



MACHINE VISION COMPUTER

VCO-6000-RPL-4E

Machine Vision Computer w/ LGA 1700 for Intel 12/13/14th Gen CPU & R680E PCH, 3 PCIe

Features

- LGA 1700 socket for 12/13/14th Gen. Intel® ADL & RPL Processor (65W/35W TDP)
- Intel® R680E chipset
- 2x DDR5 4800/5600MHz SODIMM. Max. up to 64GB
- Triple Independent Display: 2x DisplayPort, 1x DVI-I
- 2x Intel® 2.5GbE supporting Wake-on-LAN and PXE
- 2x 2.5" SATA HDD Bay (1x Internal) and with RAID 0, 1 support
- 1x Full-size Mini PCIe (1x shared by 1x mSATA), 2x SIM socket
- 1x M.2 (E Key, 2230), 1x M.2 (B Key, 2242/3042/3052)
- 2x PCIe x16 (8-lane, Gen 4); 1x PCIe x4 (1-lane, Gen 3)
- 6x RS-232/422/485 (4x internal), 4x USB 3.2 Gen 2, 5x USB 3.2 Gen 1 (internal)
- 8x DI + 8x DO with isolation
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- 48VDC 600W Power Board for GPU Expansion
- Wide Operating Temperature -25°C to 70°C (35W CPU); -25°C to 60°C (65W CPU)
- TPM 2.0 Supported



Specifications

System	
Processor	Support 12/13/14th(Non-vPRO) Gen Intel® ADL & RPL Processor (LGA 1700, 65W/35W TDP)
- Intel® Core™ i9-14900/i9-13900E/i9-12900E, 65W	
- Intel® Core™ i9-14900T/i9-13900TE/i9-12900TE, 35W	
- Intel® Core™ i7-14700/i7-13700E/i7-12700E, 65W	
- Intel® Core™ i7-14700T/i7-13700TE/i7-12700TE, 35W	
- Intel® Core™ i5-14500/i5-13500E/i5-12500E, 65 W	
- Intel® Core™ i5-14500T/i5-13500TE/i5-12500TE, 35W	
- Intel® Core™ i3-13100E/i3-12100E, 60W	
- Intel® Core™ i3-14100T/i3-13100TE/i3-12100TE, 35W	
- Intel® Core™ 300T, 35W	
- Intel® Pentium® G7400E, 46W / G7400TE, 35W	
- Intel® Celeron® G6900E, 46W / G6900TE, 35W	
System Chipset	Intel® R680E Express Chipset
LAN Chipset	2.5 GbE1: Intel I226; 2.5 GbE2: Intel I226, Support Wake-on-LAN and PXE, Support TSN
Audio Codec	Realtek ALC888S
System Memory	2x 262-Pin DDR5 4800/5600MHz SODIMM. Max. up to 64GB (ECC and Non-ECC)
Graphics	Intel® UHD Graphics 770/710
BIOS	AMI 256Mbit SPI BIOS
Watchdog	Software Programmable Supports 1~255 sec. System Reset
TPM	TPM 2.0
Display	
Display Port	2x DisplayPort 1.4a, Support resolution 5120 x 3200, Up to 7680 x 4320
DVI	1x DVI-I, support resolution 1920 x 1200
Multiple Display	Triple Display
VGA	Yes (by optional split cable)
Storage	
M.2	1x M.2 B Key, 2242/3042/3052 (PCIe x2, Support AI Module/NVMe Storage) (PCIe x1 & USB 3.2 Gen1, Support 4G/5G)
mSATA	1x mSATA (Shared by 1x Mini PCI Express)
SIM Socket	2x Internal SIM socket (Mini PCIe/M.2 B Key attached)
SSD/HDD	1x Internal 2.5" SATA/SSD HDD Bay (support H=9mm) 1x Removable 2.5" SATA HDD Bay (support H=7mm, Hot-swappable), Support RAID 0, 1
Configuration Options:	
• 4B7M: 4x Removable 2.5" SATA HDD Bay (support H=7mm, Hot-swappable) Support RAID 0, 1, 5, 10	
• 2B15M: 2x Removable 2.5" SATA HDD Bay (support H=15mm, Hot-swappable) Support RAID 0, 1, 5, 10	
• 2N15M: 2x Removable 2.5" U.2 NVMe Bay (support H=15mm, Hot-swappable) Support RAID 0, 1	
Expansion	
Mini PCIe	1x Full-size Mini PCIe (1x shared by 1x mSATA)
PCIe	2x PCIe x16 (8-lane, Gen 4); 1x PCIe x4 (1-lane, Gen 3)
Card Dimension	310 (L) x 112 (H) mm
GPU Card Dimension	Please ensure the card dimensions do not exceed the following specifications to avoid potential installation issues. 312 (L) x 111 (W) mm (Height: Single GPU 20 mm, Dual GPU less than 40 mm)
I/O	
COM	2x RS-232/422/485 ; 4x RS-232/422/485 (internal)

