

SUBSCRIBER, AUXILIARY, AND "A" SWITCHBOARD KEYPULSING SENDERS
TESTS USING ORIGINATING SENDER TEST FRAME SD-25221-01
NO. 1 CROSSBAR OFFICES

1. GENERAL		PAGE
1.01	This section describes the method of testing subscriber, auxiliary, and "A" switchboard keypulsing senders in No. 1 crossbar offices, using the originating sender test frame SD-25221-01. A manual test of auxiliary senders is included.	
1.02	This section has been reissued for the following reasons:	
	(a) To add Test O.1 for testing dial tone transmission level.	
	(b) To revise Tests V and AV to include key operations for stuck sender trunk identification (SSTI) feature.	
	(c) To add Tests DJ, DK, and DL for testing directory assistance call charge feature.	
	(d) Part 5 changed to include new keys and switches.	
	(e) Part 6 changed to include new and revised test chart information.	
	(f) To make minor changes as required.	
	This issue affects the Equipment Test List.	
1.03	The tests covered are:	
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A. Full Selector Call:	This test checks that the sender functions properly on a normal service call to a panel or crossbar office. It also makes an operate test of the sender LO relay on AMA calls, and on a non-AMA call in an AMA office, checks the ACC lead for false grounds.	10
B. Trouble Release From Transverter With MBI-9—AMA Offices:	This test checks that the sender, upon receiving a trouble release from the transverter on a call using message billing index 9, will route the call to overflow.	10
C. Continuity and False Ground Test of DC, OT, LO, 2L, and 5L Leads—AMA Offices:	This test checks for continuity of the DC, OT, LO, 2L and 5L leads from the sender to the transverter, and for false ground on the DC lead.	10
D. Permanent Signal Feature—AMA Offices:	This test checks that the sender calls in a transverter on a permanent signal. It also checks that the sender signals the transverter when no permanent signal trunks are available.	10
E. Permanent Signal Feature—Non-AMA Offices:	This test checks that the sender will function to route a call to permanent signal trunk if the first digit is not dialed within the allotted time following sender seizure.	11
F. Select Bar Operation:	This test checks the operation of the dial register switch under extreme operating conditions.	11
G. Dial Pulse and Register Control:	This test checks that the sender will count and register dial pulses correctly under extreme operating conditions.	11

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H. Special Service Operator: This test checks that the sender will complete a call to a special service operator.	11	Q. 2-Party Check Feature: This test checks that on calls from a 2-party line the sender tests for ground on the customer line before dialing starts and again after dialing is completed, to determine whether the tip party is calling. It also applies an operate and a nonoperate test to the sender TP relay.	13
I. Restricted Code: This test checks that the sender waits until all digits have been dialed before closing the trunk and grounding the TR lead when a restricted code is dialed.	11	R. Deleted:	14
J. Unassigned Code: This test checks the functions of the sender when an unassigned code is dialed.	11	S. Deleted:	14
K. Deleted:	11	T. Partial Dial Timing: This test checks that the sender will signal an operator in the case of monitor-type senders or apply disconnect tone to the line in the case of timed release senders and will deflect the partial dial (PD) supervisory meter (if equipped) when the customer fails to dial a complete number within the allotted time.	14
L. Deleted:	11	U. Stuck Sender Timing: This test checks that the sender signals an operator in the case of monitor-type senders or applies disconnect tone to the line in the case of timed release senders and will deflect the slow completing (SC) supervisory meter (if equipped) when the sender fails to release in the allotted time following registration.	15
M. 2-Stage PCI Pulsing: This test checks that the sender, when arranged for 2-stage pulsing, will output the office code as soon as a connection is made to an outgoing trunk and will not output the numerical digits until registration is completed.	11	V. Stuck Sender Lamp and Priming Feature: This test checks that the priming feature of the timed release sender will not operate falsely and that the sender will function to light its associated SS lamp at the sender make-busy frame when a stuck sender condition is encountered.	16
N. Toll Diversion Feature: This test checks that the sender will reverse the dialing tip and ring potentials at dialing completion for the diversion of restricted PBX traffic on seven digit extra charge calls.	11	W. PCI Calls: This test checks that the sender will transmit PCI pulses on calls to PCI and PCI tandem offices.	17
O. Dial Tone: This test checks that the sender furnishes dial tone to the customer as soon as it is ready to register the first digit.	11	X. Late Release—Full Selector Call: This test checks that the sender will send the incoming selector to telltale and then release if a call is	
O.1 Dial Tone Transmission Level: This test checks that the sender furnishes dial tone to the customer, and the transmission level of this dial tone.	12		
P. Trouble Release: This test checks that the sender signals the marker for translation three times on a trouble condition (except for DDD calls).	13		

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abandoned after the thousands digit has been dialed.	17	by providing a short fundamental closure. It also makes an operate test of the sender TG relay.	17
Y. 3-Digit Operator: This test checks the sender functions on a direct call to a 3-digit operator. . .	17	AG. Capacity Test for Ground Closures Between PCI Pulses: This test checks that the sender provides ground closures between PCI pulses to discharge cable capacity.	17
Z. PCI Tandem—3-Digit Operator: This test checks the sender functions on a call to a 3-digit operator through a PCI tandem office.	17	AH. Official Reroute: This test checks that the sender, when equipped with the official reroute feature, will route calls for OFF-9300 to a particular group of trunks.	17
AA. Late Release—PCI Call: This test checks that on PCI calls abandoned after trunk test, the sender will await assignment and then release when the code is one which operates the sender TW relay, or will release without awaiting assignment when the code is one which does not operate the sender TW relay.	17	AI. Official Reroute—False Operation: This test checks that the official reroute feature in the sender will not operate falsely on calls to other than OFF-9300.	17
AB. Office Overflow: This test checks that on second trial calls routed full selector, PCI, or to the operator, the sender will recognize an overflow signal.	17	AJ. Release Test of STP Relay: This test checks the performance of the sender STP relay and is intended to be used whenever adjustments have been made to an STP relay. . . .	17
AC. Incoming Overflow: This test checks that the sender will function properly when an overflow condition is encountered after incoming brush selection. It also makes a speed operate test of the sender OF and STP relays and, when the LIOF key is provided, a hold test of the sender L relay.	17	AK. Prefix 1-1 Feature: This test checks that if two ones (1-1) are pulsed into the sender before the office code, the sender will indicate to the marker that the called office is in the extended area.	17
AD. Alternate Route: This test checks that the sender will recognize a trouble release signal through the sender link after the marker connector has been released, and will recall a marker and request an alternate route.	17	AL. Register Control: This test checks the sender steering relays for proper operation when slow pulses are received and makes a release test of the sender TS and RS relays. . .	17
AE. Counting Relays: This test checks that only one pair of counting relays will operate for each revertive pulse received by the sender. . . .	17	AM. Unassigned Code: This test checks that the sender causes a reorder signal to be sent to the operator if a code which is unassigned has been registered.	17
AF. Fast Assignment: This test checks for a fast trunk assignment		AN. Trunk to Incoming—More Than Four Digits Keyed: This test checks that the sender causes a reorder signal to be sent to the operator when more than four digits are keyed	

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on a call handled by an incoming trunk.	17	priming feature of the sender on a time-out.	17
AO. Trunk to Full Selector Tandem District—No Office Code Keyed: This test checks that the sender causes a reorder signal to be sent to the operator when no office code is keyed on a call handled by a full selector tandem district.	17	AV. Stuck Sender Timing: This test checks that the priming feature of the sender will not operate falsely and that the sender will function to light its associated SS lamp at the sender make-busy frame when a time-out occurs.	18
AP. Trunk to District Junctor—No Office Code Keyed: This test checks that the sender causes a recorder signal to be sent to the operator when no office code is keyed on a call which is handled by a district junctor. . . .	17	AW. Intersender Timing: This test checks that intersender timing functions properly on full selector and PCI calls.	18
AQ. Trunk to District Junctor—Wrong Code Keyed: This test checks that the sender causes a reorder signal to be sent to the operator when a code for a distant office selector or PCI tandem office is keyed on a call handled by a district junctor. . . .	17	AX. Intersender Timing—Sustaining Period: This test checks that the sustaining period of intersender timing functions properly.	19
AR. Trunk to District Office Selector—Wrong Code Keyed: This test checks that the sender causes a reorder signal to be sent to the operator when a code for a district junctor is keyed on a call handled by a distant office selector.	17	AY. Information Code 411: This test checks that the sender recognizes a local 411 code, a home area 1+411 code, or a foreign area 1+NPA+411 code and outputs three or six digits as required.	19
AS. Premature Operation of AL and AC Relays: This test checks that the sender AL and AC relays do not operate prematurely due to a cross.	17	AZ. Special Service Codes: This test checks that the sender, when arranged, will function properly for the following codes.	19
AT. Stored Ringing Features: This test checks that when the stored ringing feature is provided, the sender, on a call through a direct controlled ring incoming trunk, records the ringing signal received from the operator and signals the incoming trunk to start ringing when selections are completed.	17	(a) 11X service code: The sender will register the 11X code and complete its functions. (This test does not apply to Subscriber Sender Circuit SD-27810-01.)	
AU. Automatic Priming Feature: This test checks the automatic		(b) 00 emergency operator code: The sender registers the prefix 00 and signals the marker to indicate an emergency or regular operator call.	
		(c) Prefix 01: The sender registers the prefix 01 and signals the marker to indicate a 01 prefix operator call.	
		(d) Prefix 10: The sender registers the prefix 10 and signals the	

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marker to indicate a 10 prefix operator call.			
BA. MF Call—Ten Digits: This test checks that the subscriber sender, auxiliary sender link, and auxiliary sender function properly on a normal direct distance dialed call.	20	BH. Revertive Call—Seven Digits—Alternate Route MF: This test checks a route advance from revertive pulsing to MF pulsing.	22
BB. MF Call—Seven Digits: This test checks that the subscriber and auxiliary senders function properly on a 7-digit type MF outpulsed call.	20	BI. Trouble Time-out After Receipt of Wink: This test checks that when trouble is encountered after a <i>wink</i> is received from the remote office, the timing features of the auxiliary sender function to cause the subscriber and auxiliary senders to prime and release.	22
BC. MF Call—Ten Digits—Abandoned: This test checks the release features of the subscriber and auxiliary senders on MF, 10-digit calls abandoned at various times.	20	BJ. No More Than One Struck Auxiliary Sender in a Group: This test checks that the operating ground to all CTR relays in an auxiliary sender group is removed when any CTR relay in the group is operated (indicating a call being held on a time-out condition).	23
BD. MF Call—Ten Digits—Trouble Time-out: This test checks the time-out features of the auxiliary sender and the ability of the subscriber sender to disconnect on trouble conditions encountered prior to receiving the remote sender attached wink.	20	BK. Major Alarm—Two Auxiliary Senders Stuck: This test checks that if a second auxiliary sender in a group becomes stuck, a major alarm is sounded.	23
BE. MF Call—Stuck Auxiliary Sender—Primed Release: This test checks that, with the auxiliary sender CTR key pulled out and no other auxiliary sender in the group stuck, an auxiliary sender will time out and stick on trouble conditions encountered prior to receiving the remote sender attached wink. Primed release of the stuck auxiliary sender is manually checked.	20	BL. Translator Overflow—Local AMA: This test checks the ability of the subscriber sender to recognize an overflow indication from the translator and route the call to overflow.	25
BF. MF Call—Ten Digits—No Auxiliary Sender Available: This test checks that, with no auxiliary senders available, a 10-digit call will be routed to overflow.	21	BM. 10-Digit Recycle Call: This test checks that subscriber senders function properly on 10-digit calls using area codes that are to be compressed.	25
BG. MF Call—Ten Digits—Incoming Trunk Reversed: This test checks that a 10-digit call, on completion of dialing, will be routed to overflow if the incoming trunk is reversed at time of seizure.	21	BN. 10-Digit Recycle Call—No Code Compressors Available: These tests check that, with no code compressors available, the call will be routed to overflow, intercept or to 10-digit MF trunks, depending upon how the markers are wired.	25
		BO. 3-Digit Operator Call—No Code Compressors Available: This test checks that, with no code	

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compressors available, 3-digit operator calls will terminate.	26
BP. Outpulsing of the Directory Number—7- or 10-Digit Call—LAMA Offices: This test checks that the sender and auxiliary sender function properly to outpulse the called and calling (directory) numbers.	26
BQ. Outpulsing of the Directory Number—Zero Operator Call—LAMA Offices: This test checks that the sender and auxiliary sender function properly to outpulse the directory number of the calling subscriber.	26
BR. Outpulsing of the Directory Number—Multi-Party Call—CAMA Offices: This test checks that the sender and auxiliary sender function to outpulse the proper identification signal.	26
BS. Outpulsing of the Directory Number—Identification Failure—AMA Offices: This test checks that the sender and auxiliary sender function properly when an identification failure occurs in the transverter.	26
BT. Outpulsing of the Directory Number—No CAMA Reversal—LAMA Offices: This test checks the ability of the subscriber sender to advance if a CAMA reversal is not received.	26
BU. Reconstruction of the Recycled Area Code: This test checks that the auxiliary sender operates properly to reconstruct the recycled area code. Tests are also provided to check options which cause the auxiliary sender to outpulse the last 4, 5, or 7 digits.	25
BV. Interchangeable Code: In offices where prefix identification for 10-digit calls is not required, this test checks that the sender, upon a signal from the marker, times for an eighth digit on regular calls or a seventh digit on 411 calls. Upon second marker seizure,	

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the sender signals the marker that the call requires a 7- or 10-digit route. In offices where prefix identification for 10-digit calls is required, this test checks that the sender recognizes a prefix 0 or 1 as a 10-digit call and no prefix as a 7-digit call.	27
BW. Prefix 0 Timing: This test checks that the sender registers a prefix 0 and times for a succeeding digit. If no additional digit is received, the call is routed to the operator.	27
BX. Extra Digit Timing: This test checks that, upon a signal from the marker, the sender times for a seventh digit on NPA+411 calls or an eighth digit on normal calls. If the seventh or eighth digit is not received, the call proceeds on a 7-digit route. This test is only performed in offices where prefix identification is not required for 10-digit calls.	27
BY. PBX Toll Diversion—7 or 10-Digit Call: This test checks the ability of the sender to reverse the dialing tip and ring potential at dialing completion when senders are arranged for the division of restricted PBX traffic on 10-digit call.	27
CA. Slow Pulse—Long Interdigital Periods: This test checks the response of the receiver to long pulsing intervals followed by equally long interdigital periods.	28
CB. Slow Pulse—Short Interdigital Periods: This test checks the response of the receiver to long pulsing intervals followed by shortened interdigital periods.	28
CC. Low Level Signal Test: This test checks the response of the receiver to low level signal conditions.	28
CD. High Level Signal Test: This test checks the response of the	

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receiver to high level signal conditions.	28		
CE. High Frequency Test: This test checks the ability of the TOUCH-TONE receiver to receive and record digits when the signal frequencies are higher than the nominal frequencies.	28		
CF. Low Frequency Test: This test checks the ability of the TOUCH-TONE receiver to receive and record digits when the signal frequencies are lower than the nominal frequencies.	28		
CG. Single Frequency Test: This test checks the ability of the TOUCH-TONE receiver to ignore a preliminary pulse of any one of the eight TOUCH-TONE signal frequencies.	28		
CH. Special 3-Frequency Test: This test checks the ability of the TOUCH-TONE receiver to ignore a preliminary pulse composed of three frequencies, two of which are a valid combination of TOUCH-TONE frequencies. The third frequency is a signal of 2000 Hz at a higher level.	28		
CI. Speed Test: This test speed tests the TOUCH-TONE to dial pulse converter on 10-or 11-digit DDD TOUCH-TONE card dialer calls.	28		
CJ. Eleventh and Twelfth Button TOUCH-TONE Frequencies: This test checks the ability of the sender to route the call to overflow or announcement trunk upon receipt of the eleventh (*) or twelfth (#) tones.	28		
DA. Coin Failure—Revertive Pulse: This test checks the coin failure functions of a sender arranged with coin service improvement features when the original route requires revertive pulsing.	28	DB. Coin Failure—PCI, False Trunk Closure: This test checks for a false trunk closure prior to completion of second marker seizure when a coin failure occurs on a call routed on a direct PCI basis.	28
		DC. Coin Failure—PCI, with Office Selections and Sender TW Relay Normal: This test checks the coin failure functions of a sender engaged in a PCI call which requires office selections and sender TW relay normal.	28
		DD. Coin Failure—PCI, With Office Selections and Sender TW Relay Operated: This test checks the coin failure functions of a sender engaged in a PCI call which requires office selections and sender TW relay operated.	28
		DE. Coin Failure—MF: This test checks the coin failure functions of a sender engaged in a multifrequency call.	28
		DF. Coin Failure—Straightforward: This test checks the coin failure functions of a sender engaged in a straightforward call which requires a coin deposit.	28
		DG. GT Relay Release Test: This test makes a release test of the GT relay of senders arranged for coin service improvement features.	28
		DH. GT Relay Operate Test: This test makes an operate test of the GT relay of senders arranged for coin service improvement features.	29
		DI. False Exposure of GT Relay: This test checks that a sender arranged for coin service improvement features will cancel coin test on a free route.	29
		DJ. ♦Directory Assistance Call—Straightforward With MBI16	

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1.07 The following tests may adversely affect service calls as indicated:

AMA Offices: This test checks that the sender will process a call for directory assistance charging straightforward. It also provides a test that checks that the sender, upon receiving a trouble release from the transverter, will route the call to overflow.

