NEW

# MSW-4428X

## L2+ Gigabit 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/10G Base-X dual speed SFP+ uplink slots. The MSW-4428X offers the best flexibility and scalability for the 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.

## Feature and Benefits

### 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

Enabling 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

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|---|---|
| **Interface** | 100/1000Mbps SFP slots x 24 + 10/100/1000Base-T RJ45 x 4 + 1/10Gbps SFP+ slot x 4 |
| **Console Port** | RJ-45 console port x 1 |
| **Management Port** | 10/100/1000Base-T RJ45 x 1 |
| **Switching fabric capacity** | 136Gbps |
| **Packet Forwarding capacity** | 101Mpps |
| **Filter & Forward Rate** | 14880pps at 10Mbps, 148800pps at 100Mbps, 1488000pps at 1Gbps, 14880000pps at 10Gbps |
| **Transmission Method** | Store and Forward Switching |
| **Standard** | 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 802.3ah, IEEE 802.1ag, ITU-T Y.1731 |
| **Packet Buffer** | 32M bits |
| **Mac Table Size** | 32K |
| **Max. Packet Size** | 14K Bytes |
| **VLAN Feature** | 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 |
| **QoS Feature** | 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 |
| **L2 switching Protection** | STP, RSTP, MSTP, ITU-T G.8031/G.8032 |
| **Trunking** | IEEE 802.3ad LACP (Max. 14 trunking group, Max. 8 ports per trunking group) |

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|---|---|
| **Security** | 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 |
| **IP Multicasting** | IGMP throttling, IGMP filtering, IGMP fast leave |
| | IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2 |
| **Storm Control** | Unicast/Broadcast/Multicast storm suppression |
| **Management** | Web/Telnet CLI/SNMP/console interface |
| | Web/CLI authentication, SSH v2, HTTPs, port mirroring |
| | syslog, IPv6 management, NTP, SNTP |
| **SNMP agent** | SNMP v1/v2c/v3, RMON Group 1,2,3 and 9 |
| **Software upgrade** | TFTP/HTTP |
| **Ethernet OAM** | IEEE 802.3ah/IEEE 802.1ag/ITU-T Y.1731, RFC2544, ITU-T Y.1564 |
| **Timing Synchronization** | IEEE 1588 V2 |
| **MPLS feature** | RFC5654 MPLS-TP |
| **LED display** | Power, System, Console, Link/Act, Speed |
| **Power input** | 100V ~ 240V AC, -36 ~ -60V DC |
| **Build in power module combination** | AC, DC, AD (AC+DC), AA (AC+AC) or DD (DC+DC) |
| **Power Consumption** | < 60W |
| **Operating Temperature** | 0 ~ 50°C |
| **Humidity** | 5% ~ 90% (non-condensing) |
| **Dimensions** | 250x 440x 43.5mm (DxWxH) |
| **Certification** | FCC, CE |



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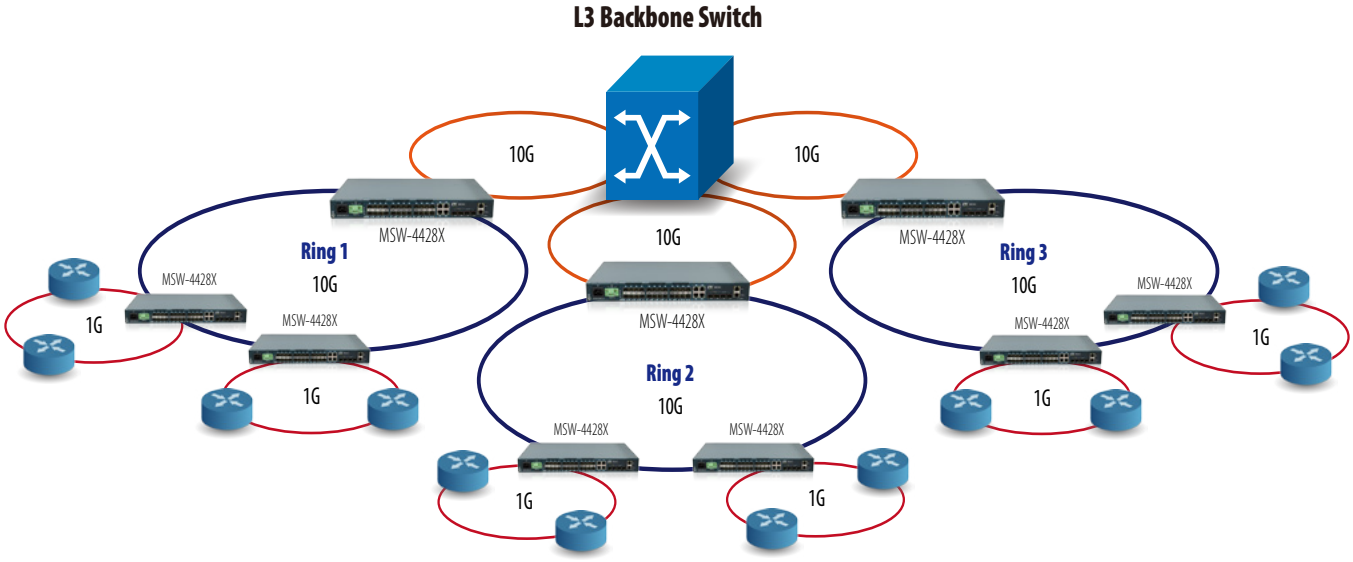
Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

## Application Diagram




## Ordering Information

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

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

***Accessories***

10G SFP+ Transceiver Module

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|---|---|
| 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 |