

UC-8600A Series

Arm Cortex-A72 dual-core 1.5 GHz 64-bit box computers with rich set of interfaces, -40 to 75°C operating temperature



Features and Benefits

- Arm Cortex-A72 dual-core 1.5 GHz processor
- 4 auto-sensing 10/100/1000 Mbps Ethernet ports
- 8 RS-232/422/485 serial ports
- 2 CAN ports (CAN 2.0A/CAN 2.0B) with 3 kV isolation protection
- M.2 M key SSD slot and Micro SD socket for storage expansion
- Supports cellular and Wi-Fi 6E via an expansion slot
- Moxa Industrial Linux with 10-year superior long-term support
- EN 18031-1 compliant wireless cybersecurity
- IEC 62443-4-2 Security Level 2 certified
- -40 to 75°C operating temperature range (-40 to 70°C with cellular module enabled)

Certifications



Introduction

The UC-8600A Series Arm-based box-type computing platform is designed for embedded data-acquisition and edge-computing applications.

The UC-8600A comes with four 10/100/1000 Ethernet ports, eight RS-232/422/485 serial ports, four DI/DO channels, two CAN ports, enabling robust connectivity for a wide variety of field devices. The UC-8600A also supports storage expansion via an M.2 M key slot for SSD and a Micro SD card slot. In addition, a wireless expansion slot that supports Wi-Fi 6E and cellular modules enables reliable wireless communication for remote applications. The versatile communication and expansion capabilities of the UC-8600A Series facilitates efficient deployment in diverse industrial environments.

IEC 62443-4-2 Security Level 2 Certified

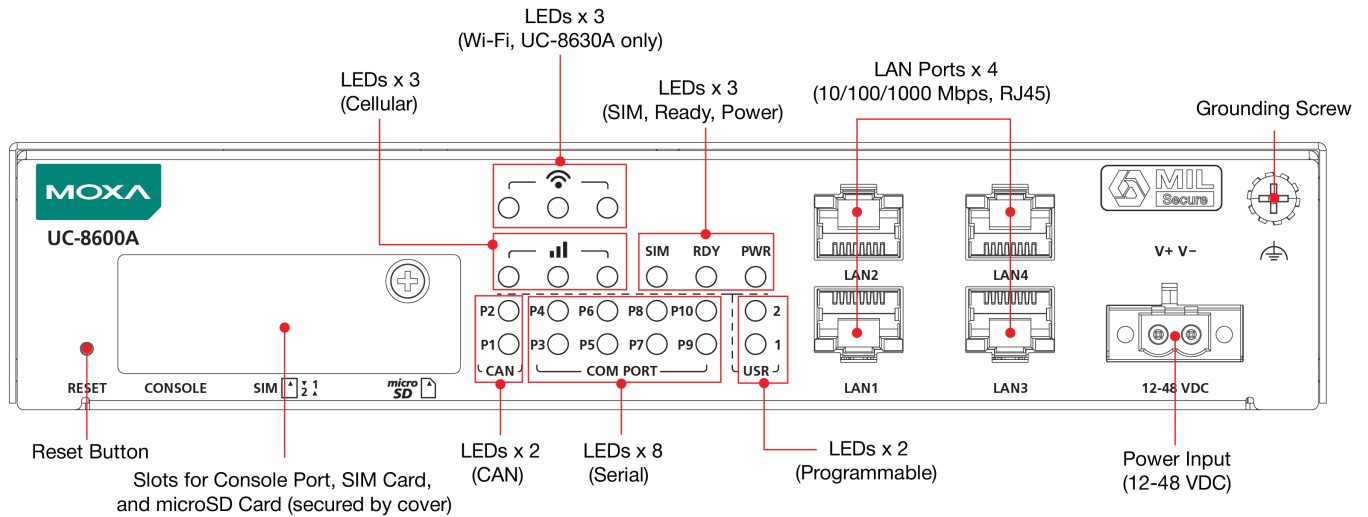
UC-8600A Series models with Moxa Industrial Linux 4 (MIL4) Secure are IEC 62443-4-2 Security Level 2 certified, making it easier for asset owners and system integrators to integrate IIoT applications by providing a secure platform that has already been tested and validated to protect IIoT data and infrastructure against cyberthreats.

