

**DATA SYSTEMS ON DIRECT DISTANCE DIALING (DDD) NETWORK
DATA-PHONE SYSTEMS USING 130-TYPE SUBSCRIBER SETS
USE OF TEST CENTER TESTING ARRANGEMENTS**

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1. GENERAL

1.01 This section covers methods of using the test center equipment provided for testing low-speed, one-way, DATA-PHONE stations that use 130-type subscriber sets and associated TTY station apparatus.

1.02 A block diagram of the test center equipment is shown in foldout Fig. 1. A detailed description of this equipment, including calibration and maintenance procedures, is included in another section of this series. This equipment will permit testing either a sending or receiving DATA-PHONE station provided for Teleticketing or any similar one-way service. It will also permit testing a 130-type DATA-PHONE subset arranged for alternate 2-way TTY communication. The principal requirements are that the signaling frequencies employed by the 130-type subset be 1310 cps for marking signals (sending and receiving) and 1240 cps for spacing signals (sending or receiving).

2. TESTING PROCEDURES

TEST PROCEDURE CHART — FIG. 2

2.01 The attached foldout Fig. 2 gives step-by-step procedures for setting up various testing conditions. These procedures are based on the equipment arrangements as shown in the block diagram, Fig. 1. As indicated in Fig. 1, the various jack arrangements and designations are typical and local arrangements may vary.

INSTALLATION AND ROUTINE VISIT TESTS

2.02 The necessary transmission tests in connection with installation and routine visits to the DATA-PHONE station will be initiated by the craftsman at the subscriber's premises. After they have been successfully completed, the employee at the subscriber's premises would insert and align the regular forms in the teletypewriter and would verify and adjust, if necessary, the following:

- a. Vertical and horizontal form alignment
- b. Tabulation stop settings
- c. Form feedout

To assist in these adjustments, the test center should have available an appropriate test tape.

2.03 As a final check, it is necessary to verify that the form (e.g. airlines teleticket) can be received and printed out correctly in all respects. For this purpose, it is necessary to initiate a test DATA-PHONE call between a sending and

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receiving station of the subscriber and transmit a sample form or ticket.

TROUBLE INVESTIGATION TESTS

2.04 In case of trouble, the DATA-PHONE subscriber is instructed to call the local telephone repair service desk in the usual manner for assistance. If the local test desk finds that the trouble involves the data equipment and

the local test center is not equipped with telegraph testing facilities the complaint is referred to a designated test center so equipped. The attendant at this center calls the subscriber and questions him regarding the details of the complaint. He must make such tests as are required to determine whether a station visit is necessary. If a visit is necessary, the craftsman visiting the subscriber's premises would initiate additional tests as required.

