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Thermal Solution
5G Telecom Base Station
AAU/BBU/DU/CU/ODU/IDU
BTS/Small Cell

*All products are RoHS compliant.

ABOUT SUNON

Over 41 years, SUNON has specialized in various types of thermal solutions related to motors, fans, and ventilators for a wide range of applications. We offer optimal thermal solutions and prompt responses to clients' needs, with customer service and technical support networks all around the world.



5G ERA

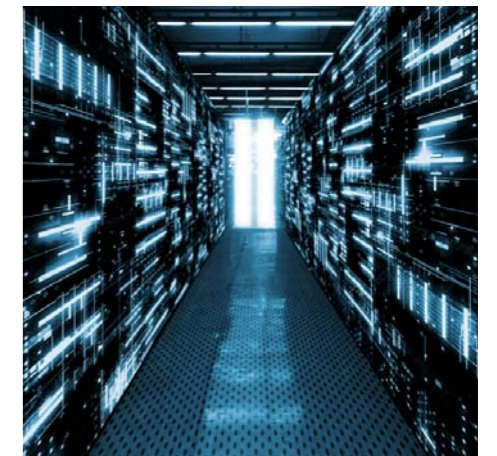
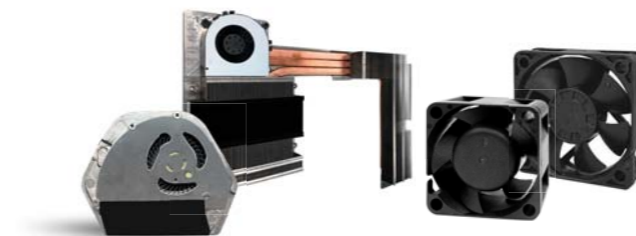
Smart Life
High-speed Connections

