

UC-7101 Series

Mini RISC-based ready-to-run computer with 1 serial port, LAN, SD, μ Clinux



- > MOXA ART ARM9 32-bit 192 MHz processor
- > 16 MB RAM and 8 MB Flash ROM
- > One 10/100 Mbps Ethernet port for network redundancy
- > One software-selectable RS-232/422/485 port
- > Select any baudrate from 50 bps to 921.6 Kbps
- > SD socket for storage expansion
- > Built-in real-time clock (RTC), buzzer, watchdog timer (WDT)
- > Pre-installed μ Clinux Kernel 2.6 platform
- > -40 to 75°C wide temperature model available
- > DIN-Rail or wall mountable
- > Robust fanless design

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



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Overview

The UC-7101 may be Moxa's smallest RISC-based communication platform for embedded applications, but it is also one of the most powerful. The computer comes with one RS-232/422/485 serial port and a 10/100 Mbps Ethernet LAN port to provide users with a versatile industrial communication and embedded computing platform.

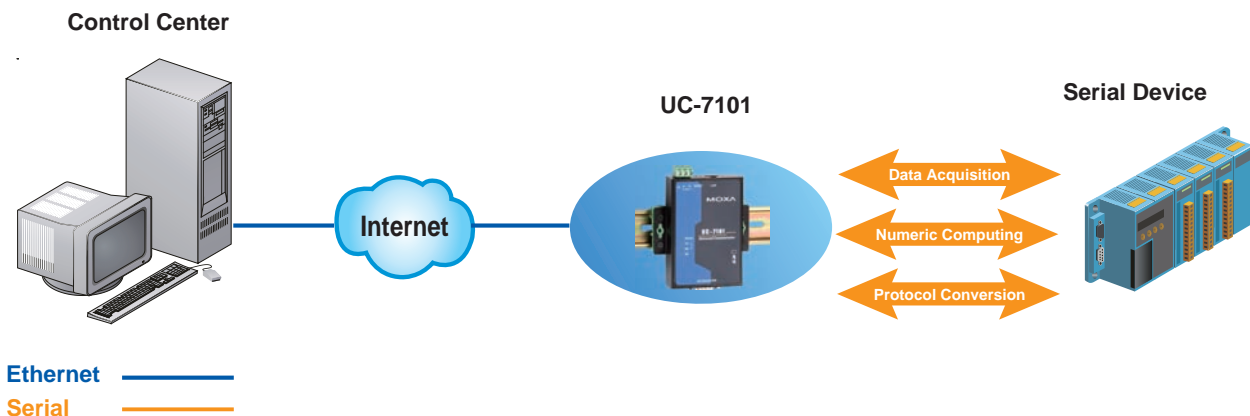
The UC-7101 embedded computer uses the MOXA ART ARM9 192 MHz RISC CPU, which provides a powerful computing engine and communication functions, but without generating too much heat. The built-in 8 MB NOR Flash ROM and 16 MB SDRAM give users plenty of storage capacity, and the SD socket provides greater flexibility for running a variety of applications. The LAN port built into the ARM9 CPU allows the UC-7101 computer to be used as a communication

platform for basic data acquisition and protocol conversion applications, and the computer's RS-232/422/485 serial port allows you to connect one serial device for data acquisition applications.

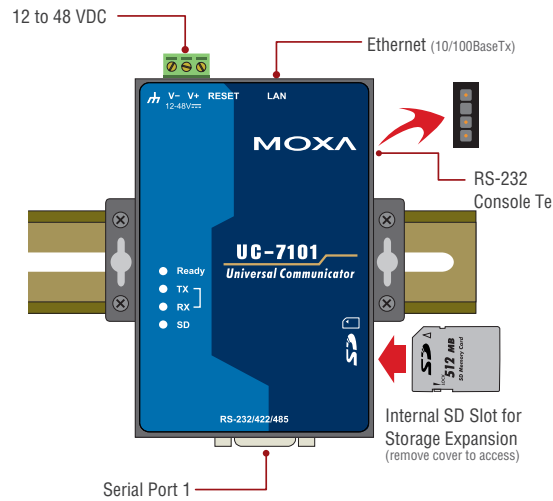
The UC-7101 comes with the μ Clinux operating system pre-installed. Software written for desktop PCs is easily ported to the UC-7101 computer with a GNU cross compiler, so that you will not need to spend time modifying existing software code.

A wide temperature model of the UC-7101 that supports an operating temperature range of -40 to 75°C is also available, making it suitable for any harsh environment. These features make the UC-7101 embedded computer an ideal solution for a variety of industrial automation applications.

