SLC®-2000 Access System

SPQ®810 DT Server — 12 or 24 DS0s — LFIU80PBAA

Features/Functions

- TR-08/TR-303 basic service
- Software downloading for future upgradable features
- Enhanced ONU system alarms
- TR-303 ISDN BRI 2B+D service
- TR-08/TR-303 metallic circuit testing

- TR-303 ISDN metallic circuit testing
- ONU inventory retrieval
- DT Server inventory information (such as *COMMON LANGUAGE CLEI* code, date of manufacture, etc)
- Server/ONU link performance monitoring.

For a description of the features and functions listed above, see 363-208-000, *SLC-2000 Access System, Applications Planning and Ordering Guide*.

Introduction

This data sheet describes the *SPQ*® 810 Distant Terminal (DT) Server (COMCODE 107838955) and is intended for the end-user of the unit. This DT Server supports the following *SLC*-2000 Software Releases for Fiber in the Loop (FITL) applications:

■ **Release 4.4**. For this release, the *SPQ*810 Server supports only FITL applications hosting the DDM-2000 FiberReach Narrowband Shelf (NBS) optical network unit (ONU).

■ **Release 4.5 and later**. For these releases, the *SPQ*810 Server supports both the DDM-2000 NBS and the *SLC*-2000 Multi-Services Distant Terminal (MSDT) ONUs. It is backwards compatible and supersedes the *SPQ*809 and *SPQ*808 MSDT Servers. When the *SPQ*810 DT Server hosts the MSDT, the MSDT must contain the following circuit packs to take advantage of all its features listed on page 1:

— MC97793A1 BIU

— AUA411B CDTU.

Physical and Functional Description

The *SPQ*810 DT Server is a double-width unit made up of two circuit boards joined together with one common faceplate. It occupies two adjacent channel unit slots in an MDS assembly shelf of the *SLC*-2000 host digital terminal (HDT).

Figure 1 shows a functional block diagram of the unit. The *SPQ*810 DT Server is always located in an HDT. It accepts either twelve or twenty-four time slots from the *SLC*-2000 system backplane. The time slots are scrambled and rate-converted to a 1.544 Mb/s bit DSX-1 signal and transmitted toward the ONU. When receiving a DSX-1 signal from the ONU, the DT Server converts it from a balanced input to a logic level signal and passes it to the framer circuit where clock is recovered and rate-converted from the 1.544 Mb/s bit stream. The signal is descrambled, demultiplexed, and passed to the backplane interface logic (BPIL) circuit for buffering and rearrangement in the time slot interchange (TSI).
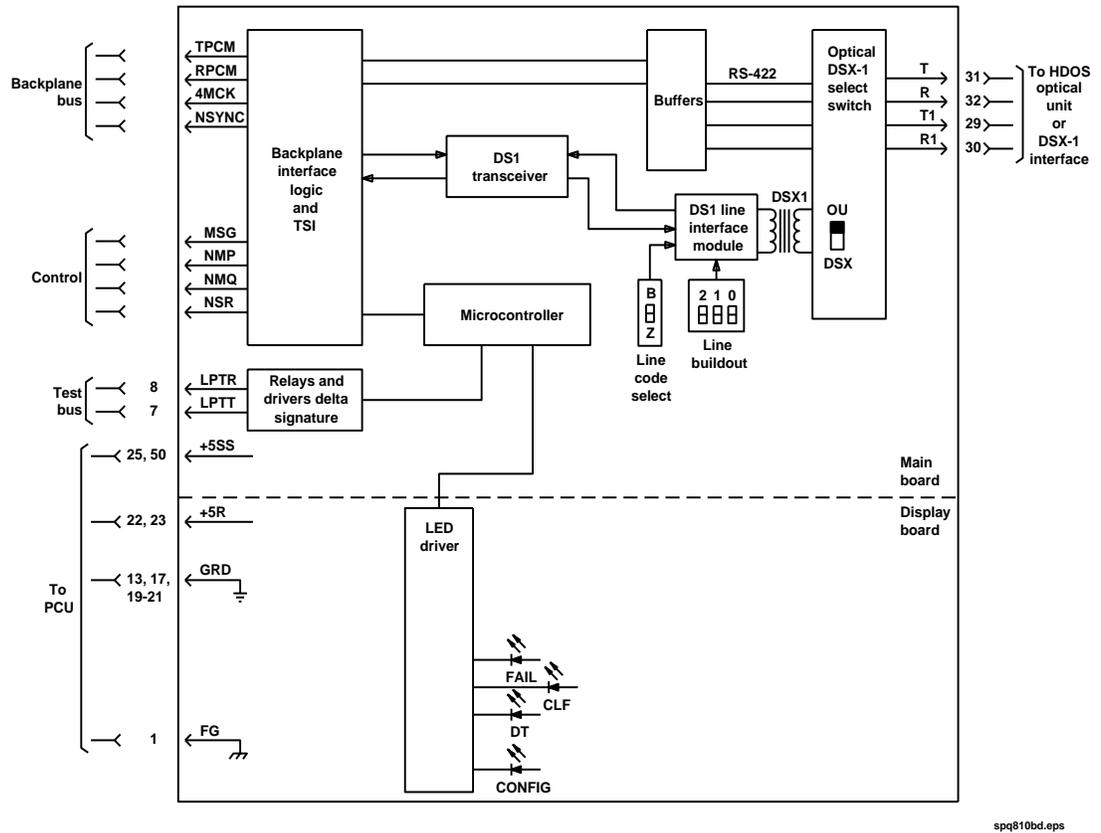
spq810bd.eps

