

# Supermicro Liquid Cooling Direct-to-Chip Solution

Accelerated Time-to-Delivery of Plug-and-Play Liquid Cooled Rack Designs with Proven Quality and Reliability

## Supermicro Direct-to-Chip Liquid Cooling Solution Advantages

- **Optimized data center sustainability:**
  - Up to **40%** reduction in electricity costs for entire data center
  - Up to **55%** reduction in data center server noise
  - Up to **89%** reduction in electricity costs in server cooling infrastructure
  - Up to **80%** reduction in data center space usage
- **Broad range of modular cold plate designs**
- **Unique liquid cooled server designs to double GPU density at server and rack level**
- **Cabling for optimizing cooling and maintenance**
- **Rack scale validation of customer applications and environments to ensure the highest quality and satisfaction**
- **Plug-and-play data center level integration readiness**
- **Single-vendor total IT solution from design to delivery**

## Single Vendor Proven Solution

Supermicro provides total rack scale liquid cooling solutions from hardware to software with complete building block solutions or third-party vendor combinations. Supermicro delivers a completely tested solution, including servers, racks, networking, liquid cooling components, and liquid cooling tower which speeds up time to deployment and results in higher quality of the entire infrastructure.

Supermicro's direct to chip liquid cooling solution includes:

- Hose Kit
- CDU (Coolant Distribution Unit)
- Vertical CDM (Coolant Distribution Manifold)
- Horizontal CDM (Coolant Distribution Manifold)
- CPU cold plate
- GPU cold plate
- DIMM module cold plate

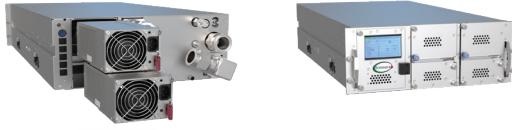


## World-Class Rack Manufacturing Facility

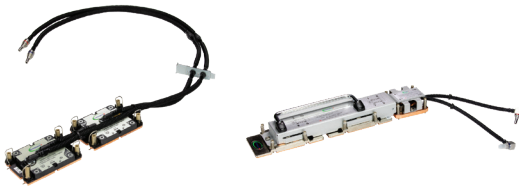
Supermicro has a global rack manufacturing capacity of 5,000+ racks per month—of which 1,350 can be liquid cooling racks—for full-scale solution production, testing and shipping. In addition, up to 800Gb/s networking speed testing environment allows Supermicro rack solutions to be validate for a wide range of network requirements. Supermicro's rack production is completely assembled in-house, complementing an unwavering commitment to quality, sustainability and maximizing time-to-market. The 11MW facility is designed to maximize efficiently, reduce greenhouse gas emissions, minimize air pollutions and reduce water use during manufacturing

## Supermicro Ready-to-Deploy Liquid Cooling Tower

The Supermicro Liquid Cooling Solution now includes a complete Liquid Cooling Tower solution, which is designed to efficiently remove the heat produced by today's—and tomorrow's—most powerful CPUs and GPUs, including those for AI Training and Inferencing. Supermicro's pioneering total Liquid Cooling Infrastructure enables customers to obtain everything that is required for a modern data center from a single vendor.



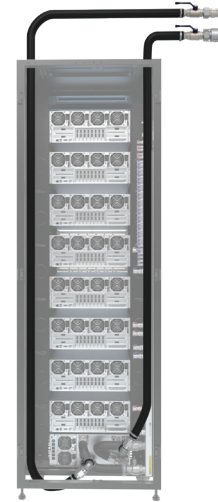
Component	CDU (Coolant Distribution Unit)
Outstanding Features	<ul style="list-style-type: none"> <li>Intelligent CDU monitoring and control with both touch panel and remote access</li> <li>Maximum uptime and redundancy</li> <li>Peak operating efficiency</li> <li>1.002 mPUE</li> </ul>
Form Factor	4U Rackmount
Dimension	480mm (W) x 1160.7mm (D) x 177mm (H)
Cooling Capacity	100kW Support up to 45°C facility water
Coolant	Propylene glycol 25 wt%
Pump	1+1 Redundant, hot-swappable Over 99% uptime
Power	1+1 Redundant, hot-swappable PSUs
Monitoring and Control	Dew point control Liquid level Pump speed Web interface Monitoring item log Fully integrated by Supermicro SuperCloud Composer software



Component	Cold Plate
Outstanding Features	<ul style="list-style-type: none"> <li>Low thermal resistance</li> <li>Micro-sized channels</li> <li>Low liquid flow resistance</li> </ul>
Cold Plate Supporting List	Latest Intel® Xeon® processors Latest AMD EPYC™ processors NVIDIA HGX™ H100 8-GPU NVIDIA HGX™ H100 4-GPU NVIDIA GH200 Grace™ Hopper Superchip AMD Instinct™ MI300X DIMM module



Component	CDM (Coolant Distribution Manifold)
Outstanding Features	<ul style="list-style-type: none"> <li>Optimized flow distribution</li> <li>Easy integration button mounted</li> </ul>
CDM Types	Vertical CDM Horizontal CDM
Rack Unit Support	Vertical CDM: 42U and 48U Horizontal CDM: 1U
Sensors	Liquid level sensor Air pressure sensor Anti-condensation sensor
QDC (Quick Disconnect Coupling)	Non-spill design One-handed QDC operation Low liquid flow resistance Color coding



Component	Hose Kit
Outstanding Features	<ul style="list-style-type: none"> <li>Seamless integration with existing facility pipings</li> <li>Flexible length design</li> <li>Dummy-proof camlock design with international fitting standard</li> <li>Toolless Deployment</li> </ul>
Length	1, 2, 3, 5 meters
Internal Width Diameter	1.25 inches
Connector Type	Ball valve
Max Liquid Pressure	10-bar
Camlock Interface	Facility Supply: female camlock fitting Facility Return: male camlock fitting