

AUXILIARY LINE CIRCUIT  
 FOR MEASURED RATE INWATS SERVICE  
 (SD-99439-01)

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1. GENERAL INFORMATION

- 1.1 This method covers the test to be performed on the Auxiliary Line Circuit For Measured Rate Inwats Service (SD-99439-01) which provides a connection to a timing circuit for measured rate Incoming Wide Area Telephone Service (INWATS).
- 1.2 Options 13-22 provides variable measured rate for 800 service. Three rate periods are established for billing purposes. A message register and running time meter are provided for each rate period. Arrangements are included for weekend and holiday rates.

2. RECORDS AND REQUIREMENTS

- 2.1 Records
- 2.11 The results of these tests should be recorded on forms SD-97-1313 and SD-97-1315.
- 2.2 Requirements
- 2.21 The tests in this section are based on SD, CD-99439-01.

3. TEST EQUIPMENT

3.1 Test Set

<u>Amt</u>	<u>ITE or Code</u>	<u>Description</u>
1	4011	Misc. Trunk Test Set
1	9650	Telephone Set
1	ITE-4631	Test Receiver
1	4442A	Volt-Ohmmeter
1	ITE-5590	Fuse Alarm Verification Test Set

3.2 Accessories

<u>Amt</u>	<u>ITE or Code</u>	<u>Description</u>
1	KS-3008	Stop Watch

4. FUSING

- 4.1 Using ITE-4442A Volt-Ohmmeter, check each fuse post for absence of battery and ground.
- 4.2 Insert the ITE-5590 into the vacant fuse socket. Verify that a minor alarm sounds. Verify also that the fuse alarm lamp lights and the aisle lamp lights.
- 4.3 Remove the ITE-5590. Alarm silences and alarm lamps go out.
- 4.4 Using fuses of correct type, as indicated by circuit drawing and panel designations, install the fuses one at a time, checking that each fuse is associated with the correct equipment and is free from crosses with the other unfused posts on the fuse panel.
- 4.5 Using ITE-4442A Volt-Ohmmeter, check for -48V battery on unit T.S., punching 11.
- 4.6 Option 17: Check for -48V on (N) T.S., Punching 11, J99235EV unit.
- 4.7 Option 13: Check for -48V on (CT) T.S., punchings 01 and 02, J99235EV unit.

5. TIMING

5.1 Variable Measured Rate (Option 19-22)

5.11 Block the PTC and STI relays nonoperated and operate the PTT key.

5.12 Plug in the 24VAC transformer to a 115V 60HZ supply. The AC and ALM relays operate and the AC and ALM lamps extinguish

5.13 Set the dial on SOA timing relay for 15 minutes and the SO for 6 minutes. Release the PTT key and start timing. the SOA relay operates in 14.5-16 minutes and SO operates in 5-6 minutes after SOA.

NOTE: To determine when SO and SOA operate measure as follows:

	<u>normal</u>	<u>operated</u>
5 (SO)	GRD	-48V
3 (SOA)	-48V	GRD

5.14 Operate PTT key to reset SO and SOA relays. Repeat paragraph 5.13 until timing of both relays is met.

5.15 Remove block from the PTC and STI relays and release the PTT key.

5.16 During the remaining tests the SO and SOA relays must not operate.

6. FUNCTIONAL TEST

NOTE: Consult the Telephone Company on cross connect information for Auxiliary Line Circuits to measuring devices (registers).

6.1 Variable Measured Rate Service (Option 13-22)

6.11 Program Control

Block the SKP, HD, HK and HW relays nonoperated.

6.111 Momentarily operate the ADV key. The STI relay momentarily operates. The time of day relays will always operate in the sequence shown.

<u>Rate Period</u>	<u>Relays Operated</u>	<u>Lamps Lit</u>
Prime	PA, P1A, P1B	White P
Evening	E2A, E2B	Green E
Night	N3, N3A	Blue N

Each operation of the ADV key will cause the rate period relays to switch to the next period.

example: If N3, N3A were operated then they release and PA, P1A, P1B operate.

