

FOS-5126 Management 10 Gigabit Ethernet Switch



Managed Layer 2 Ethernet Access Switch

Uplink: 2 x 10 Gbps SFP+ Ports

LAN: 20 x 100/1000Mbps SFP Ports + 4 Combo port
(10/100/1000Mbps RJ-45 + 100/1000Mbps SFP)

Features

- **Up to 10 Gbps Uplink Speed**
This is Ethernet uplink ports integration that facilitates management and cost reduction for those requiring more data, applications, access at a rapid rate.
- **Support IPv4/IPv6 dual stack**
Support IPv6 management, packet forwarding and MLD v1/v2 Snooping.
- **SFF-8472 Diagnostic Monitor Interface**
Allow administrator to view SFP information and status including speed, distance, vendor ID, vendor S/N, temperature, voltage, TX bias, etc.
- **Rich in functions to facilitate multimedia streaming**
Support IGMP snooping, IGMP fast leave, IGMP filtering & advanced MVR** to intelligently transmit multicast traffic and deliver IPTV service.
- **Support Q-in-Q VLAN tag**
Allows service providers to implement Metro Ethernet service while maintaining the layer-2 separation of different customers.
- **IEEE 802.3ad Link Aggregation**
A cost-efficient way to increase bandwidth and reliability by grouping multiple links into one.
- **Unique Power Down Trap technology**
Built-in CTS unique SNMP power down trap function can rapidly detect network fault caused by power outage.
- **Power supply redundancy**
By combining two power sources (2AC or 2DC or 1AC+1DC), power redundancy can be well achieved.

Target Applications

- FTTX Metro Ethernet implementations.

** Coming soon.

Description

At the course of trends, bandwidth always keeps improving due to heavy workloads. Connection Technology Systems (CTS) FOS-5126 is mainly focused on 10Gbps uplink ports that give two advantages -- high uplink speed and simplified management. All SFP slots can accommodate wide range of SFP transceivers including single-mode, WDM or CWDM transceivers. FOS-5126 is perfect for service providers and enterprises who plan to implement FTTX or Metro Ethernet networks, with further spanning into triple-play service.

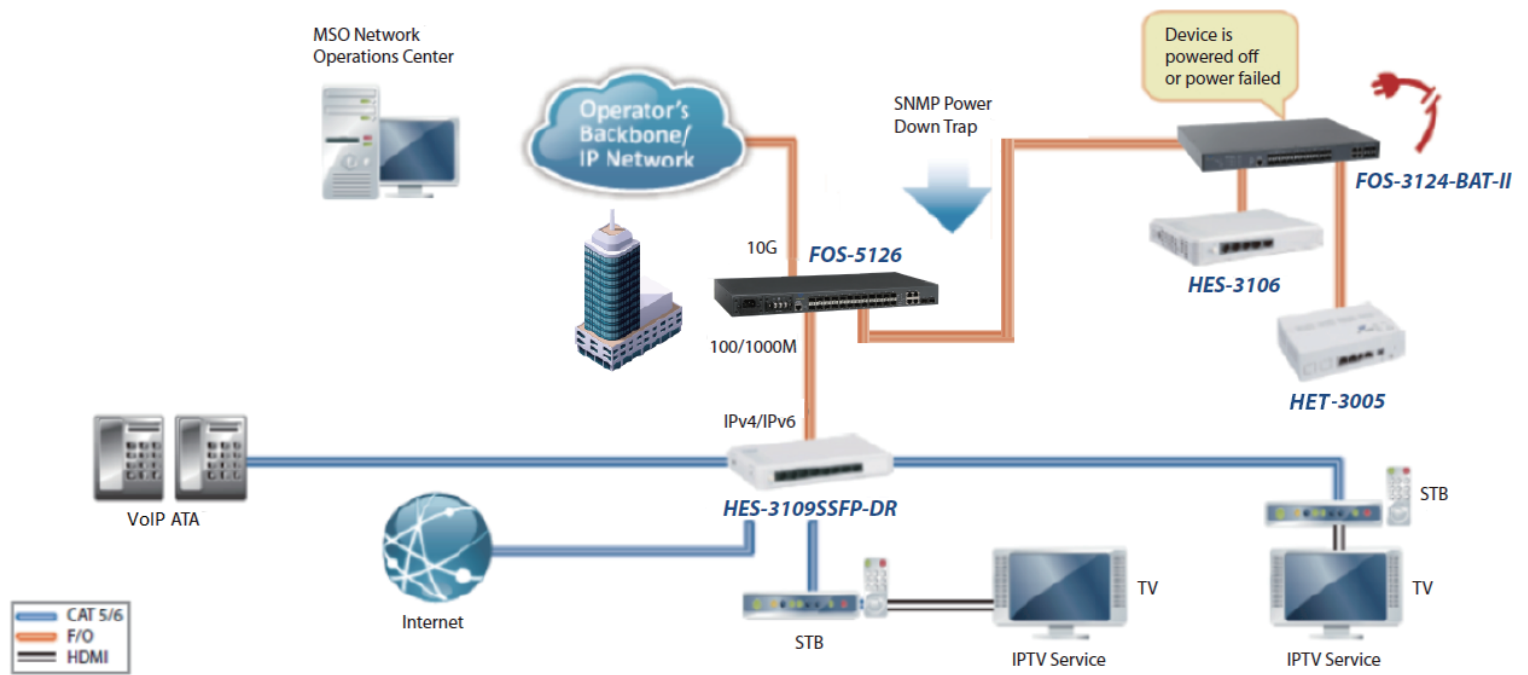
FOS-5126 delivers wire-speed throughput for data, voice and IPTV services, using non-blocking 88Gbps switching fabric. 1+1 power supply design can provide seamless power changeover to reach sustainability of power if one of power supply has failure. AC and DC powers can be mixed in the same unit for deployment flexibility.