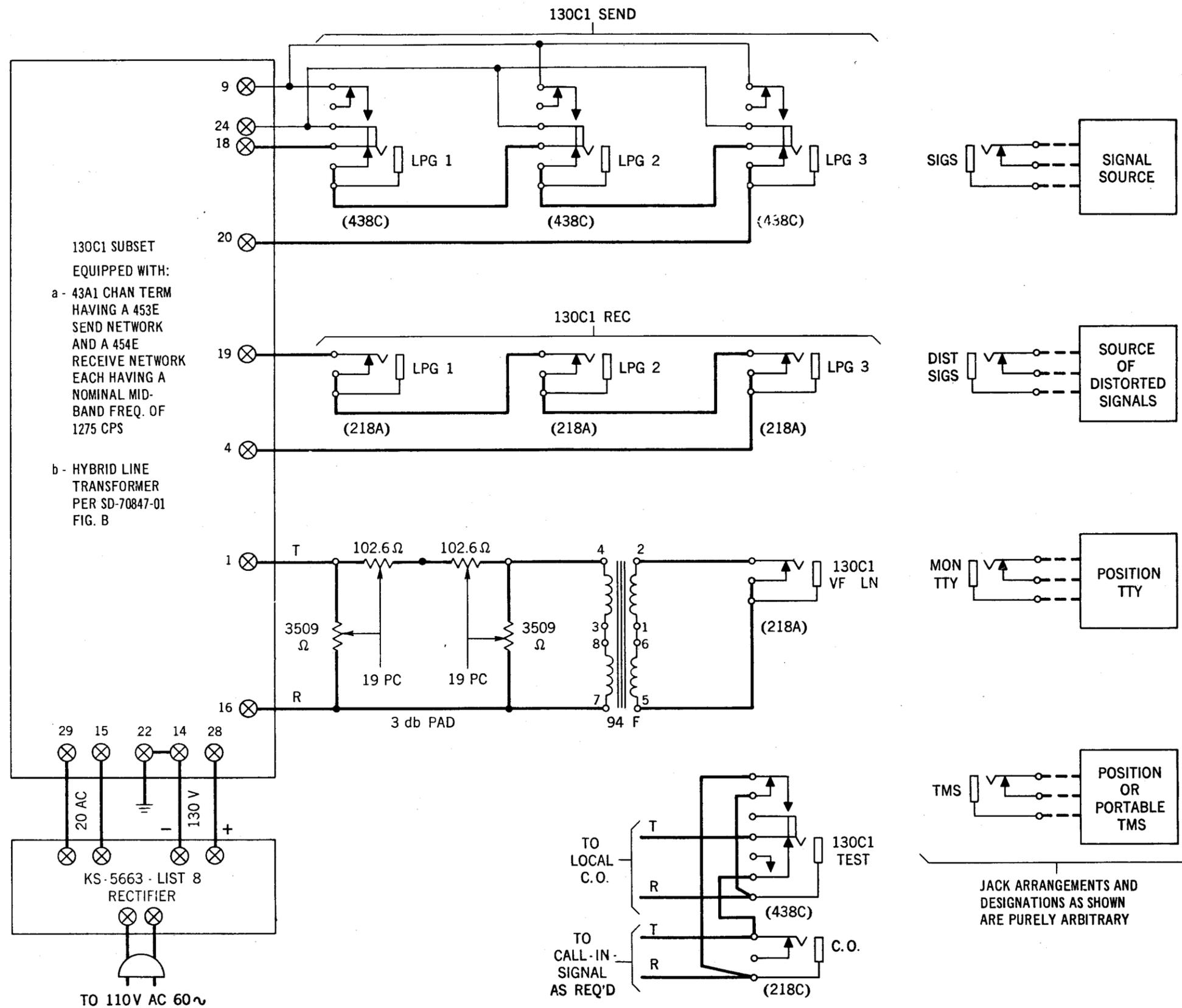


Fig. 1 - Block Diagram Typical Testing Arrangement

TEST OR OPERATION	FOR TESTING WITH		PROCEDURE	REMARKS
	REC. STA.	SEND STA.		
A. To make call to or to receive call from DATA-PHONE station	Yes	Yes	1. Patch position telephone cord to jack C.O. and make or answer call in usual manner	a. When receiving call, determine whether DATA-PHONE station is a receiving one or a sending one.
B. To transfer from the telephone to the DATA-PHONE condition	Yes	Yes	1. Patch from jk 130C1 VF LN to jk 130C1 TEST 2. Retain patch A-1 if you wish to talk after DATA-PHONE condition. Otherwise take down patch A-1	a. Prepare all test patches before transferring to DATA-PHONE use. b. When testing with a sending sta. transfer to the DATA-PHONE condition when tone is heard in your receiver. c. When testing with receiving station, request that they transfer to DATA-PHONE condition when they hear tone in receiver.
C. To transfer from DATA-PHONE to the telephone condition	Yes	Yes	1. Take down patch 130C1 VF LN to jack 130C1 TEST	a. Agree, in advance, with DATA-PHONE sta. when transfer is to be made.
D. To send steady marking signals	Yes		1. Insert shorting plug in jk SEND LPG 1 <i>or</i> connect position TTY to jk SEND LPG 1	
E. To send steady spacing signals	Yes		1. Insert open plug in jack SEND LPG 1 <i>or</i> connect position TTY to jk SEND LPG 1 and hold operated BREAK key of TTY	
F. To send steady "SPACE" characters	Yes		1. Connect position TTY to jk SEND LPG 1 and hold down SPACE bar on TTY keybrd	
G. To send test signals	Yes		1. Connect test signals (undistorted or distorted), as req'd to jk SEND LPG 1 2. Connect position TTY to jk REC LPG 1 if local copy is wanted	
H. To test the disconnect feature	Yes		1. Connect position TTY to jk SEND LPG 1 and from keybd. Send FIGS BLANK H or FIGS H as req'd for the particular receiving station	a. At the receiving sta., this code shuts down the TTY equipment and transfers the line to the telephone set.
J. To receive test signals or test message		Yes	1. Connect position TTY to jk REC LPG 1	a. These signals may be provided at the sending station by a portable test distributor, by a prepared tape kept at the station or by keyboard sending. Agree with sta. when transfer back to telephone condition is to be made. Examine received message contents for accuracy.
K. To measure distortion of received signals		Yes	1. Connect position TTY to jk REC LPG 1 2. Connect telegraph transmission meas. equipment to jk REC LPG 2	a. Verify that the receiving bias is within standard requirements for a local station.
L. To "hang-up" on the telephone connection	Yes	Yes	1. Take down any patch to jk C.O. or jk 130C1 TEST	

Fig. 2 - Testing Procedures