

D3 CHANNEL BANK
SYSTEM LINEUP PROCEDURES WITH VIDAR D3
DIGITAL TRANSMISSION SYSTEMS

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1. GENERAL

1.01 This section includes overall tests with the banks out of service and single channel tests with banks in service. Transmission loss and idle channel noise should be measured for all channels added or reassigned to an in-service bank. Crosstalk and distortion should be measured on only one added channel.

1.02 When this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 It is assumed that both banks have been installed and single-end tested per Section 365-150-501 and Section PSB-6013 (Vidar). For complete information on signaling compatibility, refer to Section 179-100-310. Verify that the proper channel unit options and pad selection have been made in accordance with the circuit layout record card.

1.04 When T1 terminals are to be used for special services (for example, private line data service) and the special service requirements are stricter than those specified for the T1 system, then the more stringent requirements must also be met. See Section 365-010-500.

1.05 When troubleshooting, each board removed because of suspicion of a defective network, but found not to be responsible for the trouble, should be reinserted in the bank into the original slot from which it was removed.

2. APPARATUS

2.01 The following test apparatus or the equivalent is required at the Western Electric D3 end:

1—Hot Spare and Maintenance Shelf (Section 365-150-100)

1—J94003A or C Noise Measuring Set (NMS) [Section 103-611-100 (3A) or 103-611-101 (3C)]

1—3-Inch Shorting Strap per Section 365-150-500

1—P6AA Cord or 2—P3BH Cords

2—P3BH Cords

2—262B Plugs (600-ohm termination) for working banks

24—258C Open Plugs for nonworking banks.

2.02 The following test apparatus or the equivalent is required at the Vidar D3 end:

1—3015 Test Panel

1—HP236A Test Oscillator

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

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1—HP3555B Transmission and Noise Measuring Set (TNMS)

2—P3BH Cords

1—Vidar 13842-010 Cord (when jack field is not available)

24—258C Open Plugs (when jack field is available)

1—600 ohm + 2.15 μ F Termination

1—900 ohm + 2.15 μ F Termination

1—Vidar 3110-01 Extender Board (Vidar P/N 11580-010).

3. END-TO-END TEST PROCEDURES

STEP WESTERN ELECTRIC D3 END

VIDAR D3 END

A. Preparation for Tests

1 Verify that all trunks to be tested are made busy and special services patched off or turned down for overall tests.

Verify that all trunks to be tested are made busy and special services patched off or turned down for overall tests.

2 No action.

Operate the BUSY or TEST switches on channel units not in service.

Note: If the test is being performed while the terminal is in service, monitor the channel unit BUSY light and operate the switch when the light extinguishes.

3 Assemble test equipment and establish communication with other end.

Assemble test equipment and establish communication with other end.

4 Verify that all lamps on the alarm control unit are extinguished.

Verify that all lamps on the power and alarm unit are extinguished.

B. Transmission Test

Receiving End

Transmitting End

1 Connect the test circuit for channel to be checked as shown in Fig. 1B.

Connect the test circuit for channel to be checked as shown in Fig. 2A.

Note 1: On the P6AA Cord, the knurled edge is associated with the red sleeve on the other end.

Note: If DPT, FXO, or FXS channel units are used in the test circuit, the tip-to-ring loop must be closed to obtain correct readings in this test. Operation of the loop closure relay via the TEST switch or RLY OPR test points closes the tip-to-ring loop. The TEST switch may be internally modified (via jumper removal) to open the tip-to-ring loop when operated. In this case, the RLY OPR test points must be used to close the tip-to-ring loop.

Note 2: Do not connect NMS at this time.

STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
2	No action.	For DPT, List 4 and later units, if the TEST switch is not jumpered for loop closure, jumper between the RLY OPR test points. Note: Pomona Electronics Co. manufactures a shorting dual-pin plug, P/N 3552, suitable for this purpose.
3	No action.	For DPT, List 3 and earlier, FXO, or FXS units, if the TEST switch is not jumpered for loop closure, connect the RLY OPR test point to ground.
4	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to OFF TEST to CHAN LINE.	Set controls on test oscillator as follows: FREQUENCY to 1020 HZ OUTPUT LEVEL to 0 DBM (2-wire channel unit) or -16 DBM (4-wire channel unit) FUNCTION to 600 HOLD or 900 HOLD per channel unit impedance.
5	Measure level on CAU meter. Requirement: The meter reading is in the green/black range (0.0 dBm \pm 0.25 dB). In addition, the speaker on the CAU should sound. Note 1: If meter is not in green/black range, sound will not be heard from speaker. Note 2: If the reading is out of range, an external meter may be used to check level.	No action.
6	If requirement of Step 5 is met, proceed to Step 10. If not met, notify other end for corrective action.	If requirement at other end is met, proceed to Step 10. If not met at other end, remove test oscillator and channel unit and install extender board into channel unit slot. Plug channel unit into extender board and connect test oscillator output across channel unit tip-ring. Adjust channel gain potentiometer (located at top, center of unit PC board) for required level at receiving terminal.
7	No action.	Remove test oscillator and extender board. Replace channel unit in proper shelf slot.

