

GT Full Chain Liquid Cooling Solution

Overall cooling from inside to outside

Direct-to-Chip full chain liquid cooling solution Immersion full chain liquid cooling solution

Strong R&D In-house Production

Cold Plate Electronics Cooling Quick Coupling Cabinet Secondary Loop CDU Soluking Long-term Working Medium Cold Source

Comprehensive Detection Intelligent Control Quick Delivery





Save paper for the protection of forest resources



GT Full Chain Liquid Cooling

In the Era of Explosive AI and Computing Power Demand, GOTTOGPOWER Provides End-to-End Liquid Cooling Solutions from Chips to Data Centers.

Through a closed-loop thermal management architecture, we break traditional cooling bottlenecks, building sustainable thermal foundations for high-density computing—empowering data center energy efficiency revolution and future-ready upgrades.





GT Full Chain Liquid Cooling Solution



Mainstream cooling solutions for data centres: liquid cooling

This cooling method utilizes liquid coolant in direct contact with heatgenerating electronic components for thermal exchange. By leveraging liquids' superior thermal conductivity, it rapidly absorbs and transfers heat from highpower-density equipment like chips and servers-achieving thousands of times greater efficiency than air cooling-thus addressing extreme cooling demands unattainable through traditional air cooling.







- Ultra-Low PUE.
- · High heat dissipation efficiency, capable of handling ultra-high power density.
- Liquid cooling has less noise than air-cooled rooms, improving the working environment.



 Data centers significantly reduce carbon emissions.

GT Full Chain Liquid Cooling Solution



 Simplified infrastructure saves 30% of computer room space.





Reduced risk of server downtime and lower operation and maintenance costs.



Overall Cooling from Inside to Outside



Direct-to-Chip Full Chain Liquid Cooling Solution

Immersion Full Chain Liquid Cooling Solution

Immersion liquid cooling technology is a new cooling technology that uses liquid instead of air as the cooling medium. Its main feature is that the liquid as the cooling medium is in direct contact with the heat source. Compared with air, liquid has better heat transfer characteristics (greater specifc heat capacity and higher thermal conductivity). Therefore, compared with the traditional air cooling system, the liquid cooling system has the advantages of high heat exchange efciency and low cooling energy consumption. According to whether the liquid phase changes during the heat exchange process, it can be divided into two forms: phase-change immersion liquid cooling and single-phase immersion liquid cooling.

Modular Liquid Cooling System



- Modular liquid cooling system: composed of CDU and cabinet.
- The CDU integrates the coolant circulation pump, heat exchanger, filter, controller and sensors, realizing the intelligent control of the liquid cooling system.
- The quantity of CDU, cabinet, and dry cooler can be flexibly matched to different application scenarios.
- Suitable for single-phase immersion liquid cooling system applications.

Product Specification

Cabinet (Single-phase Immersion)						
Model GT21C30F3 GT42C60F3 GT52C80F3						
Cabinet Capacity (U)	21	42	52			
Equipment Specifications for IT	19 inch depth ≤ 900mm	19 inch depth ≤ 900mm	19 inch depth ≤ 900mm			
Power of IT Devices (kW)	10~30	20~60	25~80			
Liquid Volume (L)	280~420	560~840	690~1000			
External Dimensions-L*W*H (mm)	1050*800*1250	2100*800*1250	2550*800*1250			
Net Weight (kg)	200	400	550			

Liquid CDU							
Model	GT80J553	GT120J5S3	GT200J5S3	GT320J5S3			
Power of IT Devices (kW)	80	120	200	320			
Number of Coolant Pumps	1	1	1	1			
Circulation Volume (m ³ /h)	36/32	54/49	90/81	144/130			
Working Medium	Oil / fluorinated liquid						
Power Supply	380V 3P 50Hz	380V 3P 50Hz	380V 3P 50Hz	380V 3P 50Hz			
	Chilled water	Chilled water	Chilled water	Chilled water			
Cold Source Demand	Supply water temp. ≤ 35℃						
	Flow≥241L/min	Flow ≥ 362L/min	Flow ≥ 602L/min	Flow ≥ 965L/min			
External Dimensions-L*W*H (mm)	1000*800*1500	1200*800*1500	1500*1000*1800	1600*1200*1800			
Net Weight (kg)	400	500	650	850			

Advantages

- · Rapid deployment, reduce on-site construction and shorten deployment period.
- · Efficient cooling to meet the needs of high performance computing.
- · Green and energy saving, greatly reducing the power consumption.

