Supermicro SSE-T8264C 1.6T Liquid-Cooled Ethernet Switch

The Premier Ethernet Solution With Leading Low Latency for Data Center Workloads

Key Advantages for AI/ML Data Center Applications:

- Purpose-built for AI and ML infrastructure with ultra-low latency, high-performance Ethernet
- Support for Supermicro Enterprise Advanced SONiC, maximizing deployment flexibility and customer choice
- High-density, power-efficient connectivity at 1600G, 800G, 400G, and 200G for scalable data center fabrics
- Lower total cost of ownership: up to 20% CapEx and 40% OpEx savings versus comparable pluggable optics solutions

Built on 224Gbps PAM4 SERDES Architecture

The Supermicro SSE-T8264C is a next-generation data center switch built on 224Gbps PAM4 SerDes technology. By increasing the data rate per lane, the architecture delivers higher bandwidth density while helping reduce cost per bit for large-scale Ethernet deployments. Operators can expand fabric capacity without a proportional increase in optics and cabling requirements, effectively reducing CapEx by up to 20% compared to equivalent solutions. It also enables 1.6TbE connectivity through port pairing while maintaining backward compatibility with 800GbE and 400GbE. This provides a practical migration path to higher-speed Ethernet while protecting existing infrastructure investments.

Balanced Capacity, Form Factor, and Efficiency

The SSE-T8264C delivers 102.4Tbps of switching capacity in a compact 2OU form factor, enabling high-density deployments while conserving rack space. Supporting up to 64 ports of 1.6T or 128 ports of 800G, the platform provides line-rate Ethernet performance with proven Layer 2 and Layer 3 features. This combination of switching capacity and port density enables large Ethernet fabrics to scale while maintaining predictable forwarding behavior. Power-efficient operation also helps control energy use as traffic grows in space-constrained data centers.

CPO Liquid Cooling for AI Workloads

The SSE-T8264C combines co-packaged optics (CPO) with liquid cooling for dense AI and cloud-scale Ethernet fabrics. By placing optics closer to the switch silicon, CPO shortens electrical paths, reducing power consumption and signal-loss overhead compared with traditional pluggable optics, which can lower OpEx by up to 40%. Liquid cooling removes heat from tightly packed switching and optical components where air cooling alone may be insufficient. Together, these technologies support high-bandwidth Ethernet deployments at scale while helping reduce networking power, cooling, and infrastructure costs as AI and machine learning clusters continue to grow.

SONiC OS and Deployment Flexibility

The SSE-T8264C supports Supermicro Enterprise Advanced SONiC, providing deployment flexibility for AI factories, GPU scale-out networks, storage networks, enterprise environments, service providers, and cloud data centers. Built on the open-source SONiC network operating system, the platform enables organizations to align automation, telemetry, and operational workflows with their infrastructure requirements rather than relying on a proprietary software stack. Supermicro Enterprise Advanced SONiC adds enterprise-ready features and user-friendly management capabilities designed to simplify deployment and day-to-day operations. Together, these software capabilities complement the switch's hardware scale, providing flexibility for evolving Ethernet infrastructure requirements.

© Copyright Super Micro Computer, Inc. All rights reserved

Operating System / NOS

The SSE-T8264C series switch comes with preloaded Supermicro Enterprise Advanced SONiC OS.
This comes in a 3-year or 5-year license and is required for software support including upgrades.

