

## 10B DATA LINE CONCENTRATOR TEST PROCEDURES

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**1. GENERAL**

**1.01** This section covers the procedures to be followed when testing the 10B Data Line Concentrator while trying to isolate a trouble condition. Installation testing is covered in the section entitled 10B Data Line Concentrator—Installation and Connections (591-811-201) and, therefore, will not be covered herein.

**1.02** The tests covered are:

**A. Line Connection Test:** This test checks the ability of the concentrator to connect a specific line to a specific trunk.

**B. Switching Matrix Network Test:** This test checks continuity between the tip and ring leads of a particular line circuit (AR366) and the tip and ring leads of a particular trunk circuit (AR488 or AR382) through the switching matrix network crosspoints.

**C. Control, Line and Switch, and Trunk Module Test:** This test checks the voltages on the terminal boards of the control module (TB1), line and switch module (TB3), and trunk module (TB2).

**D. Circuit Pack Test:** This test checks the voltages and signals present on the test points of the AR366, AR488, AR382, AR489, AR377, AR490, AR383, AR376, AR597, and AR381 circuit packs which are used in the 10B Data Line Concentrator.

**E. Repeat Trunk Test:** This test checks the ability of the concentrator to connect a specific trunk to any or all lines.

**1.03** These tests should be performed in accordance with the section entitled 10B Data Line Concentrator—Maintenance (591-811-301).



*When the Data Auxiliary Set (DAS) 803E1 and AR464 circuit pack (manual test circuit) are used to establish a connection, the call request is placed in queue the same as any normal service request. Thus, if the line scanners are not working or if the test connection is attempted during periods of heavy traffic, it may take a long time to establish the connection. It is therefore advised that Tests A, B, and E be performed during a nonbusy hour.*

**1.04** When a camp-on condition exists to one or both trunk groups, one or both of the line scanners will be stopped. If Test A, B, or E is attempted at this time and the line and trunk to be tested are idle, one of the following three reactions can be encountered.

(a) If the trunk group to which the test attempt is made has another idle trunk and lines are camped-on to the opposite trunk group, the line scanner necessary to make the connection will be running. In this case, an attempt at Test A, B, or E would result in an immediate connection.

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(b) If lines are camped-on to the trunk group to which the test attempt is made and there are idle trunks in the opposite trunk group, the line scanner necessary to make the connection will be stopped but the opposite line scanner will be running. In this case, an attempt at Test A, B, or E would not result in a connection until the line is scanned by the proper line scanner. Since the opposite line scanner is running, it will periodically scan the line and an unsuccessful attempt to connect the line will be made. Each time this happens, the operation and release of a relay will be heard. This clicking is not a malfunction and will continue until the line is scanned by the proper scanner. At that time a connection should be established.

(c) If lines are camped-on to both trunk groups, both line scanners will be stopped. In this case, an attempt at Test A, B, or E would not

result in a connection until the line is scanned by the proper line scanner. If the opposite line scanner starts running first and scans the line before the proper line scanner, the reaction just described in 1.04(b) will occur.

**2. APPARATUS**

**Tests A, B, and E**

**2.01** DAS 803E1 and AR464 circuit pack (manual test set furnished with concentrator).

**Tests B, C, and D**

**2.02** KS-14510-L1 volt-ohm-milliammeter (VOM), or equivalent.

**3. PROCEDURES**

STEP	PROCEDURE
	<p><b>Test A—Line Connection Test</b></p> <p>1 Plug AR464 CP into slot 11 of the 23B1 Data Mounting (control module).</p> <p>2 Plug J5 of the AR464 CP into P5 of the DAS 803E1.</p> <p>3 Operate switch on faceplate of the DAS 803E1 to the OFF position.</p> <p>4 At the 18A1 (or 19A1 or 20A1) Data Mounting (line and switch module), locate the AR366 CP associated with the line to be connected.</p> <p>5 Connect the DAS 803E1 test cord (LINE CORD) to the test points on the line circuit (AR366) to be tested in accordance with Table A.</p> <p><i>Note:</i> Each red clip of the DAS 803E1 LINE CORD has two numbers on it and the black clip has four numbers. These numbers correspond to the test points on the AR366 CP. Test Points TP1, 2, 3, 4, 5, and 6 of the AR366 CP are associated with the circuitry for the odd-numbered lines. Test points TP9, 10, 11, 12, 13, and 14 of the AR366 CP are associated with the circuitry for the even-numbered lines.</p> <p>6 Connect the AR464 CP test cord (TRUNK CORD) to the test points on the trunk circuit (AR488 or AR382) of the trunk to be connected in accordance with Table B.</p> <p> <i>Be sure to note that when connecting the trunk cord to AR488 CP, probe 2 goes to TP2 and probe 12 goes to TP12; when connecting it to AR382 CP, probe 2 goes to TP12 and probe 12 goes to TP2.</i></p>