Integrated Liquid Cooling Cabinet



- · Various functions of CDU are integrated in the cabinet.
- Integrated cabinet module is relatively independent, flexible deployment and convenient for later expansion.
- Suitable for single-phase or phase-transition immersion liquid cooling systems.

Product Specification

Integrated Cabinet (Single-phase Immersion)							
Model GT11510F3 GT20520F3 GT32535F3							
Cabinet Capacity (U)	11	21	32				
Equipment Specifications for IT	19 inch depth ≤ 900mm	19 inch depth ≤ 900mm	19 inch depth ≤ 900mm				
Power of IT Devices (kW)	10	20	35				
Working Medium	Oil/Fluorinated liquid	Oil/Fluorinated liquid	Oil/Fluorinated liquid				
Power Supply	380V 3P 50Hz	380V 3P 50Hz	380V 3P 50Hz				
	Chilled water	Chilled water	Chilled water				
Cold Source Demand	Supply water temp. ≤ 35°C	Supply water temp. ≤ 35°C	Supply water temp. ≤ 35℃				
	Flow ≥ 241L/min	Flow ≥ 362L/min	Flow≥602L/min				
External Dimensions-L*W*H (mm)	1000*800*1300	1550*800*1300	2100*800*1300				
Net Weight (kg)	220	300	400				

Integrated Cabinet (Phase-transition Immersion)									
4odel GT21D50F3 GT32D80F3 GT42D100F3									
Cabinet Capacity (U)	21	32	42						
Equipment Specifications for IT 19 inch depth ≤ 900mm 19 inch depth ≤ 900mm 19 inch depth ≤ 900mm									
Power of IT Devices (kW)	50	80	100						
Working Medium	fluorinated liquid	fluorinated liquid	fluorinated liquid						
Power Supply	380V 3P 50Hz	380V 3P 50Hz	380V 3P 50Hz						
Cold Source Domand	Supply water temp. ≤ 35℃	Supply water temp. ≤ 35°C	Supply water temp. ≤ 35℃						
	Flow ≥ 72L/min	Flow ≥ 144L/min	Flow ≥ 179L/min						
External Dimensions-L*W*H (mm)	1100*880*1550	1650*880*1550	2250*880*1550						
Net Weight (kg)	320	450	600						

- Noise and vibration reduction by removing the fans in the data center room.
- · Safe and reliable as the characterstics of the coolant.
- Simplified system design to reduce failure rate.

- Integrated design, highly productized, greatly reducing on-site construction and realizing rapid deployment.
- · Suitable for applications such as small data centers, edge nodes, and communication base stations.

Independent R&D · Independent Production





Independent design, production and assembly.

Cold plate

Server Module

Thermal conductive silicone grease is filled between the cold plate and the chip to introduce heat into the cold plate, and thenheat is taken away by the fowing liquid to achieve the purpose of cooling the chip. In the data center application, the energy consumption can be greatly reduced.

Applications

CPU, GPU, memory-chip and others.





Features

- · Flow channel is designed inside the cold plate to dissipate heat to the CPU and other chips through liquid flow circulation.
- · Optional customized shape and size.
- · High reliability, with characteristic of tight sealing, corrosion resistance and leak proof design.
- High heat dissipation power, good temperature uniformity, low thermal resistance and low flow resistance.
- CFD technology: optimize the design of cold plate flow channel by accurately locating the hot spots of CPU and GPU.



