



GPU COMPUTING SYSTEM

# VCO-6120-2060S

GPU Computing System with LGA 1151 for Intel 8th/9th Gen CPU & Q370 PCH, RTX 2060 Integrated, 2x Power Input



## FEATURES

- Support 8<sup>th</sup>/9<sup>th</sup> Gen Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)
- Intel® Q370 Chipset
- 6 Display interface supported by 1x DVI-I, 1x DVI-D, 3x DisplayPort, 1x HDMI
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 2x Full-size mini PCIe (shared by 1x mSATA), and 2x SIM socket
- 4x 2.5" SATA HDD Bay with RAID 0, 1, 5, 10 support, 1x mSATA (Shared by 1x Mini PCIe)
- 1x M.2 (M Key, PCIe x4, 2280, Support NVMe), 1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi)
- 6x RS-232/422/485 (4x internal)
- 4x USB 3.2 Gen 2 (10 Gbps), 4x USB 3.2 Gen 1 (5 Gbps, internal)
- 8x DI + 8x DO with isolation
- 9 to 48V DC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature (-25°C to 60°C)
- TPM 2.0 Supported

## SPECIFICATIONS

### System

#### Processor

- Support 8<sup>th</sup>/9<sup>th</sup> Gen Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)
- Intel® Core™ i7-9700E, 8 Cores, 12MB cache, up to 4.4 GHz
  - Intel® Core™ i5-9500E, 6 Cores, 9MB Cache, up to 4.2 GHz
  - Intel® Core™ i3-9100E, 4 Core, 6MB Cache, 3.7 GHz
  - Intel® Core™ i7-9700TE, 8 Cores, 12MB cache, up to 3.8 GHz
  - Intel® Core™ i5-9500TE, 6 Cores, 9MB Cache, up to 3.6 GHz
  - Intel® Core™ i3-9100TE, 4 Core, 6MB Cache, 3.2 GHz
  - Intel® Core™ i7-8700T, 6 Cores, 12MB cache, up to 4.0 GHz
  - Intel® Core™ i5-8500T, 6 Cores, 9MB Cache, up to 3.5 GHz
  - Intel® Core™ i3-8100T, 4 Cores, 6MB Cache, 3.1 GHz
  - Intel® Pentium® G5400T, 2 Cores, 4MB Cache, up to 3.1 GHz
  - Intel® Celeron® G4900T, 2 Cores, 2MB Cache, up to 2.9 GHz

System Chipset Intel® Q370 Express Chipset

LAN Chipset GbE1: Intel I219LM (Support Wake-on-LAN and PXE)  
GbE2: Intel I210-AT (Support Wake-on-LAN and PXE)

Audio Codec Realtek ALC888S

System Memory 2x 260-Pin DDR4 2400/2666MHz SODIMM.  
Max. up to 64GB (Un-buffered and Non-ECC)

BIOS AMI 256Mbit SPI BIOS

Watchdog Software Programmable Supports 1~255 sec. System Reset

TPM TPM 2.0

### Display

Graphics Intel® UHD Graphics 610/630 or NVIDIA GeForce® RTX 2060 Super

DVI 1x DVI-I, 1x DVI-D

HDMI 1x HDMI

DisplayPort 3x DisplayPort, support resolution 4096 x 2304

Multiple Display 6 Display interfaces

### Storage

SSD/HDD 2x Internal 2.5" SATA HDD Bay (support H=9mm)  
2x Removable 2.5" SATA HDD Bay (support H=7mm, hot-swappable), Support RAID 0, 1, 5, 10

mSATA 1x mSATA (Shared by 1x Mini PCI Express)

M.2 1x M.2 (M Key, PCIe x4, 2280, Support NVMe),  
1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi)

SIM Socket 2x Internal SIM socket

### Expansion

Mini PCI Express 2x Full-size Mini PCIe (1x shared by 1x mSATA)

### Operating System

Windows Windows 10

Linux Linux kernel 5.X

### I/O

COM 2x RS-232/422/485  
4x RS-232/422/485 (internal)

