800 SERIES DSX
GENERAL DESCRIPTION
DIGITAL TRANSMISSION SYSTEMS

CONTENTS PAGE

CONTENTS PAGE

1. GENERAL

1.01 This practice contains a general description of the 800 series DSX, a manual digital system cross-connect for interconnecting digital signals at the DS1 (1.544 Mb/s) and DS1C (3.152 Mb/s) transmission rates. The acronym DSX, which is used throughout this practice, is the common term for digital signal cross-connect bays. These bays are identi-

Copyright ©1986 AT&T
All Rights Reserved
Printed in U.S.A.

fied as the DSX when describing a feature common to both DS1 and DS1C circuits, and as the DSX-1 or DSX-1C when describing features exclusive to DS1 or DS1C circuits, respectively.

1.02 Whenever this practice is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 The 800 series DSX is intended as a replacement for the current AT&T DSX equipment offering described in Practice 365-301-101, and other currently available commercial DSX apparatus. All generic DSX functional features adopted by older AT&T and current commercial DSX products have been retained in the 800 series DSX offering. Consequently the 800 series DSX can be installed beside, and operate with, existing DSX installations.

1.04 The 800 series DSX offers the following advantages over other DSX designs:

- Increased circuit termination density—up to 800 circuit terminations on a standard unequal flange bay 7 feet high, 2 feet 2 inches wide with 23-inch mounting hole spacing (Fig. 1) and up to 38,000 circuit terminations in a 69-bay, 3-lineup DSX configuration, (which conforms to the generally accepted cross-connect length limit of 0.7 dB transmission loss, or 85 feet of cross-connect wire) without the need for active (repeatered) cross-connections

- Lower operating costs due to front-facing operations for all craft activities — cross-connecting, maintenance patching, monitoring, and jumper tracing

- Front-facing installation and repair, that allows back-to-the-wall installation where space is limited

- Fewer bays and less floor space required due to higher density apparatus, improved cabling methods that eliminate spacers between bays, and narrower aisle spacing between lineups with the rear aisle designated as a wiring aisle rather than a maintenance aisle

- Total system concept that minimizes planning and engineering considerations, improves installation and craft administration activities, and features cross-connect and cabling designs that ensure no wiring congestion

- Efficient cost-effective approach for all applications (small and large central offices, digital loop carrier, and customer premise)

- Cross-aisle tie pair strategy that grows incrementally with DSX configuration to facilitate fully random cross-connects without congestion

- Preprinted designation label packages for legible identification of digital equipment circuit terminations

- Compatible with existing DSX-1 lineups

- New Modular Compact 800-A connecting block that has:

  (a) New high-density jack-access field (IN, OUT, and MON) and patch cord, both with gold-plated contacts for maintenance patching and digital signal monitoring

  (b) Front-access wire-wrap terminal field for 4-wire cable terminations, and front-facing wire-wrap terminal field for 5-wire jumper cross-connects

  (c) LED TLs (tracing lamps) for longer life, low-power usage

  (d) Specific circuit terminations for QRSSs (quasi random signal sources), bridge for network clock, maintenance lines, and auxiliary maintenance lines.

- Improved performance through the use of modern automated manufacturing techniques that ensure reliable, low crosstalk, transmission paths.

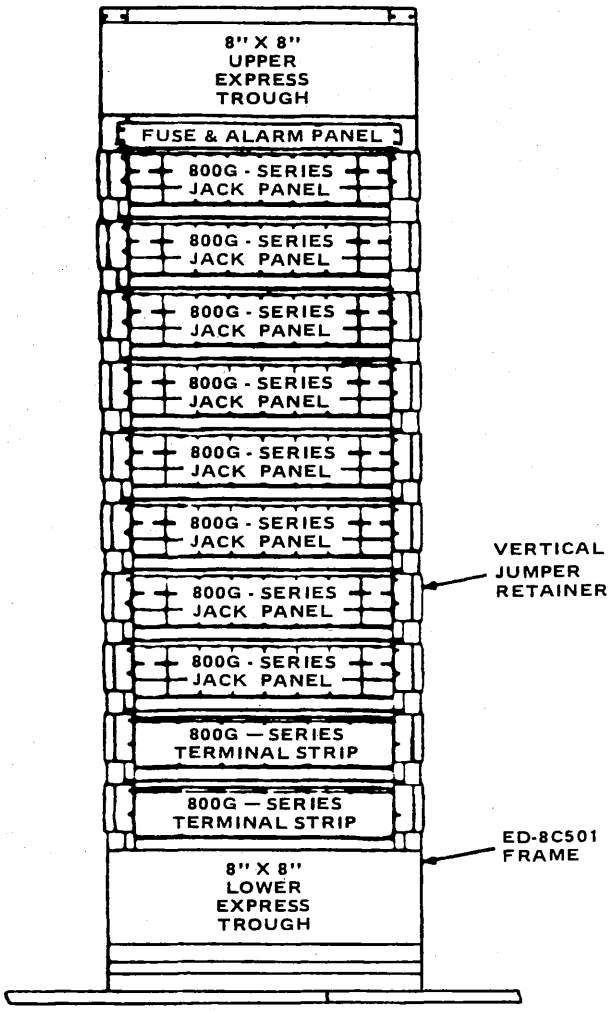


Fig. 1—Typical Bay for Triple Lineup

2. PHYSICAL DESCRIPTION

2.01 The 800 series DSX is an assembly of apparatus and framework that can be used to construct DSX frames of up to 38,000 digital signal terminations. The major subassemblies of the 800 series DSX are:

- 800G type connecting block panel assemblies
- 800H type connecting block panel assembly
- 800 series connecting blocks
- ED-6C152 type framework groups
- System cabling.

Each of these subassemblies is discussed below.

800G TYPE CONNECTING BLOCK PANEL ASSEMBLY

2.02 The 800 series DSX circuit termination apparatus is normally provided as 800G type connecting block panel assemblies that mount on the 26-inch wide bays provided with the ED framework groups. The 800G series panel assemblies include:

- either eight 800A type connecting block subassemblies or six 800B type connecting block subassemblies,
- 24″ wide shelf, designed to mount on the 23″ mounting hole spacings of standard relay racks. This shelf mounts the connecting block subassemblies, provides a horizontal jumper shelf, and provides space to mount a label
- left and right vertical troughs with circuit identification labels
- mounting screws, and
- installation instructions and parts list.

2.03 A typical 800G type connecting block panel assembly is 800G1-A1, shown in Fig. 2. See Table C for ordering information of the 800G type panels. The 800G type panels are available to provide any of the following:

- 80 DS1 or DS1C circuit terminations
- 75 circuit terminations for ORB applications (3 sets of 25 circuits with one maintenance line per set)
- 40 full-level and 40 monitor-level (-20 dB) QRSS jack circuits plus 130 monitor level QRSS cross-connect circuits
- 300 terminations for tie circuits (4-wire or 5-wire).

Note: The 800G1-C1 panel may be ordered empty (without connecting block subassemblies) for use in equipping miscellaneous panels (typically for auxiliary maintenance lines or network clock synchronization or QRSS circuits).

800H-TYPE CONNECTING BLOCK PANEL ASSEMBLY

2.04 The 800H type connecting block panel assemblies are similar in construction to the 800G type connecting block panel assemblies, but with the difference that they are equipped with six 800A type connecting block subassemblies or four 800B type connecting block subassemblies. Panels are available for the following applications:

- 60 DS1 or DS1C circuit terminations
- 200 terminations for tie circuits (4-wire or 5-wire)
- Empty (without connecting block subassemblies) for use in equipping miscellaneous panels.

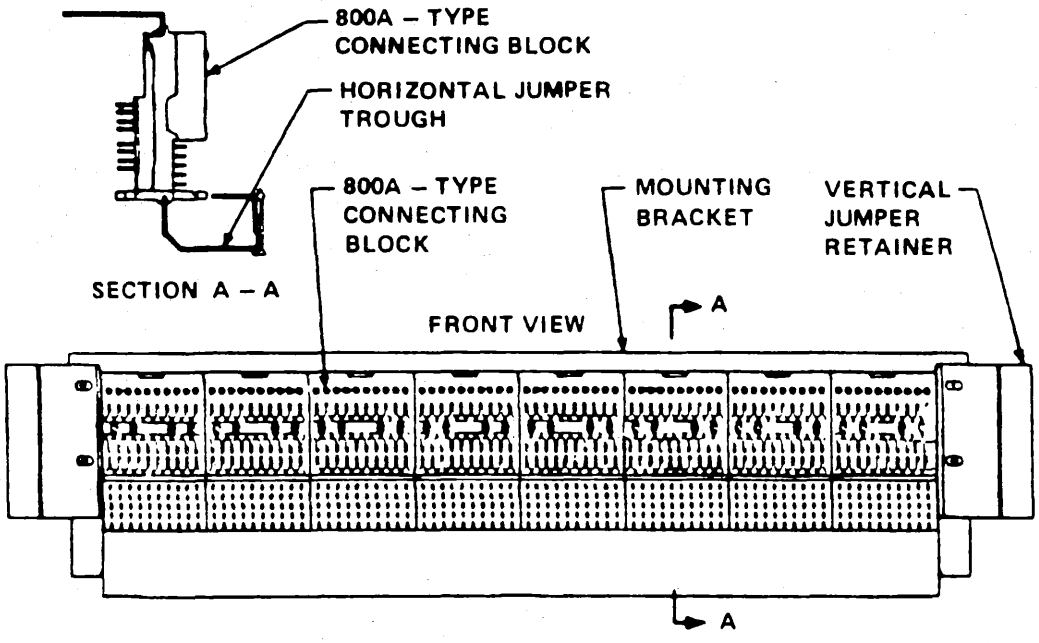


Fig. 2—800G1-A1 Circuit Panel

The 800H type panels are intended to mount on existing relay racks equipped with non-800 series DSX equipment. A typical code is the 800H1-E1, which may be used on an existing DSX frame to terminate cross-aisle tie circuits between an 800 series DSX in one lineup and an "old style" DSX (e.g. ED-1C544-30 or ED-2C544-30 equipment) in another lineup.

