



Description

Connection Technology Systems (CTS) FOS-5112 is a high-density Layer 2 access switch equipped with 8 x dual-speed SFP slots and 4 x 1/10Gbps SFP+ uplink ports. All SFP slots can accommodate a wide range of SFP transceivers including single-mode, WDM transceivers. FOS-5112 has sufficient functionalities for service providers and enterprises who plan to implement FTTH or Metro Ethernet networks, enabling easy operation and deployment of service.

FOS-5112 delivers wire-speed throughput for data, voice, and IPTV services, using non-blocking 96Gbps switching fabric. FOS-5112 also supports AC power input or DC power input for different environments.

For inspirational design features, FOS-5112 comes with new features of Fast Ring v2 & Intelligent transceiver diagnostic mechanism for better topology recovery, device monitoring, and user troubleshooting.

Many service providers are extending their existing data service with triple-play service because it generates higher revenue returns. Advanced triple-play features on FOS-5112 include Multicast VLAN Registration, IGMP snooping, IGMP fast leave, IGMP filtering, various QoS classifications, and rate limit control. These features greatly benefit the service providers who are to deploy a manageable network environment and deliver a robust triple-play service.

In order to provide customers with extra security and separation, FOS-5112 has come with Selective Q-in-Q and Q-in-Q features, as they enable service providers to separate different customers and services at the Layer 2 level.

CTS has never settled in improving users' management experience, as FOS-5112 can easily be operated with web user interface, console, telnet CLI, SNMP, and DHCP auto-provision.

FOS-5112

8 x 100/1000Base-X SFP +

4 x 1/10GBase-R SFP+

Managed Fiber Access Switch

■ High-Density Interface

Deliver high density ports (96Gbps switching fabric with 4 x 10Gbps + 8 x 1Gbps port) in 8.5 inches / 1 rack unit (1U), making it a cost-effective device for switch deployment, more practicability and convenience.

■ Up to 10Gbps Uplink Speed

Equipped with four 10G ports to fulfill the demand of higher bandwidth for traditional internet services and premium services.

■ Fanless Design

Under the fanless design, FOS-5112 can reduce the speed of dust accumulation and power consumption with zero noise.

■ Intelligent Diagnosis Mechanism

Greatly help network operators to monitor current CPU/memory utilization, power input voltage, system voltage, CPU temperature & whether SFP transceiver parameter (e.g. temperature) is beyond or under the threshold.

■ Selective Q-in-Q

Enable operators to differentiate various types of users (home/enterprise) & service level by encapsulating VLAN tags.

■ Multicast VLAN Registration

Reduce the bandwidth required to distribute IPTV multicast streams by eliminating duplication of multicast streams on different VLANs.

Target Applications

- **FTTX Metro Ethernet Implementations.**

■ Interface

- SFP Slot:
8 x 100/1000Base-X SFP
- SFP+ Slot:
4 x 10GBase-SR/LR SFP+
- Compatible with 1000Base-X transceiver
- Console Port:
1 x RS-232 to RJ45 serial port
- Terminal Block
1 x Digital Input (Dry contact)

■ Standards

- IEEE 802.3u 100Base-FX
- IEEE 802.3z 1000Base-X
- IEEE 802.3ae 10Gb/s Ethernet
- IEEE 802.3ad Link Aggregation (LACP)
- IEEE 802.1ab LLDP
- IEEE 802.1p Priority
- IEEE 802.1q Tag VLAN
- IEEE 802.1d STP
- IEEE 802.1w RSTP
- IEEE 802.1x Port-Based Network Access Control

■ H/W Specification

- MAC Address Table: 16K
- Non-blocking Switching Fabric: 96Gbps
- Throughput @ 64Bytes: 71.4Mpps
- Packet Buffer: 12Mbit
- Jumbo Frame: 12K Bytes
- Store and Forward Switching Mechanism

■ LED

- Power, Status, COM, Speed/Link/Act

■ Forward/Filter Rate

- 100M: 148,800/148,800pps
- 1000M: 1,488,000/1,488,000pps
- 10G: 14,880,000/14,880,000pps

■ Layer 2 Switch Features

- VLAN**
- IEEE 802.1q VLAN
- VLAN ID: 4094 IDs
- VLAN Concurrent Groups: 4K VLAN Groups
- Port Based VLAN
- VLAN Translation
- Q-in-Q Double tag with Configurable Ether Type
- Selective Q-in-Q

QoS

- QoS 802.1p CoS / DSCP
- Scheduling Algorithm
Weighted Round Robin (WRR)
- Strict Priority Queuing (SPQ)
- QoS Priority Queues: 8 Queues
- 802.1p P-bit & DSCP Remarking
- Port based rate limit (ingress/egress)

