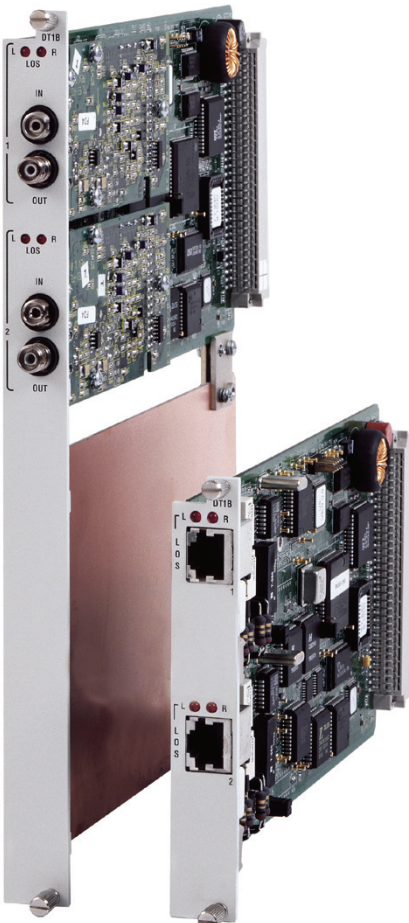


DXC Module

DT1B

T1 Link Module



- Two-port T1 interface module
- Available with copper or fiber optic line interface
- Range up to 100 km (62 mi) with fiber optic interface
- High-speed data rate of up to 1.544 Mbps
- Complies with AT&T TR-62411, ANSI T1.403, ITU-T Rec.G.703, G.704, G.921, and G.956 standards

DT1B is a two-port T1 link module for use with RAD's modular Digital Cross-Connect units DXC-8R, DXC-10A, DXC-30, and DXC-30E. Each module provides two T1 links over copper or fiber optic interfaces that support both T1 and fractional T1 rates.

DT1B can be ordered with either a balanced copper or a fiber optic interface.

The following fiber optic, laser link options are available:

- 850 nm multimode
- 1310 nm single mode
- 1550 nm single mode, providing the maximum range of 100 km (62 mi).

DT1B supports D4 (SF) or ESF framing and 1.544 Mbps unframed mode per ITU-T Rec. G.703.

2-port copper or fiber
T1 link module for the
DXC family of modular
cross-connects



data communications

Innovative Access Solutions

DT1B

T1 Link Module

DT1B modules support two types of redundancy:

- Single-slot/line redundancy (1:1) ensures protective switching between ports on the same module within less than 50 ms
- Y-cable redundancy switches between different modules to protect the service from hardware failure. This type of redundancy is supported by the copper interface only.

For longer-range applications, copper link modules are available with an CSU option for increasing the line attenuation up to -36 dB.

The optional port bypass feature ensures continuous traffic support in case of power failure, by bypassing port 1 to port 2.

Two user-programmable timeslot routing modes are available for the module ports:

- Bidirectional with symmetrical routing
- Unidirectional with independent control over routing in each direction.

Setup, control, and diagnostics can be performed via a supervisory port using an ASCII terminal or by the RADview SNMP element management system. Remote units can be controlled using a dedicated management timeslot in the T1 path.

Diagnostic capabilities include self-diagnostics on power-up, analog and remote loopbacks, BER test on the active timeslots, and the inband code-activated loopback, specified in ANSI T1.403.

Table 1. Fiber Optic Interface Characteristics

Laser Transmitter Wavelength [nm]	Fiber Type [μm]	Typical Output Power [dBm]	Receiver Sensitivity [dBm]	Typical Optical Budget [dB]	Typical Maximum Distance	
					[km]	[mi]
850	62.5/125 multimode	-18	-38	18	5	3
1310	9/125 single mode	-12	-34	25	55	34
1550	9/125 single mode	-12	-34	25	100	62

