

UC-5100 Series

Arm-based Industrial computing platform for industrial automation



Features and Benefits

- Armv7 Cortex-A8 1000 MHz processor
- Dual auto-sensing 10/100 Mbps Ethernet ports
- 4 software-selectable RS-232/422/485 ports supporting all signals
- Dual CAN ports with industrial CAN 2.0 A/B protocol supported
- Moxa Industrial Linux with 10-year long-term support
- Mini PCIe socket for Wi-Fi/cellular module
- SD slot for storage expansion
- Supports TPM v2.0 (optional)
- -40 to 85°C wide temperature range and -40 to 70°C with LTE enabled
- IEC 61000-6-2/6-4 standards for harsh industrial environments

Certifications

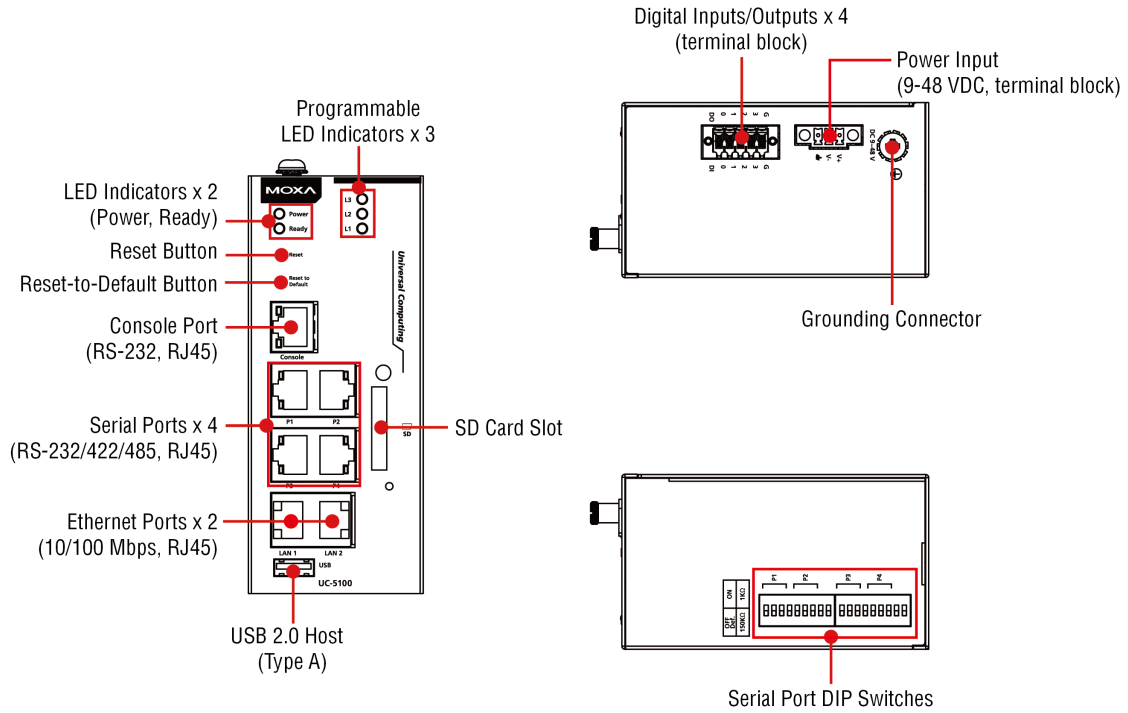


Introduction

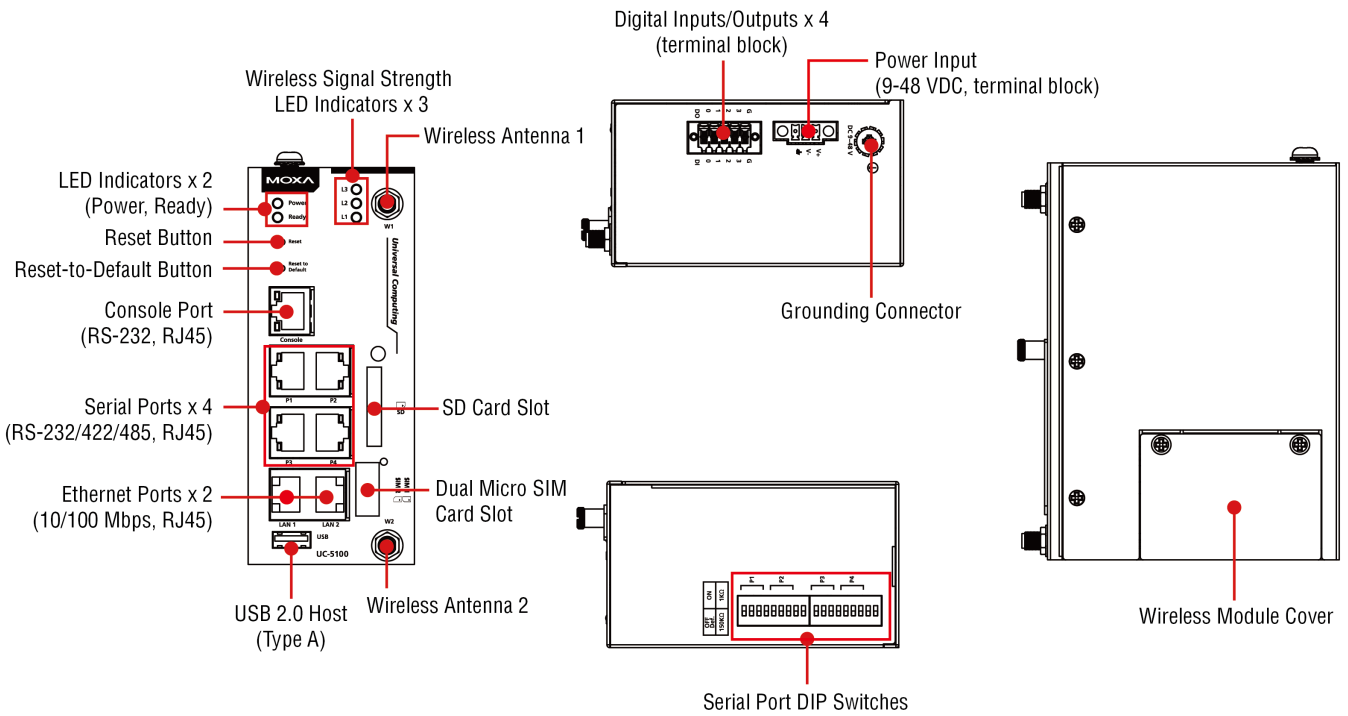
The UC-5100 Series embedded computers are designed for industrial automation applications. The computers feature 4 RS-232/422/485 full signal serial ports with adjustable pull-up/pull-down resistors, 2 CAN ports, 2 Ethernet ports, 4 digital input channels, 4 digital output channels, USB interface, and an SD slot in a compact, front-end access housing. To fulfill various industrial applications, the UC-5100 Series computing platform provides models with 2 CAN ports and a mini PCIe slot for wireless connections featuring a dual-SIM design for network redundancy. The UC-5100's vertical DIN-rail form factor makes it easy to install the computer in a small cabinet. This space-saving solution also facilitates easy wiring, making the UC-5100 a great choice as front-end embedded controllers for industrial applications. Furthermore, all models are equipped with Moxa Industrial Linux that comes with 10-year long-term support as well as optimized software features.