STEP	PROCEDURE
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**TABLE A**  
**LINE CORD TEST CONNECTIONS**

TYPE OF CONNECTION	DAS 803E1 LINE CORD TEST CLIP CONNECTIONS				
	3-1-11-9	2-10	4-12	5-13	6-14
Odd-numbered line to trunk in trunk group A	TP3	TP2	TP4	TP5	TP6
Odd-numbered line to trunk in trunk group B	TP1				
Even-numbered line to trunk in trunk group A	TP11	TP10	TP12	TP13	TP14
Even-numbered line to trunk in trunk group B	TP9				

**TABLE B**  
**TRUNK CORD TEST CONNECTIONS**

TYPE OF TRUNK CIRCUIT	AR464 CIRCUIT PACK TRUNK CORD TEST CLIP CONNECTIONS							
	1	2	9	10	11	12	13	14
AR488	TP1	TP2	TP9	TP10	TP11	TP12	TP13	TP14
AR382		TP12				TP2		

7 Operate switch on faceplate of DAS 803E1 to the TRK HOLD position.

**Requirement:** LB and TB lamps extinguished.



*A lighted LB lamp indicates that the line is in service and a lighted TB lamp indicates that the trunk is in service. If the LB and/or TB lamps are lighted, wait until both are extinguished before proceeding to Step 8. If the CF lamp is on at this time, it indicates that the trunk circuit is not seeing the proper voltage across L1 and L2 of the trunk. This could be because the port data set (or 1A Data Station) is squelching the current or it could indicate a trouble condition (eg, trunk loop open*

STEP	PROCEDURE
	<p><i>or shorted). The manual test equipment can force a connection between a line and this trunk even through a line requesting service cannot.</i></p>
8	<p>Operate switch on DAS 803E1 to the LINE CONN position.</p> <p><b>Note:</b> For the connection to be established, the line must be served in the normal queue. If the test is made during a busy hour, it may take some period of time for the CONN, LB, and TB lamps to light after the DAS is switched to LINE CONN [see 1.04(b) and (c)].</p> <p><b>Requirement:</b> CONN, LB, and TB lamps lighted. If the CF lamp also lights, it indicates that no current is flowing in the loop. This is a normal condition as long as the station on that line is not turned on.</p>
9	<p>If no further tests are to be performed, operate the switch on the DAS 803E1 to the OFF position and disconnect the DAS 803E1 and AR464 CP test cords (LINE CORD and TRUNK CORD) from the line and trunk circuits.</p>
	<p> <b><i>It is important to disconnect the test cords when testing is completed, because as long as they are connected, the trunk will appear busy to the concentrator.</i></b></p>
	<p><b>Test B—Switching Matrix Network Test</b></p>
1	<p>Perform Steps 1 through 8 of Test A.</p>
2	<p>Operate switch on DAS 803E1 to the TIP position.</p>
3	<p>Condition VOM to measure 200 ohms.</p>
	<p><b>Caution:</b> <i>In order to avoid damaging the matrix contacts, do not use any instrument other than a VOM.</i></p>
4	<p>Connect VOM leads to the RES and COM binding posts on the DAS 803E1.</p> <p><b>Requirement:</b> Meter indicates 100 to 200 ohms.</p>
5	<p>Operate switch on DAS 803E1 to the RING/LINE position.</p> <p><b>Requirement:</b> Meter indicates 100 to 200 ohms.</p>
6	<p>Disconnect both VOM leads from the DAS 803E1.</p>
7	<p>End of test; operate switch on DAS 803E1 to the OFF position and disconnect the DAS 803E1 and AR464 CP test cords (LINE CORD and TRUNK CORD) from the line and trunk circuits.</p>

