TESTING DATA SET 202S
FROM FIELD LOCATIONS
USING J1P005 AUTOMATIC DATA TEST SYSTEM (ADTS)

CONTENTS PAGE

1. GENERAL

1.01 This section provides self test and field test information for data set (DS) 202S. Remote and error run tests are provided using the J1P005 ADTS. These procedures are to be used when testing DS 202S on an initial installation or during a maintenance visit.

1.02 When this section is reissued, the reason for reissue will be presented in this paragraph.

1.03 The self test requires no external test equipment, and is included here for completeness.

1.04 This section contains information for testing DS 202S by means of DIVA (Digital Inquiry Voice Answer). DIVA requires a TOUCH-TONE® dial telephone, or a rotary dial telephone used with a KS-21799-L1 (or equivalent) portable TOUCH-TONE pad.

1.05 In this section, the term "user" refers to telephone company (telco) personnel at the data set responsible for interfacing the data set with the ADTS.

1.06 Test circuitry built into DS 202S permits a local self-test to be performed. Additional tests require the use of external test equipment such as a 921A data test set (DTS) and/or the ADTS.

1.07 Detailed self test procedures are presented in paragraphs 4.02 and 4.03.

1.08 General ADTS test information is presented in paragraphs 5.01 through 5.26. Detailed ADTS test procedures are presented in paragraphs 5.27 through 5.67.

2. INSTALLATION TESTS

2.01 This part provides the sequence in which tests are to be performed following installation of the data set. This test sequence (Fig. 1) provides a method of verifying that the installation is satisfactory. Before proceeding with the tests, verify that the local loop meets the requirements specified in Section 314-205-501.

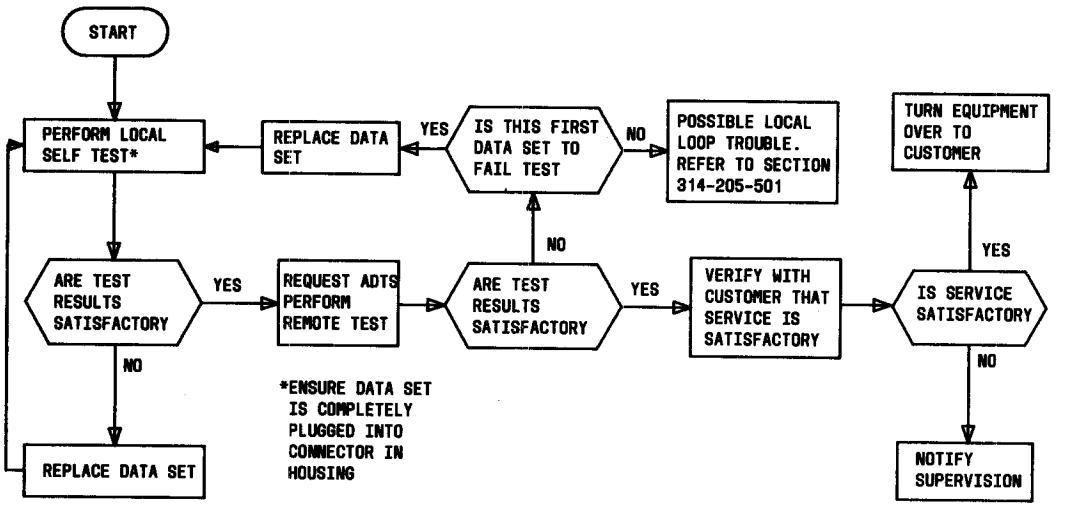


Fig. 1—Installation Test Sequence

3. MAINTENANCE TESTS

3.01 This part provides the sequence in which tests are to be performed when clearing a trouble report and during a maintenance visit to the data station.

3.02 When a trouble report is received, a test center or ADTS is responsible for isolating the trouble to the data station or the transmission facility. The procedure for doing this is shown in Fig. 2.

3.03 The data station equipment must be tested prior to dispatching a telco employee. If the trouble seems to be in the data station equipment, a telco employee must be dispatched to conduct more extensive tests at the data station. The following equipment should be taken on a trouble visit:

- 921A or 914-type DTS
- Spare DS 202S.

3.04 Troubleshooting is performed by the ADTS using the remote test or error run test. If the trouble is isolated to the data set, replace the data set and repeat the test.

3.05 If the trouble persists after the tests have been completed, proceed as follows:

(a) Check fo physical damage to data station equipment.

(b) Verify that all cords and connectors are properly connected.

(c) Check that options installed in data set agree with those specified on service order.

(d) Verify that customer-provided equipment (CPE) has been tested and is operating properly.

(e) Check for intermittent trouble in station wiring.

(f) Verify that data set and CPE are connected to a common ground.

(g) If trouble persists, request help from immediate supervisor, who may then obtain technical support from DATEC (Data Technical Support) per Section 010-521-100.