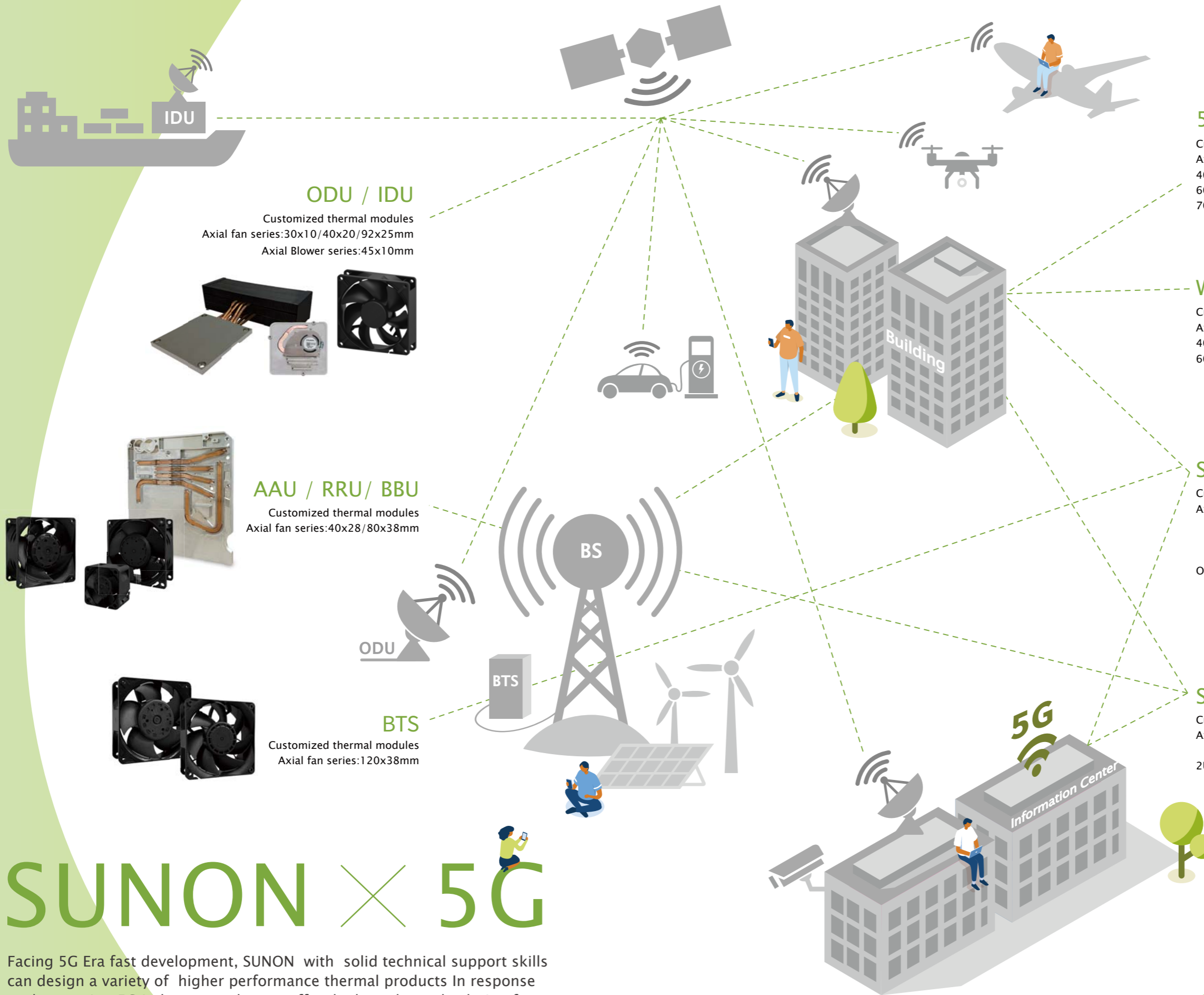
Global corporations have invested time and effort in building 5G infrastructure and networks. The best 5G operating performance is determined by a seamless integration of ultra-high speed, ultra-low latency and high capacity. SUNON can design suitable thermal modules to meet 5G thermal needs and offer an optimal and efficient thermal solution in the limited spaces of 5G infrastructure's internal structures.

Base Stations



Networking





ODU / IDU
 Customized thermal modules
 Axial fan series: 30x10/40x20/92x25mm
 Axial Blower series: 45x10mm



AAU / RRU / BBU
 Customized thermal modules
 Axial fan series: 40x28/80x38mm



BTS
 Customized thermal modules
 Axial fan series: 120x38mm



5G Small Cell
 Customized thermal modules
 Axial fan series:
 40x10/40x20/40x28/50x20mm
 60x14/60x15/60x25mm
 70x18/92x25mm



Wi-Fi 6 Router
 Customized thermal modules
 Axial fan series:
 40x10/40x20/50x10/50x15/50x20mm
 60x15/70x15/70x18mm



Switch / Router
 Customized thermal modules
 Axial fan series:
 1U - 38x28/40x20/40x28/40x56mm
 2U - 60x38/60x56/60x76/80x80/80x86mm
 4U - 92x38/120x38/120x76mm
 Others - 30x04/30x06/30x10/35x07/35x10mm
 40x10/40x20/45x10/50x06/50x10/50x15/50x20/55x08mm
 60x12/60x15/70x15/70x18/97x33mm



Server / Edge / Storage
 Customized thermal modules
 Axial fan series:
 1U - 40x28/40x56mm
 2U/4U - 60x38/60x56mm
 80x38/80x56/80x80/80x86mm



