

DATA SET 401B
RECEIVER
TEST PROCEDURE

1. GENERAL

1.01 This section provides test procedures for Data Set 401B. The tests are to be made at time of installation and as a means of clearing routine trouble.

1.02 This section is reissued for the following reasons:

- (a) To provide a test with the data test center (DTC) using 914B Data Test Set
- (b) To delete tests for Data Set 401D
- (c) To delete the local test (test without DTC).

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 Before proceeding with the tests in this section, insure that the data loop has been tested and meets requirements as specified in the section entitled Data Systems—DATA-PHONE® Service on Direct Distance Dialing Networks—Test Requirements for Subscriber, Foreign Exchange, and Remote Exchange Lines (314-205-501). Check with the local DTC to verify whether the loop has been tested and whether it meets requirements.

1.04 The telephone portion of the installation should meet standard dc talk, signaling, and supervision requirements.

1.05 A letter a, b, c, etc, added to a step number in Part 3 of this section indicates an action

which may or may not be required, depending upon local conditions. The condition under which a lettered step or series of lettered steps should be made is given in the PROCEDURE column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.06 When test and demonstration calls are made, refer to the section entitled Crediting Charges on Test Calls (010-250-001) for the procedure to be used for crediting calls.

2. TESTS AND EQUIPMENT REQUIRED

2.01 The test to be performed will be determined by the type of test equipment available. Test procedures and the required test equipment are provided in this section as follows:

- Test A—Test with DTC using 901A or 901B Data Test Set and 1011-type handset
- Test B—Test with DTC using 914B Data Test Set and 1011-type handset
- Test C—Test of power outlet ground source using 6A impulse counter.

3. TEST PROCEDURES

3.01 The following procedure tests Data Set 401B using the equipment and services listed in Part 2 of this section.

STEP	PROCEDURE
	Test A
1	Connect data test set to data set interface connector using cables furnished with the data test set.
2	When using 901A Data Test Set, set the SELECTOR switch to 401B, D, F. When using 901B Data Test Set, set the SELECTOR switch to 7. On either test set, set the A TEST and B TEST switches to OFF. Set the UNATT-ATT switch to ATT.
3	Set the 1011-type handset switch to MON. Connect the handset to the tip and ring of the data set telephone line.
4	Call the DTC and request a call to the data line.
5a	If the data set is arranged for unattended operation— Operate the UNATT-ATT switch to UNATT when the station bell rings. Ringing is tripped. Set A TEST switch to position 1. Answer tone (1785 Hz) is heard in the 1011-type handset receiver.
6b	If the data set is arranged for attended operation— Remove the handset from the switchhook and pull up the data key when the station bell rings. Set the A TEST switch to position 1. Answer tone (1785 Hz) is heard in the 1011-type handset receiver.
7b	Set the A TEST switch to position 2. Answer tone is removed.
8	Set the 1011-type handset switch to TALK. Request the DTC to send a frequency of 697 Hz. Set the A TEST switch to 3.
	Note: For proper data set operation, the level of frequencies sent from the DTC must reach the data set at a level of approximately -30 dBm.
9	Operate the 1011-type handset switch to MON. Repetitive alternate bursts of the test frequency and answer tone should be heard in the 1011-type handset.
	Note: The presence of the on-off answer tone indicates that the data relay is furnishing a contact closure in response to the transmitted data frequency. (The 1785-Hz answer tone will be louder than the data frequency).
10	Repeat Steps 8 and 9 for each frequency accepted by the data set under test. The A TEST switch must be set to the proper position for the frequency to be tested. Table A shows the switch positions and frequencies to be tested.
11	After completion of Step 10, set the UNATT-ATT switch to ATT. The data set releases the line, which will then be under control of the telephone set (attended) or will release (unattended).
12	Remove all test connections and restore equipment to normal operating conditions.

TABLE A
DATA SET 401B

A TEST POSITION	FREQUENCY (Hz)
3	697
4	770
5	852
6	941
8	1209
9	1336
10	1477
11	1633

3.02 The following procedure tests Data Set 401B using 914B Data Test Set and the DTC. Test set switches not shown on the test connection diagram (Fig. 1) or not mentioned in text are not required for the test. Lamp indications are not pertinent to this test and may be disregarded.



Before making any test connections, insure that all programming pins are removed from the matrix. Insert only those pins shown in the test connection diagram (Fig. 1).

STEP	PROCEDURE
	Test B
1	Establish test connections as shown in Fig. 1.
2	Program the 914B matrix by inserting shorting pins as shown in Fig. 1.
3	Operate (depress) all A interface selector switches on the 914B. <i>Note:</i> No commercial 60-Hz 120-volt power is required for 914B Data Test Set for this test.
4	Call the DTC and request a call to the data line.
5a	If the data set is arranged for unattended operation— When the bell in the telephone set rings, Set S1 switch to ON. Ringing is tripped.
6a	Set S4 switch to ON. Answer tone (1785 Hz) is heard in the 1011-type handset receiver.
7b	If the data set is arranged for attended operation— When the bell in the telephone set rings, set S1 switch to ON and lift the handset from the switchhook. Ringing is tripped.
8b	Pull up the data set DATA key and set S4 switch to ON. Answer tone (1785 Hz) is heard in the 1011-type handset receiver.
9	Set S4 switch to OFF. Answer tone is removed.
10	Set 1011-type handset switch to TALK, and request the DTC to send a frequency of 697 Hz. Set S2 switch to ON. <i>Note:</i> For proper data set operation, the level of frequencies sent from the DTC must reach the data set at a level of approximately -30 dBm.
11	Set the 1011-type handset switch to MON. Repetitive alternate bursts of the test frequency and answer tone should be heard in the 1011-type handset receiver.