STEP	PROCEDURE
	 <p><i>It is important to disconnect the test cords when testing is completed, because as long as they are connected, the trunk will appear busy to the concentrator.</i></p>
	<p><b>Test C—Control, Line and Switch, and Trunk Module Test Control Module (23B1 Data Mounting)</b></p>
1	Condition the VOM to measure resistance.
2	Connect positive VOM lead to a good ground point on the frame and the negative VOM lead to terminal 2 (GRD) of TB1.
	<p><b>Requirement:</b> Meter indicates zero ohms.</p>
3	Condition VOM to measure 24 volts dc.
4	Disconnect positive VOM lead and connect it to terminal 1 (+) of TB1.
	<p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p>
5	Disconnect both VOM leads, connect positive lead to terminal 2 (GRD) of TB1, and connect negative lead to terminal 3 (–) of TB1.
	<p><b>Requirement:</b> Meter indicates 22 to 26 volts and within 2 volts of the reading taken in Step 4.</p>
6	When the concentrator serves 32 or less lines, disconnect negative VOM lead and connect it to terminal 4 (M) of TB1.
	<p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p>
7	When the concentrator serves 33 or more lines, condition the VOM to measure 48 volts dc, disconnect negative VOM lead, and connect it to terminal 4 (M) of TB1.
	<p><b>Requirement:</b> Meter indicates 46 to 50 volts.</p>
8	Disconnect both VOM leads.
	<p><b>Line and Switch Module (18A1, 19A1, or 20A1 Data Mounting)</b></p>
9	Condition VOM to measure resistance.
10	Connect positive VOM lead to a good ground point on the frame and the negative VOM lead to GRD of TB3.
	<p><b>Requirement:</b> Meter indicates zero ohms.</p>
11	Condition VOM to measure 24 volts dc.

STEP	PROCEDURE
12	<p>Disconnect positive VOM lead and connect it to + of TB3.</p> <p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p>
13	<p>Disconnect both VOM leads, connect positive VOM lead to GRD of TB3, and connect negative VOM lead to – of TB3.</p> <p><b>Requirement:</b> Meter indicates 22 to 26 volts and within 2 volts of the reading taken in Step 12.</p>
14	<p>Disconnect both VOM leads.</p> <p><b>Trunk Module (21B1 or 22B1 Data Mounting)</b></p>
15	<p>Condition VOM to measure resistance.</p>
16	<p>Connect the positive VOM lead to a good ground point on the frame and the negative VOM lead to terminal 3 of TB2.</p> <p><b>Requirement:</b> Meter indicates zero ohms.</p>
17	<p>Condition VOM to measure 24 volts dc, disconnect positive VOM lead, and connect it to terminal 2 of TB2.</p> <p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p>
18	<p>Disconnect both VOM leads, connect the positive VOM lead to terminal 3 of TB2, and connect negative VOM lead to terminal 4 of TB2.</p> <p><b>Requirement:</b> Meter indicates 22 to 26 volts and within 2 volts of the reading taken in Step 17.</p>
19	<p>End of test; disconnect both VOM leads.</p> <p><b>Test D—Circuit Pack Test</b></p>
1	<p>Condition VOM to measure 24 volts dc.</p> <p><b>AR366 Circuit Pack (Line Circuit)</b></p> <p><b>Note:</b> The test point (TP) number shown in parentheses in this part of the test corresponds to the TP number of the portion of the AR366 CP that is associated with the even-numbered lines.</p>
2	<p>Connect the negative VOM lead to GRD of TB3 on the line and switch module.</p>
3	<p>Connect positive VOM lead to TP1 (9) of the AR366 CP.</p> <p><b>Requirement:</b> Line idle—Meter indicates voltage present. Line busy, locked out, or requesting service—Meter indicates near zero volts.</p>