SUNON × 5G

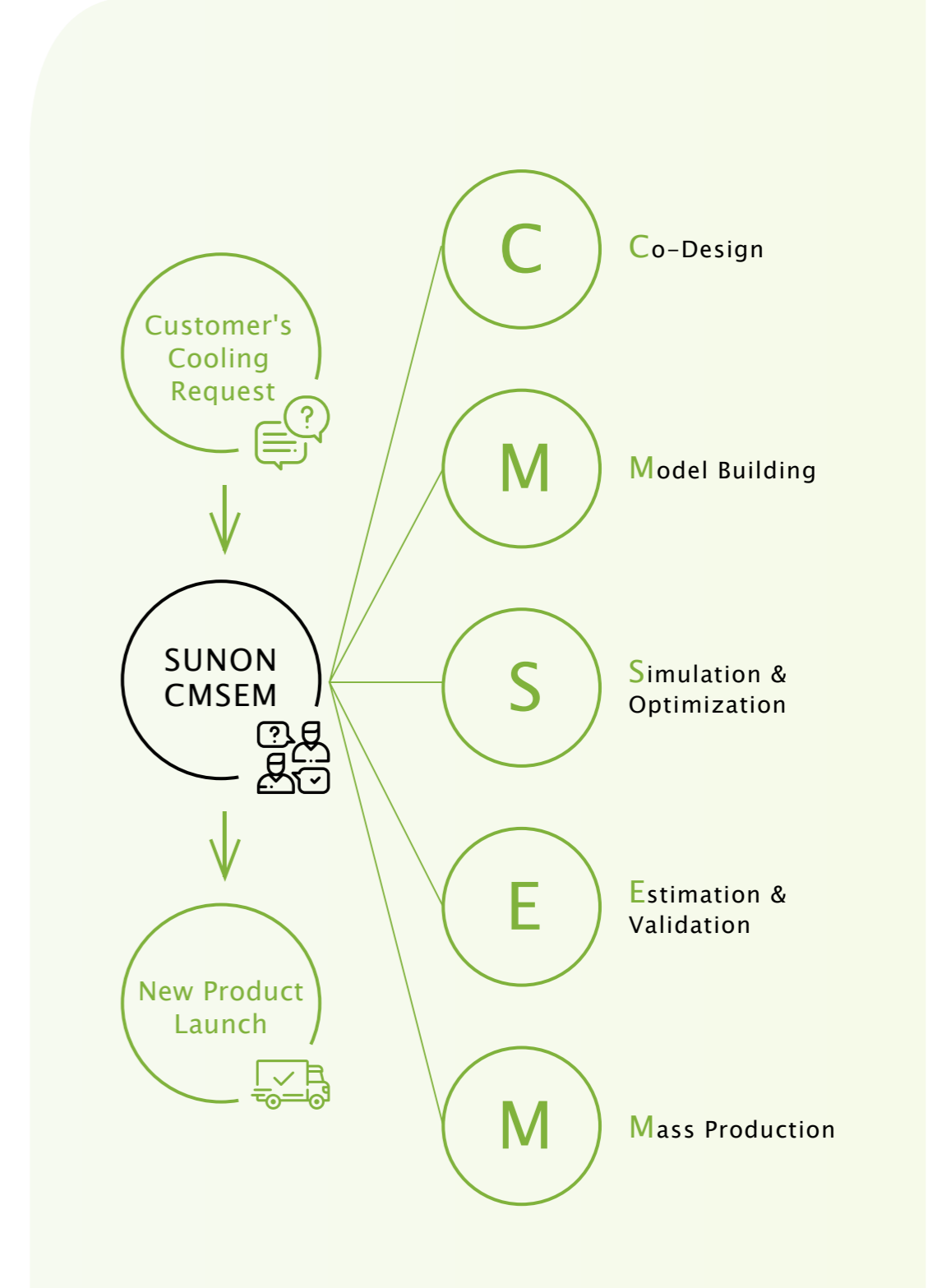
Facing 5G Era fast development, SUNON with solid technical support skills can design a variety of higher performance thermal products. In response to the growing 5G industry, so that we offer the best thermal solution for various 5G applications.

