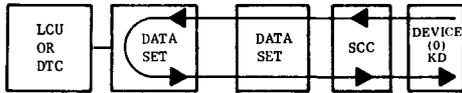


## NOTICE

These pages are excerpts from "DATASPEED\*" 4540 STATION ARRANGEMENTS  
TESTING AND TROUBLESHOOTING - SECTION 582-300-500, Issue 2,  
dated June 1980.



3.13 Far-End Digital Loopback Test to Test Center or LCU Data Set:



Caution: Caution of 3.11 applies.

If permission is given, perform Steps 1 and 3 of Chart 13.

Note 1: This test can only be performed from KD connected to port 1.

Note 2: This test does not require that Data Set Ready (DSR) from Data Set be on.

CHART 13

NEAR-END ANALOG AND FAR-END DIGITAL LOOPBACK TESTS

STEP	PROCEDURE	CORRECT RESPONSE	TEST FAILS
1	<p>Depress the CLEAR key, then depress LOCAL (or RESET) key if not lit. Request a Local Test by depressing the L/TST key while CONTROL (or ALPHA) key is held down.</p> <p>(See Notes 1 and 2 on the next page.)</p>	<p>The "LOCAL TEST MODE" message shown below is displayed on the monitor. Display does not clear automatically in 20 seconds as it did with 40/4-type equipment.</p> <p>To perform analog loopback test: Go to 2.</p> <p>To perform far-end digital loopback test: Go to 3.</p>	<ul style="list-style-type: none"> <li>• If no message appears or S/R indicator is flashing:                             <ul style="list-style-type: none"> <li>(a) Check to see that KD is optioned correctly. (See Section 582-300-200).</li> <li>(b) Check SSI cabling to SCC per SSI cable analysis in this section.</li> </ul> </li> <li>• If monitor adjustments are needed, refer to Section 582-213-700.</li> </ul>
<p>All 45FG110-types:</p>			
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">LOCAL TEST MODE</p> <p>TEST MSG:</p> <p>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 0123456789 TIMES.</p> <p>TO TEST LOOPBACK, PRESS S/R OR ENTER TO RESET PRESS CLEAR SEE MANUAL FOR DETAILS</p> </div>			
<p>45FG110/AA or 45FG110/AB type only:</p>			
<div style="border: 1px solid black; padding: 5px;"> <p>( _ _ _ )</p> </div>			
<p>45FG110/AC/01 only:</p>			
<div style="border: 1px solid black; padding: 5px;"> <p>SCC No. _ _</p> <p>DEV No. _ _</p> <p>CODE EBCDIC</p> </div>			

CHART 13 (Contd)

NEAR-END ANALOG AND FAR-END DIGITAL LOOPBACK TESTS

STEP	PROCEDURE	CORRECT RESPONSE	TEST FAILS
1 (Contd)			
	<p><i>Note 1:</i> If Step 2 is tried twice in succession, an "Operation Error, Aborted" message will appear. Repeat Step 4 again to resume testing.</p>		
	<p><i>Note 2:</i> If the CLEAR key is depressed with the above message on the display screen, the keyboard will become locked. To unlock the keyboard, depress the CLEAR key again.</p>		
2	<p>Near-end analog loopback Test from KD connected to SSI port #1 only: (Device 0 (space))</p> <p><i>Caution: If station is on-line with LCU, obtain permission from customer before performing this test.</i></p> <p>Depress AL on 201, 208 or 209-type data set or slide test switch on 500A-type DSU to LL position or depress Local Loopback button on 48230 LADS.</p> <p>Depress CONTROL (or ALPHA) and R/TST together.</p>	<p>The message shown below is displayed.</p> <p>The TEST STATUS indicator #4 on SCC also turns on; then off.</p> <p>If optioned for single alarm, alarm will sound once and LOCAL indicator should light. If optioned for continuous alarm, alarm will sound repeatedly until LOCAL (or RESET) key is manually depressed.</p> <p>When test is complete, release AL button on 201, 208 or 209-type data set, or slide test switch on 500A-type DSU to center position, or release local loopback button on 48230 LADS.</p> <p><i>Note:</i> If modem other than mentioned above is used, refer to operating manual included with that modem.</p> <p>The station passes the Analog Loopback Test. Return to Chart 12 Question 2, 3, 4 or 6 (as applies).</p>	<ul style="list-style-type: none"> <li>• If S/R indicator is flashing, replace 410311 circuit card in SCC.</li> <li>• If "LOOPBACK DATA CONTAINED ERRORS" message is received, go to Step 4.</li> <li>• If "DEVICE FAILED TO SEND DATA" message is received, perform Display Analysis, Chart 8.</li> <li>• If "INVALID DATA FROM DEVICE" message is received, go to Step 5.</li> <li>• If, after 5 seconds, a "NO DATA RECEIVED" message is received, go to Step 6.</li> <li>• If "NO CTS FROM DATA SET" is received, go to Step 7.</li> <li>• See Note 2 below.</li> </ul>
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 0123456789 TIMES.</p> </div>		<p>Appears on one line. (See Note 1 below.)</p>
	<p><i>Note 1:</i> If any characters in the QUICK BROWN FOX message were changed before depressing S/R (or ENTER) key, those characters will appear in the above message. Up to 2-1/2 lines can be entered.</p>		
	<p><i>Note 2:</i> If SCC is on line with LCU, and is sending and receiving large amounts of long text blocks, a "LOOPBACK CANNOT BE PERFORMED" message will appear on the display. Perform Steps 1 and 2 (to try again).</p>		

