

# UC-4400Aシリーズ

LTE/5GおよびWi-Fi 6E機能を備えたArm Cortex-A53クアッドコア64ビットコンピュータ



## 機能とメリット

- Arm Cortex-A53クアッドコア 1.6 GHzプロセッサ
- デュアルSIMとAT&T承認を備えた統合5Gサブ6GHz NRモジュール
- 自動検出10/100/1000 Mbpsイーサネットポート x 2
- CANbusおよびシリアルポート (2kV絶縁保護付き)
- Moxa Industrial Linuxを搭載 (10年間の超長期サポート付き)
- ストレージ拡張用のmicroSDソケット
- オプションアクセサリでWi-Fi 6Eおよび4G LTE Cat.4のサポート
- ISA/IEC 62443-4-2 SL2認証に対応
- CE/FCC/UL認証
- 動作温度範囲-40~75°C (セルラーモジュール有効時は-40~70°C)

## 認証



## 製品紹介

UC-4400Aのコンピューティングプラットフォームは、組み込み型データ収集アプリケーション向けに設計されています。このコンピュータには、最大4つのRS-232/422/485シリアルポート、デュアル10/100/1000 Mbpsイーサネットポート、最大2つのCANポートが搭載されており、さらにLTE Cat.4およびWi-Fi 6EモジュールをサポートするためのMini PCIeおよびM.2 Eソケットを備えています。汎用的な機能を備えており、ユーザーはUC-4400Aをさまざまな複雑な通信ソリューションに効率的に適應させることができます。

UC-4400Aはエネルギー監視システムでの使用に最適化されたArm Cortex-A53クアッドコアプロセッサを搭載しており、さまざまな産業ソリューションに広く適用可能です。柔軟なインターフェースオプションを備えたこの小型の組み込みコンピュータは、現場サイトでのデータ収集およびデータ処理のための信頼性が高く安全なゲートウェイであると同時に、多くの大規模展開における有用な通信プラットフォームでもあります。

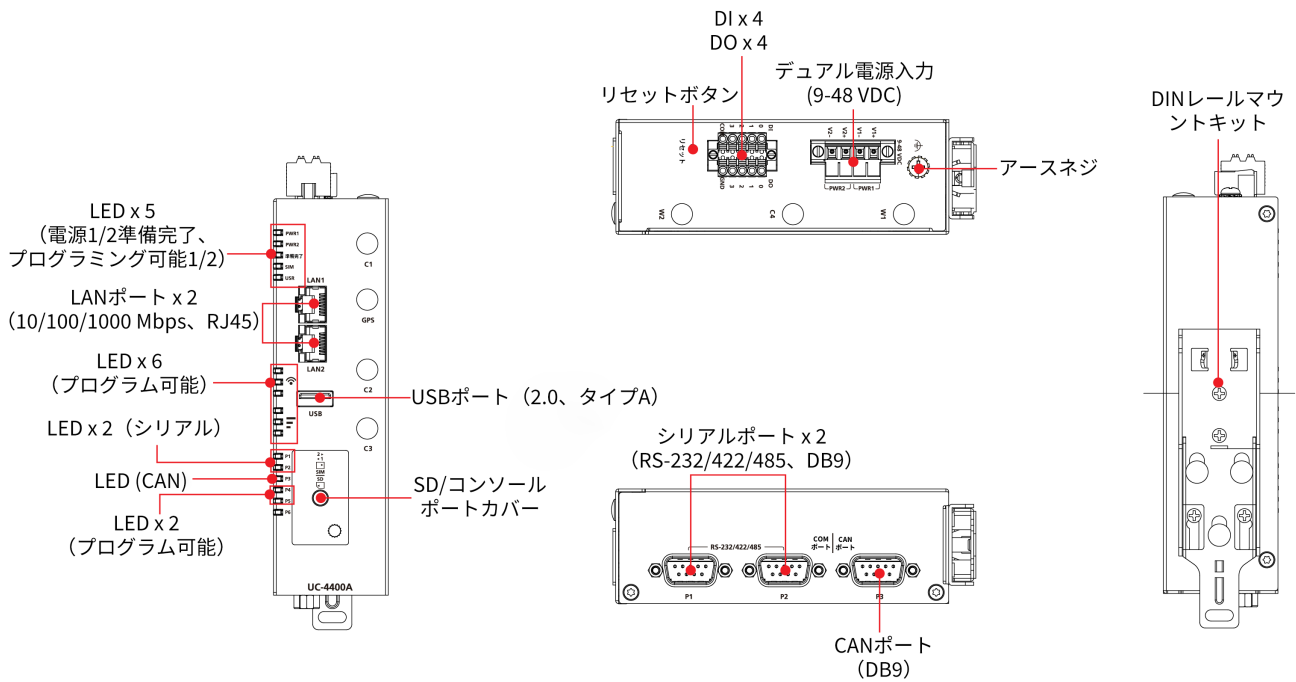
広温度範囲対応のセルラー対応モデルは、温度範囲が広いアプリケーションに使用できます。すべてのユニットは、テストチャンバーで徹底的に検査されており、セルラー対応コンピューティングプラットフォームが広温度範囲での使用に適していることが保証されています。

