premio

MACHINE VISION COMPUTER

VCO-6000-RPL-4-2PWR

Machine Vision Computer with LGA 1700 for Intel® Core™ (Series 2) / 14th / 13th / 12th Gen Processors & R680E PCH, 3x PCIe, 4x Expansion Slots, 2x Power Input

Features
- Intel® Core™ Processors (BTL, Series 2) / 14th / 13th / 12th Gen RPL/ADL Series, LGA1700
- Intel® R680E chipset
- 2x DDR5 4800/5600MHz SODIMM. Max. up to 96GB
- 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 up to 70°C
- TPM 2.0 Supported

Specifications

System

Processor **Standard** 13th Gen Intel® Core™ Processors (Raptor Lake-S) - Intel® Core™ i7-13700TE, 35W - Intel® Core™ i5-13500TE, 35W 12th Gen Intel® Core™ Processors (Alder Lake-S) - Intel® Core™ i7-12700TE, 35W - Intel® Core™ i5-12500TE, 35W **Project Based** - Intel® Core™ 3 / 5 / 7 (Series 2, Bartlett Lake-S, 45W) - 14th Gen Intel® Core™ i3 / i5 / i7 / i9 (Raptor Lake-S Refresh, 35W~65W) - 13th Gen Intel® Core™ i3 / i5 / i7 / i9 (Raptor Lake-S, 35W~65W) - 12th Gen Intel® Core™ i3 / i5 / i7 / i9 (Alder Lake-S, 35W~65W)	
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 4800/5600 MT/s SODIMM. Max. up to 96GB (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: • 4x Removable 2.5" SATA HDD Bay (support H=7mm, Hot-swappable, Optional) Support RAID 0, 1, 5, 10 • 2x Removable 2.5" SATA HDD Bay (support H=15mm, Hot-swappable, Optional) Support RAID 0, 1, 5, 10 • 2x Removable 2.5" U.2 NVMe Bay (support H=15mm, Hot-swappable, Optional) Support RAID 0, 1

Expansion

Mini PCIe	1x Full-size Mini PCIe (1x shared by 1x mSATA)
M.2	1x M.2 (E Key, PCIe x1, USB 2.0, 2230)
PCIe	2x PCIe x16 Slot (8-lane, Gen 4) 1x PCIe x4 (1-lane, Gen 3)
Card Dimension	310 (L) x 112 (H) mm

I/O

COM	2x RS-232/422/485 ; 4x RS-232/422/485 (internal)
DIO	8 in / 8 out (Isolated)

LAN, USB, Others

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) 1x 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 • 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/45W CPU) -25°C to 60°C (65W CPU)
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

