FCD-20

E1 (CEPT) Rate and Interface Converter

FEATURES

- Connects E1 (CEPT) equipment to digital data services
- Connects two PABXs through digital data services
- Maintains fractional E1 (CEPT) integrity end-to-end
- Link interface: V.35 or X.21
- Front panel setup and control
- Complies with CCITT recommendations G.703, G.704 and G.732
- Selectable E1 framing format: two or sixteen frames per multiframe
- Downline loading of configuration to remote sites

DESCRIPTION

- The FCD-20 is a rate and interface converter for connecting E1 (2.048 Mbps) equipment to a high speed public data service that provides V.35 or X.21 link at any n x 64 kbps data rate.
- The FCD-20 connects equipment providing fractional E1 (in which only some of the timeslots are being used) to data channels in which the data rate is lower than the E1 rate.
- The FCD-20 keeps the fractional E1 data channelized (i.e., the exact placement of data into timeslots is maintained end-to-end). This unique feature allows connection of both multiplexers and single channel equipment to the data service.
- Channelization integrity is maintained by allocating 8 kbps for synchronization between the two FCD-20s. The remaining 56 kbps in the synchronization timeslot can be used either for user data channel or for downline loading of parameters to the remote unit. The channelized E1 interface is compatible with CCITT recommendations G.703, G.704 and G.732.
- Two models are available: with V.35 link interface or with X.21 link interface. Both models provide setup and control from the front panel.
- Data from the E1 multiplexer is decoded in one of two selectable methods: either as a bundle of several consecutive timeslots or in a free, user-defined timeslot allocation.
- The E1 transmit clock is locked to the V.35 or X.21 trunk timing of the data service network. The E1 multiplexer should operate in loopback timing mode, or with its own timing, if it is accurate enough to prevent excessive frame slips and loss of data.
- Maintenance and diagnostics capabilities include local and remote loopbacks at various points.
SPECIFICATIONS

DATA SERVICE LINK

- **Interface**
  - V.35 or X.21 (see Ordering)

- **Connector**
  - V.35: 34 pin, female
  - X.21: 15 pin D-type, female

- **Data Rate**
  - \( n \times 64 \text{ kbps} \), where \( n \) equals 2, 3, … 31

- **Timing**
  - From the synchronous network
  - Nominal \( n \times 64 \text{ kbps} \), \( \pm 100 \text{ ppm} \)

- **Control Signals (V.35 model)**
  - RTS and DTR: constantly ON

- **Control Signals (X.21 model)**
  - C (Control): constantly ON

E1 (CEPT) CHANNEL

- **Framing**
  - 16 frames per multiframe or 2 frames per multiframe

- **Multiframe**
  - Timeslot 16 is transferred end to end, supported with 16 frames per multiframe

- **Data Rate**
  - 2.048 Mbps

- **Line Code**
  - HDB3

- **Impedance**
  - 120 ohms, balanced
  - 75 ohms, unbalanced

GENERAL

- **Timeslot Allocation**
  - Sequential (Bundled) or User-defined

- **Diagnostics**
  - Loopback 1: Towards the data service network
  - Loopback 2: Towards the E1 multiplexer

- **Front Panel Control**
  - LCD:
    - Two rows of 16 characters
  - Three push buttons: Cursor, Scroll, Enter

- **Indicators**
  - Local LOS: Data Service Interface
  - Remote LOS: Data Service Interface
  - Local LOS: E1 Interface
  - Remote LOS: E1 Interface
  - TD: Data Service Interface
  - RD: Data Service Interface
  - TEST: Data Service Interface

ALARMS

- **E1 loss of signal**
- **BPV error**
- **E1 driver failure**
- **E1 frame slip**
- **E1 Excessive BER**
- **Alarm indicator signal (AIS)**
- **Elastic buffer slip**

POWER

- **230 VAC (\( \pm 10\% \))**
  - 47 to 63 Hz, 15 watts

PHYSICAL

- **Height:** 43.2 mm / 1.7 in (1U)
- **Width:** 267 mm / 10.5 in
- **Depth:** 305 mm / 12.0 in
- **Weight:** 1.3 kg / 2.9 lb

ENVIRONMENT

- **Temperature:** 0-50°C / 23-122°F
- **Humidity:** Up to 90%, non-condensing

ORDERING

- **FCD-20/+/#**
  - E1 Rate and Interface Converter
  + Specify:
    - V35 for V.35 link interface
    - X21 for X.21 link interface
  # Specify:
    - 115 for 115 volts supply
    - 230 for 230 volts supply
    (Default is 230 volts supply)

RM-3

- Hardware for mounting one unit onto a 19" rack

APPLICATION

- Specifications are subject to change without notification

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Order from: Cutter Networks
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www.bestdatasource.com