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STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
8	If the requirement of Step 5 is still not met and the Western Electric D3 is suspected, replace the channel unit properly optioned and with proper pad selections.	If the requirement at other end is still not met and the Vidar D3 is suspected, replace the channel unit properly optioned and with proper pad selections.
9	If the requirement is still not met, refer to Section 365-150-501 for single-ended tests. Repeat the end-to-end tests after the trouble is cleared.	If the requirement at other end is still not met, refer to Section PSB-6013 for single-ended tests. Repeat the end-to-end tests after the trouble is cleared.
10	Repeat Steps 1 through 9 for all channels to be tested.	Repeat Steps 1 through 9 for all channels to be tested.
	Transmitting End	Receiving End
11	Connect the test circuit for channel to be checked as shown in Fig. 1A.	Connect the test circuit for channel to be checked as shown in Fig. 2B.
12	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to 0 TEST to CHAN LINE.	Set controls on TNMS as follows: FUNCTION to 600 BAL or 900 BAL per channel unit impedance INPUT to TMS TERM RANGE as required.
13	No action.	Read level on the TNMS. Requirement: -2 dBm for 2-wire channels; +7 dBm for 4-wire channels.
14	No action.	If requirement is not met, adjust channel unit RCV LVL control for required level.
15	If the requirement at other end cannot be met and the Western Electric D3 is suspected, replace the channel unit properly optioned and with proper pad selections.	If the requirement cannot be met and the Vidar D3 is suspected, replace the channel unit properly optioned and with proper pad selections.
16	If the requirement at other end is still not met, refer to Section 365-150-501 for single-ended tests. Repeat the end-to-end tests after the trouble is cleared.	If the requirement is still not met, refer to Section PSB-6013 for single-ended tests. Repeat the end-to-end tests after the trouble is cleared.
17	Repeat Steps 11 through 16 for all channels to be tested.	Repeat Steps 11 through 16 for all channels to be tested.
C. Idle Channel Noise Test		
1	Verify that Preparation for Tests and Transmission Test have been completed.	Verify that Preparation for Tests and Transmission Test have been completed.

STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
2	Connect the test circuit for channel to be checked as shown in Fig. 1B.	Connect the test circuit for channel to be checked as shown in Fig. 3.
3	Place 258C open plugs in XMT jacks of all channel units not in service.	Terminate channel unit under test. If carrier drops are wired through a jack field, insert open plugs or standard plugs with tip-to-ring open into all office side jacks at panel used for CXR (2-wire channels) or XMT (4-wire channels).
4	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to OFF TEST to CHAN LINE.	Set controls on TNMS as follows: FUNCTION to 600 BAL or 900 BAL per channel unit impedance INPUT to NOISE TERM NOISE WTG to C-MSG RANGE as required.
5	Set switches on NMS as follows: DBRN to on scale WTG to C-MSG FUNCTION to 600/900 NM (3C) or 600 NM (3A) NORM/DAMP to DAMP. <i>Note:</i> The following portion of this test is performed independently of the other end.	Power TNMS from internal battery or through a 2-wire adapter to isolate it from local power company ground. <i>Caution: If 2-wire adapter is used, be sure that neither wire is connected to the chassis of the TNMS.</i> <i>Note:</i> The following portion of this test is performed independently of the other end.
6	Measure noise. <i>Requirement:</i> 23 dBrnc or less.	Measure noise. <i>Requirement:</i> For the nominal RCV drop levels of -2 dBm (2 wire) and +7 dBm (4 wire), readings should be 21 dBrnc and 30 dBrnc, respectively. <i>Note:</i> To convert meter readings to OTLP, subtract RCV drop levels from readings on meter. Thus, a maximum noise level should be 23 dBrnc0.
7	If requirement is met, proceed to Step 12. If the requirement is <i>not</i> met, perform idle channel noise measurements single-ended per Section 365-150-501 and repeat this test.	If the requirement is met, proceed to Step 12. If the requirement is <i>not</i> met, proceed as follows.
8	No action.	Connect the patch cord sleeve to the TNMS case ground and repeat Step 6.

STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
9	No action.	Reverse the TNMS power plug and repeat Step 6.
10	No action.	Remove the sleeve to case ground and repeat Step 6.
11	No action.	If the requirement is still not met, perform idle channel noise measurements single-ended per Section PSB-6013 and repeat this test.
12	Repeat Steps 1 through 11 for all channels to be tested.	Repeat Steps 1 through 11 for all channels to be tested.
13	Remove 258C open plugs.	Remove open plugs if installed in Step 3.
14	When the requirement is met for all channels tested, proceed to the next test or remove test connections.	When the requirement is met for all channels tested, proceed to the next test or remove test connections.

D. Quantizing Distortion Test

1	Verify that Preparation for Tests and Transmission Test have been completed.	Verify that Preparation for Tests and Transmission Test have been completed.
	<i>Transmitting End</i>	<i>Receiving End</i>
2	No action.	Connect test setup shown in Fig. 4
3	No action.	Adjust oscillator frequency for minimum level reading on TNMS.
		Note 1: Oscillator frequency should be approximately 1020 Hz. Level reading should be less than or equal to -52 dBm.
		Note 2: Do not change oscillator frequency for the remainder of this test.
4	Connect the test circuit for channel to be checked as shown in Fig. 1A.	Connect the test circuit for channel to be checked as shown in Fig. 5B.

Caution: *If 2-wire adapter is used, be sure that neither wire is connected to the TNMS chassis.*

Note 1: Power the TNMS from internal battery or through a 2-wire adapter to isolate it from local power company ground.

Note 2: If DPT, FXO, or FXS channel units are used in the test circuit, the tip-to-ring loop must be closed to obtain correct readings

STEP

WESTERN ELECTRIC D3 END

VIDAR D3 END

in this test. Operation of the loop closure relay via the TEST switch or RLY OPR test points closes the tip-to-ring loop. The TEST switch may be internally modified (via jumper removed) to open the tip-to-ring loop when operated. In this case, the RLY OPR test points must be used to close the tip-to-ring loop.