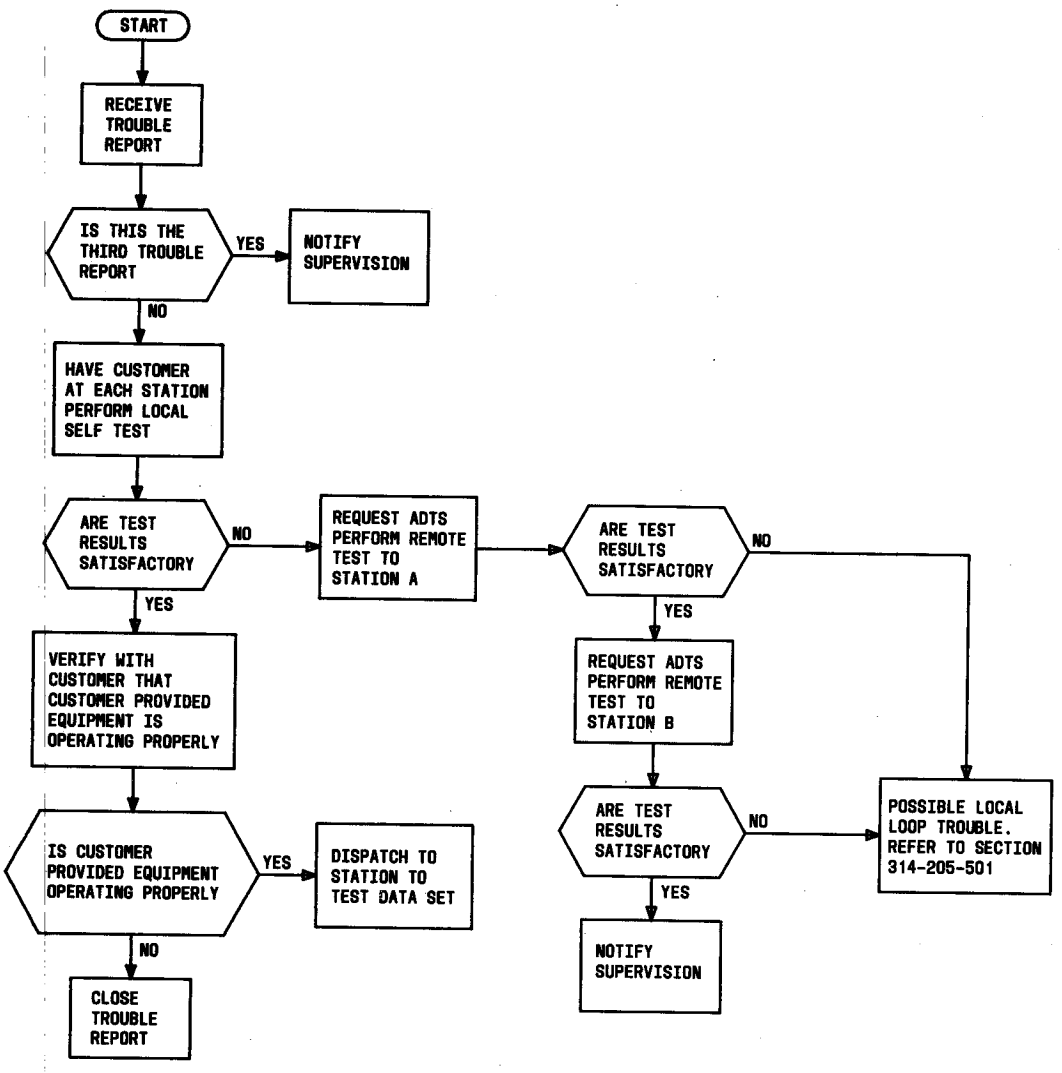


Fig. 2—Clearing Trouble Report

4. SELF TEST PROCEDURES

4.01 This part provides procedures for the installation and maintenance self tests.

4.02 This test checks the data set transmitter and receiver. The customer interface is not checked. Test data generated by the data set is looped back internally from the transmitter output to the receive input. The received data is compared

to the original data. Under normal conditions, all the data set indicator lamps are lighted; however, if an error is detected, the TM lamp goes off.

4.03 Perform the test as follows:

(1) Ensure that data set is not transmitting or receiving data.

(2) Firmly depress and hold LT switch for at least 15 seconds.

Note: If LT switch is depressed slowly, TM lamp may go off in a nondefective data set.

Requirement: TM lamp remains lighted while LT switch is depressed.

(3) If requirement specified in (2) is not met, repeat (2) four more times.

Requirement: TM lamp remains lighted during all four repeats.

5. ADTS TEST PROCEDURES

A. General

5.01 This part provides instructions necessary for the proper operation of ADTS from field data sets. Included are instructions for entering and leaving the system and for performing installation and maintenance tests.

5.02 Operations involving ADTS require man/machine interaction. With DIVA, the information is entered into ADTS by tones from a TOUCH-TONE dial. The system outputs a message by a voice response unit, and the user receives the message via the telephone handset.