DIO	8 in / 8 out (Isolated)
LAN	2x RJ45
Universal I/O Bracket	2x Universal I/O Bracket (By mini PCIe interface)
USB	4x USB 3.2 Gen 2 (10 Gbps) 5x USB 3.2 Gen 1 (5 Gbps, Internal) 1x USB 3.2 Gen 1 header (5 Gbps, internal)
Others	4x WiFi Antenna Holes 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off 1x PC/Car Mode Switch, 1x Delay Time Switch 1x Removable CMOS Battery (internal) 1x 6CM FAN Module (Optional)

Operating System	
Windows	Windows 10/11
Linux	Linux kernel
Power	
Power Adapter	Optional AC/DC 24V/9.2A, 220W Optional AC/DC 24V/11.67A, 280W (for more advanced CPU) Optional AC/DC 24V/15A, 360W (for more advanced i7/i9 CPU) Optional AC/DC 48V/12.5A, 600W (for GPU Expansion)
Power Mode	AT, ATX
Power Ignition Sensing	Power Ignition Management
Power Supply Voltage	9~48VDC • VCO-6000-RPL-4E-2PWR: 48VDC (For GPU Expansion)
Power Connector	5-pin Terminal Block 4-pin Terminal Block (second power supply for GPU)
Power Protection	OVP (Over Voltage Protection) OCP (Over Current Protection) Reverse Protection

Environment	
Operating Temperature	-25°C to 70°C (35W CPU) -25°C to 60°C (65W CPU) *Without GPU attached
Storage Temperature	-30°C to 85°C
Relative Humidity	10% to 95% (non-condensing)
Certification	UL 62368 Ed. 3, CE, FCC Class A
Vibration	With HDD: 1 Grms (5 - 500 Hz, 0.5 hr/axis) With SSD: 3 Grms (5 - 500 Hz, 0.5 hr/axis)
Shock	With SSD: 20G half-sin 11ms

Physical	
Dimensions	177 (W) x 340 (D) x 240 (H) mm
Weights	9.7 KG
Construction	Extruded Aluminum with Heavy Duty Metal
Mounting Options	Wall Mounting

* For 12/13/14th Gen Intel CPUs configured to run at 65W, operating temperatures will be limited to 60°C.

* 65W CPUs may experience thermal throttling depending on extreme application workloads; this is also due to an increase in the physical CPU cores from the Intel silicon (up to 24 cores). Please note, this does not indicate system malfunction or problems in the fanless design. Please consult our embedded engineers for the best configuration to match your application requirements.

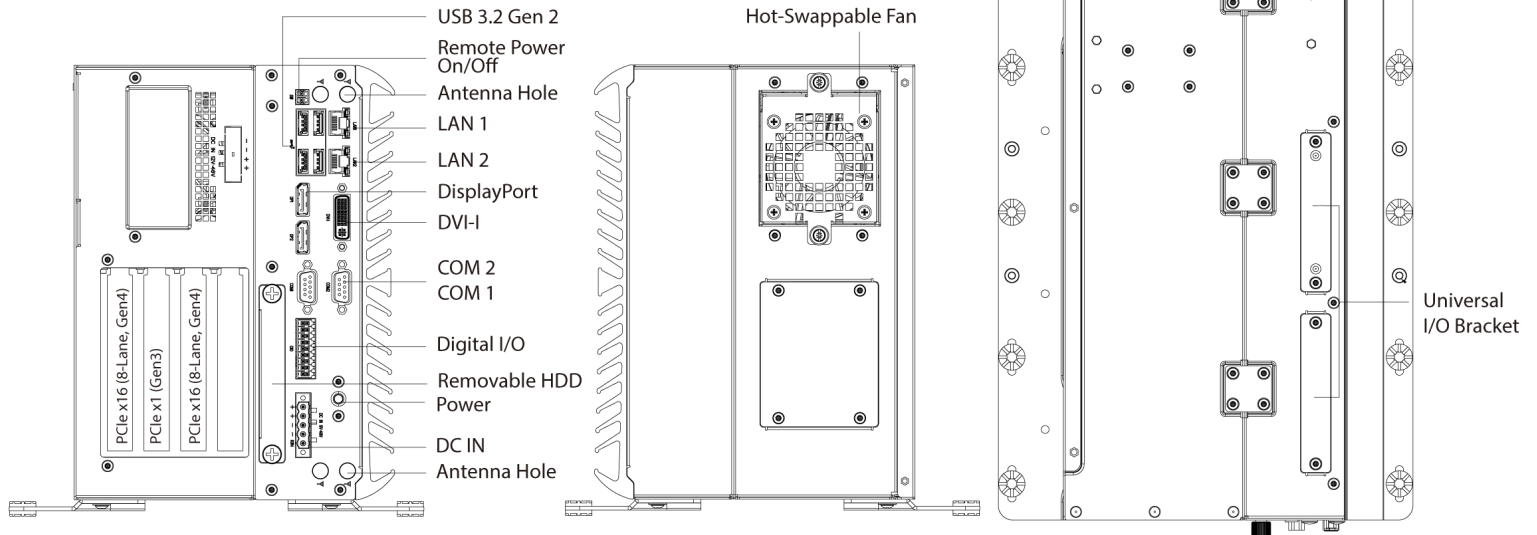
*All specifications and photos are subject to change without notice.

