NO. 1 ELECTRONIC SWITCHING SYSTEM ADF

HALF-DUPLEX—150 WORD PER MINUTE DATA STATION

USING 4-ROW TELETYPEWRITERS

TEST PROCEDURES

1. GENERAL

1.01 This section describes the test procedures and test requirements for a half-duplex, 150-word per minute data station incorporating a model 37 receive only (RO) teletypewriter (TTY) and used with the No. 1 Electronic Switching System Arranged with Data Features (No. 1 ESS ADF).

1.02 The testing of the data station depends on a specific format. Any deviation from specific format may condition the data station for false indications or operations. If such a condition occurs, momentarily disconnect the power cord to the data station. This will return the data station to the idle condition.

Test procedures of the data station are controlled by the serving test center (STC) or the control serving test center (CSTC).

1.03 Both installation and maintenance test procedures are given. Since some of the tests are identical for installation and maintenance, each test is presented only once. For best results, final range finder adjustments should be made with the STC or CSTC.

1.04 The installation test sequence consists of the following tests:

- Local Test

- Message Reception Test

- Polling Responses

- Remote Test of Data Auxiliary Set (DAS) 820B4 (with Data Set 108A only)

- Customer Verification

1.05 The maintenance test sequence will be determined by the nature of the trouble being investigated. In general, the station is tested remotely by the STC or CSTC to determine the nature of trouble. Any or all of the following tests may be used in investigating the trouble.

- Local Test

- Remote Test of DAS 820B4 With Specified Conditions (with Data Set 108A only)

- Message Reception Test

- Polling Responses

- Remote Test of Data Set 108A-Type

- Continuity Test of DAS 804R3

2. INSTALLATION TESTS

2.01 The installation tests are designed to verify that the data station has been assembled properly and is operative with the No. 1 ESS ADF System.

2.02 The test procedure (Part 4) should be performed in the sequence described in 1.04.

Transmission from the RO data station to the STC or CSTC can be accomplished only by loop-back testing; the RO CANNOT originate traffic. Remote loop-back testing is possible only with Data Set 108A-type (not possible with Data Set 109A-type).

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3. MAINTENANCE TESTS

3.01 The maintenance test procedure should be in accordance with the maintenance philosophy given in the section entitled No. 1 Electronic Switching System ADF—Half-Duplex—150 Word Per Minute Data Station—Using 4-Row Teletypewriters—Maintenance (580-301-302).

3.02 Maintenance procedures for the TTYs should be in accordance with the section entitled Model 37 Teletypewriters—Field Maintenance Practice (579-400-350).

4. TEST PROCEDURE

Local Test

4.01 The following test should be performed to verify that the data station functions properly. Tests with the STC or CSTC should not be attempted unless the data station is operative.

(1) Verify that the AUD OFF lamp is extinguished. (To extinguish, operate the AUD OFF key.)

(2) Call STC or CSTC and request that the data station leg be connected to a test hub.

(3) Remove the paper supply. PAPER LOW lamp should light and buzzer should sound.

(4) Operate the AUD OFF key. The AUD OFF lamp should light and buzzer should be silenced.

(5) Replace the paper supply. PAPER LOW lamp should remain lighted.

(6) Operate the PAPER LOW key. PAPER LOW lamp should extinguish.

(7) Operate the OUT OF SVC key. OUT OF SVC lamp should light.

(8) Operate the OUT OF SVC key. OUT OF SVC lamp should extinguish.

Remote Test of DAS 820B4

4.02 A remote test of the data station is requested by calling the STC or CSTC. The data station must furnish the station polling code (SPC), call enquiry code (CEC), and station identity code (SIC) to the STC or CSTC. Test of the data station is then under control of the STC or CSTC.

4.03 When the STC or CSTC places the station controller in the test mode, the OUT OF SVC lamp will light. During the test, the REC lamp will light. When all lamps are extinguished, the remote test has been completed.

Message Reception Test

4.04 This test permits the data station to check the range finder adjustment of the TTY and the parity circuits.

(1) Call the STC or CSTC and request a message reception test.

