



**GT-SX-4428-4ZF-F**  
**24 Ports SFP Network Switch**

**Technical Specifications**

**General**

Interfaces	24* 10GE SFP+ & 4*100GE QSFP28 Ports
Console Port	RJ-45 console ports for out-of-band CLI management
Management Port	10/100/1000BASE-T RJ-45 Ethernet for out-of-band IP management
USB Port	1*2.0 port

**Performance**

Switching Capacity	1.280 Tbps
MAC Address Table	Up to 32K entries
Packet Forwarding	952 MPPS
Packet Buffer Memory	4 MB

**Physical**

Flash	32 MB
DRAM	1 GB
Power Input	100 to 240 V AC, 50Hz 10%
Power Consumption	No Load: 45W, Full Load: 70W
Weight	7.1Kg
MTBF (H)	>100 000
Dimensions (W x D x H)	440 × 350 × 44 mm
Operating Temperature	0 to 50 °C
FAN	4 Smart Internal Fans

**Standard Image Software Features**

Stackability	VSS (up to 4 Switches)
L2 Features	<ul style="list-style-type: none"> <li>• MAC Address Table</li> <li>• Up to 32K entries</li> <li>• Flow Control</li> <li>• 802.3x Flow Control when using full-duplex</li> <li>• Back Pressure when using half-duplex</li> <li>• HOL Blocking Prevention</li> <li>• Spanning Tree Protocol</li> <li>• 802.1D STP</li> <li>• 802.1w RSTP</li> <li>• 802.1s MSTP</li> <li>• Root Guard</li> <li>• Loop Guard</li> <li>• Jumbo Frame</li> <li>• Up to 9Kb</li> </ul> <ul style="list-style-type: none"> <li>• 802.1AX Link Aggregation</li> <li>• 8 groups per device, 8 ports per group</li> <li>• ERPS (Ethernet Ring Protection Switching)</li> <li>• Port mirroring</li> <li>• Supports one-to-one, many-to-one</li> <li>• Supports mirroring for Tx/Rx/both</li> <li>• Supports 4 mirroring groups</li> <li>• VLAN mirroring</li> <li>• L2 protocol tunneling</li> <li>• Loopback Detection (LBD)</li> </ul>

L2 Multicast Features

- IGMP Snooping
- IGMP v1/v2/v3 Snooping
- Supports 2K IGMP groups
- IGMP Snooping Querier
- Host-based IGMP Snooping Fast Leave

- MLD Snooping
- MLD v1/v2 Snooping
- Supports 256 groups
- Host-based MLD Snooping Fast Leave
- MLD Snooping Querier

VLAN

- 802.1q
- Double VLAN (Q-in-Q)
- Port-based Q-in-Q
- Selective Q-in-Q
- Port-based VLAN
- MAC-based VLAN
- Private VLAN

- VLAN group
- Max. 4K static VLAN groups
- Max. 4094 VIDs
- ISM VLAN (multicast VLAN)
- VLAN trunking
- GVRP

Quality of Service (QoS)

- 802.1p Quality of Service
- 8 queues per port
- CoS based on
- 802.1p Priority Queues
- DSCP • MAC address
- VLAN
- TCP/UDP port
- Switch port Congestion Control
- WRED

- Bandwidth Control
- Port-based (ingress/egress, min. granularity 64 Kb/s)
- Queue Handling
- Strict Priority (SP)
- Weighted Round Robin (WRR)
- WFQ
- DRR

Access Control List (ACL)

- ACL based on:
- 802.1p priority
- VLAN
- MAC address
- IP address
- DSCP
- TCP/UDP port number

- Time-based ACL
- Max. ACL entries:
- Ingress (hardware entries): 1K
- Egress (hardware entries): 1K

Security

- Port isolation, Port security, and "IP+MAC+port" binding, MAC Sticky
- DHCP Snooping and option 82, DAI & IP source guard
- IEEE 802.1x, Radius and Tacacs+
- L2/L3/L4 ACL flow identification and filtration Anti-attack from

- DDoS, TCP's SYN Flood, UDP Flood, etc.
- Broadcast/multicast/unknown unicast storm-control
- Supports encryption MD5, SHA-256, RSA-1024, AES256, etc.

L3 Features

- ARP
- IP Interface 1K
- Loopback interface
- IPv6 Neighbor Discovery (ND)

- UDP helper
- IPv6 tunneling
- IGMP Proxy Reporting
- VRRP v2/v3

L3 Routing

- Static routing
- IPv4 8K
- IPv6 4K
- Default routing
- Policy-based Route (PBR)
- Null route
- Bidirectional Forwarding Detection (BFD)
- IPv4/IPv6 static route
- OSPF
- BGP, BGPv4
- OSPF
- Route Redistribution
- OSPF v2/v3
- OSPF v2/v3
- OSPF Passive Interface
- Bidirectional Forwarding Detection (BFD)
- Stub/NSSA Area
- OSPF
- Graceful Restart (GR) Helper for OSPF
- BGP, BGPv4
- Route Preference

- RIP
- RIP v1/v2
- RIPng
- Route Redistribution
- Default route
- Static route
- RIP
- RIPng
- OSPF
- BGP

Management

- Web-based GUI
- Support IPv4/IPv6 access
- Support SSL (HTTPS)
- Command Line Interface (CLI)
- Telnet Server for IPv4/IPv6 access
- Telnet Client for IPv4/IPv6
- SNMP
- Support v1/v2c/v3
- Support IPv4/IPv6 access
- SNMP Trap
- TFTP Client for IPv4/IPv6
- FTP Client for IPv4/IPv6
- IPv4 SFTP Server
- RMONv1
- Supports 1, 2, 3, 9 groups
- RMONv2
- Supports ProbeConfig group

- LLDP/LLDP-MED
- DHCP/DHCPv6 Local Relay
- DHCP Server
- Support IPv4/IPv6 address assignment
- Dual Images/ Dual Configurations
- DNS Relay for IPv4/IPv6
- DNS Client for IPv4/IPv6
- Debug Command
- Password recovery/ encryption
- Ping/ Traceroute for IPv4/IPv6
- sFlow
- ZTP

L3 Features

- IPv6 Tunneling
- Static
- ISATAP
- 6to4

L3 Multicast

- IGMP v1/v2/v3
- MLD v1/v2
- PIM-DM/SM

OAM (Operations, Administration and Maintenance)

- 802.3ah Ethernet Link OAM
- Unidirectional Link Detection (ULD)
- Dying Gasp
- 802.1ag Connectivity Fault Management (CFM)
- Y.1731 OAM
- Optical Transceiver Digital Diagnostic Monitoring (DDM)

### Ordering Information

Part Number	Description
GT-SX-4428-4ZF-F	GT 24-Slots 10G SFP+ L3 Managed Switch with 4 100G Fiber QSFP28 Slots & Redundant Internal power Supply with GT 100G QSFP28 to QSFP28 1 Meter Direct Attached Cable.
GT-DAC-ZFZF-1M	GT 100G QSFP28 to QSFP28 1 Meter Direct Attached Cable.