5 Set switches on CAU as follows:
 REJ FL to IN
 SEND LEVEL to 0
 TEST to CHAN LINE.

For DPT, List 4 and later units, if the TEST switch is not jumpered for loop closure, jumper between the RLY OPR test points.

Note: Pomona Electronics Co. manufactures a shorting dual-pin plug, P/N 3552, suitable for this purpose.

6 No action.

For DPT, List 3 and earlier, FXO, or FXS units, if the TEST switch is not jumpered for loop closure, connect the RLY OPR test point to ground.

7 No action.

Place the 3015 FUNCTION switch in the 1020 Hz BAND REJECT position.

8 Set CAU SEND LEVEL DB to:

Operate DBRN switch on TNMS to obtain an on-scale indication.

Requirement:

	2W CHANNEL	4W CHANNEL
0	54 dBrnc or less	63 dBrnc or less
-10	44 dBrnc or less	53 dBrnc or less
-20	34 dBrnc or less	43 dBrnc or less
-30	24 dBrnc or less	33 dBrnc or less
-40	20 dBrnc or less	30 dBrnc or less

Note: When measuring a 2-wire channel, add 2 dBrnc + 1 dBrnc (insertion loss of 3015). When measuring a 4-wire channel, subtract +7 dBrnc -1 dBrnc (insertion loss of 3015). This gives a meter reading corrected to zero transmit level point (dBrnc0).

9 No action.

If the TNMS reads high, perform the following one at a time and record the lowest reading.

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STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
10	No action.	Connect the patch cord sleeve to the TNMS case ground.
11	No action.	Reverse the TNMS power plug.
12	No action.	Remove the sleeve to case ground.
13	If requirements at other end are <i>not</i> met, perform distortion measurements single-ended per Section 365-150-501 and repeat this test.	If requirements are <i>not</i> met, perform distortion measurements single-ended per Section PSB-6013 and repeat this test.
	Receiving End	Transmitting End
14	Connect the test circuit for channel to be checked as shown in Fig. 1B.	Connect the test circuit for channel to be checked as shown in Fig. 5A.
15	Set switches on NMS as follows: DBRN to 85 WTG to C-MSG FUNCTION to 600/900 NM (3C) or 600 NM (3A) NORM/DAMP to DAMP.	Set test oscillator output level according to the channel type selected (+1 DBM for 2-wire channels; -15 DBM for 4-wire channels).
16	Set switches on CAU as follows: REJ FL to IN SEND LEVEL to OFF TEST to CHAN LINE.	No action.
17	Adjust DBRNC control on NMS as required to read meter.	Operate 3015 test panel ATTENUATOR switches as follows:
	Requirement:	
	56 dBrnc or less	0 ALL OUT
	46 dBrnc or less	10 IN
	36 dBrnc or less	20 IN
	26 dBrnc or less	30 IN
	22 dBrnc or less.	30 + 10 IN.
18	If requirements are <i>not</i> met, perform distortion measurements single-ended per Section 365-150-501 and repeat this test.	If requirements at other end are <i>not</i> met, perform distortion measurements single-ended per Section PSB-6013 and repeat this test.
19	When the requirements have been met, proceed to the next test or remove test connections.	When the requirements have been met, proceed to the next test or remove test connections.

STEP

WESTERN ELECTRIC D3 END

VIDAR D3 END

E. Crosstalk Test

In this test, tone is sent alternately on the two most likely interfering channels while noise caused by crosstalk is measured at the other end of the channel under test.

- | | | |
|---|---|--|
| 1 | Verify that Preparation for Tests and Transmission Test have been completed. | Verify that Preparation for Tests and Transmission Test have been completed. |
| 2 | Select the channel to be tested. | From Table A, determine the two most likely interfering channels for the channel under test. |
| 3 | No action. | Connect test setup shown in Fig. 4. |
| 4 | No action. | Adjust oscillator frequency for minimum level reading on transmission measuring set.

Note 1: Oscillator frequency should be approximately 1020 Hz. Level reading should be less than or equal to -52 dBm.

Note 2: Do not change oscillator frequency for the remainder of this test. |
| | Receiving End | Transmitting End |
| 5 | Connect the test circuit as shown in Fig. 6B to channel under test. | Connect test circuit as shown in Fig. 7A to the first most likely interfering channel. |
| 6 | Insert 262B plugs in XMT jack of channel under test and most likely interfering channels. | Set oscillator output level according to the channel type (0 dBm for 2-wire channels; -16 dBm for 4-wire channels). |
| 7 | Set switches on CAU as follows:

REF FL to OUT
SEND LEVEL to OFF
TEST to CHAN LINE. | Connect appropriate termination (600 or 900 ohm + 2.15 μ f) to the adjacent channel (see Table A). |
| 8 | Set switches on NMS as follows:

DBRN to on Scale
WTG to C-MSG
FUNCTION to 600/900 NM (3C) or 600 NM (3A)
NORM/DAMP to DAMP. | No action. |
| 9 | Measure crosstalk. | No action. |