Power Electronic Cold Plate

The heat dissipation problem can be solved by designing corresponding flow channels according to different product types, well solving the problem of high heat dissipation of traditional power electronics.

Advantages: smaller, guieter, better heat dissipation performance, cleaner and less dependence on the environment when comparing with air cooling.

Applications

Charging pile, blockchain, power module, medical treatment, laser, radar, etc.



Features

- Flow channel is designed inside the cold plate to dissipate heat through liquid flow circulation.
- It can be formed by welding, CNC, milling and other processes.
- High reliability, with characteristic of tight sealing, corrosion resistance and leak proof design.
- · High heat dissipation power, good temperature uniformity, low thermal resistance and low flow resistance.

The material of the cold plate satisfies different applications and operating environments

Copper: excellent heat dissipation.

Aluminum: excellent weight reduction.

Stainless steel: strong corrosion resistance.







Electronics Cooling

Heat Pipe

Heat pipe is a special material with fast temperature equalizing. The hollow metal tube makes it light and has excellent thermal superconductivity; the application range is quite wide. Heat pipes are widely applied with its frst application in the aerospace feld, and are widely used in various heat exchangers, coolers and other equipment now.





Sintered H/P



Groove H/P



Composite H/P

Artery UT H/P

Vapor Chamber

Vapor chamber is a high-speed heat conduction device with a capillary structure on the inner wall. When the heat is conducted from the heat source to the evaporation area, the working medium in the cavity begins to vaporize and absorb heat. The gas-phase working medium condenses and releases heat in the lower temperature area inside the heat pipe, and the condensed liquid-phase working medium returns to the heat source under the action of capillary force or gravity to realize the rapid difusion and transfer of heat.





Thermal Module

The heat dissipation module is composed of copper, aluminum and other diferent materials and diferent heat dissipation components. The heat sink can be customized according to the user's working conditions to meet the heat dissipation requirements in diferent environment.

Name	Features	Photo
Pure copper shovel tooth	High temp. adaption and high reliability	
Vapor chamber	Maximum size: 350(L)mm*300(W)mm	
Aluminum + heat pipe	Lower cost, higher performance (80W, thermal resistance lower to 0.25 °C/W)	
Copper fin + heat pipe	Copper fin + heat pipe (130W, thermal resistance lower to 0.15 ℃/W)	
Aluminum fin + heat pipe without welding	Large space, high performance, low cost (200W, thermal resistance lower to 0.10°C/W)	
Heat pipe	Low power and multi heat source environment	
3D-TVC	Phase transition heat exchange, thermosyphon heat dissipation	

Quick Disconnect Coupling

The quick disconnect coupling is the connector between every device in the liquid cooling circulation system. It can realize the quick connection and disconnection between the devices, ensure no leakage, and reduce workload for liquid discharge and injection, greatly improving efciency.

Applications

Free connection and disconnection under pressure.

Features

- · Manual/self-fastening.
- Blind Connection.
- No leakage.
- Highly reliable sealing test passed.
- · Multiple sizes.
- · Optional material in stainless steel, aluminum and copper available.
- Customized interface modes available.

COMPONENT.

Selected Product

Model	Working Principle	Photo
Self-fastening Series	Stell ball fastening mode, disconnect the joint through sliding sleeve	
Blind Connection Series	No fasting structure, locked by external structure	

Sealing Ring

Model	Code	Working Temp. (°C)	Working Medium
MFVQ	MFVQ	-55~175	EG, aviation fuel, N_2 , antifreeze, silicone oil
EPDM	EPDM	-45~150	Brake fluid, hot water, EG, silicone oil, freon
FKM	FKM	-20~200	Aviation fuel, strong acid, strong alkali
NBR	NBR	-30~100	EG, gasoline, grease, silicone oil