29

DK. Directory Assistance Call—MF With MBI16 AMA Offices:

This test checks that the sender will process a call for directory assistance charging by MF outpulsing. It also provides a test that checks that the sender, upon receiving a trouble release from the transverter, will route the call to overflow.

29

DL. Directory Assistance Call—Straightforward—ANI Offices:

This test checks that the sender will process a call for directory assistance charging straightforward.

29

TEST	REASON
P or AH	Excessive marker usage.
AW or AX	May send service calls to announcement trunk if trunk test delay exceeds intersender timing interval.
AX	If IT jacks are used, service calls will be sent to overflow in all cases where the trunk test delay exceeds the intersender timing interval.
BD or BE	Excessive auxiliary sender holding time.
BF	May send service calls to overflow.
BF or BI	Causes all auxiliary senders of a group to test busy during the interval between the completion of dialing of the seventh digit and the seizure of the particular auxiliary sender to be tested.
BN, BO	When making these tests the 3-digit code compressors are made to appear busy to a maximum of ten senders as follows:
BN	For the interval of time from the dialing of the third digit to the completion of the fourth.
BO	For the interval of time from the dialing of the third digit until the sender is released (approximately 2-1/2 seconds).

1.08 Local instructions should be followed with reference to recording any register operations caused by performing these tests.

1.09 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Parts 3 and 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

1.04 The functioning of the auxiliary sender on abandoned calls, calls resulting in a stuck auxiliary sender, and the routing of the subscriber sender to overflow when no auxiliary senders are available or when an incoming trunk is reversed at the time of the seizure, are tested on 10-digit calls. No separate tests are required for other MF outpulsed classes since the circuit features are the same.

1.05 A Test Chart is provided in this section for performing the tests. The data on the chart should be completed by consulting office records and following the instructions provided in Part 6 of this section.

1.06 The following tests may be adversely affected by service calls as indicated:

TEST	REASON
T or U	Difficult to check supervisory meter deflection if senders used for service calls are also reaching test condition.

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 Originating sender test frame SD-25221-01.

Tests D, F, T, U, V, AU, AV, AW, AX, BE, BI, BK, BW, and BX

2.02 KS-3008 stopwatch or equivalent.

Tests B, N, AT, BK, DJ, DK, and DL

2.03 322A (make-busy) plugs, as required.

Tests AY, BA Through BI, BK Through BU, BY, and CA Through CJ

2.04 329A plugs as required.

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

Test O.1

2.06 W2W cord, 6 feet long, equipped with one 310 plug and one 360B and one 360C tools (2W17A cord).

2.07 Two KS-6278 clips.

2.08 Screwdriver C.

3. PREPARATION

STEP

ACTION

VERIFICATION

All Tests Except BJ

1 Restore all lever-type keys to normal, operate test class release keys (R1 and R2), and remove plugs from test jacks.

2 Operate and restore RN key.

All lamps extinguished.

3a If test frame does not restore—
Momentarily operate CA key.

Note: On AMA test calls the CA key should never be operated before the transverter is released, as the sender may be left off normal and unguarded.

4a Operate and restore RN key.

All lamps extinguished.

5b If **end-of-group** feature is provided, and is required (see the following note)—
Operate proper EG_ key.

Note: The operation of an EG_ key will cause the test circuit to block with the EG lamp lighted when all senders having certain operating conditions have been tested. Upon receiving the EG lamp during test, consult the office records and reset the test frame

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STEP	ACTION	VERIFICATION
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keys as required. Restore the EG_ key to allow the test frame to advance.

6c If the **pass-group** feature is provided and it is desired to pass senders having different operating conditions than those for which the test frame is set up—
Operate PG_ key or keys.

4. METHOD

STEP	ACTION	VERIFICATION
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Tests A through C

7 Operate keys and insert 322A plugs into jacks shown on Test Chart.

8 Operate ST key.

Test circuit proceeds to test senders to which it has access.
EC lamp lighted.
Minor alarm sounds.

9 Restore ST key.

10 Momentarily operate RN key.

All lamps extinguished.
Minor alarm silenced.

D. Permanent Signal Feature—AMA Offices

7 Operate keys shown on Test Chart.

8 Operate ST key.

Test circuit proceeds to test senders to which it has access.
Test 1—
CD lamps lighted 20 to 40 seconds during each test of sender SD-25012-01 or SD-25772-01.
CD lamp lighted 18.5 to 22 seconds during each test of sender SD-27810-01.
Test 2—
CD lamp lighted 9.5 to 11.5 seconds during each test of sender SD-27810-01.

9 Restore ST key.

10 Momentarily operate RN key.

All lamps extinguished.
Minor alarm silenced.

11 At printer table of maintenance recorder—
Momentarily operate P key.

Permanent signal entry made for each sender tested.
998 printed for permanent signal trunk.

STEP	ACTION	VERIFICATION
12	Operate TRK-IDT key.	
13	Repeat Steps 8, 9, and 10.	
14	At printer table of maintenance recorder— Momentarily operate P key.	Permanent signal entry made for each sender tested. Modified sender number printed in place of permanent signal trunk number.

E. Permanent Signal Feature—Non-AMA Offices

7	Operate keys shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. Test 1— CD lamp lighted 20 to 40 seconds during each test of sender SD-25012-01 or SD-25772-01. CD lamp lighted 18.5 to 22 seconds during each test of sender SD-27810-01. Test 2— CD lamp lighted 9.5 to 11.5 seconds during each test of sender SD-27810-01.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

Tests F through N

7	Operate keys and insert 322A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

O. Dial Tone

Note: If transmission level of dial tone is required, perform Test O.1.

7	Operate keys shown on Test Chart.	
8	Operate ST key.	Dial tone heard in test receiver.

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STEP	ACTION	VERIFICATION
9	Momentarily operate CA key.	Test circuit advances to next sender. Dial tone heard in test receiver.
10	Repeat Step 9 for each sender until all senders have been tested.	EC lamp lighted. Minor alarm sounds.
11	Restore ST key.	
12	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

0.1 Dial Tone Transmission Level

7	At originating sender test frame— Remove cover from headset jacks.	
8	Using W2W cord, connect headset jack terminals to IN jack of 3A or 3C noise measuring set.	
9	At 3A or 3C noise measuring set— Connect 900-ohm resistor across IN terminals.	
10	Calibrate per instructions in cover of test set.	
11	Set NORM/DAMP switch to NORM.	
12	Insert 3KC flat frequency weighting at WTG position.	
13	Set FUNCTION switch to BRDG.	
14	At originating sender test frame— Operate keys shown on Test Chart.	
15	Operate ST key.	Dial tone heard in test receiver.
16	At 3A or 3C noise measuring set— Rotate DBRN switch until meter deflects between 0 and 10.	Reading is approximately: (a) TOUCHTONE not provided — 60-72 dBrn or -24, ±6 dBm. (b) TOUCHTONE provided — 74-86 dBrn or -10 ±6 dBm.
		Note: Reading is total of DBRN switch setting and meter deflection.
17	Momentarily operate CA key.	Test circuit advances to next sender. Dial tone heard in test receiver.
18	Repeat Steps 16 and 17 for each sender until all senders have been tested.	EC lamp lighted. Minor alarm sounds.
19	Restore ST key.	

STEP	ACTION	VERIFICATION
20	Remove 3A or 3C noise measuring set from headset jack terminals.	
21	At originating sender test frame— Replace cover to headset jacks.	
22	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.♦
P. Trouble Release		
7	Operate keys shown on Test Chart.	
8d	If sender is arranged to release when trouble release signal is received on third trial— Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9e	If sender is not arranged to release when trouble release signal is received on third trial— Operate ST key.	Test circuit blocks when sender receives trouble release signal from marker.
10e	Momentarily operate CA key.	Test circuit advances to next sender. Test circuit blocks when sender receives trouble release signal from marker.
11e	Repeat Step 10e for each sender until all senders have been tested.	EC lamp lighted. Minor alarm sounds.
12	Restore ST key.	
13	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
Q. 2-Party Check Feature		
7	Operate keys shown on Test Chart.	
8	Operate TPO key.	
9	Operate ST key.	Test circuit proceeds to test first sender to which is has access. ♦If using Test Class 1— CD lamp momentarily lighted. If using Test Class 17— After A digit is pulsed— CD lamp momentarily lighted.♦
10	Immediately after CD lamp is extinguished— Operate TPNO key.	Test circuit advances to completion of dialing and blocks. RLS lamp lighted.

STEP	ACTION	VERIFICATION
11	Momentarily operate CA key.	RLS lamp extinguished. Test circuit advances and proceeds to test sender again. ◆If using Test Class 1—◆ CD lamp momentarily lighted.
12d	◆If using Test Class 1—◆ Immediately after CD lamp is extinguished— Operate TPO key.	Test circuit advances to completion of dialing and blocks. RLS lamp lighted.
13e	◆If using Test Class 17— After A digit is pulsed— Operate TPO key.	Test circuit advances to completion of dialing and blocks. RLS lamp lighted.◆
14	Restore REP key.	
15	Momentarily operate CA key.	RLS lamp extinguished. Test circuit advances to next sender to which it has access.
16	Immediately upon seizure of sender— Operate REP key.	
17	Repeat Steps 10 through 16 until all available senders have been tested.	EC lamp lighted. Minor alarm sounds.
18	Restore ST key.	
19	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
R. Deleted.		
S. Deleted.		
T. Partial Dial Timing		
7.	Operate keys shown on Test Chart.	
8d	If sender PD meter is provided— Operate REP key.	
9	Operate ST key.	Test circuit proceeds to test first sender to which it has access.
10d	If sender PD meter is provided— Measure timing interval.	Timing of 5 to 12 seconds measured from time dial progress C lamp is extinguished to time PD meter shows a deflection.
11d	Momentarily operate CA key.	PD meter needle returns to former position.
12d	Repeat Steps 10d and 11d.	PD meter deflected.
13d	Restore REP key.	

STEP	ACTION	VERIFICATION
14	Measure timing intervals. When testing timed release senders arranged to provide disconnect tone, listen for disconnect tone in test receiver.	Sender SD-25012-01 timing measured from instant A progress lamp is extinguished until RLS lamp is extinguished as follows: Test 1—30 to 50 seconds plus answering time for monitor-type senders. Test 2—30 to 50 seconds for senders arranged for automatic priming. Test 2—110 to 130 seconds for timed release senders, including 20 seconds disconnect tone, when provided. Test 3—150 to 170 seconds for timed release senders, including 20 seconds disconnect tone, when provided. Sender SD-27810-01 timing measured from instant B progress lamp is extinguished until DEC lamp is lighted as follows: Test 2—18.5 to 22 seconds. Test 4—6 to 8 seconds.
15	Momentarily restore TA key.	Test circuit advances to next sender.
16	Repeat Steps 8d and 10d through 15 until all available senders have been tested.	EC lamp lighted. Minor alarm sounds.
17	Restore ST key.	
18	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
U. Stuck Sender Timing		
7	Operate keys shown on Test Chart.	
8d	If sender SC meter is to be tested— Operate REP key.	
9	Operate ST key.	Test circuit proceeds to test first sender to which it has access.
10d	If sender SC meter is to be tested— Measure timing interval.	Timing of 5 to 12 seconds measured from time dial progress U lamp is extinguished to time SC meter shows a deflection.
11d	Momentarily operate CA key.	SC meter needle returns to former position.
12d	Repeat Steps 10d and 11d.	SC meter deflected.
13d	Restore REP key.	

STEP	ACTION	VERIFICATION
14	Measure timing intervals. When testing timed release senders arranged to provide disconnect tone, listen for disconnect tone in test receiver.	<p>RLS lamp lighted during timing period as follows:</p> <p>Test 1—30 to 60 seconds plus answering time for monitor-type senders.</p> <p>Test 2—60 to 80 seconds plus answering time for monitor-type senders.</p> <p>Test 3—30 to 60 seconds for senders arranged for automatic priming. Test 3—50 to 70 seconds for timed release senders, including 20 seconds disconnect tone, when provided.</p> <p>Test 4—60 to 80 seconds for senders arranged for automatic priming.</p> <p>Test 4—90 to 110 seconds for timed release senders, including 20 seconds disconnect tone, when provided.</p> <p>Test 5—36.5 to 43.5 seconds for senders SD-27810-01.</p> <p>Test 6—54.5 to 64.5 seconds for senders SD-27810-01.</p>
15	Momentarily restore TA key.	Test circuit advances to next sender.
16	Repeat Steps 8d and 10d through 15 as required until all available senders have been tested.	EC lamp lighted. Minor alarm sounds.
17	Restore ST key.	
18	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
V. Stuck Sender Lamp and Priming Feature		
7d	<p>◆If SSTI feature is provided— At sender test connector control (STCC) circuit— Operate SG_ key(s) for sender group being tested.◆</p>	SG_ lamp(s) lighted.
8	Operate keys shown on Test Chart.	
9	Operate ST key.	Test circuit proceeds to test first sender to which it has access.

STEP	ACTION	VERIFICATION
10	Measure timing interval.	SS lamp at sender make-busy frame lighted 60 to 80 seconds after RLS lamp lighted at sender test frame.
11	At sender make-busy frame— Restore (push in) CTR key of sender under test.	SS lamp extinguished at sender make-busy frame— Test circuit advances to next sender.
12	Repeat Steps 7d, 9 and 10 until all available senders have been tested.	EC lamp lighted. Minor alarm sounds.
13	At sender test frame— Restore ST key.	
14	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
15d	◆If SSTI feature is provided— At sender test connector control (STCC) circuit— Restore SG_ key(s).◆	SG_ lamp(s) extinguished.

