

UC-8200 系列

Arm Cortex-A7 雙核心 1 GHz IIoT 閘道，內建 LTE Cat. 4 模組，配備 1 個 mPCIe 擴充插槽（可加裝 Wi-Fi 模組）、1 個 CAN 埠、4 個數位輸入（DI）與 4 個數位輸出（DO）



特色與優點

- 採用 Armv7 Cortex-A7 雙核心 1 GHz 處理器
- 搭載 Moxa 工業級 Linux 作業系統，提供長達 10 年的支援與維護
- 支援 LTE 通訊，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，支援美洲、歐洲與亞太頻段
- 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
- IEC 62443-4-2 安全等級 2 認證
- -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。配備 2 個 RS-232/422/485 多功能串列埠、2 個 10/100/1000 Mbps 乙太網路埠、1 個 CAN 埠，以及 2 個 mPCIe 插槽，可擴充 Wi-Fi 或行動通訊模組。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。

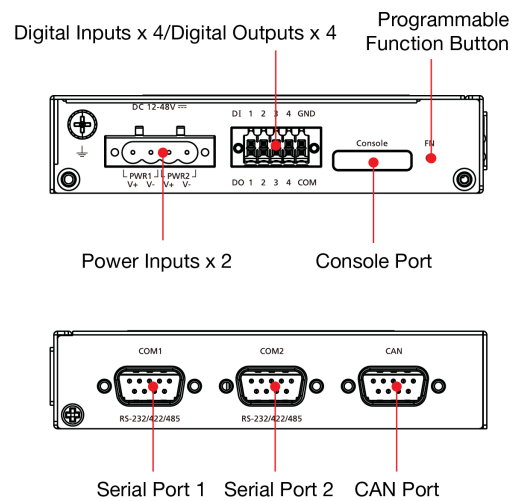
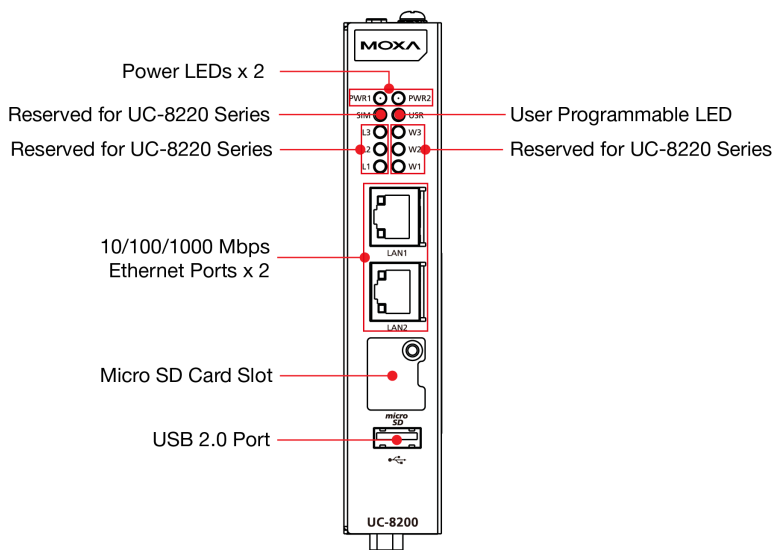
UC-8200 採用的是專為能源監視系統進行優化的 Cortex-A7 雙核心處理器，該處理器目前已被廣泛地用於各種工業解決方案。這款輕薄的嵌入式電腦是可靠且安全的閘道，具備彈性的介面選項，可協助您在現場進行資料擷取並進行處理，同時也是適用於許多其他大規模部署的通訊平台。