CHART 13 (Contd)

NEAR-END ANALOG AND FAR-END DIGITAL LOOPBACK TESTS

STEP	PROCEDURE	CORRECT RESPONSE	TEST FAILS
3	<p>Far-end Digital Loopback Test from KD connected to SSI port #1 only (device 0 (space)), to LCU data set or DATA TEST CENTER:</p> <p><i>Caution: Permission must first be obtained before performing this test if station is on-line with customer's equipment.</i></p> <p>Instruct far-end attendant to depress DL on 201, 208 or 209-type data set or slide test switch on 500-type DSU to RT position or depress DC BUSBACK button on 48230 LADS.</p> <p>Depress CONTROL (or ALPHA) and R/TST together.</p>	<p>The message shown in Step 2 is displayed.</p> <p>When test is complete, have far-end attendant release DL button on 201, 208 or 209-type data set or slide test switch on 500A-type DSU to center position, or release DC BUSBACK button on 48230 LADS.</p> <p><i>Note: If modem other than mentioned above is used, refer to operating manual included with that modem.</i></p> <p>The station passes the Digital Loopback Test. Return to Chart 12, Question 7.</p>	<p>(Refer to "No" response column of Step 2.)</p>

CHART 13 (Contd)

NEAR-END ANALOG AND FAR-END DIGITAL LOOPBACK TESTS

STEP	PROCEDURE	CORRECT RESPONSE	TEST FAILS
4	<p>The following message is displayed when Step 2 or 3 is performed:</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p align="center"><b>**LOOPBACK DATA CONTAINED ERRORS**</b></p> <p align="center">LOCAL TEST MODE</p> <p>TEST MSG:</p> <p>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 0123456789 TIMES.</p> <p>RE-TEST LOOPBACK, PRESS S/R OR ENTER TO RESET PRESS CLEAR SEE MANUAL FOR DETAILS</p> </div> <p>45FG110/AA or 45FG110/AB type only:</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>( _ _ )      <input type="text"/></p> </div> <p>45FG110/AC/01 only:</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>SCC _ _ DEV _ _ CODE EBCDIC</p> </div>	<p>(Does not apply, see "Test Fails")</p>	<p>If test fails the second time:</p> <ul style="list-style-type: none"> <li>• Check data set or data set cable if message occurred during Analog Loopback Test (Step 2).</li> <li>When 208A data set is mounted on shelf in controller cabinet, the ventilation fan modification kit (451340) must be present and moving air through the data set. (See Section 582-300-200).</li> <li>• Check far-end data set or check facilities between data sets if message occurred during Far-End Digital Loopback Test (Step 3).</li> <li>• Perform Display Analysis, Chart 8.</li> </ul>
5	<p>"INVALID DATA FROM DEVICE" message is displayed when Step 2 or 3 is performed.</p> <p><i>Note:</i> If "ERASE INPUT" key was depressed before S/R or ENTER, message is valid and Steps 1 and 2 (or 1 and 3) should be tried again.</p>	<p>(Does not apply, see "Test Fails")</p>	<ul style="list-style-type: none"> <li>• If ERASE INPUT was not depressed before S/R or ENTER: <ul style="list-style-type: none"> <li>(a) Check SSI cabling to SCC per SSI Cable Analysis of this section.</li> <li>(b) Perform Display Analysis, Chart 8.</li> </ul> </li> </ul>

