D3 CHANNEL BANK
SYSTEM LINEUP PROCEDURES WITH LENKURT 9002A OR 9002B
DIGITAL TRANSMISSION SYSTEMS

CONTENTS PAGE

1. GENERAL

1.01 This section includes overall tests with 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 342-911-103 (Lenkurt). 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 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 130-611-101(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 apparatus or the equivalent is required at the Lenkurt 9002A or B end:

1—91232 Lenkurt Test and Alignment Set, Model 1 or 2

1—035-91232-01 Alignment Cord

1—6000A-01 Terminating Plug, 600 ohm

1—6000A-02 Terminating Plug, 900 ohm

2—6000B-02 Test Cords

2—6000C-02 Patch Cords

1—6000D-02 Patch Cord

1—Northeast Electronics TTS-37B Noise Measuring Set

1—Lenkurt 633 Patch Cord (for powering 37B NMS)

1—91256 Test Level Adapter and Cord.

3. END-TO-END TEST PROCEDURES

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B 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.	Monitor all trunks and set the NORM/BUSY switch on all applicable channel units to BUSY. ***Note:*** Units without NORM/BUSY switches must be made busy at either the test board or by some other office procedure.
2	No action.	Insert terminating plugs (91242 and 91245 channel units) or open plugs in the 2-wire or 4-wire XMT jacks of all channel units installed.
3	Assemble test equipment and establish communication with other end.	Assemble test equipment and establish communication with other end.
4	No action.	Prepare the 91232 test and alignment set (T&AS) for tests as follows.
5	No action.	Set the DIGITAL FUNCTION switch to OFF.
6	No action.	Verify PUSH TO TEST TERMINAL button is in outermost (released) position.
7	No action.	Connect the alignment cord between ALIGN connector on the T&AS and the ALIGN connector on the CARR GRP ALM and CONTROL UNIT (M2) or ALARM and CONTROL UNIT (M3).
8	No action.	If T&AS is equipped with a power ON/OFF switch, set switch to ON. For all T&AS the POWER lamp should be lighted. If power lamp is not lighted, check fuse on the alarm and control unit.
9	No action.	Connect test cord between MEASURE LEVEL jack on the T&AS and a 37B NMS.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
10	No action.	Set the TRANSMIT ATTENUATOR on T&AS to 0 DB.
11	No action.	Depress 2-WIRE 600 Ω button on TRANSMIT side of CHANNEL TYPE SELECT button.
12	No action.	Set controls on 37B NMS as follows: POWER Switch to ON INPUT Switch to BRDG 600 Ω.
13	No action.	Press and hold 600 Ω CALIBRATION PUSH TO ADJUST button. Read 0 DB on 37B NMS. ***Note 1:*** If necessary, adjust OSC LEVEL for 0 DB on 37B NMS. ***Note 2:*** The OSC LEVEL CONTROL is a multiturn potentiometer that adjusts the output level of the internal 1025 Hz oscillator.
14	No action.	Set DIGITAL FUNCTION to 1 KHZ on END/END side of switch.
15	No action.	Depress 1 KHZ CHECK button. GREEN lamp lights.
16	No action.	Set DIGITAL FUNCTION to QUIET on END/END side of switch.
17	No action.	Depress 1 KHZ CHECK button. GREEN lamp must ***not*** light.
18	No action.	Set DIGITAL FUNCTION switch to 1 KHZ on END/END side of switch.
19	Verify that all lamps on the alarm and control unit are extinguished.	Verify that all lamps on the 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. ***Note 1:*** On the P6AA cord, the knurled edge is associated with the red sleeve on the other end.	For channel units marked ♦ (diamonds) connect the cord plug of the 91256 test level adapter (TLA) to the 4W REC jack and pad assembly plug to the test set RECEIVE jack. Set pad assembly switch to CARR. On all other units connect one end of a tip-ring-sleeve (TRS) cord to the 4W REC or 2-WIRE jack on the

