



## MSW-4424CS

20x GbE/SFP + 4x GbE Combo + 4x 10G/SFP+  
L2+ Managed Carrier Ethernet Switch w/ SyncE

The MSW-4424CS is positioned as a layer 2+ Gigabit access switch solution. It is equipped with 20 100Base-FX/1000Base-X dual speed SFP slots, 4 ports GbE combo (10/100/1000Base-T or 100/1000Base-X SFP) ports and 4 1000Base-X/10G Base-X dual speed SFP+ uplink slots. The MSW-4424CS offers the best flexibility and scalability for the operators or service providers to deploy their Metro Ethernet network. With the deployment of MSW-4424CS, the operators or service providers can flexibly provision the bandwidth for either 100Mbps or 1000Mbps as well as uplink connection of Gigabit or 10G speed upon their service applications. The MSW-4424CS has built-in dual power supplies to enable power redundancy function and enhance the high network availability.

Aimed at Metro Ethernet applications, the specifications of MSW-4424CS fully meet the attributes of Carrier Ethernet proposed by MEF (Metro Ethernet Forum). It complies with MEF 9 standard to support E-Line/E-Access service and MEF 14 standard to enable 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. MSW-4424CS supports timing synchronization features (SyncE & IEEE 1588v2) to enhance and migrate a carrier grade network for mobile backhaul applications.

### 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

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.

#### Timing synchronization

Advanced synchronization features such as SyncE or IEEE1588 v2 to allow operators delivering service with optimal stability and continuity in the end-to-end connectivity.

- Stable internal clock with a temperature compensated crystal oscillator (TCXO).
- Utilizes a Digital Phase Locked Loop (DPLL) for accurate clock recovery.
- Transparent timing accuracy of <20ns exceeds IEEE 1588 v2 standards.