Tests W through AT

7	Operate keys and insert 322A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

AU. Automatic Priming Feature

7	Operate keys shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test first sender to which it has access.
9	Measure timing interval.	KR lamp lighted 20 to 40 seconds.
10	Momentarily restore TA key.	Test circuit advances to next sender.
11	Repeat Steps 9 and 10 until all available senders have been tested.	EC lamp lighted. Minor alarm sounds.
12	Restore ST key.	

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STEP	ACTION	VERIFICATION
13	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
AV. Stuck Sender Timing		
7d	◆If SSTI feature provided— At sender test connector control (STCC) circuit— Operate SG_ key(s) for sender group being tested.◆	SG_ lamp(s) lighted.
8	Operate keys shown on Test Chart.	
9	Operate ST key.	Test circuit proceeds to test first sender to which it has access.
10	When IB lamp lights— Momentarily operate AV key.	IG lamp lighted.
11	Measure timing interval.	SS lamp at sender make-busy frame lighted 40 to 60 seconds after IG lamp lighted at sender test frame.
12	At sender make-busy frame— Restore (push in) CTR key of sender under test.	SS lamp extinguished.
13	At sender test frame— Restore TA key.	
14	Operate CA key.	SS lamp extinguished. Test circuit advances to next sender.
15	Operate TA key.	
16	Repeat Steps 7d, 9 through 13 until all available senders have been tested.	EC lamps lighted. Minor alarm sounds.
17	Restore ST key.	
18	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
19d	◆If SSTI feature is provided— At sender test connector control (STCC) circuit— Restore SG_ key(s).◆	SG_ lamp(s) extinguished.

AW. Intersender Timing

7	At originating trouble indicator— Check that ANO and ANE keys are normal.	
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STEP	ACTION	VERIFICATION
8	At sender test frame— Operate keys shown on Test Chart.	
9	Operate ST key.	Test circuit proceeds to test first sender to which it has access.
10	Measure timing interval that IT lamp is lighted.	IT lamp lighted for 3 to 6 seconds. Test circuit advances to the next sender and continues to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
11	Restore ST key.	
12	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

AX. Intersender Timing—Sustaining Period

7	Operate keys shown on Test Chart.	
8	Select sender in sender group to be tested.	
9	Operate IST_ key corresponding to sender group under test.	
10	Momentarily operate ST key.	Test circuit proceeds to test sender selected. IST_ lamp lighted.
11	Measure timing interval.	Timing interval measures 12 to 18 seconds from operation of register CT to IST_ lamp extinguished.
12	Repeat Steps 8 through 11 on other sender groups.	
13	Momentarily operate RN key.	All lamps extinguished.

Tests AY and AZ

7	Operate keys and insert 322A plugs into jacks listed on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test sender to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	

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STEP	ACTION	VERIFICATION
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
Tests BA through BD		
7	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
BE. MF Call—Stuck Auxiliary Sender—Primed Release		
7	Operate PAS_ key associated with auxiliary sender to be tested.	
8	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
9	Select subscriber sender which has access to particular auxiliary sender to be tested.	
10d	If sender monitor operation is provided— Notify trouble supervisory operator not to prime subscriber sender selected for test.	
11e	If automatic priming is provided— Operate (pull out) CTR key for subscriber sender selected for test.	
12	Operate ST key.	Test circuit proceeds to test sender. At sender make-busy frame— Auxiliary sender SS lamp lighted. EP lamp lighted. ♦12 to 18♦ seconds after EP lamp lighted.— Auxiliary sender SS lamp flashes.
13	At sender make-busy frame— Insert 322A plug into auxiliary sender make-busy jack.	Auxiliary sender SS lamp stops flashing but remains lighted.
14	Remove 322A plug from auxiliary sender make-busy jack.	Auxiliary sender primes. Auxiliary sender SS lamp extinguished.

STEP	ACTION	VERIFICATION
15	At sender test frame— Restore ST key.	
16	Momentarily operate RN key.	Test circuit restores.
17	Restore PAS_ key.	All lamps extinguished.
18	Repeat Steps 7 through 17 for other auxiliary senders to be tested.	
19d	If sender monitor operation is provided— Notify trouble supervisor operator that testing is completed.	
20e	If automatic priming is provided— Restore (push in) CTR key for subscriber sender selected for test.	
BF. MF Call—Ten Digits—No Auxiliary Sender Available		
7	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
BG. MF Call—Ten Digits—Incoming Trunk Reversed		
7	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.

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STEP	ACTION	VERIFICATION
BH. Revertive Call—Seven Digits—Alternate Route MF		
7	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
BI. Trouble Time-out After Receipt of "Wink"		
7	Select subscriber sender which has access to particular group of auxiliary senders to be tested.	
8	Operate PAS_ key associated with auxiliary sender to be tested.	
9	Operate keys and insert plugs into jacks shown on Test Chart.	
10	At auxiliary sender— Block nonoperated ACA relay.	
11	At sender test frame— Operate ST key.	At sender make-busy frame— SS lamp lighted.
12	When KP lamp lights— Start timing.	In 2 to 3 seconds SS lamp flashes. Sender primes 12 to 18 seconds after receipt of flashing signal.
13	At auxiliary sender— Remove blocking tool from ACA relay.	
14	At sender test frame— Restore ST and PAS_ keys.	
15	Momentarily operate RN key.	Test circuit restores to normal. All lamps extinguished.
16	Repeat Steps 7 through 15 on all auxiliary senders to be tested.	

STEP	ACTION	VERIFICATION
BJ.	No More Than One Stuck Auxiliary Sender in a Group	
1	Check that there are no stuck auxiliary senders in group to be tested.	CTR relay of each auxiliary sender normal.
2	With one side of 38B lamp socket connected to 48-volt test battery— Connect other side (extended by 624B tool) momentarily to terminal A23 of each auxiliary sender in group.	Lamp lighted on each test.
3	With 38B lamp socket connected to last terminal tested in Step 2— Momentarily operate CTR relay of each auxiliary sender of group.	Lamp extinguished with operation of each CTR relay.
4	Disconnect 38B lamp socket and remove 624B tool from terminal A23.	
BK.	Major Alarm—Two Auxiliary Senders Stuck	
7	Select subscriber sender which has access to group of auxiliary senders to be tested.	
8	At sender make-busy frame— Make auxiliary sender busy.	At sender make-busy frame— Associated SS lamp lighted.
9	At auxiliary sender made busy— Block operated ON, BK, and CTR relays.	
10	At sender test frame— By means of PAS_ key, associate sender test circuit with another auxiliary sender in same group.	
11	Operate keys and insert plugs into jacks shown on Test Chart.	
12d	If sender monitor operation is provided— Notify trouble supervisory operator not to prime subscriber sender selected for test.	
13e	If automatic priming is provided— Operate (pull out) CTR key for subscriber sender selected for test.	
14	Operate ST key.	SS lamp for auxiliary sender corresponding to operated PAS_ key lighted. 14 to 20 seconds from start of test— SS lamp changes from steady to flashing. Major alarm sounds.

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STEP	ACTION	VERIFICATION
15	Restore ST key.	
16	Momentarily operate RN key.	Test circuit restores. Major alarm silenced. SS lamp extinguished.
17	To test other auxiliary senders in same group— Change PAS_ key, as required, and repeat Steps 14, 15, and 16.	
18	At auxiliary sender— Remove blocking tools from ON, BK, and CTR relays.	
19	At sender make-busy frame— Remove make-busy plug from auxiliary sender made busy.	Associated SS lamp extinguished.

To Test Auxiliary Sender from Which Blocking Tools Have Been Removed

20	Make another auxiliary sender busy in same group.	Associated SS lamp lighted.
21	At auxiliary sender made busy— Block operated ON, BK, and CTR relays.	
22	At sender test frame— By means of PAS_ key, associate sender test circuit with auxiliary sender from which blocking tools have been removed.	
23	Repeat Steps 14, 15, and 16.	
24	At auxiliary sender— Remove blocking tools from ON, BK, and CTR relays.	
25	At sender make-busy frame— Remove make-busy plug from auxiliary sender made busy.	Associated SS lamp extinguished.
26d	If sender monitor operation is provided— Notify trouble supervisory operator that testing is finished.	
27e	If automatic priming is provided— Restore (push in) CTR key associated with subscriber sender used for test.	

STEP	ACTION	VERIFICATION
BL. Translator Overflow—Local AMA		
7	At sender test frame— Operate keys and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test sender to which it has access. TR lamp lighted momentarily at completion of each test call. Note: A failure of the translator overflow feature will cause a trouble release and the test circuit will block with the TR lamp lighted steadily. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	
Tests BM and BU—Recycle Calls		
7	Operate keys and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. OF lamp lighted on each test call. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.
BN. 10-Digit Recycle Call—No Code Compressors Available		
7	Operate keys and insert plugs into jacks shown on test chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. If markers are cross-connected to route call to overflow— OF lamp lighted on each test call. EC lamp lighted. Minor alarm sounds.

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STEP	ACTION	VERIFICATION
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.

BO. 3-Digit Operator Call—No Code Compressors Available

Note: When making this test the 3-digit code compressors will not be available to a maximum of 10 senders for a period of time from the dialing of the third digit until the sender is released by the sender test frame (approximately 2-1/2 seconds). During this interval of time, service may be adversely affected.

7	Operate keys and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. ODN lamp lighted during the check of the directory number. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.

Tests BP through BT

7	Operate keys and insert 329A plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. ODN lamp lighted during the check of the directory number. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.

STEP	ACTION	VERIFICATION
BV. Interchangeable Code		
7	Operate keys and insert 329A plugs into jacks listed on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
Tests BW and BX		
7	Operate keys listed on Test Chart.	
8	Operate PCS key to select sender to be tested.	
9	Operate ST key; <i>start timing</i> .	Within approximately 3 to 4 seconds after RLS lamp lighted— DEC lamp extinguished.
10	Restore ST key.	
11	Momentarily operate RN key.	All lamps extinguished.
12	Repeat Steps 8 through 11 for other senders to be tested.	
BY. PBX Toll Diversion—7- or 10-Digit		
7	Operate keys and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. TDR lamp momentarily lighted to indicate detection of reversal of tip and ring potential. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.

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STEP	ACTION	VERIFICATION
Tests CA Through CI		
7	Operate keys and switches, and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.
CJ. Eleventh and Twelfth Button TOUCH-TONE Frequencies		
7	Operate keys and switches, and insert plugs into jacks shown on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test first sender to which it has access. Overflow tone heard in test frame receiver.
9	Momentarily operate CA key.	Test frame proceeds to test next sender to which it has access. Overflow tone heard in test frame receiver.
10	Repeat Step 9 until all nonwire-spring senders have been tested.	EC lamp lighted. Minor alarm sounds.
11	Restore ST key.	
12	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.
Tests DA Through DG		
7	Operate keys and switches listed on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. COK lamp lighted on each test call. EC lamp lighted. Minor alarm sounds.
9	Restore ST key.	

STEP	ACTION	VERIFICATION
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.
Tests DH and DI		
7	Operate keys listed on Test Chart.	
8	Operate ST key.	Test circuit proceeds to test senders to which it has access. EC lamps lighted. Minor alarm sounds.
9	Restore ST key.	
10	Momentarily operate RN key.	Test circuit restores. All lamps extinguished. Minor alarm silenced.
Tests DJ Through DL		
7	Insert 322A make-busy plug into 7DG-DL jack.	
8	Operate keys as shown on Test Chart.	
9	Operate ST key.	Test circuit proceeds to test senders to which it has access. When all senders tested— EC lamp lighted. Minor alarm sounds.
10	Restore ST key.	
11	Momentarily operate RN key.	All lamps extinguished. Minor alarm silenced.
5. INTERPRETATION OF JACK, KEY, LAMP, AND SWITCH DESIGNATIONS		ID (0-5)
		Identification Digit: To set up the identification digit on ODN test calls.
5.01 Jacks		0
		Operator: To prepare the test circuit to dial a zero and check the outpulsing of the directory number on a zero operator ODN test call.
JACK	PURPOSE	
ACA (2-9) ACB (0-9) ACC (0-9)	Area Code A, B, C: 329A plugs inserted in these jacks cause the test frame to dial an area code (N0X, N1X) used in direct distance dialing. (NXX for interchangeable code.)	ODN
		Outpulse Directory Number: To prepare the test circuit to check the ODN features of the sender and auxiliary sender.

RC	Remote Control: These jacks are installed in suitable locations on the sender frames. Momentary insertion of a make-busy plug causes the CA feature to operate. Used in conjunction with a 32A test set, depression of the red button operates the CA feature; depression of the white button controls the DSS or SS advance, depending on which key of the test frame is operated.	the auxiliary sender, of seven digits on a 10-digit call.
		5.02 Keys
		KEY PURPOSE
		A (0-9) A Digit: To set up the A digit of an office code.
		ACO Alarm Cut Off: To prevent or silence the audible alarm.
RCY	Recycle: A plug in this jack prepares the test frame for a recycle call.	AGS1 Advance Ground Supply One: To cause the marker to advance from ground supply 1 to ground supply 2.
RTR	Reverse Tip and Ring: To reverse trunk tip and ring on keypulsing sender tests.	AMA Automatic Message Accounting: To arrange the test circuit to check AMA features.
SRG	Stored Ring: To provide a test of the stored ring feature in KP senders.	AMA-CK Automatic Message Accounting—Check: To block sender test when transverter is released by a trouble condition.
TDV	Toll Diversion: To provide a test of the toll diversion feature.	APB Automatic Pass Busy: To automatically pass by senders if they remain busy for 29 seconds minimum to 59 seconds maximum.
TO, TO1	Time-Out: To provide time-out tests of auxiliary senders.	AR Alternate Route: To test the completion of a call through an alternate route.
WO W01 W02	Wipe-Out: To provide abandoned call conditions for tests of auxiliary senders.	ASB Auxiliary Sender Busy: Maintains an all busy condition on auxiliary senders during portions of certain tests.
4DG PL	4-Digit Pulse: To provide a check of MF outpulsing, from the auxiliary sender, of four numerical digits on a 7-digit dialed call.	AT AIOD Translator: To simulate the failure to complete a connection to the AIOD translator.
5DG PL	5-Digit Pulse: To provide a check of MF outpulsing, from the auxiliary sender, of the C digit (as a directing digit on common usage incoming trunks) as well as the numerical digits.	ATNS Automatic Test New Sender-Eleventh or Twelfth Tones: To set up for Automatic eleventh or twelfth TOUCH-TONE® button sender tests ON SD-27810-01 Wire-Spring Senders.
7DG DL	7-Digit Dial: To prepare the test circuit to dial seven (or eight) digits on a call to be MF outpulsed.	AV Advance: To manually advance the test circuit on a step-by-step
7DG PL	7-Digit Pulse: To provide a check of MF outpulsing, from	

	basis. With the DSS key operated, it controls digit pulsing into the sender; with the SS key operated, it controls revertive pulsing into the sender; and with the PSS key operated, it controls TOUCH-TONE pulsing into the sender.	CANC SS	Cancel Stuck Sender (SSTI): To disable sender test connector control circuit (STCC) and prevent stuck sender trunk identification (SSTI) circuit from seizing OST.◀
B (0-9)	B Digit: To set up the B digit of an office code. Operate key unit 0 on all 2-digit code tests.	CCB	Code Compressor Busy: To make all code compressors appear busy to the sender during portions of certain tests.
BA	B Advance: To cause the test circuit to transmit the B digit when a 3-digit office code is used.	CID	Continue Dialing: To enable the test frame to continue dialing after 411 is dialed on a 1+NPA+411 call when interchangeable code feature is not provided.
B OFF	Beyond Office Compensating Resistance: To provide, with the sender compensating resistance for the code used, the desired resistance in the fundamental circuit for selection beyond office.	CH (0-7)	Column Hundreds (AMA): To set up the column hundreds location of a simulated calling line.
CR (0)		CLASS 1	Class 1 Full Selector: To set up a full selector call to a panel or a crossbar office.
(300)		CLASS 2	Class 2 Register Control: To test the sender for registration with a minimum interval between numerical digits.
(600)		CLASS 3	Class 3 Late Release Full Selector: To test that the sender releases on calls abandoned after the thousands digit has been pulsed.
(700)		CLASS 4	Class 4 Panel Call Indicator Tandem: To test the sender for a PCI tandem call.
(900)		CLASS 5	Class 5 Panel Call Indicator Direct: To test the sender for a direct PCI call.
(1000)		CLASS 6	Class 6 Panel Call Indicator Tandem—3-Digit Operator: To test the sender for a 3-digit PCI operator call.
(1300)			
(1600)			
BT	Busy Test AMA: to make a test call using an AIOD translator that is made busy.		
BTI	To block the sender test circuit in the event that the transverter originates or attempts to originate a trouble indication.		
C (0-9)	C Digit: To set up the C digit of an office code.		
CA	Control Advance: To manually advance the test circuit to the next sender when the REP key is normal, or to cause another test to be started on the same sender if the REP key is operated. (See RC jack.)		
CAP	Capacity Panel Call Indicator: To add capacity to the fundamental circuit and to check that the sender grounds the FT and FR leads between pulses to discharge the cable loop.		
PCI			

