

TRAFFIC REGISTERS FOR  
MJ MOBILE RADIO TELEPHONE SYSTEM  
TESTS  
NO. 5 CROSSBAR OFFICES

1. GENERAL PAGE

1.01 This section describes a method of testing traffic registers associated with: (1) line circuits SD-2R002-01 and SD-2R049-01; (2) link circuits SD-2R008-01 and SD-2R054-01; (3) register-sender circuit SD-2R051-01; and (4) marker circuit SD-2R004-01 for use with the large and/or small MJ Mobile Radio and Telephone Systems in No. 5 crossbar offices.

1.02 The tests covered are:

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A. **Line Circuit (Large and/or Small System) (PC Lead):** This test checks the operation of the line circuit traffic register upon completion of a call. . . . . 4

B. **Call Check (Small System) (RA, RLCR Leads):** This test checks registration of calls completed by the link circuit to a local area by mobile station roaming out of the home area. This test also checks registration of calls extended to the switchboard of the link circuit. . . . . 4

C. **Call Check (Large System) (MA, RA, OC Leads):** This test checks registration upon call completion employing the following conditions:

- (1) Manual mobile calls
- (2) Calls to an operator
- (3) Calls from a switchboard. . . . . 5

D. **Register-Sender (Small System) (RPC, SPC Leads):** This test checks registration upon completion of a call in

the sender or register operating mode. . . . . 5

E. **Marker Operation (Large and/or Small System) (OCCI, IMAI, ICCI, OMAI Leads):** This test checks the traffic registration under the following conditions:

- (1) End of pulsing land-to-mobile call
- (2) Marker ready to establish link on mobile-to-land call
- (3) Line-to-link connections established
- (4) Land-to-mobile call completed. . . . . 5

1.03 All tests require action and/or verification at the traffic register circuit and at the MJ mobile telephone control terminal.

1.04 Local instructions should be followed for recording and reporting register operations caused by performing 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

All Tests

2.01 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one

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KS-6278 tool, one 419A (test connector) tool (for use in applying ground momentarily to the contacts of nonwire-spring-type relays).

**Test E**

**2.02** Blocking and insulating tools as required. Use tools and apply as covered in Section 069-020-801.

**2.03** The following apparatus may also be required:

- (a) Two 26 cords are required in offices where it is necessary to patch the traffic register

to the circuit under test and to patch the traffic register to a battery supply.

- (b) Two W2W cords, 10 feet long, each equipped with a 310 plug and two 360-type tools (2W17C cords), two KS-6278 connecting clips, and two 108 cord tips (required when a portable test lamp is used).

- (c) 38B lamp socket equipped with a 2Y lamp (required when a portable test lamp is used).

- (d) Two head telephone sets (required when a portable test lamp is not used).

**3. PREPARATION**

STEP	ACTION	VERIFICATION
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**All Tests**

- 1a If traffic registers are arranged for patching—  
At traffic register circuit—  
Insert cord tip of 26 patching cord into P-jack for circuit associated with register to be tested.
- 2a Insert cord tip on other end of 26 patching cord into black jack associated with register to be tested (black jack is located on mounting plate with register).
- 3a Insert cord tip of 26 cord into red jack on mounting plate with register to be tested.
- 4a Insert cord tip on other end of 26 cord into any S- jack located at bottom of jack field.
- 5b If traffic registers are arranged for patching and if battery supply for register to be tested is controlled by C- toggle switch—  
At traffic register circuit—  
Operate C- toggle switch to ON.
- 6c If traffic registers are not arranged for patching—  
Determine, from local office records, functional designation of peg count BAT key associated with register to be tested.
- 7c At traffic register circuit—  
Operate BAT key associated with register to be tested.

STEP	ACTION	VERIFICATION
8d	If tests are to be performed without portable test lamp— Establish talking circuit between frames where test is to be performed and where observations are to be made.	
9e	If tests are to be performed with portable test lamp— At frame where action is to be taken— Insert plug of 2W17C cord, equipped with two KS-6278 connecting clips, into SP jack of miscellaneous circuit.	
10e	Determine, from circuit drawing of circuit associated with register to be tested, location of punching on terminal strip at which common lead to traffic register circuit is connected.	
11e	Connect one lead of 2W17C cord to punching on terminal strip determined in Step 10e.	
12e	Connect other lead of 2W17C cord to battery.	
13e	Connect leads of 38B lamp socket to leads of another 2W17C cord equipped with two KS-6278 connecting clips.	
14e	Insert plug of this 2W17C cord into any appearance of selected SP jack of miscellaneous circuit close to position where test is to be performed.	
15e	Place portable test lamp so that it can be easily observed.	
16f	If tests are performed with portable test lamp and circuit associated with register to be tested removes ground from common lead to traffic register circuit to operate register— Observe portable test lamp when register operates.	Portable test lamp extinguished.
17g	If tests are performed with portable test lamp and circuit associated with register to be tested applies ground to common lead to traffic register circuit to operate register— Observe portable test lamp when register operates.	Portable test lamp lighted.
18e	If tests are to be performed with portable test lamp— To observe scoring of register when using	

STEP	ACTION	VERIFICATION
	portable test lamp, proceed as follows: (a) For first observation of scoring of register, observe that portable test lamp indicates proper condition on common lead and that register scores as required and (b) for subsequent observations of scoring of same register, observe portable test lamp indications only.	