Network Redundancy

- IEEE 802.1d Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad Link Aggregation (LACP)
- Static Port Trunking
- Up to 6 Aggregation Groups, 8 Ports per Group

Multicast

- IGMP Snooping v1/v2/v3
- IGMP Fast Leave and Querier
- MLD v1/v2 Snooping
- MLD Querier
- IGMP/MLD Snooping Group: 512/128 Groups
- IP Multicast Filter with Segment and Profile
- Static Multicast Group
- Multicast VLAN Replication (MVR)

IPv6 Feature

- IPv6 over Ethernet (RFC 2464)
- IPv6 Addressing Architecture (RFC 4291)
- IPv6 Dual Stack (RFC 4213)
- ICMPv6 (RFC 4884)
- Path MTU Discovery for IPv6 (RFC 1981)
- Neighbor Discovery (RFC 4861)
- DHCPv6 Client

Layer 2 Protocol Tunneling

- CDP, LLDP, STP, VTP, LACP, PAgP & UDLD

Access Control List

- Physical port, Ether Type, MAC address, VID, ToS/DSCP, Protocol Type, L4 Port and IP address
- ACL entries (IPv4: 64 entries; IPv6: 32 entries)

■ Security

- 802.1x Port Base Access Control
- 802.1x RADIUS Authentication
- 802.1x MAC Authentication Bypass
- RADIUS Based VLAN Assignment
- DHCP Option 82 Relay Agent
- DHCP Option 82 with configurable circuit and Remote ID
- DHCP Snooping and DHCP server trust port
- IP Source Guard
- Port Isolation
- Storm Control
- Unknown Unicast/Unknown Multicast /Broadcast
- MAC Limiter
- Loop Detection

■ Management

- SNMP v1,v2c & v3
- /Web/Telnet/HTTPS/SSHv2/CLI
- Text Base CLI Configure file
- Port Configuration
- Speed/Duplex/Flow Control/Description
- NTP with Daylight Saving Time
- Layer 2 Control Protocol filter
- Static MAC address Table
- LLDP

■ Maintenance

Diagnostic

- Port Mirror
- ICMP Ping
- Event log
- Syslog
- SFP SFF-8472 DDMI & threshold monitor
- Temp/Volt/TX bias/TX power/RX power
- CPU
- Temperature/Utilization
- Memory Statistics
- System Voltage

Upgrade/Restore

- Firmware Upgrade/Downgrade
- HTTP/HTTPS/FTP/TFTP
- DHCP Auto-provision via DHCP option 60/43
- Configuration Upload/Backup
- HTTP/HTTPS/FTP/TFTP
- DHCP Auto-provision via DHCP option 60/43

■ Power Requirement

- Input AC: 100V ~ 240V 50/60Hz
- Input DC: 48V (Range: 44 ~ 52V)
- Power Consumption (Max.): 20W

■ Environmental Condition

- Operation: 0°C ~ 50°C
- Storage: -20°C ~ 60°C
- Humidity: 5% ~ 90%, Non-condensing

■ Dimension & Weight

- Size: 210 x 235 x 44mm (W x D x H)
- Weight: 1.8kg (with Rack ear)

