

**T1C CARRIER  
SYSTEM REQUIREMENTS  
AND  
REPEATER BAY EQUIPMENT  
EQUIPMENT DESIGN REQUIREMENTS  
COMMON SYSTEMS**

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**NOTICE**

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## 1. GENERAL

### SCOPE

**1.01** This specification, together with the supplementary information listed herein, describes the equipment design requirements for the engineering, manufacture, and installation of the T1C Carrier System. It includes the basic design features, the equipment composition (including options), and the interaction of the equipment components in system operation.

**1.02** Whenever this section is reissued, the reason for reissue will be specified in this paragraph.

### DESCRIPTION

**1.03** The T1C system is a baseband digital carrier transmission system using only unidirectional line repeaters. It uses two exchange grade cable pairs: one pair for each direction of transmission of 48 pulse code modulated (PCM) voice or data channels. The M1C multiplexer (see Section 365-604-100) provides the interface between DS-1 and DS-1C signals as shown in Fig. 1. The M1C combines two DS-1 signals at 1.544 Mb/s, adds appropriate framing information, and performs required pulse coding for the resulting 3.152 Mb/s DS-1C signal. This bipolar signal is then applied via a DSX-1C (see Section 365-301-101), or equivalent, cross-connect panel to an office repeater bay (ORB). The ORB and the repeatered line equipment provide facilities for transmitting and receiving the bipolar 3.152 Mb/s signals of the M1C. At each end of the digital line, an ORB in conjunction with an M1C is used as a terminal.

#### A. Modes of Operation

**1.04** The T1C system can be arranged for any of the following three modes of cable-repeater operation:

Mode 1—One-cable operation

Mode 2—Two-cable operation

Mode 3—Screened-cable operation.

**1.05** In mode 1 cable operation, both directions of transmission are carried in a one-cable sheath.

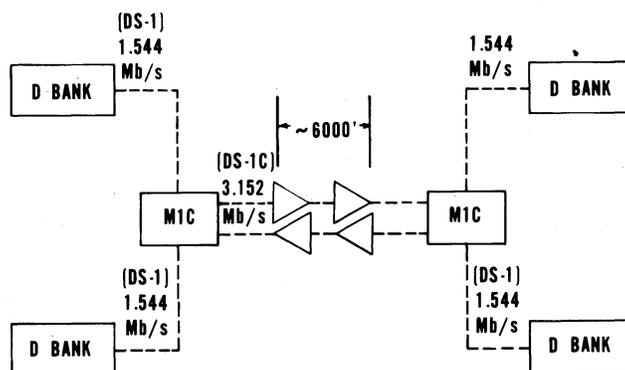


Fig. 1—Basic T1C/M1C System

Mode 2 uses two cables; each direction of transmission is carried in a separate cable sheath. Mode 3 operation, which uses screened cable, is interchangeable with 2-cable operation, but is recommended only when large cable (900 pairs or greater) is required. Screened cable has a shield that bisects the cable and adds significant isolation between the two halves. Because T1C repeaters are unidirectional, each apparatus case is equipped for only one direction (unidirectional) of transmission regardless of the mode of T1C cable operation. Side 1 and side 2 in a T1C line repeater are associated with two separate systems transmitting in the same direction. Therefore, the unidirectional repeaters require that T1C apparatus cases be used in pairs for complete 2-way transmission systems.

#### B. Repeatered Line

##### General

**1.06** The T1C system configurations and circuit designs are similar to those of the T1 system (see Section 365-200-100). T1C and T1 lines are compatible in the same cable sheath, but not in the same unit (binder group). See Section 855-351-110 for T1C engineering rules.

##### Cable Usage

**1.07** T1C has a nominal range of 50 miles and can operate on unitized, 22-gauge copper cable in a one-cable, a 2-cable, or a screened-cable mode. T1C is engineered in blocks of 50 unidirectional, repeatered lines for compatibility with unit type cable. Unit type cable is available in binder groups of 50 or 100 pairs per unit. There are two maintenance lines per 50-pair unit (four per 100-pair unit). Because the

order-wire, fault-locating, and gas pressure alarm pairs carry only low-frequency information, these pairs are taken from units carrying voice-frequency (VF) service. This permits units carrying T1C signals to be fully developed in one-cable operation and in 900-pair or larger 2-cable operation. In 2-cable operation of similar cross section or in screened-cable operation where no units are reserved for VF service, two other options are available. These options require either

- (a) the sacrifice of two units (one in each cable) of carrier for this low-frequency service, or
- (b) the use of VF suppression filters that permit such service in the same unit of special order, odd-count cable.

#### Apparatus Cases

**1.08** Two apparatus cases (479-type) per line repeater location are required for both one-cable and 2-cable operation because all T1C line repeaters are unidirectional and only one direction of transmission is permitted per case. These cases are usually located in manholes or on poles (see Section 640-527-107). Each apparatus case provides two cable stubs, which are spliced into the main cable. One stub is for low-level incoming signals, the other for high-level regenerated signals. Two stubs are necessary to ensure adequate crosstalk isolation between input and output signal levels.

**1.09** The 479-type apparatus case (Fig. 2) consists of a gastight galvanized cast iron assembly with two 54-pair cable stubs. The case has three housings (with removable covers) for accommodating 25 line repeaters. An AT-8816 E desiccant is recommended for all air-pressurized apparatus cases.

**1.10** The 479A1 apparatus case accommodates up to twenty-five 218-type or 248-type repeaters, and it is intended for use where electrical surge protection is not required. Two of the three case housings have ten compartments each for accommodating repeaters. The third housing accommodates five repeaters, a fault-locating filter, an order-wire circuit, a load coil case, and a blocking capacitor unit if one is required for the order-wire circuit. The FIL slot accommodates 1068-type fault-locating filters. The CAP and COIL slots accommodate 939C and D connectors. The COIL slot also accommodates a 184B1 voice load coil case. The 479A1 apparatus case comes equipped with two 30-foot or 40-foot lead sheath cable stubs.

**1.11** The 479B1 apparatus case accommodates up to twenty-five 219-type or 249-type repeaters, and it is intended for use where electrical surge protection is required. The 467-type electron tube is provided for surge protection. Two of the three case housings have ten compartments each for accommodating repeaters. The third housing accommodates five repeaters, a pressure contactor, a fault-locating filter, an order-wire circuit, a load coil case, and a blocking capacitor unit if one is required for the order-wire circuit. The PRES slot accommodates an AT-8782 R pressure contactor with a 253A adapter. The FIL slot accommodates 1068-type fault-locating filters. The CAP and COIL slots can directly accommodate 977C and D connectors. In a like manner, the COIL slot can also accommodate a 184B1 voice load coil case. The 479B1 apparatus case comes equipped with two 30-foot or 40-foot lead sheath cable stubs.

**1.12** The 479A2 apparatus case is the same as the 479A1 apparatus case except for the following items. The case is arranged to accommodate a pressure contactor. The PRES slot accommodates an AT-8782 R pressure contactor with a 245A adapter. The CAP and COIL slots can directly accommodate 977A and B connectors. The COIL slot also accommodates a 4269A network. With the addition of the 245A adapter, the CAP and COIL slots can accommodate 939A and B connectors. In a like manner, the COIL slot can also accommodate a 184A1 voice load coil case. The final item of difference between the A2 and A1 apparatus cases is that the A2 case has a simpler and lower-cost casting design.

**1.13** The 479B2 apparatus case is identical with the 479B1 apparatus case, except the B2 case has a simpler and lower-cost casting design.

**1.14** The 479C1 apparatus case is identical with the 479A2 apparatus case, except the C1 case is equipped with two 30-foot or 40-foot plastic sheath cable stubs.

**1.15** The 479D1 apparatus case is identical with the 479B2 apparatus case, except the D1 case is equipped with two 30-foot or 40-foot plastic sheath cable stubs.