STEP	PROCEDURE
4	<p>Disconnect positive VOM lead and connect it to TP2 (10).</p> <p><b>Requirement:</b> Line idle—Meter indicates zero volts. Line busy—Due to possible ground potential, meter may or may not indicate voltage present.</p>
5	<p>Disconnect positive VOM lead and connect it to TP3 (11)</p> <p><b>Requirement:</b> Line idle, locked out from trunk group B, or camped-on to trunk group B—Meter indicates voltage. Line busy, locked out from trunk group A, or camped-on to trunk group A—Meter indicates approximately zero volts.</p>
6	<p>Disconnect positive VOM lead and connect it to TP4 (12).</p> <p><b>Requirement:</b> Line idle, locked out, or requesting service and not scanned—Meter indicates zero or near zero volts. Line busy or requesting service and has been scanned—Meter indicates voltage present.</p>
7	<p>Disconnect positive VOM lead and connect it to TP5 (13).</p> <p><b>Requirement:</b> Line scanner on line—Meter indicates approximately 3 volts. Line scanner scanning—Meter indicates approximately 5 volts.</p>
8	<p>Disconnect positive VOM lead and connect it to TP6 (14).</p> <p><b>Requirement:</b> Line idle—Meter indicates zero volts. Line busy—Due to possible ground potentials, meter may or may not indicate voltage present.</p>
9	<p>Disconnect both VOM leads.</p> <p><b>AR488 and AR382 Circuit Packs (Trunk Circuit A and Trunk Circuit B)</b></p>
10	<p>Condition VOM to measure 24 volts dc.</p>
11	<p>Connect negative VOM lead to TB2-3 of 21B1 or 22B1 Data Mounting.</p>
12	<p>Connect positive VOM lead to TP1 of AR488 or AR382 CP.</p> <p><b>Requirement:</b> Meter indicates zero volts.</p>
13	<p>Condition VOM to measure resistance.</p> <p><b>Requirement:</b> Meter indicates zero ohms.</p>
14	<p>Condition VOM to measure 24 volts dc.</p>
15	<p>Disconnect positive VOM lead and connect it to TP2.</p> <p><b>Requirement:</b> Trunk idle—Meter indicates zero volts. Trunk busy—Due to possible ground potentials, meter may or may not indicate voltage present.</p>

STEP	PROCEDURE
16	<p>Disconnect positive VOM lead and connect it to TP9.</p> <p><b>Requirement:</b> Relay K1 operated (indicates this trunk selected to be used for next connection to this trunk group)—Meter indicates zero volts. Relay K1 <b>not</b> operated—Meter indicates 22 to 26 volts.</p>
17	<p>Disconnect positive VOM lead and connect it to TP10.</p> <p><b>Requirement:</b> Trunk connected to a line—Meter indicates zero volts. Trunk <b>not</b> connected to a line—Meter indicates 22 to 26 volts.</p>
18	<p>Disconnect positive VOM lead and connect it to TP12.</p> <p><b>Note:</b> TP11 is not used.</p> <p><b>Requirement:</b> Trunk idle—Meter indicates zero volts. Trunk busy—Due to possible ground potentials, meter may or may not indicate voltage present.</p> <p><b>Note:</b> Polarity of voltage appearing on TP13 (Step 19) will depend on whether or not marking battery is being received from the trunk (see requirement for Step 19).</p>
19	<p>Disconnect positive (or negative) VOM lead and connect it to TP13.</p> <p><b>Requirement:</b> Trunk circuit receiving marking battery from trunk—Meter indicates -16 to -20 volts. Trunk circuit <b>not</b> receiving marking battery from trunk—Meter indicates +22 to +26 volts.</p>
20	<p>Disconnect VOM positive lead and connect it to TP14.</p> <p><b>Requirement:</b> Trunk idle—Meter indicates zero or near zero volts. Trunk busy or K1 relay operated—Meter indicates voltage present.</p>
21	<p>Disconnect both VOM leads.</p>
	<p><b>AR489 Circuit Pack (Clock Circuit)</b></p> <p> <b>The output of the free-running clock (2000 Hz) appears on TP10. If this signal should become unusually high in frequency, the concentrator will ignore all requests for service. This will be indicated by the inability of any station to gain access to the computer.</b></p>
22	<p>Condition VOM to measure 24 volts dc.</p>
23	<p>Connect the negative VOM lead to a good signal ground.</p>
24	<p>Connect the positive VOM lead to TP9.</p>

