

**COMBINED AND COMPLETING MARKER CIRCUITS—PART 27**  
**TESTS USING MASTER TEST FRAME**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**1.01** This section is Part 27 in a series of sections for testing combined and completing markers.

**1.02** The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. This issue affects Equipment Test Lists.

- (a) To revise test procedures to include offices arranged with Electronic Translation System (ETS).
- (b) To make minor changes as required.

**1.03** The tests covered are:

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**CU. Access Group Controller Features—ETS Not Provided:**

The following features are checked:  
(1) An originating call to the CCSA network causes an add indication to the access group controller. (2) A terminating call to a centrex station in the customer group served by the access group controller causes an add indication to the access group controller. (3) Incompleted calls will not cause an add indication to the access group controller.

**2**

**CV. Direct Access to No. 101**

**ESS:** This test checks that the marker will complete properly on calls to a No. 101 ESS PBX. The following features are also checked: (1) No. 101 ESS Bell System and private network calls. (2) Trouble indication to marker.

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**1.04 Lettered Steps:** A letter, a, b, c, etc, added to a step number in Part 3 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, the steps designated by that letter should be omitted.

**1.05** The manner of selecting some circuits and test conditions at the master test frame (MTF) and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.

**1.06** The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

**1.07** When the office is arranged for LAMA-C or ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in a **maintenance busy** condition - not in an **out-of-service** condition. To change a scanner or distributor from an **out-of-service** to a **maintenance-busy** condition, use the procedure given in the following sections for the office arrangement.

218-798-308 - Taking LAMA-C  
Equipment Out-of-Service.

218-799-701 - Taking ETS  
Equipment Out-of-Service.

**NOTICE**

Not for use or disclosure outside the  
Bell System except under written agreement

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**1.08** Additional test procedures are available for verification of leads between the completing marker and the distributor and scanner (DAS). Refer to Section 218-122-531 for DAS application to LAMA-C or Section 218-799-321 for DAS application to ETS.

**1.09** When making tests in No. 5 crossbar offices arranged with Electronic Translation System and test verification requires a completing marker trace output (teletype printout or data dump) to determine the data used to process a call, operate the TCPO key at the master test frame (MTF). The data dump received at the maintenance teletypewriters (TTY) may be in a raw form (binary or hexadecimal numbering system), formatted into

decimal and written text, or a combination of both. For additional information on data dumps and formats used, refer to Section 218-799-102.

**2. APPARATUS**

**All Tests**

- 2.01** Master test control circuit, SD-25800-01.
- 2.02** 322A (make-busy) plugs as required.
- 2.03** Blocking and insulating tools as required. Use tools and apply as covered in Section 069-020-801.

**3. METHOD**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
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*Note:* Refer to paragraphs 1.04 through 1.09.

**CU. Access Group Controller Features—ETS Not Provided**

**Originating Seizure**

- |    |   |                         |
|----|---|-------------------------|
| 1  | At MTF—<br>Restore all keys and switches.   |                         |
| 2  | Momentarily operate RL key.   | All lamps extinguished. |
| 3  | Select ORIG class of test.  |                         |
| 4  | Select OR class of call with LT3 translator indication.   |                         |
| 5  | Select A_ through K_ digits as required to direct call to CCSA network route associated with access group controller. |                         |
| 6  | Select line location having access to access group controller.  |                         |
| 7  | Select class of service and rate treatment associated with access group controller.                                   |                         |
| 8  | Select route advance 0.   |                         |
| 9  | Select marker under test.   |                         |
| 10 | Momentarily operate ST key.   | MRL, ADD lamps lighted. |

