

V2426 Series

x86 ready-to-run embedded computers with Intel Atom N270, VGA, DVI-I, audio, 2 LANs, 4 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, CompactFlash, 2 peripheral expansion slots



- > Intel Atom N270 1.6 GHz processor
- > DDR2 SODIMM socket supporting DDR2 533 up to 2 GB (max.)
- > Dual independent displays (VGA + DVI-I)
- > 2 10/100 Mbps Ethernet ports with M12 connectors
- > 4 RS-232/422/485 serial ports (non-standard baudrates supported)
- > 3 USB 2.0 ports for high speed peripherals
- > 6 DIs, 2 DOs
- > CompactFlash socket for storage expansion
- > 1 SATA-II connector for hard disk drive expansion
- > M12 power connector
- > EN50155 certified
- > Ready-to-run Embedded Linux, or Windows Embedded Standard 2009 platform
- > -40 to 70°C wide temperature models available



Overview

The V2426 Series embedded computers are based on the Intel Atom N270 x86 processor, and feature 4 RS-232/422/485 serial ports, dual LAN ports, and 3 USB 2.0 hosts. In addition, the V2426 computers provide VGA and DVI-I outputs, and are EN 50155 certified, making them particularly well-suited for railway and industrial applications.

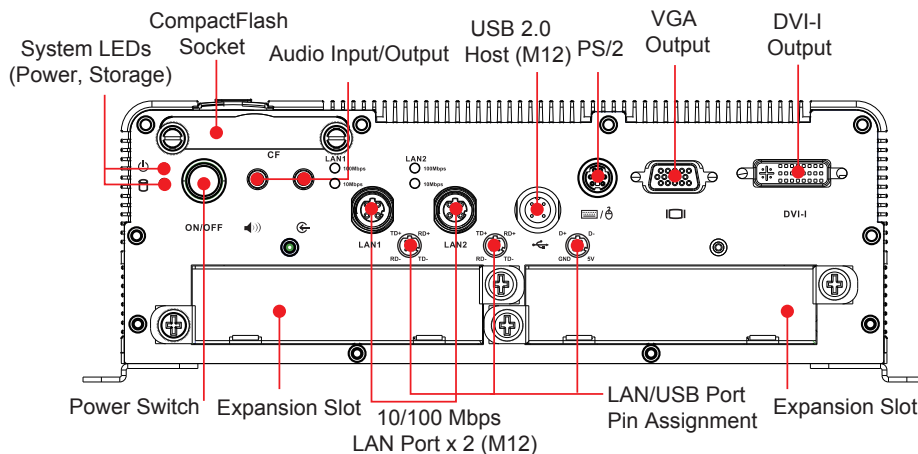
The dual 10/100 Mbps Ethernet ports with M12 connectors offer a reliable solution for network redundancy, promising continuous operation for data communication and management. As an added convenience, the V2426 computers have 6 DIs and 2 DOs for connecting digital input/output devices. In addition, the CompactFlash socket, SATA connector, and USB sockets provide the V2426 computers with the reliability needed for industrial applications that require data buffering and storage expansion. Moreover, the V2426

computers come with 2 peripheral expansion slots for inserting different communication modules, such as a 2-port CAN module, an HSDPA, GPS, WLAN module, an 8+8 port digital input/output module, a 2-port serial module, a mini PCI expansion module, and a mini-PCI Express module, giving greater flexibility for setting up different industrial applications at field sites.

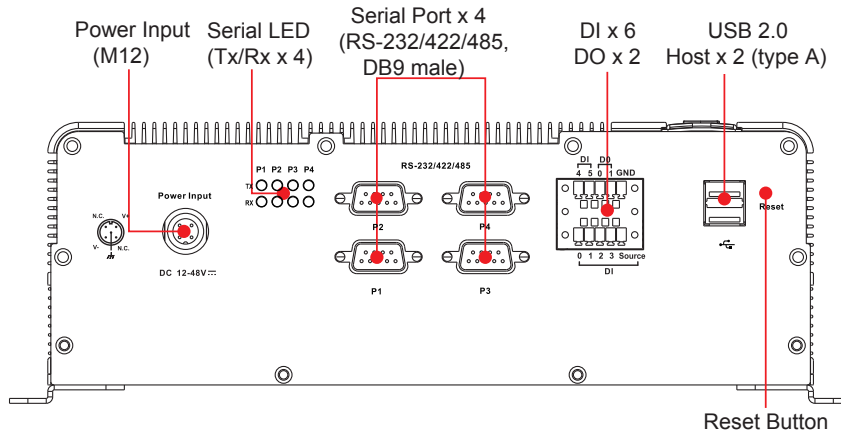
Pre-installed with Linux or Windows Embedded Standard 2009, the V2426 Series provides programmers with a friendly environment for developing sophisticated, bug-free application software at a low cost. Wide temperature models of the V2426 Series that operate reliably in a -40 to 70°C operating temperature range are also available, offering an optimal solution for applications subjected to harsh environments.

