

Model	CE 2+*		CE 2+*		CE 2+*	
	MSW-404	MSW-202	MSW-202A	MSW-4204	MSW-4204S	CE 2+* SyncE autoSense
MEF standard compliance	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	CE 1.0	CE 2.0 E-Line/E-Access	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	
HW interface						
Uplink port	100/1000Base-X SFP slot x 4	100/1000Base-X SFP slot x 2	100/1000Base-X SFP slot x 2	1000Base-X/10GBase-SR SFP slot x 2	1000Base-X/10GBase-SR SFP slot x 2	
Service LAN port	10/100/1000Base-T RJ45 x 4	10/100/1000Base-T RJ45 x 2	10/100/1000Base-T RJ45 x 2	10/100/1000Base-T RJ45 x 2 + 10/100/1000/2.5GBase-T RJ45 x 2	10/100/1000Base-T RJ45 x 2 + 10/100/1000/2.5GBase-T RJ45 x 2	
Console port	RS-232 DB9 x 1 (when plugged into FRM220-CH02M)	RS-232 DB9 x 1 (when plugged into FRM220-CH01M)	RS-232 DB9 x 1 (when plugged into FRM220-CH01M)	RJ45 x 1 (RS-232)	RJ45 x 1 (RS-232)	
Management Port				10/100/1000Base-T RJ45 x 1	10/100/1000Base-T RJ45 x 1	
1 PPS / ToD					√	
HW specification & performance						
Power module	AC power : 100 ~ 240VAC DC power : 18 ~ 72VDC (48V)	AC power : 100 ~ 240VAC DC power : 18 ~ 72VDC (48V)	AC power : 100 ~ 240VAC DC power : 18 ~ 72VDC (48V)	AC power : 100 ~ 240VAC DC power : 36 ~ 60VDC (48V)	AC power : 100 ~ 240VAC DC power : 36 ~ 60VDC (48V)	
Power supply type	Dual power & built-in FRM220-CH02M	Dual power & built-in FRM220-CH01M	Dual power & built-in FRM220-CH01M	Single power or dual power	Single power or dual power	
Switching fabric capacity	16Gbps	8Gbps	8Gbps	54Gbps	54Gbps	
Packet buffer	1M bits	2M Bits	2M Bits	8Mbits	8Mbits	
MAC address table size	8K	8K	8K	16K	16K	
Jumbo frame size	10K Bytes	9.6 Bytes	9.6 Bytes	10K Bytes	10K Bytes	
Layer 2 feature						
Flow control	IEEE 802.3x for full duplex mode	√	√	√	√	√
	Back pressure for half duplex mode	√	√	√	√	√
VLAN	VLAN Group	4K	4K	4K	4K	4K
	VLAN ID	1 ~ 4094	1 ~ 4094	1 ~ 4094	1 ~ 4094	1 ~ 4094
	IEEE 802.1Q tagged VLAN	√	√	√	√	√
	MAC based VLAN	√	√	√	√	√
	IEEE 802.1v Protocol & subnet based VLAN	√	√	√	√	√
	IEEE 802.1ad Q-in-Q	√	√	√	√	√
	Q-in-Q TPID selectable	√	√	√	√	√
	Voice VLAN	√	√	√	√	√
	Private VLAN	√	√	√	√	√
	VLAN translation	√	√	√	√	√
	GVRP	√	√	√	√	√
Aggregation	Static Trunk (SA, DA, IP, TCP/UDP port)	√	√	√	√	√
	Max. trunk No. (LACP)	4	2	2	3	3
Spanning Tree	Port No. per (LACP)	8 Max.	4 Max.	4 Max.	6 Max.	6 Max.
