DA-660 Series

RISC-based 19-inch rackmount data acquisition computers with 8 or 16 serial ports, dual LANs

> Intel XScale IXP-422 266 MHz processor
> 128 MB RAM onboard, 32 MB flash
> 8 or 16 RS-232/422/485 serial ports
> Dual 10/100 Mbps Ethernet
> Standard 19-inch rackmount installation, 1U height
> Wide range of power input voltages from 100 to 240 V, both AC and DC
> LCM display and keypad for HMI
> Ready-to-Run Linux, Windows CE 5.0 OS platform
> Robust, fanless design

Overview

The DA-660 embedded computers come with 8 or 16 software-selectable RS-232/422/485 serial ports, making them suitable for a variety of industrial applications. Two 10/100 Mbps Ethernet ports are included for network redu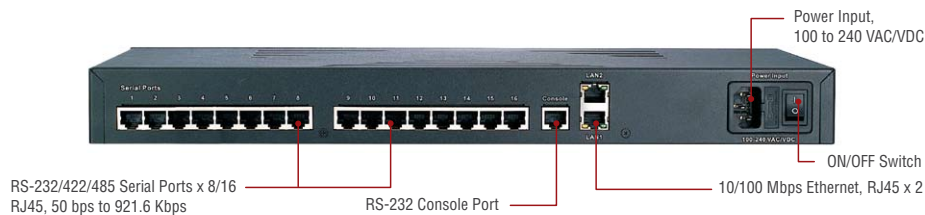ndancy. In addition, the DA-660 computers are designed with a standard 19-inch, rugged 1U rackmount case, and are embedded with a 100-240V AC/DC power input. This combination of features gives users a robust and reliable ready-to-run solution for applications such as data acquisition and power substations.

Appearance

Front View

LCD Panel

LED Indicators
System Status, LAN, Serial Tx/Rx

19-inch Rackmount Ear

Reset Button

Push Buttons

Rear View

Power Input,
100 to 240 VAC/VDC

RS-232/422/485 Serial Ports x 8/16
RJ45, 50 bps to 921.6 Kbps

RS-232 Console Port

ON/OFF Switch

10/100 Mbps Ethernet, RJ45 x 2

: Hardware Specifications

Computer

CPU: Intel XScale IXP-422 266 MHz
OS (pre-installed): Embedded Linux or Windows CE 5.0
DRAM: 128 MB onboard (256 MB for ODM)
Flash: 32 MB onboard

LAN Interface

Ethernet: 10/100 Mbps x 2, RJ45 connectors
Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 8 or 16
Serial Standards: RS-232/422/485, software-selectable
Connectors: 8-pin RJ45
ESD Protection: 15 KV for all signals
Console Port: RS-232 x 1, 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 Communication Parameters

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 x 1
LAN: 10M/100M x 2
Serial: TxD, RxD (8 or 16 of each)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case, 2 x 16 text mode
Push Buttons: Four membrane buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm)
Weight: 2600 g
Dimensions:
Without ears: 440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
With ears: 480 x 45 x 198 mm (18.90 x 1.77 x 7.80 in)
Mounting: Standard 19-inch rackkmount

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)

Power Requirements

Input Voltage: 100 to 240 VAC/VDC auto ranging (47 to 63 Hz for AC input)
Power Consumption: 12 watts

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)
MTBF: DA-660-16: 93,410 hrs, DA-660-8: 124,323 hrs.

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)
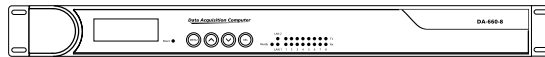**Automatic Reboot Trigger:** Built-in WDT (watchdog timer)

Warranty

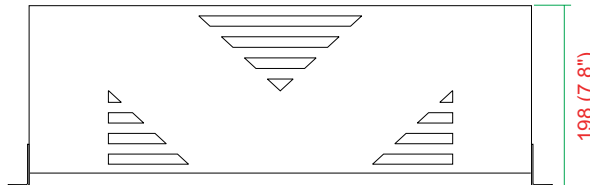**Warranty Period:** 5 years
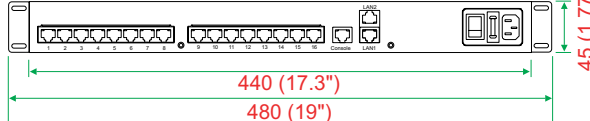**Details:** See www.moxa.com/warranty

Dimensions

DA-660-8

DA-660-16

DA-660-8

DA-660-16

198 (7.8")
45 (1.77")
440 (17.3")
480 (19")
Unit = mm (in)

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DA-660 Series

: Software Specifications

Linux

Kernel Version: 2.4.18

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

Supporting Services and Daemons:
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 Environment:
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, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNTP, SMTP, Telnet, FTP, PPP

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, 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

DA-660-8-LX: RISC-based 19-inch rackmount data acquisition computer with 8 serial ports, dual LANs, Linux OS
DA-660-8-CE: RISC-based 19-inch rackmount data acquisition computer with 8 serial ports, dual LANs, WinCE 5.0 OS
DA-660-16-LX: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, dual LANs, Linux OS
DA-660-16-CE: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, dual LANs, WinCE 5.0 OS

Package Checklist

- DA-660 computer
- 19-inch rackmount 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
- Power Cord
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card