

TRANSMISSION TEST PADS

MTF TRUNK TEST CIRCUIT SD-25918-01

ADJUSTMENTS

1. GENERAL

1.01 This section describes a method of adjusting test pads in the MTF trunk test circuit to compensate for cabling loss in the terminating and originating test lines for tandem and toll.

1.02 This issue affects Equipment Test Lists.

1.03 The adjustments covered are:

A. Pad A: Using TST or TST1 jack and toll originating test line 1.

B. Pad D: Using TST2 jack and toll originating test line 2.

C. Pad B: Using TM1 jack and local originating test line (for tandem use).

D. Pad C: Using TM2 jack and 2-wire terminating test line, or 4-wire local originating test line (for tandem use).

1.04 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

1.05 *Use of the wheatstone bridge is mandatory to insure accurate measurements.* Refer to Section 100-815-101 for description and application of the portable wheatstone bridge.

1.06 When instructed to strap the tip and ring at various locations in the MTF or line link frame, connections must be secure. If wire-spring, wire wrap the connection; if non-wire-spring, a soldered connection is preferred.

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

2.01 KS-14959 test set (portable wheatstone bridge).

2.02 Two 1W13B testing cords, (893 cord, 6 foot long, equipped with two 360A tools).

2.03 Two 624B (terminal connector) tools, and two 364 (spade terminal) tools. For use with 1W13B cord.

2.04 One KS-16492 wire unwrapping tool.

2.05 One 635B wire wrapping tool.

2.06 One KS-14440 soldering copper or equivalent.

2.07 Blocking tools as required. Use tools and apply as covered in Section 069-020-801.

2.08 350A plugs as required.

2.09 349A plugs as required.

3. METHOD

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STEP	PROCEDURE
A. Pad A	
1	At MTF— Insert 350A plug into the TRK TST or TRK TST1 jack.
2	Measure the loop resistance between terminals 1 and 8 of component assembly 11 (CA11). (Refer to 1.05.)
3	Divide the loop resistance measured in Step 2 by two.
4	Strap out the resistance value derived in Step 3 in resistors PDA7-9 and the same amount in resistors PDA16-18 on terminal strip CA11 to compensate for this cabling loss. Refer to Table A for strapping information.
5	Remove the plug from the TRK TST or TRK TST1 jack.
6	Block the TBD relay operated.
7	At the line frame appearance of toll originating test line 1— Strap the T and R leads. (Refer to 1.06.)
8	At MTF— Measure the loop resistance between terminal 1 of component assembly 9 (CA9) and terminal 1 of component assembly 10 (CA10).
9	Divide the loop resistance measured in Step 8 by two.
10	Strap out the resistance value derived in Step 3 in resistors PDA1-5 and the same amount in resistors PDA10-14 on terminal strips CA9 and CA10 to compensate for this cabling loss. Refer to Table B for strapping information.
11	At the line link frame appearance of the toll originating test line 1— Remove strapping from T and R leads.
12	At MTF— Remove the blocking tool from the TBD relay.
STEP	PROCEDURE
B. Pad D	
1	At the MTF— Insert 350A plug into the TRK TST2 jack.
2	Measure the loop resistance between terminals 1 and 8 on component assembly 27 (CA27). (Refer to 1.05.)
3	Divide the loop resistance measured in Step 2 by two.