Appearance

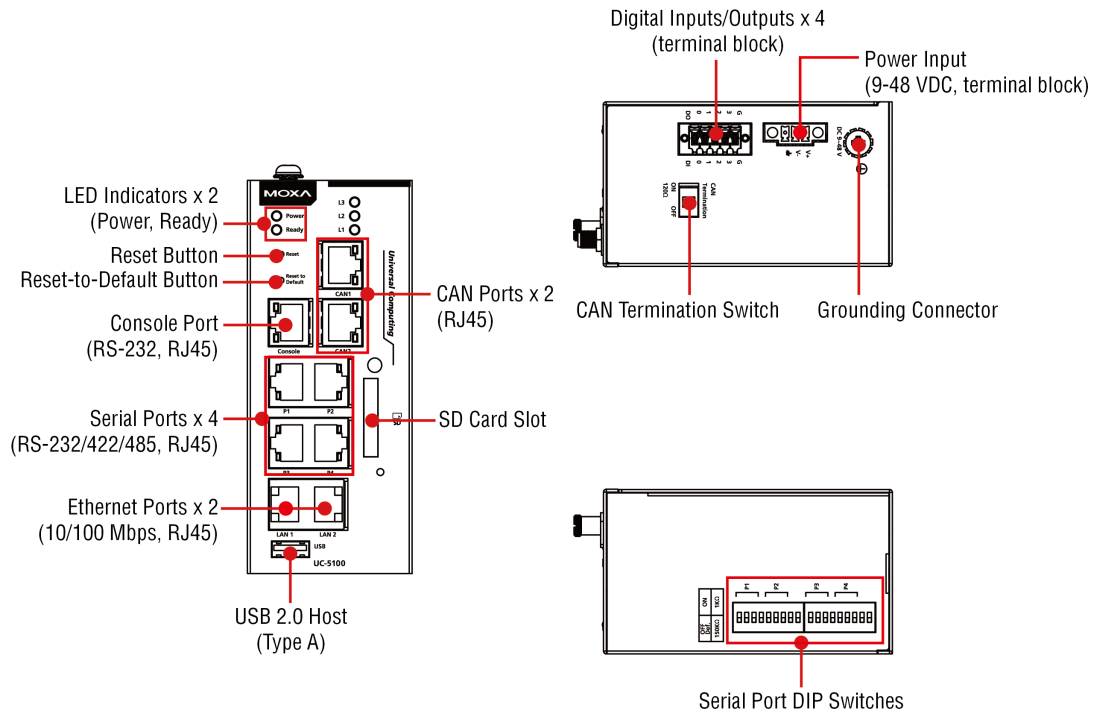
UC-5101



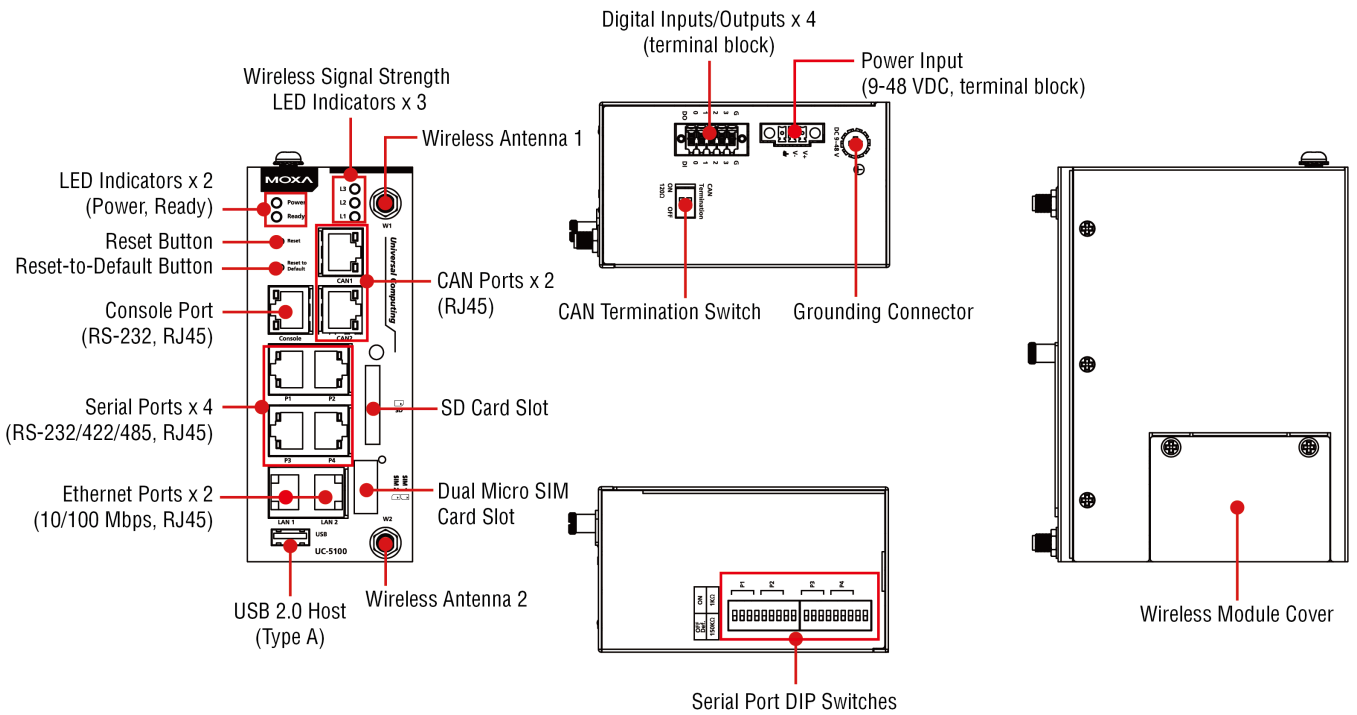
UC-5102



UC-5111



UC-5112



Specifications

Computer

CPU	Armv7 Cortex-A8 1 GHz
Pre-installed OS	Linux Debian 9 kernel 4.4 (Moxa Industrial Linux)
DRAM	512 MB DDR3
Storage Pre-installed	8 GB eMMC
Storage Slot	SD slots x 1