* Processor Base Power: 35W, 45W, 60W, 65W (CPU-dependent); View appendix table for complete supported CPUs.
** For 12/13/14th Gen Intel CPUs configured to run at 65W, operating temperatures will be limited to 45°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.
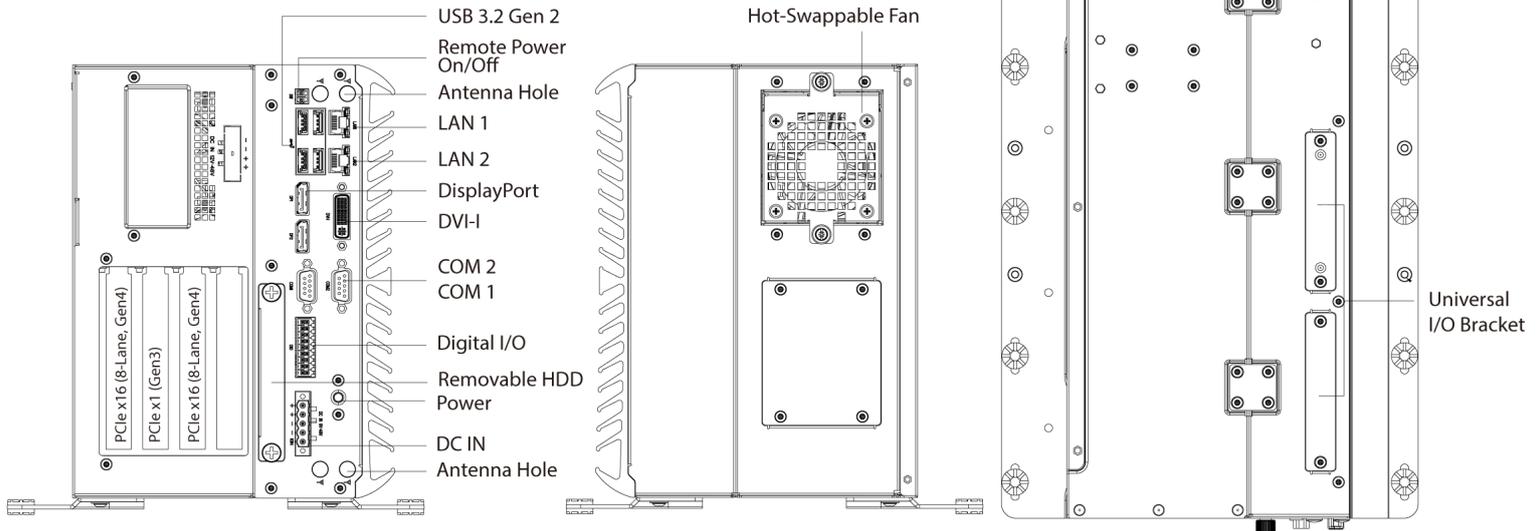**** All specifications and photos are subject to change without notice.
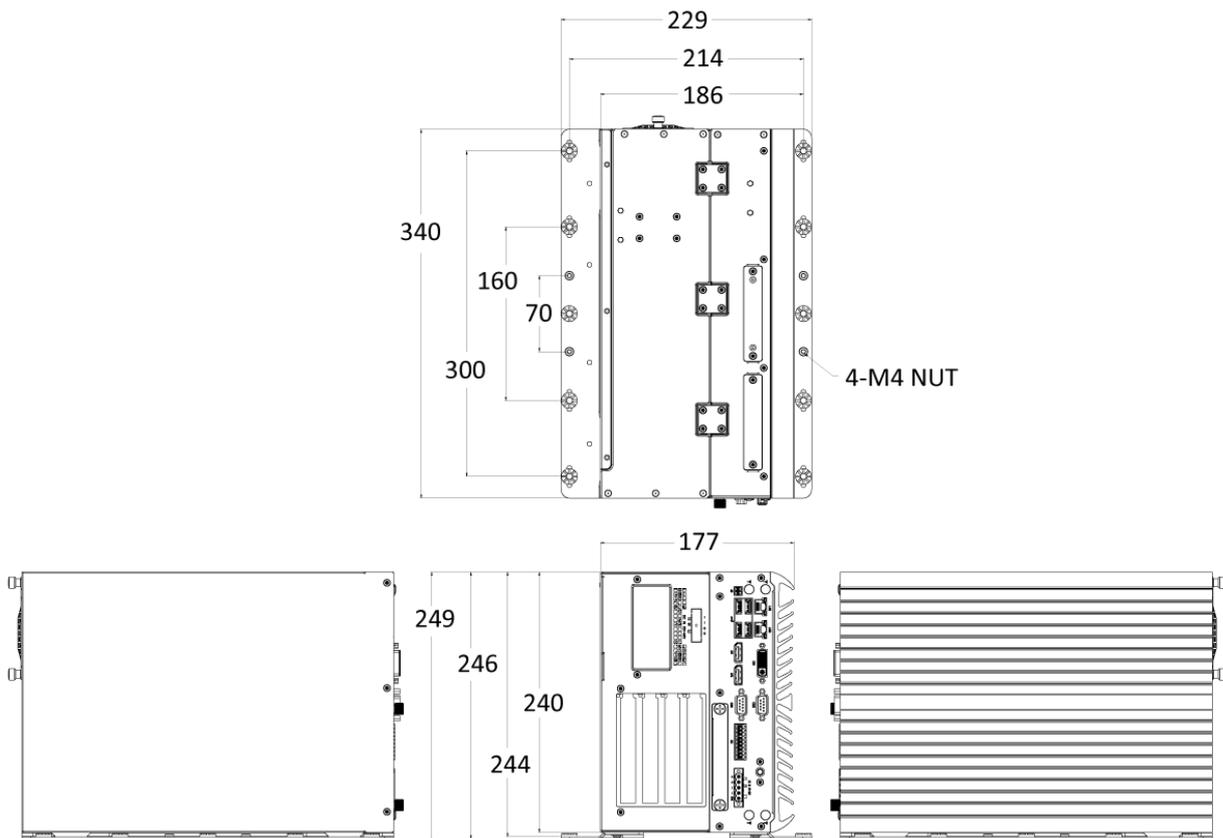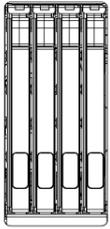
External I/O Mechanical Layout

