

DATA SET 202E-TYPE
TEST PROCEDURES

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Because of extensive revision, change arrows ordinarily used to indicate changes have been omitted.

1.03 Data set models 202E1, E2, E7, and E9 have a rotary dial (X option) and differ in basic features on a modular basis. Their functional equivalents in a TOUCH-TONE® dial version (W option) are 202E10, E11, E12, and E13, respectively. These sets are identical except for the dial mechanism. Features of the different models can be found in the section entitled Data Set 202E-Type, Description and Operation (592-018-100). Information in this section will refer to the rotary dial version only.

1.04 For detailed information concerning Data Set 202E-type, refer to SD- and CD-1D078-01.

1.05 Test information covering DS 202E9 will also pertain to DS 202E8, Manufacture Discontinued, except when stated.

1.06 Before proceeding with any tests of the data set, complete the following:

- (a) Verify with local test center that loop has been tested and meets requirements as specified in Section 314-205-500.
- (b) Check that telephone portion of installation meets standard dc, talk, signaling, and supervision requirements.
- (c) Check that data set strapping options agree with service order.

1.07 If the set fails to meet installation test requirements, replace entire set.

1. GENERAL

1.01 This section contains information covering installation and maintenance test procedures on Data Set (DS) 202E-type. These tests should be carried out during installation and maintenance, if necessary, to restore data set to normal operating condition. Maintenance test procedures are recommended for further trouble analysis on telephone company premises.

1.02 This section is reissued to:

- (a) Add the remote test procedure taken from Section 592-018-100.
- (b) Add the 914B Data Test Set (DTS) to the interface test procedure.
- (c) Add the end-to-end test procedure using 901-, 902-, and 903-type DTS and the 914B DTS.



Take proper steps to ensure that the customer is not billed for test calls. Refer to the section entitled Crediting Charges on Test Calls (010-250-001).

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1.08 If the set meets test requirements:

- (a) Confirm with customer that business machine and associated cords have been checked.
- (b) Check for cord and connector defects.
- (c) Check for intermittent troubles in inside wire, drops, protector, etc.
- (d) Fill out form E-5855 if no troubles are found or if troubles are found in the customer-provided terminal.

2. INSTALLATION TEST PROCEDURES

A. Remote Tests

2.01 The purpose of this test is to check the data frequencies, automatic answer, EIA interface module operation, and reverse-channel sensitivity of DS 202E-type from a telephone company data test center (DTC).

2.02 There is no test equipment required at the data set station to perform the remote test.

2.03 The remote test procedure for DS 202E-type is as follows:

(a) **202E1**—The DTC calls the data station and the call is answered in the normal manner. The attendant of the data set is then instructed to remain off-hook, depress the TST A button, wait approximately one minute, and then depress the TALK button for further instructions. The DTC then instructs the attendant of the data set to remain off-hook, depress the TST B button, wait approximately one minute, and then depress the TALK button. While in the test A mode, the level and frequency of the marking signal are measured. While in the test B mode, the level and frequency of the spacing signal are measured.

(b) **202E2**—The DTC calls the data station and the call is answered in the normal manner. The attendant of the data set is then instructed to remain off-hook, depress the TST A button, wait approximately one minute, and then depress the TALK button. During the one-minute test interval, the level and frequency of the marking and spacing signals are measured and the

sensitivity and bandwidth of the reverse-channel tone detector are determined.

(c) **202E7**—The DTC places a call to the data station and instructs the attendant to depress the TST A button, verify that the TST A button lights, and then depress the TALK button. The attendant will then be instructed to place the handset on-hook and depress the TST A button. After ringing is answered, the attendant will wait approximately one minute and then lift the handset and depress the TALK button. The DTC will then instruct the data set attendant to depress the TST B button and wait approximately one minute before depressing the TALK button. This will terminate the test. With the TST A button on the data set depressed, the DTC receives and measures the level and frequency of either the mark or space signal and checks automatic answer. With the TST B button depressed, the DTC receives and measures the level and frequency of the other data signal.

