



## Ethernet Aggregation Switch Platform

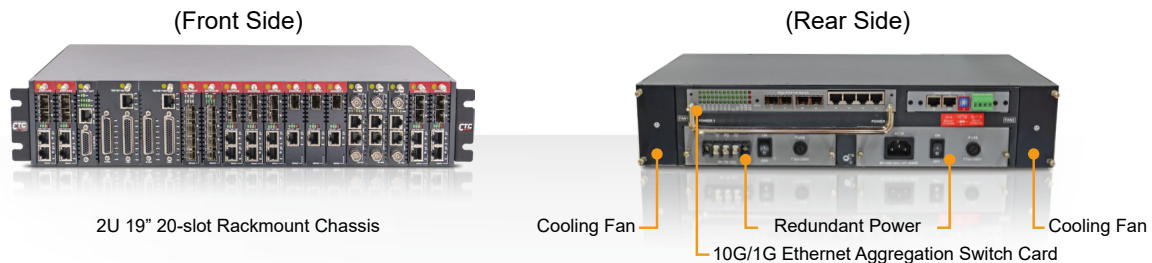
- FRM220A

The FRM220A series is an Ethernet based aggregation platform, which incorporates a 24 + 4 port L2 Gigabit Ethernet switch (FRM220A-GSW/SNMP-1G or a new 20 + 4 port L2 Gigabit Ethernet switch with 4 × 10Gigabit uplink (FRM220A-GSW/SNMP-10G). The FRM220A has a built-in Gigabit Ethernet backplane to interconnect the Ethernet access with the FRM220-GSW/SNMP card. The L2 switch card supports many advanced Layer 2 switch technologies including port and tag based VLAN, QoS, LACP, RSTP to name just a few. The FRM220A chassis solution significantly lowers the OPEX for operator and service provider when deploying fiber access networks.

### // Specifications

|                                |   |                           |
|--------------------------------|---|---------------------------|
| <b>Physical Specifications</b> | Dimensions                                    | 303 × 438 × 88 mm (D×W×H) |
|                                | Weight (w/o Power)                            | 5.2kg                     |
| <b>Power</b>                   | AC  | 18~240VAC                 |
|                                | DC24  | 18~36VDC                  |
|                                | DC48  | 36~60VDC                  |
| <b>Temperatures</b>            | Operating                                     | 0~60°C                    |
|                                | Storage                                       | -10~70°C                  |
| <b>Humidity</b>                | 5%~90% non-condensing                         |                           |
| <b>MTBF</b>                    | 65,000 hrs                                    |                           |
| <b>Certification</b>           | FCC Class A, VCCI Class A, CE, RoHS compliant |                           |

### // Chassis Overview



### // 1G/10G Uplink Ethernet Aggregation Switch Card

The FRM220A chassis incorporates an Ethernet trunk card (FRM220A-GSW/SNMP-10G), for grooming traffic from all twenty (20) card slots and for Device Management. This card has four (4) uplink ports of either 1G/10G SFP+, depending on model, and is built with GbE interfaces to connect the backplane with each slot of FRM220A chassis. The FRM220A-GSW/SNMP-10G Ethernet switch trunk card transmits Ethernet between the subscriber equipment (bridge/modem or network interface card) and provides a user-networking interface with Ethernet packets.

### FRM220A-GSW/SNMP-10G

10G uplink Ethernet Aggregation Switch Card with In-Band Management



- Provides chassis aggregation via 4x1G/10Gigabit Base-X SFP/SFP+ plus 4 x 10/100/1000Base-T uplink ports
- Supports IEEE 802.1p HW based 8 priority queues and L2~L4 QoS functions
- Supports IPv6 management
- Provides Web (https), Telnet, SSHv2, SNMP(V1, V2c, V3) management interfaces

### FRM220A-GSW/SNMP-1G

Gigabit uplink Ethernet Aggregation Switch Card with In-Band Management



- Supports secure authentication by IEEE802.1x, RADIUS or TACACS+
- Supports IEEE802.1D/802.1w/802.1s for ring protection on all interfaces
- Supports IEEE 802.1Q tagged VLAN and IEEE 802.1ad Q-in-Q application

## // FRM220A Cards

The products listed below are designed for FRM220A-CH20 Ethernet Aggregation Switch Applications

### Ethernet Switch

FRM220A-2000EAS/4F



- 4-port 100/1000Base-X SFP
- Standalone IP Based, Web GUI, Telnet and SNMP management
- Supports dying gasp
- Supports Cisco® like CLI
- Online local / remote F/W upgrade
- Supports local / remote IEEE 802.3ah OAM / IP management

