V2406A Series

Compact, fanless, vibration-proof railway computers

Features and Benefits

- Intel Celeron/Core i7 processor

- Dual independent DVI-I displays

- 2 Gigabit Ethernet ports with M12 X-coded connectors

- 1 SATA connector and 2 CFast sockets for storage expansion

- M12 A-coded power connector

- Compliant with EN 50121-4

- Complies with all EN 50155 mandatory test items[1]

- Ready-to-run Debian 7, Windows Embedded Standard 7, and Windows 10 Embedded IoT Enterprise 2016 LTSB platforms

- -40 to 70°C wide-temperature models available

- Supports SNMP-based system configuration, control, and monitoring (Windows only)

Certifications

 EN 50155   EN 50121-4   CE   FC

Introduction

The V2406A Series embedded computers are based on the Intel 3rd Gen processor, and feature 4 RS-232/422/485 serial ports, dual LAN ports, audio in/out, 3 USB 2.0 hosts, 2 CFast sockets, and 1 SATA storage socket. The V2406A computers provide dual DVI-I outputs, and in addition are compliant with the mandatory test items of the EN 50155 standard, making the computers suitable for a variety of industrial applications.
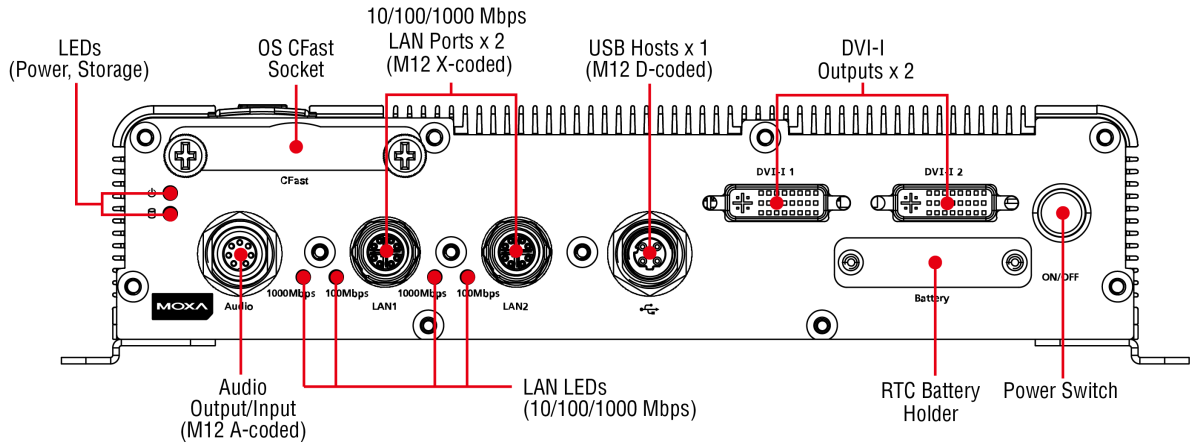
The dual megabit/Gigabit Ethernet ports with M12 X-coded connectors offer a reliable solution for network redundancy, promising continuous operation for data communication and management. As an added convenience, the V2406A computers have 6 DIs and 2 DOs for connecting digital input/output devices, and the CFast feature provides the reliability needed for industrial applications that require data buffering and storage expansion.

Preinstalled with Linux Debian 7 or Windows Embedded Standard 7, the V2406A Series provides programmers with a friendly environment for developing sophisticated, bug-free application software at a low cost. Wide-temperature models of the V2406A 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.
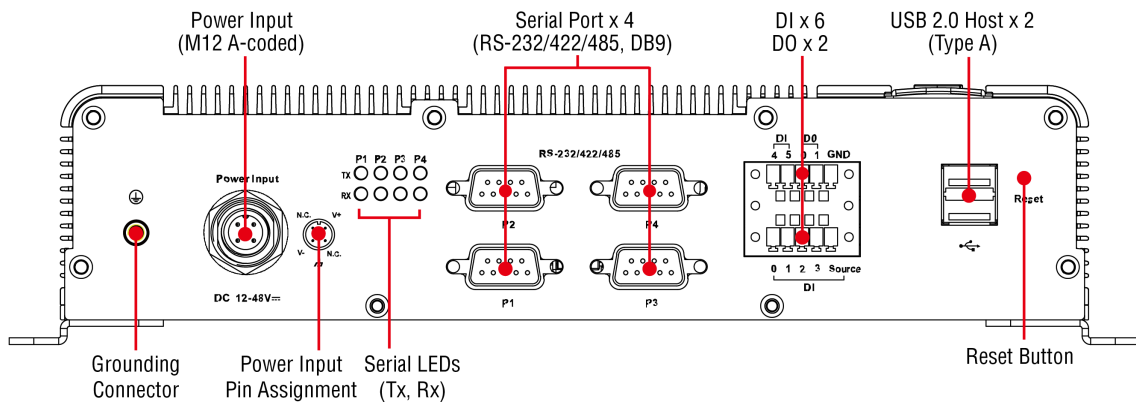
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1.   This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

