

**TRUNK TRANSMISSION TESTS
NO. 1 CROSSBAR OFFICES
PROVIDED WITH**

MANUAL OUTGOING TRUNK TEST FRAME SD-25177-01

1. GENERAL

1.01 This section describes the methods of making transmission measurements on outgoing trunks and trunks to switchboards, or plant or traffic operating desks in No. 1 crossbar offices using the manual outgoing trunk (OGT) test frame SD-25177-01. This section also describes the method of assisting with transmission measurements on incoming trunks. The transmission measurements covered in this section include loss, message circuit noise, impulse noise, frequency response, and peak-to-average ratio (P/AR).

1.02 This section is reissued to:

- (a) Add 23D transmission measuring set to apparatus list and tests A, D, E, AA, AB, BA, and BB
- (b) Add 6H IC to apparatus list and describe its use in tests C, AD, and BD
- (c) Add J94742A portable auxiliary test set to apparatus list and describe its use in tests A, B, D, E, AA, AB, and AC when testing trunks to No. 5 CSBR ACD.

This reissue does not affect the Equipment Test List.

1.03 The tests covered are:

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Note: Tests BA through BE describe the methods of assisting the distant originating end in making transmission measurements on

the trunk under test terminated at the 101-type test line at the near end.

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BA. Two-Way 1000-Hz Loss Measurement to 101-Type Test Line—Terminating End Procedures: **31**

BB. Two-Way Frequency Response Measurement to 101-Type Test Line—Terminating End Procedures: **31**

BC. Message Circuit Noise Measurement to 101-Type Test Line—Terminating End Procedures: **32**

BD. Impulse Noise Measurement to 101-Type Test Line—Terminating End Procedures: **35**

BE. Two-Way P/AR Measurement to 101-Type Test Line—Terminating End Procedures: **38**

1.04 The tests and procedures in this section are identified by a special designation plan. Single test letters A through Z are reserved for tests which require no assistance at the terminating end. Double test letters AA through AZ are reserved for near-end originated tests that require assistance at the far end. Double test letters BA through BZ are reserved for the assistance required on incoming tests to this office. The second letters of double lettered tests and procedures identify companion procedures and tests. For example:

NEAR END TEST	CORRESPONDING FAR END PROCEDURE
AA-----	BA
AB-----	BB
-----	-----
AZ-----	BZ

The tests and procedures for the far-end offices are contained in the trunk transmission sections covering the particular type of far-end office involved.

1.05 Transmission requirements for trunks are shown on circuit layout cards, local trunk records, or the appropriate section of the practices.

1.06 In each test, the transmission loss indicated by the transmission measuring set (TMS) meter includes the connecting circuits used to complete the connection.

1.07 The transmission loss indicated by the TMS meter is the actual measured loss (AML) in dB of the circuit under test and is made under the same conditions as the expected measured loss (EML) was computed. The results of these tests should be entered on the proper form. Precautions should be taken when performing these tests so that normal traffic will not be adversely affected.

1.08 The TM and TEL jacks of the 101-type test line are located on the OGT frame.

1.09 For Tests AB and BB, when using the KS-19353 L1 oscillator (OSC), the output must be adjusted to the desired level prior to testing with a 23-type TMS. When using the KS-19353 L1 or L4 OSC to test trunks employing single-frequency signaling units, the output of the oscillator must be disconnected before sweeping through a signaling frequency (such as 2400 or 2600 Hz).

1.10 Tests AA, AB, AC, AD, and AE can be performed on the same trunk without releasing the trunk from the test line after the trunk under test has been connected to a 101-type test line.

1.11 Tests BA, BB, BC, BD, and BE can be performed on the trunk under test before releasing it if so directed by the originating end.

1.12 Test C is only applicable to trunks not employing N, O, or ON carrier.

1.13 For Tests AA through AE, a talking path can be established with the terminating end using either the handset associated with the OGT test frame or a 52S (replaces 52A) head telephone set connected to the TEL jack on the OGT test frame.

1.14 A busy test should be made after connecting to the trunk T jack at the OGT test frame (see Section 216-276-501 or, for AIS, 216-397-501). Two sets of T and MB jacks are provided at the OGT test frame for each ANI outgoing trunk (SD-26209-01 and SD-26210-01). One set of T and MB jacks is associated with the office link and

connector end of the trunk circuit and the other set is associated with the line side of the trunk circuit. **When testing an ANI outgoing trunk, the T jack associated with the office link and connector end of trunk circuit and the MB jack associated with the line side of the trunk circuit should be used.** With an ANI key provided, test calls may be directed to a special NNX code (a free code) without AMA tape registration. Any other test line termination will be routed to an operator for verification of calling number. When an ANI key is not provided, no tests can be performed without operator assistance on ANI trunks to 4-type toll offices; and only tests which have been assigned a special NNX code (a free code) can be directed to crossbar tandem or No. 5 crossbar offices. The ANI **does not** serve PCI test facilities; therefore, only tests to those lines which have been assigned a special NNX code can be performed without operator assistance on ANI trunks requiring PCI pulsing.

1.15 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 The apparatus required for each test is shown in Table A. A more descriptive name and additional information on each item are covered in the paragraph indicated by the number in parentheses. Procedures for calibrating and operating each set may be found in the section listed with each test set. **It is important that the transmission test equipment is known to be accurately calibrated.**

2.02 Test termination circuit (TTC) SD-96540-01.

2.03 Transmission and noise measuring circuit (TNM) SD-95900-01.

Note: If office is not equipped with this circuit, use apparatus described in 2.05 and 2.06.

2.04 Transmission test line or test trunk circuit (101-type) SD-98100-01 (Fig. 7).

2.05 23A, B, C, or D transmission measuring set, (TMS) J94023A, B, C, or D (Sections 103-223-100 and 103-223-101).

2.06 3A or 3C noise measuring set (NMS) J94003A or J94003C (Section 103-611-100 or 103-611-101 respectively).

2.07 6A or 6H impulse counter (IC) J94006A or J94006H (Section 103-620-100 or 103-620-101).

Note 1: The 6H IC should be equipped with the C-notched weighting filter 497G.

Note 2: When 6A IC is used for measurements without 554A filter and when 6C lamp is dark, 6A IC should be calibrated from 900-ohm 1MW source, i.e. 1000-0-900 jack.

2.08 KS-19260 or KS-19353, L1 or L4 oscillator (OSC) (Section 103-302-100, 103-302-105, or 103-302-106 respectively).

2.09 P/AR meter generator J94027A (Section 103-110-110).

2.10 P/AR meter receiver J94027B (Section 103-110-110).

2.11 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord).

2.12 Patching cord, P3E cord, 3 feet long, equipped with two 310 plugs (3P7B cord).

2.13 Patching cord, P3F cord, 8 feet long, equipped with a 309 plug and a 310 plug (3P12H cord).

2.14 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord) and two KS-6278 connecting clips (for connecting ground to 3A or 3C NMS).

2.15 Patching cord, P2B cord, 6 feet long, equipped with two 310 plugs (2P4C cord).

Note: Do not substitute. 6A IC must not be grounded.

TABLE A

APPARATUS	TESTS														
	A	B	C	D	E	AA	AB	AC	AD	AE	BA	BB	BC	BD	BE
TTC (2.02)	1	1	1	1	1	1	1	1	1	1	1	1	1		
TNM (2.03)	1	1		1	1	1	1	1			1	1	1		
101-Type Test Line (2.04)											1	1	1	1	1
23-Type TMS (2.05)	1			1	1	1	1				1	1			
3A or 3C NMS (2.06)		1						1					1		
6A or 6H IC (2.07)			1						1					1	
Oscillator (2.08)							1		1*			1		1*	
P/AR GEN (2.09)										1					1
P/AR (RCVR (2.10)										1					1
Patching Cord (2.11)	1	1‡		2	2	2	2	1‡		3	3	3	2‡		2
Patching Cord (2.12)	1	1		2	2	2	2	1			2	2			
Patching Cord (2.13)	2	2	2	2	3	2	2	2	2						
Testing Cord (2.14)		1						1					1		
Patching Cord (2.15)			1						1‡						1‡
Patching Cord (2.16)		1						1					1		
Testing Cord (2.17)				1					2§	1				2§	1
Test Receiver (2.18)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
52S Head Telephone Set (2.19)													1	1	
554A Filter §									1					1	
J94742A Aux. Test Set (2.20)¶	1	1		1	1	1	1	1							
Patching Cord (2.21)¶	1	1		1	1	1	1	1							

* Required if testing trunks containing N, O, or ON carrier.

