

UC-7112/UC-7110

Mini RISC-based Ready-to-Run Embedded Computer with 2 Serial Ports, Dual LANs, SD

Wide Temperature



Features

- MOXA ART ARM9 32-bit 192 MHz processor
- 32/16 MB RAM (about 12 MB of user programmable space)
- 16/8 MB Flash ROM (about 4 MB of user programmable space)
- Dual 10/100 Mbps Ethernet for network redundancy
- 2 software-selectable RS-232/422/485 ports
- Serial port speed from 50 bps to 921.6 Kbps, supporting ANY BAUDRATE
- SD socket for storage expansion supported
- Built-in RTC, Buzzer
- Built-in Linux Kernel 2.6 platform
- -40 to 75°C wide temperature models available



Overview

UC-7112/UC-7110 Mini RISC-based Communication Platforms are ideal for your embedded applications. UC-7112/UC-7110 comes with two RS-232/422/485 serial ports and dual 10/100 Mbps Ethernet LAN ports to provide users with a versatile communication platform.

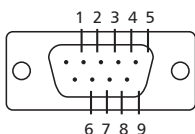
UC-7112/UC-7110 uses the ARM9 RISC CPU. Unlike the X86 CPU, which uses a CISC design, the ARM9's RISC design architecture and modern semiconductor technology provide UC-7112/UC-7110 with a powerful computing engine and communication functions, but without generating too much heat. The built-in 8 MB NOR Flash ROM and 16 MB SDRAM give you enough storage capacity, and an additional SD socket provides the user with flexible

storage expansion to run applications. The dual LAN ports built into the ARM9 make UC-7112/UC-7110 an ideal communication platform for some of the more simple data acquisition and protocol conversion applications, and the two RS-232/422/485 serial ports allow you to connect a variety of serial devices.

The pre-installed µClinux operating system provides an open software operating system for software program development. This means that software written for desktop PCs is easily ported to UC-7112/UC-7110 by using a GNU cross compiler, so that you will not need to spend time modifying existing software code. The operating system, device drivers, and your own software can all be stored in the UC-7112/UC-7110's Flash memory.

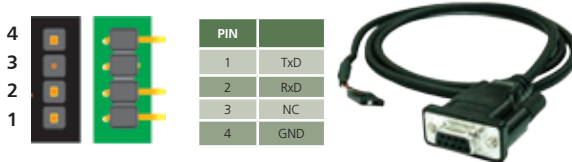
Pin Assignment

Male DB9



PIN	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	---
2	RxD	TxDB(+)	TxDB(+)	---
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	---	---	---
7	RTS	---	---	---
8	CTS	---	---	---

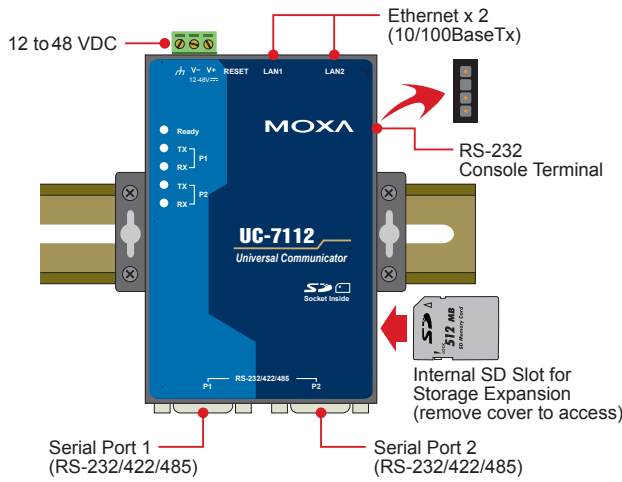
Serial Console port



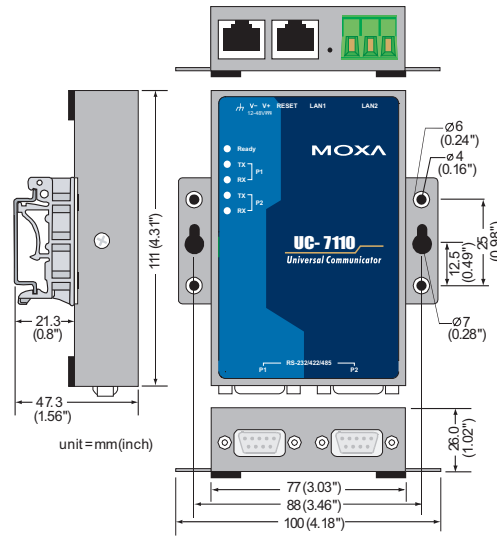
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UC-7112/7110

Appearance



Dimensions



Hardware Specifications

System

CPU: Moxa ART ARM9 32-bit RISC CPU, 192 MHz

DRAM:

UC-7112 Plus Version: 32 MB onboard (64 MB for ODM)
 UC-7112/UC-7110: 16 MB (64 MB for ODM)

Flash: UC-7112 Plus Version: 16 MB onboard

UC-7112/UC-7110: 8 MB onboard (16MB for ODM)

Storage Expansion: SD socket x 1 (UC-7112 only)

