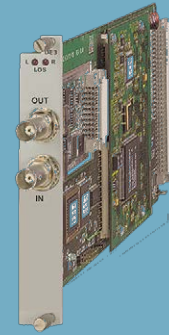


DXC Modules

DE3

E3 Multiplexer Module



- Direct connection to E3 networks
- Grooming of T1/FT1, E1/FE1, $n \times 64$ data, and $n \times$ T1 inverse multiplexer traffic
- Up to 16 multiplexed E1 channels
- E3 unbalanced copper or fiber optic with LED or laser link interfaces
- ITU-T G.751-compliant framing and multiplexing

DE3 is an E3 multiplexer module for RAD's DXC-8R/10A/30 family, providing access to standard E3 interface over copper or fiber lines.

The module functions as a terminal multiplexer, for feeding an E3 network or accessing channelized E3 ports of higher order switches in PDH or SDH networks. It grooms and multiplexes E1/Fractional E1 and T1/Fractional T1 traffic, and $n \times 64$ kbps data.

Together with the DIM inverse multiplexer module, it also operates at $n \times$ E1 data rate (where $n = 1$ to 8).

Note: *Data services can be groomed from multiple sources into internal E1 trunks, while voice services (with CAS signaling) carried by E1/FE1 are transparently placed into internal E1 trunks.*

Any internal E1 channel of the E3 module can be used as the source clock or the fallback clock for the DXC system. The user can choose the master clock or the fallback clock from any internal E1 channel of the E3 interface, or from any E1, T1, or HS module.

The DE3 module provides the full channelization functionality of an M13 multiplexer required to multiplex and demultiplex 16 independent E1 channels into and from a single E3 interface.



data communications

The Access Company

DE3

E3 Multiplexer Module

The E3 link interface can be either unbalanced copper or fiber optic. A number of fiber optic link options are available including: 850 nm multimode, 1310 nm single mode with laser, and 1550 nm single mode with laser.

Maintenance and diagnostic capabilities include individual E1 remote loopbacks and E3 local and remote loopbacks, to enable rapid location of faults.

Setup, control and diagnostics can be performed via a supervisory port using an ASCII terminal, or by the RADview SNMP network management system. Remote units are controlled via a dedicated management timeslot in the E3 path.

Line and hardware redundancy are ensured by installing a second module in the chassis as a standby backup.

The DE3 module occupies one I/O slot in a DXC-8R, DXC-10A or DXC-30 chassis.

