



# MSW-404SE

4x GbE, RJ45 + 4x Dual Rate SFP L2+  
Carrier Ethernet Switch (NID) with SyncE

MSW-404SE is a new generation of carrier grade Ethernet demarcation device for business connection and mobile backhaul transportation service delivered by carriers. The MSW-404SE is equipped 4 SFP slots in dual rate 100/1000Base-X and 4 ports 10/100/1000Base-T RJ45 network interfaces. It is designed to enable E-Line, E-LAN, E-Tree services which are CE (Carrier Ethernet) 2.0 compliant for Metro Ethernet network deployments.

MSW-404SE enables carriers and service providers to delivered SLA-based network service with extensive fault detection and diagnostic capabilities which are compliant with the latest Ethernet OAM standards such as IEEE 802.3ah, IEEE 802.1ag and ITU-TY.1731. With built-in RFC2544 feature sets, the MSW-404SE also enables the service providers to perform the SLA verification anytime to ensure the quantitative latency, jitter and throughput delivery performance indexes. The CE2.0 compliant functions support EVCs and 3 colors marker QoS traffic management to enable service providers managing bandwidth and enforce SLA guaranteed.

MEF 22.1 defines the standard for how Metro Ethernet service is adopted into the traffic transportation in the mobile backhaul application. The mobile service is time sensitive and required accurately packet delivery over a clocking synchronized network to transmit packetized data from a mobile device among base stations without loss. The MSW-404SE supports Synchronized Ethernet to fulfill the IP converged services (data, voice, video) over synchronous Ethernet aware carrier Ethernet network.