Front Panel

Rear Panel

Top Panel

Front Panel labels:
- USB 3.2 Gen 2
- Remote Power On/Off
- Antenna Hole
- LAN 1
- LAN 2
- DisplayPort
- DVI-I
- COM 2
- COM 1
- Digital I/O
- Removable HDD Power
- DC IN
- Antenna Hole
- PCIe x16 (8-Lane, Gen4)
- PCIe x1 (Gen3)
- PCIe x16 (8-Lane, Gen4)

Rear Panel labels:
- Hot-Swappable Fan

Top Panel labels:
- Universal I/O Bracket

Dimension

Unit: mm

- 229
- 214
- 186
- 340
- 160
- 70
- 300
- 4-M4 NUT
- 177
- 249
- 246
- 240
- 244
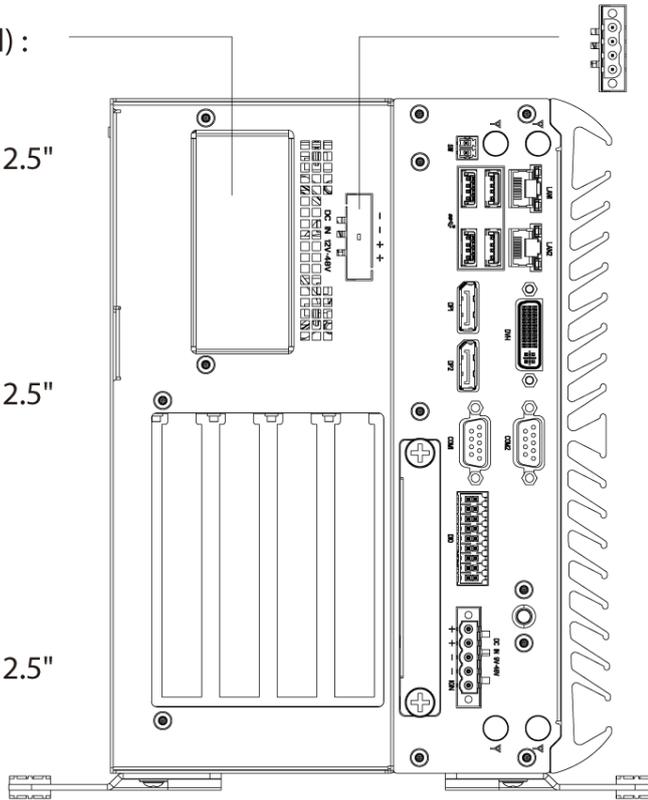
Expansion

Storage (optional) :

- 4B7M:
  4x Removable 2.5"
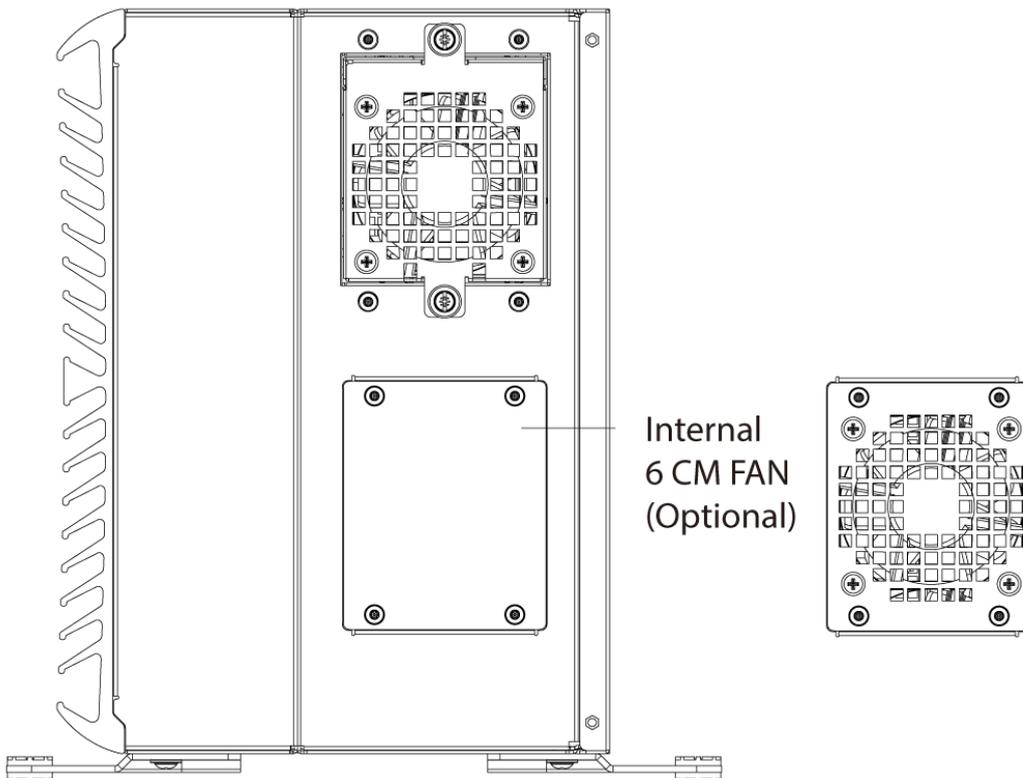 SATA HDD Bay