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
	Note 2: Do not connect NMS at this time.	channel to be tested. Connect the other end to the RECEIVE jack on the test set. ***Note:*** ● Circle, ♦ Diamond, ■ Square, ▲ Triangle.
2	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to OFF TEST to CHAN LINE.	In the RECEIVE side of the T&AS CHANNEL TYPE SELECT buttons, push the button which has the same symbol as the channel unit to be checked. Select ● (circle) when TLA is used.
3	No action.	Connect one end of a TRS cord or test level adapter cord to the 4W XMT of 2-WIRE jack on the channel unit to be tested. Connect the other end to the TRANSMIT jack of the test set.
4	No action.	In the TRANSMIT set of the CHANNEL TYPE SELECT buttons on the test set, push the button which has the same symbol as the channel unit to be checked.
5	Measure level on CAU meter. ***Requirement:*** The meter reading is in the green/black range (0.0 dB ±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 requirement is ***not*** met, proceed to Step 7.	If requirement at other end is met, proceed to Step 10. If requirement is ***not*** met, proceed to Step 7.
7	No action.	Adjust XMT LEV on channel unit for proper level at other 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 is still ***not*** met and the Lenkurt 9002A or B is suspected, replace the channel unit properly optioned and with proper pad selections.
9	If the requirement is still ***not*** met, refer to Section 365-150-500 for single-ended tests.	If the requirement at other end is still ***not*** met, refer to Section 342-911-103 for single-ended

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
	Repeat the end-to-end tests after the trouble is cleared.	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 Check as shown in Fig. 1A.	No action.
12	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to 0 TEST to CHAN LINE.	No action.
13	No action.	Observe level on 37B NMS. ***Requirement:*** +7.0 dB if measuring at 4W RCV jack; -3.0 dB or as specified locally if at a 2W RCV jack.
14	No action.	If requirement is ***not*** met, adjust RCV LEV on channel unit for proper level.
15	If the requirement at other end cannot be met and the Western Electric D3 is suspected, refer to Section 365-150-501 for single-ended tests. Repeat the end-to-end test after the trouble is cleared.	If the requirement is still ***not*** met, refer to Section 342-911-103 for single-ended tests. Repeat the end-to-end test after the trouble is cleared.
16	No action.	Depress PUSH TO TEST TERMINAL button. GREEN lamp OFF.
17	Repeat Steps 11 through 16 for all channels to be checked.	Repeat Steps 11 through 16 for all channels to be checked.

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.
2	Connect the test circuit for channel to be checked as shown in Fig. 1B.	At the 91230 alarm and control unit, verify the following.
3	Place 258C open plugs in XMT jacks of all channel units not in service.	Alignment cord connected to the ALIGN connector.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
4	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.	All lamps OFF.
5	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to OFF TEST to CHAN LINE.	At the 91232 T&AS verify the following.
6	No action.	Alignment cord connected to the ALIGN connector.
7	No action.	POWER lamp ON.
8	No action.	TRANSMIT ATTENUATORS set to 0 DB.
9	No action.	PUSH TO TEST TERMINAL button in outermost position. GREEN lamp OFF. ***Warning: Do not insert a terminating plug in the 91243, 91250, or 91259 units because the resistor in the plug will burn out. Terminate these units by connecting a TRS cord from the 2-WIRE jack (■) on the unit to the receive jack on the test set.***
10	No action.	Push the (■) button in the RECEIVE set of CHANNEL TYPE SELECT buttons. Terminate units marked (♦) by connecting the 4W XMT jack to the test set RECEIVE jack with the test level adapter. Use 4W 600 Ω (●). Adapter switch must be in outermost position (CARR).
11	No action.	Insert a 600- or 900-ohm terminating plug, as applicable, in the 4W XMT or 2-WIRE jack of the channel unit to be tested.
12	No action.	Connect one end of a TRS cord or test level adapter cord to the 4W RCV or 2-WIRE jack on the channel to be tested. Connect the other end to the RECEIVE jack on the test set.
13	No action.	In the RECEIVE set of CHANNEL TYPE SELECT buttons on the test set, push the

