

# 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, and AUS regions
- Supports TPM v2.0 (optional)
- 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
- Supports Linux real-time OS mode
- Moxa Industrial Linux with 10-year long-term support

## Certifications



## Introduction

Moxa's UC-3100 Series computers can be used as edge-field smart gateways for data pre-processing and transmission, as well as for other embedded data-acquisition applications. The UC-3100 Series includes three 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 your "data pre-processing" and "data transmission" capability in most harsh environments. In addition, TPM v2.0 uses a hardware chip to boost data security, making it highly unlikely that hackers will be able to steal your data, either remotely or locally.

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; greater 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
- Cybersecurity auto-configuration system based on IEC 62443
- Real COM mode to provide a control interface to Moxa's NPort products

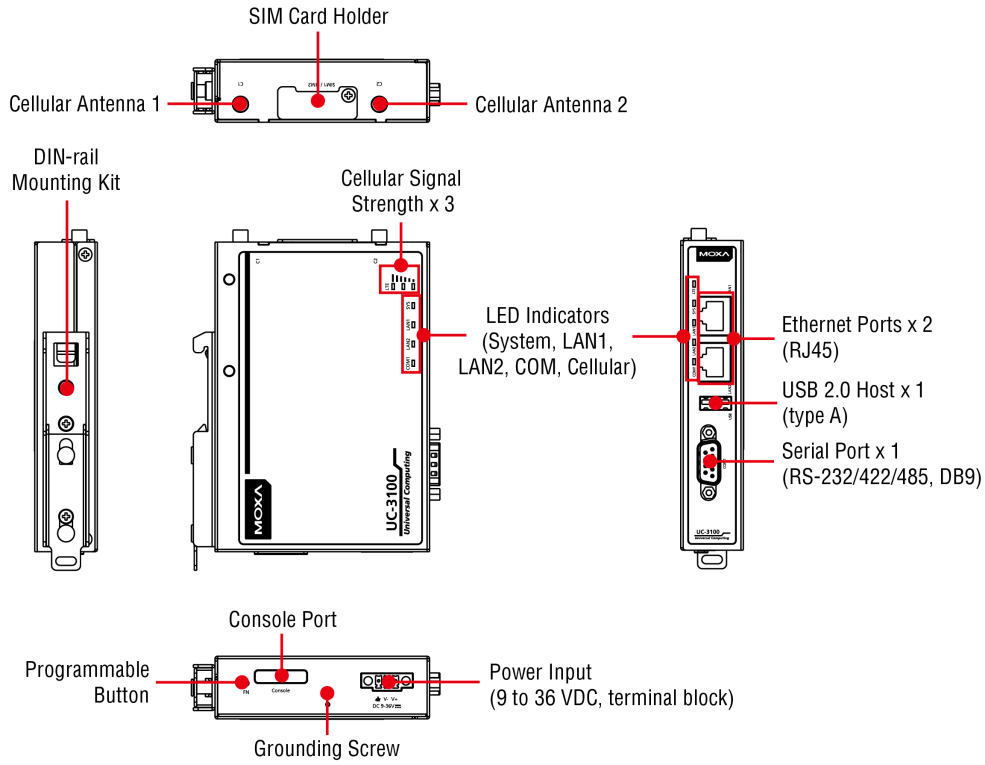
In addition, Moxa provides 10 years of Linux OS support from Moxa's customer support engineers. With a new version of the Debian repository released on average every 2 to 3 years, long-term Linux OS support helps you create a reliable solution that will be supported now and long into the future.