Every entry from a TOUCH-TONE dial must be followed by a TOUCH-TONE star (*) except when calling the DIVA port number. To avoid repetition, the star entry has not been included in the text but should be understood as included whenever an entry is mentioned.

5.03 The ADTS must be on-line and DIVA must be up to accept DIVA tests.

Functions Available Via DIVA (Table B)

5.04 The test functions available via DIVA initiate a static or dynamic test of a data set. When 3 is used as a prefix with a test function, a fast test is performed on the data set without review of the line card information and without receiving test instructions.

5.05 ***Test Function List:*** With an entry of 8, DIVA will respond with a message of all test functions that can be performed on DS 202S.

5.06 ***Remote Test:*** This function provides a remote test of DS 202S by the ADTS. The remote test is initiated by entering 78; the fast remote test by entering 378.

5.07 ***Error Run Test:*** This function provides an error run test between the data set and the ADTS in each direction (half duplex). A 921A or a 914-type DTS is required at the data set. Bit or block errors are automatically recorded for various combinations of pseudorandom data sequences and for various periods of time. The data sequences and the periods of time are user specified. Use of the 921A or 914-type DTS requires an initial test setup as described in paragraphs 5.43 and 5.62, respectively. The error run test is initiated by entering 37; the fast error run test by entering 337.

5.08 ***Results:*** This function provides results of the most recent test of the data set. The results function is initiated by entering 7. In response to the results function entry, the ADTS gives the audible query WHAT IS THE TELEPHONE OR SPECIAL SERVICE CIRCUIT NUMBER? After receiving a number, the ADTS outputs the results in a format similar to the following:

THE TEST RESULTS ARE:

THE DATA SET CODE IS (data set code)

THE RECEIVED SIGNAL LEVEL IS OUT OF LIMITS

WHAT IS THE FUNCTION YOU WISH TO PERFORM?

5.09 ***Stop:*** This function stops the present function and requests a new function. The stop function is initiated by entering #73.

5.10 *Off:* This function stops the present function and disconnects the DIVA port. The off function is initiated by entering #63.

Accessing ADTS

5.11 Access to ADTS by DIVA is obtained by placing a call to a DIVA port number. Depending on the mode of ADTS and the mode of DIVA, one of four actions will occur:

(a) Busy signal; all DIVA ports are busy. Try again later.

(b) Call not answered; DIVA is in the down mode.

(c) Call answered; the user will hear a 1-second burst of answer tone. Following the answer tone will be the audible query: THIS IS THE AUTOMATIC DATA TEST SYSTEM. PLEASE ENTER THE PASSWORD. Once the password has been entered, the system responds with PLEASE ENTER THE FUNCTION YOU WISH TO PERFORM.

(d) Call answered; the user will hear: THE ADTS IS OFF-LINE. The ADTS will automatically abort the task. The ADTS must be put on-line by entering ONLIN to the function query on a terminal at the ADTS. The user may then place a call to a DIVA port number and access the ADTS.

5.12 The user may shorten the password-function request formalities by inputting both the password and the desired function in one entry (no intervening *). If both the password and function are valid, ADTS begins executing the function immediately. To shorten the time required to set up a test, answers to familiar questions asked by DIVA may be given while the question is in progress.

5.13 Information is entered into ADTS by letters or numbers on the TOUCH-TONE dial. Numbers are entered into ADTS by depressing the desired digits on the TOUCH-TONE dial. Letters are entered into ADTS by using the following format:

(a) Depress #.

(b) Depress button with desired letter on it.

(c) Depress a number (1, 2, or 3) corresponding to the letter's position on the button [depressed in (b)].

5.14 In response to a YES or NO question, the following format is used:

(a) YES, enter one (1).

(b) NO, enter zero (0).

5.15 The user can again listen to the last spoken message, by entering #* (Table A).

Performing Tests

5.16 To start a test, the user enters the desired number code from Table B. The ADTS response is WHAT IS THE TELEPHONE OR SPECIAL SERVICE CIRCUIT NUMBER? After the number has been entered, the ADTS response is YOU HAVE ENTERED (telephone or special service circuit number). IS THAT CORRECT? The user enters 1 for YES or 0 for NO. If the response is incorrect, ADTS repeats the original query.

5.17 If the response is correct, ADTS will attempt to find a line card file (LCF). If an LCF is found, ADTS will use the data set code to find the test program. If there is a test program for the data set code and test function entered, ADTS will continue. If no test program is found, ADTS will abort the test with the following message: THE ADTS CANNOT RUN SELECTED TEST ON THIS DATA SET. (Since there are test programs available for data set 202S—78 and 37—this response indicates that the wrong test code was entered.)

5.18 If both an LCF and test program are found, the LCF information is given to the user. The user is then given a chance to make any necessary changes.

5.19 If no LCF is found, the ADTS response is THE DATA SET IS NOT ON FILE. ENTER THE DATA SET CODE. The user must then answer this question and others to create an LCF. In this case the entry would be 202#73*. After entry of the data set code, ADTS checks for the test program.

