

# UC-8200 系列

Arm Cortex-A7 雙核心 1 GHz IIoT 閘道，內建 LTE Cat.4，1 個用於 Wi-Fi 模組的迷你 PCIe 擴充插槽，1 個 CAN 連接埠、4 個 DI、4 個 DO



## 特色與優點

- Armv7 Cortex-A7 雙核心 1 GHz
- ISASecure IEC 62443-4-2 安全等級 2 透過 Moxa Industrial Linux 3 Secure 完成認證
- Moxa 工業 Linux，提供 10 年超長期間支援
- LTE 規格電腦，獲得 Verizon/AT&T 認證以及工業級 CE/FCC/UL 認證
- 雙 SIM 插槽
- 2 個自動感應 10/100/1000 Mbps 乙太網路連接埠
- 整合式 LTE Cat.4 模組，支援 US/EU/APAC 頻帶
- 1 個 CAN 連接埠，可支援 CAN 2.0A/B
- 具有 microSD 插槽，可擴充儲存空間
- -40 至 85°C 寬溫範圍設計，啟用 LTE 時溫度範圍為 -40 至 70°C

## 認證



## 簡介

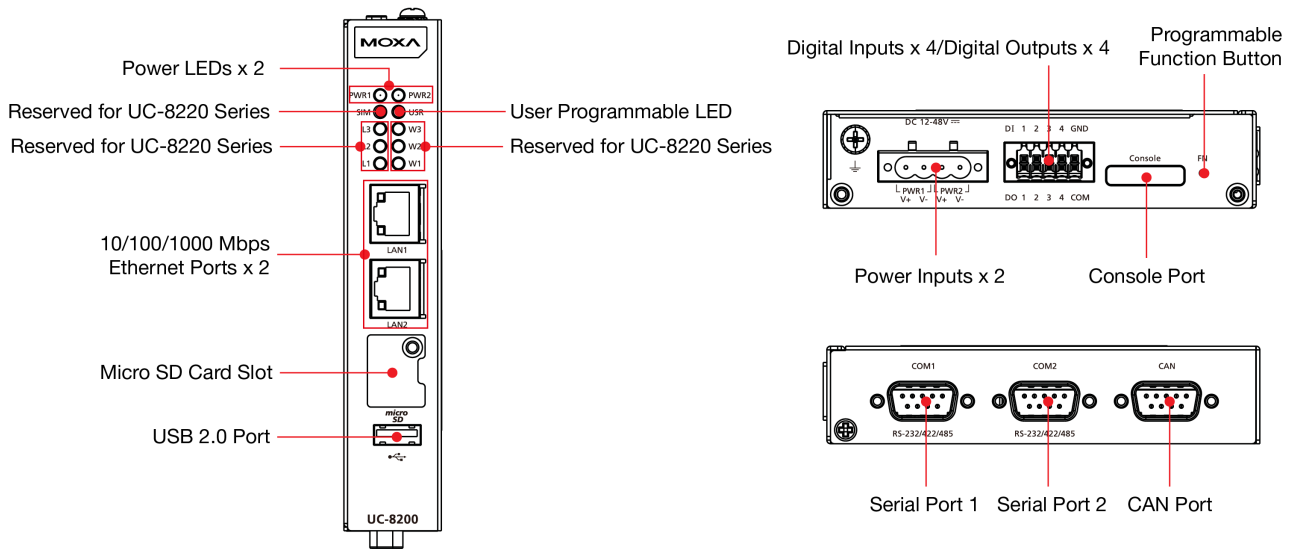
UC-8200 運算平台是專為嵌入式資料擷取應用所設計。電腦配備兩個 RS-232/422/485 串列埠、雙 10/100/1000 Mbps 乙太網路連接埠、一個 CAN 連接埠，以及雙 Mini PCIe 插槽以支援 Wi-Fi/行動通訊網路模組。這些多元功能讓使用者能有效地調整 UC-8200 以適應各種複雜通訊解決方案。