† Required if testing trunks not containing N, O, or ON carrier, or if using 6H IC.

§ Required if testing trunks containing N, O, or ON carrier using 6A IC.

‡ 2P16A cord required for connection to 3A NMS.

‡ 3P7A cord required for connection to 3C NMS.

¶ Required if testing trunks to No. 5 CSBR ACD.

2.16 Patching cord, P2AE cord, 4 feet long, equipped with a 310 plug and a 289B plug (2P16A cord).

2.18 Test receiver, 716C receiver equipped with a 310 plug.

2.19 52S (replaces 52A) head telephone set.

2.17 Testing cord, W2DL cord, 5 feet 6 inches long, equipped with a 310 plug and two 35 cord tips (2W42A cord).

2.20 ¶J94742A portable auxiliary test set for originating calls to No. 5 CSBR ACD.

- 2.21 Patching cord, P2J cord, 6 feet long, equipped with two 310 plugs (P29B cord).◆

appropriate section of the practices (see Part 2) before it is used. Also refer to these sections for details of operations of the test set.

3. PREPARATION

- 3.01 *Each test set employed in the tests should be calibrated in accordance with the*

3. PREPARATION (Cont)

STEP	ACTION	VERIFICATION
Tests A, D, E, AA, AB, BA, BB		
1	At TTC— Restore all keys.	
2a	If using portable 23-type TMS— At portable 23-type TMS— Using P3E cord, connect MEAS jack to REC1 jack of TTC.	
3a	Operate INPUT key to 900.	
4a	Operate function key to MEAS.	
5b	If using frame-mounted 23B or 23C TMS— At TTC— Using P3E cord, connect MEAS/900 jack to REC1 jack.	
6c	If using TNM— At TTC— Using P3E cord, connect RCVB jack to REC1 jack.	
7c	At TNM— Operate RCV key.	
8d	◆If testing trunks to a No. 5 CSBR ACD— At J94742A portable auxiliary test set— Restore all keys to normal.	
9d	Place TRK TR switch in Position 1.	
10d	Using P2J cord, connect BAT jack to -48V battery and ground supply.	
11e	If testing trunks to a No. 5 CSBR ACD using SF signaling— Operate DEL key.◆	

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STEP	ACTION	VERIFICATION
Tests A, D, E, AA, AB, AE		
12	At TTC— Using P3F cord, connect TST1 jack to T1 jack of OGT frame. <i>Note:</i> ♦Omit this step if testing trunks to No. 5 CSBR ACD.♦	
13	Using P3F cord, connect TRK1 jack to T jack of trunk under test. (See 1.14.)	If testing switchboard-ended or desk-ended trunks— At switchboard or desk— Call is answered and, if required, will be transferred to supervisory telephone circuit.
14d	♦If testing trunks to a No. 5 CSBR ACD— At J94742A portable auxiliary test set— Using P3F cord, patch TRK1 TST FAC jack to TRK1 jack of TTC.	
15d	Using P3F cord, patch TRK1 TRK jack to T jack of trunk to be tested. (See 1.14.)♦	
16	Insert plug of test receiver in RCVR jack.	
Tests B, AC, BC		
17	At TTC— Restore all keys.	
18f	If using portable 3A NMS— At portable 3A NMS— Set FUNCTION switch to NM-900.	
19f	Using P2AE cord, connect 289B plug to IN jack and 310 plug to REC1 jack of TTC.	
20g	If using portable 3C NMS— At portable 3C NMS— Operate FUNCTION switch to NM 600/900.	
21g	Using P3E cord, connect one end to IN jack and other end to REC1 jack of TTC.	
22	At NMS— Connect GRD post to ground.	
23c	If using TNM— At TNM— Operate NM key.	NMB lamp lighted.
24c	Operate RCV key.	

STEP	ACTION	VERIFICATION
25c	Using P3E cord, connect RCVB jack to REC1 jack of TTC.	
26	At TTC— Using P3F cord, connect TST1 jack to T1 jack of OGT test frame. <i>Note:</i> ♦Omit this step if testing trunks to No. 5 CSBR ACD.♦	
27	Using P3F cord, connect TRK1 jack to T jack of trunk under test. (See 1.14.)	If testing switchboard- or desk-ended trunks— At switchboard or desk— Call is answered and, if required, will be transferred to supervisory telephone circuit.
28d	♦If testing trunks to No. 5 CSBR ACD— At J94742A portable auxiliary test set— Restore all keys to normal.	
29d	Place TRK TR switch in Position 1.	
30d	Using P2J cord, connect BAT jack to -48V battery and ground supply.	
31d	Using P3F cord, patch TRK1 TST FAC jack to TRK1 jack of TTC.	
32d	Using P3F cord, patch TRK1 TRK jack to T jack of trunk to be tested. (See 1.14.)	
33e	If testing trunks to No. 5 CSBR ACD using SF signaling— Operate DEL key.♦	
34	Insert plug of test receiver into RCVR jack.	
Tests C, AD		
35	At TTC— Restore all keys.	
36	Using P3F cord, connect TST1 jack to T1 jack of OGT test frame.	
37	Using P3F cord, connect TRK1 jack to T jack of trunk under test. (See 1.14.)	If testing switchboard- or desk-ended trunks— At switchboard or desk— Call is answered and, if required, will be transferred to supervisory telephone circuit.
38	Insert plug of test receiver into RCVR jack.	

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STEP	ACTION	VERIFICATION
Tests AB, BB		
39h	If using portable KS-19353 OSC— At KS-19353 OSC— Using P3E cord, connect OUTPUT jack to SD jack on TTC.	
40h	Operate FUNCTION switch to 900.	
41i	If using frame-mounted KS-19260 OSC— At TTC— Using P3E cord, patch REC1 jack to OSC/900 jack.	
Tests AE, BE		
42	At TTC— Restore all keys.	
43	At P/AR RCVR— Operate IMPEDANCE key to 900.	
44	At TTC— Using W2DL cord, connect 310 plug to REC1 jack and 35 cord tips to INPUT binding posts on P/AR RCVR.	
45	Using P3D cord, connect SD jack to 900 jack on P/AR GEN.	
Tests BA Through BE		
	Note: In these tests, the distant office will originate the test call to one of the 101-type trunk transmission test lines, and a signal will be received at the OGT frame, resulting in one of the lamps TRK1, TRK2, or TRK3 being lighted.	
46	At OGT test frame— Restore all keys to normal.	
47	Connect 716C receiver to RCVR jack.	
48	Connect 52S headset to TEL jacks.	
49	Using P3F cord, patch TST1 jack to DIAL jack.	When signal is received— TRK1, TRK2, or TRK3 lamp flashes.
50	Operate TRK_ key associated with lighted TRK_ lamp to TALK.	TRK_ lamp lighted steadily.

STEP	ACTION	VERIFICATION
51	Determine from originating end type of test to be made and length of time to be allowed for each test.	
52	Using P3E cord, patch TRK1 jack to TM_ jack associated with operated TRK_ key.	TRK_ lamp remains steadily lighted.
53j	If connection in Step 52 was made to TM2 or TM3 jack— Operate 6C key.	6C lamp lighted.
54	Restore TRK_ key to normal.	TRK_ lamp flashes.

4. METHOD

STEP	ACTION	VERIFICATION
A. One-Way 1000-Hz Loss Measurement to 102-Type Test Line (Fig. 1)		
17	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
18	At OGT test frame— Originate call to 102-type test line in office in which trunk terminates, as described in Section 216-276-501 or, for AIS, 216-397-501.	1000-Hz tone heard in test receiver.
19k	If switchboard terminated trunk— Request operator to connect to 1MW TEST jack.	
20d	◆If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
21d	Restore START 1 key.	
22d	Press TOUCH-TONE® button 2 to select 102-type test line.	
23d	Operate CUT THRU 1 key.◆	
24	At TTC— Operate TMS1 key.	On 23-type TMS or TNM— Meter indicates far-to-near transmission loss.
25	At 23-type TMS or TNM— Record meter reading.	
26	Restore TMS1 key.	

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STEP	ACTION	VERIFICATION
27	Remove connection from T jack of trunk just tested.	
28	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 16 through 27.	
29l	If no further tests are to be made— Remove all patching cords; restore all keys.	
B. Message Circuit Noise Measurement to 100-Type Test Line (Fig. 2)		
35	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
36	At OGT test frame— Originate call to 100-type test line in office in which trunk terminates as described in Section 216-276-501 or, for AIS, 216-397-501.	
37k	If switchboard terminated trunk— Request operator to connect to balance test termination.	
38d	◆If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
39d	Restore START 1 key.	
40d	Press TOUCH-TONE button 0 to select 100-type test line.	
41d	Operate CUT THRU 1 key.◆	
42	At TTC— Operate TMS1 key.	NMS or TNM meter indicates noise at near end. Character of noise heard in 716C receiver.
43	Record meter reading (scale A on TNM) and character of noise.	
44	Remove connection from T jack of trunk just tested.	
45	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 35 through 44.	
46l	If no further tests are to be made— Remove all patching cords; restore all keys.	