Typical Application



Appearance



Hardware Specifications

Computer

- CPU:** MOXA ART ARM9 32-bit 192 MHz processor
- OS (pre-installed):** µClinux (based on Linux Kernel 2.6)
- DRAM:** 16 MB
- Flash:** 8 MB
- Storage Expansion:** SD slot
- Reset Button:** Supports "Reset to Factory Default"

LAN Interface

- Ethernet:** 10/100 Mbps, RJ45 connector
- Magnetic Isolation Protection:** 1.5 KV built-in

Serial Interface

- Number of Ports:** 1
- Serial Standards:** RS-232/422/485, software-selectable
- Connectors:** DB9 male
- ESD Protection:** 15 KV ESD for all signals
- Console Port:** RS-232 (TxD, RxD, GND), 4-pin pin header output

Serial Communication Parameters

- 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
- Baudrate:** 50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)

Serial Signals

- RS-232:** TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND
- RS-422:** TxD+, TxD-, RxD+, RxD-, GND
- RS-485-4w:** TxD+, TxD-, RxD+, RxD-, GND
- RS-485-2w:** Data+, Data-, GND

LEDs

- System:** Ready x 1
- LAN:** 10M/Link x 1, 100M/Link x 1 (located on RJ45 connector)
- Serial:** TxD, RxD (1 of each)

Physical Characteristics

- Housing:** Aluminum (1 mm)
- Weight:** 130 g
- Dimensions:** 67 x 22 x 100.4 mm (2.64 x 0.87 x 3.95 in)
- Mounting:** DIN-Rail, wall

Environmental Limits

- Operating Temperature:**
Standard models: -10 to 60°C (14 to 140°F)
Wide temp. models: -40 to 75°C (-40 to 167°F)
- Operating Humidity:** 5 to 95% RH
- Storage Temperature:**
Standard models: -20 to 80°C (-4 to 176°F)
Wide temp. models: -40 to 75°C (-40 to 167°F)

Power Requirements

- Input Voltage:** 12 to 48 VDC
- Power Consumption:** 300 mA @ 12 VDC (3.6 watts)

Regulatory Approvals

- EMC:** CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)

Safety:

- LVD: EN60950-1
- UL/cUL: UL60950, CAN/CSA-C22.2 No. 60950-00

Directives:

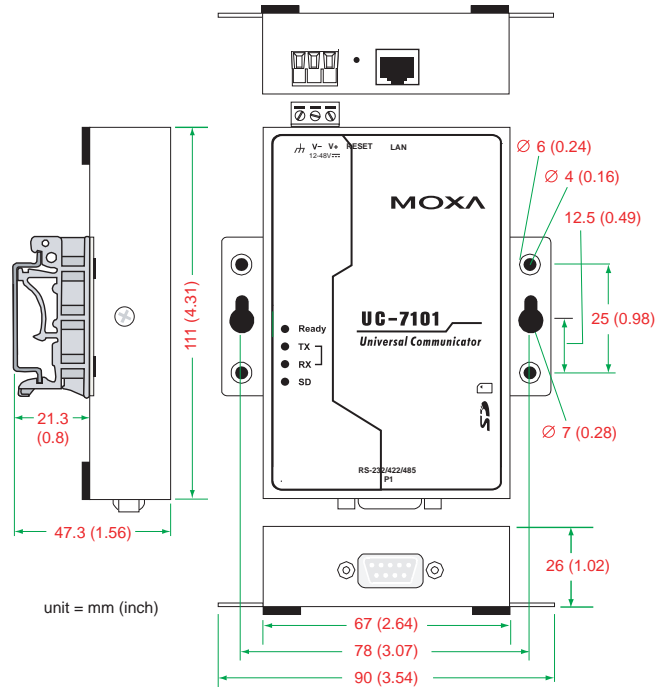
Reliability

- Alert Tools:** Built-in buzzer and RTC (real-time clock)
- Automatic Reboot Trigger:** Built-in WDT (watchdog timer)

Warranty

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

Dimensions



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Software Specifications

Linux

Kernel Version: 2.6.19

Protocol Stack: TCP, UDP, IPv4, SNMP V1, ICMP, ARP, HTTP, CHAP, PAP, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE

File System: JFFS2 (on-board flash) for kernel, root file system (read only), and user directory (read/write)

System Utilities: msh, busybox, tinylogin, telnet, ftp

Supporting Services and Daemons:

telnetd: Telnet server daemon

ftpd: FTP server daemon

Boa: Web server daemon

pppd: dial in/out over serial port daemon & PPPoE

snmpd: snmpd agent daemon

inetd: TCP server manager program

Application Development Environment:

Moxa Linux API Library

Linux Tool Chain:

Arm-elf-gcc: C/C++ PC cross compiler

μ Clibc: POSIX standard library

Device Drivers: UART, RTC, buzzer, SD card

Ordering Information

Available Models

UC-7101-LX: Mini RISC-based embedded computer with 1 serial port, LAN μ Clinux OS (standard operating temperature: -10 to 60°C)

UC-7101-T-LX: Mini RISC-based embedded computer with 1 serial port, LAN μ Clinux OS (wide operating temperature: -40 to 75°C)

Optional Accessories (can be purchased separately)

DK-35A: Mounting Kit for 35-mm DIN-Rail

Package Checklist

- UC-7101 computer
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-RJ45F9-150: 8-pin RJ45 to DB9 female console port cable, 150 cm
- Universal power adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card