STEP	PROCEDURE
4	Strap out the resistance value derived in Step 3 in resistors PDD7-9 and the same amount in resistors PDD16-18 on terminal strip CA27 to compensate for this cabling loss. Refer to Table A for strapping information.
5	Remove the plug from the TRK TST2 jack.
6	Block the 2TBD relay operated.
7	At the link frame appearance of the toll originating test line 2— Strap the T and R leads. (Refer to 1.06.)
8	At MTF— Measure the loop resistance between terminal 1 of component assembly 25 (CA25) and terminal 1 of component assembly 26 (CA26).
9	Divide the loop resistance measured in Step 8 by two.
10	Strap out the resistance value derived in Step 3 in resistors PDD1-5 and the same amount in resistors PDD10-14 on terminal strips CA25 and CA26 to compensate for this cabling loss. Refer to Table B for strapping information.
11	At the line link frame appearance of the toll originating test line 2— Remove strapping from T and R leads.
12	At MTF— Remove the blocking tool from 2TBD relay.
STEP	PROCEDURE
1	<p>C. Pad B</p> <p>At the MTF— Insert 349A plug into the TM1 jack.</p>
2	Block the TAN2 relay operated.
3	Measure the loop resistance between terminals 1 and 8 on component assembly 22 (CA22). (Refer to 1.05.)
4	Divide the loop resistance measured in Step 3 by two.
5	Strap out the resistance value derived in Step 4 in resistors PDB1-3 and the same amount in resistors PDB11-13 on terminal strip CA22 to compensate for this cabling loss. Refer to Table A for strapping information.
6	Remove the plug from the TM1 jack.
7	Operate the TM1 key. TM1, TM1A relays operate.

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STEP	PROCEDURE
8a	If the line link frame is a 2-wire line link circuit— At the 2-wire line link frame appearance of the local originating test line— Strap the T and R leads. (Refer to 1.06.)
9b	If the line link frame is a 4-wire line link circuit— At master test control circuit— Block 4WC relay operated.
10b	At the 4-wire line link frame appearance of the local originating test line— Strap the T1 and R1 leads. (Refer to 1.06.)
11	At MTF— Measure the loop resistance between terminal 8 of component assembly 16 (CA16) and terminal 8 of component assembly 17 (CA17).
12	Divide the loop resistance measured in Step 11 by two.
13	Strap out the resistance value derived in Step 12 in resistors PDB5-10 and the same amount in resistors PDB15-20 on terminal strips CA16 and CA17 to compensate for this cabling loss. Refer to Table C for strapping information.
14	Remove the blocking tool from TAN2 relay.
15b	If the line link frame is a 4-wire line link circuit— Remove blocking tool from 4WC relay.
16b	At 4-wire line link frame appearance of the local originating test line— Remove strap from T1 and R1 leads.
17a	If the line link frame is a 2-wire line link circuit— At the 2-wire line link frame appearance of the local originating test line— Remove the strap from T and R leads.
18	At MTF— Restore TM1 key. TM1, TM1A relays release.
STEP	PROCEDURE
1	C. Pad C At MTF— Insert 349A plug into the TM2 jack.
2	Block TAN2 relay operated.
3	Measure the loop resistance between terminals 1 and 8 on component assembly 23 (CA23). (Refer to 1.05.)

STEP	PROCEDURE
4	Divide the loop resistance measured in Step 3 by two.
5	Strap out the resistance value derived in Step 4 in resistors PDC1-3 and the same amount in resistors PDC5-7 on terminal strip CA23 to compensate for this cabling loss. Refer to Table A for strapping information.
6	Remove the plug from the TM2 jack.
7	Operate the TM2 key. TM2 relay operates.
8a	If the line link frame is a 2-wire line link circuit— At line link frame appearance of the 2-wire terminating test line— Strap the T and R leads.
9a	At MTF— Measure the loop resistance between terminal 8 of component assembly 18 (CA18) and terminal 8 of component assembly 19 (CA19).
10a	Divide the loop resistance measured in Step 9a by two.
11a	Strap out the resistance value derived in Step 10a in resistors PDC10-15 and the same amount in resistors PDC16-21 on terminal strips CA18 and CA19 to compensate for this cabling loss. Refer to Table C for strapping information.
12a	At the line link frame appearance of the 2-wire terminating test line— Remove the strap from the T and R leads.
13b	If the line link frame is a 4-wire line link circuit— At the 4-wire line link frame appearance of the local originating test line— Strap the T and R leads.
14b	At MTF— Block 4WG relay or 4W relay operated (according to options provided in master test control).
15b	Measure the loop resistance between terminal 8 of component assembly 20 (CA20) and terminal 8 of component assembly 21 (CA21).
16b	Divide the loop resistance measured in Step 15b by two.
17b	Strap out the resistance value derived in Step 16b in resistors PDC22-27 and the same amount in resistors PDC28-33 on terminal strips CA20 and CA21 to compensate for this cabling loss. Refer to Table C for strapping information.
18b	At the 4-wire line link frame appearance of the local originating test line— Remove the strap from T and R leads.
19b	At MTF— Remove blocking tool from 4WG or 4W relay.

