

# DA-710 Series

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



- > Intel Core 2 Duo T7500 2.2 GHz processor
- > 1 socket of 2GB DDR2-533/667 SODIMM SDRAM
- > 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, 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.

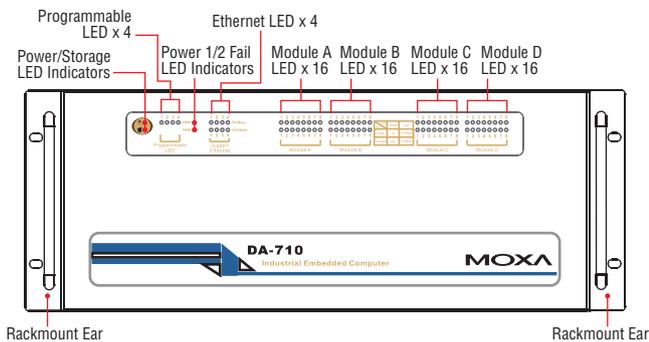
The DA-710 comes with 4 PCI slots for inserting expansion modules. Moxa provides a variety of communication modules, including an 8-port RS-232/422/485 module, a 4-port 10/100 Mbps LAN module, an 8-port RS-422/485 module, an 8-port switch module, and a

universal PCI expansion module. The friendly modular design gives users the advantage of being able to swap out modules quickly and easily.

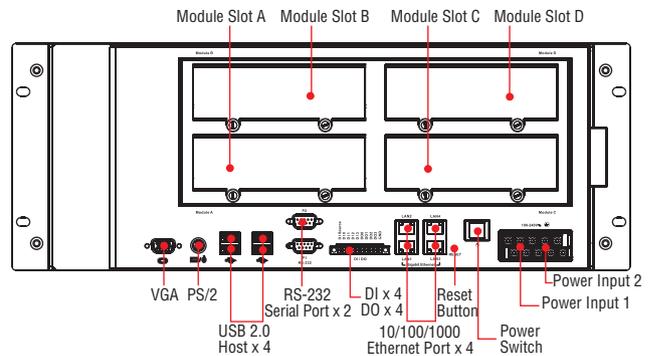
The DA-710 runs Linux, or Windows Embedded Standard 2009 (pre-installed), providing a friendly environment for developing sophisticated application software. The great software support that Moxa provides makes the programmer's job easier, and helps programmers develop bug-free code quickly and at a lower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

## Appearance

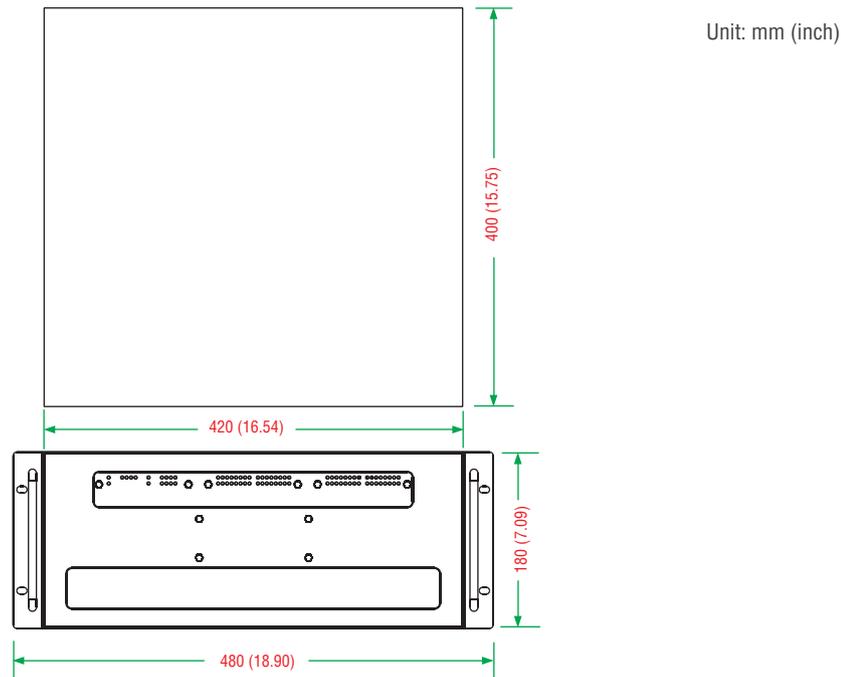
### Front View



### Rear View



## Dimensions



## Hardware Specifications

### Computer

**CPU:** Intel Core 2 Duo T7500 2.2 GHz processor

**OS:** Windows Embedded Standard 2009, Linux 2.6

*Note: The OS is pre-installed.*

**System Chipset:** Intel GME965 + ICH8M

**BIOS:** 8 Mbit SPI Serial Flash, PCI Plug & Play, ACPI function support

**FSB:** 800 MHz

**System Memory:** 2 GB capacity, 1 GB pre-installed: 1 slot of DDR2-533/667 200-pin SO-DIMM SDRAM

**USB:** USB 2.0 hosts x 4, Type A connector, supports system boot up

### Storage

**Built-in:** 2 GB industrial DOM onboard to store OS

**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:** Auto-sensing 10/100/1000 Mbps ports (RJ45) x 4

**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

**Programmable:** LED x 4

**Power Failure:** LED x 2

**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 (31.11 lb)

**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)

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

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

## 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

## Standards and Certifications

**Safety:** UL 60950-1, CSA C22.2 No. 60950-1-07, CCC (GB4943, GB9254, GB17625.1)

**EMC:** EN 61000-6-2/6-4

**EMI:** CISPR 22, FCC Part 15B Class A

**EMS:**

IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m

IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV

IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV

IEC 61000-4-6 CS: Signal: 10 V

IEC 61000-4-8: 20 A/m

IEC 61000-4-9: 300 A/m

IEC 61000-4-11: (AC models only)

**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

**MTBF** (mean time between failures)

**Time:** 118,815 hrs

**Standard:** Telcordia (Bellcore) Standard SR-332

## Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Software Specifications

### Linux

**OS:** Linux 2.6.26, Debian 5 (Lenny)

**Web Server (Apache):** Allows you to create and manage Web sites, supporting PHP and XML

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

**File System:** EXT2

**Internet Protocol Suite:** TCP, UDP, IPv4, SNMP v1/v2c/v3, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE

**Internet Security:** iptables firewall, OpenVPN

**Dial-up Networking:** PPP Daemon for Linux 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 software function to trigger system reset in a user specified time interval (Moxa API provided)

### Application Development Software:

- Moxa API Library
- GNU C/C++ compiler
- GNU C library

### Windows XP Embedded

**OS:** Windows Embedded Standard 2009

**File System:** NTFS

**Internet Protocol Suite:** DHCP, DNS, FTP, HTTP, SNT, 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

**Silverlight 2.0:** A free runtime that powers rich application experiences and delivers high quality, interactive video across multiple platforms and browsers, using the .NET framework

**Remote Desktop:** The Terminal Server Remote Desktop component provides remote access for the desktop of a computer running Terminal Services

**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 Write Filter:** Redirect disk write operations to volatile (RAM) or non-volatile (disk) storage

### Application Development Software:

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

## 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

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

### Package Checklist

- DA-710 embedded computer
- 19-inch rackmount kit
- Ethernet cable: RJ45-to-RJ45 cross-over cable, 100 cm
- Documentation and software CD or DVD
- Quick installation guide (printed)
- Warranty card