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
		button which has the same symbol as the channel unit.
14	No action. ***Note:*** The following portion of this test is performed independently of the other end.	Connect the 37B noise measuring set to the MEASURE LEVEL jack on the test set. Set switches on NMS as follows: INPUT to 600-OHM BRDG HOLD to OFF FILTER to C-MSG. ***Note:*** The following portion of this test is performed independently of the other end.
15	Measure noise. ***Requirement:*** 23 dBrnc or less.	Measure noise. ***Requirement:*** 30 dBrnc or less if at a 4W RCV jack; 20 dBrnc or less if at a 2-WIRE jack (at -3.0 dB TLP).
16	If requirement is met, proceed to Step 22. If the requirements are ***not*** met, perform idle channel noise measurements single-ended per Section 365-150-501 and repeat this test.	If requirement is met proceed to Step 22. If the requirement is ***not*** met, perform the following.
17	No action.	On test set, set DIGITAL FUNCTION switch to QUIET on END/END side of switch.
18	No action.	Set CHANNEL POSITION SWITCH on test set to channel number of channel under test.
19	No action.	Depress PUSH TO TEST TERMINAL button. GREEN lamp comes ON.
20	No action.	Measure noise. ***Requirement:*** 24 dBrnc or less if at a 4W RCV jack; 14 dBrnc or less if at a 2W RCV jack (at -3.0 dB TLP). ***Note:*** If the terminal meets the requirements, the fault is at the far-end terminal or the transmission facility.
21	No action.	Depress PUSH TO TEST TERMINAL button. GREEN lamp goes OFF.
22	Repeat Steps 1 through 21 for all channels to be tested.	Repeat Steps 1 through 21 for all channels to be tested.
23	Remove 258C open plugs.	Remove terminating plugs.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
24	When the requirement is met for all channels tested, proceed to next test or remove test connections.	When the requirement is met for all channels tested, proceed to 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.
	Transmitting End	***Receiving End***
2	Connect the test circuit for channel to be checked as shown in Fig. 1A.	At the 91230 alarm and control unit, verify the following.
3	Set switches on CAU as follows: REJ FL to IN SEND LEVEL to 0 TEST to CHAN LINE.	Alignment cord connected to the ALIGN connector.
4	No action.	All lamps OFF.
5	No action.	At the 91232 T&AS verify the following.
6	No action.	Alignment cord connected to the ALIGN connector.
7	No action.	POWER lamp ON.
8	No action.	TRANSMIT ATTENUATOR set to 0 dB.
9	No action.	PUSH TO TEST TERMINAL button in outermost position. GREEN lamp OFF.
10	No action.	DIGITAL FUNCTION switch set to 1 KHZ on END/END side of switch.
11	No action.	Noise measuring set connected to MEASURE LEVEL jack.
12	No action.	Connect noise measuring set test cord to MEASURE DISTN jack. Verify that noise measuring set controls are set as follows: INPUT to 600-OHM BRDG HOLD to OFF FILTER to C-MSG.
13	No action.	Connect one end of a TRS cord or TLA cord to the 4W RCV or 2-WIRE jack on the channel unit being tested. Connect the other end to the RECEIVE jack on the test set.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
14	No action.	In the RECEIVE set of CHANNEL TYPE SELECT buttons on the test set, push the button which has the same symbol as the channel unit to be checked.
15	No action.	Depress and hold down the DISTORTION REFERENCE PUSH TO ADJUST button and adjust the DISTORTION REFERENCE ADJUST knob for a reading on the noise measuring set as follows.
16	No action.	Set to 90 dBrnc at 4W RCV jack.
17	No action.	Set to 80 dBrnc at 2W jack (at -3.0 dB TLP).
18	No action.	Release pushbutton and read noise. ***Requirement:*** **4W Channel** — **2W Channel** 57 dBrnc or less — 47 dBrnc or less
19	Set CAU SEND LEVEL to: -20 -30.	Adjust DBRN control on NMS as required to read meter. ***Requirement:*** **4W Channel** — **2W Channel** 37 dBrnc or less — 27 dBrnc or less 30 dBrnc or less — 20 dBrnc or less
20	If requirements at other end are ***not*** met, perform distortion measurements single-ended per Section 365-150-501 and repeat this test.	If the requirements are ***not*** met, perform distortion measurements single-ended per Section 342-911-103 and repeat this test.
	Receiving End	***Transmitting End***
21	Connect the test circuit for channel to the checked as shown in Fig. 1B.	Connect one end of a TRS cord or TLA cord to the 4W XMT or 2-WIRE jack on the channel unit being tested. Connect the other end to the TRANSMIT jack on the test set.
22	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.	In the TRANSMIT set of CHANNEL TYPE SELECT buttons on the test set, push the button which has the same symbol as the channel unit to be checked.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
23	Set switches on CAU as follows: REJ FL to IN SEND LEVEL to OFF TEST to CHAN LINE.	Set the TRANSMIT ATTENUATOR to 0 dB.
24	Adjust DBRN control on NMS as required to read meter. ***Requirement:*** 56 dBrnc or less.	No action.
25	Adjust DBRN control on NMS as required to read meter. ***Requirement:*** 36 dBrnc or less.	Set the TRANSMIT ATTENUATOR to position A (-20 DB).
26	Adjust DBRN control on NMS as required to read meter. ***Requirement:*** 24 dBrnc or less.	Set the TRANSMIT ATTENUATOR to position B (-34 DB).
27	If requirements are ***not*** met perform distortion measurements single-ended per Section 365-150-501 and repeat this test.	If requirements at other end are ***not*** met, perform distortion measurements single-ended per Section 342-911-103 and repeat this test.
28	When the requirements have been met, proceed to the next test or remove test connections.	When the requirements have been met, proceed to next test or remove test connections.