STEP	PROCEDURE
	<p>Note: The presence of the on-off answer tone indicates that the data relay is furnishing a contact closure in response to the transmitted data frequency. (The 1785-Hz answer tone will be louder than the data frequency).</p>
12	Repeat Steps 10 and 11 for frequencies of 770, 852, and 941 Hz to be sent from the DTC.
13	At the 914B, set S2 switch to OFF and S3 switch to ON.
14	Repeat Steps 10 and 11 for frequencies of 1209, 1336, 1477, and 1633 Hz to be sent from the DTC.
15	At the 914B, set S1 switch to OFF.
16a	If the data set is arranged for unattended operation— The data set will release the telephone line.
17b	If the data set is arranged for attended operation— The telephone set will retain control of the telephone line.
18	Remove all test connections, and restore equipment to normal operating conditions.

3.03 The following procedure tests the power outlet ground source of Data Set 401B using the 6A impulse counter.

STEP	PROCEDURE
	<p>Test C</p>
1	Connect the business machine (data terminal equipment) ground to J2 on the 6A impulse counter.
2	Connect the data set ground to J3 on the 6A impulse counter. Note: Do not ground the 6A impulse counter for this test.
3	Set switches on the 6A impulse counter as follows: <ul style="list-style-type: none"> • (S1)—VOICEBAND • (S2)—ADD 30 • (S3)—60 • RESET—0000 (reading on counter).
4	Set timer to 15 MINUTES. If any counts are noted in a 15-minute period, it is an indication that the grounding arrangements are unsatisfactory. Refer to sections in the 460-100-ZZZ layers for method of providing approved grounds.
5	Remove all test connections and restore equipment to normal operating conditions.

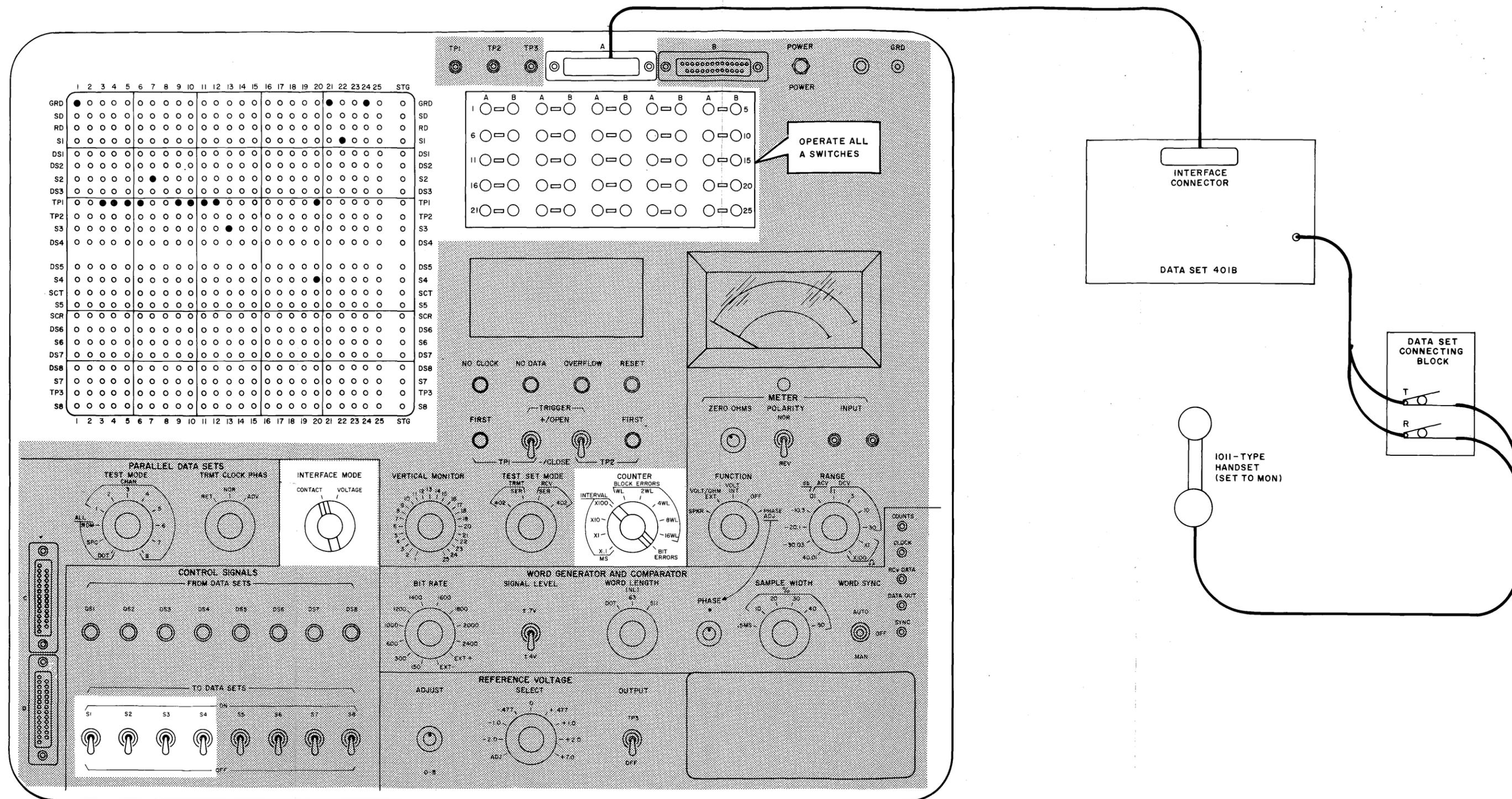


Fig. 1—Test Connection Diagram