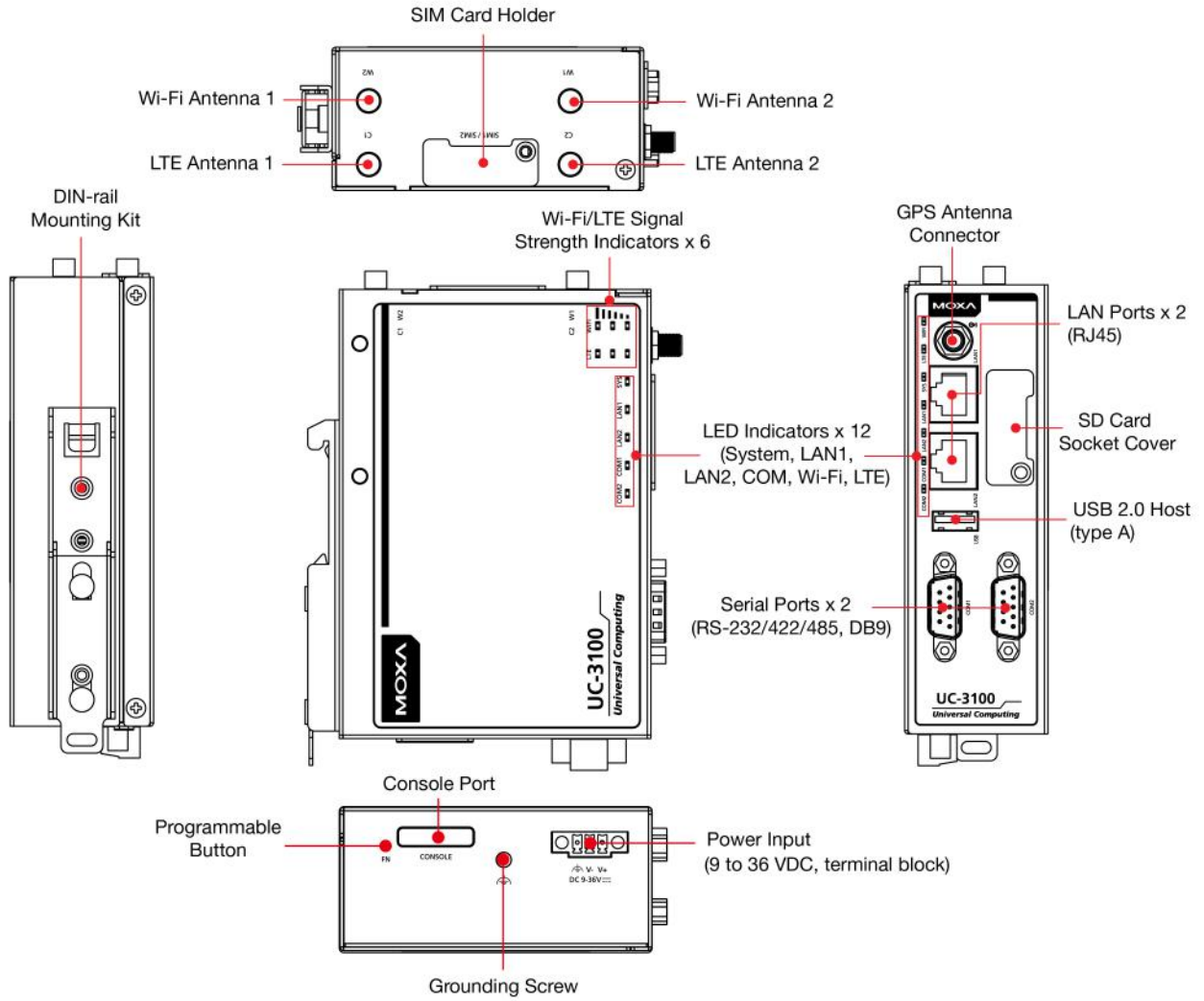
- Remote Terminal Unit (RTU)
- Data acquisition
- M2M communication (smart gateway)
- Digital signage
- Factory automation
- In-vehicle monitor/data logger (transportation)
- Programmable router
- Energy usage optimization
- Predictive maintenance
- Asset management

