FCD-1X

T1 or Fractional T1 CSU/DSU

FEATURES

- T1 or Fractional T1 CSU/DSU
- Optionally available without CSU
- D4 (SF) or ESF Framing
- Supports V.35, RS-530, V.36/RS-449 and X.21 interfaces
- Selectable sync data rates: n x 56 or 64 kbps
- Selectable 1's density control: Transparent, B7ZS or B8ZS
- Multiple clock source selection for both T1 main link and data channel
- Front panel and supervisory port for setup and control
- Stores last 24 hours of T1 line diagnostics information

DESCRIPTION

- The FCD-1X is a CSU/DSU for T1 or Fractional T1 services. FCD-1X provides synchronous data channel connection over the public T1 network, thus fulfilling the requirement for a full T1 multiplexer, while limiting billing only to bandwidth actually used.
- FCD-1X can also be ordered without the integral CSU, allowing for operation using an external CSU.
- Selectable timeslotting allows data to be placed into time slots (DSOs) either consecutively or alternately. FCD-1X provides additional flexibility by giving the user full control over timeslot allocation without restrictions.
- FCD-1X provides both V.35 and RS-530 ports for the data channel. V.36/RS-449 or X.21 interfaces are also supported using the RS-530 port, via special conversion cables (see *Ordering*). The data rate can be selected to operate at any multiple of 56 or 64 kbps.
- FCD-1X is compatible with virtually all carrier provided T1 services, including ASDS from AT&T, meeting all requirements of TR-62421. It supports both 12-frame D4 (SF) and 24-frame ESF (Extended Super Frame) formats. Zero suppression over the line is selectable for either Transparent, B7ZS or B8ZS. The integral CSU insures a range of up to 1 mile.
- Three clocking modes provide maximum flexibility in connecting the T1 and user interfaces:
  - In **DCE** mode, FCD-1X operates as a DCE, providing both TX and RX clocks to the user DTE equipment.
  - **External-DCE (DTE1)** mode is similar, except that FCD-1X receives the TX clock from the user equipment.
  - In **DTE (DTE2)** mode, FCD-1X operates as a DTE, receiving both RX and TX clocks from the user DCE equipment.
- Setup and control can be performed from the front panel LCD, or via a terminal or PC connected to the FCD-1X's supervisory port. Status and diagnostic information can be obtained via either the LCD or the supervisory port.
- Remote line diagnostics, alarm information, unit configuration and other control and monitoring information can be accessed via modems from a central site.
- Maintenance capabilities include local and remote loopbacks at various points for rapid location of faults. When operating in the ESF format, T1 line statistics are stored in memory in compliance with both the ANSI and the AT&T standards. This information may be retrieved by the service supplier, or locally through the supervisory port.

Order from: Cutter Networks Ph:727-398-5252/Fax:727-397-9610 www.bestdatasource.com

FCD-1X

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SPECIFICATIONS

T1 MAIN LINK

- **Framing Formats**
  D4 (SF), ESF
- **Bit Rate**
  1.544 Mbps
- **Line Code**
  AMI
- **Zero Suppression**
  Transparent, B7ZS or B8ZS
- **Impedance**
  100Ω, balanced
- **Signal Levels**
  Receive:
  0 to -34 dB /with CSU
  0 to -10 dB /without CSU
  Transmit:
  0 dB, -7.5 dB, -15 dB /with CSU
  ±3 V, (±10%), soft adjustable to be measured at 0 to 655 feet with/without CSU
- **Jitter Performance**
  As per AT&T TR-62411
- **Connector**
  D-type 15-pin, female
- **Transmit Timing**
  Soft-selectable,
  Internal accuracy: ±32 ppm
  Receive timing: ±130 ppm
  External timing, DCE source: ±100 ppm