#### Apparatus Case Plug-In Equipment

**1.16** Various units of plug-in equipment and their locations are shown in Fig. 2 through 5 and in Table A.

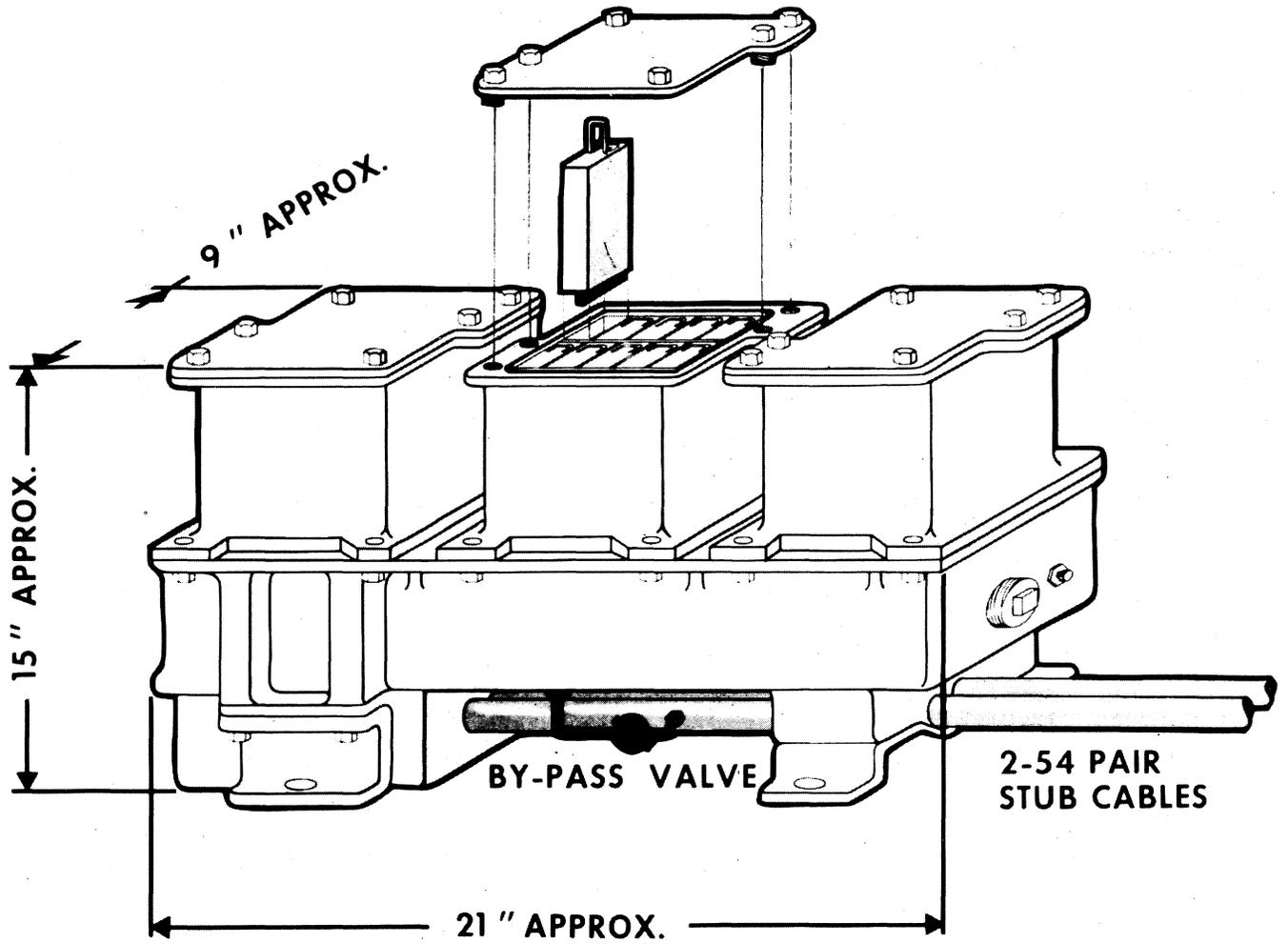


Fig. 2—Typical 479-Type Apparatus Case

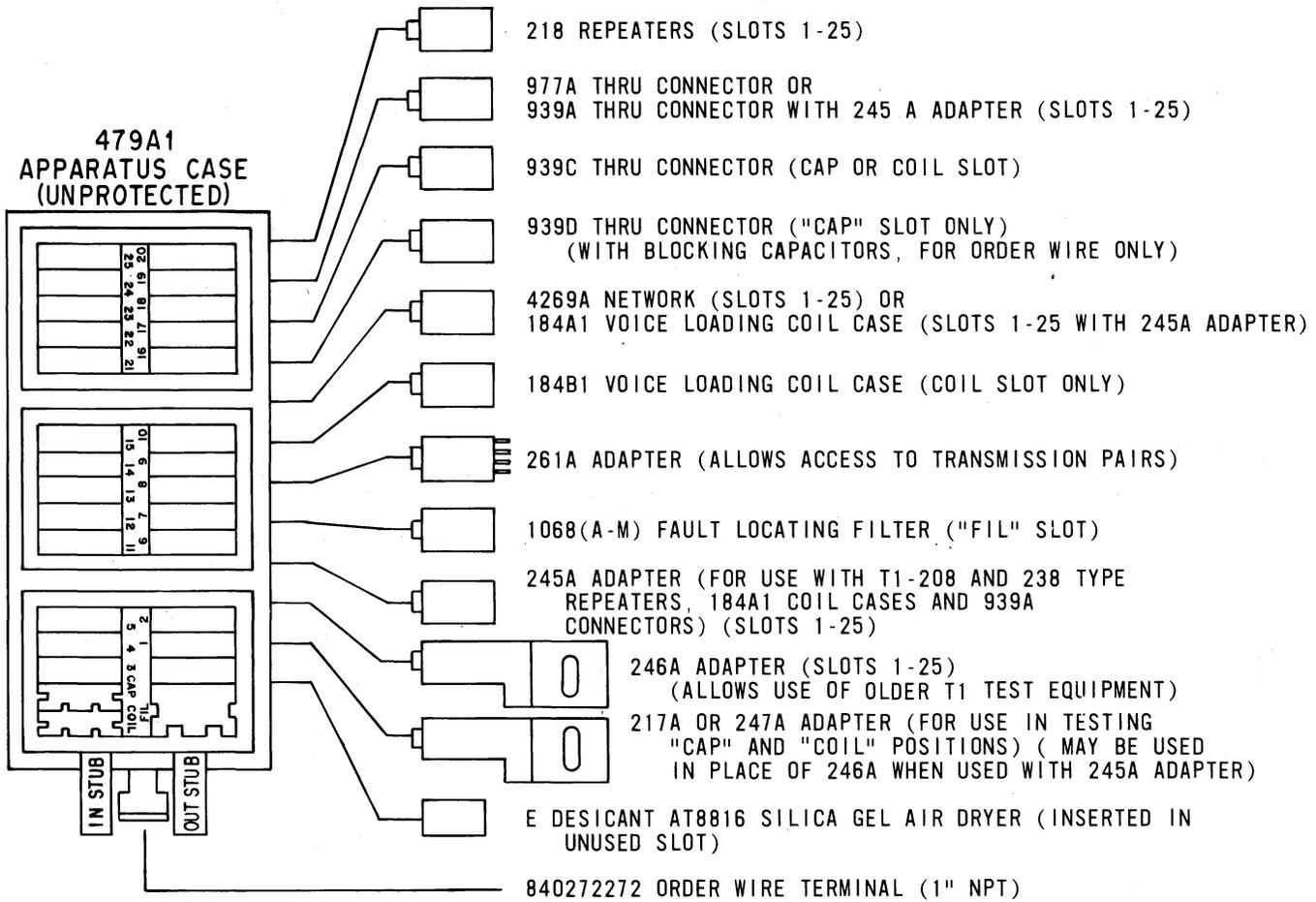


Fig. 3—479A1 Apparatus Case Plug-Ins

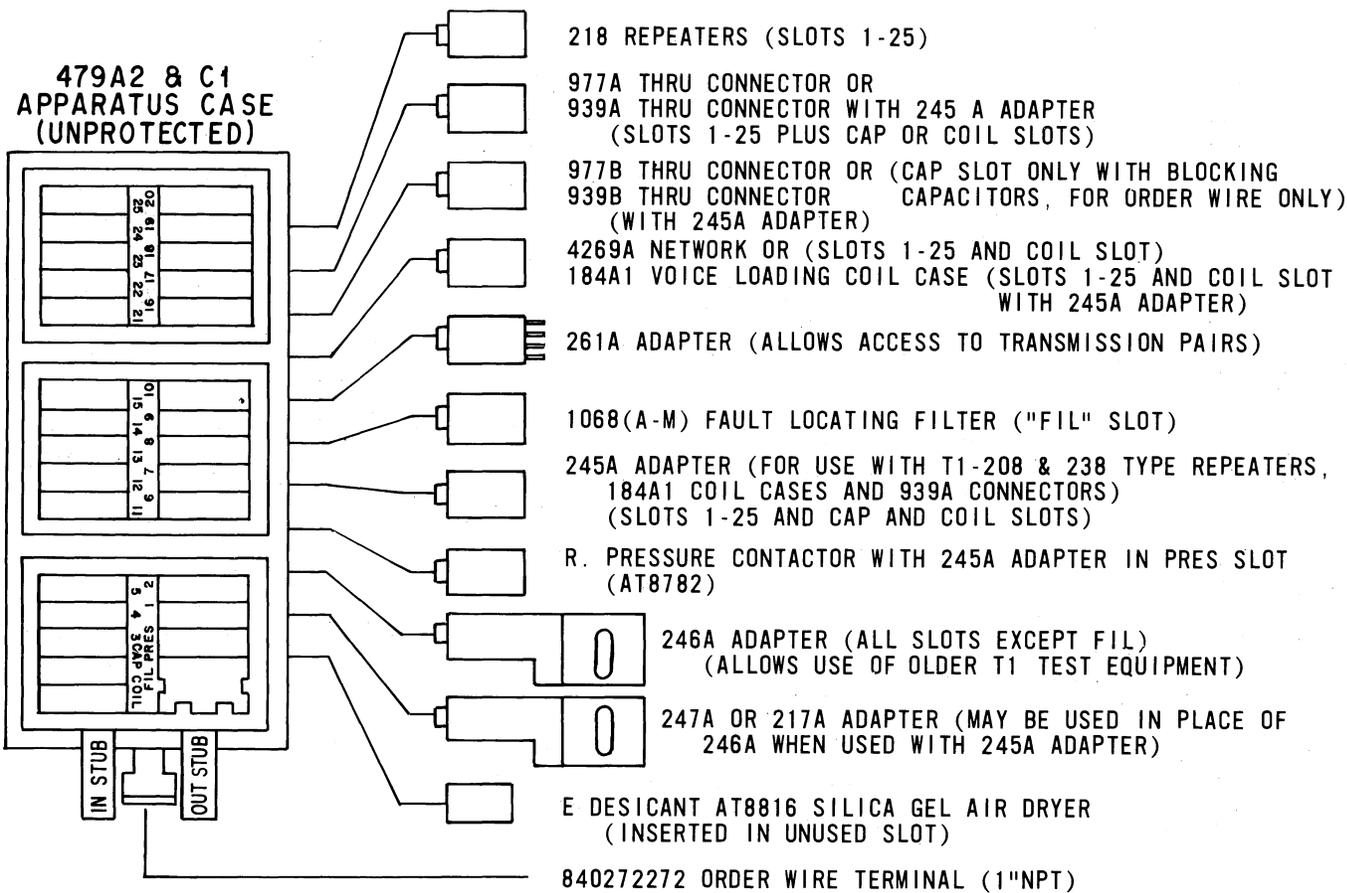


Fig. 4—479A2, C1 Apparatus Case Plug-Ins

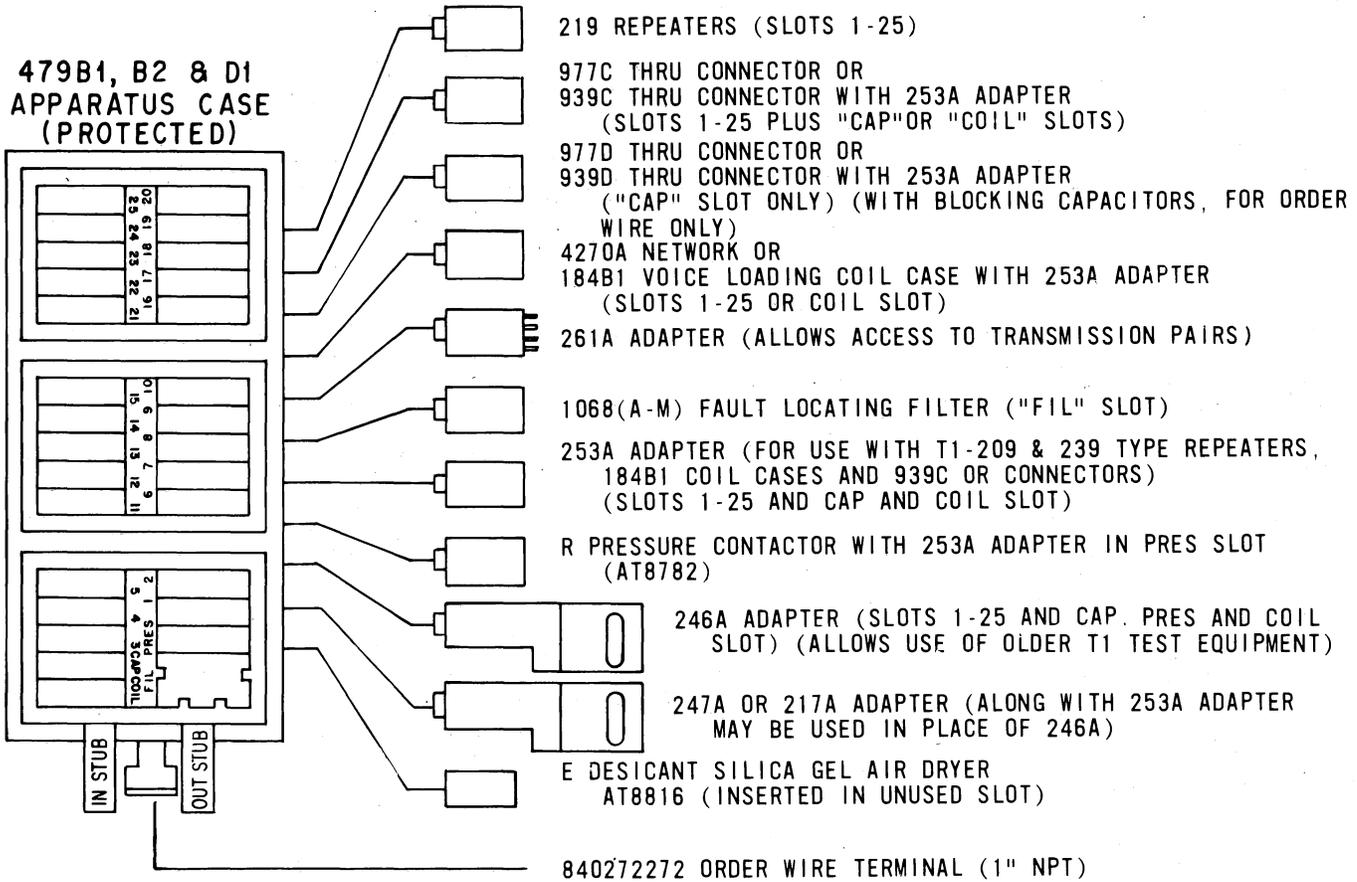


Fig. 5—479B1, B2, D1 Apparatus Case Plug-Ins

**TABLE A**  
**APPARATUS CASE PLUG-IN EQUIPMENT**

PLUG-IN CODE	USED IN APP CASE 479	USED IN SLOT	NOTES
Repeater 208-Type 209-Type 218-Type, 248-Type 219-Type, 249-Type	A1, A2, C1 B1, B2, D1 A1, A2, C1 B1, B2, D1	1-25 1-25 1-25 1-25	Use With 245A Adapter Use With 253A Adapter
Connector 939A 939B 939C 939D 977A 977B 977C 977D	A1 A2, C1 A2, C1 A1 B1, B2, D1 A1 B1, B2, D1 A1 A2, C1 A2, C1 B1, B2, D1 B1, B2, D1	1-25 1-25, CAP, COIL CAP CAP, COIL 1-25, CAP, COIL CAP CAP 1-25 1-25, CAP, COIL CAP 1-25, CAP, COIL CAP	Use With 245A Adapter Use With 245A Adapter Use With 245A Adapter Use With 253A Adapter Use With 253A Adapter
Coil Case 184A1 184B1	A1 A2, C1 A1 B1, B2, D1	1-25 1-25, COIL COIL COIL	Use With 245A Adapter Use With 253A Adapter
Filter 1068-Type	A1, A2, C1 B1, B2, D1	FIL FIL	Use Supplied Wood-Block
Network 4269A 4270A	A1 A2, C1 B1, B2,, D1	1-25 1-25 COIL 1-25 COIL	
Pressure Contactor AT-8722 R	A2, C1 B1, B2, D1	PRES PRES	Use With 245A Adapter Use With 253A Adapter Use Supplied Wood-Block
Desiccant AT-8816 E	All	Any Unused	
Adapter 245A, C 246A, B 247A, B 253A, C 261A	A1 A2, C1 A1 A2, C1 B1, B2, D1 A1 A2, C1 B1, B2, D1 B1, B2, D1 A1 A2, C1 B1, B2, D1	1-25 1-25, CAP, COIL, PRES 1-25 1-25, CAP, COIL, PRES 1-25, CAP, COIL, PRES CAP, COIL 1-25, CAP, COIL, PRES 1-25, CAP, COIL, PRES 1-25, CAP, COIL, PRES 1-25 1-25, CAP, COIL, PRES 1-25, CAP, COIL, PRES	Use With 245A Adapter Use With 253A Adapter

**Repeaters**

**1.17** The T1C line repeaters for use with the 479-type apparatus cases may be selected from Table B.

**Coil Cases**

**1.18** The 184-type coil case and the 4269A and the 4270A networks are available for temporarily loading two pairs that are not to be used immediately for carrier transmission. T1C and voice frequency cannot operate simultaneously in the same apparatus case or binder group; therefore, these coil cases and networks should be installed only when the entire case can be dedicated to voice-frequency transmission.

**Connectors**

**1.19** The 939A, 939C, 977A, and 977C connectors may be used to establish continuity of in-out pairs through an apparatus case.

**1.20** The 939B, 939D, 977B, and 977D connectors may be used in the CAP slot to provide blocking capacitors in the order-wire circuit for long loops.

**Adapters**

**1.21** The 245A adapter (Fig. 6) is required when 208-type T1 repeaters, 184A1 load coils, R pressure contactor, and 939A connectors are used in T1C apparatus cases (see Table A).

**1.22** The 246A adapter (Fig. 7) is required to permit the insertion of the 113-type pair loss test set, the 162A adapter, or the J98710P line error detector into T1C apparatus cases (see Table A).

**1.23** The 247A adapter (Fig. 8) is required to gain access to the CAP and COIL slots in the 479A1 apparatus case.

**1.24** The 253A adapter (Fig. 9) is required when 209-type T1 repeaters, 184B1 load coils, R pressure contactor, and 939C and D connectors are used in T1C apparatus cases (see Table A).

**1.25** The 261A adapter (Fig. 10) is required to gain access to the in-and-out pairs of a particular repeater slot. (It provides a function similar to that of the 162A jack adapter.)

**Fault-Locating Filters**

**1.26** One 1068A through 1068M fault-locating filter is used in each 479-type apparatus case (see Section 640-527-211). The outputs of the 50 regenerators in one apparatus case share the common filter. The outputs of the fault-locating filters are applied to a voice loaded pair that terminates in the central offices.

**Pressure Contactor**

**1.27** The AT-8782 R pressure contactor is useful when the apparatus case is statically pressurized on a filled cable route. The contactor is calibrated to initiate an alarm if the internal pressure in the case drops to between 5 and 6 pounds per square inch, gauge, at sea level. To use the R pressure contactor in the 479-type apparatus cases, the 245A or 253A adapter is necessary.

**C. Line Repeaters**

**1.28** The T1C repeaters regenerate the 3.152 Mb/s, 50 percent duty cycle, bipolar, coded signals transmitted over the preceding line section. The regenerated signal is then transmitted to the next location via the following line section.

**1.29** There are two distinct families of T1C line repeaters. The 218- and 219-type make up one family and are considered standard-power repeaters. The 248- and 249-type make up the other family and are considered low-power repeaters. Because of their different power levels, the standard- and low-power repeaters are not interchangeable and should not be mixed within the same apparatus case.

**1.30** Initially seven codes of 218-type repeaters and seven codes of 219-type repeaters were provided to cover the various types of standard-power installations (see Table B). The A and the C suffix codes are used for pulp cable with losses between 5.7 and 38.7 dB at 1.576 MHz, whereas the B and the D suffix codes are used for pulp cable with losses between 20 and 54 dB at 1.576 MHz. For pulp cable with losses between 20 and 38.7 dB, either code may be used. The E and the F suffix codes are used for PIC cable with losses between 5.7 and 54 dB at 1.576 MHz. The G suffix codes are used for MAT cable.

**1.31** Several years after their introduction, the 218A through G and 219A through G repeater codes were discontinued by the manufacturer and re-

**TABLE B**  
**T1C LINE REPEATERS**

REPEATER CODE	CLE CODE	POWER OPTION	CABLE CODE	APPARATUS CASE
218A	T1R0KP5GAA	Through	Pulp (Short Code)	479A1, A2, C1 Unprotected
218B	T1R0KR5GAA	Through	Pulp (Long Code)	
218C	T1R0KP6GAA	Looped	Pulp (Short Code)	
218D	T1R0KR6GAA	Looped	Pulp (Long Code)	
218E	T1R0KS5GAA	Through	PIC	
218F	T1R0KS6GAA	Looped	PIC	
218G	T1R0KT9GAA	Through/Loop	MAT	
218AA	T1R08U9GAA	Through/Loop	PULP	
218AB	T1R08S9GAA	Through/Loop	PIC	
218AC	T1R08T9GAA	Through/Loop	MAT	
248A	T1R1123EAA	Through/Loop	PULP	
248B	T1R1124EAA	Through/Loop	PIC	
248C	T1R1121EAA	Through/Loop	MAT	
219A	T1ROJP5HAA	Through	Pulp (Short Code)	
219B	T1ROJR5HAA	Through	Pulp (Long Code)	
219C	T1ROJP6HAA	Looped	Pulp (Short Code)	
219D	T1ROJR6HAA	Looped	Pulp (Long Code)	
219E	T1ROJS5HAA	Through	PIC	
219F	T1ROJS6HAA	Looped	PIC	
219G	T1ROJT9HAA	Through/Loop	MAT	
219AA	T1R09U9HAA	Through/Loop	PULP	
219AB	T1R09S9HAA	Through/Loop	PIC	
219AC	T1R09T9HAA	Through/Loop	MAT	
249A	T1R1223FAA	Through/Loop	PULP	
249B	T1R1224FAA	Through/Loop	PIC	
249C	T1R1221FAA	Through/Loop	MAT	