CLASS 7	Class 7 Late Release Panel Call Indicator—TW Relay Normal: To test the sender for wipe-out on an abandoned direct PCI call.	CLASS 17	Class 17 Direct Distance Dialing: To test the subscriber and auxiliary sender on calls to be multifrequency pulsed forward.
CLASS 8	Class 8 Late Release Panel Call Indicator—TW Relay Operated: To test the sender for a PCI wipe-out on tandem calls or a call to trunks which have a reversed battery and ground condition.	CLASS 18	Class 18 Restricted: To test the keypulsing sender for unassigned code and to test the subscriber sender for restricted code.
CLASS 9	Class 9 Special Service Operator: To test the sender for a call to a special service operator.	CLASS R1	Release Row 1: To restore to normal CLASS keys 1 to 9.
CLASS 10	Class 10 Three-Digit Operator: To test the KP sender for a 3-digit operator call and to test the subscriber sender for unassigned code.	CLASS R2	Release Row 2: To restore to normal CLASS keys 10 to 18.
CLASS 11	Not used.	CN	Coin: To check that the sender delays trunk guard test until a coin is deposited.
CLASS 12	Class 12 Permanent Signal Timeout: To test the subscriber sender for permanent signal operation and to test the keypulsing sender for release after time-out.	CON	Coin Operate Normal: To test the sender arranged for coin service improvement features for coin failure routing operation and to perform operate and release tests of the sender GT relay.
CLASS 13	Class 13 Office Overflow: To test the sender for the office overflow operation.	CR	Coin Resistance: To provide a 1000 ohm ground to the tip lead to assure passing coin test for all senders not arranged for coin service improvement features on coin class calls.
CLASS 14	Class 14 Incoming Overflow: To test the sender for the incoming overflow operation.	CS(DIST-0) (TW-1) (INC-2) (TAN-3) (INC-4) (INC-5)	Class-of-Service: To set up a class-of-service or class-of-trunk indication in the sender as outlined in 5.03, Table A.
CLASS 15	Class 15 Dial Tone and Operator's Error: To test the subscriber sender for dial tone. To test the keypulsing sender for a reorder signal on an operator error.	CS 6,7,8,9	Class-of-Service: To set up a class-of-service indication in the sender as outlined in 5.03, Table A.
CLASS 16	Class 16 Trouble Release and Operator's Error: To test the subscriber sender for disconnect tone. To test the keypulsing sender for a reorder signal on an operator's error.	CT	Converter Test: To perform a speed test of the TOUCH-TONE to dial pulse converter feature.

CT (0-9)	Column Tens (AMA): To set up the column tens location of a simulated calling line.	FAS	Fast Assignment: To make a fast operate test of the sender TG relay, by simulating a fast PCI trunk assignment.
CU (0-9)	Column Units (AMA): To set up the column units location of a simulated calling line.	FC	Free Call: To test a coin sender for a free call or a noncoin call.
DAC-STF	Directory Assistance Charging—Straightforward: To arrange test circuit for a straightforward test.	FTC	False Trunk Closure: To detect false trunk closure on direct PCI calls when testing coin failure announcement routing.
DAC-TV TRL	Directory Assistance Charging—Transverter Trouble Release: To check that the sender goes to overflow when it receives a trouble release from the transverter.	G (0-2)	Group: To direct the test circuit to the desired group of 100 senders when the test circuit has access to more than 100 senders.
DAC-411	Directory Assistance Charging—411 Information Code: To arrange test circuit for a 411 information code test.▲	GTN	GT Normal: To make a release test of the GT relay.
DGT	Detect GT: To test the tip lead for a false exposure of the sender GT relay.	GTO	GT Operate: To make an operate test of the GT relay.
DISC TONE	Disconnect Tone: To test the disconnect tone feature on a timed release sender when both timed release and sender monitor-type senders are provided.	H (0-9)	Hundreds: To set up the hundreds digit of a called number.
DSS	Digits Step-by-Step: To pulse each digit into the sender on a step-by-step basis under the control of the AV key. (See RC jack.)	HLV	High Level Signals: This key causes high level TOUCH-TONE signals to be transmitted, simulating strong signal conditions.
EG (0-4)	End of Group: To stop the test circuit after it has tested the last sender in a group for which the test circuit was prepared. (See Part 3, Step 5b.)	ICD	Interchangeable Code: To test the sender for interchangeable codes in offices where prefix identification is not required for 10-digit calls.
F (0-9)	Frame: To set up a frame number 0 through 9, operate the FA0 key and one of the F (0-9) keys. To set up a frame number 10 through 19, operate the FA1 key and one of the F (0-9) keys.	IG5	Incoming Group 5: To test the sender for five additional incoming group pulses. Operate this key if the senders operate over common trunk groups to multioffice units and the code used required the five additional pulses.
		IOS	Interchangeable Office Code With Office Selection: To test interchangeable code features using a full selector route with office selections.

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IST (0-1)	Intersender Timing: To test desired group of subscriber senders for intersender timing control.	OF	Office Index (AMA): To indicate an office index to the AIOD equipment.
L	Long Loop (AMA): To cause the AIOD equipment to make a loop test.	OFF CR (0) (300) (600) (700) (900) (1000) (1300) (1600)	Office Compensating Resistance: To provide, with the sender compensating resistance for the code used, the desired resistance in the fundamental circuit for office selections.
LGP	Long Pulse: To lengthen the transmission period and shorten the interdigital period of the TOUCH-TONE signal.		
LIOF	Long Incoming Overflow: To check that the sender holds the fundamental circuit closed and waits for the distant office to open reversed battery at incoming overflow.	OFF SCR (0) (300) (600) (700) (900) (1000) (1300) (1600)	Office Second Compensating Resistance: To provide, with the sender compensating resistance, the desired resistance in the fundamental circuit during second office selections.
LLV	Low Level Signals: This key causes low level TOUCH-TONE signals to be transmitted, simulating high line loss conditions.		
LO	Line Observing (AMA): To provide an operate test of the sender LO relay and a continuity test of the LO lead to the transverter.	OG (0-9)	Office Group: To set up the office group selection as required for the office code used.
LT	Light Traffic: To test for a premature advance of the sender preference lead.	ORR	Official Reroute: To test the sender for the proper routing of a call for code "OFF-9300."
MGB	Make Group Busy: To make busy the sender group connected to the test circuit.		
MR	Maintenance Recorder (AMA): To signal the transverter to call in the maintenance recorder.	OT	Over Ten (AMA): To test the continuity of the OT lead to the transverter.
MTG	Marginal Trunk Guard: To check the marginal trunk guard relay in the sender.	PAS (0-9)	Particular Auxiliary Sender: To select a particular auxiliary sender.
NST	No Station: To indicate no station digit on a CLASS 17 call.		
OB (0-9)	Office Brush: To set up the office brush selection as required for the office code used.		Caution: Must be used during light traffic as all auxiliary senders are made

	<i>busy for a short interval during each test.</i>	R2	Release Row Two: Used when a class key in the first row is depressed.
PNS	Pass New Sender: To permit the test circuit to pass sender SD-27810-01 when testing SD-25012-01 senders.	REP	Repeat: To enable the test circuit to make an indefinite number of repeat tests on a sender.
PBX SURGE	PBX Surge: To test the ability of the sender L relay to hold operated on a surge produced by a PBX switchboard dialing circuit.	REP 2	Repeat 2: To enable the test circuit to make two tests on a sender before advancing.
PCR	Particular Circuit Run: To cause the test circuit sender connector equipment to advance automatically until the PCR key is restored to normal.	RESET	Reset (AMA): To release the shut down printer PBX-AIOD-A1.
		RN	Return to Normal: To restore the test circuit to normal.
PCS	Particular Circuit Step: To advance the connector switch one step at a time to a particular sender.	RR	Regular Recorder (AMA): To signal the transverter to connect the regular recorder.
PDG0	Pulse Digit 0: To set up a zero prefix to a called number.	RRT	Ring Release Test: To make a current flow release test of the sender RS relay.
PDG1	Pulse Digit 1: To set up a one prefix to a called number.	RS-AIOD	Release AIOD (AMA): To release PBX-AIOD-A2 alarms.
PG (0-4)	Pass Group: To cause the test circuit to pass a group of senders requiring a different test circuit preparation.	RVT	Reversed Trunk: On revertive and operator calls, to check that the sender OF relay does not operate at trunk test when trunk normally gives reverse supervision. On DDD calls, to check that the auxiliary sender recognizes an off-normal incoming trunk condition.
PL LP	Pulse Lamp: To light lamps indicating the number of revertive pulses which actually were sent to the sender.		
PP	Preliminary Pulse: To cancel the sending of a preliminary pulse.	SB (0-9)	Second Office Brush: To set up the second office brush selection as required.
PSS	Pulsing Step-by-Step: To permit step-by-step TOUCH-TONE signaling of each digit with each operation of the AV key.	SBA	Second Office Brush Announcement: To set up office selection completion for coin failure announcement routing.
R1	Release Row One: Used when a class key in the second row is depressed.	SD	Stations Delay: To test the sender for the stations delay feature.

SG (0-9)	Second Office Group: To set up the second office group selection as required.		under the control of the AV key. (See RC jack.)
SGR	Class Check: To check the class-of-service leads grounded to the marker by the operated class-of-service relays in the sender. (See Table A.)	SSAR	♦ Stuck Sender Alarm Release (SSTI): To release alarm relays in sender test connector control (STCC) circuit.♦
SG RLS	♦ Sender Group Release (SSTI): To release all operated LG_relays in sender test connector control (STCC) circuit.♦	SSO	Skip Second Office: To cancel the check for second office selection.
SGT NO	SGT Nonoperate: To make a nonoperate test of the sender SGT relay.	ST	Start: To start the test circuit.
SGT OPR	SGT Operate: To make an operate test of the sender SGT relay.	STA NFD 0	Station No Fifth Digit: To test the subscriber sender for the following: (a) Station delay feature (with SD key operated). (b) False station delay (with SD key nonoperated).
SKP	Slow Key Pulses: To check that the sender will register slow key pulses correctly by slowing the keypulse cycle of the test circuit. Also causes a current flow operate test to be made on the sender TM and RM relays by changing the resistance of the circuit.	STA 1 W R J M	Station: To set up a fifth digit or station letter. The designation on the individual key buttons indicates the following: 1—The first digit of a number over 9999. W, R, J, M—Station digit.
SL	Sender Lamp: To check for the proper functioning of the sender lamps and to check the release of the sender when primed.	STP	Stepper: To make a severe release test of the STP relay.
SLP	Slow Pulse: To simulate extremely slow TOUCH-TONE keying by the customer.	SW (0-9)	Switch (AMA): To set up the switch location of a simulated calling line.
SO	Skip Office: To cancel the check for office selections.	T (0-9)	Tens: To set up the tens digit of a called number.
SP	Slow Pulse: To test the stepper and counting relays for operation on slow revertive pulsing.	TA	Time Alarm: To prevent the test circuit from timing.
SS	Step-by-Step: To transmit the revertive pulses for each selection on a step-by-step basis	TCT	Test Cross Test: To check the keypulsing sender for premature operation of the AL and AC relays.
		TE (1-5)	Trouble Entry (1-5) (AMA): To block the recorder and cause

	trouble indicator display on a particular line of entry.	TV-TRL	Transverter Trouble Release (AMA): To check that the sender goes to overflow when it receives a trouble release from the transverter after two trials.
TH (0-9)	Thousands: To set up the thousands digit of a called number.		
TOP	Translator Operate (AMA): To provide an operate test of translator tubes. A failure results in a trouble indicator display.	TWD	TW Down: To test coin failure routing on PCI calls with TW relay normal and with office selections.
TOV	Translator Overflow (AMA): To cause an overflow signal to be returned to the sender on AMA calls.	TWU	TW Up: To test coin failure routing on PCI calls with TW relay operated and with office selections.
TPNO	TP Nonoperate: To apply a nonoperate test to the sender TP relay.	U (0-9)	Units: To set up the units digit of a called number.
TPO	TP Operate: To make an operate test of the sender TP relay and to check the continuity of the TP lead to the transverter.	VF (0-9)	Vertical File (AMA): To set up the vertical file location of a simulated calling line.
TRK IDT	Trunk Identification: On AMA permanent signal test calls, to cause the sender to signal the maintenance recorder that a modified sender number must be perforated on the maintenance recorder tape. On non-AMA test calls, to check that the ACC lead is not falsely grounded.	XBSY	Crossbar Synchronization: To delay trunk guard test until after registration of the hundreds digit. Operate for test using crossbar or No. 1 ESS office codes.
TRT	Tip Release Test: To make a current flow release test of the sender TS relay.	ZLL	Zero Loop No Leak: To provide special line conditions as an aid to detecting an open in the capacitor connected to the primary winding of a polar L relay. The condition is most effective when used in conjunction with 7PPS-MAX BR and 26PPS-MIN BR dial speeds.
TS PCI	PCI Two Stage PCI: To check that the sender will transmit pulses in two stages on a call through a PCI tandem office.	1-1	One-One: To check that the sender will transmit a one-one prefix to the office code when the office code is an extended area code. Also used for testing 11X service code when prefix 1 is provided.
TV (0-9)	Transverter (AMA): To select a particular transverter, operate one of keys TV (0-7). To select any transverter in the order of preference, operate the TV8 or TV9 key.	1,2,4,8	Class Check: To check the class-of-service leads grounded to the marker by the operated class-of-service relays in the sender. (See Table A.)
TT	TOUCH-TONE: Closes various leads to activate the TOUCH-TONE calling features of the test circuit.		

2L **Two Line (AMA):** To check the continuity of the 2L lead to the transverter.

