FR-TSN4208

Industrial L3 Managed 8-port 10/100/1000Base-TX + 2-port 100/1000M/2.5G/10GBase-SFP TSN Fiber Ethernet Switch with Redundant DC Power Inputs





Main Features

TSN Features

- Time Sync: IEEE 1588v2 PTP and 802.1AS
- Traffic Shaping: IEEE 802.1Qbv and 802.1Qch
- Policing & Preemption: IEEE 802.1Qci and 802.1Qbu
- Redundancy: IEEE 802.1CB seamless redundancy

Layer 2+ Features

- L3 Routing: IPv4/IPv6 OSPFv2/v3, RIPv2, and static routing
- Ring Recovery: ERPSv2 (<20ms), STP/RSTP/MSTP, MRP
- Link Aggregation: Dynamic LACP and static trunking
- VLAN Support: 802.1Q, QinQ, Voice, Private VLAN, MVR
- Multicast: IPv4 IGMP Snooping (v1/v2/v3) and IPv6 MLD Snooping (v1/v2)
- QoS: WRR/SP scheduling and 802.1p/DSCP prioritization

Software Management

- Interfaces: WebUI, CLI, SNMPv1/v2c/v3
- Discovery & Logs: LLDP, LLDP-MED, NTP, Syslog
- Diagnostics: Port mirroring, sFlow, UDLD, OAM

Security

- IEEE 802.1X, AAA, RADIUS, and TACACS+ authentication
- IPv4/IPv6 L2/L3 ACL, IP Source Guard, DAI, Storm control

Industrial Reliability

- Operating temperature -40°C to +75°C
- Redundant DC power inputs / Alarm relay
- High ESD/surge protection / Fanless
- NDAA & RoHS compliant

CE FC

Protected by hardware warranty
Advance replacement. Global coverage.

View policy on Fiberroad's website.

Product Specifications

FR-TSN4208

Product	FR-TSN4208
Interface	
RJ45 Ports	8 x 10/100/1000Base-T
SFP Ports	2 x 1/10G SFP/SFP+ slots
Console Port	1 x RJ45-to-RS232 console (115200, 8, N, 1)
Electrical and Mechanical	
Input Voltage	Dual 18-72VDC wide-range inputs
Power Consumption	Max. 16.8W / 57.3 BTU (system on) Max. 38.2W / 10.3 BTU (full loading)
Surge Protection	Power supply ±4kV; RJ45 port ±2kV; ESD contact ±8kV, air ±15kV
Enclosure	IP40 aluminum case
Dimension	160 x 132 x 70 mm, 1.1kg
Standards	
IEEE 802.3	10BASE-T
IEEE 802.3u	100BASE-TX/100BASE-FX
IEEE 802.3z	1000BaseSX/LX/LHX/ZX
IEEE 802.3bz	2.5GBaseT(X) and 5GBaseT(X)
IEEE 802.3x	Flow Control
IEEE 802.3ad	Port trunk with LACP
IEEE 802.1D	Spanning Tree Protocol
IEEE 802.1w	Rapid Spanning Tree Protocol
IEEE 802.1s	Multiple Spanning Tree Protocol
IEEE 802.1p	Class of Service
IEEE 802.1Q	VLAN tagging
IEEE 802.1X	Authentication
IEEE 802.1ab	Link Layer Discovery Protocol
IEEE 802.3ah	OAM

