SLC®-2000 MSDT

BDJ242 FSM DSX Circuit Pack — SAIUNKOBAA

Overview

This data sheet describes the BDJ242 DSX circuit pack (COMCODE 107287369) and is intended for the end-user of the unit. It is used at a *SLC*®-2000 Fiber Service Module (FSM). The FSM multiplexes 12 DSX-1 signals into a 51 Mb/s signal for optical transport. This increases the circuit capacity on the fiber lines between a *SLC*-2000 host digital terminal (HDT) and multi-services distant terminal (MSDT). The FSM DSX circuit pack is used in FSMs at both the HDT site and the MSDT site.

The DSX circuit pack is optional in the FSM. It provides the hardware and firmware to interface eight additional DSX lines in addition to the four DSX lines on the MUX circuit pack with the FSM.

CAUTION:
Under no circumstances should the DSX lines be run to outside plant cables or equipment unless both primary and secondary lightning protection are installed on both the transmit and receive lines of each DSX port.

Features

The DSX circuit pack provides the following features:

- ***Function***. This circuit pack interfaces up to eight DSX signals into two VTG groups for transport to the MUX circuit pack.
- ***Line Interface Types***. This circuit pack contains the following line interface types:
  - — Eight DSX interfaces
  - — Two VTG (6.48 Mb/s) interfaces containing four DSXs each, used to transmit and receive the eight DSX interfaces to the MUX circuit pack.
- ***Alarm Indicators***. This circuit pack contains the following alarm indicators and contact closures:
  - — Red LED on the faceplate indicating a circuit pack failure
  - — Yellow LED on the faceplate indicating a CLF condition

    NOTE:
    The CLF LED blinks at a rate that indicates the DSX-1 circuit number that failed; for example, two blinks indicates that DSX-1 circuit 2 has failed. If more than one DSX-1 fails, the CLF LED lights and stays on without blinking.
- ***LBO Switches***. This circuit pack contains two sets of three LBO switches. Each set controls the LBO on a group of four DSX lines.
- ***AMI/B8ZS Switches***. This circuit pack contains a switch for each DSX line that allows you to choose between AMI and B8ZS line code formats.

Functional Description

Figure 1 shows the block diagram of the DSX circuit pack.

NOTE:
In this section, the *downstream* direction is defined as signal flow from the HDT site to the MSDT site. The *upstream* direction is defined as signal flow from the MSDT site to the HDT site.