STEP	PROCEDURE
	<p><b>Requirement:</b> AR489 causing line scanners to be stopped—Meter indicates zero or near zero volts. AR489 CP <b>not</b> causing line scanners to be stopped—Meter indicates voltage present.</p> <p><b>Note:</b> A negative spike will occur if the scanner is stopped for only a short time.</p>
25	<p>Disconnect positive VOM lead and connect it to TP10.</p> <p><b>Requirement:</b> Meter indicates approximately 3 volts.</p>
26	<p>Disconnect positive VOM lead and connect it to TP11.</p> <p><b>Requirement:</b> AR489 CP causing line scanners to be stopped—Meter indicates approximately 0 or 6 volts. AR489 CP <b>not</b> causing line scanners to be stopped—Meter indicates approximately 3 volts.</p> <p><b>Note:</b> A spike will occur if the scanner is stopped for only a short time.</p>
27	<p>Disconnect positive VOM lead and connect it to TP13.</p> <p><b>Requirement:</b> AR489 CP has not detected a line requesting service or service request has been detected and served immediately—Meter indicates approximately 1 volt. A station is camped-on to one trunk group—Meter indicates approximately 8 volts. Stations are camped-on to both trunk groups—Meter indicates approximately 12 volts.</p> <p><b>Note:</b> A spike occurs when the request is served immediately.</p>
28	<p>Disconnect positive VOM lead and connect it to TP14.</p> <p><b>Requirement:</b> Meter indicates zero or near zero volts. Each time a connection is attempted, a positive spike is shown on the meter.</p>
29	<p>Connect positive VOM lead to TP12.</p> <p><b>Requirement:</b> Meter indicates 18 to 24 volts. Each time a connection is attempted, a negative spike is shown on the meter.</p>
30	<p>Disconnect both VOM leads.</p> <p><b>AR490 Circuit Pack (Alarms—Registers Circuit)</b></p>
31	<p>Condition VOM to measure 24 volts dc.</p>
32	<p>Connect negative VOM lead to a good signal ground.</p>
33	<p>Connect positive VOM lead to TP1.</p> <p><b>Requirement:</b> Meter indicates approximately 3 volts.</p>
34	<p>Disconnect positive VOM lead and connect it to TP2.</p>

STEP	PROCEDURE
35	<p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p> <p>Disconnect positive VOM lead and connect it to TP6.</p>
	<p><b>Requirement:</b> No AR488 trunks idle—Meter indicates approximately 1 volt. AR488 trunks idle—Meter indicates negative voltage present.</p>
36	<p>Disconnect positive VOM lead and connect it to TP7.</p> <p><b>Requirement:</b> No AR382 trunks idle—Meter indicates approximately 1 volt. AR382 trunks idle—Meter indicates negative voltage present.</p>
37	<p>Disconnect both VOM leads and connect positive lead to a good signal ground and the negative lead to TP5.</p> <p><b>Requirement:</b> Meter indicates 22 to 26 volts.</p>
38	<p>Disconnect both VOM leads.</p> <p><b>AR383 Circuit Pack (Dual Access Line Scanner Circuit)</b></p>
39	<p>Condition VOM to measure 24 volts dc.</p>
40	<p>Connect negative VOM lead to a good signal ground.</p>
41	<p>Connect positive VOM lead to TP1.</p> <p><b>Requirement:</b> Line scanner A scanning—Meter indicates approximately 3.5 volts. Line scanner A stopped—Meter indicates approximately 4.5 volts.</p> <p><b>Note:</b> A spike will occur if the scanner is stopped for only a short time.</p>
42	<p>Disconnect positive VOM lead and connect it to TP2.</p> <p><b>Requirement:</b> Line scanner A stopped on lines 1 through 64—Meter indicates voltage present. Line scanner A stopped on lines 65 through 128—Meter indicates zero or near zero volts. Line scanner A running—Meter fluctuates between 2 and 4 volts.</p>
43	<p>Disconnect positive VOM lead and connect it to TP3.</p> <p><b>Requirement:</b> Meter indicates 2.5 volts.</p> <p><b>Note:</b> A spike will occur if the scanner is stopped for only a short time.</p>
44	<p>Disconnect positive VOM lead and connect it to TP4.</p> <p><b>Requirement:</b> Line scanner A or B stopped on lines 1, 9, 17, 25, 33, 41, 49, 57, 65, 73, 81, 89, 97, 105, 113, or 121—Meter indicates voltage present. Otherwise—Meter indicates zero or near zero volts.</p>

