

COMBINED AND COMPLETING MARKER CIRCUITS—PART 18

TESTS USING MASTER TEST FRAME

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 18 in a series of sections for testing combined and completing markers. The tests in this section apply only to completing markers, SD-26002-01.

1.02 The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. This issue does not affect Equipment Test Lists.

- (a) To revise test procedures to include offices arranged with Electronic Translation System (ETS).
- (b) To exclude under verification in all tests, reference to "class of test" lamps.
- (c) To make minor changes as required.

1.03 The test covered is:

CA: Features Common to Phases I, II, and III Centrex: (Also refer to Test CB for Phases I and II centrex and to Test CC for Phase III centrex.) This test checks the following features: (1) Intra-PBX 4- and/or 5-digit calling. (2) Class-of-service match. (3) Restricted station. (4) Intercustomer group 4- and/or 5-digit calling. (5) Listed directory number. (6) Intercept on customer group basis. (7) Busy line verification.

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, all 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 On issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, DT, ORIG, ITDO, ITNP, OGT, INC, OR, SDR, IR, MISC, IAO, MLV, LT, IMS, PTT, TVT, ATNT, and IMT.

1.08 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

NOTICE

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

SECTION 218-122-518

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

1.09 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.

1.10 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

2.01 Master test control circuit, SD-25800-01.

3. METHOD

STEP	ACTION	VERIFICATION
-------------	---------------	---------------------

Note: Refer to paragraphs 1.04 through 1.10.

CA. Features Common to Phases I, II, and III Centrex

Station-to-Station 4- and/or 5-Digit Call

- | | | |
|-----|---|-------------------------|
| 1 | At MTF—
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. | |
| 5a | If office is arranged for four digits only—
Select A_ through D_ digits for a line with restrictions to complete. | |
| 6a | Select X11 translator indication. | |
| 7b | If office is arranged for five digits only—
Select A_ through E_ digits for a line with restrictions to complete. | |
| 8b | Select FVD translator indication. | |
| 9c | If office is arranged for four <i>and</i> five digits—
Select A_ through D_ digits for a line with restrictions to complete. | |
| 10c | Select X11 translator indication. | |
| 11 | Select line location as required for line identification of centrex line. | |

STEP	ACTION	VERIFICATION
12	Select class of service and rate treatment as required for access to selected route.	
13d	◆If ETS provided— Operate PCS key.◆	
14	Select marker under test.	
15	Operate REC key.	
16e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
17	Momentarily operate ST key.	DIS1, LK2, MRL lamps lighted. Trouble record taken. FS_, TS_, TB_, TG_, LC_, LV_, FAK/FBK designations perforated indicating location of B appearance of intraoffice trunk without transfer (first trouble card), A appearance (second trouble card). ◆If ETS provided— TG_ designation not perforated.◆ If multiple class-of-service match is not provided— CTUK designation perforated (first trouble card). If multiple class-of-service match is provided— MCS, CM designations perforated (first trouble card). ◆If ETS provided— CTUK designation perforated (first trouble card).◆
18	Momentarily operate RL key.	All lamps extinguished.
19c	If office is arranged for four and five digits— Select A_ through E_ digits for a line with restrictions to complete.	
20c	Select FVD translator indication.	
21c	Repeat Steps 11 through 18.	
22	Restore all keys and switches.	
Intercustomer Group 4- and/or 5-Digit Call		
23	At MTF— Restore all keys and switches.	

