

Liquid Cooling-LiquidMax™ TL40-X3 Workstation

Smart Computing, Ultra Quiet Dual Socket, 4x PCIe 4.0 GPU Tower



Features

- Integrated with dual socket 3rd Gen Intel® Xeon® Scalable series processors
- Supports 4 FHFL GPUs
- Utilizes CPU+GPU full liquid cooling solution
- The noise level of the entire workstation at full load is 55dB
- 10 x 3.5"/2.5"+2 x 2.5" internal hard disk bays
- Abundant I/O expansion capabilities

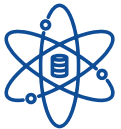
Applications

- Image recognition
- Autonomous driving
- Online teaching
- Smart medical
- Video surveillance
- Mobile communication



Full Liquid Cooling Support, with Extreme Noise Reduction

- Noise level of the entire workstation at full load is 55dB.
- Circulating air duct design, with no dead spots for heat dissipation
- Adjustable fan speed, delivering a balance between power efficiency and quietness
- Balanced, closed circulating waterway, with no risk of liquid leakage



Dual Socket 3rd Gen Intel Xeon Processors, with 4 FHFL PCIe Gen4 GPUs

- Up to 80 processor cores and 160 threads
- Up to 192GB GPU Memory
- NVLink bandwidth up to 112GB/s
- Parallel GPU design, supports flexible assembly and disassembly



Intelligent LCD Panel, Provides Real-time Monitoring Status

- LCD display for key temperature information
- Real-time monitoring of important parameters of the cooling system
- Real-time leakage detection



Flexible Configuration, High Scalability

- Support 10 x 3.5"/2.5" +2 x 2.5"SATA/SAS internal hard disk
- Support NVMe M.2 (2280 /22110) SSD
- Equipped with multiple USB 3.0 and USB 2.0 ports
- Onboard dual 10Gbps RJ45 Ethernet ports and IPMI management port

Liquid Cooling Components

CPUs and GPUs are the components that generate the most heat inside the workstation. As a result, we need to ensure that the heat generated by these components is quickly dissipated away in a very short time, to ensure the workstation operates efficiently.



For workstations with 4 high performance GPUs, the choice of heat dissipation method is very important. After repeated tests and comparisons, AMAX has chosen a GPU parallel cooling design. After the liquid is cooled, it will flow through all GPUs in parallel at the same time, and after the heat is taken away as a whole, it will be returned to the cold row for heat dissipation. This ensures that all GPUs are always operating in a low temperature state.

At the same time, we adopt the design of reinforced connector and water stop valve to ensure flexible installation or removal of any GPU. Secondly, the water body is transmitted through the hose, without affecting the flow rate and heat dissipation effect, avoiding the hidden fracture and long-term use of the liquid leakage risk of most hard water pipes on the market.

Smart LCD Panel, Air Duct Design

The LiquidMax™ TL40-X3 workstation contains multiple temperature detectors to monitor the highest temperature inside the machine in real time. Real-time monitoring of fan speed.



Real-time monitoring of liquid flow rate, water level and temperature. It incorporates high-efficiency circulating air duct design, and the air outlet fan speed can be adjusted to ensure ventilation and improve heat dissipation efficiency.

LiquidMax™ TL40-X3 System Specifications

Processor Support	• Dual 3rd Gen Intel® Xeon® Scalable Processors up to 270W TDP and 80 processor cores per system
GPU Support & Quantity	• 4 x double-width FHFL NVIDIA A100, A40, A30, A16, RTX™ A6000, A5000, A4000, Quadro RTX™, or GeForce RTX™ GPUs
Chipset	• Intel® C621A chipset
Memory Capacity	• 16 DIMM slots • Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM • Up to 4TB Intel® Optane™ Persistent Memory 200 Series
Expansion Slots	• 6 x PCIe 4.0 x16 slots • 1 x PCIe 4.0 x8 slot
Network Connectivity	• 2 x 10GbE RJ45
I/O ports	• 1 x BMC LAN port • 1 x VGA port • 6 x USB 3.0 • 2 x COM
System management	• Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port
Drive Bays	• 10 x 3.5"/2.5"+ 2 x 2.5"SATA/SAS internal drive bays • 2 x NVMe M.2 (2242/2260/2280/22110)
Power Supply	• Single 2000W high efficiency power supply
System Dimensions (H x W x D)	• Tower chassis • 24.7" x 12.5" x 26.4" / 629mm x 319mm x 670mm

Use Case Examples

Online Education

Online education or distance education, online learning, is a concept generally refers to a type of network-based learning behavior, similar to the concept of network training. Distance education truly breaks the limitations of time and space. Those who are busy at work and have irregular study time can study anytime and anywhere. Using video, voice and other teaching software to make the communication between teachers and students more convenient, making the entire teaching process more interactive; allowing more people to have more free time in class and more convenient course arrangements; also making teachers and students enjoy it feels like a face-to-face communication without leaving home.

According to the characteristics of online education, the LiquidMax™ TL40-X3 is specially designed for offices and quiet places. It can be conveniently placed on the desktop, and has strong heat dissipation and ultra-quiet characteristics. It also provides up to 200TB of large-capacity storage, and further enhances AI development and visual applications. Accurate and effective combination to achieve high-definition barrier-free mute transmission function, improve classroom teaching “zero distance, high sharing, high harvest”.

Smart Medical

From “Internet + medical”, “AI + big health” to “5G + smart medical”, in recent years, the global medical and health industry has been continuously integrating high technologies such as artificial intelligence, Internet of Things, and big data, making medical services real. The intelligentization of meaning has also ushered in an unprecedented opportunity for development. The field of “AI + Medical” is based on AI technologies such as image recognition, deep learning, and neural networks, and there is a lot to be done. The LiquidMax™ TL40-X3 is equipped with 4 double-width GPUs, and can easily process large amounts of medical data, accelerate the implementation of the smart medical industry, landing scenarios include disease prediction, health management, new drug research and development, precision surgery, auxiliary diagnosis, hospital management and many other “outreach” directions.

Additional Product Features

CPU	The second generation Intel® Xeon® Scalable (Refresh), the number of CPU cores of the entire workstation can be as high as 80
GPU	Efficient parallel connection, room temperature 25°C, maximum GPU 67°C, high efficiency and stable operation
Storage	10 3.5" hard disk drives
Noise	The room temperature is 25°C, and the noise of the whole machine is 55dB
Water Pump	Professional grade, life span of 5-10 years
Coolant	Insulation, antifreeze, water scale inhibitor, microbial inhibitor, etc., to extend the life of the equipment
Liquid Cooling Tube	Use hose, bendable, no risk of breakage, anti-oxidation
Cold Plate	Metal welded and sealed cold plate, while improving the heat dissipation performance, the product is lighter and more reliable, the system requires less flow, and it is efficient and energy-saving Lightweight heat-conducting plate, under the premise of ensuring good heat dissipation efficiency, the weight is reduced by 52% The cold plate is light and thin, and the base thickness is only 7mm, which ensures the GPU interval and ensures the ventilation and heat dissipation of the common components in the server
Cold Row	All red copper, excellent thermal conductivity, 4 fans
Chassis	Professional customization, calm atmosphere, sturdy and durable
LCD Panel	Easy to adjust fan speed, real-time display of the highest temperature of key components, real-time display of flow rate Water level and temperature, alarm function, fast positioning of bad fans
After Sale	Regular inspection, provide original factory door-to-door service, 3 years maintenance, up to 5 years optional