800A SERIES CONNECTING BLOCK

2.05 The 800A type connecting block is intended primarily for replacement purposes of individual connecting block subassemblies in the 800G type panels, or to be ordered individually and mounted in the 800G1-C1 panel for small applications (such as loop applications), or for miscellaneous circuit types (such as bridge for network clock synchronization and auxiliary maintenance lines).

2.06 Typical is the 800A1-A1 connecting block for terminating ten DS1 or DS1C digital signals (Fig. 3).

2.07 The 800A series connecting blocks are designed to provide one of the following:

- DS1/1C circuit terminations (10 per block)
- Auxiliary maintenance line terminations (2 per block)
- Bridge for network clock synchronization terminations (4 per block)
- QRSS jack circuits (10 per block).

2.08 Each 800A series connecting block has:

- Cabling terminal field for wire-wrap terminations of up to ten 4-wire digital circuits
- Cross-connect terminal field for the wire-wrap termination of the 5-wire jumpers to cross-connect signal terminations to form a digital circuit

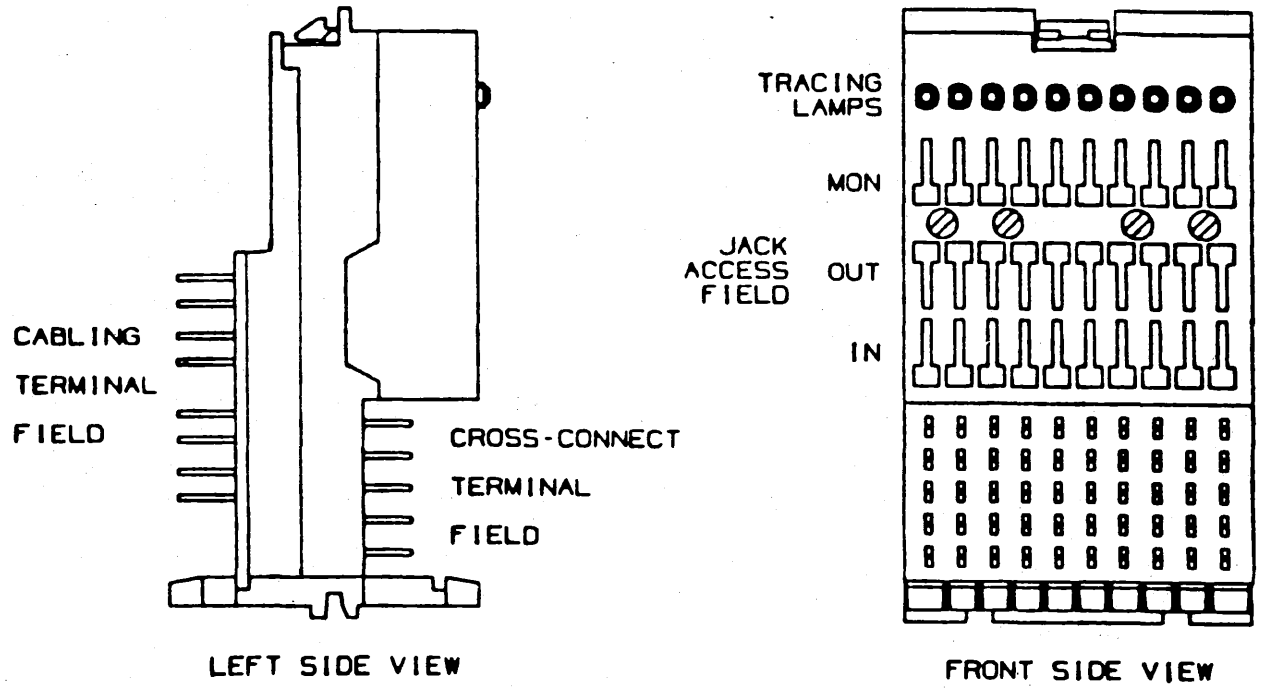


Fig. 3—800A Series Connecting Block

- Jack-access field for maintenance patching (OUT, IN) and digital signal monitoring (MON)

- Tracing lamps for circuit identification when performing maintenance operations.

Up to eight 800A series connecting may be mounted in an 800G1-C1 panel, or up to six connecting blocks may be mounted in an 800H1-C1 panel.

800B SERIES CONNECTING BLOCK

2.09 The 800B type connecting blocks provide tie circuit terminations or resistor circuits. They are available to provide:

- 50 Tie circuits of 4-wire ties

- 50 Tie circuits of 5-wire ties

- 30 Resistor circuits for QRSS monitor-level x-connect terminations or

- 51 Resistor circuits of 432 ohms per conductor or

- 51 Resistor circuits of 1210 ohms per conductor.

Up to six 800B series connecting blocks may be mounted in an empty 800G type panel, or four 800B series connecting blocks may be mounted in an empty 800H type panel.

800 TYPE PATCH CORDS

2.10 The 800 Series DSX connecting blocks use a new edge-board type jack, which allow increased termination density over other jack designs. The 800 Series patch cords are designed to plug into these jacks. The plugs on these cords have a double-sided printed wiring board with gold plated pads that mates with gold-plated jack terminals within the connecting block body.

2.11 Patch cords with 800 type plugs on each end come in lengths from 1 to 12 feet. Adapter cords are available with male or female 310 type or bantam type plugs. A terminating plug is also available, which has a 100 ohm terminating resistor bridged across the tip and ring leads.

8 TYPE LABELS

2.12 The 8 type labels are preprinted with circuit information for various equipment types. A typical code is the 8B1H, which is preprinted with circuit information for office repeater bays that use circuit 1 for maintenance line. This and the other 8-H type labels are mounted on the front of the horizontal jumper shelf of the 800G type connecting block panel assemblies. One 8-H type label is included with each 800G type connecting block panel assembly as follows:

800G Type Panel Assembly	Label
800G1-A1	8A1H
800G1-B1	8B1H
800G1-B2	8B2H
800G1-C1	8A1H
800G1-E1	8G1H
800G1-E2	8G1H
800G1-F1	8A1H

2.13 The 8A1T label set includes 2 circuit routing labels that mount in the vertical trough of the 800G type panel assemblies. One set is provided with each 800G type connecting block panel assembly.

ED-6C152 TYPE FRAMEWORK GROUPS

2.14 The basic structure of an 800 series DSX is a standard 2-foot 2-inch wide, 7-foot high network bay frame (ED-8C501). This unequal flange bay has the standard 23-inch wide mounting hole spacing. This bay can be ordered directly as part of the 800 series DSX by ordering ED-6C152 type framework groups. The 800G type panels can also be installed on 9-foot or 11-foot six-inch high bays. However, in general, only the lower seven feet of the frame is used to mount DSX connecting blocks since all circuit terminations (800 per bay) will be at a convenient location for craft access, and the circuit termination density is consistent with maximum cable-racking and jumper trough capacity.

2.15 A typical 800 series DSX framework group is ED-6C152-30 G1. This group is a complete framework (Fig. 1) and, as shown in this illustration, can be equipped to hold up to ten 800G type panel assemblies, each containing a maximum of 80 circuit terminations per panel for a total of 800 circuit terminations per framework group.

