

VCM

2000

14th Generation Intel® Core™ i9/i7/i5/i3 Processor
Compact Fanless Embedded Box PC



^ Intelligent Traffic Safety



- Workstation-grade Platform: Intel® Core™ i9/i7/i5/i3 Processor running with Intel® H610E PCH supports max 65W TDP CPU
- Supports 2 DIMM up to 96GB DDR5 5600MHz memory
- 2 USB3.2, 2 USB2.0, 2 COM RS-232/422/485
- 4 Independent Intel® GigE LAN ports, including 3 x 2.5GbE
- 2 External SIM Card Socket support WiFi/4G/5G/LTE/GPRS/UMTS
- Key E, Key B, 2 Mini PCIe for PCIe/USB/SIM Card expansions
- 12V DC Power Input, optional supports 9V to 36V wide range DC power input, Software Ignition Control
- Supports operating temperatures from -40°C to 60°C



v Smart Manufacturing



^ Advanced AMR

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Specifications

System

Processor	- 24-core 15th Gen Intel® Core™ i9/i7/i5/i3 Processor (Bartlett Lake-S) - 24-core 14th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S Refresh) - 24-core 13th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S) - 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
Chipset	Intel H610E
BIOS	AMI
SIO	IT8786E
Memory	2 DDR5 5600MHz SO-DIMM, up to 96GB
OS	Windows 11, Windows 10, Linux

I/O Interface

Serial	2 COM RS-232/422/485
USB	- 2 USB 3.2 Type-A - 2 USB 2.0 Type-A
LED	Power, HDD
SIM Card	2 External SIM Card Sockets

Expansion

M.2	- 1 M.2 Key E Socket(2230, PCIe2/USB2) - 1 M.2 Key B Socket (2280/3042/3052, PCIe1/default USB3.2/USB2.0) with SIM
Mini PCIe	- 1 Full-size Mini PCIe (PCIex1, SATA, USB2) - 1 Full-size Mini PCIe (PCIex1, SATA, USB2) with SIM

Graphics

Graphics Processor	Intel® X® LPG Graphics architecture, up to 4X® Graphics Engines
Interface	- 1 HDMI 2.0: Up to 3840 x 2160 @60Hz - 1 DVI-I: Up to 1920 x 1080 @60Hz

Storage

SATA	2 SATAIII (6Gbps) for SSD/HDD
M.2	- 1 M.2 Key M Socket (2242/2280, PCIe4) - 1 M.2 Key B Socket (2280, PCIe x2, share with expansion)
mSATA	2 SATA III (Mini PCIe Type, 6Gbps, share with expansion)

Audio

Audio Codec	Realtek ALC885S-VD2, 7.1 Channel HD Audio
Audio Interface	1 Mic-in, 1 Line-out

Ethernet

LAN 1	Intel® I219LM GigE LAN
LAN 2 - 4	Intel® I226 2.5 GigE LAN

Power

Power Input	- VCM-2000: 12V DC-in - VCM-2000A: 9V to 36V wide range DC-in
Power Interface	3-pin Terminal Block: V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Terminal Block

Others

TPM	Infineon SLB9670 supports TPM 2.0, SPI Interface
Watchdog Timer	Reset: 1 to 255 sec./min. per step
Smart Mgmt.	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.

Mechanical

Dimensions	209.0mm x 150.5mm x 75.0mm (8.23" x 5.93" x 2.95")
Weight	2.31kg (5.09lb)
Mounting	- Wallmount by mounting bracket - DIN Rail Mount (Optional) - VESA Mount (Optional)

Environment

Operating Temp. (with air flow)	- 35W TDP CPU with heat sink: -40°C to 60°C (-40°F to 140°F) with air flow - 65W TDP CPU with fan sink : -40°C to 60°C (-40°F to 140°F)
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @60°C
Shock	IEC 60068-2-27 SSD: 50G @wallmount, Half-sine, 11ms
Vibration	IEC 60068-2-64 SSD: 5Grms, 5Hz to 500Hz, 3 Axis
EMC	CE, FCC, ICES, EN50155, EN50121-3-2

Order Information

Model	DC-IN	GigE LAN	2.5G LAN	USB	COM	SIM
VCM-2000	12V	1	3	4	2	2
VCM-2000F	12V					
VCM-2000A	9V to 36V					
VCM-2000FA	9V to 36V					

* VCM-2000F Series are Fan Sink Model for high TDP CPU (65W).