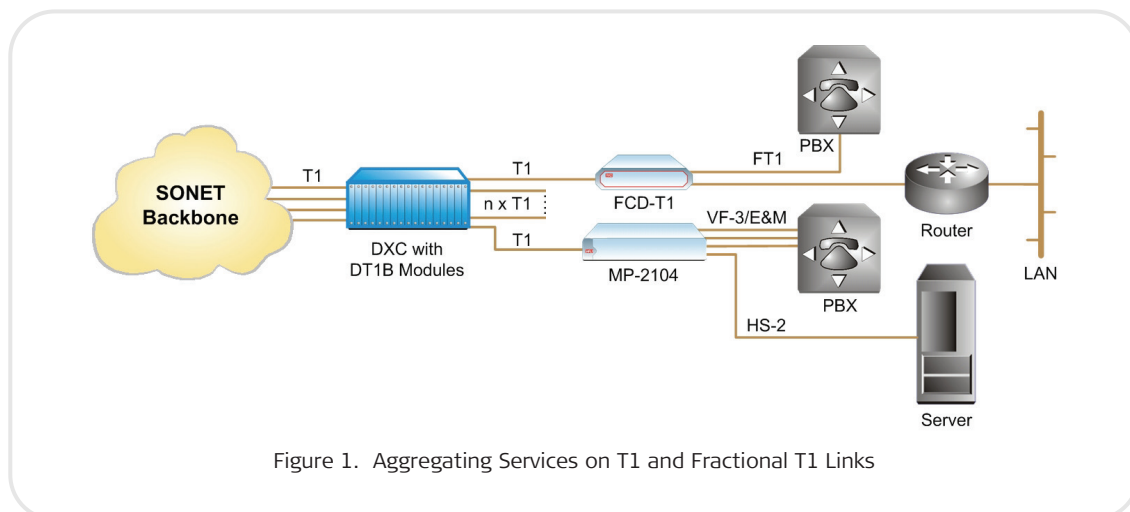


Figure 1. Aggregating Services on T1 and Fractional T1 Links

Specifications

Number of Ports

Two per module

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

COPPER INTERFACE

Line Code

AMI

Impedance

100Ω, balanced

Signal Level

Receive:

0 to -36 dB with CSU

0 to -10 dB without CSU

Transmit:

±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

Connectors (per port)

RJ-45, 8-pin, balanced

FIBER OPTIC LASER INTERFACE

Operating Characteristics

See *Table 1*

Dynamic Range

28 dB for all types of optical interfaces

Connectors

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

GENERAL

Timeslot Allocation

User-defined, any timeslot to any timeslot
mapping

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 and ETSI TBR 12/13

Diagnostics

Local and remote loopbacks on each
module port

Network line loopback (LLB)

Payload loopback (PLB)

BER testing

Indicators

L LOS (red) – Local port frame
synchronization loss

R LOS (red) – Remote port frame
synchronization loss

Power Consumption

3W at 0.6A

Configuration

Programmable via DXC management

Physical

3U-high occupies one DXC-8R/10A/30
module slot

6U-high occupies one DXC-30E module
slot

Table 2. DXC Family Comparison Table

Features	DXC-8R	DXC-10A	DXC-30/30E	DXC-100
Height	1U	1U	3U/6U	6U per nest
Maximum number of ports	32	40	120/*	688 (8 nests)
Number of I/O slots	4	5	15	86 (8 nests)
System redundancy	Built-in	None	Optional	Optional
T1, T1, E3, T3, STM-1 modules	✓	✓	✓	✓
XDSL, inverse multiplexing modules	✓	✓	✓	–
n x 56/64 kbps modules	✓	✓	✓	✓
Router, OC-3 modules	–	–	–	✓
ASCII, SNMP, RADview management	✓	✓	✓	✓

* Maximum possible ports are 240 with the ISDN option only.

DT1B

T1 Link Module

Ordering

DXC-M-T1B/\$/#/+

Two-port T1 link module, 3U-high

DXC-ME-T1B/\$/#/+

Two-port T1 link module, 6U-high

*Legend***\$** CSU option:

- C** built-in CSU (copper interface only)
- BP** port bypass
- BP/C** built-in CSU and optional port bypass (copper interface only)

Link connector type (default is copper interface with coaxial BNC connectors):

- ST** ST connectors
- FC** FC/PC connectors
- SC** SC connectors

+ Laser optical interface wavelength and transmitter type (not relevant with copper interface):

- 85L** 850 nm, multimode
- 13L** 1310 nm, single mode
- 15L** 1550 nm, single mode

OPTIONAL ACCESSORIES

CBL-MP-RJ45/STR

Straight cable for balanced T1 connection

CBL-MP-RJ45/CROSS

Cross-cable for balanced T1 connection

CBL-RJ45-Y/CROSS

Cross-cable for providing Y-cable redundancy. Includes four RJ-45 connectors, two on each side.

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