**Note:** The 248- and 249-type repeaters are low-power versions of the 218- and 219-types.

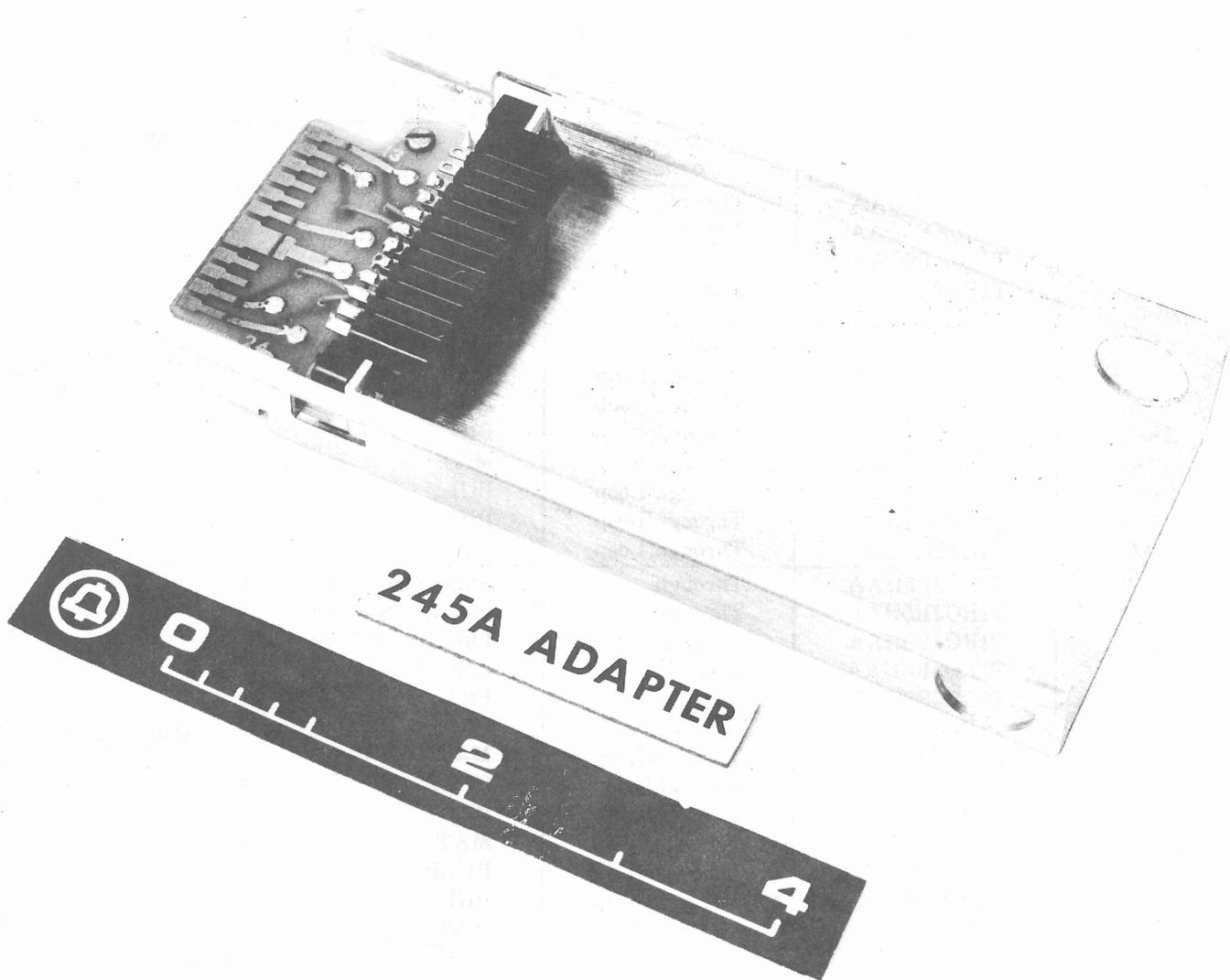


Fig. 6—245A Adapter

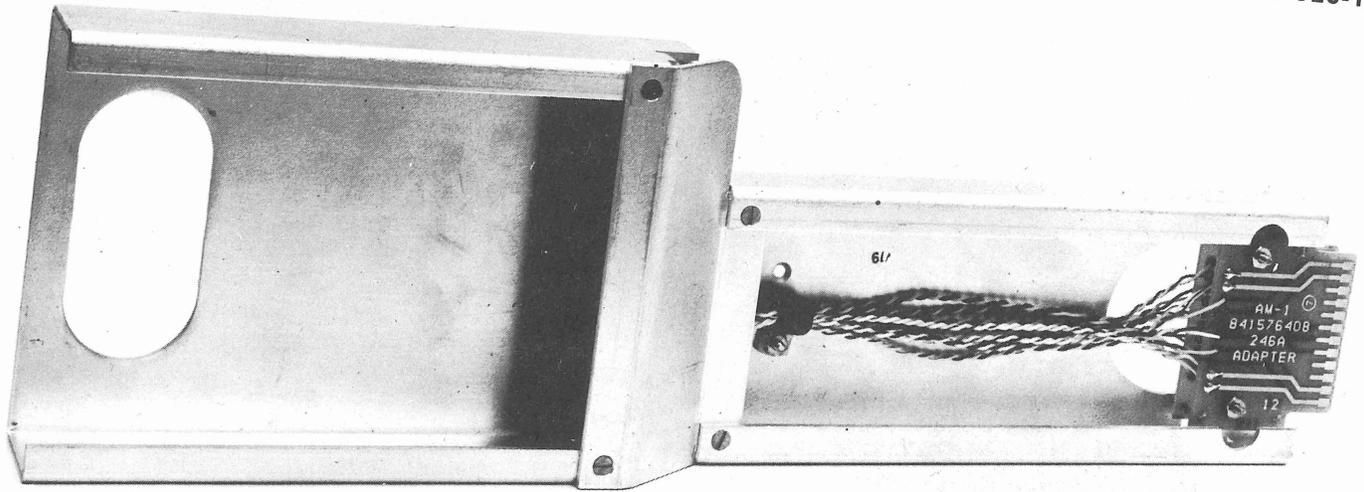


Fig. 7-246A Adapter

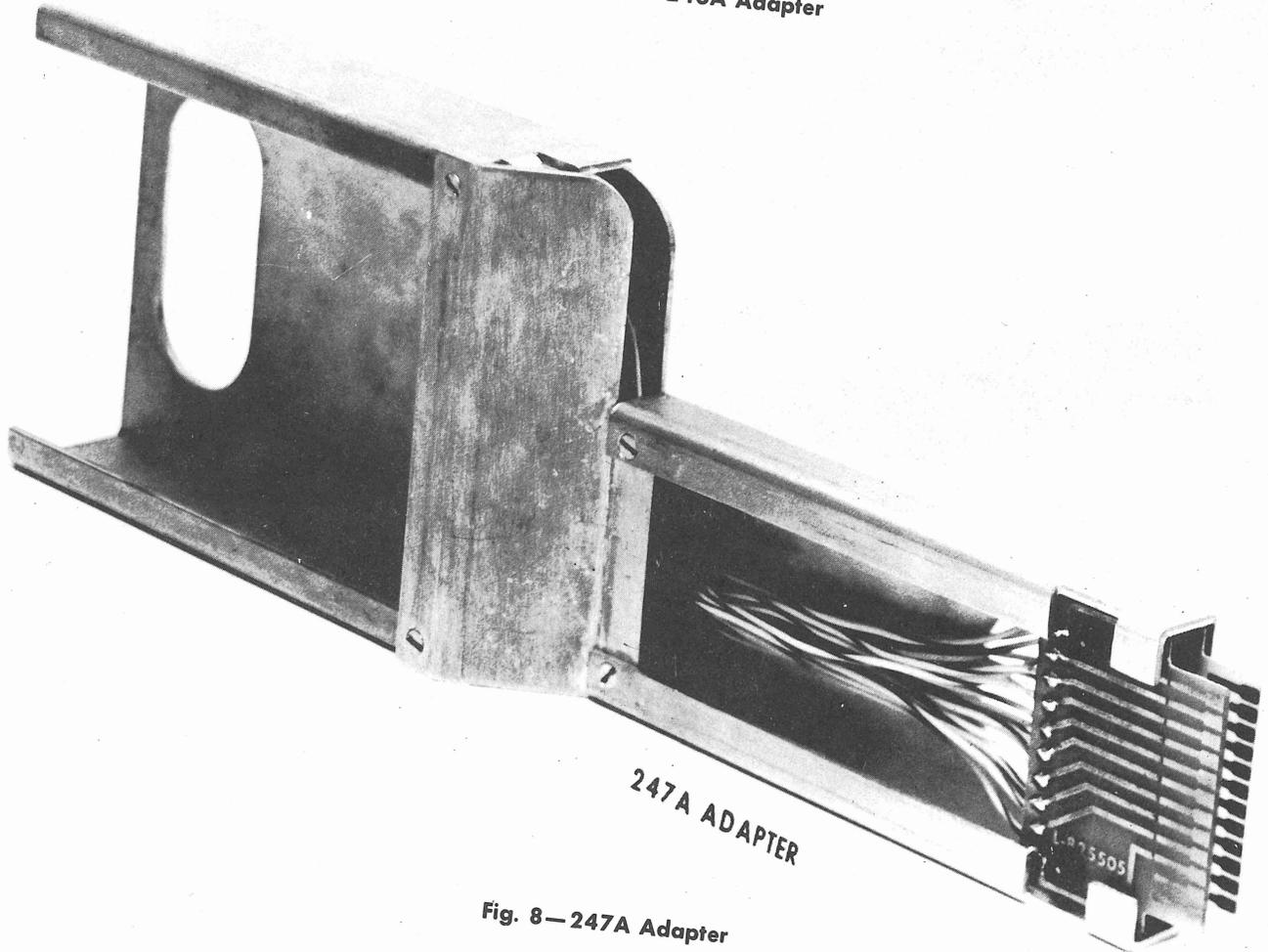


Fig. 8-247A Adapter

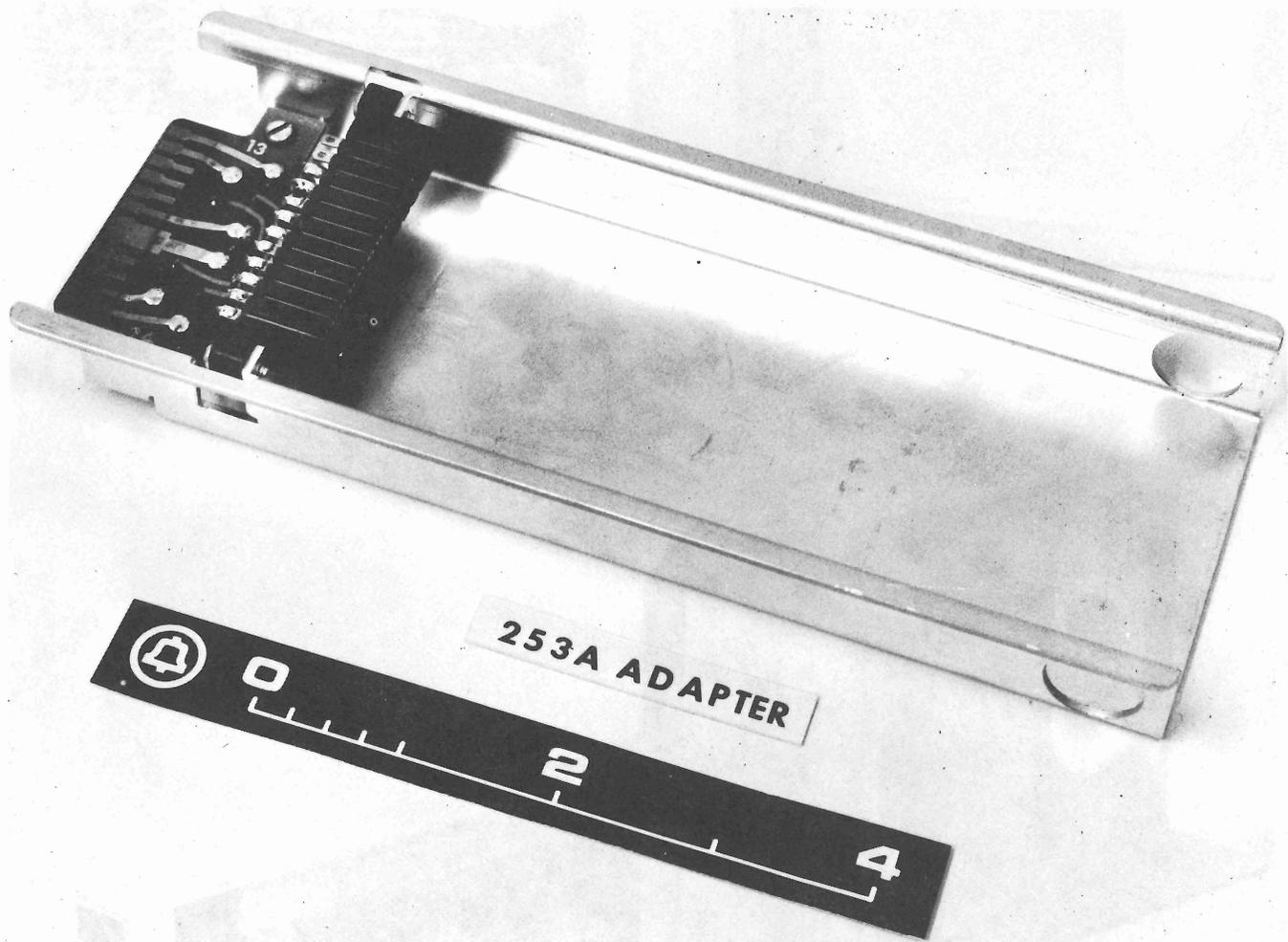


Fig. 9—253A Adapter

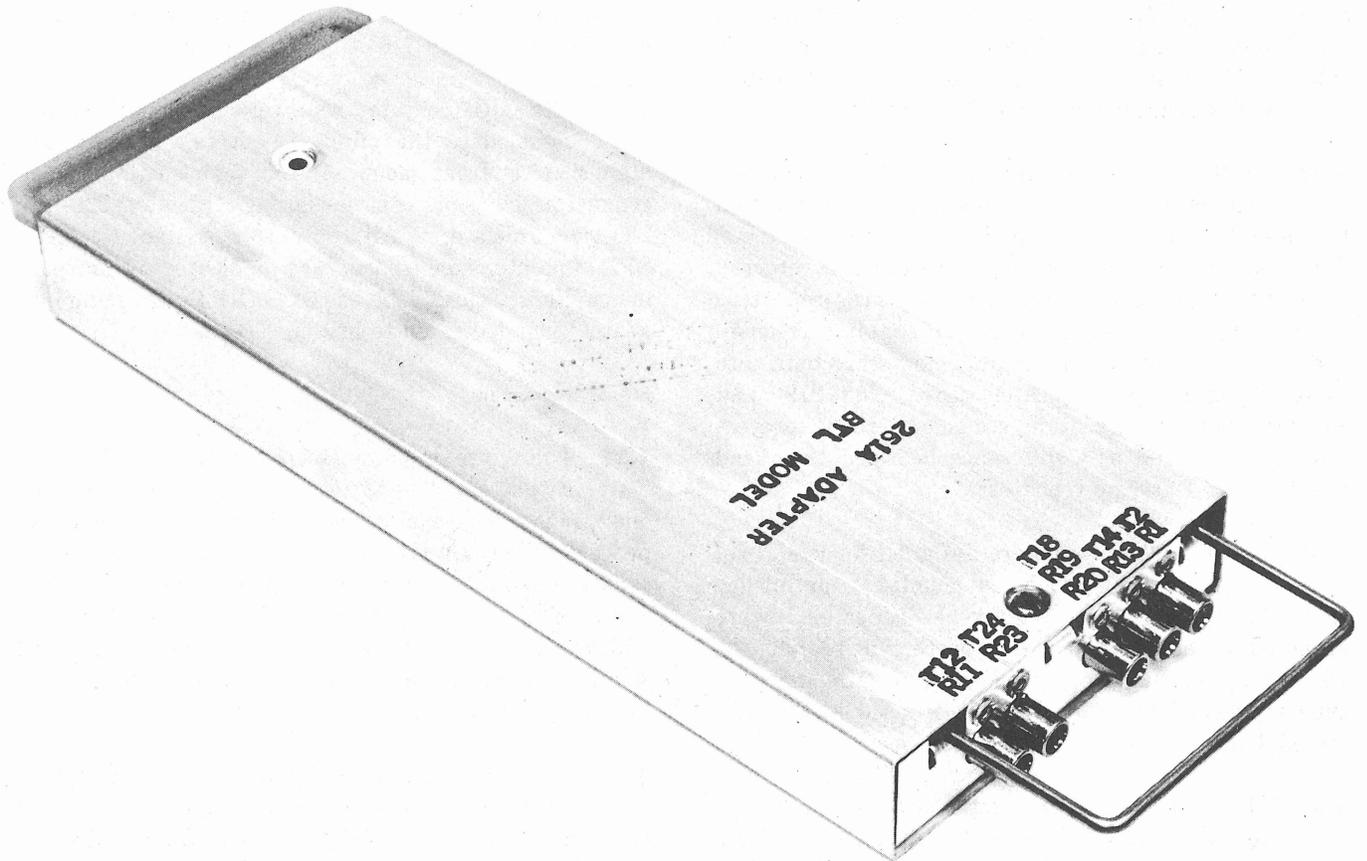


Fig. 10—261A Adapter

placed by three new codes of 218-type repeaters and three new codes of 219-type repeaters (see Table B). These codes are for standard-power installations. The AA suffix codes are used for pulp cable. The AB suffix codes are used for PIC cable. The AC suffix codes are used for MAT cable. These double suffix codes are directly interchangeable with the single suffix codes.

**1.32** Three codes of 248-type repeaters and three codes of 249-type repeaters are provided to cover the various types of low-power installations (see Table B). The A suffix codes are used for PULP cable. The B suffix codes are used for PIC cable. The C suffix codes are used for MAT cable.

**1.33** All T1C line repeaters consist of two complete regenerators that provide pulse regeneration for one direction of transmission for two systems. For identification, the two regenerators are referred to as side 1 and side 2. Both sides of these repeaters are powered from the same power supply. Through and looping line-powering arrangements are built into these repeaters per repeater code. The 219- and 249-type repeaters contain secondary surge protection, which is the only difference between them and the 218- and 248-type repeaters.

**1.34** T1C line repeaters were designed for use in remote locations such as manholes or utility poles. The 218- and 248-type repeaters were designed to be used in the unprotected 479A1, A2, and C1 apparatus cases, whereas the 219- and 249-type repeaters were designed to be used in the protected 479B1, B2, and D1 apparatus cases.

**1.35** The entire structure of the 218- and 248-type repeaters (Fig. 11) is enclosed in an aluminum can that is held in place with one screw. The faceplate bears the repeater code, vintage number, and date of manufacture. These repeaters are about 6-1/2 inches long, 3 inches high, and 3/4 inch wide. The 219- and 248-type repeaters are similar in appearance to the 218-type, except they are about 1-1/2 inches longer.

#### **D. Office Repeater Bay**

##### **General**

**1.36** In central offices, T1C spans terminate in office repeaters mounted in shop-wired, 23-inch duct-type bays. The 11-foot 6-inch bay is available in two versions. One version (Fig. 12), which is for use

in non-DSX applications, includes shop-wired connectors and associated equipment for up to one hundred and four 220- or 250-type plug-in repeaters. Of these 104 repeaters, 96 are used with working lines and 4 with maintenance lines, and 4 are bridging repeaters. The second version (Fig. 13), which is for use in DSX applications, includes shop-wired connectors and associated equipment for up to one hundred and fifty-six 220- or 250-type plug-in repeaters. Of these 156 repeaters, 144 are used with working lines and 6 with maintenance lines, and 6 are bridging repeaters. Office repeater bay (ORB) designs are also available in 9-foot 0-inch and 7-foot 0-inch versions.

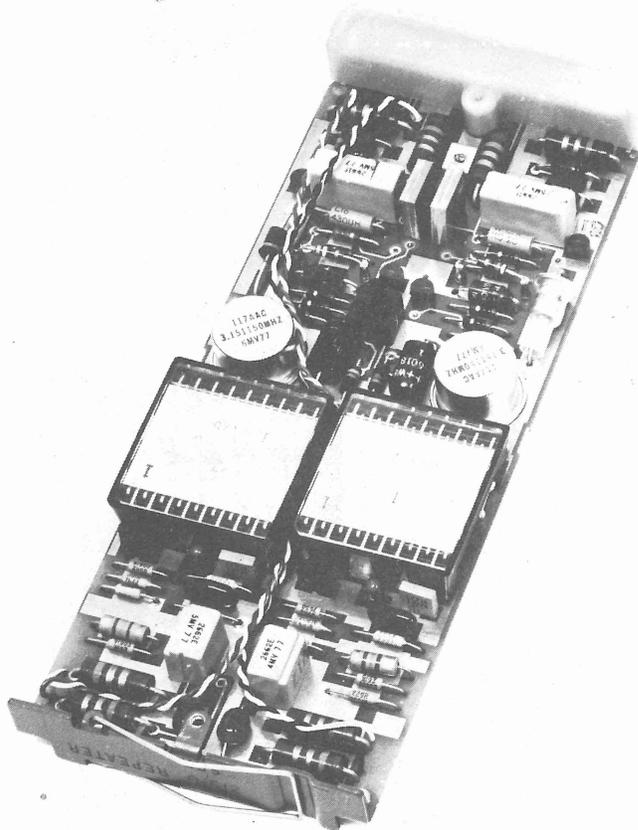
**1.37** The ORB contains repeater shelves, which accommodate the office repeaters. Each 8-inch high shelf is front mounted, and each shelf provides connectorized slots for accepting thirteen 220- or 250-type repeaters. All repeater slots labeled MNT SPR (maintenance spare) are dedicated to maintenance lines; those labeled BDG RPT (bridging repeater) are dedicated to bridging repeaters.

##### **Office Repeater**

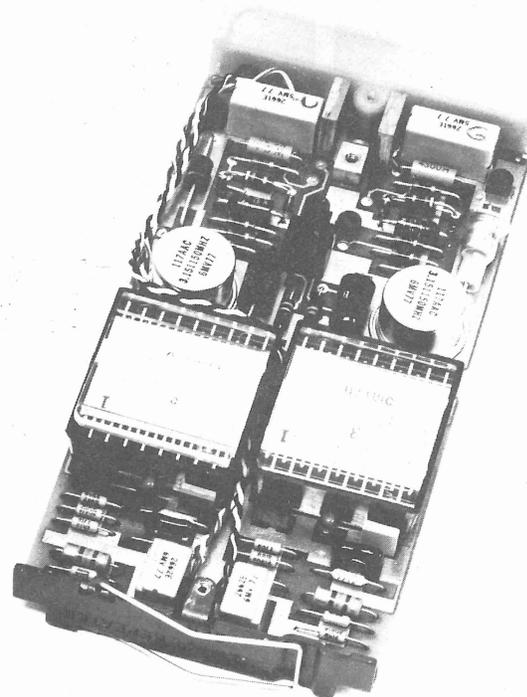
**1.38** There are two distinct families of T1C office repeaters. The 220- type repeaters make up one family and are considered standard-power repeaters. The 250-type repeaters make up the other family and are considered low-power repeaters. Because of their different power levels, the standard- and low-power repeaters are not interchangeable and should not be mixed within the same 50-repeater grouping in the bay.

**1.39** The 220- and 250-type office repeaters (Fig. 14) are plug-in units designed for central office use with the T1C digital line. Eight office repeater codes are provided: the 220A, incorporating the line current regulator for powering lines; the 220B, for looping power (no regulator); the 220C, for bridging applications; the 250A, a low-power version of the 220A; the 250B, a low-power version of the 220B; the 250C, a lower-cost version of the 220C; the 220AA, a lower-cost version of the 220A; and the 220AB, a lower-cost version of the 220B. (See Table C.) The bridging repeater provides a signal for a maintenance line and enables in-service patching with no interruption of service.

**1.40** The 220A, 220B, 250A, 250B, 220AA, and 220AB repeaters each consist of circuits carrying separate directions of transmission (transmit and receive). The transmit and receive circuits of each



219 TIC PROTECTED



218 TIC UNPROTECTED

Fig. 11—Typical 218- and 219-Type Line Repeaters

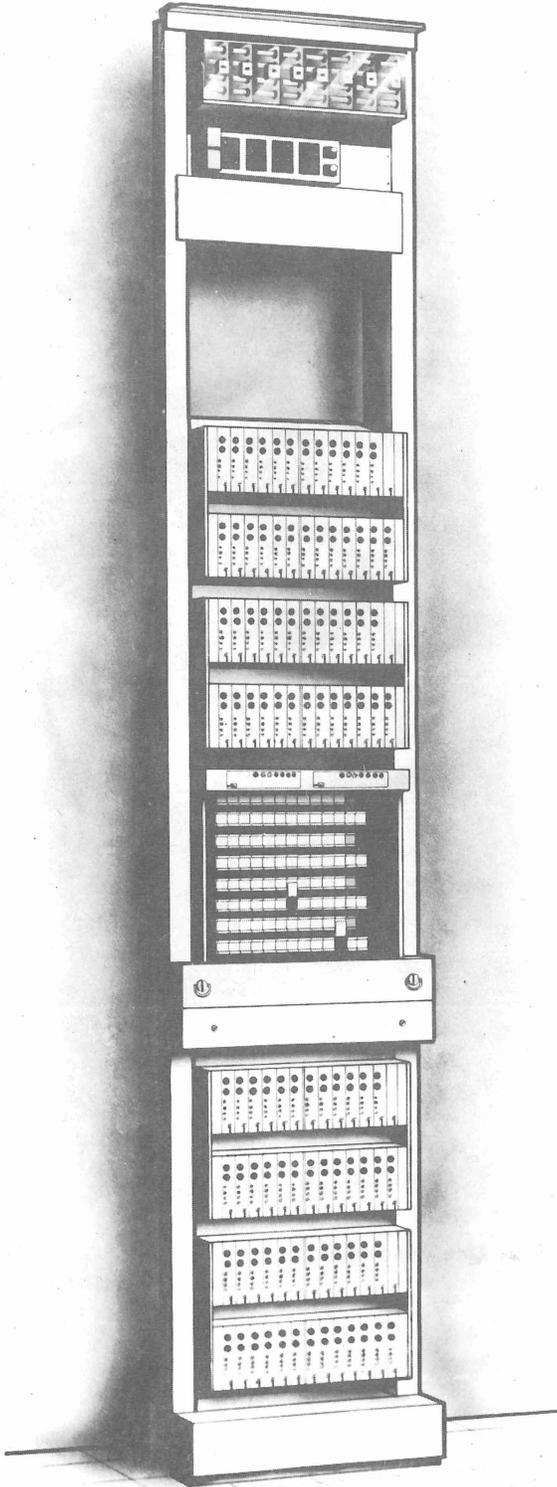


Fig. 12—11-Foot 6-Inch Office Repeater Bay (ORB) — Non-DSX

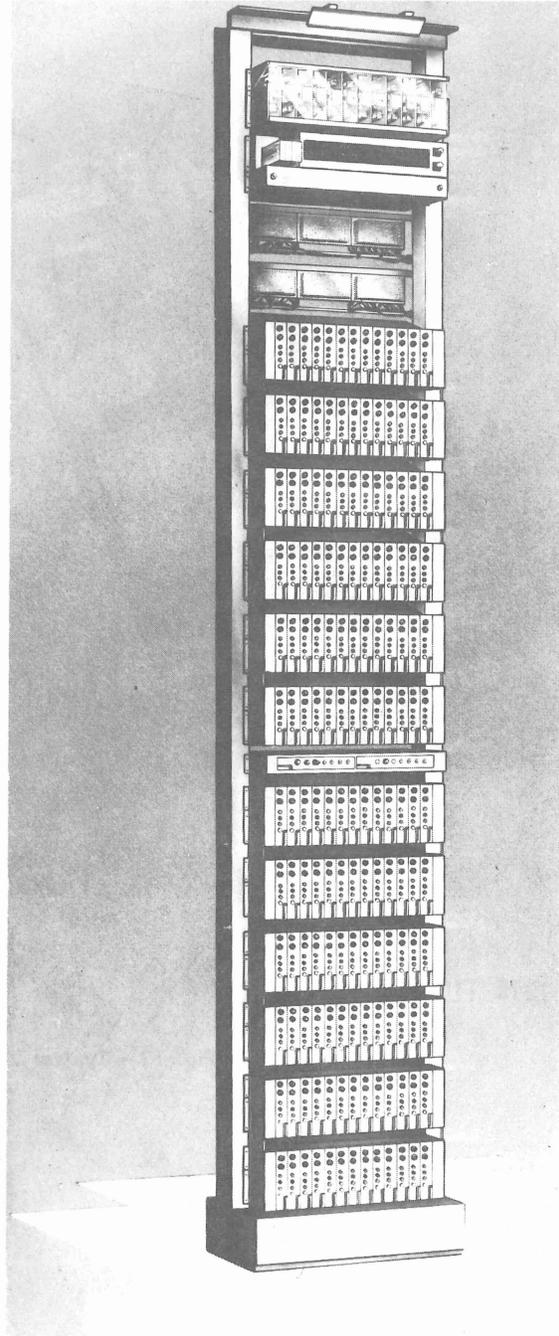


Fig. 13—11-Foot 6-Inch Office Repeater Bay (ORB)— DSX Dedicated



**TABLE C**  
**T1C OFFICE REPEATERS**

CODE	CIE CODE	FUNCTION
220A	T1ROLS7JAA	Provides 48V, 130V, 178V, and 260V current regulation for line
220B	T1ROLS6JAA	Provides power looping for line (no line current regulation)
220C	T1ROLS8JAA	Bridging regenerator for restoration and patching
250A	T1R13BAGAA	Low-power version of 220A
250B	T1R14BAGAA	Low-power version of 220B
250C	T1R15AAGAA	Same as 220C
220AA	T1ROLS7JAB	Same as 220A
220AB	T1ROLS6JAB	Same as 220B

repeater are associated with the same T1C system. Both repeaters have a regenerator circuit for incoming (receive) line signals and a passive, through-connecting circuit for outgoing (transmitted) line signals.