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Standards	
IEEE 802.1ag	Connectivity Fault Management (CFM)
IEEE 802.1AS	Time-Sensitive Networking Timing
IEEE 802.1Qbu	Frame Preemption
IEEE 802.1Qbv	Time-Aware Shaper
IEEE 802.1Qci	Per-stream filtering and policing (PSFP)
IEEE 802.1CB	Frame replication and elimination for reliability (FRER)
Switching	
Switch Architecture	Store-and-forward
Switch Fabric	128Gbps, non-blocking
Forwarding Rate	96Mpps
Packet Buffer Size	32Mbits
Maximum Packet Length	10K bytes (jumbo frame)
MAC Address Table	32K entries, automatic source address learning and aging
Flow Control	IEEE 802.3x pause frame (full duplex); back pressure (half duplex)
Software Features	
Port Configuration	Port disable/enable; auto-negotiation 10/100/1000Mbps full/half duplex; flow control enable/disable; port link capability control
Port Status	Speed, duplex mode, link status, flow control status, auto-negotiation status, trunk status
Port Mirroring	TX/RX/both; many-to-1; RSPAN; up to 5 sessions
VLAN	802.1Q tagged VLAN, 802.1ad Q-in-Q, private VLAN, MAC-based VLAN, VLAN translation, protocol-based VLAN (VCL), Voice VLAN, MVR, MVRP, GVRP; up to 4K VLAN groups
Link Aggregation	IEEE 802.3ad LACP / static trunk; 8 trunk groups, 16 ports per group
Spanning Tree Protocol	802.1D STP, 802.1w RSTP, 802.1s MSTP (7 instances); BPDU guard, BPDU filtering, BPDU transparent; root guard
Multicast	IPv4 IGMP v1/v2/v3 snooping and querier (255 groups); IPv6 MLD v1/v2 snooping and querier (255 groups)

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Regulatory	
ISO	ISO-9001
Safety	IEC/EN 62368-1
EMI	EN55032 Class A, CISPR 32, FCC Part 15B Class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8 (PFMF)
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Environmental	RoHS

Dimension (Unit: mm)

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Software Features	
Rate Limitation	Per-port bandwidth control: ingress/egress 10Kbps to 13128Mbps
Ring	ITU-T G.8032 ERPSv2 (<20ms @ 3 nodes, <50ms @ 16 nodes; major/sub-ring), APS (1+1, 1:1), MRP
QoS	Traffic classification (port, 802.1p, 802.1Q tag, DSCP/ToS); 8-level priority; strict priority and WRR; TSN: IEEE 1588 time stamping, 802.1AS-Rev gPTP, 802.1Qbv time-aware scheduling, 802.1Qch CQF, 802.1Qci PSFP, 802.1CB FRER, 802.1Qbu frame preemption
ACL	IP-based and MAC-based ACL (MAC, IP, Ethertype, protocol, VLAN ID, DSCP, 802.1q priority); up to 512 entries
Security	Port security; IP source guard (512 entries); dynamic ARP inspection (1K); user-level command authority; static MAC (64 entries); RADIUS and TACACS+ client; 802.1X port-/MAC-based access control; local/RADIUS authentication
Layer 3 Functions	
IP Interfaces	Max. 128 VLAN interfaces
IP Services	Max. 512 static route entries; max. 3072 routing table entries
Routing	IPv4: RIPv2, OSPFv2, hardware static routing IPv6: OSPFv3, hardware static routing
Management	
Basic Management Interface	Console, Telnet, web browser, SNMPv1/v2c
Secure Management Interface	SSHv2, TLSv1.2, SNMPv3
System Management	Firmware upgrade and config upload/download via HTTP; remote Syslog; system log; NTP; Firo NMS; PTP (1588v2) master/slave, boundary/transparent clock; LLDP/LLDP-MED, UDLD, sFlow, UPnP; standard MIBs (MIB-II, Bridge, Ethernet, Interface, RMON, Entity, RADIUS, IGMP, IP Forward, MAU)
Environmental	
Operating Temperature	-40°C to +75°C
Storage Temperature	-40°C to +85°C
Operating Humidity	5% to 95% (non-condensing)
MTBF	300,000 hrs
Cooling	Passive, fan-less design

Product Specifications

Ordering Information

Available Model	Description	Input Voltage	Operating Temp.
FR-TSN4208	Industrial L3 Managed TSN 8-port 10/100/1000Base-TX + 2-port 1/10GBase-SFP Ethernet Switch with Redundant DC Power Inputs	Dual 9-56VDC	-40 to +75°C

Optional Accessories (to be purchased separately)	
SFP Optical Transceiver	Please select your SFP on our SFP Modules page for details.

Package Contents	
Device	1 x Industrial Ethernet Switch
Cable	1 x DB9 female to RJ45
Installation Kit	1 x DIN-Rail Clip 2 x Wall-Mount Kits

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