CPU List

Series	CPU	Cores	GHz	TDP (W)	CPU	Cores	GHz	TDP (W)
Intel® Core™	i9-14900	24	5.8	65	i9-14900T	24	5.5	35
	i7-14700	20	5.4		i7-14700T	20	5.2	
	i5-14500	14	5		i5-14500T	14	4.8	
	i3-14100	4	4.7		i3-14100T	4	4.4	
	i9-13900E	24	5.2		i9-13900TE	24	5	
	i7-13700E	16	5.1		i7-13700TE	16	4.8	
	i5-13500E	14	4.6		i5-13500TE	14	4.5	
	i3-13100E	4	4.4		i3-13100TE	4	4.1	
	i9-12900E	16	5		i9-12900TE	16	4.8	
	i7-12700E	12	4.8		i7-12700TE	12	4.7	
	i5-12500E	6	4.5		i5-12500TE	6	4.3	
	i3-12100E	4	4.2		i3-12100TE	4	4	

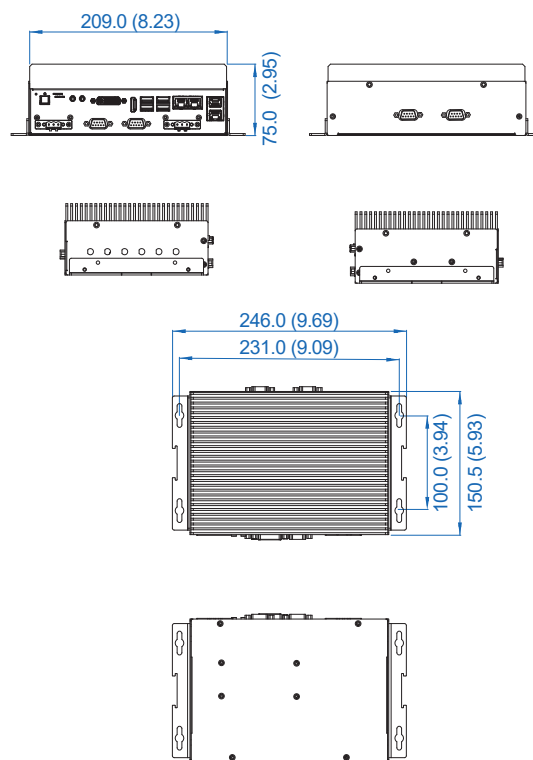
* 14th Gen support PC Client use condition only.

Accessories

DDR5 48G	Certified DDR5 48GB 5600MHz RAM
DDR5 32G	Certified DDR5 32GB 5600/4800MHz RAM
DDR5 24G	Certified DDR5 24GB 5600MHz RAM
DDR5 16G	Certified DDR5 16GB 5600/4800MHz RAM
DDR5 8G	Certified DDR5 8GB 5600/4800MHz RAM
PWA-100W-12V	100W, 12V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-135W-WT-12V	135W, 12V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-120W1	120W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
PWA-160W-WT	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-180W	180W, 24V, AC 90V-132V/180V-264V Power Adapter
PWA-330W	330W, 24V, AC 90V-264V Power Adapter *Recommended when enable turbo mode
DIN Rail	DIN Rail Kit
VESA Mount	VESA Mounting Kit
M.2 Storage Module	M.2 Key M Storage Module
5G Module	5G Module with Antenna
4G Module	4G/GPS Module with Antenna
WiFi & Bluetooth	WiFi & Bluetooth Module with Antenna

Dimensions & Drawing

Unit : mm (inch)



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