



## FRM220A-2000EAS/1 FRM220A-2000EAS/2

1/2x 10/100/1000Base-T + 1/2x 100/1000Base-X SFP  
OAM/IP GbE Managed Switch

The FRM220A-2000EAS/1 and FRM220A-2000EAS/2 are OAM compliant Gigabit Ethernet switch designed to make conversion between 10/100/1000Base-T(X)+100/1000Base-X SFP (2000EAS/1) and 2x 10/100/1000Base-T(X)+2x 100/1000Base-X SFP (2000EAS/2). With embedded SNMP and Web-based management, the administrator can monitor, configure and control the activity of each switch card both locally and remotely. Based on a powerful L2+ switch architecture, this switch supports bandwidth control, duplex and speed configuration, VLAN tagging, Q-in-Q, QoS, Spanning tree, jumbo frames as well as auto laser shutdown, link fault pass through, OAM loop back and dying gasp. This card may also be controlled and monitored via an GSW/SNMP in a managed FRM220A chassis

### Features

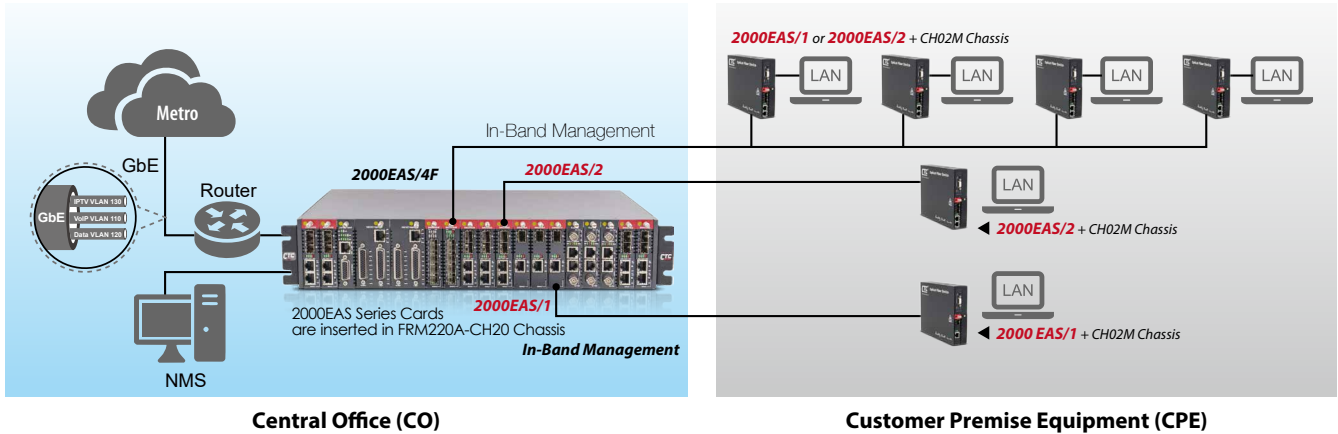
- 10/100/1000Base-T and 100/1000Base-X SFP (2000EAS/1)
- 2x 10/100/1000Base-T and 2x 100/1000Base-X SFP (2000EAS/2)
- Standalone IP Based, Web GUI, Telnet, SNMP management
- Supports RMON counter
- Supports dying gasp
- D/D function for supported SFP fiber transceiver
- Supports Cisco® like CLI
- Online local / remote f/w upgrade
- Supports local / remote IEEE 802.3ah OAM / IP management
- Auto Laser Shutdown (ALS)

