

# SAGE DATA TRANSMISSION SYSTEMS — PRIVATE SERVICE SYSTEMS

## AIR-GROUND VOICE COMMUNICATION SYSTEM

### COMMON USER GROUP EQUIPMENT

### CHANNEL AND SENDER CIRCUITS

### TESTS

#### 1. GENERAL

1.01 This section describes a method of testing the channel and sender circuits for the common user group equipment of the air-ground voice communication system. In general, the tests are made using the automatic test circuit SD-1G030-01.

1.02 The tests covered are:

A. Normal Test: At the direction center, this test simulates a call originated by a console. At the radio site, this test simulates a call originated by a radio receiver. The test frame checks the ability of the channel and sender circuits to establish an outgoing connection, to transmit and receive supervisory signals, and to release the connection.

B. Trunk-originated Test: At the direction center, this test simulates a call originated by a radio receiver. At the radio site, this test simulates a call originated by a console. The test frame checks the ability of the channel circuit to establish an incoming connection, to transmit and receive supervisory signals, and to release the connection.

C. Transfer Test: This test enables the test frame to check the ability of the channel circuit at the direction center to receive a transfer signal from the console and pass the signal forward to the trunk or to check the ability of the channel circuit at the radio site to receive a transfer signal from the trunk and pass the signal forward towards the air force alarm panel.

D. Timing Test - Direction Center Only: This test enables the test frame at

the direction center to check the ability of the channel circuit to respond to a release signal from the trunk and channel alarm and control circuit within the correct time limits.

E. Site-selected Test - Radio Site Only: This test enables the test frame at the radio site to check the ability of the channel circuit to hold the connection on a channel-originated call after the codan signal has been removed, if a site-selected signal is received.

1.03 Where the automatic test circuit is used for conducting the tests, its start and advance may be controlled by connecting the control cord to the RC jack of the frame under observation.

1.04 Local instructions should be followed with reference to recording any register operations caused by the performance of these tests.

1.05 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 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 a series of lettered steps should be made is given in the 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 Automatic test circuit SD-1G030-01.

2.02 Test cord, Fig. 9 of SD-1G023-01 or SD-1G028-01.

2.03 No. 32A test set.

#### 3. PREPARATION

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>All Tests</u>		
1	Restore all keys, switches to normal	
2	Operate RL key momentarily	All lamps extinguished
3a	If group switch is provided - Set to select desired group	

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<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
4b	If testing one of channel units 01 to 22 - Set channel tens, units switches to desired number	
5c	If channel to be tested is out of service, that is, if spare channel is substituting for it - Associate TT connector with C connector on spare channel unit Associate one end of test cord with D connector on spare channel unit, other end with A connector on channel unit to be tested Set channel tens, units switches to desired number Operate TSC key	
6a	If testing spare channel - Associate TT connector with B connector on spare channel unit, operate TSC key, set channel tens, units switches to 23	
7e	If testing over all channels - Operate CAT key	
	<u>Note:</u> When the CAT key is operated, the GE lamp will light instead of the ET lamp when a test is complete	
8f	If it is desired to pass busy channels - Operate PBC key	
9	Set trunk tens, units switches to 0 position	
10	Operate CTA key	
11	Operate ON key	

4. METHOD

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>A. Normal Test</u>		
12	Operate ST key momentarily	Testing starts When test is complete, ET or GE lamp lights
13	Operate RL key momentarily	ET or GE lamp extinguished
14	Restore all operated keys to normal	All lamps extinguished
<u>B. Trunk-originated Test</u>		
12	Operate TO key	
13	Operate ST key momentarily	Testing starts When test is complete, ET or GE lamp lights
14	Operate RL key momentarily	ET or GE lamp extinguished
15	Restore all operated keys to normal	All lamps extinguished

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>C. Transfer Test</u>		
12	Operate TR key	
13g	If at site - Operate TO key	
14	Operate ST key momentarily	Testing starts When test is complete, ET or GE lamp lights
15	Operate RL key momentarily	ET or GE lamp extinguished
16	Restore all operated keys to normal	All lamps extinguished
<u>D. Timing Test - Direction Center Only</u>		
12	Operate TM key	
13	Operate ST key momentarily	Testing starts When test is complete, ET or GE lamp lights
14	Operate RL key momentarily	ET or GE lamp extinguished
15	Restore all operated keys to normal	All lamps extinguished
<u>E. Site-selected Test - Radio Site Only</u>		
12	Operate SS key	
13	Operate ST key momentarily	Testing starts When test is complete, ET or GE lamp lights
14	Operate RL key momentarily	ET or GE lamp extinguished
15	Restore all operated keys to normal	All lamps extinguished