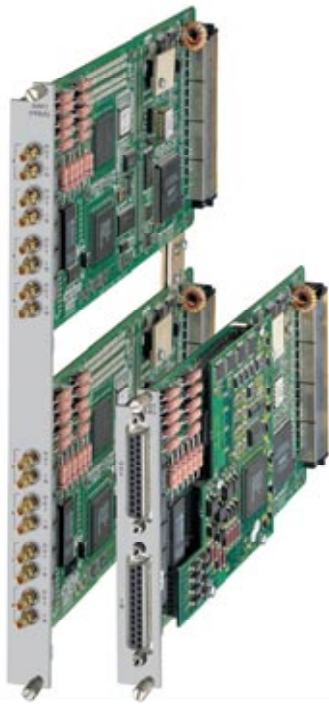


# D4E1, D8E1



## 4-Port/8-Port E1 Interface Modules



### FEATURES

- Four- or eight-port E1 interface module for the DXC family
- Support 256N or 256S multiframe, with or without CRC-4 protection, or unframed mode
- High speed data rate up to 2.048 Mbps per port
- Four or eight-line interface with RJ-45, mini-BNC or DB-25 connectors
- Complies with ITU-T Rec. G.703, G.704, G.706, G.732 and G.823 standards
- Can be configured for increased E1 port sensitivity to support monitoring applications (such as SS7)
- Fit into any DXC chassis:
  - 3U-high versions fit into DXC-8R, DXC-10A, DXC-30, DXC-STM-1;
  - special 6U-high versions fit into DXC-30E chassis

### DESCRIPTION

- D4E1 and D8E1 are four- or eight-port modules used with the modular Digital Cross-Connect units (DXC-8R, DXC-10A, DXC-30, DXC-30E and DXC-STM-1). The modules provide E1 links over copper cable and support E1 or fractional E1 rates.
- D4E1 and D8E1 support both 2 and 16 frames per multiframe (256N and 256S), or 2 Mbps unframed mode per ITU-T Rec. G.703.
- The following line interface options are available:
  - 120 $\Omega$  balanced interface terminated with individual RJ-45 connectors (D4E1 or 6U-high D8E1) or two DB-25 female connectors (3U-high D8E1)
  - 75 $\Omega$  unbalanced interface terminated with 1.0/2.3 mm coax connectors (D4E1 or 6U-high D8E1) or two DB-25 female connectors (3U-high D8E1).
- D4E1 and D8E1 modules are equipped with an integral LTU, ensuring ranges of up to 2.2 km (1.4 miles).
- Setup, control and diagnostics can be performed via a supervisory port using an ASCII terminal, or by the RADview SNMP network management System.
- Diagnostic capabilities include local and remote loopbacks on each E1 port. D4E1/D8E1 also features BER test on each port at timeslot level, and inband code-activated loopback as per ANSI T1E1.2/93-003.
- Line/single-slot redundancy (1:1) ensures protective switching within less than 50 msec, between ports on the same module (currently supported by DCL.2 only).

- When used in signaling monitoring applications, the D4E1 and D8E1 modules enable the DXC to collect signaling timeslots (such as SS7) from many leased lines and groom them over a full E1 link to the protocol analyzer at a central site (see Figure 3).

### SPECIFICATIONS

- **Number of Ports**  
D4E1: 4 E1 ports  
D8E1: 8 E1 ports
- **Data Rate**  
2.048 Mbps per port
- **Compliance**  
ITU-T Rec. G.703, G.704, G.732, G.823
- **Framing**
  - G732N – 2 frames per multiframe, with or without CRC-4
  - G732S – 16 frames per multiframe, with or without CRC-4
  - Unframed
- **Line Code**  
HDB3
- **Line Attenuation**  
Short haul (DSU): -10 dB  
Long haul (LTU): -36 dB
- **Resistive Attenuation in Monitoring**  
Lower gain: 12 dB  
Higher gain: 30 dB
- **Jitter Performance**  
Per ITU-T Rec G.823;  
ETSI TBR 13
- **Line Impedance**  
Balanced: 120 $\Omega$   
Unbalanced: 75 $\Omega$
- **Pulse Shape**  
Per ITU-T Rec. G.703

# D4E1, D8E1

## 4-Port/8-Port E1 Interface Modules

- Connectors**
  - D4E1 balanced: 4 x RJ-45
  - D4E1 unbalanced: 4 pairs of mini-BNC (coax 1.0/2.3 mm, female)
  - D8E1-6U balanced: 8 x RJ-45
  - D8E1-6U unbalanced: 8 pairs of mini-BNC (coax 1.0/2.3 mm, female)
  - D8E1-3U: two DB-25 female, balanced or unbalanced
- Timing**
  - Receive timing recovered from incoming line signal
  - Transmit timing locked to the DXC master clock
- Timeslot Allocation**