External I/O Mechanical Layout

Front Panel

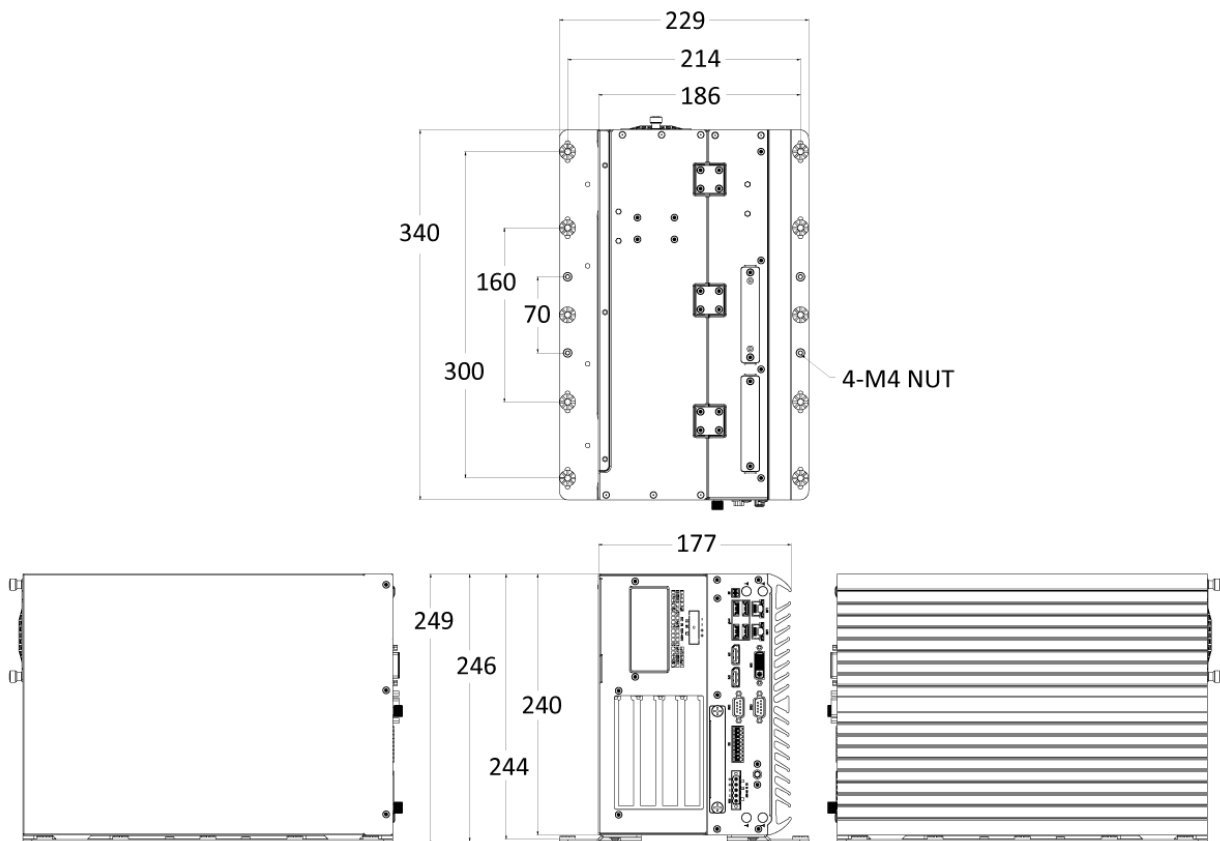
Rear Panel