5.20 After the LCF information has been given or after new line card information has been

TABLE A

TOUCH-TONE CODES FOR DIVA

FUNCTION	DEPRESS BUTTON(S)	DESCRIPTION
1, 2, 3, . . .etc.	Appropriate button(s)	Digits
#	#	Prefix character.
*	*	TOUCH-TONE star. Used at end of all entries as EOL character.
A,B,C, . . .etc.	Depress number sign, button on which character appears, and digit corresponding to the relative position of the letter (1,2, or 3). Example: For the letter A #21	Alphabetic characters.
Yes	1*	Answer yes to a question.
No	0*	Answer no to a question.
Repeat	#*	Repeats last message spoken by the system.
Telephone Number	Example: 3115552368*	Enter telephone number in sequence followed by EOL.
Data Set Code	Example: 202#23* Example: 202#235* Example: 401#515*	202C 202C5 401J5
Data Set Transmit Level	Example: 12*	-12 dBm. Eliminate sign and units designation. Enter numerical value.

TABLE B

FUNCTIONS AVAILABLE VIA DIVA

FUNCTION	DESCRIPTION	NORMAL	FAST
Test List	Lists valid test functions.	8*	
Remote Test	Dynamic test of a data set.	78*	378*
Error Run Test	Tests a data set with data test set connected.	37*	337*
Results	Outputs results of most recent test of a data set.	7*	
Stop	Stops present function and requests new function.	#73*	
Off	Stops present function and disconnects.	#63*	

entered ADTS instructs the user TO CORRECT ERRORS ENTER ONE. IF NO ERRORS, ENTER ZERO. If a 1 is entered, ADTS repeats the line card information query.

5.21 If no corrections are made to the LCF, ADTS asks ARE YOU CALLING FROM THE DATA SET? If the user is calling from a data set, the user must hang up prior to running the test. ADTS will then call the data set for testing. After the test has been completed, ADTS calls the data set again to give the user the results of the test. The test instructions direct the user on this procedure.

5.22 The ADTS asks the user DO YOU WANT INSTRUCTIONS? If requested, ADTS will supply test instructions. These instructions are to prompt the user, not to replace the data set BSP instructions.

5.23 After the instructions, ADTS gives the following message: WHEN READY, ENTER ONE. Upon receipt of a 1, ADTS responds THANK YOU. A pause will follow the thank you message as ADTS attempts to seize the hardware needed for the test. If the test hardware is busy performing another test or a self test, ADTS gives the following message: THE ADTS TEST EQUIPMENT IS BUSY, PLEASE WAIT. When the test hardware becomes available, ADTS outputs THE TEST IS READY TO START.

5.24 At completion of the test, the user receives a short message describing the test results. When the data set fails, the system gives the reason(s) for failure. After giving the results of the data set test, the system returns to the function query.

Leaving ADTS

5.25 ***Manual Abort:*** Whenever the system is expecting user input, the user can abort the operation by entering #73 (the letter S) or #63 (the letter O). The letter S, for STOP, causes ADTS to abort the operation and return to the function query. The letter O, for OFF, causes ADTS to abort the operation and the DIVA port to hang up.

5.26 ***Automatic Abort:*** The ADTS automatically performs the equivalent of a user OFF if the user does not respond to a system request. Thirty seconds without a user entry after the original function query, ADTS will repeat the query. Thirty seconds after the second query without a user entry, ADTS will repeat the query for the third time. Thirty seconds after the third query without a user entry, ADTS will abort the task and hang up. If incorrect or illogical entries are made three successive times, ADTS will perform the equivalent of an OFF. After each invalid entry, an appropriate error message such as THE NUMBER IS INVALID, PLEASE REENTER will be spoken. After a third invalid entry, ADTS will abort the task and hang up.

B. Remote Test

5.27 Call the DIVA port number of the serving ADTS, using a TOUCH-TONE (TT) dial or pad. A 1-second answer tone will be heard in the handset. After the answer tone will be the following: THIS IS THE AUTOMATIC DATA TEST SYSTEM. PLEASE ENTER THE PASSWORD.

> ***Note 1:*** If the above message is not heard, refer to paragraph 5.11.
>
> ***Note 2:*** TOUCH-TONE stars are shown hereafter as required.

5.28 Enter the 4-character password, followed by a *, on the TT dial. ADTS will respond with PLEASE ENTER THE FUNCTION YOU WISH TO PERFORM.

5.29 Enter 78* on the TT dial. (The fast test, which omits line card review and test instructions, may be requested by entering 378*.) ADTS will respond with REMOTE TEST. WHAT IS THE TELEPHONE OR SPECIAL SERVICE CIRCUIT NUMBER?

5.30 Enter the data set telephone number, followed by *, on the TT dial. ADTS will respond with YOU HAVE ENTERED (telephone number). IS THAT CORRECT?

