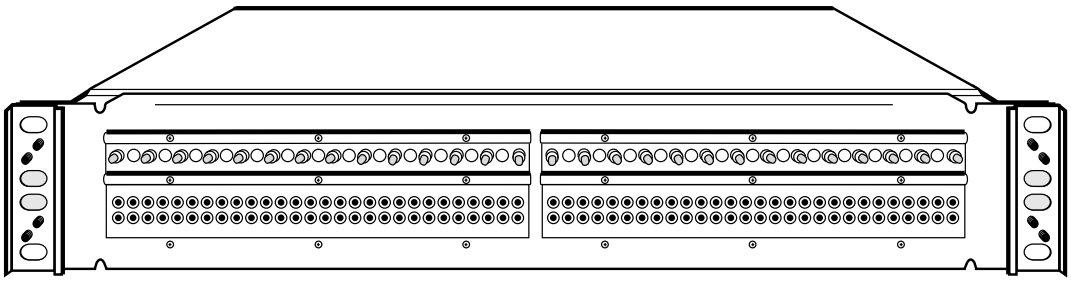
Telecommunications

DSX-1 and DSX-1C Interbay Patch Module User Manual



8906-A

BANTAM JACK INTERBAY PATCH MODULE

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INTRODUCTION

This manual describes the ADC DSX-1 and DSX-1C Interbay Patch Modules and their use in multiple bay single lineups and in multiple bay multiple lineups.

Revision History

ISSUE	DATE	REASON FOR CHANGE
Issue 3	12/96	Update to standard format. Changed title from DSX-1 and DSX-1C Interbay Module to DSX-1 and DSX-1C Interbay Patch Module. Remove all information relating to Longframe modules.

List of Changes

PAGE	IDENTIFIER	DESCRIPTION OF CHANGE
All Pages	–	Issue 3

Admonishments

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment. An admonishment identifies a possible hazard and then explains what may happen if the hazard is not avoided. The admonishments — in the form of Dangers, Warnings, and Cautions — must be followed at all times. These warnings are flagged by use of the triangular alert icon (seen below), and are listed in descending order of severity of injury or damage and likelihood of occurrence.

⚠ **Danger**: *Danger is used to indicate the presence of a hazard that **will** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Warning**: *Warning is used to indicate the presence of a hazard that **can** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Caution**: *Caution is used to indicate the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.*

1. GENERAL

1.01 This manual describes the ADC DSX-1 and DSX-1C Interbay Patch Module and its use in multiple bay single lineups, and in multiple bay multiple lineups DSX Systems. The Module is described both physically and functionally, and simplified schematic diagrams are included to show interconnecting cabling and circuit patching operations. Installation instructions are also provided showing cabling interconnections to termination blocks on each Module.

2. DESCRIPTION

2.01 Interbay Patch Modules in DSX-1 Bay Systems provide the capability to patch between two DSX circuit locations that are several bays or lineups apart without using long patch cords. A circuit patch is set up in two steps; 1) from the originating DSX termination and to a patch jack circuit on the nearest Interbay Patch Module; 2) from the terminating DSX termination to the corresponding patch jack circuit on a nearby Interbay Patch module.

2.02 A typical 28 circuit Bantam Jack Interbay Patch Module (rear view) is shown in Figure 1. The Interbay Patch Module is available in various dimensions with either 25 or 28 circuits using Bantam jacks. A LED or lamp provides a circuit busy or in use indicator. The Interbay Patch Modules have terminal blocks on the back of the Module for interconnect cabling between Modules.