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STEP	PROCEDURE
20	Restore TM2 key. TM2 relay releases.
21	Remove blocking tool from TAN2 relay.

TABLE A

STRAPPING INFORMATION FOR:

CA11 (PDA 7 Through 9 and 16 Through 18)
 CA22 (PDB 1 Through 3 and 11 Through 13)
 CA23 (PDC 1 Through 3 and 5 Through 7)
 CA27 (PDD 7 Through 9 and 16 Through 18)

DERIVED RESISTANCE	STRAP	
	FROM TERMINAL	TO TERMINAL
1.5	6	8
	1	3
3.0	6	7
	2	3
4.5	7	8
	1	2
6.0	5	7
	2	4
7.5	5	7
	1	3
	6	8
	2	4
9.0	5	6
	3	4
10.5	5	8
	1	4

Note: Strap to nearest ohm figure.

TABLE B

STRAPPING INFORMATION FOR:

CA9 (PDA 1 Through 5)
 CA10 (PDA 10 Through 14)
 CA25 (PDD 1 Through 5)
 CA26 (PDD 10 Through 14)

DERIVED RESISTANCE	STRAP	
	FROM TERMINAL	TO TERMINAL
1.5	1	2
3	2	3
4.5	1	3
6	3	6
7.5	1	2
	3	6
9	2	6
10.5	1	6
12	6	7
13.5	1	2
	6	7
15	2	3
	6	7
16.5	1	3
	6	7
18	3	7
19.5	1	2
	3	7
21	2	7
22.5	1	7
24	6	8
25.5	1	2
	6	8
27	2	3
	6	8
28.5	1	3
	6	8
30	3	8
31.5	1	2
	3	8
33	2	8
34.5	1	8

Note: Strap to nearest ohm figure.

TABLE C

STRAPPING INFORMATION FOR:
 CA16 (PDB 5 Through 10)
 CA17 (PDB 15 Through 20)
 CA18 (PDC 10 Through 15)
 CA19 (PDC 16 Through 21)
 CA20 (PDC 22 Through 27)
 CA21 (PDC 28 Through 33)

DERIVED RESISTANCE	STRAP TERMINALS		DERIVED RESISTANCE	STRAP TERMINALS		DERIVED RESISTANCE	STRAP TERMINALS	
	FROM	TO		FROM	TO		FROM	TO
1.5	7	8	20.3	3	7	34.5	1	3
3.0	6	7	21.0	2	3	6	8	
4.5	6	8		5	6	35.3	2	7
6.0	5	6	21.8	3	8	36.0	1	3
7.5	5	6	22.5	2	3	5	6	
	7	8		5	6	36.8	2	8
				7	8			
9.0	5	7	24.0	2	3	37.5	1	3
10.5	5	8		5	7	5	6	
11.3	3	5	25.5	2	3	7	8	
12.8	3	5		5	8	39.0	1	3
	7	8	26.3	2	5	5	7	
14.3	3	5	27.8	2	5	40.5	1	3
	6	7		7	8	5	8	
15.0	2	3	29.3	2	5	41.3	1	5
15.8	3	5		6	7	42.8	1	5
	6	8	30.3	1	3	7	8	
16.5	2	3	30.8	2	5	44.3	1	5
	7	8		6	8	6	7	
17.3	3	6	31.5	1	3	45.8	1	5
18.0	2	3		7	8	6	8	
	6	7	32.3	2	6	47.3	1	6
18.8	3	6	33.0	1	3	48.8	1	6
	7	8		6	7	7	8	
19.5	2	3	33.8	2	6	50.3	1	7
	6	8		7	8	51.8	1	8

Note: Strap to nearest ohm figure.