Hardware Specifications

Physical Ports

- 128 x 800G MMC16 Ports
- 16 x ELSFP Ports
- 1 x 100G QSFP28 Ports
- 1 x RJ45 Serial Console
- 1 x RJ45 100/1000BASE-T Management
- 1 x USB3.0 Type A Storage

Design Support

- BMC AST2600 support
- Power cycle Button support
- TPM support (optional)

Onboard CPU Engine

- Intel® Xeon® 8-core D-1736
- 32GB DDR4 DRAM w/ECC up to 64GB
- 128GB SSD up to 512GB

Thermal

- 100% Liquid Cooling
- Max PG25 operating temperature 40°C
- Flow rate for entire switch 6.0LPM

DC Input

- Max Power Consumption <3200W
- Support 40-60VDC Busbar power input
- 2OU, ORV3 Rack support
- Dimensions: (WxHxD) 537 x 92.5 x 805mm
- Weight: 30kg

Environmental

- Operating temperature: 0-40°C
- Operating humidity: 5-90%
- Operating altitude: 0-3000m

Safety and Compliance

Safety

EU:
- EN 60950-1
- IEC 60950-1
- EN 62368-1
- IEC 62368-1

North America:
- UL 60950-1
- CAN/CSA-C22.2 No. 60950
- UL 62368-1
- CAN/CSA-C22.2 No. 62368-1

Australia/New Zealand (ACMA):
- AS/NZS 60950-1
- AS/NZS 62368-1

Korea (KCC):
- KC 62368-1

Taiwan (BSMI):
- CNS 15598-1

Environmental

- EU (RoHS)
- EU (REACH)
- EU (WEEE)
- Taiwan (RoHS)

Electromagnetic Compatibility

EU:
- CISPR 32
- EN 55032
- BS EN 55032
- CISPR 35
- EN 55035
- BS EN 55035
- EN6100-3-2
- BS EN 6100-3-2
- EN6100-3-3
- BS EN 6100-3-3
- EN 300 386

Japan:
- VCCI CISPR 32-1

North America:
- 47CFR Part 15(CFR 47) Class A
- ICES003 issue7 Class A

Australia/New Zealand:
- AS/NZS CISPR 32

Taiwan (BSMI):
- CNS 15936

Korea (KCC):
- KN32 Class A
- KN35

© Copyright Super Micro Computer, Inc. All rights reserved

Supermicro Enterprise Advanced Software Features

System and Platform Infrastructure Features

- System locator and interface LED
- Hardware watchdog
- Third-party container management
- Interface aliasing (IS-standard and IS-standard-extended interface naming)
- Maintenance mode
  - LACP graceful shut
  - BGP graceful shut
  - OSPFv2 maximum metrics
- Multi-instance Redis DB
- Hardware resource allocation and reservation
- DOM information display
- Dynamic port breakout
- Port auto-breakout and auto-detect for port speed
- Transceiver parameter tuning
- Link flap error-disable
- CPU/memory histogram
- System ready for services and applications
- Secure boot process and reference implementation
- Syslog high threshold notifications and clear for CPU/temperature
- Patching support in SONiC (patch host/containers)
- Media AutoFEC for FEC type automation

Layer 2 Features

- LAG and MCLAG (static and LACP)
- LLDP
- UDLD
- PVST, RPVST+, and MSTP
- DHCP snooping
- IGMP
- IGMP snooping (v1, v2, v3)

Layer 3 Features

- MCLAG
- DHCP relay and IP helper
- Proxy ARP
- VRRP
- VXLAN EVPN
- Route leaking
- IP SLA (ICMP and TCP tracker)
- IPv4 unnumbered interfaces
- Many hashing algorithms to support a range of traffic patterns
- Static routing, BGP, OSPFv2 and OSPFv3
- BFD
- Fast Link Failover (FLF)
- Multi-site Data Center Interconnect (DCI)
- RIB/FIB consistency checker
- Next Hop Group (NHG)
- L3 PIM (operates on L3 interfaces only)
- IPv4 PIM-SSM
- 1 million route scale

ACL and Flow-Based Services

- PBR and service chaining
- Layer 2 and Layer 3 ACLs
- Policy-based routing (IPv4 and IPv6)
- ACL consistency checker

Security Features

- AAA – RADIUS, TACACS, LDAP, MFA
- CAC-PIV over SSH
- Federal certs common criteria
- Role-based Access Control (RBAC)