Top Panel

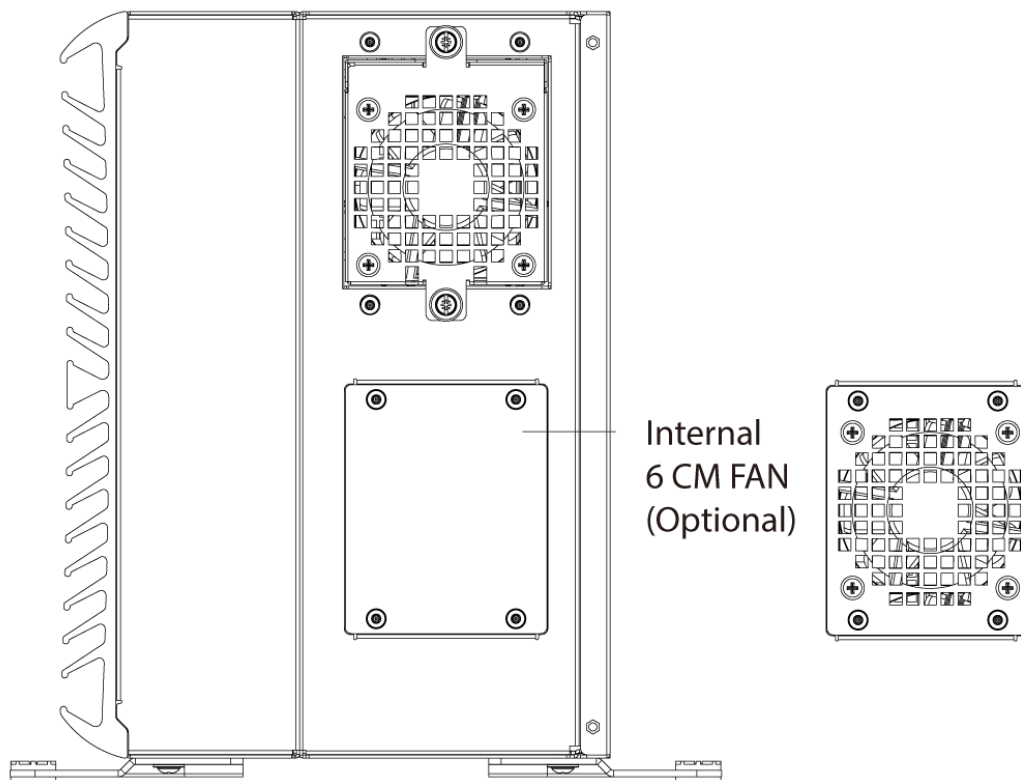
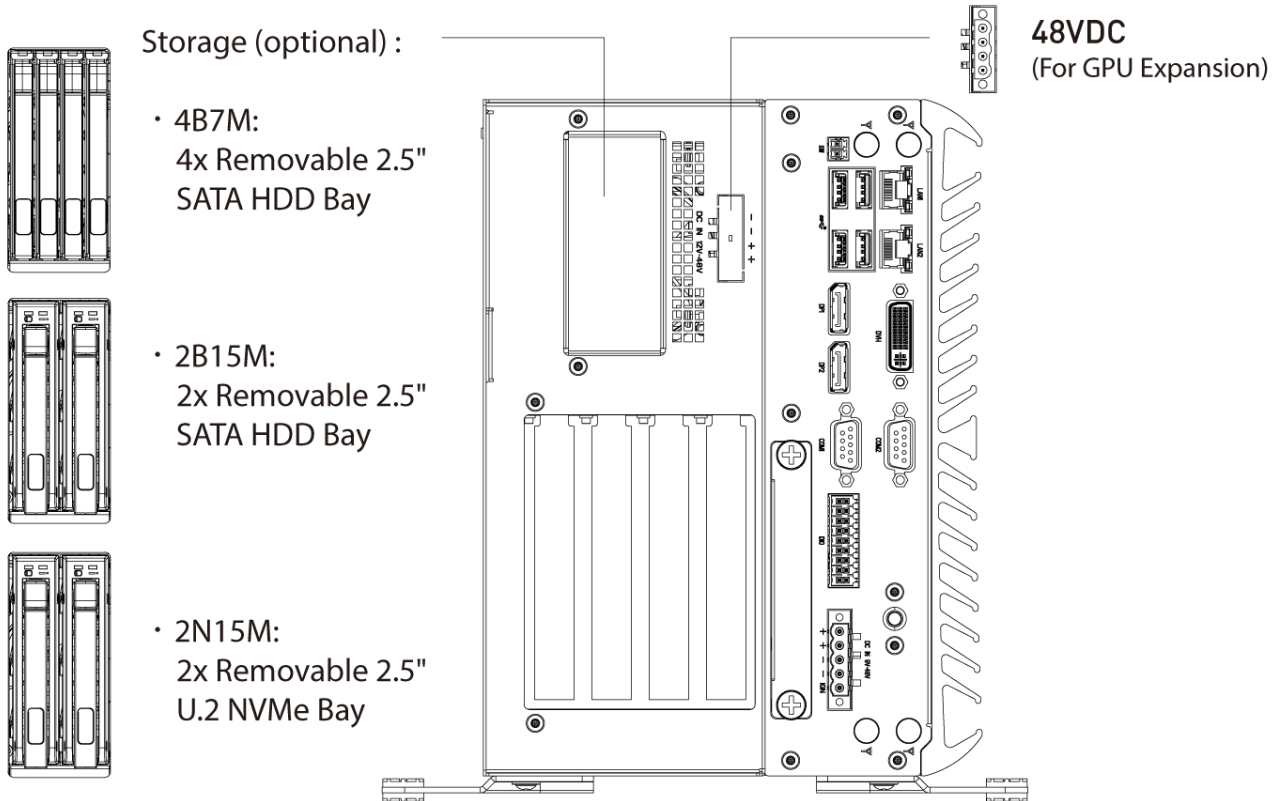


