



***SLC*[®]-2000 MSDT**

BDJ243 FSM MUX Circuit Pack — SAIUNLOBBA

Overview

This data sheet describes the BDJ243 MUX circuit pack (COMCODE 107287377) 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 MUX circuit pack is used in FSMs at both the HDT site and the MSDT site.

The MUX circuit pack provides the hardware and firmware to support multiplexing and demultiplexing of four DSX and VTG interfaces to an STS-1 rate signal. It will operate within the following temperature range:

- -40 degrees C to +85 degrees C

Features

The MUX circuit pack provides the following features:

- **Function.** This circuit pack multiplexes four DSX interfaces and two externally provided VTG interfaces to one STS-1 (51.84 Mb/s) interface.
- **Line Interface Types.** This circuit pack contains the following line interface types:

- Four DSX interfaces



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.

- One 51.84 Mb/s STS-1 interface to an optical unit (OU)
- Two VTG (6.48 Mb/s) interfaces to support an optional DSX pack in the FSM.

- **VLSI Serial Interface.** This interface is for all on-board SONET devices as well as for the optional DSX circuit pack in the FSM.
- **Alarm Indicators and Contact Closures.** 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.

- Alarm summary contact closures that activate for various fault conditions.

- **LED TEST Pushbutton.** This circuit pack contains an LED TEST push button accessible from the faceplate.
- **RS232 UART Interface.** This interface is for future intershelf communication.
- **Master Controller Function.** This circuit pack functions as a master controller for intrashelf communication using the *Microwire** interface.

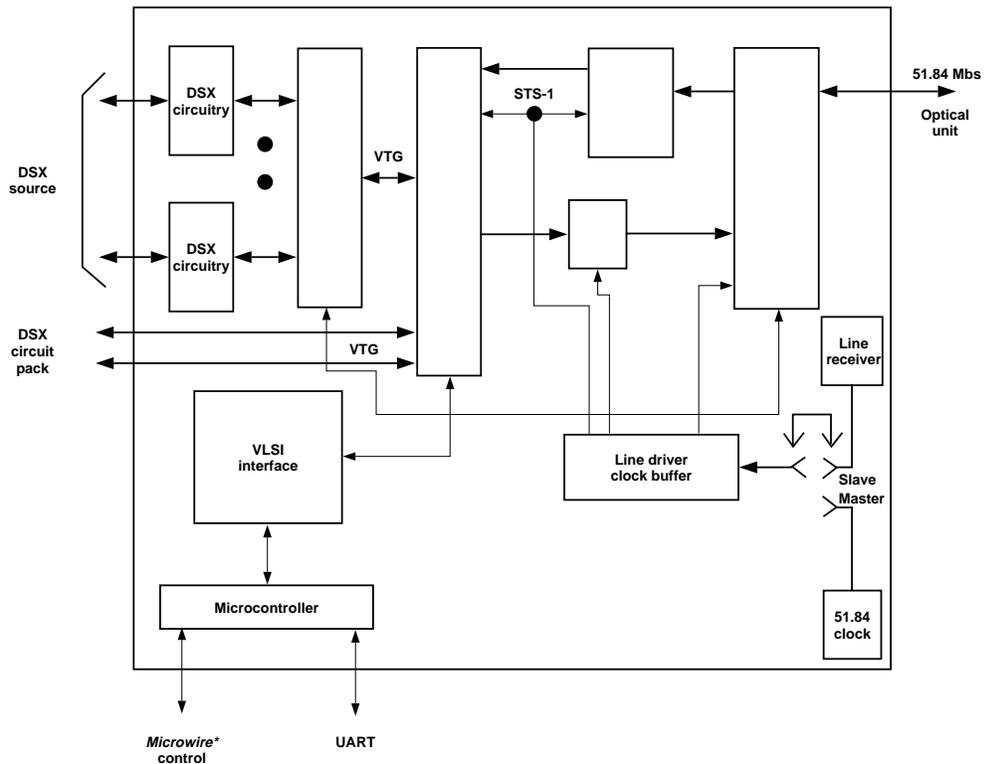
* Microwire is a registered trademark of Advanced Interconnection Technology, Inc.

Functional Description

Figure 1 shows a block diagram of the MUX 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.



* Registered trademark of Advanced Interconnection Technology, Inc.

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Figure 1. BDJ243 MUX Circuit Pack Block Diagram

HDT Site

In the downstream direction at the HDT site, the MUX circuit pack multiplexes four DSX signals and two VTG signals into an STS-1 signal. These signals may come from the following sources:

- **Four DSX Signals.** The MUX pack receives these signals from either the MSDT Servers in the *SLC-2000* access system's MDS shelf or by another source of DSX subscriber interface such as video or nonpremier DS1 services.
- **Two VTG Signals.** The MUX pack receives these signals from the optional DSX circuit pack. Each VTG signal contains four DSX signals.

The MUX circuit pack 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 MSDT site.

In the upstream direction at the HDT site, the MUX circuit pack demultiplexes the electrical STS-1 signal received from the OU into four DSX signals and two VTG signals. It then distributes four DSX signals to either the MSDT Servers or the other DSX subscriber interfaces. The two VTG signals are sent to the DSX circuit pack.

