REPEATERED LINE CABLE SECTIONS
PAIR-LOSS MEASUREMENTS
(USING J98725AA TEST SET)
T1, T1/OS, and T1C DIGITAL LINES
DIGITAL TRANSMISSION SYSTEMS

CONTENTS PAGE

1. GENERAL

1.01 This section contains the procedure for making pair-loss measurements on T1, T1/OS, and T1C repeatered line cable sections using the J98725AA T1C/T1 pair loss test set. These measurements are made between T1C/T1 office repeater bays (ORBs), 206 ORBs, line terminating units (LTUs), or span terminating modules (STMs) at a central office (CO) and the first apparatus case. To make measurements between a 201 ORB at a CO and the first apparatus case, refer to Section 365-211-516 for use of the 113-type test set. The dc tests provided in Part 5 are performed only on a cable pair which does not meet the requirements of the pair-loss measurement test in Part 4.

1.02 This issue does not affect Equipment Test Lists.

1.03 To meet CO requirements for digital transmission lines, the following modes of cable repeater operation are available:

A. T1C

(1) One cable using unidirectional line repeaters

(2) Two cables using unidirectional line repeaters

(3) One cable (screened) using unidirectional line repeaters.

B. T1 and T1/OS

(1) One cable using bidirectional line repeaters

(2) One cable using unidirectional line repeaters

(3) Two cables using bidirectional line repeaters

(4) Two cables using unidirectional line repeaters

(5) One cable (screened) using bidirectional or unidirectional line repeaters.

In T1, T1/OS, and T1C digital lines, both directions of transmission are carried in a single cable sheath when one cable is used; whereas, each direction is carried in a separate cable sheath when two cables are used. However, whatever mode is used in

the system the procedures in this section are based on line repeater operation.

1.04 The pair-loss measurements help to ensure the correctness of splicing and to ensure an average pair loss that is based on all cable pairs in the span. The measurements are made on an out-of-service basis only, usually as part of the installation tests associated with the preparation of a route for the T1, T1/OS, or T1C Carrier System. If the facilities of a working system must be remeasured, the procedures in Section 365-226-500 (T1), Section 365-200-400 (T1/OS), or 365-250-000 (T1C) should be followed for patching equipment out of service.

1.05 The T1 and T1/OS digital line layout design requires that each repeater section have a maximum net loss of 31 dB at the center frequency (772 kHz) of the principal energy peak of the T1 carrier transmitted energy spectrum. Based on the measurements covered in this section, when nonintegrated-circuit type repeaters are used, an 836-type line build out (LBO) network is selected to build out each cable section to the required loss. (See ***Note.***) Provision is made in each nonintegrated-circuit type repeater for mounting the selected LBO networks. When integrated-circuit type repeaters which incorporate automatic line build out (ALBO) are used, the same cable tests are required and the requirements are the same, but there are no LBO networks to select. A general description of the repeaters used in T1 and T1/OS systems is provided in Section 365-200-101.

> ***Note:*** The measured results should be compared with values established in accordance with Section 855-355-101.

1.06 In the T1C Carrier System, each repeatered section is allowed to have a maximum cable loss of 54 dB at the center frequency (1576 kHz) for proper pulse equalization. All T1C repeaters incorporate ALBO networks. In the T1C system, the measurements are taken to ascertain the integrity of the cable pairs and to ensure adequate range in the ALBO networks. A general description of the repeaters used in the T1C system is provided in Section 365-250-101.

1.07 Before beginning the tests in this section, test personnel at the CO and apparatus case are required to have a knowledge of the operation of the J98725AA pair loss test set and the equipment being tested. The description of the test set is provided in Section 103-494-104. Test personnel at the apparatus case should refer to Section 640-525-220 for procedures regarding pair-loss measurements in repeatered line sections.

1.08 All adapters necessary to enable insertion of the J98725AA pair loss test set probe into the apparatus cases are furnished with the test set. At the 206 ORB, LTU, or STM, an additional adapter (175C) in combination with the adapters furnished with the test set is required. The T1C/T1 ORB requires the test set probe and the ED-3C583-30, G1 adapter. A schematic diagram of each of the adapters used in this section is shown in Fig. 1.

> ***Note:*** When using the 175C adapter at a 206 ORB or LTU, add the loss associated with the office repeater pad or artificial line to the pair-loss values (Section 103-494-104). (The 175C adapter does not contain these losses.)

1.09 In a bidirectional mode of transmission containing up to 25 systems, two E-6779 forms (Fig. 2) are used for recording measurements (one for line repeater side 1 [RCV A or RCV B] and one for line repeater side 2 [RCV A or RCV B]). In a unidirectional mode of transmission containing up to 50 systems, four E-6779 forms (Fig. 2) are used (two for recording measurements of line repeater side 1 [RCV A and RCV B] and two for recording measurements of line repeater side 2 [RCV A and RCV B]). The data recorded must be evaluated by the technician in order to determine if the dc tests in Part 5 should be performed. The evaluation consists of totaling the checks in each column and then using the following procedures to determine if the individual pairs are satisfactory for T1, T1/OS, or T1C systems.

A. T1, T1/OS DATA EVALUATION

1.10 Determine the mean columns. The mean columns consist of the two columns which make up one lettered LOSS switch position, one of which is the column with the largest total number of checks. In the example in Fig. 2, the mean columns are F- and F+.

1.11 All pairs that were found to be in the mean columns or immediately adjacent to the mean columns are satisfactory for use on T1 and T1/OS

systems. In Fig. 2, the columns immediately adjacent to the mean columns are E+ and G-.

1.12 Any pair that is outside of the mean columns or the adjacent columns is not acceptable for T1 and T1/OS systems. In Fig. 2 the pair associated with slot 4 has a measured value of D+ and is not acceptable. The dc tests in Part 5 must be performed on this pair.

B. T1C DATA EVALUATION

1.13 Determine the mean column. The mean column is the column with the largest total. In the example in Fig. 2 the mean column is F-.

1.14 For a given type of cable, Table A gives a satisfactory tolerance of data around the mean column. In the example in Fig. 2, using the information that the cable is 22 gauge, copper, pulp, with a length of 4.5 Kft, the tolerance from Table A is ±2. The pair associated with slot 4 has a measured value of D+ and is not acceptable. The dc tests in Part 5 must be performed on this pair.

2. APPARATUS

2.01 The following apparatus is required for performing the tests in this section.

At the Central Office

1—J98725AA T1C/T1 Pair Loss Test Set—Section 103-494-104

1—J98725AA L2 (ED-3C583-30, G1) adapter for use at the T1C/T1 ORB

1—175C adapter for all measurements at a 206 ORB, LTU, or STM

At the Repeater Apparatus Case

1—J98725AA T1C/T1 Pair Loss Test Set—Section 103-494-104

3. PREPARATION

3.01 The following procedure must be completed at the CO and the apparatus case before the tests in Part 4 are performed.