DATA CHANNEL

- **Interfaces**
  – V.35 with 34-pin female connector
  – RS-530 with 25-pin D-type female connector. (V.36/RS-449 and X.21 interfaces are also supported via conversion cables - see *Ordering*)
- **Bit Rate**
  n x 56 kbps or n x 64 kbps (where n equals 1 to 24)
- **Clock Modes**
  DCE: FCD-1X provides both RX and TX clocks to the user DTE.
  EXT-DCE (DTE1): FCD-1X provides RX clock to the user while receiving TX clock from user. Used for tail-end applications.
  DTE (DTE2): FCD-1X receives both RX and TX clocks from user DCE.
- **Control Signals**
  – CTS follows RTS or is constantly ON, soft-selectable
  – DSR constantly ON, unless in test mode
  – DCD constantly ON, unless in RED ALARM

GENERAL

- **Timeslot Allocation**
  – Consecutive (Bundled)
  – Alternate
  – User-defined
- **Diagnostics**
  – DS-1 local analog loopback towards local DTE
  – Channel loopback towards remote DTE
  – BERT through remote FCD-1X
- **Statistics**
  – Full statistical diagnostic capability according to ANSI standard T1.403-1989
  – Local support of ESF diagnostics according to AT&T PUB 54016
- **Supervisory Port**
  Interface: RS-232
  Connector: 9-pin D-type, female
  Speed: 9.6, 4.8, 2.4, 1.2, 0.3 kbps, autobaud
  Character: 8 bit no parity, 7 bit even or odd parity
- **Front Panel Controls**
  LCD with Cursor, Scroll and Enter push-buttons
- **Indicators**
  Main link: Red and Yellow alarms, Data channel: TD; RD; DCD; RTS
  General: Test
- **Alarms**
  DS-1 loss of signal, BPV error, DS-1 driver failure, DS-1 frame slip, Invalid clock source
- **Power**
  115 or 230 VAC (±10%), 15 VA 47 to 63 Hz;
  -48 VDC
- **Physical**
  Height: 1.7 in / 4.3 cm (1U)
  Width: 10.5 in / 26.7 cm
  Depth: 12.0 in / 30.5 cm
  Weight: 2.9 lb / 1.3 kg
- **Environment**
  Temperature: 0-50°C/32-122°F
  Humidity: Up to 90%, non-condensing

ORDERING

FCD-1X/#/*
T1 and Fractional T1 CSU/DSU

\# Specify **D** for integral DSU only (default is with both CSU and DSU)

* Specify voltage:
115 for 115 VAC operation
230 for 230 VAC operation
48 for -48 VDC operation

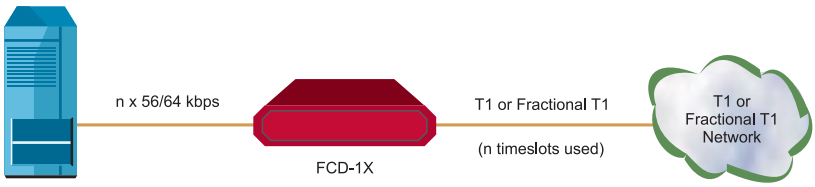
RM-3
Hardware for mounting unit in a 19” rack

CONVERSION CABLES
for converting RS-530 data channel port into specified interface

CBL-530/449/& for V.36/RS-449 interface
CBL-HS2/X/1/& for X.21 interface

& Specify cable connector type:
F for female
M for male

APPLICATION



RAD
data communications
http://www.rad.com

Corporate Headquarters
12 Hanechoshet Street
Tel Aviv 69710, Israel
Tel: (972) 3-6458181
Fax: (972) 3-6498250, 6474436
Email: rad@radmail.rad.co.il

U.S. Main Office
900 Corporate Drive
Mahwah, NJ 07430
Tel: (201) 529-1100
Fax: (201) 529-5777
Email: market@radusa.com

561-100-05/98

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Order from: Cutter Networks
Ph:727-398-5252/Fax:727-397-9610
www.bestdatasource.com