STEP	ACTION	VERIFICATION
C. Impulse Noise Measured to 100-Type Test Line (Fig. 1)		
	<i>Note:</i> Test C is applicable only to trunks not containing N, O, or ON Carrier.	
40k	If using 6A IC— At TTC— Using P2B cord, connect REC1 jack to IN jack of 6A IC.	
	<i>Note:</i> 6A IC must not be grounded.	
41k	At 6A IC— Set REF-LEV-DBRN key and switch to step nearest required noise reference level.	
42l	If using 6H IC— At TTC— Using P2B cord, connect REC1 jack to MEAS jack of 6H IC.	
43l	At 6H IC— Operate DIAL-MEAS switch to MEAS.	
44l	Set DBRN control to required noise reference level.	
45	At OGT test frame— Originate call to 100-type test line in office in which trunk terminates as described in Section 216-276-501 or, for AIS, 216-397-501.	
46m	If switchboard terminated trunk— Request operator to connect to balance test termination.	
47	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
48	Operate TMS1 key.	
49k	If using 6A IC— At 6A IC— Operate timer switch to HOLD, or to 5 minutes beyond required interval, then set to required timing interval.	
50l	If using 6H IC— Operate TIMER switch to required interval.	

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STEP	ACTION	VERIFICATION
	<i>Note:</i> To insure accurate timing on intervals of 3 minutes or less, adjust TIMER to 5 minutes and return to desired interval.♦	
51	Momentarily operate RESET key.	
52	After timing interval— Record counter reading.	Counter shows impulse counts measured at near end minus corrections if required.
	<i>Note:</i> If distant end returns repeated on-hook supervision, monitor connection with 716C receiver and observe impulse counter to determine number of impulses per minute caused by changes in supervision. Multiply by timing interval in minutes and subtract result from counter reading.	
53	Remove connections from T jack of trunk just tested.	
54	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 41k through 53.	
55n	If no further tests are to be made— Remove all patching cords; restore all keys.	
D. Two-Way 1000-Hz Loss Measurement and Noise Check to 104-Type Test Line (Fig. 1)		
17	At TTC — Using P3E cord, connect SD jack to 1000/0/900 jack.	
18	Operate SD-REC1 key to its receive position (horizontal).	
19	At OGT test frame— Originate call to 104-type test line as described in Section 216-383-503.	
20	If switchboard terminated trunk— Request operator to connect to 104-type test termination.	
21d	♦If testing trunks to a No. 5 CSBR ACD — Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
22d	Restore START 1 key.	
23d	Press TOUCH-TONE button 4 to select 104-type test line.	

STEP	ACTION	VERIFICATION
24d	Operate CUT THRU 1 key.◀	
25	Operate TMS1 key.	When 104-type test line is seized— Test progress tone (2225-Hz) heard or S lamp at TTC is momentarily lighted.
26	When test progress tone is silenced or S lamp is extinguished— At TTC— Operate SD-REC1 key to its send position (vertical) for approximately 3 seconds; then restore it to receive (horizontal)	When SD-REC1 key is restored to its receive position (horizontal)— First 10-second interval of 1000-Hz tone heard at near-end.
	<i>Note:</i> Near-to-far transmission loss measured and stored at the distant transmission measuring circuit.	
27k	If S lamp momentarily lighted or test progress tone is heard instead of the 1000-Hz tone— Repeat Step 26.	
28	At TMS— Record far-to-near transmission loss during first 10-second interval of 1000-Hz tone.	
29l	If S lamp momentarily lighted or a short burst of test progress tone (2225 Hz) is heard after the first 10-second interval of 1000-Hz tone— Add 10 dB to TMS meter reading for the second 10-second interval of 1000-Hz tone.	
30	Record sum of far-to-near and near-to-far losses during second 10-second interval of 1000-Hz tone.	
31m	If far-end noise check required— After second 10-second interval of 1000-Hz tone— Monitor test call for 5 seconds.	If S lamp steadily lighted or if steady test progress tone (2225 Hz) heard— Far-end noise does not exceed 41 dBrnc. If S lamp flashes, or interrupted test progress tone heard— Far-end noise exceeds 41 dBrnc.
32	Subtract TMS reading in Step 28 from reading in Step 30.	
33	Remove test connection from T jack of trunk just tested.	
34	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 18 through 32.	

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STEP	ACTION	VERIFICATION
35n	If no further tests are to be made— Remove all patching cords; restore all keys.	
E. Two-Way 1000-Hz Loss Measurement Using Loop-Around Test Line (Fig. 1 and 2).		
17	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
18	At OGT frame— Originate call to 102-type test line in office in which trunk terminates, as described in Section 216-276-501 or, for AIS, 216-397-501.	
19k	If switchboard terminated trunk— Request operator to connect to 1MW TEST jack.	
20d	▶If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
21d	Restore START 1 key.	
22d	Press TOUCH-TONE button 2 to select 102-type test line.	
23d	Operate CUT THRU 1 key.▶	
24	At TTC— Operate TMS1 key.	1000-Hz tone heard in 716C receiver. TMS or TNM meter indicates far-to-near transmission loss.
25	Record meter reading.	
26	Restore TMS1 key.	
27	Remove connection from T jack of trunk just tested.	
28	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 17 through 27.	
29	When all trunks in group have been tested— Select one trunk from the group as a "reference trunk" (Section 660-501-500).	
30	At TTC— Restore all keys.	

STEP	ACTION	VERIFICATION
31	Disconnect 310 plug from REC1 jack (Fig. 1) and connect it to REC2 jack (Fig. 2).	
32	Using 3P7B cord, connect SD jack to 1000/0/900 jack.	
33	Operate SD-REC1 key to its receive position (horizontal).	
34	Using P3F cord, connect TST2 jack to T1 jack of OGT test frame.	
	<i>Note:</i> ♦Omit this step if testing trunks to No. 5 CSBR ACD.♦	
35	Using P3F cord, connect TRK1 jack to T jack of first trunk to be tested.	
36	Using P3F cord, connect TRK2 jack to T jack of "reference trunk."	
37	At OGT test frame— Originate call as described in Section 216-276-501 or, for AIS, 216-397-501 to first appearance of loop-around test line.	
38l	If switchboard terminated trunk— Request operator to connect to first appearance of loop-around test line.	
39d	♦If testing trunks to No. 5 CSBR ACD— At J94742A portable auxiliary test set— Using P3F cord, connect TRK1 TST FAC jack to TRK1 jack of TTC.	
40d	Using P3F cord, connect TRK1 TRK jack to T jack of reference trunk.	
41d	Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
42d	Restore START 1 key.	
43d	Press TOUCH-TONE button 6 to select first appearance of loop-around test termination.	
44d	Operate CUT THRU 1 key.	
45	At TTC— Operate TMS2 and REC2 keys.	

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STEP	ACTION	VERIFICATION
	<i>Note:</i> If first appearance of loop-around test line is also a 102-type test line, TMS or TNM indicates far-to-near transmission loss of reference trunk.	
46	At TTC— Remove plug from TST2 jack and insert into TST1 jack.	
47	At OGT test frame— Originate call to second appearance of loop-around test line as described in Section 216-276-501 or, for AIS, 216-397-501.	
48l	If switchboard terminated trunk— Request operator to connect to second appearance of loop-around test line.	
49d	◆If testing trunks to No. 5 CSBR ACD— At J94742A portable auxiliary test set— Using P3F cord, connect TRK 2 TST FAC jack to TRK2 jack of TTC.	
50d	Using P3F cord, connect TRK 2 TRK jack to T jack of first trunk to be tested.	
51d	Operate TRK TR switch to Position 2.	
52d	Operate START 2 key.	Interrupted dial tone heard in monitoring receiver.
53d	Restore START 2 key.	
54d	Press TOUCH-TONE button 7 to select second appearance of loop-around test termination.	
55d	Operate CUT THRU 2 key.◆	
56	At TTC— Operate TMS1 key.	
57	Operate SD-REC1 key to its send position (vertical).	At TMS or TMN— 1000-Hz tone received.
58	Record meter reading.	Meter indicates loop-around transmission loss. Difference between loop-around loss and far-to-near loss of "reference trunk" (Step 25) is near-to-far loss of trunk under test.
59	At TTC— Restore TMS1 key to normal and operate SD-REC1 key to its receive position (horizontal).	