### Ethernet Switch

FRM220A-2000EAS/1 & FRM220A-2000EAS/2



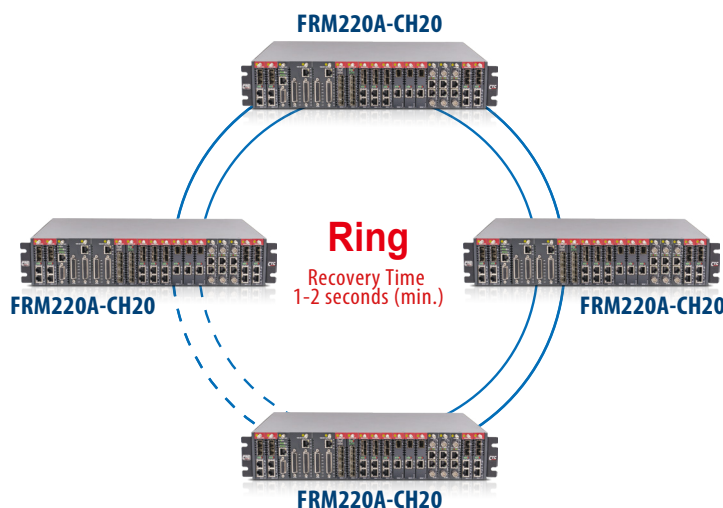
- 10/100/1000Base-T and 100/1000Base-X SFP (2000EAS/1)
- 2 x 10/100/1000Base-T and 2 x 100/1000Base-X SFP (2000EAS/2)
- Standalone IP Based, Web GUI, Telnet and SNMP management
- Supports dying gasp
- Online local / remote F/W upgrade
- Supports local / remote IEEE 802.3ah OAM / IP management

## // Benefit of FRM220A Chassis Platform

### Enabling IP Transportation Protection Mechanism

- STP/RSTP Featured Ring Protection

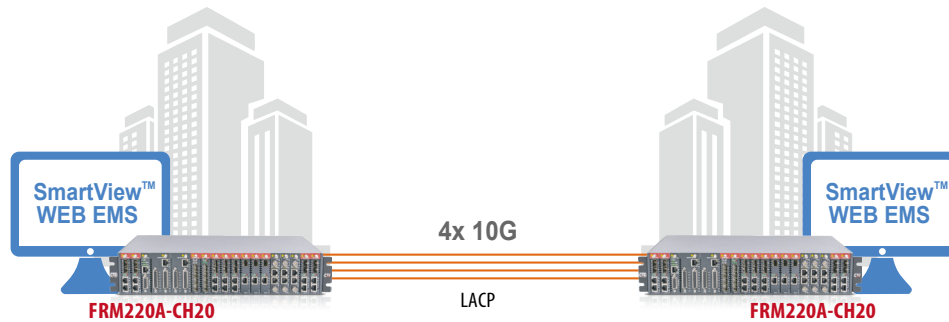
- Standard based but advanced fault protection systems
- Rapidly recovery path from failed connection (1-2 seconds min. recovery time)



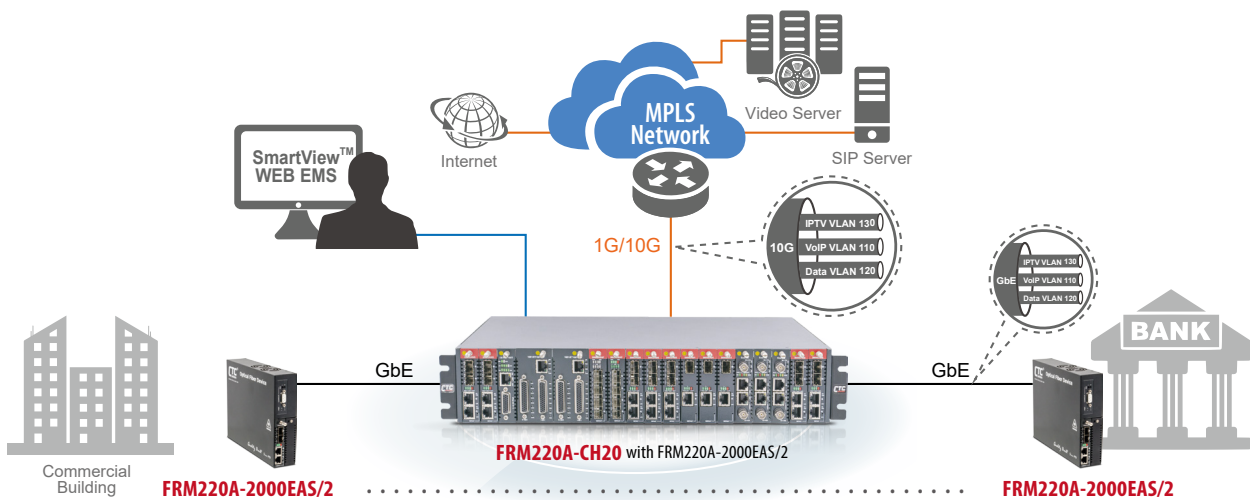
## LACP Enabled Traffic Aggregation

- Fiber Redundant / Trunking Application

- Dynamic port aggregation or trunking to increase bandwidth between LACP peer devices
- Redundant paths to reduce network fault risk



## Enabling VLAN & QoS Prioritized Multiple Play Services



## Secured Access Control Enhancement

- Centralized Management of Accessing the Network for user or device