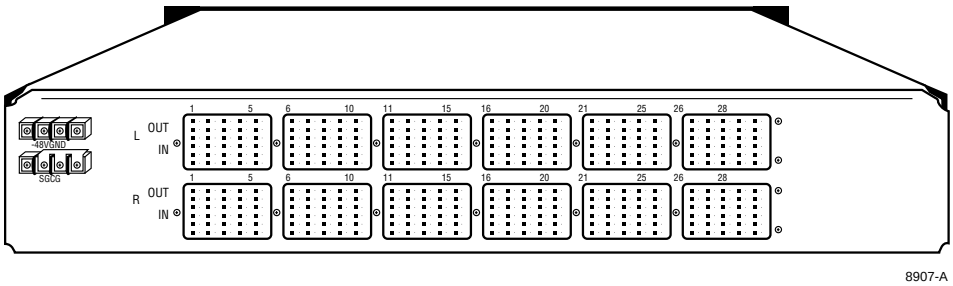

Figure 1. Rear View of Bantam Jack Interbay Patch Module

2.03 Each patch circuit on the Interbay Patch Module consists of four jacks and a busy indicator as shown in Figure 2. The jacks are designated; OUT L, IN L and OUT R, IN R. The L (left) jacks are used to patch to the bays to the left of the Interbay Patch Module (standing in front of the module), and the R (right) jacks are used to patch to the bays to the right of the Interbay Patch Module.

2.04 The patch circuit busy indicator is normally dark and when a patch cord or plug is inserted in a jack the light flashes for about 30 seconds then remains lit. The busy indicator lights at each multiple point of the patch circuit. The patch jack circuit multiple wiring is such that the circuit is open in the opposite direction of the patch setup. That is, if the setup is to the left, the left jack is used and opens the jack multiple to the right. See Figure 3, 4, 5 and 6.