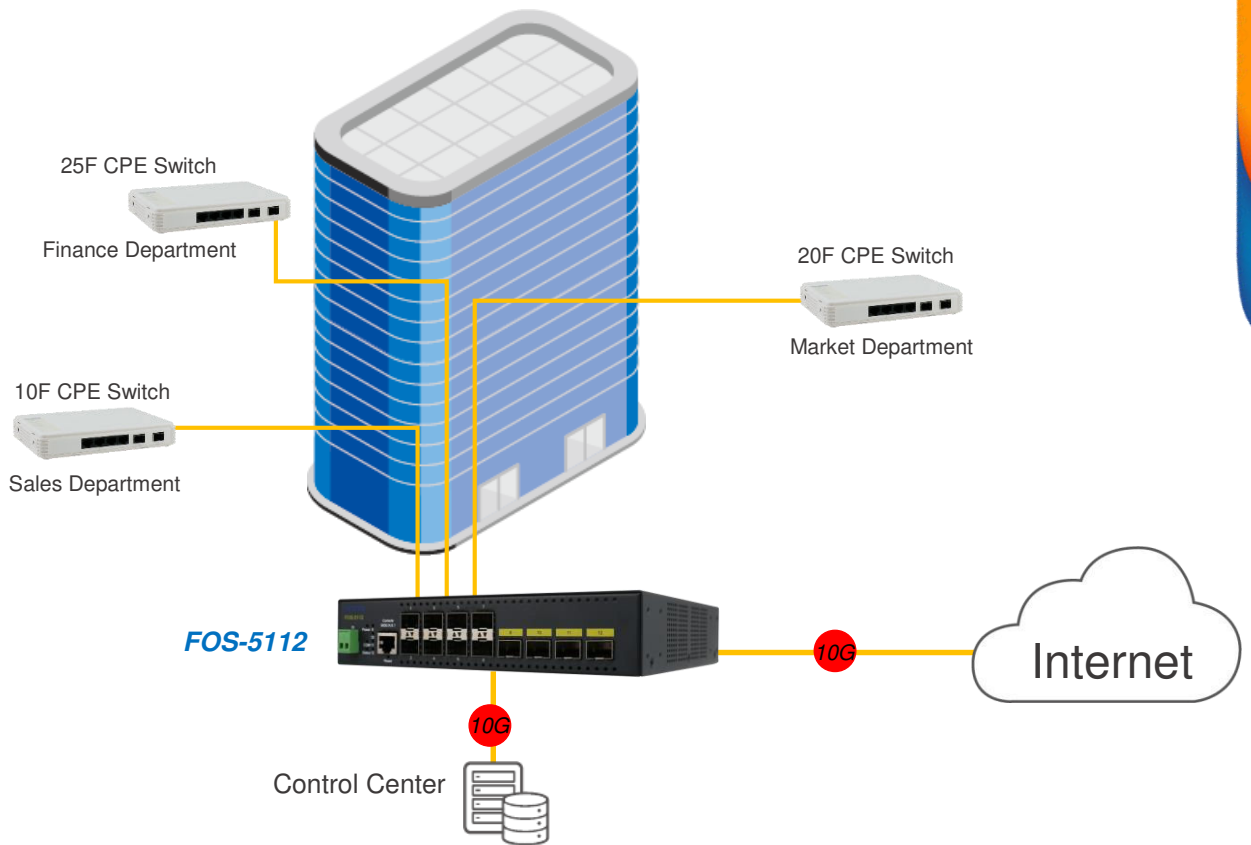
■ EMC/Safety

- FCC Class A, CE

* Under development function

** Future feature

Application Diagram



Order Information

FOS-5112

Model	1G Fiber Port			10G Fiber Port			Support Power Source
	Speed	Type	Ports	Speed	Type	Ports	
FOS-5112-1A	100/1000Mbps	SFP	8	1/10Gbps	SFP+	4	Fixed 1 Internal AC
FOS-5112-1D	100/1000Mbps	SFP	8	1/10Gbps	SFP+	4	Fixed 1 Internal DC

Accessory

SFP-51

Model	Fiber Port					
	Speed	Type	Connector	Distance	Wavelength	Temperature
SFP-51FC	10Gbps	MM	LC	300M	850nm	0°C~70°C
SFP-51FC(SM-10/20)	10Gbps	SM	LC	10/20KM	1310/1310nm	0°C~70°C
SFP-51W2A(SM-10/20)	10Gbps	WDM	LC	10/20KM	TX: 1270/1270nm RX: 1330/1330nm	0°C~70°C
SFP-51W2B(SM-10/20)	10Gbps	WDM	LC	10/20KM	TX: 1330/1330nm RX: 1270/1270nm	0°C~70°C

SFP-31-DR

Model	Fiber Port					
	Speed	Type	Connector	Distance	Wavelength	Temperature
SFP-31FC-DR	100/1000Mbps	MM	LC	550M/2KM	1310nm	0°C~70°C
SFP-31FC(SM-10)-DR	100/1000Mbps	SM	LC	10KM	1310nm	0°C~70°C
SFP-31W2A(SM-10/20)-DR	100/1000Mbps	WDM	LC	10/20KM	TX: 1310/1310nm RX: 1550/1550nm	0°C~70°C
SFP-31W2B(SM-10/20)-DR	100/1000Mbps	WDM	LC	10/20KM	TX: 1550/1550nm RX: 1310/1310nm	0°C~70°C

SFP-31

Model	Fiber Port					
	Speed	Type	Connector	Distance	Wavelength	Temperature
SFP-31FC	1000Mbps	MM	LC	550M	850nm	0°C~70°C
SFP-31FC(SM-10/20)	1000Mbps	SM	LC	10/20KM	1310/1310nm	0°C~70°C
SFP-31W2A(SM-10/20)	1000Mbps	WDM	LC	10/20KM	TX: 1310/1310nm RX: 1550/1550nm	0°C~70°C
SFP-31W2B(SM-10/20)	1000Mbps	WDM	LC	10/20KM	TX: 1550/1550nm RX: 1310/1310nm	0°C~70°C

Connection Technology Systems (CTS) reserves the right to change specification without prior notice.