DA-660/662 Series

RISC 19-inch rackmount data acquisition computers with 16 serial ports, Ethernet, USB

- Intel XScale IXP425 533 MHz processor
- 128 MB RAM onboard, 32 MB flash
- 16 software-selectable RS-232/422/485 serial ports
- 15 kV ESD protection for all serial signals
- Dual or quad 10/100 Mbps Ethernet ports
- USB slots for storage expansion supported
- 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 OS platform
- Robust, fanless design

Overview

The DA-660/662 embedded computers come with 16 software-selectable RS-232/422/485 serial ports, making them suitable for a variety of industrial applications. Models are available with either 2 or 4 10/100 Mbps Ethernet ports. The DA-662 models also come with USB ports to make it easy to add additional memory. The 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 (DA-660)

Front View (DA-662)
**Power Computers**

**Rear View (DA-660)**

- RS-232/422/485 Serial Ports x 16
- RJ45, 50 bps to 921.6 Kbps
- RS-232 Console Port
- ON/OFF Switch
- 10/100 Mbps Ethernet, RJ45 x 2
- Power Input, 100 to 240 VAC/VDC

**Rear View (DA-662)**

- RS-232/422/485 Serial Ports x 16
- RJ45, 50 bps to 921.6 Kbps
- RS-232 Console Port
- ON/OFF Switch
- 10/100 Mbps Ethernet, RJ45 x 4
- Power Input, 100 to 240 VAC/VDC

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**Hardware Specifications**

**Computer**
- CPU: Intel IXP425 533 MHz
- OS: Embedded Linux (pre-installed)
- DRAM: 128 MB onboard
- Flash: 32 MB onboard

**Ethernet Interface**
- LAN: 2 or 4 auto-sensing 10/100 Mbps ports (RJ45)
- Magnetic Isolation Protection: 1.5 kV built-in

**Serial Interface**
- Serial Standards: 16 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
- LAN: DA-660: 10/100M x 2
  DA-662: 10/100M x 4
- Serial: TxD, RxD (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: 2.6 kg
- 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 rackmount

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**Environmental Limits**
- Operating Temperature: -10 to 60°C (14 to 140°F)
- Storage Temperature: -20 to 80°C (-4 to 176°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 mins 17 sec per axis

**Power Requirements**
- Input Voltage: 100 to 240 VAC/VDC auto ranging
  (47 to 63 Hz for AC input)
- Power Consumption:
  DA-660: 12 W
  DA-662: 20 W

**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):
  DA-660: 124,323 hrs
  DA-662: 85,193 hrs

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

Unit: mm (inch)

Software Specifications

Linux
OS:
DA-660: Linux 2.6.10
DA-662: Linux 2.6.10
File System: JFFS2 (on-board flash)
Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPOE
Internet Security: OpenVPN, iptables firewall
Web Server (Apache): Allows you to create and manage web sites; supports PHP and XML
Terminal Server (SSH): Provides secure encrypted communications between two un-trusted hosts over an insecure network
Dial-up Networking: PPP Daemon for Linux that allows Unix machines to connect to the Internet through dialup lines, using the PPP protocol, as a PPP server or client. Works with ‘chat’, ‘dip’, and ‘diald’, among (many) others. Supports IP, TCP, UDP, and (for Linux) IPX (Novell).

Ordering Information

Available Models
DA-660-16-LX: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, dual LANs, Linux OS
DA-662-16-LX: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, quad LANs, USB, Linux OS

Package Checklist
- DA-660 or DA-662 embedded 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
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card