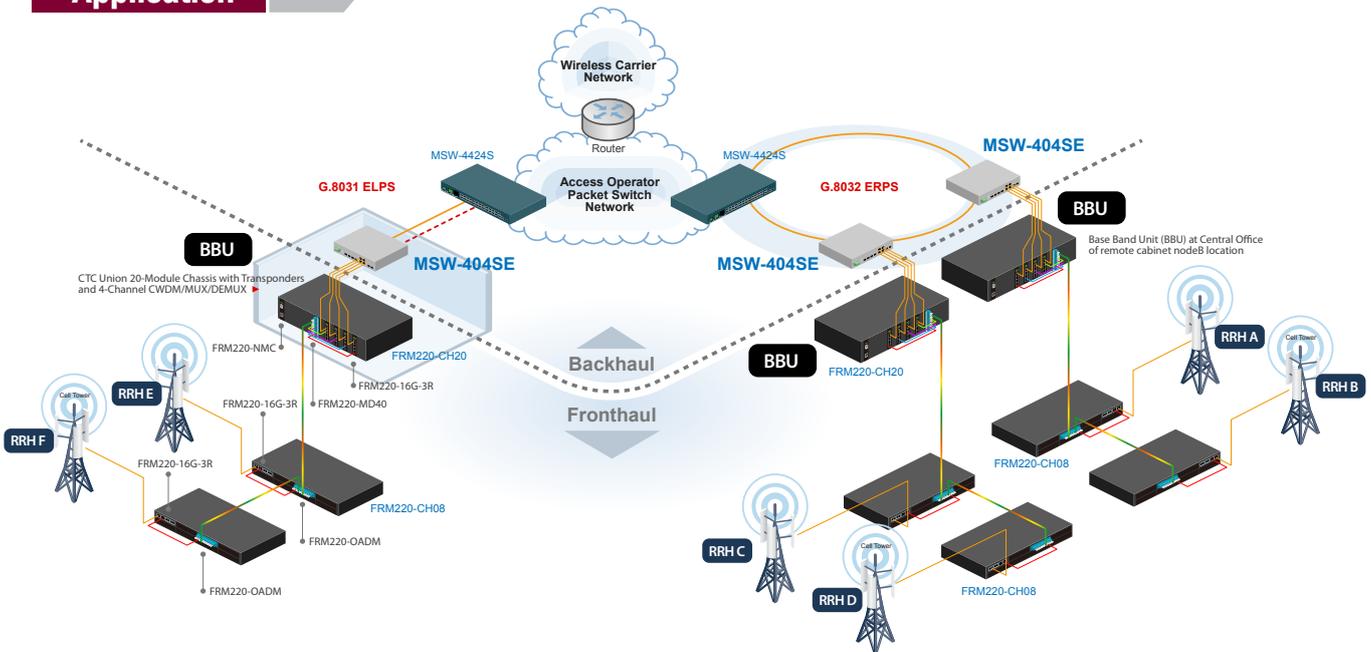
## Feature

- The next generation of Ethernet demarcation device, at customer premise, fulfilling the large-scale carrier Ethernet deployment for intelligent business connection and mobile backhaul services complied to CE 2.0 standard.
- CE2.0 standards compliant product guarantees the fully interoperability with other MEF certified equipment and reduces the risks and cost of Carrier Ethernet network deployment for operators and service providers.
- Advanced clock synchronized features for carrier Ethernet network allows operators to deliver time sensitive services with optimal stability and continuity in the end-to-end connectivity.

## Specifications

<b>Interface</b>	100/1000Mbps SFP slots x 4 + 10/100/1000Base-T RJ45 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</b>	Unicast/Broadcast/Multicast storm suppression
<b>1PPS/ToD port</b>	RJ45 x 1	<b>Management</b>	Web/Telnet CLI/SNMP/console interface, Web/CLI authentication, SSH v2, HTTPs, port mirroring, syslog, IPv6 management, NTP, SNTP
<b>BITS E1/T1 Timing</b>	RJ45 x 1	<b>SNMP Agent</b>	SNMP v1/v2c/v3, RMON Group 1,2,3 and 9
<b>Switching Fabric capacity</b>	16Gbps	<b>Software Upgrade</b>	TFTP/HTTP
<b>Filter &amp; Forward rate</b>	14880pps at 10Mbps, 148800pps at 100Mbps, 1488000pps at 1Gbps	<b>Ethernet OAM</b>	IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, RFC2544
<b>Transmission Method</b>	Store and Forward Switching	<b>Timing Synchronization</b>	ITU-T G.8262 Synchronous Ethernet, IEEE 1588v2
<b>Standard</b>	IEEE 802.3u, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1D, IEEE 802.1w, IEEE 802.1s, IEEE 802.1x, IEEE 802.3ad	<b>LED Display</b>	Power, System, Console, Link, Speed/Act
<b>Packet Buffer</b>	8M bits	<b>Power Input</b>	100V ~ 240VAC, -36 ~ -60VDC
<b>MAC Table Size</b>	8K	<b>Power Consumption</b>	< 20W
<b>Max. Packet Size</b>	10K Bytes	<b>Operating Temperature</b>	0 ~ 50°C
<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>Humidity</b>	5% ~ 90% (non-condensing)
<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>Dimensions</b>	250 x 218 x 44 mm (D x W x H)
<b>L2 switching protection</b>	STP, RSTP, MSTP, ITU-T G.8031/G.8032 Ethernet ring protection	<b>Regulatory</b>	FCC, CE
<b>Trunking</b>	IEEE 802.3ad LACP (Max. 4 trunking groups, Max. 8 ports per trunking group)		

Application



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

Ordering Information

Model Name	Description
MSW-404SE-AC	4x 100/1000Base-x SFP slots + 4x 10/100/1000Base-T RJ45 Carrier Ethernet Switch with SyncE & single AC power supply built-in
MSW-404SE-DC	4x 100/1000Base-x SFP slots + 4x 10/100/1000Base-T RJ45 Carrier Ethernet Switch with SyncE & single DC power supply built-in
MSW-404SE-AA	4x 100/1000Base-x SFP slots + 4x 10/100/1000Base-T RJ45 Carrier Ethernet Switch with SyncE & Dual AC power supply built-in
MSW-404SE-DD	4x 100/1000Base-x SFP slots + 4x 10/100/1000Base-T RJ45 Carrier Ethernet Switch with SyncE & Dual DC power supply built-in
MSW-404SE-AD	4x 100/1000Base-x SFP slots + 4x 10/100/1000Base-T RJ45 Carrier Ethernet Switch with SyncE & AC & DC power supply built-in

Power Type  
**MSW – 404SE-**   
 Example: MSW – 404SE-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