

## A1 DIGITAL DATA TRANSMISSION SYSTEM

### TRANSFER AND CONTROL CIRCUIT

### OUT-OF-SERVICE TESTS

#### 1. GENERAL

1.01 This section describes methods of making out-of-service tests on either the transfer and control circuit for dual circuits (SD-1G004, Fig. 1), or the control circuit for single circuits (SD-1G004-01, Fig. 2). These will be referred to as "dual" or "single," respectively.

1.02 This section is reissued to make the continuity tests agree with the wiring changes in issue 5-AR of the transfer and control circuit, SD-1G004-01. Since this is a general revision, the arrows ordinarily used to indicate changes have been omitted.

1.03 The tests covered are:

- A. Operation of A, B, TA, and TB Relays - Transfer and Control Circuit for Dual Circuits
- B. Continuity of Circuits - Transfer and Control Circuit for Dual Circuits
- C. Operation of A and B Relays - Control Circuit for Single Circuits
- D. Continuity of Circuits - Control Circuit for Single Circuits

1.04 The following abbreviations are employed:

VOM KS-14510, List 1 Volt-ohm-milliammeter  
CONN Jack and Connector Circuit  
CORD Cord, ED-1G014-90, (G17)-(L)

1.05 Application schematic Fig. 101 of SD-1G008-01, Issue 3 or later, will be helpful to visualize the testing circuit.

1.06 Section 314-504-300 covers the analysis and clearance of trouble detected by the tests in this section.

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Parts 3 or 4 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or series of lettered steps should be made is given in ACTION 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.

#### 2. APPARATUS

- 2.01 One jack and connector circuit - SD-1G008-01.
- 2.02 One KS-14510, List 1 volt-ohm-milliammeter or equivalent.
- 2.03 Two No. 627A tools.

#### 3. PREPARATION

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
1	Operate TRA, TRB keys of CONN to OFF position	
2	Connect M1-18M2-HRSL plug of CORD to M1-18-F2SL connector of test fixture in test bay	

#### 4. METHOD

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>A. Operation of A, B, TA, and TB Relays - Transfer and Control Circuit for Dual Circuit</u>		
3	Connect M1-50-F2HRSL connector of CORD to M1-50-M2 connector of dual circuit to be tested and lock dual circuit in test fixture	ST <sub>1</sub> , ST <sub>2</sub> lamps light

**SECTION 314-504-501**

- | <u>STEP</u> | <u>ACTION</u>   | <u>VERIFICATION</u> |
|-------------|---|---------------------|
| 4           | Operate TRA, TRB keys simultaneously to ON position   | See Table A, line 1 |
|             | Note: If the lamps and relays have the condition as listed in Table A, line 7, operate TRA, TRB keys simultaneously to OFF and repeat Step 4. |                     |
| 5           | Operate and release TRA, TRB keys for lines 2 through 7 of Table A in numbered sequence   |                     |

TABLE A

<u>Line</u>	<u>Operate Keys</u>		<u>Condition of Relays</u>			<u>Condition of Lamps (See Note 1)</u>			
	<u>TRA</u>	<u>TRB</u>	<u>A</u>	<u>B</u>	<u>TA &amp; TB</u>	<u>ST<sub>1</sub></u>	<u>ST<sub>2</sub></u>	<u>SW<sub>1</sub></u>	<u>SW<sub>2</sub></u>
1	ON	ON	OP	OP	NOP	0	0	0	*
2	OFF	ON	NOP	OP	OP	*	0	*	0
3	OFF	OFF	NOP	NOP	OP	*	*	*	0
4	ON	OFF	OP	NOP	NOP	0	*	0	*
5	OFF	OFF	NOP	NOP	NOP	*	*	0	*
6	OFF	ON	NOP	OP	OP	*	0	*	0
7	ON	ON	OP	OP	OP	0	0	*	0

