

DECODERS

TESTS USING AUTOMATIC TESTING CIRCUIT SD-21188-01

PANEL OFFICES

1. GENERAL

1.01 This section describes a method of testing decoder circuits using the automatic testing circuit SD-21188-01.

1.02 This section is reissued to add features for Tests A and B for decoders that are arranged for prefix 0 or 1 screening.

1.03 The tests covered are:

A. All Codes Test: This test makes a check of all codes in sequence by comparing the transmitting leads of the first or master decoder and any other decoder in the group.

B. Particular Code Test: This test checks a code, determined by the setting of the appropriate keys of the decoder test circuit, by matching the transmitting leads of the decoder under test with the decoder test circuit key settings.

C. Special Code Test: This test, depending upon the special code key operated, checks the following features or routings where provided with decoders used with modified translator senders:

- (1) Preliminary pulse and second trial (PP-ST key) and the Z (ZO key) or PS1 (PS1 key) relay chain circuit feature.
- (2) Special service operator (OPR key) and the Z (ZO key) or PS1 (PS1 key) relay chain circuit feature.
- (3) Permanent signal (PS key) and the Z (ZO key) or PS1 (PS1 key) relay chain circuit feature.
- (4) Trouble release (TRL key).

D. Test of Trouble Release Busy Ground:

This test checks the ability of the detector to hold itself busy for a short time after giving a trouble release signal to a sender so

that the sender on its second trial will choose another decoder if available.

1.04 Local instructions should be followed for recording any register operations caused when performing these tests.

1.05 While Test A is in progress, two decoders in a group will be unavailable for service calls.

Caution: Before making Test A with the TA key normal, determine that there are no make-busy plugs in either decoder or connector make-busy jacks. Test A should not be made on idle decoders when a decoder within the group is made busy. When making this test on a decoder that is made busy, other than the last decoder in a group, operate the TA key.

1.06 When performing Step 7e of Test A in offices provided with two translators, the test should be performed during light traffic hours.

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 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 Automatic testing circuit SD-21188-01.

2.02 184B (make-busy) plugs as required.

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3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
1	Restore all keys to normal.	
2	Operate RN key momentarily.	Switches normal.

4. METHOD

STEP	ACTION	VERIFICATION
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A. All Codes Test

3a If local area and DDD codes are to be tested —
Operate DR key, also LA key if provided.

4b If prefix 1 screening feature is to be tested —
Operate PF1 key.

Note: The LA key should be nonoperated.

5c If prefix 0 screening feature is to be tested —
Operate PF0, LA keys.

6d If codes which work off 3-digit translators are to be tested —
Operate DR, CC- keys; also LA key if provided.

7e If 3-digit common translators are provided —
Make busy 3-digit translator to which master decoder is connected.

Caution: If office has only two translators, make test during light traffic hours.

8f If class-of-service feature is provided —
Operate CLS- key for class to be tested.

9g If office is arranged with two decoder groups having a different class-of-service treatment —
Operate EC key.

10 Operate ST key. Test circuit progresses to test codes. EC lamp lighted.

STEP	ACTION	VERIFICATION
	<i>Caution: When TA key is operated, test circuit should not be left unattended.</i>	
11	Restore ST key.	EC lamp extinguished.
12d	If codes which work off 3-digit translators are to be tested — Change CC- key setting to test codes in other areas.	
13	Operate ST key.	Test circuit progresses to test codes. EC lamp lighted.
14	Restore ST key.	EC lamp extinguished.
15e	If 3-digit common translators are provided — Restore 3-digit translator made busy to service.	
16g	If office is arranged with two decoder groups having a different class-of-service treatment — Restore EC key.	
17g	Operate keys which apply to the desired test. (See Steps 3a through 8f.)	
18g	Operate PC, DR GR 100, DR1, LP keys.	DR GR 100, DR1 lamps lighted.
19g	Operate ST key.	
20g	Restore PC, LP keys.	Test circuit progresses to test codes. EC lamp lighted.
21g	Restore ST key.	EC lamp extinguished.
22d	If codes which work off 3-digit translators are to be tested — Change CC- keys to test codes in other areas.	
23	To test other classes of service — Change CLS- key setting and repeat Steps 9g through 22d as required.	
B. Particular Code Test		
3a	If local area or DDD code is to be tested — Operate A, B, C code keys and LA key if provided.	