5L **Five Line (AMA):** To check the continuity of the 5L lead to the transverter.

7PPS
MIN BR **Seven Pulses Per Second—Minimum Break:** To check that the sender RA relay holds over slow dial pulses and that the sender L relay is in proper adjustment.

7PPS
MAX BR **Seven Pulses Per Second—Maximum Break:** To check that the sender SR relay holds over dial pulses and that the sender L relay is in proper adjustment.

15PPS
MIN BR **15 Pulses Per Second—Minimum Break:** To check that the sender L relay releases and closes its back contact to operate the L3 and L4 relays.

15PPS
MAX BR **15 Pulses Per Second—Maximum Break:** To check that the secondary winding of the sender L relay is not open.

26PPS
MIN BR **26 Pulses Per Second—Minimum Break:** To provide

a release test of the sender L and L1 relays and of a fast operate test of the sender RA relay.

26PPS
MAX BR **26 Pulses Per Second—Maximum Break:** To provide a fast operate test of the sender L relay and a service release test of the sender RA relay.

555 **◆Directory Assistance Charging—555-1212 Information Code:** To arrange test circuit for a 555-1212 information code test.◆

* **Eleventh Button:** To test the senders ability to receive the eleventh button tone.

Twelfth Button: To test the senders ability to receive the twelfth button tone.

5.03 Table A is a complete list of CS_ keys and the class check keys required to be operated for each class of service. Unless otherwise specified, any class of service that the sender is arranged for may be used. If the senders serve both coin service improvement and noncoin service improvement coin classes, operate CR key for noncoin service improvement coin class calls.

TABLE A

CLASSES OF SERVICE SERVED BY SENDER GROUP	SUBSCRIBER SENDERS		CLASS CHECK KEYS TO BE OPERATED
	CLASSES OF SERVICE SIMULATED	CS-KEYS OPERATED	
One	—	None	None
	1	(DIST-0)	1
	2	(TW-1)	2
	3	(INC-2)	1,2
	4	(TAN-3)	4
	5	(INC-4)	1,4
2 to 6	6	(INC-5)	2,4
	*8	(DIST-0)	1,8
	*9	(TW-1)	2,8
	*10	(INC-2)	1,2,8
	*11	(TAN-3)	4,8
	*12	(INC-4)	1,4,8
	*13	(INC-5)	2,4,8
	1	(DIST-0), CS6	1
	2	(TW-1), CS6	2
	3	(INC-2), CS6	1,2
	4	(TAN-3), CS6	4
	5	(INC-4), CS6	1,4
	6	(INC-5), CS6	2,4
8	(DIST-0), CS7	1,8	
9	(TW-1), CS7	2,8	
10	(INC-2), CS7	1,2,8	
11	(TAN-3), CS7	4,8	
12	(INC-4), CS7	1,4,8	
13	(INC-5), CS7	2,4,8	
7 to 24	14	(DIST-0), CS8	1,SGR
	15	(TW-1), CS8	2,SGR
	16	(INC-2), CS8	1,2,SGR
	17	(TAN-3), CS8	4,SGR
	18	(INC-4), CS8	1,4,SGR
	19	(INC-5), CS8	2,4,SGR
	20	(DIST-0), CS9	1,8,SGR
	21	(TW-1), CS9	2,8,SGR
	22	(INC-2), CS9	1,2,8,SGR
	23	(TAN-3), CS9	4,8,SGR
	24	(INC-4), CS9	1,4,8,SGR
25	(INC-5), CS9	2,4,8,SGR	

* The senders of the second group served by the same originating marker group are arranged to indicate six additional classes of service by grounding the D8 lead to the marker.

TABLE A (Cont)

CLASS OF TRUNK SIMULATED	KEYPULSING SENDERS	
	CS-KEYS OPERATED	CLASS CHECK KEYS OPERATED
Trunk to District	(DIST-0)	8
Trunk to Distant Office Selector or Crossbar Tandem	(TW-1)	8
Trunk to Incoming	(INC-2)	8
Trunk to Tandem District	(TAN-3)	8
Trunk to Incoming	(INC-4) ✓	8
Trunk to Incoming	(INC-5) ✓	8

5.04 Lamps

LAMP	INDICATION
A, B, C	Office Code (Dial Progress): The first, second, and third digit of the office code is being pulsed into the sender.
A, B, C	Office Code (MF and PCI progress): The first, second, and third digit of the office code pulsed out by the sender is being checked. A, B, and C also indicate what code digit is being checked in the marker during code check.
ACA, ACB, ACC	Area Code A, B, C (Dial Progress): The first, second,

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	and third area code digit is being dial pulsed into the sender.	D	D Digit: The class-of-service registration is being checked.
ACA, ACB, ACC	Area Code A, B, C (MF Progress): The first, second, and third area code digit is being MF outpulsed.	DC	District Control: On keypulsing sender test calls, it indicates an open or a permanently grounded DC lead.
AMA	Automatic Message Accounting: With the AMA key operated, it indicates an AMA test. With the AMA key normal and the TRK-IDT key operated, it indicates a false ground on the ACC lead from the marker.	DC	District Control (AMA): The test circuit is waiting for the transverter to connect battery to the DC lead.
		DCG	District Control Ground (AMA): Indicates a check for false ground on the transverter DC lead.
AR	Alternate Route: The alternate route information sent by the sender to the marker is being checked.	DCO	DC Opened (AMA): Failure to remove battery from the DC lead.
BDL	Block Display Lost: Indicates test display lost due to trouble indicator either being engaged on a trouble or made busy.	DEC	Decoder: The sender is transmitting registration information to the marker.
BTI	Block Transverter Indicator: Indicates display at TVI caused by test failure.	DGT	Detect GT: A false exposure of sender GT relay has taken place on a call which does not require a coin deposit.
BY	Busy: The sender has not been seized by the test circuit due to a busy condition.	DLNO,1,2,4,7,	Data Link Number (AMA): The corresponding lead to the PBX-AIOD-A2 system is grounded.
CD	Code Check: The code is being dialed and checked.	EA	Extended Area: The extended area indication is received from the originating marker.
CH, CH1	Chain: The ground and battery chains through the sender selection circuit (S-relays) are being checked.	EC	End of Cycle: The last sender to which the test circuit has access has been tested satisfactorily.
CN	Coin: Indicates that the sender has closed the fundamental circuit, either without receiving a coin ground or in spite of a solid ground on the line, or that it has failed to close the fundamental circuit after receiving coin ground.	EG	End of Group: The last sender of a group has been tested, and the key setup should be changed. The EG_lamp will light only if the associated EG_key is operated.
COK	Coin Check: Second marker seizure coin failure translation is correct.	EP	End-of-Dial Pulsing: Indicates dialing completed. Lamp is extinguished at time of wink signal.

F, FA	Frame: The district frame (units and tens) registration is being checked.	ICK	ICK Relay Release (AMA): The ICK relay in the transverter has failed to release or the DC lead was not grounded.
FB	Final Brush: The final brush selection is being checked.	IG	Incoming Group: The incoming group selection is being checked.
FC	Fundamental Closure: The sender did not open the outgoing tip and ring (fundamental) soon enough after the completion of revertive pulses.	IMP	Impulser: The PCI pulses from the sender have not been completely received during the time allowed by the test circuit.
FNS	Fail New Sender: Indicates test failure of automatic eleventh on twelfth TOUCH-TONE button sender test.	INF	Information (AMA): The information lead is being checked.
FT	Final Tens: The final tens selection is being checked.	IST (0-1)	Intersender Timing: Indicates that intersender timing is being applied to sender group 0 or 1.
FU	Final Units: The final units selection is being checked.	IT	Intersender Timing: Indicates trunk test closure for intersender timing.
GB	Group Busy: The test of the sender group circuit is being made.	KP	Keypulsing: This lamp lights from completion of dialing to receipt of the KP signal on MF outpulsed calls.
GH	Ground Hold: The test circuit is waiting for the sender selection circuit to ground the GH lead.	KR	Key Release: The keypulsing sender is being checked for key release.
GR (0-2)	Group (Locating): The group of senders that is being tested.	LA	Local Area: The local area indication is received from the marker.
GTK	GT Check: GT relay operate or release failure.	LLT	Long Loop Test (AMA): The long loop test is being made.
H	Hundred (Dial Progress): The hundreds digit is being pulsed into the sender.	LO	Line Observing (AMA): A check of the LO lead from the sender to the transverter is being made.
H	Hundreds (MF and PCI Progress): The hundreds digit pulsed out by the sender is being checked.	MGB	Make Group Busy: A sender group is being held out of service, waiting for a particular sender to become idle.
IA	Incoming Advance: The incoming advance feature of the sender is being checked.	MJ-AIOD	Major-AIOD (AMA): Major alarm on PBX-AIOD-A1 or A2 system.
IB	Incoming Brush: The incoming brush selection is being checked.		

MN-AIOD	Minor-AIOD (AMA): Minor alarm on PBX-AIOD-A1 or A2 system.	ORR	Official Reroute: The official reroute feature of the sender is being checked (ORR key operated).
MT	Marker Translation: Marker translation is taking place during speed test of TOUCH-TONE to dial pulse converter.	OT	Over Ten (AMA): A check of the OT lead from the sender to the transverter is being made.
MTG NO	MTG Nonoperate: The sender MTG relay operated during its nonoperate test.	P (0-1-2-	Pulse: Indicates leads grounded on a failure to check MF digit pulsed.
MTG O	MTG Operate: An operate test of the sender MTG relay is being made.	PCI (0-9)	PCI Check: The actual number received from the sender as compared with the code keys operated.
MTR	Manual Trace Required (SSTI): Indicates trunk could not be found with an associated stuck sender and that a manual trace is required.♦	PP	Preliminary Pulse: The preliminary dial pulse is being pulsed into the sender.
NS	New Sender: Indicates sender SD-27810-01 is being tested.	PRF	Peripheral Failure (SSTI): Indicates a failure occurred at printer or ATA equipment.♦
OB	Office Brush: The office brush selection is being checked.	PSD	Printer Shut Down (AMA): Printer shut down using PBX-AIOD-A1 system.
OBA	Office Brush Announcement: Office brush selection is being checked on the coin failure announcement routing.	PTF	Pulse Time Failure: Indicates a failure of test frame TO relay to operate on its short timing interval.
ODN	Outpulse Directory Number: Indicates that the test circuit is set to check the identification digit and directory number on ODN test calls.	PTY	Party: The party indication sent by the sender to the marker is being checked.
OF	Overflow: An operate test of the sender OF relay is being made.	PULSE (0-9)	Pulse Check: The actual number of revertive pulses sent to the sender for the selection being made when the failure occurred.
OG	Office Group: The office group selection is being checked.	RBT	Reverse Battery Tip: Lights when making reverse battery test on operator class call.
OGA	Office Group Announcement: Office group selection is being checked on the coin failure announcement routing.	REL	Release (AMA): The release of the sender is awaited.
		RL	Release Link: The test circuit is waiting for the sender to ground the RL lead.

RLS	Release: On normally completed test calls, the test circuit is waiting for the sender to ground the TR lead, or on keypulsing sender test calls, to open the S lead on tests requiring a reorder signal.	SS	Stuck Sender (SSTI): Indicates sender test connector control (STCC) circuit has seized OST to a stuck sender.⚡
S	Synchronizing: The sender has closed the fundamental too soon or too late.	ST	Start Signal: Waiting the MF start pulse after completion of last numerical digit outpulsed.
SB	Second Brush: Second office brush selection is being checked.	STA	Station (Dial Progress): The station digit is being pulsed into the sender.
SD	Station Delay: The sender waited for the dialing of a fifth digit when no fifth digit was expected, or failed to wait for the dialing of a fifth digit when one was expected.	STA	Station (MF and PCI Progress): The station digit pulsed out by the sender is being checked.
SEL	Selection: The test circuit is waiting for the operation of the particular S ₁ relay in the sender selection circuit.	T	Tens (Dial Progress): The tens digit is being pulsed into the sender.
SG	SG Second Group: Second office group selection is being checked.	T	Tens (MF and PCI Progress): The tens digit pulsed out by the sender is being checked.
SGPO	Sender Group Primed Out (SSTI): Indicates that identification to one or more subgroups of senders has been locked out and the subgroup is primed out.⚡	TA	Time Alarm: The test of a particular sender was not completed within the allowable time.
SGR	SGR Lead: If the SGR key is operated, the sender has failed to ground the SGR lead. If the SGR key is normal, there is a false ground on the SGR lead.	TC	Trunk Closure: For full selector class test calls on keypulsing senders, the test circuit is waiting for the sender to close a trunk closure bridge across the fundamental after incoming advance.
SPF	Sender Preference: A test of the sender preference lead is being made. It will stay lighted if the sender upon becoming busy, either fails to advance the preference lead to the next sender in the chain, or fails to disconnect the S ₁ relay from its associated preference lead.	TCL	Trunk Closure (AMA): Trunk closure failure on the test of the sender feature for transverter trouble release.
		TDR	Toll Diversion Reversal: This lamp lights at the completion of an FS or PCI call if the dialing tip and ring are reversed.
		Tens (0-9)	Tens Lamps (Locating): The horizontal row on the crossbar switch on which the sender under test is located.

TFB	Trunk Frame Busy (SSTI): Indicates incoming trunk test frame (ITT) is busy.⚡	TT	TOUCH-TONE: Indicates that this circuit is set to originate a TOUCH-TONE call.
TG	Trunk Guard: The test circuit is waiting for the sender to advance after trunk test.	TVG	TV Lead Ground (AMA): A grounded TV (0-7) lead when TV8 or TV9 key is operated.
TGT	Trunk Guard Test: For operator class test calls on keypulsing senders, the test circuit is waiting for the sender to close its fundamental for trunk test.	U	Units Lamps (Dial Progress): The units digit is being dialed into the sender.
TH	Thousands (Dial Progress): The thousands digit is being pulsed into the sender.	U	Units (MF and PCI Progress): The units digit pulsed out by the sender is being checked.
TH	Thousands (MF and PCI Progress): The thousands digit pulsed out by the sender is being checked.	Units (0-9)	Units Lamps (Locating): The number of the pair of vertical rows on the crossbar switch.
TNO	TNO Relay (AMA): The TNO relay in the test circuit is being tested for operate.	X	Cross: A cross at the contacts of the sender SC ₁ relays, or the sender selection circuit advanced the preference lead prematurely.
TO	Time Out (SSTI): Indicates an overall timeout of 120 seconds has occurred.⚡	2L	Two Line (AMA): A check of the 2L lead from the sender to the transverter is being made.
TP	2-Party (AMA): A check of the sender 2-party test feature is being made.	5L	Five Line (AMA): A check of the 5L lead from the sender to the transverter is being made.
TR	TR Lead Ground (AMA): Premature closure of ground on the TR lead by the sender.	7DG	Seven Digits Dialed: On MF outpulsed calls seven or eight digits will be dialed and four, five, seven, or eight digits pulsed forward.
TRAP	TRAP (AMA): Trap function on PBX-AIOD-A1 system.	7DP	Seven Digits Pulsed: On 10-digit MF outpulsed calls, indicates seven digits outpulsed forward.
TSB	Transverter Start Battery (AMA): The TSB relay operates between first and second trials, lighting the TSB lamp and withholding battery on the start lead until the transverter is normal. This permits reselection of the same transverter.	10DG	Ten Digits Dialed: Indicates ten digits dialed into subscriber sender.
TSD	Timed Shutdown (AMA): Timed shutdown on PBX-AIOD-A1 system.	5.05 Switches	
		SWITCH	PURPOSE
		CRA	Compensating Resistance Announcement: To select the

proper compensating resistance for coin failure announcement routes requiring office selections.

