

DA-682

x86-based rackmount computer with VGA, 4 Gigabit Ethernet ports, 2 peripheral expansion slots, CompactFlash, USB



- > Intel Celeron M 1 GHz processor with 400/533 MHz FSB
- > Built-in DDR2 SDRAM and industrial flash disk module
- > Quad Gigabit Ethernet ports for network redundancy
- > Software selectable RS-232/422/485 with 2 KV isolation protection
- > PCI expansion slots for inserting expansion modules
- > 1 CompactFlash socket for storage expansion
- > USB 2.0 ports for high speed peripherals, supporting system bootup
- > 19-inch rackmount, 2U high form factor
- > 100/240 VAC/VDC power inputs
- > Ready-to-Run Linux, WinCE 6.0, or Windows XP Embedded platform
- > Fanless Design



Overview

The DA-682 computer is based on the Intel x86 processor and supports VGA, 4 Gigabit Ethernet ports, 8 RS-232/422/485 serial ports with optical isolation, CompactFlash, and USB. The DA-682 comes in a standard 19-inch, 2U high form factor.

With its robust design, the DA-682 is suitable for industrial automation applications that require standard 19-inch rackmount solutions, such as power automation, transportation, and oil and gas. Another plus is that the serial ports come with 2 KV optical isolation protection to guarantee communication reliability in harsh industrial environments.

The DA-682 runs Linux, WinCE 6.0, or Windows XP Embedded (pre-installed), providing a friendly environment for developing sophisticated

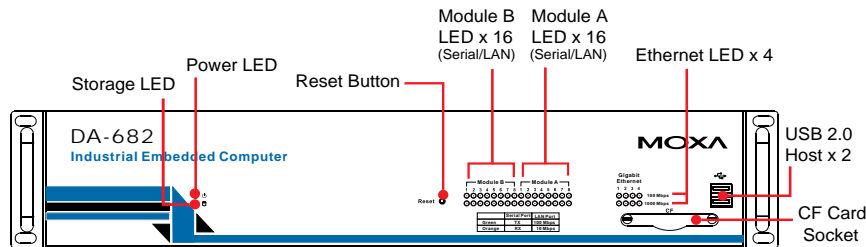
application software. The great software support that Moxa provides makes the programmer's job easier, and helps programmers develop bug-free code quickly and at a lower cost.

The DA-682 comes with 2 PCI slots for inserting expansion modules. Moxa provides a variety of communication modules, including an 8-port RS-232/422/485 module, a 4-port 10/100 Mbps LAN module, and a universal PCI expansion module. The friendly design gives users the advantage of being able to swap out modules quickly and easily.

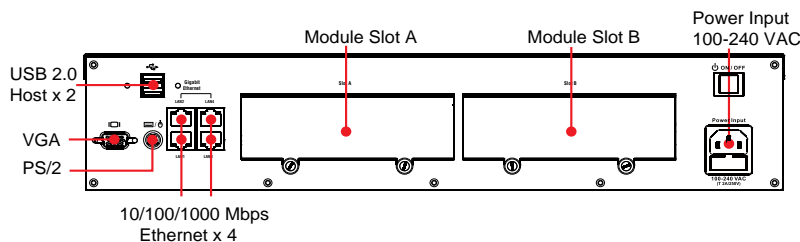
These features make the DA-682 an ideal solution for use with a wide array of industrial automation applications.

Appearance

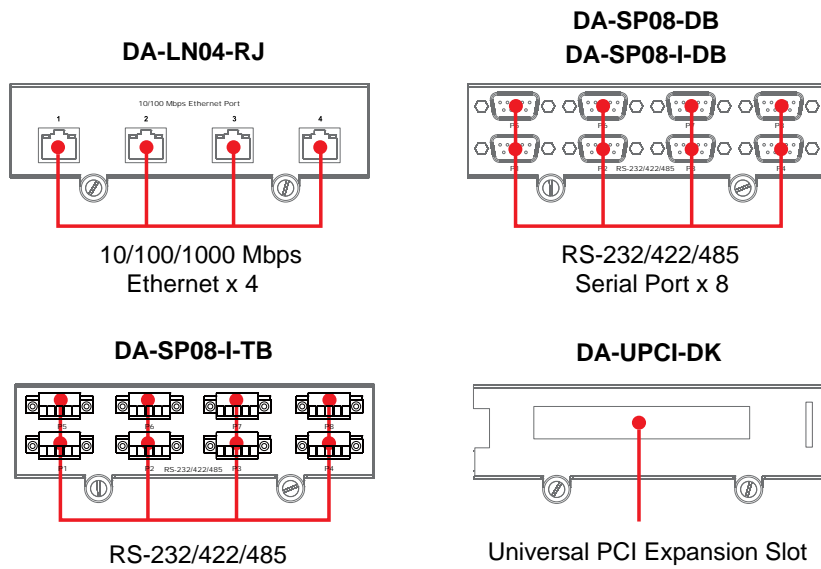
Front View



Rear View



Expansion Modules



Hardware Specifications

Computer

CPU: Intel Celeron M 1GHz processor
OS (pre-installed): Linux, WinCE 6.0 or Windows XP Embedded SP2
System Chipset: Intel 915GME + ICH6M chipset
FSB: 400/533 MHz
Expansion Bus: Two PCI expansion slots
BIOS: 4 mega-bit Flash BIOS, PCI Plug & Play, ACPI function support
System Memory: 1 x 200-pin DDR2 SODIMM socket supporting DDR2 400/533; up to 1 GB max. (512 MB for XPe/Linux, 256 MB for 6.0)