Computer Interface

USB 2.0	USB 2.0 hosts x 1, type-A connectors
Expansion Slots	mPCIe slot x 1
Number of SIMs	2
SIM Format	Micro
Serial Ports	RS-232/422/485 ports x 4, software selectable (RJ45)
Digital Input	DIs x 4
Digital Output	DOs x 4
Buttons	Reset button Dip switch for serial and CAN ports configuration
TPM	TPM v2.0 (Optional)
Console Port	RS-232 (TxD, RxD, GND), RJ45 output (115200, n, 8, 1)

Ethernet Interface

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

Serial Interface

Serial Ports	4 x RS-232/422/485
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	UC-5111-LX: 2 UC-5111-T-LX: 2 UC-5112-LX: 2 UC-5112-T-LX: 2
Signals	UC-5111-LX: CAN_L, CAN_H, CAN Signal GND UC-5111-T-LX: CAN_L, CAN_H, CAN Signal GND UC-5112-LX: CAN_L, CAN_H, CAN Signal GND UC-5112-T-LX: CAN_L, CAN_H, CAN Signal GND
Terminator	UC-5111-LX: N/A, 120 ohms (by DIP) UC-5111-T-LX: N/A, 120 ohms (by DIP) UC-5112-LX: N/A, 120 ohms (by DIP) UC-5112-T-LX: N/A, 120 ohms (by DIP)

Digital Inputs

Voltage	0 to 0.8 VDC 2.0 to 5.5 VDC
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Digital Outputs

Current Rating	24 mA per channel
Voltage	0 to 0.55 VDC 2.5 to 3.3 VDC

LED Indicators

System	Power x 1 System Ready x 1
LAN	2 per port (10/100 Mbps)
Serial	2 per port (Tx, Rx)
CAN	UC-5111-LX: 2 per port (Tx, Rx) UC-5112-LX: 2 per port (Tx, Rx) UC-5111-T-LX: 2 per port (Tx, Rx) UC-5112-T-LX: 2 per port (Tx, Rx)
Wireless Signal Strength	UC-5112-LX: Cellular/Wi-Fi x 3 UC-5102-LX: Cellular/Wi-Fi x 3 UC-5102-T-LX: Cellular/Wi-Fi x 3 UC-5112-T-LX: Cellular/Wi-Fi x 3

Physical Characteristics

Housing	Metal
Weight	600 g (1.32 lb)
Dimensions	57 x 136 x 100 mm (2.24 x 5.35 x 3.94 in)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Power Parameters

Input Voltage	9 to 48 VDC
Input Current	0.95 A @ 9 VDC, 0.23 A @ 48 VDC
Power Consumption	6 W

Environmental Limits

Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: <ul style="list-style-type: none">• Product only: -40 to 85°C (-40 to 185°F)• With LTE accessory: -40 to 70°C (-40 to 158°F)• With Wi-Fi accessory: -10 to 70°C (14 to 158°F)
Storage Temperature	UC-5101-LX: -20 to 70°C (-4 to 158°F) UC-5102-LX: -20 to 70°C (-4 to 158°F) UC-5111-LX: -20 to 70°C (-4 to 158°F) UC-5112-LX: -20 to 70°C (-4 to 158°F) UC-5101-T-LX: -40 to 85°C (-40 to 185°F) UC-5102-T-LX: -40 to 85°C (-40 to 185°F) UC-5111-T-LX: -40 to 85°C (-40 to 185°F) UC-5112-T-LX: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Vibration	2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without any USB devices attached)
Shock	IEC 60068-2-27

Standards and Certifications

Safety	UL 60950-1 EN 60950-1 IEC 60950-1
EMC	EN 55032/24 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 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Green Product	RoHS, CRoHS, WEEE

Reliability

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

MTBF

Time	UC-5101-LX: 728,216 hrs UC-5101-T-LX: 728,216 hrs UC-5102-LX: 704,409 hrs UC-5102-T-LX: 704,409 hrs UC-5111-LX: 584,470 hrs UC-5111-T-LX: 584,470 hrs UC-5112-LX: 568,997 hrs UC-5112-T-LX: 568,997 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