Many service providers are extending their existing data service with triple-play service because it can generate higher revenue return by combining data, voice and IPTV in one box. Advanced features including MVR**, IGMP snooping, IGMP fast leave, IGMP filtering, various QoS classifications and rate limit control facilitate service providers to deploy a manageable network environment and deliver a successful triple-play service.

In order to provide customers extra security and separation, FOS-5126 has come with QinQ feature. This feature enables service providers to separate different customers at layer2 level no matter what VLAN setting the end customer has.

With carrier-grade in mind while keeping user-friendly for administrators, FOS-5126 can be easily managed by web interface, console, telnet CLI, SNMP and DHCP auto-provision.

Application Diagram



Specification

Interfaces

- Uplink Port (Type):
2 x 10Gbps (SFP+)
- LAN Port (Type):
4 x 100/1000Mbps Combo (SFP + RJ-45)
20 x 100/1000Mbps (SFP)
- Console Port (Type):
1 x RS-232 Port (RJ-45)

Standards

- IEEE802.3 10Base-T
- IEEE802.3u 100Base-TX/FX
- IEEE802.3ab 1000Base-T
- IEEE802.3z 1000Base-X
- IEEE802.3ae 10 Gigabit Ethernet
- IEEE802.3az EEE
- IEEE802.3x Flow Control
- IEEE802.3ad Link Aggregation (LACP)
- IEEE802.1ab LLDP
- IEEE802.1p Priority
- IEEE802.1q Tag VLAN
- IEEE802.1d STP
- IEEE802.1w RSTP
- IEEE802.1X Port Based Network Access Control

LEDs

Power A/B, COM, Status, Speed/Link/Act

H/W Specification

- MAC Address Table: 16K
- Non-Blocking Switching Fabric: 88Gbps
- Memory Buffer: 1536K Bytes
- VLAN Groups: 2K VLAN Groups
- Priority Queues: 8 Queues
- Jumbo Frame: 9K Bytes
- Store and Forward Switching Mechanism
- Auto-Cross Over for MDI/MDIX in TP Ports
- Auto-Negotiation in TP Ports
- Full/Half Duplex Mode Operation