Figure 1.   *SPQ*810 DT Server Block Diagram

Using this method, the HDT *extends* 12 or 24 channels of service through a DSX-1 signal to an ONU using one of the following methods depending on the *SLC*-2000 software release:

■ **Releases 4.4**. For this release, the Server can host a DDM-2000 FiberReach NBS over one of the following facilities:

— **T1 Metallic Facility**. Using this configuration, the DT Server hosts the NBS over a T1 metallic facility. The DSX-1 signal from the DT Server usually connects through a manual cross-connect to an external T1 office repeater that interfaces with the T1 facility.

— **OC-1 Optical Facility**. Using this configuration, the DT Server interfaces with the NBS ONU through a DDM-2000 FiberReach Wideband shelf (WBS). A WBS collocated with the HDT accepts the DSX-1 electrical signals from the DT Servers, multiplexes them into an OC-1 optical signal, and feeds the OC-1 signal to another WBS at the ONU location. The OC-1 signal can be part of a linear or ring application. This WBS demultiplexes the OC-1 optical signal back into DSX-1 electrical signals for use at the NBS.

When hosting the DDM-2000 FiberReach NBS, you can provision the DSX-1 signals from the DT Server in either the *quad* or *octet* mode. However, when operating in the octet mode, you can not provision the server for `lines=12`. For definitions of these modes and FITL applications, see 363-208-000 *SLC-2000 Access System Applications, Planning, and Ordering Guide*.

■ **Release 4.5 and Later**. For these releases, the *SPQ*810 DT Server can host the following ONUs:

— **DDM-2000 FiberReach NBS**. The DT server can host the NBS using one of the following two methods:

■ **T1 Metallic Facility**. Using this configuration, the DT Server hosts the NBS over a T1 metallic facility. The DSX-1 signal from the DT Server usually connects through a manual cross-connect to an external T1 office repeater that interfaces with the T1 facility.

■ **OC-1 Optical Facility**. Using this configuration, the DT Server interfaces with the NBS ONU through a DDM-2000 FiberReach Wideband shelf (WBS). A WBS collocated with the HDT accepts the DSX-1 electrical signals from the DT Servers, multiplexes them into an OC-1 optical signal, and feeds the OC-1 signal to another WBS at the ONU location. The OC-1 signal can be part of a linear or ring application. This WBS demultiplexes the OC-1 optical signal back into DSX-1 electrical signals for use at the NBS.

When hosting the DDM-2000 FiberReach NBS, you can provision the DSX-1 signals from the DT Server in either the *quad* or *octet* mode. For definitions of these modes and FITL applications, see 363-208-000 *SLC-2000 Access System Applications, Planning, and Ordering Guide*.

— **SLC-2000 MSDT:** The DT server can host the MSDT using one of the following two methods:

■ *T1 Metallic Facility*. Using this configuration, the DT Server hosts the MSDT over a T1 metallic facility. The DSX-1 signal from the DT Server usually connects through a manual cross-connect to an external T1 office repeater that interfaces with the T1 facility.

■ *Optical Facility Through the HDOS Assembly*: Using this configuration , the DT Server transmits the 1.544 Mb/s bit stream to an optical unit (OU) in the HDOS assembly using a balanced EIA-422 interface. The OU then sends a 1.544 Mb/s optical signal to the MSDT.

Per-channel trunk processing is performed in the upstream direction (toward the switch or central office terminal).

Faceplate Indicators

Figure 2 shows the faceplate and the location of the faceplate indicators. The faceplate contains the following LED indicators:

■ **Fail** (Red LED): When lighted, indicates that a failure has been sectionalized to the *SPQ*810 DT Server.

■ **CLF** (Yellow LED): When lighted, indicates that a carrier line failure has been sectionalized to the link connecting the HDT and ONU.

■ **DT** (Yellow LED): When lighted, indicates an event at the ONU.

■ **CONFIG** (Yellow LED): When lighted, indicates a problem with an ONU channel unit and/or a *SPQ*810 DT Server configuration.

Option Strap and Switches

The DT Servers contains the following option strap and switches (Figure 2 shows their location):

■ **MJ** (Option Strap): This strap changes the alarm severity for a subset of failures. When the strap is in the **MJ=12** position with 12 lines assigned to the *SPQ*810 Server, or in the **MJ=ANY** position, a failure causes a major alarm to be transmitted. When the strap is in the **MJ=12** position with less than 12 lines assigned to the *SPQ*810 DT Server, a failure causes a minor alarm to be transmitted.

