

# DXC-2

## T1/E1 Converter and Timeslot Cross-Connect



### Converts between T1 and E1 data and signaling

- Configurable A-law/ $\mu$ -law and signaling conversion, or transparent conversion at 64 kbps timeslot level
- Complies with ITU Rec. G.802, Annex 2
- Controlled slip for buffer overflow/underflow
- Monitoring and control from terminal or front panel LCD

DXC-2 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/ $\mu$ -law and signaling conversion, in compliance with T1 and E1 (CEPT) standards.

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, B7Z5 or B8Z5.



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## T1/E1 Converter and Timeslot Cross-Connect

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.

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  
Transmit:  
±3V (±10%), balanced  
±2.37V (±10%), unbalanced

#### Impedance

Balanced: 120Ω  
Unbalanced: 75Ω

#### Jitter Performance

As per ITU-T Rec. G.823

#### 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

#### Line Code

AMI

#### Impedance

Balanced: 100Ω

#### Zero suppression

Transparent, B7ZS, B8ZS

#### Signal Level

Receive: 0 to -10 dB  
Transmit: (nominal level) ±3V (±10%),  
balanced

#### Jitter Performance

As per AT&T TR-62411

#### Connectors

15-pin D-type, female

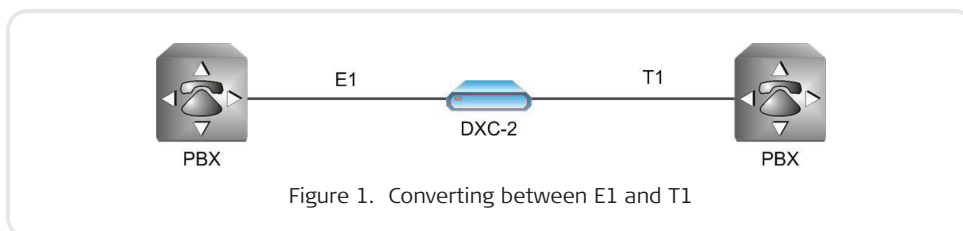


Figure 1. Converting between E1 and T1

**GENERAL****Timing**

Main Source (soft-selectable):

- Internal oscillator  $\pm 30$  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/ $\mu$ -law and signaling conversion per timeslot

**Elastic Buffer**

Buffer length:  $\pm 1$  frame  
Underflow: 1 frame repeated  
Overflow: 1 frame skipped (No frame sync loss for buffer overflow or underflow)  
Data delay: up to 375 ms

**Unused Timeslot**

User-defined both for E1 and T1 interfaces

**Diagnostics**

Local E1 or T1 loopbacks  
Remote E1 or T1 loopbacks  
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:  
DSO 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°F  
Humidity: Up to 90%, non-condensing

**DXC-2****T1/E1 Converter and Timeslot Cross-Connect****Ordering****DXC-2/~***Legend*

~	Power supply:
<b>100</b>	100 VAC operation
<b>115</b>	115 VAC operation
<b>230</b>	230 VAC operation
<b>48</b>	48 VDC

**SUPPLIED ACCESSORIES**

AC power cord (when AC power supply is ordered)

DC connection kit (when DC power supply is ordered)

**OPTIONAL ACCESSORIES****RM-1/NEW**

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

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