

UC-1200A Series

Arm Cortex-A53 dual-core 64-bit 1 GHz Industrial Computers with 1 mPCIe expansion slot, -40 to 60°C operating temperature



Features and Benefits

- Armv8 Cortex-A53 dual-core 1 GHz processor
- 2 auto-sensing 10/100/1000 Mbps Ethernet ports
- Rich set of programmable LEDs and a programmable button for easy installation and maintenance
- Moxa Industrial Linux with 10-year superior long-term support
- IEC 62443-4-2 Security Level 2 certified
- -40 to 60°C operating temperature range

Certifications



Introduction

The UC-1200A computing platform is designed for embedded data-acquisition applications. The computer comes with dual RS-232/422/485 serial ports and dual 10/100/1000 Mbps Ethernet ports. These versatile capabilities let users efficiently adapt the UC-1200A to a variety of complex communications solutions.

The UC-1200A is built around a Cortex-A53 processor that has been optimized for use in energy monitoring systems, but is widely applicable to a variety of industrial solutions. With flexible interfacing options, this tiny embedded computer is a reliable and secure gateway for data acquisition and processing at field sites as well as a useful communications platform for many other large-scale deployments.

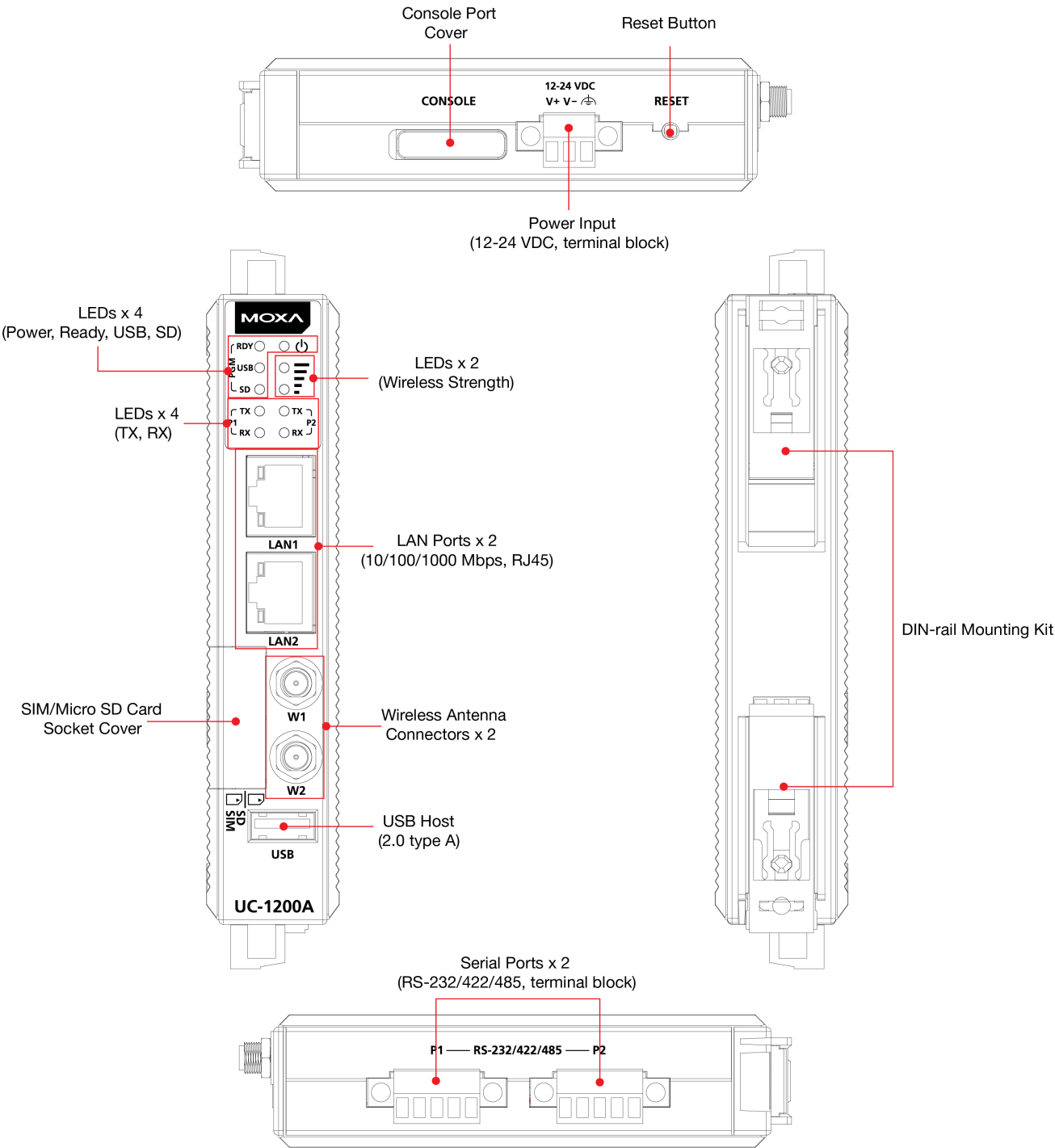
IEC 62443-4-2 Security Level 2 Certified

