DA-682A Series

x86 2U 19 inch rackmount computer with Intel® i7 CPU, 6 Gigabit Ethernet ports, 2 PCI expansion slots, fanless design

> 2nd generation Intel core processors (Sandy Bridge)
> Built-in DDR3 SDRAM and industrial DOM
> 6 Gigabit Ethernet ports for network redundancy
> 2 PCI expansion slots for expansion modules
> 1 CompactFlash socket for storage expansion
> 4 high speed, system-bootable USB 2.0 ports
> 19 inch 2U rack-mountable case
> 100/240 VAC power inputs
> Ready-to-Run Linux or Windows Embedded Standard 7 platform
> Fanless design

Windows® Embedded Standard 7 · Linux · CCC · e · RoHS · c UL us LISTED · CE · FC

Overview

The DA-682A series of computers are x86 platforms with VGA, 6 Gigabit Ethernet ports, CompactFlash, USB, and two PCI ports for DA Series expansion modules. The DA-682A comes in a standard 19 inch 2U rack-mountable case.

With their robust design, DA-682A computers are specialized for industrial automation applications: power substations, transportation and shipping, and oil and gas production and supply.
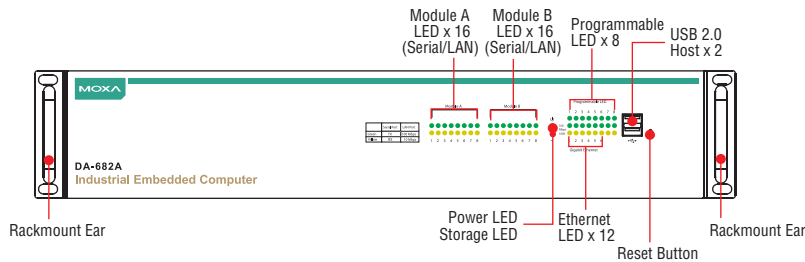
The DA-682A runs either Linux or Windows Embedded Standard 7, providing a friendly environment for developing sophisticated application software. Moxa's ready-to-run software and readily available after-service support makes the programmer's job easier, helping programmers develop bug-free code quickly and at a lower cost. In addition, the DA-682A also comes with three different CPU options, and basic models that allow system designers to install the DOM, RAM, and operating system according to their specific requirements. This is particularly flexible for building custom industrial solutions.
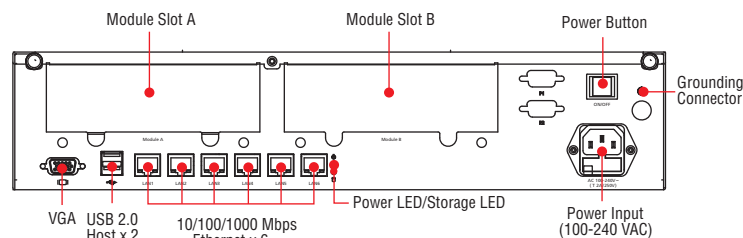
The DA-682A comes with 2 PCI ports that accept DA series expansion modules. Moxa provides a variety of communication modules for the DA series, including an 8-port RS-232/422/485 module, a 4-port 10/100 Mbps LAN module, and a universal PCI expansion module. This friendly design gives users the advantage of being able to swap out modules quickly and easily, making the DA-682A an ideal solution for a wide array of industrial automation applications.

Appearance

Front View

Module A LED x 16 (Serial/LAN)
Module B LED x 16 (Serial/LAN)
Programmable LED x 8
USB 2.0 Host x 2
DA-682A Industrial Embedded Computer
Rackmount Ear
Power LED Storage LED
Ethernet LED x 12
Reset Button
Rackmount Ear

Rear View

Module Slot A
Module Slot B
Power Button
Grounding Connector
VGA
USB 2.0 Host x 2
10/100/1000 Mbps Ethernet x 6
Power LED/Storage LED
Power Input (100-240 VAC)

MOXA®

Hardware Specifications

Computer

CPU: 2nd generation Intel core processors (Sandy Bridge)
• Intel Celeron 827E, 1.4 GHz single core processor
• Intel Celeron 847E, 1.1 GHz dual core processor
• Intel Core i7-2610UE, 1.5 GHz dual core processor
OS: Linux or Windows Embedded Standard 7 (pre-installed)
Note: The OS is pre-installed.
System Chipset: Intel HM65
BIOS: 64 Mbit Flash BIOS, PCI Plug & Play, ACPI
System Memory: 4 GB capacity, 1 GB (LX) / 2 GB (W7E) pre-installed: 1 slot of 4 GB DDR3-1066/1333 SO-DIMM SDRAM M
USB: 4 USB 2.0 ports, system bootable, type A connector

Storage

Built-in: 2 GB (LX) / 8 GB (W7E) industrial DOM for read-only OS volume
Storage Expansion:
• 1 x CompactFlash socket
• 2 x SATA-300 connector

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: 6 auto-sensing 10/100/1000 Mbps ports
Magnetic Isolation Protection: 1.5 kV built-in

LEDs

System: Power, Storage
LAN: 100/1000M mode
Programmable: 8 LEDs
Communication: Module A x 16, Module B x 16

Switches and Buttons

Power Button: On/Off (on rear panel)
Reset Button: Soft reboot (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 rack

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 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 watchdog timer, configurable for restarts at 1 to 255 second intervals

Warranty

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

Software Specifications

Linux

OS: Linux Debian 7
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
Secure Shell for Remote Access: SSH allows remote logins to a secure encrypted console from any connected network
Dial-up Networking: PPP Daemon for Linux that allows Unix machines to connect to the Internet through dialup lines, using the Point-to-Point Protocol (PPP). 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: A watchdog timer that triggers a system reset upon software freezes, for both specific applications and system-wide failures.
Application Development Software:
• Moxa API Library (Watchdog timer, Moxa serial I/O control)
• GNU C/C++ cross-compiler
• GNU C library
• Perl

