

# UC-7410/7420 Series

**RISC-based ready-to-run computers with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash**



- > Intel XScale IXP422/425, 266/533 MHz processor
- > 128 MB RAM on-board, 32 MB flash
- > 8 RS-232/422/485 serial ports
- > Dual 10/100 Mbps Ethernet for network redundancy
- > USB 2.0 host
- > CompactFlash socket for storage expansion
- > PCMCIA supports WLAN, GPRS, UMTS, HSDPA
- > LCM display and keypad for HMI ready-to-run Linux or WinCE 5.0 platform
- > DIN-rail or wallmount installation
- > Robust, fanless design

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

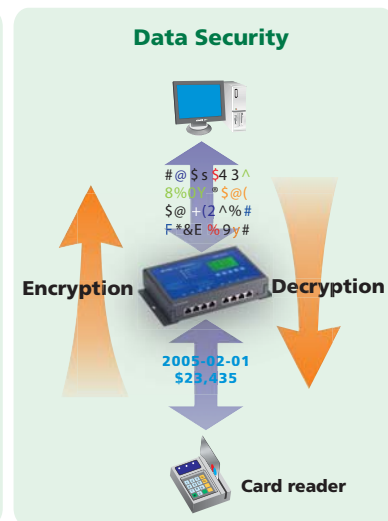
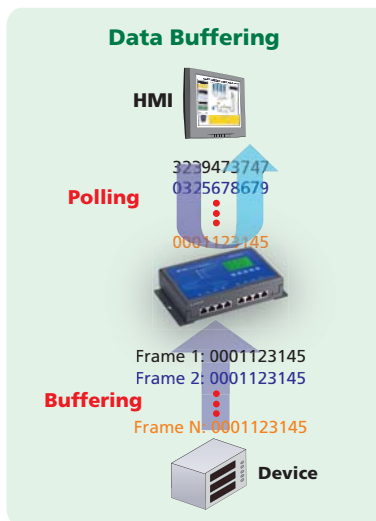
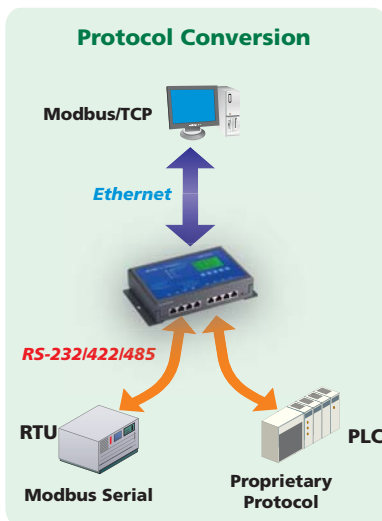


## Overview

The UC-7410/UC-7420 RISC-based ready-to-run Linux and WinCE computers are designed for embedded applications. The computers feature 8 RS-232/422/485 serial ports, a PCMCIA interface for wireless LAN communication, CompactFlash, and USB ports for adding external memory. The pre-installed open-standard Linux or WinCE operating system makes a convenient platform for software

development. Software written for a desktop PC can be ported "as is" to the UC-7410/UC-7420 platform using readily available development tools, and the code can be stored in the UC-7410/UC-7420's Flash memory. System integrators use UC-7410/UC-7420 computers as part of distributed control systems based on embedded technology.

