

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 (non-standard 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.

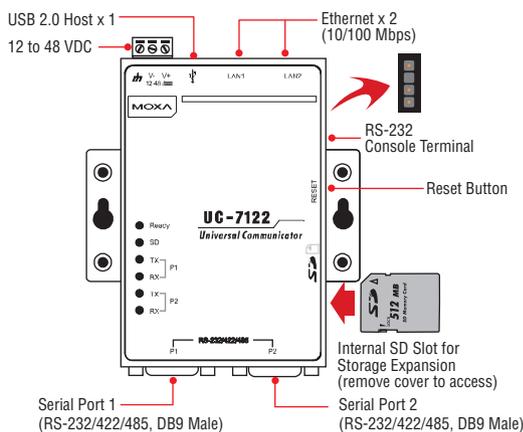
The UC-7122/7124 embedded computers use the Cirrus Logic EP9302 ARM9 200 MHz RISC CPU. Unlike the x86 CPU, which uses a CISC design, the ARM9's RISC design architecture and modern semiconductor technology provide the UC-7122/7124 with a powerful computing engine and communication functions, but without 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. In addition, the RS-232/422/485 serial ports allow you to connect a variety of serial devices. Taken together, 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.

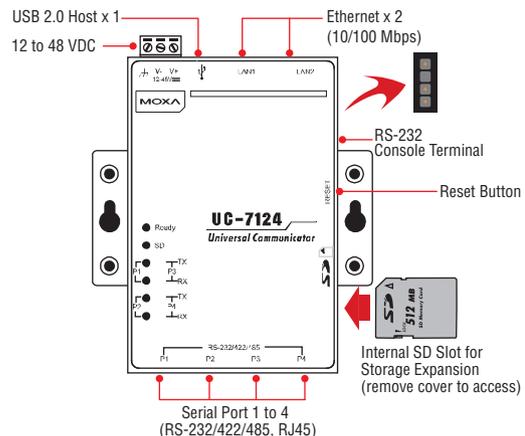
The pre-installed WinCE 5.0 operating system provides a common Windows-based software operating system for software program development. This means that software written in Visual C/C++ for desktop PCs is easily ported to the UC-7122/7124 computers with a general programming tool such as Microsoft Embedded Visual C++ or Microsoft Visual Studio 2005. You will not need to spend time modifying existing software code, and the operating system, device drivers, and your own software can all be stored in the UC-7122/7124's flash memory.

Appearance

UC-7122



UC-7124



Hardware Specifications

Computer

CPU: Cirrus EP9302 ARM9 CPU, 200 MHz

OS (pre-installed): Windows CE 5.0

DRAM: 32 MB onboard

Flash: 16 MB onboard

Storage

Storage Expansion: SD slot

Ethernet Interface

LAN: 2 auto-sensing 10/100 Mbps ports (RJ45)

Magnetic Isolation Protection: 1.5 kV built-in

Serial Interface

Serial Standards:

UC-7122: 2 RS-232/422/485 ports, software-selectable (DB9 male)

UC-7124: 4 RS-232/422/485 ports, software-selectable (RJ45)

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 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, 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

UC-7124: 200 g

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 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:

UC-7122: 4.1 W UC-7124: 4.3 W

• 170 mA @ 24 VDC • 180 mA @ 24 VDC

• 340 mA @ 12 VDC • 360 mA @ 12 VDC

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1

EMC: EN 55022 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):

UC-7122: 234,746 hrs

UC-7124: 210,233 hrs

Warranty

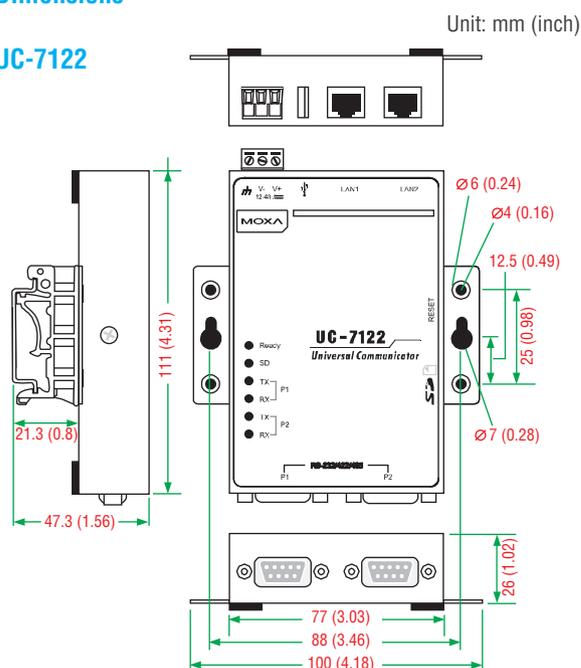
Warranty Period: 5 years

Details: See www.moxa.com/warranty

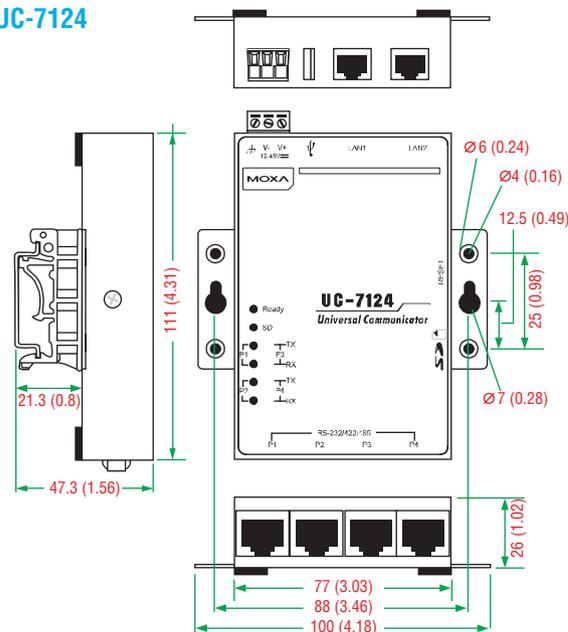
Note: The Hardware Specifications apply to the embedded computer unit itself, but not to accessories. In particular, the wide temperature specification does not apply to accessories such as the power adaptor and cables.

Dimensions

UC-7122

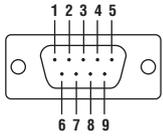


UC-7124



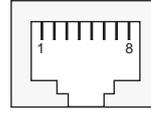
Pin Assignment

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 on-board flash)

Internet Protocol Suite: TCP, UDP, IPv4, SNMPv2, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, 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 in a user specified time interval. (Moxa API provided)

Application Development Software:

- Moxa WinCE 5.0 SDK
- Moxa API Library
- C Libraries and Run-times
- 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)

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

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 adaptor (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 | ✓ | — | ✓ |