



# FRM220-E1/DATA

## E1 to Data

The FRM220-E1/Data is a single port G.703/704 Fractional E1 DSU/CSU card for the FRM220/220A Series Platform Media Converter Rack. The converter supports Unframed, PCM31, PCM31+CRC4, PCM30, and PCM30+CRC4 framing modes. The clock source may be selected internally, recovered from received E1 signal, externally from the Data port or transparent. The data port interface utilizes a single hi-density 26pin connector. Cable solutions are provided for RS-530/449, X.21, V.35 and RS-232. The unit can recognize the cable type attached and automatically self-configure the interface circuits. Choosing from one of two model types, the E1 connection is either unbalanced 75 ohm with two BNC connectors or balanced 120 ohm with one RJ-45 connector. When the FRM220-E1/Data card is placed in the FRM220 rack with NMC management, the administrator can view the converter card's status, type, version, E1 link status and alarms. The card can be configured to enable or disable the port, reset the card, set clocking, frame mode, interface type and provide analog or digital diagnostic loopbacks. A unique feature of the FRM220-E1/Data is the use of a common card design which may either be inserted in the FRM220-CH01 single slot chassis as a stand-alone modem or as a card when placed in the FRM220-CH20 managed rack.

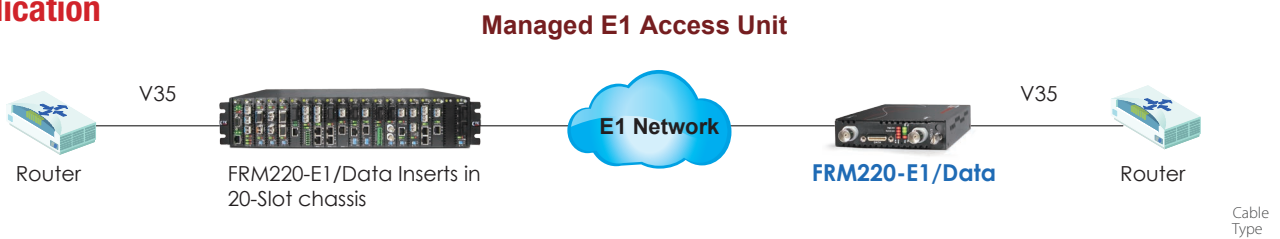
### Features

- Supports Fractional E1 and Unframed E1 services with V.35/X21/RS530 adapter cable
- I/O connectors all located on front panel
- Multiple clock source selection and remote loopback (Internal or External: E1 recovery, DTE or DCE)
- Unbalanced E1/BNC or balanced E1/RJ45
- Fully compatible with FRM220-CH20 and FRM220A chassis
- SNMP management with FRM220-CH20 (NMC)
- LED Alarm indication
- Standalone RS232 console management via CH01M

### Specifications

<b>E1 Interface</b>	Framing	Framed/Unframed	<b>Serial Interface</b>	Standards	ITU-T, E1A
	Standards	ITU-T G.703/G.704/G.706 & G.732, G.823		Data rate	Nx56 / Nx64
	Bit rate	2.048Mbps± 50ppm		Connector	HDB26F w/ adapter cable for Data
	Line code	HDB3		<b>LEDs</b>	Power, TD, RD, RTS, DCD, TX Clock loss, Signal loss, Sync loss, Alarm, test error
	Clock setting	Internal OSC or recovery clock			
	Receive level	-43dB		<b>Power</b>	12VDC
	Line impedance	75 ohm (BNC) / 120 ohm (RJ45)			<b>Power Consumption</b>
	Jitter	Complies with ITU-T G.823		<b>Dimensions</b>	Card: 155 x 20.8 x 88mm (D x W x H)
	Performance			<b>Weight</b>	130g
	Pulse Mask	Complies with ITU-T G.703		<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70 °C (Storage)
	Pulse amplitude	Nominal 2.37V ± 10%		<b>Humidity</b>	10 ~ 90% RH (non-condensing)
Delay Variance	8ms	<b>Certifications</b>	CE, FCC		
Connector	BNC / RJ-45	<b>MTBF</b>	65,000 hrs		
Diagnostics	Digital remote loopback				

### Application



### Ordering Information

Model Name	Description	FRM220 - E1/RS530-B	RS530 to framed E1 BNC card with HP26M to DB25M cable
FRM220-E1/V35-R	V35 to framed E1 RJ-45 card with HP26M to MB34F cable	FRM220-E1/RS449-R	RS449 to framed E1 RJ-45 card with HP26M to DB37M cable
FRM220-E1/V35-B	V35 to framed E1 BNC card with HP26M to MB34F cable	FRM220-E1/RS449-B	RS449 to framed E1 BNC card with HP26M to DB37M cable
FRM220-E1/X21-R	X21 to framed E1 RJ-45 card with HP26M to DB15M cable	FRM220-E1/RS232-R	RS232 to framed E1 RJ-45 card with HP26M to DB25M cable
FRM220-E1/X21-B	X21 to framed E1 BNC card with HP26M to DB15M cable	FRM220-E1/RS232-B	RS232 to framed E1 BNC card with HP26M to DB25M cable
FRM220-E1/RS530-R	RS530 to framed E1 RJ-45 card with HP26M to DB25M cable		

### Interface Cable Adapters



**Note:** This card may be set by DIP switch and placed in CH01 chassis, or set by serial console if placed in CH01M chassis. For standalone SNMP management, place this card in CH02/NMC chassis.