SECTION 218-122-518

STEP	ACTION	VERIFICATION
24	Momentarily operate RL key.	All lamps extinguished.
25	Select ORIG class of test.	
26	Select attendant originating line location.	
27	Select class of service and rate treatment associated with attendant originating line location.	
28d	◆If ETS provided— Operate PCS key.◆	
29	Select A_ through E_ digits as required for a listed directory number in a different customer group which is arranged to complete to class of service used in Step 27.	
30	Select OR class of call with X11 or FVD translator indication as required.	
31	Select marker under test.	
32	Operate REC key.	
33e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
34	Momentarily operate ST key.	DIS1, LK2, MRL lamps lighted. Trouble record taken. CDN, LDN, GS_ designations perforated. ◆If ETS provided— GS_ designation not perforated.◆ If Phase III centrex is provided— FS_ TS_ TB_ TG_ LC_ LV_ FAK/FBK designations perforated indicating location of B appearance of intraoffice trunk with transfer (first trouble card), A appearance (second trouble card). ◆If ETS provided— TG_ designation not perforated.◆
35	Momentarily operate RL key.	All lamps extinguished.
36	Select originating line location of station used in Step 29.	
37	Select A_ through E_ digits as required for listed directory number associated with originating line location selected in Step 26.	

STEP	ACTION	VERIFICATION
38	Repeat Steps 34, 35.	
39	Repeat Steps 26 through 38 for all other centrex customer groups arranged to complete on an intercustomer group basis.	
40	Repeat Steps 23 through 28d, 30 through 33e.	
41	Select A_ through E_ digits as required for a station in a different customer group which is not arranged to complete to class of service used in Step 27.	
42	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FS_, TS_, TB_, TG_, LC_, LV_, FBK designations perforated indicating location of intercept trunk. ◆If ETS provided— TG_ designation not perforated.◆
43	Momentarily operate RL key.	All lamps extinguished.
44	Repeat Steps 40 through 43 for other customer groups which are not arranged to complete to other customer groups on a 4- or 5-digit basis.	
45	Restore all keys and switches.	
Station to Listed Directory Number 4- and/or 5-Digit Call—Intracustomer Group		
46	At MTF— Restore all keys and switches.	
47	Momentarily operate RL key.	All lamps extinguished.
48	Select ORIG class of test.	
49	Select A_ through E_ digits as required for listed directory number.	
50	Select line location as required for centrex line location.	
51	Select class of service and rate treatment, as required, in same customer group as listed directory number.	
52d	◆If ETS provided— Operate PCS key.◆	

SECTION 218-122-518

STEP	ACTION	VERIFICATION
53	Select OR class of call with X11 or FVD translator indication.	
54	Select marker under test.	
55	Operate REC key.	
56e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	<i>Note:</i> See paragraph 1.10.◆	
57	Momentarily operate ST key.	MRL, RA_ lamps lighted. ◆If ETS provided— RA_ lamp not lighted.◆ Trouble record taken. FS_ TS_ TB_ TG_ LC_ LV_ FAK/FBK designations perforated indicating location of tone trunk. CDN, LDN, GS_ designations perforated. ◆If ETS provided— TG_ GS_ designations not perforated.◆
58	Momentarily operate RL key.	All lamps extinguished.
59	Restore all keys and switches.	
Intraoffice 7-Digit Call—Station or Listed Directory Number		
	<i>Note:</i> For Phases I and II second marker usage for listed directory number call, refer to Section 218-122-519, Test CB.	
60	At MTF— Restore all keys and switches.	
61	Momentarily operate RL key.	All lamps extinguished.
62	Select ORIG class of test.	
63	Select line location as required for a noncentrex originating line location.	
64	Select class of service and rate treatment as required for noncentrex line.	
65d	◆If ETS provided— Operate PCS key.◆	
66f	If calling station number— Select A_ through G_ digits as required for	