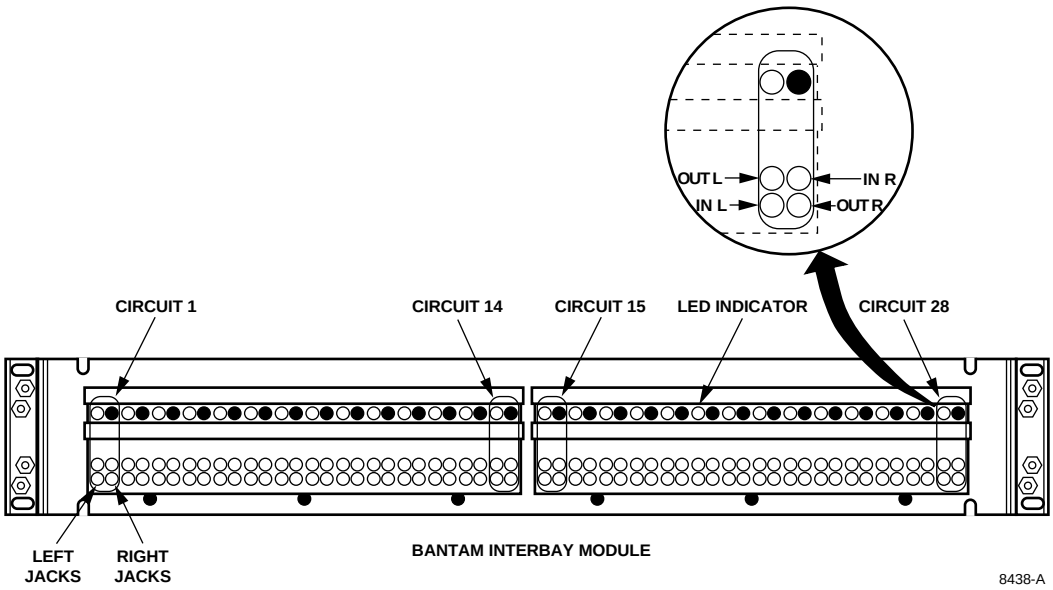

Figure 2. Front View of Bantam Jack Interbay Patch Module Module

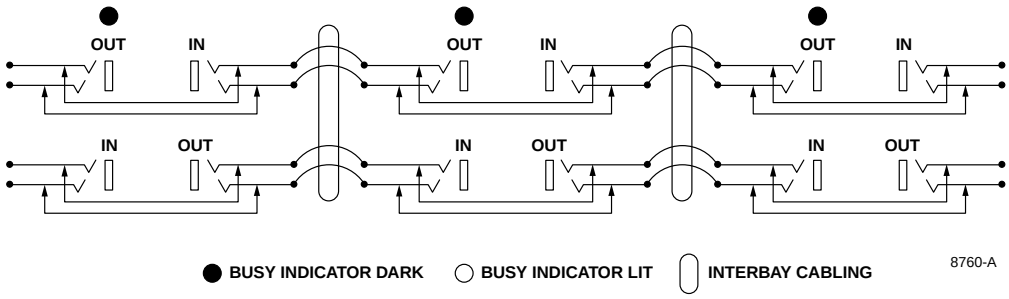

Figure 3. Interbay Patch Circuit No Patch Cords Plugged In

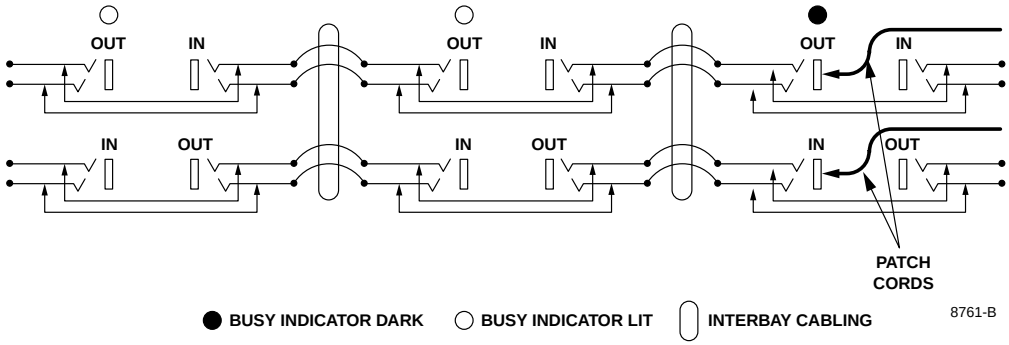

Figure 4. Interbay Patch Setup to the Left

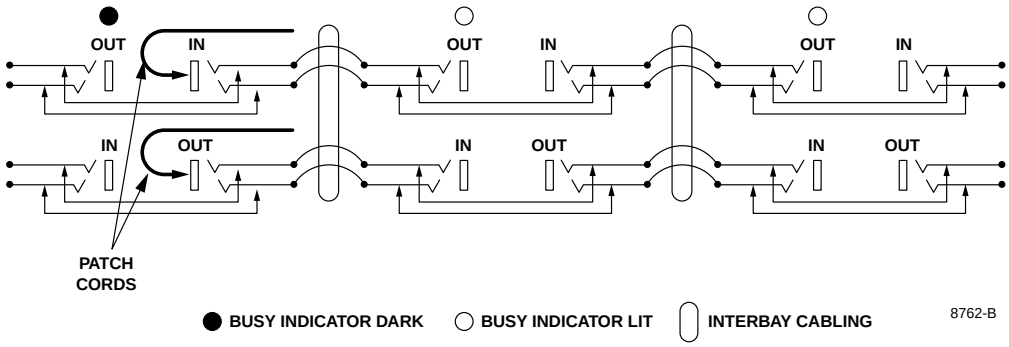

Figure 5. Interbay Patch Setup to the Right

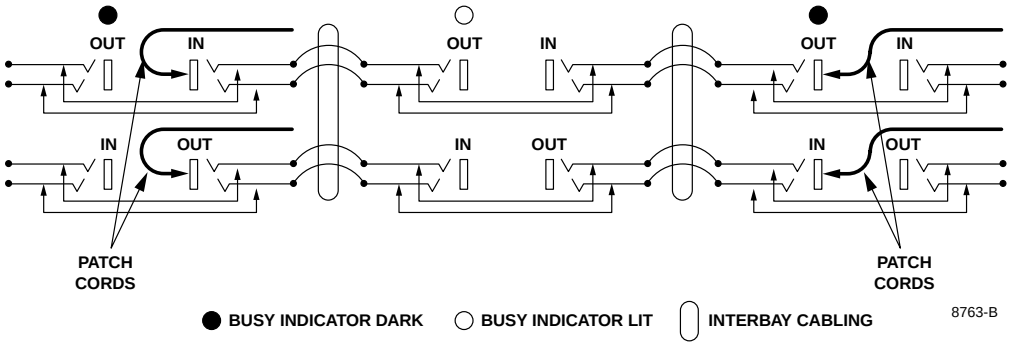

Figure 6. Interbay Patch Setup Using Left and Right Jacks

3. APPLICATION AND OPERATION

3.01 It is recommended that Interbay Patch Modules are installed and wired as shown in Figure 7. As shown, typically the modules are installed in maintenance bays in each DSX-1 system lineup. For simplicity only two circuits on each module are shown in multiples between modules within the lineup and two circuit multiples between modules in other lineups. In reality the circuits should be split; half multiples within the lineup and half multiples to other lineups.