Note: All tests are made with the transmission system out of service.

STEP	PROCEDURE
1	At the CO, ensure that cross connections have been made at the MDF and at the repeater bay in accordance with the carrier layout card information. The repeaters, if in place, should be removed from the slots of the ORB.
2	At the CO and apparatus case, remove the test set cover.
3	Set the FUNCTION switch to LED CHK and the power switch to ON. ***Requirement:*** BAT, LO, and HI lamps light. ***Note:*** If the requirement is met, proceed to Step 4. If the requirement is not met, change the batteries per Section 103-494-104. If the requirement is still not met, the test set is defective and cannot be used for pair-loss measurement.
4	Set the test set controls as follows: FUNCTION to CAL TEST to AC DC CONN/SYSTEM to appropriate type system to be tested (T1 or T1C HI)

STEP	PROCEDURE
	Note: The LO lamp will light when the DC CONN/SYSTEM switch is set to T1 or T1C LO and the HI lamp will light when the switch is set to HI.
5	Adjust the CAL potentiometer for a meter indication at the midscale MED mark.
6	At the CO, establish voice communication with test personnel at the apparatus case.
7	At the apparatus case, after communication has been established with the CO, proceed to Part 4.

4. TESTS

4.01 After completing the preparatory steps in Part 3, the applicable pair-loss measurements must be performed as follows.

Note: In any of the following tests, if a reading cannot be obtained in a given repeater slot at either the CO or the repeater location or if the readings differ markedly from the mean, that particular cable pair should be examined for trouble after all repeater slots have been measured. Trouble location procedures for cable pairs are the same as those for trunk cable.

STEP	PROCEDURE
	A. Terminal or Intermediate Office—T1C/T1 ORB, 206 ORB, LTU, or T1/OS STM—Bidirectional Line Repeater Operation (Fig. 3)
	Note: Testing for both sides of the repeater is always done in the direction of transmission of side 1 of the line repeater.
	Central Office Sending to Apparatus Case
1	At the CO and apparatus case, ensure that preparation in Part 3 has been completed.
2	Determine from Table B the proper probe/adapter combination for the ORB, STM, LTU, or apparatus case to be tested.
3	At the CO, insert the test set probe into the adapter(s) and then into the repeater slot associated with the first cable pair to be measured.
4	At the apparatus case, insert the test set probe into the adapter(s) and into the repeater slot associated with the cable pair used in Step 3.
5	At the CO, set the FUNCTION switch to SEND A.
6	At the apparatus case, set the FUNCTION switch to RCV A. (Enter RCV A on Form E-6779 in space labeled FUNCTION SWITCH POSITION.)

STEP	PROCEDURE
7	Set the LOSS switch to the letter position (A1 through M) for a meter indication closest to the MED mark.
8	Record the LOSS switch letter code and meter polarity indication on Form E-6779 for side 1 (example: Fig. 2, slot 1 shows a reading of F-).
9	At the CO, set the FUNCTION switch to SEND B.
10	At the apparatus case, set the FUNCTION switch to RCV B. (Enter RCV B on another Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
11	Set the LOSS switch to the letter position for a meter indication closest to the MED mark.
12	Read the LOSS switch letter code and meter polarity indication on the pair-loss data sheet for side 2.
13	At the CO, move the probe with adapter(s) to the next slot of the repeater shelf.
14	At the apparatus case, move the probe with adapter(s) to the next slot of the apparatus case.
15	At the CO and apparatus case, repeat Steps 5 through 14 for each cable pair to be measured.
16	Disconnect the test sets and return the repeaters to the assigned slots if removed.
17	Perform data evaluation per paragraphs 1.10 through 1.14.
	Apparatus Case Sending to Central Office
1	At the CO and apparatus case, ensure that preparation in Part 3 has been completed.
2	Determine from Table B the proper probe/adapter combination for the ORB, LTU, STM, or apparatus case to be tested.
3	At the CO, insert the test set probe into the adapter(s) and then into the repeater slot associated with the first cable pair to be measured.
4	At the apparatus case, insert the test set probe into the adapter(s) and then into the repeater slot associated with the cable pair used in Step 3.
5	At the CO, set the FUNCTION switch to RCV B. (Enter RCV B on Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
6	At the apparatus case, set the FUNCTION switch to SEND A.
7	At the CO, set the LOSS switch to the letter position (A1 through M) for a meter indication closest to the MED mark.

STEP	PROCEDURE
8	Record the LOSS switch letter code and meter polarity indication on Form E-6779, for side 1 (example: Fig. 2, slot 1 shows a reading of F-).
9	At the CO, set the FUNCTION switch to RCV A. (Enter RCV A on another Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
10	At the apparatus case, set the FUNCTION switch to SEND B.
11	At the CO, set the LOSS switch to the letter position for a meter indication closest to the MED mark.
12	Record the LOSS switch letter code and meter polarity indication on the pair-loss data sheet for side 2.
13	At the CO, move the probe with adapter(s) to the next slot of the repeater shelf.
14	At the apparatus case, move the probe with adapter(s) to the next slot of the apparatus case.
15	At the CO and apparatus case, repeat Steps 5 through 14 for each cable pair to be measured.
16	Disconnect the test sets and return the repeaters to the assigned slots, if removed.
17	Perform data evaluation per paragraphs 1.10 through 1.14.

B. Terminal or Intermediate Office—T1C/T1 ORB, 206 ORB (Fig. 4), or T1/OS STM (Fig. 5)—Unidirectional Line Repeater Operation

Note: Testing for both sides of the repeater is always done in the direction of transmission of side 1 of the line repeater.

Central Office Sending to Apparatus Case

1 At the CO and apparatus case, ensure that preparation in Part 3 has been completed.

2 Determine from Table B the proper probe/adapter combination for the ORB, STM, or apparatus case to be tested.

3 At the CO, insert the test set probe into the adapter(s) and then into the repeater slot associated with the first cable pair to be measured located on the first shelf (T1 or T1C) or first projection group (T1/OS) of the power loop.

Note: Refer to the following for location of power mates (power loops): Fig. 6, T1C/T1 ORB; Fig. 7, 206 ORB; Fig. 8, 1 × 5 STM; Fig. 9, 1 × 11 STM or 1 × 24 STM.

4 At the apparatus case which receives from the CO, insert the test set probe into the adapter(s) and then into the repeater slot associated with the cable pair used in Step 3.