IEC 62443-4-2 Security Level 2 certificate:

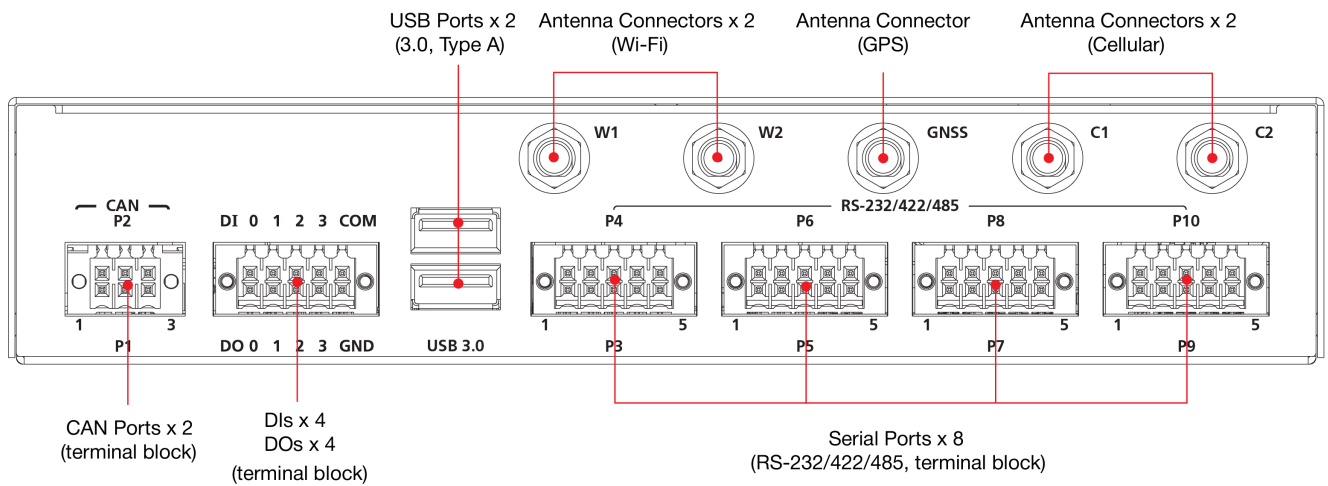
<https://certificates.iecee.org/#/deliverables/CERT/2180763/view>

Appearance

Front View



Rear View



Specifications

Computer

CPU	Arm Cortex-A72 dual-core 1.5 GHz
DRAM	4 GB LPDDR4 SDRAM
Storage Pre-installed	32 GB eMMC
Storage Slot	microSD sockets x 1 M.2 M-key 2242 sockets x 1, PCIe
Supported OS	Moxa Industrial Linux 4 (Debian 13, kernel 6.12), 2033 EOL See www.moxa.com/MIL

Computer Interface

Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 4
Serial Ports	RS-232/422/485 ports x 8 (software-selectable, terminal-block connector)
Digital Input	DIs x 4

Digital Output	DOs x 4
CAN Ports	CAN 2.0 A/B x 2 (3-pin terminal block)
USB 3.0	USB 3.0 hosts x 2, type-A connectors
Expansion Slots	UC-8620A/UC-8630A: mPCIe slots x 1 (for LTE) UC-8630A: M.2 E-key sockets x 1 (for Wi-Fi)
Cellular Antenna Connector	SMA x 2
Number of SIMs	2
SIM Format	Nano
Wi-Fi Antenna Connector	UC-8630A: RP-SMA x 2
GPS Antenna Connector	SMA x 1
Console Port	RS-232 (TxD, RxD, GND), 3-pin header output (115200, n, 8, 1)
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	8
Baudrate	50 bps to 921.6 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 for RS-232 ADDC (automatic data direction control) for RS-485

Serial Signals

RS-232	TxD, RxD, RTS, CTS, 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	2
Connector	3-pin spring-type terminal block
Baudrate	10 Kbps to 1 Mbps
Industrial Protocols	CAN 2.0A CAN 2.0B
Isolation	3 kV (built-in)
Signals	CAN_H, CAN_L, CAN_GND

Digital Inputs

No. of Channels	4
Connector	Spring-type Euroblock terminal
Sensor Type	Dry contact Wet contact (NPN)
Dry Contact	Logic 0: Close to GND Logic 1: Open
Wet Contact (DI to COM)	Logic 0: 10 to 30 VDC (COM to DI) Logic 1: 0 to 3 VDC
Isolation	1.5 kV