# Appearance

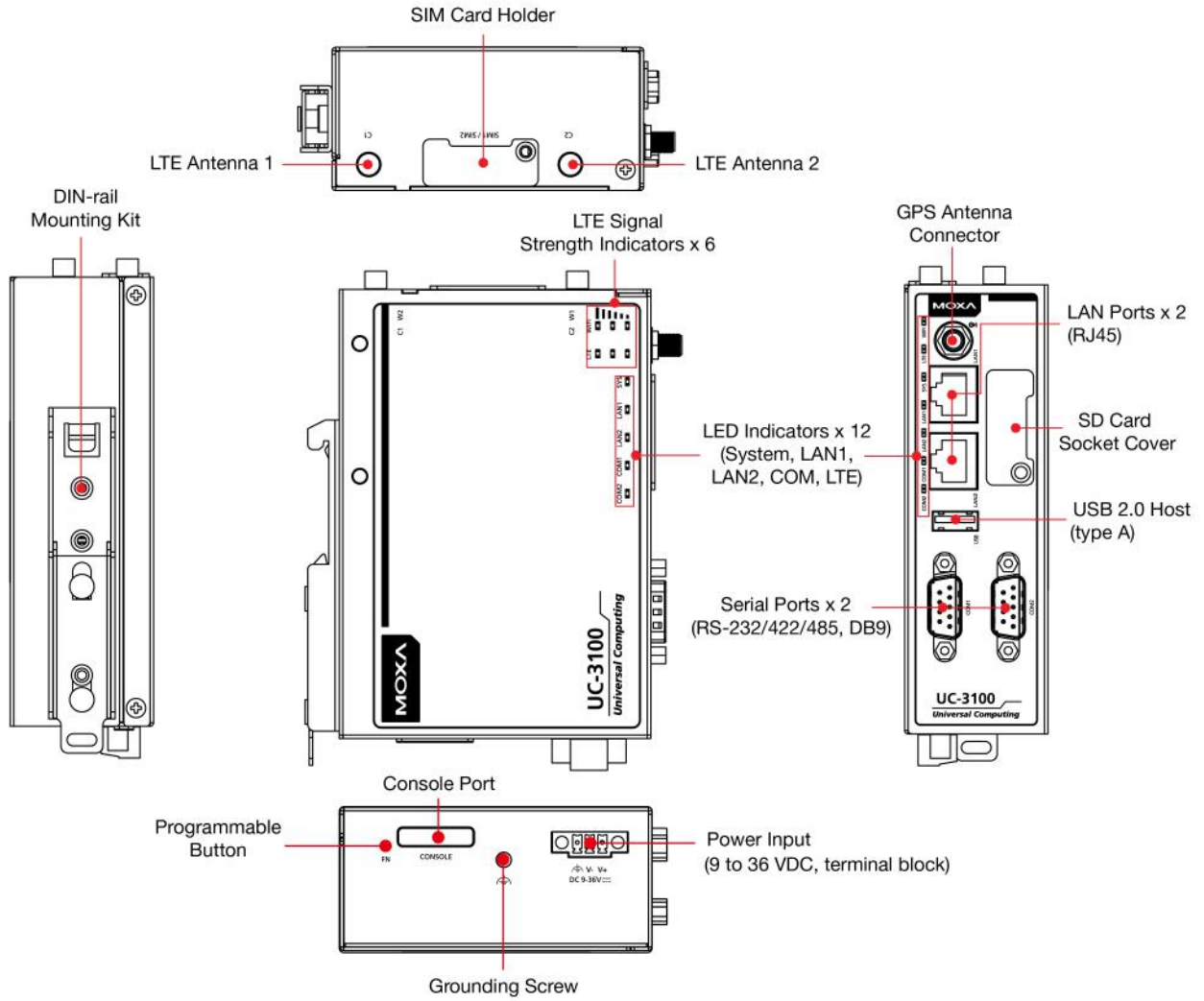
## UC-3101

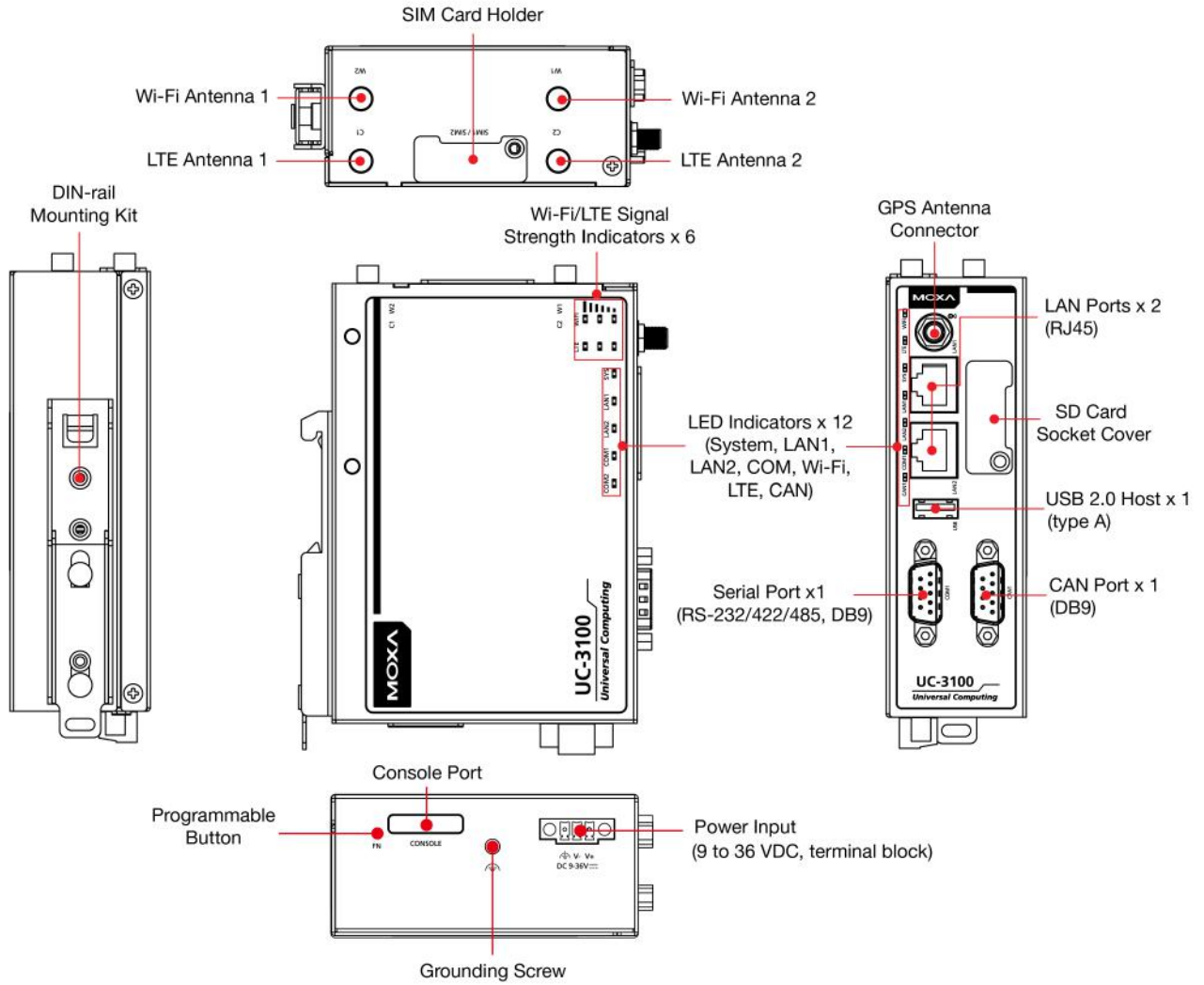


**UC-3111 (non-NW models)**



**UC-3111 (NW models)**





## Specifications

### Computer

CPU	Armv7 Cortex-A8 1 GHz
DRAM	1 GB DDR3
Supported OS	Moxa Industrial Linux 1 (Debian 9, kernel 4.4), 2027 EOL See <a href="http://www.moxa.com/MIL">www.moxa.com/MIL</a>
Storage Pre-installed	8 GB eMMC
Storage Slot	UC-3111/3121 Models: SD slots x 1

### Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-3101/3121 Models: RS-232/422/485 ports x 1, software-selectable (DB9 male) UC-3111 Models: RS-232/422/485 ports x 2, software-selectable (DB9 male)
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
Wi-Fi Antenna Connector	UC-3111/UC-3121 Models: RP-SMA x 2
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)
TPM	TPM v2.0
<b>Ethernet Interface</b>	
Magnetic Isolation Protection	1.5 kV (built-in)
<b>Cellular Interface</b>	
Band Options	<p><b>US Models:</b>  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><b>EU Models:</b>  LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 7 (2600 MHz) / Band 8 (900 MHz) / Band 20 (800 MHz) / Band 28A (700 MHz)  UMTS Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 8 (900 MHz)</p> <p><b>AP Models:</b>  LTE Bands: Band 1 (2100 MHz) / 3 (1800 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz) / Band 9 (1700 MHz) / Band 18 (850 MHz) / Band 19 (850 MHz) / Band 26 (850 MHz) / Band 28 (700 MHz)  UMTS Bands: 1 (2100 MHz) / Band 5 (850 MHz) / Band 6 (800 MHz) / Band 8 (900 MHz) / Band 19 (800 MHz)</p>
<b>WLAN Interface</b>	
WLAN Standards	UC-3111-T-LX/UC-3121-T-LX Models: 802.11a/b/g/n, Bluetooth 4.2 compliance
Frequency Band	UC-3111-T-LX/UC-3121-T-LX Models: 2.4 GHz/5 GHz
<b>Serial Interface</b>	
Baudrate	50 bps to 921.60 kbps
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)
<b>Serial Signals</b>	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
<b>CAN Interface</b>	
Baudrate	UC-3121-T-US-LX/UC-3121-T-EU-LX/UC-3121-T-AP-LX: 10 to 1000 kbps
Connector	UC-3121-T-US-LX/UC-3121-T-EU-LX/UC-3121-T-AP-LX: DB9 male

Isolation	UC-3121-T-US-LX/UC-3121-T-EU-LX/UC-3121-T-AP-LX: 2 kV (built-in)
Signals	UC-3121-T-US-LX/UC-3121-T-EU-LX/UC-3121-T-AP-LX: CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND

#### LED Indicators

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

#### Power Parameters

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

#### Physical Characteristics

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

#### Environmental Limits

Operating Temperature	-40 to 70°C (-40 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 55032/35
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: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Carrier Approvals	UC-3101-T-US-LX: AT&T, Verizon UC-3111-T-US-LX/-T-US-LX-NW: AT&T, Verizon UC-3121-T-US-LX: AT&T, Verizon

Cellular Standards	EN 301511 EN 301908-1 EN 62311(MPE SAR) EN 301489-1/-52 EN 301489-1/17
Radio Frequency	FCC PTCRB RCM IFETEL (UC-3111-T-US-LX) ENACOM (UC-3111-T-EU-LX) NBTC (UC-3111-T-EU-LX) SUBTEL (UC-3111-T-EU-LX)
WLAN Standards	EN 301489-1-17 EN 300328 EN 301893
Safety	IEC 60950-1 UL 60950-1 IEC 62368-1 UL 62368-1 NOM (UC-3111-T-US-LX)
Hazardous Locations	Class I Division 2 ATEX IECEX
Green Product	RoHS, CRoHS, WEEE

#### MTBF

Time	UC-3101-T-US-LX: 702,846 hrs UC-3101-T-EU-LX/T-AP-LX: 585,775 hrs UC-3111-T-US-LX: 465,569 hrs UC-3111-T-EU-LX/T-AP-LX: 416,081 hrs UC-3121-T-US-LX: 474,796 hrs UC-3121-T-EU-LX/T-AP-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