SUNON Optimal Cooling Solution

Cooling Fans		Cooling Modules				
Product Info	DC Fan & Blower EC Fan AC Fan & Blower	Air Cooling	Liquid Cooling	Passive Cooling		
		Fan Cooling Module	Cold Plates	Heat Sink (HS)	Heat Pipe (HP)	Vapor Chamber (VC)
		Custom Design	Integral Pipelining Embedded	Extrusion Die Casting Skived Fin Stacked Fin	Custom Design	Custom Design
Features	<ul style="list-style-type: none"> • High fan efficiency • Low noise • Energy saving • Long life 	<ul style="list-style-type: none"> • The most efficient heat dissipation solution 	<ul style="list-style-type: none"> • Compact design • Large power carrier • Effective space utilization 	<ul style="list-style-type: none"> • High reliability • Economic thermal solution 	<ul style="list-style-type: none"> • Various pipe design • Flexible configuration 	<ul style="list-style-type: none"> • Better isothermal system • High Qmax

SUNON Comprehensive Thermal Solution and Technical Support Service

SUNON is an original cooling product manufacturer. We are 100% research-based, designing and manufacturing a variety of fans, vapor chambers and heat pipes and more, We can configure both active and passive cooling components to provide our clients a full range of cooling solutions through the use of scientific simulation and equipment. SUNON aims to give excellent service in thermal solutions, satisfying clients' thermal requirements for any function, sizes, and budget.



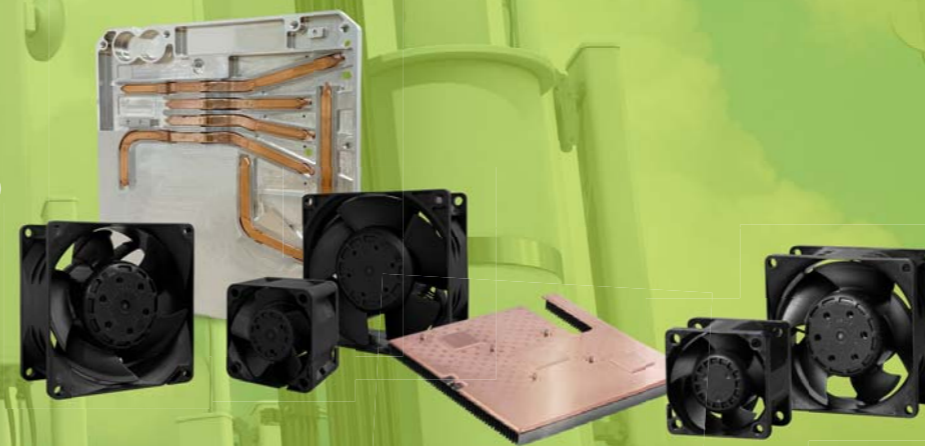
WHAT WE DO

CMSEM One-Stop Thermal Solution Service

SUNON provides a set of CMSEM services, designing thermal solutions from scratch. We work together with our clients to design the best thermal modules for their individual needs. Then, we create a model to simulate and optimize each module's thermal performance, which is passed through various estimation and mass-production phrases. Through collaboration, the highest quality of service, and a timesaving process of solving heat problems, SUNON provides our clients with optimal thermal solutions.

5G Telecom Base Stations

Steadily managing high-powered base station infrastructure's function ensures a better quality of telecommunication transmission. A series of electrical waves is processed and sent without latency by using appropriate thermal modules for base station applications, knowing that, SUNON can customize the thermal solution exclusive to base station infrastructure use.



SUNON can offer custom-designed thermal modules to various base station applications by flexibly configuring both active cooling fans and passive cooling components. SUNON's compact and highly efficient thermal solution can be designed to meet all clients' thermal requirements.