User-defined, any timeslot to any timeslot mapping
- Diagnostics**
  - Local and remote loopbacks on each module port
  - BER testing on each port
  - Inband code activated loopback as per ANSI T1E1.2/93-003
- Power Consumption**

D4E1: 5.5W (1.1A at +5 VDC)  
D8E1: 7.25W (1.45A at +5 VDC)
- Configuration**

Programmable via DXC management by ASCII terminal or RADview Management System
- Physical**

Occupies one DXC-8R/10A/30/30E or DXC-STM-1 module slot

## ORDERING

- DXC-M/4E1/<**  
 Four-port E1 Interface Module, 3U high version
  - DXC-M/8E1/<**  
 Eight-port E1 Interface Module, 3U high version
  - DXC-ME/4E1<**  
 Four-port E1 Interface Module, 6U-high version
  - DXC-ME/8E1/<**  
 Eight-port E1 Interface Module, 6U high version
- < Specify line interface type:  
**B** for balanced  
**U** for unbalanced

- CBL-D8E1-BNC**  
 Adaptor cable for D8E1, converting 2 x DB-25 connectors to 8 pairs of BNC unbalanced connectors
- CBL-D8E1-MBNC**  
 Adaptor cable for D8E1, converting 2 x DB-25 connectors to 8 pairs of mini-BNC unbalanced connectors
- CBL-D8E1-RJ45/X**  
 Adaptor cable for D8E1, converting 2 x DB-25 connectors to 8 x RJ-45 balanced connectors.

## APPLICATIONS

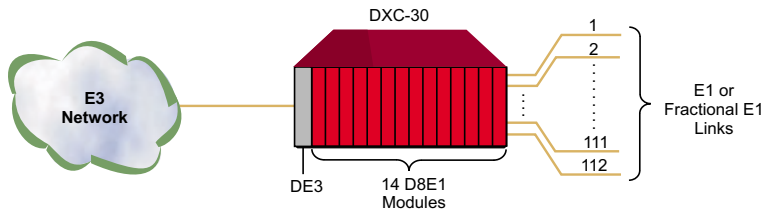


Figure 1. Typical High-Density Grooming Application for DXC-30

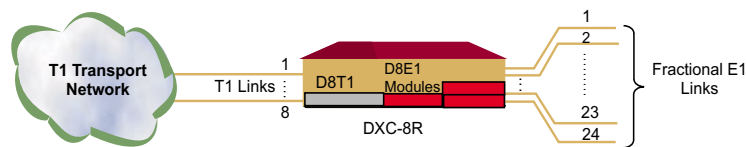


Figure 2. High-Density T1/E1 Conversion and Cross-Connect Application for DXC-8R

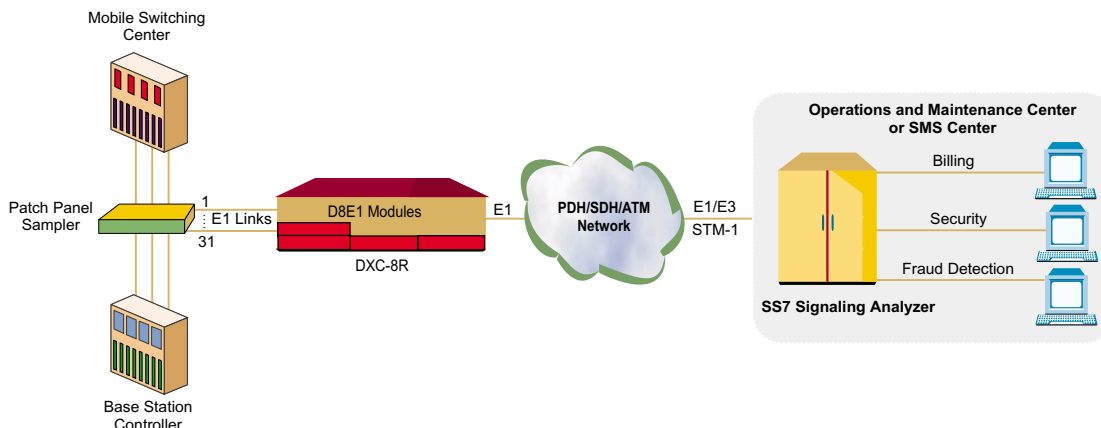


Figure 3. Signaling Monitoring Application for DXC-8R



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