CHART 13 (Contd)

NEAR-END ANALOG AND FAR-END DIGITAL LOOPBACK TESTS

STEP	PROCEDURE	CORRECT RESPONSE	TEST FAILS
6	<p>"NO DATA RECEIVED" message is displayed after five seconds when Step 2 or 3 is performed.</p>	<p>(Does not apply, see "Test Fails")</p>	<p>If message occurred during Step 2 or 3:</p> <ul style="list-style-type: none"> <li>• Make sure data set has power on and is conditioned as directed in Step 2 or 3.</li> <li>• Replace data set.</li> <li>• Replace data set cable.</li> <li>• Replace 410320 circuit card in SCC.</li> <li>• Replace 410311 circuit card in SCC.</li> </ul>
7	<p>"NO CTS FROM DATA SET" message is displayed when Step 2 or 3 is performed.</p> <p><i>Note:</i> If test is part of Analog or Digital Loopback Test and no data set is present, message is valid.</p>	<p>(Does not apply, see "Test Fails")</p>	<ul style="list-style-type: none"> <li>• Make sure data set ac power is on.</li> <li>• Replace data set.</li> <li>• Replace data set cable.</li> <li>• Replace data set extension cable (if used).</li> <li>• Replace 410311 circuit card in SCC.</li> </ul>

## H. SSI Cable Analysis

3.14 When it is suspected that cabling between the controller (SCC) and device may be a cause of trouble or when the controller is equipped with a 45FG110/AB circuit card, it is noticed that the Status 3 indicator of the SCC, blinks 2 or more times within 15 minutes, the following troubleshooting procedures should be used:

- (a) First try to isolate the cable causing the trouble by disconnecting device cables in groups until the trouble is no longer experienced. Then start reconnecting cables from last disconnected group until trouble reappears. Cable last connected, causing the trouble to reappear, is at fault.
- (b) If cable exhibits outer jacket damage, (shield or wire insulators visible while flexing) cable should be replaced and the cause of the damage corrected.
- (c) Visually inspect the seating of terminals in the connectors at both ends of the cable. Check crimping of terminals to wires; the lower crimp point must tightly grip the conductor and the upper crimp point must tightly grip the conductor insulation. Shielded cables have mylar tape wrapped around the conductor bundle under the shield. When the outer shield is removed in preparation for affixing terminals and connectors, the mylar tape must extend approximately 1/4-inch beyond the point of shield removal in order to prevent frayed shield ends from piercing conductor insulation.

*Note 1:* Intermittent operational failures may occur between a device and the controller when there is a significant difference in ground potential at the device and the controller ac outlets, and the SSI cable drains are connected at both ends. If the above situation should occur, it is recommended that the device end SSI cable drain terminal be removed from the connector with a 402840 extractor and taped back. If failures still

occur, then reinsert terminal at device end and remove and tape back drain terminal at the SCC end.

*Note 2:* The next issue will include suggestions for alternate hardware to make required jumpers.

3.15 Short SSI cable lengths (up to 50 feet) or data set cables can be checked for shorts and continuity per the following methods:

- (a) Unplug the cable under test at both the controller and device ends.
- (b) See warning below. Using a standard continuity tester (lamp or buzzer type or ohmmeter):
  - (1) Measure that shorts do not exist between conductors.
  - (2) Measure each conductor for continuity. (Refer to Section 582-300-400 for wiring.) If cable is still suspected, replace cable. Do not perform test of 3.17 - 3.27.

*Warning:* If foreign voltages are present, they may damage an ohmmeter. Before using an ohmmeter, check that no voltage is present. If voltage is present, correct fault and do not attempt a shorts or continuity test until fault is corrected.

3.16 For long SSI cable runs, the following methods may be employed:

- (a) Unplug the cable under test from both the controller and the remote device.
- (b) See warning above. Using an ohmmeter (VOM) on the RX10 or RX100 range, measure that shorts do not exist between conductors or between a conductor and shield.
- (c) When it is determined that the cable is free from internal shorts, perform SSI Cable Testing beginning at 3.17.