STEP	ACTION	VERIFICATION
11	Momentarily operate RL key.	All lamps extinguished.
12a	If more than one access group controller is provided— Repeat Steps 5 through 11 for each access group controller.	
13	Restore all keys and switches.	
<b>Terminating Seizure</b>		
14	Select INC class of test.	
15	Select INC class of call with LT3 translator indication.	
16	Select trunk link frame.	
17	Operate REC key.	
18	Select A_ through K_ digits as required to direct call to station associated with access group controller.	
19	Select incoming trunk class as required for completion to called station.	
20	Select marker under test.	
21	Momentarily operate ST key.	MRL, ADD lamps lighted. Trouble record taken. INC, LT3 designations perforated. FTT_ FUT_ VGT_ HGT_ VFT_ designations perforated indicating location of called line. ◆AGCK designation perforated.◆
22	Momentarily operate RL key.	All lamps extinguished.
23a	If more than one access group controller is provided— Repeat Steps 18 through 22 for each access group controller.	
24	Restore all keys and switches.	
<b>Partial Dial</b>		
25	Select ORIG class of test.	
26	Select OR class of call with LT3 translator indication.	

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STEP	ACTION	VERIFICATION
27	Operate PD, REC keys.	
28	Select line location having access to access group controller.	
29	Select class of service and rate treatment associated with access group controller.	
30	Select route advance 0.	
31	Select marker under test.	
32	Momentarily operate ST key.	MRL lamp lighted. ADD lamp <i>not</i> lighted. Trouble record taken. PD, OR, LT3 designations perforated. FS_, TS_, TG_, TB_, LC_, LV_, FAK/FBK designations perforated indicating location of tone trunk or special service trunk according to marker cross-connections.
33	Momentarily operate RL key.	All lamps extinguished.
34a	If more than one access group controller is provided— Repeat Steps 28 through 33 for each access group controller.	
35	Restore all keys and switches.	

**Vacant Code**

36	Select ORIG class of test.
37	Select OR class of call with LT3 translator indication.
38	Operate REC key.
39	Select A_ through G_ digits as required for vacant ABX code and directory number.
40	Select line location having access to access group controller.
41	Select class of service and rate treatment associated with access group controller.
42	Select route advance 0.
43	Select marker under test.

STEP	ACTION	VERIFICATION
44	Momentarily operate ST key.	MRL lamp lighted. ADD lamp <b>not</b> lighted. Trouble record taken. OR, LT3 designations perforated. FS_, TS_, TG_, TB_, LC_, LV_, FAK/FBK designations perforated indicating location of tone trunk or special service trunk according to marker cross-connections.
45	Momentarily operate RL key.	All lamps extinguished.
46a	If more than one access group controller is provided— Repeat Steps 39 through 45 for each access group controller.	
47	Restore all keys and switches.	
<b>Inhibited Call</b>		
48	Select ORIG class of test.	
49	Select OR class of call with LT3 translator indication.	
50	Operate REC key.	
51	Select A_ through K_ digits as required to direct call to CCSA network route associated with access group controller.	
52	Select line location having access to access group controller.	
53	Select class of service and rate treatment associated with access group controller.	
54	Select route advance 0.	
55	Select marker under test.	
56	Insert make-busy plug into MMB_jack associated with marker under test.	
57	At marker under test— Block operated ART_ relay associated with class of service used in Step 53.	
58	At MTF— Momentarily operate ST key.	MRL lamp lighted. ADD lamp <b>not</b> lighted. Trouble record taken. OR, LT3 designations perforated.

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STEP	ACTION	VERIFICATION
		FS_, TS_, TG_, TB_, LC_, LV_, FAK/FBK designations perforated indicating location of tone trunk.
59	Momentarily operate RL key.	All lamps extinguished.
60	Restore REC key.	
61	Change line location as required for line not associated with access group controller.	
62	Change class of service and rate treatment as required for line not associated with access group controller.	
63	Change A_ through K_ digits as required to direct call to station of remote PBX associated with class of service used in Step 62.	
64	Momentarily operate ST key.	MRL lamp lighted. ADD lamp <i>not</i> lighted.
65	Momentarily operate RL key.	All lamps extinguished.
66	Restore all keys and switches.	
67	Select INC class of test.	
68	Select INC class of call with LT3 translator indication.	
69	Select any trunk link frame.	
70	Operate REC key.	
71	Select A_ through K_ digits as required to direct call to station associated with access group controller.	
72	Select incoming trunk class as required for completion to called station.	
73	Select marker under test.	
74	Momentarily operate ST key.	MRL lamp lighted. ADD lamp <i>not</i> lighted. Trouble record taken. INC, LT3, ROA designations perforated.
75	Momentarily operate RL key.	All lamps extinguished.
76	Restore all keys and switches.	