5.31 If the number is correct, enter 1* on the TT dial. If the number is incorrect, enter 0* on the TT dial.

5.32 If 0* was entered, the query in paragraph 5.29 will be repeated. If 1* was entered, ADTS will respond with THE DATA SET CODE IS 202S. NO REVERSE CHANNEL. ARE YOU

CALLING FROM THE DATA SET? To respond "yes" enter 1*: to respond "no", enter 0*.

5.33 ADTS continues: TO CORRECT ERRORS ENTER ONE. IF NO ERRORS ENTER ZERO. Enter 1* to change the data set code. Follow this with an entry of 202#73* to select DS 202S.

5.34 This question follows: DO YOU WANT INSTRUCTIONS? A 1* reply requests instructions, which are as follows:

(1) When ADTS is called from a telephone other than the data set: RELEASE ALL SWITCHES ON THE DATA SET TO THE OUT POSITION. DEPRESS THE RT SWITCH ON THE DATA SET. THE ADTS WILL CALL THE DATA SET. LEAVE THIS TELEPHONE OFF-HOOK TO RECEIVE THE TEST RESULTS AT THE COMPLETION OF THE TEST.

(2) When ADTS is called from the data set telephone: RELEASE ALL SWITCHES ON THE DATA SET TO THE OUT POSITION. ON THE TONE DEPRESS THE RT SWITCH ON THE DATA SET AND THEN HANG UP. THE ADTS WILL CALL THE DATA SET. WHEN THE TEST IS COMPLETED, THE ADTS WILL CALL THE DATA SET AGAIN TO REPORT THE TEST RESULTS.

5.35 The ADTS then responds: DO YOU WANT THESE INSTRUCTIONS REPEATED? Enter 1* for "yes" or 0* for "no". A "yes" answer causes the instructions to be repeated.

5.36 The ADTS then gives the message WHEN READY ENTER ONE.

5.37 When the user is satisfied that the instructions are understood, enter 1*, to which the ADTS responds PLEASE WAIT. THE TEST IS READY TO START.

5.38 On conclusion of the test the ADTS will call the data set. The user answers the call in the talk mode. The ADTS then gives the following message: TO RECEIVE TEST RESULTS, ENTER ONE.

5.39 If the test was satisfactorily completed the ADTS gives the results as follows:

THE TEST RESULTS ARE:

THE RECEIVED LEVEL IS (-11 to -38) DBM.
THE NUMBER OF BIT ERRORS WAS (20 or less).
THE DATA SET TESTS OK. PLEASE ENTER THE FUNCTION YOU WISH TO PERFORM.

5.40 Enter next function or enter #63* if another test will not be performed at this time.

5.41 If the data set failed the test, one or more of the following messages is given:

- NO ANSWER. TEST ABORTED.
- CARRIER WAS NOT RECEIVED.
- NO DIAL TONE. TEST ABORTED.
- THE RECEIVED SIGNAL LEVEL IS OUT OF LIMITS.
- THE NUMBER OF BIT ERRORS DETECTED WAS TOO HIGH.
- THE ANSWER TONE WAS NOT RECEIVED. TEST ABORTED.
- THE DATA SET DID NOT SEND STEADY MARK IN RESPONSE TO REVERSE CHANNEL.
- THERE HAS BEEN AN ADTS TEST EQUIPMENT MALFUNCTION. TRY AGAIN LATER.
- THE RECEIVED SIGNAL WENT OFF DURING MEASUREMENT.
- THE DATA SET SENT STEADY SPACE DURING THE TWO-MINUTE 63-BIT PSEUDORANDOM TEST INTERVAL.
- THE REVERSE CHANNEL TONE WAS NOT RECEIVED.
- THE DATA SET DID NOT SEND STEADY SPACE IN RESPONSE TO THE STEADY SPACE ERROR INJECT SIGNAL.

- THE DATA SET DID NOT SEND STEADY SPACE IN RESPONSE TO REMOVAL OF REVERSE CHANNEL.
- THE DATA SET FAILED THE TEST.

5.42 The ADTS repeats the function query. Enter next function or enter #63* if another test will not be performed.

C. End-to-ADTS Error Run Test Using 921A DTS

Initial Test Setup for 921A DTS

5.43 Perform the initial test setup for the 921A DTS when used to test DS 202S as follows:

STEP	ACTION	VERIFICATION
1	Connect data set to DTS using interface cable and Electronic Industries Association (EIA) adapter cord provided with DTS. ***Note:*** The interface cable is equipped with two 37-pin connectors. The 6-inch adapter cord is equipped with a 37-pin female connector and a 25-pin male connector. Connect interface cable from DATA SET (DCE) connector on DTS to 37-pin connector on adapter cord. Insert 25-pin connector on adapter cord into customer interface connector on data set.	
2	Connect DTS to a 105- to 129-Vac 60-Hz power source.	
3	Apply power to data set.	Data set ON lamp lights.
4	On front of DTS, set POWER switch to ON.	POWER lamp lights.
5	Press RST on keyboard. ***Note:*** If RST is pressed during a test, the test is ended and the DTS recycles to this step.	Display reads (briefly) version number of DTS. DTS then performs self tests. If DTS is defective, display reads— TEST FAILED If DTS is satisfactory, display reads— DATA SET:
6	Remove EIA interface module from storage and ensure that all 25 interface module switches are in TERM position.	
7	On right side of DTS, ensure that locking lever is in OPEN position.	
8	Insert interface module into slot.	
9	Move locking lever to CLOSE position.	
10	On front of DTS, ensure that all 37 DCE interface lead switches are in NORM position except that switch 11 is in OPEN position.	