Quick Disconnect Coupling Product Series

No.	Туре	Code	Description	No.	Туре	Code	Description
		С	Cooling			1	Nickel-plated copper
1	Series	Н	Hydraulic			2	Aluminium alloy
		G	Gas		Daga Matarial	3	SUS304
2	Crock Design	G	Graphic design	0	Base Material	4	SUS316
2	Spool Design	Т	Thimble		-	5	Titanium alloy
		Р	Push			6	Plastic
		Т	Twice push			1	NBR
2	Connection	S	Snap		Material of Sealing Ring	2	Fluorocarbon
3	Method	D	Draw-tube	7		3	EPDM
		Q	Steel ball draw-ring			4	MFVQ
		В	Straight blade			5	PTFE
	Equivalent Diameter	03	Inner diameter 3mm		Interface Code	1	Internal thread
4		04	Inner diameter 4mm			2	External thread
4		05	Inner diameter 5mm			3	Flange
		XXX	Other inner diameter sizes	8		4	Pagoda
		1	Single female			5	Barbs
		2	Single bulkhead female			6	Nylon tube
		3	Automatic plate female		-	7	Union
5	Connector Type	4	Automatic plate valveless male	Ontional	Color Ring Configuration	KR	Red
		5	Automatic plate valved male			KB	Blue
		6	Valveless male		Dust-proof Rubber Sleeve	FCB	Black
		7	Valved male		Plastic Protective Cap	SMB	Black

C Series

Product Series	Load Type	Media Type	Plug Type	Brief Description
CGN			Normal connector	Rear pull sliding sleeve, steel ball fastening
CGQ	Light load	Glycol, Aqueous solution	Quick connector	Direct and steel ball fastening
CGB			Blind connector	Direct and fastening by external force

UQD Series



	Material of Sealing Ring	ISO Interface
		G1/8
	EPDM	G1/4
		G3/8
		G1/2



Cabinet

Cabinet

The liquid cooling cabinet is mainly composed of cabinet, manifold pipeline, power distribution system, exchange board and internal equipment; as the carrier of liquid cooling equipment, each equipment is connected with a special liquid cooling hose to ensure the heat dissipation efect.



Technical Specification

No.		Available Installation Space		
	Width (W)	Depth (D)	Height (H)	1U = 44.45 (mm)
1	600mm	1200mm	2000mm	42U
2	600mm	1200mm	2200mm	47U
3	600mm	1200mm	2500mm	54U

Features

Upwards pipe, downwards pipe, dual power supply, water leakage alarm, water tray.

Manifold

Manifold is mainly used to connect the main circuit between the liquid cooling source CDU and the cold plate. It has the characteristics of strong corrosion resistance, high strength and easy processing. It is widely used in military and civil feld. According to the needs of use, there are single pipe and double row pipes. The single pipe is mainly used for quick-plug connection, whereas the double row pipe is used for blind plug connection, and it is welded. The position accuracy of the two pipes is ±0.15mm, which belongs to ultra-precision manufacturing.



Technical Specification

Model	Specifications	Material	Connection Mode	Working Temp.	Working Medium
	30X30 (mm)	611520.4		10000	Ethylene glycol,
GT0305	40X40 (mm)	SUS304 SUS316I	Quick connect	-180℃ -400℃	propylene glycol,
	50X50 (mm)	0000102			deionized water
GT030D	30X30 (mm)		Blind connect		Ethylene glycol,
	40X40 (mm)	SUS304 SUS316I		-180°C -400°C	propylene glycol,
	50X50 (mm)	3033102			deionized water



Manifold

Features

- Strict control process, MES control system
- Dust-free workshop, high cleanliness
- High reliability, double pressure test of gas and liquid.
- Uniform flow distribution
- Optional self fastening type and blind connection type.

Secondary Loop

The secondary loop is made of stainless steel, belongs to modular prefabricated loop, easy to use and can be assembled quickly. Connect the secondary loop of the waterway system, and control the fow of the branch pipe through the valve.

Features

- · Modular production, connected with quick chuck, quick assembly.
- · No cutting and welding needed on-site.
- · High reliability.
- · Uniform flow distribution.
- · Easy maintenance.