STEP	PROCEDURE
45	<p>Disconnect positive VOM lead and connect it to TP5.</p> <p><b>Requirement:</b> Same as Step 9.</p>
46	<p>Disconnect positive VOM lead and connect it to TP10.</p> <p><b>Requirement:</b> Same as Step 43.</p>
47	<p>Disconnect positive VOM lead and connect it to TP11.</p> <p><b>Requirement:</b> Line scanner A or B stopped on lines 1 through 8—Meter indicates voltage present. Otherwise—Meter indicates zero or near zero volts.</p> <p><b>Note:</b> A positive spike occurs if scanner stops on lines 1 through 8 for only a short time.</p>
48	<p>Disconnect positive VOM lead and connect it to TP12.</p> <p><b>Requirement:</b> Same as Step 43.</p>
49	<p>Disconnect positive VOM lead and connect it to TP13.</p> <p><b>Requirement:</b> Line scanner B scanning—Meter indicates approximately 3.5 volts. Line scanner B stopped—Meter indicates approximately 4.5 volts.</p> <p><b>Note:</b> A spike occurs if scanner is stopped for only a short time.</p>
50	<p>Disconnect positive VOM lead and connect it to TP14.</p> <p><b>Requirement:</b> Line scanner B stopped on lines 1 through 64—Meter indicates voltage present. Line scanner B stopped on Lines 65 through 128—Meter indicates zero or near zero volts. Line scanner B running—Meter fluctuates between 2 and 4 volts.</p>
51	<p>Disconnect both VOM leads.</p> <p><b>AR376 Circuit Pack (Dual Access Trunk Scanner)</b></p>
52	<p>Condition VOM to measure 24 volts dc.</p>
53	<p>Connect negative VOM lead to a good signal ground.</p>
54	<p>Connect positive VOM lead to TP1.</p> <p><b>Requirement:</b> Trunk scanner A stopped on trunks 1 through 16—Meter indicates approximately 4.5 volts. Trunk scanner A stopped on trunks 17 through 32—Meter indicates zero or near zero volts. Trunk scanner A not stopped—Meter indicates approximately 2.5 volts.</p>
55	<p>Disconnect positive VOM lead and connect it to TP2.</p> <p><b>Requirement:</b> Trunk scanner B stopped—Meter indicates approximately 4.5 volts. Trunk scanner B not stopped—Meter indicates approximately 2.5 volts.</p>

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56	<p>Disconnect positive VOM lead and connect it to TP6.</p> <p><b>Requirement:</b> Trunk scanner A stopped on trunk 1, 9, 17, or 25—Meter indicates voltage present. Trunk scanner A running or stopped on any other trunk—Meter indicates less than 1.5 volts.</p>
57	<p>Disconnect positive VOM lead and connect it to TP7.</p> <p><b>Requirement:</b> Trunk scanner A stopped on trunk 1 through 8—Meter indicates voltage present. Otherwise—Meter indicates 1.5 volts or less.</p>
58	<p>Disconnect positive VOM lead and connect it to TP8.</p> <p><b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative spike may appear every time a connection is made to an AR488 trunk).</p>
59	<p>Disconnect positive VOM lead and connect it to TP9.</p> <p><b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative spike may appear every time a manual test connection is attempted to an AR488 trunk).</p>
60	<p>Disconnect positive VOM lead and connect it to TP10.</p> <p><b>Requirement:</b> Trunk scanner B stopped on trunks 17 through 24—Meter indicates voltage present. Otherwise—Meter indicates 1.5 volts or less.</p>
61	<p>Disconnect positive VOM lead and connect it to TP11.</p> <p><b>Requirement:</b> Trunk scanner B stopped on trunks 1, 9, 17, or 25—Meter indicates voltage present. Otherwise—Meter indicates 1.5 volts or less.</p>
62	<p>Disconnect positive VOM lead and connect it to TP13.</p> <p><b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative spike may appear every time a manual test connection is attempted to an AR382 trunk).</p>
63	<p>Disconnect positive VOM lead and connect it to TP14.</p> <p><b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative spike may appear every time a connection is made to an AR382 trunk).</p>
64	<p>Disconnect both VOM leads.</p> <p><b>AR597 Circuit Pack (Camp-On Generator)</b></p>
65	<p>Condition VOM to measure 24 volts dc.</p>
66	<p>Connect negative VOM lead to a good signal ground.</p>
67	<p>Connect positive VOM lead to TP1.</p>