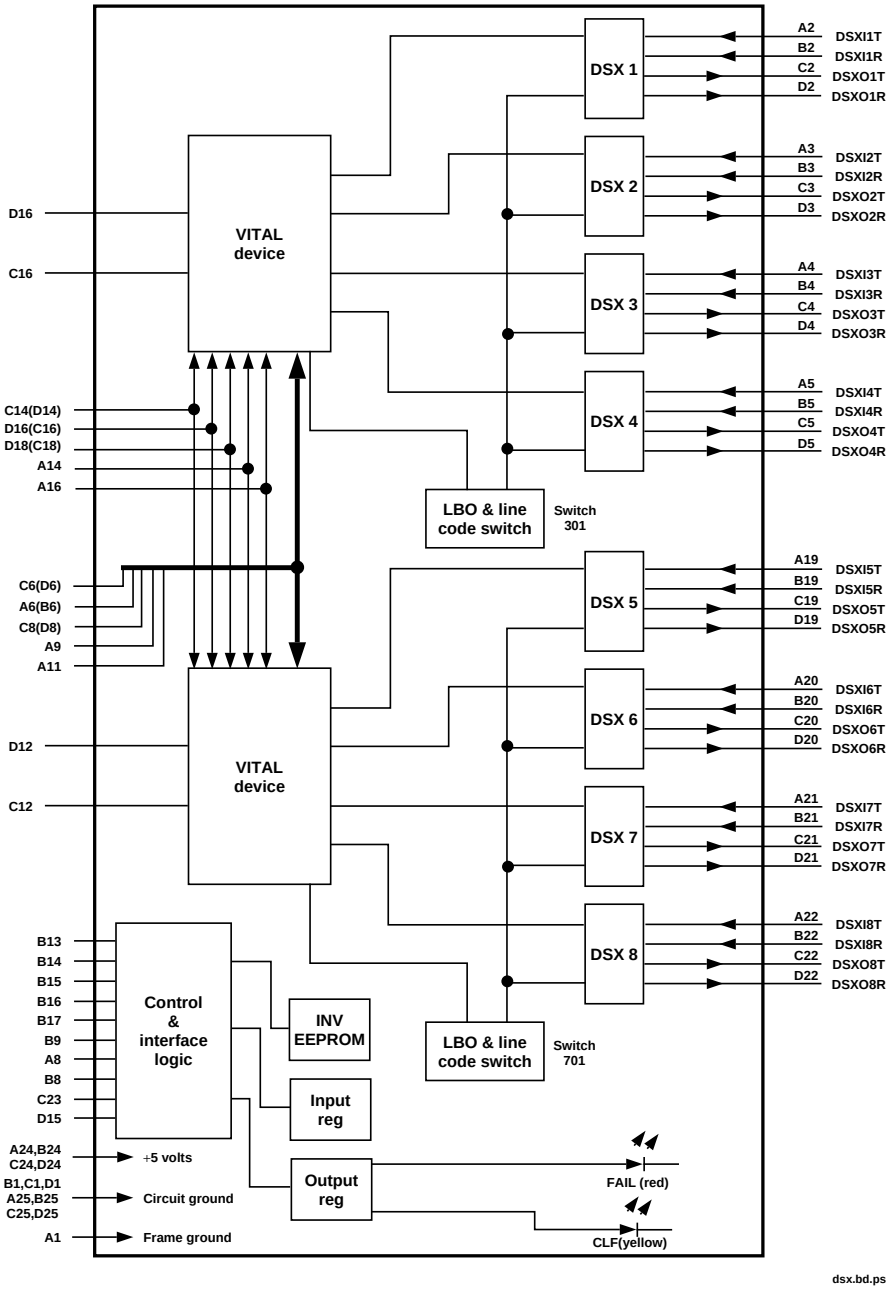

Figure 1. BDJ242 DSX Circuit Pack Block Diagram

HDT Site

In the downstream direction at the HDT site, the DSX circuit pack multiplexes eight DSX signals into two VTG signals and sends them to the MUX circuit pack. These DSX signals may come from the following sources:

- MSDT Servers in the *SLC*-2000 access system's metallic distribution shelf (MDS)
- Another source of DSX subscriber interface such as video or nonpremier DS1 services.

The MUX circuit pack then combines the two VTG signals with other DSX signals and multiplexes them into an electrical STS-1 signal. It then transmits the STS-1 signal to the optical unit (OU) which converts the signal to an optical STS-1 signal. This optical signal is then transmitted to the FSM at the MSDT site.

In the upstream direction at the HDT site, the DSX circuit pack demultiplexes the two VTG signals received from the MUX circuit pack back into eight DSX signals. It then distributes the eight DSX signals to either the MSDT Servers or the other DSX subscriber interfaces.

MSDT Site

In the upstream direction at the MSDT site, the DSX circuit pack multiplexes eight DSX signals into two VTG signals and sends them to the MUX circuit pack. These signals may come from the following sources:

- The DST circuit pack outputs of MSDTs
- Another source of DSX-1 subscriber interfaces.

The MUX circuit pack then combines the two VTG signals with other DSX signals and multiplexes them into an electrical STS-1 signal. It then transmits the STS-1 signal to the optical unit (OU) which converts the signal to an optical STS-1 signal. This optical signal is then transmitted to the FSM at the HDT site.

In the downstream direction at the MSDT site, the DSX circuit pack demultiplexes the two VTG signals received from the MUX circuit pack back into eight DSX signals. It then distributes the eight DSX signals to the DST circuit packs or the other DSX subscriber interfaces.

Option Switches

Figure 2 shows the location of the two sets of option switches on the DSX circuit board. These option switches control the following functions:

- ***Line Build-Out (LBO) Switch***. The LBO is set using the first three switch positions on each switch. As shown in Table 1, LBO switches are set for groups of four DSXs. Table 2 shows the settings for the line lengths up to 655 feet.

  CAUTION:
  Switch combinations other than the ones shown in Table 2 are not valid.

- ***ZCS/B8ZS Switch***. The ZCS/B8ZS option is set using switch positions 4 through 7 on each switch. Table 1 shows which switch corresponds to which DSX line. Set each switch as follows for each line: ***AMI/ZCS*** — ON; ***B8ZS*** — OFF.

