



# UC-7110 Series Quick Installation Guide

First Edition, August 2004

## 1. Overview

The MOXA UC-7110 Series of RISC-based Communication Platforms features two RS-232/422/485 serial ports, and dual 10/100 Mbps Ethernet ports, making these products ideal for your embedded applications.

## 2. Package Checklist

Before installing UC-7110, verify that the package contains the following items:

- 1 UC-7110
- UC-7110 Quick Installation Guide
- Universal Communicator Documentation & Software CD-ROM
- Cross-over Ethernet cable: RJ45 to RJ45, 100 cm
- Console port cable: CBL-4PINDB9F-100 4-pin header to DB9 (Female) cable, 100 cm
- Power Adaptor
- Product Warranty Booklet

### Optional Accessories

- DK-35A DIN-Rail Mounting Kit (35 mm)

Notify your sales representative if any of the above items is missing or damaged.

## 3. Hardware Introduction

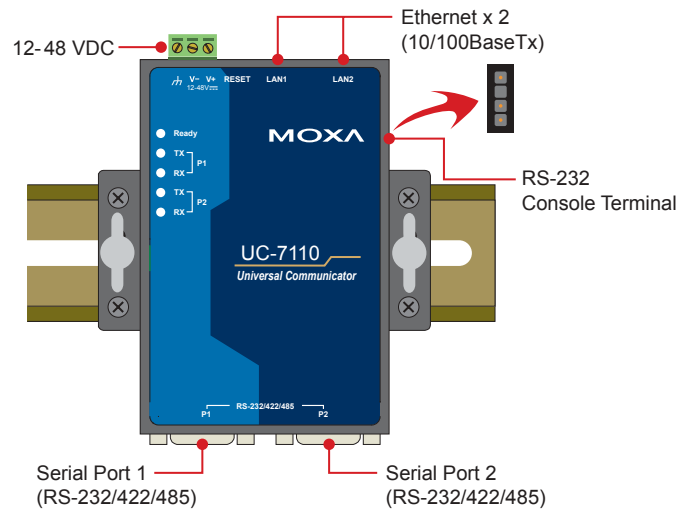
### LED Indicators

The following LED indicators are located on the top panel of UC-7110.

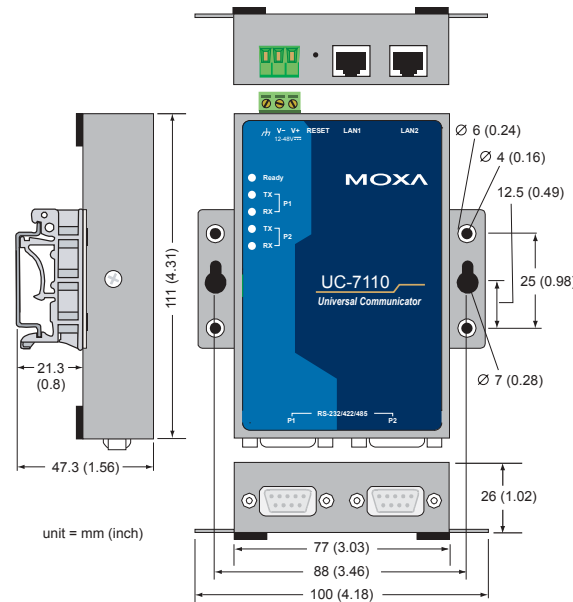
LED Name	LED Color	LED Function
Ready	Green	Power is on and functioning normally.
P1/P2 (Tx)	Green	Serial port 1/2 is transmitting data.
	Off	Serial port 1/2 is not transmitting data.
P1/P2 (Rx)	Yellow	Serial port 1/2 is receiving data.
	Off	Serial port 1/2 is not receiving data.

P/N: 18020711000

### UC-7110 Top View

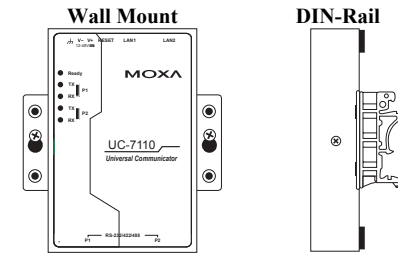


### UC-7110 Dimensions



## 4. Hardware Installation Procedure

- STEP 1:** Remove UC-7110 from the box and attach the power adaptor.
- STEP 2:** Connect UC-7110's serial console cable to your PC's RS-232 COM port for initial setup via console terminal.
- STEP 3:** Connect UC-7110 to a network. Use a standard straight-through Ethernet cable to connect to a Hub or Switch. When setting up or testing UC-7110, you might find it convenient to connect directly to your computer's Ethernet port. In this case, use a cross-over Ethernet cable.
- STEP 4: Placement Options**  
In addition to placing UC-7110 on a desktop or other horizontal surface, you may also make use of the DIN-Rail or Wall Mount options, as illustrated here.



