UC-7101 Series

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

- 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 µClinux Kernel 2.6 platform
- -40 to 75°C wide temperature model available
- DIN-Rail or wall mountable
- Robust fanless design

Overview

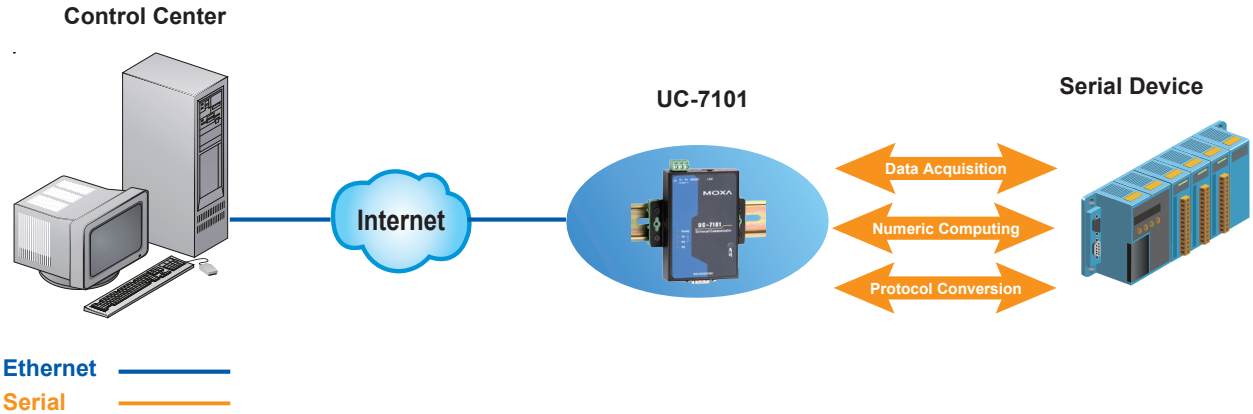
The UC-7101 may be Moxa's smallest RISC-based communication platform for embedded applications, but it is also one of the most powerful. The computer comes with one RS-232/422/485 serial port and a 10/100 Mbps Ethernet LAN port to provide users with a versatile platform for industrial communication and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

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.

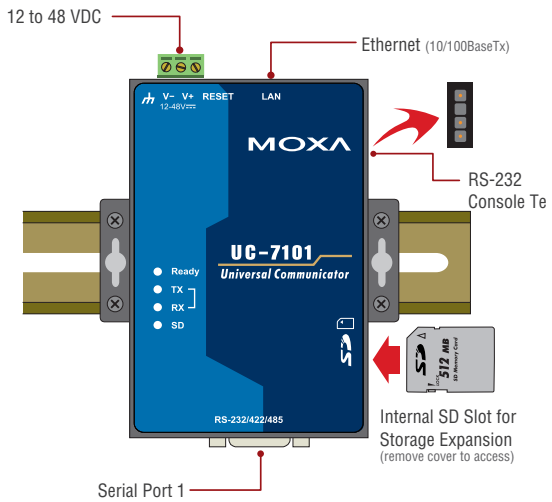
The UC-7101 comes with the µClinux operating system pre-installed. Software written for desktop PCs is easily ported to the UC-7101 computer with a GNU cross complier, so that you will not need to spend time modifying existing software code.

The wide temperature model of the UC-7101 supports an operating temperature from -40 to 75°C, making it suitable for any harsh environment. The combination of excellent features makes 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

Storage Expansion: SD slot

Ethernet Interface

LAN: auto-sensing 10/100 Mbps port (RJ45)

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Serial Standards: 1 RS-232/422/485 port, software-selectable (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 (supports non-standard baudrates; 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

LAN: 10M/Link x 1, 100M/Link x 1 (located on RJ45 connector)

Serial: TxD x 1, RxD x 1

Reset Button: Supports "Reset to Factory Default"

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)

Anti-Vibration: 1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 cycle, 13 min 17 sec per axis

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption: 4.5 W
- 170 mA @ 24 VDC
- 340 mA @ 12 VDC

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

Green Product: RoHS, CRoHS, WEEE

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

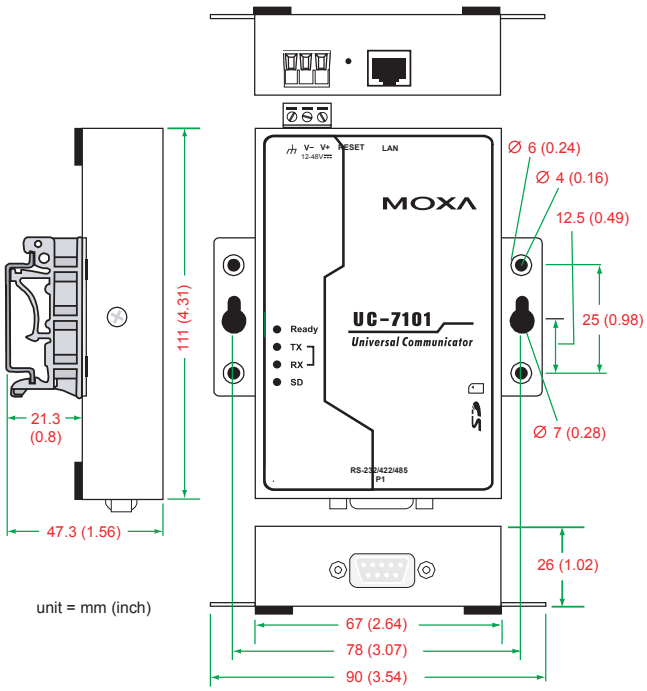
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Note: The Hardware Specifications apply to the embedded computer unit itself, but not to accessories. In particular, the wide temperature specification does not apply to accessories such as the power adaptor and cables.

Dimensions



Software Specifications

µCLinux

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

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

snmpd: snmpd agent daemon

telnetd: Telnet server daemon

inetd: TCP server manager program

ftpd: FTP server daemon

boa: Web server daemon

Application Development Software:
- Moxa Linux API Library
- Linux Tool Chain:
- Arm-elf-gcc: C/C++ PC cross compiler
- µClibc: 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, µClinux OS, -10 to 60°C operating temperature

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

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-4PINDB9F-100: 4-pin header to DB9 female console port cable, 100 cm
- Universal power adaptor (including terminal block to power jack converter)
- Universal power adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card