

# UC-7122/7124 Series

**RISC ready-to-run embedded computers with dual LANs,  
2 or 4 serial ports, SD, USB**



- > Cirrus Logic EP9302 ARM9 32-bit 200 MHz processor
- > On-board 32 MB RAM, 16 MB flash disk
- > 2 or 4 software-selectable RS-232/422/485 serial ports
- > 50 bps to 921.6 kbps baudrate (nonstandard baudrates supported)
- > Dual 10/100 Mbps Ethernet for network redundancy
- > SD socket for storage expansion supported
- > Built-in real-time clock (RTC), buzzer, watchdog timer (WDT)
- > Ready-to-run WinCE 5.0 platform
- > -40 to 75°C wide temperature models available



## Overview

The UC-7122/7124 embedded computers come with 2 or 4 RS-232/422/485 serial ports and dual 10/100 Mbps Ethernet LAN ports to provide users with a versatile communication platform, making these RISC-based embedded computers ideal for your embedded applications.

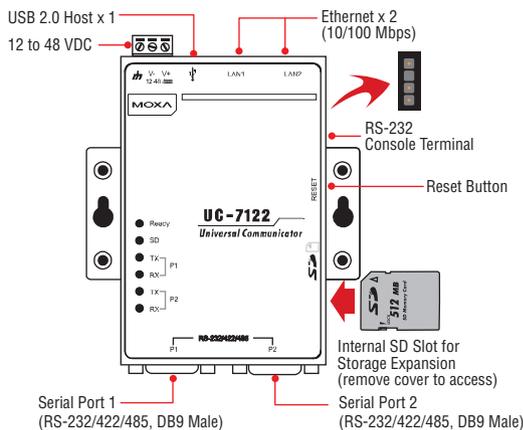
The UC-7122/7124 embedded computers use the Cirrus Logic EP9302 ARM9 200 MHz RISC CPU. Unlike the x86 CPU, which uses a CISC design, the ARM9's RISC design architecture and modern semiconductor technology provide the UC-7122/7124 with a powerful computing engine and communication functions, but without generating too much heat. Moreover, the built-in 16 MB NOR Flash ROM and 32 MB SDRAM give you enough storage capacity to run applications on the UC-7122/7124 computers. The additional SD socket provides the flexibility of adding storage expansion disks, and the dual LAN ports built into the ARM9 make the UC-7122/7124 ideal communication platforms for simple data acquisition and

protocol conversion applications. The RS-232/422/485 serial ports on these computers allow you to connect a variety of serial devices. These features ensure that the UC-7122/7124 embedded computers are convenient and powerful central control units for industrial applications, such as data acquisition, remote device control and monitoring, and protocol conversion.

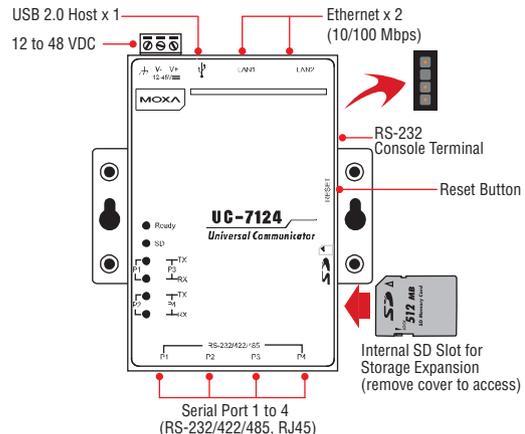
The pre-installed WinCE 5.0 operating system provides a common Windows-based software operating system for software program development. This means that software written in Visual C/C++ for desktop PCs can easily be ported to the UC-7122/7124 computers with a general programming tool such as Microsoft Embedded Visual C++ or Microsoft Visual Studio 2005. You will not need to spend time modifying existing software code, the operating system, device or the drivers. You can store the software that you created on the computer's flash memory without any modification.