## Applications

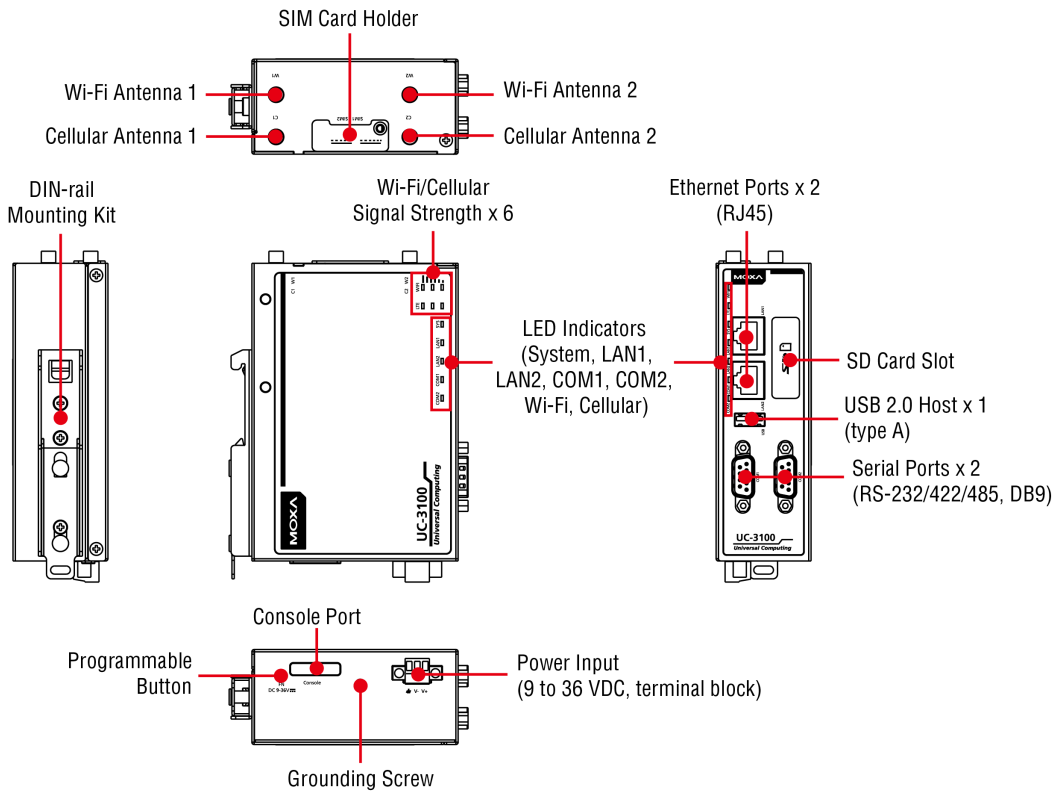
- Remote Terminal Unit (RTU)
- Data acquisition
- M2M communication (smart gateway)
- Digital signage
- Factory automation
- In-vehicle monitor/data logger (transportation)
- Programmable router
- Energy usage optimization
- Predictive maintenance
- Asset management

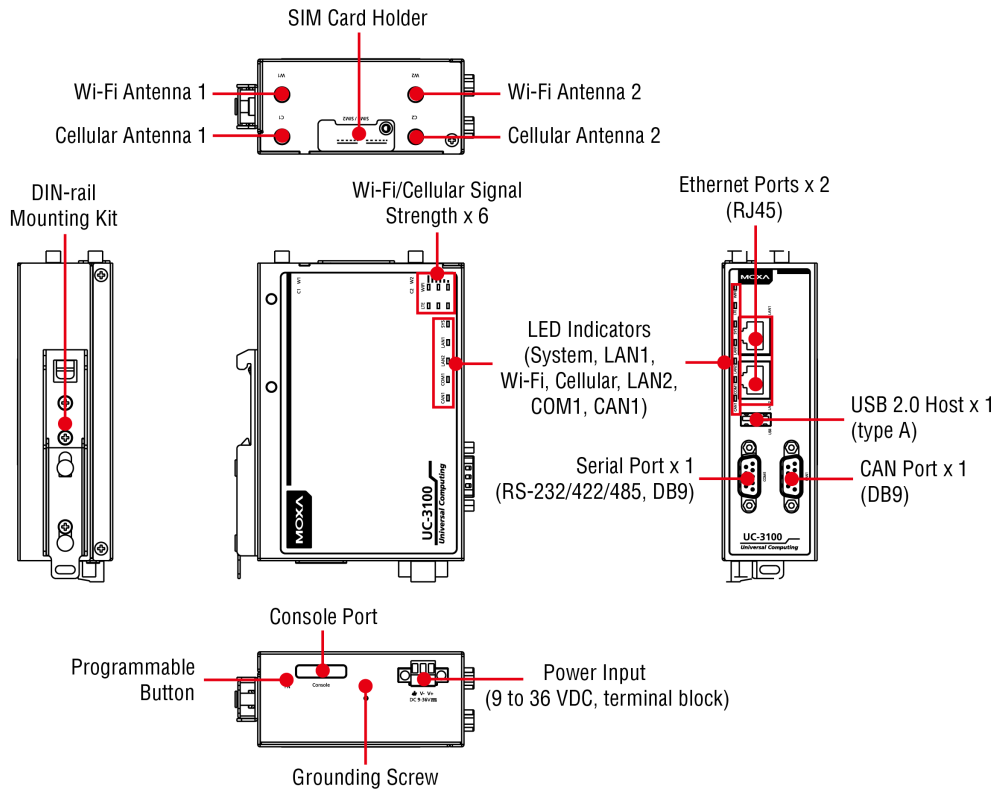
# Appearance

## UC-3101



## UC-3111





## Specifications

### Computer

CPU	Armv7 Cortex-A7 dual-core 1 GHz
DRAM	512 MB DDR3
Supported OS	Linux Debian 9 kernel 4.4 (Moxa Industrial Linux)
Storage Pre-installed	4 GB eMMC

### Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-3101/3121 Series: RS-232/422/485 ports x 1, software-selectable (terminal block) UC-3111 Series: RS-232/422/485 ports x 2, software-selectable (terminal block)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Cellular Antenna Connector	UC-3101-T-AU-LX: SMA x 2 UC-3101-T-EU-LX: SMA x 2 UC-3101-T-US-LX: SMA x 2 UC-3111-T-AU-LX: SMA x 4 UC-3111-T-EU-LX: SMA x 4 UC-3111-T-US-LX: SMA x 4 UC-3121-T-AU-LX: SMA x 4 UC-3121-T-US-LX: SMA x 4 UC-3121-T-EU-LX: SMA x 4
Number of SIMs	2
SIM Format	Nano
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)

## CAN Interface

Baudrate	UC-3121-T-AU-LX: 10 kbps to 1000 kbps UC-3121-T-EU-LX: 10 kbps to 1000 kbps UC-3121-T-US-LX: 10 kbps to 1000 kbps
Connector	UC-3121-T-AU-LX: DB9 male UC-3121-T-EU-LX: DB9 male UC-3121-T-US-LX: DB9 male
Isolation	UC-3121-T-AU-LX: 2 kV (built-in) UC-3121-T-EU-LX: 2 kV (built-in) UC-3121-T-US-LX: 2 kV (built-in)
No. of Ports	UC-3121-T-US-LX: 1 UC-3121-T-AU-LX: 1 UC-3121-T-EU-LX: 1
Signals	UC-3121-T-EU-LX: CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND UC-3121-T-US-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
Wireless Signal Strength	UC-3101-T-EU-LX: Cellular/Wi-Fi x 4 UC-3101-T-US-LX: Cellular/Wi-Fi x 4 UC-3101-T-AU-LX: Cellular/Wi-Fi x 4 UC-3111-T-EU-LX: Cellular/Wi-Fi x 8 UC-3111-T-US-LX: Cellular/Wi-Fi x 8 UC-3111-T-AU-LX: Cellular/Wi-Fi x 8 UC-3121-T-EU-LX: Cellular/Wi-Fi x 8 UC-3121-T-US-LX: Cellular/Wi-Fi x 8 UC-3121-T-AU-LX: Cellular/Wi-Fi x 8
CAN	UC-3121-T-AU-LX: 1 per port (Tx, Rx), UC-3121-T-EU-LX: 1 per port (Tx, Rx), UC-3121-T-US-LX: 1 per port (Tx, Rx)
Serial	UC-3101-T-AU-LX: 1 per port (Tx, Rx) UC-3121-T-US-LX: 1 per port (Tx, Rx) UC-3101-T-US-LX: 1 per port (Tx, Rx) UC-3121-T-AU-LX: 1 per port (Tx, Rx) UC-3121-T-EU-LX: 1 per port (Tx, Rx) UC-3101-T-EU-LX: 1 per port (Tx, Rx) UC-3111-T-EU-LX: 2 per port (Tx, Rx) UC-3111-T-AU-LX: 2 per port (Tx, Rx) UC-3111-T-US-LX: 2 per port (Tx, Rx)
LAN	2 per port (10/100 Mbps)

## 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, Rx, 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

## Power Parameters

Power Consumption	6 W (max.)
Input Current	500 mA @ 12 VDC

## Physical Characteristics

Dimensions	UC-3101-T-AU-LX: 128.5 x 89.1 x 26 mm (5.06 x 3.51 x 1.02 in) UC-3101-T-EU-LX: 128.5 x 89.1 x 26 mm (5.06 x 3.51 x 1.02 in) UC-3101-T-US-LX: 128.5 x 89.1 x 26 mm (5.06 x 3.51 x 1.02 in) UC-3111-T-AU-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) UC-3111-T-EU-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) UC-3111-T-US-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) UC-3121-T-AU-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) UC-3121-T-EU-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in) UC-3121-T-US-LX: 128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in)
Housing	Metal
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Weight	Product only: 550 g (1.22 lb)

## Environmental Limits

Operating Temperature	-30 to 70°C (-22 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)