UC-8200 採用的是專為能源監視系統進行最佳化的 Cortex-A7 雙核心處理器，但是該處理器目前已被廣泛地用於各種工業解決方案。這款輕薄的嵌入式電腦是可靠且安全的閘道，具備彈性的介面選項，可協助您在現場進行資料擷取並進行處理，同時也是適用於許多其他大規模部署的實用通訊平台。

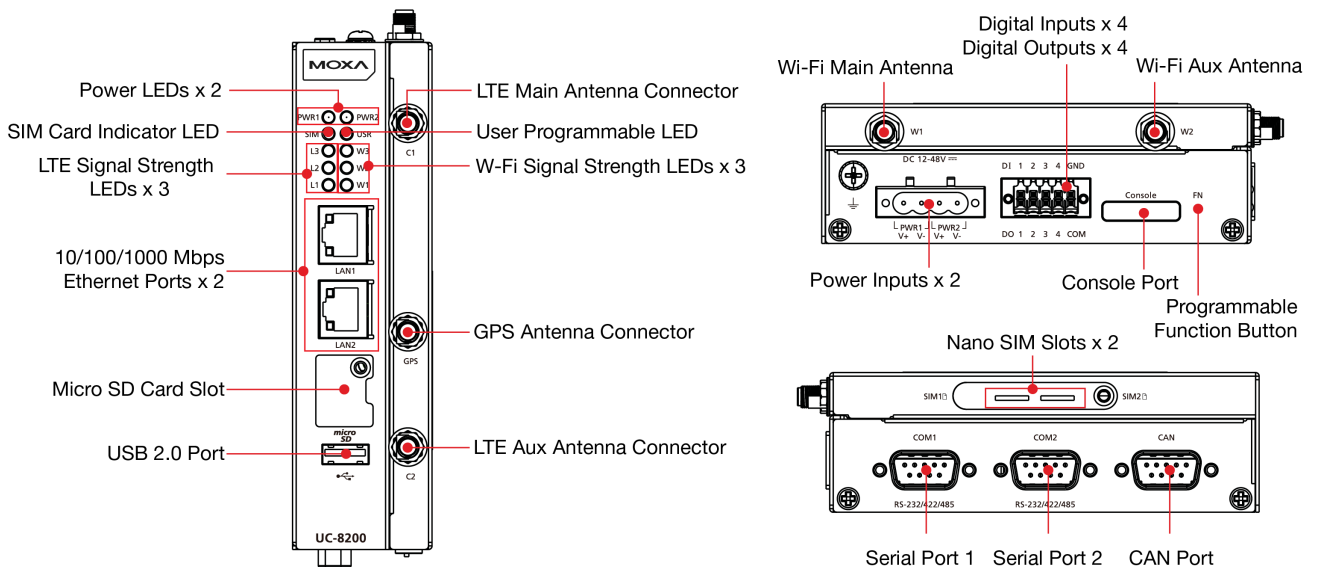
已啟用 LTE 的寬溫度型號可用於延伸的溫度應用。所有裝置全都在試驗室中經過完整測試，保證已啟用 LTE 的運算平台適用於寬溫應用。

## 外觀

### UC-8210



### UC-8220



## 規格

### Computer

CPU	Arm7 Cortex-A7 dual-core 1 GHz
DRAM	2 GB DDR3L
Storage Pre-installed	8 GB eMMC
Pre-installed OS	Moxa Industrial Linux (Debian 9, Kernel 4.4) Moxa Industrial Linux 1 (Debian 9, kernel 4.4), 2027 EOL Moxa Industrial Linux 3 <sup>1</sup> (Debian 11, kernel 5.10), 2031 EOL See <a href="http://www.moxa.com/MIL">www.moxa.com/MIL</a>
Expansion Slots	MicroSD (SD 3.0) socket x 1

