DA-682 Series

x86 rackmount embedded computers with VGA, 4 Gigabit Ethernet ports, 2 peripheral expansion slots, CompactFlash, USB

TAIWAN EXCELLENCE 2009

> Intel Celeron M 1 GHz processor with 400 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
> 2 PCI expansion slots for 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 or Windows XP Embedded platform
> Fanless design

Microsoft® Windows® Embedded   CCC   e   RoHS   c UL us LISTED   CE   FC

Overview

The DA-682 computers are based on the Intel x86 processor and support 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 their robust design, the DA-682 computers are 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.
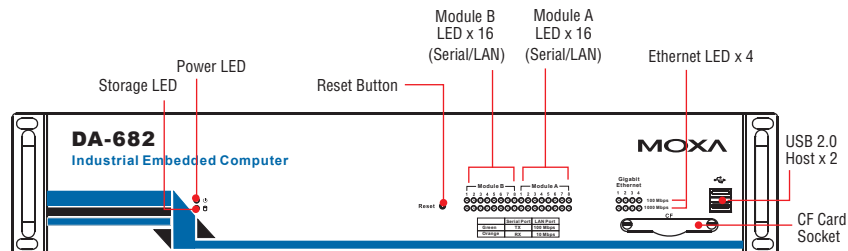
The DA-682 computers run Linux or Windows XP Embedded (pre-installed), providing a friendly environment for developing sophisticated application software. The great software support that Moxa provides makes the programmer's job easier, and helps programmers develop bug-free code quickly and at a lower 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.
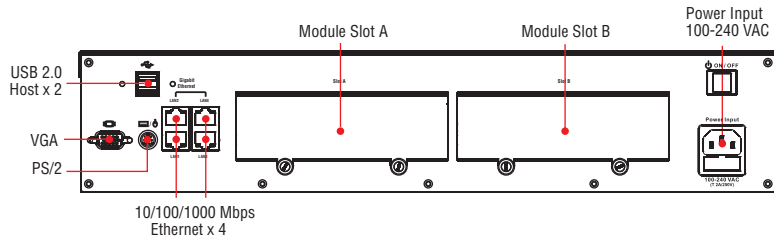
These features make the DA-682 an ideal solution for use with a wide array of industrial automation applications.

Appearance

Front View

MOXA®

Rear View

Power Input
100-240 VAC

Module Slot A

Module Slot B

USB 2.0 Host x 2

VGA

PS/2

10/100/1000 Mbps
Ethernet x 4

Hardware Specifications

Computer
CPU: Intel Celeron M 1 GHz processor
OS (pre-installed): Linux, WinCE 6.0, or Windows XP Embedded SP2
System Chipset: Intel 915GME + ICH6M chipset
BIOS: 4 mega-bit Flash BIOS, PCI Plug & Play, ACPI function support
FSB: 400/533 MHz
System Memory: 1 x 200-pin DDR2 SODIMM socket supporting DDR2 400/533; up to 1 GB max. (512 MB for WinXPe/Linux, 256 MB for WinCE 6.0)
USB: USB 2.0 compliant hosts x 4, Type A connector, supports system boot up

Storage
Built-in: 256 MB (CE) or 1 GB (WinXPe/Linux) industrial DOM for OS
Storage Expansion: CompactFlash socket

Other Peripherals
KB/MS: 1 PS/2 interface, supports standard PS/2 keyboard and PS/2 mouse

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 75 Hz

Ethernet Interface
LAN: 4 auto-sensing 10/100/1000 Mbps Gigabit ports (Realtek RTL8110SC controller)
Magnetic Isolation Protection: 1.5 KV built-in

LEDs
System: Power, Storage
Gigabit LAN: 100M x 4, 1000M x 4
LAN: 10/100M mode
Serial: TX/RX
Communication: Module A x 16, Module B x16

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

Physical Characteristics
Housing: SECC sheet metal (1 mm)
Weight: 7 kg
Dimensions: 440 x 315 x 90 mm (17.32 x 12.40 x 3.54 in) (without rackmount ears)
Mounting: Standard 19-inch rackmount

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: 2 g rms @ IEC-68-2-34, random wave, 5-500 Hz, 1 hr per axis
Anti-shock: 20 g @ IEC-68-2-27, half sine wave, 11 ms