Valve



SS304 Ball Valve



Butterfy Valve

CDU

Cabinet Type CDU

The CDU is mainly composed of cabinet, water pump, plate exchanger, valve, expansion tank and pipeline, etc. The heat is exchanged through the plate, the cooled liquid is sent to the heat source to absorb heat, and the liquid with the heat enters the plate for heat exchange cyclically.

Features

- · Dual power backup.
- Optional high efficient single pump or dual pumps.
- · Anti-condensation control.
- 50µm ultra dense filter available.
- · Automatic fluid rehydration.
- · Online maintenance.
- Single unit with cooling capacity at 100kW, 300kW, 1800kW, etc.

- · Corrosion-resistant stainless steel pipeline.
- Intelligent monitoring system.
- Online water quality monitoring.
- 10% ~ 100% adjustable flow.
 - · Over-pressure protection.
 - · Low energy consumption.
 - · Liquid leakage detection.

Technical Specification

Model	GT50P10D3	GT120P5S3	GT300P10S3	GT300P5S3	GT550P5S3
Heat Exchange Capacity	50kW (Dual pumps)	120kW (Single pump)	300kW (Single pump)	300kW (Single pump)	550kW (Single pump)
Primary Loop Inlet and Outlet Temp.	32℃ ~45℃	32℃ ~45℃	32℃ ~45℃	32℃ ~45℃	32℃ ~45℃
Secondary Loop Inlet and Outlet Temp.	37°C ~50°C	37℃ ~50℃	37°C ~50°C	37℃ ~50℃	37℃ ~50℃
Primary Loop Connecting Spec.	1.25"quick chuck/ flanged	2"quick chuck/flanged	3.5" *2quick chuck/ flanged	4.5" *2quick chuck/ flanged	5" *2quick chuck/ flanged
Secondary Loop Connecting Spec.	1.25"quick chuck/ flanged	2"quick chuck/flanged	2.5" *2quick chuck/ flanged	4.5" *2quick chuck/ flanged	5" *2quick chuck/ flanged
Power Supply	380V 3Ph 50Hz	380V 3Ph 50Hz	380V 3Ph 50Hz	380V 3Ph 50Hz	380V 3Ph 50Hz
Communication	Modbus/SNMP	Modbus/SNMP	Modbus/SNMP	Modbus/SNMP	Modbus/SNMP
Dimension W*D*H (mm)	600*1200*2000	600*1200*2000	600*1200*2000	1200*1200*2000	1600*1600*2000

Note: The above parameters all use pure water as the working medium. Please check with us for different refrigeration capacities and diferent liquid cooling working medium requirements.





Rack-mounted Water Cooled CDU

Applications

- Suitable for all-in-one cabinet, save space
- · Support high power density.
- Maximum cooling capacity: 80kW.



Features

- · Height: 4U.
- The pipeline adopts 304 stainless steel with strong corrosion resistance and long life cycle.
- · The centrifugal pump automatically adjusts the flow according to the number of equipment that generates heat.
- Redundant pumps to improve product life cycle.
- · Intelligent monitoring system (Modbus, SNMP).
- · Single CDU can support 80kW cooling capacity.

Technical Specification

- Dual power supply, higher reliability by stable operation without power connection.
- · Liquid leakage detection.
- · Automatic fluid rehydration.
- · Anti-condensation.
- Optional secondary loop 50µm filter.
- 4.3 inch LCD display.

Rack-mounted Air Cooled CDU

It is high heat density liquid cooling solution specially developed for the data center industry in view of the characteristics that the server CPU/GPU heat is sensitive to the ambient temperature. When the unit is running, the cooling liquid is sent to each end cold plate, taking away the heat.

Features

- · Overall dimension: 4U.
- · Complete functions with upstream communication, display operation and alarm, etc.

Working Principle

- · Composed of water pump, heat exchanger, fan, filter, expansion tank and control module.
- The power is provided by the built-in circulating pump to take away the heat and then dissipate the heat to the environment through the fan.