STEP	ACTION	VERIFICATION
77	At marker under test— Remove blocking tool from ART_ relay.	
78	At MTF— Remove make-busy plug from MMB_ jack.	
<b>Busy Line—Intraoffice Call</b>		
79	Select ORIG class of test.	
80	Select OR class of call with LT3 translator indication.	
81	Operate LB, REC keys.	
82	Select line location having access to access group controller.	
83	Select class of service and rate treatment associated with access group controller.	
84	Select A_ through K_ digits as required to direct call to station of remote PBX associated with selected class of service.	
85	Select route advance 0.	
86	Select marker under test.	
87	Momentarily operate ST key.	MRL, BY lamps lighted. ADD lamp <i>not</i> lighted. Trouble record taken. INC, LT3, LB designations perforated.
88	Momentarily operate RL key.	All lamps extinguished.
89	Restore all keys and switches.	
<b>Busy Line—Terminating Call</b>		
90	Select INC class of test.	
91	Select INC class of call with LT3 translator indication.	
92	Select any trunk link frame.	
93	Operate LB, REC keys.	
94	Select A_ through K_ digits as required to direct call to station associated with access group controller.	

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STEP	ACTION	VERIFICATION
95	Select incoming trunk class as required for completion to called station.	
96	Select marker under test.	
97	Momentarily operate ST key.	MRL, BY lamps lighted. ADD lamp <b>not</b> lighted. Trouble record taken. INC, LT3, LB, BY designations perforated.
98	Momentarily operate RL key.	All lamps extinguished.
99	Restore all keys and switches.	

CV. Direct Access to No. 101 ESS

Incoming Call to No. 101 ESS Arranged for Bell System POTS Numbers

1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select INC class of test.	
4	Operate TCLA, REC keys.	
5a	◆If ETS provided and CM dump is required— Operate TCPO key.  <b>Note:</b> See paragraph 1.09.◆	
6	Select any trunk link frame.	
7	Select INC class of call and translator indication as required for office designation having access to No. 101 ESS arranged for Bell System numbers.	
8	Select A_ through E_ digits as required to direct call to No. 101 ESS Bell System POTS directory number.	
9	Select incoming trunk class having access to No. 101 ESS.	
10	Select marker under test.	
11	Momentarily operate ST key.	MRL, POTS lamps lighted. Trouble record taken. INC, TCA designations perforated.

STEP	ACTION	VERIFICATION
		FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated indicating location of trunk to No. 101 ESS.
12	Momentarily operate RL key.	All lamps extinguished.
13b	If direct access to more than one No. 101 ESS is provided— Repeat Steps 7 through 12 for Bell System numbers to which office has direct access.	
14	Restore all keys and switches.	
<b>Incoming Call to No. 101 ESS Arranged for Private Network Numbers</b>		
15	Select INC class of test.	
16	Operate TCLA, REC keys.	
17a	◆If ETS provided and CM dump is required— Operate TCPO key.◆	
18	Select any trunk link frame.	
19	Select INC class of call and translator indication as required for office designation having access to No. 101 ESS arranged for private network numbers.	
20	Select A_ through E_ digits as required to direct call to No. 101 ESS private network directory number.	
21	Select incoming trunk class having access to No. 101 ESS.	
22	Select marker under test.	
23	Momentarily operate ST key.	MRL, CCSA lamps lighted. Trouble record taken. INC, TCA designations perforated. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated indicating location of trunk to No. 101 ESS.
24	Momentarily operate RL key.	All lamps extinguished.
25b	If direct access to more than one No. 101 ESS is provided— Repeat Steps 19 through 24 for each No. 101	