I. SSI Cable Testing

3.17 When checking SSI cable, the cable should be tested per the following cable tests. The cables which pass these tests will operate with an error rate of less than one error in  $10^6$  bits, or one bit error in 15 minutes, under normal conditions.

3.18 The following test equipment and materials are required for testing cable:

- 1 - Simpson 260 Volt-Ohm-Meter (VOM) (or equivalent)
- 2 - 6 inch jumper cables with insulated alligator clips
- 2 - 135 ohm  $\pm$  10 percent, 1/4 watt resistors

1 - WILCOM T194B Transmission and Noise Test Set

OR

1 - HP3550B Communication Test Set and 1-6F (J94006F) Voiceband Noise Set with 50KHZ network.

3.19 There are two types of cable tests, dc tests and ac tests. The dc tests consist of measuring foreign voltages, insulation resistances, and loop resistances. The ac tests consist of measuring crosstalk, loop loss, background circuit noise, and impulse noise. Tables "A" through "G" can be copied to provide separate records for different cables.

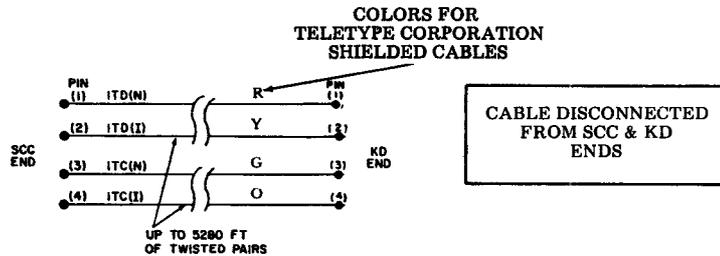


Fig. 15—DC Tests on Cable Pairs Between SCC and KD

FOR CONSISTANCY,  
MAKE MEASUREMENTS  
AT THE SCC END.

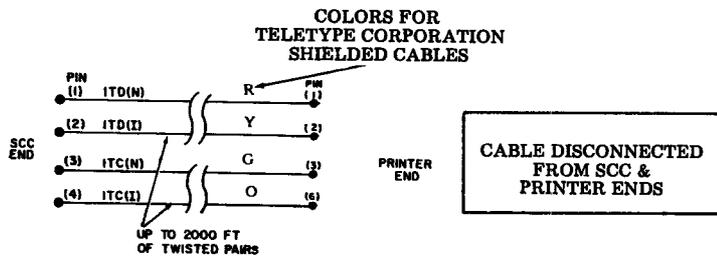


Fig. 16—DC Tests on Cable Pairs Between SCC and KD

DC Tests

3.20 The Loop Resistance tests require a Simpson 260 VOM and a jumper. See Fig. 15 or 16 (as applies) for test arrangement.

(a) If the cable length is known, use the formula "Loop resistance equals 2 times cable length times 0.025 ohms per foot". Then make measurement per Table A. If measured resistance is approximately equal

to resistance determined by above formula, the cable passed the test.

*Example:* If cable is 2000 feet long, the approximate resistance should be 2 times 2000 (cable length) times 0.025 (ohms per foot) = 100 ohms.

(b) If the cable length is not known, make measurement per Table A. If measured resistance is less than 300 ohms for a KD cable or less than 140 ohms for a printer cable, the cable passed the test.

Table A - Loop Resistance Tests	
Cable being tested:	SCC _____ TO DEVICE _____
Measure the resistances between the following leads with the conditions given:	
1. Short ITD (N) and ITD (I) with a jumper at the device end of cable. Measure the resistance across ITD pair at the SCC end.	Measured Resistances 1. _____ ohms
2. Remove jumper from ITD pair and place jumper across ITC pair at the device end of cable. Measure the resistance at the SCC end.	2. _____ ohms
3. Remove jumper from ITC pair and place jumper across ITC (I) and shield at the device end of the cable. Measure that resistance is less than 300 ohms for a KD cable or less than 140 ohms for a printer cable.	3. _____ ohms
The cable:                      Passed <input type="checkbox"/> Failed <input type="checkbox"/>	

3.21 The foreign voltage tests require a Simpson 260 VOM or equivalent. See Fig. 15 or 16 (as applies). Perform the tests in Table B.