## アプリケーション

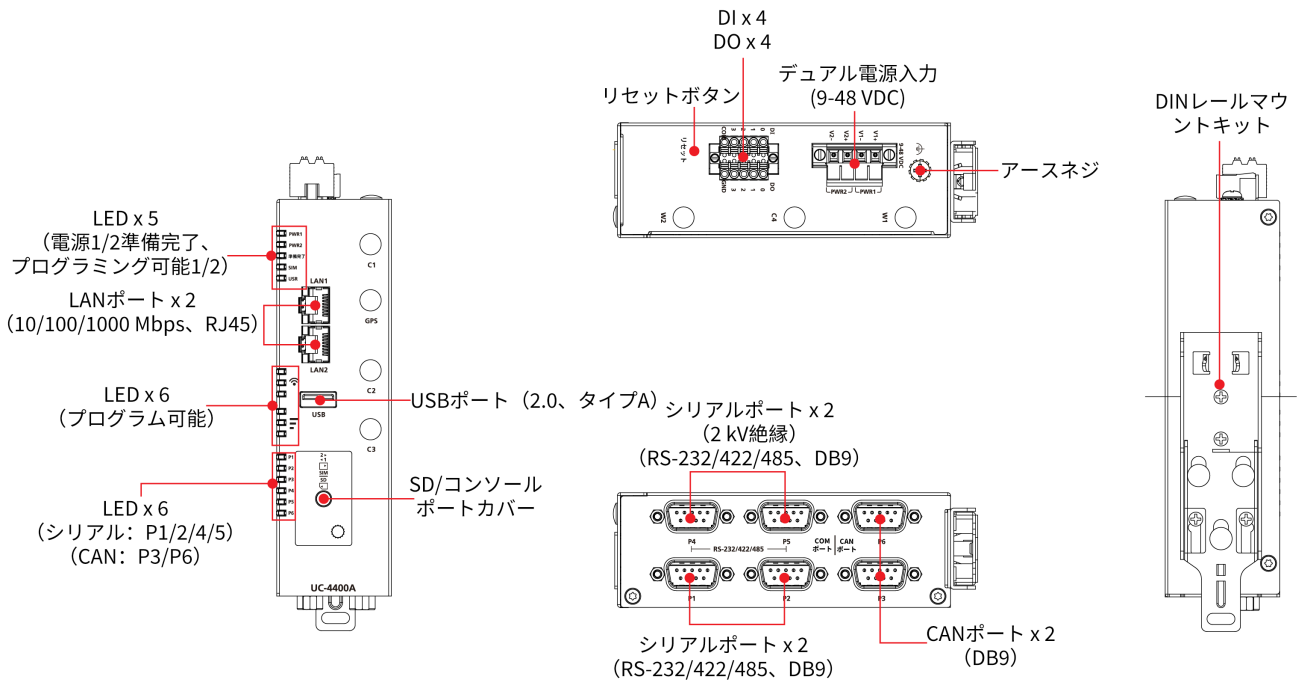
- 太陽光/風力エネルギー
- バッテリーエネルギー貯蔵
- EV充電インフラ
- 施設モニタリング
- 機械モニタリング
- 石油および天然ガス
- 水処理・廃水管理
- 高度道路交通システム
- さまざまなIIoTゲートウェイアプリケーション