6.112 Operate the ADV key twice more. The day of week relays always operate in the sequence shown.

Day of Week      Relays Operated

Sun.	S1, D1A
Mon.	M2, D2A
Tues.	T3, D3A
Wed.	W4, D1A
Thur.	T5, D2A
Fri.	F6, D3A
Sat.	S7, D1A

example: If F6,D3A were operated then they release and S7, D1A operate.

6.113 Continue operating the ADV key. Every third operation the day of week relays always switch to the next day in the sequence.

6.12 Cut Through Relays

6.121 Operate the ADV key until the white P lamp is lit. Verify the PCTH relay, all PCH(00-900) relays provided, all P(0-999) relays provided, CKE and CKP relays are operated.

6.122 Momentarily hold a P relay nonoperated, one at a time, in each group of 10 provided. The CKP and ALM relays release, ALM lamp lights and office alarms operate each time.

6.123 Operate the ADV key until the Green E lamp is lit. Verify the ECTH relay, all ECH (00-900) relay provided, all E (0-999) relays provided, CKE and CKP relays are operated.

6.124 Momentarily hold an E relay nonoperated, one at a time, in each group of 10 provided. The CKE and ALM relays release, ALM lamp lights and office alarms operate each time.

6.125 Operate the ADV key until the blue N lamp is lit. Verify the PCTH, ECTH, CKE, CKP, all ECH, E, PCH and P relays are not operated. Remove blocks from the SKP, HD, HK, and HW relays.

6.13 Day of Week Cross Connections

6.131 Verify the standard cross connections have been added. Add an additional cross connection on the XC terminal strip from M2 to LD.

6.132 Operate the ADV key until the S7 and PA relays are operated. The ALM relay momentarily releases and the SKP and HK relays operate. The amber HK lamp lights.

6.133 Operate the HD key and then momentarily operate the HK key. The HW relay operates and HW lamp lights.

6.134 Operate the ADV key until the S1 and P1B relays are operated. The SKP relay operates. Verify the PCTCH, ECTH, CKE, CKP, all ECH, E, PCH and P relays are not operated.

6.135 Operate the LD toggle switch. Operate the ADV key until M2 and P1B relays are operated. The SKP relay releases and HD operates. Verify the ECTH relay operates. Release the LD toggle switch and the HD relay releases. Release the HD key.

6.136 Remove the cross connection from M2 to LD.

6.2 Seizure

6.21 Prepare the ITE-4011 test set with pin jack connections as shown in Figure 1. Operate the STT key on the test set.

6.22 Originate a call to the ITE-4011 test set. The SL relay operates when Aux Line circuit is seized. During ringing, observe that relays R and RI operate during the ringing interval, and that they release during the silent interval.

6.23 Verify that the SZ register, if provided for this circuit, scores once.

6.24 Answer the call by operating the DD-CW key on the test set during the ringing interval. Observe that relays L & TM operate, and timing meter TM starts.

6.25 Check the accuracy of the timer TM with a KS-3008 Stop Watch. Timer TM scores on a 6 minute interval.

6.26 Verify that the MR register, for this circuit, scores once.

6.27 Return the DD-CW key on the test set to normal. Relays L and TM release, stopping the TM timing meter and relay SL releases.

6.3 Variable Measured Rate (Option 19-22)

6.31 Operate ADV key to operate PA, P1A and P1B relays. Repeat paragraph 6.2 observing the timing meter TMP and message register MRP.

6.32 Operate ADV key to operate E2A and E2B relays. Repeat paragraph 6.2 observing the timing meter TME and message register MRE.

6.4 Disconnect6.41 Calling Party First (SxS, No. 1 ESS and No. 2 ESS Sleeve Circuits)

6.411 Perform Para. 6.22, 6.24, and 6.26.

6.412 Go on-hook at the originating end. Relays SL and TM release, stopping the TM timing meter and relay RI operates.

6.413 Return the DD-CW key on the test set to normal. Relays L and RI release returning the circuit to normal.

6.42 Calling Party First (No. 1 and No. 5 Crossbar Sleeve Circuits)

6.421 Perform Para. 6.22, 6.24 and 6.26.

6.422 Go on-hook at the originating end. Relays SL and TM release stopping the TM timing meter relay RI operates, and then relays SL1 and TM operate.