1. CTO 型號可透過 Moxa 電腦配置系統 (CCS) 選取 MIL3 OS。如需型號名稱，請參閱型錄 PDF 檔案的「訂購資訊」部分。

## Computer Interface

TPM	TPM v2.0
Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 2
Serial Ports	RS-232/422/485 ports x 2, software selectable (DB9 male)
CAN Ports	CAN 2.0 A/B x 1 (DB9 male)
Digital Input	DIs x 4
Digital Output	DOs x 4
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Wi-Fi Antenna Connector	UC-8220 Models: RP-SMA x 2
Cellular Antenna Connector	UC-8220 Models: SMA x 2
GPS Antenna Connector	UC-8220 Models: SMA x 1
Expansion Slots	UC-8220-T-LX: mPCIe slot x 2 UC-8220-T-LX US/EU/AP Models: mPCIe slot x 1
SIM Format	UC-8220 Models: Nano
Number of SIMs	UC-8220 Models: 2
Buttons	Programmable button

## Ethernet Interface

Magnetic Isolation Protection	1.5 kV (built-in)
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## Security Functions

Hardware-based Security	TPM 2.0 Hardware Root of Trust Secure Boot
Intrusion Detection	Host-based Intrusion Detection
Security Tools	Security Diagnostic Tool Security Event Auditing Secure Update
Disk Protection	LUKS Disk Encryption
Recovery	One-step recovery to the last known secure state Dual-system design with automatic failback
Reliability	Network Keep Alive Network Failover and Failback

## Serial Interface

Console Port	1 x 4-pin header to DB9 console port
Baudrate	300 bps to 921.6 kbps
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	1
Connector	DB9 male
Baudrate	10 to 1000 kbps
Industrial Protocols	CAN 2.0A CAN 2.0B
Isolation	2 kV (built-in)
Signals	CAN_H, CAN_L, CAN_GND, CAN_SHLD, CAN_V+, GND

## Digital Inputs

Connector	Screw-fastened Euroblock terminal
Dry Contact	Off: open On: short to GND
Isolation	3K VDC
Sensor Type	Wet contact (NPN) Dry contact
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC

## Digital Outputs

Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	24 VDC nominal, open collector to 30 VDC

## Cellular Interface

Cellular Standards	LTE Cat. 4
Band Options	<p>US Models: LTE Band 2 (1900 MHz) / LTE Band 4 (1700 MHz) / LTE Band 5 (850 MHz) / LTE Band 13 (700 MHz) / LTE Band 17 (700 MHz) UMTS/HSPA 850 MHz / 1900 MHz Carrier Approval: Verizon, AT&amp;T</p> <p>EU Models: LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 5 (850 MHz) / LTE Band 7 (2600 MHz) / LTE Band 8 (900 MHz) / LTE Band 20 (800 MHz) UMTS/HSPA 850 MHz / 900 MHz / 1900 MHz / 2100 MHz</p> <p>AP Models: LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 5 (850 MHz) / LTE Band 7 (2600 MHz) / LTE Band 8 (900 MHz) / LTE Band 28 (700 MHz) UMTS/HSPA 850 MHz / 900 MHz / 1900 MHz / 2100 MHz</p>

## GPS Interface

Receiver Types	GPS/GLONASS/Galileo State-of-the-art GNSS solution
Accuracy	Position: 2.0 m @CEP50
Acquisition	Hot starts: 1.1 sec Cold starts: 29.94 sec
Sensitivity	Cold starts: -145 dBm Tracking: -160 dBm
Time Pulse	0.25 Hz to 10 MHz

## LED Indicators

System	Power x 2 Programmable x 1 SIM card indicator x 1
Wireless Signal Strength	Cellular/Wi-Fi x 6

## Power Parameters

No. of Power Inputs	Redundant dual inputs
Input Voltage	12 to 48 VDC
Power Consumption	10 W
Input Current	0.8 A @ 12 VDC

