



# FRM220A-Eoe1/G(S)

## Ethernet Bridge over E1(GFP)

- HDLC & GFP
- MTU 2046bytes
- Unframed E1

The FRM220A-Eoe1/G(S) is an Ethernet over E1 Bridge for cost-effective connection of 10/100Base-TX or 100Base-FX LANs over a single E1 transport. By using GFP (Generic Framing Procedure) or standard HDLC encapsulation, the FRM220A-Eoe1/G(S) is able to transmit up to a 2M bits Ethernet over an E1 link. The FRM220A-Eoe1/G(S) supports an E1 attenuation of up to 43 dB on twisted pair or coax cable, which provides an approximate operating range up to 2km (using 22AWG). The FRM220A-Eoe1/G(S) fully meets E1 specifications including ITU-T G.704 and G.823. The Ethernet copper interface supports auto-negotiation and auto MDI/MDIX, allowing plug-and-play Ethernet connection without any additional configuration. When placed in FRM220A system, the Ethernet may be aggregated to the chassis's built in Ethernet switch. When placed in a single slot chassis and used standalone without management, the card may be configured by serial terminal.

### Feature

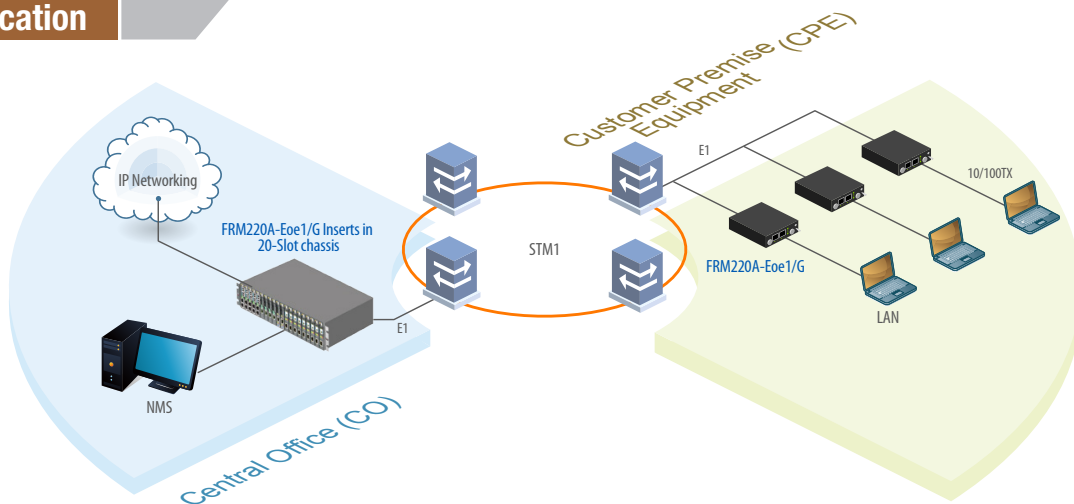
- Connects one Fast Ethernet over E1 links (2.048Mbps)
- Built-in GFP bridge operates at WAN rate
- Auto-Negotiation
- Unbalanced E1/BNC or balanced E1/RJ45
- Fully compatible with FRM220A and FRM220 chassis
- SNMP management with FRM220A and FRM220 chassis
- LED Alarm indication
- Standalone RS232 console management via CH01M

### Specifications

<b>E1 Interface</b>	Framing	Unframed
	MTU	2046bytes
	Standard	ITU-T G.703/G.704/G.706 & G.732, G.823
	Bit rate	2.048Mbps± 50ppm
	Line code	HDB3
	Clock setting	Internal OSC or recovery clock
	Receive level	-43dB
	Line impedance	75 ohm (BNC) / 120 ohm (RJ-45)
	Jitter Performance	Complies with ITU-T G.823
	Pulse Mask	Complies with ITU-T G.703
	Pulse amplitude	Nominal 2.37V ± 10%
	Delay Variance	220ms
	Connector	RJ-45, BNC
<b>Ethernet Interface</b>	Diagnostics	Digital remote loopback
	Standards	IEEE 802.3, 802.3u

<b>Ethernet Interface</b>	Data rate	10/100Base-TX or 100Base-FX Half/Full duplex
		Encapsulation GFP (G.7041)
<b>Connector</b>	RJ45	10/100Base-T
	SFP-LC	100Base-FX
<b>Indications</b>	Power, ALM, E1 signal loss, E1 Alarm (AIS, LOF, RAI, LOMF), LAN link /ACT, 10/100M, SD (100Base-FX)	
<b>Power Input</b>	12VDC	
<b>Power Consumption</b>	< 6W	
<b>Dimensions</b>	155 x 88 x 24 mm (D x W x H)	
<b>Weight</b>	DC12 : 280g AC/DC 48/AD : 580g	
<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% RH (non-condensing)	
<b>Certifications</b>	CE, FCC, RoHS compliant	
<b>MTBF</b>	65,000 hrs	

### Application



### Ordering Information

Model Name	Description
FRM220A-Eoe1/G	10/100Base-TX to E1 GFP bridge operators at WAN
FRM220A-Eoe1/GS	100Base-FX SFP to GFP bridge operators at WAN (Optical SFP module)

**Note:** This card may be set by DIP switch and placed in CH01 chassis, or set by serial console if placed in CH01M chassis. When connected as a remote to a managed central chassis, this card supports in-band management and only needs a CH01 chassis.