STEP	ACTION	VERIFICATION
	<i>Note:</i> If first appearance of loop-around test line is also a 102-type test line, TMS or TNM indicates far-to-near transmission loss of reference trunk.	
60	At OGT— Remove P3F cord from T jack of trunk just tested.	
61	Insert P3F cord into T jack of next trunk to be tested.	
62	Repeat Steps 47 through 61 for each remaining trunk to be tested.	
63	Remove plug from T jack of "reference trunk."	
64	Remove plug from T jack of last trunk tested and insert into jack of "reference trunk."	
65	Select second reference trunk from trunk previously tested (Section 660-501-500).	
66	Restore TMS2 and REC2 keys.	
67	Insert plug of cord connected to TRK2 jack into T jack of second reference trunk.	
68d	If testing trunks to No. 5 CSBR ACD— Insert plug of cord connected to TRK 2 TRK jack into T jack of second reference trunk.	
69	Remove plug from TST1 jack and insert into TST2 jack.	
70	Repeat Steps 37 through 58 considering "reference trunk" to be trunk under test and "second reference trunk" to be the "reference trunk."	
71m	If no further tests are to be made— Remove all patching cords; restore all keys.	
AA.	Manual Two-Way 1000-Hz Loss Measurement to 101-Type Test Line, Switchboards, or Plant or Traffic Operating Desks—Originating End Procedures (Fig. 1)	
17k	If testing nonswitchboard-ended or nondesk-ended trunks— At OGT test frame—	

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STEP	ACTION	VERIFICATION
	Originate call to 101-type test line, as described in Section 216-276-501 or, for AIS, 216-397-501.	
18d	▶If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
19d	Restore START 1 key.	
20d	Press TOUCH-TONE button 1 to select 101-type test line.	
21d	Operate CUT THRU 1 key.▶	
22	Request terminating end to connect 0 dBm 1000-Hz tone to trunk under test for agreed upon interval.	
23	At TTC— Operate TMS1 key then SD-REC1 key to its receive position (horizontal).	TMS or TNM meter indicates far-to-near loss.
24	Record meter reading.	
	<i>Note:</i> If only one-way test is required, omit Steps 25 through 31l.	
25	At TTC— After agreed upon interval— Restore TMS1 key.	
26	Request terminating end to measure.	
27	At TTC— Using 3P7B cord, connect SD jack to 1000/0/900 jack.	
28	Operate TMS1 key, then operate SD-REC1 key to its send position (vertical).	
29	After agreed upon interval— Operate SD-REC1 key to its receive position (horizontal) and restore TMS1 key.	
30	Obtain and record TMS reading from terminating end.	
31l	If no further tests are to be made on this trunk— Request terminating end to disconnect.	

STEP	ACTION	VERIFICATION
32	At TTC— Remove test connection from T jack of trunk just tested.	
33	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 17k through 32.	
34m	If no further tests are to be made— Remove all patching cords; restore all keys.	
AB. Two-Way Frequency Response Measurement to 101-Type Test Line, Switchboards, or Plant or Traffic Operating Desks—Originating End Procedures (Fig. 1)		
42k	If testing nonswitchboard-ended or nondesk-ended trunks— At OGT test frame— Originate call to 101-type test line, as described in Section 216-276-501 or, for AIS, 216-397-501.	
43d	▶If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
44d	Restore START 1 key.	
45d	Press TOUCH-TONE button 1 to select 101-type test line.	
46d	Operate CUT THRU 1 key.▶	
47	Request terminating end to send first required frequency at 0 dBm for agreed upon length of time.	
48	At TTC— Operate TMS1 key; then operate SD-REC1 key to its receive position (horizontal).	Tone heard in receiver. TMS indicates far-to-near loss at first frequency.
49	Record TMS reading.	
50	Restore TMS1 key and request next required frequency to be sent.	
51	Operate TMS1 key.	Tone heard in receiver. TMS indicates far-to-near loss at second frequency.
52	Record TMS reading.	

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STEP	ACTION	VERIFICATION
53	Repeat Steps 50 through 52 for other required frequencies. <i>Note:</i> If only one-way test required, omit Steps 54 through 61.	
54	Restore TMS1 key and request terminating end to measure loss at required frequencies over trunk under test.	
55	Adjust to send first required frequency at 0 dBm.	
56	Operate TMS1 key.	
57	Operate SD-REC1 key to send position (vertical) for agreed upon length of time.	
58	Operate SD-REC1 key back to its receive position (horizontal) and restore TMS1 key.	
59	Obtain and record TMS reading from terminating end.	
60	Adjust oscillator to send next required frequency at 0 dBm. <i>Note:</i> TMS1 key must be normal while changing frequencies. This is particularly important when passing through 2400-2600 Hz.	
61	Repeat Steps 56 through 60 for other required frequencies.	
62l	If no further tests are to be made on this trunk— Request terminating end to disconnect.	
63	Remove test connection from T jack of trunk just tested.	
64	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 42k through 63.	
65m	If no further tests are to be made— Remove all patching cords; restore all keys.	

STEP	ACTION	VERIFICATION
AC.	Message Circuit Noise Measurement to 101-Type Test Line, Switchboards, or Plant or Traffic Operating Desks—Originating End Procedures (Fig. 1)	
35	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
36k	If testing nonswitchboard-ended or nondesk-ended trunks— At OGT test frame— Originate call to 101-type test line in office in which trunk terminates, as described in Section 216-276-501 or, for AIS, 216-397-501.	
37d	◆If testing trunks to a No. 5 CSBR ACD— Operate START 1 key.	Interrupted dial tone heard in monitoring receiver.
38d	Restore START 1 key.	
39d	Press TOUCH-TONE button 1 to select 101-type test line.	
40d	Operate CUT THRU 1 key.◆	
41	Request terminating end to provide a balance termination, or if a far-end noise measurement is also desired, to connect noise measuring equipment at far-end.	
	<i>Note:</i> If only near-end test required, omit Steps 42 and 45.	
42	Request terminating end to measure noise for agreed upon interval.	
43	At TTC— Operate TMS1 key.	NMS or TNM indicates noise measured at near end. Character of noise heard in 716C receiver.
44	Record meter reading and character of noise.	
45	After agreed upon interval— Restore TMS1 key and obtain noise measurement and character of noise from terminating end.	
46l	If no further tests are to be made on this trunk— Request terminating end to disconnect.	

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STEP	ACTION	VERIFICATION
47	At TTC— Remove test connections from T jack of trunk just tested.	
48	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 35 through 47.	
49m	If no further tests are to be made— Remove all patching cords; restore all keys.	
AD. Impulse Noise Measurement to 101-Type Test Line, Switchboards, or Plant or Traffic Operating Desks—Originating End Procedures (Fig. 1)		
For Trunks Not Containing N, O, or ON Carrier		
39k	If using 6A IC— At TTC— Using P2B cord, connect REC1 jack to IN jack of 6A IC. <i>Note:</i> 6A IC must not be grounded.	
40k	At 6A IC— Set REF-LEV-DBRN key and switch to step nearest required noise reference level.	
41l	◆If using 6H IC— At TTC— Using P2B cord, connect REC1 jack to MEAS jack of 6H IC..	
42l	At 6H IC— Operate DIAL-MEAS switch to MEAS.	
43l	Set DBRN control to required noise reference level.◆	
44m	If testing nonswitchboard-ended or nondesk-ended trunks— At OGT test frame— Originate call to 101-type test line in office in which trunk terminates as described in Section 216-276-501 or, for AIS, 216-397-501.	
45	At TTC— Operate SD-REC1 key to its receive position (horizontal).	
46	Request terminating end to provide a balance termination or if a far-end impulse noise	

STEP	ACTION	VERIFICATION
	measurement is also desired, to connect an impulse counter.	
	<i>Note:</i> If only one-way test is required, omit Steps 47 and 54.	
47	Request terminating end to measure impulse noise for agreed upon interval.	
48	Operate TMS1 key.	
49k	If using 6A IC— At 6A IC— Operate timer switch to HOLD or to 5 minutes beyond required interval, then set to required timing interval.	
50l	◆If using 6H IC— Operate TIMER switch to required interval.	
	<i>Note:</i> To insure accurate timing on intervals of 3 minutes or less, adjust TIMER to 5 minutes and return to desired interval.◆	
51	Momentarily operate RESET key.	
52	After timing interval— Record counter reading.	Counter indicates impulse counts measured at near end.
53	After agreed upon interval— Restore TMS1 key.	
54	Obtain counter reading from terminating end.	
55n	If no further tests are to be made on this trunk— Request terminating end to disconnect.	
56	At TTC— Remove test connections from T jack of trunk just tested.	
57	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 40k through 56.	
58o	If no further tests are to be made— Remove all patching cords; restore all keys.	