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	No action.	At the 91232 T&AS, verify the following.
3	No action.	DIGITAL FUNCTION switch to OFF and assure the PUSH TO TEST TERMINAL button is in its outermost position.
4	No action.	Alignment cord between the ALIGN jack on the test set and the ALIGN jack on the alarm unit. POWER LAMP is ON.
5	No action.	Test cord between the MEASURE LEVEL jack on the test set and an unterminated 37B NMS.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
6	No action.	TRANSMIT ATTENUATOR switch on the test set to 0 DB.
7	No action.	Push the 600 ohm (▲ triangle) button in the TRANSMIT grouping of CHANNEL TYPE SELECT buttons on the test set.
8	No action.	On the test set depress 600-ohm CALIBRATION PUSH TO ADJUST button. Read 0 DB on 37B NMS. If necessary, adjust test set OSC LEVEL for 0 DB reading on 37B NMS.
9	Select the channel to be tested.	From Table A determine the two most likely interfering channels for the channel under test.
	Receiving End	***Transmitting End***
10	Connect the test circuit as shown in Fig. 2B to channel under test.	Connect one end of a TRS or TLA cord to the 4W XMT or 2-WIRE jack on the channel unit to the first most likely interfering channel. Connect the other end to the TRANSMIT jack on the test set. In the TRANSMIT grouping of CHANNEL TYPE SELECT buttons on the test set, push the button that has the same symbol as the channel unit jack or TLA cord.
11	Insert 262B plugs in XMT jack of channel under test and most likely interfering channels.	No action.
12	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to OFF TEST to CHAN LINE.	No action.
13	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.
14	Measure crosstalk. ***Requirement:*** 27 dBrnc or less.	No action.
15	No action.	Move the test connection to the other most likely interfering channel.
16	Measure crosstalk.	No action.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
	Requirement: 27 dBrnc or less.	
17	If the requirement of Step 14 or 16 is ***not*** met, perform crosstalk measurements single-ended per Section 365-150-501 and repeat this test.	If the requirements at other end are ***not*** met, perform crosstalk measurements single-ended per Section 342-911-103 and repeat this test.
18	From Table A, determine two most likely interfering channels for the channel under test.	Select the channel to be tested.
	Transmitting End	***Receiving End***
19	Connect the test circuit as shown in Fig. 2A to the first most likely interfering channel.	Connect one end of a TRS cord or TLA cord to the 4W RCV or 2-WIRE jack on the channel unit under test. Connect the other end to the RECEIVE jack on the test set. In the RECEIVE grouping of CHANNEL TYPE SELECT buttons on the test set, push the button that has the same symbol as the channel unit jack. ***Note:*** If the channel unit to be terminated in step below is type 91243, 91250, or 91259 do not use a terminating plug. Instead, terminate and seize the unit by connecting a TRS cord from the 2-WIRE jack on the unit to the RECEIVE jack on the test set and pushing the (■) button in the RECEIVE set of CHANNEL TYPE SELECT buttons. Terminate units marked ♦ by connecting the 4W XMT (♦) jack to the test set RECEIVE jack with the test level adapter. Use 4W 600 ohm (●).
20	Set switches on CAU as follows: REJ FL to OUT SEND LEVEL to 0 TEST to CHAN LINE.	Insert a 600- or 900-ohm terminating plug as applicable in the 4W XMT or 2W jack of channel under test.
21	Insert a 262B plug into the XMT jack of the channel under test.	Connect the NMS to the CRSTLK jack on the Model 2 test set or MEASURE LEVEL jack on the Model 1 test set.
22	No action.	Set switches on 37B NMS as follows: INPUT to 600-OHM BRDG HOLD to OFF FILTER to C-MSG.

STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
23	No action.	Measure crosstalk. ***Requirement:*** 22 dBrnc or less at 2-WIRE jack (at -3.0 dB TLP); 32 dBrnc or less at 4W REC jack. ***Note:*** Model 1 of the 91232 test set does not include the crosstalk filter; therefore, the levels indicated on the noise measuring set may be 1 or 2 dB higher than those specified above.
24	Move the test connection to the other most likely interfering channel.	No action.
25	No action.	Measure crosstalk. ***Requirement:*** 22 dBrnc or less at 2-WIRE jack (at -3 dB TLP); 32 dBrnc or less at 4W REC jack.
26	If the requirements at other end are ***not*** met, perform crosstalk measurements single-ended per Section 365-150-501 and repeat this test.	If the requirement of Step 23 or 25 is ***not*** met, perform crosstalk measurements single-ended per Section 342-911-103 and repeat this test.
27	Disconnect patch cords and plugs from channel units.	Disconnect patch cords and plugs from channel units.
28	Disconnect test setup and turn off power on test sets as applicable.	Disconnect test setup and turn off power on test sets as applicable.

F. Alarm Test

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

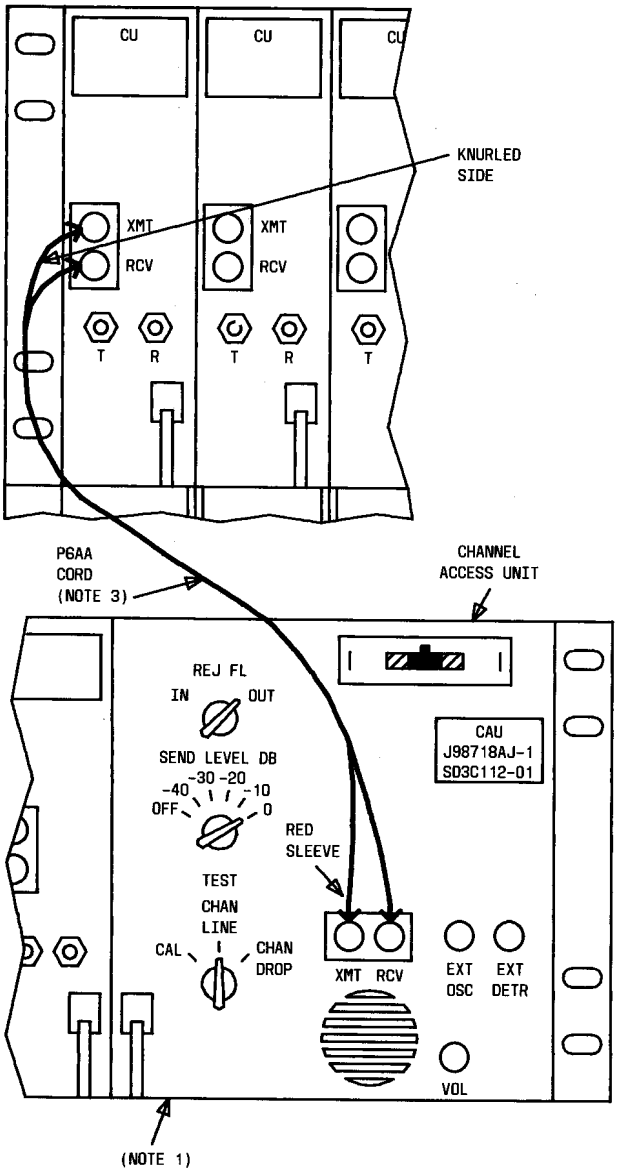
Note: Disregard the lighting or extinguishing of lamps not specifically referred to in this test.

1	Connect a 3-inch wire equipped with pin plugs between the RNFAL and GRD jacks on the receiver unit.	Observe the alarm unit.
	Requirement: The red AR lamp on the alarm control unit lights.	***Requirement:*** The yellow REM lamp lights on the alarm unit.