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STEP	ACTION	VERIFICATION
	ESS arranged for private network to which office has direct access.	
26	Restore all keys and switches.	
<b>Intraoffice Call to No. 101 ESS Arranged for Bell System Numbers</b>		
27	Select ORIG class of test.	
28	Select OR class of call and translator indication as required for access to No. 101 ESS arranged for Bell System numbers.	
29	Operate TCLA, REC keys.	
30a	◆If ETS provided and CM dump is required— Operate TCPO key.◆	
31	Select A_ through G_ digits as required to direct call to No. 101 ESS Bell System POTS directory number.	
32	Select line location having access to No. 101 ESS.	
33	Select class of service and rate treatment as required.	
34c	◆If ETS provided— Operate PCS key.◆	
35	Select route advance 0.	
36c	◆If ETS provided— Operate PTS key.◆	
37	Select marker under test.	
38	Momentarily operate ST key.	MRL, POTS lamps lighted. Trouble record taken. FS_, TS_, TB_, TG_, LC_, LV_ designations perforated indicating location of B appearance of intraoffice trunk (first trouble card), A appearance (second trouble card). ◆If ETS provided— TG_ designation not perforated.◆
39	Momentarily operate RL key.	All lamps extinguished.
40	Restore all keys and switches.	

STEP	ACTION	VERIFICATION
<b>Intraoffice Call to No. 101 ESS Arranged for Private Network Numbers</b>		
41	Select ORIG class of test.	
42	Select OR class of call with LT3 translator indication.	
43	Operate TCLA, REC keys.	
44a	◆If ETS provided and CM dump is required— Operate TCPO key.◆	
45	Select A_ through G_ digits as required to direct call to No. 101 ESS private network directory number.	
46	Select line location having access to No. 101 ESS.	
47	Select class of service and rate treatment as required.	
48	Select route advance 0.	
49c	◆If ETS provided— Operate PCS, PTS keys.◆	
50	Select marker under test.	
51	Momentarily operate ST key.	MRL, CCSA lamps lighted. Trouble record taken. FS_, TS_, TG_, TB_, LC_, LV_ designations perforated indicating location of B appearance of intraoffice trunk (first trouble card), A appearance (second trouble card). ◆If ETS provided— TG_ designation not perforated.◆
52	Momentarily operate RL key.	All lamps extinguished.
53	Restore all keys and switches.	
<b>Trouble Indication From Direct Access Pretranslator— Receives Insufficient Information From Marker</b>		
54	Select ORIG class of test.	
55	Select OR class of call and translator indication as required for access to No. 101 ESS.	
56	Operate TCLA key.	

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STEP	ACTION	VERIFICATION
57	Select A_ through G_ digits as required to direct call to No. 101 ESS.	
58	Select line location having access to No. 101 ESS.	
59	Select class of service and rate treatment as required.	
60	Select route advance 0.	
61c	♦If ETS provided— Operate PCS, PTS keys.♦	
62	Select marker under test.	
63	Insert make-busy plug into MMB_jack associated with marker under test.	
64d	If wire-spring-relay type marker is under test— At marker under test— Insulate 10B of SLCK1 relay.	
65e	If nonwire-spring-relay type marker is under test— At marker under test— Insulate 3B, 4B of SLCK1 relay.	
66	At MTF— Momentarily operate ST key.	TRL and POTS or CCSA lamps lighted. Trouble record taken.
67	Momentarily operate RL key.	All lamps extinguished.
68	At marker under test— Remove insulator from SLCK1 relay.	
69	At MTF— Remove make-busy plug from MMB- jack of marker under test.	
70	Restore all keys and switches.	