

Vantageo 25HL-C

Flexible, Scalable, and Secure



The Vantageo 25HL-C motherboard is designed to be an ideal platform for both GPU workstations and general purpose server applications.

Overview

As a workstation motherboard, the S7100 features onboard audio and allows the use of 4 GPU cards. This enables maximum performance in technical computing workloads such as Engineering Analysis, 3D Design, Photorealistic Rendering, Image Manipulation, Media & Entertainment Creation, and Energy Exploration. With much of modern high performance workstation applications featuring support for VGA offloading and all four PCIe x16 slots being a full electrical x16 link, Vantageo 25HL-C is one of the most powerful workstation motherboards on the market today.

The Vantageo 25HL-C is also a versatile platform for many server applications. With a total of 7 PCIe slots, it lends itself well to many high I/O applications such as Video Walls, Large Scale Video Capture, Surveillance, Industrial Automation, and general purpose server workloads. The board design also lends itself to offering support for true full length 12.3" PCIe cards.

Features

Xeon Scalable Processor Family

The new Xeon Scalable Processor is Intel's largest advancement in a decade and brings many new features and capabilities:

- Up to 28 CPU cores per socket
- 50% Increased memory bandwidth with 6 memory channels per socket

- Memory speeds up to DDR4-2667 (depending on CPU SKU)
- No slowdown in memory speed when deploying 2 DIMMs per channel
- Increased PCIe connectivity to 48 PCIe Gen3.0 lanes per CPU socket
- Optional Integrated Intel Omni-Path Architecture Host Fabric Interface
- Native support for up to 14 SATA ports
- New Ultra Path Interconnect
- New Advanced Vector Extensions 512 (AVX-512)

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Vantageo motherboards offers maximum expansion within a standard 12" x 13" SSI EEB form factor:

- (4) PCIe Gen 3.0 x16 (2 slots from CPU0; 2 slots from CPU1)
- (3) PCIe Gen 3.0 x8 (1 slot from CPU0; 2 slots from CPU1)

205W CPU Support

The Intel Xeon Scalable Processor Family features processors with a maximum TDP of up to 205W. With this in mind, the VRM of the s7100 motherboard has been designed to power the most demanding of the Xeon SP lineup.

Optional HD Audio

Powered by an optional Realtek ALC892, the s7100 workstation motherboard offers 7.1 Channel HD Audio via internal header and on-board optical S/PDIF output.

4 GPU Support

Paired with a workstation or 3U chassis, the s7100 supports the use of four double-wide GPU cards. This makes it an excellent choice for GPU powered workstations and servers which offload much of the computational workload to powerful VGA cards and GPU accelerators.

Dual Port SATA DOM and NVMe M.2

The s7100 provides multiple options for compact boot drive support in space constrained server chassis, including a pair of NVMe M.2 and another pair of SATA DOM ports with Pin-8 power support.

IPMI 2.0 with Redfish Support

Featuring AMI Megarac firmware, the s7100 motherboard offers support for IPMI 2.0 with iKVM and the DMTF Redfish management protocol

Target Applications

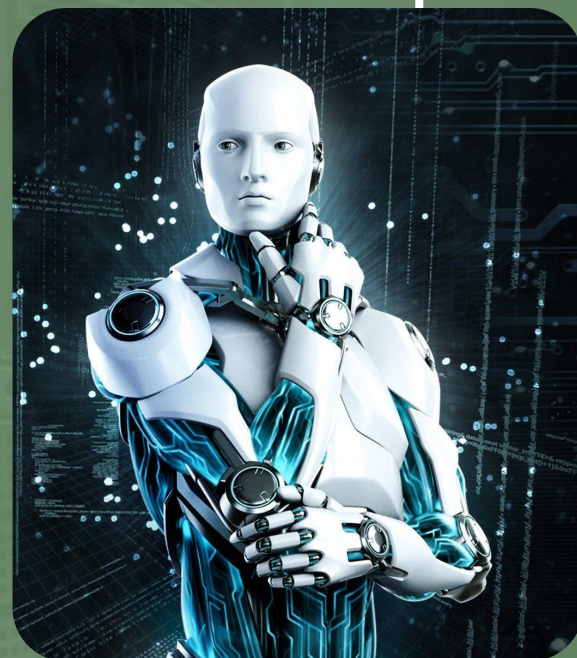
- GPU Workstations
- Industrial Automation
- Video Walls
- Large Scale Video Capture
- General Purpose Server Applications
- Full Length 12.3" PCIe card deployment

The Vantageo 25HL-C is a high-performance dual-socket server/workstation motherboard designed for demanding workloads. It is part of Vantageo Tempest HX series, targeting applications such as scientific computing, virtualization, and enterprise environments.

Use Cases:

The Vantageo 25HL-C is ideal for professionals in fields such as research, finance, and data science who require robust multi-threaded performance and scalability in a server or workstation environment. Its support for high core-count processors, abundant memory capacity, and high-speed I/O make it a suitable choice for heavy-duty computation tasks.

This motherboard offers flexibility and power to build a highly capable workstation or server that meets the needs of demanding enterprise workloads.