Storage

Built-in: 256 MB (CE) or 1 GB (XPe/Linux) industrial DOM for OS
CompactFlash: Socket available for storage expansion with DMA mode support

Other Peripherals

USB: USB 2.0 compliant hosts x 4, Type A connector, supports system boot up
KB/MS: 1 PS/2 interface, support standard PS/2 keyboard and PS/2 mouse via Y-type cable (Optional)

Display

Graphics Controller: Integrated graphics with built-in Intel 915GME, and built-in Intel extreme Graphics 2 technology
Display Memory: Dynamic video memory (shares up to 32 MB of system memory)
Display Interface: CRT Interface for VGA output (DB15 female connector)
Resolution: CRT display mode with pixel resolution up to 2548 x 1536 at 75Hz

Ethernet Interface

LAN: Auto-sensing 10/100/1000 Mbps Gigabit Ethernet x 4, using Realtek RTL8110SC Controller
Magnetic Isolation Protection: 1.5 KV built-in

LEDs

System: Power x 1, Storage x 1
Gigabit LAN: 100M x 4, 1000M x 4

Communication: Module A x 16, Module B x 16

Serial: TX/RX
LAN: 10/100M mode

Physical Characteristics

Enclosure: SECC sheet metal (1 mm)
Weight: 7 kg
Dimensions: 440 x 253 x 90 mm (17.32 x 9.96 x 3.54 in) (without rackmount ear)
Mounting: Standard 19-inch rackmount

Switches and Buttons

Power Switch: on/off (on rear panel)
Reset Button: To reset system hardware (on front panel)

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)
Operating Humidity: 5 to 95% RH
Storage Temperature: Standard Models: -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: 30W (full loading)

Regulatory Approvals

EMC: CE (EN61000-6-4, EN61000-3-2, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A), CCC (GB9254, GB 17625.1)
Safety: UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), LVD (EN60950-1), CCC (GB4943)

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock) with battery lithium backup

Automatic Reboot Trigger: Built-in WDT (watchdog timer) supporting 1-255 level time interval system reset, software programmable

Warranty

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

: DA-SP08-DB/DA-SP08-I-DB/TB (Module with 8 serial ports)

Serial Interface

Number of Ports: 8

Serial Standards: RS-232/422/485 (software-selectable)

Connectors: DB9 male(DB)/Terminal block (TB)

ESD Protection: 15 KV for all signals

Optical Isolation Protection: 2 KV (DA-SP08-I-DB/TB only)

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 (non-standard baudrates supported; 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

: DA-LN04-RJ (Module with 4 LAN ports)

Ethernet Interface

LAN: Auto-sensing 10/100 Mbps Ethernet x 4, RJ45 connectors

Magnetic Isolation Protection: 1.5 KV built-in

: DA-UPCI-DK (Module with 1 Universal PCI expansion slot)

Universal PCI Card Expansion Adapter

Fit-in System: DA-682 Series

PCI Slot: 1

Interface Bus: 32-bit Universal PCI (3.3V and 5V)

: Software Specifications

Windows Embedded CE 6.0

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.

File Server: Enables clients to access files and other resources over the network (Microsoft® Windows® CE)

Web Server (httpd): Includes 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.

Watchdog Service: CPU Hardware function to reset CPU in a user specified time interval (triggered by calling a MOXA library function)

Application Development Environment:

Moxa WinCE 6.0 SDK

C Libraries and Run-times

Component Services (COM and DCOM)

Microsoft® .NET Compact Framework 2.0 SP2

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

SOAP Toolkit Client

Winsock 2.2

Windows XP Embedded

Protocol Stack: DHCP, IPv4, DNS, IPsec, HTTP, TCP, UDP, ICMP, IGMP, ARP, TAPI, TSP, SNMP, NTP, ICS, PPP, CHAP, EAP, SNTP, Telnet, SNTP, FTP, SMTP, PPPoE, PPTP, NetBIOS

File System: NTFS

System Utilities: Windows command shell, Telnet, ftp, web-based administration manager, Wireless Zero Configuration

Supported Services and Daemons:

Telnet Server: Allows users to connect to Telnet servers from remote computers.

IIS Web Server: Allows you to create and manage Web sites.

Terminal Server: Microsoft Terminal Server client application (mstsc.exe).

COM+ Services: The next evolution of Microsoft Component Object Model (COM) and Microsoft Transaction Server (MTS).

Computer Browser Service: Computer browsing functionality exposed by Windows through Microsoft Networking. It allows a client machine to browse its network neighborhood for available computers exposing file and print sharing services.