# 外観

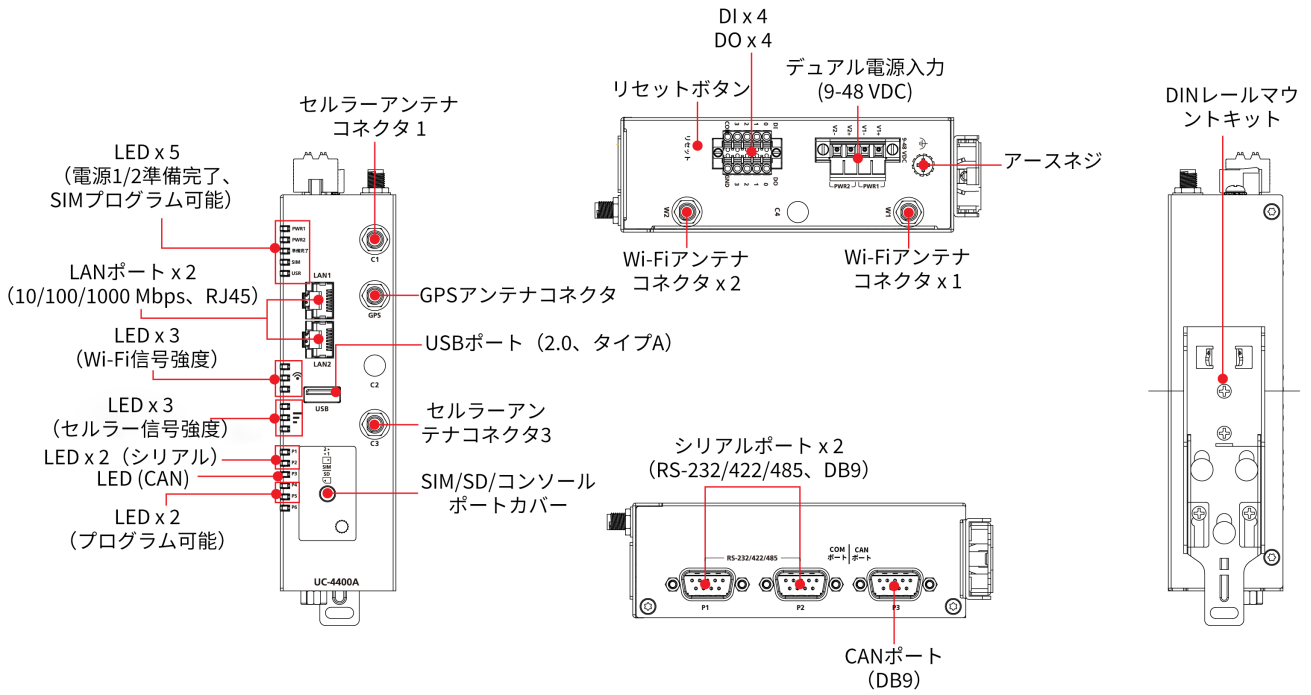
## UC-4410Aモデル



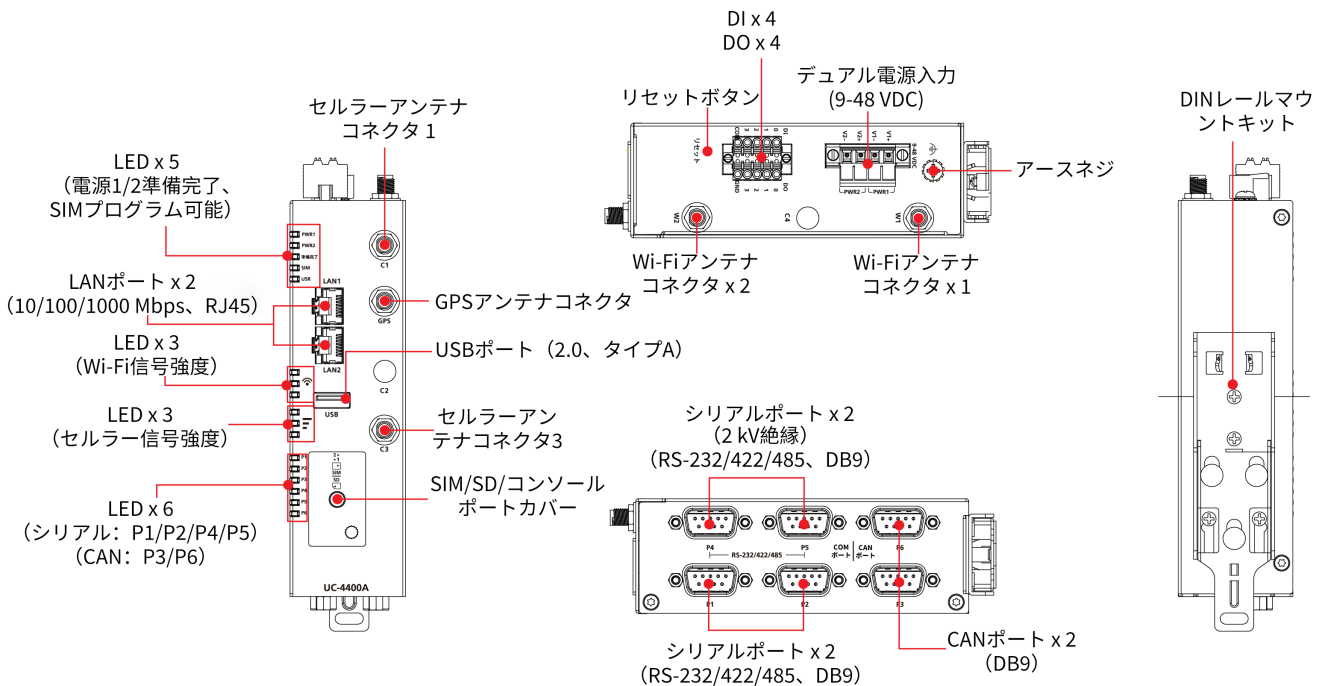
## UC-4414Aモデル



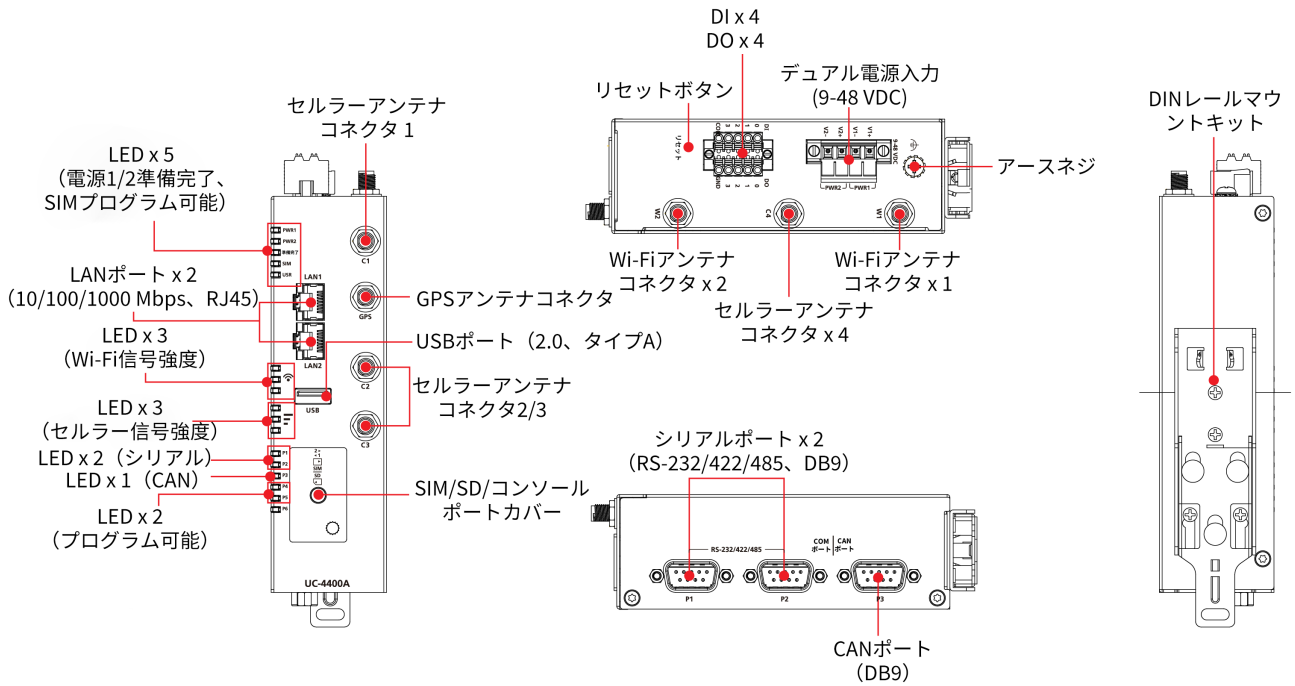
## UC-4430Aモデル



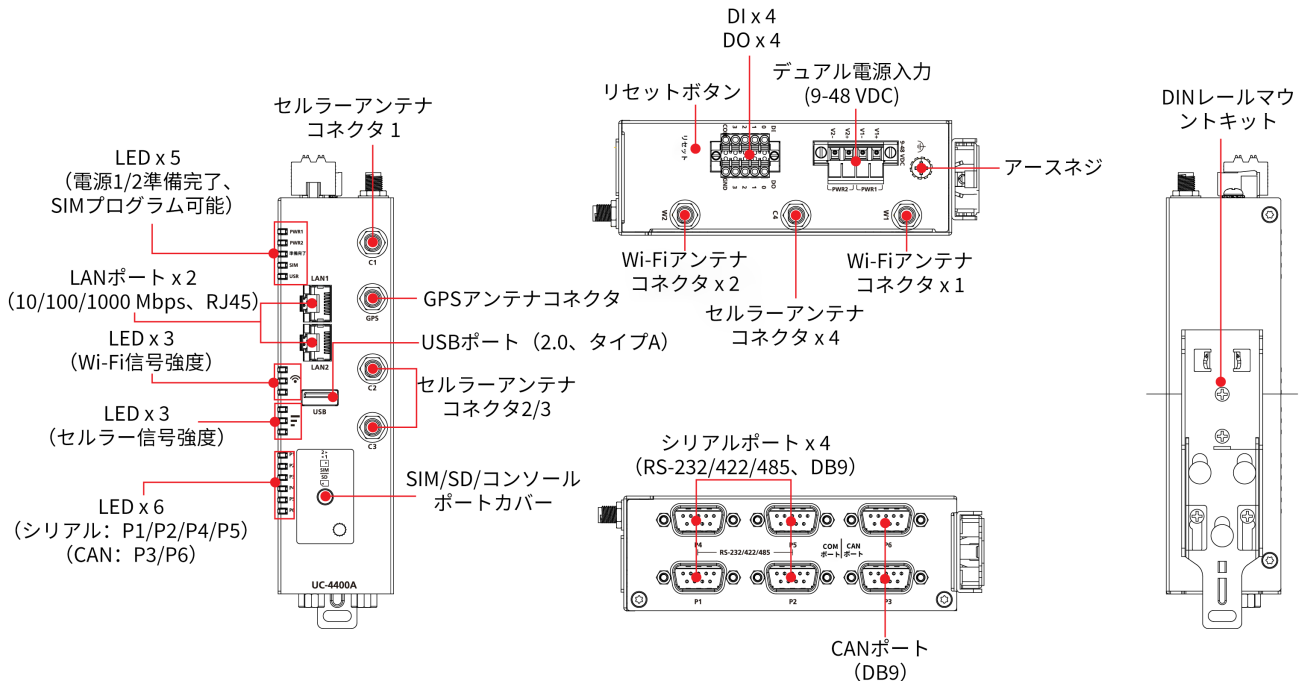
## UC-4434Aモデル



## UC-4450Aモデル



## UC-4454Aモデル



## 仕様

### Computer

CPU	Arm Cortex-A53 quad-core 1.6 GHz
DRAM	4 GB LPDDR4
Supported OS	Moxa Industrial Linux 3 (Debian 11, kernel 5.10), 2031 EOL See <a href="http://www.moxa.com/MIL">www.moxa.com/MIL</a>

Storage Pre-installed	16 GB eMMC