STEP	PROCEDURE
5	At the CO, set the FUNCTION switch to SEND A.
6	At the apparatus case, set the FUNCTION switch to RCV A. (Enter RCV A on Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
7	Set the LOSS switch to the letter position (A1 to M) for a meter indication closest to the MED mark.
	Note: If the SYSTEM switch is set to T1C HI and reading cannot be obtained, set it to T1C LO and repeat Step 7.
8	Record the LOSS switch letter code, SYSTEM SWITCH POSITION, and meter polarity indication on the pair-loss data sheet, Form E-6779, for side 1 (example: Fig. 2 shows a reading of F-).
9	At the CO, move the probe with adapter(s) to the power mate of the repeater slot used in Step 3.
	Note: The power mate is located on the second shelf (T1 or T1C) or second protection group (T1/OS) of the power loop.
10	At the apparatus case, set the FUNCTION switch to RCV B. (Enter RCV B on another Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
11	Set the LOSS switch to the letter code and meter polarity indication closest to the MED mark.
12	Record the LOSS switch letter code and meter polarity indication on the pair loss data sheet, Form E-6779, for side 2.
13	At the CO, move the probe with adapter(s) to the repeater slot associated with the next cable pair to be measured located on the first shelf (T1 or T1C) or first protection group (T1/OS) of the power loop.
14	At the apparatus case, move the probe with adapter(s) to the next slot in the apparatus case.
15	At the CO and apparatus case, repeat Steps 5 through 14 for each cable pair to be measured in the apparatus case which receives from the CO.
16	Disconnect the test sets and return the repeaters to the assigned slots, if removed.
17	Perform data evaluation per paragraphs 1.10 through 1.14.
	Apparatus Case Sending to Central Office
1	At the CO and apparatus case, ensure that preparation in Part 3 has been completed.

STEP	PROCEDURE
2	Determine from Table B the proper probe/adapter combination for the ORB, STM, or apparatus case to be tested.
3	At the CO, insert the test set probe into the adapter(s) and then into the cable pair to be measured located on the first shelf (T1 or T1C) or first protection group (T1/OS) of the power loop. ***Note:*** Refer to the following for location of power mates (power loops): Fig. 6, T1C/T1 ORB; Fig. 7, 206 ORB; Fig. 8, 1 × 5 STM; Fig. 9, 1 × 11 STM or 1 × 24 STM.
4	At the apparatus case which transmits to the CO, insert the test set probe into the adapter(s) and then into the first repeater slot associated with the cable pair used in Step 3.
5	Set the FUNCTION switch to SEND A.
6	At the CO, set the FUNCTION switch to RCV B. (Enter RCV B on Form E-6779 in space labeled FUNCTION SWITCH POSITION.)
7	Set the LOSS switch to the letter position (A1 to M) for a meter indication closest to the MED mark. ***Note:*** If the SYSTEM switch is set to T1C HI and reading cannot be obtained, set it to T1C LO and repeat Step 7.
8	Record the LOSS switch letter code, system SWITCH POSITION, and meter polarity indication on the pair-loss data sheet, Form E-6779, for side 1 (example: Fig. 2, slot 1 shows a reading of F-).
9	At the apparatus case, set the FUNCTION switch to SEND B.
10	At the CO, move the probe with adapter(s) to the power mate of the repeater slot used in Step 3. ***Note:*** The power mate is located on the second shelf (T1 or T1C) or second protection group (T1/OS) of the power loop.
11	Set the LOSS switch to the letter position for a meter indication closest to the MED mark.
12	Record the LOSS switch letter code and meter polarity indication on the pair loss data sheet for side 2.
13	At the apparatus case, move the probe to the next slot to be tested.
14	At the CO, move the probe with adapter(s) to the repeater slot associated with the next cable pair to be measured located on the first shelf (T1 or T1C) or first protection group (T1/OS) of the power loop.

STEP	PROCEDURE
15	At the CO and apparatus case, repeat Steps 8 through 14 for each cable pair to be measured.
16	Disconnect the test sets and return the repeaters to the assigned slots, if removed.
17	Perform data evaluation per paragraphs 1.10 through 1.14.

5. DC TESTS

5.01 The dc tests are performed on any pair which does not meet the criteria of paragraphs 1.10 through 1.14 in the data evaluation.

STEP	PROCEDURE
1	At the CO and apparatus case, set the test set controls as follows: POWER to OFF TEST to DC DC CONN/SYSTEM to T-R FUNCTION per Table C
2	Connect probes to repeater slots associated with defective pair.
3	At the receive location, connect an ohmmeter to the DC TEST OUTPUT pin jacks of the test set.
4	Observe and record the ohmmeter indication on Form E-6779. ***Requirement:*** Ohmmeter indicates open.
5	At the transmit location, depress and hold the LOOP SHORT switch.
6	At the receive location, observe and record the ohmmeter indication on Form E-6779.
7	At the transmit location, release the LOOP SHORT switch.
8	At both locations, set the DC CONN/SYSTEM switch to T-G.
9	At the receive location, observe the ohmmeter indication. ***Requirement:*** Ohmmeter indicates open.

STEP	PROCEDURE
	Note: If the requirement is met, proceed to Step 10. If the requirement is not met, record indication on Form E-6779 preceded by designation OC for open circuit, and proceed to Step 13.
10	At the transmit location, depress and hold the LOOP SHORT switch.
11	At the receive location, observe and record the ohmmeter indication on Form E-6779. Precede the indication by the designation LS for loop short.
	Requirement: Value should be one-half of value recorded in Step 6.
12	At the transmit location, release the LOOP SHORT switch.
13	At both locations, set the DC CONN/SYSTEM switch to R-G.
14	At the receive location, observe the ohmmeter indication.
	Requirement: Ohmmeter indicates open.
	Note: If the requirement is met, proceed to Step 15. If the requirement is not met, record indication on Form E-6779 preceded by designation OC for open circuit, and proceed to Step 18.
15	At the transmit location, depress and hold the LOOP SHORT switch.
16	At the receive location, observe and record the ohmmeter indication on Form E-6779. Precede the indication by the designation LS for loop short.
	Requirement: Value should be one-half of value recorded in Step 6.
17	At the transmit location, release the LOOP SHORT switch.
18	Disconnect all test equipment.

TABLE A

ALLOWABLE MAXIMUM DEVIATION OF PAIR LOSS DATA FROM A DETERMINED MEAN DATA COLUMN – T1C

TYPE CABLE	GAUGE	CABLE LENGTH Kft	ALLOWED DATA COLUMN DEVIATIONS FROM MEAN COLUMN
CU-PULP	24	0–2.0* 2.0–4.0 4.0–4.6	+1, –2* ±2 +2, –3
	22	0–1.4 1.4–3.0 3.0–6.2	±1 +1, –2 ±2
	19	0–2.3 2.3–5.0 5.0–8.3	±1 +1, –2 ±2
CU-PIC (Air Core)	24	0–2.8 2.8–5.0 5.0–5.8	±1 ±2 +2, –3
	22	0–3.4 3.4–6.3 6.3–7.3	±1 ±2 +2, –3
	19	0–4.3 4.3–8.6 8.6–9.9	±1 ±2 +2, –3
CU-PIC Filled	24	0–5.0 5.0–7.1	±1 ±2
	22	0–6.2 6.2–8.7	±1 ±2
	19	0–9.2 9.2–12.6	±1 ±2
AL-PIC Filled	20	0–8.7	±1
	17	0–10.3 10.3–12.4	±1 ±2
CU DEPIC Filled	24	0–4.4 4.4–6.2	±1 ±2
	22	0–5.7 5.7–7.7	±1 ±2
	19	0–8.0 8.0–10.8	±1 ±2
MAT	25	0–2.5 2.5–5.0 5.0–6.4	±1 ±2 ±3

* An example would be measuring the loss of 24-ga CU Pulp, 1.9 Kft in length, with the SYS SW set to T1C-LO and the mean data column F–. The allowed data columns are then E–, E + F–, F +. This deviation is given in the table as +1 and –2 data columns from the mean column (F–).

