

DXC-2



T1/E1 Converter and Timeslot Cross-Connect



FEATURES

- Converts between T1 and E1 data and signaling
- Configurable A-law/ μ -law and signaling conversion, or transparent conversion at 64 kbps timeslot level
- Complies with ITU Rec. G.802, Annex 2
- Built-in CSU (T1) and LTU (E1) options available
- Controlled slip for buffer overflow/underflow
- Monitoring and control from terminal or front panel LCD
- Loopback capabilities
- E1/E1 or T1/T1 timeslot cross-connect with optional frame conversion

DESCRIPTION

- The DXC-2 E1/T1 Converter and Timeslot Cross-Connect enables conversion between one T1 signal and one E1 signal (24 timeslots).
- For conversion between T1 and E1 trunks, DXC-2 can perform the required A-law/ μ -law and signaling conversion, in compliance with T1 and E1 (CEPT) standards.
- DXC-2 can be ordered with a built-in CSU for T1 and LTU for E1 interfaces (see *Ordering*).

- The T1 to E1 conversion can be set to comply with ITU G.802, Annex 2. This enables the location of the T1 F-bit to be specified in the E1 data stream.
- A user-programmable connection table allows DXC-2 to connect any incoming 64 kbps timeslot to any outgoing 64 kbps timeslot. Programming can be performed during system operation without any disruption to service.
- The T1 interface complies with AT&T TR-62411 and ANSI T1.403 requirements, supporting D4 or ESF framing formats and AMI line code. Zero suppression is selectable for transparent, B7ZS or B8ZS.
- The E1 interface complies with ITU Rec. G.703, G.704, G.732 and G.823, and supports both 2 and 16 frames per multiframe with or without CRC-4. Line code is HDB3.
- DXC-2 can also be ordered with two ports of the same type (two E1 or two T1). This allows the reshuffling of timeslots or the modifying of framing patterns; for example, D4 to ESF for a T1 product, or G.704 without CRC-4 to G.704 with CRC-4 for an E1 product.
- Maintenance capabilities include local and remote loopbacks. When operating in ESF format, T1

link statistics are stored in memory in compliance with both the ANSI and AT&T standards. When operating in CRC-4 format, E1 link statistics are stored in memory in compliance with ITU G.706.

- Selectable timing options cover all timing possibilities for the T1/E1 interface. These include internal clock and loopback timing, for either the T1 or E1 interface.
- Setup, control, status, alarms and diagnostic information can be monitored and controlled via the front panel LCD display or via an ASCII terminal.
- DXC-2 is a compact 1U-high desktop standalone unit. A rack mount adapter kit enables installation of one or two (side-by-side) standalone units in a 19" rack (see *Ordering*).

SPECIFICATIONS

E1 INTERFACE

- **Data Rate**
2.048 Mbps
- **Compliance**
ITU-T Rec. G.703, G.704, G.732
- **Framing**
 - 256N – no MF, CCS
 - 256N – no MF, CCS with CRC-4
 - 256S – TS16 MF, CAS
 - 256S – TS16 MF, CAS with CRC-4
 - Unframed (T1→E1 conversion only)
- **Line Code**
HDB3
- **Signal Level**
Receive:
0 to -10 dB without LTU
0 to -40 dB with LTU
Transmit:
 $\pm 3V$ ($\pm 10\%$), balanced
 $\pm 2.37V$ ($\pm 10\%$), unbalanced
- **Impedance**
120 Ω , balanced
75 Ω , unbalanced
- **Jitter Performance**
As per ITU-T Rec. G.823

DXC-2

T1/E1 Converter and Timeslot Cross-Connect

- **Connectors**
 - Balanced: 15-pin D-type female
 - Unbalanced: two BNC coaxial