CABLING

2.16 All equipment and facility cables are at the back of the 800 series DSX bays directly behind the connecting blocks, using either a "waterfall" style of cabling (Fig. 4) for overhead cables or a

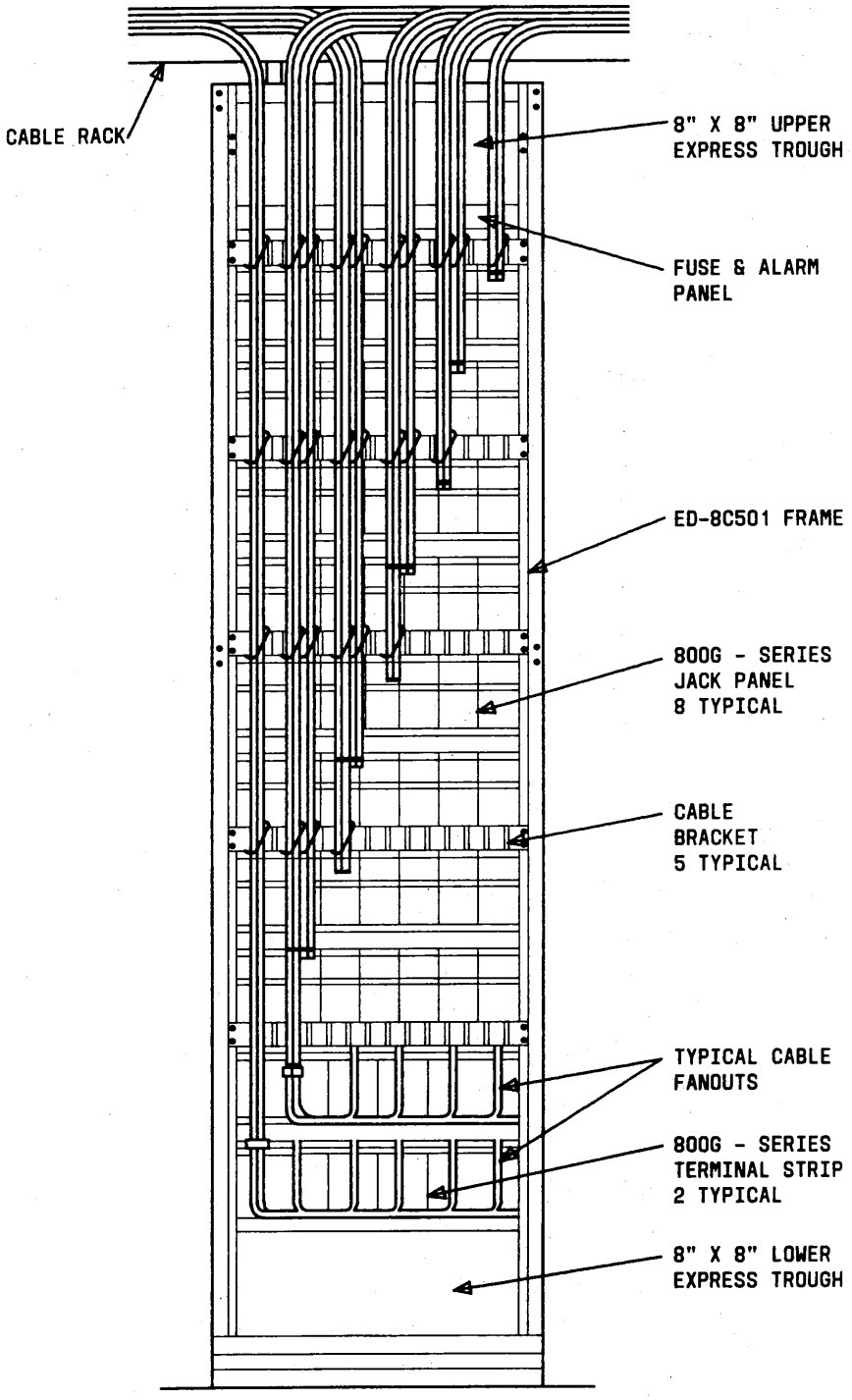


Fig. 4—ED-8C501 Cabling Frame (Commonly Called a 501 Frame)

"fountain" style of cabling (Fig. 5) for underfloor cables. This eliminates the need for spacers between bays, and allows a much higher cable termination density than other cabling schemes. The cables are terminated on the wire-wrap pins of the cabling terminal field of the 800 series connecting block (Figure 3). Also, as shown on Fig. 6, a cabling slack loop is provided so that the 800 series connecting blocks can be snapped out and cabled or replaced from the front.

2.17 Due to the snap-out feature of the 800 series connecting blocks, all cable connections can be made from the front of the bay. This makes the 800 series DSX ideal for small central office or loop applications, where access to the rear of the bays can be limited.

CROSS-CONNECT WIRE

2.18 Dual-insulated (IPVC over expanded polyethylene), 24 gauge wire is recommended for all cross-connects. Y2-type wire is available in 5-conductor coils or spools. DP3 wire is used wherever single, double, triple, or quad wire is required.

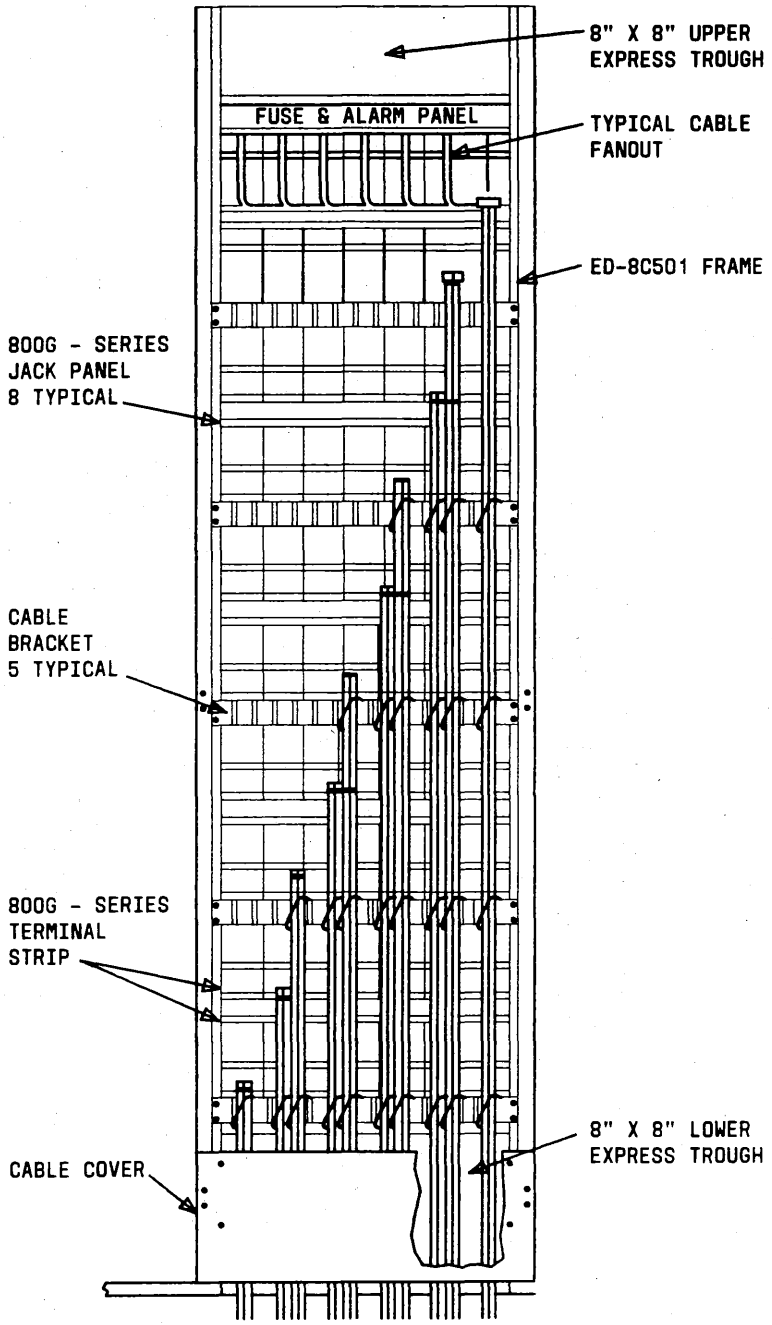


Fig. 5—Typical Bay for Triple Lineup Complexes Under Floor Cabling (Bays 1 - 3 of Each 4 Bays)