(2) The STC or CSTC will select the data station as a receiver and will send the test message.

(3) While receiving the test message, take a range on the TTY.

Note 1: Range should meet the requirements specified in the section entitled Teletypewriter Station Tests—Orientation And Distortion Tests (570-006-500).

Note 2: The STC or CSTC can be alerted when ranging has been completed by momentarily operating the R switch of the 820B4 to the MTCE position. This will cause the data signals to be looped back to the STC or CSTC.

(4) The STC or CSTC will roll call the data station. The MSG REC lamp may light if a lost character is detected during the range adjustment.

Note: If the MSG REC lamp is lighted, momentarily operate the MSG REC key. The MSG REC lamp should extinguish.

(5) Request the STC or CSTC to transmit a nonparity test sentence.

(6) The STC or CSTC will select the data station as a receiver and send the test message with the exception that the test message will **not** contain even parity.

(7) The test message will be received as follows:

_H___U__K_B___N_____UMP_D__V____H___AZY_
        D_G'S_BA__K_____S_ND_NG

(8) The ERROR lamp should light.

(9) At the end of the test message, the MSG REC lamp should light if the station response to roll call was negative (NAK).

(10) Operate the ERROR key. ERROR lamp should extinguish.

(11) Operate the MSG REC key. MSG REC lamp should extinguish.

Polling Responses

4.05 Polling response tests are initiated from the STC for testing two conditions:

(1) For the station READY test—the station is in service (OUT OF SVC lamp extinguished) and the polling response is CAN.

(2) For the station NOT READY test—the station is out of service (OUT OF SVC lamp lighted) and the polling response again is CAN. The STC then performs a call-in (ENQ-CEC) and the CALL lamp lights. In this condition, the station response is NAK when the STC again polls the station.

Remote Test of Data Set 108A-Type

4.06 The remote test of the data set requires gaining access to DAS 820B4. To gain access, refer to Section 580-301-302.

(1) Using a nearby telephone, call the STC or CSTC and request a remote test of Data Set 108A-type.

(2) When requested, operate the R switch on DAS 820B4 to the MTCE position.

(3) The STC or CSTC will perform the remote test of the data set.

(4) When the remote test is completed, restore the R switch to the NORM position.

Continuity Test of DAS 804R3

4.07 This test checks the continuity of the keys and cabling associated with DAS 804R3.

Remove the power cord to the customer-provided ac receptacle before performing this test.

(1) Gain access to DAS 820B4. Refer to Part 2 of Section 580-301-302.

(2) Disconnect the N plug from DAS 820B4.

(3) Connect a KS-16786 L3 connector (to be ordered separately) to the N plug.

(4) Using a KS-14510 L1 volt-ohm-milliammeter, perform the continuity test shown in Table A by using the pins of the KS-16786 L3 connector to make the connections.

TABLE A

CONTINUITY TEST OF DAS 804R3

STEP	KEY	POSI-TION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE +	CONNECT PROBE −	READING OHMS
1	—	—		3	12	50 ±15
2	—	—		3	2	50 ±15
3	—	—		3	4	50 ±15
4	—	—		3	18	50 ±15
5	—	—		3	16	50 ±15
6	—	—		3	26	50 ±15
7	AUD	RLS		3	8	∞
8	OFF	OPR		3	8	250 ±25
9	AUD	OPR		25	8	∞
10	OFF	RLS		25	8	0 to 5
11	OUT OF SVC	RLS	RX10	13	8	0 to 5
12		OPR		13	8	∞
13		—		9	8	0 to 5
14		—		6	8	0 to 5
15		—		19	8	0 to 5
16		—		21	8	0 to 5
17	PAPER LOW	RLS		14	23	0 to 5
18		OPR		14	23	∞
19	ERROR	RLS		14	17	0 to 5
20		OPR		14	17	∞
21	MSG REC	RLS		14	15	0 to 5
22		OPR		14	15	∞
23	—	—		30	LDSPKR YEL-OR	0 to 5
24	—	—		27	LDSPKR YEL-BL	0 to 5
25				36	FRAME VIO-SL	0 to 5