

DA-685 Series

x86 rackmount substation computers with VGA, 2 RS-232/422/485 and 6 RS-485 serial ports, 6 LAN Ports, CompactFlash, USB



- > Intel Atom D510 1.66 GHz processor
- > 1 DDR2 SO-DIMM sockets supporting DDR2 667 up to 2 GB (max.)
- > 6 10/100/1000 Mbps Ethernet ports
- > 2 RS-232/422/485 serial ports (DB9 male)
- > 6 RS-485 serial ports (terminal block)
- > 2 USB 2.0 ports for high speed peripherals
- > CompactFlash socket for storage expansion
- > 1 SATA interface for hard disk drive expansion
- > EMC Level 4 certified



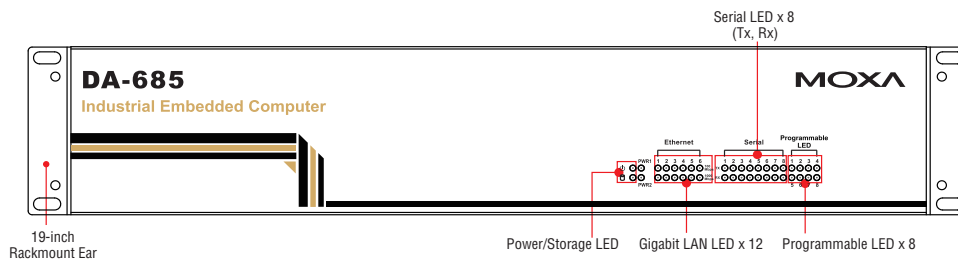
Overview

DA-685 industrial computers excel in a wide array of power automation applications. The DA-685 series is based on the Intel x86 processor and supports VGA, 6 Gigabit Ethernet ports, 2 RS-232/422/485 and 6 RS-485 serial ports, CompactFlash, and USB. The computers come standard in a 19-inch, 2U high form factor, and the Intel Atom processor gives them enough punch to perform demanding industrial tasks without consuming a lot of power.

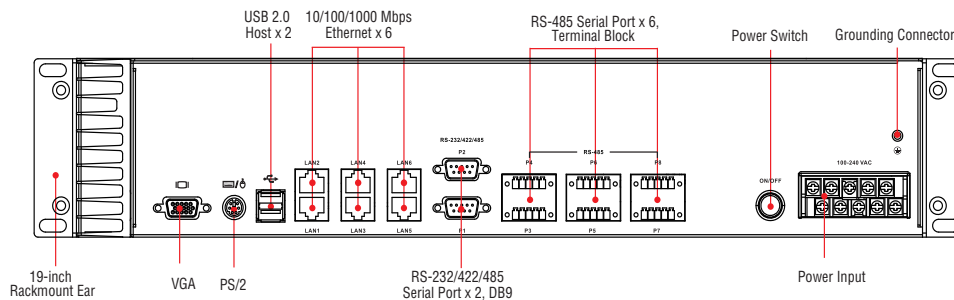
The DA-685 computer are pre-installed with Linux, Windows Embedded Standard 2009, or Windows Embedded Standard 7 operating systems, providing a familiar environment for developing sophisticated application software.

Appearance

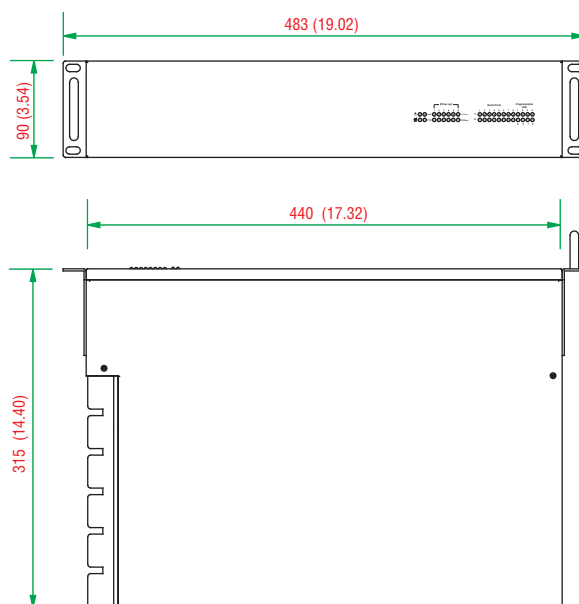
Front View



Rear View



Dimensions



Unit: mm (inch)

Hardware Specifications

Computer

CPU: Intel Atom D510 1.66 GHz processor

OS: Linux, Windows Embedded Standard 2009, or Windows Embedded Standard 7

System Chipset: Intel Pineview-D + ICH8M

BIOS: 16 Mbit Flash BIOS, PCI Plug & Play, ACPI function support

FSB: 667 MHz

System Memory: 2 GB capacity, 1 GB (LX and XPE)/ 2 GB (W7E) pre-installed: 1 or 2 slots of 2 GB 200-pin DDR2-667 SO-DIMM