## Standards and Certifications

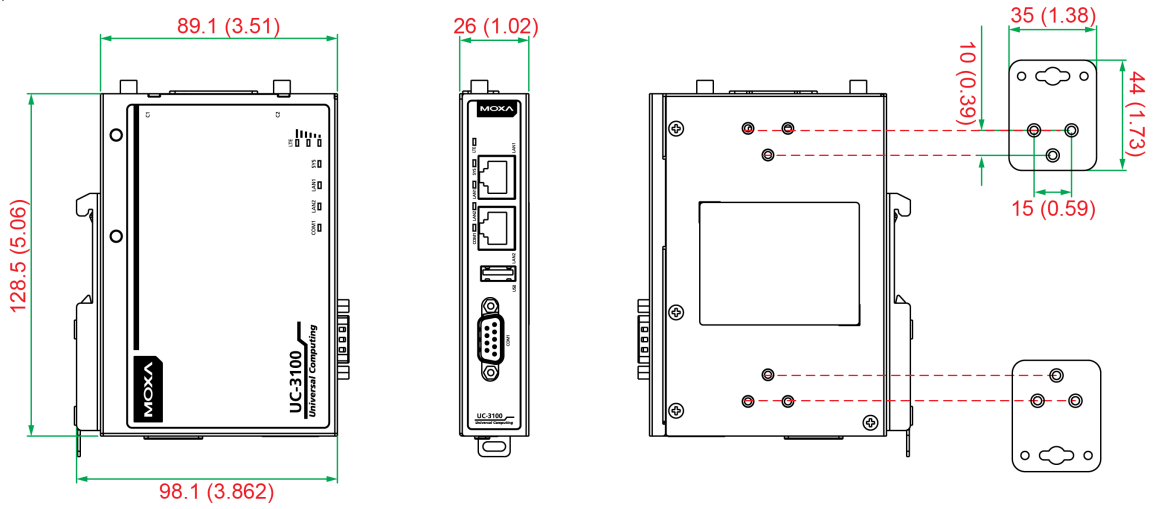
EMC	EN 61000-6-2/-6-4
EMI	CISPR 22, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Cellular Standards	EN 301511 EN 3011908-1 MPE SAR EN 301489-1-1 EN 301489-24 AS/NZS S042 AS/NZS 60950
Radio Frequency	PTCRB, FCC
Hazardous Locations	Class I Division 2, IECEx, Class I Division 2, ATEX

Safety	UL 60950-1
WLAN Standards	UC-3111-T-AU-LX: EN 301489-1-17 UC-3111-T-EU-LX: EN 301489-1-17 UC-3111-T-US-LX: EN 301489-1-17 UC-3121-T-AU-LX: EN 301489-1-17 UC-3121-T-EU-LX: EN 301489-1-17 UC-3121-T-US-LX: EN 301489-1-17 UC-3111-T-AU-LX: EN 300328 UC-3111-T-EU-LX: EN 300328 UC-3111-T-US-LX: EN 300328 UC-3121-T-AU-LX: EN 300328 UC-3121-T-EU-LX: EN 300328 UC-3121-T-US-LX: EN 300328 UC-3111-T-AU-LX: EN 301893 UC-3111-T-EU-LX: EN 301893 UC-3111-T-US-LX: EN 301893 UC-3121-T-AU-LX: EN 301893 UC-3121-T-EU-LX: EN 301893 UC-3121-T-US-LX: EN 301893
<b>WLAN Interface</b>	
WLAN Standards	UC-3111-T-AU-LX: 802.11a/b/g/n UC-3111-T-EU-LX: 802.11a/b/g/n UC-3111-T-US-LX: 802.11a/b/g/n UC-3121-T-AU-LX: 802.11a/b/g/n UC-3121-T-EU-LX: 802.11a/b/g/n UC-3121-T-US-LX: 802.11a/b/g/n
<b>Cellular Interface</b>	
Band Options	US Model: LTE Bands: 2, 4, 5, 12 (700, 850, 1700/2100 (AWS) and 1900 MHz) UMTS Bands: 5, 4, 2 (WCDMA/FDD 850, 1700/2100 (AWS) and 1900 MHz) Carrier Approval: AT&T VZW Model (Pending due to Verizon certificate is on-going): LTE Bands: 4,13 (1700/2100 AWS, 700 MHz) Carrier Approval: Verizon EU Model: LTE Bands: 1, 3, 8, 20, 28 (700, 800, 900, 1800, 2100 MHz) GSM Bands: 900 and 1800 MHz AU/NZ Model: LTE Bands 3, 5, 8, 28 (1800, 850, 900, 700 MHz) UMTS Bands 1, 5, 8 (WCDMA/FDD 2100, 850, 900 MHz)
<b>Package Contents</b>	
Cable	1 x terminal block to power jack converter
Documentation	1 x quick installation guide 1 x warranty card
<b>Declaration</b>	
Green Product	RoHS, CRoHS, WEEE
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Ethernet Interface</b>	
Magnetic Isolation Protection	1.5 kV (built-in)