## Typical Applications

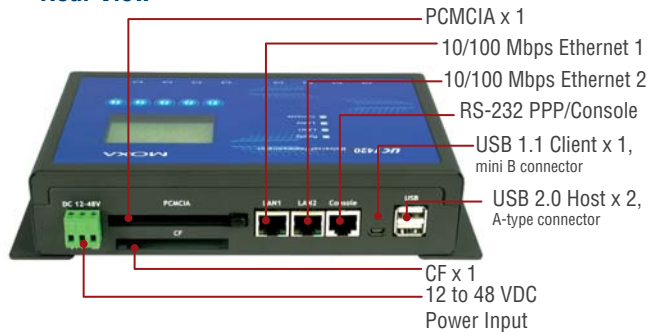


## : Appearance

### Front View



### Rear View



## : Hardware Specifications

### Computer

#### CPU:

UC-7410/7420: Intel XScale IXP422 266 MHz

UC-7410/7420 Plus: Intel XScale IXP425 533 MHz

**OS (pre-installed):** Embedded Linux or Windows CE 5.0

**DRAM:** 128 MB onboard (256 MB for ODM)

**Flash:** 32 MB onboard

**PCMCIA:** Cardbus card and 16-bit PCMCIA 2.1/JEIDA 4.2 card (UC-7420 only)

### Storage

**Storage Expansion:** CompactFlash socket (UC-7420 only)

### Ethernet Interface

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

**Magnetic Isolation Protection:** 1.5 KV built-in

### Serial Interface

**Serial Standards:** 8 RS-232/422/485 ports, software-selectable (8-pin RJ45)

**ESD Protection:** 15 KV for all signals

**Console Port:** RS-232 (all signals), RJ45 connector, supports PPP

### 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:** OS Ready, Console (TxD/RxD)

**LAN:** 10M/100M x 2

**Serial:** TxD x 8, RxD x 8

### Mini Screen with Push Buttons

**LCD Panel:** Liquid Crystal Display on the case, 128 x 64 dot graphics mode

**Push Buttons:** Five membrane buttons for convenient on-site configuration

### Physical Characteristics

**Housing:** SECC sheet metal (1 mm)

#### Weight:

UC-7410: 810 g

UC-7420: 875 g

**Dimensions:** 197 x 44 x 125 mm (7.76 x 1.73 x 4.92 in)

**Mounting:** DIN-Rail, wall

### Environmental Limits

**Operating Temperature:** -10 to 60°C (14 to 140°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 80°C (-4 to 176°F)

**Anti-vibration:** 1g @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1 hr/axis

**Anti-shock:** 5g @ IEC-68-2-27, half sine wave, 30 ms

### Power Requirements

**Input Voltage:** 12 to 48 VDC

**Power Consumption:**

UC-7410: 10 W

• 415 mA @ 24 VDC

• 830 mA @ 12 VDC

UC-7420: 11 W

• 450 mA @ 24 VDC

• 890 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:** UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)

### Reliability

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

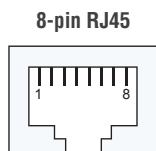
**Automatic Reboot Trigger:** Built-in WDT (watchdog timer)

### Warranty

**Warranty Period:** 5 years

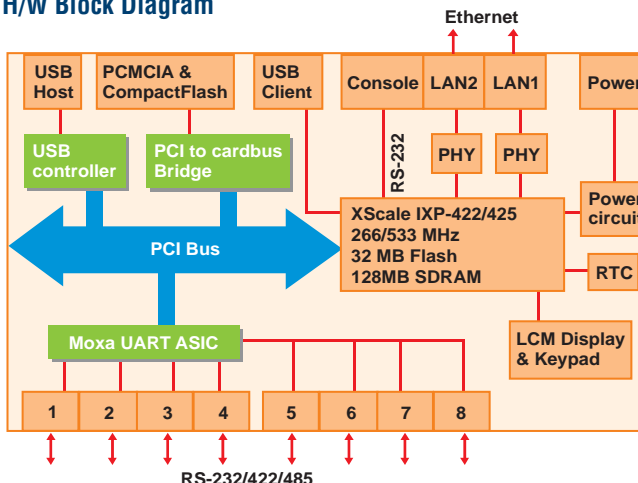
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

### Pin Assignment



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

### H/W Block Diagram



## Software Specifications

### Linux

**Kernel Version:** 2.4.18 or 2.6.10 (Plus version)

**Protocol Stack:** TCP, UDP, IPv4, SNMP V1, 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

**telnetd:** Telnet Server daemon

**ftpd:** FTP server daemon

**sshd:** Secure shell server

**Apache:** Web server daemon, supporting 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 Software:**

- Moxa Linux API Library for device control
- Linux Tool Chain: Gcc, Glibc, GDB

### Windows Embedded CE 5.0

**System Utilities:** Windows command shell, telnet, ftp, web-based administration manager

**File System:** FAT (on-board flash)

**Protocol Stack:** TCP, UDP, IPv4, SNMP V2, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNTP, SMTP, Telnet, FTP, PPP

**Telnet Server:** Allows remote administration through a standard telnet client.

**FTP Server:** Used for transferring files to and from remote computer systems over a network.

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

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

**Application Development Environment:**

- Moxa WinCE 5.0 SDK
- C Libraries and Run-times
- Component Services (COM and DCOM)
- Microsoft Foundation Classes (MFC)
- Microsoft® .NET Compact Framework 2.0 SP2
- XML, including DOM, XQL, XPATH, XSLT, SAX2
- SOAP Toolkit
- Winsock 2.2

## Ordering Information

### Available Models

**UC-7410-LX:** RISC-based IXP422 embedded computer with 8 serial ports, dual LANs, Linux 2.4

**UC-7410-LX Plus:** RISC-based IXP425 embedded computer with 8 serial ports, dual LANs, Linux 2.6

**UC-7420-LX:** RISC-based IXP422 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, Linux 2.4

**UC-7420-LX Plus:** RISC-based IXP425 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, Linux 2.6

**UC-7410-CE:** RISC-based IXP422 embedded computer with 8 serial ports, dual LANs, WinCE 5.0

**UC-7420-CE:** RISC-based IXP422 embedded computer with 8 serial ports, dual LANs, USB, PCMCIA, CompactFlash, WinCE 5.0

### Package Checklist

- UC-7410 or UC-7420 computer
- Wall mounting kit
- DIN-Rail mounting kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-RJ45F9-150: 8-pin RJ45 to DB9 female console port cable, 150 cm
- CBL-RJ45M9-150: 8-pin RJ45 to DB9 male serial port cable, 150 cm
- Universal power adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card