Digital Outputs

No. of Channels	4
Connector	Spring-type Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	0 to 30 VDC
Isolation	1.5 kV

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 fallback
Reliability	Network Keep Alive Network Failover and Failback

LED Indicators

System	Power x 1 System ready x 1 SIM card indicator x 1 Programmable x 2
LAN	4 ports, 2 per port (10/100/1000 Mbps)
CAN	2 ports, 1 per port (Tx, Rx)
Wireless Signal Strength	Wi-Fi x 3 Cellular x 3

Power Parameters

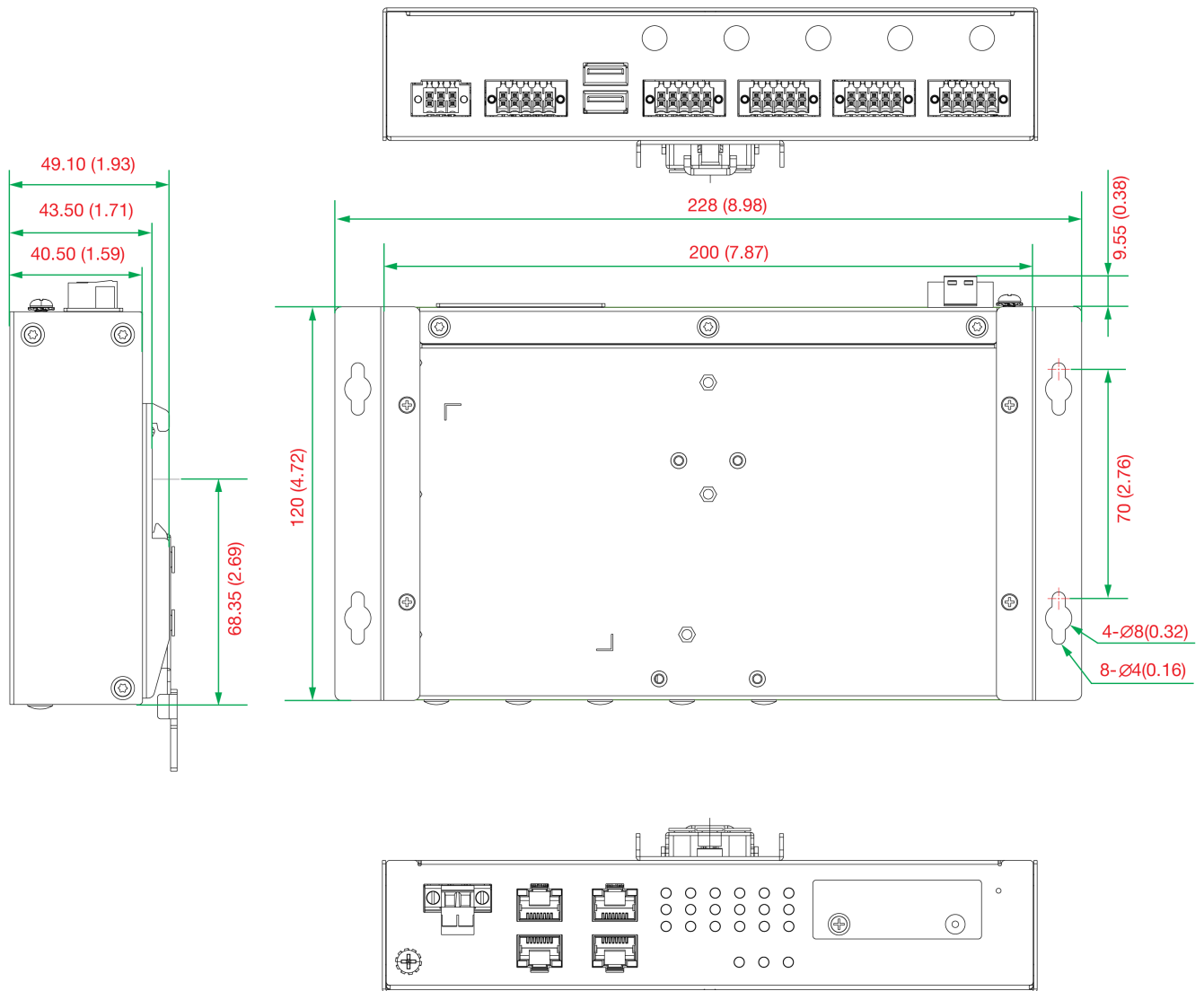
Input Current	UC-8620A-T: 1.34 A @ 12 V UC-8630A-T: 1.58 A @ 12 V
Input Voltage	12 to 48 VDC