MSDT Site

In the upstream direction at the MSDT site, the MUX circuit pack multiplexes four DSX signals and two VTG signals into an STS-1 signal. These signals may come from the following sources:

- **Four DSX Signals.** The MUX pack receives these signals from either the DST outputs of up to four MSDTs or by another source of DS1 subscriber interface.
- **Two VTG Signals.** The MUX pack receives these signals from the optional DSX circuit pack. Each VTG signal contains four DSX signals.

The MUX circuit pack 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 HDT site.

In the downstream direction at the MSDT site, the MUX circuit pack demultiplexes the electrical STS-1 signal received from the OU into four DSX signals and two VTG signals. It then distributes four DSX signals to either the DST circuit pack or the other DSX subscriber interfaces. The two VTG signals are sent to the DSX circuit pack.

Jumpers

You can provision the MUX circuit pack to the *master* or *slave* mode by setting the jumpers as shown in Figure 2. Set the jumper according to where you are installing the FSM:

Site Location	Setting
HDT site	Master
MSDT site	Slave

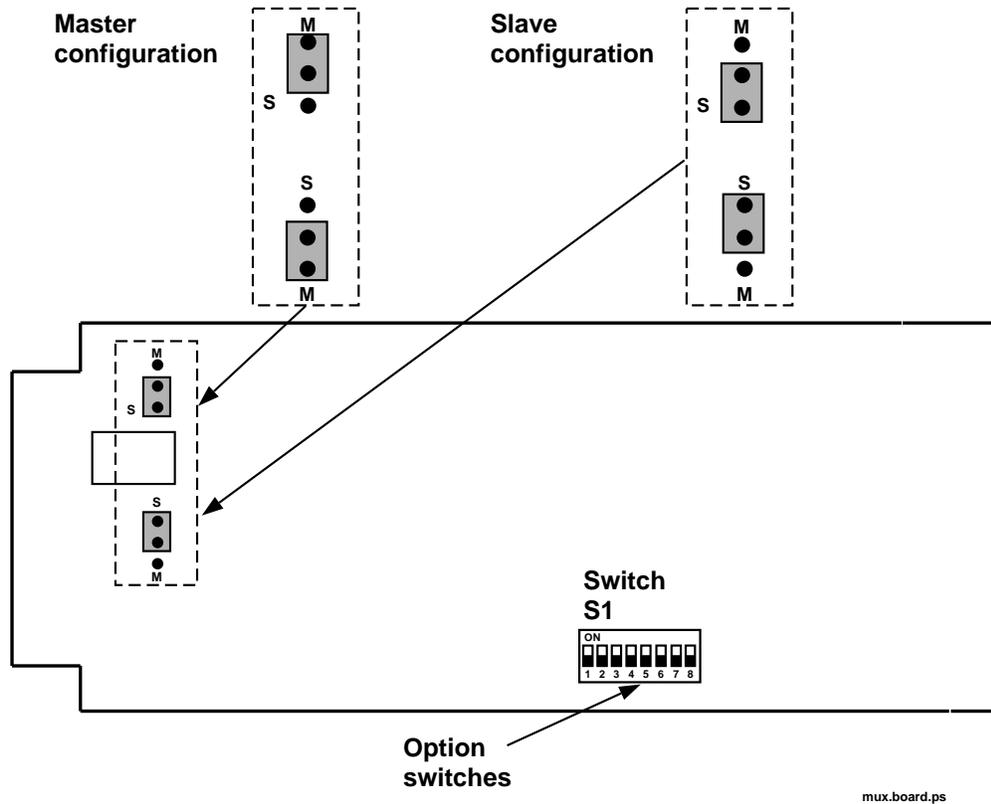


Figure 2. Jumpers and Option Switch Location

Option Switches

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

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



CAUTION:

Switch combinations other than the ones shown in Table 1 are not valid.

Table 1. LBO Switch Settings

Distance (ft)	SW0	SW1	SW2
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

- **ZCS/B8ZS Switch.** The ZCS/B8ZS option is set using switch positions 4 through 7. Table 2 shows which switch corresponds to which DSX line. Set each switch as follows for each line:

— **AMI/ZCS** — ON

— **B8ZS** — OFF

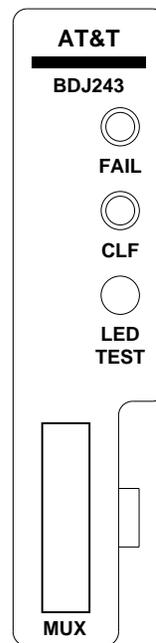
Table 2. ZCS/B8ZS Option Switches (Switch S1)

Switch Number	DSX Line Number
S4	B/Z 1
S5	B/Z 2
S6	B/Z 3
S7	B/Z 4
S8	Future use

User Interfaces

The MUX circuit pack contains the following user interfaces:

- **Red FAIL LED.** This LED on the faceplate (Figure 3) indicates a circuit pack failure.
- **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.
- **LED TEST Push Button.** This push button on the faceplate (Figure 3) allows you to test all LEDs in the FSM. When you press this button, all LEDs in the FSM will light then go off after a few moments.
- **Alarm Contacts.** The alarm summary contact closures activate for various fault conditions in the FSM.



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Figure 3. BDJ243 MUX Circuit Pack Faceplate

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 363-005-320).

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