TABLE B

ADAPTER(S) TO USE WITH TEST SET PROBE

AT CENTRAL OFFICE			
REPEATER MOUNTING	CARRIER SYSTEM	REPEATER SLOT TYPE	ADAPTER
STM 206 ORB, LTU*	T1/0S	206 or 236	ED-3C559, G2; ED-3C559, G3 and 175C†
T1C/T1 ORB	T1 or T1C	220, 221 231, or 250	ED-3C583-30, G1
AT APPARATUS CASE			
APPARATUS CASE	CARRIER SYSTEM	REPEATER SLOT TYPE	ADAPTER
475( )	T1 or T1/0S	208, 209 238, or 239	Not required
479( )	T1C	218, 219 248, or 249	ED-3C559, G2
466( ) 468( )	T1 or T1/OS	201 or 205	ED-3C559, G2 and ED-3C559, G3
818( ) or 819( ) (Replacement for 475 Type Apparatus Case)	T1 or T1/OS	238 or 239	Not required
818( ) or 819 ( ) (Replacement for 479 Type Apparatus Case)	T1C	218, 219 248, or 249	ED-3C559, G2

* LTU can be installed on customer premises.

† Office repeater pad or artificial line losses should be taken into consideration when comparisons are being made with test performed using the 113-type test set equipped with the 175A or 175B adapter. The 175C adapter does not contain these losses.

TABLE C

TEST SET FUNCTION SWITCH POSITIONS FOR DC TESTS

LINE REPEATER OPERATION	DIRECTION OF TRANSMISSION	SET FUNCTION SWITCH TO	
		AT APPARATUS CASE	AT CO
Unidirectional	Apparatus case to 1st shelf (ORB) or 1st protection group (STM) at CO	SEND A	RCV B
	Apparatus case to 2nd shelf (ORB) or 2nd protection group (STM) at CO	SEND B	RCV B
	CO from 1st shelf (ORB) or first protection group (STM) to apparatus case	RCV A	SEND A
	CO from 2nd shelf (ORB) or 2nd protection group (STM) to apparatus case	RCV B	SEND A
Bidirectional	Apparatus case to CO	SEND A (Side 1)	RCV B
		SEND B (Side 2)	RCV A
	CO to apparatus case	RCV A (Side 1)	SEND A
		RCV B (Side 2)	SEND B

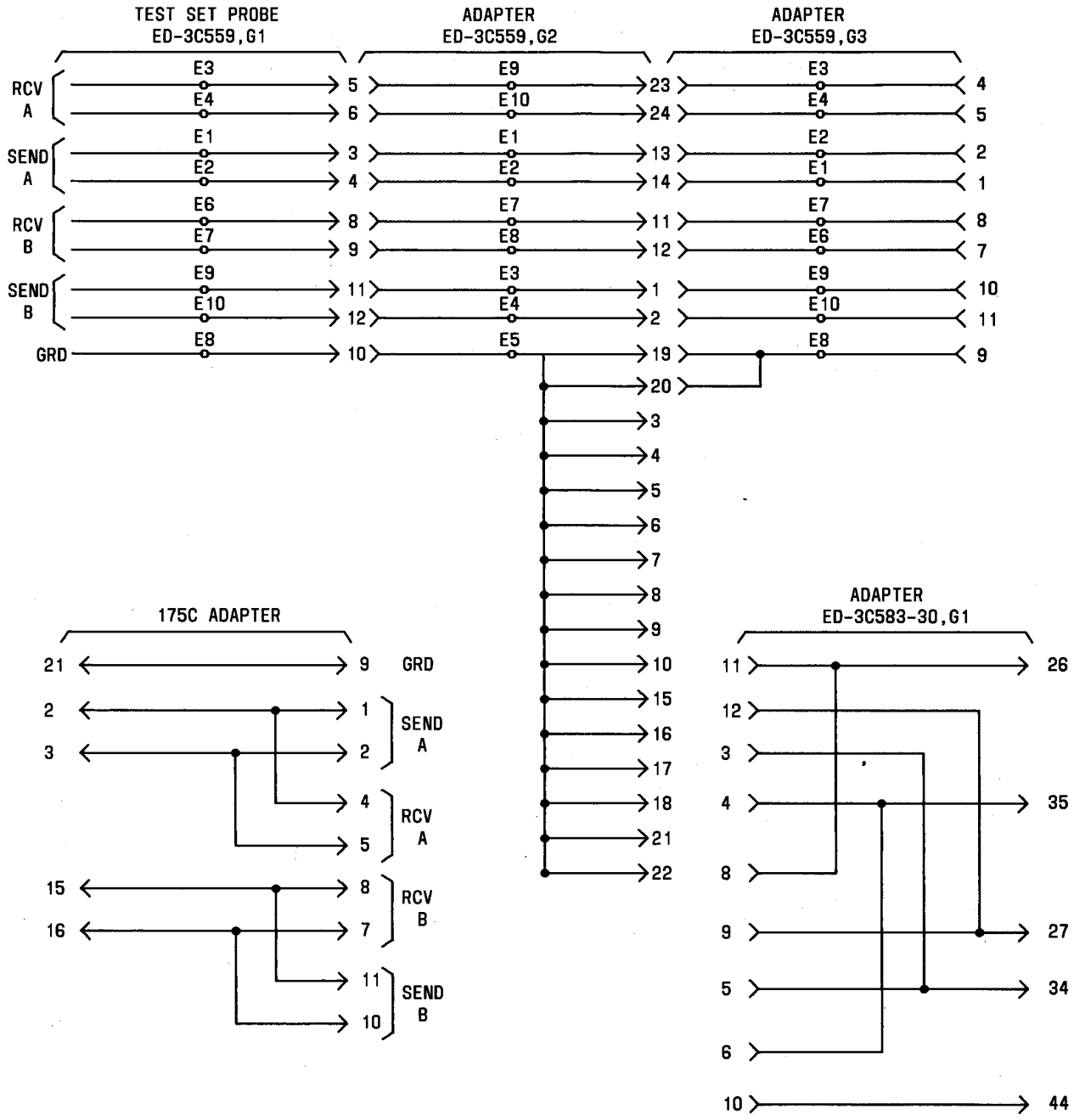

Fig. 1—Schematic Diagram—J98725AA T1C/T1 Pair Loss Test Set Probe and Adapters

PAIR LOSS TEST SET DATA SHEET

TEST SET USED J98725AA

SHELF	REPEATER SLOT	AC TEST LBO OR LOSS SWITCH POSITION INCLUDING POLARITY OF DEVIATION																								DC TEST			
		A1 −	A1 +	A −	A +	B −	B +	C −	C +	D −	D +	E −	E +	F −	F +	G −	G +	H −	H +	J −	J +	K −	K +	L −	L +	M −	M +	T-R OPEN	T-R LOOP SHORT	TG	RG
SHELF NUMBER 1	1													✓															
	2												✓																	
	3													✓																
	4										✓																	OPEN	211	LS-73	LS-138
	5														✓															
	6													✓																
	7													✓																
	8													✓																
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	TOTAL										1		3	17	3	1														
		A1 −	A1 +	A −	A +	B −	B +	C −	C +	D −	D +	E −	E +	F −	F +	G −	G +	H −	H +	J −	J +	K −	K +	L −	L +	M −	M +				