## Appearance

### UC-7122

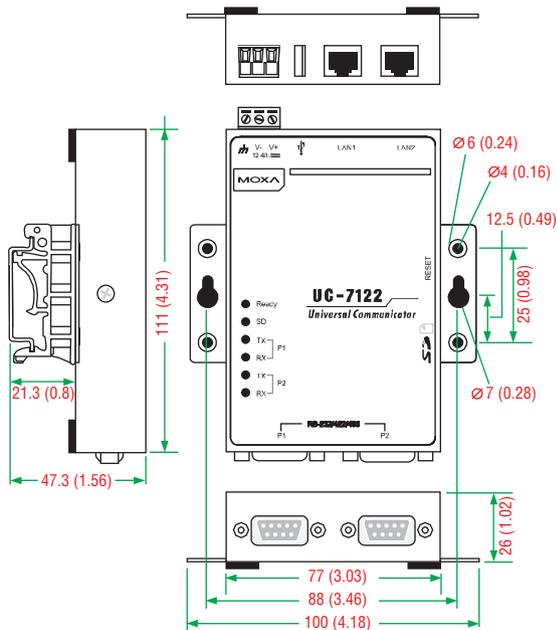


### UC-7124



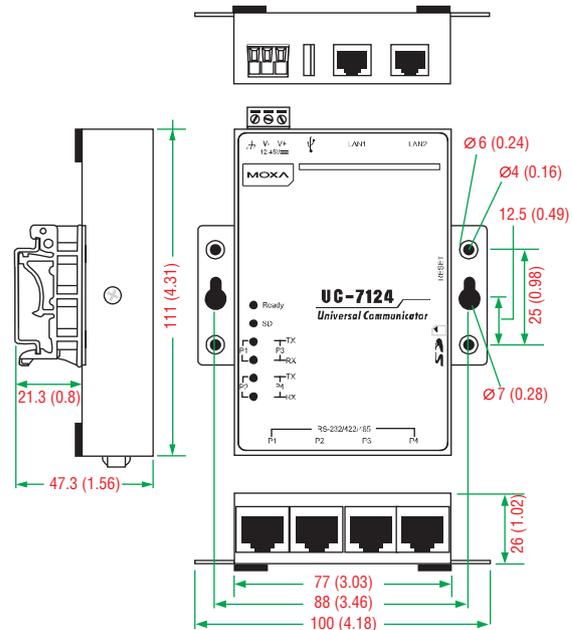
## Dimensions

### UC-7122



### UC-7124

Unit: mm (inch)



## Hardware Specifications

### Computer

**CPU:** Cirrus EP9302 ARM9 CPU, 200 MHz  
**USB:** USB 2.0 hosts x 1, type A connector  
**DRAM:** DDR2 SDRAM, 32 MB  
**Flash:** NOR Flash, 16 MB  
**OS (pre-installed):** Windows CE 5.0

### Storage

**Storage Expansion:** SD slot

### Ethernet Interface

**LAN:** Auto-sensing 10/100 Mbps ports (RJ45) x 2  
**Magnetic Isolation Protection:** 1.5 kV, built-in

### Serial Interface

**Serial Standards:**  
 UC-7122: RS-232/422/485 ports, software-selectable (DB9 male) x 2  
 UC-7124: RS-232/422/485 ports, software-selectable (RJ45) x 4  
**ESD Protection:** 4 kV 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 nonstandard 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, SD  
**LAN:** 10M/Link x 2, 100M/Link x 2 (on connector)  
**Serial:** TxD, RxD (2 or 4 of each)

### Physical Characteristics

**Housing:** Aluminum (1 mm)  
**Weight:**  
 UC-7122: 190 g (0.42 lb)  
 UC-7124: 200 g (0.44 lb)  
**Dimensions:** 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 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)  
**Storage Temperature:**  
 Standard Models: -20 to 80°C (-4 to 176°F)  
 Wide Temp. Models: -40 to 85°C (-40 to 185°F)  
**Ambient Relative Humidity:** 5 to 95% (non-condensing)  
**Anti-Vibration:** 1 Grms @ 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  
**Input Current:**  
 UC-7122:  
 • 170 mA @ 24 VDC  
 • 340 mA @ 12 VDC  
 UC-7124:  
 • 180 mA @ 24 VDC  
 • 360 mA @ 12 VDC  
**Power Consumption:**  
 • UC-7122: 4.1 W  
 • UC-7124: 4.3 W