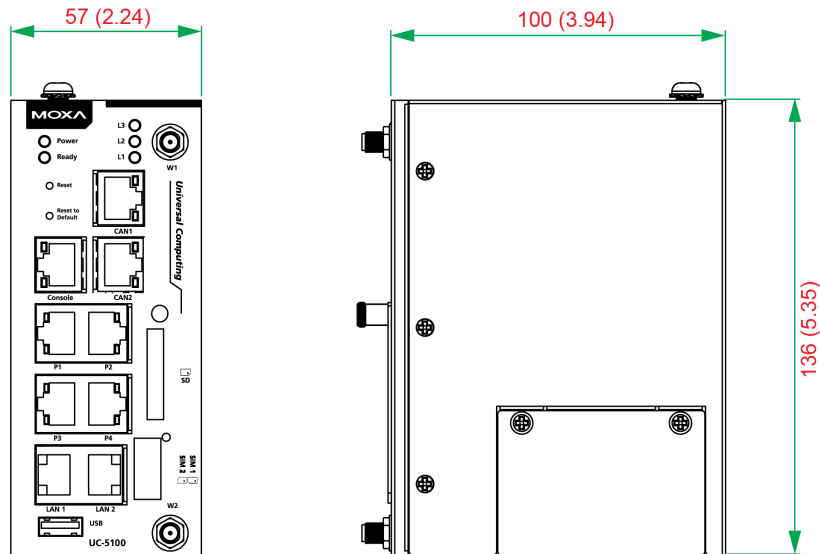
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x UC-5100 Series computer
Installation	1 x DIN-rail kit (preinstalled) 1 x power jack
Cable	1 x RJ45-to-DB9 console cable
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	CPU	RAM	Storage	Ethernet	Serial	CAN	microSD	USB	Mini PCIe	Operating Temp.
UC-5101-LX	1 GHz	512 MB	8 GB	2	4	–	1	1	–	-10 to 60°C
UC-5102-LX	1 GHz	512 MB	8 GB	2	4	–	1	1	1 (dual-SIM socket)	-10 to 60°C
UC-5111-LX	1 GHz	512 MB	8 GB	2	4	2	1	1	–	-10 to 60°C
UC-5112-LX	1 GHz	512 MB	8 GB	2	4	2	1	1	1 (dual-SIM socket)	-10 to 60°C
UC-5101-T-LX	1 GHz	512 MB	8 GB	2	4	–	1	1	–	-40 to 85°C
UC-5102-T-LX	1 GHz	512 MB	8 GB	2	4	–	1	1	1 (dual-SIM socket)	-40 to 85°C
UC-5111-T-LX	1 GHz	512 MB	8 GB	2	4	2	1	1	–	-40 to 85°C
UC-5112-T-LX	1 GHz	512 MB	8 GB	2	4	2	1	1	1 (dual-SIM socket)	-40 to 85°C

Accessories (sold separately)

Power Adapters

PWR-24270-DT-S1	Power adapter, input voltage 90 to 264 VAC, output voltage 24 V with 2.5 A DC load
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Power Cords

PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 1.83 m
PWC-C7EU-2B-183	Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m
PWC-C7UK-2B-183	Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m
PWC-C7CN-2B-183	Power cord with two-prong China (CN) plug, 1.83 m
PWC-C7AU-2B-183	Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m

Cellular Wireless Modules

UC-LTE-CAT1-EU	LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for Asia and Europe bands 1, 3, 8, 20, 28
UC-LTE-CAT1-AUS	LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for Australia and New Zealand bands 3, 5, 8, 28
UC-LTE-CAT4-CN	LTE cellular module, with 2 each of M2 and M2.5 mounting screws, for LTE (FDD) bands B1, B3, B8 and LTE (TDD) bands B39, B40, B41(38)

Wi-Fi Wireless Modules

UC-WiFi-USB	802.11 a/b/g/n/ac, 2.4/5 GHz Wi-Fi module with 2 each of M2 and M2.5
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Antennas

ANT-WDB-ARM-0202 plus ADP	2.4/5 GHz omni-directional antenna, 2/2 dBi, RP-SMA-type (male) connector
ANT-LTE-OSM-03-3m BK	Multi-band antenna that covers 700-2700 MHz. Specially designed for 2G, 3G, and 4G applications. Magnetic mounting is available
ANT-LTE-ASM-04 BK	LTE Stick antenna that covers 704-960/1710-2620 MHz providing omnidirectional radiation with a gain of 4.5 dBi.
ANT-LTE-ASM-05 BK	LTE stick antenna that covers 704-960/1710-2620 MHz with a gain of 5 dBi.
ANT-LTE-OSM-06-3m BK MIMO	Multi-band antenna that covers 700-2700/2400-2500/5150-5850 MHz frequencies. Screw-fastened mounting and full IP67 waterproofing are available.
SMA-Adapter	SMA adapter for UC-2104 and UC-5100 Series

DIN-Rail Mounting Kits

DK-UC-5000	DIN-rail mounting kit with screws for the UC-5000 Series
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Wall-Mounting Kits

WM-UC-5000	Wall-mounting kit with screws for the UC-5000 Series
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