3.02 Circuit patching can be accomplished with two or three sets of short patch cords when wired as recommended. The following examples describe patch procedures in a single lineup and in a multiple lineup. See Figure 7.

⚠ **Caution**: *A patch cord or plug inserted into any jacks of an established patch set up will interrupt the circuit.*

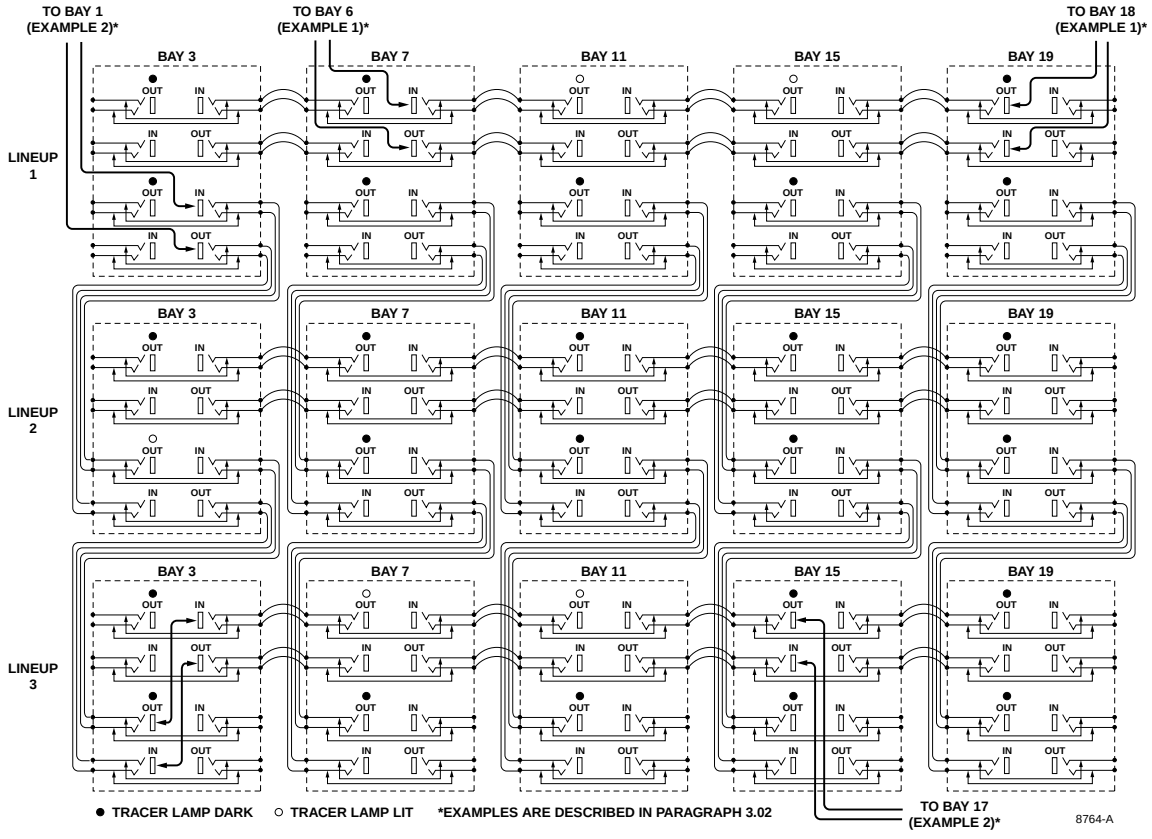

Figure 7. Recommended Interbay Patch Module Wiring

Example 1: Single Lineup Patch

1. Patch a DSX circuit on bay 6 of lineup 1 to a DSX circuit on bay 18 of lineup 1.
   a) Install patch cords from the desired DSX circuit on bay 18 to an upper left set of IN/OUT jacks on the bay 19 Interbay Patch Module. The busy indicator on all jacks multipled to the selected jack circuit will flash for about 30 seconds and then remain lit to indicate all patching jacks that may be used for the patch setup.
   b) Install patch cords from the desired DSX circuit on bay 6 to the upper right set of IN/OUT jacks on bay 7 corresponding to the flashing busy indicator. This will extinguish busy indicators in bays 3 and 7. The busy indicators for jacks in the circuit on bay 11 and 15 will remain lit to show this interbay circuit is in use. A plug inserted into the jacks of this circuit on bays 11 or 15 will interrupt the patched circuit.

Example 2: Multiple Lineup Patch

1. Patch a DSX circuit on bay 1 of lineup 1 to a DSX circuit on bay 17 of lineup 3.
   a) Install patch cords from the desired DSX circuit on bay 1 of lineup 1 to a lower right set of IN/OUT jacks on lineup 1 bay 3 Interbay Patch Module. The busy indicator on all jacks multipled to the selected jack circuit will flash for about 30 seconds and then remain lit to indicate all patching jacks that may be used for the patch setup.