STEP	PROCEDURE
	<b>Requirement:</b> Meter indicates zero or near zero volts (on a group B connection attempt a voltage spike will appear).
68	Disconnect positive VOM lead and connect it to TP3.
	<b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative voltage spike appears whenever the concentrator attempts to make a connection).
69	Disconnect positive VOM lead and connect it to TP5.
	<b>Requirement:</b> Meter indicates zero or near zero volts (a positive voltage spike appears whenever the concentrator attempts to make a connection).
70	Disconnect positive VOM lead and connect it to TP7.
	<b>Requirement:</b> Meter indicates approximately 4.5 volts (on a group B connection attempt a negative voltage spike will occur).
71	Disconnect positive VOM lead and connect it to TP8.
	<b>Requirement:</b> Meter indicates less than 1 volt (a positive voltage spike may appear about every 3 seconds).
72	Disconnect positive VOM lead and connect it to TP10.
	<b>Requirement:</b> Meter indicates approximately 4.5 volts (a negative voltage spike may appear every 3 seconds).
73	Disconnect both VOM leads.
	<b>AR381 Circuit Pack (DC/DC Converter)</b>
74	Condition VOM to measure 4.5 volts dc.
75	Connect negative VOM lead to a good signal ground.
76	Connect positive VOM lead to TP14.
	<b>Requirement:</b> Meter indicates 4.5 volts.
77	Disconnect both VOM leads.
	<b>AR377 Circuit Pack (Dual Access Control Circuit)</b>
78	Condition VOM to measure 24 volts dc.
79	Connect negative VOM lead to a good signal ground.
80	Connect positive VOM lead to TP1.

STEP	PROCEDURE
81	<p><b>Requirement:</b> No AR488 trunks idle—Meter indicates voltage present. AR488 trunks idle—Meter indicates less than 1.5 volts.</p> <p>Disconnect positive VOM lead and connect it to TP2.</p>
82	<p><b>Requirement:</b> No AR382 trunks idle—Meter indicates voltage present. AR382 trunks idle—Meter indicates less than 1.5 volts.</p> <p>Disconnect positive VOM lead and connect it to TP4.</p>
83	<p><b>Requirement:</b> No service requests to trunk group B—Meter indicates zero or near zero volts. A station is camped-on to trunk group B—Meter indicates approximately 1.5 volts. (A positive spike may appear every time a connection is made to trunk group B).</p> <p>Disconnect positive VOM lead and connect it to TP9.</p>
84	<p><b>Requirement:</b> No service requests to trunk group A—Meter indicates zero or near zero volts. A station is camped-on to trunk group A—Meter indicates approximately 1.5 volts.</p> <p><b>Note:</b> A positive spike may appear everytime a connection is made to trunk group A.</p> <p>Disconnect positive VOM lead and connect it to TP12.</p>
85	<p><b>Requirement:</b> Meter indicates between 2 and 3 volts (a voltage spike may appear occasionally).</p> <p>End of test; disconnect both VOM leads.</p>
<p><b>Test E—Repeat Trunk Test</b></p>	
1	<p>Perform Steps 1 through 8 of Test A.</p>
2	<p>Operate switch on DAS 803E1 to the TRK HOLD position.</p>
3	<p>Disconnect the DAS 803E1 LINE CORD from the line circuit (AR366).</p>
4	<p>Locate the line circuit of the next line to be tested and repeat Steps 5, 7, and 8 of Test A.</p>
5	<p>Repeat Steps 2 through 4 of this test until all lines to be tested with this trunk have been tested.</p>
6	<p>End of test; operate switch on DAS 803E1 to the OFF position and disconnect the DAS 803E1 and AR464 test cords (LINE CORD and TRUNK CORD) from the line and trunk circuits.</p>
<p> <b><i>It is important to disconnect the test cords when testing is completed, because as long as they are connected, the trunk will appear busy to the concentrator.</i></b></p>	