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STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END
	Requirement: 27 dBrnc or less.	
10	No action.	Move the test connection to the other most likely interfering channel (see Table A).
11	Measure crosstalk.	No action.
	Requirement: 27 dBrnc or less.	
12	If the requirement of Step 9 or 11 is <i>not</i> met, perform crosstalk measurements single-ended per Section 365-150-501 and repeat this test.	If the requirements at other end are <i>not</i> met, perform crosstalk measurements single-ended per Section PSB-6013 and repeat this test.
13	From Table A, determine the two most likely interfering channels for the channel under test.	Select the channel to be tested.
	Transmitting End	Receiving End
14	Connect the test circuit as shown in Fig. 6A to first most likely interfering channel.	Connect the test circuit as shown in Fig. 7B to channel under test.
		Note 1: Power the TNMS from internal battery or through a 2-wire adapter to isolate it from local power company ground.
		Note 2: If DPT, FXO, or FXS channel units are used in the test circuit, the tip-to-ring loop must be closed to obtain correct readings in this test. Operation of the loop closure relay via the TEST switch or RLY OPR test points closes the tip-to-ring loop. The TEST switch may be internally modified (via jumper removed) to open the tip-to-ring loop when operated. In this case, the RLY OPR test points must be used to close the tip-to-ring loop.
15	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to 0 TEST to CHAN LINE.	For DPT, List 4 and later units, if the TEST switch is not jumpered for loop closure, jumper between the RLY OPR test points.
		Note: Pomona Electronics Co. manufactures a shorting dual-pin plug, P/N 3552, suitable for this purpose.
16	Insert a 262B plug into the XMT jack of the channel under test.	For DPT, List 3 and earlier, FXO, or FXS units, if the TEST switch is not jumpered for loop closure, connect the RLY OPR test point to ground.

STEP	WESTERN ELECTRIC D3 END	VIDAR D3 END				
17	No action.	<p>Measure crosstalk.</p> <p>Requirement:</p> <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">2W CHANNEL</td> <td style="text-align: center;">4W CHANNEL</td> </tr> <tr> <td style="text-align: center;">22 dBrnc</td> <td style="text-align: center;">31 dBrnc</td> </tr> </table> <p>Note: When measuring a 2-wire channel, add 2 dBrnc + 1 dBrnc (insertion loss of 3015). When measuring a 4-wire channel, subtract +7 dBrnc -1 dBrnc (insertion loss of 3015). This gives a meter reading corrected to zero transmit level point (dBrnc0). The dBrnc0 level should never exceed 25 dBrnc0.</p>	2W CHANNEL	4W CHANNEL	22 dBrnc	31 dBrnc
2W CHANNEL	4W CHANNEL					
22 dBrnc	31 dBrnc					
18	No action.	If the TNMS reads high, perform the following one at a time and record the lowest reading.				
19	No action.	Connect the patch cord sleeve to the TNMS case ground.				
20	No action.	Reverse the TNMS power plug.				
21	No action.	Remove the sleeve to case ground.				
22	Move the test connection to the other most likely interfering channel.	<p>Measure crosstalk.</p> <p>Requirement:</p> <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">2W CHANNEL</td> <td style="text-align: center;">4W CHANNEL</td> </tr> <tr> <td style="text-align: center;">22 dBrnc</td> <td style="text-align: center;">31 dBrnc</td> </tr> </table> <p>Note: When measuring a 2-wire channel, add 2 dBrnc + 1 dBrnc (insertion loss of 3015). When measuring a 4-wire channel, subtract +7 dBrnc -1 dBrnc (insertion loss of 3015). This gives a meter reading corrected to zero transmit level point (dBrnc0). The dBrnc0 level should never exceed 25 dBrnc0.</p>	2W CHANNEL	4W CHANNEL	22 dBrnc	31 dBrnc
2W CHANNEL	4W CHANNEL					
22 dBrnc	31 dBrnc					
23	If requirement at other end is not met , perform crosstalk measurements single-ended per Section 365-150-501 and repeat this test.	If requirement of Step 17 or 22 is not met , perform crosstalk measurements single-ended per Section PSG-6013 and repeat this test.				
24	Disconnect patch cords and plugs from channel units.	Disconnect patch cords and plugs from channel units.				
25	Disconnect test setup and turn off power on test sets as applicable.	Disconnect test setup and turn off power on test sets as applicable.				

STEP

WESTERN ELECTRIC D3 END

VIDAR D3 END

F. Alarm Test

Caution: *This test should not be performed on working banks unless all circuits have been made busy or removed from service.*

Note: Disregard the lighting or extinguishing of lamps not specifically referred to in this test.

- | | | |
|---|--|---|
| 1 | Connect a 3-inch wire equipped with pin plugs between the RNFAL and GRD jack on the receiver unit. | Observe power and alarm unit. |
| | Requirement: The red AR lamp on the alarm control unit lights. | Requirement: The amber REM lamp lights on the power and alarm unit. |
| 2 | Depress ACO button. | Depress the ACO button. |
| | Requirement: The ACO lamp lights and the audible alarms silence. | Requirement: Yellow ACO indication and the audible alarms silence. |
| | | Note: All switches used on the terminal common equipment and channel units are self-indicating pushbutton types which provide a color indication when in the operated position and a black indication when in the released position. |
| 3 | If the lamp does not light, remove the lamp and check it with an ohmmeter. If there is continuity, replace the alarm control unit. | If the lamp does not light, remove the lamp and check it with an ohmmeter. If there is continuity, replace the power and alarm unit. |
| 4 | Remove the wire from between the RNFAL and GRD jacks. | Observe power and alarm unit. |
| | Requirement: The red AR lamp extinguishes. | Requirement: The amber REM lamp extinguishes after about 15 seconds. |
| 5 | If the requirement is <i>not</i> met, replace the alarm control unit. | If the requirement is <i>not</i> met, replace the power and alarm unit. |
| 6 | Disengage the transmit unit. | Observe power and alarm unit. |
| | Requirement: The yellow AY lamp on the alarm control unit lights. | Requirement: The red LOC lamp lights on the power and alarm unit. |

- | STEP | WESTERN ELECTRIC D3 END | VIDAR D3 END |
|------|---|--|
| 7 | Depress ACO button.

