

UC-7408

RISC-based Data Acquisition Embedded Computer with 8 Serial Ports, 8 DI Channels, 8 DO Channels, Dual Ethernet, PCMCIA, CompactFlash



Features

- Intel XScale IXP-422 266 MHz Processor
- 128 MB RAM on-board, 32 MB Flash Disk
- Eight RS-232/422/485 serial ports
- 8-ch digital input and 8-ch digital output
- Dual 10/100 Mbps Ethernet
- PCMCIA, CompactFlash, Wireless LAN Expansion (supports 802.11b/g)
- Ready-to-Run Linux / WinCE .NET Communication Platform
- DIN-Rail or Wall-mount Installation
- Robust, Fanless Design



Overview

UC-7408 is a data acquisition embedded computer for embedded applications. UC-7408 features eight RS-232/422/485 serial ports, 8-ch digital input, 8-ch digital output, dual 10/100, a PCMCIA interface for wireless LAN communication and a CompactFlash slot for mass storage disk expansion, making UC-7408 ideal for your embedded applications.

In addition to the 8 RS-232/422/485 serial ports, UC-7408 features an additional 8 digital input and 8 digital output channels for acquiring data through serial ports, and for I/O event handling, making it suitable as a data acquisition solution.

The digital I/O feature of UC-7408 provides users with the convenience of connecting their digital devices to a front-end embedded computer. UC-7408 can be used for on/off event handling by reading the state change of the digital input signal. In addition, output signals from external digital devices

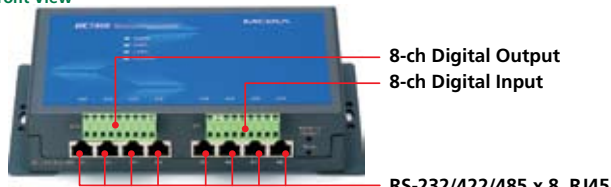
can be imported into UC-7408's digital input channels. UC-7408 can be programmed to take immediate action when it detects a change in the signal state.

The digital output channels on UC-7408 can connect to devices and trigger digital output signals to control external digital devices. Including the digital I/O feature means that MOXA's embedded computers support both data acquisition and protocol conversion via the RS-232/422/485 serial ports, and simple I/O control with the digital I/O signals.

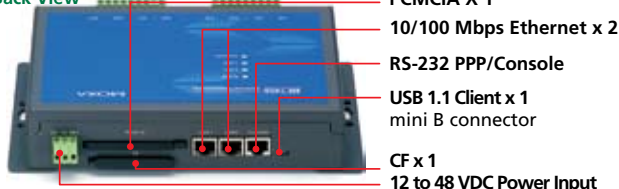
Choose a pre-installed open standard Linux OS or the commonly used WinCE OS. This means that software written for a desktop PC can be easily ported to the UC-7408 platform by using a common compiler, without needing to modify the software code. All the software you develop for your own applications can be stored on UC-7408's Flash memory.

UC-7408 Appearance

Front View

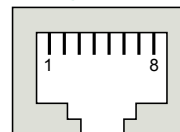


Back View



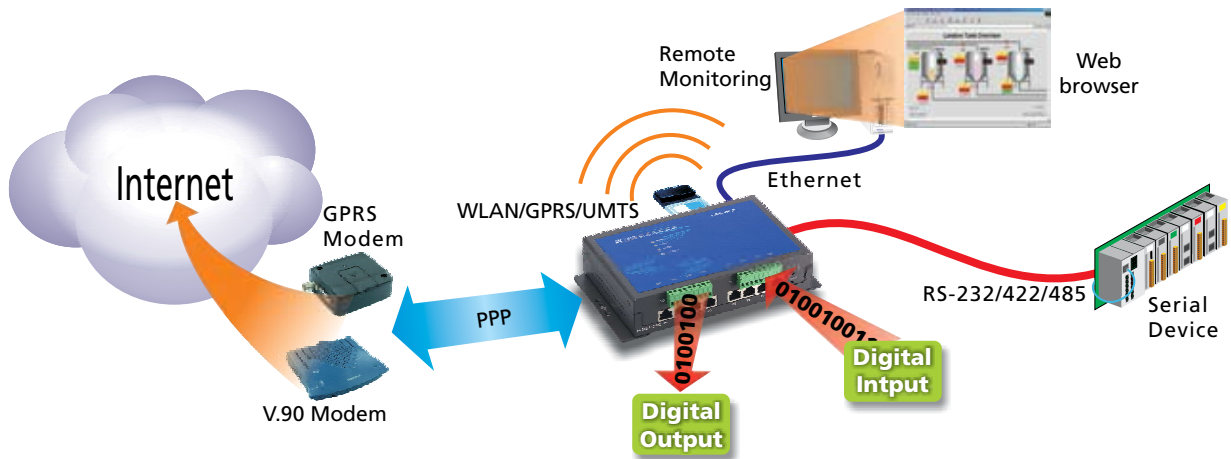
Pin Assignment

Serial Port, RJ45 Connector



PIN	RS-232	RS-422	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	---	---

Typical Application



Hardware Specifications

System

- CPU:** IXP-422 266 MHz
- DRAM:** 128 MB onboard
- Flash:** 32 MB onboard
- DI/DO:** DI x 8, DO x 8, TTL (3.3V)
- PCMCIA:** Cardbus card and 16-bit PCMCIA 2.1/ JEIDA 4.2 card
- Storage Expansion:** CompactFlash x 1 with full function
- Console Port:** RS-232 x 1, RJ45, support PPP
- Other:** RTC, buzzer, Watchdog Timer
- OS:** Built-in embedded Linux or Windows CE 5.0