The cable passes foreign voltage tests if all measured voltages are less than 0.1 volt dc.

Table B — Foreign Voltage Tests		
Cable being tested:	SCC _____	TO DEVICE _____
Measure the voltage between the following leads:		Measured Voltages
1. ITD(N) to ITD(I)		_____ VDC
2. ITC(N) to ITC(I)		_____ VDC
3. ITC(N) to ground		_____ VDC
4. ITC(I) to ground		_____ VDC
5. ITD(N) to ground		_____ VDC
6. ITD(I) to ground		_____ VDC
7. Shield to ground		_____ VDC
This cable:                      passed <input type="checkbox"/> failed <input type="checkbox"/>		

3.22 The Insulation Resistance Tests require a Simpson 260 VOM or equivalent. See Fig. 15 or 16 (as applies) for test arrangement. Perform the tests in Table C.

The cable passes the Insulation Resistance Tests if all measured resistances are greater than 300K ohms (300,000 ohms).

Table C — Insulation Resistance Tests		
Cable being tested:	SCC _____	TO DEVICE _____
Measure the Resistance between the following leads		Measured Resistance
1. ITD(N) to ITD(I)		_____ Kohms
2. ITD(N) to ITC(N)		_____ Kohms
3. ITD(N) to ITC(I)		_____ Kohms
4. ITD(I) to ITC(I)		_____ Kohms
5. ITD(I) to ITD(N)		_____ Kohms
6. ITC(N) to ITC(I)		_____ Kohms
7. Shield to ground		_____ Kohms
8. ITD(N) to ground		_____ Kohms
9. ITD(I) to ground		_____ Kohms
10. ITC(N) to ground		_____ Kohms
11. ITC(I) to ground		_____ Kohms
This cable:                      passed <input type="checkbox"/> failed <input type="checkbox"/>		

Steps 8 — 11 require jumper to short shield to ground.

AC Tests

3.23 The Cross-Talk Tests require either a WILCOM T194B Transmission and Noise Test Set or a HP-3550B Communication Test Set and two 135 ohm resistors. Connect the test set and resistors as shown in Fig. 17. If a WILCOM Test Set is used, perform the initial set up of 3.24 first. Perform the tests in Table D.

The cable passes the Cross-Talk Tests if all measured values are lower than -48 dBm. (eg, -49 dBm is lower than -48 dBm.)