MOXA
Reliable Networks ▲ Sincere Service

Appearance

Front View

- LEDs (Power, Storage)
- OS CFast Socket
- 10/100/1000 Mbps LAN Ports x 2 (M12 X-coded)
- USB Hosts x 1 (M12 D-coded)
- DVI-I Outputs x 2
- Audio Output/Input (M12 A-coded)
- LAN LEDs (10/100/1000 Mbps)
- RTC Battery Holder
- Power Switch

Rear View

- Power Input (M12 A-coded)
- Serial Port x 4 (RS-232/422/485, DB9)
- DI x 6 DO x 2
- USB 2.0 Host x 2 (Type A)
- Grounding Connector
- Power Input Pin Assignment
- Serial LEDs (Tx, Rx)
- Reset Button

Specifications

Computer

CPU	V2406A-C2 Series: Intel® Celeron® Processor 1047UE (2 M cache, 1.40 GHz) V2406A-C7 Series: Intel® Core™ i7-3517UE Processor (4 M cache, up to 2.80 GHz)
System Chipset	Mobile Intel® HM65 Express Chipset
Graphics Controller	Intel® HD Graphics 4000 (integrated)
System Memory Pre-installed	4 GB DDR3
System Memory Slot	SODIMM DDR3/DDR3L slot x 1
Supported OS	Linux Debian 7 Windows Embedded Standard 7 (WS7E) 32-bit Windows Embedded Standard 7 (WS7E) 64-bit
Storage Slot	2.5-inch HDD/SSD slots x 1 CFast slot x 2

Computer Interface

Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (M12 X-coded) x 2
Serial Ports	RS-232/422/485 ports x 4, software selectable (DB9 male)
USB 2.0	USB 2.0 hosts x 1, M12 D-coded connector USB 2.0 hosts x 2, type-A connectors
Audio Input/Output	Line in x 1, Line out x 1, M12 D-coded

Digital Input	DIs x 6
Digital Output	DOs x 2
Video Output	DVI-I x 2, 29-pin DVI-I connectors (female)

Digital Inputs

Isolation	3k VDC
Connector	Screw-fastened Euroblock terminal
Dry Contact	On: short to GND Off: open
I/O Mode	DI
Sensor Type	Dry contact Wet Contact (NPN or PNP)
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC

Digital Outputs

Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	24 to 30 VDC

LED Indicators

System	Power x 1 Storage x 1
LAN	2 per port (10/100/1000 Mbps)
Serial	2 per port (Tx, Rx)

Serial Interface

Baudrate	50 bps to 921.6 kbps
Flow Control	RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only)
Isolation	N/A
Parity	None, Even, Odd, Space, Mark
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

Power Parameters

Input Voltage	12 to 48 VDC
Power Connector	M12 A-coded male connector
Power Consumption (Max.)	3.3 A @ 12 VDC 0.82 A @ 48 VDC
Power Consumption	40 W (max.)

Physical Characteristics

Housing	Aluminum
IP Rating	IP30
Dimensions (with ears)	275 x 63 x 154 mm (10.83 x 2.47 x 6.06 in)
Dimensions (without ears)	250 x 57 x 154 mm (9.84 x 2.23 x 6.06 in)
Weight	2,000 g (4.44 lb)
Installation	DIN-rail mounting (optional), Wall mounting (standard)
Protection	V2406A-C2-CT-T/C7-CT-T: PCB conformal coating

Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) Wide Temp. Models: -40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4, IEC 60571
Railway Fire Protection	EN 45545-2
Safety	EN 60950-1, UL 60950-1
Shock	IEC 60068-2-27, IEC 61373, EN 50155
Vibration	IEC 60068-2-64, IEC 61373, EN 50155