**1.41** The 220A, 220B, 250A, 250B, 220AA, and 220AB repeaters provide options for establishing appropriate powering combinations for the repeatered line and the local power supply. The 220- and 250-type repeaters do not require any field adjustments except for these powering options.

**1.42** The entire structure of the 220- and 250-type repeaters, which are about 10-1/2 inches long, 6 inches high, and 1-1/2 inches wide, plugs into a slot provided in the T1C office repeater bay. A spring-loaded latch holds the repeater in place, but permits easy removal. Two line fuses and four pin jacks are also mounted on the faceplate of the 220A, 250A, and 220AA, whereas only two pin jacks are mounted on the faceplate of the 220B, 250B, and 220AB. The 220C and 250C are not equipped with pin jacks or fuses.

#### Equalizers

**1.43** Associated with each office repeater shelf in the ORB is a connector position for a plug-in equalizer printed wiring board (PWB). The equalizer enables consistent intraoffice transmission for all the repeaters located on that shelf. The regenerator out-

puts of 13 repeaters are wired to one equalizer connector. The output of the equalizer is then connected to terminal blocks at the top of the bay.

**1.44** The equalizer connector will accept a plug-in equalizer PWB (see Table D and Fig. 15). This equalizer card is available in 11 codes. Each of these codes provides equalization for 13 repeaters (one shelf). These equalizers provide pulse equalization for intraoffice ABAM cable.

**1.45** The equalizer arrangement is handled in a different manner in early ORBs. Associated with each office repeater connector position in the ORB is a connector assembly for a discrete plug-in equalizer circuit card (Fig. 16). This discrete equalizer card is available in eleven codes (see Table D).

#### Fuse and Alarm Panel

**1.46** The fuse and alarm panel distributes -48, -130, and +130 volt battery power to the office repeater shelves. The power delivered to each shelf is separately fused. Alarm relays are provided to indicate fuse failure. A shelf fuse failure causes a pair of relay contacts to operate and light the red (major alarm) lamp. An office repeater fuse failure causes another pair of relay contacts to operate and light the white (minor alarm) lamp. Four separate fuse positions protect order wire or any other equipment used in the ORB that may require -48 volt battery.

**TABLE D**  
**EQUALIZER CODES**

CODE	DISTANCE (FEET) BETWEEN REPEATER & CROSS CONN	SD COVERAGE	REPEATER TYPE	BAY TYPE J98725	SEE NOTES
ED-3C555-30, GR1 GR2 GR3	0-135 135-270 270-400	SD-3C253-01, FS3	220	A, B, C	1
ED-3C585-30, GR1 GR2 GR3	0-220 220-440 440-655	SD-3C285-01, FS3	221, 231		
ED-3C655-30, GR1 GR2 GR3 GR4 GR5	0-135 135-270 270-400 400-533 533-667	SD-3C311-01, CP1 CP2 CP3 CP4 CP5	250		
ED-3C744-30, GR1 GR2 GR3	0-135 135-270 270-400	SD-3C371-01, CP6 CP7 CP8	220	D, E	2
ED-3C765-30, GR1 GR2 GR3	0-220 220-440 440-655	SD-3C371-01, CP9 CP10 CP11	221, 231		
ED-3C767-30, GR1 GR2 GR3 GR4 GR5	0-135 135-270 270-400 400-533 533-667	SD-3C371-01, CP1 CP2 CP3 CP4 CP5	250		

**Notes**

1. One equalizer code is associated with each repeater position.
2. One equalizer code is associated with each repeater shelf.

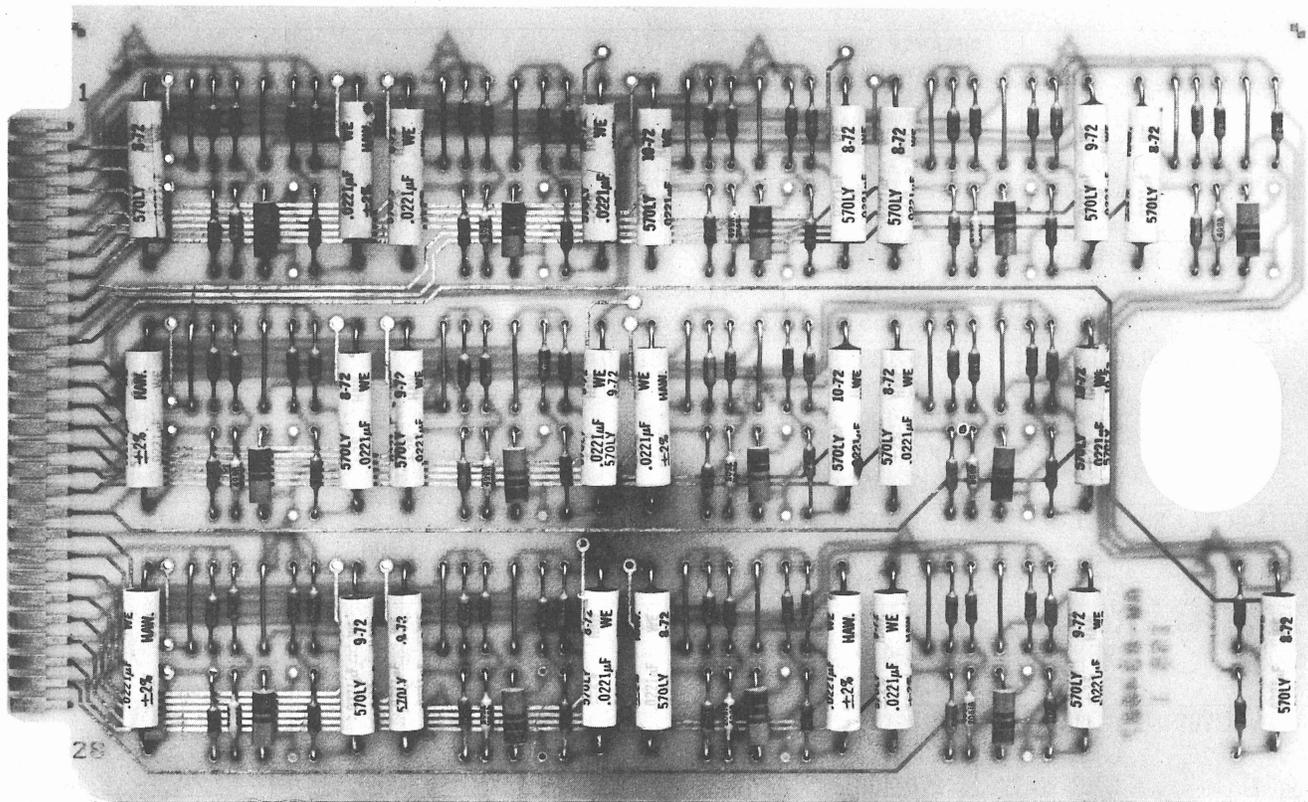


Fig. 15—Equalizer Printed Wiring Board Assembly (Shelf)

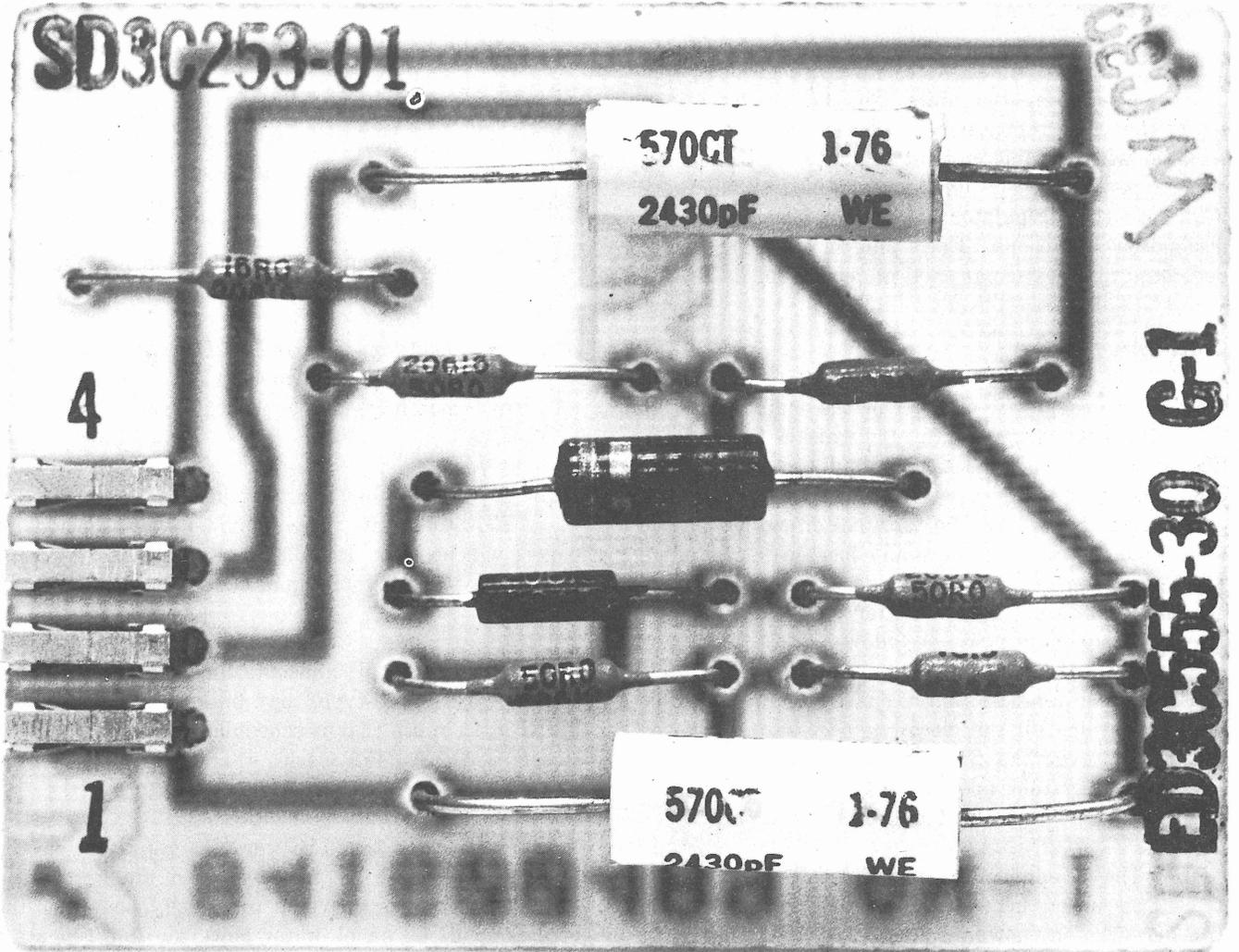


Fig. 16—Equalizer Printed Wiring Board Assembly (Connector)

**Fault-Locating Filters**

1.47 Plug-in fault-locating filters (1068-type) are located at the top of the bays in the fuse and alarm panel or in a separate fault-locating filter panel. Microswitches provide a short circuit when no fault-locating filter is required.

**Power Dissipation Units**

1.48 The high-dissipation resistors are grouped into power dissipation units (Fig. 17) located at the top of the office repeater bay. These resistors are associated with the line current regulator circuit in the office repeaters; their function is to prevent an overload of the regulator transistor during high-dissipation conditions. Each plug-in resistor unit is dedicated to a particular shelf of repeaters.

**Order-Wire Panel**

1.49 The order wire is used in the maintenance of the T1C carrier route. It furnishes voice facilities between repeater locations and terminal offices. The order wire includes a voice pair that parallels the T1C system route. At the terminal office, the order-wire panel (Fig. 18) is normally located in the office repeater bay. This panel provides connectors to accommodate two of the four order-wire plug-in units. The four plug-in units are as follows:

- (a) The order-wire and telephone set plug-in unit contains all the circuitry necessary to power and talk over the line, to connect to the central office dial system, and to provide timing and alarm circuitry to call the central office.
- (b) The telephone set plug-in unit contains the circuitry necessary to talk over a given order-wire line powered from another location.
- (c) The multiple plug-in unit enables additional appearances of the same order wire within the central office.
- (d) The bridging and coupling plug-in unit provides for ac coupling two individually powered lines. It also provides a bridge connection that, in combination with a telephone set plug-in unit, enables craft personnel to talk over the joined order-wire lines.

**E. Express Office Repeater Panel**

1.50 The T1C express office repeater panel (EORP) (Fig. 19) provides through-office routing on a T1C span. This function is required when a T1C span passes through an intermediate central office other than the span-terminating office. The EORP performs a function similar to a manhole apparatus case; however, it is designed to be bay mounted in a central office location.

1.51 Each panel is designed to accommodate twenty-five 218- or 248-type line repeaters. The panel also contains 25 artificial line network printed wiring boards: one associated with each repeater in the panel.

1.52 The bay arrangement for mounting T1C express office repeater panels is as follows:

- 7-foot bay— 8 panels (200 repeaters)
- 9-foot bay—10 panels (250 repeaters)
- 11-foot 6-inch bay—14 panels (350 repeaters).

1.53 A typical bay arrangement is specified in ED-3C724-10. The minimum installation of panels will be two. Installations will be in groups of two, since the minimum span capability of T1C is 50 systems.

1.54 Unidirectional (and only unidirectional) T1 repeaters (208-type) may be installed in the T1C EORP on a route that is scheduled for future conversion to T1C. A 245A, series 4, adapter must be used when T1 repeaters are used.

1.55 Power for the T1C (or T1) repeaters in the EORP must be provided from the repeatered line. No option is provided for locally powering the repeaters in the panel or for powering line repeaters from the panel.

**F. Test Equipment**

1.56 Seven test sets are required for the maintenance of T1C. All but one, the repeater test set, are designed to serve for T1 as well as T1C testing. The KS-20775 L1 error rate test set is required for M1C maintenance and T1C/M1C preservice testing. This set is an existing design originally developed for use with M12 multiplex equipment.