Manageability Features

- Industry Standard CLI (IS-CLI)
- NTP client and server
- SCP, SFTP, TFTP, FTP
- Syslog and audit logs
- Remote logging
- In-memory debug logging
- SPAN/ERSPAN
- Zero Touch Provisioning (ZTP)

QoS

- Configurable queue and buffer size
- L2 and L3 QoS maps
- Traffic priority scheduling
- Rate limiting
- ACL-based DSCP and PCP remarking
- Priority Flow Control (PFC)
- DSCP marking preservation for VXLAN
- CoPP (Control Plane Policing)

Telemetry and Instrumentation

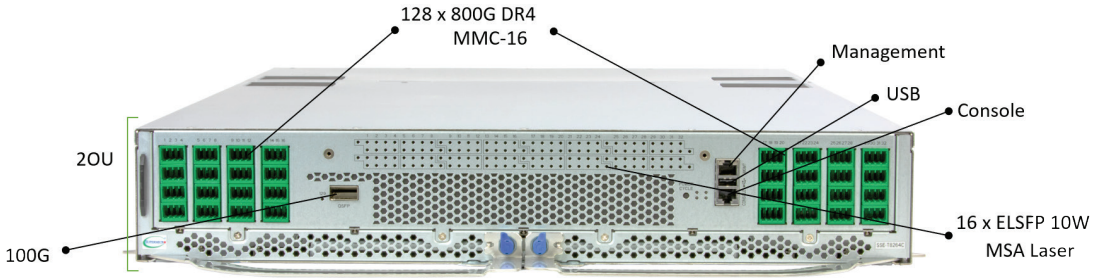
- sFlow
- gNMI
- REST
- SNMP

AI/ML Focused Features

- RoCEv2
- RoCEv2 with cut-through mode support
- RoCEv2 over VXLAN
- PFC, ECN, ETS optimizations
- Enhanced DCQCN
- Adaptive Routing Selection (ARS) / Dynamic Load Balancing (DLB)
- Enhanced hashing and load balancing with 100mSec granularity
- Rich congestion and load balancing telemetry
- LLDP for DCBx
- RoCE buffer configurable based on cable length per interface

© Copyright Super Micro Computer, Inc. All rights reserved

Hardware Outlook



Location	Component
Front Panel	128 MMC-16
	16 ELSFP
	1 QSFP28
	2 RJ45 (Ethernet & Console)
	1 USB3.0 Type-A
	Port LED
	ELSFP LED
	Indicator LEDs: SYS, Leakage
	Power cycle button
	System tag
Rear Panel	48V Busbar connector
	2 UQD08 (1 Inlet, 1 Outlet)

Switch Software SKUs

Product SKU	Description
SFT-BCM1600G-3YR	Supermicro Enterprise Advanced 3-year Software Support
SFT-BCM1600G-5YR	Supermicro Enterprise Advanced 5-year Software Support
**A 3-year or 5-year software SKU is mandatory per switch and will need renewal for software support including upgrades*	

Optics & Cables Supported

SMC P/N	Length	Description
CBL TBD	TBD	MMC16-MMC16 Fiber Cable
	TBD	MMC16-2*MPO12 Fiber Cable

Warranty

SSE-T8264C comes with a standard (3-1-1) warranty which covers 3 years of labor, 1 year of parts, and 1 year of cross-shipment warranty. The warranty can be extended up to a total of 5 years. For more information, please visit the warranty page.

Onsite Services

Supermicro Hardware Maintenance provides flexible and customizable Service Level Agreements for remote help desk and rapid onsite support to cover Supermicro hardware solutions. Our Onsite Service Programs offer up to a 4-hour Onsite Response time option for mission-critical uptime or any tailored solution that will meet your specific business requirements. For more details, please visit the Onsite Services page.

© Copyright Super Micro Computer, Inc. Specifications subject to change without notice. All other brands and names are the property of their respective owners. All logos, brand names, campaign statements and product images contained herein are copyrighted and may not be reprinted and/or reproduced, in whole or in part, without express written permission by Supermicro Corporate Marketing.