6.423 Return the DD-CW key on the test set to normal. Relay L releases, and then relays SL1, RI and TM release returning the circuit to normal.

6.5 Answer During Silent Ringing

6.51 Perform Paragraph 6.22.

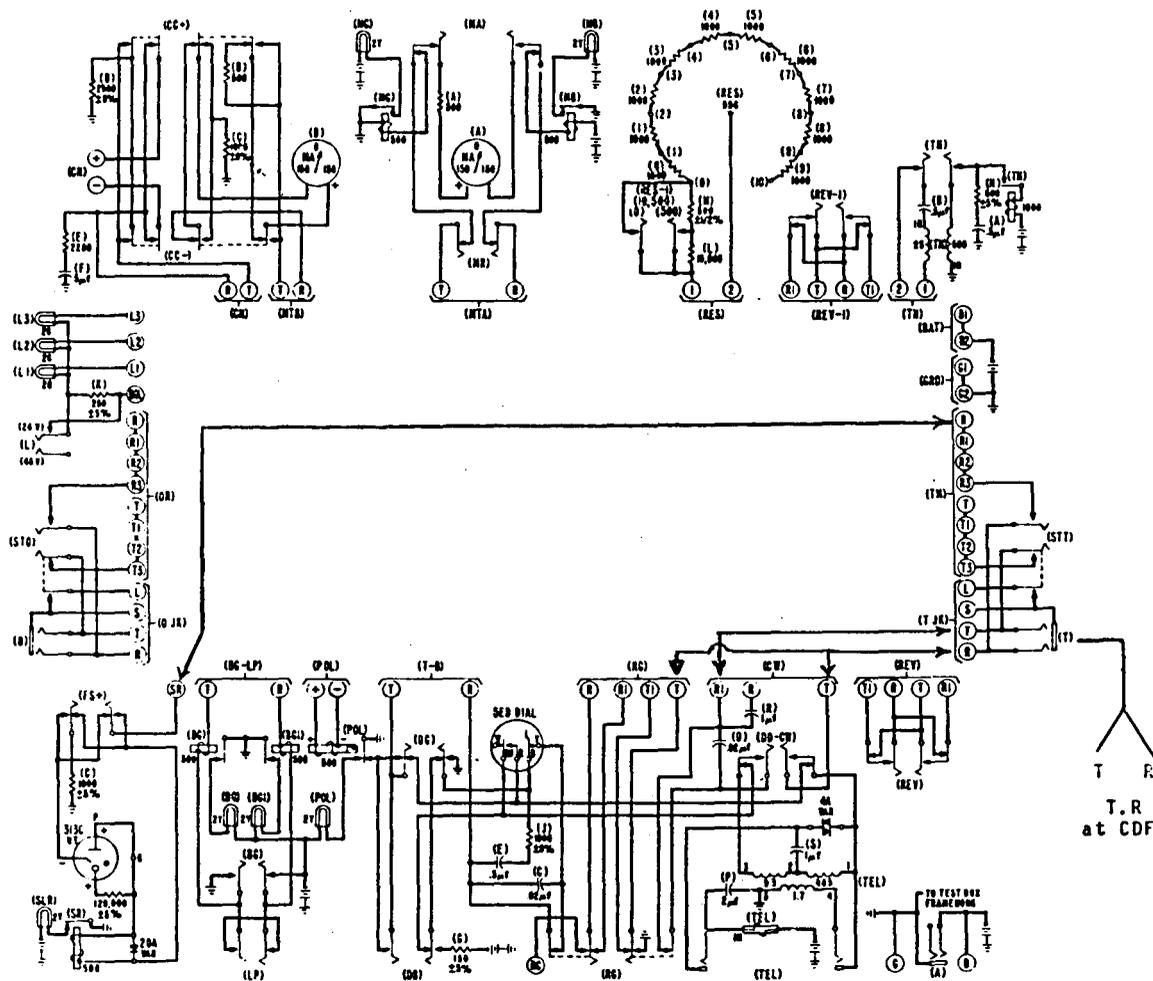
6.52 Answer the call by operating the DD-CW key on the test set during the silent interval. Observe that relays L and TM operate, timing meter TM starts, and register MR scores once.