Dimension

Unit: mm



Expansion



Available Models

Model No.	Description
VCO-6000-RPL-4E-2PWR	Machine Vision Computer w/ LGA 1700 for Intel 12/13/14th Gen CPU & R680E PCH, 3x PCIe, 2x Power input, 600W GPU Power Board
VCO-6000-RPL-4E-4B7M-2PWR	Machine Vision Computer w/ LGA 1700 for Intel 12/13/14th Gen CPU & R680E PCH, 3x PCIe, 6x HDD, 2x Power input, 600W GPU Power Board
VCO-6000-RPL-4E-2B15M-2PWR	Machine Vision Computer w/ LGA 1700 for Intel 12/13/14th Gen CPU & R680E PCH, 3x PCIe, 4x HDD, 2x Power input, 600W GPU Power Board
VCO-6000-RPL-4E-2N15M-2PWR	Machine Vision Computer w/ LGA 1700 for Intel 12/13/14th Gen CPU & R680E PCH, 3x PCIe, 2x 15mm NVMe, 2x Power input, 600W GPU Power Board

Optional Accessories

Model No.	Description
1-E09A22001	Adapter AC/DC 24V 9.2A 220W with 5pin Terminal Block Plug 5.0mm Pitch
1-E09A28001	Adapter AC/DC 24V/11.67A 280W with 5pin Terminal Block Plug 5.0mm Pitch
1-E09A36003	Adapter AC/DC 24V/15A 360W with 5pin Terminal Block Plug 5.0mm Pitch
1-E09A60001	Adapter AC/DC 48V/12.5A 600W with 4pin Terminal Block 5.0mm Pitch
1-TPCD00005	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm
3-VC63002NFAN	Internal 2nd Fan Module Kit w/ Filter

Packing List

1x VCO-6000-RPL-4E Series Embedded System
 1x Wall Mount Kit
 1x Accessory Kit
 1x DVI to VGA Adapter

Compliances and Standards

Vibration	With HDD: 1 Grms (5 - 500 Hz, 0.5 hr/axis) With SSD: 3 Grms (5 - 500 Hz, 0.5 hr/axis) IEC60068-2-64:2008 Designed to comply with MIL-STD-810G Method 514.7 Procedure I
Shock	With SSD: 20G half-sin 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810G Method 516.7 Procedure I
Operating Temperature	-25°C to 70°C (35W CPU) -25°C to 60°C (65W CPU) *Without GPU attached IEC60068-2-1:2007 (Cold test procedure) IEC60068-2-2:2007 (Dry heat test procedure) IEC60068-2-3:2007 (Damp heat, steady state, test procedure) IEC60068-2-14:2009 (Wide temperature range thermal shock)
EMC	- FCC Class A - CE - ICES-003 - UKCA - Industrial EMC Compliance - EN 61000-4-2: 2009 - EN IEC 61000-4-3: 2020 - EN 61000-4-4: 2012 - EN 61000-4-5: 2014 +A1: 2017 - EN 61000-4-6: 2014
Safety	- UL Safety: UL62368-1, 3rd Ed., (cULus) - Test procedure: CB Scheme - Standard: IEC 62368-1:2018