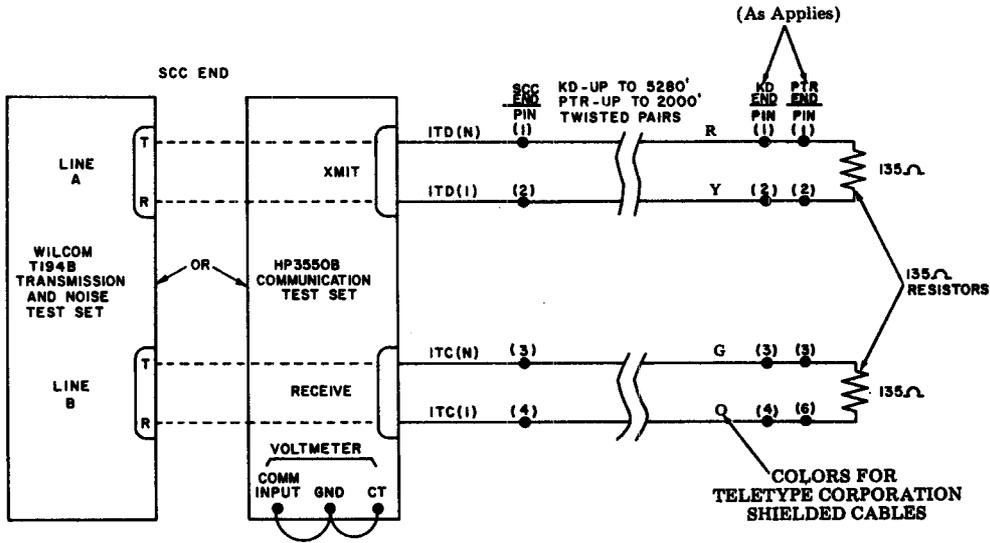


Fig. 17—Cross-Talk Measurements

3.24 WILCOM T194B Test Set — Initial Set Up

- Set FUNCTION switch to CAL OUTPUT position.
- Set SEND and RECEIVE IMPEDANCE switches to 135 position.
- Set BRDG/TERM switch to TERM position.
- Set SEND LEVEL and RECEIVE LEVEL switches to 0 dB. (use the red calibration scale to set the receive level).
- Set DISPLAY switch to SEND Hz position.
- Using FREQUENCY Hz switch, select the range of frequency.  
(The three frequencies of TABLE D are 10 KHz, 50KHz and 100KHz)
- Select send frequency with the TUNING knob. The send frequency will appear in the digital display.
- Using send LEVEL VERNIER; adjust the output for a 0 dB reading on the meter scale.

Table D – Cross Talk Tests	
Cable being tested:	SCC _____ TO DEVICE _____
<b>1a. For WILCOM T194B Transmission and Noise Test Set Only:</b> (Perform 3.24 first)	
(1) Set FUNCTION switch to SEND A/REC B or SEND B/REC A to send signal on the desired pair of the SSI cable.	
(2) Set WEIGHTING switch to 30-300 KHz position.	
(3) Set both HOLD switches to OFF position.	
(4) Set NORMAL/DAMP switch to NORMAL position.	
(5) Set 1004 Hz NOTCH switch to OFF position.	
(6) Set desired send frequency with the FREQUENCY Hz switch and TUNING knob. Observe on digital display. (Check if "X 10" LED is lighted)	
(7) Adjust the RECEIVE LEVEL switches for a meter reading near 0 dB on the scale.	
(8) Read the dBm value by adding the readings (use outer (red) scale) of the RECEIVE LEVEL switches and the meter.	
(9) Repeat 3.24 a, f, h, then Table D Step 1a (1), (6), (7) and (8) for 50 KHZ and 100 KHZ.	
<b>1b. For HP-3550B Communications Test Set only:</b>	
(1) Connect the voltmeter common input (black) to the voltmeter ground terminal.	
(2) Connect the output and input center tap (CT) to the voltmeter ground terminal.	
(3) Input and output impedance to 135 ohms.	
(4) Set frequency to > 5 KHz (greater than 5 KHz).	
(5) Set patch panel dB control to 0.	
(6) Set patch panel MEAS-CAL switch to CAL position, adjust the oscilloscope amplitude control to obtain a 0-dBm reading on the voltmeter.	
(7) Set the MEAS-CAL switch to MEAS position.	
<b>2. Measure the cross-talk between cable pairs at the following frequencies:</b>	
1. 10 KHz	Measured Cross-Talk (Requirements: Lower than -48 dBm)
2. 50 KHz	1. _____ dBm
3. 100 KHz	2. _____ dBm 3. _____ dBm
The cable:                      Passed <input type="checkbox"/> Failed <input type="checkbox"/>	

3.25 The Loop-Loss Tests require either a WILCOM T194B Transmission and Noise Test Set or a HP-3550B Communication Test Set and two jumpers. Connect the test set as shown in Fig. 18. Perform the tests in Table E.