Console Port: RS-232, 3-wire (TxD, RxD, GND), pin-header

OS: Built-in µClinux, Linux

Other: RTC, buzzer, Watchdog Timer

Network Communication

LAN: 10/100 Mbps x 2, RJ45

Protection: Built-in 1.5 KV magnetic isolation protection

Serial Communication

Serial Ports: RS-232/422/485 x 2, software-selectable, DB9

Protection: Built-in 15 KV ESD protection for all signals

Data bits: 5, 6, 7, 8

Stop bit(s): 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, RS-485 ADDC™

Speed: 50 bps to 921.6 Kbps, supports Any Baudrate

LEDs

System: Ready x 1

LAN: 10M/Link x 2, 100M/Link x 2 (on connector)

Serial: TxD x 2, RxD x 2

Power Requirements

Power Input: 12 to 48 VDC

Power Consumption: 340 mA @ 12 VDC, 4.5W

Mechanical

Dimensions (WxDxH): 77 x 111 x 26 mm
 (3.03 x 4.37 x 1.02 in)

Weight: 190 g

Construction Material: Aluminum, 1 mm

Mounting: Wall-mounting, DIN-Rail

Environment

Operating Temperature:

-10 to 60°C (14 to 140°F), 5 to 95% RH

-40 to 75°C (-40 to 167°F) for -T models

Storage Temperature:

-20 to 80°C (-4 to 176°F), 5 to 95% RH

-40 to 85°C (-40 to 185°F) for -T models

Regulatory Approvals

EMC:

FCC: Part 15 Subpart B, CISPR 22 Class A

CE: EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024

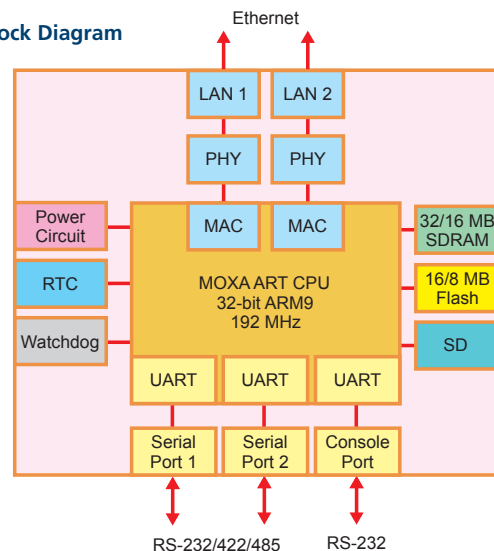
Safety:

TÜV: EN60950-1

UL/cUL: UL60950-1, CSA C22.2 No. 60950-1-03

Warranty: 5 years

H/W Block Diagram



Software Specifications

µClinux

Kernel Version: 2.6.19

Protocol Stacks: TCP, UDP, IPv4, SNMP V1/V2c, ICMP, ARP, HTTP, CHAP, PAP, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE

File System: JFFS2 (on-board flash)

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

µClibc: POSIX Standard Library

UC Finder: UC's LAN IP broadcast search utility for Windows and Linux

Device Drivers:

UART, RTC, Buzzer, SD Card, Watchdog Timer (WDT)

Linux (Plus Version)

Kernel Version: 2.6.9

Protocol Stacks: TCP, UDP, IPv4, SNMP V1/V3, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSH 1.0/ 2.0, SSL, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE

File System: JFFS2 (on-board flash)

System Utilities: bash, busybox, tinylogin, telnet, ftp, scp

Supporting Services and Daemons:

telnetd: Telnet Server daemon

ftpd: FTP server daemon

sshd: Secure shell server

Apache: Web server daemon, supports PHP and XML

OpenVPN: Virtual private network service manager

iptables: Firewall service manager

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: Gcc, Glibc, GDB

Windows Tool Chain: Gcc, Glibc, Insight (Windows-based source level debug utility)

UC Finder: UC's LAN IP broadcast search utility for Windows and Linux

Device Drivers:

Watchdog Timer (WDT), UART, RTC, Buzzer, SD card

Ordering Information

Standard Operating Temperature Models (-10 to 60°C)

UC-7110-LX

Mini RISC-based Ready-to-Run Embedded Computer with 2 Serial Ports, Dual LANs, µClinux OS

UC-7112-LX Plus NEW

Mini RISC-based Ready-to-Run Embedded Computer with 2 Serial Ports, Dual LANs, SD, Linux 2.6

UC-7112-LX

Mini RISC-based Ready-to-Run Embedded Computer with 2 Serial Ports, Dual LANs, SD, µClinux OS

Wide Operating Temperature Models (-40 to 75°C)

UC-7110-T-LX

Mini RISC-based Ready-to-Run Embedded Computer with 2 Serial Ports, Dual LANs, µClinux OS, Wide Temperature

All items include

- 1 UC-7112 or UC-7110
- Quick Installation Guide
- Document & Software CD
- Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm
- Console Port Cable: CBL-4PINDB9F-150 4-pin pin-header to female DB9 cable, 150 cm
- Universal Power Adaptor (includes terminal block to power jack converter)
- Product Warranty Statement

Optional Accessory

DK35A: DIN-Rail Mounting kit (35 mm)