STEP	ACTION	VERIFICATION
11	Enter 24. ***Note:*** To delete a wrong entry on keyboard during any test, press back arrow (←).	Display reads— DATA SET: 24
12	Press GO.	Display reads— BIT RATE:
13	Enter 12.	Display reads— BIT RATE: 12
14	Press GO. ***Note:*** If GO or TST is pressed at an unauthorized point in a test, the test is ended and the DTS recycles to this step.	Display reads— TEST SEQ:
15	For Version 1 DTS, set DCE interface lead switch 20 to OPEN and connect a jumper wire between DCE interface lead jacks 9 and 20.	

5.44 Call the DIVA port number of the serving ADTS, using a TOUCH-TONE (TT) dial or pad. A 1-second answer tone will be heard in the handset. After the answer tone will be the following: THIS IS THE AUTOMATIC DATA TEST SYSTEM. PLEASE ENTER THE PASSWORD.

Note: If the above message is not heard, refer to paragraph 5.11.

5.45 Enter the 4-character password, followed by a ✱, on the TT dial. ADTS will respond with PLEASE ENTER THE FUNCTION YOU WISH TO PERFORM.

5.46 Enter 37✱ on the TT dial. (The fast test, which omits line card review and test instructions, may be requested by entering 337✱.) ADTS will respond with WHAT IS THE TELEPHONE OR SPECIAL SERVICE CIRCUIT NUMBER?

5.47 Enter the data set telephone number, followed by ✱, on the TT dial. ADTS will respond with YOU HAVE ENTERED (telephone number). IS THAT CORRECT?

5.48 If the number is correct, enter 1✱ on the TT dial. If the number is incorrect, enter 0✱ on the TT dial.

5.49 If 0✱ was entered, the query in paragraph 5.46 will be repeated. If 1✱ was entered, ADTS will respond with THE DATA SET CODE IS 202S. ACCESS TYPE LAST USED WAS DDD, ADTS ORIGINATED. TO CORRECT ERRORS ENTER ONE. IF NO ERRORS ENTER ZERO.

5.50 Enter 1✱ to change the data set code. Follow this with an entry of 202#73✱ to select DS 202S.

5.51 Enter 1✱ to change the data set access type. The ADTS responds with ENTER THE DATA SET ACCESS TYPE.

1. DDD, ADTS ORIGINATED
2. DDD, DATA SET ORIGINATED
3. RTAU
4. RTS.

5.52 If there are no more corrections, the ADTS asks the following question: DO YOU WANT THE ADTS TO TRANSMIT TO THE DATA SET?

5.53 A "yes" or "no" answer is followed by the following question: DO YOU WANT TO USE THE STANDARD TEST PARAMETERS?

(Standard test parameters are: test time, 1 minute; word bit length, 511; bit error count.) A "yes" answer is followed by PLEASE WAIT; a "no" answer by the following: ENTER THE TEST TIME IN MINUTES. ENTER THE WORD BIT LENGTH: 15, 63, 511, OR 2047 BITS.

5.54 If the answer to the question in paragraph 5.53 was "no", the following message is given: DO YOU WANT TO DETECT BLOCK ERRORS? The response to a "yes" is ENTER THE BLOCK WORD LENGTH. An acceptable answer is 1, 2, 4, 8, or 16. If response is "no", a bit error count is made. With the proper answer, the ADTS responds PLEASE WAIT, then ARE YOU CALLING FROM THE DATA SET? A "yes" or "no" answer is acceptable.

5.55 A "yes" reply to the question DO YOU WANT INSTRUCTIONS? prompts the following message if the ADTS is originating the call and the call is not initiated from the data set: THE ADTS WILL CALL THE DATA SET AND START THE TEST AFTER THE DATA SET ANSWERS. LEAVE THIS TELPHONE OFF-HOOK TO RECEIVE THE TEST RESULTS. WHEN READY ENTER ONE.

5.56 When the call is from the data set the instructions are: ON THE TONE, HANG UP. THE ADTS WILL CALL AND TEST THE DATA SET. WHEN THE TEST IS COMPLETED, THE ADTS WILL CALL THE DATA SET TO REPORT THE TEST RESULTS OR YOU MAY CALL ADTS AND REQUEST THE TEST RESULTS.

ADTS Transmitting Data

5.57 If the ADTS is to transmit to the data set, this message follows: ADTS TEST DATA TRANSMISSION WILL BE PRECEDED BY 30 SECONDS OF GOOD DATA FOLLOWED BY THE INJECTION OF 10 BIT ERRORS.

