UC-7410/7420 Series

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

> 128 MB RAM onboard, 32 MB flash
> 8 RS-232/422/485 serial ports
> Dual 10/100 Mbps LANs for network redundancy
> USB 2.0 host
> CompactFlash socket for storage expansion
> PCMCIA supporting WLAN, GPRS, UMTS, HSDPA
> LCM display and keypad for HMI
> Built-in firewall and VPN function
> Apache web server supporting PHP and XML
> Ready-to-run Linux or WinCE 5.0 platform
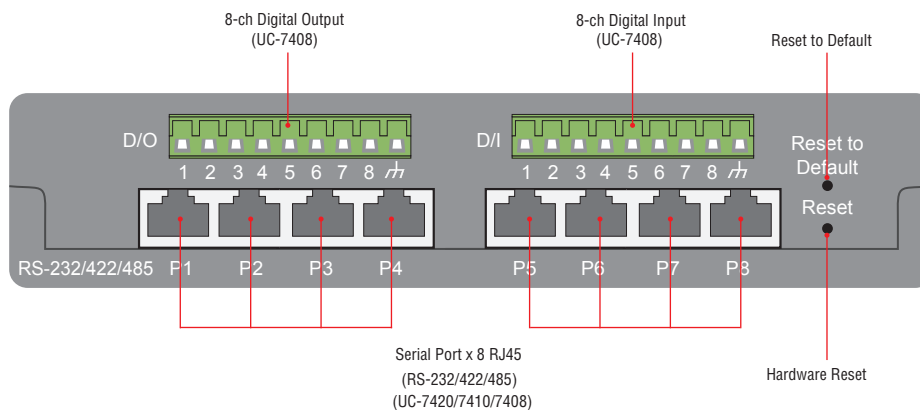> DIN-rail or wallmount installation
> Robust, fanless design

Overview

The UC-7410/7420 Series 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 built-in firewall, VPN, and web server make these computers ideal for applications that require a web server and front-end controller in the industrial embedded system.
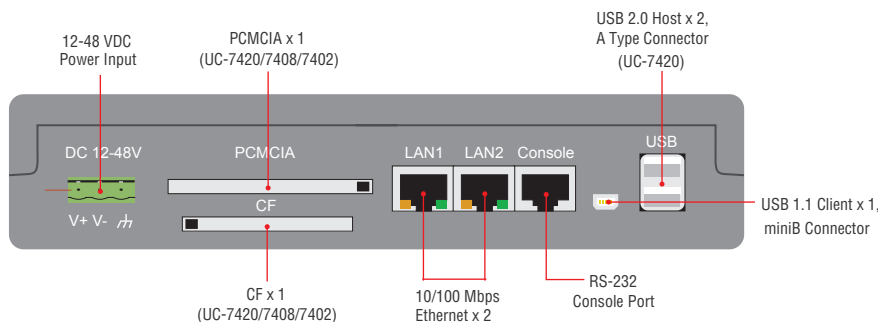
The pre-installed open-standard Linux or WinCE OS operating system provide a convenient platform for software development. In fact, software written for a desktop PC can be ported as is to the UC-7410/7420 platform using readily available development tools, and the code can be stored in the UC-7410/7420's Flash memory. System integrators will find it easy to use the UC-7410/7420 computers as part of distributed control systems based on embedded technology.

Appearance

8-ch Digital Output
(UC-7408)

8-ch Digital Input
(UC-7408)

Reset to Default

Front View

D/O   1 2 3 4 5 6 7 8 ⊥

D/I   1 2 3 4 5 6 7 8 ⊥

Reset to Default

Reset

RS-232/422/485   P1   P2   P3   P4   P5   P6   P7   P8

Serial Port x 8 RJ45
(RS-232/422/485)
(UC-7420/7410/7408)

Hardware Reset

MOXA®

> www.moxa.com ⟩ info@moxa.com

Rear View

12-48 VDC Power Input

PCMCIA x 1 (UC-7420/7408/7402)

USB 2.0 Host x 2, A Type Connector (UC-7420)

DC 12-48V PCMCIA LAN1 LAN2 Console USB

V+ V- CF

USB 1.1 Client x 1, miniB Connector

CF x 1 (UC-7420/7408/7402)

10/100 Mbps Ethernet x 2

RS-232 Console Port

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
Flash: 32 MB onboard
PCMCIA: Cardbus card and 16-bit PCMCIA 2.1 ro JEIDA 4.2 card (UC-7420 only)
USB:
• USB 2.0 compliant hosts x 2, A-type connector
• USB 1.1 client x 1, mini B connector

Storage
Storage Expansion: CompactFlash socket (UC-7420, UC-7420 Plus)

Ethernet Interface
LAN: 2 auto-sensing 10/100 Mbps ports (RJ45)
Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface
Serial Standards: RS-232/422/485 software-selectable (8-pin RJ45), 8 ports
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 (UC-7408/7410/7420, UC-7408/7410/7420 Plus only)

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: 1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 cycle, 13 min 17 sec per axis
Anti-Shock: 5 g @ IEC-68-2-27, half sine wave, 30 ms

Power Requirements
Input Voltage: 12 to 48 VDC
Power Consumption:
UC-7410: 10 W
• 415mA @ 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

Software Specifications

Linux

Kernel Version: 2.6.10

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, IPv6 Tunneling, 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.
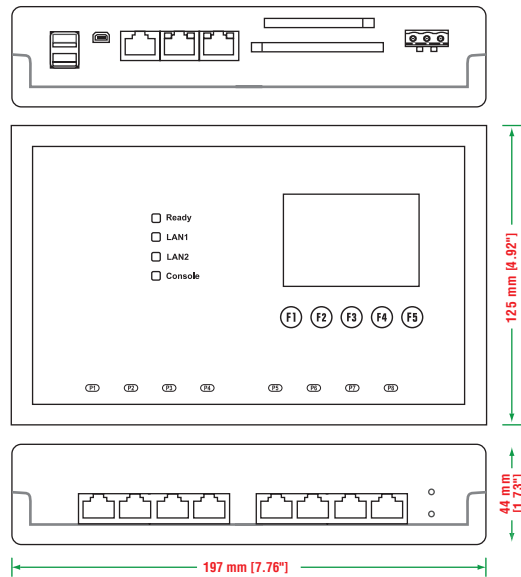
Web Server (httpd): WinCE IIS, including ASP, ISAPI Secure Socket Layer support, SSL 2, SSL 3, and Transport Layer Security (TLS/SSL 3.1) public key-based protocols, and Web Administration ISAPI Extensions.

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

Application Development Software:
• 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

Dimensions (unit = mm)

Ordering Information

Available Models

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

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

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

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

Package Checklist

• 1 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)
• Product Warranty Statement (printed)