Appearance

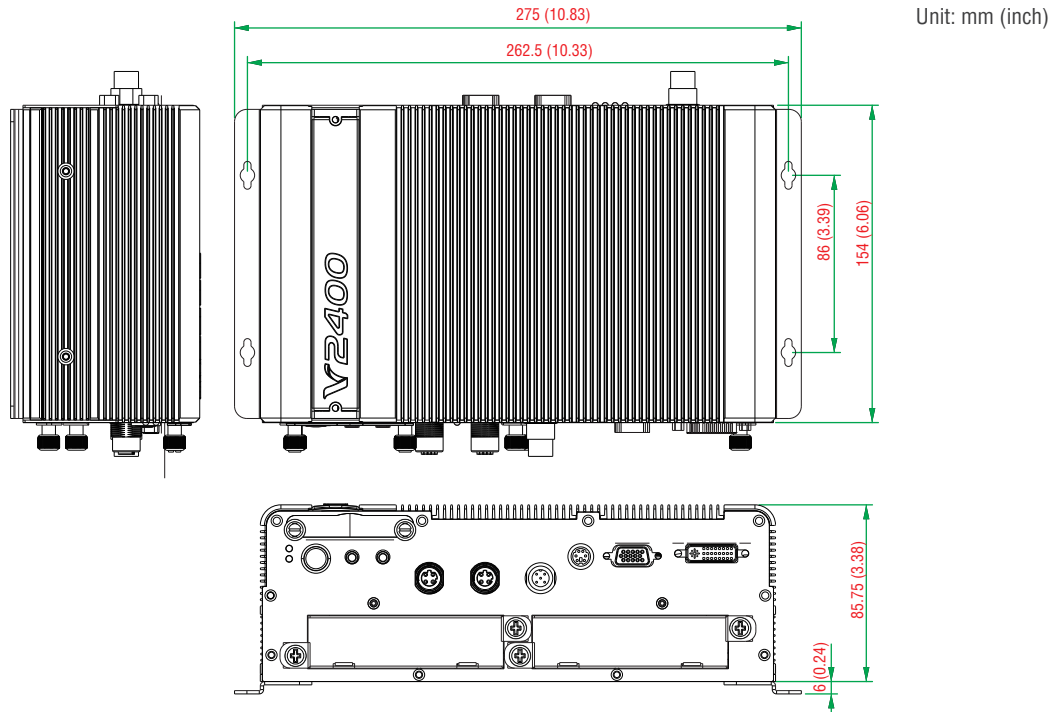
Front View



Rear View



Dimensions



Hardware Specifications

Computer

- CPU:** Intel Atom N270 1.6 GHz processor
- OS (pre-installed):** Linux or Windows Embedded Standard 2009
- System Chipset:** Intel 945GSE + ICH7-M
- BIOS:** 8 Mbit Flash BIOS, PLCC type, ACPI function supported
- FSB:** 533 MHz
- System Memory:** 1 x 200-pin DDR2 SODIMM socket support DDR2 533 up to 2 GB, built-in 1 GB
- Expansion Bus:** PCI interface reserved
- USB:** USB 2.0 compliant hosts, type A connector x 2, supports system boot up, M12 connector x 1

Storage

- Built-in:** 2 GB onboard industrial DOM to store OS
- Storage Expansion:** CompactFlash socket for CF card expansion, supporting CF Type-I/II
- HDD Support:** 1 SATA-II connector for HDD expansion

Other Peripherals

- KB/MS:** 1 PS/2 interface supporting standard PS/2 keyboard and mouse through Y-type cable
- Audio:** Line-in, line-out interface
- Display**
- Graphics Controller:** Intel Gen 3.5 Integrated Graphics Engine, 250 MHz core render clock and 200 MHz core display clock at 1.05-V core voltage
- VGA Interface:** DB15 female connector, up to 2048 x 1536 resolution
- DVI Interface:** DVI-I connector (chrontel CH7307 SDVO to DVI transmitter), up to 1600 x 1200 resolution
- Ethernet Interface**
- LAN:** 2 auto-sensing 10/100 Mbps ports (M12)
- Magnetic Isolation Protection:** 1.5 KV

Serial Interface

Serial Standards: 4 RS-232/422/485 ports*, software selectable (DB9 male)

*COM1's pin 9 signal can be set by jumper as N/C (default), +5 V, or +12 V

ESD Protection: 8 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: RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485

Baudrate: 50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)

Serial Signals

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

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

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

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

Digital Input

Input Channels: 6, source type

Input Voltage: 0 to 30 VDC at 25 Hz

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 V to +30 V (Source to DI)

Isolation: 3 KV optical isolation

Digital Output

Output Channels: 2, sink type

Output Current: Max. 200 mA per channel

On-state Voltage: 24 VDC nominal, open collector to 30 VDC

Connector Type: 10-pin screw terminal block (6 DI points, 2 DO points, DI Source, GND)

Isolation: 3 KV optical isolation

LEDs

System: Power, Storage

LAN: 10M/Link x 2, 100M/Link x 2

Serial: TX x 4, RX x 4

Switches and Buttons

Power Switch: on/off (front panel)