**All Tests**

- 19 At test panel for large and/or small mobile radio switching systems—  
Restore all keys, set all switches to OFF.

**4. METHOD**

STEP	ACTION	VERIFICATION
<b>A. Line Circuit (Large and/or Small System) (PC Lead)</b>		
20h	If testing large system line circuit— At line circuit— Momentarily apply ground to 5T of RD relay.	At traffic register cabinet— Register associated with PC lead scored once.
21h	At line circuit— Repeat Step 20h for each line circuit.	
22i	If testing small system line circuit— At line circuit— Momentarily apply ground to 3B of BY relay.	At traffic register cabinet— Register associated with PC lead scored once.
23i	At line circuit— Repeat Step 22i for each line circuit.	
<b>B. Call Check (Small System) (RA, RLCR Leads)</b>		
<b>Call Extended to Switchboard</b>		
20	At link circuit— Momentarily apply ground to 9B of RO relay.	At traffic register cabinet— Register associated with RA lead scored once.
21	At link circuit— Repeat Step 20 for each link circuit.	
<b>Roam Line Used</b>		
22	At link circuit— Momentarily apply ground to 9B of RLC relay.	At traffic register cabinet— Register associated with RLCR lead scored once.
23	Repeat Step 22 for each link circuit.	

STEP	ACTION	VERIFICATION
<b>C. Call Check (Large System) (MA, RA, OC Leads)</b>		
<b>Manual Mobile Call Operation</b>		
20	At link circuit— Momentarily apply ground to 7T of MC relay.	At traffic register cabinet— Register associated with MA lead scored once.
21	At link circuit— Repeat Step 20 for each link circuit.	
<b>Call to Operator</b>		
22	Momentarily apply ground to 3T of OA relay.	At traffic register cabinet— Register associated with RA lead scored once.
23	At link circuit— Repeat Step 22 for each link circuit.	
<b>Call From Switchboard</b>		
24	At link circuit— Momentarily apply ground to 12T of SA relay.	At traffic register cabinet— Register associated with OC lead scored once.
25	At link circuit— Repeat Step 24 for each link circuit.	
<b>D. Register-Sender (Small System) (RPC, SPC Leads)</b>		
<b>Register Portion of Register-Sender Circuit</b>		
20	At register-sender circuit— Momentarily apply ground to 7B of REG relay.	At traffic register cabinet— Register associated with RPC lead scored once.
<b>Sender Portion of Register-Sender Circuit</b>		
21	At register-sender circuit— Momentarily apply ground to 10B of SD relay.	At traffic register cabinet— Register associated with SPC lead scored once.
<b>E. Marker Operation (Large and/or Small System) (OCC1, IMA1, ICC1, OMA1 Leads)</b>		
<b>End of Pulsing Land-to-Mobile Call</b>		
20h	If duplicate service is provided— At duplicate switching and test access circuit— Operate MB MKR- key associated with marker selected for test.	
21h	At marker selected for test— Block operated ES relay.	
22h	Block operated LCT relay.	

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
23h	Momentarily operate ST1 relay.	At traffic register cabinet— Register associated with OCC1 lead scored once.
24h	At marker selected for test— Remove blocking tools from ES, LCT relays.	
25h	Restore MB MKR- key.	
26h	Repeat Steps 20h through 25h for other marker.	
27i	If duplicate service is not provided— At marker selected for test— Momentarily apply ground to 7T of MTR relay.	At traffic register cabinet— Register associated with OCC1 lead scored once.

**Marker Ready to Establish Link on Mobile-to-Land Call**

28h	If duplicate service is provided— At duplicate switching and test access circuit— Operate MB MKR- key associated with marker selected for test.	
29h	At marker selected for test— Momentarily operate INC relay.	At traffic register cabinet— Register associated with IMA1 lead scored once.
30h	Restore MB MKR- key.	
31h	Repeat Steps 28h through 30h for other marker.	
32i	If duplicate service is not provided— At marker circuit— Momentarily apply ground to 1T of MTR relay.	At traffic register cabinet— Register associated with IMA1 lead scored once.

**Line-to-Link Connections Established**

33h	If duplicate service is provided— At duplicate switching and test access circuit— Operate MB MKR- key.	
34h	At marker circuit— Insulate 9T, 10T of INC relay.	
35h	Block operated INC relay.	
36h	Momentarily operate LCT relay.	At traffic register cabinet— Register associated with ICC1 lead scored once.
37h	At marker circuit— Remove blocking tool from INC relay.	

STEP	ACTION	VERIFICATION
38h	Remove insulating tools from 9T, 10T of INC relay.	
39h	Repeat Steps 33h through 38h for other marker.	
40i	If duplicate service is not provided— At marker circuit— Momentarily apply ground to 1B of MTR relay.	At traffic register cabinet— Register associated with ICC1 lead scored once.
<b>Land-to-Mobile Call Completed</b>		
41h	If duplicate service is provided— At duplicate switching and test access circuit— Operate MB MKR- key.	
42h	At marker circuit— Block operated ST1 relay.	
43h	Momentarily operate OTG relay.	At traffic register cabinet— Register associated with OMA1 lead scored once.
44h	At marker circuit— Remove blocking tool from ST1 relay.	
45h	Repeat Steps 41h through 44h for other marker.	
46i	If duplicate service is not provided— At marker selected for test— Momentarily apply ground to 4T of MTR relay.	At traffic register cabinet— Register associated with OMA1 lead scored once.