Windows Embedded Standard 7

Core OS:
• Windows 7 Embedded, 32 bit
• Sensor and Location Platform
• Remote Procedure Call

Applications and Services Development:
• .Net Framework 3.5
• Remote Desktop Protocol 7.1
• COM OLE Application Support
• COM+ Application Support
• MSMQ
Internet Services:
• Internet Explorer 8.0
• IIS 7.0
File Systems and Data Storage:
• Windows Data Access Components
• Windows Backup and Restore
Diagnostics:
• Common Diagnostic Tools
• Problem Reports and Solutions
Fonts:
• Chinese (Trad. and Simp.), Middle East, South East Asian, and South Asian Fonts
• True Type Fonts
Graphics and Multimedia:
• MPEG DTV-DVD Audio Decoder (MPEG-2, AAC)
• MPEG Layer-3 Audio Codecs(MP3)
• MPEG4 Decoders
• Windows Media Video VC-1 (WMV) Codecs
• DirectX and Windows Device Experience
• Windows Media Player 12
International:
• IME Simplified Chinese Support
• IME Traditional Chinese Support

Management:
• Group Policy Management
• Windows Management Instrument (WMI)
• Windows Update

Networking:
• Extensible Authentication Protocol (EAP)
• Internet Authentication Service
• Telnet Server
• Bluetooth
• Domain Services
• Network Access Protection
• Network and Sharing Center
• Quality of Service
• Remote Access Service (RAS)
• Telephony API Client
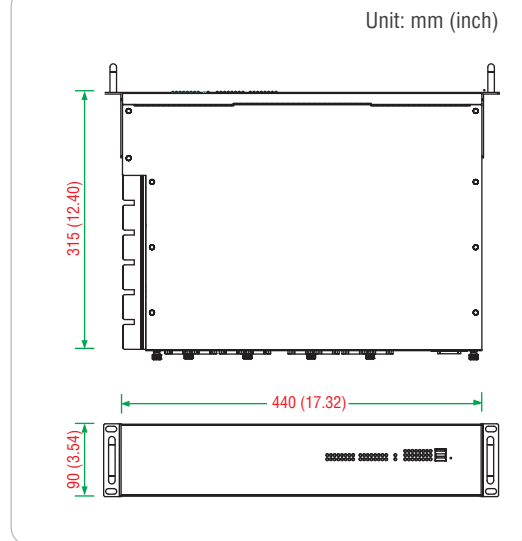• Windows Firewall
• Wireless Networking

Security:
• Credential Roaming Service
• Credentials and Certificate Management
• Windows Authorization Manager (AZMAN)
• Windows Security Center
• Active Directory Rights Management
• Security Base
• Encrypted File System (EFS)

Embedded Features:
• Enhanced Write Filter(EWF)
• File-Based Write Filter (FBWF)
• Message Box Default Reply
• Registry Filter
• WSDAPI for .NET

Embedded Self-Health Diagnostics: SNMP-based remote scripting layer for monitoring, reporting, and control

Dimensions

Unit: mm (inch)

315 (12.40)

440 (17.32)

90 (3.54)

: Ordering Information

Available Models

DA-682A-C0: Rackmount computer with Celeron 827E, 1.4 GHz, single core CPU, without DOM/RAM/OS, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket

DA-682A-C0-LX: Rackmount computer with Celeron 827E, 1.4 GHz, single core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 1 GB system memory, 2 GB Linux Debian 7 pre-installed DOM

DA-682A-C0-W7E: Rackmount computer with Celeron 827E, 1.4 GHz, single core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 2 GB system memory, 8 GB Windows Embedded Standard 7 pre-installed DOM

DA-682A-C1: Rackmount computer with Celeron 847E, 1.1 GHz, dual core CPU, without DOM/RAM/OS, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket

DA-682A-C1-LX: Rackmount computer with Celeron 847E, 1.1 GHz, dual core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 1 GB system memory, 2 GB Linux Debian 7 pre-installed DOM

DA-682A-C1-W7E: Rackmount computer with Celeron 847E, 1.1 GHz, dual core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 2 GB system memory, 8 GB Windows Embedded Standard 7 pre-installed DOM

DA-682A-C7: Rackmount computer with Core i7-2610UE 1.5 GHz, dual core CPU, without DOM/RAM/OS, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket

DA-682A-C7-LX: Rackmount computer with Core i7-2610UE 1.5 GHz, dual core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 1 GB system memory, 2 GB Linux Debian 7 pre-installed DOM

DA-682A-C7-W7E: Rackmount computer with Core i7-2610UE 1.5 GHz, dual core CPU, VGA, 6 Gigabit LANs, USB x 4, CompactFlash socket, 2 GB system memory, 8 GB Windows Embedded Standard 7 pre-installed DOM

Expansion Modules (can be purchased separately)

DA-SP08-I-EMC4-DB: 8-port RS-232/422/485 serial module with DB9 connector and isolation; suitable for EMC Level 4 environments

DA-SP08-I-EMC4-TB: 8-port RS-232/422/485 serial module with terminal block connector and isolation; suitable for EMC Level 4 environments

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

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

DA-SP08-I-TB: 8-port RS-422/485 serial module with digitally isolated terminal block

DA-SP38-I-TB: 8-port RS-422/485 serial module with digitally isolated terminal block

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

Optional Accessories (can be purchased separately)

DA-682A HDD Kit: Hard disk installation package

Package Checklist

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

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