

Preliminary



## FRM220-MSW404

**4x SFP Slots in Dual Rate 100/1000Base-X  
and 4 Ports 10/100/1000Base-T RJ45  
OAM Managed Carrier Ethernet Switch (NID)**

The CTC Union's FRM220-MSW404 is the new generation of carrier grade Ethernet demarcation device for business connection and mobile backhaul transportation service delivered by carriers. The FRM220-MSW404 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.

The FRM220-MSW404 device 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-T Y.1731. With built-in RFC2544 feature sets, The FRM220-MSW404 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 hierarchical QoS traffic management to enable service providers managing bandwidth and enforce SLA guaranteed.

### Features

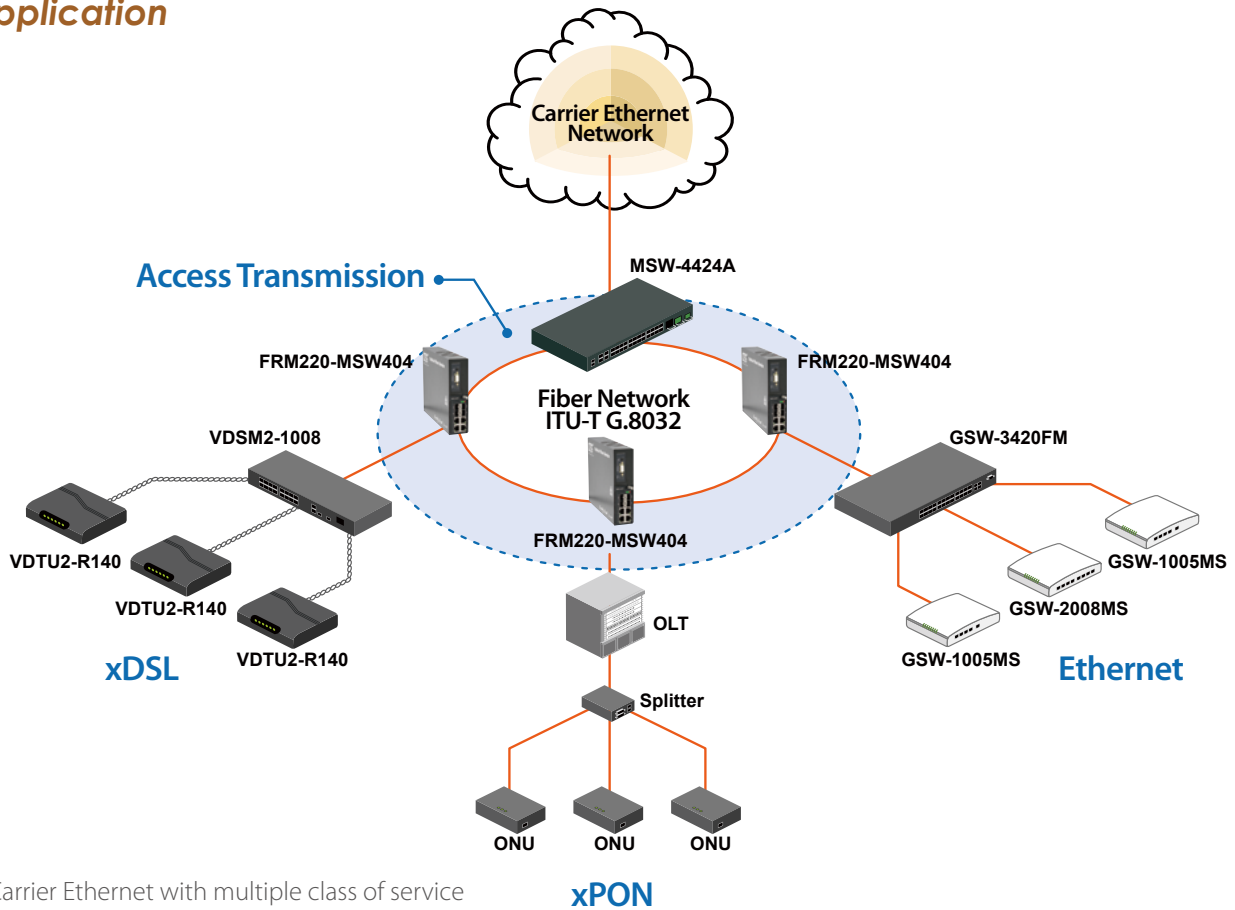
- The next generation of Ethernet demarcation device, at customer premise, fulfilling the large-scale carrier Ethernet deployment for intelligent business connection and mobile backhaul services complied to CE 2.0 standard.
- MEF 9/14 standards compliant product guarantees the fully interoperability with other MEF certified equipment and reduces the risks and cost of Carrier Ethernet network deployment for operators and service providers.

### Specifications

<b>Interface</b>	100/1000Mbps SFP slots x 4 + 10/100/1000Base-T RJ45 x 4
<b>Filter &amp; Forward Rate</b>	10M (14880/14880pps); 100M (148800/148800pps); 1000M (1488000/1488000pps)
<b>Transmission Method</b>	Store and Forward Switching
<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>Packet Buffer</b>	1M bits
<b>MAC Table Size</b>	8K
<b>Max. Packet Size</b>	10K Bytes
<b>VLAN Feature</b>	IEEE 802.1Q tagged VLAN, port based VLAN, MAC based VLAN, protocol based VLAN, private VLAN, IEEE 802.1ad Q-in-Q
<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
<b>L2 switching protection</b>	STP, RSTP, MSTP, ITU-T G.8031/G.8032 Ethernet ring protection
<b>Trunking</b>	IEEE 802.3ad LACP

<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, IP source guard
<b>IP Multicasting</b>	IGMP throttling, IGMP filtering, IGMP fast leave, IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2
<b>Storm Control</b>	Unicast/Broadcast/Multicast storm suppression
<b>Management</b>	Web/Telnet CLI/SNMP/console interface, Web/CLI authentication, SSH v2, HTTPs, port mirroring, system syslog, IPv6 management, NTP, SNTP
<b>SNMP Agent</b>	SNMP v1/v2c/v3
<b>Software Upgrade</b>	TFTP/HTTP/HTTPS
<b>Ethernet OAM</b>	IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, RFC2544
<b>LED Display</b>	Power, System, Console, Link, Speed/Act
<b>Power Input</b>	100V ~ 240VAC, -18 ~ -72VDC
<b>Power Consumption</b>	< 20W
<b>Operating Temperature</b>	0 ~ 50°C
<b>Humidity</b>	5% ~ 90% (non-condensing)
<b>Dimensions</b>	220 x 168 x 45 mm (D x W x H)
<b>Regulatory</b>	FCC, CE, RoHS compliant

## Application



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

## Ordering Information

Model Name	Description
FRM220-MSW404	4 x SFP Slots in Dual Rate 100/1000Base-X and 4x 10/100/1000Base-T RJ45 OAM Managed Carrier Ethernet Switch

**Note:** To Support Console Interface managed, this card must be placed in CH02M chassis.

**FRM220 – MSW404**   
Example: FRM220 – MSW404