## 5. Software Installation Information

- STEP 1:** Insert UC-7110's CD-ROM into your Windows or Linux PC, and then use Acrobat Reader to read the UC-7110 Series User's Manual.
- STEP 2:** Install UC-7110's tool chain, which is on the CD-ROM. The tool chain consists of the following components:
1. **UC Finder:** Broadcast search for UC-7110's IP address on your LAN. UC-7110 supports both Windows and Linux environments.
  2. **Cross Compiler:** Arm-elf-gcc (V2.95.3), C/C++ PC Cross Compiler is a gcc compiler that runs on an x86 PC, but creates an execution file for Arm-based platforms, such as UC-7110. For more information, visit <http://www.uclinux.org>.
  3. **uclibc:** GNU C Library—uClibc (V0.9.19) is an abbreviation for "microcontroller C library." uClibc was created to support  $\mu$ Clinux, a Linux port for MMU-less microcontrollers, such as the ARM9 installed in UC-7110. For more information, visit <http://www.uclibc.org>.
- STEP 3:** Edit source code on a PC Linux.
- STEP 4:** Use the Cross Compiler to compile the source code, and then use FTP to download the program to UC-7110.
- STEP 5:** Run your program.

## 6. System Commands

busybox (V0.60.4): µClinux normal command utility collection

### File manager

<b>cp</b>	copy file
<b>ls</b>	list file
<b>ln</b>	make symbolic link file
<b>mount</b>	mount and check file system
<b>rm</b>	delete file
<b>chmod</b>	change file owner & group & user
<b>chown</b>	change file owner
<b>chgrp</b>	change file group
<b>sync</b>	sync file system; save system file buffer to hardware
<b>mv</b>	move file
<b>pwd</b>	display active file directly
<b>df</b>	list active file system space
<b>mkdir</b>	make new directory
<b>rmdir</b>	delete directory

### Editor

<b>vi</b>	text editor
<b>cat</b>	dump file context
<b>zcat</b>	Compress or expand files
<b>grep</b>	print lines matching a pattern
<b>cut</b>	remove sections from each line of files
<b>find</b>	search for files in a directory hierarchy
<b>more</b>	dump file by one page
<b>test</b>	test if file exists or not
<b>sleep</b>	sleep (seconds)
<b>echo</b>	echo string

### Network

<b>ping</b>	ping to test network
<b>route</b>	routing table manager
<b>netstat</b>	display network status
<b>ifconfig</b>	set network IP address
<b>tracerout</b>	trace route
<b>tftp</b>	tftp protocol
<b>telnet</b>	user interface to TELNET protocol
<b>ftp</b>	file transfer protocol

### Process

<b>kill</b>	kill process
<b>killall</b>	kill process by name
<b>ps</b>	report process status

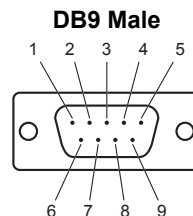
### Other

<b>dmesg</b>	dump kernel log message
<b>stty</b>	set serial port
<b>zcat</b>	dump .gz file context
<b>mknod</b>	make device node
<b>free</b>	display system memory usage
<b>date</b>	print or set the system date and time
<b>env</b>	run a program in a modified environment
<b>clear</b>	clear the terminal screen
<b>reboot</b>	reboot / power off/on the server
<b>halt</b>	halt the server
<b>du</b>	estimate file space usage
<b>gzip, gunzip</b>	compress or expand files
<b>hostname</b>	show system's host name
<b>tar</b>	tar archiving utility

### MOXA special utilities

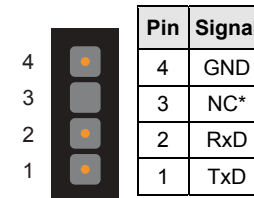
<b>backups</b>	backup file system (user directory)
<b>bf</b>	build file system (user directory)
<b>cat /etc/version</b>	show user directory version
<b>upramdisk</b>	mount ramdisk
<b>downramdisk</b>	unmount ramdisk
<b>kversion</b>	show kernel version

## 7. Pin Assignments



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



\*NC=Not Connected



## 8. Environmental Specifications

Power requirements	12 to 48 VDC, 290 mA at 12V (max.)
Operating temp.	-10 to 60°C (14 to 140°F), 5 to 95% RH
Storage Temperature	-20 to 85°C (-4 to 185°F), 5 to 95% RH
Serial protection	15 KV ESD for serial port
Magnetic isolation	1.5 KV for Ethernet
Regulatory approvals	FCC Class A, CE Class A, UL, CUL, TÜV
Warranty	5 years

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