Note 1: \* Denotes lighted lamp  
0 Denotes dark lamp

- 6a If Test B is not to be made -  
Remove CORD from dual circuit and dual circuit from test fixture  
All keys can be left in operated position

B. Continuity of Circuits - Transfer and Control Circuit for Dual Circuits

- |    |   |   |
|----|---|---|
| 3a | If Test A was not made -<br>Connect M1-50-F2HRSL connector of CORD to M1-50-M2 connector of dual circuit to be tested and lock dual circuit in test fixture | ST <sub>1</sub> , ST <sub>2</sub> lamps light |
| 4  | Operate TRA, TRB keys simultaneously to ON position   | See Table A, line 1 or 7                      |
| 5  | Remove M1-50-F2 connector of cord from dual circuit   |   |
| 6  | Rotate selector knob of VOM to RX10   |   |
| 7  | Place VOM prods on terminals AA, M of M1-50-M2 connector of dual circuit  | VOM indicates continuity                      |
| 8  | Place VOM prods on terminals AA, v of M1-50-M2 connector of dual circuit  | VOM indicates continuity                      |
| 9  | Place VOM prods on terminals AA, K of M1-50-M2 connector of dual circuit  | VOM indicates continuity                      |
| 10 | Block A relay operated with No. 627A tool   |   |

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
11	Place VOM prods on terminals AA, L of M1-50-M2 connector of dual circuit	VOM indicates continuity
12	Remove blocking tool from A relay	
13	Place VOM prods on terminals AA, Y of M1-50-M2 connector of dual circuit	VOM indicates continuity
14	Place VOM prods on terminals AA, w of M1-50-M2 connector of dual circuit	VOM indicates continuity
15	Place VOM prods on terminals AA, a of M1-50-M2 connector of dual circuit	VOM indicates continuity
16	Block B relay operated with No. 627A tool	
17	Place VOM prods on terminals AA, Z of M1-50-M2 connector of dual circuit	VOM indicates continuity
18	Place VOM prods on terminals x, y of M1-50-M2 connector of dual circuit	VOM indicates continuity
19	Remove blocking tool from B relay	
20	Place VOM prods on terminals AA, CC of M1-50-M2 connector of dual circuit	VOM indicates continuity
21	Block TA relay operated with No. 627A tool	
22	Place VOM prods on terminals AA, BB of M1-50-M2 connector of dual circuit	VOM indicates continuity
23	Remove blocking tool from TA relay	
24	Remove dual circuit from test fixture	
<u>C. Operation of A and B Relays - Control Circuit for Single Circuits</u>		
3	Operate TRA, TRB keys on ON position	
4	Insert single circuit into test fixture	
5	Connect M1-50-F2HRSL connector of CORD into M1-50-M2 plug of single circuit	A, B relays operate
6	Operate TRA key to OFF position	A relay release Lamp ST <sub>1</sub> lights
7	Operate TRB key to OFF position	B relay releases Lamp ST <sub>2</sub> lights
8	Operate TRA, TRB keys to ON position	A, B relays operate Lamps ST <sub>1</sub> , ST <sub>2</sub> go dark
9	Remove CORD from single circuit	
10a	If Test D is not to be made - Remove single circuit from test fixture All keys can be left in operated position	

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>D. Continuity of Circuits - Control Circuit for Single Circuits</u>		
3a	If Test C was not made - Insert single circuit into test fixture	
4	Rotate selector of VOM to RX10	
5	Place VOM prods on terminals AA, K of M1-50-M2 connector of single circuit	VOM indicates continuity
6	Place VOM prods on terminals AA, Y of M1-50-M2 connector of single circuit	VOM indicates continuity
7	Block operated A, B relays using No. 627A tools	
8	Place VOM prods on terminals AA, L of M1-50-M2 connector of single circuit	VOM indicates continuity
9	Place VOM prods on terminals AA, Z of M1-50-M2 connector of single circuit	VOM indicates continuity
10	Remove tools from A, B relays, remove single circuit from test fixture	