Declaration

Green Product	RoHS, CRoHS, WEEE

MTBF

Time	332,173 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	3 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x V2406A Series computer
Installation Kit	1 x wall-mounting kit
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)
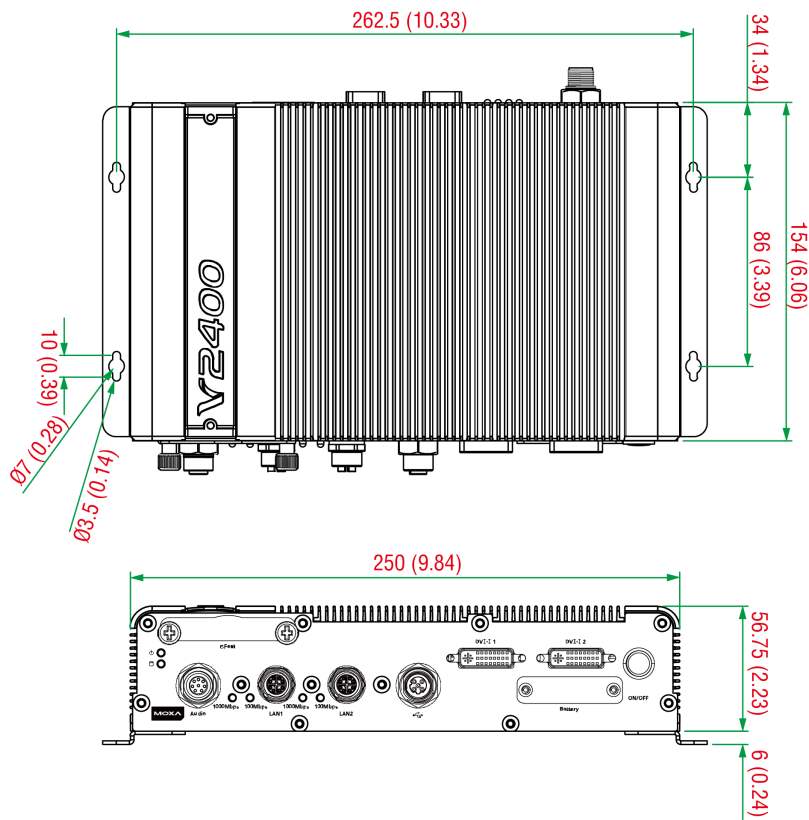
Ordering Information

Model Name	CPU	Memory (Default)	OS CFast (CTO)	Backup CFast (CTO)	SSD/HDD Tray (CTO)	Operating Temp.	Conformal Coating
V2406A-C2	Celeron 1047UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-25 to 55°C	–
V2406A-C2-T	Celeron 1047UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-40 to 70°C	–
V2406A-C2-CT-T	Celeron 1047UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-40 to 70°C	✓
V2406A-C7	Core i7-3517UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-25 to 55°C	–
V2406A-C7-T	Core i7-3517UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-40 to 70°C	–
V2406A-C7-CT-T	i7-3517UE	4 GB	1 (Optional)	1 (Optional)	1 (Optional)	-40 to 70°C	✓
V2406A-C2-W7E	Celeron 1047UE	4 GB	8 GB	1 (Optional)	1 (Optional)	-25 to 55°C	–

Model Name	CPU	Memory (Default)	OS CFast (CTO)	Backup CFast (CTO)	SSD/HDD Tray (CTO)	Operating Temp.	Conformal Coating
V2406A-C2-T-W7E	Celeron 1047UE	4 GB	8 GB	1 (Optional)	1 (Optional)	-40 to 70°C	–
V2406A-C7-T-W7E	i7-3517UE	4 GB	8 GB	1 (Optional)	1 (Optional)	-40 to 70°C	–

Accessories (sold separately)

Battery Kits

RTC Battery Kit	Lithium battery with built-in connector

Cables

CBL-M12(FF5P)/Open-100 IP67	A-coded M12-to-5-pin power cable, IP67-rated 5-pin female M12 connector, 1 m
CBL-M12XMM8PRJ45-BK-100-IP67	M12-to-RJ45 Cat-5E UTP gigabit Ethernet cable, 8-pin X-coded male connector, IP67, 1 m

Connectors

M12A-5PMM-IP68	5-pin male circular threaded D-coded M12 USB connector, IP68
M12X-8PMM-IP67	8-pin male X-coded circular threaded gigabit Ethernet connector, IP67
M12A-5P-IP68	A-coded screw-in sensor connector, female, IP68, 4.05 cm
M12A-8PMM-IP67	8-pin male circular threaded A-codes M12 connector,IP67-rated(for field-installation)

Power Adapters

PWR-24270-DT-S1	Power adapter, input voltage 90 to 264 VAC, output voltage 24 V with 2.5 A DC load

Power Cords

PWC-C7AU-2B-183	Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m
PWC-C7CN-2B-183	Power cord with two-prong China (CN) plug, 1.83 m
PWC-C7EU-2B-183	Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m
PWC-C7UK-2B-183	Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m
PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 1.83 m

Antennas

ANT-WDB-ANF-0407	2.4/5 GHz, omni-directional antenna, 4/7 dBi, N-type (male)

Wall-Mounting Kits

V2400 Isolated Wall Mount Kit	Wall-mounting kit with isolation protection, 2 wall-mounting brackets, 4 screws

Storage Kits

FK-75125-02	Storage bracket, 4 large silver screws, 4 soft washers, 4 small sliver bronze screws, 1 SATA power cable, 4 golden spacers (only for the V2406 and V2426)

DIN-Rail Mounting Kits

DK-DC50131	DIN-rail mounting kit, 6 screws