5.58 During this initial period of data transmission, prepare the 921A DTS to receive the test data as indicated in the steps below. Receipt of bit errors is a positive indication that transmission is taking place. The time entered in Step 9 must be less than the time requested for the ADTS test, since erroneous errors will be produced if the 921A DTS looks for data when none is being transmitted.

STEP	ACTION	VERIFICATION
1	Ensure that initial test setup described in paragraph 5.43 has been performed. ***Note:*** If GO or TST is pressed at an unauthorized point in the following tests, the test in progress is ended and the DTS recycles to the start of that test (last preceding step that display read TEST SEQ:).	Display reads— TEST SEQ:
2	On data set, depress AL switch. TM lamp lights.	
3	Enter 55.	Display reads— TEST SEQ: 55
4	Press GO.	Display reads— TRANSMITTER=? 1=921 2=914 3=903
5	Enter 1.	Display reads (briefly)— TRANSMITTER=1 1=921 2=914 3=903 Display then reads (briefly)— SELECT ERROR TEST Display then reads— D=DT 0=SP 1=MK 2=2047 5=511 6=63

STEP	ACTION	VERIFICATION
6	Enter 5.	Display reads (briefly)— 511 BIT ERROR TEST Display then reads— 1=BIT ERRORS 2=BLOCK ERRORS
7	Enter 2.	Display reads— ????? BITS IN A BLOCK
8	Enter 01024.	Display reads (briefly)— 01024 BITS IN A BLOCK Display then reads— ???? SECONDS
9	Enter 0060. ***Note:*** To perform functions listed below, press associated key.	Display reads (briefly)— 0060 SECONDS Display then reads— BLK RCVD=0000 ERR=0000 From this point, display counts number of blocks received and number of blocks in error. If sync is lost during test, display flashes OSYN. If this occurs, test must be repeated by pressing A. At end of test, display reads TEST COMPLETE, total snyc losses, total blocks received, and total blocks in error.

KEY	FUNCTION
A	Repeat test.
B	Display time remaining in test.
C	Clear display.
D	End test.
E	Inject 8 errors into data stream.
F	Force out-of-sync condition.

10	Press TST.	Display reads— TEST SEQ:

ADTS Receiving Data

5.59 If the ADTS is to receive data from the data set, perform the following steps at the transmitting station:

STEP	ACTION	VERIFICATION
1	Ensure that initial test setup described in paragraph 5.43 has been performed.	Display reads— TEST SEQ:
2	Enter 53.	Display reads— TEST SEQ: 53

STEP	ACTION	VERIFICATION
3	Press GO.	Display reads (briefly)— SELECT ERROR TEST Display then reads— D=DT 0=SP 1=MK 2=2047 5=511 6=63
4	Enter 5.	Display reads— 511 BIT ERROR TEST
5	Place data set in data mode.	On DTS, DSR indicator lights (data set ready lead ***on***) Display continues to read— 511 BIT ERROR TEST

5.60 After all instructions are performed and the test is complete, the ADTS gives this message: THE TEST RESULTS ARE (results). THE TEST TIME WAS (number of) MINUTES. DO YOU WANT TO RUN ANOTHER TEST?

5.61 The ADTS gives error message(s) as shown in paragraph 5.41 if the data set test was not performed successfully.

D. End-to-ADTS Error Run Test Using 914-Type DTS

Initial Test Setup for 914-Type DTS

5.62 Perform the initial test setup for the 914-type DTS when used to test DS 202S as shown in Fig. 3.

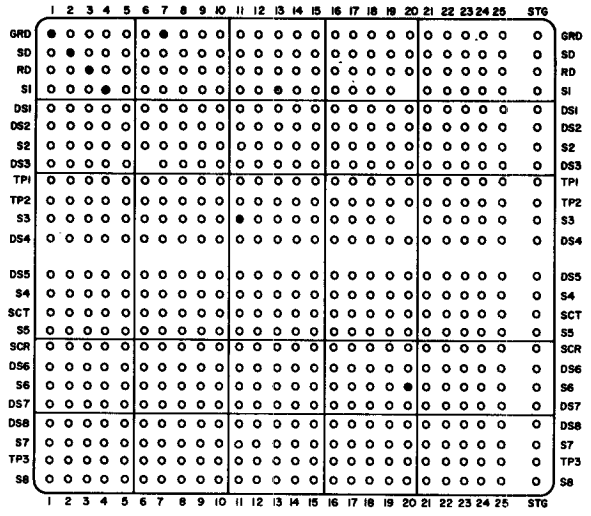
5.63 Repeat paragraphs 5.44 through 5.57 as for the error run test using the 921A DTS.

ADTS Transmitting Data

5.64 If the ADTS is to transmit to the data set, this message follows: ADTS TEST DATA TRANSMISSION WILL BE PRECEDED BY 30 SECONDS OF GOOD DATA FOLLOWED BY THE INJECTION OF 10 BIT ERRORS. Following this, the ADTS sends good data for the time specified.