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STEP	ACTION	VERIFICATION
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For Trunks Containing N, O, or ON Carrier

59h	If using portable KS-19353 OSC— At TTC— Using P3E cord, connect SD jack to OUTPUT jack of oscillator.	
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60h	At KS-19353 OSC— Operate FUNCTION switch to 900.	
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61i	If using frame-mounted KS-19260 OSC— At TTC— Using P3E cord, patch REC1 jack to OSC/900.	
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62k	If using 6A IC— At TTC— Using W2DL cord, connect 310 plug to REC1 jack and 35 cord tips to terminals 1 and 2 of 554A filter.	
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63k	Using W2DL cord, connect 310 plug to IN jack of 6A IC and 35 cord tips to terminals 7 and 8 of 554A filter.	
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Note: The 6A IC must not be grounded.

64k	At 6A IC— Set REF-LEV-DBRN key and switch to 57 dBm.	
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65l	◆If using 6H IC— At TTC— Using P2B cord, connect REC1 jack to MEAS jack of 6H IC.	
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66l	At 6H IC— Operate DIAL-MEAS switch to MEAS.	
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67l	Set DBRN control to 57 DBRN.◆	
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68m	If testing nonswitchboard-ended or nondesk-ended trunks— At TTC— Originate call to 101-type test line in office in which trunk terminates as described in Section 216-276-501 or, for AIS, 216-397-501.	
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69k	If using 6A IC— Request terminating end to connect oscillator adjusted for 600 Hz at -10 dBm.	
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STEP	ACTION	VERIFICATION
70l	<p>◆If using 6H IC— Request terminating end to connect oscillator adjusted for 2800 Hz at -10 dBm.◆</p>	
71	Operate TMS1 key; then operate SD-REC1 key to its receive position (horizontal).	
72	<p>At impulse counter— Operate timer switch to at least 5 minutes beyond required interval.</p>	
73	Momentarily operate RESET key.	
74p	If impulse counter does not count continuously— Proceed immediately to Step 77.	
75q	If impulse counter counts continuously— Call terminating end over order wire or DDD connection.	
76q	Request terminating end to adjust oscillator above or below original frequency until impulse counter stops counting continuously. Output of distant oscillator should remain at -10 dBm.	
	<p>Note: If no oscillator setting can be found which will stop the impulse counter from counting continuously, repeat Step 76q with the impulse counter adjusted to the next higher dBrn setting. Use successively higher settings until an oscillator frequency can be found which causes the impulse counter to stop counting continuously.</p>	
77	Restore TMS1 key.	
78k	<p>If using 6A IC— At 6A IC— Set REF-LEV-DBRN key and switch to step nearest required noise reference level.</p>	
79l	<p>◆If using 6H IC— At 6H IC— Set DBRN control to required noise reference level.◆</p>	
80	<p>At TTC— Operate TMS1 key.</p>	
81	<p>At impulse counter— Operate timer switch to 5 minutes beyond</p>	

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STEP	ACTION	VERIFICATION
	required interval, then set to required timing interval.	
82	Momentarily operate RESET key.	
83	After timing interval— Record counter reading.	Counter indicates impulse counts measured at originating end.
84	At TTC— Restore TMS1 key.	
85	Request terminating end to disconnect oscillator.	
	<i>Note:</i> If only near-end test desired, omit Steps 86 through 94.	
86	Request terminating end to connect impulse counter as described in Test BD Steps 73k through 77l. Also request terminating end to notify near end over a separate communication circuit if impulse counter counts continuously.	
87k	If using 6A IC— Adjust oscillator output for 600 Hz at -10 dBm.	
88l	▶If using 6H IC— Adjust oscillator output for 2800 Hz at -10 dBm.◀	
89	Operate TMS1 key, then operate SD-REC1 key to its send position (vertical).	
90r	If required by distant office— Adjust frequency of oscillator slowly above or below original setting until terminating end indicates impulse counter has stopped counting continuously. Oscillator output should remain at -10 dBm.	
91s	If terminating end has not indicated need for change in frequency or after the oscillator has been adjusted to the proper frequency according to Step 90r— Restore TMS1 key and request terminating end to adjust impulse counter to required reference level and to measure impulse noise.	
92	Operate TMS1 key.	Counter at terminating end indicates impulse counts measured at terminating end.

STEP	ACTION	VERIFICATION
93	After required timing interval— Restore TMS1 key.	
94	Obtain and record impulse noise measurements from terminating end.	
95t	If no further tests on this trunk— Request terminating end to disconnect. Remove connections from T jack of trunk just tested.	
96	For other trunks to be tested— Repeat appropriate Steps in PREPARATION and Steps 64k through 95t. <i>Note:</i> Do not change oscillator frequency setting from that used in Steps 87k through 90r on first trunk tested.	
97u	If no further tests are to be made— Remove all patching cords; restore all keys.	

AE. Two-Way P/AR to 101-Type Test Line, Switchboard, or Plant or Traffic Operating Desks—Originating End Procedures Outgoing Trunk (Fig. 1)

46	Operate SD-REC1 key to its receive position (horizontal).	
47k	If testing nonswitchboard-ended or nondesk-ended trunks— At OGT test frame— Originate call to 101-type test line in office in which trunk terminates, as described in Section 216-276-501 or, for AIS, 216-397-501.	
48	Request terminating end to connect a P/AR GEN for agreed upon interval.	
49	At TTC— Operate TMS1 key.	
50	On P/AR RCVR— Adjust COARSE and FINE RECEIVED LEVEL ADJ controls to obtain RECEIVED LEVEL meter reading at REF LEVEL.	Meter reading is P/AR measurement at originating end.
51	Record P/AR meter reading. <i>Note:</i> If only one-way test required, omit Steps 52 and 53.	

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STEP	ACTION	VERIFICATION
52	After agreed upon interval— At TTC— Restore TMS1 key.	
53	Request terminating end to prepare to make P/AR measurement.	
54	Operate TMS1 key, then operate SD-REC1 key to its send position (vertical).	
55	After agreed upon interval— Restore TMS1 key and obtain P/AR measurement from terminating end.	
56l	If no further tests are to be made on this trunk— Request terminating end to disconnect.	
57	At TTC— Remove test connections from T jack of trunk just tested.	
58	For other trunks to be tested— Repeat Steps 46 through 57.	
59m	If no further test are to be made— Remove all patching cords; restore all keys.	

**BA. Two-Way 1000-Hertz Loss Measurement to
101-Type Test Line—Terminating End Procedures
(Fig. 3)**

55	When requested by originating end to connect 0 dBm 1000-Hz tone— Operate TMS1 key, then operate SD-REC1 key to its send position (vertical).	
56	After agreed upon interval— Restore TMS1 key.	
57	When requested by originating end to measure 0 dBm 1000-Hz tone applied to trunk under test from originating end— Operate TMS1 key, then SD-REC1 key to its receive position (horizontal).	
58	Read TMS meter.	
59	Restore TMS1 key and report meter reading to originating end.	

STEP	ACTION	VERIFICATION
60k	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	
BB. Two-Way Frequency Response Measurement To 101-Type Test Line—Terminating End Procedures (Fig. 3)		
55	When directed by originating end to send— Adjust oscillator to 0 dBm at requested frequency.	
	<i>Note:</i> TMS1 key must be normal while changing frequency.	
56	Operate TMS1 key; then operate SD-REC1 key to its send position (vertical).	
57	After agreed upon interval— Restore TMS1 key.	
58	Repeat Steps 55 through 57 at other frequencies as directed by originating end.	
59	When directed by originating end to measure— Operate TMS1 key, then operate SD-REC1 key to its receive position (horizontal).	
60	Read TMS meter.	
61	Restore TMS1 key and report meter reading to originating end.	
62	Repeat Steps 59 through 61 as directed by originating end.	
63k	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	
BC. Message Circuit Noise Measurement to 101-Type Test Line—Terminating End Procedures (Fig. 3)		
55	When requested by originating end to make a noise measurement— At TTC— Operate TMS1 key then operate SD-REC1 key to its receive position (horizontal).	NMS or TNM indicates noise measured at terminating end. Character of noise heard in 716C receiver.
56	Restore TMS1 key and report noise reading and character of noise to originating end.	

