DXC Module

D8SL

2-wire SHDSL E1 Link Module

- Eight-port SHDSL E1 link module for the DXC family
- Up to 2048 kbps per port over existing 2-wire copper cables
- User-selectable data rates between 64 kbps to 2048 kbps
- Range up to 8 km (5 mi) over 24 AWG 2-wire cables
- ITU-T Rec. G.991.2 SHDSL compliance

D8SL is eight-port I/O module that use Single-pair High-speed Digital Subscriber Line (SHDSL) technology, according to ITU-T Rec. G.991.2.

Each port is a multirate SHDSL modem operating at user-selectable data rates that are multiples of 64 kbps (1 timeslot), up to 2048 kbps (32 timeslots). Payload capacity per module is up to 256 timeslots (16.384 Mbps). *Table 1* lists typical range data versus payload data rate.

The D8SL module can be configured to operate in accordance with ITU-T Rec. G.991.2. Annex B, for compatibility with European (or similar) networks.

Each port transfers either G732N or G732S multiframes (2 or 16 frames per multiframe, respectively). The user can also enable the CRC-4 option, specified in ITU-T Rec. G.704 and G.703, independently for each remote port.

All ports can operate in unframed mode to transparently transmit unframed 2.048 Mbps signals.

RAD
data communications
The Access Company

The module can operate as a central SHDSL solution opposite RAD's ASMi-52, ASMi-52L SHDSL modems. The units also link with other vendors' ITU-T G.991.2 compatible SHDSL remote terminal units.

Timeslot traffic through any port can be cross-connected with any other DXC module (excluding another D8SL port or module).

Diagnostic capabilities include local and remote loopbacks on the link, BER test on the active timeslots, and inband code-activated loopbacks specified in ANSI T1.403. Performance statistics for the link may be obtained and analyzed via the DXC management system.

Setup, control, and diagnostics can be performed using an ASCII terminal connected to the supervisory port, or by the RADview SNMP based management system.

D8SL module operating in the DXC-30 chassis require a fan tray for external cooling (see *Ordering*). The DXC-8R and DXC-10A chassis do not require additional cooling.

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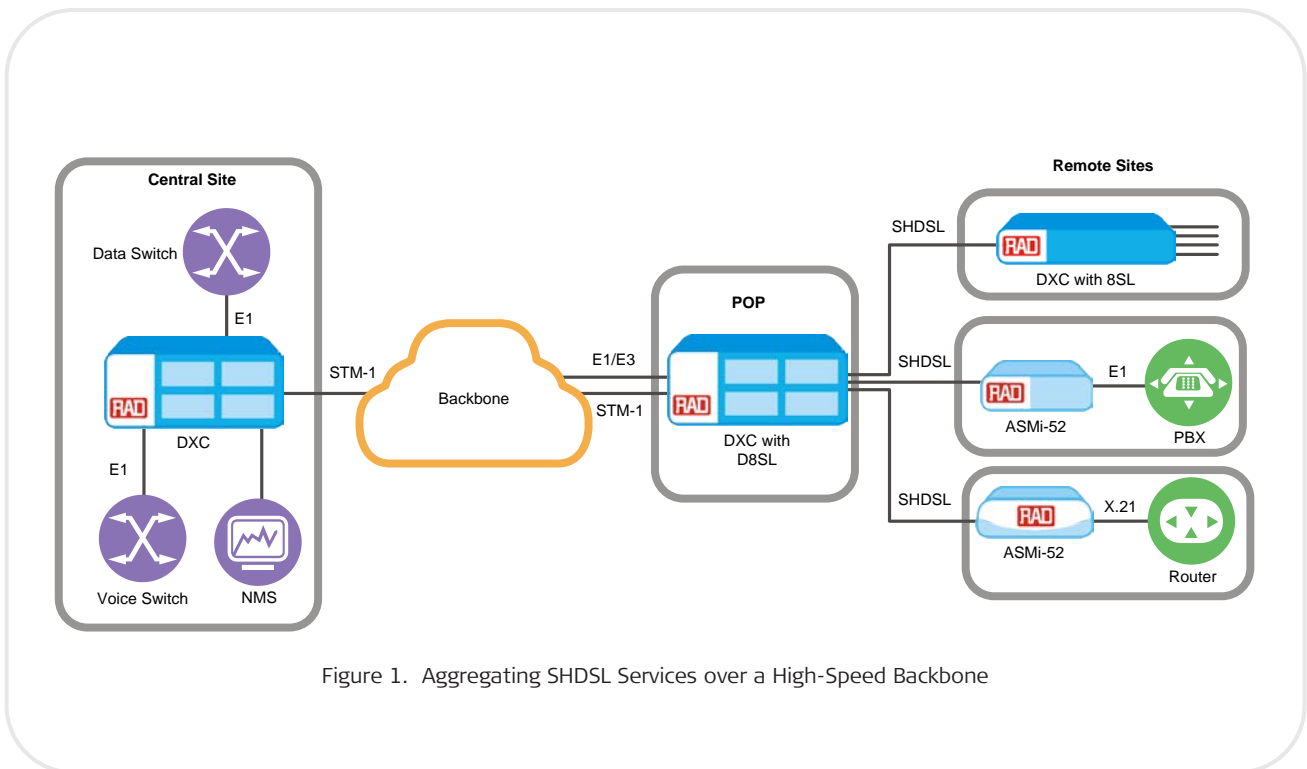

Figure 1. Aggregating SHDSL Services over a High-Speed Backbone

Specifications

SHDSL INTERFACES

Number of Ports
8

Type
SHDSL

Compliance
ITU-T Rec. G.991.2

Line Type
Single unloaded and unconditioned copper twisted pair

Impedance
135Ω

Range
See *Table 1*

Connector
Single 25-pin D-type female connector for all ports

INTERNAL E1 PORTS

Framing
G732N – 2 frames per multiframe
G732S – 16 frames per multiframe
Unframed

Compliance
ITU-T Rec. G.704, G.703, G.732

MANAGEMENT

Programmable via the DXC management system

TIMING

D8SL central site module: locked to DXC master clock

DIAGNOSTICS

Performance Monitoring
Per ITU-T Rec G.991.2

Loopbacks
User-activated local and remote loopback on each port
Remote loopback activation by inband FT1 code (on all timeslots, or on specific timeslots)
Remote timeslot loopback
Remote loopback on the remote unit
BER testing on each port

GENERAL

Indicators per Port
SYNC LOS (red) –
On: not synchronized with the remote unit
Flashing: handshaking with the remote unit

SYNC LOS (green) –
On: synchronized with the remote unit
Flashing: synchronizing with the remote unit

TEST (yellow) –
On: test is active on the port

Power Consumption
18.5W at maximum data rate on all the ports

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

Table 1. Typical Range vs. Payload Data Rate

Data Rate	Range @ 26 AWG	
[kbps]	[km]	[mi]
256	6.5	4
512	5.6	3.5
768	4.55	2.8
1024	3.65	2.7
1536	3.2	2
2048	3	1.85

Note: *Typical ranges are based on error-free real-line laboratory tests without noise.*

D8SL
2-wire SHDSL E1 Link Module

Ordering

DXC-M-8SL-E1
8-port, 2-wire SHDSL E1 link module

OPTIONAL ACCESSORIES

CBL-D8SL-RJ45/X
Adapter cable for D8SL, splits
a DB-25 connector into
8 × RJ-45 balanced connectors

DXC-30M-FT/~
Fan tray (for the DXC-30 chassis only)

Legend

~   Fan tray power supply:
    AC   100 to 240 VAC
    48   −48 VDC

RAD
data communications
The Access Company