- 2B15M:
  2x Removable 2.5"
  SATA HDD Bay

- 2N15M:
  2x Removable 2.5"
  U.2 NVMe Bay

48VDC
(For GPU Expansion)

**Internal
6 CM FAN
(Optional)**

Compatible GPU AVL

Model	RAM	CUDA Cores	TDP	TOPS/TFLOPS	Displays	System Interface	Form Factor
NVIDIA T1000	8G	896	50W	5.3 TFLOPS	4x mDP	PCIe 3.0 x16	2.7" H x 6.1" L, Low-Profile Single Slot
NVIDIA RTX A1000	8G	2304	50W	6.74 TFLOPS	4x mDP	PCIe 4.0 x8	2.7" H x 6.4" L, Single slot
NVIDIA RTX A2000	12G	3328	70W	7.99 TFLOPS	4x mDP	PCIe 4.0 x16	2.7" H x 6.6" L, Low Profile, Dual Slot
NVIDIA RTX 2000 ADA	16G	2816	70W	12 TFLOPS	4x mDP	PCIe 4.0 x8	2.7" H x 6.6" L, Dual slot
NVIDIA RTX A4000	16G	6144	140W	19.2 TFLOPS	4x DP 1.4a	PCIe 4.0 x16	4.4" H x 9.5" L, Single Slot
NVIDIA RTX 4000 SFF ADA	20G	6144	70W	19.2 TFLOPS	4x mDP	PCIe 4.0 x16	2.7" H x 6.6" L, Low Profile, Dual Slot
NVIDIA RTX 4000 ADA	20G	6144	130W	26.7 TFLOPS	4x DP 1.4a	PCIe 4.0 x16	4.4" H x 9.5" L, Single Slot
NVIDIA RTX 4500 ADA	24G	7680	210W	39.9 TFLOPS	4x DP 1.4a	PCIe 4.0 x16	4.4" H x 10.5" L, Dual Slot
NVIDIA RTX 5000 ADA	32G	12800	250W	65.3 TFLOPS	4x DP 1.4a	PCIe 4.0 x16	4.4" H x 10.5" L, Dual Slot

Available Models

Model No.	Description
VCO-6000-RPL-4-2PWR-P	Machine Vision Computer w/ Intel® Core™ Processors (Series 2)/13th Gen (RPL)/12th Gen (ADL) & R680E PCH, 2x LAN, 3x PCIe, 4x Expansion Slots, 600W GPU Power Board
VCO-6000-RPL-4-2PWR-2B-P	Machine Vision Computer w/ Intel® Core™ Processors (Series 2)/13th Gen (RPL)/12th Gen (ADL) & R680E PCH, 2x LAN, 3x PCIe, 4x Expansion Slots, 2 Bay 15mm SATA, 600W GPU Power Board
VCO-6000-RPL-4-2PWR-2N-P	Machine Vision Computer w/ Intel® Core™ Processors (Series 2)/13th Gen (RPL)/12th Gen (ADL) & R680E PCH, 2x LAN, 3x PCIe, 4x Expansion Slots, 2 Bay 15mm NVMe, 600W GPU Power Board
VCO-6000-RPL-4-2PWR-4B-P	Machine Vision Computer w/ Intel® Core™ Processors (Series 2)/13th Gen (RPL)/12th Gen (ADL) & R680E PCH, 2x LAN, 3x PCIe, 4x Expansion Slots, 4 Bay 7mm SATA, 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 Plug 5.0mm Pitch
999930	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

Packing List

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

Exports And Tariff Codes

ECCN	5A992.c
HTS	8471.50.0150
ScheduleB	84.71

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-810H Method 514.8 Procedure I
Shock	With SSD: 20G half-sin 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810H Method 516.8 Procedure I
Operating Temperature	-25°C to 70°C (35W/45W CPU) -25°C to 60°C (65W CPU) 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