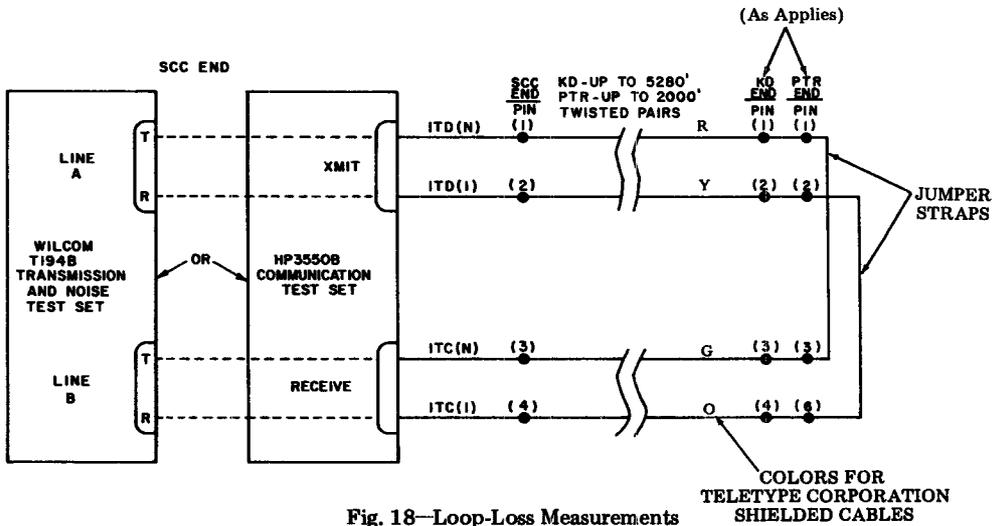


Fig. 18—Loop-Loss Measurements

Table E - Loop-Loss Tests			
Cable being tested:		SCC _____ TO DEVICE _____	
1. Set up the WILCOM T194B or HP-3550B as instructed in Table D.			
Note: For WILCOM Test Set only — perform steps (6), (7), and (8) of 1a, Table D for each frequency.			
2. Measure the Loop-loss at the following frequencies:	Measured Loop-Loss	Maximum Loop-Loss Allowed for KD	Maximum Loop-Loss Allowed for Printer
a. 28KHz	_____ dBm	24.5 dBm	7.5 dBm
b. 56KHz	_____ dBm	30.5 dBm	10.4 dBm
c. 84KHz	_____ dBm	34.5 dBm	12.5 dBm
The cable:		Passed <input type="checkbox"/>	Failed <input type="checkbox"/>

3.26 The Background Noise Tests require either a WILCOM Transmission and Noise Test Set or a 6F Voiceband Noise Measuring set and one or two 135 ohm resistors. Connect the test set as shown in "Test 1" of Fig. 19. Perform the tests in Table F. The cable passes the Background Noise Level Tests if the readings are lower than 45 dBrn.

Note: Disconnect line B from test set when performing following test.