LARGEST TOTAL IS IN COLUMN F-

CABLE SECTION

FROM #284

TO #307

FUNCTION SWITCH POSITION RCV A

RELAY RACK NUMBER _____

OR

APPARATUS CASE NUMBER 5

DATE 1-20-76

TIME 3 PM

TESTER J.J.JONES

CABLE NUMBER IDENTIFICATION 5627

COUNT 1-25

CONTINUITY CHECK

FAULT LOCATE PAIR ☐

ORDER WIRE PAIR ☐

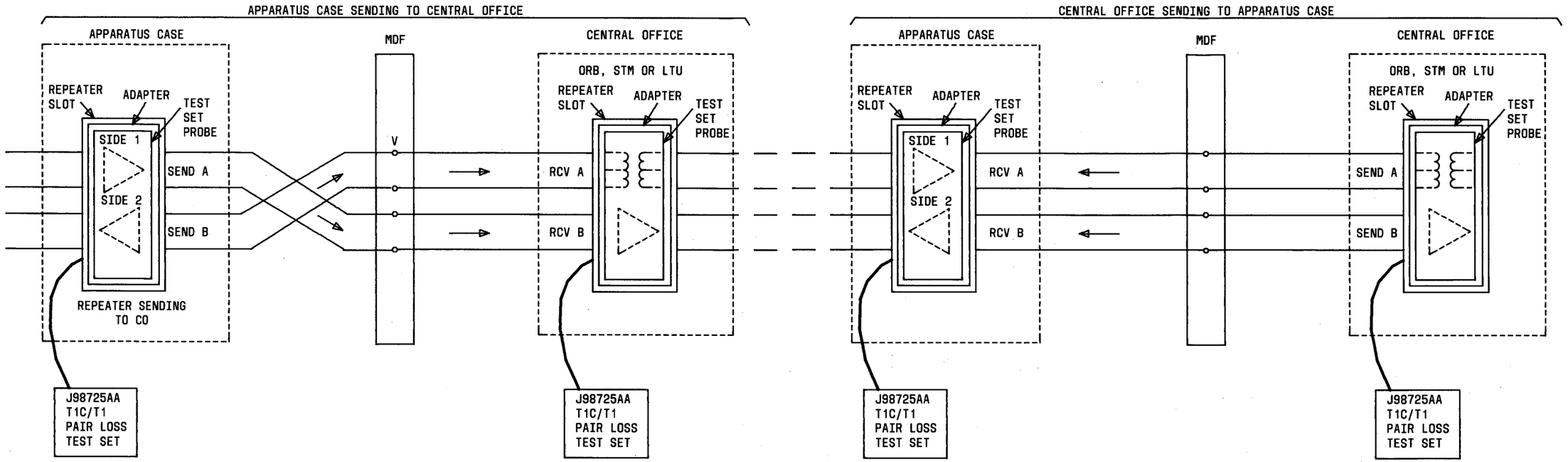
E-6779 OCTOBER, 1977

CABLE

	UNDERGROUND	AERIAL
TYPE (CHECK ONE)	(22GAcuPULP) ✓	
LENGTH	4.5KFT	

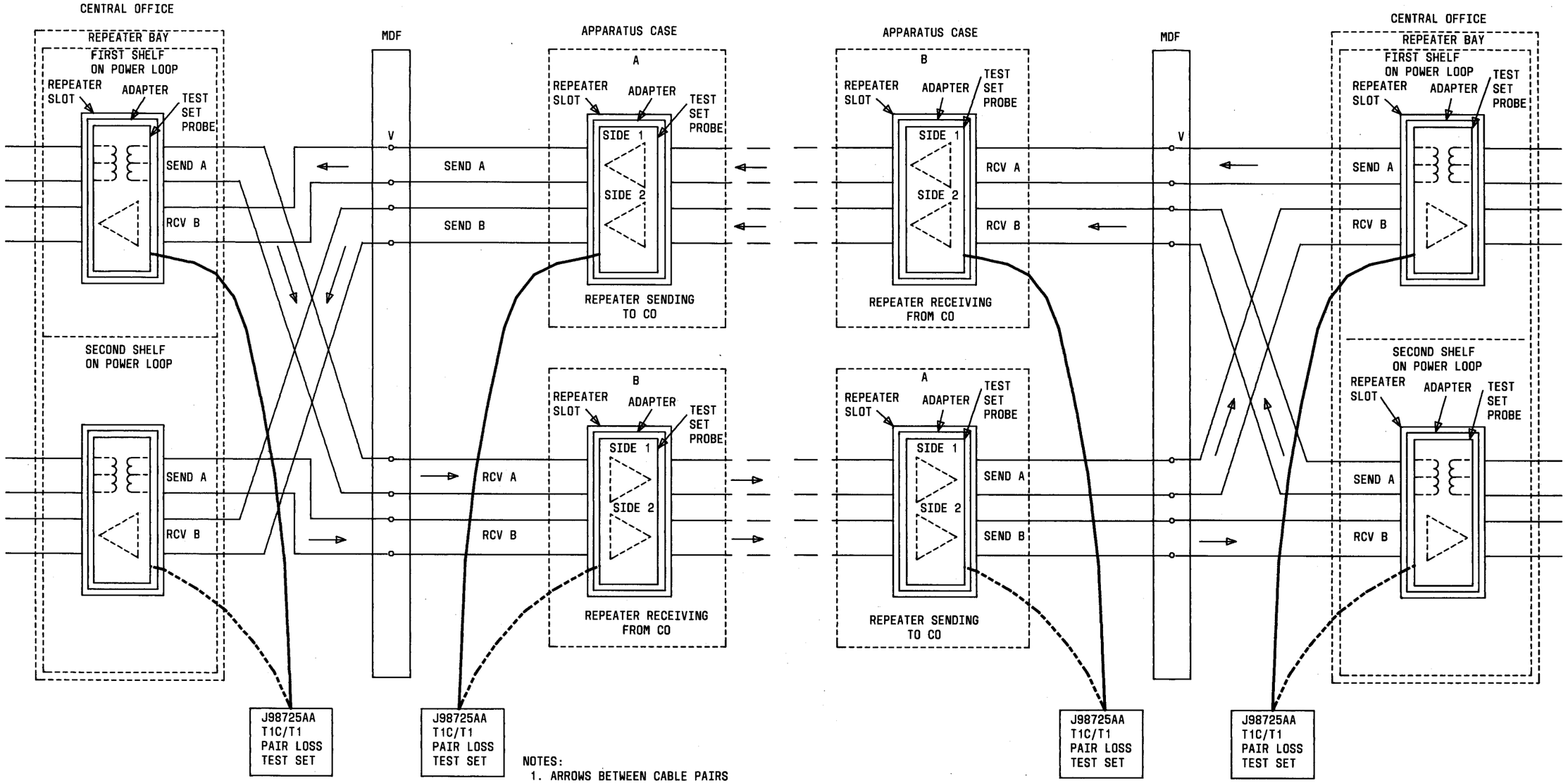
J98725AA SYSTEM SWITCH POSITION		
T1	T1C LO	T1C HI
	✓	