- 6.53 Disconnect at both ends. Timing meter TM stops.
- 6.6 Inwats Customer Attempts to Originate
- 6.61 SxS, No. 1 and No. 2 ESS Sleeve Circuits
- 6.611 Operate the DD-CW key on the test set. Observe that relays L then RI operate. With the R-9572 Test Receiver, check for presence of ground on the Sleeve.
- 6.612 Return the DD-CW key to normal. Relays L and RI release.
- 6.62 No. 1 and No. 5 Crossbar Sleeve Circuits
- 6.621 Operate the DD-CW key on the test set. Observe that relays L, RI, SLI and TM operate in that order. Calling party is connected to a permanent signal holding trunk.
- 6.622 Return the DD-CW key to normal. Relay L releases, then relays SLI, RI and TM release.
- 6.67 OVERFLOW (FS 12)
- 6.71 Busy out all Subscriber Line Circuits associated with the Overflow Register under test. For procedure, consult the Telephone Company.
- 6.72 Originate a call to the line circuits made busy. Verify that the OF register scores once.
- 6.73 Remove the busy conditions.
- 6.8 770A PBX FLEXIBLE NIGHT CONNECTION YE OPTION
- 6.81 Remove the cord from the (CW) T jack of the ITE-4011 and insert it into the (RG) T jack.
- 6.82 Operate the RG key and verify that the L and RI relays operate. In approximately 1-3 seconds the RIA operates. In approximately 12-14 seconds the NT relay operates and the RIA relay releases. Release the RG key.
- 6.83 After completion of test, restore circuit to normal and remove all associated cords, plugs, strapping, insulators and blocking tools if applicable.
7. PROGTAM TIMER (Option 17)
- 7.1 Three tabs along the outer edge of the clock dial must be fully pushed in for exactly 8:00 AM, 5:00 PM, and 11:00 PM.
- 7.2 The ship-a-day pins are not used on the star wheel day of the week indicator.
- 7.3 Rotate the minute hand of the clock to the current time and then operate the advance key until the current day of week relays are operated and the current rate period lamp is lit.

Manager, Product Engineering  
Control Center

ATTACHMENT  
Figure T on Page 5

Reason for Reissue:  
To add test information for  
Variable Measured Rate (Option 13-22).



NOTE: ARROWS ON KEY CHART INDICATE KEYS OPERATED BEFORE START OF TEST.

REQ#	CODE	RES %	TEST	SWAY	TEST	REARJ
POL	2307B	5%	0	-15	0 0	3
			0	15	1 0	1
			0	-12	1 2	2
POL	2007	40%	0	-12	0 0	3
			0	12	1 1	1 0
			0	12	0 1	1
TR	2004	5%	0	15	12	
			0	10	11	
DC, DC1	1	5%	0	0	10	0 1
DC, DC	0-413	5%	0	0	0 1	0 1
CR		5%	0	0	1	0 0

\* APPLIED WITH TENSION OF BIASING SPRING RELEASED

REQ	QTY	LENTH	CODE	END	WITH
0	0347	12"	1	2455	2455
1	0001	12"	3	D10	310
1	0003	12"	3	D10	300
2	0030	12"	3	D10	3-2455
14	0040	0"	1	2400	2455
1	0000	12"	2	D10	310
2	0314	12"	3	D10	3-0000
0	0307				ALLWATER CLIPS
0	2103				PLUGS
0	0100				SPARE 7170
0	0410				CONNECTOR 0-POINT
0	0413				CONNECTOR 0-POINT

MISCELLANEOUS TRUSS TEST SET, ITC-4011

CC-	LP	DO-CH
STO	CC+	DC
TR	MA	DO
STT	DC	DC

NOTE: ALL RESISTOR VALUES ARE 5% UNLESS OTHERWISE SPECIFIED

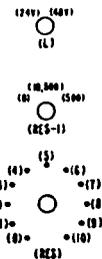


FIGURE 1