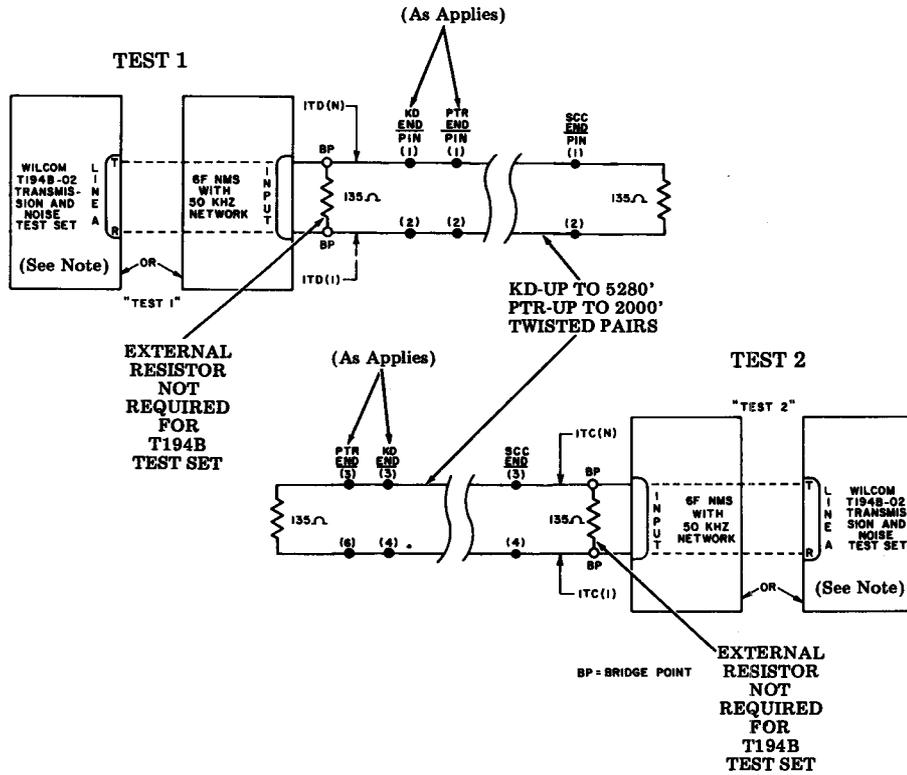


Fig. 19—Noise Measurements

Table F — Background Circuit Noise Tests	
Cable being tested:	SCC _____ TO DEVICE _____
1a. For WILCOM T194B Transmission and Noise Test Set ONLY:	
(1) Set FUNCTION switch to SEND B/REC A position (however, sending on B is not intended). (2) Set WEIGHTING switch to 50KHz position. (3) Set RECEIVE IMPEDANCE switch to 135 position. (4) Set BRDG/TERM switch to TERM position. (5) Set 1004 Hz notch switch to OUT position. (6) Set NORMAL/DAMP switch to NORMAL position. (Exception: Under severely fluctuating noise condition, set to DAMP.) (7) Turn down send level (to avoid false reading) then adjust RECEIVE LEVEL switches for a meter reading near 0 dB on the scale. (Level may be so low that switch adjustments cannot permit an on-scale meter reading.) (8) Read the background noise level by adding the RECEIVE LEVEL Switch settings (using the inner (black) scale) and the meter reading. (9) Connect the test set as shown in "TEST 2" of Fig. 19. Again perform Steps 1a(7) and 1a(8).	
1b. For 6F VOICE-BAND NOISE MEASURING SET ONLY:	
Plug in the 50 KHz weighting network on 6F Voice band Noise Measuring Test Set and calibrate as follows:	
(1) Set the Counter Separation switch to the 2 dB position. (2) Set the Function switch to CAL-CTR-BAT and turn the power switch on. (3) Verify that the meter indicates in the BAT GOOD area. Replace batteries that do not have good indication. (4) Adjust the Counter 1 CAL control until the associated counter just counts (the count will be erratic when properly adjusted). (5) Adjust the Counter 2, 3, and 4 controls by depressing the associated push button switch and adjusting the CAL control until the counter just counts as in Step 1b(4). During calibration, only one counter will operate at a time. (6) Set the FUNCTION switch to CAL-MTR and adjust the meter CAL control for a meter indication at the CAL marking. (7) Set the function switch to 600 ohm bridging. Adjust the dBrn dial to obtain a meter reading in the upper half of the meter scale. (8) The background noise level is the sum of the dBrn dial setting and the meter reading. (9) Connect the test set as shown in "Test 2" of Fig. 19. Again perform Steps 1b(7) and 1b(8).	
"Test 1" Background noise level      _____ dBrn "Test 2" Background noise level      _____ dBrn	
The cable:	Passed <input type="checkbox"/> Failed <input type="checkbox"/>

3.27 The Impulse Noise Tests require either a WILCOM T194B Transmission and Noise Test or a 6F Voiceband Noise Measuring Set, and one or two 135 ohm resistors. Connect the test set as shown in "Test 1" of Fig. 19. Perform the tests in Table G. The cable passes the test if "Test 1" (or "Test 2") results in a count of 1 or less.

Table G — Impulse Noise Tests	
Cable being tested:	SCC _____ TO DEVICE _____
1a. For WILCOM T194B Transmission and Noise Test Set ONLY:	
(1) Set up test set as instructed in Steps 1a(1) through 1a(6) of Table F. (2) Set RECEIVE LEVEL switches using the inner (Black) scale to 65 dBrn. (3) Set DISPLAY switch to IMPULSE COUNT position. (4) Set IMPULSE COUNT TIME MINUTES to 30 position. (5) With COUNTING lamp lit, run the test for 30 minutes. (6) When COUNTING lamp turns off and COUNT COMPLETE lamp turns on, take a reading. (7) Set DISPLAY switch to SEND Hz position and back to IMPULSE COUNT position. (This resets a digital display to zero.) (8) Connect the test set as shown in "TEST 2" of Fig. 19. Run test as directed in Steps 5 and 6 of 1a.	
1b. For 6F Voice Band Noise Measuring Set only:	
(1) Set up and calibrate the 6F Voice Band Noise Measuring Set as instructed in Step 1b of Table F. (2) Set the function switch to 600 ohm bridging. Adjust the impulse noise threshold to 65 dBrn by setting the dBrn dial to 35. Reset the counter to 00, (3) After resetting the counter, run the test for 30 minutes and take a reading. (4) Connect the test set as shown in "Test 2" of Fig. 19. Run test as directed in Steps 1, 2 and 3 of 1b.	
"Test 1" count _____	"Test 2" count _____
The cable:                      Passed <input type="checkbox"/> Failed <input type="checkbox"/>	

**NOTES**