

DA-710 Series

x86 embedded computers with 2 serial ports, quad LANs, VGA, 4 DIs, 4 DOs, USB, and 4 peripheral expansion slots



- > Intel Celeron M 2.0 GHz processor with 533 MHz FSB
- > 1 X 200-pin DDR2 SODIMM socket, supporting DDR2 533 up to 2 GB
- > 4 PCI slots for expansion modules
- > Quad 10/100/1000 Mbps Ethernet for network redundancy
- > 1 CompactFlash socket, 1 IDE, and 2 serial ATA-150 connectors for storage expansion
- > 4 USB 2.0 ports for high speed peripherals
- > 4 DIs and 4 DOs
- > Ready-to-Run Linux or Windows Embedded Standard 2009 platform
- > 19-inch rackmount model, 4U high
- > Fanless Design
- > Dual 100/240 VAC/VDC power input



Overview

The DA-710 computer is based on the Intel x86 processor, supports VGA, and comes with 4 Ethernet ports, 2 RS-232 serial ports, CompactFlash, and USB. The DA-710 comes in a standard 19-inch, 4U high form factor, making it an ideal platform for industrial applications.

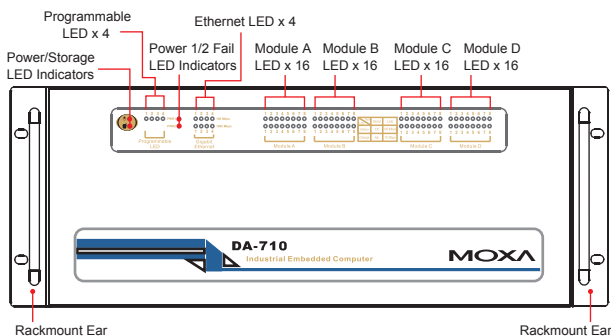
The DA-710 comes with 4 PCI slots for inserting expansion modules. Moxa provides a variety of communication modules, including an 8-port RS-232/422/485 module, a 4-port 10/100 Mbps LAN module, an 8-port RS-422/485 module, an 8-port switch module, and a universal PCI expansion module. The friendly modular design gives

users the advantage of being able to swap out modules quickly and easily.

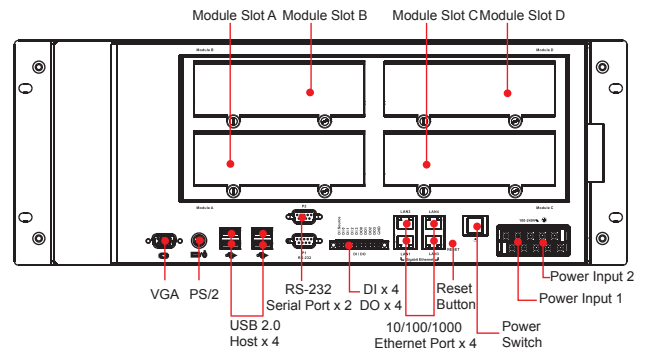
The DA-710 runs Linux, or Windows Embedded Standard 2009 (pre-installed), providing a friendly environment for developing sophisticated application software. The great software support that Moxa provides makes the programmer's job easier, and helps programmers develop bug-free code quickly and at a lower cost.

Appearance

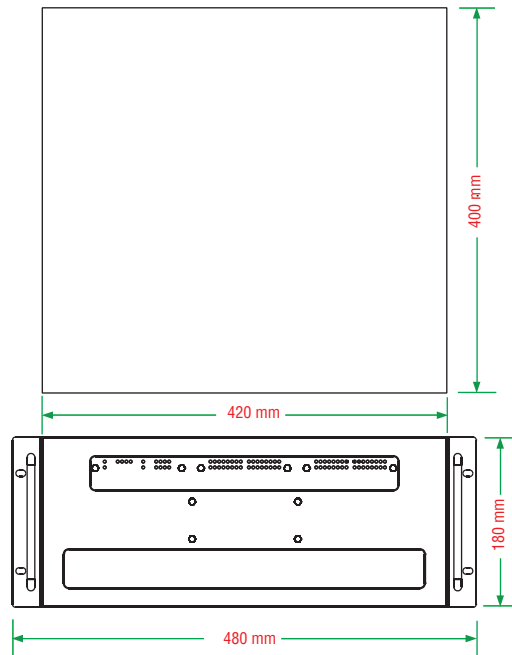
Front View



Rear View



Dimensions (unit = mm)



Hardware Specifications

Computer

CPU: Intel Celeron M 2.0 GHz processor
OS (pre-installed): Windows Embedded Standard 2009, Linux 2.6
System Chipset: Intel GLE960 + ICH8M
BIOS: 8 Mbit SPI Serial Flash, PCI Plug & Play, ACPI function support
FSB: 533 MHz
System Memory: 1 x 200-pin DDR2 SODIMM socket supporting DDR2 533; up to 2 GB max. (1 GB built-in)
USB: USB 2.0 compliant hosts x 4, type A connector, supports system boot up

Storage

Built-in: Onboard industrial DOM to store OS; 1 GB for Linux, 2 GB for XPe
Storage Expansion: CompactFlash socket
HDD Support: 2 x SATA connector, 1 x IDE connector