Power Connector	Screw-fastened Euroblock terminal
Power Consumption	UC-8620A-T: 15 W UC-8630A-T: 17 W
Reliability	
Automatic Reboot Trigger	External WDT (watchdog timer)
Alert Tools	External RTC (real-time clock)
Physical Characteristics	
Housing	Metal
IP Rating	IP30
Weight	1,000 g (2.21 lb)
Dimensions	200 x 120 x 40.5 mm (7.87 x 4.72 x 1.59 in)
Installation	Wall mounting (standard) DIN-rail mounting (with optional kit)
Environmental Limits	
Operating Temperature	Without accessories: UC-8620A-T: -40 to 75°C UC-8630A-T: -40 to 70°C With LTE and Wi-Fi -30 to 65°C With Wi-Fi only: -30 to 70°C With LTE only: -40 to 70°C
Storage Temperature	-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 UKCA RCM KC
EMI	FCC Part 15B Class A ICES-003 Class A EN 55032 Class A EN 61000-6-4 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: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Cybersecurity	IEC 62443-4-2 Security Level 2 EN 18031-1
Safety	IEC 62368-1, EN 62368-1, UL 62368-1
Shock	IEC 60068-2-27

Vibration	IEC 60068-2-6 IEC 60068-2-64
International Approval	CE FCC ISED UKCA RCM KC
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	UC-8630A-T: 1,023,992 hrs UC-8620A-T: 1,152,015 hrs
Standards	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x UC-8600A Series computer
Installation Kit	1 x wall-mounting kit
Documentation	1 x quick installation guide 1 x warranty card
Note	An additional power-jack-to-terminal block cable (model name: CBL-PJTB-10) is required when you use a power adapter to power the device.

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	CPU	Operating System	IEC 62443-4-2 SL2 Certified	mPCIe Slot	M.2 E Key Slot	Operating Temp.
UC-8620A-T	Arm Cortex-A72 dual-core 1.5 GHz	Default: MIL4 Standard UC-8600A (CTO): Order MIL4 Secure	Models with MIL4 Secure	Reserved for LTE	-	-40 to 75°C
UC-8630A-T	Arm Cortex-A72 dual-core 1.5 GHz	Default: MIL4 Standard UC-8600A (CTO): Order MIL4 Secure	Models with MIL4 Secure	Reserved for LTE	Reserved for Wi-Fi 6	-40 to 70°C

Accessories (sold separately)

Antennas

ANT-WDB6-ARM-05	2 dBi at 2.4 GHz or 2 dBi at 5 GHz or 3 dBi at 6 GHz, tri-band dipole antenna with RP-SMA (female) connector
ANT-5G-OSM-04	4 dBi LTE/5G NR dipole antenna with SMA (male) connector
ANT-GPS-CSM-04-3m BK	20 dBi at 1575 to 1605 MHz, SMA (male), right-hand circular polarization (RHCP), active GPS antenna, 3-meter cable

Cables

CBL-F9DPF1x4-BK-100	Console cable with 4-pin connector, 1 m
CBL-PJTB-10	Non-locking barrel plug to bare-wire cable

Cellular Wireless Modules

UC-8620A-LTE	Telit LE910C4-WWxD LTE Cat. 4 mPCIe card package for the UC-8620A models
UC-8630A-LTE	Telit LE910C4-WWxD LTE Cat. 4 mPCIe card package for the UC-8630A models

Wi-Fi Wireless Modules

UC-8600A-WLAN	EMWICOM WMX7205-1 Wi-Fi 6E M.2 card package for the UC-8600A Series
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DIN-Rail Mounting Kits

UC-8600A Din-rail Kit	DIN-rail mounting kit with 1 plate (90 x 45 mm), 1 extension bracket (25 x 16 mm), 5 M3 x 4 mm screws for the UC 8600A Series
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Thermal Kits

UC-8620A-M.2 SSD	M.2 SSD thermal package with 3 thermal pads, 1 heat sink, 5 screws for the UC-8620A models
UC-8630A-M.2 SSD	M.2 SSD thermal package with 1 thermal pad, 1 screw for the UC-8630A models

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