## Dimensions

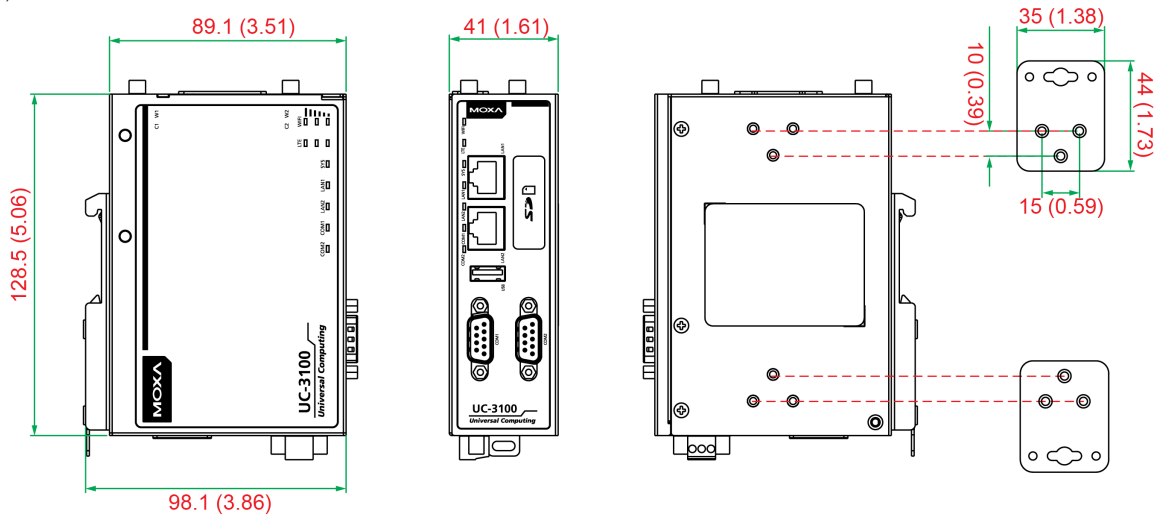
### UC-3101

Unit: mm (inch)



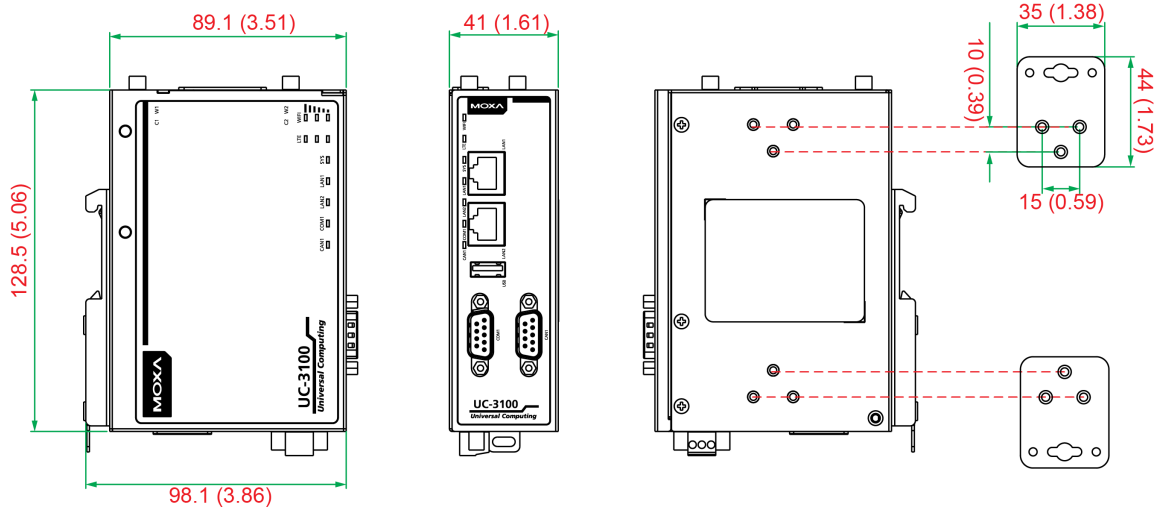
### UC-3111

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	SIM Slots
UC-3101-T-US-LX	AT&T	-	-	-	1	1 GHz	512 MB	4 GB	1	Cat. 1	2
UC-3111-T-US-LX	AT&T	✓	-	1	2	1 GHz	512 MB	4 GB	1	Cat. 1	2
UC-3121-T-US-LX	AT&T	✓	1	-	1	1 GHz	512 MB	4 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