Expansion Bus: PCI/104 interface reserved

USB: USB 2.0 compliant hosts, Type A connector x 2, supports system boot up

Storage

Built-in: 2 GB (LX and XPE) / 8 GB (W7E) industrial DOM onboard to store OS

Storage Expansion: CompactFlash socket for CF card expansion, supporting CF Type-I/II

HDD Support: 1 SATA connector for drive expansion

Other Peripherals

KB/MS: 1 PS/2 interface, supports standard PS/2 keyboard and mouse through Y-type cable

Display

Graphics Controller: Intel® GMA3150 graphics controller on Intel D510 card

Display Interface: VGA output (DB15 female connector)

Resolution: CRT display mode with pixel resolution up to 2048 x 1536 at 75 Hz

Ethernet Interface

LAN: 6 auto-sensing 10/100/1000 Mbps ports

Magnetic Isolation Protection: 1.5 kV built-in

Serial Interface

Serial Standards:

- 2 RS-232/422/485 ports (DB9 male)
- 6 RS-485-2W ports (terminal block)

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND, RI

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

LEDs

System: Power, Storage

Gigabit LAN: 100M x 6, 1000M x 6

Serial: TX/RX

Programmable: LED x 8

Switches and Buttons

Power Switch: on/off (on rear panel)

Physical Characteristics

Housing: SECC sheet metal (1 mm)

Weight: 4 kg

Dimensions: 315 x 440 x 90 mm (12.40 x 17.32 x 3.54 in) (without rackmount ears)

Mounting: Standard 19-inch rackmount

Environmental Limits

Operating Temperature: -10 to 55°C (14 to 131°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, 50/60 Hz, 0.9-0.4 A

Power Consumption: 40 W

Standards and Certifications

Safety: LVD, UL, cUL, CCC

EMC: FCC, CE (Class A)

Green Product: RoHS, CRoHS, WEEE

Reliability

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

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

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

• Software Specifications

Linux

OS: Debian 5 Linux, Lenny; kernel 2.6.26

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, PTP

Internet Security: OpenVPN, iptables firewall

Web Server (Apache): Allows you to create and manage web sites; supports PHP and XML

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

Terminal Server (SSH): Provides secure encrypted communications between two un-trusted hosts over an insecure network

Windows XP Embedded

OS: Windows Embedded Standard 2009

File System: NTFS

Internet Protocol Suite: HCP, DNS, FTP, HTTP, SMTP, NTP, Telnet, SMTP, SNMPv2, TCP, UDP, IPv4, ICMP, IGMP, IPsec, TAPI, ICS, PPP, CHAP, EAP, PPPoE, PPTP, NetBIOS, PTP

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

File-based Writer Filter: Redirects all write requests directed at protected volumes to the overlay cache, which records and displays the changes while preserving the protected status of the target volume.

Application Development Software:

- Moxa API Library
- Microsoft .Net Framework 3.5 with SP1
- Active Directory Service Interface (ADSI) Core
- Active Template Library (ATL)
- 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

Windows Embedded Standard 7

Core OS:

- 32-bit support
- Remote Client
- 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.), Japanese, Korean, Western, Middle Eastern, South East Asian, and South Asian 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
- IME Japanese Support
- IME Korean 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

Ordering Information

Available Models

DA-685-XPE: x86 Rackmount Computer with 1.66GHz CPU, VGA, 6 Gigabit Ethernet Ports, 2 RS-232/422/485, 6 2-wire RS-485 Ports, Compact Flash, 2 USB Ports, Single Power Input, Windows Embedded Standard 2009

DA-685-LX: x86 Rackmount Computer with 1.66GHz CPU, VGA, 6 Gigabit Ethernet Ports, 2 RS-232/422/485, 6 2-wire RS-485 Ports, Compact Flash, 2 USB Ports, Single Power Input, Linux

DA-685-W7E: x86 Rackmount Computer with 1.66GHz CPU, VGA, 6 Gigabit Ethernet Ports, 2 RS-232/422/485, 6 2-wire RS-485 Ports, Compact Flash, 2 USB Ports, Single Power Input, Windows Embedded Standard 7

Optional Accessories (can be purchased separately)

FK-12072-01: Hard disk installation package (8 screws, 4 brass standoffs, 1 SATA cable, 1 hard disk mounting bracket)

Package Checklist

- DA-685 embedded computer
- Rackmount kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- Documentation CD or DVD
- Quick installation guide (printed)
- Warranty card