

## MSW-4428X

24x GbE/SFP + 4x GbE/RJ-45 with 4x 10G/SFP+  
L2+ Carrier Ethernet Switch

The MSW-4428X is positioned as a layer 2+ Gigabit access switch solution. It is equipped with 24 100Base-FX/1000Base-X dual speed SFP slots, 4 ports GbE (10/100/1000Base-T) ports and 4 1000Base-X/10GBase-X dual speed SFP+ uplink slots. The MSW-4428X offers the best flexibility and scalability for operators or service providers to deploy their Metro Ethernet network. With the deployment of MSW-4428X, operators or service providers can flexibly provision the bandwidth of either 100Mbps or 1000Mbps as well as uplink connection of Gigabit or 10G speed upon their service applications. The MSW-4428X has built-in dual power supplies to enable power redundancy and enhance high network availability.

Aimed at Metro Ethernet applications, the specifications of MSW-4428X fully meet the attributes of Carrier Ethernet proposed by MEF (Metro Ethernet Forum). It complies with CE2.0 standard to support E-Line/E-LAN/E-Tree/E-Access service and enables the bandwidth profile configuration delivering SLA (Service Level Agreement) for end-to-end performance characteristics as well as Ethernet OAM functionality to support carrier grade service OAM management rapidly detecting and recovering from the network incidents in real time.

### Features

#### Fully dual rate architecture of fiber link port

Completely dual speed ports of fiber link to offer the scalable physical connection of Metro Ethernet network for operators

#### Fully Ethernet OAM enabled

Enables Ethernet OAM features (IEEE 802.3ah/802.1ag/ITU-T.Y.1731) to rapidly detect and recover network fault and save the OPEX for operators as well as increase customer satisfaction

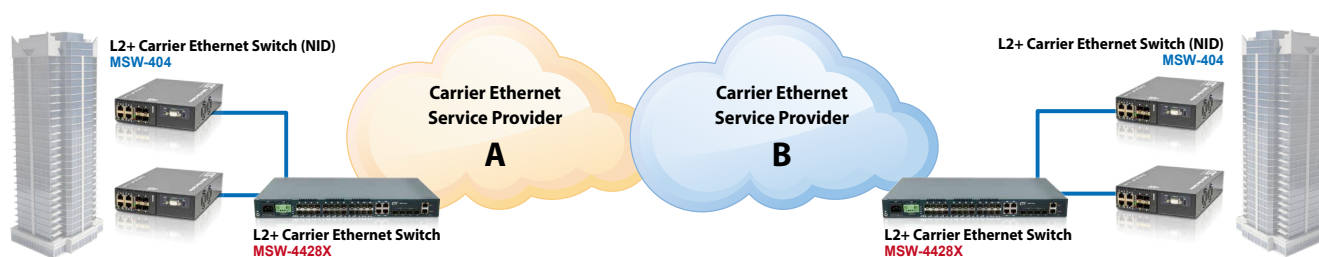
#### MEF standards compliant solution

CE2.0 compliant product to guarantee the compatibility with other MEF certified equipment and reduce the risk and cost for Metro Ethernet network deployment of operators