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STEP	ACTION	VERIFICATION
57	When requested by originating end to provide a balance termination— At TTC— Operate TR key.	
58	Monitor with 716C receiver.	
59	When requested by terminating end to remove balance termination— Restore TR key.	
60k	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	

BD. Impulse Noise Measurement to 101-Type Test Line—Terminating End Procedures (Fig. 3).

55	When requested by originating end to provide a balance termination— At TTC— Operate TR key.	
56	Monitor with 716C receiver.	
57	When requested to remove termination— Restore TR key.	

For Trunks Not Containing N, O, or ON Carrier

58k	If using 6A IC— When requested by originating end to make an impulse noise measurement— At TTC— Using P2B cord, connect REC1 jack to IN jack of 6A IC. <i>Note:</i> 6A IC must not be grounded.	
59k	At 6A IC— Set WTG switch to VOICE BAND.	
60k	Set REF-LEV-DBRN key and switch to nearest required noise reference level.	
61l	◆If using 6H IC— When requested by originating end to make an impulse noise measurement— At TTC— Using P2B cord, connect REC1 jack to MEAS jack of 6H IC.	

STEP	ACTION	VERIFICATION
62l	At 6H IC— Operate DIAL-MEAS switch to MEAS.	
63l	Set DBRN control to required noise reference level.	
64	At TTC— Operate TMS1 key and SD-REC1 key to its receive position (horizontal).	
65	At impulse counter— Operate timer switch to 5 minutes beyond required interval, then set to required timing interval.	
66	Momentarily operate RESET key.	
67	After timing interval— Record counter reading.	Counter indicates impulse counts measured at terminating end.
68	At TTC— Restore TMS1 key and report counter reading to originating end.	
69m	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	

For Trunks Containing N, O, or ON Carrier

70h	If using portable KS-19353 OSC— On OSC— Using P3E cord, connect OUTPUT jack to SD jack on TTC.
71h	Operate FUNCTION switch to 900.
72i	If using frame-mounted KS-19260 OSC— At TTC— Using P3E cord, patch SD jack to OSC/900.
73k	If using 6A IC— At TTC— Using W2DL cord, connect 310 plug to REC1 jack and 35 cord tips to terminals 1 and 2 of 554A filter.
74k	Using W2DL cord, connect 310 plug to IN jack of 6A IC and 35 cord tips to terminals 7 and 8 of 554A filter.

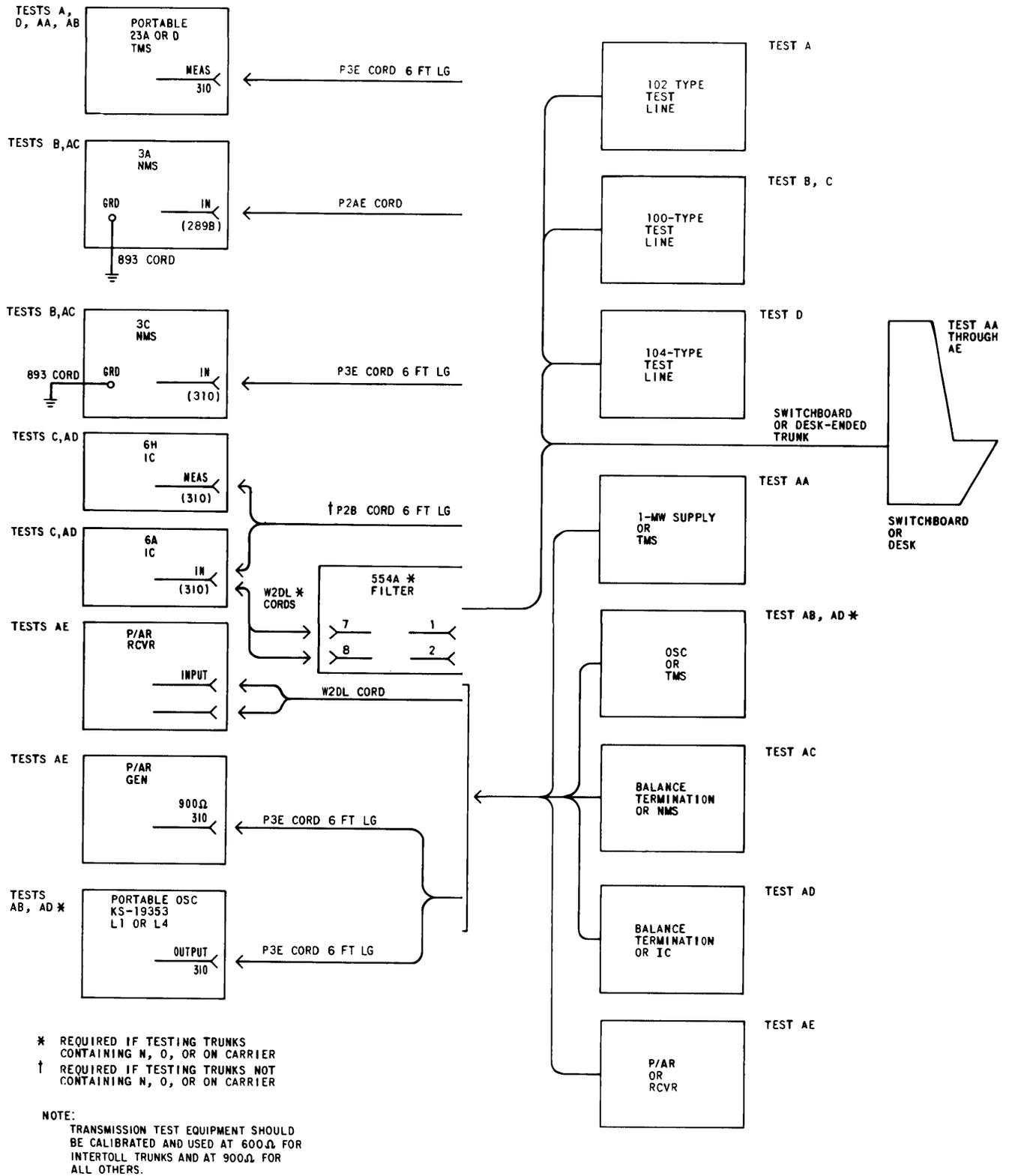
SECTION 216-769-501

STEP	ACTION	VERIFICATION
	<i>Note:</i> The 6A IC must not be grounded.	
75k	When requested by originating end to provide test termination— Adjust oscillator output for 600 Hz at -10 dBm.	
76l	◆If using 6H IC— At TTC— Using P2B cord, connect REC1 jack to MEAS jack of 6H IC.	
77l	When requested by originating end to provide test termination— Adjust oscillator output for 2800 Hz at -10 dBm.◆	
78	Operate TMS1 key, then operate SD-REC1 key to its send position (vertical).	
79n	If required by originating end— Adjust oscillator frequency above or below original setting at -10 dBm until originating end indicates that impulse counter stopped counting continuously.	
80	After timing interval— Restore TMS1 key.	
81k	If using 6A IC— When requested by originating end to measure— At 6A IC— Set WTG switch to VOICE BAND.	
82k	Set REF-LEV-DBRN key and switch to 57 DBRN.	
83k	Originating end will connect oscillator adjusted for 600 Hz at -10 dBm.	
84l	◆If using 6H IC— When requested by originating end to measure— At 6H IC— Operate DIAL-MEAS switch to MEAS.	
85l	Set DBRN control to 57 DBRN.	
86l	Originating end will connect oscillator adjusted for 2800 Hz at -10 dBm.◆	
87	Operate TMS1 key; then operate SD-REC1 key to its receive position (horizontal).	

STEP	ACTION	VERIFICATION
88	At impulse counter— Operate timer switch to at least 5 minutes beyond required interval.	
89	Momentarily operate RESET key.	
90o	If impulse counter does not count continuously— Proceed immediately to Step 93.	
91p	If impulse counter counts continuously— Call originating end over order wire or DDD.	
92p	Request originating end to adjust oscillator above or below original frequency at -10 dBm until impulse counter stops counting continuously.	
	<i>Note:</i> If no oscillator setting can be found which will stop the impulse counter from counting continuously, repeat Step 92p with impulse counter adjusted to the next higher DBRN setting. Use successively higher settings until an oscillator frequency can be found which causes the impulse counter to stop counting continuously.	
93	Restore TMS1 key.	
94k	If using 6A IC— At 6A IC— Set REF-LEV-DBRN key and switch to step nearest required noise reference level.	
95l	If using 6H IC— At 6H IC— Set DBRN control to required noise reference level.	
96	At TTC— Operate TMS1 key.	
97	At impulse counter— Operate timer switch to 5 minutes beyond required interval, then set to required timing interval.	
98	Momentarily operate RESET key.	
99	After timing interval— Record counter reading.	
100	Restore TMS1 key and report counter reading to originating end.	

