ThinkCore DA-660

RISC-based 19-inch Rackmount Data Acquisition Embedded Computer with 8/16 Serial Ports, Dual LANs

Features

> **Intel XScale IXP-422 266 MHz processor**
> **128 MB RAM on-board, 32 MB flash disk**
> **8/16 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 240V, both AC and DC**
> **LCM display and keypad for HMI**
> **Ready-to-Run Linux / Window CE 5.0 platform**
> **Robust, fanless design**

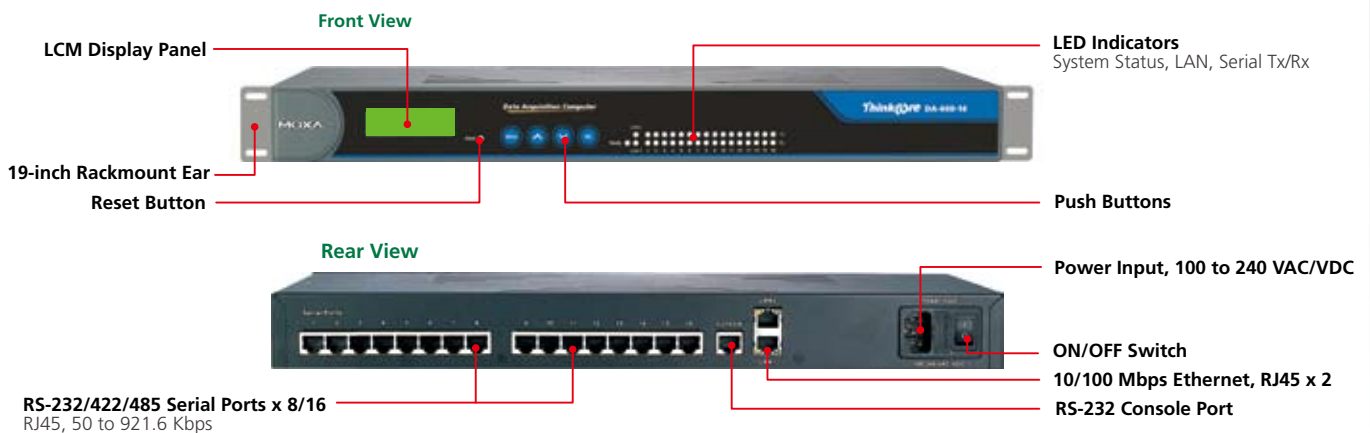*Microsoft* **Windows CE 5.0**   RoHS   CE   FC   c(UL)us LISTED   TÜV Rheinland Product Safety   BAUART GEPRÜFT TYPE APPROVED

⠿ Overview

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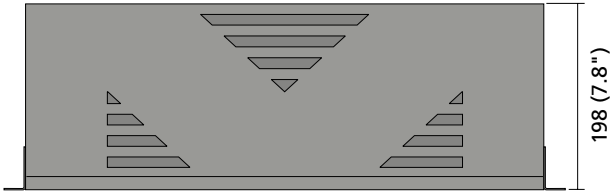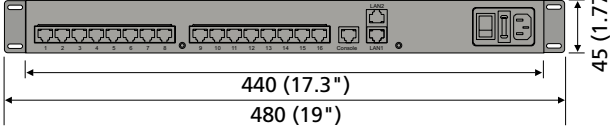
⠿ DA-660 Appearance

Front View

LCM Display Panel

19-inch Rackmount Ear

Reset Button

LED Indicators
System Status, LAN, Serial Tx/Rx

Push Buttons

Rear View

Power Input, 100 to 240 VAC/VDC

ON/OFF Switch

10/100 Mbps Ethernet, RJ45 x 2

RS-232 Console Port

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

⋮ Dimensions

Unit = mm (in)

DA-660-8

DA-660-16

198 (7.8")

DA-660-8

DA-660-16

440 (17.3")
480 (19")
45 (1.77")

⋮ Pin Assignment

Serial Port, RJ45 Connector

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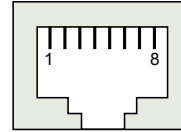
PIN	RS-232	RS-422	RS-485
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TxD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

⋮ Hardware Specifications

System
CPU: Intel XScale IXP-422 266 MHz
DRAM: 128 MB onboard
Flash: 32 MB onboard
LCM: 2 x 16 Text Mode
Keypad: 4 membrane buttons
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: 10/100 Mbps x 2, RJ45
Protection: Built-in 1.5 KV magnetic isolation protection

Serial Communication
Serial Ports: RS-232/422/485 x 16, software-selectable, RJ45, (8 for DA-660-8)
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 ADDC™
Speed: 50 bps to 921.6 Kbps, supports Any Baudrate

LEDs
System: Ready x 1
LAN: 10M/100M x 2

Serial: TxD x 16, RxD x 16 (8 for DA-660-8)

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

Mechanical
Dimensions (WxDxH):
480 x 198 x 45 mm (19 x 7.8 x 1.77 in)
(including rackmount ears)
440 x 198 x 45 mm (17.3 x 7.8 x 1.77 in)
(without rackmount ears)
Weight: 2.6 kg
Construction Material: SECC sheet metal, 1 mm
Mounting: Standard 19-inch rackmount

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

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:

Watchdog Timer (WDT), UART, RTC, Buzzer, LCM, Keypad

MOXA 2G NPort Real TTY Driver

Windows CE 5.0

Boot Loader: Redboot

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

File Systems: TFAT (on-board flash)

Protocol Stacks: 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, offering 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

XML, including DOM, XQL, XPATH, XSLT, SAX2

SOAP Toolkit

Winsock 2.2

Device Drivers:

Watchdog Timer (WDT) API, UART, RTC, Buzzer, LCM, Keypad

: Ordering Information

ThinkCore DA-660-16-LX

RISC-based 19-inch Rackmount Data Acquisition Computer with 16 Serial Ports, Dual LANs, Linux OS

ThinkCore DA-660-16-CE

RISC-based 19-inch Rackmount Data Acquisition Computer with 16 Serial Ports, Dual LANs, WinCE 5.0

ThinkCore DA-660-8-LX

RISC-based 19-inch Rackmount Data Acquisition Computer with 8 Serial Ports, Dual LANs, Linux OS

ThinkCore DA-660-8-CE

RISC-based 19-inch Rackmount Data Acquisition Computer with 8 Serial Ports, Dual LANs, WinCE 5.0

All items include

- 1 DA-660
- Quick Installation Guide
- 19-inch Rackmount 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
- Power Cord
- Product Warranty Statement

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