STEP	ACTION	VERIFICATION
	intraoffice route and line with restrictions to complete.	
67g	If calling listed directory number— Select A_ through G_ digits as required for intraoffice route and listed directory number.	
68	Select OR class of call with LT translator indication.	
69	Select marker under test.	
70	Operate REC key.	
71e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	<i>Note:</i> See paragraph 1.10.◆	
72	Momentarily operate ST key.	DIS1, LK2, MRL lamps lighted. Trouble record taken. If station number is called or Phase III centrex is provided— FS_, TS_, TB_, TG_, LC_, LV_, FAK/FBK designations perforated indicating location of B appearance of intraoffice trunk (first trouble card), A appearance (second trouble card). TBS_ designation perforated (first trouble card). ◆If ETS provided— TG_, TBS_ designations not perforated.◆ Non-AMA Operation First and second trouble record— NSI designation perforated. AMA Operation Second trouble record— NSI, NDI, CP_, MB_, RN_, OSG_, AMA designations perforated. ◆If ETS provided— CP_, MB_ designations not perforated. If station number is called— POTS designation perforated (first trouble card). If listed directory number is called— CDN, LDN designations perforated (first trouble card).
73	Momentarily operate RL key.	All lamps extinguished.

SECTION 218-122-518

STEP	ACTION	VERIFICATION
74	Restore all keys and switches.	
Intraoffice 7-Digit Call to Restricted Station		
75	At MTF— Restore all keys and switches.	
76	Momentarily operate RL key.	All lamps extinguished.
77	Select ORIG class of test.	
78	Select line location as required to select a noncentrex originating line location.	
79	Select class of service and rate treatment as required for noncentrex line.	
80d	◆If ETS provided— Operate PCS key.◆	
81	Select A_ through G_ digits as required for an intraoffice route and a station with restrictions not to complete.	
82	Select OR class of call with LT translator indication.	
83	Select marker under test.	
84	Operate REC key.	
85e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
86	Momentarily operate ST key.	BN, DIS1, LK2, MRL lamps lighted. Two trouble records taken. FTT_ FUT_ VGT_ HGT_ VFT_ designations perforated indicating line location of announcement or intercept trunk. ITR, BN, RIP, TBS_ designations perforated (first trouble card). ◆If ETS provided— RIP, TBS_ designations not perforated.◆
87	Momentarily operate RL key.	All lamps extinguished.
88	Restore all keys and switches.	

STEP	ACTION	VERIFICATION
Terminating Call Through an Incoming Trunk to Station or Listed Directory Number		
<i>Note:</i> For Phases I and II second marker usage for listed directory number call, refer to Section 218-122-519, Test CB.		
89	At MTF— Restore all keys and switches.	
90	Momentarily operate RL key.	All lamps extinguished.
91	Select INC class of test.	
92f	If calling station number— Select A_ through G_ digits as required for a line with restrictions to complete.	
93g	If calling listed directory number— Select A_ through G_ digits as required for a listed directory number.	
94	Select incoming class of call with translator indication as required for completion to called line.	
95	Select any trunk link frame.	
96	Select incoming trunk class as required for completion to called line.	
97	Select marker under test.	
98	Operate REC key.	
99e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
<i>Note:</i> See paragraph 1.10.◆		
100	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. TER, TBS_ designations perforated. ◆If ETS provided— TBS_ designation not perforated.◆ If station number is called— DAT, BLT, BLDA, or POTS designation perforated. FTT_, FUT_, VGT_, HGT_, VFT_, CS 1/0-9, CS 1/10-19, CS 1/20-29 designations perforated. indicating line location and class of service with rate treatment of called line.

SECTION 218-122-518

STEP	ACTION	VERIFICATION
		<p>◆If ETS provided— BLT, BLDA designations not perforated.◆ If listed directory number is called— CND, LDN designations perforated. If office is arranged for Phase III centrex and listed directory number is called— FTT_, FUT_, VGT_, HGT_, VFT_, CS 1/0-9, CS 1/10-19, CS 1/20-29 designations perforated indicating line location and class of service with rate treatment of called line.</p>
101	Momentarily operate RL key.	All lamps extinguished.
102	Restore all keys and switches.	