Table 1. Individual Option Switch Function

Switch 301 DSX 1 through 4		Switch 701 DSX 5 through 8	
Switch Number	**Function**	**Switch Number**	**Function**
S1	LBO1	S1	LBO1
S2	LBO2	S2	LBO2
S3	LBO3	S3	LBO3
S4	B/Z 1	S4	B/Z 5
S5	B/Z 2	S5	B/Z 6
S6	B/Z 3	S6	B/Z 7
S7	B/Z 4	S7	B/Z 8
S8	Future use	S8	Future use

Table 2. LBO Switch Settings

Distance (ft)	LBO1	LBO2	LBO3
0 — 133	OFF	OFF	OFF
134 — 267	OFF	OFF	ON
268 — 400	OFF	ON	OFF
401 — 533	OFF	ON	ON
534 — 655	ON	OFF	OFF

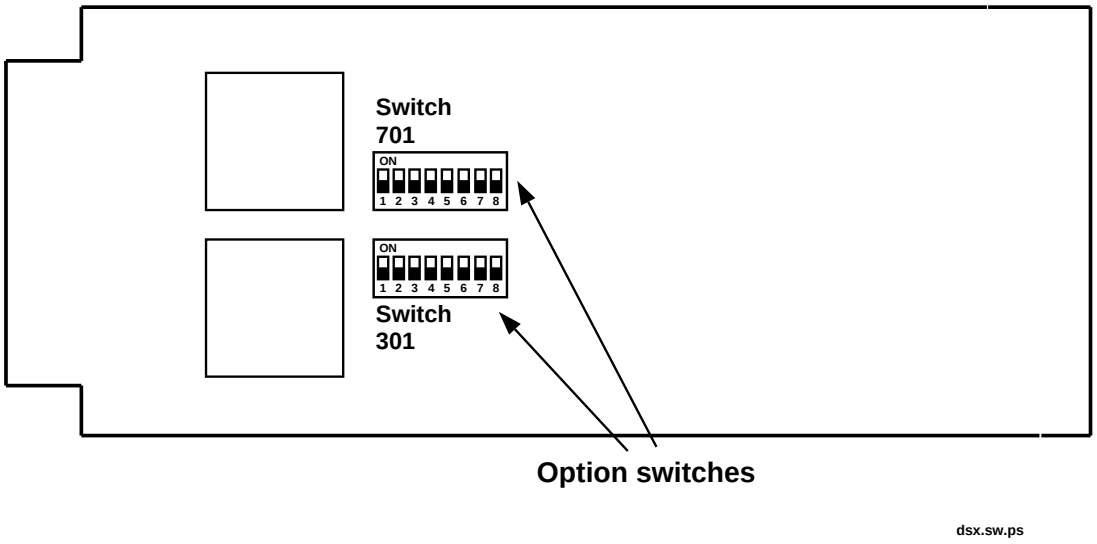

Figure 2. Option Switch Location

User Interfaces

The DSX circuit pack contains the following user interfaces:

- ***Red FAIL LED***. This LED on the faceplate (Figure 3) indicates a circuit pack failure. The DSX circuit pack also reports this condition through the *Microwire** interface to the MUX circuit pack.
- ***Yellow CLF LED***. This LED on the faceplate (Figure 3) indicates a CLF condition. It will blink to indicate which DSX line contains the CLF conditions. For example, one blink indicates DSX line 1, two blinks indicates DSX line 2, etc. If two or more DSX lines contain a CLF condition at the same time, the LED will light and stay on. The DSX circuit pack also reports this condition through the *Microwire* interface to the MUX circuit pack.

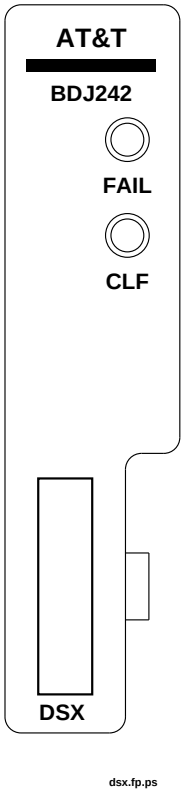

Figure 3. BDJ242 DSX Circuit Pack Faceplate

* Microwire is a registered trademark of Advanced Interconnection Technology, Inc.

Technical Specifications

The DSX circuit pack conforms to the following technical specifications:

- ***Temperature Range***: –40 degrees C to +85 degrees C
- ***Relative Humidity***: 5% to 95%
- ***Power Dissipation***: ≤1 Watt.

Technical Assistance

Follow local procedures for obtaining technical assistance. AT&T also provides in-hours or emergency out-of-hours help for the *SLC*-2000 Access System. Call the AT&T Regional Technical Assistance Center at **1-800-225-RTAC**.

Ordering Information

Call the Customer Information Center at 1-800-432-6600 to get additional copies of this document (AT&T 363-005-319).

Comments

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