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STEP	ACTION	VERIFICATION
4b	If prefix 1 screening feature is to be tested — Operate PF1 key.	
	<i>Note:</i> The LA key should be nonoperated.	
5c	If prefix 0 screening feature is to be tested — Operate PF0, LA keys.	
6d	If code which works off 3-digit translators is to be tested — Operate A, B, C, and CC- keys.	
7e	If single tandem routing to foreign area is to be tested — (a) Operate EA key if prefix 1-1 is provided. (b) Operate CC- key if compressed foreign area code is provided.	
8f	If DDD code requiring the use of auxiliary senders is to be tested — Operate TAN-PCI and A, B, C code keys for foreign area.	
9g	If auxiliary sender is required to delete the first three digits of a 10-digit call — Operate TAN-PCI, SK3, and A, B, C code keys for foreign area.	
10h	If code is for 7-digit call which requires auxiliary senders for completion — Operate 7DG and A, B, C code keys and SK2 or SK3 key if required.	
11	Operate DR, PCD keys.	
12i	If class-of-service feature is provided — Operate CLS- key for class to be tested.	
13j	If office is arranged with two decoder groups having a different class-of-service treatment — Operate EC key.	

STEP	ACTION	VERIFICATION
14	From decoder chart or card — Operate, as required, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys for code to be tested and TDV, SK- keys if re- quired.	
15	Operate ST key.	Test circuit progresses until EC lamp lights.
16	Restore ST key.	EC lamp extinguished.
17i	If class-of-service feature is provided — Operate CLS- key for other class to be tested and repeat Steps 14, 15, and 16.	
18j	If office is arranged with two decoder groups having a different class-of-service treatment — Restore EC, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys if operated.	
19j	From decoder chart or card — Operate, as required, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys for code to be tested and TDV, SK- keys if re- quired.	
20j	Operate CLS- key as required.	
21j	Operate PC, DR GR 100, DR1 LP keys.	DR GR 100, DR1 lamps lighted.
22j	Operate ST key.	
23j	Restore PC, LP keys.	Test circuit progresses until EC lamp lights.
24j	Restore ST key.	EC lamp extinguished.
25	To test other classes of service — Change CLS- key setting and repeat Steps 18j through 24j as required.	

C. Special Code Test

~~Preliminary Pulse and Second Trial~~, Special Service Operator, or Permanent Signal

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| 3 | Operate DR, SCD keys. | |
| 4a | If class-of-service feature is provided —
Operate CLS- key for class to be tested. | |

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STEP	ACTION	VERIFICATION
5b	Where offices are arranged with two decoder groups having a different class-of-service treatment — Operate EC key.	
6	Operate required SPL-T key (PP-ST for preliminary pulse and second trial, OPR for special service operator, PS for permanent signal or if provided, ZO for Z relay chain circuit or PS1 for PS1 relay chain circuit tests).	
7	From decoder chart or card — Operate, as required, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys for code to be tested.	
8	Operate ST key.	Test circuit progresses until EC lamp lights.
9	Restore ST key.	EC lamp extinguished.
10a	If class-of-service feature is provided — To test other classes of service — Operate CLS- key and repeat Steps 7, 8, and 9.	
11b	Where offices are arranged with two decoder groups having a different class-of-service treatment — Restore EC, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys if operated.	
12b	From decoder chart or card — Operate, as required, CL, CR, DB, DG, OB, OG, TS, TTR, SD, ZC/CCT, TWO keys for code to be tested.	
13b	Operate required CLS- key.	
14b	Operate PC, DR GR 100, DR1, LP keys.	DR GR 100, DR1 lamps lighted.
15b	Operate ST key.	
16b	Restore PC, LP keys.	Test circuit progresses until EC lamp lights.
17b	Restore ST key.	EC lamp extinguished.

STEP	ACTION	VERIFICATION
18b	To test other classes of service — Change CLS- key setting and repeat Steps 11b through 17b as required.	
19b	Restore all keys.	

Trouble Release

20	Operate DR, SCD, TRL keys.	
21	Operate ST key.	Test circuit progresses until EC lamp lights.
22	Restore ST key.	EC lamp extinguished.
23	Restore all keys.	

D. Test of Trouble Release Busy Ground

3	At trouble indicator frame, insert 184B plugs into TIDR jacks associated with decoders under test.	
4	Operate DR, SCD, TRL, TRBG keys.	
5	Operate ST key.	TRBG and TBL lamps lighted. TI alarm sounds.
6	Operate CA key to advance to next higher decoder.	TRBG and TBL lamps extinguished. TI alarm silenced.
7	Repeat Step 6 until all decoders have been tested.	EC lamp lighted.
8	Restore all keys.	EC lamp extinguished.