(d) **202E8**—The DTC places a call to the data station and instructs the attendant to place the handset on-hook and wait for a second call. Upon receiving the second call, the TST A button is depressed thereby lighting the test lamp. The remainder of the test is controlled by the remote test module and is terminated automatically. While the data set is in the test mode, the DTC measures the level and frequency of the mark and space signals, the level and frequency of the answer tone, the sensitivity and bandwidth of the reverse-channel tone detector, and checks automatic answer.

(e) **202E9**—Remote test procedure for DS 202E9 is the same as for the 202E7, with the exception that the TST B button is not used on DS 202E9. While the data set is in the test mode, the DTC measures the level and frequency of the mark and space signals, the level and frequency of the answer tone, and the sensitivity and bandwidth of the reverse-channel tone detector.

B. Interface Test Using 901B Data Test Set

2.04 For detailed information concerning the 901B DTS, refer to the section entitled 901A and 901B Data Test Sets, Identification and Operation (107-100-100).

2.05 The following equipment is required to perform this test:

1—901B DTS

1—Interface test adapter (cover of 901B)

1—KS-16979-L1 volt-ohm-milliammeter (VOM) or equivalent.

Note: For Data Sets 202E1 and E2, omit 2.06.

2.06 Open the captive shorting clip for terminal 19 on the interface test adapter. Strap a connection between TST terminals 9 and 19 of the test adapter.

2.07 Connect the W25A cord of the interface test adapter to the data set interface connector. Connect the W25A cord of the 901B DTS to the mating connector on the interface test adapter.

2.08 Figure 1 is a block diagram of equipment setup for the interface test.

2.09 The following list gives the test steps to follow for each data set model when performing the interface test:

TEST STEPS	DATA SET MODELS
9, 10	202E1 (voltage interface)
11, 12	202E1 (contact interface)
5-8	202E2

1-4,6,7,9,10 202E7

1-10 202E9

2.10 Perform the test by the following steps that pertain to the data set being tested.

Note: All connections from the VOM are to the terminal posts of the 901B DTS.

(1) Set the controls on the 901B DTS as follows:

- A TEST to OFF
- B TEST to position 1
- ATT-UNATT to ATT
- SELECTOR to position 4.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to C
- (c) – probe to A.

Measure 8.2 (± 0.7) volts (negative supply).

(2) Set the controls on the 901B DTS as follows:

- A TEST to OFF
- B TEST to position 2
- ATT-UNATT to ATT.

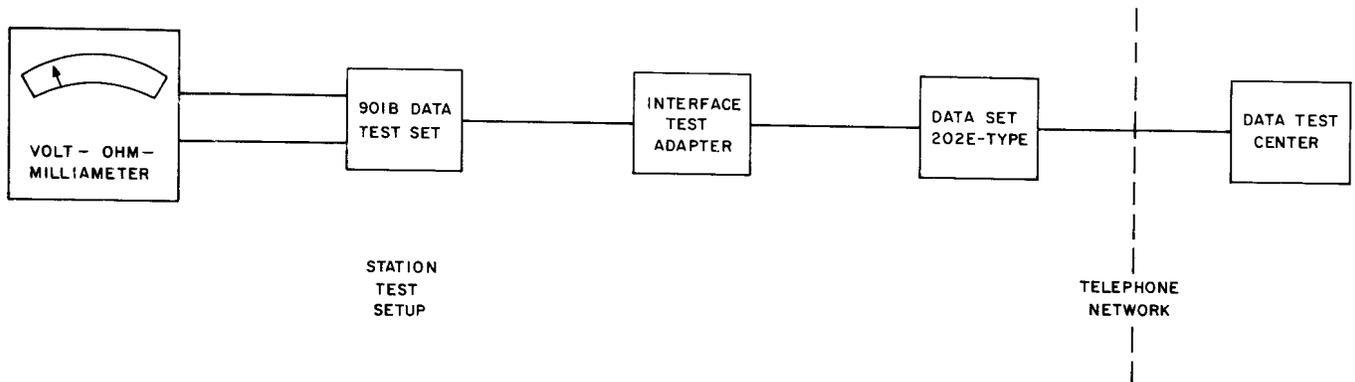


Fig. 1—Interface Test, Block Diagram

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Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to A
- (c) – probe to C.

Measure 7.7 (± 0.7) volts (positive supply).