本系列亦提供支援 LTE 的寬溫機型，適用於極端溫度環境。所有機型均經過環境測試驗證，確保 LTE 模組啟用下仍可於寬溫條件下穩定運行。

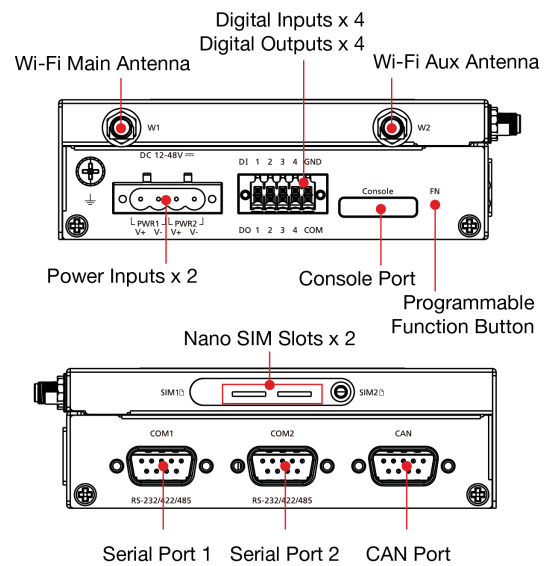
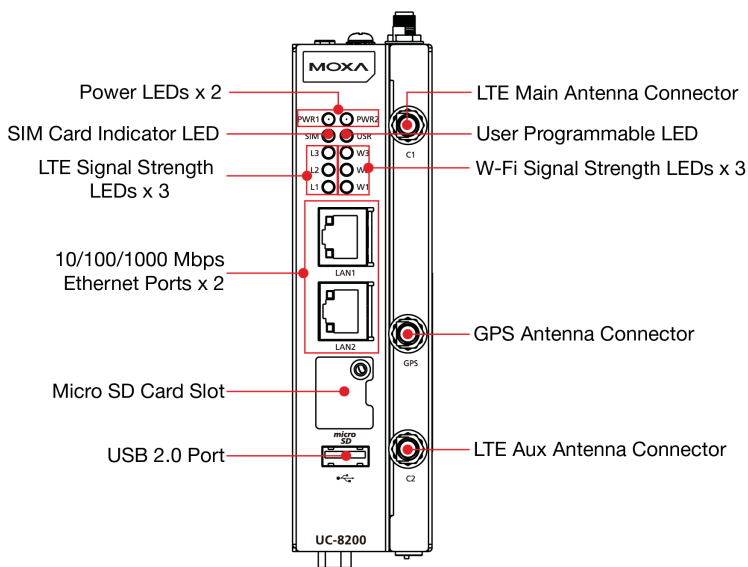
IEC 62443-4-2 安全等級 2 認證

搭載 Moxa Industrial Linux 3 (MIL3) 的 UC-8200 系列型號通過 IEC 62443-4-2 安全等級 2 認證，為資產擁有者與系統整合商提供一個已通過測試與驗證、可防禦資安威脅的 IIoT 安全平台，加速安全應用的導入與整合。

UC-8210



UC-8220



規格

Computer

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

1. MIL3 OS 可透過 Moxa 電腦配置系統 (CCS) 針對 CTO 型號選擇。如需型號名稱，請參閱資料表 PDF 檔案的「訂購資訊」一節。

Computer Interface

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 connector)
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
TPM	TPM v2.0

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

Baudrate	300 bps to 921.6 kbps
Data Bits	7, 8
Stop Bits	1, 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)
Console Port	1 x 4-pin header to DB9 console port

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

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	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&T 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 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

GPS Interface

Receiver Types	GPS, GLONASS, BeiDou, Galileo, QZSS
Accuracy	Position: 2.0 m @CEP50
Time to First Fix (TTFF)	Hot start: 1.1 s Warm start: 22.1 s Cold start: 29.9 s
Sensitivity	Acquisition: -147 dBm Tracking: -160 dBm Cold starts: -145 dBm
Update Rate	1 Hz

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)
Weight	UC-8210 Models: 560 g (1.23 lb) UC-8220 Models: 750 g (1.65 lb)
Housing	SECC Metal
IP Rating	IP30
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)
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

EMC	BIS EN 55032/35 EN 61000-6-2/-6-4 KC RCM UKCA
EMI	EN 55032 Class A EN 61000-6-4 Class A FCC Part 15B Class A ICES-003 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; 1.4 GHz to 6 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: line-to-line: 0.5 kV; line-to-PE: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Industrial Cybersecurity	IEC 62443-4-2 Security Level 2
Hazardous Locations	Class I Division 2 ATEX
Carrier Approvals	Verizon AT&T PTCRB
Safety	UL 62368-1 EN 62368-1
Radio Frequency	UC-8220 FCC CE (RED) ISED RCM NCC
International Approval	FCC CE ISED UKCA RCM KC BIS
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 www.moxa.com/tw/warranty