## Reliability

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

## Physical Characteristics

Dimensions	UC-8220 Models: 141.5 x 120 x 39 mm (5.7 x 4.72 x 1.54 in) UC-8210 Models: 141.5 x 120 x 27 mm (5.7 x 4.72 x 1.06 in) 141.5 x 120 x 27 mm (5.7 x 4.72 x 1.06 in)
Housing	SECC Metal
Installation	DIN-rail mounting Wall mounting (with optional kit)
IP Rating	IP30
Weight	UC-8210 Models: 560 g (1.23 lb) UC-8220 Models: 750 g (1.65 lb)

## 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)
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)

## Standards and Certifications

Safety	UL 62368-1 EN 62368-1
EMC	EN 55032/35 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 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2
Hazardous Locations	Class I Division 2 ATEX
Carrier Approvals	Verizon AT&T
Green Product	RoHS, CRoHS, WEEE

## MTBF

Time	UC-8210-T-LX-S: 708,581 hrs UC-8220-T-LX: 650,836 hrs UC-8220-T-LX-US-S/EU-S/AP-S: 528,574 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

## Warranty

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

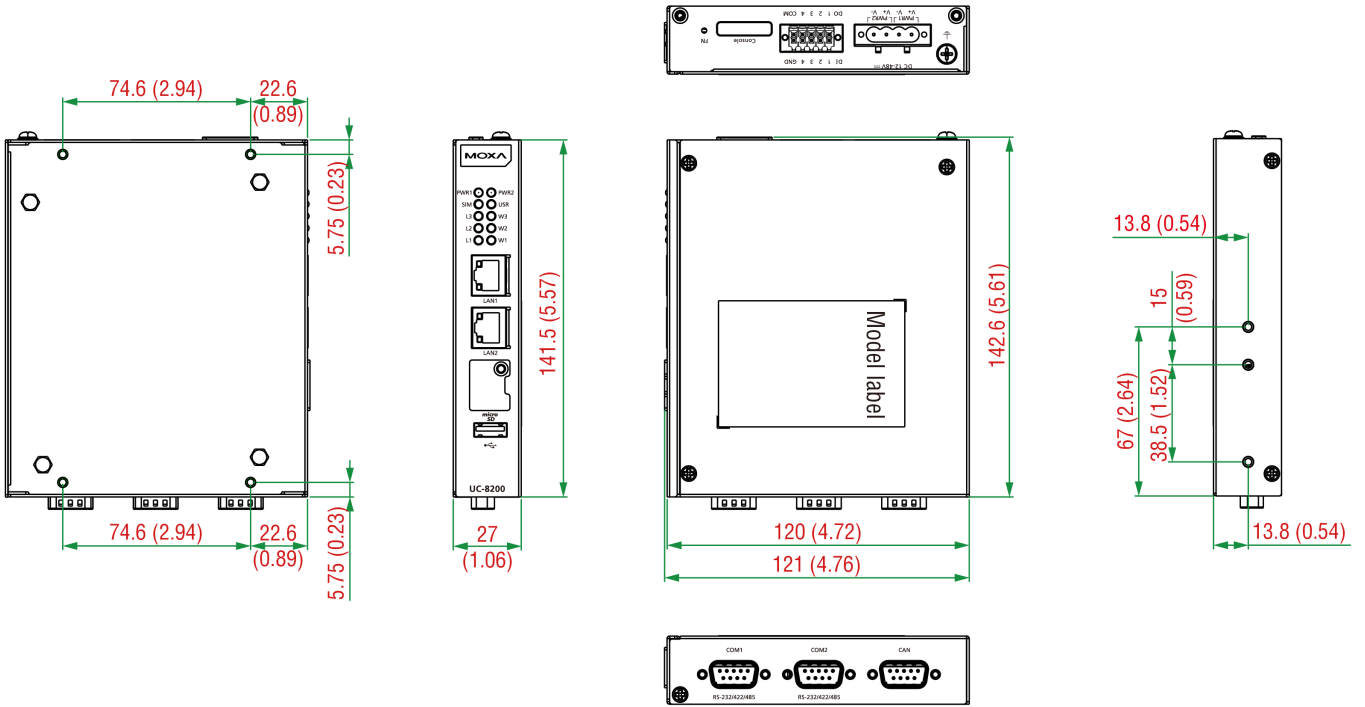
## Package Contents

Device	1 x UC-8200 Series computer
Documentation	1 x quick installation guide 1 x warranty card
Installation Kit	1 x DIN-rail kit (preinstalled) 1 x power jack 6 x M2.5 mounting screws for the cellular module
Cable	1 x console cable