	802.1D STP	√	√	√	√	√
	802.1w RSTP	√	√	√	√	√
Loop protection	802.1s MSTP	√	√	√	√	√
	ITU-T G.8031	√	√	√	√	√
ITU-T G.8032 ERPS	Convergence time	50 ms	50 ms	50 ms	50 ms	50 ms
	Revertive operation mode	√	√	√	√	√
	Multiple-ring network	√	√	√	√	√
QoS feature						
Priority Queues	8	8	8	8	8	8
Traffic scheduling	WRR priority scheduling	√	√	√	√	√
	Strict priority scheduling	√	√	√	√	√
	Hybrid	√	√	√	√	√
Traffic classification QoS	802.1p based COS	√	√	√	√	√
	IP Precedence based COS	√	√	√	√	√
	IP DSCP based COS	√	√	√	√	√
Two rate three color markers	Ingress traffic policing	√	√	√	√	√
	Egress traffic shaping	√	√	√	√	√
	Marking/remarking	√	√	√	√	√
Rate limiting	Ingress	Per port based/Per queue based	Per port based/Per queue based	Per port based/Per queue based	Per port based/Per queue based	Per port based/Per queue based
	Egress	Per port based / Per queue based	Per port based / Per queue based	Per port based / Per queue based	Per port based / Per queue based	Per port based / Per queue based
Diffserv remarking (RFC2474)	√	√	√	√	√	√
IP Multicasting						
IGMP Snooping v1/v2/v3	√	√	√	√	√	√
IGMP filtering/throttling	√	√	√	√	√	√
IGMP Fast Leave	√	√	√	√	√	√
IGMP query	√	√	√	√	√	√
IGMP proxy reporting	√	√	√	√	√	√
MLD snooping v1/v2	√	√	√	√	√	√
MVR (Multicast VLAN Registration)	√	√	√	√	√	√
Security features						
Static Port Security (MAC-based)	√	√	√	√	√	√
Per port limited MAC learning	√	√	√	√	√	√
IEEE 802.1X	Port-Based	√	√	√	√	√
	MAC-Based	√	√	√	√	√
	Dynamic VLAN Assignment	√	√	√	√	√
	QoS Assignment (w/o ACL profile)	√	√	√	√	√
	QoS assignment w/ ACL profile	√	√	√	√	√
	Guest VLAN / Voice VLAN	√	√	√	√	√
ACL	Number of rules	256	256	256	256	256
	L2/L3/L4	√	√	√	√	√
RADIUS authentication	√	√	√	√	√	√
RADIUS authentication & accounting	√	√	√	√	√	√
TACACS+ authentication	√	√	√	√	√	√
HTTPS & SSL	√	√	√	√	√	√
SSH v2	√	√	√	√	√	√
User name password authentication	Local Authentication	√	√	√	√	√
	Remote Authentication via RADIUS/TACACS+	√	√	√	√	√
Management Interface Access	SNMP	√	√	√	√	√
Filtering	Web	√	√	√	√	√
Management features	Telnet/SSH	√	√	√	√	√
Cisco like CLI	√	√	√	√	√	√
Web based management	√	√	√	√	√	√
Telnet Server	√	√	√	√	√	√
SNMP v1/v2c/v3	√	√	√	√	√	√
SW & configuration upgrade	TFTP	√	√	√	√	√
	HTTP	√	√	√	√	√
RMON (1,2,3,9 group)	√	√	√	√	√	√
MIB II	RFC 1213	√	√	√	√	√
DHCP	Client	√	√	√	√	√
	Relay snooping	√	√	√	√	√
	relay option 82	√	√	√	√	√
IP Source Guard	√	√	√	√	√	√
Port mirroring	√	√	√	√	√	√
RSPAN (remote mirroring)	√	√	√	√	√	√
Event Syslog	Syslog server (RFC3164)	√	√	√	√	√
	Support 3 server	Support 3 server	Support 3 server	Support 3 server	Support 3 server	Support 3 server
DNS	Client	√	√	√	√	√
	Proxy	√	√	√	√	√
NTP	√	√	√	√	√	√
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol	√	√	√	√	√
	LLDP-MED	√	√	√	√	√
UPnP	√	√	√	√	√	√
sFlow	√	√	√	√	√	√
L2CP	√	√	√	√	√	√
IPv6 Management (Telnet Server/ICMP v6)	√	√	√	√	√	√
SFF-8472 DDMI	√	√	√	√	√	√
Ethernet OAM features						
IEEE 802.3ah	Peer discovery	√	√	√	√	√
	Dying gasp	√	√	√	√	√
	Loopback	√	√	√	√	√
	Event notification	√	√	√	√	√
IEEE 802.1ag	CCM	√	√	√	√	√
	Loopback	√	√	√	√	√
	Linktrace	√	√	√	√	√
ITU-T Y.1731	CCM/Loopback/Linktrace	√	√	√	√	√
	Loss measurement	√	√	√	√	√
	Delay Measurement	√	√	√	√	√
	TEST signal	√	√	√	√	√
RFC2544 tester functionality	√	√	√	√	√	√
ITU-T Y.1564	√	√	√	√	√	√
RFC5654 MPLS-TP	√	√	√	√	√	√
Timing synchronization						
ITU-T G.8262 SyncE	√	√	√	√	√	√
IEEE 1588v2	√	√	√	√	√	√
Others						
Dimension	220 x 168 x 45 mm	155 x 88 x 23 mm	155 x 88 x 23 mm	117 x 250 x 43.8 mm	117 x 250 x 43.8 mm	
Operating temperature	0 ~ 50 degree C	0 ~ 50 degree C	0 ~ 50 degree C	0 ~ 50 degree C	0 ~ 50 degree C	
Operating humidity	5% ~ 90% (non-condensing)	5% ~ 90% (non-condensing)	5% ~ 90% (non-condensing)	5% ~ 90% (non-condensing)	5% ~ 90% (non-condensing)	
Power consumption	< 20W	< 12W	< 12W	< 15W	< 15W	
Installation type	19" rack mounting	desktop placement	desktop placement	19" rack mounting	19" rack mounting	