Fig. 2—Measurement Recorded on Form E-6779



NOTES:
1. ARROWS BETWEEN CABLE PAIRS INDICATE DIRECTION OF TRANSMISSION OF PAIR LOSS MEASUREMENT TEST
2. SEND AND RECEIVE DESIGNATIONS AT REPEATER SLOTS INDICATE TEST SET FUNCTION FOR APPLICABLE TEST

Fig. 3—Pair-Loss Measurements—Terminal or Intermediate Office (206 ORB, LTU, STM, or T1C/T1 ORB) Bidirectional Line Repeater Operation



NOTES:
1. ARROWS BETWEEN CABLE PAIRS INDICATE DIRECTION OF TRANSMISSION OF PAIR LOSS MEASUREMENT TEST
2. SEND AND RECEIVE DESIGNATIONS AT REPEATER SLOTS INDICATE TEST SET FUNCTION FOR APPLICABLE TEST

Fig. 4—Pair-Loss Measurements—Terminal or Intermediate Office (206 ORB or T1C/T1 ORB) Unidirectional Line Repeater Operation

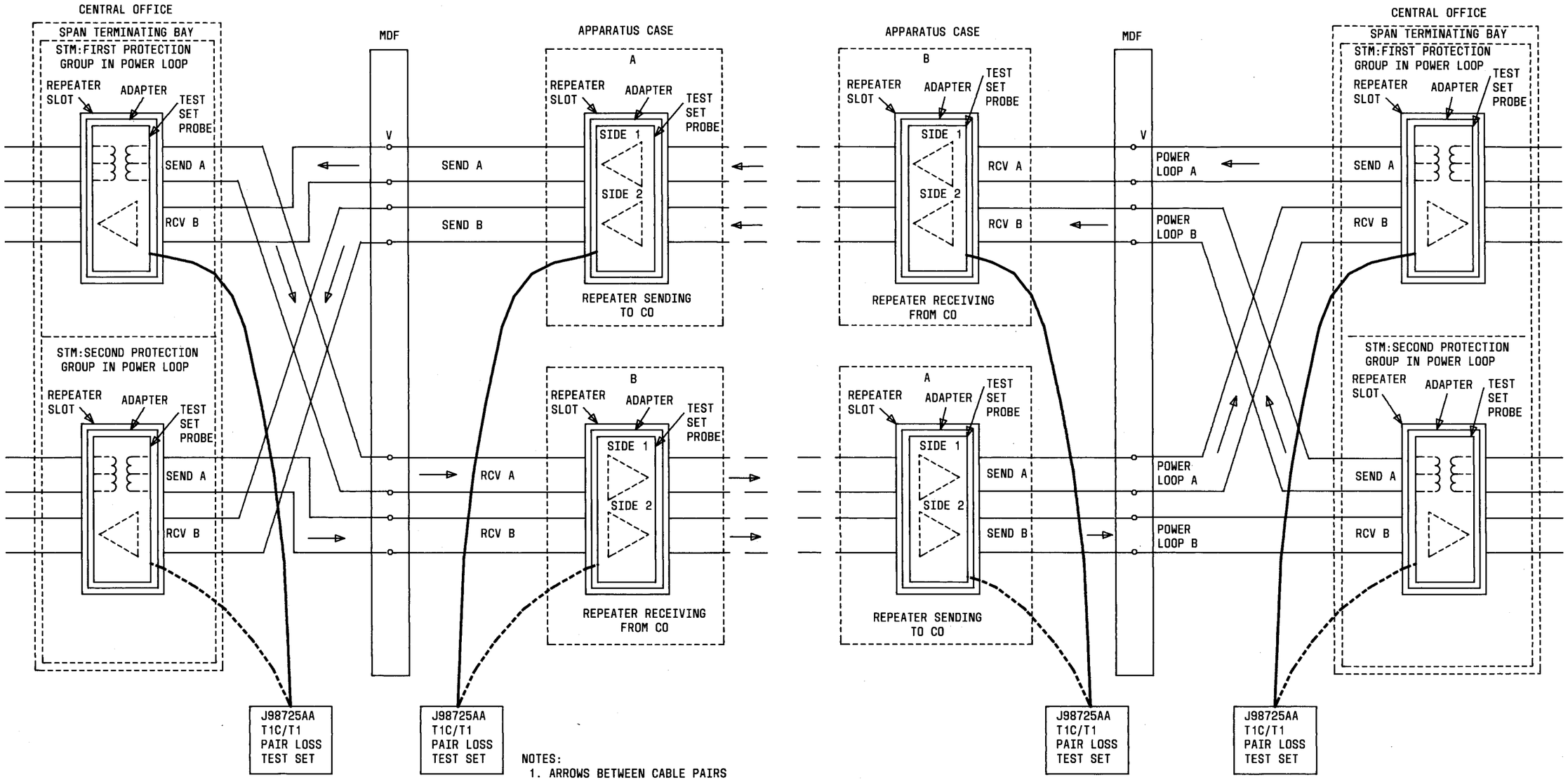
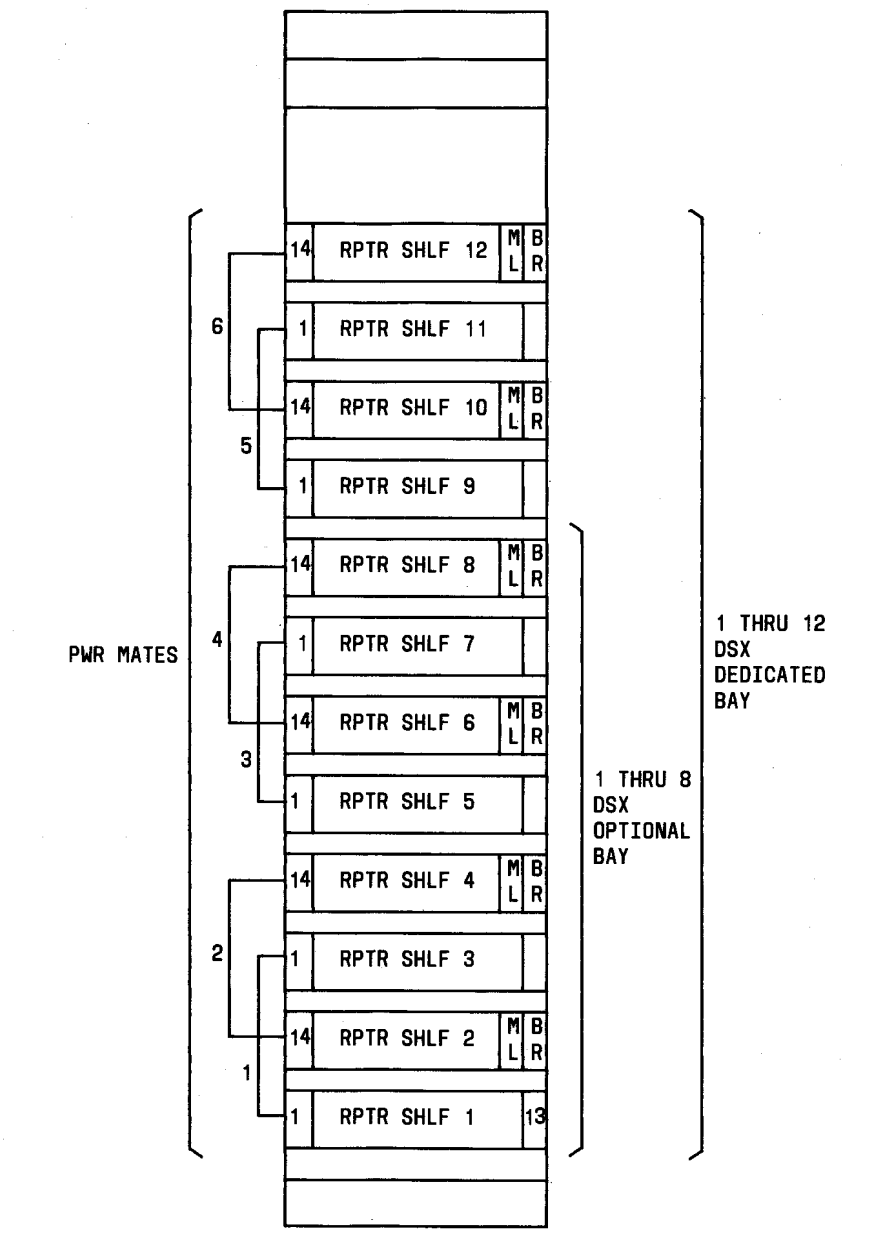