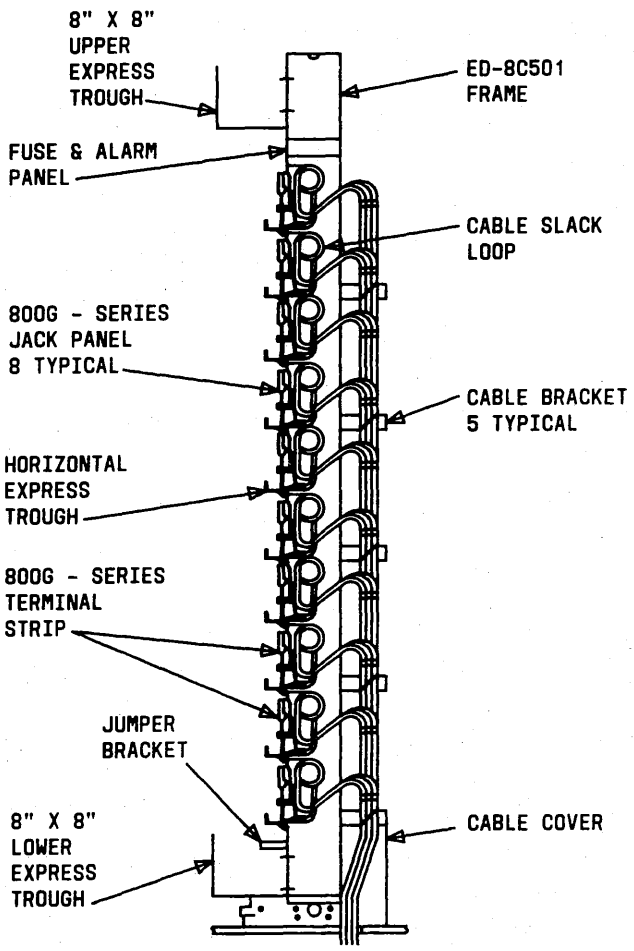


Fig. 6—Side View of Bay Showing Cabling Slack Loops

3. SYSTEM CONFIGURATIONS

TOTAL SYSTEMS CONCEPT

3.01 The 800 series DSX blocks, shelves, and bays have been designed to provide for very small through very large DSX installations up to 38,000 circuit size. Table A lists six sizes for DSX frame systems, based on the number of terminations required. A termination consists of two copper pairs, one pair for transmit, the other pair for receive, cabled to the DSX. A complete circuit on the DSX consists of two terminations and the associated jumper wires connecting them.

3.02 Except for small offices, it is often convenient to arrange DSX bays in groups of four. One such 4-bay complement is shown in Fig. 7. The ED-6C152-30 framework ED groups associated with the 800 series DSX are arranged into 15 groups. All 800 series apparatus is designed to fit on these framework groups.

SMALL APPLICATIONS

3.03 Although extensive coverage for very small applications will not be provided within this practice, it should be noted that the 800 series DSX apparatus is suitable for small size applications such as one requiring up to 80 terminations (one panel). The unique snap-in compact design of the 800A type block makes it ideal for use in equipment cabinets for loop transmission applications where space is limited. In addition, the cabling and apparatus are compatible with the back-to-the-wall DSX installation for small central offices or mini-huts and CEVs in the loop plant.

LARGE APPLICATIONS

3.04 As shown in Table A, the 800 series DSX can be installed in a modular growable manner up to a full 3-lineup, 69-bay arrangement (approximately 38,000 circuits). No cross-connect wire congestion should be encountered for DSX installations of up to 38,000 circuit terminations as the horizontal, vertical, and express jumper troughs are designed for the increased jumper capacity. In addition, tie-pair blocks and plans for tie-pair cabling are available to provide a nonblocking DSX network. Applications larger than 38,000 terminations can be achieved by using active (repeatered) ties.

CROSS-AISLE TIE CIRCUITS

3.05 Multiple lineup DSX Frames require cross-aisle tie circuits to allow cross-connections between termination circuits located on different lineups. Cross-aisle tie circuits consist of 5-wire cabling between tie circuit panels located on the two lineups. A cross-connect between termination circuits located on the two lineups is accomplished by cross-connecting (A) between one of the termination circuits and an available cross-aisle tie circuit located on the same lineup, and (B) between the other end of the tie circuit and the termination circuit located on the second lineup. The method of cross-connecting between either termination circuit and the tie circuit is identical for each end — the OUT leads of the terminating circuit should be cross-connected to the T1 and R1 leads of the tie circuit and the IN leads should be cross-connected to the T2 and R2 leads. The cabling of the tie circuit is arranged so that the OUT pins of one terminating circuit are properly connected to the IN pins of the other terminating circuit.

TABLE A

DSX FRAME SYSTEM SIZES

MAXIMUM TERM.	BAYS	LINEUPS	TIE PAIRS PANELS/BAY	EXPRESS TROUGH SIZE
800	1	1	0	none
3000	4	1	0	small
8400	12	1	0	small
15000	23	1	1	large
28000	46	2	1	large
38000	69	3	2	large

BAY 1	BAY 2	BAY 3	BAY 4
EXPRESS TROUGH	EXPRESS TROUGH	EXPRESS TROUGH	EXPRESS TROUGH
F/A PANEL	F/A PANEL	F/A PANEL	F/A PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	INTRA OFFICE REPEATER
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	ORSS BRIDGING REPEATER
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES TERMINAL STRIP
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	INTER-BAY PATCH MISC. PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	660 COMM. PANEL WRITING SHELF
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL
800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL	800G - SERIES JACK PANEL
EXPRESS TROUGH	EXPRESS TROUGH	EXPRESS TROUGH	EXPRESS TROUGH
KICK RAIL	KICK RAIL	KICK RAIL	KICK RAIL

Fig. 7—Typical 800 DSX 4-Bay Complement

3.06 Tie circuit panel assemblies are available to terminate up to 300 circuits, either 5 wires or 4 wires each. The 5-wire tie circuits are used to interconnect different DSX lineups as described above, including to the two directions of transmission and the tracing lamp lead. The 4-wire tie circuits are typically used to interconnect termination circuits between different DSX frame complexes, where tracing lamps are not needed. A typical application is for digital access lines between a DSX located on telephone company premises and another DSX belonging to an inter-LATA carrier (e.g. AT&T-Communications).

3.07 The 800 series DSX uses a tie circuit layout strategy that provides adequate capacity for growth of the DSX frames to an ultimate size of 38,000 digital circuit terminations. For triple-lineup 800 series DSXs, two panel positions in each bay should be reserved for tie circuits. This provides a maximum of 600 tie circuits in each bay, which is sufficient to randomly cross-connect all circuits on the 800 series DSX without congestion. For double lineup DSXs, one panel position per bay should be reserved. For single lineup DSXs, no cross-aisle tie circuits are required, and so no panel positions need be reserved

for tie circuits. See ED-6C150-10 for a complete description of the tie circuit layout strategy.

4. FUNCTIONAL DESCRIPTION

4.01 Figure 8 shows some of the equipment types that may connect to a DSX-1 or DSX-1C. Each separate equipment type will usually connect to a separate DSX panel or group of panels.

4.02 The wiring schematic for the standard 800 series connecting block is shown in Figure 9. Cabling pins, labeled T&R IN and T&R OUT are located on the rear of the block for terminating leads from the digital equipment.