Requirement: The ACO lamp lights and the audible alarms silence. | Depress ACO button.

Requirement: The audible alarms silence. |
| 8 | Reinsert transmit unit.

Requirement: The yellow AY lamp on the alarm control unit extinguishes. | Observe power and alarm unit.

Requirement: LOC lamp extinguishes after about 10 seconds. |
| 9 | If the requirement is <i>not</i> met, replace the alarm control unit. | If the requirement is <i>not</i> met, replace the power and alarm unit. |
| 10 | Depress the MEM RESET button on TPU if provided. | Depress ACO button. |

TABLE A

CHANNEL UNDER TEST	MOST LIKELY INTERFERING CHANNELS		CHANNEL UNDER TEST	MOST LIKELY INTERFERING CHANNELS	
1	24	23	13	12	11
2	1	24	14	13	12
3	2	1	15	14	13
4	3	2	16	15	14
5	4	3	17	16	15
6	5	4	18	17	16
7	6	5	19	18	17
8	7	6	20	19	18
9	8	7	21	20	19
10	9	8	22	21	20
11	10	9	23	22	21
12	11	10	24	23	22

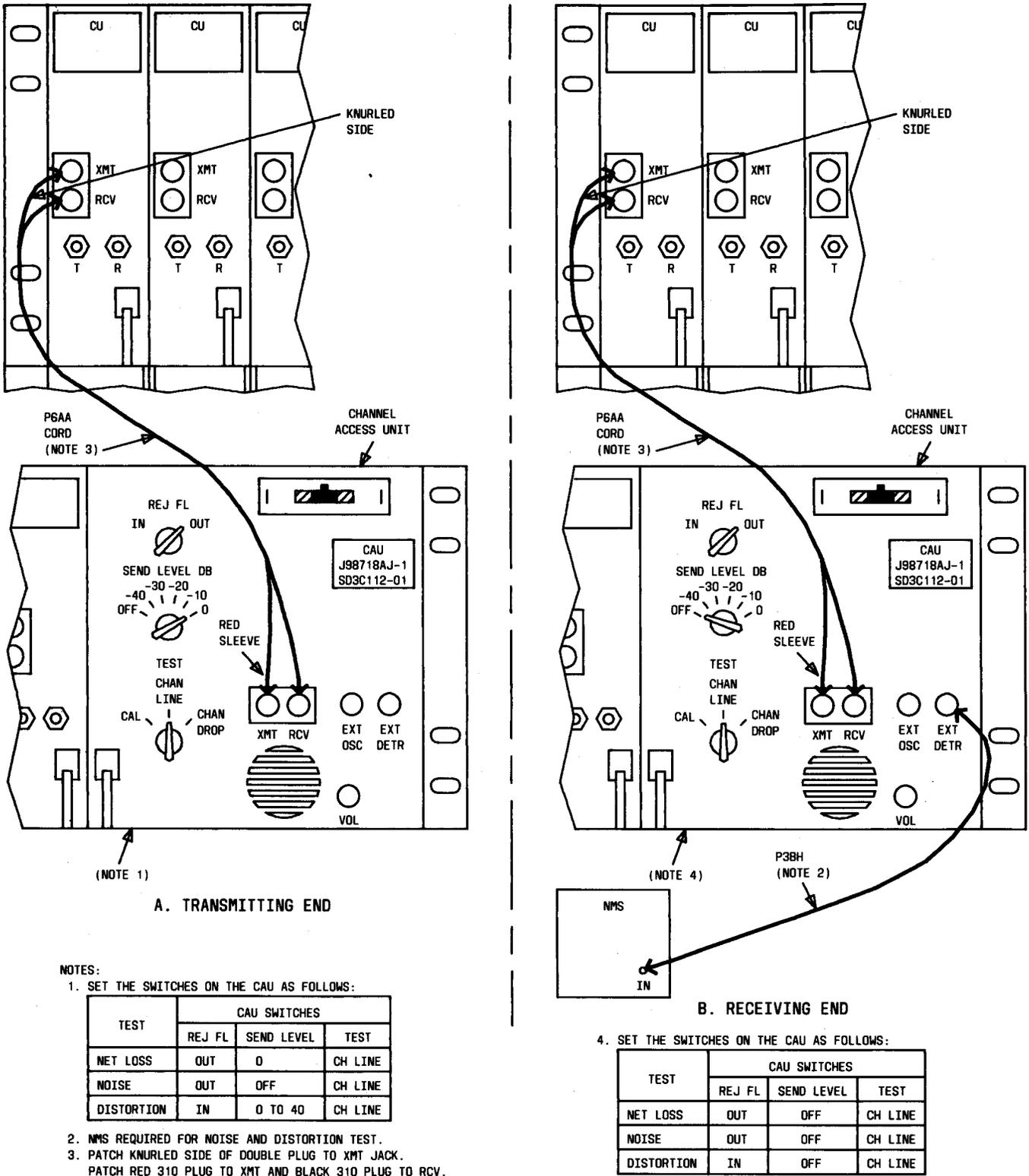
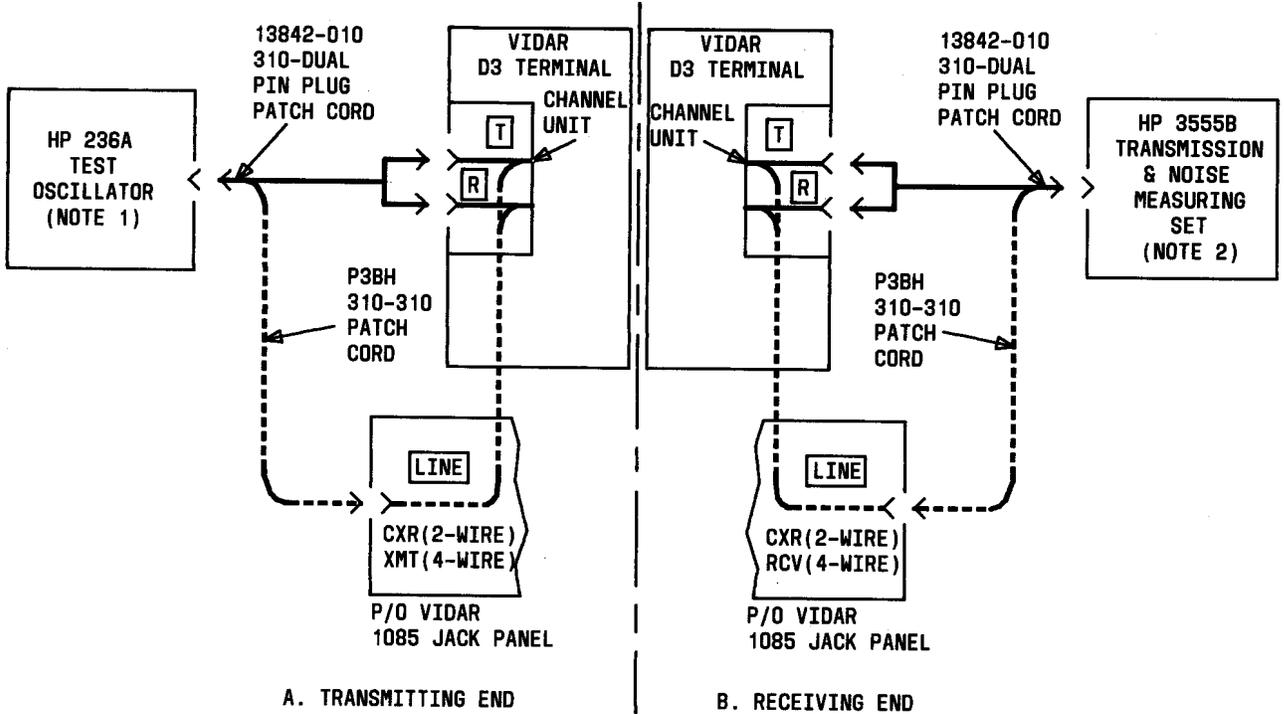


