

**2600-CYCLE E1E SINGLE-FREQUENCY SIGNALING CIRCUIT**

(SD-98088-01 OR SD-98088-02)

**IN-SERVICE TESTS USING TESTING AND MONITORING CIRCUIT**

(SD-96519-01 OR SD-96519-02)

**1. GENERAL**

**1.01** This section describes a method of testing a 2600-cycle single-frequency signaling circuit while in service using monitoring circuit per SD-96519-01 or SD-96519-02 (J98613Y or J98613AY).

**1.02** This section is reissued to bring it into accordance with SD-98088-01, Issue 10-A, and SD-98088-02, Issue 2-A. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes have been omitted.

**1.03** The tests covered are:

**A. Transmitted Tone Level:** This test checks the level of the single-frequency tone as sent on the line.

**B. Received Tone Level:** This test checks the level of the 2600-cycle tone received from the distant office.

**C. Monitoring:** This test gives an indication of the operating condition of the circuits, whether idle (tone on), seized (tone off), sending supervisory signals to the distant office, or receiving supervisory signals of reverberative pulses from the distant office.

**1.04** When the results of these tests indicate the need for a more complete check or readjustment of the signaling circuit, it should be removed to the 2600-cycle signaling testing position J98613AY for out-of-service tests and readjustments per Section 179-324-501.

**Caution:** If this section is used as a preliminary check test, observe the following precautions. The signaling unit should be in normal operating position for several minutes to allow mercury in 291- or 303-type relays to assume operating conditions.

**1.05** Readings obtained on TMS are with respect to 1 mw.

**1.06 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** The apparatus required for each test is shown in Table A. The details of each item are covered in the paragraph indicated by the number in parentheses.

**TABLE A**

APPARATUS	TESTS		
	A	B	C
Monitoring Circuit (2.02)	1	1	1
13A Transmission Measuring Set (TMS) or Equivalent	1	1	1
Head Telephone Set	1	1	1
Cord (2.03)	1	1	1
Cord (2.04)	1	1	1
Cord (2.05)	1	1	1
Tool (2.06)	✓	✓	✓

✓ As required.

**2.02** Monitoring circuit, J98613Y or J98613AY (SD-96519-01 or SD-96519-02).

2.03 Testing cord, W2DL cord, 5-1/2 feet long, equipped with one 310 plug and 35 cord tips (2W42A).

2.04 Patching cord, P3E cord, 3 feet long, equipped with two 310 plugs (3P7B cord).

2.05 Patching cord, P8E, 12 feet long, equipped with one KS-8585 L10 plug and one KS-8586 L7 socket.

2.06 Disengaging tool, P-43C851 (for removing unit from working position).

### 3. PREPARATION

STEP	ACTION	VERIFICATION
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#### Calibration of TMS — All Tests

1	Calibrate TMS in accordance with appropriate practice (see Section 103-213-100 for 13A TMS).	
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#### All Tests

2	Attach testing cord to TMS.	
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3a	If monitoring circuit is on J98613Y or J98613AY panel — Using testing and monitoring circuit SD-96519-01 which has CAL MEAS and CAL OUT jacks — Perform following steps.	
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4a	Connect TMS to CAL MEAS jack.	
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Record TMS reading.

5a	Remove connection from TMS to CAL MEAS jack.	
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6a	Patch CAL OUT jack to MON IN jack.	
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7a	Connect TMS to AMP OUT jack.	
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8a	Adjust GAIN potentiometer of MON AMPL to obtain reading recorded in Step 4a.	
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9a	Remove patch cord from CAL OUT to MON IN jack.	
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10a	Patch monitoring cord between S socket of E1E unit to be monitored and S1 socket of monitoring circuit.	
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11b	If monitoring circuit is on J98613AY panel — Using testing and monitoring circuit SD-96519-01 or SD-96591-02 which do <i>not</i> have CAL MEAS and CAL OUT jacks — Perform following steps.	
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12b	Connect 1 MW SUP jack to TMS.	
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TMS reading should be  $0 \pm 0.2$  db.  
See Step 13c.

13c	If requirement of Step 12b is not met — 1 MW supply should be readjusted.	
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STEP	ACTION	VERIFICATION
14c	Disconnect TMS from 1 MW SUP jack, connect TMS to AMP OUT jack.	
15c	Turn S2 RECEIVER switch to position 2 M OPR.	TMS reading should be exactly 0 db. See Step 16d.
16d	If requirement of Step 15c is not met — Readjust MON AMP to get 0 db reading.	
17d	Turn S2 RECEIVER switch to position 1 MEAS INPUT.	
18d	Patch monitoring cord between S socket of E1E unit to be monitored and S1 socket.	

#### 4. METHOD

STEP	ACTION	VERIFICATION
<b>A. Transmitted Tone Level</b>		
19	Patch LINE XMT jack to MON IN jack.	When circuit is idle (tone on) — Steady reading on TMS of $-36 \pm 1$ db.
20	Remove patch from LINE XMT jack to MON IN jack.	
21	Disconnect E1E unit from monitoring circuit.	
<b>B. Received Tone Level</b>		
19	Patch LINE RCV jack to MON IN jack.	When circuit is idle (tone on) — Steady reading on TMS of $-8 \pm 6$ db.
20	Remove patch from LINE RCV jack to MON IN jack.	
21	Disconnect E1E unit from monitoring circuit.	
<b>C. Monitoring</b>		
19	Remove connection from AMP OUT jack to IN terminals of TMS.	
20	Plug head telephone set in MON OUT TEL SET jack.	
21	Patch LINE XMT jack to MON IN jack.	When circuit is idle — Tone is heard. When circuit is seized — Tone is not heard. After circuit is seized and tone is not heard — At least five pulses of louder tone preceding normal lower level tone are heard. Calling party disconnects. Tone is heard.

STEP	ACTION	VERIFICATION
22	Remove patch from LINE XMT jack to MON IN jack.	
23	Patch LINE RCV jack to MON IN jack.	When circuit is idle — Tone is heard. When circuit is initially seized — Tone is heard. A short interval after circuit is seized — At least five groups of pulses of louder tone preceding normal lower level tone are heard. Called party answers. Tone is not heard.  <i>Note:</i> If operator answers, tone is heard. Busyback, tone pulses of 60 ipm are heard. Reorder or overflow, tone pulses of 120 ipm are heard.
24	Remove patch from LINE RCV to MON IN jack.	
25	Remove head telephone set from MON OUT TEL SET jack.	
26	Disconnect E1E unit from monitoring circuit.	