T1 INTERFACE

- **Data Rate**
1.544 Mbps
- **Compliance**
AT&T TR-62411, ANSI T1.403
ITU-T Rec.G.703, G.704
- **Framing**
 - D4(SF)
 - ESF
 - Unframed (T1→E1 conversion only)
- **Line Code**
AMI
- **Impedance**
100Ω, balanced
- **Zero suppression**
Transparent, B7ZS, B8ZS
- **Signal Level**
Receive:
0 to -40 dB with CSU
0 to -10 dB without CSU
Transmit:
Nominal level
±3V (±10%), balanced
Levels with CSU
0 dB, -7.5 dB, -15 dB, -22.5 dB
Levels without CSU
Adjustable to be measured at
0 to 655 ft
- **Jitter Performance**
As per AT&T TR-62411
- **Connector**
15-pin D-type, female

GENERAL

- **Timing**
 - Main Source (soft-selectable):
Internal oscillator ±30 ppm
Locked to receive clock of link A
Locked to receive clock of link B
 - Fallback Source (independently soft-selectable):
Locked to receive clock of link A
Locked to receive clock of link B

- **Timeslot Mapping**
Any timeslot to any timeslot, with/without A-law/μ-law and signaling conversion per timeslot
- **Elastic Buffer**
 - Buffer length: ±1 frame
 - Underflow: 1 frame repeated
 - Overflow: 1 frame skipped
(No frame sync loss for buffer overflow or underflow)
 - Data delay: up to 375 msec
- **Unused Timeslot**
User-defined both for E1 and T1 interfaces
- **Diagnostics**
 - Local E1 or T1 loopback
 - Remote E1 or T1 loopback
 - Code activated network loopback per ANSI T1.403
- **Statistics**
 - T1 ESF diagnostics:
ANSI T1.403 full support
AT&T 54016 local support
Transparent FDL between two T1 ports
 - E1 CRC-4 diagnostics:
Per ITU-T G.706
- **Alarm Response**
 - OOS indications in individual timeslots:
DS0 pattern,
OOS A, B signaling bits
 - Link alarms:
Local loss of link input signal
Local loss of synchronization to link signal
Local reception of AIS signal
Remote loss of synchronization or remote loss of link signal
- **Supervisory Port**
 - Interface: V.24/RS-232, async
 - Connector: 9-pin D type, female
 - Data Rate: 300-9600 bps, autobaud
- **Indicators**
 - Local sync loss: LINK A, LINK B
 - Remote sync loss: LINK A, LINK B
 - TEST
- **Front Panel Controls**
 - LCD: 2 rows x 16 characters
 - Push-buttons: CURSOR, SCROLL, ENTER

- **Power**
100, 115 or 230 VAC; 47 to 63 Hz
-48 VDC (-36 to -72 VDC), 15W
- **Physical**
Height: 4.4 cm / 1.7 in
Width: 21.6 cm / 8.4 in
Depth: 2.4 cm / 9.5 in
Weight 1.4 kg / 3.1 lb
- **Environment**
Temperature: 0–50°C/32–122°
Humidity: Up to 90%, non-condensing

ORDERING

DXC-2/~/&/%

T1/E1 Converter and Timeslot Machine

~ Specify power supply:

100 for 100 VAC operation

115 for 115 VAC operation

230 for 230 VAC operation

48 for -48 VDC operation

& Specify link interface:

2T1 for dual T1 ports

2E1 for dual E1 ports

Default is one T1 and one E1 port

Specify optional CSU/LTU:

C1 for CSU/LTU in port 1

C2 for CSU/LTU in port 2

Default is without CSU/LTU

RM-1/NEW

Mechanical adaptor, for mounting one or two units (side by side) in a 19" rack



data communications

www.rad.com

- **International Headquarters**
24 Raoul Wallenberg Street
Tel Aviv 69719, Israel
Tel: (972) 3-6458181
Fax: (972) 3-6498250, 6474436
Email: rad@rad.co.il

- **U.S. Headquarters**
900 Corporate Drive
Mahwah, NJ 07430
Tel: (201) 529-1100
Toll free: 1-800-444-7234
Fax: (201) 529-5777
Email: market@radusa.com

771-100-09/02

APPLICATION