Terminating Call to Restricted Station Through an Incoming Trunk

103	Perform Steps 89 through 91.	
104	Select A_ through G_ digits as required for a line with restrictions not to complete on terminating class of call.	
105	Perform Steps 94 through 99e.	
106	Momentarily operate ST key.	<p>MRL lamp lighted. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated indicating line location of announcement or intercept trunk. TER and PAN, BN or RIP designations perforated. ◆If ETS provided— PAN, RIP designations not perforated.◆</p>
107	Momentarily operate RL key.	All lamps extinguished.
108	Restore all keys and switches.	

Multiple Class-of-Service Match—Class Match

109	At MTF— Restore all keys and switches.	
110	Momentarily operate RL key.	All lamps extinguished.
111	Select ORIG class of test.	
112	Select class of service and rate treatment as required.	

STEP	ACTION	VERIFICATION
113d	◆If ETS provided— Operate PCS key.◆	
114	Select A_ through E_ digits as required for a line with restrictions to complete with class-of-service used in Step 112.	
115	Select OR class of call with X11 or FVD translator indication.	
116	Select centrex line location.	
117	Select marker under test.	
118	Operate REC key.	
119e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
120	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FS_, TS_, TB_, TG_, LC_, LV_, FAK/FBK designations perforated indicating location of B appearance of intraoffice trunk without transfer (first trouble card), A appearance (second trouble card). POTS, MCS, CM designations perforated (first trouble card). ◆If ETS provided— TG_, MCS, CM designations not perforated. CTUK designation perforated (first trouble card).◆
121	Momentarily operate RL key.	All lamps extinguished.
122h	If more than one calling line class of service must match with class of service of called line for remaining classes of service— Repeat Steps 112, 120, 121.	
	Note: For classes of service matched only according to tens digit, only one class of service associated with each tens digit should be used.	
123	Repeat Steps 112 through 121 for each called line associated with a different class of service requiring multiple class-of-service match. (Refer to Note in Step 122h.)	
124	Restore all keys and switches.	

SECTION 218-122-518

STEP	ACTION	VERIFICATION
Multiple Class-of-Service Match—Class Mismatch		
125	At MTF— Restore all keys and switches.	
126	Momentarily operate RL key.	All lamps extinguished.
127	Select ORIG class of test.	
128	Select class of service and rate treatment as required.	
129d	◆If ETS provided— Operate PCS key.◆	
130	Select A_ through E_ digits as required for number having class-of-service tens digit not associated with class of service used in Step 128.	
131	Select OR class of call with X11 or FVD translator indication.	
132	Select centrex line location.	
133	Select marker under test.	
134	Operate REC key.	
135e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
136	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FTT_ FUT_ VGT_ HGT_ VFT_ designations perforated indicating line location of announcement or intercept trunk. PUL, BN, RIP, NMR, TBS_ designations perforated. ◆If ETS provided— RIP, NMR, TBS_ designations not perforated.◆
137	Momentarily operate RL key.	All lamps extinguished.
138i	If office is arranged to match some class-of-service units digits associated with tens digit and mismatch others— Select class-of-service tens digit associated with	

STEP	ACTION	VERIFICATION
	some units digits arranged for match and some for mismatch.	
139i	Select class-of-service units digit associated with class-of-service tens digit of Step 138i arranged to match.	
140i	Select A_ through E_ digits as required for line having class-of-service tens digit which will match that of Step 138i but having units digit arranged to mismatch.	
141i	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated indicating line location of announcement or intercept trunk. PUL, BN, RIP, NMR, TBS_ designations perforated. ♦If ETS provided— RIP, NMR, TBS_ designations not perforated.♦
142i	Momentarily operate RL key.	All lamps extinguished.
143	Restore all keys and switches.	
Intercept on Customer Group Basis		
144	At MTF— Restore all keys and switches.	
145	Momentarily operate RL key.	All lamps extinguished.
146	Select ORIG class of test.	
147	Select A_ through G_ digits as required to direct call to nonworking centrex line.	
148	Select OR class of call with LT translator indication.	
149	Select noncentrex line location.	
150	Select noncentrex class of service and rate treatment as required.	
151d	♦If ETS provided— Operate PCS key.♦	
152	Select marker under test.	

