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 SNMP management, the management 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 in-band managed rack
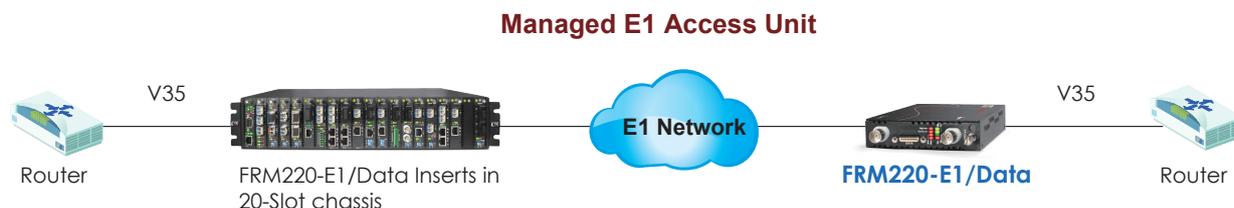
Features

- 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 chassis
- LED Alarm indication
- Standalone RS232 console management via CH01M

Specifications

E1 Interface		
	Framing	Framed/Unframed
	Standards	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 (RJ45)
	Jitter Performance	Complies with ITU-T G.823
	Pulse Mask	Complies with ITU-T G.703
	Pulse amplitude	Nominal 2.37V ± 10%
	Delay Variance	8ms
	Connector	BNC / RJ-45
	Diagnostics	Digital remote loopback

Serial Interface		
	Standards	ITU-T, E1A
	Data rate	Nx56 / Nx64
	Connector	HDB26F w/ adapter cable for Data
LEDs		Power, TD, RD, RTS, DCD, TX Clock loss, Signal loss, Sync loss, Alarm, test error
Power		12VDC
Power Consumption		< 12W
Dimensions		155 x 88 x 24mm (D x W x H)
Weight		130g
Temperature		0 ~ 50°C (Operating), -10 ~ 70 °C (Storage)
Humidity		10 ~ 90% RH (non-condensing)
Certifications		CE, FCC, RoHS compliant
MTBF		65,000 hrs

Application

Managed E1 Access Unit

V35 — Router — FRM220-E1/Data Inserts in 20-Slot chassis — E1 Network — **FRM220-E1/Data** — V35 — Router

Ordering Information

Model Name	Description
FRM220- E1/V35-R	V35 to framed E1 RJ-45 with V35 cable
FRM220- E1/V35-B	V35 to framed E1 BNC with V35 cable
FRM220- E1/X21-R	X21 to framed E1 RJ-45 with X21 cable
FRM220- E1/X21-B	X21 to framed E1 BNC with X21 cable
FRM220- E1/RS530-R	RS530 to framed E1 RJ-45 with RS530 cable
FRM220- E1/RS530-B	RS530 to framed E1 BNC with RS530 cable
FRM220- E1/RS449-R	RS449 to framed E1 RJ-45 with RS449 cable
FRM220- E1/RS449-B	RS449 to framed E1 BNC with RS449 cable
FRM220- E1/RS232-R	RS232 to framed E1 RJ-45 with RS232 cable
FRM220- E1/RS232-B	RS232 to framed E1 BNC with RS232 cable

FRM220 − ☐☐ / ☐☐☐ − ☐
Example: FRM220 − E1/V35 − R

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/SNMP chassis.