   b) At bay 3 in lineup 3, install patch cords from the lower left set of IN/OUT jacks corresponding to the flashing busy indicator, to an upper right set of IN/OUT jacks. The busy indicator that was flashing for this patch circuit on bay 3 of lineup 3 will be extinguished, and the busy indicator for the jacks multipled to the right set of jacks will start flashing.
   c) Install patch cords from the desired DSX circuit on bay 17 of lineup 3 to the upper left set of IN/OUT jacks on bay 15 corresponding to flashing busy indicator. The busy indicators for this patch circuit on bays 15 and 19 of lineup 3 will be extinguished. The busy indicator for this patch circuit on bays 7 and 11 in lineup 3 and bay 3 in lineup 2 will remain lit to show that this patch circuit is in use.

4. INSTALLATION

⚠ **Warning**: *To prevent electrical shock, never install telephone equipment in a wet location or during a lightning storm. When installing or modifying telephone lines, disconnect lines at the network interface before working with uninsulated lines or terminals.*

4.01 Installation of Interbay Patch Modules in various DSX-1 bays involves the interconnection of the circuits on the terminal blocks at the back of the modules and connection of battery and battery return leads for the LED indicators. Office power to the Interbay Patch Module should be fused at 0.5 Amp. Use a minimum of 22 AWG wire when making power connections.

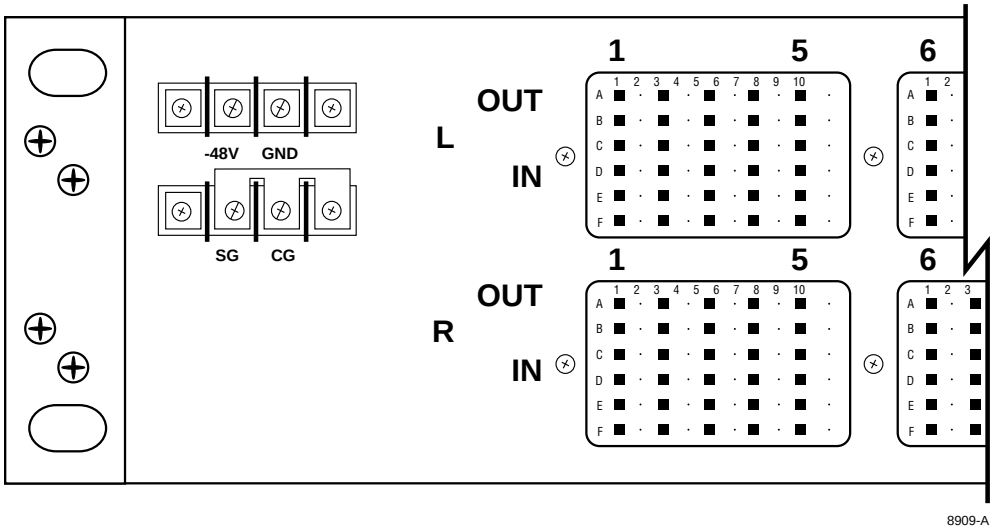

Figure 8. Typical Bantam Interbay Module Power Terminal Strip

A. Power and Ground Connections

4.02 A typical DSX-1/1C Interbay Patch Module power terminal strip is shown in Figure 8. Connect each module to the fuse module as follows:

1. Connect the –48V terminal on the module to a NEG (–) terminal on the fuse module (white wire).
2. Connect the GND terminal on the module to the corresponding POS (+) terminal on the fuse module (black wire).
3. Connect the CG terminal on the module to the office frame ground (green wire). This the recommended chassis grounding procedure.

Note: The metal strap between the CG (Chassis Ground) and SG (Shield Ground) terminals on the module may be removed to isolate the shield ground from the chassis ground.

B. Interbay Interconnection Wiring

4.03 Interbay circuits are connected together using the 12 terminal blocks located at the back of each module. Terminal block pins are connected to each jack circuit as shown in Table 1. The upper six terminal blocks are connected to the left interbay jack circuits and the lower six terminal blocks are connected to the right interbay circuits.

Table 1. Interconnection

CIRCUIT LEAD		PIN	ROW	T/B
CKT 1 OUT Left	T	A	1	1
CKT 1 OUT Left	R	B		
CKT 1 IN Left	T	C		
CKT 1 IN Left	R	D		
	BY	E		
	G	F		
REPEATED				
CKT 28 OUT Left	T	A	3	6
CKT 28 OUT Left	R	B		
CKT 28 IN Left	T	C		
CKT 28 IN Left	R	D		
	BY	E		
	G	F		
CKT 1 OUT RIGHT	T	A	1	7
CKT 1 OUT RIGHT	R	B		
CKT 1 IN RIGHT	T	C		
CKT 1 IN RIGHT	R	D		
	BY	E		
	G	F		
REPEATED				
CKT 28 OUT RIGHT	T	A	3	12
CKT 28 OUT RIGHT	R	B		
CKT 28 IN RIGHT	T	C		
CKT 28 IN RIGHT	R	D		
	BY	E		
	G	F		

Intermodule Cabling Requirements

4.04 Interbay Patch Module interconnection wires also add to the digital signal losses depending on the wire length. To assure reliable signal levels, do not exceed 85 feet (26 meters) including patch cord lengths for each DSX frame.

Cable Types

4.05 The recommended cable type for interconnecting Interbay Patch Modules is 22-26 AWG shielded twisted pair cable (AT&T 600 C or 1249 equivalent) grounded at one end only.

Interbay Module Cabling

4.06 Interconnect all Interbay Modules, using tie cables to wire-wrap terminals at the back of each module. Specific wire-wrap terminals are defined on each installation drawing. A typical installation drawing is shown in Figure 9. Interbay Patch Modules are normally located in every fourth bay of DSX-1 and DSX-1C systems as shown in Figure 10.

4.07 Inter module cabling is shown in Figure 10. In single lineups, corresponding circuits 1 through 28 on each Interbay Patch Module are multipled. In double and triple lineups, corresponding circuits 1 through 14 on each module are multipled in each lineup, and corresponding circuits 15 through 28 on each module are multipled between lineups.