Network Communication

- LAN:** 10/100Mbps x 2, RJ45
- Protection:** Built-in 1.5 KV magnetic isolation protection

Serial Communication

- Serial Port:** RS-232/422/485 x 8, software-selectable, RJ45
- Protection:** Built-in 15 KV ESD protection for all signals
- Data bits:** 5, 6, 7, 8
- Stop bits:** 1, 1.5, 2
- Parity:** None, Even, Odd, Space, Mark
- Flow Control:** RTS/CTS, XON/XOFF, RS-485 ADDCTM
- Speed:** 50 bps to 921.6 Kbps, supports Any Baudrate

LEDs

- System:** Ready x 1, Console x 1
- LAN:** 10M/100M x 2
- Serial:** TxD/RxD x 8

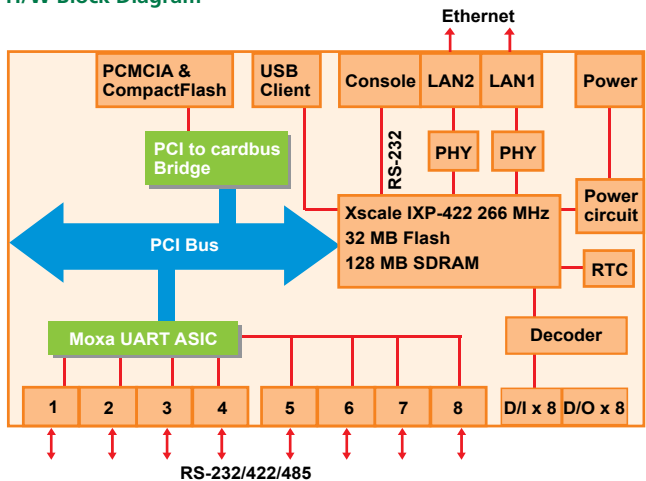
Power Requirements

- Power Input:** 12 to 48V
- Power Consumption:** 628 mA @ 12 VDC, 8W

Mechanical

- Dimensions (WxDxH):** 197 x 125 x 44 mm (7.8 x 4.9 x 1.7 in)
- Weight:** 870 g
- Construction Material:** SECC sheet metal, 1 mm
- Mounting:** Wall-mounting, DIN-Rail

H/W Block Diagram



Environmental

- Operating Temperature:** -10 to 60°C (14 to 140°F), 5 to 95% RH
- Storage Temperature:** -20 to 80°C (-4 to 176°F), 5 to 95% RH
- 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

Regulatory Approvals

- EMC:** FCC Part 15, CISPR 22 Class A
CE Class A: EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024
- Safety:** TÜV: IEC/EN60950
UL/cUL: UL60950, CAN/CSA-C22.2 No. 60950-00
- Warranty:** 5 years

Software Specifications

Linux

Kernel Version: 2.4.18

Boot Loader: Redboot

Protocol Stacks: TCP, UDP, IPv4, SNMP V1/V3, 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

Supporting Services and Daemons:

telnetd: Telnet Server daemon
ftpd: FTP server daemon
sshd: Secure shell server
Apache: Web server daemon, support PHP and XML
MySQL: Database Server and Client
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 Environment:

MOXA Linux API Library
Linux Tool Chain: Gcc, Glibc, GDB
Windows Tool Chain: Gcc, Glibc,
Insight (Windows-based source level debug utility)
UC Finder: UC's LAN IP broadcast search utility for
Windows and Linux

Device Drivers:

PCMCIA CardBus (supports 802.11b/g wireless LAN Card),
CF Card Watchdog Timer (WDT), UART, RTC, Buzzer
MOXA 2G NPort Real TTY Driver

Windows CE 5.0

Boot Loader: Redboot

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

File Systems: TFAT (on-board flash)

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

Supporting Services and Daemons:

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, offer 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, support 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
XML, including DOM, XQL, XPATH, XSLT, SAX2
SOAP Toolkit
Winsock 2.2

Device Drivers:

PCMCIA CardBus, CF Card, Watchdog Timer (WDT) API, UART, RTC, Buzzer

Ordering Information

UC-7408-LX

RISC-based Data Acquisition Embedded Computer with 8 Serial Ports, 8 DI Channels, 8 DO Channels, Dual Ethernet, PCMCIA, CompactFlash, Linux OS

UC-7408-CE NEW

RISC-based Data Acquisition Embedded Computer with 8 Serial Ports, 8 DI Channels, 8 DO Channels, Dual Ethernet, PCMCIA, CompactFlash, WinCE 5.0

All items include

- 1 UC-7408
- Quick Installation Guide
- Wall-mounting Kit
- DIN-Rail Mounting Kit
- Document & Software CD
- Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm
- Console Port Cable: CBL-RJ45F9-150 8-pin RJ45 to female DB9 cable, 150 cm
- Serial Port Cable: CBL-RJ45M9-150 8-pin RJ45 to male DB9 cable, 150 cm
- Universal Power Adaptor (includes terminal block to power jack converter)
- Product Warranty Booklet

