

# 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



## 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.

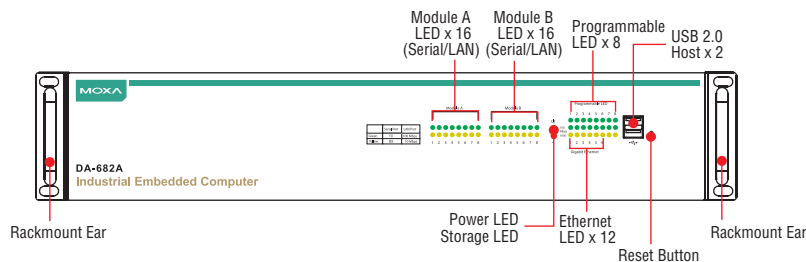
The DA-682A runs either Linux or Windows Embedded Standard 7, providing a friendly environment for developing sophisticated application software. Moxa's ready-to-run software and readily available after-service support makes the programmer's job easier, helping programmers develop bug-free code quickly 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.

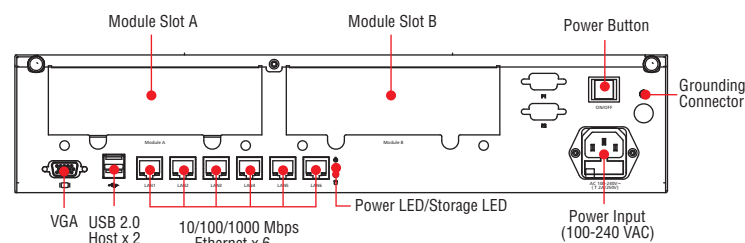
The DA-682A comes with 2 PCI ports that accept DA series expansion modules. Moxa provides a variety of communication modules for the DA series, including an 8-port RS-232/422/485 module, a 4-port 10/100 Mbps LAN module, and a universal PCI expansion module. This friendly design gives users the advantage 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



### Rear View



## 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 (pre-installed):** Linux or Windows Embedded Standard 7

**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](http://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

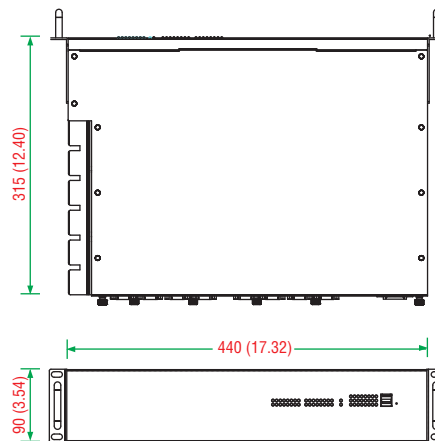
- Windows Authorization Manager (AZMAN)
- Windows Security Center
- Active Directory Rights Management
- Security Base
- Encrypted File System (EFS)

**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)

**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-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)

**FK-76127-01:** 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