Expansion Slots	microSD socket x 1

### Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Serial Ports	UC-4414/UC-4434/UC-4454 models: RS-232/422/485 ports x 4 (software-selectable, DB9 male connector) UC-4410/UC-4430/UC-4450 models: RS-232/422/485 ports x 2 (software-selectable, DB9 male connector)
CAN Ports	UC-4414/UC-4434/UC-4454 models: CAN 2.0 A/B x 2 (DB9 male) UC-4410/UC-4430/UC-4450 models: 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-4430/ UC-4434/UC-4450/UC-4454 models: RP-SMA x 2
Cellular Antenna Connector	UC-4450/UC-4454 models: SMA x 4 UC-4430/ UC-4434 models: SMA x 2
GPS Antenna Connector	UC-4430/ UC-4434/UC-4450/UC-4454 models: SMA x 1
Console Port	RS-232 (TxD, RxD, GND), 3-pin header output (115200, n, 8, 1)
Expansion Slots	UC-4430/ UC-4434/UC-4450/UC-4454 models: M.2 E-key slot x 1 (for Wi-Fi) UC-4430/ UC-4434 models: mPCIe slot x 1 (for LTE)
SIM Format	UC-4430/ UC-4434/UC-4450/UC-4454 models: Nano
Number of SIMs	UC-4430/ UC-4434/UC-4450/UC-4454 models: 2
Buttons	Programmable button
TPM	TPM v2.0

