# V2403C Series

Intel® 7th Gen Core™/Celeron® Industrial IoT embedded computers with power ignition control, 2 Mini PCIe expansion slots for wireless, SMA connectors







#### **Features and Benefits**

- Intel® Celeron®/Intel® Core™ i3/i5/i7 high performance network video recorder for rail-wayside and in-vehicle applications
- Multiple interfaces: Dual display (HDMI, DP), 4 serial ports, 4 GbE ports, 4 DIs, 4 DOs, 4 USB, and 2 Mini PCIe slots for wireless
- · Power management with Ignition on/off delay (externally accessible rotary switch)
- E1 Mark, ISO 7637-2, and MIL-STD-810G compliant
- Compliant with EN 50121-4

#### **Certifications**









#### Introduction

The V2403C Series embedded computers are built around an Intel® Core™ i7/i5/i3 or Intel® Celeron® high-performance processor and come with up to 32 GB RAM, one mSATA slot, and two HDD/SSD for storage expansion. The computers are compliant with EN 50121-4, E1 mark, and ISO-7637-2 standards making them ideal for rail-wayside and in-vehicle (except trains) applications.

V2403C computers are equipped with a rich set of interfaces including 4 gigabit Ethernet ports, 4 RS-232/422/485 serial ports, 4 DIs, 4 DOs, and 4 USB 3.0 ports. In addition, they are also provided with 1 DisplayPort output and 1 HDMI output with 4K resolution.

Reliable connections and good power management are key to in-vehicle applications. The computers are provided with 2 mPCle wireless expansion slots and 4 SIM-card slots to establish redundant LTE/Wi-Fi connectivity. In terms of power management, startup and shutdown delay mechanisms help in avoiding system malfunction and damage.

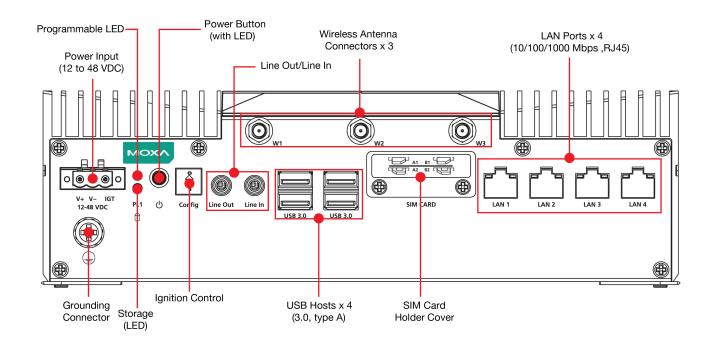
#### **Power Management With Ignition Control Switch**

The V2403C computers come with power management capability that uses an externally accessible rotary switch on the front panel. You can use the switch to configure power ignition on/off delays in the computer for in-vehicle applications. This feature is vital to protect the computer against high/low pulses and waveforms, ensure longevity of batteries, and complete data preservation prior to an unplanned shutdown.

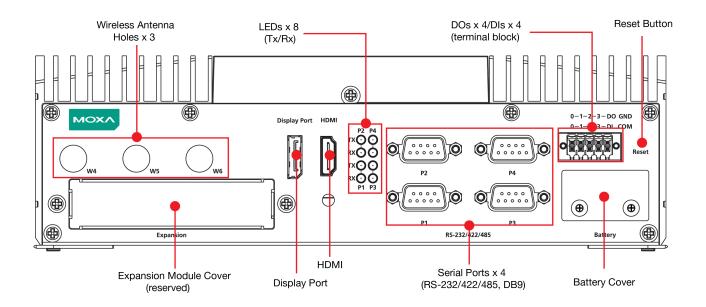


### **Appearance**

#### **Front View**



#### **Rear View**



### **Specifications**

#### Computer

CPU	V2403C-KL1-T: Intel® Celeron® 3965U processor (2M Cache, 2.2 GHz) V2403C-KL3-T: Intel® Core™ i3-7100U processor (3M Cache, 2.4 GHz) V2403C-KL5-T: Intel® Core™ i5-7300U processor (3M Cache, 2.6 GHz) V2403C-KL7-T: Intel® Core™ i7-7600U processor (4M Cache, 2.8 GHz)
Storage Slot	2.5-inch HDD/SSD slots x 2 mSATA slots x 1
Supported OS	Linux Debian 9 Windows 10 Embedded IoT Ent 2019 LTSC 64-bit



System Memory Slot	SODIMM DDR4 slot x 2		
DRAM	32 GB max		
Graphics Controller	Celeron Model: Intel HD Graphics 610 i3/i5/i7 Models: Intel HD Graphics 620		
Computer Interface			
Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 4		
Serial Ports	RS-232/422/485 ports x 4, software selectable (DB9 male)		
Digital Output	DOs x 4		
Digital Input	DIs x 4		
USB 3.0	USB 3.0 hosts x 4, type-A connectors		
Audio Input/Output	Line in x 1, Line out x 1, 3.5 mm phone jack		
Video Output	HDMI x 1, HDMI connector (standard) DP x 1, DisplayPort connector (standard)		
Wi-Fi Antenna Connector	RP-SMA x 3		
Cellular Antenna Connector	SMA x 2 (optional)		
GPS Antenna Connector	SMA x 1, (optional)		
Expansion Slots	mPCle slots x 2		
SIM Format	Micro		
Number of SIMs	4		
Digital Inputs			
Connector	Screw-fastened Euroblock terminal		
I/O Mode	DI		
Isolation	3k VDC		
Sensor Type	Wet contact (NPN or PNP) Dry contact		
Dry Contact	Logic 0: Short to GND Logic 1: Open		
Wet Contact (DI to COM)	Logic 0: 0 to 3 VDC Logic 1: 10 to 30 VDC		
Digital Outputs			
Connector	Screw-fastened Euroblock terminal		
Current Rating	200 mA per channel		
I/O Type	Sink		
Voltage	0 to 30 VDC		



