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**
### Hardware Specifications

#### Computer

- **CPU**: Intel Core 2 Duo T7500 2.2 GHz processor
- **OS (pre-installed)**: Windows Embedded Standard 2009, Linux 2.6
- **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 compliant 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**: 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
- **Baudrate**: 50 bps to 115.2 kbps

#### Digital Input

- **Input Channels**: 4, source type
- **Input Voltage**: 0 to 30 VDC
- **Input Current**: 200 mA per channel
- **Connector Type**: 6-pin screw terminal block (4 points, DI Source to DI)
- **Isolation**: 4 kV optical isolation

#### Digital Output

- **Output Channels**: 4, sink type
- **Output Voltage**: 24 V DC 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)
- **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 55022 Class A, 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 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):** 118,815 hrs

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

### Software Specifications

**Linux**
- **OS:** Linux 2.6.26, Debian 5 (Lenny)
- **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
- **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.
- **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’, ‘dit’, 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, SNMP, NTP, Telnet, SMTP, SNMIPv2, TCP, UDP, IPv4, ICMP, IGMP, IPsec, TAPI, ICS, PPP, CHAP, EAP, PPoE, PPTP, NetBIOS

### Ordering Information

**Available Models**
- **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, Windows Embedded Standard 2009
- **DA-710-UX:** 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**
- 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**
- 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
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**Package Checklist**
- DA-710 embedded computer
- 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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