Other Peripherals

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

Display

Graphics Controller: Integrated Intel graphics media accelerator (GMA X3100)
Display Memory: Dynamic video memory technology
Intel Clear Video Technology: MPEG-2 hardware accelerator, Microsoft DirectX 9
Display Interface: CRT interface for VGA output (DB15 female connector)
Resolution: QXGA maximum with resolution up to 2048 x 1536 at 60 Hz

Ethernet Interface

LAN: 4 auto-sensing 10/100/1000 Mbps ports (RJ45)
Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Serial Standards: 2 RS-232 ports (DB9 male)
ESD Protection: 4 KV for all signals

Serial Communication Parameters

Data Bits: 5, 6, 7, 8
Stop Bits: 1, 1.5, 2
Parity: None, Even, Odd, Space, Mark
Flow Control: XON/XOFF
Baudrate: 50 bps to 115.2 Kbps

Serial Signals

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

Digital Input

Input Channels: 4, source type
Input Voltage: 0 to 30 VDC
Digital Input Levels for Dry Contacts:
 • Logic level 0: Close to GND
 • Logic level 1: Open
Digital Input Levels for Wet Contacts:
 • Logic level 0: +3 V max.
 • Logic level 1: +10 to +30 V (DI Source to DI)
Connector Type: 6-pin screw terminal block (4 points, DI Source, GND)

Isolation: 4 KV optical isolation

Digital Output

Output Channels: 4, sink type
Output Current: Max. 200 mA per channel
On-state Voltage: 24 VDC nominal, open collector to 30 V
Connector Type: 5-pin screw terminal block (4 points, GND)
Isolation: 4 KV optical isolation

LEDs

System: Power x 1, Storage x 1
LAN: 100M x 4, 1000M x 4
Power Failure: LED x 2

Programmable: LED x 4

Module: Module A x 16, Module B x 16, Module C x 16, Module D x 16

Physical Characteristics

Housing: SECC sheet metal (1 mm)

Weight: 14 kg

Dimensions:

- Without ears: 400 x 420 x 180 mm (15.75 x 16.54 x 7.09 in)
- With ears: 400 x 480 x 180 mm (15.75 x 18.90 x 7.09 in)

Mounting: Standard 19-inch rackmount

Environmental Limits

Operating Temperature: -10 to 50°C (14 to 122°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 80°C (4 to 176°F)

Power Requirements

Input Voltage: Single or dual inputs, 100 to 240 VAC/VDC auto-ranging, 47 to 63 Hz, terminal block

Power Consumption: 60 W

Regulatory Approvals

EMC: CE (EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 55024), FCC (Part 15 Subpart B, CISPR 22 Class A, ANSI C63.4)

Safety: UL/cUL (UL 60950-1, CSA C22.2 No. 60950-1-07), CCC

Green Product: RoHS, CRoHS, WEEE

Reliability

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

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

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

Software Specifications

Linux

Distribution: Debian Lenny 5.0

Kernel Version: 2.6.26

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

File System: EXT2 (1G DOM)

System Utilities: bash, busybox, login, telnet, ftp, ssh, openssh, inetd, apt, apt-utils, dpkg, grub, udev

telnetd: telnet Server daemon

ftpd: FTP server daemon

sshd: secure shell server

Apache: web server daemon, supporting 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

pppoe: PPP over ethernet

tftp/ftpd: Trivial file transfer protocol client/server

snmpd: snmpd agent daemon

usbmount: supports USB PnP

DHCP Client: dhcp3-client

cron: to manage regular background processing

grep: NU grep, egrep, and fgrep

minicom: friendly serial communication program

watchdog: software watchdog

inetd: TCP server manager program

Application Development Environment: GNU Make 3.8.1 (GNU make utility to maintain groups of programs)

Automatic Configuration Script Builder: autoconf 2.13

gcc: GNU C compiler

g++: GNU C++ compiler

libc6-dev: GNU C library (development libraries and headers)

Perl: Practical Extraction and Report Language

Vim: Vi Improved (enhanced vi editor)

Windows XP Embedded

Version: Windows Embedded Standard 2009

System Utilities: Windows command shell, Telnet, ftp, Wireless Zero Configuration

File System: NTFS

Protocol Stack: DHCP, IPv4, DNS, IPsec, HTTP, TCP, UDP, ICMP, IGMP, ARP, TAPI, TSP, SNMP V2, NTP, ICS, PPP, CHAP, EAP, SNTp, Telnet, FTP, SMTP, PPPoE, PPTP, NetBIOS

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. 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 Software:

- 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 USB .95 or 1.0
- Windows API, Media Player 10, Script Engines, and WMI

: Ordering Information

Available Models

DA-710-XPE: x86-based rackmount embedded computer with 2 RS-232 ports, 4 LANs, 4 peripheral expansion slots, 4 DIs, 4 DOs, VGA, CompactFlash, USB, Windows Embedded Standard 2009

DA-710-LX: x86-based rackmount embedded computer with 2 RS-232 ports, 4 LANs, 4 peripheral expansion slots, 4 DIs, 4 DOs, VGA, CompactFlash, USB, Linux 2.6

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

Package Checklist

- 1 DA-710 computer
- Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm
- Quick Installation Guide (printed)
- Document and Software CD or DVD
- Product Warranty Statement (printed)