FCA

Frequency Check A

FCB

Frequency Check B

Used to select the particular frequencies required for the single and special frequency tests. In addition, the FCB switch controls the maximum and minimum frequency deviation of the TOUCH-TONE signal frequencies. Table C in Part 6 shows the various combinations of test frequencies available for different combinations of the FCA and FCB keys.

OBA

Office Brush Announcement

OGA

Office Group Announcement

To select the required office brush and office group selections on coin failure announcement routing.

TT*#

Touch-Tone: To select the digit where the eleventh (*) or twelfth (#) tone is substituted.

6. PREPARATION OF TEST CHART

6.01 Complete the test chart to show the test frame keys to be operated for each test as directed in Table B and the following paragraphs.

6.02 Select ACA, ACB, and ACC jacks to provide the area code required for each 10-digit call.

6.03 Select A_, B_, and C_ keys to provide the type of office code required for each test.

6.04 Select the following keys as required by the office code selected: BA, 1G-5, XBSY, MTG, and 1-1.

6.05 Select OB_ and OG_ or SO_ keys to conform with the routing of the office code selected unless otherwise stated in Table B.

6.06 Select OFF CR_ and B OFF CR_ keys to provide, with the compensating resistance in the sender, the desired total resistance in the fundamental circuit. These totals will be 900 ohms and 1600 ohms on alternate calls unless otherwise stated in Table B or the Test Chart.

6.07 Select CS_ and class check keys to test all classes of service provided. Operate in accordance with Table A.

6.08 Select F_ and FA_ keys to simulate each equipped sender link frame.

6.09 When testing senders arranged for coin service improvement features, if route to coin failure announcement trunks requires office selections, operate SBA key and set OBA, OGA, and CRA switches according to the required office brush selection, office group selection, and compensating resistance respectively. If the route does not require office selections, set OBA, OGA, and CRA switches to OFF position. Consult office records for route information.

6.10 When provided, CTR key of the subscriber and auxiliary sender should be operated (pulled out) unless otherwise stated in Table B or the test chart.

6.11 When testing subscriber senders or auxiliary senders and a specific PPS key is not shown on the test chart, select a PPS key so that various speeds are tested over a number of test calls.

6.12 In an office which serves both TOUCH-TONE and dial pulse customers from the same sender group, TOUCH-TONE and dial pulse test cycles should be in proportion to the percentage of calls originated from each type of instrument with the following exceptions: Tests F, G, AC, AL, and CA through CJ.

6.13 When making TOUCH-TONE calling tests on subscriber senders, a false pulse test can be incorporated with the TOUCH-TONE tests by operating the FCA and FCB switches as shown in Table C. All combinations are covered on a progressive basis as shown on Test Chart, Tests 305 through 318.

6.14 When testing office codes requiring AMA treatment, select AMA and TV_ keys. TV9 key should be used except when it is desired to

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test a particular transverter. Select CH_, CT_, CU_, SW_, and VF_ keys to simulate various equipment locations.

6.15 In offices where prefix identification is not required for 10-digit calls, operate the PDG0 or PDG1 key for each test when it is desired to dial a prefix 0 or 1 before the office code. When the recycle feature is furnished, provide one test call in which the PDG1 key is operated and a test class key other than 17 is used. In offices where prefix identification is required for 10-digit calls, PDG0 or PDG1 key must be operated for any 10-digit call. If an interchangeable code is used, leave ICD key normal.

TABLE B

TEST SELECTION OF TEST FRAME KEYS

- A** Select office codes to check each used numeral on A, B, and C keys and each OB and OG selection. In offices arranged for AMA, select office code and class-of-service combinations to check each used message billing index, and line equipment locations using each of keys 0, 1, 3, and 6 in each of rows CH, CT, CU, SW, and VF. Operate TRK- IDT key when testing codes requiring non-AMA treatment in offices arranged for AMA.
- B** Select an office code and class-of-service requiring message billing index 9. Select a TV_ key and insert make-busy plugs into the associated TVMB_ and TVTIB_ jacks at the transverter trouble indicator frame.
- C** In test No. 1 and 2, select an office code and class-of-service to provide a 2-line entry. In Test No. 3, select an area code, an office code, and class of service to provide a 5-line entry. In Test No. 4, select an office code for a direct PCI call and operate CLASS 5 key, or select a code for a call through PCI tandem and operate CLASS 4 key.

D, E,

F

G

H

See Test Chart.

Select office codes for each of the following conditions. (XBSY and MTG keys should be normal for these tests.)

(a) Test No. 1 through 18 check the ability of a particular selecting bar, its disengaged selecting fingers and its off-normal contacts to release and become stabilized in the minimum time between digits. Use office codes having A, B, and C digits as near as possible to those indicated under H, T, and U, respectively, on the Test Chart.

(b) Test No. 19 through 28 check the ability of a particular selecting bar to disengage its selecting fingers quickly and to operate in one direction when a maximum number of selecting fingers are trapped in the opposite direction. Use office codes having A, B, and C digits as near as possible to those indicated under TH, H, and T, respectively, on the Test Chart.

(c) Test No. 29 through 38 check the ability of a particular selecting bar and its disengaged selecting fingers to release and become stabilized in the minimum time between digits, when a maximum number of selecting fingers are trapped in one direction. Use office codes having A, B, and C digits as near as possible to those indicated under TH, H, and T, respectively, on the Test Chart.

Select an office code, or codes, which require operation of the sender TG relay.

Register zeros on the A, B, and C keys.

- I Select a restricted office code and a class of service to which it is restricted.
- J Select a blank office code. Use Test No. 1 when senders require numerical digits to be dialed. Use Test No. 2 when senders do not require numerical digits to be dialed.
- K Deleted.
- L Deleted.
- M Select an office code for a call requiring 2-stage pulsing through a PCI tandem office, if available.
- N Select an office code, other than one whose routing requires an auxiliary sender, which will divert restricted PBX traffic. Insert a make-busy plug into the TDV jack.
- O See Test Chart.
- O.1 ♦See Test Chart.♦
- P Select an office code for a full selector call to a panel or crossbar office.
- Q Select an office code for a full selector call to a panel or crossbar office. Select CS_ and class check keys for a 2-party message rate class of service.
- R Deleted.
- S Deleted.
- T When testing monitor-type senders, use Test No. 1 and select an office code for a full selector call to a panel or crossbar office. When testing senders arranged for automatic priming, use Test No. 2 and an office code for a full selector call to a panel or crossbar office. When testing timed release senders, use Test No. 2 with an office code for a full selector call to a panel or crossbar office and Test No. 3 with an office code for a call to a PCI office. Use a full selector call to a panel or crossbar office for Test No. 4 for sender SD-27810-01 only.
- U When testing monitor-type senders, use Test No. 1 with an office code for a full selector call to a panel or crossbar office and Test No. 2 with an office code for a call to a PCI office. When testing timed release senders or senders arranged for automatic priming, use Test No. 3 with an office code for a full selector call to a panel or crossbar office and Test No. 4 with an office code for a call to a PCI office. Use a full selector call to a panel or crossbar office for Test 90 for sender SD-27810-01 only. Use a PCI direct call for Test No. 6 for sender SD-27810-01 only.
- V Select an office code for a full selector call which does not require office selections.
- W Select office codes for PCI calls which will provide the following tests of the sender.
- (a) Test of no stations delay. On Test No. 1 through 5, SD key must be normal.
- (b) Test of stations delay, no fifth digit dialed. On Test No. 1 through 5, operate SD key when testing SD-25012-01 senders only.
- (c) Test of stations delay, fifth digit dialed. Test No. 6 through 9 are for calls to offices arranged for party letters; Test No. 10 through 15 are for calls to offices with numbers above 9999; Test No. 6 through 20 are for calls to offices with numbers above 10,499. Operate the SD key when testing SD-25012-01 subscriber

senders. When office code selected is for a call through PCI tandem, use CLASS 4 key. When office code selected is for a direct PCI call, operate CLASS 5 key.

X Select an office code for a full selector call to a panel or crossbar office. XBSY key must be normal.

Y Select a code for a call direct to a 3-digit operator. Select a B OFF CR-key to provide, with the compensating resistance in the sender, a total of 900 ohms in the fundamental.

Z Select a code for a call through PCI tandem to a 3-digit operator. Select a B OFF CR_ key to provide, with the compensating resistance in the sender, a total of 900 ohms in the fundamental.

AA Select an office code for a PCI call not requiring operation of the sender TW relay for Test No. 1. Select an office code for a PCI call requiring operation of the sender TW relay for Test No. 2. Operate the SD key when testing SD-25012-01 subscriber senders.

AB Select office codes for each of the following conditions:

Test No. 1—Call routed full selector on its alternate route.

Test No. 2—Call routed PCI on its alternate route. Operate SD key when testing SD-25012-01 subscriber senders.

Test No. 3—Call routed to operate on its alternate route.

Select OB_, OG_, and OFF CR_ keys to conform with the alternate route of the code selected. Select a B OFF CR_ key to provide, with the compensating resistance in the sender, a total of 900 ohms

in the fundamental of the alternate route of the code selected.

AC Select office codes for calls routed full selector on alternate route. Select a code for Test No. 1 and 2 which will cause operation of the sender TG relay. Select a code for Test No. 3 which will cause operation of the sender MTG relay.

AD Select an office code for a call routed full selector on its alternate route which will cause operation of the sender TG relay. Test No. 1 applies if regular and alternate route relays are in ground supply 1. Test No. 2 applies if alternate route relay is in ground supply 2.

AE Select an office code for a full selector call to a panel or crossbar office.

AF Select a code to a PCI office not arranged for stations if possible, or use any PCI code and operate the SD key. Operate CLASS 4 key if code selected is for a call through PCI tandem. Operate CLASS 5 key if code selected is for a direct PCI call.

AG Select an office code for a call to a PCI office requiring 0 ohms compensating resistance in the sender and operate the B OFF CR 1300 key. If no such code is available, select a code requiring the least compensating resistance in the sender and select a B OFF CR_ key to provide a total of 1300 ohms in the fundamental. Operate CLASS 4 key if code selected is for a call through PCI tandem. Operate CLASS 5 key if code selected is for a direct PCI call.

AH XBSY key must be normal for Test No. 1. Test No. 2 requires operation of OB_, OG_, OFF

	CR_, and B OFF CR_ keys to conform with the alternate route of code 633. Operate CLASS 4 key if alternate route is through PCI tandem.	AT	If the office code selected is for a call to trunks using 20-cycle and simplex ring, insert a make-busy plug into RTR jack as well as SRG jack.
AI	Test No. 1 requires a full selector code other than 633.	AU	Select an office code for a call through a district junctor.
AJ	Select an office code for a full selector call to a panel or crossbar office. Select a B OFF CR_ key to provide, with the compensating resistance in the sender, a total of 900 ohms in the fundamental.	AV	Select an office code which does not require office selections for a call through a district junctor.
AK	Select an office code for a full selector or PCI call to an extended area. Use CLASS 4 key when code selected is for a call through PCI tandem. Use CLASS 5 key when code selected is for a direct PCI call. Operate PP key when testing subscriber senders.	AW	Test No. 1 and 2—Select an office code for a full selector call to a panel or crossbar office. Select low digits for the TH, H, T, and U. Test No. 3—Select an office code which will result in a PCI tandem routing.
AL	Select an office code which requires operation of the sender TG relay on a full selector call to a panel or crossbar office.	AX	Select an office code for a full selector call to a panel or crossbar office.
AM	Select an office code which is not available to the KP operator.	AY, AZ	See Test Chart.
AN, AO	See Test Chart.	BA	Select area and office codes as follows: (a) Test No. 1 through 10—Select area codes such that each used ACA, ACB, and ACC numerical code is checked. (b) In offices equipped with local AMA, select office codes which do not reflect a 0 or 1 in the first or second digit. (c) Test No. 1—Select area and office codes to route the call on a 10-digit skip 3 basis. (d) Test No. 10 and 11—In offices equipped with ANI, operate PDGO key.
AP	Select a 3-digit operator code. Register these same three digits on TH_, H_, and T_ keys, respectively.		
AQ	Select an office code for a call through a distant office selector or PCI tandem office.		
AR	Select an office code for a call through a district junctor.		
AS	Select an office code for a full selector call to a panel or crossbar office in Test No. 1 and 2. Select an office code for a call through PCI tandem in Test No. 3.		

Note: A, B, C, TH, H, T, and U digits have been preselected to ensure coverage of all possible combinations of registration and

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MF pulsing in the auxiliary sender. Included are those combinations which would be encountered on a 7-digit option.

BB Select office codes which will cause the marker to route the call for the desired pulsing condition as follows:

BSP TEST	TEST NO.	DIGITS PULSED MF	REMARKS
BB	1	7	No Skip — Tandem Route
BB	2	8	Manual Office With Pty
BB	3	5	7-Digit Skip 2 — "C" Directing Digit
BB	4	4	7-Digit Skip 3 — Direct Route

BC to BG, BI, and BK Select area and office codes which require the use of auxiliary senders.

Note: Test BF. In offices where the sender test circuit is not equipped with the ASB key, this test cannot be done.

BH Select an office code requiring reverting pulsing for original route and MF pulsing for alternate route.

BJ See Part 4, Method.

BL Select any code and key setting that will cause an AMA charge condition.

BM Select area and office codes typical of recycle calls. Establish class of call according to type of condition.

BN Select an area code which, with no code compressors available, the marker is arranged to route the call to overflow, intercept, or to MF trunks. For the overflow or intercept routing, depress office code keys to correspond with the area code.

BO Select any 3-digit operator code.

BP Select an area code with an ODN routing. Select an office code corresponding to the office code wired into the auxiliary sender and activated by the particular office index of the line equipment location. Select line equipment locations so that the translator output matches the operated, A, B, C, TH, H, T, and U keys.

BQ Select line equipment locations so that translator output match the directory number set up on the A, B, C, TH, H, T, and U keys.

BR Select an area code with an ODN routing. Select a multiparty class of service.

BS Select an area code with an ODN routing. Select a line location that has no cross-connection in the translator.

BT Select an area code with an ODN routing. Select line equipment with a cross-connection in the translator. In Test No. 1 plug the ODN and 0 jacks in place of the area code.

BU Select an area code which is recycled and reconstructed by the auxiliary sender. Additional tests are provided to test options in the auxiliary sender which cancel reconstruction of the recycled area code and instead cause the last 4, 5, or 7 digits to be outpulsed. Recycled area codes with proper "skip" information should be chosen for these tests.

BV Select any interchangeable area or office code. For Test No. 5, the A, B, C, TH, H, T, U keys must correspond to the directory number that will be translated to the line link frame. Where prefix identification is required for 10-digit codes, operate the PDG0 or PDG1 key in Test No. 4.

BW See Test Chart.

BX For Test No. 1, select an interchangeable office code. For Test No. 2, select any valid area code.

BY Select typical area and office codes for 10-digit MF call.

Note: This test can be performed only if test circuit TDK relay is U1120 type.

CA to CI Selection of code is arbitrary in making these tests.

CJ Selection of area and office code is arbitrary. Operate * or # key on alternate cycles.

DA Select an office code for a coin call to a panel or crossbar office.

DB Select an office code for a coin call with a direct PCI routing.

DC Select an office code for a coin call with a PCI routing which requires office selections and the sender TW relay normal.