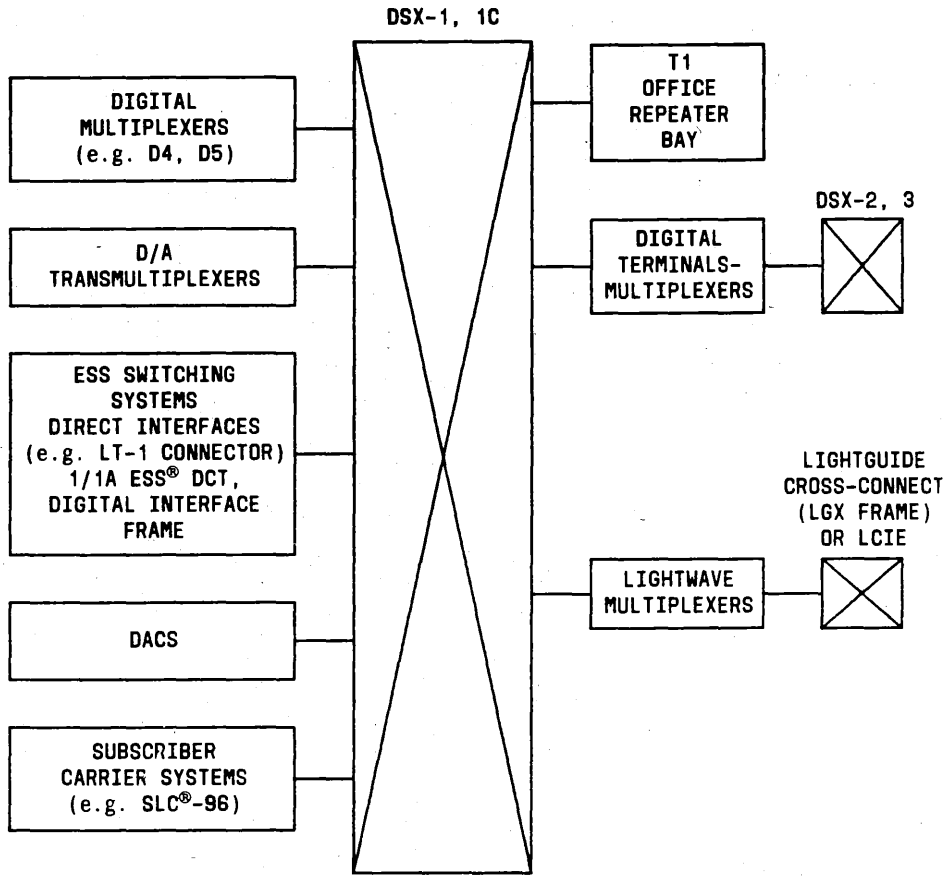


Fig. 8—DSX-1/1C Digital Terminations

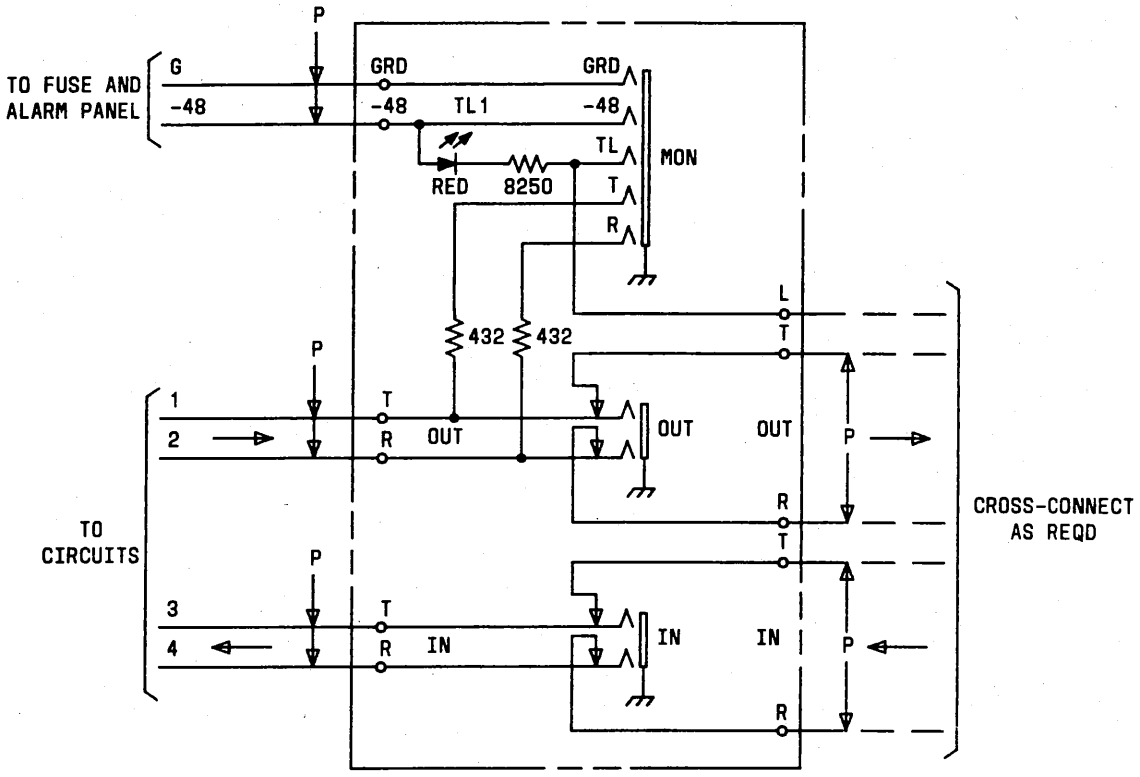


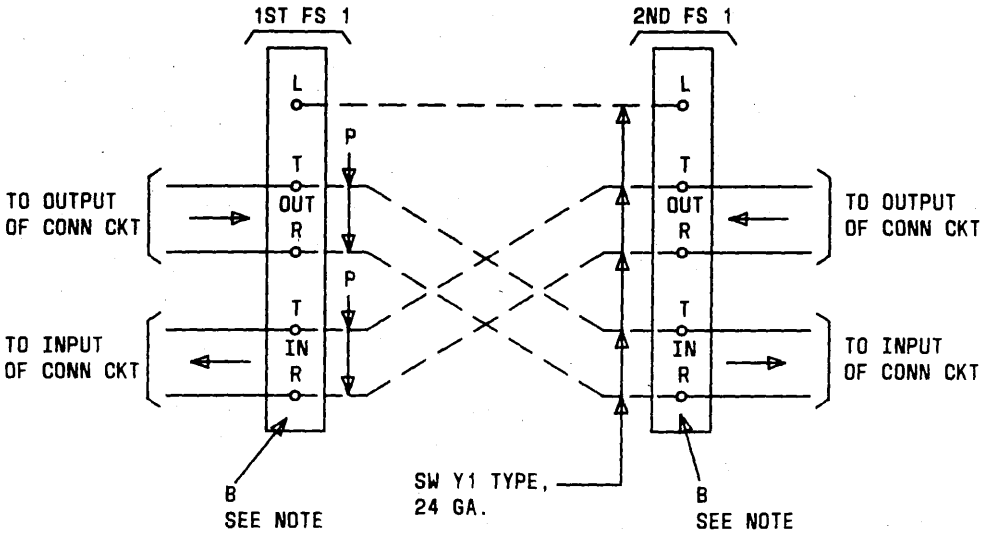
Fig. 9—800-Series DSX Standard Jack Circuit Schematic

4.03 Cross-connect pins, labeled T&R IN, T&R OUT, and L, are located on the front for connecting one DSX termination circuit to another. As shown in Figure 10, a typical cross-connection involves wiring the IN and OUT cross-connect pins of one terminating circuit to the OUT and IN pins, respectively, of another terminating circuit. The L pins are also cross-connected to provide a common ground path between the TLs of both terminating circuits.

4.04 The patching jacks, labeled IN, OUT and MON, are located on the front of the block. The IN and OUT jacks disconnect the cross-connection when a plug is inserted into the jack. The patch cord is then electrically connected to the equipment that is terminated on the cabling pins of the circuit. This feature allows two pieces of equipment to be connected together or disconnected quickly by using patch cords. Dummy or termination plugs may also be used to disconnect equipment.

4.05 The MON jack is electrically connected to the OUT jack through isolating resistors. The resistors prevent a patch cord in the MON jack from unduly affecting the signal on the OUT jack. Therefore, in-service checks can be made by testing the signal at the MON jacks. Because of the resistors, the signal at the MON jack is 20 dB below the signal level at the OUT jack for DS1/1C.

4.06 The MON jack is designed to connect ground to the TL when a patch cord is inserted. When one TL lights, the TL on the other circuit cross-connected to the first also lights. This feature provides a method for quickly locating connected circuits.



NOTE:
CROSS-CONNECT DIAGRAMS ARE DRAWN USING THE TERMINAL STRIP CONVENTIONS FOR DISTRIBUTING FRAMES: THE SYMBOL 'B' DESIGNATES THE TERMINAL NEAREST THE FANNING STRIP. ADJACENT COLUMNS OF TERMINALS THAT ARE PERPENDICULAR TO THE FANNING STRIP ARE INDICATED BY A LINE DESIGNATED BY THE SYMBOL 'E', WITH THE LEFT COLUMN OF TERMINALS DESIGNATED BY THE SYMBOL 'K'

Fig. 10—Typical Interconnection of Lineups With Cross-Aisle Terminal Strip Assembly

4.07 Use only 800 series patch cords and plugs. These are the only plugs that work properly with the 800 series DSX. Adapter cords are available to patch the 800 series DSX to standard 310-type or bantam jack sets.

4.08 Patch cords should normally be used with bridging repeaters, and should only be used as temporary connections. Patching with bridging repeaters is described in Practice 365-301-103.

Caution: Patching in-service lines directly from an OUT jack of one set to an IN jack of another set can cause service outages unless it is done precisely as in the transition procedure.

4.09 Patching jacks and plugs are used in the following applications:

Restoration— A working system connected to a failed transmission path (line) may be bridged to an ML (maintenance line).

Rerouting— A working system may be bridged to a new transmission path while the permanent connections are changed at the back of the panels.

Looping— With one patch cord, connect the IN jack to the OUT jack. This causes the connected system to send to itself. It is used for loop-back testing when new equipment is installed.

Transition— Working circuits can be moved from existing low density jack panels to the 800 Series panels to create more terminating capacity in a DSX lineup.

4.10 Although patching will cause digital errors and reframing, the disturbance is usually short enough, when using bridging repeaters, to avoid loss of customer service by dropping calls. Whenever patch cords are used as temporary cross-connections, the length of the patch cords must not exceed the length specified on SD-97807-01 for the permanent cross-connections.

4.11 For large scale cutovers, such as the 4 ESS* switch, preplanned routing is recommended. Then alternate circuit paths are patched in parallel with the existing hard-wired ones. The existing cross-connections are then removed and new wire-wrapped cross-connections are installed. At cutover, the patch cords are removed and service is transferred to the new circuits. Pretesting circuits prior to cutover is recommended.

* Trademark of AT&T

JUMPER PLACEMENT PROCEDURE

AMOUNT OF SLACK

4.12 To assure that installed jumpers can be traced and future jumpers installed properly, approximately 8 to 10 inches of slack should be left in all jumpers. Slack must be dressed back from both terminations through the fanning strips, horizontal wiring shelves, and into the vertical troughs. A convenient method of measuring 8 to 10 inches of slack is to measure up, or down, one and a half panels above or below the panel where the termination is being made.