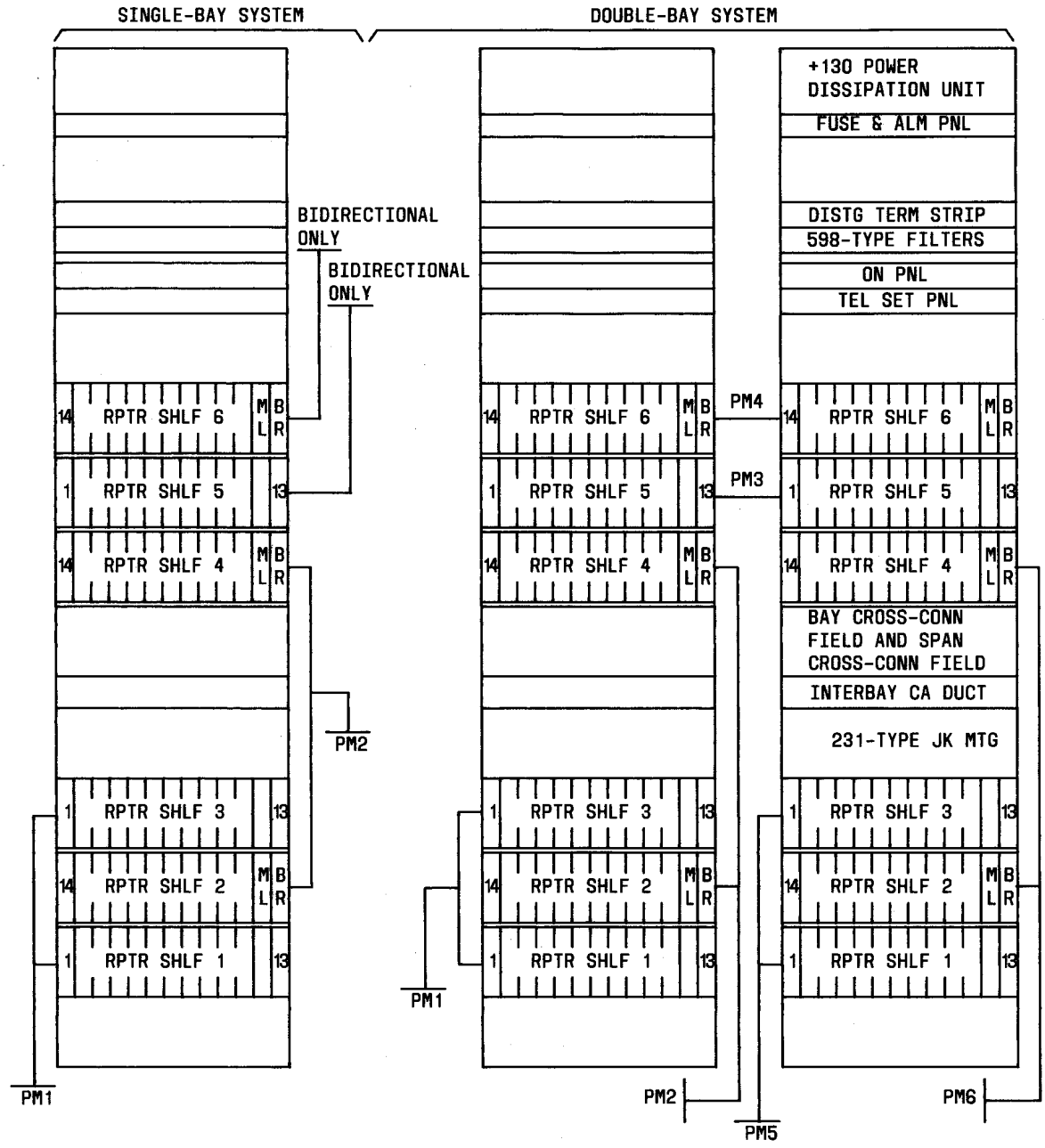
Fig. 5—Pair-Loss Measurements—Terminal or Intermediate Office (STM) Unidirectional Line Repeater Operation