■ **OU/DSX** (Board-mounted switch): You can place this switch in one of the following positions depending on the *SLC*-2000 HDT Software Release:

— *Release 4.4*. With this software release, you should place the switch in **DSX** position only. Do not place the switch in the **OU** position.

— *Release 4.5 and Later*. With these software releases, you can place this switch in the **OU** position when hosting an MSDT using a fiber optic based applications requiring a balanced EIA-422 interface to the external OU in the HDOS assembly. Place the switch in the **DSX** position when hosting an MSDT with T1 carrier applications or when hosting a DDM-2000 FiberReach NBS (with either an OC-1 facility or a T1 facility).

■ **B8ZS/ZCS** (Board-mounted switch): This switch (**B/Z**) selects between per-channel zero-code suppression (position Z) and the bipolar with 8 zero substitution (position B) line code. Set this switch per applicable office records. This switch is functional only when the **OU/DSX** switch is in the **DSX** position.

■ **Equalization** (Board-mounted switch): These three switches (TRANS 0, 1, 2) select the amount of pre-equalization based on the distance between the bank and the DSX-1 cross-connect (see Table 1). These switches are functional only when the **OU/DSX** switch is in the **DSX** position.
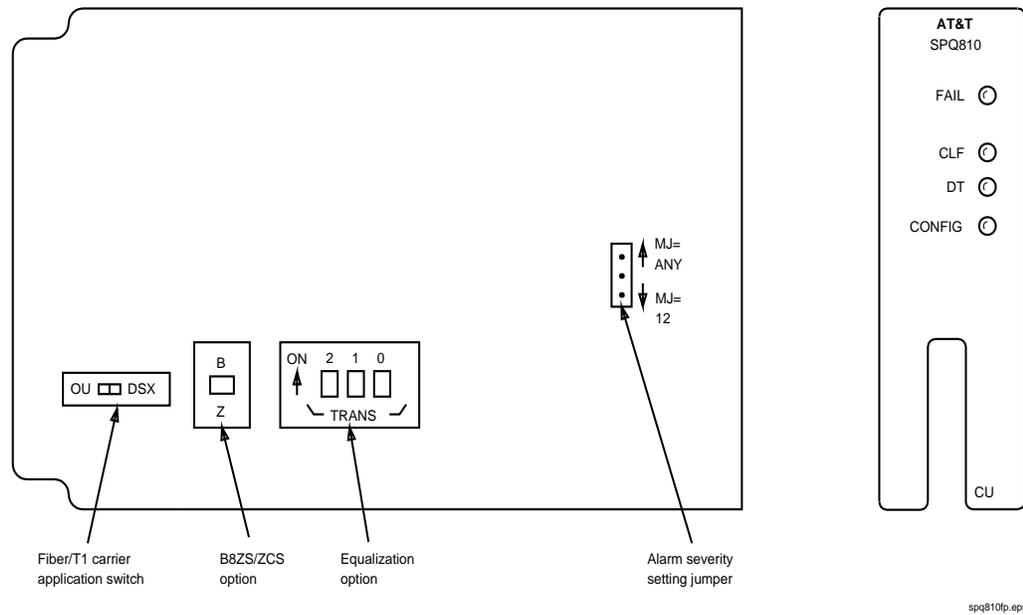
spq810fp.eps

Figure 2.   *SPQ*810 DT Server

Table 1.   **Equalization Option Settings**

TRANS			Distance to DSX-1 (in feet) (See Note)
2	**1**	**0**	
OFF	OFF	ON	0 to 132
OFF	ON	OFF	133 to 265
OFF	ON	ON	266 to 398
ON	OFF	OFF	399 to 532
ON	OFF	ON	533 to 655

Note: These distances are for ABAM cable used in the central office. Refer to 915-710-115 for calculations for other types of cable used for collocated RT and T1 extension applications.

References

The following documents provide additional information about the use of this channel unit in the *SLC*-2000 Access System:

363-208-000	*SLC*-2000 *Access System Application, Planning, and Ordering Guide*
363-208-001	*SLC*-2000 *Access System User/Service Manual.*

Technical Assistance

Follow local procedures for obtaining technical assistance. Lucent Technologies also provides in-hours or emergency out-of-hours help for the *SLC* Series 5 Carrier System and the *SLC*-2000 Access System. Call the Lucent Technologies Regional Technical Assistance Center at 1-800-225-RTAC.

Ordering Information

Additional copies of this document (363-005-389) are available from the Customer Information Center — call 1-888-582-3688.

Comments

Comments about this document can be directed to:

Lucent Technologies
Customer Training and Information Products (CTIP)
Documentation Services
2400 Reynolda Road
Winston-Salem, NC 27106-4606

Copyright Information