SHORT JUMPERS

4.13 A short jumper is defined as a cross-connection between any two panels that are mounted in either the same or adjacent bays. Short jumpers are placed into the horizontal wiring shelves and the vertical troughs, but should never be placed into either the upper or lower express troughs.

4.14 The procedure for running a short jumper is as follows:

(a) Connect the jumper to the cross-connect pins, using proper wire-wrap tools and procedures.

(b) Dress the jumper wires into the fanning strip of the connecting block.

(c) Dress the jumper wires into the horizontal wiring shelf under Run the jumper on the horizontal shelf, under the wire retainers.

(d) Run the jumper up (or down, as required) the vertical trough until reaching the proper horizontal shelf. Place the jumper behind the vertical trough retainer brackets.

(e) Run the jumper on the horizontal shelf, under the wire retainers.

(f) Measure 8 to 10 inches of slack and cut the jumper wire.

(g) Connect the wires to the cross-connect pins and then dress the jumper back into the fanning strip of the connecting block.

(h) Dress the slack back into the vertical trough.

LONG JUMPERS

4.15 A long jumper is defined as a cross-connection between any two panels that are not mounted in either the same or adjacent bays. Long jumpers use the upper and lower express troughs as well as the vertical troughs and horizontal wiring shelves.

4.16 The procedure for running a long jumper is as follows:

(a) Connect the jumper to the cross-connect pins, using proper wire-wrap tools and procedures.

(b) Dress the jumper wires into the fanning strip of the connecting block.

(c) Dress the jumper wires into the horizontal wiring shelf under the plastic wire retainers. Push the jumper towards the rear of the shelf.

(d) If the jumper originates on panels 1 through 5 (i.e., the bottom five panels), run the jumper downward in the vertical trough to the lower express trough. If the jumper originates on panels 6 through 10, run the jumper upward in the vertical trough to the upper express trough. Dress the jumper behind the vertical trough retainer brackets.

(e) Run the jumper in the express trough to the vertical trough which is immediately prior to the bay where the final termination will be located.

(f) Run the jumper up (or down) the vertical trough until reaching the proper horizontal shelf. Dress the jumper behind the vertical trough retainer brackets.

(g) Run the jumper on the horizontal shelf, under the wire retainers.

(h) Measure 8 to 10 inches of slack and cut the jumper wire.

(i) Connect the wires to the cross-connect pins and then dress the jumper back into the fanning strip of the connecting block.

5. ORDERING INFORMATION

5.01 Tables B through J summarize the orderable items associated with the 800 series DSX. This practice does not preclude using the apparatus, frameworks, and equipment listed in the tables for purposes other than an 800 series DSX, nor does it preclude using other apparatus, frameworks, or equipment in conjunction with an 800 series DSX. Complete descriptions of the framework groups, connecting blocks, plugs and labels are also contained in ED-6C150-10.

6. ASSOCIATED EQUIPMENT

BRIDGING REPEATERS

6.01 Each DSX bay should have at least one assembly containing two bridging repeaters. The T1 or T1C (also used for T1D) bridging repeaters are plugged into an ED-2C497-30 DS1/DS1C bridging repeater panel assembly. This assembly may be mounted at the bottom of the DSX bay or immediately above the topmost jack panel. The DS1/DS1C bridging repeater panel is described in Practice 365-301-103.

6.02 A bridging repeater accepts a low level signal and transmits it at the DSX level. This allows tapping into a signal through isolation resistors in special jacks or through MON jacks so the original signal is unaffected by the tap. Bridging repeaters are used for patching and for special jacks such as the or MTCE LINE and the BRDG FOR NET CLK SYNC (bridge for network clock synchronizing) jack. Bridging repeaters may be mounted in the DSX bays, miscellaneously near the DSX bays, or in the ORBs.

TABLE B

ED6C152-30 FRAMEWORK GROUPS

CODE	COMCODE	DESCRIPTION
Group 1	601004559	Hardward kit* with small troughs and frame
Group 2	601004526	Hardward kit* with small troughs, no frame
Group 3	601004539	Hardward kit* with large troughs and frame
Group 4	601004542	Hardward kit* with large troughs, no frame
Group 5	601057565	2″ high adapter for 17.5″ wide eqp.
Group 6	601057573	2″ high vertical trough members
Group 7	601057581	4″ high adapter for 17.5″ wide eqp.
Group 8	601057599	4″ high vertical trough members
Group 9	601057607	6″ high adapter for 17.5″ wide eqp.
Group 10	601057615	6″ high vertical trough members
Group 11	601057623	Cable bracket
Group 12	601057631	End guard, color: soft, blue
Group 13	601057649	End guard, color: blue/gray
Group 14	601057656	End guard, color: gray
Group 15	—	transition kit

* The hardward kit includes cable brackets, transition pins, frame labels, cable cover, ground terminal strips, and either two 30 square inch express troughs or two 64 square inch express troughs. Groups 1 and 2 are intended for frame lineups up to 12 bays long. Groups 3 and 4 are intended for frame lineups of 12 bays or more.

TABLE C

800G-SERIES CONNECTING BLOCKS

CODE	COMCODE	DESCRIPTION
800G1-A1	104198288	Standard 80 termination circuit jack panel
800G1-B1	104198296	75 ckt panel for ORBs, ckt 1 for MTCE
800G1-B2	104198304	75 ckt panel for ORBs, ckt 25 for MTCE
800G1-C1	104198312	Mounting Bracket*
800G1-E1	104198338	300 circuit tie panel, 5-wire
800G1-E2	104198346	300 circuit tie panel, 4-wire
800G1-F1	104374376	QRSS jack and fanout panel†

* For miscellaneously mounting up to eight 800A-type connecting blocks or six 800B-type connecting blocks.

† Includes 40 QRSS jack circuits plus 90 QRSS monitor level cross-connect circuits

TABLE D

800H-SERIES CONNECTING BLOCKS*

CODE	COMCODE	DESCRIPTION
800H1-C1	104376819	Mounting bracket†
800H1-E1	104367149	200 ckt tie panel, 5-wire
800H1-E2	104367156	200 ckt tie panel, 4-wire

* Intended for use on bays equipped with existing "old style" DSX equipment (i.e., ED-1C544-30 or ED-2C544-30 panels).

† For miscellaneously mouting up to six 800A-type connecting blocks or four 800B-type connecting blocks.

TABLE E

800A-SERIES CONNECTING BLOCKS

CODE	COMCODE	DESCRIPTION
800A1-A1	104198205	Standard 10 circuit block
800A1-C1	104198213	Block with 5 Aux. Maintenance Lines (AML)
800A1-F1	104373576	QRSS Jack Block — 10 circuits.

TABLE F

800B-SERIES CONNECTING BLOCKS

CODE	COMCODE	DESCRIPTION
800B1-A1	104198247	50 circuit tie block, 5-wire
800B1-A2	104198254	50 circuit tie block, 4-wire
800B1-B1	104198262	51 circuit resistor block, 432-ohm
800B1-B2	104198270	51 circuit resistor block, 1210-ohm
800B1-B3	104373865	30 circuit fanout resistor block

TABLE G

800A-SERIES PLUG

CODE	COMCODE	DESCRIPTION
800A/1	104198395	1′ 800-Series Jack Cord
800A/3	104194733	3′ 800-Series Jack Cord
800A/6	104194403	6′ 800-Series Jack Cord
800A/12	104194725	12′ 800-Series Jack Cord
800B/0	104198411	800-Series terminating plug (100-ohm resistor)
800E/1	104366885	1′ Adapter, male 800 to female 310
800F/1	104366893	1′ Adapter, male 800 to female Bantam
800G/2	104377502	2′ Adapter, male 800 to male 310
800G/6	104366919	6′ Adapter, male 800 to male 310
800G/12	104366901	12′ Adapter, male 800 to male 310
800H/2	104377510	2′ Adapter, male 800 to male Bantam
800H/6	104366935	6′ Adapter, male 800 to male Bantam
800H/12	104366927	12′ Adapter, male 800 to male Bantam

TABLE H

LABELS

CODE	COMCODE	DESCRIPTION
8A1T	104201801	Blank for vertical jumper troughs
8A1H	104203997	Blank for horizontal jumper trough
8B1H	104200456	ORB with circuit 1 for maintenance
8B2H	104200472	ORB with circuit 25 for maintenance
8C1H	104200498	4ESS Digroup Terminal
8C2H	104200506	160 circuit 4ESS DIF
8G1H	104208202	300 circuit tie terminations, 4- or 5-wire
8L1H	104200514	D4 Channel Bank in 11′6″ bay
8L2H	104200522	D4 Channel Bank in 7′0″ bay
8L3H	104200530	D4 Channel Bank, 11′6″ conv. bay
8L4H	104200548	D4 Channel Bank, DS1C appearance
8L5H	104200555	D4 Channel Bank in 7′0″ conv. bay
8M1H	104200563	M1C Multiplexer, DS1 appearance
8M2H	104200571	M1C Multiplexer, DS1C appearance
8M3H	104200589	M12 Multiplexer, DS1 appearance
8M4H	104200597	M13 Multiplexer, DS1 appearance
8M5H	104200605	MX3 Multiplexer, DS1 appearance
8M6H	104200613	MX3 Multiplexer, DS1C appearance