### Ethernet Interface

Magnetic Isolation Protection	1.5 kV (built-in)
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### Serial Interface

No. of Ports	UC-4414/UC-4434/UC-4454 models: 4 UC-4410/UC-4430/UC-4450 models: 2
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)

Isolation	UC-4414/4434 models: 2 kV (P4 and P5 ports)
Console Port	1 x 3-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
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

### CAN Interface

No. of Ports	UC-4414/UC-4434/UC-4454 models: 2 UC-4410/UC-4430/UC-4450 models: 1
Baudrate	10 to 1000 kbps
Connector	DB9 male
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

Digital Input Channels	DIs x 4
Connector	Screw-fastened Euroblock terminal
Sensor Type	Wet contact (NPN) Dry contact
Dry Contact	Logic 1: Open Logic 0: Close to GND
Wet Contact (COM to DI)	Logic 1: 0 to 3 VDC Logic 0: 10 to 30 VDC
Isolation	3K VDC

### Digital Outputs

Digital Output Channels	DOs x 4
Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	0 to 30 VDC

### Cellular Interface

Cellular Standards	5G NR Release 16
5G NR Bands	5G NSA and SA bands: n1 (FDD 2100) MHz n2 (FDD 1900) MHz n3 (FDD 1800) MHz n5 (FDD 850) MHz n7 (FDD 2600) MHz n8 (FDD 900) MHz

	n20 (FDD 800) MHz n25 (FDD 1900) MHz n28 (FDD 700) MHz n29 (SDL 700) MHz n40 (TDD 2300) MHz n41 (TDD 2500) MHz n48 (TDD 3600) MHz n66 (FDD 1700 / AWS-3) MHz n71 (FDD 600) MHz n75 (SDL 1500) MHz n77 (TDD 3700) MHz n78 (TDD 3500) MHz n79 (TDD 4500) MHz
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LTE Bands	B1 (FDD 2100) MHz B2 (FDD 1900) MHz B3 (FDD 1800) MHz B4 (FDD 1700 / AWS) MHz B5 (FDD 850) MHz B7 (FDD 2600) MHz B8 (FDD 900) MHz B12 (FDD 700ac) MHz B13 (FDD 700c) MHz B14 (FDD 700PS) MHz B17 (FDD 700bc) MHz B18 (FDD 800) MHz B19 (FDD 800) MHz B20 (FDD 800DD) MHz B25 (FDD 1900) MHz B26 (FDD 850) MHz B28 (FDD 700) MHz B29 (SDL 700) MHz B30 (FDD 2300) MHz B32 (SDL 1500) MHz B34 (TDD 2000) MHz B38 (TDD 2600) MHz B39 (TDD 1900) MHz B40 (TDD 2300) MHz B41 (TDD 2500) MHz B42 (TDD 3500) MHz B43 (TDD 3600) MHz B46 (TDD 5200) MHz B48 (TDD 3600) MHz B66 (FDD 1700 / AWS-3) MHz B71 (FDD 600) MHz
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UMT Bands	B1 (2100) MHz B2 (1900) MHz B3 (1800) MHz B4 (AWS) B5 (850) MHz B6 (800) MHz B8 (900) MHz B19 (800) MHz
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### GPS Interface

Frequency Range	Wide-band GNSS: 1559 to 1606 MHz (recommended) GPS: BW NB GPS 2.046 MHz (centered at 1575.42 MHz) GLONASS: BW 8.3 MHz approx. (1597.05 to 1606 MHz) BeiDou: 4.092 MHz BW (1559.05 to 1563.14 MHz) Galileo: 4.092 MHz BW (centered at 1575.42 MHz)
Antenna Types Supported	Active antenna (default) Passive antenna
Time to First Fix (TTFF)	Hot start: 1 s Warm start: 27 s Cold start: 28 s

Sensitivity	Cold starts: -146 dBm Tracking: -161 dBm Acquisition: -148 dBm
Update Rate	Minimum 1 Hz