Package Contents

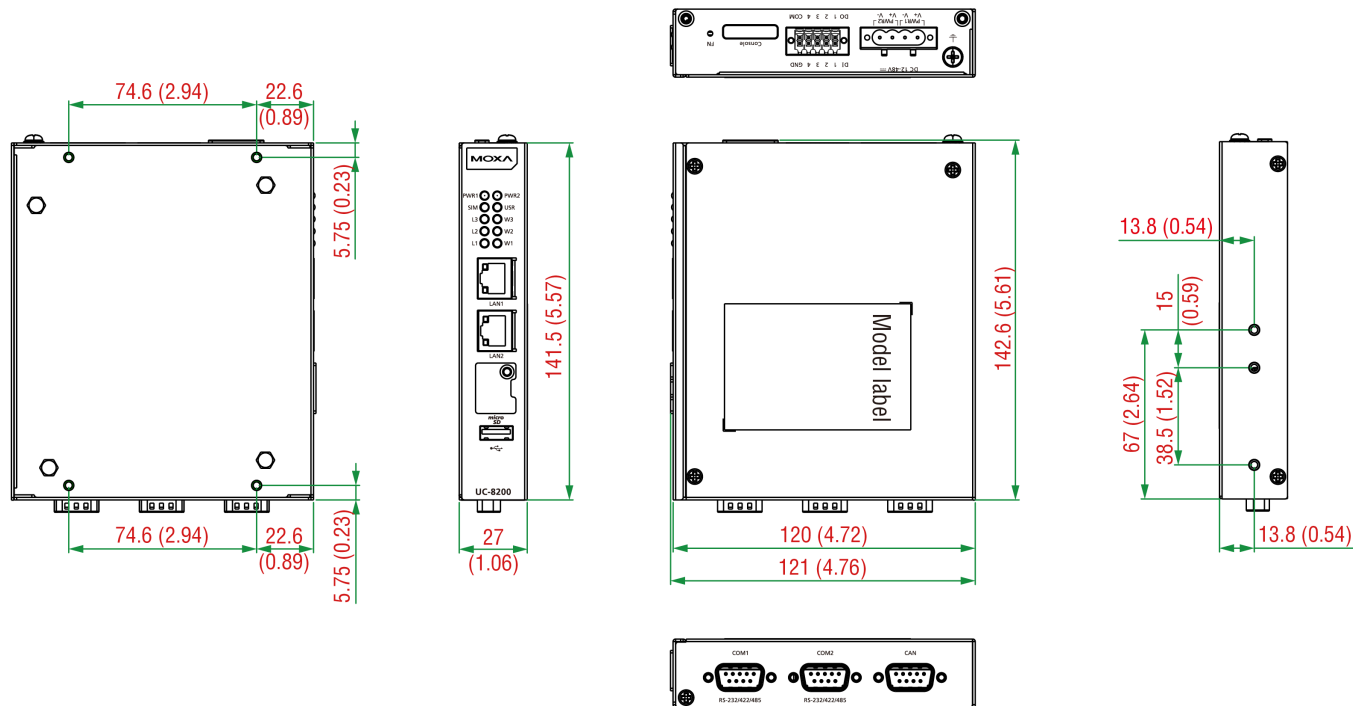
Device	1 x UC-8200 Series computer
Documentation	1 x quick installation guide 1 x warranty card