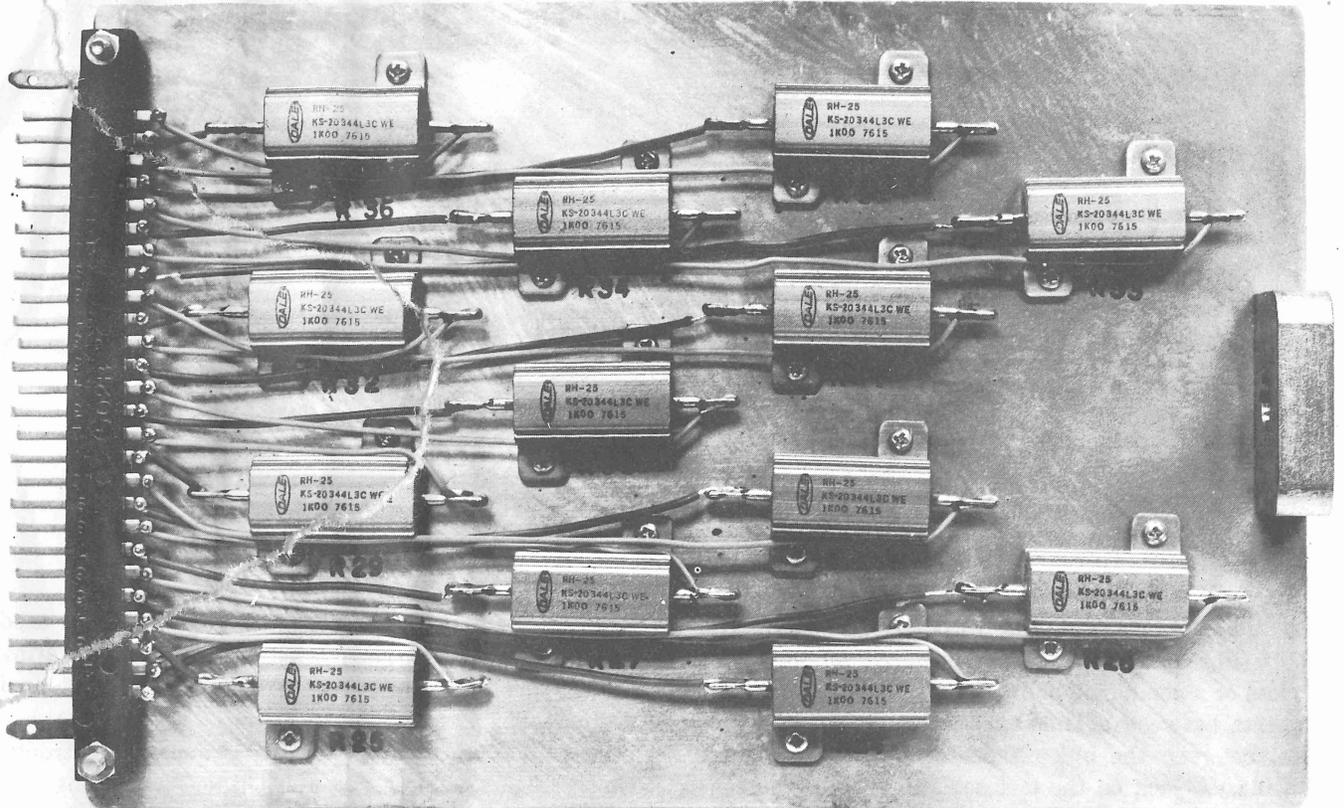


Fig. 17— Power Dissipation Unit

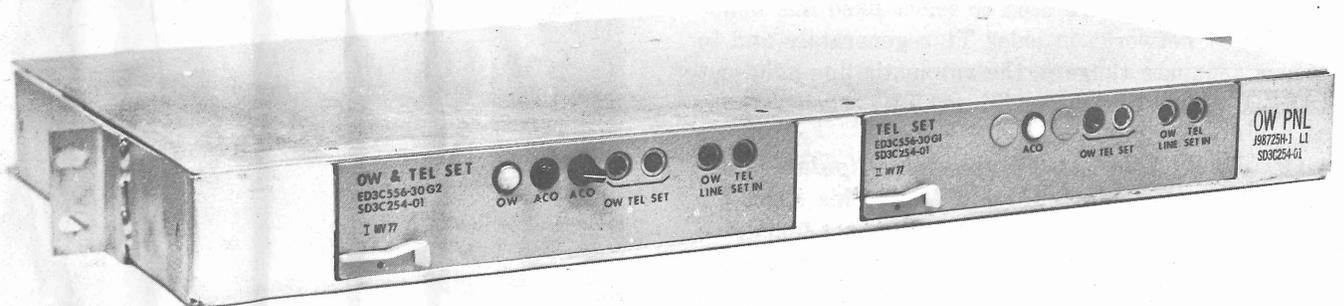


Fig. 18— Order-Wire Panel

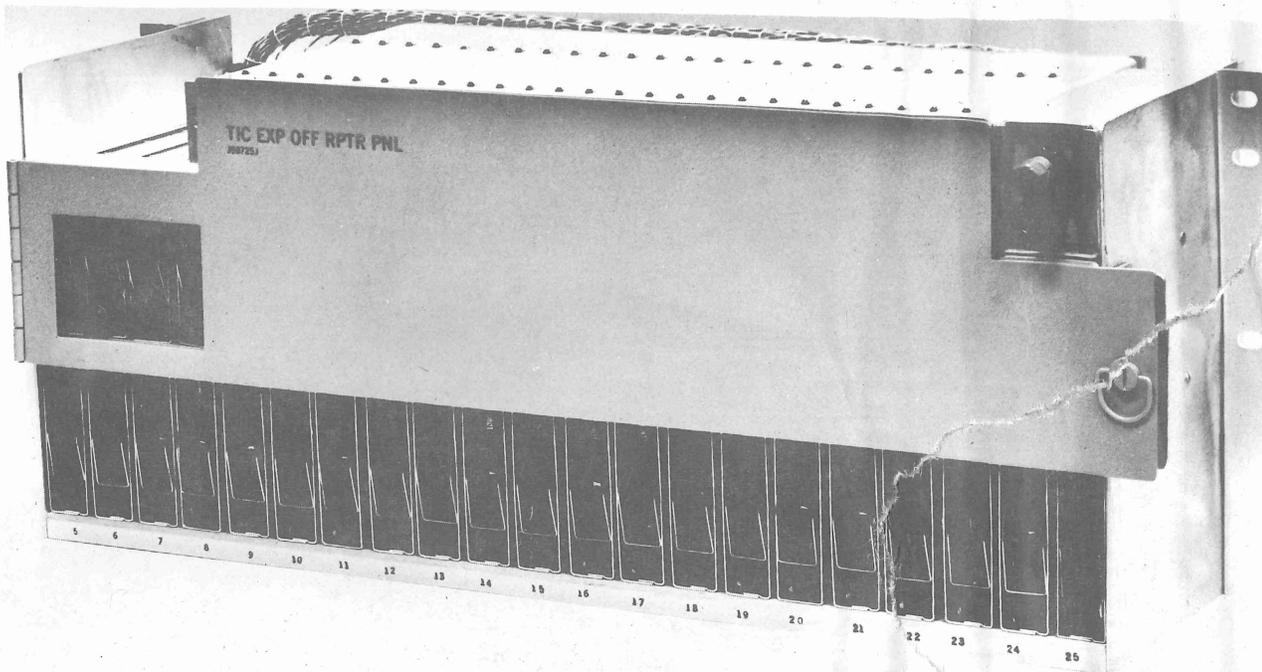


Fig. 19—Express Office Repeater Panel (EORP)

### 1.57 J98725AA—T1C/T1 Pair Loss Test Set

(Fig. 20)—This battery-powered set measures the loss of a conductor pair at 650 (T1) or 1300 (T1C) kilohertz between adjacent manholes or, for end sections, between the office repeater bay and the first manhole. A jack on the test set also enables the connection of a volt-ohmmeter to the line to test for shorts, opens, splits, and grounds on a dc basis at the time pair loss measurements are made. These tests should be made before repeaters are installed. Pair loss measurements are used to select fixed line build-out (LBO) networks in older T1 regenerators and to ensure adequate range in the automatic line build-out (ALBO) network in newer T1 and T1C regenerators.

### 1.58 J98725AB—T1C/T1 Manhole Bipolar Violation Detector (Fig. 21)

— This portable battery-powered set is used to troubleshoot failed line repeaters, either confirming a remote fault-locating diagnosis or determining the location of a marginal repeater. It also indicates the presence or absence of a valid signal. Its plug-together construction permits it to be used with the 466, 468, and 475 T1 apparatus cases and with the 479-type T1C apparatus case. The set is supplied with adaptors in a ruggedized case.

### 1.59 J98725AC—T1C/T1 Office Bipolar Violation Detector (Fig. 22)

— This is an office test set

powered from the -48 volt office supply. It is used for in-service performance testing and for indicating the absence of a valid signal. To help isolate marginal systems, the violation counter can be stopped after a preset time, up to two hours, by its built-in electronic timer. The counter counts either violations or violation-seconds but not both simultaneously.

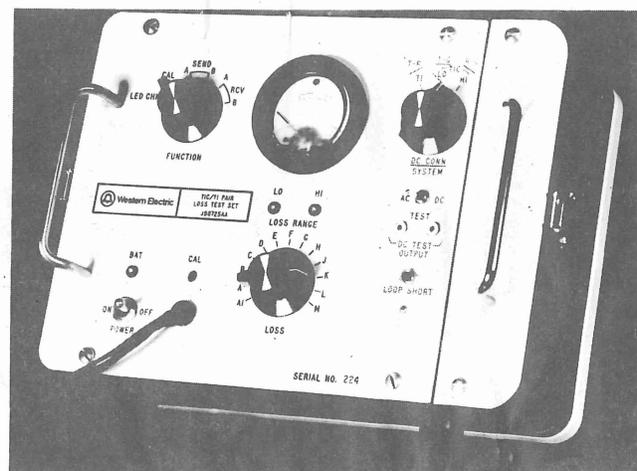


Fig. 20—J98725AA T1C/T1 Pair Loss Test Set

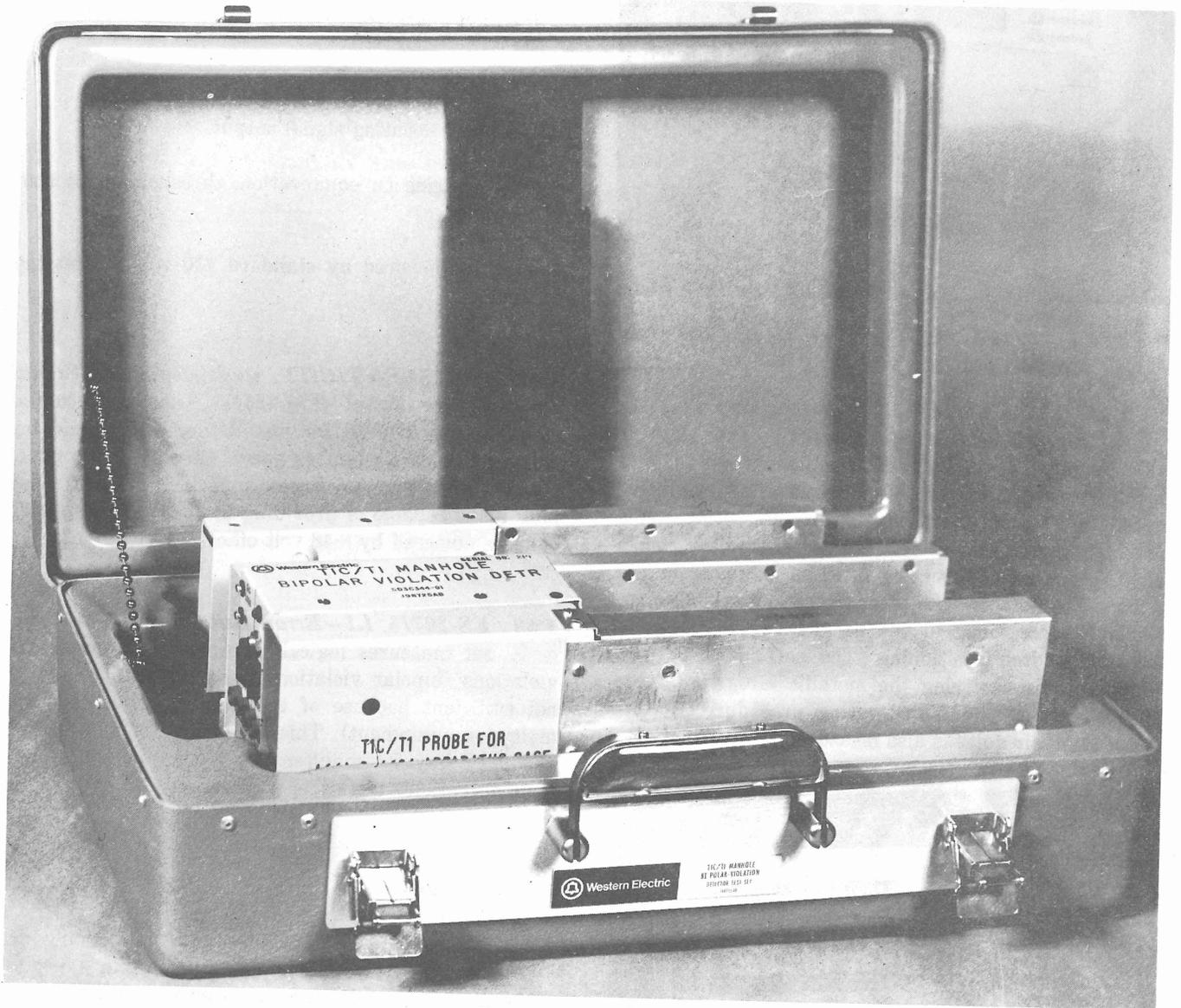


Fig. 21—J98725AB TIC/TI Manhole Bipolar Violation Detector (MBVD)

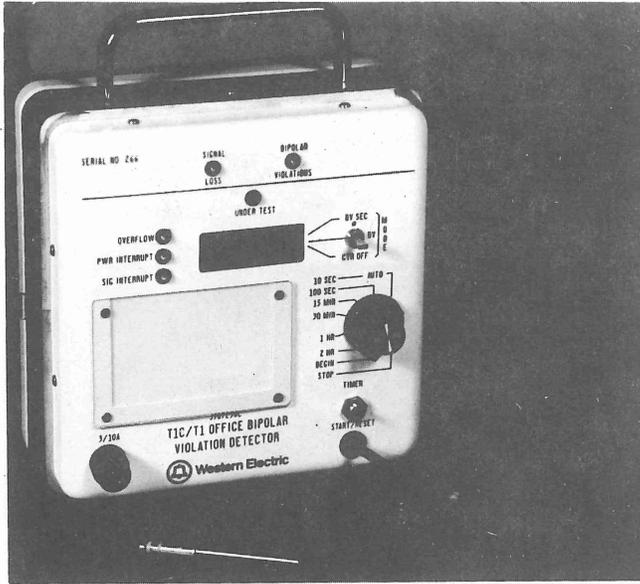


Fig. 22—J98725AC T1C/T1 Office Bipolar Violation Detector (OBVD)

**1.60 J98725AD—T1C/T1 Fault-Locating Test Set (Fig. 23)**— This set, powered by the  $-48$  volt office supply, is used to isolate line troubles to a specific repeater section. Bipolar violations are introduced in a variable-density bit stream at an audio rate. The audio tone is returned to the office from a manhole via a fault-locating filter in the manhole and a loaded cable pair. The transmitter and selective receiver are contained in one package with all tuning fixed by switch positioning. The set has a built-in ohmmeter for verifying the metallic integrity of the line as part of the fault-locating procedure. Fault-locate line pair noise is also measured by this test set.

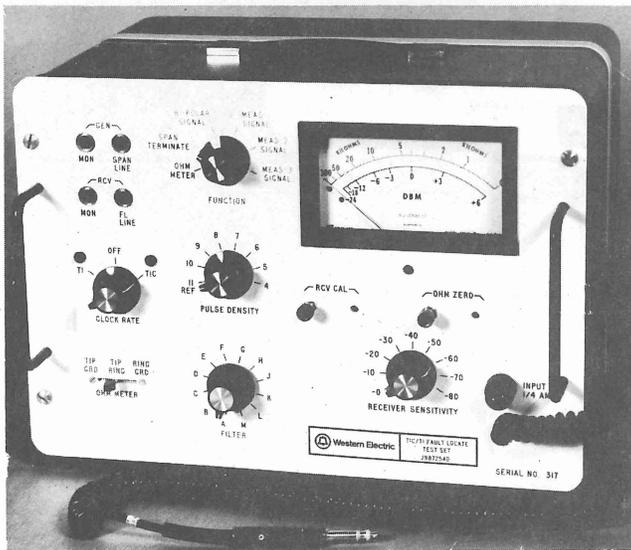


Fig. 23—J98725AD T1C/T1 Fault-Locating Test Set

**1.61 J98725AE—T1C Repeater Test Set (Fig. 24)**— This benchtop test set measures the following T1C repeater performance parameters:

- (a) power drain and leakage
- (b) external connector opens or shorts
- (c) automatic gain control range
- (d) output signal level
- (e) fault-locating signal output
- (f) margins on equalization, thresholds, and timing.

The set is powered by standard 110-volt alternating current.

**1.62 J98725AF—T1C/T1 Quasi-Random Signal Source Panel (Fig. 25)**— This bay-mounted signal source is used for installation testing and for driving unused lines after power turnup. Each panel consists of two signal source plug-ins. Each of these plug-ins is capable of providing up to 25 signals. This panel is powered by  $-48$  volt office battery.

**1.63 KS-20775 L1—Error Rate Test Set**— This set measures logical errors as well as bipolar violations (bipolar violations measurements alone are not sufficient because of the masking ability of the multiplex equipment). This set is used at the DSX-1 and M1C bay for maintenance purposes and to perform acceptance tests of T1C systems.

#### Test Set Adapters

**1.64** Three adapters are used in conjunction with two of the test sets when performing specific tests. Two of the adapters are used for cable pair access in the central office during pair loss testing, and the third adapter is used with the T1C repeater test set to test T1C office repeaters.

**1.65 J98725AA,L2—Pair Loss Bay Adapter (Fig. 26)**— The ED-3C583-30,GR1 pair loss bay adapter provides access to the T1C/T1 office repeater bay (ORB) for the J98725AA,L1 pair loss test set. It is required at the T1C/T1 office repeater bay in addi-

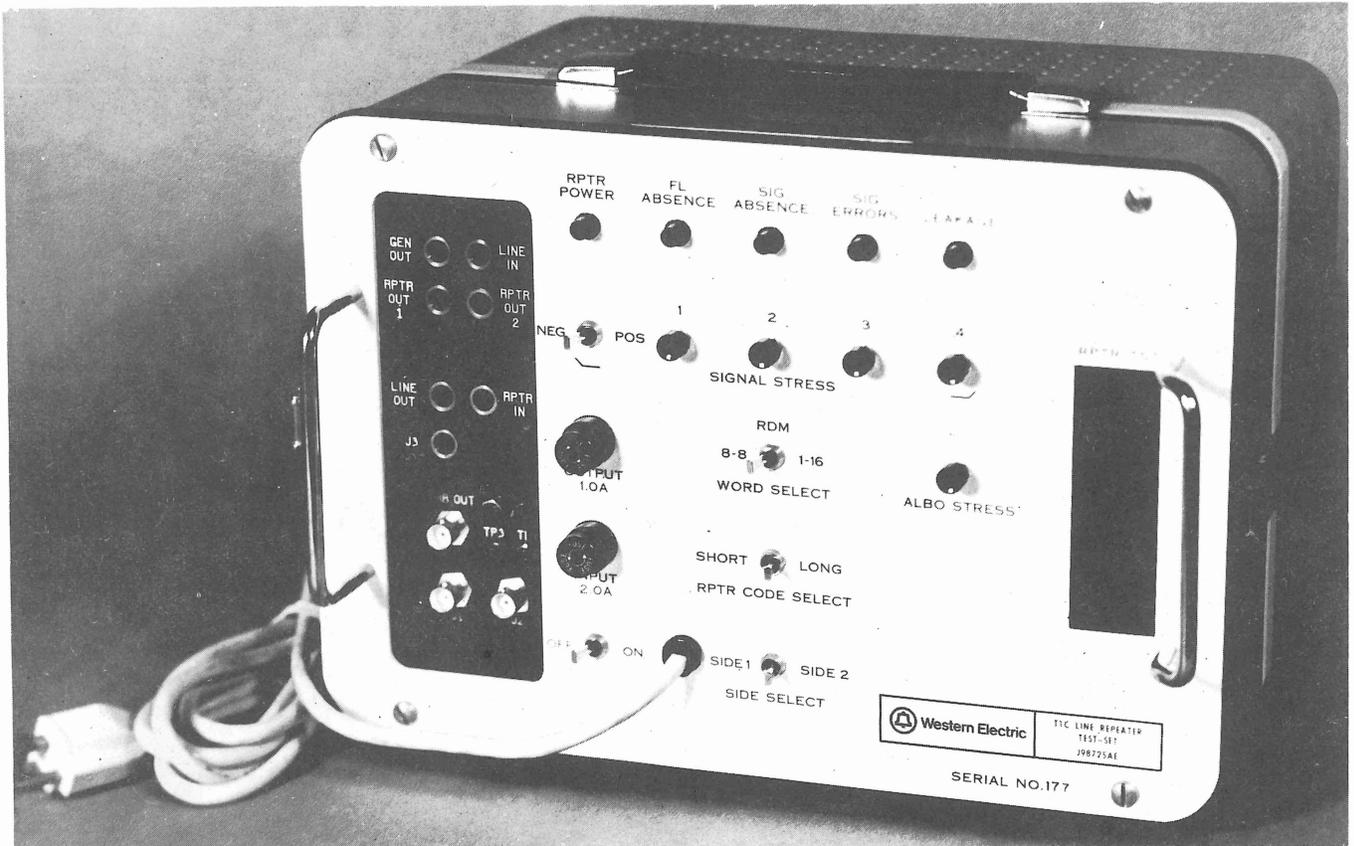


Fig. 24—J98725AE TIC Repeater Test Set

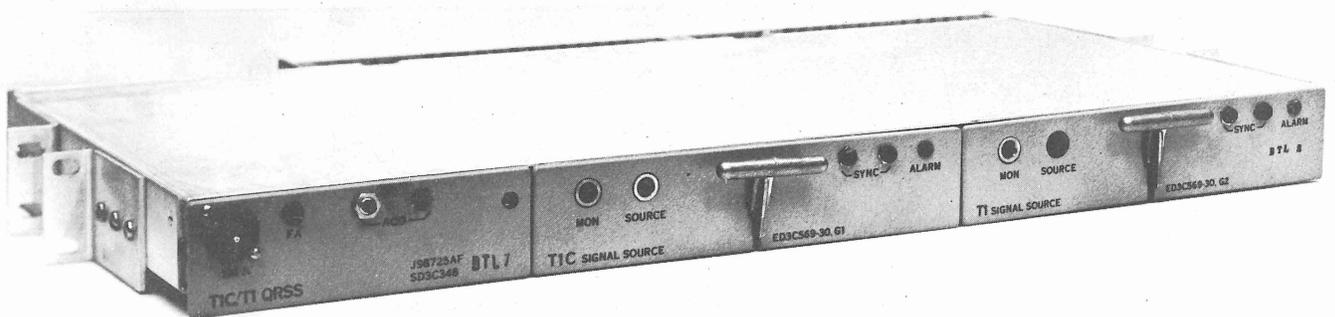


Fig. 25—J98725AF TIC/T1 Quasi-Random Signal Source (QRSS) Panel

tion to the pair loss test set when making pair loss measurements between the first manhole and the TIC/T1 ORB.