### WLAN Interface

WLAN Standards	802.11a/b/g/n/ac/ax (requires purchase of optional Wi-Fi accessory)
Frequency Band	2.4 GHz / 6 GHz 2.4 GHz / 5 GHz

### 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

### LED Indicators

System	Power x 2 READY (device bootup) x 1 SIM card indicator x 1
LAN	2 ports, 1 per port (10/100/1000 Mbps)
Serial	UC-4414/UC-4434/UC-4454 models: 1 LED per port for 4 serial ports UC-4410/UC-4430/UC-4450 models: 1 LED per port for 2 serial ports
CAN	UC-4414/UC-4434/UC-4454 models: 1 LED per port for 2 CAN ports UC-4410/UC-4430/UC-4450 models: 1 LED per port for 1 CAN port
Wireless Signal Strength	Cellular x 3 Wi-Fi x 3
User Programmable	1

### Power Parameters

No. of Power Inputs	Redundant dual inputs
Input Voltage	9 to 48 VDC
Input Current	UC-4410/UC-4414 models: 1.53 A @ 9 VDC, 0.21 A @ 48 VDC UC-4430/ UC-4434 models: 2.10 A @ 9 VDC, 0.27 A @ 48 VDC (with LTE accessory) UC-4450/ UC-4454 models: 2.13 A @ 9 VDC, 0.30 A @ 48 VDC
Power Consumption	UC-4410/UC-4414 models: 10 W @ 95% CPU loading UC-4430/UC-4434 models: 13 W (with LTE) @ 95% CPU loading UC-4450/UC-4454 models: 14.4 W @ 95% CPU loading



Power Connector	Screw-fastened Euroblock terminal
Reverse Polarity Protection	Supported

### Reliability

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

### Physical Characteristics

Housing	Metal SECC
IP Rating	IP30
Dimensions	141.5 x 120 x 41 mm (5.57 x 4.72 x 1.62 in)
Weight	750 g (1.7 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

### Environmental Limits

Operating Temperature	With Wi-Fi: -30 to 70°C (-22 to 158°F) With Cellular: -40 to 70°C (-40 to 158°F) Non-wireless Operation: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

### Standards and Certifications

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: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: line-to-line 2 kV, Signal: line-to-ground 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz; Signal: 10 V IEC 61000-4-8 PFMF
Cellular Standards	EN 301 908-1 (WCDMA/LTE) EN 301 489-1/-19 (GPS) EN 301 489-1/-52 (WCDMA/LTE) EN 303 413 (GPS)
WLAN Standards	EN 303 687 (6 GHz) EN 301 893 (5 GHz) EN 301 489-1-17 EN 300 328 (2.4 GHz)
Radio Frequency	FCC RCM CE (RED) ICID UKCA EN 62311
International Approval	FCC CE ICID UKCA RCM

	KC BSMI NCC (Q1, 2025)
Safety	IEC 62368-1 UL 62368-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-64 2 grms @ 5 to 500 Hz, random wave, 1 hr per axis (without USB devices attached)
Green Product	RoHS, CRoHS, WEEE

#### MTBF

Time	UC-4410A-T: 1,311,070 hrs UC-4414A-I-T: 1,097,567 hrs UC-4430A-T: 1,161,321 hrs UC-4434A-I-T: 813,255 hrs UC-4450A-T-5G: 982,234 hrs UC-4454A-T-5G: 892,697 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