UC-1200A 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



Specifications

Computer	
CPU	Armv8 Cortex-A53 dual-core 1 GHz
DRAM	2 GB DDR4
Storage Slot	micro SD slots x 1

Storage Pre-installed	16 GB eMMC
Supported OS	Moxa Industrial Linux 3 (Debian 11, kernel 5.10), 2031 EOL Moxa Industrial Linux 4 (Debian 13, kernel 6.12), 2035 EOL See www.moxa.com/MIL

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, terminal-block connector)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)
Expansion Slots	mPCIe slots x 1
Number of SIMs	1
SIM Format	Nano
Buttons	Reset button
TPM	TPM v2.0

Ethernet Interface

Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 2
Magnetic Isolation Protection	1.5 kV (built-in)

Serial Interface

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
Flow Control	RTS/CTS XON/XOFF Automatic Data Direction Control (ADDC) for RS-485 RTS Toggle (RS-232 only)

Serial Signals

RS-232	TxD, RxD, RTS, CTS, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

LED Indicators

System	Power x 1 SW ready (programmable) USB (programmable) x 1 Micro SD slot (programmable) x 1 Serial Port: TX x 2, RX x 2
Wireless Signal Strength	Cellular x 2; programmable Disconnected: None Very Poor Signal: 1 LED (blinking) Poor Signal: 1 LED Good Signal: 2 LEDs

Power Parameters

Input Current	600 mA @ 12 VDC 300 mA @ 24 VDC
Input Voltage	12 to 24 VDC
Power Consumption	4.5 W (minimum; without external USB device attached) 7.2 W (maximum; with external USB device attached)

Reliability

Alert Tools	External RTC (real-time clock) External WDT (watchdog timer)
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Physical Characteristics

Housing	Polycarbonate (PC)
IP Rating	IP30
Dimensions	101 x 27 x 128 mm (3.98 x 1.06 x 5.04 in)
Weight	224 g (0.5 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

Operating Temperature	-40 to 60°C (-40 to 140°F)
Storage Temperature	-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	EN 55032/35 EN 61000-6-2/-6-4 UKCA RCM KC BSMI
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: 10 V/m IEC 61000-4-3 RS: 1.4 GHz to 6 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV IEC 61000-4-5 L-PE: 1 kV ; L -L: 0.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Cybersecurity	IEC 62443-4-2 Security Level 2
Safety	EN 62368-1 UL 62368-1
Hazardous Locations	ATEX Class I Division 2

International Approval	UKCA RCM FCC CE ISED KC BSMI
Green Product	RoHS, CRoHS, WEEE