**1.66 J98725AA,L3—Pair Loss Frame Adapter (Fig. 27)**— The ED-3C588-30,GR1 pair loss frame adapter provides access to the main distribut-

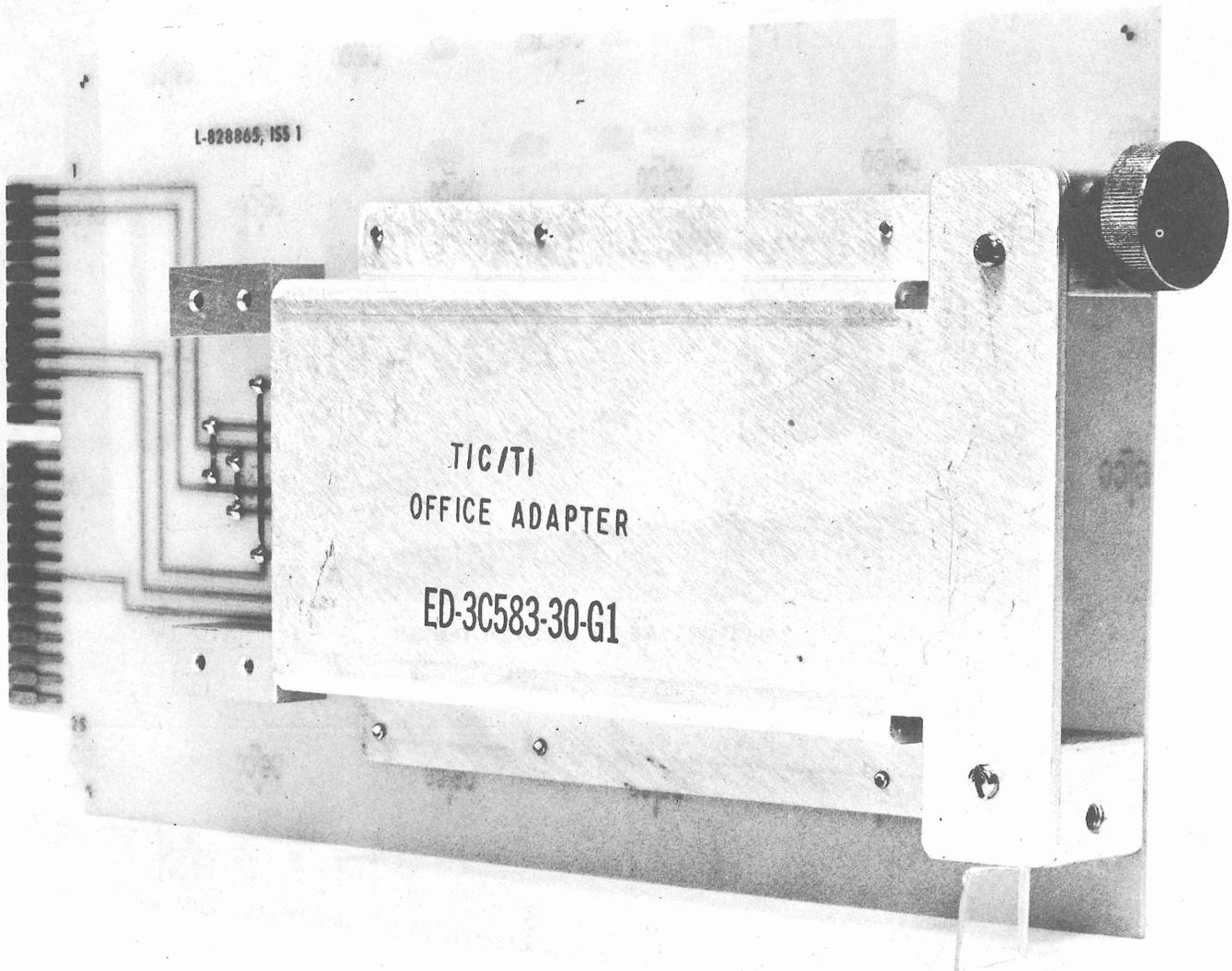


Fig. 26—J98725AA,L2 Pair Loss Bay Adapter

ing frame (MDF) for the J98725AA,L1 pair loss test set. It is required in addition to the J98725AA,L1 test set when conducting pair loss tests between the MDF and the first manhole.

**1.67 J98725AE,L2—Office Repeater Adapter**  
(Fig. 28)— The ED-3C584-30,GR1 office repeater adapter is used with the J98725AE,L1 T1C repeater test set to test T1C office repeaters. It fits into the repeater testing slot of the test set and accommodates one T1C office repeater for testing purposes.

#### G. Power Requirements

**1.68** Power input to all repeater bays is provided by two separate power feeders for each office battery. These feeders are designated A and B. The shelf powering arrangement is as follows: the odd numbered shelves are connected to feeder A, and the even numbered shelves are connected to feeder B. A maximum of three bays may be powered from a common feeder for all non-DSX dedicated bays and the 9-foot 0-inch DSX dedicated bay. A maximum of two bays may be powered from a common feeder for the 11-foot 6-inch DSX dedicated bay.

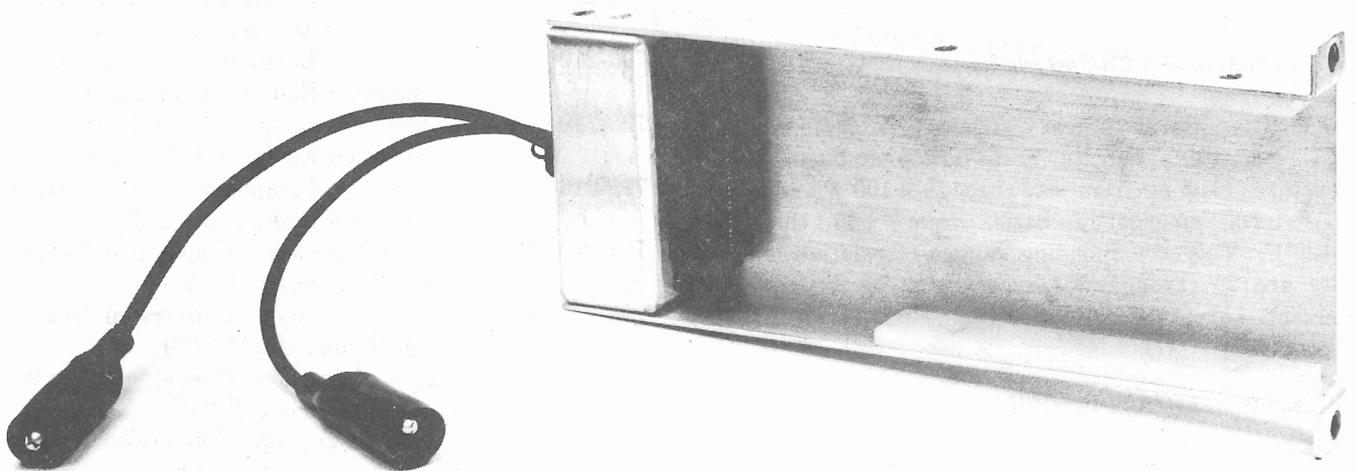


Fig. 27— J98725AA,L3 Pair Loss Frame Adapter

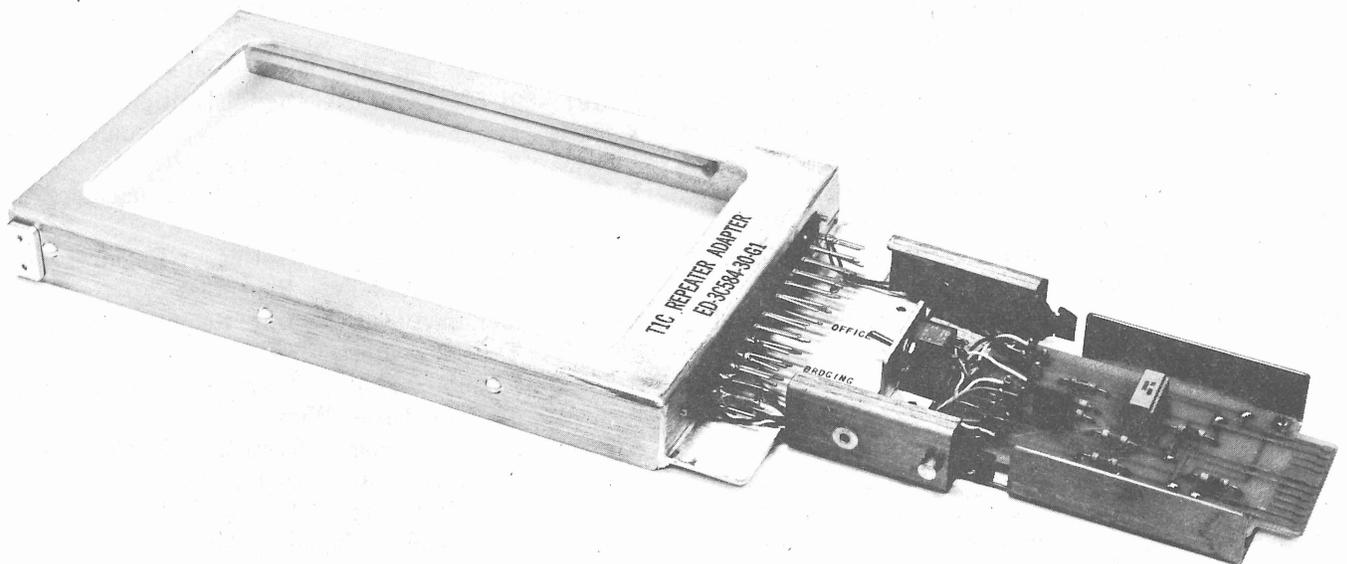


Fig. 28— J98725AE,L2 Office Repeater Adapter

1.69 The average of typical power dissipation of the T1C office repeater bays is given below.

BAY	MAX (WATTS)	MIN (WATTS)
J98725A	1500	500
J98725B	750	250
J98725C	750	250
J98725D	2400	750
J98725E	1500	500

1.70 These figures are typical figures and are highly dependent on individual bay requirements. For more detailed information regarding power, see SD-3C252-01 and SD-3C371-01.

#### H. Environmental Characteristics

1.71 The J98725 office equipment is designed to operate satisfactorily in office ambient temperatures ranging from +40 through +100°F and on a short-term emergency basis, from +35 through +120°F. The corresponding ranges of relative humidity are 20 through 55 percent and 20 through 80 percent.

## 2. SUPPLEMENTARY INFORMATION

801-000-000—Numerical Index—Common Systems  
 800-020-001—Cross Reference List—J, NJ, IS, and X Specifications to BSP Numbers  
 800-020-020—Cross Reference List—AA Series to Nine-Digit BSP Numbers  
 800-600-000—Checking List—General Equipment Requirements  
 103-493-109—Description and Operation of KS-20775-Type Error Rate Test Set  
 365-200-100—Digital Transmission Systems—T1 Digital Line—General Description  
 365-301-101—Digital Transmission Systems—DSX-1, DSX-1C, and DSX-2 Patch and Cross-Connect—General Description  
 365-604-100—Digital Transmission Systems—Digital Multiplex Type M1C—General Description  
 640-527-107—T1C Systems—479-Type Apparatus Case—Description and Installation  
 640-527-211—T1C Systems—479-Type Apparatus Case—Splicing and Maintenance  
 795-209-126—Common Language Encoder Transmission Equipment (T1EC)

795-209-139—Common Language Encoder Transmission Equipment (T1R1)  
 795-209-140—Common Language Encoder Transmission Equipment (T1BR)  
 795-209-141—Common Language Encoder Transmission Equipment (T1MR)  
 795-209-150—Common Language Encoder Transmission Equipment (T1NL)  
 795-209-151—Common Language Encoder Transmission Equipment (T1PD)  
 795-209-153—Common Language Encoder Transmission Equipment (T1RO)  
 795-209-161—Common Language Encoder Transmission Equipment (T1OW)  
 795-209-162—Common Language Encoder Transmission Equipment (T1TE)  
 795-210-126—Common Language Conversion Transmission Equipment (T1EC)  
 795-210-139—Common Language Conversion Transmission Equipment (T1R1)  
 795-210-141—Common Language Conversion Transmission Equipment (T1MR)  
 795-210-150—Common Language Conversion Transmission Equipment (T1NL)  
 795-210-151—Common Language Conversion Transmission Equipment (T1PD)  
 795-210-153—Common Language Conversion Transmission Equipment (T1RO)  
 795-210-161—Common Language Conversion Transmission Equipment (T1OW)  
 795-210-162—Common Language Conversion Transmission Equipment (T1TE)  
 855-351-110—Carrier Engineering System Application—T1C Digital Line Transmission and Outside Plant Design Procedures  
 J97038—801-015-151—Relay Rack Unequal Flange - Duct Type  
 J98726—801-505-155—D4 Channel Bank  
 J98727—801-525-155—M1C Digital Multiplex  
 X-18134—Manufacturing Testing Requirements 218- and 219-Type Repeaters  
 X-18135—Manufacturing Testing Requirements 220-Type Repeaters  
 X-18395—Manufacturing Testing Requirements 248- and 249-Type Repeaters  
 X-18396—Manufacturing Testing Requirements 250-Type Repeaters  
 X-78925—Manufacturing Testing Requirements J98725H Order Wire  
 X-78960—Manufacturing Testing Requirements J98725AA Pair Loss Test Set  
 X-78961—Manufacturing Testing Requirements J98725AB Manhole Bipolar Violation Detector

- X-78962—Manufacturing Testing Requirements  
J98725AC Office Bipolar Violation Detector
- X-78963—Manufacturing Testing Requirements  
J98725AD Fault-Locating Test Set
- X-78964—Manufacturing Testing Requirements  
J98725AE Line Repeater Test Set
- X-78965—Manufacturing Testing Requirements  
J98725AF T1C/T1 Quasi-Random Signal Source
- KS-20775 L1—Error Rate Test Set
- Floor Plan Data—FPD 801-523-153-1  
FPD 801-523-153-2  
FPD 801-523-153-3  
FPD 801-523-153-4  
FPD 801-523-153-5

**3. DRAWINGS**

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

**Circuits**

- SD-3C104-01—Application Schematic — 24 Channel PCM Bank Type D3
- SD-3C205-01—218- and 219-Type Line Repeaters
- SD-3C253-01—220-Type Office Repeater
- SD-3C304-01—Application Schematic — 48 Channel PCM Bank Type D4
- SD-3C377-01—248- and 249-Type Line Repeater
- SD-3C378-01—250-Type Office Repeater
- SD-97060-01—Application Schematic — 24 Channel PCM Bank Type D1
- SD-97080-02—Application Schematic — 206-Type Office Repeater Bay

**Framework**

- ED-97162-52—Relay Rack Assembly — Unequal Flange Cable — Duct Type
- ED-97170-50—Relay Rack Assembly — Unequal Flange Cable — Duct Type

**Equipment**

- ED-3C560-30—Card Assembly
- ED-3C561-30—Receive Amplifier Plug-In Unit
- ED-3C562-30—Transmitter Plug-In Unit
- ED-3C563-30—Control Printed Wiring Board
- ED-3C565-30—Loss Pad Printed Wiring Board
- ED-3C566-30—System Pad Printed Wiring Board

- ED-3C567-30—Calibrate Printed Wiring Board
- ED-3C571-30—Power Violation Detector Plug-In Unit
- ED-3C572-30—Timer and Reset Plug-In Unit
- ED-3C573-30—Counter and Display Plug-In Unit
- ED-3C574-30—Audio Oscillator Plug-In Unit
- ED-3C575-30—Signal Generator, Logic and Line Driver Plug-In Unit
- ED-3C576-30—Power Supply Plug-In Unit
- ED-3C577-30—Receive Detector Plug-In Unit
- ED-3C578-30—Fault Locate and Output Signal Detector Plug-In Unit
- ED-3C579-30—Word Generator Plug-In Unit
- ED-3C580-30—Line Driver and Stress Plug-In Unit
- ED-3C581-30—Simplex Power Plug-In Unit
- ED-3C582-30—Artificial Line Network Plug-In Unit
- ED-3C583-30—Pair Loss Bay Adapter
- ED-3C584-30—Office Repeater Adapter
- ED-3C588-30—Pair Loss Frame Adapter
- ED-3C589-30—Quasi-Random Signal Source Interface Printed Wiring Board Assembly
- ED-3C724-10—Typical T1C Express Office Repeater Bay
- ED-97077-18—Typical Cabling Plan For T1C Office Repeater Bays

**4. EQUIPMENT**

*ED-3C551-30—AT&T Co Std—T1C Office Repeater Shelf Assembly for Use With T1C Office Repeater Bays (J98725A, B, and C)*

*Group 1—Assembly, wiring, and equipment required for one office repeater shelf assembly.*

	WIRE	EQUIP	NOTES
Interconnect Wiring for 13 Office Repeater Positions for Odd Numbered Shelves			
SD-3C252-01: FS 1	13	13	
Interconnect Wiring for 13 Office Repeater Positions for Even Numbered Shelves,			
SD-3C252-01: FS 2	13	13	
Equalizer Connector			
Interconnect Wiring, SD-3C252-01: FS 3	26	26	
—48V Power Dist Wiring, SD-3C252-01: FS 9	1	1	
Ohm/Volt Wiring, SD-3C252-01: FS 10	1	1	

**ED-3C552-30—AT&TCo Std—Jack Field and Bay and Span Cross Connection Assembly for Use With TIC Office Repeater Bays (J98725A, B, and C)**

**Group 1**—Assembly, wiring, and equipment required for one jack field and bay and span cross connection assembly for use in a 7-foot or 9-foot TIC office repeater bay (J98725B or C).

	WIRE	EQUIP	NOTES
Jack Field for Incoming and Outgoing Signals, SD-3C252-01: FS 5	2	2	
Span Cross Connect, SD-3C252-01: FS 6	1	1	
48V Test Set Power Jack Wiring, SD-3C252-01: FS 13	1	1	

**Group 2**—Assembly, wiring, and equipment required in addition to group 1 for one jack field and bay and span cross connection assembly for use in 11-foot 6-inch TIC office repeater bays (J98725A).

	WIRE	EQUIP	NOTES
Jack Field for Incoming and Outgoing Signals, SD-3C252-01: FS 5	2	2	
Span Cross Connect, SD-3C252-01: FS 6	1	1	

**ED-3C553-30—AT&TCo Std—Fuse Alarm and Fault-Locating Filter Panel for Use With TIC Office Repeater Bays (J98725A, B, and C)**

**Group 1**—Assembly, wiring, and equipment required for one fuse alarm and fault-locating panel for use in a 7-foot or a 9-foot bay per SD-3C252-01, FS 7.

**Group 2**—Assembly, wiring, and equipment required for one fuse alarm and fault-locating panel for use in an 11-foot 6-inch bay per SD-3C252-01, FS 7.

**ED-3C554-30—AT&TCo Std—+130 Volt Heat Dissipation Unit for Use With TIC Office Repeater Bays (J98725A, B and C) When +130 Volt Office Battery Is Used on a Repeater Shelf**

**Group 1**—Assembly, wiring, and equipment required for one +130 volt heat dissipation unit per SD-3C252-01, FS 11 (see Note A).

**Note**

A. Provide four group 1 for a 7-foot or 9-foot bay and eight group 1 for an 11-foot 6-inch bay.

**ED-3C555-30—AT&TCo Std—Equalizing Circuit Printed Wiring Board Assembly for Use With TIC Office Repeater Bays (J98725A, B, and C)**

**Group 1**—Assembly and equipment required for one equalizing circuit assembly per SD-3C253-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 0 through 135 feet (see Note A).

**Group 2**—Assembly and equipment required for one equalizing circuit assembly per SD-3C253-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 135 through 270 feet (see Note A).

**Group 3**—Assembly and equipment required for one equalizing circuit assembly per SD-3C253-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 270 through 400 feet (see Note A).