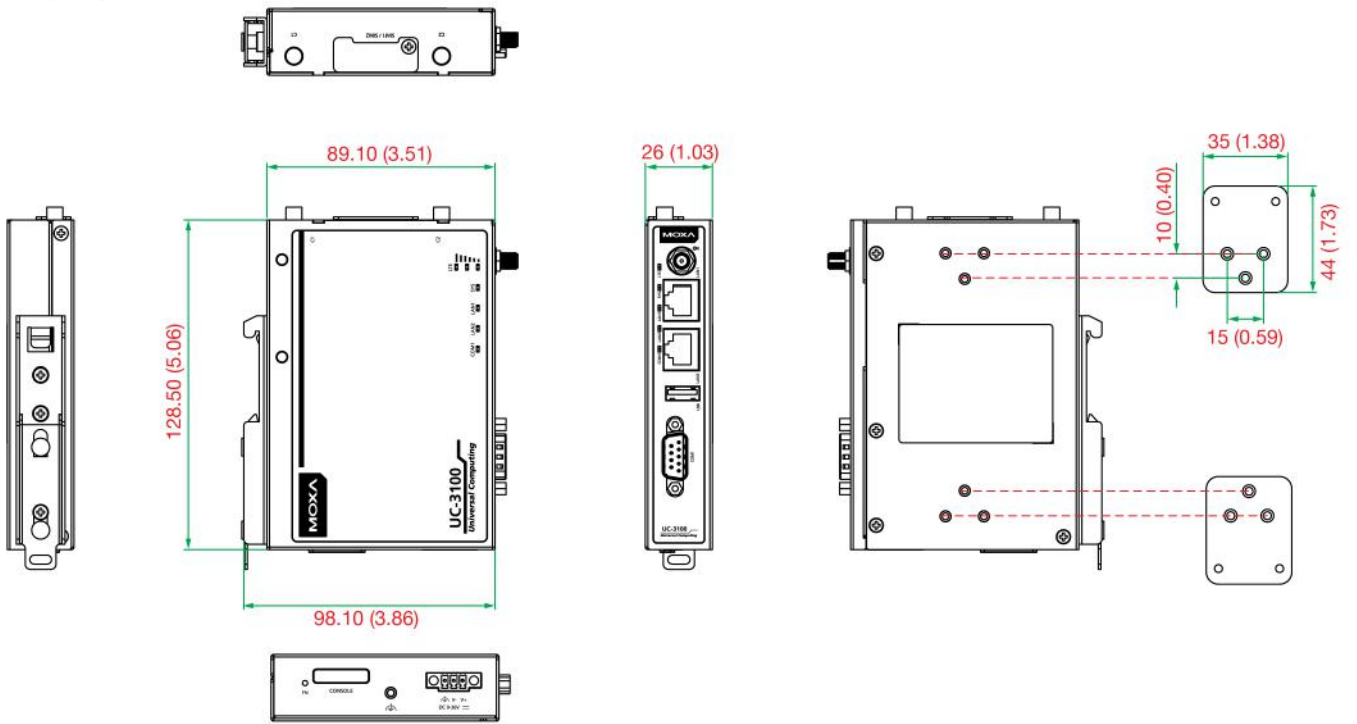
Device	1 x UC-3100 Series computer
Cable	1 x terminal block to power jack converter
Documentation	1 x quick installation guide 1 x warranty card