(3) Set the controls on the 901B DTS as follows:

- A TEST to position 1
- B TEST to OFF
- ATT-UNATT to ATT.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to C
- (c) – probe to A.

Measure 5 volts or greater (data set ready—off).

(4) Set the controls on the 901B DTS as follows:

- A TEST to position 4
- B TEST to OFF
- ATT-UNATT to ATT.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to C
- (c) – probe to A.

Measure 5 volts or greater (clear to send—off).

(5) Set the controls on the 901B DTS as follows:

- A TEST to OFF
- B TEST to OFF
- ATT-UNATT to UNATT.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to C
- (c) – probe to D.

Measure 5 volts or greater (supervisory received data—off).

(6) Set the controls on the 901B DTS as follows:

- A TEST to position 1
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to place a call to the data set and depress AUTO key on data set.

Note: Establish communication with DTC on another line if possible; otherwise, it will be necessary to communicate with the DTC by switching into and out of the talk mode by using the data set keys.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to A
- (c) – probe to C.

Measure 5 volts or greater after incoming call is answered (data set ready—on).

(7) Set the controls on the 901B DTS as follows:

- A TEST to position 4
- B TEST to OFF
- ATT-UNATT to UNATT.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to A
- (c) – probe to C.

Measure 5 volts or greater (clear to send—on).

(8) Set the controls on the 901B DTS as follows:

- A TEST to OFF
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to send 387-Hz signal for 30 seconds.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to D
- (c) — probe to C.

Measure 5 volts or greater (supervisory received data—on).

(9) Set the controls on the 901B DTS as follows:

- A TEST to position 6
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to check for a mark (1300-Hz) signal.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to C
- (c) — probe to TRANSMIT DATA.

Measure 5 volts or greater (transmitted data—off).

(10) Set the controls on the 901B DTS as follows:

- A TEST to 7
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to check for a space (2100-Hz) signal.

Connect the VOM as follows:

- (a) Scale switch to DCV—30
- (b) + probe to TRANSMIT DATA
- (c) — probe to C.

Measure 5 volts or greater (transmitted data—on).

(11) Set the controls on the 901B DTS as follows:

- A TEST to position 6
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to check for a mark (1375-Hz) signal.

Connect the VOM as follows:

- (a) Scale switch to OHMS X 1
- (b) + probe to C
- (c) — probe to B.

Measure no more than 3 ohms (transmitted data—closed).

(12) Set the controls on the 901B DTS as follows:

- A TEST to position 7
- B TEST to OFF
- ATT-UNATT to UNATT.

Request DTC to check for a space (2025-Hz) signal.

Connect the VOM as follows:

- (a) Scale switch to OHMS X 1K
- (b) + probe to C
- (c) — probe to B.

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Measure more than 300,000 ohms (transmitted data—open).

C. Interface Test Using 914B Data Test Set

- 2.10 The purpose of this test is to check the interface signals supplied to the customer and the functional operation of the data set.
- 2.11 The 914B DTS is required at the station to perform this test.
- 2.12 Because of the differences in data set models, some models require additional or different test procedures than others.
- 2.13 Plug the power cord of the 914B DTS into a 117-volt ac outlet, connect the interface connector cable from the rear of the data set to the interface jack A on the 914B DTS, and depress all A interface selector switches.
- 2.14 The following list gives the test steps to follow for each data set model when performing the interface test:

TEST STEPS	DATA SET MODEL
1,2	202E1 (voltage interface)
3,4	202E1 (contact interface)
1,2,5,6,8	202E2
1,2,5,6,7	202E7
1,2,5-8	202E9

2.15 Set up the matrix as in Fig. 2 and perform the interface test per the following steps that are required for the data set being tested:

- (1) Set the controls on the 914B DTS as follows:
 - (a) INTERFACE MODE to VOLTAGE
 - (b) TEST SET MODE to TRMT SER
 - (c) Switch S1 to OFF
 - (d) Switch S2 to ON
 - (e) RANGE switch to db—10

(f) FUNCTION switch to SPKR.