**Note**

A. One equalizing circuit assembly is associated with each 220-type office repeater.

**ED-3C556-30—AT&TCo Std—Telephone Set and Order Wire and Telephone Set Printed Wiring Board Plug-In Unit for Use With the J98725H Order Wire Panel**

**Group 1**—Assembly, wiring, and equipment required for one telephone set plug-in unit per SD-3C254-01, CPS 3, for use in talking over a given order wire powered from another location.

**Group 2**—Assembly, wiring, and equipment required for one order wire and telephone set plug-in unit per SD-3C254-01, CPS 1, for use in powering and in talking over a given order wire.

***ED-3C557-30—AT&TCo Std—Multiple and Bridging and Coupling Printed Wiring Board Plug-In Units for Use With the J98725H Order Wire Panel***

**Group 1**—Assembly, wiring, and equipment required for one multiple plug-in unit per SD-3C254-01, CPS 2, for use in providing additional appearances of the same order wire within a central office.

**Group 2**—Assembly, wiring, and equipment required for one bridging and coupling plug-in unit per SD-3C254-01, CPS 4, for use in providing for ac coupling two individually powered lines in a central office and in talking over the joined order wire lines.

***ED-3C559-30—AT&TCo Std—Probe Assemblies for Use With the T1C/T1 Pair Loss Test Set (J98725AA)***

**Group 1**—Assembly, wiring, and equipment required for one probe assembly per SD-3C343-01, FS 2, for use in gaining access to the 475A and 475B apparatus cases.

**Group 2**—Assembly, wiring, and equipment required in addition to group 1 for one probe assembly per SD-3C343-01, FS 2, for use in gaining access to the 479A and 479B apparatus cases.

**Group 3**—Assembly, wiring, and equipment required in addition to groups 1 and 2 for one probe assembly per SD-3C343-01, FS 2, for use in gaining access to the 466- and 468-type apparatus cases.

***ED-3C564-30—AT&TCo Std—Probe Assemblies for Use With the Manhole Bipolar Violation Detector (J98725AB)***

**Group 1**—Mfr Disc. — Assembly, wiring, and equipment required for one probe assembly per SD-3C344-01, FS 3, for use in gaining access to the 475-type apparatus cases.

**Group 2**—Assembly, wiring, and equipment required for one probe assembly per SD-3C344-01, FS 4, for use in gaining access to the 479-type apparatus cases.

**Group 3**—Mfr Disc. — Assembly, wiring, and equipment required for one probe assembly per SD-3C344-01, FS 2, for use in gaining access to 466- and 468-type apparatus cases.

**Group 4**—Assembly, wiring, and equipment required for one probe assembly per SD-3C344-01, FS 3, option X, for use in gaining access to 475-type apparatus cases and T1 outstate cases.

**Group 5**—Assembly, wiring, and equipment required for one probe assembly per SD-3C344-01, FS 2, option X, for use in gaining access to 466- and 468-type apparatus cases and T1 outstate cases.

***ED-3C568-30—AT&TCo Std—T1C/T1 Quasi-Random Signal Source (QRSS) Power and Alarm Plug-In Assembly for Use With the J98725AF, L1 QRSS Panel***

**Group 1**—Assembly, wiring, and equipment required for one T1C/T1 QRSS power and alarm plug-in assembly per SD-3C348-01, CPS 1.

***ED-3C569-30—AT&TCo Std—T1C/T1 Signal Source Plug-In Unit for Use With the T1C/T1 Quasi-Random Signal Source Panel (J98725AF)***

**Group 1**—Assembly, wiring, and equipment required for one T1C signal source per SD-3C348-01, CPS 2, for providing up to 25 quasi-random signals.

**Group 2**—Assembly, wiring, and equipment required for one T1 signal source per SD-3C348-01, CPS 3, for providing up to 25 quasi-random signals.

***ED-3C585-30—AT&TCo Std—Equalizing Circuit Printed Wiring Board Assembly for Use in T1 Office Repeater Bays (J98725A, B, and C)***

**Group 1**—Assembly and equipment required for one equalizing circuit assembly per SD-3C285-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 0 through 220 feet (see Note A).

**Group 2**—Assembly and equipment required for one equalizing circuit assembly per SD-3C285-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 220 through 440 feet (see Note A).

**Group 3**—Assembly and equipment required for one equalizing circuit assembly per SD-3C285-01, FS 3, for use when the distance between the repeater and the cross-connection facility is 440 through 655 feet (see Note A).

**Note**

A. One equalizing circuit assembly is associated with each 220-type office repeater.

**ED-3C590-30—AT&TCo Std—T1C/T1 T Carrier Administrative System (TCAS) Bridging Resistor Plug-In Unit for Use in T1C/T1 Office Repeater Bays (J98725D and E)**

**Group 1**—Assembly, wiring, and equipment required for one TCAS bridging resistor plug-in unit per SD-3C371, FS 7 (see Notes A and B).

**Notes**

A. This unit is ordered on a two per twenty-five office repeater basis.

B. This unit is located behind the filler plate at the right end of each repeater shelf.

**ED-3C719-30—AT&TCo Std—T1C Express Office Repeater Panel Artificial Line Networks for Use in the J98725J T1C Express Office Repeater Panel**

**Group 1**—Assembly, wiring, and equipment for one artificial line printed wiring board per SD-3C369-01, CP 1.

**Group 2**—Assembly, wiring, and equipment required in addition to group 1 to provide secondary lightning protection per SD-3C369-01, CP 2.

**ED-3C723-30—AT&TCo Std—T1C Express Office Repeater Bay Terminal Strip Panel (See Note A)**

**Group 1**—Assembly, wiring, and equipment required for one T1C express office repeater bay terminal strip panel per SD-3C369-01.

**Note**

A. See ED-3C724-10 for typical bay layout.

**ED-3C741-30—AT&TCo Std—T1C/T1 Power Dissipation Plug-In Unit for Use in J98725D and E T1C/T1 Office Repeater Bays**

**Group 1**—Assembly, wiring, and equipment required for one power dissipation plug-in unit equipped with 1000-ohm resistors for use with 140-mA operation with the 220-, 221-, and 231-type office repeaters per SD-3C371-01, FS 3.

**Group 2**—Assembly, wiring, and equipment required for one power dissipation plug-in unit equipped with 2500-ohm resistors for use with 60-mA operation with the 221-type office repeaters per SD-3C371-01, FS 7.

**Group 3**—Assembly, wiring, and equipment required for one power dissipation plug-in unit equipped with shorting straps for use with 60-mA operation with the 231-type office repeater per SD-3C371-01, FS 8.

**ED-3C742-30—AT&TCo Std — T1C/T1 Fault-Locating Filter Panel for Use in J98725D and E T1C/T1 Office Repeater Bays**

**Group 1**—Assembly, wiring, and equipment required for one T1C/T1 fault-locating filter panel per SD-3C371-01, FS 2.

**ED-3C743-30—AT&TCo Std—T1C/T1 Fuse and Alarm Panel for Use in J98725D and E T1C/T1 Office Repeater Bays**

**Group 1**—Assembly, wiring, and equipment required for one T1C/T1 fuse and alarm panel per SD-3C371-01, FS 1.

**ED-3C744-30—AT&TCo Std—T1C Cable Equalizers for Use in DSX-Dedicated Office Repeater Bays (J98725D and E) (See Note A)**

**Group 1**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 220-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 0 through 133 feet per SD-3C371-01, CPS 6.

**Group 2**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 220-type T1C office re-

peaters when the distance between the repeater bay and cross-connection facility is 134 through 267 feet per SD-3C371-01, CPS 7.

**Group 3**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 220-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 268 through 400 feet per SD-3C371-01, CPS 8.

**Note**

A. One cable equalizer printed wiring board assembly is required per shelf of office repeaters.

**ED-3C757-30—AT&TCo Std—T1C/T1 Office Repeater Shelf Assembly for Use in J98725D and E T1C/T1 Office Repeater Bays**

**Group 1**—Assembly, wiring, and equipment required for one office repeater shelf assembly.

	WIRE	EQUIP	NOTES
Interconnect Wiring for 13 Office Repeater Positions for Odd Numbered Shelves, SD-3C371-01: CAD 5	13	13	
Interconnect Wiring for 13 Office Repeater Positions for Even Numbered Shelves, SD-3C371-01: CAD 6 & 7	13	13	
Interconnect Wiring for Equalizer Plug-In Connector for Odd Numbered Shelves, SD-3C371-01: CAD 11	1	1	
Interconnect Wiring for Equalizer Plug-In Connector for Even Numbered Shelves, SD-3C371-01: CAD 12	1	1	
—48 Volt Power Dist Wiring, SD-3C371-01: FS 4	1	1	
Ohm/Volt Wiring, SD-3C371-01: FS 5	1	1	

**Group 2**—Assembly, wiring, and equipment required in addition to group 1 to provide for inter-

facing with the T-Carrier Administration System (TCAS).

	WIRE	EQUIP	NOTES
Interconnect Wiring for TCAS Connector on Odd Numbered Shelves, SD-3C371-01: CAD 8	1	1	
Interconnect Wiring for TCAS Connector on Even Numbered Shelves, SD-3C371-01: CAD 9	1	1	

**ED-3C765-30—AT&TCo Std—T1 Cable Equalizers for Use in DSX-Dedicated Office Repeater Bays (J98725D and E) (See Note A)**

**Group 1**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 221- or 231-type T1 office repeaters when the distance between the repeater bay and cross-connection facility is 0 through 220 feet per SD-3C371-01, CPS 9.

**Group 2**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 221- or 231-type T1 office repeaters when the distance between the repeater bay and cross-connection facility is 221 through 440 feet per SD-3C371-01, CPS 10.

**Group 3**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 221- or 231-type T1 office repeaters when the distance between the repeater bay and cross-connection facility is 441 through 655 feet per SD-3C371-01, CPS 11.

**Note**

A. One cable equalizer printed wiring board assembly is required per shelf of office repeaters.

**ED-3C767-30—AT&TCo Std—T1C Cable Equalizers for Use in DSX-Dedicated Office Repeater Bays (J98725D and E) Equipped with 250-Type Office Repeaters (See Note A)**

**Group 1**—Assembly, wiring, and equipment for one equalizer circuit printed wiring board as-

	WIRE	EQUIP	NOTES
sembly for use with 250-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 0 through 135 feet per SD-3C371-01, CP 1.			
<b>Group 2</b> —Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 250-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 135 through 270 feet per SD-3C371-01, CP 2.	4	4	
<b>Group 3</b> —Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 250-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 270 through 400 feet per SD-3C371-01, CP 3.	1	1	
<b>Group 4</b> —Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 250-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 400 through 533 feet per SD-3C371-01, CP 4.	1	1	
<b>Group 5</b> —Assembly, wiring, and equipment for one equalizer circuit printed wiring board assembly for use with 250-type T1C office repeaters when the distance between the repeater bay and cross-connection facility is 533 through 667 feet per SD-3C371-01, CP 5.			
<b>Note</b>			
A. One cable equalizer printed wiring board assembly is required per shelf of office repeaters.			
<b>J98725A—AT&amp;T Co Std—11-Foot 6-Inch T1C Office Repeater Bay</b>			
<b>List 1</b> —Framework, assembly, wiring, and equipment required for one T1C office repeater bay using 11 foot 6 inch by 26-3/8 inch unequal flange cable-duct type framework, and arranged to accommodate up to one hundred four 220-, 221-, 231-, or 250-type office repeaters and associated circuits per SD-3C252-01. This list is for use in offices not equipped with DSX-1C cross-connection and maintenance bay. (See Note B.)			
Office Repeater Shelf Assembly ED-3C551-30, GR1, Connected per SD-3C252-01: FS 1, 2, 9, & 10	4	4	
Jack Field and Bay and Span Cross Connection Assembly ED-3C552-30,GR1 & 2, Connected per SD-3C252-01: FS 5, 6, & 13	1	1	
Fuse Alarm and Fault- Locating Filter Panel ED-3C553-30,GR2, Connected per SD-3C252-01: FS 7	1	1	
Jack Field Interface Terminal Strip Wired per SD-3C252-01: FS 4	1	1	
Unequal Flange Cable-Duct Type Framework ED-97170-50,GR1, 17, and 25 (11 Feet 6 Inches by 26-3/8 Inches, With 2-Inch Mounting Plate Centers)		1	
<b>List 2</b> —Same as list 1 excluding the jack field and bay and span cross connection assembly ED-3C552-30,GR1 and 2. This list is for use in offices equipped with DSX-1C cross-connection and maintenance bay.			
<b>List 3</b> —Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one order-wire panel (J98725H). Requires one 2-inch by 23-inch mounting space and is connected per SD-3C252-01, FS12. (See Note A.)			
<b>List 4</b> —Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one J98722F,L3 repeater access unit (RAU) for TCAS interface. (See Notes C and D.) This list consists of the following:			
(a) one J98722F,L3 RAU			
(b) one J98722F,L4 cables and resistor module.			
<b>List 5</b> —Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one			

ED-1P267-30,GR1 and SA [maintenance line status indicator (MLSI) cross-connect terminal strip assembly with provision to terminate MLSI detectors] for use with TCAS. (See Notes E and F.)

**List 6**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one ED-1P267-30,GR1 (MLSI cross-connect terminal strip assembly) for use with TCAS. (See Notes E and F.)

**Notes**

- A. ED-3C556-30 and ED-3C557-30 plug-in units must be ordered separately.
- B. All office repeaters must be ordered separately.
- C. The RAU will be mounted directly above the top repeater shelf.
- D. All cabling to and from the RAU will run in the left duct as viewed from the rear.
- E. All wiring associated with list 5 or list 6 must be run in left duct as viewed from rear.
- F. The MLSI terminal strip assembly will be mounted directly above the fourth repeater shelf at the rear of the bay.

**J98725B—AT&T Co Std—9-Foot 0-Inch T1C Office Repeater Bay**

**List 1**—Framework, assembly, wiring, and equipment required for one T1C office repeater bay using 9 foot 0 inch by 26-3/8 inch unequal flange cable-duct type framework, and arranged to accommodate up to fifty-two 220-, 221-, 231-, or 250-type office repeaters and associated circuits per SD-3C252-01. This list is for use in offices not equipped with DSX-1C cross-connection and maintenance bay. (See Note B.)

Office Repeater Shelf  
 Assembly ED-3C551-30,  
 GR1, Connected per  
 SD-3C252-01: FS 1, 2,  
 9, & 10

	WIRE	EQUIP	NOTES
Office Repeater Shelf Assembly ED-3C551-30, GR1, Connected per SD-3C252-01: FS 1, 2, 9, & 10	2	2	

	WIRE	EQUIP	NOTES
Jack Field and Bay and Span Cross Connection Assembly ED-3C552-30, GR1, Connected per SD-3C252-01: FS 5, 6, & 13	1	1	
Fuse Alarm and Fault- Locating Filter Panel ED-3C553-30,GR1, Connected per SD-3C252-01: FS 7	1	1	
Power Dissipation Shelf Equipped With Connectors and Wired per SD-3C252-01: FS 8	1	1	
Unequal Flange Cable-Duct Type Framework ED-97170-50, GR2, 17, and 25 (9 Feet 0 Inches by 26-3/8 Inches, With 2-Inch Mounting Plate Centers)		1	

**List 2**—Same as list 1 excluding the jack field and bay and span cross connection assembly ED-3C552-30,GR1. This list is for use in offices equipped with DSX-1C cross-connection and maintenance bay.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one order-wire panel (J98725H). Requires one 2-inch by 23-inch mounting space and is connected per SD-3C252-01, FS 12. (See Note A.)

**List 4**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one J98722F,L3 repeater access unit for TCAS interface. (See Notes C and D.) This list consists of the following:

- (a) one J98722F,L3 RAU
- (b) one J98722F,L5 cables and resistor module.

**List 5**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide TCAS interface when the J98722F,L3 RAU is located in an adjacent J98725B bay. (See Note E.)

**List 6**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one ED-19267-30,GR1 and SA (MLSI cross-connect terminal strip assembly with provision to terminate MLSI detectors) for use with TCAS. (See Notes F and G.)

**List 7**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one ED-1P267-30,GR1 (MLSI cross-connect terminal strip assembly) for use with TCAS. (See Notes F and G.)

**Notes**

- A. ED-3C556-30 and ED-3C557-30 plug-in units must be ordered separately.
- B. All office repeaters must be ordered separately.
- C. The RAU will mount directly above the jack field.
- D. All cables to and from the RAU will run in the left duct as viewed from the rear.
- E. This list provides one J98722F,L6. This list is a field installation.
- F. All wiring associated with list 6 and list 7 must be run in left duct as viewed from rear.
- G. The MLSI terminal strip assembly will be mounted directly above the fourth repeater shelf at the rear of the bay.

**J98725C—AT&TCo Std—7-Foot 0-Inch TIC Office Repeater Bay**

**List 1**—Framework, assembly, wiring, and equipment required for one TIC office repeater bay using 7 foot 0 inch by 26-3/8 inch unequal flange cable-duct type framework, and arranged to accommodate up to fifty-two 220-, 221-, 231-, or 250-type office repeaters and associated circuits per SD-3C252-01. This list is for use in offices not equipped with DSX-1C cross-connection and maintenance bay. (See Note B.)

	WIRE	EQUIP	NOTES
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Office Repeater Shelf Assembly ED-3C551-30, GR1, Connected per SD-3C252-01: FS 1, 2, 9, & 10	2	2	
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Jack Field and Bay and Span Cross Connection Assembly ED-3C552-30, GR1, Connected per SD-3C252-01: FS 5, 6, & 13	1	1	
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	WIRE	EQUIP	NOTES
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Fuse Alarm and Fault- Locating Filter Panel ED-3C553-30,GR1, Connected per SD-3C252-01: FS 7	1	1	
Power Dissipation Shelf Equipped With Connectors and Wired per SD-3C252-01: FS 8	1	1	
Jack Field Interface Terminal Strip Wired per SD-3C252-01: FS 4	1	1	
Unequal Flange Cable-Duct Type Framework ED-97162-52,GR1, 10, and 13 (7 Feet 0 Inches by 26-3/8 Inches, With 2-Inch Mounting Plate Centers)		1	

**List 2**—Same as list 1 excluding the jack field and bay and span cross connection assembly ED-3C552-30,GR1. This list is for use in offices equipped with DSX-1C cross-connection and maintenance bay.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one order-wire panel (J98725H). Requires one 2-inch by 23-inch mounting space and is connected per SD-3C252-01, FS12. (See Note A.)

**List 4**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide TCAS interface capability. (See Notes C and D.) This list consists of the following:

- Four bridging-resistor modules (Amphenol part C150331).
- Four single-ended cables to connect bridging-resistor module to the jack field interface terminal (JTS).

**List 5**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one ED-1P267-30,GR1 and SA (MLSI cross-connect terminal strip assembly) for use with TCAS. (See Notes D and E.)

**List 6**—Assembly, wiring, and equipment required in addition to list 1 or list 2 to provide one ED-1P267-30,GR1 (MLSI cross-connect terminal strip assembly with provision to terminate MLSI detectors) for use with TCAS. (See Notes D and E.)

**Notes**

- A. ED-3C556-30 and ED-3C557-30 plug-in units must be ordered separately.
- B. All office repeaters must be ordered separately.
- C. Four single-ended cables to connect the bridging resistor module to the RAU must be ordered separately.
- D. All wiring associated with lists 4, 5, and 6 must run in the left duct as viewed from rear.
- E. The ED-1P267-30 MLSI terminal strip will be mounted directly above the fourth repeater shelf at the rear of the bay.

Unequal Flange  
Cable-Duct Type  
Framework ED-97170-50,  
GR1, 17, & 25 (11 Feet  
6 Inches by 26-3/8  
Inches, With 2-Inch  
Mounting Plate Centers) 1

**List 2**—Assembly, wiring, and equipment required in addition to list 1 to provide one order-wire panel (J98725H) per SD-3C371-01, FS 6.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 for interfacing with the TCAS. (See Note B.)