USB 4x USB 3.2 Gen 2 (10 Gbps)  
4x USB 3.2 Gen 1 (5 Gbps, internal)

LAN 2x RJ45

DIO 8 in / 8 out (Isolated)

Universal I/O Bracket 2x Universal I/O Bracket (By mini PCIe interface)

Others 4x WiFi Antenna Holes  
1x Power Switch  
1x Remote Power On/Off

### Power

Power Mode AT, ATX

Power Supply Voltage 9~48VDC, 12~48VDC for GPU

Power Ignition Sensing Power Ignition Management

Power Connector 3-pin Terminal Block, 3-pin or 4-pin Terminal Block for GPU

Power Adaptor Optional AC/DC 24V, 220W/ 280W  
Optional AC/DC 24V, 280W for GPU

Power Protection OVP (Over Voltage Protection);  
OCP (Over Current Protection)  
Reverse Protection

### Environment

Operating Temp. -25°C to 60°C (35 / 65W CPU)

Storage Temp. -30°C to 85°C

Relative Humidity 10% to 95% (non-condensing)

Vibration With SSD: 3 Grms, 5 - 500 Hz, 0.5 hr/axis  
With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis

Shock With SSD: 20G, half sine, 11ms

Standards / Certification CE, FCC Class A

### Physical

Construction Extruded Aluminum with Heavy Duty Metal

Dimension 137 (W) x 340 (D) x 240 (H) mm

Weight 10.1 kg

Mounting Wall Mounting / Book mounting (Optional)

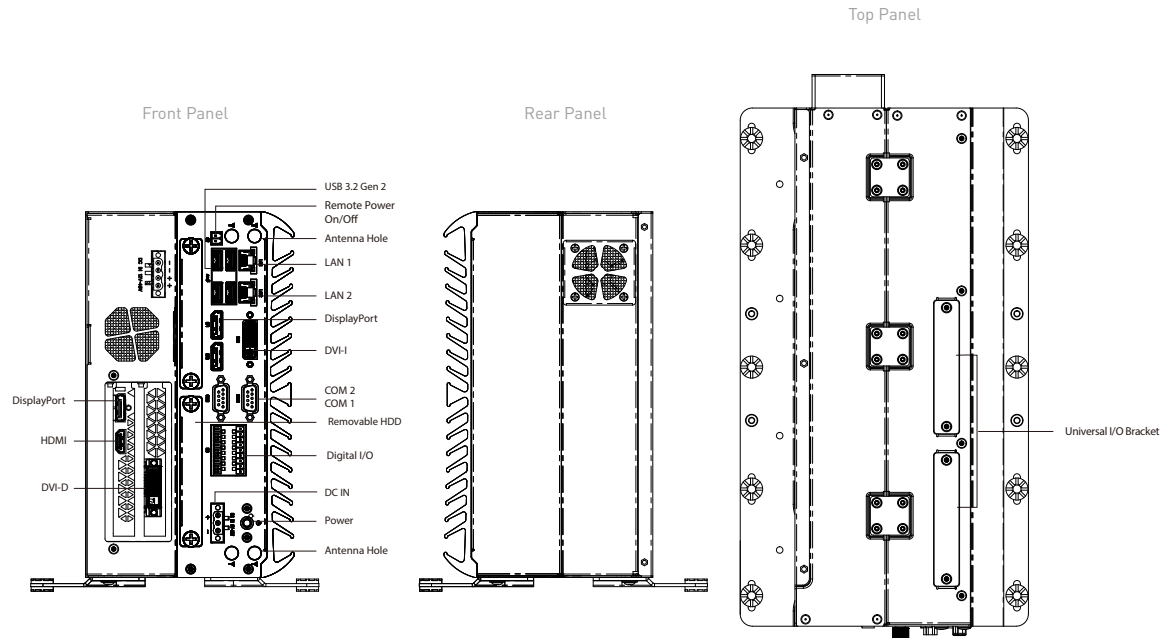
\* For 8<sup>th</sup>/9<sup>th</sup> CPUs configured to run at 65W, operating temperatures will be limited to 60°C.