AAU/BBU/RRU

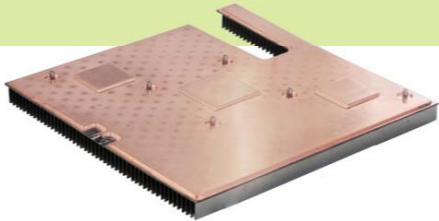
High-effective heat pipe module is integrated with the base to enhance a whole thermal solution's effectiveness.



Cooling Module

DU / CU

Large-area vapor chamber module is used to increase thermal capacity that effectively dissipates heat in the systems.



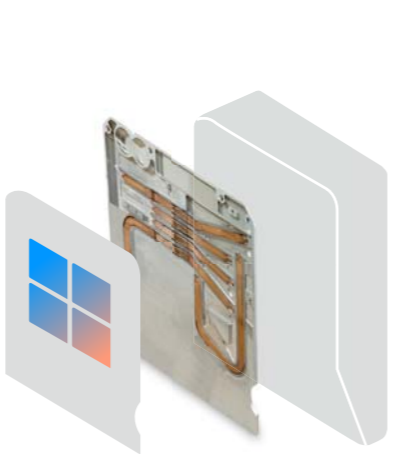
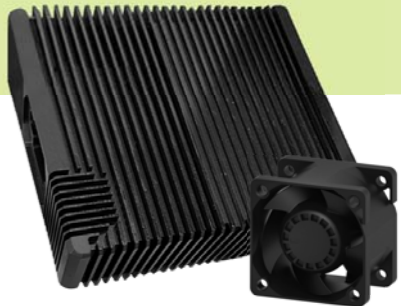
BTS / RBS

BTS/RBS cabinet door with fans installed increases the operating performance of BTS/RBS systems.



Small Cell

The integration of cooling module and fan module creates thermally synergistic effects and therefore systems can operate effectively and smoothly.

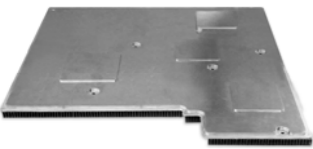




System View

Thermal Solution

5G Telecom Base Station

Thermal Modules

Module Type	Vapor Chamber (VC)	Heat Pipe (HP)	Cold plate (CP)
			
Dimension (mm)	250 x 250 x 52	200 x 180 x 20	300 x 150 x 10
Watts (W)	300W	250W	200W
Features	<ul style="list-style-type: none"> · Customized design based on system structure. · Closely attaches to heat source to enhance thermal performance. 	<ul style="list-style-type: none"> · Various shape designs available. · Highly heat dissipation effectiveness. 	<ul style="list-style-type: none"> · Compact design fitting in limited spaces. · Highly thermal effectiveness and stability.

Slim-Typed Cold Plate Solution

- > A leading cooling module for 5G base station application use.
- > Quickly solve high heat problem generated by multiple heat sources in a limited space.
- > The embedded tubes can be designed flexibly to fit in system structures that sustains highly thermal effectiveness.



High-Effective Fan Tray Solution

- > The best thermal solution, smart fans with dustproof, waterproof and salt fog protection design.
- > Customized design based on base station system structures.
- > Suitable for base station applications operating outdoors and in harsh environments.