## Dimensions

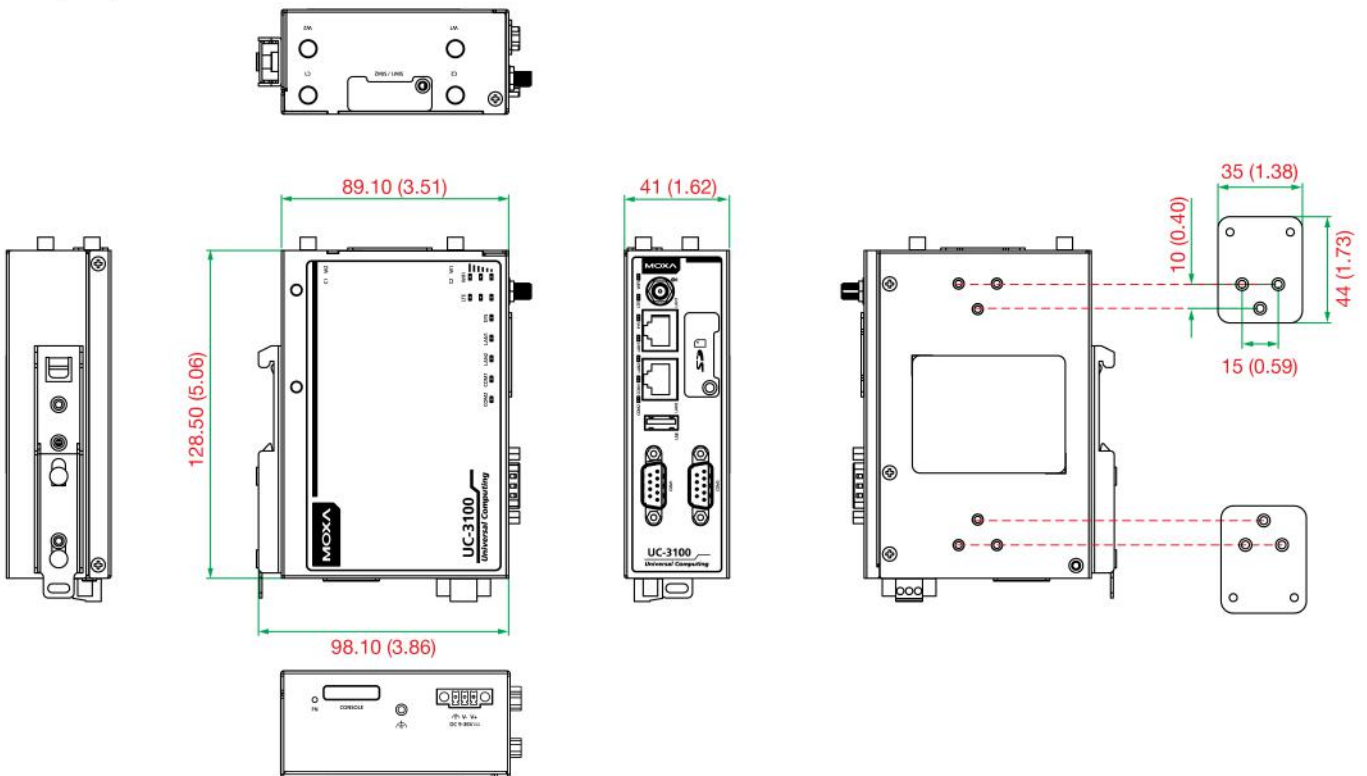
### UC-3101

Unit: mm (inch)