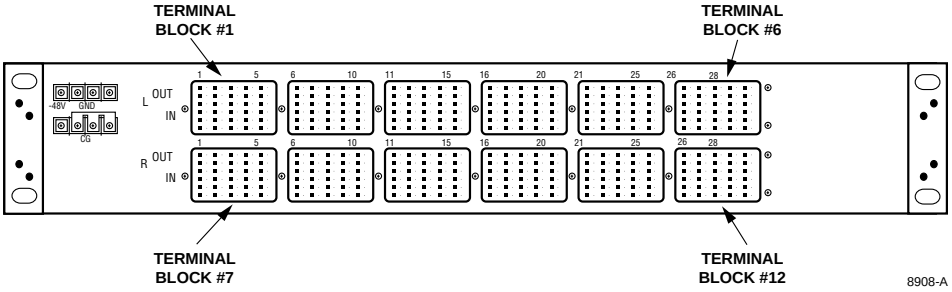

Figure 9. Typical Rear View of Bantam 28 Circuit Interbay Module

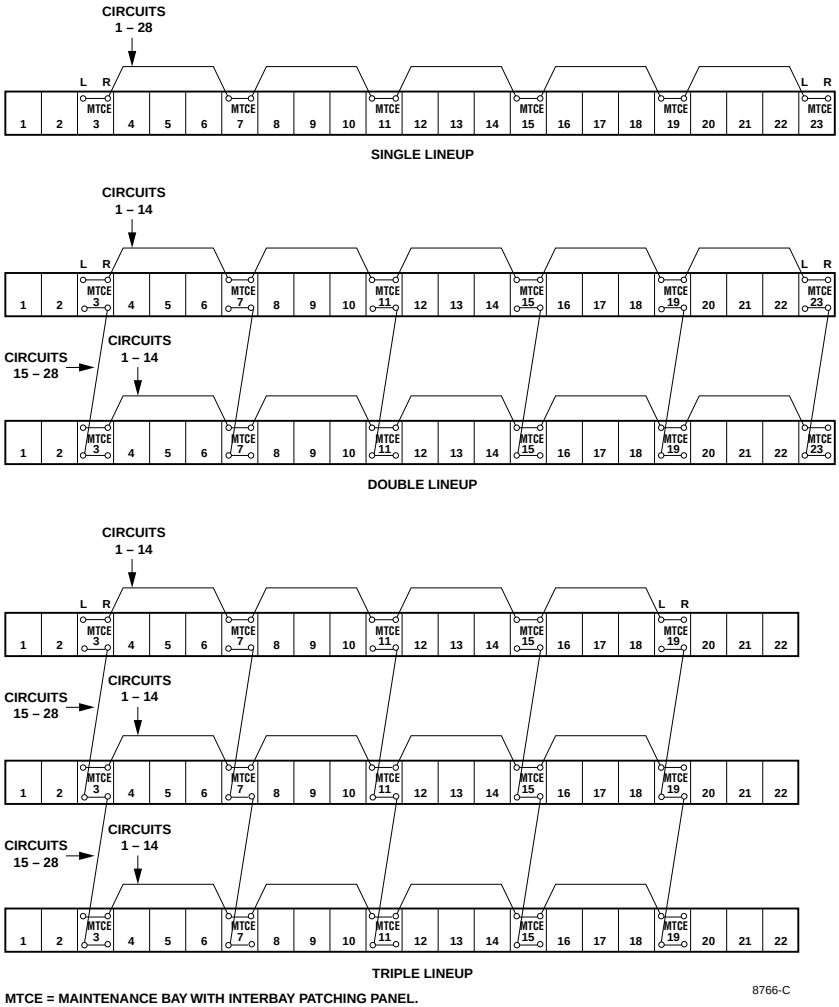

Figure 10. Typical DSX1/1C Bay Arrangement Showing Interconnection Wiring

5. SYSTEM INTEGRATION SERVICES

5.01 ADC offers the following system integration services. For calls originating in the U.S.A. or Canada, dial **1-800-366-3891**, **extension 3000**. For calls originating outside the U.S.A. or Canada, dial **612-946-3000**.

Technical Assistance Center	• Product Management • Project Engineering • Project Administration • Network Design • Broadband Design (RF Design and Strand Mapping) • Integration Network Testing • Network Monitoring (Upstream or Downstream) • Power Monitoring • Remote Surveillance • System Turn-Up and Test • Service/Maintenance Agreements
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6.01 ADC offers the following customer support services. For calls originating in the U.S.A. or Canada, dial **1-800-366-3891**, then request the extension listed. For calls originating outside the U.S.A. or Canada, dial **612-946-3475** or **612-946-3000**.

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Product Return Department **Extension 3000** **E-Mail: repair&return@adc.com**	• ADC Return Authorization number and instructions must be obtained before returning products.

6.02 Product information and service can also be obtained by writing ADC Telecommunications, Inc., 4900 West 78th Street, Minneapolis, Minnesota 55435, U.S.A.

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