### Standards and Certifications

**Safety:** UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1  
**EMC:** EN 55032 Class A, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A  
**Green Product:** RoHS, CRoHS, WEEE

## Reliability

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

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

**MTBF** (mean time between failures)

**Time:**

- UC-7122: 234,746 hrs
- UC-7124: 210,233 hrs

**Standard:** Telcordia (Bellcore) Standard

## Warranty

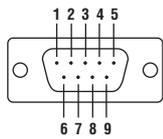
**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://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 adapter and cables.

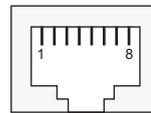
## Pin Assignment

### UC-7122 (DB9 male connector)



PIN	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	TxD-(A)	–
2	RxD	TxD+(B)	–
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	–	–
7	RTS	–	–
8	CTS	–	–

### UC-7124 (8-pin RJ45 connector)



PIN	RS-232	RS-422/485-4w	RS-485
1	DSR	–	–
2	RTS	TxD+	–
3	GND	GND	GND
4	TxD	TxD-	–
5	RxD	RxD+	Data+(B)
6	DCD	RxD-	Data-(A)
7	CTS	–	–
8	DTR	–	–

## Software Specifications

### Windows Embedded CE 5.0

**OS:** Windows Embedded CE 5.0

**File System:** FAT (for onboard flash memory)

**Internet Protocol Suite:** TCP, UDP, IPv4, SNMPv2, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNTP, SMTP, Telnet, FTP, PPP

**Web Server (WinCE IIS):** Supports ASP, ISAPI Secure Socket Layer (SSL 2/3) and Transport Layer Security (TLS/SSL 3.1) public key-based protocols, and Web Administration ISAPI Extensions

**Dial-up Networking:** Supports RAS client API and PPP, Extensible Authentication Protocol (EAP), and RAS scripting

**Watchdog:** Features a hardware function to trigger system reset based on a user-specified time interval. (Moxa API provided)

### Application Development Software:

- Moxa WinCE 5.0 SDK
- Moxa API Library
- C runtime libraries
- Component Services (COM and DCOM)
- Microsoft® .NET Compact Framework 2.0 with SP2
- XML, including DOM, XQL, XPATH, XSLT, SAX, SAX2
- SOAP Toolkit
- Winsock 2.2

## Ordering Information

### Available Models

**UC-7122-CE:** Mini RISC-based embedded computer with 2 serial ports, dual LANs, SD, USB, WinCE 5.0, -10 to 60°C operating temperature

**UC-7124-CE:** Mini RISC-based embedded computer with 4 serial ports, dual LANs, SD, USB, WinCE 5.0, -10 to 60°C operating temperature

**UC-7122-T-CE:** Mini RISC-based embedded computer with 2 serial ports, dual LANs, SD, USB, WinCE 5.0, -40 to 75°C operating temperature

**UC-7124-T-CE:** Mini RISC-based embedded computer with 4 serial ports, dual LANs, SD, USB, WinCE 5.0, -40 to 75°C operating temperature

**Optional Accessories** (can be purchased separately)

**DK35A:** DIN-rail mounting clips, 35 mm, 2 DIN-rail plates with 4 screws

### Package Checklist

- UC-7122 or UC-7124 embedded computer
- Ethernet cable: RJ45-to-RJ45 cross-over cable, 100 cm
- CBL-4PINDB9F-100: 4-pin pin header to DB9 female console port cable, 100 cm
- CBL-RJ45M9-150: 8-pin RJ45-to-DB9 male serial port cable, 150 cm
- Universal power adapter (including terminal block to power jack converter)
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Model Name	Serial Ports	LAN Ports	Storage		OS		Wide Temp.
	RS-232/422/485	10/100 Mbps	SD	USB	CE 5.0	Linux	
UC-7122	2	2	✓	1	✓	–	✓
UC-7124	4	2	✓	1	✓	–	✓