Insert meter leads in METER INPUT jacks and connect one lead to a convenient ground and the other lead to interface selector switch A-2. Depress POWER button on the 914B. Call the DTC in the normal manner and request the DTC to check for a 1300-Hz (mark) signal. Depress DATA key on DS 202E and leave handset off-hook. A 1300-Hz signal should be heard on the 914B speaker.

Note: The handset of DS 202E-type must be kept off-hook during data transmission to prevent terminating the call.

After 15 seconds, depress TALK key and confirm that DTC received the 1300-Hz signal.

(2) Operate switch S1 to the ON position and request DTC to check for a 2100-Hz (space) signal. Depress DATA key on the data set and leave the handset off-hook. A 2100-Hz signal should be heard on the speaker. After 15 seconds, depress TALK key and confirm that DTC received the 2100-Hz signal. Move FUNCTION switch to OFF and remove meter input leads.

(3) Set the controls on the 914B DTS as follows:

- (a) INTERFACE MODE to CONTACT
- (b) TEST SET MODE to TRMT SER
- (c) Switch S1 to OFF
- (d) Switch S2 to ON
- (e) RANGE switch to db—10
- (f) FUNCTION switch to SPKR.

Insert meter leads in METER INPUT jacks and connect one lead to a convenient ground and the other lead to interface selector switch A-2. Depress POWER button on the 914B DTS. Call the DTC in the normal manner and request the DTC to check for a 2025-Hz (space) signal. Depress the DATA key on the data set and leave the handset off-hook. A 2025-Hz signal should be heard on the speaker. After 15 seconds, depress TALK key and confirm that DTC received the 2025-Hz signal.

(4) Operate switch S1 to the ON position and request DTC to check for a 1375-Hz (mark) signal. Depress the DATA key on the data set and leave the handset off-hook. A 1375-Hz signal should be heard on the speaker. After 15 seconds, depress TALK key and confirm that DTC received the 1375-Hz signal. Move FUNCTION switch to OFF and remove meter input leads.

(5) Set the controls on the 914B DTS as follows:

- (a) METER POLARITY to NOR
- (b) METER RANGE to DCV—10
- (c) VERTICAL MONITOR to position 9
- (d) METER FUNCTION to VOLT INT.

Note: Every time the VERTICAL MONITOR switch position is changed, place METER FUNCTION switch to the OFF position first to avoid meter damage.

Measure +7.7 (± 0.7) volts direct current.

(6) Set the controls on the 914B DTS as follows:

- (a) METER FUNCTION to OFF
- (b) METER POLARITY to REV
- (c) VERTICAL MONITOR to position 10
- (d) METER RANGE to DCV—10
- (e) METER FUNCTION to VOLT INT.

Measure -8.2 (± 0.7) volts direct current.

(7) Set the controls on the 914B DTS as follows:

- (a) INTERFACE MODE to VOLTAGE
- (b) TEST SET MODE to TRMT SER
- (c) Switch S2 to OFF.

Depress POWER button and operate switch S2 to the ON position. Lamps DS1 and DS2 should light.

(8) Set the controls on the 914B DTS as follows:

- (a) INTERFACE MODE to VOLTAGE
- (b) TEST SET MODE to TRMT SER
- (c) Operate switch S1 to OFF.

Note: For DS 202E9, operate switch S2 to the ON position.

Depress the POWER button on the 914B DTS. Request the DTC to send a 387-Hz signal for 30 seconds. Depress the DATA key on the data set, leaving the handset off-hook, and operate switch S1 to the ON position. Lamp DS3 should light while the 387-Hz signal is being received. After approximately 30 seconds, depress the TALK key on the data set, notify DTC of the results, and terminate the call.

3. MAINTENANCE TEST PROCEDURES

A. End-to-End Tests Using 901-, 902-, and 903-Type Data Test Sets

3.01 The purpose of this test is to check the transmitter of DS 202E-type and the condition of the connecting facilities.

3.02 The following test equipment is required at the transmitting station:

- 901-type DTS (for DS 202E1 and E2)
- 901-type DTS interface test adapter (for DS 202E7 and E9)
- 903-type DTS.

For information concerning equipment setup at the receiving station, refer to the Bell System Practice dealing with the data set being used as the receiver.