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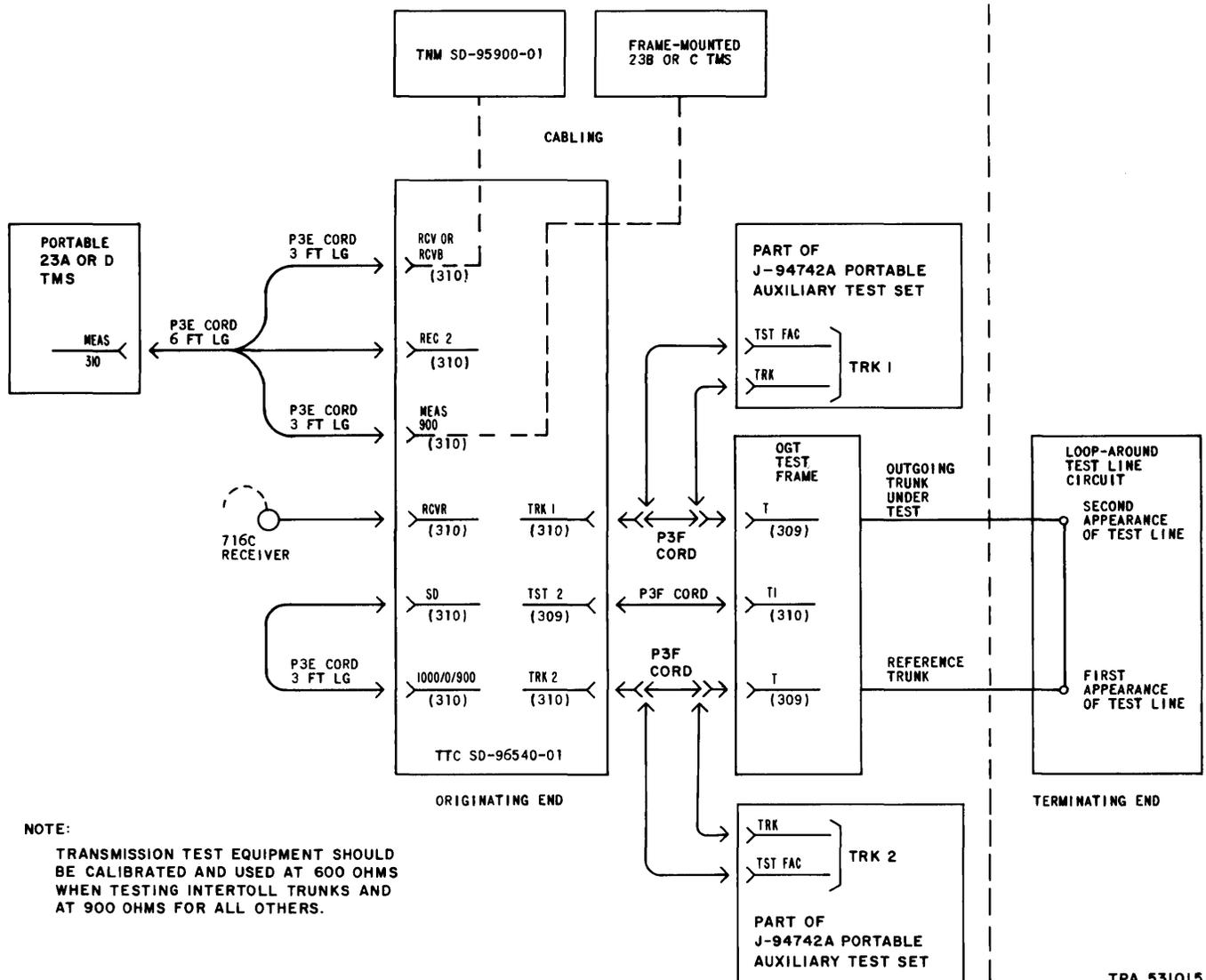
STEP	ACTION	VERIFICATION
101q	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	
BE.	Two-Way P/AR Measurement to 101-Type Test Line—Terminating End Procedures (Fig. 3)	
55	When requested by originating end to connect P/AR generator— Operate TMS1 key and SD-REC1 key to its send position (vertical).	
56	After agreed upon interval— Restore TMS1 key.	
57	When requested by originating end to make P/AR measurement— Operate TMS1 key and SD-REC1 key to its receive position (horizontal).	
58	On P/AR receiver— Adjust COURSE and FINE RECEIVED LEVEL ADJ controls to obtain RECEIVED LEVEL meter reading at REF LEVEL.	
59	Record P/AR meter reading.	
60	Restore TMS1 key and report meter reading to originating end.	
61k	If no further tests are to be made— Remove head telephone set and all patching cords; restore all keys.	



TPA 531014

Fig. 1—Tests A through D, AA through AE—Equipment Diagram



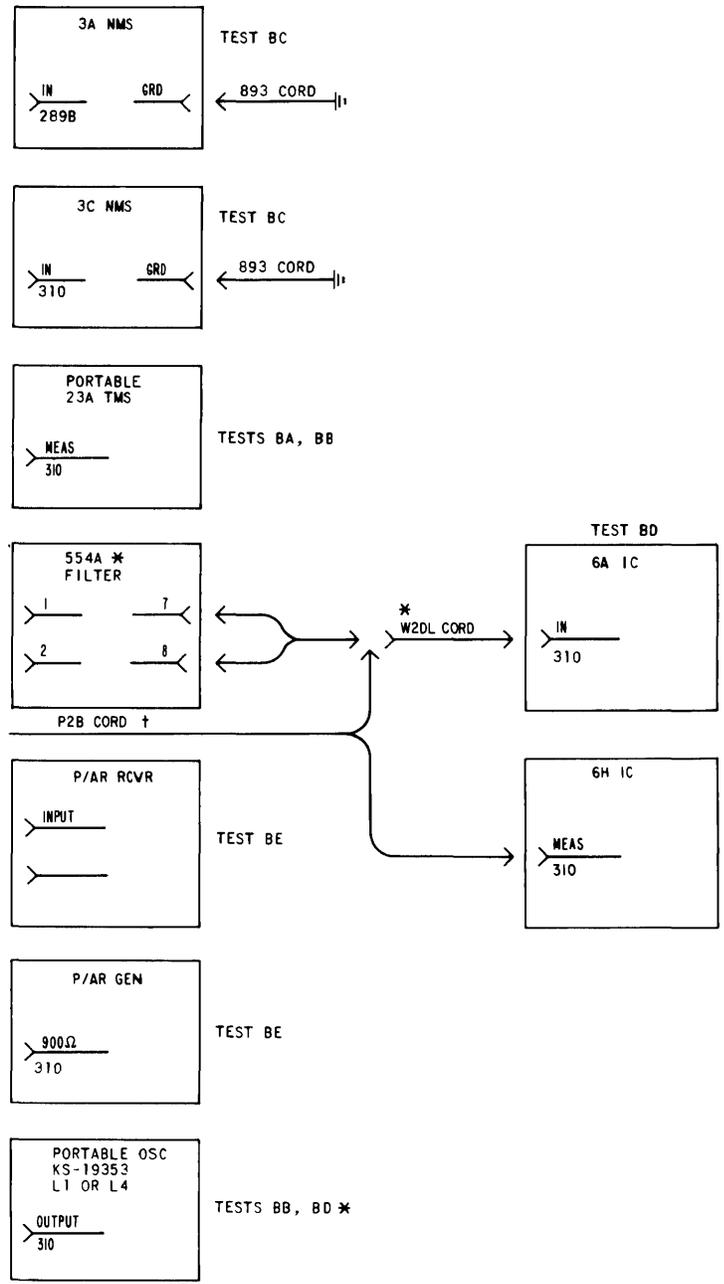


NOTE:
 TRANSMISSION TEST EQUIPMENT SHOULD BE CALIBRATED AND USED AT 600 OHMS WHEN TESTING INTERTOLL TRUNKS AND AT 900 OHMS FOR ALL OTHERS.

