Access Transmission Platform

iAccess™ Multi-Service Platform
iAccess™ 10G Ethernet Aggregation Platform

Optical Transport Solutions
- 100G Transponder / Muxponder / Protection / EDFA / WDM

Ethernet Services
- Ethernet Switch

Data Communication Solutions
- CCF / Datacom / RS485

TDM/PDH/Voice Solutions
The FRM220A series is an Ethernet based aggregation platform, which incorporates a 24+4 port L2 Gigabit Ethernet switch (FRM220A-GSW/SNMP-(n)) or a new 20+4 port L2 Gigabit Ethernet switch with 4x10Gigabit 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

#### Physical Specifications

<table>
<thead>
<tr>
<th>Dimension</th>
<th>303 x 438 x 88 mm (D x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>5.2kg</td>
</tr>
</tbody>
</table>

#### Power

- **AC**: 18~240VAC
- **DC24**: 18~36VDC
- **DC48**: 36~72VDC

#### Temperatures

- **Operating**: 0~60°C
- **Storage**: -10~70°C

#### Humidity

- 5%~99% non-condensing

#### MTBF

- 65,000 hrs

#### Certification

- FCC Class A, VCCI Class A, CE, RoHS compliant

### Chassis Overview

#### (Front Side)

- 2U 19” 20-slot Rackmount Chassis

#### (Rear Side)

- Cooling Fan
- Redundant Power
- 10G/1G Ethernet Aggregation Switch Card

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

The FRM220A chassis incorporate 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**

### FRM220A-GSW/SNMP(n)

- Gigabit uplink Ethernet Aggregation Switch Card with In-Band Management

- Provides chassis aggregation via 4x1G/10Gigabit Base-X SFP/SFP+ plus 4x10/100/1000Base-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, SNMPv1, v2c, v3) management interfaces
- 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
**FRM20 Module Cards**
The products listed below are designed for FRM220A-CH20 Ethernet Aggregation Applications

**FRM220A-1000EAS/X**
- 2-port 10/100/1000Base-T and 2-port 10/1000Base-X SFP
- Supports local / remote IEEE 802.3ah OAM / IP In-band management
- Standalone IP Based, Web GUI, Telnet, SNMP management
- Auto-Negotiation or forced mode
- Supports IEEE 802.1Q Tagged and Port based VLAN
- Supports remote CPE power fail detect (dying gasp)
- Supports Link Fault Pass-Through (LFPT)
- Loop Protection

**FRM220A-GSW40S**
- 4-port 100/1000Base-X SFP
- Supports local / remote IEEE 802.3ah OAM / IP In-band management
- Standalone IP Based, Web GUI, Telnet, SNMP management
- Supports IEEE 802.1Q Tagged and Port based VLAN
- Supports dying gasp
- Spanning Tree Protocol
- Online local / remote f/w upgrade
- Auto Laser Shutdown (ALS)

**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 trucking 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

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details. www.ctcu.com  /  sales@ctcu.com
2020  V1.0
FRM220A-GSW/SNMP-10G/FRM220A-GSW/SNMP (n) are next generation switch/management trunk cards for the FRM220A chassis. Twenty (20) GbE switch ports supply each slot of the 2U 20-slot chassis with an electrical gigabit Ethernet uplink with a remaining four (4) electrical gigabit ports accessible via the rear of the chassis. The additional four uplink SFP ports provide 1G/10G Ethernet connections, also on the rear of the chassis. All rear facing eight (8) ports (4x GE + 4x 1G/10G or 4x GE + 4x 1G) are usable without restrictions for uplink aggregation to the Ethernet Metropolitan Area Network (E-MAN). The FRM220A-GSW/SNMP trunk card transmits Ethernet between the subscriber equipment (bridge/modem or network interface card) and the E-MAN. The trunk card also provides a management interface with Ethernet packets via Telnet, SSHv2, http/https and SNMP (v1,v2c,v3).

**Features**

- Provides chassis aggregation via 4x 1G/10Gigabit Base-X SFP/ SFP+ uplink slots (FRM220A-GSW/SNMP-10G)
- Provides chassis aggregation via 4x 1G Gigabit Base-X SFP uplink slots (FRM220A-GSW/SNMP(n))
- Supports IEEE 802.1p HW based 8 priority queues and L2~L4 QoS functions
- Supports IPv6 management
- Fiber optical ports supports Ring topology

- Built-in gigabit Ethernet interface to link with each slot of FRM220A chassis
- Provides Web (https), Telnet, SSHv2, SNMP(V1, V2c, V3) management interface
- Supports IEEE 802.1D/802.1w/802.1s for ring protection on the trunk interfaces
- Supports IEEE 802.1Q tagged VLAN and IEEE 802.1ad Q-in-Q application

**Specifications**

<table>
<thead>
<tr>
<th>Trunk Interface</th>
<th>4x 1G Base-X SFP + 4x 10/100/1000Base-T RJ45 switch trunk card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports full-duplex mode for 1G/10G Mbps (FRM220A-GSW/SNMP-10G)</td>
<td></td>
</tr>
<tr>
<td>Supports full-duplex mode for 1G Mbps (FRM220A-GSW/SNMP(n))</td>
<td></td>
</tr>
</tbody>
</table>

| Capacity | Supports up to 20 service cards |
| Temperature | 0~60°C (Operating), -10~70°C (Storage) |
| Humidity | 5~90% non-condensing |

| Certification | CE, FCC, RoHS compliant |
| Management Specifications | In-band management |
| Provides all system OAM functions: software updates, and management system interaction through Ethernet trunk port |
| Out-band management | Supports Web, Telnet and SNMP, SSHv2 EMS management |

| Indications | PWR, FAN, Alarm, STK |
| Dimensions | 142 x 200 x 26 mm (D x W x H) |
| Weight | 0.5kg |
| MTBF | 65,000 hrs |

**Ordering Information**

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRM220A-CH20</td>
<td>Chassis</td>
<td>2U 20-Slot rack mount chassis with 20 line console blank plate</td>
</tr>
<tr>
<td>FRM220A-GSW/SNMP-10G</td>
<td>Card</td>
<td>10G Ethernet Aggregate switch card supports web, telnet, SNMP management interface</td>
</tr>
<tr>
<td>FRM220A-GSW/SNMP(n)</td>
<td>Card</td>
<td>1G Ethernet Aggregate switch card supports web, telnet, SNMP management interface</td>
</tr>
<tr>
<td>FRM220A-AC</td>
<td>Power</td>
<td>Chassis power module 100 ~ 240 VAC, IEC connector</td>
</tr>
<tr>
<td>FRM220A-DC24</td>
<td>Power</td>
<td>Chassis power module 18 ~ 36 VDC, 3 pin terminal block</td>
</tr>
<tr>
<td>FRM220A-DC48</td>
<td>Power</td>
<td>Chassis power module 36 ~ 72 VDC, 3 pin terminal block</td>
</tr>
</tbody>
</table>

**FRM220A**

Example: FRM220A – CH20

Example: FRM220A – GSW/SNMP-10G