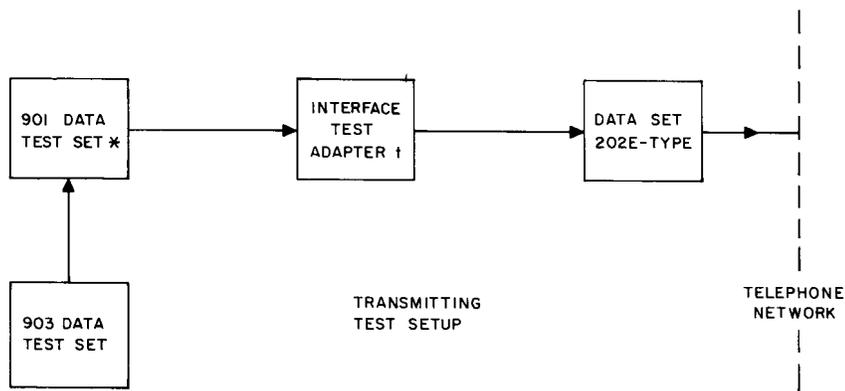
Note: This test can be carried out with the DTC at the receiving end if a compatible data set station is not available.

3.03 Figure 3 is a block diagram showing equipment setup at the transmitting station.

3.04 The transmitting data set is driven by a 903-type DTS (63-bit word generator). At the receiving end, the data signals are fed to a

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	STG		
GRD	o	o	o	o	o	o	●	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	GRD
SD	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	SD
RD	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	RD
SI	o	●	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	SI
DS1	o	o	o	o	o	o	●	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS1
DS2	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS2
S2	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S2
DS3	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS3
TP1	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	TP1
TP2	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	TP2
S3	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S3
DS4	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS4
DS5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS5
S4	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S4
SCT	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	SCT
S5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S5
SCR	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	SCR
DS6	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS6
S6	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S6
DS7	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS7
DS8	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	DS8
S7	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S7
TP3	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	TP3
S8	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	S8

Fig. 2—914B DTS Matrix Board



* OMIT AND CONNECT 903 DTS TO INTERFACE TEST ADAPTER ON DS 202E7 AND E9.
 † OMIT AND CONNECT 901 DTS TO DS 202E ON DS 202E1 AND E2.

Fig. 3—Transmitting Station, End-to-End Test

902 DTS (data comparator). Also at the receiving end, a 903-type DTS delivers an identical signal to the 902 test set. The 902 test set synchronizes these two signals, measures the peak distortion present in the system, and counts the number of errors in the received data.

3.05 The test equipment at the transmitting end is set up as follows when testing Data Set 202E1 or E2:

● 901-type DTS:

SELECTOR switch to position 4 if 901B DTS is used

SELECTOR switch to 202A if 901A DTS is used

A TEST to OFF

Toggle to UNATT

B TEST to OFF.

● 903-type DTS:

TRIGGER to +

RANDOM-DOT to RANDOM

BIT RATE—As close to business machine bit rate as possible, but not lower.

3.06 The test equipment at the transmitting end is set up as follows when testing DS 202E7 or E9:

● Interface Test Adapter:

Connect a patch cord from TST 9 to EQ 20, with both captive shorting clips in the closed position.

● 903-type DTS:

TRIGGER to +

RANDOM-DOT to RANDOM

BIT RATE—As close to business machine bit rate as possible, but not lower.

3.07 Make the following connections between data set and data test sets when testing Data Sets 202E1 and E2:

(1) Run two leads from the SIGNAL OUT terminals of the 903 DTS to TRANSMIT DATA terminals of the 901 DTS (terminals are connected red to red and black to black).

(2) Connect the 901 DTS to the connector of DS 202E with the cord provided (in place of business machine cord).

(3) Connect the power cord of the 903 DTS to a 117-volt ac outlet and turn power switch to ON.

3.08 Make the following connections between data set and test equipment when testing DS 202E7 or E9:

(1) Run two leads from the SIGNAL OUT terminals of the 903 DTS to the interface test adapter. Connect red and black terminals on the 903 DTS to EQ 2 and EQ 7 on the interface test adapter, respectively.

(2) Connect the interface test adapter connection cord to the rear of the data set (in place of business machine cord).