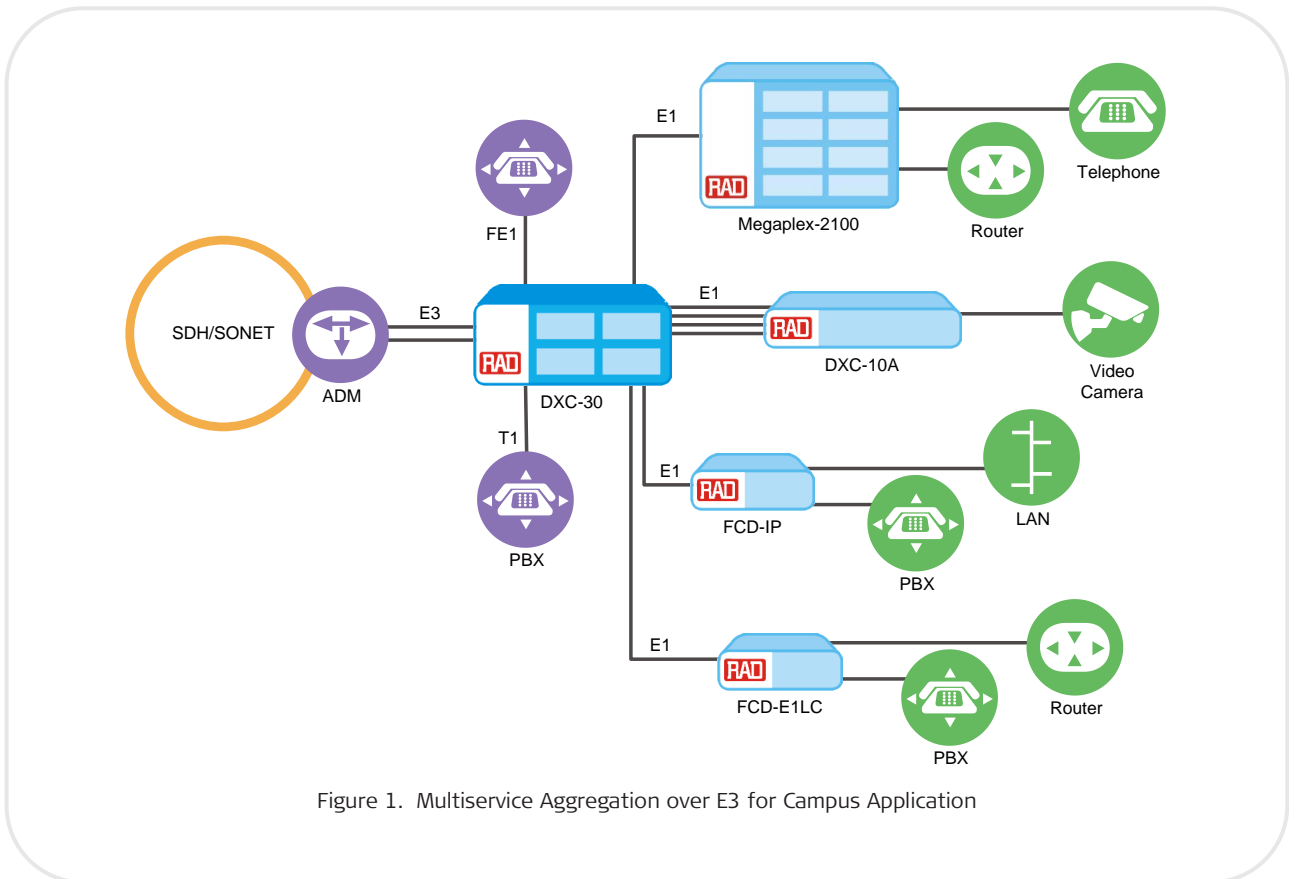


Figure 1. Multiservice Aggregation over E3 for Campus Application

Specifications

ELECTRICAL E3 INTERFACE

Line Code

HDB3

Impedance

75Ω

Pulse Shape

G.703

Connector

BNC, female

Framing

Framing per ITU-T G.751

Rate

34.368 Mbps

Jitter

As per ITU-T G.823

FIBER OPTIC E3 INTERFACE

Compliance

G.921, G.956

Characteristics
See *Table 1*
Connectors
ST, FC/PC or SC (see *Ordering*)

DIAGNOSTICS

E3 local/remote loopbacks

Local loopbacks on each internal E1 port

E3 performance monitoring: complies with RFC 1407

TIMING

Internal clock (± 32 ppm)

Station clock

Receive clock (from any link or from any internal E1 link of E3 interface)

GENERAL

Indicators (LEDs)

L LOS (red) – Local sync loss

R LOS (red) – Remote sync loss

Physical

Occupies a single slot in a DXC-8R, DXC-10A or DXC-30 chassis

For comparison of DXC chassis, see *Table 2*. For the list of DXC I/O modules, refer to the DXC-8R/10A/30 folder.
Power Consumption

Copper: 6.0W

Fiber Optic: 7.0W

Table 1. Fiber Optic Interface Characteristics

Transmitter Type and Wavelength [nm]	Fiber Type [μm]	Output Power [dBm]	Receiver Sensitivity [dBm]	Typical Maximum Range	
				[km]	[mi]
850 VCSEL	62.5/125 multimode	-14 to -20	-26	2.0	1.2
1310 laser	9/125 single mode	-8 to -15	-31	38.0	23.6
1550 laser	9/125 single mode	-8 to -15	-31	25.0	15.5

DE3

E3 Multiplexer Module

Ordering

DXC-M-E3/#+

Legend

- # Link connector (default is copper interface with coaxial BNC connectors):
 - ST ST connectors
 - FC FC/PC connectors
 - SC SC connectors
- + Laser optical interface wavelength and transmitter (not relevant with copper interface):
 - 85L** 850 nm, multimode
 - Note: 85L optical interface is not available with ST connector*
 - 13L** 1310 nm, single mode
 - Note: 13L optical interface is not available with FC and SC connectors*
 - 15L** 1550 nm, single mode

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