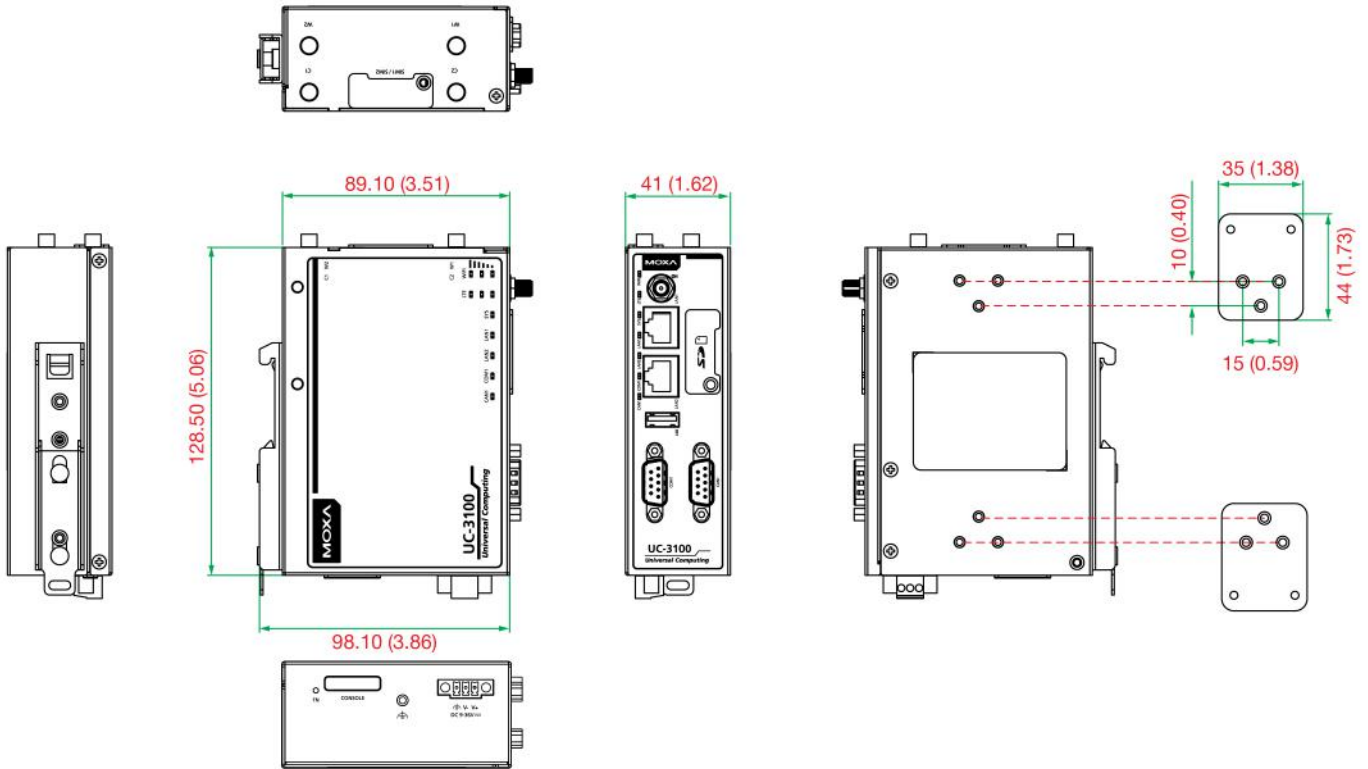
### UC-3111

Unit: mm (inch)



# UC-3121

Unit: mm (inch)



## Ordering Information

Model Name	Carrier Approval	CPU	SD Slot	RAM	eMMC	Serial	TPM 2.0	CAN	LTE	Wi-Fi	BLT
UC-3101-T-US-LX	AT&T, Verizon	1 GHz	-	1 GB	8 GB	1	✓	-	Cat. 1	-	-
UC-3111-T-US-LX	AT&T, Verizon	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	✓	✓
UC-3111-T-US-LX-NW	AT&T, Verizon	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	-	-
UC-3121-T-US-LX	AT&T, Verizon	1 GHz	1	1 GB	8 GB	1	✓	1	Cat. 1	✓	✓
UC-3101-T-EU-LX	-	1 GHz	-	1 GB	8 GB	1	✓	-	Cat. 1	-	-
UC-3111-T-EU-LX	-	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	✓	✓
UC-3111-T-EU-LX-NW	-	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	-	-
UC-3121-T-EU-LX	-	1 GHz	1	1 GB	8 GB	1	✓	1	Cat. 1	✓	✓
UC-3101-T-AP-LX	-	1 GHz	-	1 GB	8 GB	1	✓	-	Cat. 1	-	-
UC-3111-T-AP-LX	-	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	✓	✓
UC-3111-T-AP-LX-NW	-	1 GHz	1	1 GB	8 GB	2	✓	-	Cat. 1	-	-
UC-3121-T-AP-LX	-	1 GHz	1	1 GB	8 GB	1	✓	1	Cat. 1	✓	✓

## Accessories (sold separately)

### Power Adapters

PWR-12150-CN-SA-T

Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, China (CN) plug, -40 to 75°C operating temperature

PWR-12150-EU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Continental Europe (EU) plug, -40 to 75°C operating temperature
PWR-12150-UK-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, United Kingdom (UK) plug, -40 to 75°C operating temperature
PWR-12150-AU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Australia (AU) plug, -40 to 75°C operating temperature
PWR-12150-USJP-SA-T	Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, United States/Japan (US/JP) plug, -40 to 75°C operating temperature

#### Cables

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

#### DIN-Rail Mounting Kits

UC-3100 DIN-Rail Kit	DIN-rail kit with screws
----------------------	--------------------------

#### Wall-Mounting Kits

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

#### 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
UC-3100 Antenna Set	4 dBi at 1575 MHz to 1610 MHz, SMA (male), active GPS/GLONASS, adhesive-type antenna with 20-cm cable; 2 x 4 dBi at 2.4 GHz or 5 dBi at 5 GHz, RP-SMA (female), omnidirectional antennas; 2 x 1.5 dBi 698 to 960 MHz or 1710 to 2700 MHz, SMA (male), LTE, swivel-type omnidirectional portable antennas

© Moxa Inc. All rights reserved. Updated Feb 07, 2024.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.