# 尺寸

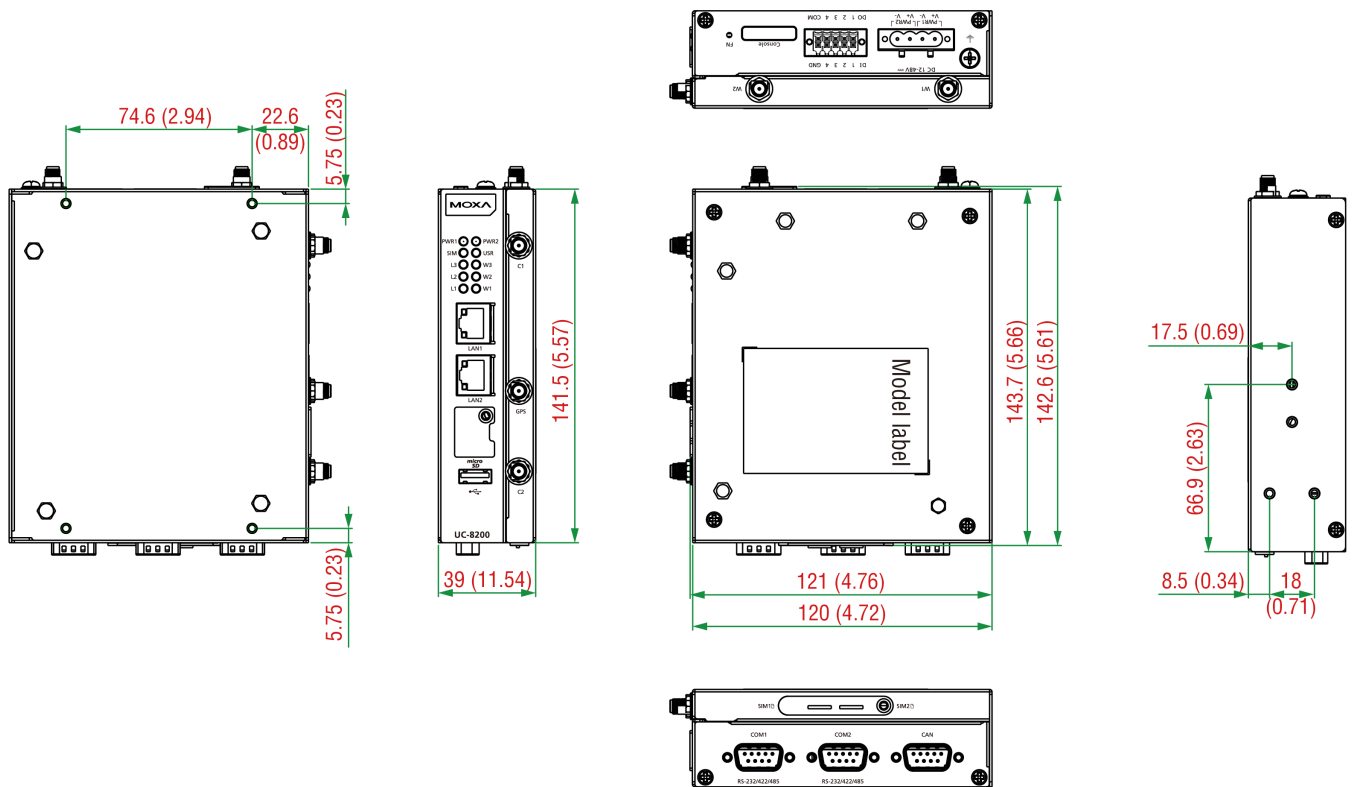
## UC-8210

單位：公釐 (英吋)