Forward / Filter Rate

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

Features

- Broadcast Storm Control
- Unknown Unicast/Multicast Flood Control
- IEEE 802.1p with 8 Hardware Priority Queues
- IEEE 802.1Q Tag-Based and Port-Based VLAN
- Q-in-Q
- Weighted Round-Robin (WRR)/Strict-Priority Queuing (SPQ) Scheduling Algorithm
- Policy Based Rate Limiting
- Port Based Traffic Shaping
- Static Multicasting
- IGMP v1/v2/v3 Snooping
- IGMP Fast Leave
- IGMP Filtering via Filtering Profile
- MLD v1/v2 Snooping
- Multicast Channel Limitations per Port
- Multicast VLAN Registration (MVR) **
- IEEE 802.3ad Link Aggregation (LACP)
- Static port Trunking
- Up to 13 Aggregation Groups, 8 Ports per Group
- Spanning Tree Protocol (STP) / Rapid Spanning Tree Protocol (RSTP)
- Layer Link Discovery Protocol (LLDP)
- SFF-8472 (Digital Diagnostic Management Interface for SFP)
- IEEE 802.1X Authentication
- RADIUS Authentication for 802.1X
- DHCP Relay Agent with Option 82
- IP Source Guard (Static IP, DHCP Snooping)
- DHCP Server Trust Port
- Loop Detection
- Port Isolation
- Port Mirroring
- ACL Based on Physical port, IEEE802.1p, VID, TOS/DSCP, Ethertype, Protocol Type and L4 Port
- Wire Speed Rate Limiting per MAC/IP/TCP/UDP
- IPv6 over Ethernet (RFC 2464)
- IPv6 Addressing Architecture (RFC 4291)
- IPv6 Dual Stack (RFC4213)
- ICMPv6 (RFC4884)
- Path MTU Discovery for IPv6 (RFC 1981)
- Neighbor Discovery (RFC4861)

- DHCPv6 Client
- SNTP, Daylight Saving
- DHCP Client and Auto-Provision
- Text Based Configuration
- FTP, TFTP, HTTP Firmware & Configuration Upgrade
- Web, SNMP, SSHv2 and Telnet Console CLI Management
- RADIUS Client for Web, CLI
- SNMP v1/v2c - Private, RFC-1213, RMON MIBs
- Event Log, Syslog
- Dying Gasp (SNMP Power Down Trap)

Power Requirement

- Input AC : 100VAC-240VAC
- Input DC : 48VDC
- Power Consumption : 33W(Max.)

Environmental Condition

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

Dimension & Weight

- Size: 440 x 205 x 44 mm (WxDxH)
- Weight: 3.04Kg

EMC/Safety

- FCC Class A, CE

** Coming soon.

Order Information

FOS-5126

| MODEL | FIBER PORT | | | | | TP PORT | | SUPPORT POWER SOURCE |
|--------------|------------------------|-------------|-----------|----------|---------|-----------------|-------|---------------------------------------|
| | Speed | Type | Connector | Distance | Ports | Speed | Ports | Power Type |
| FOS-5126-1A | 10Gbps 100/1000Mbps | SFP+ SFP | - | - | 2 24 | 10/100/1000Mbps | 4 | Fixed 1 internal AC |
| FOS-5126-2A | 10Gbps 100/1000Mbps | SFP+ SFP | - | - | 2 24 | 10/100/1000Mbps | 4 | Fixed 2 internal AC |
| FOS-5126-1D | 10Gbps 100/1000Mbps | SFP+ SFP | - | - | 2 24 | 10/100/1000Mbps | 4 | Fixed 1 internal DC |
| FOS-5126-2D | 10Gbps 100/1000Mbps | SFP+ SFP | - | - | 2 24 | 10/100/1000Mbps | 4 | Fixed 2 internal DC |
| FOS-5126-1AD | 10Gbps 100/1000Mbps | SFP+ SFP | - | - | 2 24 | 10/100/1000Mbps | 4 | Fixed 1 internal AC and 1 internal DC |