#### Warranty

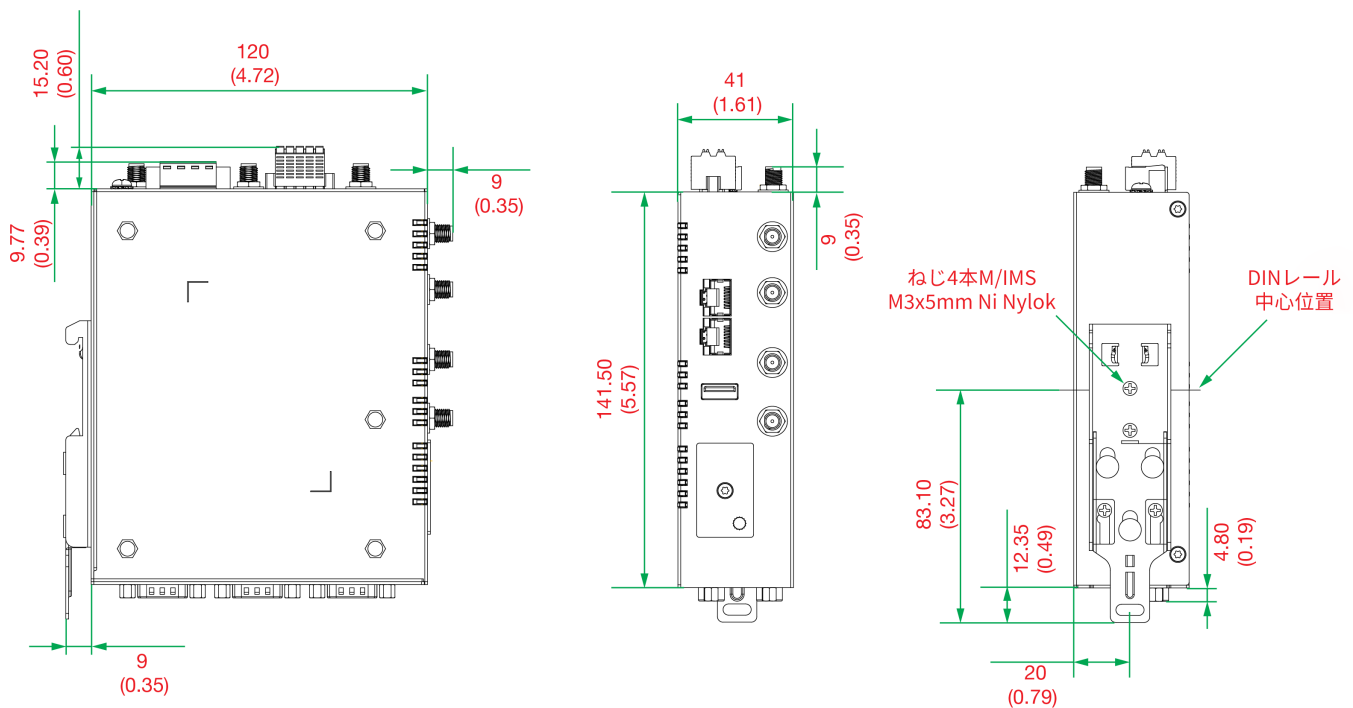
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/jp/warranty">www.moxa.com/jp/warranty</a>

#### Package Contents

Device	1 x UC-4400A Series computer
Documentation	1 x quick installation guide 1 x warranty card

## 寸法

単位: mm (インチ)



## 注文情報

Model Name	Operating System	CPU	Serial Ports	CAN Ports	M.2 E-key Slot	M.2 B-key Slot	mPCIe	Operating Temperature
UC-4410A-T	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	2	1	-	-	-	-40 to 75°C
UC-4414A-I-T	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	4	2	-	-	-	-40 to 75°C
UC-4430A-T	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	2	1	Reserved for Wi-Fi 6E	-	Reserved for LTE	-40 to 70°C
UC-4434A-I-T	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	4 (2 with isolation protection)	2	Reserved for Wi-Fi 6E	-	Reserved for LTE	-40 to 70°C
UC-4450A-T-5G	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	2	1	Reserved for Wi-Fi 6E	5G Sub-6GHz NR module	-	-40 to 70°C
UC-4454A-T-5G	Default: MIL3 Standard Order MIL3 Secure through UC-4400A (CTO)	Arm Cortex-A53 quad-core 1.6 GHz	4 (2 with isolation protection)	2	Reserved for Wi-Fi 6E	5G Sub-6GHz NR module	-	-40 to 70°C

## アクセサリ (別売)

### Power Adapters

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

### Cables

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

UC-4400A Wall-mounting Kit	Wall-mounting kit with 2 plates (44.8 x 99 x 5.7 mm each) and 5 M3 x 5 mm screws for the UC-4400A Series
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### Wireless Packages

UC-4400A-LTE-CAT4-WW	LTE package with a Telit LE910C4-WWxD LTE Cat. 4 mPCIe card for global coverage, 2 thermal pads, 2 heat sinks, 3 M2.5 x 5 mm screws for UC-443xA models
UC-4400A-WLAN22-AX	Wi-Fi 6E package with an EMWICOM WMX7205-1 Wi-Fi 6E M.2 card, 2 thermal pads, 2 heat sinks, 2 M2.5 x 5 mm screws for UC-443xA/445xA models

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