NOTE: A REPEATER NUMBER N ON THE FIRST SHELF OF A POWER LOOP IS ASSOCIATED WITH THE REPEATER HAVING THE SAME NUMBER ON THE SECOND SHELF OF THE POWER LOOP

LEGEND:
M L = MAINTENANCE LINE
B R = BRIDGING REPEATER

Fig. 6—Location of Power Mates (Power Loops) on a T1C/T1 ORB



NOTE: A REPEATER NUMBER N ON THE FIRST SHELF OF A POWER LOOP IS ASSOCIATED WITH THE REPEATER HAVING THE SAME NUMBER ON THE SECOND SHELF OF THE POWER LOOP

LEGEND:
PM = POWER MATES
M L = MAINTENANCE LINE
B R = BRIDGING REPEATER

Fig. 7—Location of Power Mates (Power Loops) on a 206 ORB

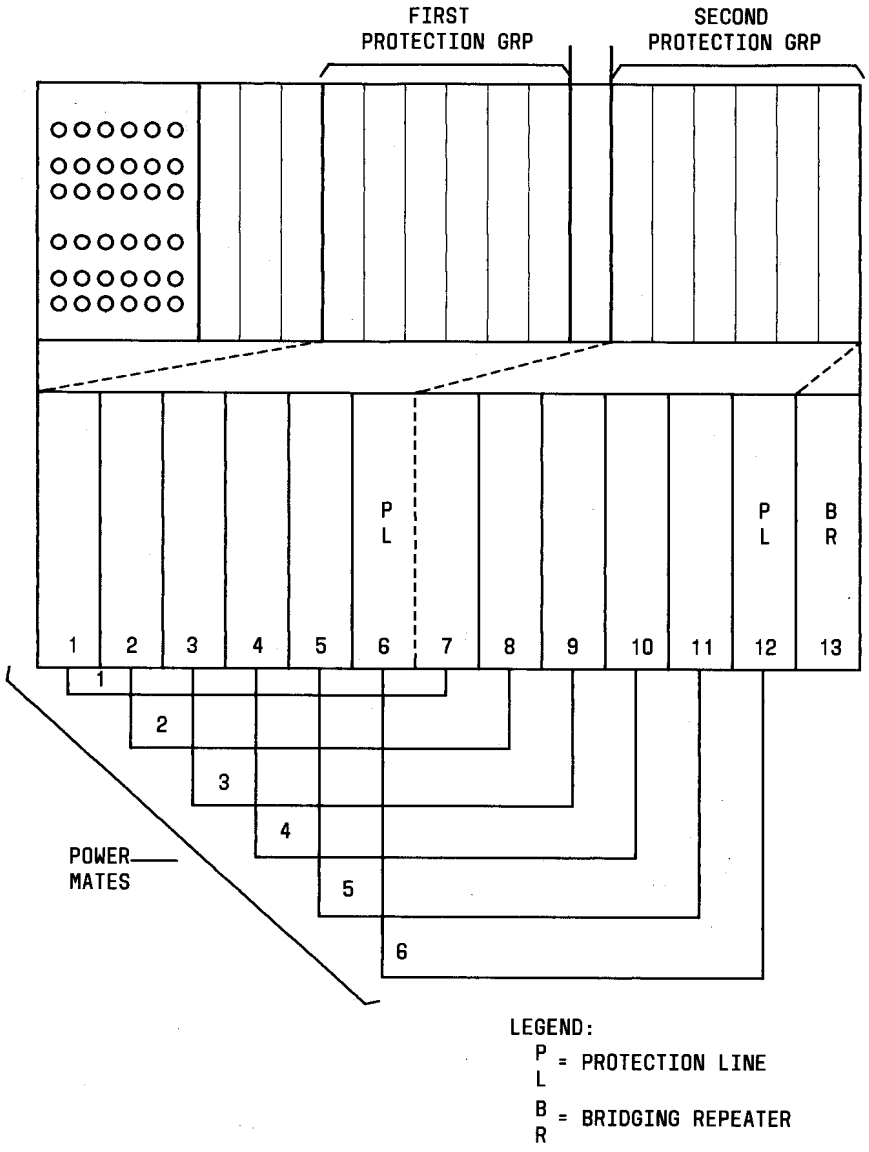


Fig. 8—Location of Power Mates in a 1 × 5 STM

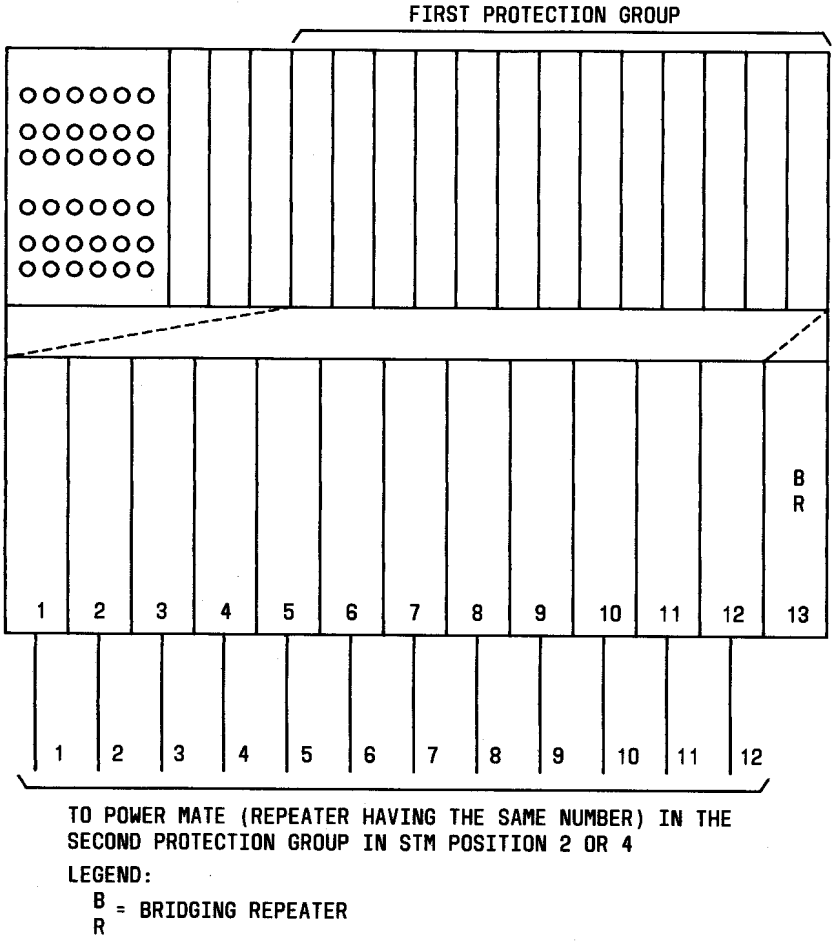


Fig. 9—Location of Power Mates in a 1 × 11 STM or 1 × 24 STM