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Features	Technical Specification	
Processor	Q'ty / Socket Type	(2) LGA3647
	Supported CPU Series	2nd Gen Intel Xeon Scalable Processor
	Thermal Design Power Wattage	Max up to 205W (TDP)
	System Bus	Up to 10.4/9.6 GT/s with Intel UltraPath Interconnect (UPI) support
Chipset	PCH Intel C621	
Memory	Supported DIMM Qty	Max up to 205W (TDP)
	DIMM Type / Speed	DDR4 ECC RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS 2933/2666 / Intel Optane DC Persistent Memory Module (DCPMM)
	Capacity	Up to 384GB RDIMM/ 768GB LRDIMM/ 1,536GB RDIMM 3DS/LRDIMM 3DS *Follow latest Intel DDR4 Memory POR
	Memory channel	6 Channels per CPU
Expansion Slots	Memory voltage	1.2V
	PCIe	(3) PCIe Gen.3 x8 slots / (4) PCIe Gen.3 x16 slots
LAN	Q'ty / Port	(2) GbE ports (1 port shared with IPMI)
	Controller	Intel I350-AM2
Storage SATA	Connector	(2) Mini-SAS HD (8 ports)
	Controller	Intel C621
	Speed	6Gb/s
	RAID	RAID 0/1/10/5 (Intel RSTe)
Storage sSATA	Connector	(2) SATA-DOM / (1) Mini-SAS HD (4-ports)
	Controller	Intel C621
	Speed	6Gb/s
	RAID	RAID 0/1/10/5 (Intel RSTe)
Storage NVMe	Connector (M.2)	(1) 2242 (by PCIe interface) / (1) 2280/2260/2242 (by PCIe interface)
Graphic VGA	Connector type	D-Sub 15-pin
	Resolution	Up to 1920x1200
	Chipset	Aspeed AST2500
Graphic VGA	USB	(3) USB2.0 ports (2 via cable, 1 Type-A) / (6) USB3.0 ports (4 @ rear, 2 via cable)
	COM	(1) header
	VGA	(1) D-Sub 15-pin VGA port (@ rear)
	RJ-45	(2) GbE ports
	Front Panel	(1) 2 x 5 header
	Audio	(1) SPDIF OUT Connector / (1) 26-pin 7.1 ch HD Connector
	SATA	(3) Mini-SAS (4-in-1) connectors / (2) SATA/SATA-DOM connectors
	Power	SSI 24-pin + 8-pin + 8-pin power connectors
Others	(1) ID button	

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Vantageo 25HL-C

Features	Technical Specification	
TPM (Optional)	TPM Support	Please refer to our TPM supported list.
System Monitoring	Chipset	Aspeed AST2500
	Fan	Total (6) 4-pin headers
	Temperature	Monitors temperature for CPU, memory & system environment
	Voltage	Monitors voltage for CPU, memory, chipset & power supply
	LED	Over temperature warning indicator / Fan & PSU fail LED indicator / Over voltage warning indicator
	Others	Watchdog timer support
Audio	Chipset	Realtek ALC892-CG
	Feature	High Definition Audio / 7.1 ch
	Connector	(1) SPDIF OUT Connector / (1) 26-pin 7.1 ch HD Connector
Server Management	Onboard Chipset	Onboard Aspeed AST2500
	AST2500 iKVM Feature	24-bit high quality video compression / Supports storage over IP and remote platform-flash / USB 2.0 virtual hub
	AST2500 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / 10/100/1000 Mb/s MAC interface
BIOS	Brand / ROM size	AMI / 32MB
	Feature	Hardware Monitor / Boot from USB device/PXE via LAN/ Storage / Console Redirection / User Configurable FAN PWM Duty Cycle / SMBIOS 3.0/PnP/Wake on LAN / ACPI 6.1 / ACPI sleeping states S4,S5
Physical Dimension	Form Factor	SSI EEB compatible
	Board Dimension	12.2" x 13.04" (309.8 x 331.2mm)
Regulation	FCC (SDoC)	Class B
	CE (DoC)	Class B
	RCM	Class B
	VCCI	Class B
Operating Environment	Operating Temp.	0° C ~ 55° C (32° F~ 131° F)
	Non-operating Temp.	0° C ~ 55° C (32° F~ 131° F)
	In/Non-operating Humidity	90%, non-condensing at 35° C
RoHS	RoHS 6/6 Compliant	Yes
Operating System	OS supported list	Please refer to our AVL support lists.
Package Contains	Motherboard	(1) S7100 Motherboard
	Manual	(1) Quick Installation Guide
	Installation CD	(1) VANTAGEO Device Driver CD
	I/O Shield	(1) I/O Shield
	Cable SATA	(2) SATA signal cables

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Part No	Description
VT 25HL-C- G226R	Intel Xeon 6226R 2.9Ghz
VT 25HL-C- 0211	Intel C621
VT 25HL-C- 203B	32GB DDR4 2933mhz
VT 25HL-C- 3057	1TB NVME SSD
VT 25HL-C- 4190	2TB SATA HDD
VT 25HL-C- 0435	Mid Tower
VT 25HL-C- G015	1000 watts
VT 25HL-C- 7111	10G*2
VT 25HL-C- 04A0	CPU Heat Sink
VT 25HL-C- NRA4k	RTX A4000 16GB
VT 25HL-C- KBM	Wired standard Keyboard and Optical scroll Mouse

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