Fig. 1—Channel Net Loss, Noise, and Distortion



NOTE 1: SET CONTROLS ON 236A OSC AS FOLLOWS:

FUNCTION - 600Ω
OR
900Ω
HOLD } PER CHAN
UNIT
IMPEDANCE

OUTPUT LEVEL - 0 DBM (2-WIRE)
- 16 DBM (4-WIRE)

FREQUENCY - 1020 HZ

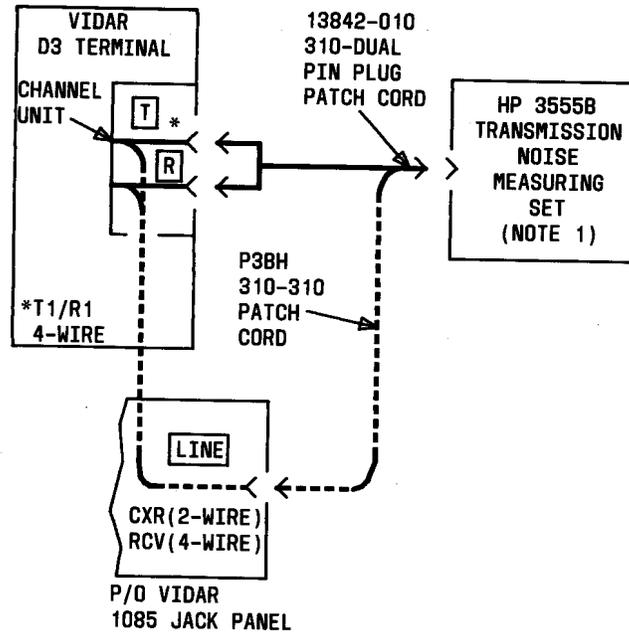
NOTE 2: SET CONTROLS ON 3555B TNMS AS FOLLOWS:

FUNCTION - 600Ω BAL
OR
900Ω BAL } PER CHAN
UNIT
IMPEDANCE

INPUT - TMS TERM

RANGE - AS REQUIRED

Fig. 2—Transmission Level Test



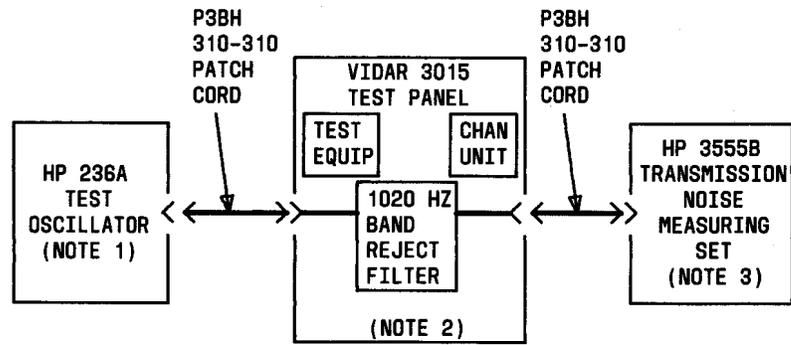
NOTE 1: SET CONTROLS ON TNMS AS FOLLOWS:

FUNCTION - 600Ω BAL	} PER CHAN UNIT
OR 900Ω BAL	

IMPEDANCE

INPUT - NOISE TERM
 NOISE WTG - C-MSG
 RANGE - AS REQUIRED

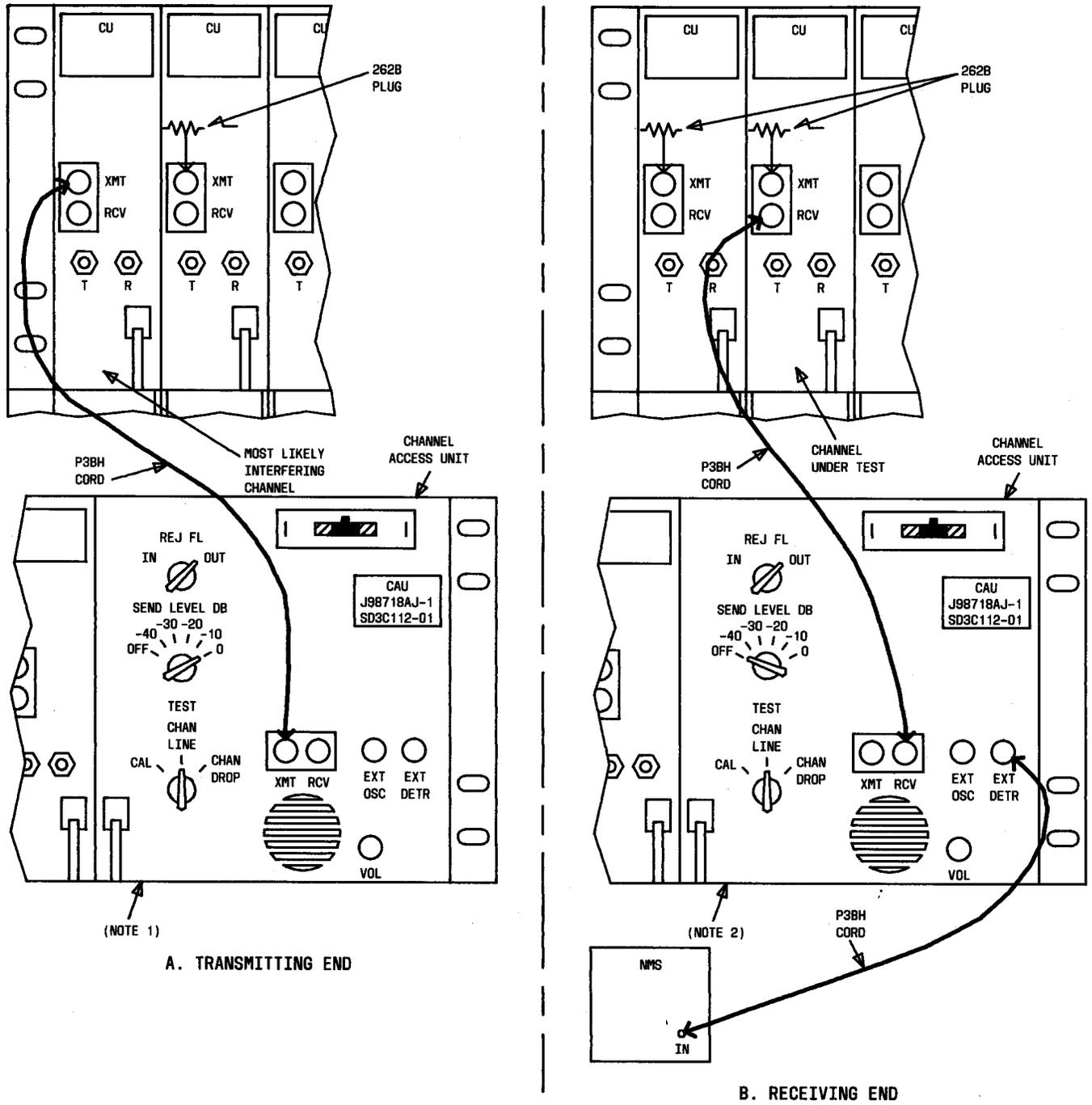
Fig. 3—Idle Channel Noise Test Setup



NOTES:

1. SET CONTROLS ON TEST OSCILLATOR AS FOLLOWS:
 FUNCTION 600 Ω HOLD
 OUTPUT LEVEL - +1 DBM
 FREQUENCY - 1020 HZ
2. SET CONTROLS ON 3015 AS FOLLOWS:
 FUNCTION - 1020 HZ BAND REJECT
 5 DB 10 DB } OUT
 20 DB 30 DB }
 TERM OUT
 HOLDING COIL IN
 600 Ω /900 Ω - 600 Ω
3. SET CONTROLS ON TNMS AS FOLLOWS:
 FUNCTION - 600 Ω BAL
 INPUT - TMS TERM
 RANGE - AS REQUIRED