Thermal Solution

5G Telecom Base Station

Thermal Fans

Type	System	size (mm)	Model	Bearing	Rated Voltage (V)	Power Current (mA)	Power (W)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H2O)	Noise (dB(A))	Frame Type
Fan	BBU	80x80x38	VF80381BX-Q01	2 Ball	12	3600	43.20	16,000	125.9	4.90	69.9	Flange
		80x80x38	PF80384BX-Q12	2 Ball	54	1150	62.10	15,500	160.2	4.24	72.8	Flange
	Small Cell	40x40x10	MF40101V1-1Q14	Vapo	12	45	0.54	7,000	8.0	0.19	27.3	Rib
		40x40x28	PF40281B1-Q00	2 Ball	12	560	6.72	17,600	24.9	1.95	28.8	Rib
		50x50x20	MF50201V1-1Q03	Vapo	12	110	1.32	6,500	19.0	0.29	35.8	Rib
		60x60x15	EF60151BX-Q01	2 Ball	12	100	1.20	5,400	21.7	0.17	35.9	Flange
		60x60x15	MF60151V1-1Q02	Vapo	12	105	1.26	4,700	26.4	0.18	34.2	Rib
		60x60x25	EF60251BX-Q09	2 Ball	12	150	1.86	6,000	27.8	0.35	40.5	Flange
		92x92x25	GF92251B2-000	2 Ball	12	300	3.60	4,200	70.0	0.30	45.0	Flange
		120x120x38	PFC0384B2-1Q01	2 Ball	48	290	13.92	4,500	175.1	0.65	55.5	Flange
BTS	120x120x38	PFC0384BX-1000	2 Ball	48	750	36.00	6,200	239.5	1.14	63.2	Flange	
	120x120x38	XGC0384BX-1000	2 Ball	48	2100	100.80	11,600	301.7	5.58	75.0	Flange	
	Blower	Small Cell	60x60x14	MF60120V1-C23	Vapo	5	330	1.65	4,400	8.0	0.59	41.2
60x60x15			MF60151VX-1B00	Vapo	12	130	1.56	4,500	6.2	0.71	37.7	
70x70x18			EF70181B1-C01	2 Ball	12	29	3.48	5,000	12.1	0.78	44.0	

Note 2 : If you need special specification. Please contact SUNON sales.

Note 3 : Specifications in this catalog are for reference, please contact SUNON sales for further information such as quotation and lead time.

Note 4 : There is no notice in advance about any changes in specifications in this catalog, please refer to datasheet provided by SUNON sales.

Ingress Protection for Environmental Applications

※ After being irradiated by a UV lamp, it will show a fluorescent reaction.



Ingress Protection	IP21-IP51	IP52-IP66	IP67-IP68	GR487
Technics	Conformal Coating	Conformal Coating	Parylene Coating	Potting
Available	Sleeve / Vapo / Ball	Ball	Ball	Ball
Cost	low			High

Thermal Solutions for VSAT Applications







By applying SUNON's total solutions for 5G and satellite-based telecommunications, the goal is to support the whole range of 5G mobile networks and operations to deliver better wireless broadband and services worldwide.

Thermal Solution

VSAT Applications

Thermal Modules

Custom-designed module sizes and configurations based on systems' structures; High thermal effectiveness and stability.

System	Indoor Unit (IDU)			Outdoor Unit (ODU)		
	Wifi router	Switch		Antenna Receiver		
Modules	Configurations			Heat Pipes	Vapor Chamber	Cold Plates
						
Materials	Fan Aluminum Copper	Fan Heat Pipes AL Fin	Heat Pipes AL Fin	Heat Pipes AL Fin	Cooper AL Fin	Aluminum
Watts (W)	20W	200W	950W	250W	300W	200W

Thermal Solution

VSAT Applications

Thermal Fans

High IP68 and GR487 water and dust protection ; Suitable for overheating operating conditions

Type	Systems	Size (mm)	Model	Bearing	Rated Voltage (V)	Power Current (mA)	Power Consumption (W)	Fan Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H ₂ O)	Noise (dB(A))	Frame
Fan	Indoor Unit (IDU)	30x30x10	MF30100V2	Vapo	5	80	0.40	9,500	4.7	0.17	21.0	Rib
	Point-to-Point Wireless Bridging	40x40x20	EF40201BX	2 Ball	12	110	1.32	9,000	10.9	0.40	32.3	Rib
	Outdoor Unit (ODU)	92x92x25	GF92251B1	2 Ball	12	393	4.72	4,500	75.0	0.35	47.0	Flange
Blower	Outdoor Unit (ODU)	45x45x10	EF45101B1	2 Ball	12	220	2.64	8,700	3.9	0.75	43.0	Blower

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