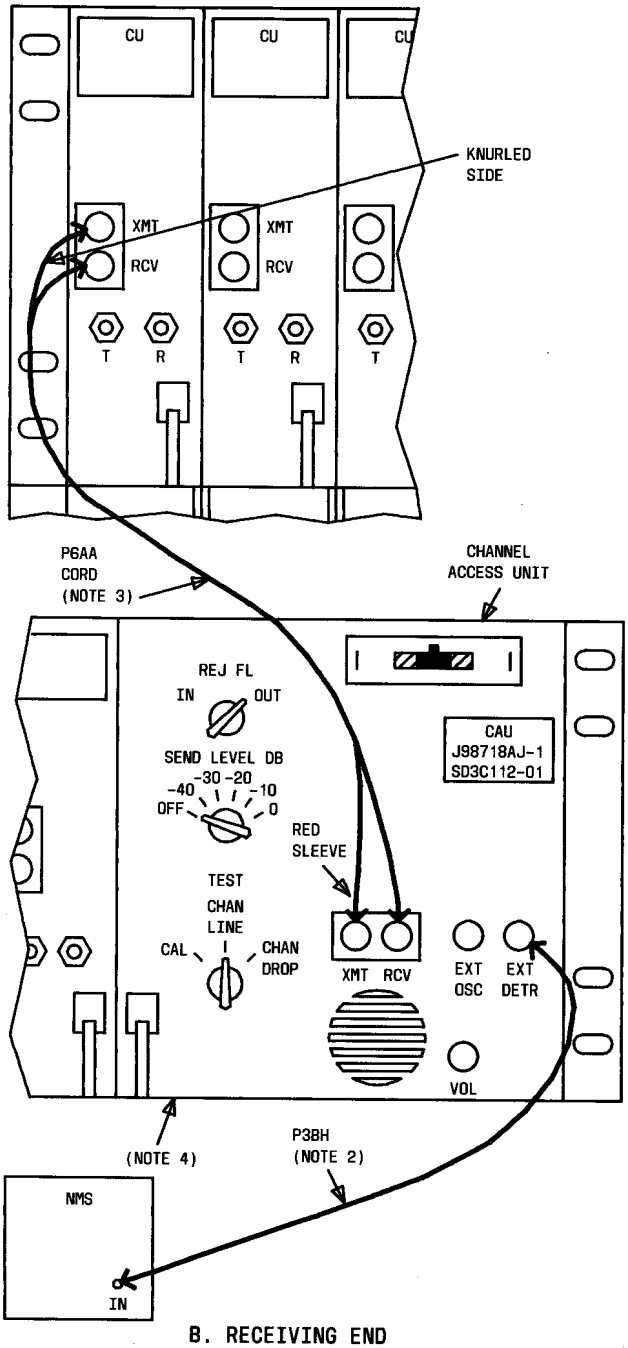
STEP	WESTERN ELECTRIC D3 END	LENKURT 9002A, 9002B END
2	Depress ACO Button. ***Requirement:*** The ACO lamp lights and the audible alarms silence.	Depress the ACO button. ***Requirement:*** The ACO lamp lights and the audible alarms silence.
3	If the lamp does not light, remove the lamp and check it 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 alarm unit.
4	Remove the wire from between the RNFAL and GRD jacks. ***Requirement:*** The red AR lamp extinguishes.	Observe the alarm unit. ***Requirement:*** The yellow REM lamp extinguishes after about 15 seconds.
5	If the requirement is ***not*** met, replace the alarm control unit.	If the requirement is ***not*** met, replace the power supply and alarm unit.
6	Disengage the transmit unit. ***Requirement:*** The yellow AY lamp on the alarm control unit lights.	Observe alarm unit. ***Requirement:*** The LOC lamp lights on the alarm unit.
7	Depress ACO button. ***Requirement:*** The ACO lamp lights and the audible alarms silence.	Depress ACO button. ***Requirement:*** The ACO lamp lights and the audible alarms silence.
8	Reinsert transmit unit. ***Requirement:*** The yellow AY lamp on the alarm control unit extinguishes.	Observe the alarm unit. ***Requirement:*** LOC lamp extinguishes after about 10 seconds.
9	If requirements are ***not*** met, replace the alarm control unit.	If requirement is ***not*** met, replace the power supply and alarm unit.
10	Depress MEM RESET button on TPU if provided.	No action.