Fig. 2—Test E—Equipment Diagram

TPA 531015



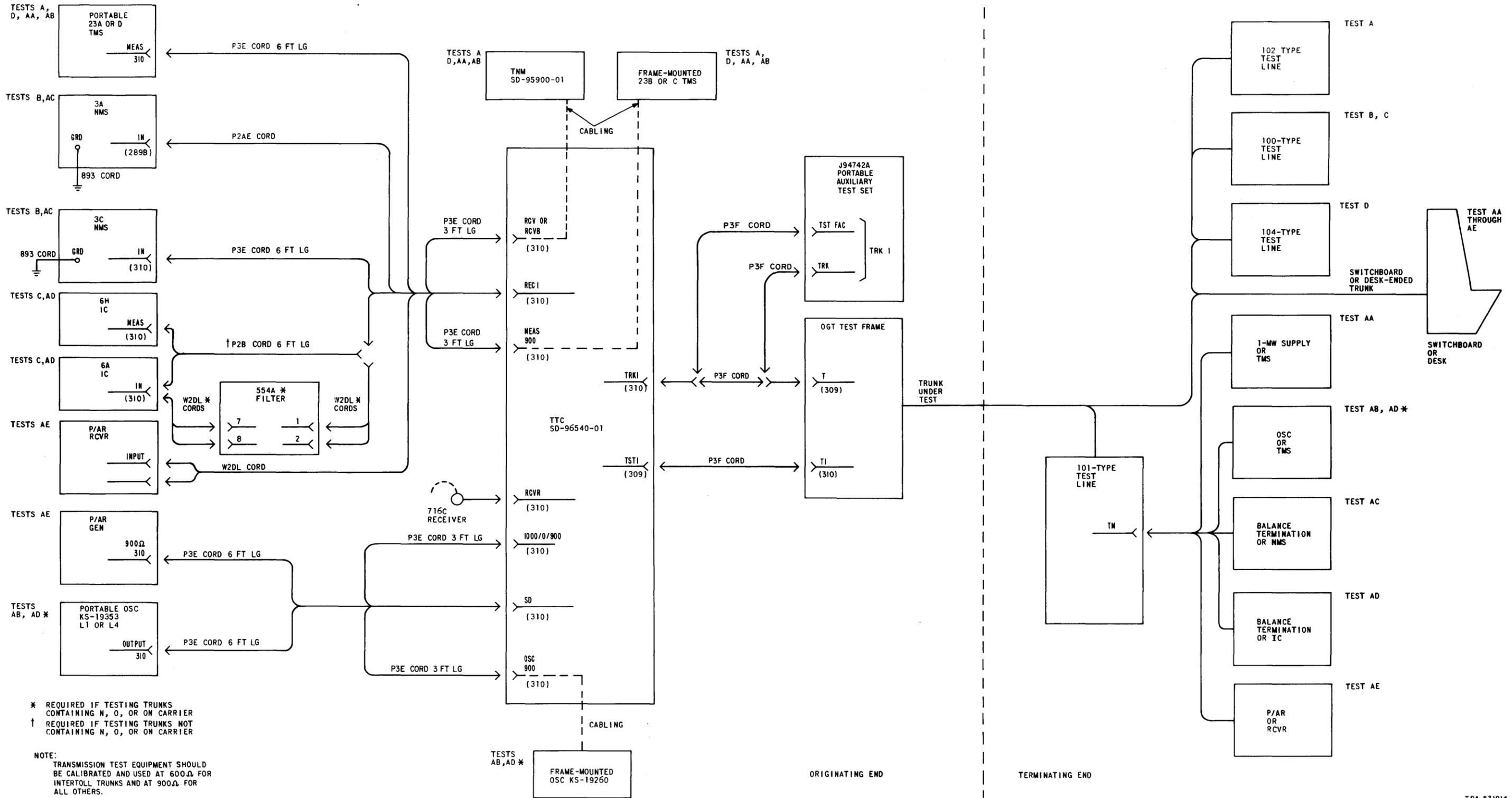


NOTE:
 TRANSMISSION TEST EQUIPMENT SHOULD BE CALIBRATED AND USED AT 600 Ω WHEN TESTING INTERTOLL TRUNKS AND AT 900 Ω FOR ALL OTHERS.
 * REQUIRED IF TESTING TRUNKS CONTAINING N, O, OR ON CARRIER USING 6A IC.
 † REQUIRED IF TESTING TRUNKS NOT CONTAINING N, O, OR ON CARRIER OR IF USING 6H IC.

TPA 531016

Fig. 3—Tests BA through BE—Equipment Diagram





* REQUIRED IF TESTING TRUNKS CONTAINING N, O, OR ON CARRIER
 † REQUIRED IF TESTING TRUNKS NOT CONTAINING N, O, OR ON CARRIER

NOTE: TRANSMISSION TEST EQUIPMENT SHOULD BE CALIBRATED AND USED AT 600Ω FOR INTERTOLL TRUNKS AND AT 900Ω FOR ALL OTHERS.

Fig. 1—Tests A through D, AA through AE—Equipment Diagram

TPA 531014

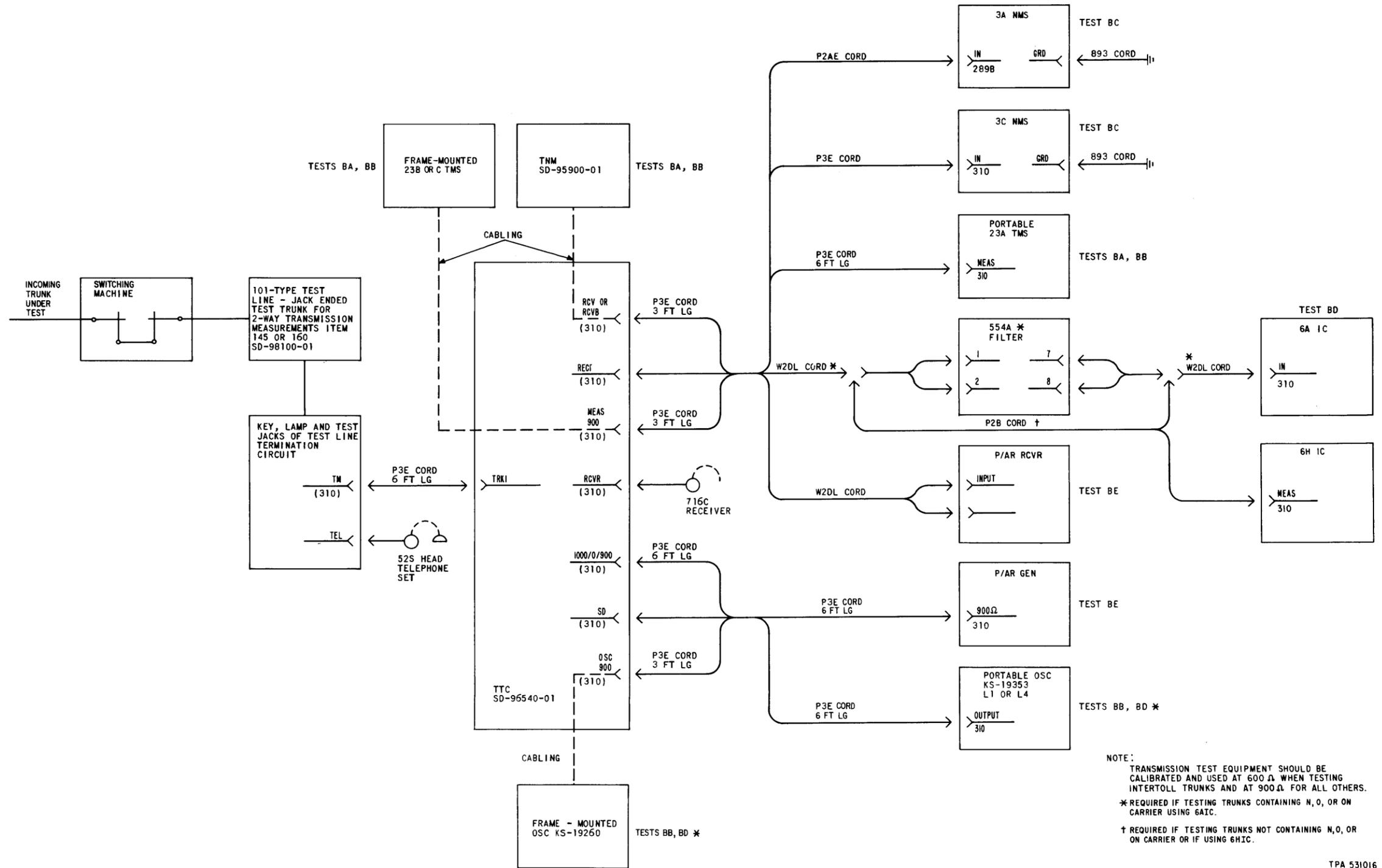


Fig. 3—Tests BA through BE—Equipment Diagram