## UC-8220

單位：公釐 (英吋)



## 訂購資訊

Model Name	Operating System	IEC 62443-4-2	CPU	TPM	mPCIe Slot 1 for LTE Module	mPCIe Slot 2 for Wi-Fi Module	Operating Temperature
UC-8210-T-LX-S	Default: MIL1 (Debian 9), 2027 EOL Order With Model UC-8210-T-LX-S (CTO): MIL3 (Debian 11) Secure/ Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	-	-	-40 to 85°C
UC-8220-T-LX	Default: MIL1 (Debian 9), 2027 EOL Order With Model UC-8220-T-LX (CTO): MIL3 (Debian 11) Secure/ Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	-	Reserved	Reserved	-40 to 70°C
UC-8220-T-LX-US-S	Default: MIL1 (Debian 9), 2027 EOL Order With Model UC-8220-T-LX-US-S (CTO): MIL3 (Debian 11) Secure/ Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	US region LTE module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-EU-S	Default: MIL1 (Debian 9), 2027 EOL Order With Model UC-8220-T-LX-EU-S (CTO): MIL3 (Debian 11) Secure/ Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	Europe region LTE module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-AP-S	Default: MIL1 (Debian 9), 2027 EOL Order With Model UC-8220-T-LX-AP-S (CTO): MIL3 (Debian 11) Secure/ Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	APAC region LTE module preinstalled	Reserved	-40 to 70°C
UC-8210-T-LX-S (CTO)	MIL3 (Debian 11) Secure or Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	-	-	-40 to 85°C
UC-8220-T-LX (CTO)	MIL3 (Debian 11) Secure or Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	-	Reserved	Reserved	-40 to 70°C
UC-8220-T-LX-US-S (CTO)	MIL3 (Debian 11) Secure or Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	US region LTE module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-EU-S (CTO)	MIL3 (Debian 11) Secure or Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	Europe region LTE module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-AP-S (CTO)	MIL3 (Debian 11) Secure or Standard, 2031 EOL	With MIL3 Secure	1 GHz Dual Core	Built in	APAC region LTE module preinstalled	Reserved	-40 to 70°C

## 配件 (選購)

### Power Adapters

PWR-12150-EU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, 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, UK plug, -40 to 75°C operating temperature
PWR-12150-USJP-SA-T	Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, US/JP plug, -40 to 75°C operating temperature
PWR-12150-AU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, AU plug, -40 to 75°C operating temperature
PWR-12150-CN-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, CN plug, -40 to 75°C operating temperature

### Power Wiring

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
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### Cables

CBL-F9DPF1x4-BK-100	Console cable with 4-pin connector, 1 m
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### Wi-Fi Wireless Modules

UC-8200-WLAN22-AC	Wireless package for UC-8200 V2.0 or later with Wi-Fi module, 2 screws, 2 spacers, 1 heat sink, 1 pad
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## Antennas

ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, 1 dBi, omnidirectional rubber-duck antenna
ANT-LTE-ASM-04 BK	704 to 960/1710 to 2620 MHz, LTE omnidirectional stick antenna, 4.5 dBi
ANT-LTE-OSM-03-3m BK	700-2700 MHz, multiband antenna, specifically designed for 2G, 3G, and 4G applications, 3 m cable
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
ANT-WDB-ARM-0202	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male), dual-band, omnidirectional antenna

## DIN-Rail Mounting Kits

UC-8210 DIN-rail Mounting Kit	DIN-rail mounting kit for UC-8210 with 4 M3 screws
UC-8220 DIN-rail Mounting Kit	DIN-rail mounting kit for UC-8220 with 4 M3 screws

## Wall-Mounting Kits

UC-8200 Wall-mounting Kit	Wall-mounting kit for UC-8200 with 4 M3 screws
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