Reset Button: For warm reboot (rear panel)

Physical Characteristics

Housing: Aluminum

Weight: 4 kg

Dimensions:

Without ears: 154 x 250 x 86 mm (6.06 x 9.84 x 3.39 in)

With ears: 154 x 275 x 92 mm (6.06 x 10.83 x 3.62 in)

Mounting: DIN-Rail, wall, VESA

Environmental Limits

Operating Temperature:

Standard models: -25 to 60°C (-13 to 140°F)

Wide temp. models: -40 to 70°C (-40 to 158°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

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

Anti-vibration: EN 50155 standard

Anti-shock: EN 50155 standard

Power Requirements

Input Voltage: 12 to 48 VDC (M12 connector)

Power Consumption: 48 W

4 A @ 12 VDC

2 A @ 24 VDC

1 A @ 48 VDC

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1

EMC: EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN

55024, FCC Part 15 Subpart B Class A

Rail Traffic: EN 50155, EN 50121-3-2, EN 50121-4, IEC 61373

Green Product: RoHS, CRoHS, WEEE

Reliability

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

MTBF (mean time between failures): 192,308 hrs

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

Note: The Hardware Specifications apply to the embedded computer unit itself, but not to accessories. In particular, the wide temperature specification does not apply to accessories such as the power adaptor and cables.

Software Specifications

Linux

OS: Linux 2.6.26, Debian Lenny 5.0

File System: EXT2

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

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

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++ compiler
- GNU C library
- Perl

Windows XP Embedded

OS: Windows Embedded Standard 2009 SP3

File System: NTFS

Internet Protocol Suite: DHCP, DNS, FTP, HTTP, SMTP, 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 Registry Service: Enables remote users to modify registry settings on this computer

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

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 Write Filter: The File Based Write Filter (FBWF) component 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), ASP.NET 2.0
- 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

V2426-XPE: x86 ready-to-run embedded computer with Intel Atom N270, VGA, DVI-I, Audio, 2 LANs, 4 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, CF, 2 peripheral expansion slots, Windows Embedded Standard 2009, -25 to 60°C operating temperature (EN 50155 Class T1)

V2426-LX: x86 ready-to-run embedded computer with Intel Atom N270, VGA, DVI-I, Audio, 2 LANs, 4 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, CF, 2 peripheral expansion slots, Linux 2.6, -25 to 60°C operating temperature (EN 50155 Class T1)

V2426-T-XPE: x86 ready-to-run embedded computer with Intel Atom N270, VGA, DVI-I, Audio, 2 LANs, 4 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, CF, 2 peripheral expansion slots, Windows Embedded Standard 2009, -40 to 70°C operating temperature (EN 50155 Class TX)

V2426-T-LX: x86 ready-to-run embedded computer with Intel Atom N270, VGA, DVI-I, Audio, 2 LANs, 4 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, CF, 2 peripheral expansion slots, Linux 2.6 -40 to 70°C operating temperature (EN 50155 Class TX)

Expansion Modules (can be purchased separately)

EPM-3112: 2 isolated CAN ports, DB9 connector

EPM-3337: HSDPA, GPS, WLAN (11a/b/g/n)

EPM-3438: 8+8 DI/DO with 3 KV digital isolation protection, 2 KHz counter

EPM-3032: 2 isolated RS-232/422/485 ports with DB9 connectors

EPM-DK01: 1-slot mini PCI and mini PCIe expansion module

EPM-3552: 1 VGA or DVI-I display connector

Optional Accessories (can be purchased separately)

PWR-24250-DT-S1: Power adaptor

PWC-C7US-2B-183: Power cord with 2-pin connector, USA plug

PWC-C7EU-2B-183: Power cord with 2-pin connector, Euro plug

PWC-C7UK-2B-183: Power cord with 2-pin connector, British plug

PWC-C7AU-2B-183: Power cord with 2-pin connector, Australia plug

PWC-C7CN-2B-183: Power cord with 2-pin connector, China plug

M12D-4P-IP68: Field-installation D-coded screw-type Ethernet connector, 4-pin male M12 connector, IP68-rated

CBL-M12D[MM4P]/RJ45-100 IP67: 1-meter D-coded M12-to-RJ45 Cat-5C UTP Ethernet cable, 4-pin male M12 connector, IP67-rated

M12A-5PMM-IP68: D-coded screw-type USB connector, 5-pin male M12 connector, IP68-rated

M12A-5P-IP68: Field-installation A-coded screw-type power connector, 5-pin female M12 connector, IP68-rated

CBL-M12[FF5P]/OPEN-100 IP67: 1-meter A-coded M12-to-5-pin power cable, 5-pin female M12 connector, IP67-rated

FK-75125-02: Hard disk installation package (for HDD, SSD, EN 50155)

DK-DC50131-01: DIN-Rail mounting kit

Package Checklist

- V2426 embedded computer
- Wall mounting kit
- PS2 to KB/MS Y-type cable
- Documentation and software CD or DVD
- Quick installation guide (printed)
- Warranty card