SFP-51

| MODEL | FIBER PORT | | | | | |
|------------------|------------|------|-----------|----------|---------------------|-------------|
| | Speed | Type | Connector | Distance | Wavelength | Temperature |
| SFP-51FC | 10Gbps | MM | LC | 300M | 850nm | 0°C to 70°C |
| SFP-51FC(SM-10) | 10Gbps | SM | LC | 10KM | 1310nm | 0°C to 70°C |
| SFP-51FC(SM-40) | 10Gbps | SM | LC | 40KM | 1550nm | 0°C to 70°C |
| SFP-51FC(SM-80) | 10Gbps | SM | LC | 80KM | 1550nm | 0°C to 70°C |
| SFP-51W2A(SM-10) | 10Gbps | WDM | LC | 10KM | TX:1270nm RX:1330nm | 0°C to 70°C |
| SFP-51W2B(SM-10) | 10Gbps | WDM | LC | 10KM | TX:1330nm RX:1270nm | 0°C to 70°C |
| SFP-51W2A(SM-20) | 10Gbps | WDM | LC | 20KM | TX:1270nm RX:1330nm | 0°C to 70°C |
| SFP-51W2B(SM-20) | 10Gbps | WDM | LC | 20KM | TX:1330nm RX:1270nm | 0°C to 70°C |
| SFP-51W2A(SM-40) | 10Gbps | WDM | LC | 40KM | TX:1270nm RX:1330nm | 0°C to 70°C |
| SFP-51W2B(SM-40) | 10Gbps | WDM | LC | 40KM | TX:1330nm RX:1270nm | 0°C to 70°C |

SFP-31

| MODEL | FIBER PORT | | | | | |
|---------------------------------|------------|------|-----------|--------------------------|--|-------------|
| | Speed | Type | Connector | Distance | Wavelength | Temperature |
| SFP-31FC | 1000Mbps | MM | LC | 550M | 850nm | 0°C to 70°C |
| SFP-31FC(SM-10/20/40/50/80/120) | 1000Mbps | SM | LC | 10/20/40/50/80/ 120KM | 1310nm/1310nm/1310nm/1550nm/ 1550nm/1550nm | 0°C to 70°C |
| SFP-31W2A(SM-10/20/40/80) | 1000Mbps | WDM | LC | 10/20/40/80KM | TX:1310nm/1310nm/1310nm/1510nm RX:1550nm/1550nm/1550nm/1570nm | 0°C to 70°C |
| SFP-31W2B(SM-10/20/40/80) | 1000Mbps | WDM | LC | 10/20/40/80KM | TX:1550nm/1550nm/1550nm/1570nm RX:1310nm/1310nm/1310nm/1510nm | 0°C to 70°C |
| SFP-31FC-C11 | 1000Mbps | CWDM | LC | 80KM | 1470nm | 0°C to 70°C |
| SFP-31FC-C12 | 1000Mbps | CWDM | LC | 80KM | 1490nm | 0°C to 70°C |
| SFP-31FC-C13 | 1000Mbps | CWDM | LC | 80KM | 1510nm | 0°C to 70°C |
| SFP-31FC-C14 | 1000Mbps | CWDM | LC | 80KM | 1530nm | 0°C to 70°C |
| SFP-31FC-C15 | 1000Mbps | CWDM | LC | 80KM | 1550nm | 0°C to 70°C |
| SFP-31FC-C16 | 1000Mbps | CWDM | LC | 80KM | 1570nm | 0°C to 70°C |
| SFP-31FC-C17 | 1000Mbps | CWDM | LC | 80KM | 1590nm | 0°C to 70°C |
| SFP-31FC-C18 | 1000Mbps | CWDM | LC | 80KM | 1610nm | 0°C to 70°C |

SFP-31-DR

| MODEL | FIBER PORT | | | | | |
|---------------------|------------------|------|-----------|----------|---------------------|-------------|
| | Speed | Type | Connector | Distance | Wavelength | Temperature |
| SFP-31FC-DR | 100Mbps/1000Mbps | MM | LC | 2KM/550M | 1310nm | 0°C to 70°C |
| SFP-31FC(SM-10)-DR | 100Mbps/1000Mbps | SM | LC | 10KM | 1310nm | 0°C to 70°C |
| SFP-31W2A(SM-10)-DR | 100Mbps/1000Mbps | WDM | LC | 10KM | TX:1310nm RX:1550nm | 0°C to 70°C |
| SFP-31W2B(SM-10)-DR | 100Mbps/1000Mbps | WDM | LC | 10KM | TX:1550nm RX:1310nm | 0°C to 70°C |