#### 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.

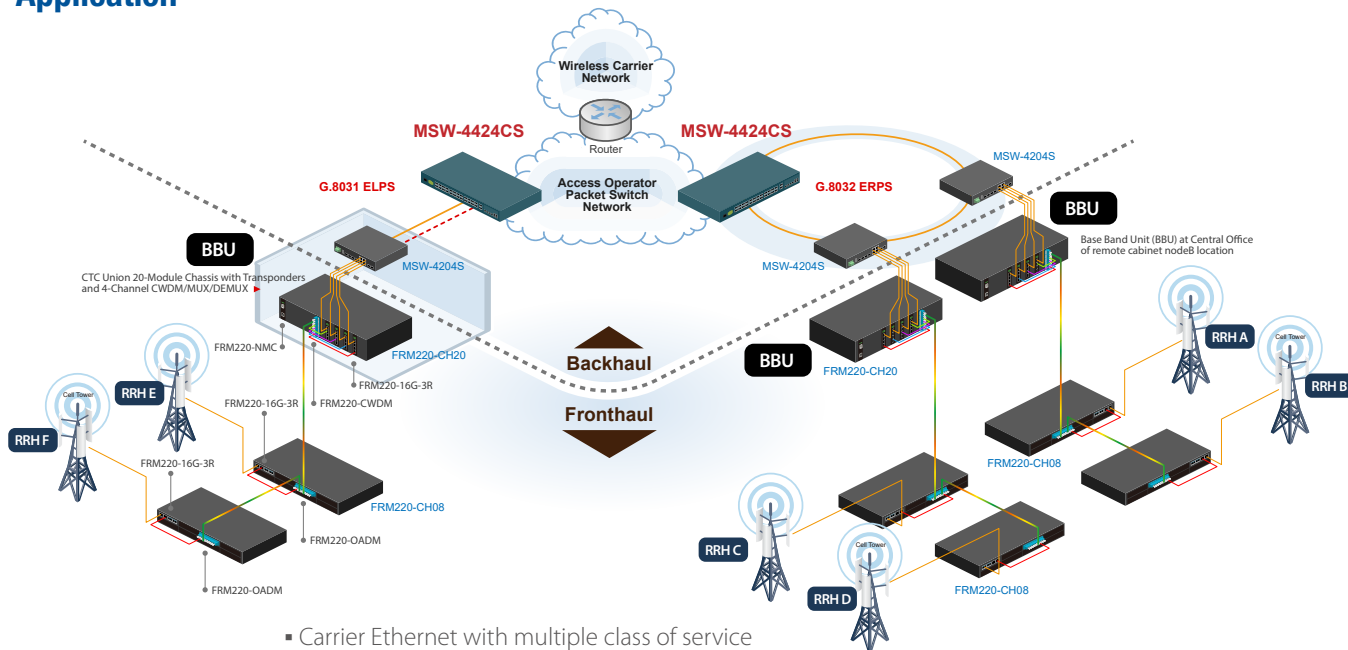
### Specifications

<b>Interface</b>	100/1000Mbps SFP slots x 20 + GbE combo port (10/100/1000Base-T or 100/1000Mbps SFP slot) x 4 + 1G/10Gbps SFP+ slot x 4	<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>Console Port</b>	RJ-45 console port x 1	<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
<b>1PPS/ToD port</b>	RJ45 x 2	<b>L2 switching Protection</b>	STP, RSTP, MSTP, ITU-T G.8031/G.8032
<b>Management Port</b>	10/100/1000Base-T RJ45 x 1	<b>Trunking</b>	IEEE 802.3ad LACP (Max. 14 trunking group, Max. 8 ports per trunking group)
<b>Filter &amp; Forward Rate</b>	14880pps at 10Mbps, 148800pps at 100Mbps, 1488000pps at 1Gbps, 14880000pps at 10Gbps	<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>Switching Fabric Capacity</b>	128Gbps	<b>IP Multicasting</b>	IGMP throttling, IGMP filtering, IGMP fast leave IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2
<b>Packet Forwarding Capacity</b>	95Mpps	<b>Storm Control</b>	Unknown Unicast/Broadcast/Multicast storm suppression
<b>Transmission Method</b>	Store and Forward Switching	<b>Management</b>	Web/Telnet CLI/SNMP/console interface, Web/CLI authentication, SSH v2, HTTPs, port mirroring syslog, IPv6 management, NTP, IEEE 802.3az, Energy, Efficient, Ethernet (EEE) power management
<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 802.3ah, IEEE 802.1ag, IEEE 802.3az, ITU-T Y.1731, ITU-T G.8262, IEEE 1588 v2		
<b>Packet Buffer</b>	32M bits		
<b>Mac Table Size</b>	32K		
<b>Max. Packet Size</b>	10K Bytes		

<b>SNMP agent</b>	SNMP v1/v2c/v3, RMON Group 1,2,3 and 9
<b>Software upgrade</b>	TFTP/HTTP
<b>Ethernet OAM</b>	IEEE 802.3ah/IEEE 802.1ag/ITU-T Y.1731
<b>Timing synchronization</b>	ITU-T G.8261/G.8262 SyncE, IEEE 1588 v2
<b>LED display</b>	Power, System, Console, Link/Act, Speed
<b>Power input</b>	100V ~ 240V AC, -36 ~ -60V DC
<b>Build in power module combination</b>	AC, DC, AD (AC+DC), AA (AC+AC) or DD (DC+DC)

<b>Power Consumption</b>	< 60W
<b>Operating Temperature</b>	-10 ~ 60°C
<b>Storage Temperature</b>	-25 ~ 70°C
<b>Humidity</b>	5% ~ 90% (non-condensing)
<b>Dimensions</b>	250x 440x 43.5mm (DxWxH)
<b>Certification</b>	FCC, CE

## Application



- Carrier Ethernet with multiple class of service
- Traffic Synchronization
- Precise delivery of time-sensitive services

## Ordering Information

Model Name	Description
<b>MSW-4424CS-AC</b>	L2+ 10G Fiber Access Switch with SyncE and build-in single AC power module
<b>MSW-4424CS-DC</b>	L2+ 10G Fiber Access Switch with SyncE and build-in single DC power module
<b>MSW-4424CS-AA</b>	L2+ 10G Fiber Access Switch with SyncE and build-in dual AC power module
<b>MSW-4424CS-DD</b>	L2+ 10G Fiber Access Switch with SyncE and build-in dual DC power module
<b>MSW-4424CS-AD</b>	L2+ 10G Fiber Access Switch with SyncE and build-in AC + DC power module

Power Type  
**MSW - 4424CS -**   
 Example: MSW - 4424CS - AC

### Accessories

#### 10G SFP+ Transceiver Module

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