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

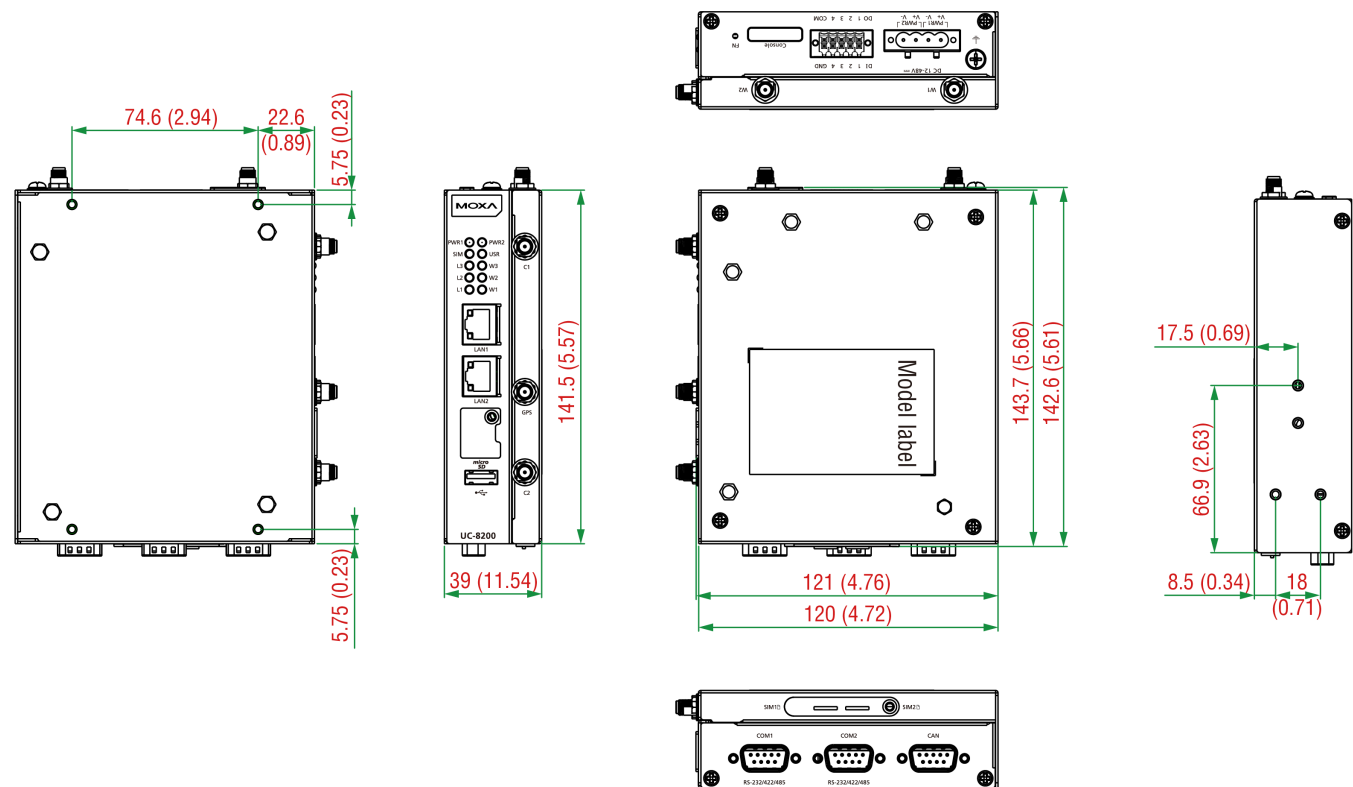
UC-8210

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 Security Level 2	CPU	mPCIe Slot 1 for LTE Module	mPCIe Slot 2 for Wi-Fi Module	Operating Temperature
UC-8210-T-LX-S	Default: MIL1 (Debian 9) Order MIL3 Standard/Secure (Debian 11) via UC-8200 (CTO)	With MIL3 Secure	1 GHz Dual Core	–	–	-40 to 85°C
UC-8220-T-LX	Default: MIL1 (Debian 9) Order MIL3 Standard/Secure (Debian 11) via UC-8200 (CTO)	With MIL3 Secure	1 GHz Dual Core	Reserved	Reserved	-40 to 85°C
UC-8220-T-LX-US-S	Default: MIL1 (Debian 9) Order MIL3 Standard/Secure (Debian 11) via UC-8200 (CTO)	With MIL3 Secure	1 GHz Dual Core	U.S. region LTE Cat. 4 module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-EU-S	Default: MIL1 (Debian 9) Order MIL3 Standard/Secure (Debian 11) via UC-8200 (CTO)	With MIL3 Secure	1 GHz Dual Core	Europe region LTE Cat. 4 module preinstalled	Reserved	-40 to 70°C
UC-8220-T-LX-AP-S	Default: MIL1 (Debian 9) Order MIL3 Standard/Secure (Debian 11) via UC-8200 (CTO)	With MIL3 Secure	1 GHz Dual Core	APAC region LTE Cat. 4 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-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
ANT-5G-OSM-04	4 dBi LTE/5G NR dipole antenna with SMA (male) connector

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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