### Specifications

|                                     |   |   |
|-------------------------------------|---|---|
| <b>Optical Interface</b>            | Connector   | SFP LC  |
|                                     | Data rate   | 125/1250Mbps  |
|                                     | Duplex mode   | Full duplex   |
|                                     | Fiber   | MM 50/125µm, 62.5/125µm.<br>SM 9/125µm  |
|                                     | Distance  | MM 550m, 2km, SM<br>15/30/50/80/120km<br>WDM 20/40/60km                           |
|                                     | Wavelength  | MM 1310nm, SM 1310,1550nm<br>WDM 1310Tx/1550Rx (type A)<br>1550Tx/1310Rx (type B) |
| <b>LEDs</b>                         | Power, FX-Link, Test, UTP-Link, UTP-SPD   |   |
| <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 802.3ad,   |   |
| <b>Packet buffer</b>                | 4M bits   |   |
| <b>MAC table size</b>               | 8K  |   |
| <b>Max. Packet Jumbo frame size</b> | 9600 Bytes  |   |
| <b>VLAN feature</b>                 | IEEE 802.1Q tagged VLAN (Max. 4K VLAN groups)   |   |
|                                     | MAC based VLAN  |   |
|                                     | Protocol based VLAN   |   |
|                                     | Private VLAN for port isolation   |   |
|                                     | IEEE 802.1ad Q-in-Q   |   |
| <b>L2 switching protection</b>      | STP, RSTP, MSTP   |   |
| <b>Trunking</b>                     | IEEE 802.3ad LACP   |   |
| <b>QoS feature</b>                  | IEEE 802.1p 8 priority queues per port, Port Default Priority, QoS Control List (QCL Mode), Port Ingress Shaping, Port egress shaper, Queue egress shapers, DiffServ (RFC2474) remarking, Tag remarking, Scheduler mode |   |
| <b>Security</b>                     | ACL rule based filtering  |   |
| <b>Storm Control</b>                | Unknown Unicast/Broadcast/Multicast storm suppression   |   |

|                          |  |
|--------------------------|--|
| <b>Management</b>        | Web/Telnet CLI interface, Web/CLI authentication, SSH v2, HTTPs, Port mirroring, System syslog, IPv4/IPv6 management, NTP, Text based CLI configuration upload or download |
| <b>SNMP agent</b>        | SNMP v1/v2c/v3, RMON Group 1,2,3 and 9, Multiple trap destinations   |
| <b>Software upgrade</b>  | TFTP/HTTP  |
| <b>Power Consumption</b> | 8W   |
| <b>Power Input</b>       | 12VDC  |
| <b>Temperature</b>       | 0 ~ 50°C (Operating), -10 ~ 70°C (Storage)   |
| <b>Humidity</b>          | 10 ~ 90% non-condensing  |
| <b>Certification</b>     | CE, FCC  |
| <b>Dimensions</b>        | 159.5 × 20.8 × 88mm (D×W×H)  |
| <b>Weight</b>            | 130g   |

## Application



Central Office (CO)

Customer Premise Equipment (CPE)

## Ordering Information

| Model Name        | Description   |
|-------------------|---|
| FRM220A-2000EAS/2 | 2x 10/100/1000Base-T and 2x 100/1000Base-X SFP-LC managed switch card (optional SFP module) |
| FRM220A-2000EAS/1 | 10/100/1000Base-T to 100/1000Base-X SFP-LC managed converter card (optional SFP module)     |

### Chassis Option

| Model Name               | Description   |
|--------------------------|---|
| FRM220-CH20(HS)          | 2U 19", 20 slots rack mount chassis with high speed cooling fan and rack mounting kit                             |
| FRM220-AC                | Chassis Power module 100~240 VAC, IEC connector, 200W   |
| FRM220-DC48              | Chassis Power module 36~72 VDC, 3 pin terminal block, 200W  |
| FRM220-CH02M-AC/DC/AD    | 2-slot chassis with console port and AC or DC power, with fan   |
| FRM220-CH02/NMC-AC/DC/AD | 2-slot chassis with fan, managed via optional NMC card and with AC, DC or AD power                                |
| FRM220-CH02/SMT-AC/DC/AD | 2-slot chassis with fan, managed via optional NMC card and with AC, DC or AD power plus fan/power alarm detection |