Isolation

3k VDC

#### LED Indicators

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 115.2 kbps			
Connector	DB9 male			
ESD	Contact: 6 kV; Air: 8 kV (level 3)			
Isolation	2 kV			
Data Bits	5, 6, 7, 8			
Flow Control	RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only)			
Parity	None, Even, Odd, Space, Mark			
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	Terminal block			
Power Consumption (Max.)	70 W (max.)			
Power Ignition Control				
Switch Type	Rotary (front panel)			
Switch Settings	Setting 0: IGT function disabled Setting 1: PWR ON delay: 0.5 sec; PWR OFF delay: 30 sec Setting 2: PWR ON delay: 1 sec; PWR OFF delay: 30 sec Setting 3: PWR ON delay: 1 sec; PWR OFF delay: 60 sec Setting 4: PWR ON delay: 2 sec; PWR OFF delay: 60 sec Setting 5: PWR ON delay: 2 sec; PWR OFF delay: 90 sec Setting 6: PWR ON delay: 3 sec; PWR OFF delay: 90 sec Setting 7: PWR ON delay: 3 sec; PWR OFF delay: 150 sec Setting 8: PWR ON delay: 4 sec; PWR OFF delay: 180 sec Setting 9: PWR ON delay: 5 sec; PWR OFF delay: 180 sec			
Physical Characteristics				
Housing	Aluminum			
IP Rating	IP20			
Dimensions (without ears)	250 x 75 x 150 mm (9.84 x 2.95 x 5.91 in)			

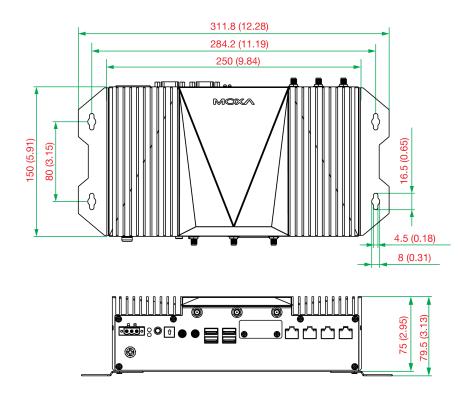


Weight	2,500 g (5.51 lb)		
Installation	Wall mounting (standard)		
Environmental Limits			
Operating Temperature	-40 to 70°C (-40 to 158°F)		
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)		
Ambient Relative Humidity	5 to 95% (non-condensing)		
Standards and Certifications			
EMI	CISPR 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		
EMC	EN 55032/35		
Safety	EN 62368-1, IEC 62368-1, UL 62368-1		
Railway	EN 50121-4		
Shock	IEC 60068-2-27, IEC 61373, MIL-STD-810G		
Vibration	IEC 60068-2-64, IEC 61373, MIL-STD-810G		
Declaration			
Green Product	RoHS, CRoHS, WEEE		
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Time	464,506 hrs		
Standards	Telcordia (Bellcore), GB		
Warranty			
Warranty Period	3 years		
Details	See www.moxa.com/warranty		
Package Contents			
Device	1 x V2403C Series computer		
Installation Kit	2 x SSD/HDD trays 1 x clamp for HDMI cable 1 x wall-mounting kit		
Documentation	1 x quick installation guide 1 x warranty card		



### **Dimensions**

Unit: mm (inch)



# **Ordering Information**

Model Name	СРИ	Memory (built-in)	Optional OS Storage (mSATA)	Optional SSD/HDD	USB Ports	Power Input	Operating Temp.	Conformal Coating
V2403C-KL1-T	Intel® Celeron® 3965U	-	1	2	4 x USB 3.0 (type A)	12 to 48 VDC (Terminal Block)	-40 to 70°C	-
V2403C-KL3-T	Intel® Core™ i3-7100U	-	1	2	4 x USB 3.0 (type A)	12 to 48 VDC (Terminal Block)	-40 to 70°C	-
V2403C-KL5-T	Intel® Core™ i5-7300U	-	1	2	4 x USB 3.0 (type A)	12 to 48 VDC (Terminal Block)	-40 to 70°C	-
V2403C-KL7-T	Intel® Core™ i7-7600U	-	1	2	4 x USB 3.0 (type A)	12 to 48 VDC (Terminal Block)	-40 to 70°C	-

## **Accessories (sold separately)**

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
Wi-Fi Wireless Modules	
V2400-WLAN22-AC	SparkLAN WPEQ-261ACNI (BT) Wi-Fi mini card, 4 black screws
V2400 Cover-DB9	Dual DB9 expansion cover, 4 male hex standoff spacer pillars
V2406C TPM2.0 Module	SLB9665XT2.0 TPM 2.0 module without conformal coating
Cellular Wireless Modules	
V2403C-LTECat4-AP	Telit LE910C4 LTE Cat. 4 mini card for the Asia-Pacific region, 3 SMA antenna cables

Telit LE910C4 LTE Cat. 4 mini card for Europe, 3 SMA antenna cables

Telit LE910C4 LTE Cat. 4 mini card for North America, 3 SMA antenna cables

V2403C-LTECat4-EU

V2403C-LTECat4-NF

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