5.65 During this initial period of data transmission, prepare the 914-type DTS to receive the test data as indicated in the steps below. Receipt of bit errors is a positive indication that transmission is taking place. The time counter set in Step 8 must be shorter than the time requested for the ADTS test, since erroneous errors will be produced if the 914-type DTS looks for data when none is being transmitted.

STEP	PROCEDURE
1	Set COUNTER switch to BLOCK ERRORS 16 WL, (63-bit word).
2	Apply power to the data set and then to the 914-type DTS.
3	Depress locking AL switch on data set. (With DS 202S-L1, wait 3 seconds before proceeding.)
4	Operate switch S1 to ON.
5	Coordinate test procedure with transmitting end.
6	On the 914 DTS, move switch S3 (DTR) to ON.



914 DTS MATRIX

NOTES:

1. SET SWITCHES ON THE 914 DTS AS FOLLOWS:

SWITCH	SETTING
INTERFACE SELECTOR A	ALL DEPRESSED
INTERFACE MODE	VOLTAGE
TEST SET MODE	SER (914C DTS)
	RCV SER (914B DTS)
COUNTER	BIT ERRORS
RCV BIT RATE	1200
RCV WORD LENGTH	63
TRANSMIT BIT RATE (914C)	1200
TRANSMIT WORD LENGTH (914C)	63
SIG LEV	±4V
SWITCH S1, S3	OFF
SWITCH S6	ON
SAMPLE WIDTH	30%

2. 914 DTS INDICATOR LAMPS AND SWITCHES CORRESPOND TO THE FOLLOWING INTERFACE LEADS.
3. INSTALL RED MATRIX PINS AS NOTED.

SWITCH	LEAD
S1	REQUEST TO SEND
S3	SECONDARY REQUEST TO SEND
S6	DATA TERMINAL READY

Fig. 3—End-to-ADTS Error Run Test Setup Using 914-Type DTS

STEP	PROCEDURE
7	Go to data mode.
8	Reset counter.
9	Counter should count at least once and shortly thereafter the NO DATA lamp should illuminate.
10	Reset counter. The NO DATA lamp should extinguish.
11	Counter should record zero counts (zero block errors).
12	At end of 5-minute interval, go to talk mode and give results.
13	End of test. Return equipment to normal operating condition.

ADTS Receiving Data

5.66 If the ADTS is to receive data from the data set, perform the following steps at the transmitting station:

STEP	PROCEDURE
1	Remove all programming pins.
2	Insert programming pins at GRD-1, SD-2, RD-3, S1-4, GRD-7, S3-11, and S6-20.
3	Set TEST SET MODE to SER (914C) or TRMT SER (914B).
4	Set counter to BIT ERRORS.
5	Set RCV BIT RATE to 1200.
6	Set RCV WORD LENGTH to 63.
7	Set TRANSMIT BIT RATE to 1200.
8	Set TRANSMIT WORD LENGTH to 63.
9	Set switches S1 and S3 to OFF.
10	Set switch S6 to ON.
11	Apply power to the data set and then to the 914-type DTS.

STEP	PROCEDURE
12	Call the receiving end to coordinate test procedure.
13	On the 914 DTS, move switch S3 (DTR) to ON.
14	Go to data mode.
15	Set S1 (RS) to ON.
16	To verify equipment is operating properly, set switch S1 (RS) to OFF.
17	Set switch S1 (RS) to ON.
18	Conduct 5-minute error run.
19	At end of 5-minute interval, go to talk mode.
20	End of test. Return equipment to normal operating condition.

5.67 After all instructions are performed and the test is complete, the ADTS gives this message: THE TEST RESULTS ARE (results). THE TEST TIME WAS (number of) MINUTES. DO YOU WANT TO RUN ANOTHER TEST? At the conclusion of test, enter #63* on the TT dial to end the test and hang up the DIVA port.

6. REFERENCES

6.01 Additional information concerning DS 202S and use of the ADTS is contained in the following publications:

SECTION	TITLE
107-101-100	914-Type Data Test Sets—Description and Operation
107-402-100	921A Data Test Set—Description and Operation
314-205-501	Data Systems—DATAPHONE® Service and Data Access Arrangements on Direct Distance Dialing Network—Test Requirements for Subscriber, Foreign Exchange, and Remote Exchange Lines
590-010-500	J1P005 Automatic Data Test System (ADTS)—Operation From Field Locations
592-028-100	Data Set 202S Transmitter-Receiver—Description and Operation
592-028-150	Data Set 202S Transmitter-Receiver—Supplementary Information
592-028-200	Data Set 202S Transmitter-Receiver—Installation and Connections
592-028-500	Data Set 202S Transmitter-Receiver—Test Procedures Using 914-Type Data Test Set
592-028-501	Data Set 202S Transmitter-Receiver—Test Procedures Using 921A Data Test Set