DD Select an office code for a coin call with a PCI routing which requires office selections and the sender TW relay operated.

DE Select area and office codes for a ten-digit call.

DF Select a code for a coin call with a straightforward routing with a charge to the calling subscriber.

DG,DH Select an office code for a coin call to a panel or crossbar office.

DI Set up an operator call using dial-tone-first class of service. Codes such as 211 or 911 may be substituted for operator.

DJ Select a code for directory assistance and class of service requiring message billing index No. 16. Select a TV_ key and insert make-busy plugs into the associated TVMB_ and TVTIB_ jacks at the transverter trouble indicator frame. Also insert make-busy plug into 7DG-DL jack.

DK,DL Select a code for directory assistance with key selection for straight-forward or MF outpulsing. Insert make-busy plug into 7DG-DL jack.

TABLE C

TEST	SWITCH POSITION		FREQUENCY EMITTED
	FCA	FCB	
Single	1	SFH	1209
Frequency	2	SFH	1336
Test	3	SFH	1477
(High)	4	SFH	1633
Single	1	SFL	697
Frequency	2	SFL	770
Test	3	SFL	852
(Low)	4	SFL	941
Three	1	3FS	1209 + 697 + 2000
Frequency	2	3FS	1336 + 770 + 2000
Test	3	3FS	1477 + 852 + 2000
	4	3FS	1336 + 941 + 2000
High Frequency		MXF	Nominal + 1.5%
Low Frequency		MNX	Nominal - 1.5%

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER							OFFICE CODE			NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES							TEST CLASS	DIAL SPEED	*MISCELLANEOUS	TEST NO.	BSP TEST
			NSS	OSS	AS	KP	A	B	C	TH	H	T										U	TV	CH	CT	CU	SW	VF					
A	1	FULL SELECTOR CALL	X	X						0	6	3	6															1		LT	1	A	
	2		X	X							1	9	5	4															1		LT	2	
	3		X	X							2	0	4	5															1		LT	3	
	4		X	X							3	2	6	3															1		LT	4	
	5		X	X							4	7	9	0															1		LT	5	
	6		X	X							5	8	1	8															1		LT	6	
	7		X	X							6	4	8	1															1		LT	7	
	8		X	X							7	1	0	9															1		LT	8	
	9		X	X							8	3	2	7															1		LT	9	
	10		X	X							9	5	7	2															1		LT	10	
B	1	Trouble Release from Transverter with MB1-9 – AMA Offices	X	X						9	0	4	5														1	7 MIN	TV-TRL, TVMB	1	B		
	2		X	X																									TVTIB	2			
C	1	Continuity and False Ground Test of DC, OT, LO, 2L and 5L Leads – AMA Offices	X	X						6	9	5	4										9				2L	1	26 MAX		1	C	
	2		X	X						6	9	5	4										9				5L	17	26 MAX		2		
	3		X	X						6	9	5	4										9				LO	1	26 MAX		3		
	4		X	X						0	2	3	4										9				OT		26 MAX	TPO	4		
D	1	Permanent Signal Feature – AMA Offices	X	X																		SO					12	26 MIN	TRK-IDT	1	D		
	2		X					N	0	0												SO					12	26 MIN	TRK-IDT, IST-	2			
E	1	Permanent Signal Feature – Non-AMA Offices	X	X																		SO							26 MAX		1	E	
	2		X					N	0	0												SO							26 MAX	IST-	2		
	3		→Simulate All Permanent Signal Trunks Busy	X	X					N	0	0										SO						12	26 MAX	AMA, MR	3		
F	1	Select Bar Operation		X						9	1	9	1															2	26 MIN	PNS	1	F	
	2			X						1	9	1	9															2	26 MIN	PNS	2		
	3			X						8	1	8	1															2	26 MIN	PNS	3		
	4			X						1	8	1	8															2	26 MIN	PNS	4		
	5			X						7	1	7	1															2	26 MIN	PNS	5		
	6			X						1	7	1	7															2	26 MIN	PNS	6		
	7			X						6	1	6	1															2	26 MIN	PNS	7		
	8			X						1	6	1	6															2	26 MIN	PNS	8		
	9			X						5	1	5	1															2	26 MIN	PNS	9		
	10			X						1	5	1	5															2	26 MIN	PNS	10		
	11			X						4	1	4	1															2	26 MIN	PNS	11		
	12			X						1	4	1	4															2	26 MIN	PNS	12		
	13			X						3	1	3	1															2	26 MIN	PNS	13		
	14			X						1	3	1	3															2	26 MIN	PNS	14		
	15			X						2	1	2	1															2	26 MIN	PNS	15		
	16			X						1	2	1	2															2	26 MIN	PNS	16		
	17			X						0	2	0	2															2	26 MIN	PNS	17		
	18			X						2	0	2	0															2	26 MIN	PNS	18		
	19		X						9	9	9	8															2	26 MIN	PNS	19			

* Operate the LT key except during heavy traffic.

Note: N denotes key normal.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER			OFFICE CODE			TH	H	T	U	NFDD OR NST	FA	F	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES							TEST CLASS	DIAL SPEED	MISCELLANEOUS	TEST NO.	BSP TEST
			NSS	OSS	AS	KP	A	B													C	TV	CH	CT	CU	SW	VF					
F (Cont)	20	Select Bar Operation (Cont)	X						8	8	8	9			8											2	26 MIN	PNS	20	F (Cont)		
	21		X						7	7	7	6			7											2	26 MIN	PNS	21			
	22		X							6	6	6	7			6										2	26 MIN	PNS	22			
	23		X							5	5	5	4			5										2	26 MIN	PNS	23			
	24		X							4	4	4	5			4										2	26 MIN	PNS	24			
	25		X							3	3	3	2			3										2	26 MIN	PNS	25			
	26		X							2	2	2	3			2										2	26 MIN	PNS	26			
	27		X							1	1	1	0			1										2	26 MIN	PNS	27			
	28		X							0	0	0	1			0										2	26 MIN	PNS	28			
	29		X							9	9	9	1			9										2	26 MIN	PNS	29			
	30		X							8	8	8	1			8										2	26 MIN	PNS	30			
	31		X							7	7	7	1			7										2	26 MIN	PNS	31			
	32		X							6	6	6	1			6										2	26 MIN	PNS	32			
	33		X							5	5	5	1			5										2	26 MIN	PNS	33			
	34		X							4	4	4	1			4										2	26 MIN	PNS	34			
	35		X							3	3	3	1			3										2	26 MIN	PNS	35			
	36		X							2	2	2	1			2										2	26 MIN	PNS	36			
	37		X							1	1	1	2			1										2	26 MIN	PNS	37			
	38		X							0	0	0	2			0										2	26 MIN	PNS	38			
G	1	Dial Pulse and Register Control	X	X					7	8	9	0	→*NST←									→*0	0	SO	0	—	2 or 17*←	26 MAX		1	G	
	2		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	26 MIN		2		
	3		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	15 MAX		3		
	4		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	15 MIN		4		
	5		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	7 MAX		5		
	6		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	7 MIN		6		
	7		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	PBX SURGE		7		
	8		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	7 MAX	ZLL	8		
	9		X	X					7	8	9	0	→*NST←									→*0	0	SO	0		2 or 17*←	26 MIN	ZLL	9		
H		Special Service Operator	X	X			0	0	0																9	26 MAX			H			
I		Restricted Code	X	X																					10	26 MIN			I			
J	1	Unassigned Code	X	X																					18	26 MIN	RVT		1	J		
	2		X	X					N	N	N	N													10	26 MIN			2			
K	1	Deleted																											1	K		
	2																												2			
L		Deleted																												L		
M		2-Stage PCI Pulsing		X					0	1	2	3													4	15 MIN	TS PCI, PNS		M			
N		Toll Diversion	X	X					2	5	7	2													1	7 MAX	TDV		N			
O		Dial Tone	X	X			N	N	N																15	15 MIN			O			
→O.1		Dial Tone Transmission Level	X	X			N	N	N																15	15 MIN			O.1 ←			

Note: Use class 17 for MF test calls.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER				OFFICE CODE				TH	H	T	U	NFD0 OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES							TEST CLASS	DIAL SPEED	MISCELLANEOUS	TEST NO	BSP TEST
			NSS	OSS	AS	KP	A	B	C	TV														CH	CT	CU	SW	VF	MISC						
P		Trouble Release	X	X						0	1	0	9															16	26 MAX			P			
Q	1	2-Party Check	Revertive	X	X					5	3	2	7														1	15 MAX	REP		1	Q			
→	2	Feature	MF	X	X					5	3	2	7	NST			*		0	0	SO	0					17		TPO or TPNO		2	←			
R		Deleted																														R			
S		Deleted																														S			
T	1	Partial Dial Timing		X						1	1	1	1														10	26 MAX	SL, TA, PNS, SO		1	T			
	2		X	X						1	1	1	1														10	26 MAX	CTR (IN), SL, TA, SO		2				
	3			X						1	1	1	1															10	26 MAX	CTR (IN), SL, TA, SD, PNS, SO		3			
	4		X							1	1	1	1															10	26 MAX	CTR (IN) SL, TA, IST-, SO		4			
U	1	Stuck Sender Timing		X						1	1	1	1															18	26 MAX	PNS, SL, TA		1	U		
	2			X						1	1	1	1															18	26 MAX	SL, TA, SD, PNS		2			
	3			X						1	1	1	1															18	26 MAX	CTR (IN), SL, TA, PNS		3			
	4			X						1	1	1	1															18	26 MAX	CTR (IN), SL, TA, PNS		4			
	5		X							1	1	1	1															18	26 MAX	CTR (IN), SL, TA		5			
	6		X							1	1	1	1															18	26 MAX	CTR (IN), SL, TA, IST-		6			
V		Stuck Sender Lamp and Priming Feature		X						1	1	1	1																			V			
W	1	PCI Calls	X	X		X				0	1	2	3	NFD0																		1	W		
	2		X	X		X				9	0	1	2	NFD0																			2		
	3		X	X		X				6	6	8	9	NFD0																			3		
	4		X	X		X				7	8	9	0	NFD0																			4		
	5		X	X		X				8	9	0	1	NFD0																			5		
	6			X		X				1	2	3	4																				6		
	7			X		X				2	3	4	5																				7		
	8			X		X				3	4	5	6																				8		
	9			X		X				4	5	6	8																				9		
	10			X		X				0	4	9	5																				10		
	11			X		X				0	3	0	1																				11		
	12			X		X				0	0	1	2																				12		
	13			X		X				0	1	2	3																				13		
	14			X		X				0	2	3	4																				14		
	15			X		X				0	4	5	6																				15		
	16			X		X				0	9	8	9																				16		
	17			X		X				0	8	5	6																				17		
	18			X		X				0	5	6	7																				18		
	19			X		X				0	6	7	8																				19		
	20			X		X				0	7	4	0																				20		
X		Late Release Full Selector Call		X	X		X			0	1	0	9														3	26 MIN				X			
Y		3-Digit Operator		X	X		X			0	0	0	0														10	15 MAX				Y			

Note: *Setup for 2-party class of service.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER							OFFICE CODE				NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES							TEST CLASS	DIAL SPEED	*MISCELLANEOUS	TEST NO.	BSP TEST
			NSS	OSS	AS	KP	A	B	C	TH	H	T	U										TV	CH	CT	CU	SW	VF	MISC					
Z		PCI Tandem - 3-Digit Operator	X	X		X				0	0	0	0	NFD0																6	15 MIN			Z
AA	1	Late Release PCI Call	X	X		X				7	8	9	0	NFD0																7	15 MIN		1	AA
	2		X	X		X				8	9	0	1	NFD0																8	7 MAX		2	
AB	1	Office Overflow	X	X		X				8	8	1	8																	13	7 MIN		1	AB
	2		X	X		X				9	0	1	2	NFD0																13	15 MIN		2	
	3		X	X		X				0	0	0	0																	13	26 MIN		3	
AC	1	Incoming Overflow	X	X		X				5	3	2	7																	14	26 MAX		1	AC
	2		X	X		X				5	3	2	7																14	26 MAX	LIOF	2		
	3		X	X		X				5	3	2	7																14	26 MAX	MTG	3		
AD	1	Alternate Route	Revertive Outpulsing		X	X		X																					1	26 MIN	AR	1	AD	
	2		Revertive Outpulsing		X	X		X																					1	26 MIN	AGS1	2		
	3		MF Outpulsing		X	X		X																					17	26 MIN	SOF, POS	3		
AE		Counting Relays	X	X		X				3	7	9	0																1	15 MAX	SP		AE	
AF		Fast Assignment	X	X		X				1	2	3	4	NFD0															*	15 MIN	FAS		AF	
AG		Capacity Test For Ground Closures between PCI Pulses	X	X		X				5	7	7	7	NFD0															*	7 MAX	CAP-PCI		AG	
AH	1	Official Reroute		X		X	6	3	3	9	3	0	0																	1	7 MIN	OPR, PNS	1	AH
	2			X		X	6	3	3	9	3	0	0																1	7 MIN	ORR, AR, PNS	2		
AI	1	Official Reroute - False Operation		X		X	6	3	3	9	1	0	0																	1	7 MAX	X BSY, PNS	1	AI
	2			X		X	6	3	3	9	2	0	0																1		X BSY, PNS	2		
	3			X		X				9	3	0	0																1	7 MAX	PNS	3		
AJ		Release Test of STP Relay	X	X		X				9	9	9	9																1	26 MIN	STP, X BSY		AJ	
AK	1	Prefix 1-1 Feature		X		X				9	0	4	5																		26 MIN	1-1, PNS	1	AK
	2			X		X				9	0	4	5	NFD0																	26 MIN	1-1, SD, PNS	2	
AL	1	Register Control				X				6	0	6	0																	1		SKP, PNS	1	AL
	2					X				5	8	6	2																	1		PNS	2	
	3					X				5	9	8	4																	1		PNS	3	
	4					X				3	0	3	0																	1		TRT, PNS	4	
	5					X				9	1	9	1																	1		RRT, PNS	5	
AM		Unassigned Code				X				6	2	0	5																18		CTR (OUT) PNS		AM	
AN		Trunk to Incoming - More than Four Digits Keyed				X	N	N	N	1	3	1	6																	16		CTR (OUT) STA W, PNS		AN
AO		Trunk to Full Selector Tandem District - No Office Code Keyed				X	N	N	N	2	4	2	3																	16		CTR (OUT), PNS		AO
AP		Trunk to District Junctor - No Office Code Keyed				X							1																	16		CTR (OUT), PNS		AP

* See Table B.