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



A. TRANSMITTING END



B. RECEIVING END

NOTES:

1. SET THE SWITCHES ON THE CAU AS FOLLOWS:

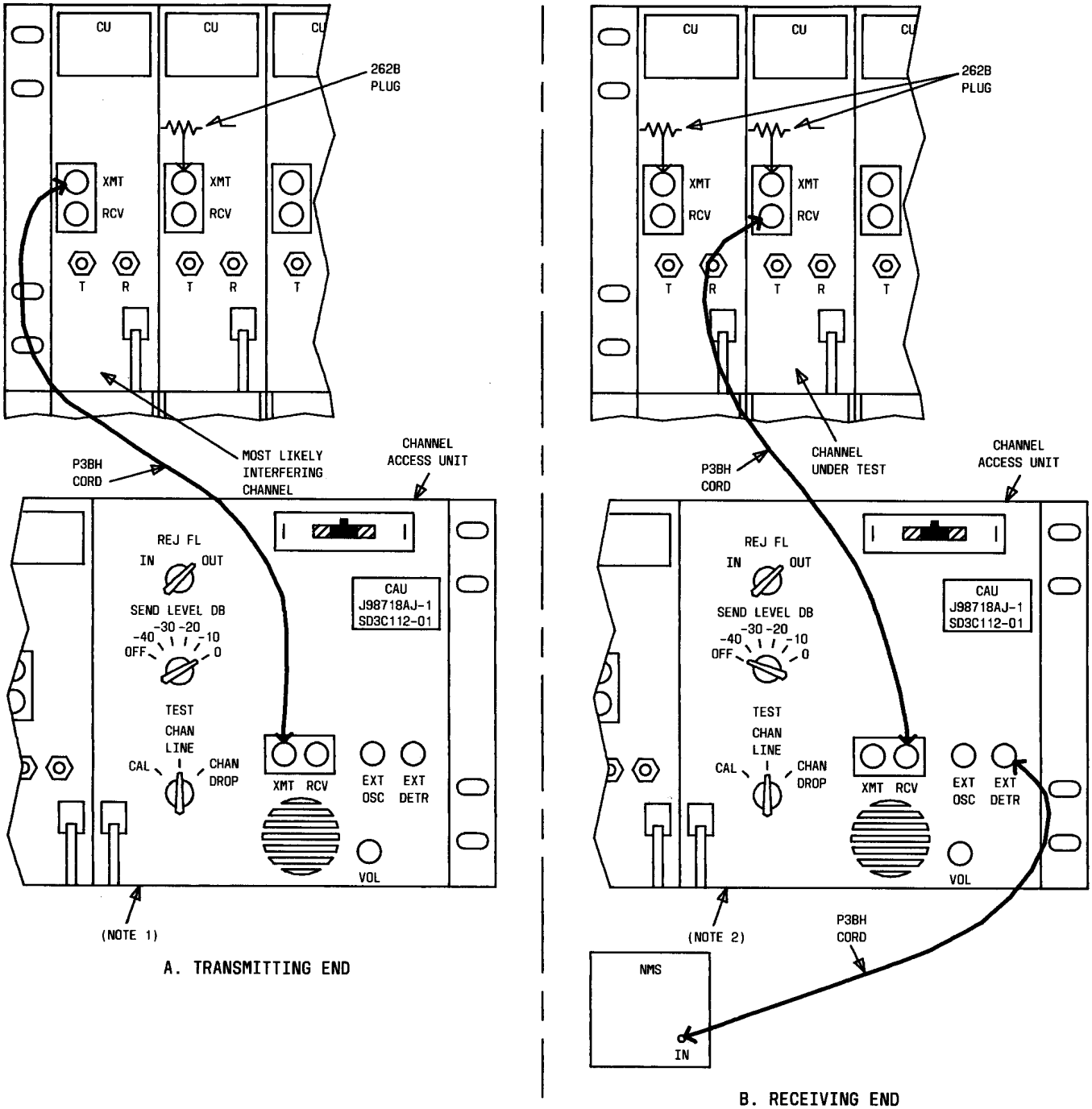
TEST	CAU SWITCHES		
	REJ FL	SEND LEVEL	TEST
NET LOSS	OUT	0	CH LINE
NOISE	OUT	OFF	CH LINE
DISTORTION	IN	0 TO 40	CH LINE

2. NMS REQUIRED FOR NOISE AND DISTORTION TEST.
3. PATCH KNURLED SIDE OF DOUBLE PLUG TO XMT JACK. PATCH RED 310 PLUG TO XMT AND BLACK 310 PLUG TO RCV.

4. SET THE SWITCHES ON THE CAU AS FOLLOWS:

TEST	CAU SWITCHES		
	REJ FL	SEND LEVEL	TEST
NET LOSS	OUT	OFF	CH LINE
NOISE	OUT	OFF	CH LINE
DISTORTION	IN	OFF	CH LINE

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



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. 2—Channel Crosstalk