Disk Management Services: Support for disk and volume management operations. The component implements a Component Object Model (COM) interface that can be used to query and configure disks and volumes, both basic and dynamic. The component also monitors disk arrivals and removals and other changes in the storage subsystem.

Remote Registry Service: Enables remote users to modify registry settings on this computer.

Application Development Environment:

Microsoft .Net Framework 2.0 with service pack 2 (CLR and the .NET Framework class library)
 Active Directory Service Interface (ADSI) Core
 Active Template Library (ATL), ASP.NET 2.0
 Certificate Request Client & Certificate Autoenrollment (CLR and the .NET Framework class library)
 COM APIs
 Common Control Libraries
 Common File Dialogs
 Direct3D, DirectPlay, DirectShow and Direct show filters
 Distributed Transaction Coordinator (MSDTC)
 Enhanced Write Filter (Redirect disk write operations to volatile (RAM)

or non-volatile (disk) storage)
 Event Log, Internet Explorer
 Mapi32 Libraries
 Message Queuing (MSMQ) Core
 Microsoft Visual C++ Run Time Libraries
 Power Management dynamic-link library
 Registry Editor
 RPC
 Smart Card Cryptographic Service Providers
 USB 2.0 core drivers compliant with The USB .95 or 1.0
 Windows API, Media Player 10, Script Engines, and WMI

Linux

Distribution: Debian Etch 4.0 r2

Kernel Version: 2.6.18

Protocol Stacks: TCP, UDP, IPv4, SNMP V1, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSH 1.0/ 2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, PPP, PPPoE

File System: EXT2, 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, supports PHP and XML

OpenVPN: Virtual private network service manager

iptables: Firewall service manager

NAT: Network Address Translation

pppd: dial in/out over serial port daemon & PPPoE

snmpd: snmpd agent daemon

inetd: TCP server manager program

Application Development Environment:

GNU Make 3.8.1 - GNU make utility to maintain groups of programs

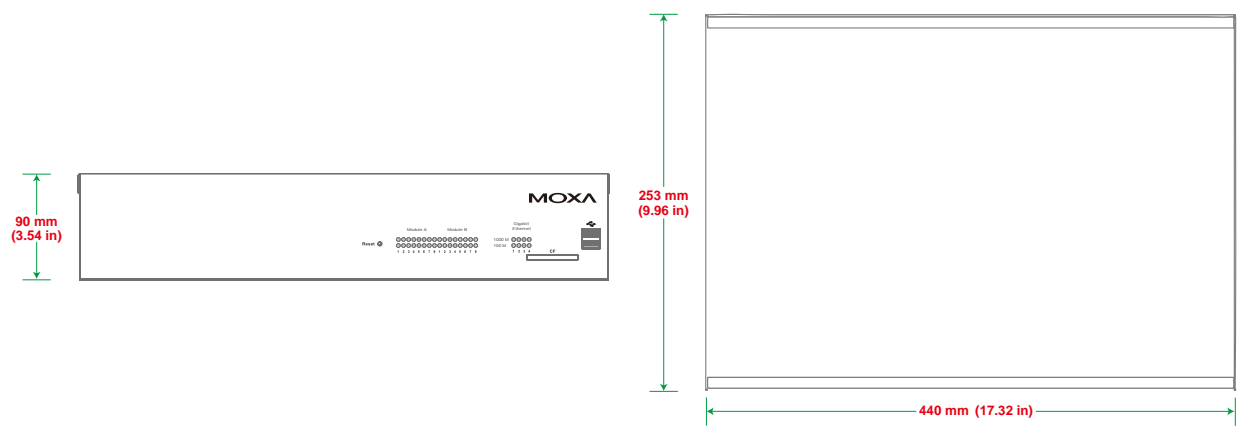
Gcc version 4.1.2 - C/C++ PC Cross Compiler

Glibc version 2.3.6 - POSIX standard C library

Linux Tool Chain: Gcc, Glibc, GDB

Device Drivers: UART, RTC, LAN, Buzzer, CF

Dimensions



Ordering Information

Available Models

DA-682-CE: x86 rackmount computer with VGA, 4 Gigabit Ethernet ports, 2 peripheral expansion slots, CompactFlash, USB, WinCE 6.0

DA-682-XPE: x86 rackmount computer with VGA, 4 Gigabit Ethernet ports, 2 peripheral expansion slots, CompactFlash, USB, WinXPe

DA-682-LX: x86 rackmount computer with VGA, 4 Gigabit Ethernet ports, 2 peripheral expansion slots, CompactFlash, USB, Linux

Package Checklist

- DA-682 embedded computer
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- AC Power cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

Expansion Modules (can be purchased separately)

DA-SP08-I-DB: 8-port RS-232/422/485 serial module with DB9 connector and optical isolation

DA-SP08-DB: 8-port RS-232/422/485 serial module with DB9 connector

DA-SP08-I-TB: 8-port RS-232/422/485 serial module with terminal block connector and optical isolation

DA-LN04-RJ: 4-port 10/100 Mbps LAN module

DA-UPCI-DK: Universal PCI development kit