Fig. 4—Test Oscillator Frequency Adjustment



NOTES:

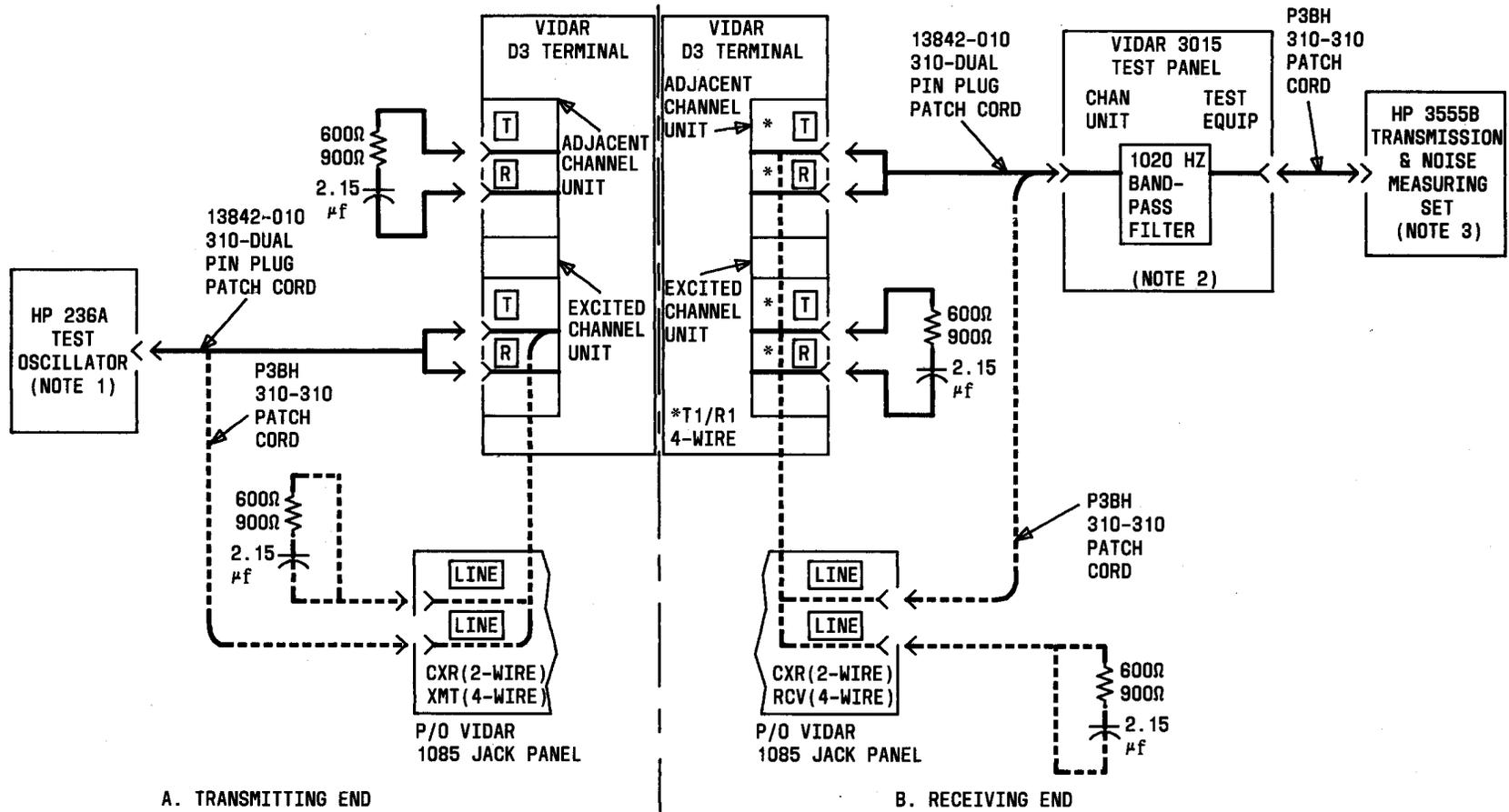
1. SET THE SWITCHES ON THE CAU AS FOLLOWS:

CAU SWITCHES		
REJ FL	SEND LEVEL	TEST
OUT	0	CH LINE

2. SET THE SWITCHES ON THE CAU AS FOLLOWS:

CAU SWITCHES		
REJ FL	SEND LEVEL	TEST
OUT	OFF	CH LINE

Fig. 6—Channel Crosstalk



NOTES:

1. SET CONTROL ON TEST OSC AS FOLLOWS:

FUNCTION - 600Ω
OR
900Ω } PER CHAN
HOLD } UNIT IMPEDANCE

OUTPUT LEVEL - 0 DBM (2-WIRE)
- 15 DBM (4-WIRE)

FREQUENCY - 1020 HZ

2. SET CONTROLS ON TEST PANEL AS FOLLOWS:

FUNCTION - 1020 HZ BANDPASS

5 DB 10 DB }
20 DB 30 DB } OUT

TERM - OUT
HOLDING COIL - IN
600Ω 900Ω - PER CHAN UNIT IMPEDANCE

3. SET CONTROLS ON TNMS AS FOLLOWS:

FUNCTION - 600Ω BAL
INPUT - NOISE TERM
NOISE WTG - C-MSG
RANGE - AS REQUIRED

Fig. 7—Adjacent Channel Crosstalk Test Setup