MTBF

Time	924,676 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

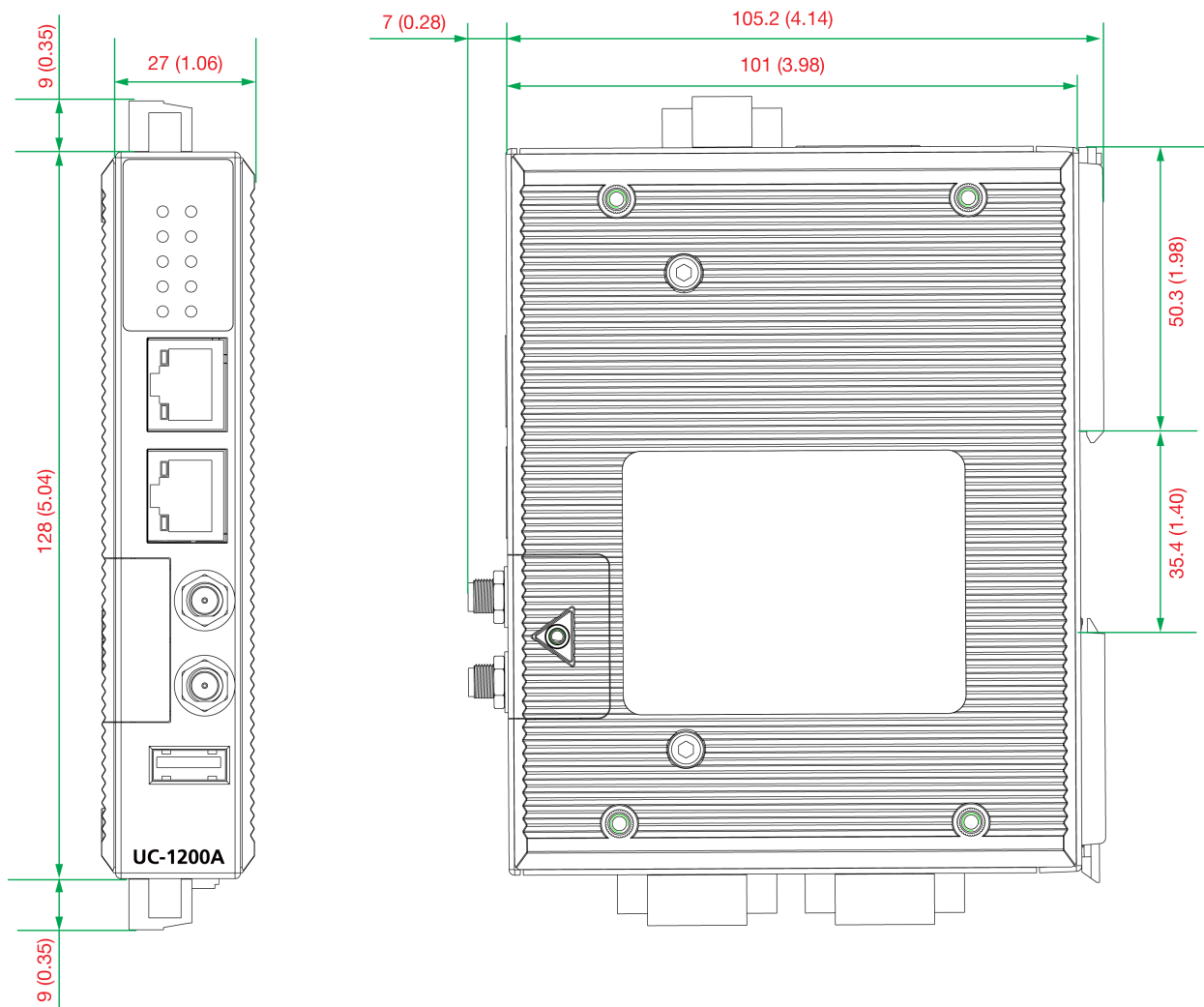
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x UC-1200A Series computer
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	OS	IEC 62443-4-2 SL2 Certified	Storage	Wireless	Operating Temperature
UC-1222A	Armv8 Cortex-A53 dual core, 1 GHz	Default: MIL3 Standard UC-1200A (CTO): Order MIL3 Secure or MIL4 Secure	Models with MIL4 Secure	16 GB eMMC	mPCIe slot x 1, reserved	-40 to 60°C

Accessories (sold separately)

Power Adapters

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-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-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-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

Cables

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

Antennas

ANT-WDB-ARM-0202	2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male), dual-band, omnidirectional antenna
ANT-LTE-ASM-05 BK	704-960/1710-2620 MHz, LTE stick antenna, 5 dBi
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, 1 dBi, omnidirectional rubber-duck antenna
ANT-LTE-OSM-06-3m BK MIMO	Multiband antenna with screw-fastened mounting option for 700-2700/2400-2500/5150-5850 MHz frequencies
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

Wireless Antenna Cables

A-CRF-SMIF-100	Wireless antenna cable package with 2 100-cm cables (SMA connectors)
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Wall-Mounting Kits

WK-33-01	Wall-mounting kit with 2 plates (98.6 x 33.8 x 5 mm), 4 TMS M3 4-mm screws
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