\*\* 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 8 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.

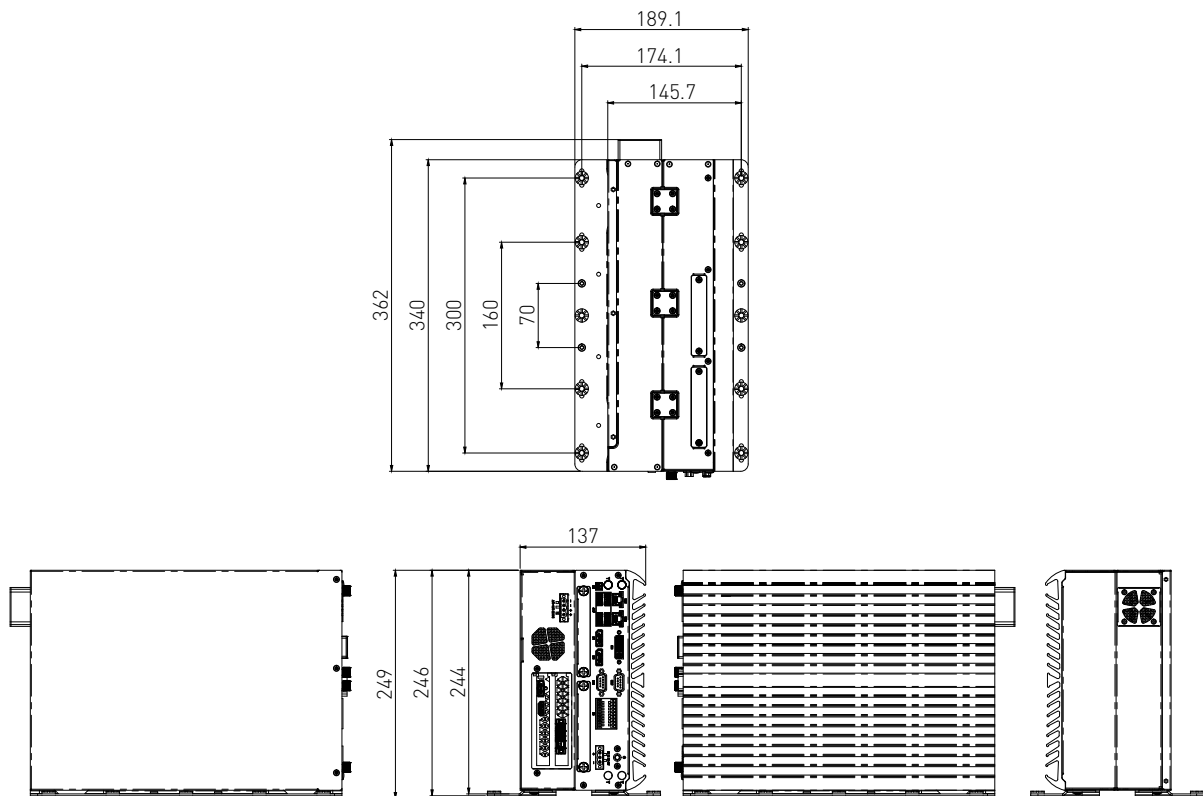
# VCO-6120-2060S

## EXTERNAL I/O MECHANICAL LAYOUT



## DIMENSION

Unit: mm





# VCO-6120-2060S

## ORDERING INFORMATION

| MODEL NO.   | DESCRIPTION                                                             |
|-------------|-------------------------------------------------------------------------|
| 1-E09A22801 | Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch |
| 1-E09A22102 | Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 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                                        |

## PACKING LIST

- 1x VCO-6100 Series Embedded System
- 1x Wall Mount Kit
- 1x Accessory Kit
- 1x DVI to VGA Adapter

## AVAILABLE MODELS

| MODEL NO.      | DESCRIPTION                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------|
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## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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