TABLE I

REPLACEMENT PARTS

ORDERING COMCODE	REPLACEMENT PART REFERENCE	DESCRIPTION	QUANTITY
845641026	845373463	23″ wide shelf mounting bracket with screws	1
845641034	845373521	designation strip	2
845641042	845373539	jumper retainers on horizontal troughs	3
845641059	845375302	Right vertical jumper trough retainer with screws	1
845641067	845375161	Left vertical jumper trough retainer with screws	1
845641075	845274687	plastic cover to block jack positions	1
845641083	845373471	thirty square inch lower express trough with screws	1
845641091	845373489	thirty square inch upper express trough with screws	1
845641109	845373497	cable cover at bottom rear of bay with screws	1
845641117	845377282	express trough transition pins	2
845641125	814574174	grounding terminal strips with screws	3
845641133	845373588	64 sq. in. lower express trough with screws	1
845641141	845373570	64 sq. in. upper express trough with screws	1
845641158	845506878	Yellow LEDs with .40 inch lead	10
845641166	845506880	Green LEDs with .40 inch lead	10
845641174	845506872	Red LEDs with .40 inch lead	10
845641182	405061268	Yellow LEDs with 1.1 inch lead	10
845641190	405061292	Green LEDs with 1.1 inch lead	10
845641208	405035981	Red LEDs with 1.1 inch lead	10

TABLE J

JUMPER WIRE

CODE	COMCODE	DESCRIPTION
Y2-5C/24 S1000	105065569	5-wire, 5000 ft — spool
Y2-5C/24 C1350	103361200	5-wire, 1350 ft — coil — 4 per box
Y2-5C/24 C3000	105065585	5-wire, 3000 ft — coil — 3 per box
DP3-2C/24 S1350	844514125	2-wire

SPECIAL JACKS

6.03 Some 800 series DSX panels used for normal service paths have provisions for one or two special termination circuits. These special circuits include Maintenance Lines, Auxiliary Maintenance Lines, Bridge for Network Clock Synchronization, and QRSS fanout.

MAINTENANCE LINE

6.04 The MTCE Maintenance Line circuits are connected to maintenance lines through the bridging repeaters at the ORBs. These jacks appear at circuit 1 or circuit 25 of the ORB terminations on the 80G1-B1 or 800G1-B2 connecting block panel assemblies, respectively. When the maintenance line

ends in an office, one such termination circuit is used and its IN cross-connect pins should be connected to a MON level QRSS signal. When the maintenance line continues on to the next office, two Maintenance Line termination circuits are cross-connected to complete the signal path between ORBs. A schematic of a typical maintenance line circuit is shown in Fig. 11. When additional maintenance lines are needed, AMLs (auxiliary maintenance lines) are used. (See paragraph 6.07.)

BRIDGE FOR NETWORK CLOCK SYNCHRONIZATION

6.05 The Bridge For Network Clock Synchronization (BNCS) circuit connects to a reference DS1 or DS1C rate signal for timing synchronization. This type of synchronization is used for the 4 ESS switches, 5ESS* switches, and DACS (digital access and cross-connect systems). Not more than two

* Trademark of AT&T

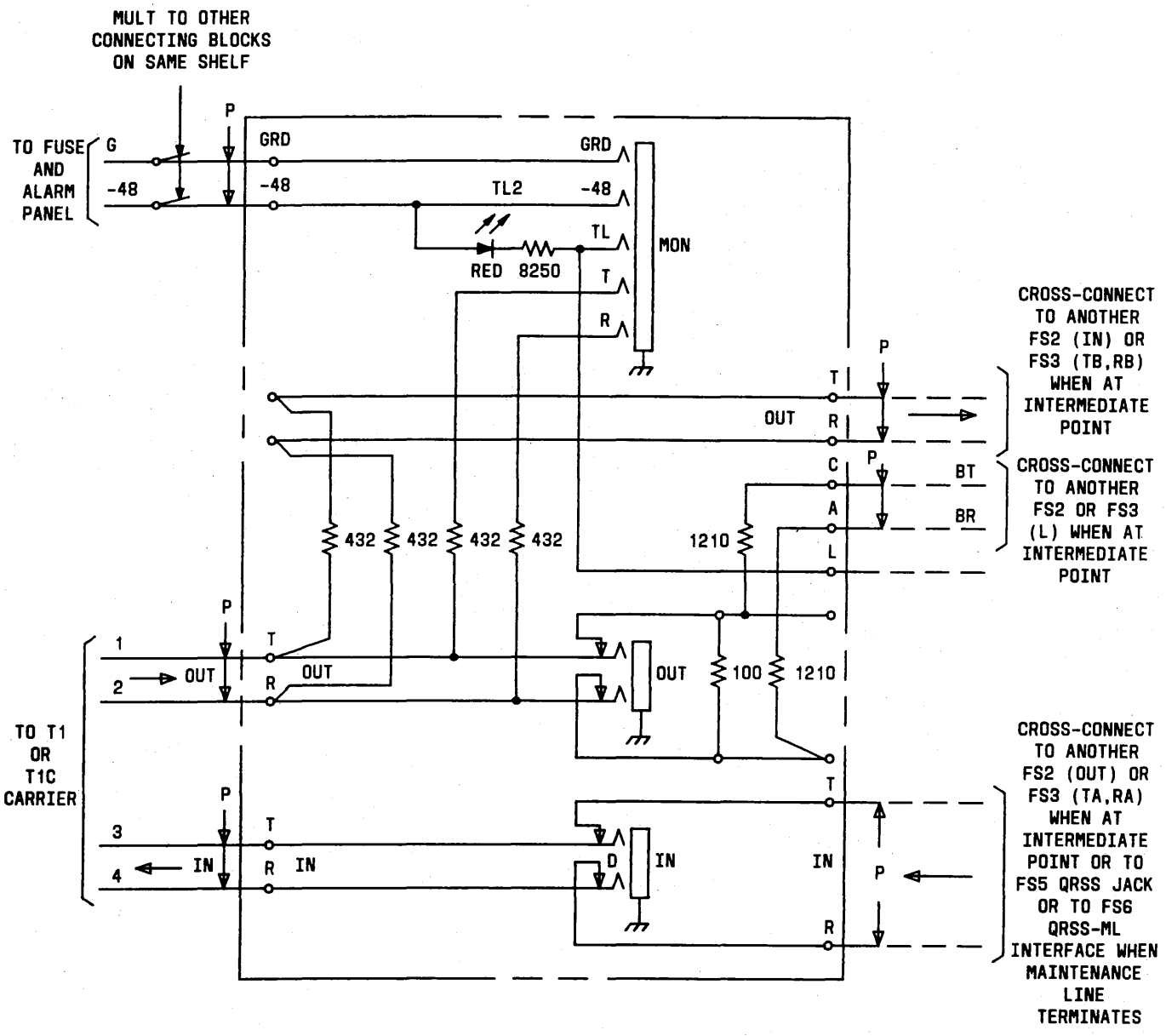


Fig. 11—ML (Maintenance Line) Jack Circuit Schematic

BNCS circuits should be used in an office for each of the above applications. The BNCS circuit is connected between the normal termination circuits (Fig. 8) as shown in Fig. 12.

QRSS

6.06 A J98710R, J98725AF, or J98725AK QRSS panel is mounted at the top of an ED-8C501 bay. Output jacks are located on a QRSS jack block, a fanout resistor block, a QRSS jack and fanout panel, a communications panel, or maintenance panels. The QRSS jack block provides 10 full-level and 10 monitor-level jack circuits, plus 10 monitor level cross-connect circuits. It requires 10 QRSS outputs. The fanout resistor block provides 30 monitor-level cross-connect circuits, and requires 3 QRSS outputs. The blocks may be mounted on a miscellaneous panel. Alternatively, the QRSS jack and fanout panel provides the equivalent of 4 QRSS jack blocks and 3

