**FEATURES**

- Two-port T1 interface modules for the DXC family
- Range up to 62 miles with fiber-optic interface
- High speed data rate up to 1.544 Mbps
- Available with copper or fiber-optic interface
- HDSL interface also available (see the DHL/T1 data sheet)
- DT1B module supports BER test on selectable timeslots
- Optional bypass between links on the DT1B module
- Fits into any DXC chassis: DXC-8R, DXC-10A, DXC-30, DXC-STM-1; a special 6U-high version fits into the DXC-30E chassis

**DESCRIPTION**

- DT1 and DT1B are two-port T1 link modules for use with the modular Digital Cross-Connect units (DXC-8R, DXC-10A, DXC-30, DXC-30E and DXC-STM-1). Each module provides two T1 links over either copper or fiber optic interface. The links support both T1 and fractional T1 rates.
- The DT1, DT1B modules can be ordered with either balanced copper or fiber optic interface.
- A number of fiber optic link options are available, including:
  - 850 nm multimode
  - 1310 nm single mode
  - 1310 nm single mode with laser
  - 1550 nm single mode with laser, providing the maximum range of 55 miles.
- DT1 and DT1B support D4(SF) or ESF framing. Additionally, DT1B supports 1.544 Mbps unframed mode per ITU-T Rec. G.703.
- For longer range applications, copper link modules feature an integral CSU option. When used, it increases the line attenuation up to -36 dB.
- DT1B modules support two types of redundancy:
  - Single-slot/line redundancy (1:1) ensures protective switching within less than 50 ms, between ports on the same module.
  - Y-cable redundancy between modules protects the service from hardware failure. This type of redundancy is supported by the copper interface only.
- Optional port bypass feature ensures continuous traffic support in case of power failure by bypassing port 1 to port 2.

**SPECIFICATIONS**

- **Number of Ports**
  Two per module
- **Data Rate**
  1.544 Mbps
- **Compliance**
- **Framing**
  D4(SF), ESF, Unframed

**COPPER INTERFACE**

- **Line Code**
  AMI
- **Impedance**
  100Ω, balanced
- **Connectors (per port)**
  RJ-45, 8-pin, for balanced
DXC Modules

DT1, DT1B

T1 Link Modules

- **Signal Level**
  - Receive:
    - 0 to -36 dB with CSU
    - 0 to -10 dB without CSU
  - Transmit:
    - Nominal level ±3V (±10%), balanced
    - 0 dB, -7.5 dB, -15 dB, -22.5 dB
  - Levels without CSU
    - Adjustable to be measured at 0 to 655 ft

- **Timing**
  - Receive:
    - Derived from a selected data port, can be used as external source for DXC master timing
  - Transmit:
    - Locked to master DXC timing source

- **Jitter Performance**
  - Per AT&T TR-62411
  - Meets ETSI TBR 12/13

- **Diagnostics**
  - Local and remote loopbacks on each module port
  - Network line loopback (LLB)
  - Payload loopback (PLB)
  - BER testing (DT1B only)

- **Connectors**
  - ST, FC/PC or SC (see Ordering)

- **Dynamic Range**
  - 28 dB for all types of optical interfaces

- **Physical**
  - Occupies one DXC-8R/10A/30/30E module slot

- **FIBER OPTIC INTERFACE**
  - **Operating Wavelength**
    - 850, 1310 or 1550 nm (see Ordering)
  - **Connectors**
    - ST, FC/PC or SC (see Ordering)
  - **Dynamic Range**
    - 28 dB for all types of optical interfaces

**GENERAL**

- **Timeslot Allocation**
  - User-defined, any timeslot to any timeslot mapping

**ORDERING**

3U-high module versions:

- **DXC-M/T1/$**
  - Two-port T1 Link Module

- **DXC-M/T1B/$/#+/**
  - Two-port T1 Link Module with BERT and loopback per timeslot

To order a 6U-high module version for DXC-30E chassis, add E after the DXC-M prefix of the corresponding option, for example:

- **DXC-ME/T1/$/#+**

To order HDSL interfaces, refer to the DHL/T1 data sheet

$ Specify built-in CSU option
- C for CSU option (copper interface only)
- BP for port bypass (DT1B only)
- BP/C for built-in CSU and optional port bypass (DT1B and copper interface only)

# + # Specify link connectors type:
- ST for ST type connectors
- FC for FC/PC type connectors
- SC for SC type connectors
- Default is copper interface with coaxial BNC connectors

+ Specify optical interface wavelength and transmitter type (not relevant with copper interface):
- 85 for 850 nm, multimode, LED
- 13 for 1310 nm, single mode, LED
- 13L for 1310 nm, single mode, laser
- 15L for 1550 nm, single mode, laser

**APPLICATION**

<table>
<thead>
<tr>
<th>Transmitter Type</th>
<th>Fiber Type</th>
<th>Output Power</th>
<th>Receiver Sensitivity</th>
<th>Maximum Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>850 nm LED</td>
<td>62.5/125</td>
<td>-18 dBm</td>
<td>-38 dBm</td>
<td>5 km (3 mi)</td>
</tr>
<tr>
<td>1310 nm LED</td>
<td>9/125</td>
<td>-18 dBm</td>
<td>-40 dBm</td>
<td>45 km (29 mi)</td>
</tr>
<tr>
<td>1310 nm laser</td>
<td>9/125</td>
<td>-12 dBm</td>
<td>-34 dBm</td>
<td>55 km (34 mi)</td>
</tr>
<tr>
<td>1550 nm laser</td>
<td>9/125</td>
<td>-12 dBm</td>
<td>-34 dBm</td>
<td>88 km (55 mi)</td>
</tr>
</tbody>
</table>