Note: N denotes key normal.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER				OFFICE CODE			TH	H	T	U	NFDD OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES								TEST CLASS	DIAL SPEED	*MISCELLANEOUS	TEST NO.	BSP TEST
			NSS	OSS	AS	KP	A	B	C														TV	CH	CT	CU	SW	VF	MISC						
AQ		Trunk to District Junctor — Wrong Code Keyed				X				4	5	4	7			DIST -0	8			SO									15		CTR (OUT), PNS		AQ		
AR		Trunk to District Office Selector — Wrong Code Keyed				X				7	6	5	8			1 -TW	8			SO									18		CTR (OUT), PNS		AR		
AS	1	Premature Operation of AL and AC Relays				X				1	3	1	6			INC-2	8			SO								1		TCT, PNS	1	AS			
	2					X				6	9	5	4			INC-2	8			SO								1		LT, PNS	2				
	3					X				8	9	0	1			TAN-3	8											4		TCT, PNS	3				
AT		Stored Ring Feature				X	N	N	N	8	7	7	9			INC-2	8			SO								1		SRG, PNS		AT			
AU		Automatic Priming Feature				X										DIST -0	8			SO								12		CTR (IN), PNS		AU			
AV		Stuck Sender Timing				X										DIST -0	8			SO								1		CTR (OUT), SS, TA, PNS		AV			
AW	1	Intersender Timing FS — PANEL	X	X						2	1	2	1							SO								18	26 MIN	SL, IST — (Note 1)	1	AW			
	2		FS — X BAR	X	X					2	1	2	1							SO								18		SL, IST — (Note 1)	2				
	3		PCI TANDEM	X	X															SO								18	26 MIN	SL, IST — (Note 1)	3				
AX		Intersender Timing — Sustaining Period		X															SO								18	26 MIN	PNS, SL, IST — (Note 2)		AX				
AY	1	Information Code 411 1 + 411 3 — Digit Outpulse — 411 MF Outpulse — ANI (Directory Assistance Charging) 3 — Digit Outpulse — +411 ANI (Directory Assistance Charging)	X	X			4	1	1																			10			1	AY			
	2			X	X			4	1	1																					2				
	3			X	X			4	1	1					NST				0	0	SO	0								17	7DG-DL, DAC411		3		
	4			X	X			4	1	1					NST				0	0	SO	0								17	PDG1, 7DG-DL		4		
AZ	1	Service Codes 11X Service Code 00 Emer Operator Code Prefix 01 Prefix 10	X	X			1	1	—																			9		1-1 (Note 3)	1	AZ			
	2			X	X			0	0	0																					9		PDG0 (Note 4)	2	
	3			X	X			1	0	0																					9		PDG0	3	
	4			X	X			0	0	0																					9		PDG1	4	

Note 1. If senders to be tested are assigned between two intersender timing groups, leave IST- normal.

Note 2. At trouble recorder frame, insert make-busy plugs in IT jacks associated with both intersender timing groups (see 1.07).

Note 3: If testing SD-27810-01 type sender, exclude this test.

Note 4: If testing SD-25012-01 type sender, and prefix code feature is provided, test frame will check for CC4 and CC7 or CC0 and CC7. If testing SD-27810-01 type sender, and zero prefix feature is provided, the sender provides CC0 and CC7 code; otherwise CC4 and CC7 code is provided.

* N denotes key normal.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	TYPE SENDER				AREA CODE			OFFICE CODE			TH	H	T	U	NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA-OFFICES								TEST CLASS	DIAL SPEED	*MISCELLANEOUS	TEST NO.	BSP TEST	
			NSS	OSS	AS	KP	A	B	C	A	B	C														TV	CH	CT	CU	SW	VF	MISC							
BA	1	MF- 10- Digit Call — No SKIP	X	X	X				1	1	1	1	1	1	1	NST					0	0	SO	0								17			1	BA			
	2		X	X	X				2	0	3	4	0	5	6	NST					0	0	SO	0									17				2		
	3		X	X	X				3	2	4	5	9	6	7	NST					0	0	SO	0										17				3	
	4		X	X	X				4	3	5	6	8	7	8	NST					0	0	SO	0										17				4	
	5		X	X	X				5	4	6	7	7	8	9	NST					0	0	SO	0										17				5	
	6		X	X	X				6	5	7	8	6	9	0	NST					0	0	SO	0										17				6	
	7		X	X	X				7	6	8	9	5	0	2	NST					0	0	SO	0										17				7	
	8		X	X	X				8	7	9	0	4	2	3	NST					0	0	SO	0										17				8	
	9		X	X	X				9	8	0	2	3	3	4	NST					0	0	SO	0										17				9	
	10		X	X	X				0	9	2	3	2	4	5	NST					0	0	SO	0										17				10	
	11	MF 10- Digit Call — SKIP 3	X	X	X				2	3	2	1	2	1	2	NST					0	0	SO	0									17	7DG- PL			11		
BB	1	MF 7-Digit Call —	No STA				N	N	N				2	1	2	1	NST					0	0	SO	0								17	26 MIN	7DG- DL	1	BB		
	2		STA				N	N	N				3	2	3	2	—					0	0	SO	0								17	26 MIN	7DG- DL, SD, PNS STA J	2			
	3		SKIP 2				N	N	N				4	3	2	1	NST					0	0	SO	0								17	26 MIN	7DG- DL 5DG- PL	3			
	4		SKIP 3				N	N	N				2	3	2	3	NST					0	0	SO	0								17	26 MIN	7DG- DL 4DG- PL	4			
BC	1	MF 10-Digit Call Abandoned	After 9 digits dialed										1	2	3	4	NST					0	0	SO	0								17	26 MIN	WO	1	BC		
	2		After dialing Complete										1	2	3	4	NST					0	0	SO	0								17	26 MIN	WO1	2			
	3		During MF Pulsing										1	2	3	4	NST					0	0	SO	0								17	26 MIN	WO2	3			
BD	1	MF CALL — 10-Digit — Trouble Time-out — Dialing not Completed	X	X								3	4	1	2	NST					0	0	SO	0									17	26 MIN	TO, PNS	1	BD		
	2		X	X								3	4	1	2	NST					0	0	SO	0									17	26 MIN	TO1, CTR (AS-in) PNS	2			
BE		MF Call — Stuck Auxiliary Sender — Primed Release	X	X								3	4	1	2	NST					0	0	SO	0									17	26 MIN	TO1, CTR (AS-out) CTR (SS-out) PNS		BE		
BF		MF Call — 10-Digit — No Auxiliary Sender Available (Note 2)	X									1	1	1	1	NST					0	0	SO	0									17	26 MIN	TO, PAS- MB (AS) ASB, PNS		BF		
BG		MF Call — 10-Digit — Incoming Trunk Reversed	X	X								1	1	1	1	NST					0	0	SO	0									17	26 MIN	RVT, PNS		BG		
BH		RP Call — 7-Digit — Alternate Route MF	X	X	X		N	N	N			1	1	1	1	NST					0	0	SO	0									17	26 MIN	7DG- DL, 4DG- PL, AGS1		BH		
BI		MF Call — 10-Digit — Trouble Timeout After Wink	X	X								3	4	2	1	NST					0	0	SO	0									17	26 MIN	PAS CTR (AS-in) PNS		BI		
BK		Major Alarm — Two Auxiliary Senders Stuck	X	X												NST					0	0	SO	0									17		TO1, REP, PNS CTR(SS) CTR(AS)		BK		
BL		Translator Overflow — Local AMA	X	X	X																															BL			
BM	1	10-Digit Recycle Call	Full Selector																														1		RCY	1	BM		
	2		PCI Direct																															5		RCY		2	
	3		PCI Tandem																																4			RCY	3
	4		7-Digit MF				X	X	X									NST																17		RCY, 7DG- PL		4	

Note 1. Test BA. In offices equipped with local AMA (see Table B).

Note 2. Test BF. If sender test circuit is not equipped with ASB key, this test cannot be performed.

Note 3. Tests BB and BH. N denotes jack normal.

Test Chart (Cont)

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	AREA CODE			OFFICE CODE			TH	H	T	U	NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA OFFICES							TEST CLASS	DIAL SPEED	TOUCH-TONE		MISCELLANEOUS JACKS AND KEYS	TEST NO.	BSP TEST
			A	B	C	A	B	C														TV	CH	CT	CU	SW	VF	MISC			FCA	FCB			
CA		Slow Pulse — Long Interdigital Periods						3	5	7	0	NST					0	0	SO	0							17				TT, SLP		CA		
CB		Slow Pulse — Short Interdigital Periods						3	5	7	0	NST					0	0	SO	0							17				TT, PP, LGP		CB		
CC		Low Level Signal						3	5	7	0	NST					0	0	SO	0						17				TT, LLV		CC			
CD	1	High Level Signal						3	5	7	0	NST					0	0	SO	0						17				TT, HLV	1	CD			
	2							4	6	8	9	NST					0	0	SO	0						17				TT, HLV, LGP	2				
CE		High Frequency						3	5	7	0	NST					0	0	SO	0						17			MXF	TT, LLV		CE			
CF		Low Frequency						3	5	7	0	NST					0	0	SO	0						17			MNF	TT, LLV, SLP		CF			
CG	1	Single Frequency						3	5	7	0	NST					0	0	SO	0						17		1	SFH	TT	1	CG			
	2							3	5	7	0	NST					0	0	SO	0						17		2	SFH	TT	2				
	3							3	5	7	0	NST					0	0	SO	0						17		3	SFH	TT	3				
	4							3	5	7	0	NST					0	0	SO	0						17		4	SFH	TT	4				
	5							3	5	7	0	NST					0	0	SO	0						17		1	SFL	TT	5				
	6							3	5	7	0	NST					0	0	SO	0						17		2	SFL	TT	6				
	7							3	5	7	0	NST					0	0	SO	0						17		3	SFL	TT	7				
	8							3	5	7	0	NST					0	0	SO	0						17		4	SFL	TT	8				
CH	1	Special 3-Frequency						3	5	7	0	NST					0	0	SO	0						17		1	3FS	TT	1	CH			
	2							3	5	7	0	NST					0	0	SO	0						17		2	3FS	TT	2				
	3							3	5	7	0	NST					0	0	SO	0						17		3	3FS	TT	3				
	4							3	5	7	0	NST					0	0	SO	0						17		4	3FS	TT	4				
CI	1	Speed Test — TOUCH-TONE To						3	5	7	0	NST					0	0	SO	0						17				TT, CT	1	CI			
	2	Dial Pulse Converter						3	5	7	0	NST					0	0	SO	0						17				TT, CT, PDG1	2				

Note: Tests CA through CI apply to any subscriber sender with TOUCH-TONE feature.

**TEST CHART
SENDER TESTS**

BSP TEST	TEST NO.	TITLE	AREA CODE			OFFICE CODE			TH	H	T	U	NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA OFFICES							TEST CLASS	*# ATNS	* OR #	TT * # SWITCH	MISCELLANEOUS JACKS AND KEYS	TEST NO.	BSP TEST
			A	B	C	A	B	C														TV	CH	CT	CU	SW	VF	MISC							
CJ	1	Eleventh (*) and Twelfth (#) Button TOUCH-TONE Frequencies	N									NST					0	0	SO	0							17	NOTE 2		ACA	TT, PNS	1	CJ		
	2			N									NST					0	0	SO	0							17	NOTE 2		ACB	TT, PNS		2	
	3				N								NST					0	0	SO	0							17	NOTE 2		ACC	TT, PNS		3	
	4					N							NST					0	0	SO	0							17	NOTE 2		A	TT, PNS		4	
	5						N						NST					0	0	SO	0							17	NOTE 2		B	TT, PNS		5	
	6							N					NST					0	0	SO	0							17	NOTE 2		C	TT, PNS		6	
	7								N				NST					0	0	SO	0							17	NOTE 2		TH	TT, PNS		7	
	8									N			NST					0	0	SO	0							17	NOTE 2		H	TT, PNS		8	
	9										N		NST					0	0	SO	0							17	NOTE 2		TN	TT, PNS		9	
	10											N	NST					0	0	SO	0							17	NOTE 2		U	TT, PNS		10	
	11												NST					0	0	SO	0							17	NOTE 2		STA	TT, PNS		11	

Note 1: N denotes jack or keys normal.

Note 2: If Option PB is provided for SD-27810-01 wire-spring senders, operate *#ATNS key and verify that CT key is in normal position.

Note 3: When testing SD-25012-01 senders, after eleventh or twelfth tone is keyed into sender, overflow (120ipm) tone will be returned over the tip and ring by the sender. This is verified by listening with the test receiver on the test frame.

Note 4: When testing SD-27810-01 senders, after eleventh or twelfth tone is keyed into sender, overflow (120 ipm) tone will not be heard at test frame, but automatically processes by the sender.

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	AREA CODE			OFFICE CODE			TH	H	T	U	NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	OBA	OGA	CRA	TEST CLASS	DIAL SPEED	TOUCH-TONE		MISCELLANEOUS KEYS	TEST NO.	BSP TEST
			A	B	C	A	B	C																			FCA	FCB			
DA		Coin Failure — Revertive Pulse						1	1	1	1													1				CON, SBA*		DA	
DB		Coin Failure — PCI, False Trunk Closure						1	1	1	1	NFDO													5				CON, FTC, SBA*		DB
DC		Coin Failure — PCI, With Office Selections and Sender TW Relay Down						1	1	1	1																	CON, TWD, SBA*		DC	
DD		Coin Failure — PCI With Office Selections and Sender TW Relay Operated						1	1	1	1																	CON, TWU, SBA*		DD	
DE		Coin Failure — MF						1	1	1	1	NST													17			CON, SBA*		DE	
DF		Coin Failure — Straightforward																										CON, SBA*		DF	
DG		GT Relay Release Test						1	1	1	1														1			CON, GTN, SBA*		DG	
DH		GT Relay Operate Test						1	1	1	1														1			CON, GTO		DH	
DI		False Exposure of GT Relay				0	0	0	—	—	—	—								SO					9			DGT		DI	

Note: Tests DA through DI apply to any subscriber sender arranged for coin service improvement features. If senders serve both coin service improvement and noncoin service improvement coin classes, operate CR key for noncoin service improvement coin class calls.

* Operate SBA key if coin failure announcement trunk routing requires office selections. (See 6.09)

TEST CHART
SENDER TESTS

BSP TEST	TEST NO.	TITLE	AREA CODE			OFFICE CODE			TH	H	T	U	NFDO OR NST	FA	F	CS	CLASS CHECK	OB	OG	OFF CR	B OFF CR	AMA OFFICES							TEST CLASS	DIAL SPEED	TOUCH-TONE		MISCELLANEOUS JACKS AND KEYS	TEST NO.	BSP TEST
			A	B	C	A	B	C														TV	CH	CT	CU	SW	VF	MISC			FCA	FCB			
DJ	1	DAC - (AMA) Straightforward				4	1	1					NST					O	O	SO	O												DAC-411, DAC-STF, AMA-CK, AMA, 2L, 7DG-DL	1	DJ
	2	MBI 16 Local Record				5	5	5	1	2	1	2	NST					O	O	SO	O											555, DAC-STF, AMA-CK, AMA, 2L, 7DG-DL	2		
	3	Trouble Release from Transverter											NST					O	O	SO	O											DAC-411, DAC-STF, AMA-CK, AMA, 2L, 7DG-DL, TV-TRL	3		
	4	With MBI 16 - AMA Offices											NST					O	O	SO	O										555, DAC-STF, AMA-CK, AMA, 2L, 7DG-DL, TV-TRL	4			
DK	1	DAC - (AMA) MF MBI 16 Local Record				4	1	1					NST					O	O	SO	O											DAC-411, AMA-CK, AMA, 2L, 7DG-DL	1	DK	
	2					5	5	5	1	2	1	2	NST					O	O	SO	O											555, AMA-CK, AMA, 2L	2		
	3	Trouble Release from Transverter											NST					O	O	SO	O											DAC-411, AMA-CK, AMA, 2L, 7DG-DL, TV-TRL	3		
	4	with MBI 16 - AMA Offices											NST					O	O	SO	O										555, AMA-CK, AMA, 2L, TV-TRL	4			
DL		DAC - (ANI) Straightforward				4	1	1					NST					O	O	SO	O													DL	

Note: To print information on maintenance recorder, operate MR key (2L key not necessary).
To print information on regular recorder, operate RR key (2L key not necessary).