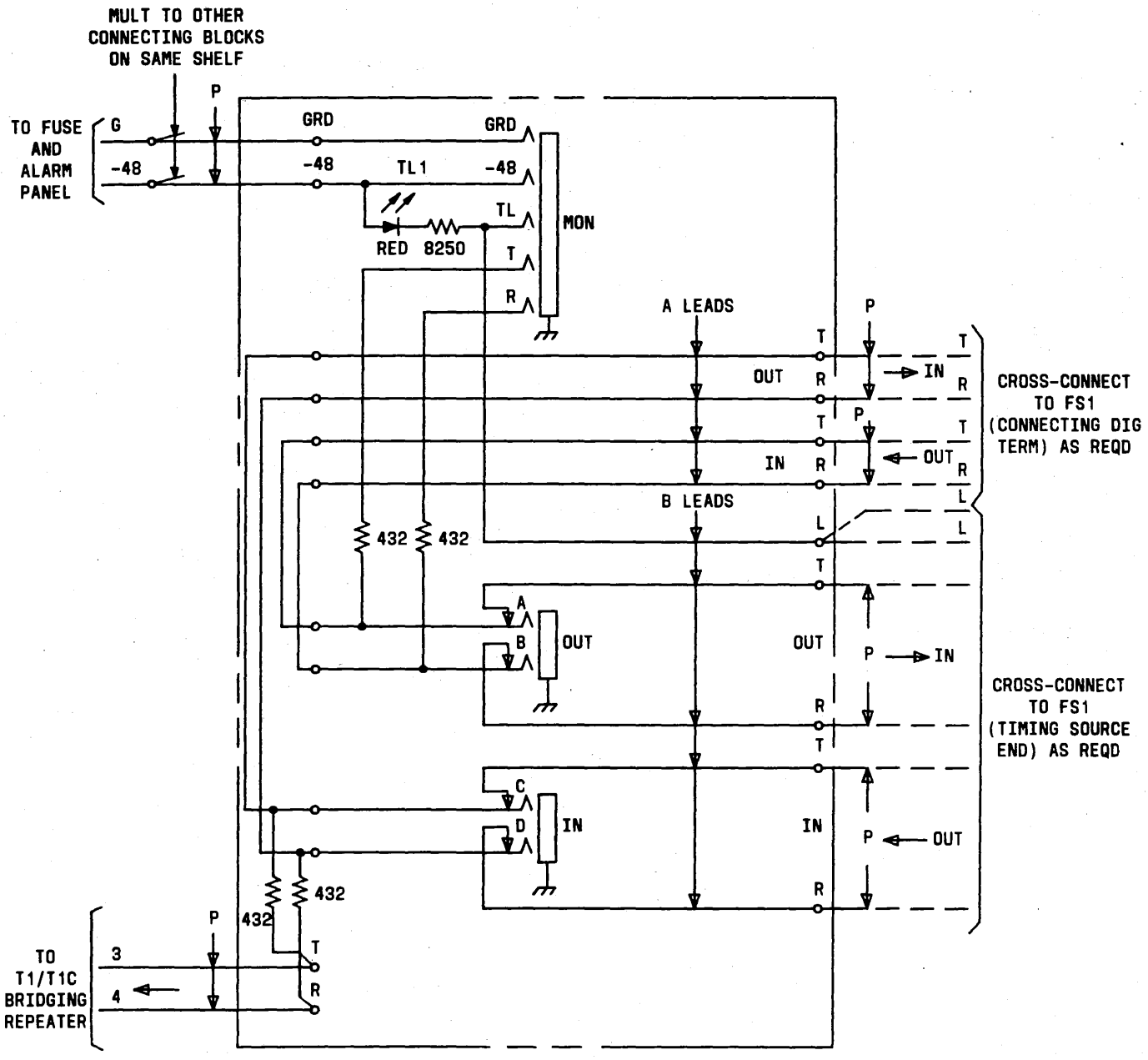


Fig. 12—Bridging Repeater Connection for NTWK CLK SYNC Circuit

fanout resistor blocks in one panel. It requires a total of 49 QRSS outputs.

AUXILIARY MAINTENANCE LINE (AML) PANEL

6.07 The auxiliary maintenance line connecting block terminates two AML circuits. These circuits provide a method for converting any transmission line not being used for service into a maintenance line.

6.08 The bridging repeater used with an AML circuit will be mounted in the DSX lineup or mounted miscellaneously. Figure 13 shows a typical schematic diagram of an AML circuit and how it connects on one side. The connection on the other side is IN to OUT and OUT to IN as in a normal maintenance line cross-connection. Signal plugs are installed in the IN and OUT jacks of the standard transmission set as a precaution against an unintentional interruption of the circuit.

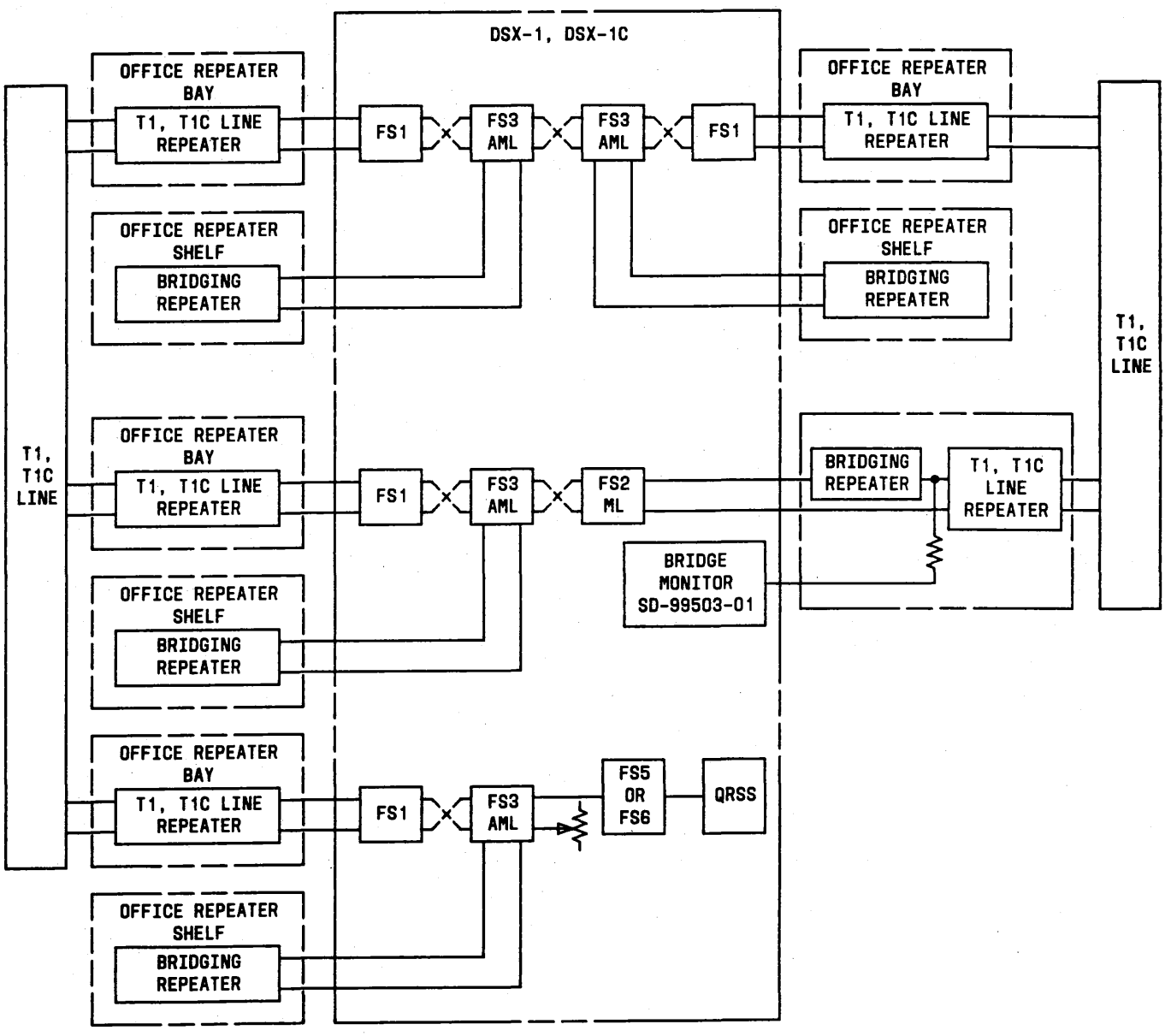


Fig. 13—Bridging Repeater Connection for Auxiliary Maintenance

MAINTENANCE PANELS

6.09 Maintenance panels, also called miscellaneous jack panels, have a variety of jack configurations. The 800 series DSX is compatible with the miscellaneous jack panels described in Practice 365-301-101.

INTERBAY PATCH PANEL

6.10 Interbay patch panels are used in DSX lineups to accommodate long patching distances. The 800 series DSX is compatible with the interbay patch panels described in Practice 365-301-101.

COMMUNICATIONS PANELS

6.11 The communications panel is an auxiliary panel for the appearance of various voice communication circuits for maintenance purposes. Where a DSX extends for several bays in a line, a communication panel should appear in every fourth bay. The 800 series DSX is compatible with the communication panels described in Practice 365-301-101.

WRITING SHELF

6.12 A writing shelf may be installed in every fourth bay of a DSX lineup.

7. REFERENCES

7.01 Further information on the 800 series DSX is contained in the following documents:

- ED-6C150-10, "800 series DSX — Planning and Engineering."
- Floor Plan Data Sheets FPD — 801-500-164-1 through 801-500-164-37
- SD-97807-10, "800 Series DSX Interconnection Circuits."

8. ISSUING ORGANIZATION

Published by
The AT&T Documentation Management Organization.