Model			GT15L5D2	GT30L5D2
Heat Exchange Capacity		kW	15	30
Primary Loop	Working Medium / Softened water		Softened water	30% glycol aqueous solution (freezing point - 15°C)
	Inlet and Outlet Temp.	°C	15/20	15/22
	Connecting Specification	mm	1"quick chuck	1.25"quick chuck
Secondary Loop	Working Medium	/	Deionized water	25% propylene glycol aqueous solution
	Inlet and Outlet Temp.	°C	40/45°C , support inlet & outlet water temp. of 5°C or above	30/35° C, support inlet & outlet water temp. of 30-50℃
	Quantity of Pump	Set	2 (one main & the other standby)	2 (one main & the other standby)
	Interface Specification	mm	1"quick chuck	1.25"quick chuck
Dimension W*D*H		mm	450*850*175	450*850*175

Technical Specification

	Model		GT04A5D2	GT06A10D2
Parameter	Heat Exchange Capacity kW 4		6	
	Working Medium / 25% propylene glycol aqueous solution		25% propylene glycol aqueous solution	
	Inlet and Outlet Temp.	°C	45/50	40/50
	Flow L/min 12		10	
	Dimension W*D*H	mm	450*850*175	450*850*175



- High reliability
- · Easy installation without complicated debugg in.



Liquid Cooling Working Medium

Composition

Deionized water, additives (pH buffer, ionic corrosion glycol, ethylene glycol), fungicide, etc.

Compatibility analysis of liquid contact materials

Compatibility: metal & non-metal & liquid cooling medium. inhibitor, scale inhibitor), antifreeze (optional propylene Commonly used: copper cold plate, aluminum cold plate.



Tybe of Additive	Function
Corrosion Inhibitor	Prevent metal from corrosion
Buffer	Adjust pH
Scale Inhibitor-Dispersant	Prevent scale deposition
Others	Prevent accidental ingestion by bitter taste or adding stain for convenient leak detection purpose

Technical Specification

Item	Specification
Color	Blue
Taste	Tasteless ~ slightly tasteless
Density(20°C)	1.001-1.005kg/L
PH(25℃)	7.5~9.0
Turbidity	<1 NTU

Cold Source

Dry Cooler

Through liquid inside the pipe and natural air outside the pipe to cool the liquid inside the pipe. The connector has unit or combined mode, and it is convenient for disassembly and maintenance with independent fan. The material is high-strength galvanized plate with anti-corrosion coating, which is more suitable for outdoor installation environment with anti-corrosion coating copper pipes and fns.

Features

- · Composed with stainless steel connectors and marine grade corrosion-resistant aluminum.
- · Frequency conversion control, high efficient and energy saving.
- · Owl fan, low noise.
- · Cooling can be integrated with evaporative cooling.
- · Low maintenance requirements, suitable for various climatic conditions.
- · Single/dual refrigeration circuit.



Cooling Tower

- Optional multiple types and cooling capacity.
- Multiple fluid cooling applications.
- · Easy installation and maintenance.
- High efficiency, energy saving, reliable operation.



- High performance V type condenser/ dry cooler.
- Achieve medium or high capacity in process of cooling and air adjustment.
- Reduce fan losses while obtaining heat exchange.
- Reduce the pressure drop of the medium in the coil.

· Optimized solutions for different demand available.



Comprehensive Detection and Intelligent Control





Visual monitoring Safe



Intelligent Monitoring Platform

Intelligent linkage control of liquid cooling system, matching the required cooling capacity regulation system, the primary loop water pump and outdoor cooling equipment are optimized for overpressure protection, automatic fuid replenishment and online maintenance.



Full chain liquid leakage detection

Cabinet (server and manifold) leakage detection, CDU leakage detection, primary loop and secondary loop side pipeline leakage detection.

Online water quality monitoring

Detection of pH, conductivity and turbidity.

Anti-condensation control

CDU anti-condensation function.

Liquid leakage detection in the server

Zero risk of liquid leakage remote alarm.

Attached closer to pipeline.

Compact impedance detection.









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