### Specifications

<b>Interface</b>	100/1000Mbps SFP slots x 24 + 10/100/1000Base-T RJ45 x 4 + 1G/10Gbps SFP+ slot x 4	<b>Security</b>	IEEE 802.1x port based access control MAC based access control authentication RADIUS authentication, limited MAC address learning IP/MAC binding, ACL rule based filtering, TACACS+ IP source guard, DHCP snooping/relay option 82 ARP inspection
<b>Console Port</b>	RJ-45 console port x 1	<b>IP Multicasting</b>	IGMP throttling, IGMP filtering, IGMP fast leave IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2
<b>Management Port</b>	10/100/1000Base-T RJ45 x 1	<b>Storm Control Management</b>	Unknown/Broadcast/Multicast storm suppression Web/Telnet CLI/SNMP/console interface Web/CLI authentication, SSH v2, HTTPs, port mirroring, RSPAN syslog, IPv6 management, NTP, IEEE 802.3az, Energy Efficient, Ethernet (EEE) power management
<b>Switching fabric capacity</b>	136Gbps	<b>SNMP agent</b>	SNMP v1/v2c/v3, RMON Group 1,2,3 and 9
<b>Packet Forwarding capacity</b>	102Mpps	<b>Software upgrade</b>	TFTP/HTTP
<b>Filter &amp; Forward Rate</b>	14880pps at 10Mbps, 148800pps at 100Mbps, 1488000pps at 1Gbps, 14880000pps at 10Gbps	<b>Ethernet OAM</b>	IEEE 802.3ah/IEEE 802.1ag/ITU-T Y.1731, RFC2544, ITU-T Y.1564
<b>Transmission Method</b>	Store and Forward Switching	<b>Timing Synchronization</b>	IEEE 1588v2 (Future Upgradable)
<b>Standards</b>	IEEE 802.3u, IEEE 802.3z, IEEE 802.3ae IEEE 802.1p, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1d IEEE 802.1w, IEEE 802.1s, IEEE 802.1x, IEEE 802.3ad IEEE 802.3az, IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731	<b>LED display</b>	Power, System, Console, Link/Act, Speed
<b>Packet Buffer</b>	32M bits	<b>Power input</b>	100V ~ 240V AC, -36 ~ -60V DC
<b>Mac Table Size</b>	32K	<b>Build in power module combination</b>	AC, DC, AD (AC+DC), AA (AC+AC) or DD (DC+DC)
<b>Max. Packet Size</b>	10,240 bytes - jumbo frames	<b>Power Consumption</b>	< 60W
<b>VLAN Feature</b>	IEEE 802.1Q tagged VLAN (Max. 4K VLAN groups), port based VLAN, MAC based VLAN, protocol based VLAN private VLAN, IEEE 802.1ad Q-in-Q, VLAN translation, GVRP	<b>Operating Temperature</b>	-10 ~ 60°C
<b>QoS Feature</b>	IEEE 802.1p 8 priority queues per port, CoS based on switch port; VLAN ID; DSCP; TCP/UDP port IEEE 802.1p priority tag remarking, DSCP remarking, Port based ingress/egress rate limit 3 colors marker-CIR/EIR/Burst bandwidth control IEEE 802.3x flow control	<b>Storage Temperature</b>	-25 ~ 70°C
<b>L2 switching Protection</b>	STP, RSTP, MSTP, ITU-T G.8031/G.8032	<b>Humidity</b>	5% ~ 90% (non-condensing)
<b>Trunking</b>	IEEE 802.3ad LACP (Max. 16 trunking group, Max. 8 ports per trunking group)	<b>Dimensions</b>	250 x 440 x 43.5mm (D x W x H)
		<b>Certification</b>	FCC, CE

## Application



## Ordering Information

Model Name	Description
MSW-4428X-AC	L2+ 10G Fiber Access Switch and build-in single AC power module
MSW-4428X-DC	L2+ 10G Fiber Access Switch and build-in single DC power module
MSW-4428X-AA	L2+ 10G Fiber Access Switch and build-in dual AC power module
MSW-4428X-DD	L2+ 10G Fiber Access Switch and build-in dual DC power module
MSW-4428X-AD	L2+ 10G Fiber Access Switch and build-in AC + DC power module

Power Type  
**MSW – 4428X** –    
 Example: MSW – 4428X – AC

### Accessories

#### 10G SFP+ Transceiver Module

SFM-1000-SR85	10G SFP+ SR/SW MMF 300m, 850nm VCSEL, 10G Ethernet/FC/SDH/SONET
SFS-1010-LR31	10G SFP+ LR/LW SMF 10km, 1310nm DFB DML, 10G Ethernet/FC/SDH/SONET
SFS-1040-ER55	10G SFP+ ER/EW SMF 40km, 1550nm DFB EML, 10G Ethernet/FC/SDH/SONET
SFS-1080-ZR55	10G SFP+ ZR/EW SMF 80km, 1550nm DFB EML, 10G Ethernet/FC/SDH/SONET