Power Requirements
Input Voltage: 100 to 240 VAC/VDC auto-ranging (47 to 63 Hz for AC input)
Power Consumption: 30 W (full loading)

Standards and Certifications
Safety: UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)
EMC: EN 61000-6-4, EN 61000-3-2, 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) with battery lithium backup
Automatic Reboot Trigger: Built-in WDT (watchdog timer) supporting 1-255 level time interval system reset, software programmable
MTBF (mean time between failures): 134,407 hrs

Warranty
Warranty Period: 3 years
Details: See www.moxa.com/warranty

Software Specifications

Linux
OS: Linux 2.6.18, Debian Etch 4.0
File System: EXT2, JFFS2
Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1/v2c/v3, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE
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).
File Server: Enables remote clients to access files and other resources over the network
Watchdog: Features a hardware function to trigger system reset in a user specified time interval (Moxa API provided)
Application Development Software:
• Moxa API Library (Watchdog timer, Moxa serial I/O control)
• GNU C/C++ cross-compiler
• GNU C library
• Perl

Windows XP Embedded

OS: Windows XP Embedded
File System: NTFS
Internet Protocol Suite: DHCP, DNS, FTP, HTTP, SNTP, NTP, Telnet, SMTP, SNMPv2, TCP, UDP, IPv4, ICMP, IGMP, IPsec, TAPI, ICS, PPP, CHAP, EAP, PPPoE, PPTP, NetBIOS
Web Server (IIS): Allows users to create and manage websites
Remote Registry Service: Enables remote users to modify registry settings on this computer
Watchdog: Features a hardware function to trigger system reset in a user specified time interval (Moxa API provided)
**Enhanced Writer Filter:** Redirect disk write operations to volatile (RAM) or non-volatile (disk) storage

Application Development Software:
• Moxa API Library
• Microsoft .Net Framework 2.0 with SP 2
• Active Directory Service Interface (ADSI) Core
• Active Template Library (ATL), ASP.NET 2.0
• Common Control Libraries
• Common File Dialogs
• Direct3D, DirectPlay, DirectShow, and Direct show filters
• Mapi32 Libraries
• Message Queuing (MSMQ) Core
• Microsoft Visual C++ Run Time Libraries
• Power Management dynamic-link library
• RPC
• Windows API, Script Engines, and WMI

Dimensions

Unit: mm (inch)

315 (12.40)

440 (17.32)

90 (3.54)
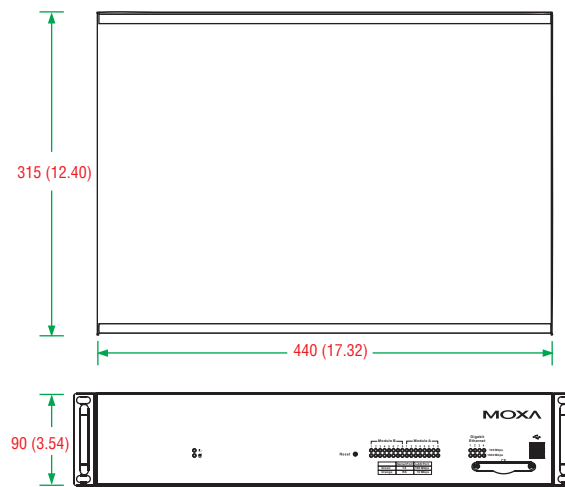
: Ordering Information

Available Models

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

Expansion Modules (can be purchased separately)

DA-SP08-I-DB: 8-port RS-232/422/485 serial module with DB9 connector and digital 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 digital isolation
DA-SP38-I-TB: 8-port RS-422/485 serial module with terminal block connector and digital isolation
DA-SW08-RJ: 8-port 10/100 Mbps unmanaged switch module
DA-LN04-RJ: 4-port 10/100 Mbps LAN module
DA-UPCI-DK: Universal PCI development kit
DA-FX04-MM-ST-T: 4-port (100BaseFX) fiber LAN module with multi-mode, ST connector, supports IP Teaming

Package Checklist

• DA-682 embedded computer
• Rackmount kit
• Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
• AC power cable
• Documentation and software CD or DVD
• Quick installation guide (printed)
• Warranty card