(3) Connect the power cord of the 903 DTS to a 117-volt ac outlet and turn power switch to ON.

3.09 Complete end-to-end tests will involve making two 15-minute and ten 1-minute test calls. Establish voice communication in the manner normally used by the customer when placing data calls, eg:

● DDD

● Attendant or operator-assisted

● Private line.

3.10 Place a call to the receiving station and if customer use of the service is to be during normal business day, all test calls should be placed during the busy hours. If, however, the customer use of the service is not during the normal business day, final end-to-end tests should be made during hours customer uses the service most.

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3.11 During the 15-minute calls, the receiving station should make a minute-by-minute count of errors.

3.12 If requirements are not met on first series of following tests, the test results, together with any other pertinent information, should be referred to the plant member of the project team for analysis and investigation.

Test Call Procedures

3.13 Voice communication is established between the two stations in the normal telephone manner. The transmitter should be connected to the line briefly before initial call begins as follows:

- (1) Depress the DATA key on DS 202E-type to shift to data mode, leaving handset off-hook.
- (2) Momentarily depress START switch of 903 test set. Upon release of the switch, the receiving station should hear data being transmitted.
- (3) After a prearranged time interval (approximately 15 seconds), shift back to the talk mode by depressing TALK key.
- (4) If the receiving station reports data being received, then repeat the action by shifting to the data mode and momentarily depress START switch on the 903 DTS.

Test Call Requirements

3.14 During 15-minute calls, the errors should be counted by the receiving station in 1-minute test periods:

- Disregard the two test periods with highest number of errors.
- There should be more than eight errors in the remaining thirteen 1-minute test periods.

3.15 *For 1-Minute Calls:*

- No less than eight out of ten calls should be error-free.
- The average distortion of 20 percent must not be exceeded in nine out of ten calls.

Note: The above limits are in no way guaranteed error rates. Except for the occasional extraordinary call, the error rates experienced by the customer should be considerably less.

B. End-to-End Test Using 914B Data Test Set

3.16 The purpose of this test is to check the transmitter of DS 202E-type and the condition of the connecting facilities.

3.17 The 914B DTS is required at the station.

3.18 Perform the following steps at the transmitting end using the 914B DTS:

- (1) TEST SET MODE to TRMT SER.
- (2) BIT RATE—As close as possible to, but not lower than, the business machine bit rate.
- (3) SIGNAL LEVEL to ± 4 V.
- (4) WORD LENGTH to 63.
- (5) RANGE switch to db—10
- (6) FUNCTION switch to SPKR
- (7) Insert meter leads in METER INPUT jacks and connect one lead to a convenient ground and the other lead to interface selector switch A-2.
- (8) Matrix set up as in Fig. 2 except 2 by SD is substituted for 2 by S1.
- (9) INTERFACE MODE to VOLTAGE (to CONTACT if DS 202E1, with contact interface, is tested).
- (10) Switch S2 to ON.
- (11) Connect the 914B DTS connector cord from the rear of the data set to interface jack A on the test set.
- (12) Plug the 914B DTS into a 117-volt ac outlet. Turn the 914B DTS on by depressing the POWER button.

3.19 Connect the test equipment at the receiving end according to the Bell System Practice concerning the data set being used as a receiver.

Note: This test can be carried out with the DTC at the receiving end if a compatible data set station is not available.

3.20 Establish voice communication between the two stations in the normal manner and depress DATA key on DS 202E-type to shift to data mode, at which time the receiving and transmitting stations should hear data being transmitted.

3.21 After a prearranged interval, shift back to talk mode by depressing TALK key.

3.22 If receiving station reports data being received, switch to data mode.

Test Call Requirements

3.23 During 15-minute calls, errors should be counted by the receiving station in 1-minute test periods:

- Disregard the two test periods with highest number of errors.

- There should be no more than eight errors in the remaining thirteen 1-minute test periods.

3.24 For 1-minute calls, eight out of ten calls should be error-free.

Note: The above limits are in no way guaranteed error rates. Except for the occasional extraordinary call, the error rates experienced by the customer should be considerably less.

3.25 Return data set to normal operating conditions. Remove all temporarily installed straps and plugs.