SECTION 218-122-518

STEP	ACTION	VERIFICATION
153	Operate REC key.	
154e	◆If ETS provided and CM dump is required— Operate TCP0 key. <i>Note:</i> See paragraph 1.10.◆	
155	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated indicating line location of intercept trunk associated with customer group.
156	Momentarily operate RL key.	All lamps extinguished.
157j	If more than one customer group is arranged for centrex intercept on customer group basis— Repeat Steps 147 through 156 for each customer group having customer group intercept.	
158	Restore all keys and switches.	

Centrex Busy Line Verification Trunk Seizure

159	At MTF— Restore all keys and switches.	
160	Momentarily operate RL key.	All lamps extinguished.
161	Select ORIG class of test.	
162	Select class of service corresponding to a centrex attendant class.	
163d	◆If ETS provided— Operate PCS key.◆	
164	Select rate treatment assigned for centrex busy line verification.	
165	Select A_ through E_ digits as required to direct call to station in customer group associated with class of service in Step 162. <i>Note:</i> Called station must not be reached by a line link pulsing line circuit.	
166	Select OR class of call with X11 or FVD translator indication.	
167	Select centrex line location.	

STEP	ACTION	VERIFICATION
168	Select marker under test.	
169	Operate REC key.	
170e	◆If ETS provided and CM dump is required— Operate TCP0 key.	
	Note: See paragraph 1.10.◆	
171	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FS_, TS_, TG_, TB_, LC_, LV_, FAK/FBK designations perforated indicating location of centrex busy line verification trunk. DR designation perforated. ◆If ETS provided— TG_ designation not perforated.◆
172	Momentarily operate RL key.	All lamps extinguished.
173	Restore all keys and switches.	

**Verification of Idle Line Using Centrex Busy Line
Verification Trunk—Special Markers**

174	At MTF— Restore all keys and switches.	
175	Momentarily operate RL key.	All lamps extinguished.
176	Select INC class of test.	
177	Select A_ through E_ digits as required to direct call to centrex station.	
	Note: Called station must not be reached by line link pulsing circuit.	
178	Select INC class of call with X11 or FVD translator indication.	
179	Select any trunk link frame.	
180	Select incoming trunk class as required for completion to called line.	
181	Select centrex attendant class of service having access to number used in Step 177.	
182	Select special marker under test.	
183	Operate CNT, CNTX, TRF, SPL, REC keys.	

SECTION 218-122-518

STEP	ACTION	VERIFICATION
184	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FTT_ FUT_ VGT_ HGT_ VFT_ designations perforated indicating location of called line. CM or CTUK designation perforated. ◆If ETS provided— CM designation not perforated.◆
185	Momentarily operate RL key.	All lamps extinguished.
186	Restore all keys and switches.	
Verification of Busy Line Using Centrex Busy Line Verification Trunk—Special Markers		
187	Perform Steps 174 through 183.	
188	Operate LBL key.	
189	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. FTT_ FUT_ VGT_ HGT_ VFT_ designations perforated indicating location of called line. CM or CTUK, RCY, NTT designations perforated. ◆If ETS provided— CM designation not perforated.◆
190	Momentarily operate RL key.	All lamps extinguished.
191	Restore all keys and switches.	
Attempt to Verify Idle Line Outside Customer Group Using Centrex Busy Line Verification Trunk—Special Markers		
192	Perform Steps 174 through 180.	
193	Select centrex attendant class of service <i>not</i> having access to number used in Step 177.	
194	Perform Steps 182, 183.	
195	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. OV, RS0, RS9 designations perforated. CT_ CU_ designations perforated indicating class of service of called number. CS_ designation perforated indicating class of service set up in Step 193.
196	Momentarily operate RL key.	All lamps extinguished.

STEP

ACTION

VERIFICATION

197

Restore all keys and switches.