**J98725D—AT&TCo Std—11-Foot 6-Inch TIC/T1 Office Repeater Bay — DSX Dedicated**

**List 1**—Framework, assembly, wiring, and equipment required for one TIC/T1 office repeater bay, DSX dedicated, using 11 foot 6 inch by 26-3/8 inch unequal flange cable-duct type framework, and arranged to accommodate up to one hundred fifty-six 220-, 221-, 231-, or 250-type office repeaters per SD-3C371-01. (See Note A.)

**Notes**

- A. All office repeaters must be ordered separately.
- B. The ED-3C590-(),GR1 TCAS bridging resistor plug-in unit must be ordered separately. (Two per 25 office repeaters.) This plug-in is located behind the filler plate at the right end of each repeater shelf.

**J98725E—AT&TCo Std—9-Foot 0-Inch TIC/T1 Office Repeater Bay — DSX Dedicated**

**List 1** —Framework, assembly, wiring, and equipment required for one TIC/T1 office repeater bay, DSX dedicated, using 9 foot 0 inch by 26-3/8 inch unequal flange cable-duct type framework, and arranged to accommodate up to one hundred four 220-, 221-, 231-, or 250-type office repeaters per SD-3C371-01. (See Note A.)

	WIRE	EQUIP	NOTES
Office Repeater Shelf Assembly ED-3C757-30, GR1, Connected per SD-3C371-01	6	6	
Fault-Locating Filter Panel ED-3C742-30, GR1, Connected per SD-3C371-01: FS 2	1	1	
Fuse and Alarm Panel ED-3C743-30,GR1, Connected per SD-3C371-01: FS 1	1	1	
Power Dissipation Shelf Equipped With Connectors and Wired per SD-3C371-01: CAD 10	1	1	
Distributing Terminal Strips Wired per SD-3C371-01: CAD 3 & 4	1	1	
DSX Interface Terminal Strips Wired per SD-3C371-01: CAD 13, 14, 15, & 16	1	1	

	WIRE	EQUIP	NOTES
Office Repeater Shelf Assembly ED-3C757-30, GR1, Connected per SD-3C371-01	4	4	
Fault-Locating Filter Panel ED-3C742-30,GR1, Connected per SD-3C371-01: FS 2	1	1	
Fuse and Alarm Panel ED-3C743-30,GR1, Connected per SD-3C371-01: FS 1	1	1	

	WIRE	EQUIP	NOTES
Power Dissipation Shelf Equipped With Connectors and Wired per SD-3C371-01: CAD 10	1	1	
Distributing Terminal Strips Wired per SD-3C371-01: CAD 3 & 4	1	1	
DSX Interface Terminal Strips Wired per SD-3C371-01: CAD 13, 14, 15, & 16	1	1	
Unequal Flange Cable-Duct Type Framework ED-97170-50,GR2, 17, & 25 (9 Feet 0 Inches by 26-3/8 Inches, With 2-Inch Mounting Plate Centers).		1	

**List 2**—Assembly, wiring, and equipment required in addition to list 1 to provide one order-wire panel (J98725H) per SD-3C371-01, FS 6.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 for interfacing with the TCAS. (See Note B.)

#### Notes

A. All office repeaters must be ordered separately.

B. The ED-3C590-( ),GR1 TCAS bridging resistor plug-in unit must be ordered separately. (Two per 25 office repeaters.) This plug-in is located behind the filler plate at the right end of each repeater shelf.

#### J98725H—AT&TCo Std—Order-Wire Panel

**List 1**—Assembly, wiring, and equipment required for one order-wire panel occupying one 2-inch by 23-inch bay space per SD-3C254-01, FS 1. (See Note A.)

#### Note

A. ED-3C556-30 and ED-3C557-30 plug-in units must be ordered separately.

#### J98725J—AT&TCo Std—TIC Express Office Repeater Panel (See Notes E and F)

**List 1**—Assembly, wiring, and equipment required for one express office repeater panel for use with twenty-five 218- or 248-type repeaters and one 1068-type fault-locating filter per SD-3C369-01, FS 1, 2, and 3. (See Notes A and B.)

**List 2**—Equipment required in addition to list 1 to provide twenty-five ED-3C719-30,GR1, artificial line printed wiring boards when secondary lightning protection is not required per SD-3C369-01, CP 1.

**List 3**—Equipment required in addition to list 1 to provide twenty-five ED-3C719-30,GR2, artificial line printed wiring boards when secondary lightning protection is required per SD-3C369-01, CP 2.

**List 4**—Assembly, wiring, and equipment required in addition to list 3 to provide primary lightning protection for one fault-locating line and 25 repeaters per SD-3C369-01, FS 6.

**List 5**—Assembly, wiring, and equipment required in addition to list 1 to provide one fault-locating loading coil per SD-3C369-01, FS 8, option T. (See Note D.)

**List 6**—Assembly, wiring, and equipment required in addition to list 1 to provide one order-wire jack appearance per SD-3C369-01, FS 5.

**List 7**—Assembly, wiring, and equipment required in addition to list 1 to provide one order-wire binding post appearance when panel is to be maintained by outside plant personnel per SD-3C369-01, FS 4.

**List 8**—Assembly, wiring, and equipment required in addition to list 6 or list 7 to provide one order-wire loading coil per SD-3C369-01, FS 9, option U. (Normally furnished with FS 9, option V.)

**List 9**—Assembly, wiring, and equipment required in addition to list 6 or list 7 to provide two order-wire capacitors per SD-3C369-01, FS 7, option Z. (See Note C.)

**List 10**—Assembly, wiring, and equipment required in addition to list 6 or list 7 and list 4 to provide primary lightning protection for the order wire per SD-3C369-01, FS 6.

**List 11**—Assembly, wiring, and equipment for one order-wire multiple circuit when TIC order-wire panel appearance is extended to express office repeater panel per SD-3C369-01, FS 10.

**List 12**—Assembly, wiring, and equipment required in addition to list 4 to provide primary lightning protection through fault-locating line per SD-3C369-01, FS 6.

**Notes**

- A. A minimum of two lists 1 are always required, and future growth must also be handled on a two-panel basis.
- B. The 218- or 248-type repeaters and the 1068-type fault-locating filters must be ordered separately. (Twenty-five 218- or 248-type repeaters and one fault-locating filter per panel.)
- C. If an order-wire span is over 13 miles long, the dc power connection must be broken, and the order-wire span must be powered from both ends. To provide the dc isolation and maintain ac continuity, coupling capacitors must be located at a repeater location near the center of the span. List 9 provides these capacitors in the panel.
- D. Provide FS 8, option S or T when fault-locating load coil is required. Normally furnished with FS 8, option S.
- E. An ED-3C723-30 T1C express office repeater bay terminal strip panel may be ordered to terminate order-wire and fault-locating pairs at the top of the bay before express office repeater panels are located in the bay (see ED-3C724-10 typical T1C express office repeater bay).
- F. When express office repeater panel is to house T1 repeaters, use the 245A, series 4 adapter.

**J98725AA—AT&TCo Std—T1C/T1 Pair Loss Test Set**

**List 1**—Assembly, wiring, and equipment required for one T1C/T1 pair loss test set per SD-3C343-01 for use with T1 and T1C lines.

	WIRE	EQUIP	NOTES
Probe Assembly ED-3C559-30 per SD-3C343-01: FS 1 & 2	1	1	
Cord Assembly ED-3C560-30 per SD-3C343-01: FS 1	1	1	
Receive Amplifier Plug-In Unit ED-3C561-30 per SD-3C343-01: CPS 2		1	
Transmitter Plug-In Unit ED-3C562-30 per SD-3C342-01: CPS 1		1	
Loss Pad Printed Wiring Board ED-3C565-30 per SD-3C343-01: FS 1	1	1	

WIRE EQUIP NOTES

System Pad Printed Wiring Board ED-3C566-30 per SD-3C343-01: FS 1	1	1	
Calibrate Pad Printed Wiring Board ED-3C567-30 per SD-3C343-01: FS 1	1	1	

**List 2**—Assembly and equipment required for one ED-3C583-30,GR1, pair loss bay adapter per SD-3C343-01, FS 2. Required in addition to list 1 when making pair loss measurements from a T1C office repeater bay (J98725A).

**List 3**—Assembly, wiring, and equipment required for one ED-3C588-30,GR1, pair loss frame adapter per SD-3C343-01, FS 2. Required in addition to list 1 when performing tests from an office main frame.

**J98725AB—AT&TCo Std—T1C/T1 Manhole Bipolar Violation Detector**

**List 1**—Assembly, wiring, and equipment required for one T1C/T1 manhole bipolar violation detector per SD-3C344-01 for use with T1 and T1C lines.

WIRE EQUIP NOTES

Control Printed Wiring Board ED-3C563-30,GR1, per SD-3C344-01: FS 1	1	1	
Probe Assembly ED-3C564-30,GR1, per SD-3C344-01: FS 3	1	1	
Probe Assembly ED-3C564-30,GR2, per SD-3C344-01: FS 4	1	1	
Probe Assembly ED-3C564-30,GR3, per SD-3C344-01: FS 2	1	1	

**List 2**—Assembly, wiring, and equipment required for one T1C/T1 manhole bipolar violation detector per SD-3C344-01 for use with T1, T1C, and T1 outstate lines.

WIRE EQUIP NOTES

Control Printed Wiring Board ED-3C563-30,GR1, per SD-3C344-01: FS 1	1	1	
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	WIRE	EQUIP	NOTES
Probe Assembly ED-3C564-30,GR4, per SD-3C344-01: FS 3, Option X	1	1	
Probe Assembly ED-3C564-30,GR2, per SD-3C344-01: FS 4	1	1	
Probe Assembly ED-3C564-30,GR5, per SD-3C344-01: FS 2, Option X	1	1	
<b>J98725AC—AT&amp;TCo Std—T1C/T1 Office Bipolar Violation Detector</b>			

**List 1**—Assembly, wiring, and equipment required for one T1C/T1 office bipolar violation detector per SD-3C345-01 for use with T1, T1 outstate, and T1C lines.

	WIRE	EQUIP	NOTES
Power Violation Detector Plug-In Unit ED-3C571-30 per SD-3C345-01: CPS 1		1	
Timer and Reset Plug-In Unit ED-3C572-30 per SD-3C345-01: CPS 2		1	
Counter and Display Plug-In ED-3C573-30 per SD-3C345-01: CPS 3		1	
<b>J98725AD—AT&amp;TCo Std—T1C/T1 Fault-Locating Test Set</b>			

**List 1**—Assembly, wiring, and equipment required for one T1C/T1 fault-locating test set per SD-3C346-01 for use with T1, T1 outstate, and T1C lines.

	WIRE	EQUIP	NOTES
Audio Oscillator Plug-In Unit ED-3C574-30 per SD-3C346-01: CPS 2		1	
Signal Generator, Logic and Line Driver Plug-In Unit ED-3C575-30 per SD-3C346-01: CPS 4		1	
Power Supply Plug-In Unit ED-3C576-30 per SD-3C346-01: CPS 1		1	

	WIRE	EQUIP	NOTES
Receive Detector Plug-In Unit ED-3C577-30 per SD-3C346-01: CPS 3		1	
Receiving Active Filter Plug-In Unit 1127A per A-254873		1	
<b>J98725AE—AT&amp;TCo Std—T1C Line Repeater Test Set</b>			

**List 1**—Mfr Disc.—Assembly, wiring, and equipment required for one T1C line repeater test set per SD-3C347-01 for use in testing T1C line repeaters (218- and 219-type).

	WIRE	EQUIP	NOTES
Word Generator Plug-In Unit ED-3C579-30 per SD-3C347-01: CPS 2		1	
Line Driver and Stress Plug-In Unit ED-3C580-30 per SD-3C347-01: CPS 3		1	
Simplex Power Plug-In Unit ED-3C581-30 per SD-3C347-01: CPS 5		1	
Artificial Line Network Plug-In Unit ED-3C582-30 per SD-3C347-01: CPS 4		1	
Fault-Locating and Output Signal Detector Plug-In Unit ED-3C578-30 per SD-3C347-01: CPS 6		1	

**List 2**—Assembly, wiring, and equipment required for one ED-3C584-30,GR1, office repeater adapter per SD-3C347-01, CPS 7. Required in addition to list 1, list 3, or list 4 when testing T1C office repeaters.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 to provide low-power repeater testing capability to the existing list 1 on a field modification basis per SD-3C347-01, FS 1, option T and CPS 5, options W, X, and V.

**List 4**—Assembly, wiring, and equipment required for one low- and standard-power T1C line repeater test set per SD-3C347-01, FS 1, option T.

	WIRE	EQUIP	NOTES
Word Generator Plug-In Unit ED-3C579-30,GR1 per SD-3C347-01: CPS 2		1	
Line Driver and Stress Plug-In Unit ED3C-580-30,GR1 per SD-3C347-01: CPS 3		1	
Simplex Power Plug-In Unit ED-3C581-30,GR2 per SD-3C349-01: CPS 5 Options W, X, & V		1	
Artificial Line Network Plug-In Unit ED-3C582-30,GR1 per SD-3C347-01: CPS 4		1	
Fault-Locating and Output Signal Detector Plug-In Unit ED-3C578-30,GR1 per SD-3C347-01: CPS 6		1	

**J98725AF—AT&TCo Std—T1C/T1 Quasi-Random  
Signal Source Panel**

**List 1**—Assembly, wiring, and equipment for one quasi-random signal source (QRSS) panel for use in providing up to fifty T1 or T1C signal sources, arranged to mount on 2-inch mounting plate by 23-inch bay framework. (See Notes A, B, and C.)

	WIRE	EQUIP	NOTES
QRSS Interface Printed Wiring Board Assembly ED-3C589-30,GR1, per SD-3C348-01: CPS 4, Wired per FS 1	2	2	
QRSS Power and Alarm Unit ED-3C568-30,GR1, per SD-3C348-01: CPS 1, Wired per FS 1		1	A

**Notes**

- A. Panel is shipped with ED-3C568-30,GR1, unit in place.
- B. When panel is to be mounted on 1-3/4 inch framework, additional mounting brackets are shipped loose with panel.
- C. Signal source plug-in ED-3C569-30 shall be ordered separately.

**5. GENERAL NOTES AND INDEXES**

- 5.01** Codes J98725F, J98725G, and J98725K through J98725Y are unassigned.
- 5.02** Tables B and C list the required 218-, 219-, 220-, 248-, 249-, or 250-type repeater plug-in units that must be ordered separately because they are not supplied with the equipment. The tables also list the common language equipment (CLE) codes.

## SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WE J drawings should be ordered by referring to the prefix and base number and requesting the current dash (-) number.

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
ED-3C551-30	Std	Office Repeater Shelf Assembly	ED-3C551-30	SD-3C252-01
ED-3C552-30	Std	Jack Field and Bay and Span Cross Connection Assembly	ED-3C552-30	SD-3C252-01
ED-3C553-30	Std	Fuse Alarm and Fault-Locating Filter Panel	ED-3C553-30	SD-3C252-01
ED-3C554-30 (T1PD)	Std	130-Volt Heat Dissipation Unit	ED-3C554-30	SD-3C252-01
ED-3C555-30 (T1EC)	Std	Equalizing Circuit T1C PWB Assembly	ED-3C555-30	SD-3C253-01
ED-3C556-30 (T10W)	Std	Tel Set and Order Wire PWB Assembly	ED-3C556-30	SD-3C254-01
ED-3C557-30 (T10W)	Std	Multiple, Bridging and Coupling PWB Assemblies	ED-3C557-30	SD-3C254-01
ED-3C559-30	Std	Pair Loss Probe Assembly	ED-3C559-30	SD-3C343-01
ED-3C564-30	Std	Manhole Detector Probe Assembly	ED-3C564-30	SD-3C344-01
ED-3C568-30	Std	QRSS Power and Alarm Plug-In	ED-3C568-30	SD-3C348-01
ED-3C569-30	Std	QRSS Signal Source Plug-In	ED-3C569-30	SD-3C348-01
ED-3C585-30 (T1EC)	Std	Equalizing Circuit (T1) Plug-In	ED-3C585-30	SD-3C385-01
ED-3C590-30	Std	TCAS Bridging Resistor Plug-In	ED-3C590-30	SD-3C371-01
ED-3C719-30 (T1NL)	Std	Express Office Repeater Artificial Line Networks	ED-3C719-30	SD-3C369-01
ED-3C723-30	Std	Express Office Terminal Strip Panel	ED-3C723-30	SD-3C369-01
ED-3C741-30 (T1PD)	Std	Power Dissipation Plug-In	ED-3C741-30	SD-3C371-01
ED-3C742-30	Std	Fault-Locating Filter Panel	ED-3C742-30	SD-3C371-01
ED-3C743-30	Std	Fuse and Alarm Panel	ED-3C743-30	SD-3C371-01
ED-3C744-30 (T1EC)	Std	Cable Equalizer Plug-In	ED-3C744-30	SD-3C253-01

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
ED-3C757-30	Std	Office Repeater Shelf Assembly	ED-3C757-30	SD-3C371-01
ED-3C765-30 (TIEC)	Std	T1 Cable Equalizers	ED-3C765-30	SD-3C371-01
ED-3C767-30 (TIEC)	Std	T1C Low-Power Cable Equalizers	ED-3C767-30	SD-3C371-01
J98725A (T1BR)	Std	11-Foot 6-Inch T1C Office Repeater Bay	J98725A-()	SD-3C252-01
J98725B (T1BR)	Std	9-Foot 0-Inch T1C Office Repeater Bay	J98725B-()	SD-3C252-01
J98725C (T1BR)	Std	7-Foot 0-Inch T1C Office Repeater Bay	J98725C-()	SD-3C252-01
J98725D (T1BR)	Std	11-Foot 6-Inch T1C/T1 Office Repeater Bay - DSX-Dedicated	J98725D-()	SD-3C371-01
J98725E (T1BR)	Std	9-Foot 0-Inch T1C/T1 Office Repeater Bay - DSX-Dedicated	J98725E-()	SD-3C371-01
J98725H	Std	Order-Wire Panel	J98725H-()	SD-3C254-01
J98725J (T1MR)	Std	T1C Express Office Repeater Panel	J98725J-()	SD-3C369-01
J98725AA (T1TE)	Std	T1C/T1 Pair Loss Test Set	J98725AA-()	SD-3C343-01
J98725AB (T1TE)	Std	T1C/T1 Manhole Bipolar Violation Detector	J98725AB-()	SD-3C344-01
J98725AC (T1TE)	Std	T1C/T1 Office Bipolar Violation Detector	J98725AC-()	SD-3C345-01
J98725AD (T1TE)	Std	T1C/T1 Fault-Locating Test Set	J98725AD-()	SD-3C346-01
J98725AE (T1TE)	Std	T1C Line Repeater Test Set	J98725AE-()	SD-3C347-01
J98725AF (T1TE)	Std	T1C/T1 Quasi Random Signal Source	J98725AF-()	SD-3C348-01

## Circuit Schematic Index

CIRCUIT DRAWING	J98725 EQUIP CODE
SD-3C252-01	A,B,C ED-3C551-30 ED-3C552-30 ED-3C553-30 ED-3C554-30
SD-3C253-01	ED-3C555-30 ED-3C744-30
SD-3C254-01	H ED-3C556-30 ED-3C557-30
SD-3C343-01	AA ED-3C559-30
SD-3C344-01	AB ED-3C564-30
SD-3C345-01	AC
SD-3C346-01	AD
SD-3C347-01	AE
SD-3C348-01	AF ED-3C568-30 ED-3C569-30
SD-3C369-01	J ED-3C719-30 ED-3C723-30
SD-3C371-01	D,E ED-3C590-30 ED-3C741-30 ED-3C742-30 ED-3C743-30 ED-3C757-30 ED-3C765-30 ED-3C767-30
SD-3C385-01	ED-3C585-30

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