ST484 3-15-76

ENGINEERING

VITEL* 2900B
LOCAL MESSAGE METERING SYSTEM TESTS
NO. 1 CROSSBAR OFFICES

FILE COPY

1. GENERAL

1.01 This section describes the routine tests that are to be performed on VITEL 2900B Local Message Metering System equipment installed in No. 1 Crossbar offices.

1.02 The tests covered in this section are:

- Test A: 1000-Call Termination Tests on each Scanner Bank Adapter
- Test B: Scanner Bank Test-Line Interface Unit and Fixed Address Alarm Test
- Test C: Power Fail Test On Scanner Bank
- Test D: Power Fail Test On Scanner Bank Adapter
- Test E: Oscillator Failure Test-Scanner Bank Adapters
- Test F: Parity and Memory Test On SA4 Circuit Pack (For (1) ones and (0) zeros)
- Test G: Parity and Memory Test On SA6 Circuit Pack (For (1) ones and (0) zeros)
- Test H: Subscan Error Test
- Test I: SBA Selector Failure Test on OC1 Circuit Pack in Each Data Path
- Test J: Bus Parity Error Test On OC2 Circuit Pack in Each Data Path
- Test K: Binary to BCD Conversion Error Test on OC3 Circuit Pack in Each Data Path
- Test L: Input Buffer Failure Test On OC4 Circuit Pack in Each Data Path
- Test M: Memory Failure Test On OC5 Circuit Pack in Each Data Path
- Test N: Interrogator Failure Test On OC6 Circuit Pack in Each Data Path
- Test O: MTR Controller Failure Test On OC8R Circuit Pack in Each Data Path
- Test P: Clock Oscillator Failure Test On OC10 Circuit Pack in Each Data Path
- Test Q: Clock Divider Failure Test On OC10 Circuit Pack in Each Data Path

1.03 The reinsertion of a circuit pack while performing these tests may cause alarms not mentioned in these procedures. Any alarm occuring coincidentally with the reinsertion of a circuit pack shall not be considered as a test failure.

1.04 The teletype printout shall be marked to indicate alarms caused by testing.

1.05 The transmittal form forwarding the VITEL tapes shall indicate what tests were performed.

1.06 THE PERFORMANCE OF THESE TESTS WILL CAUSE SOME LOSS OF BILLING DATA. THEY SHALL ONLY BE PERFORMED DURING LIGHT-TRAFFIC PERIODS.

1.07 When a teletype printout occurs, delay any succeeding action until printing has been completed.

*Registered Trademark of the Vidar Corporation.

2. TEST METHOD

STEP	ACTION	VERIFICATION
	Test A: 1000-Call Termination Test Call on Each Scanner Bank Adapter (SBA)	
1	Press the DAC button to obtain the call count on the teletypewriter.	
2	Instert SA12 in the SBA TEST slot of the first SBA to be tested.	Both PASS LEDs are ON. *Note 1:* If the POWER FAIL LED is on, the power supply is out of tolerance — change the power supply. *Note 2:* If FREQ FAIL LED is on, the crystal oscillator is out of tolerance — change SA7. If FREQ FAIL is still on after changing SA7, call maintenance personnel responsible (possible SA12 failure).
3	Clear any alarms that occurred by pressing OAC and DAC to extingush LEDs and clear digital display.	
4	Set the DIRECTORY NUMBER thumb wheels to a seven-digit line identification number served by the SBA to be tested. The first two digits identify the central office code (see Table A) the third and fourth digits identify the SBA, and the last three digits identify the terminal on the SBA. The last three digits should be set the same as the fourth digit.	

TABLE A
VITEL OFFICE CODE ASSIGNMENTS

LOCATION	CODE	LOCATION	CODE
SNFC CA 03	60	SNFC CA 13	67
SNFC CA 04	61	SNFC CA 14	68
SNFC CA 05	62	ALBY CA 11	69
COLA CA 01	63	ALMD CA 11	70
SNFC CA 06	64	OKLD CA 04	71
SNFC CA 11	65	OKLD CA 12	72
SNFC CA 12	66	OKLD CA 11	73

5	Slide the DIRECTORY NUMBER SET switch down to store the selected number.	INITIATE lamp lights.

STEP	ACTION	VERIFICATION
6	Rotate the output and control unit (O and CU) ROUTINE SYSTEM FUNCTIONS switch to the TEST CALL position.	
7	Press the INITIATE/BUSY button.	INITIATE lamp goes out, BUSY lamp lights.
8	Press the 63-1/2 SEC switch on SA12 to send 1000 test calls.	
9	Measure the output time.	Period of pulsating TAPE WRITE activity should not exceed 10 seconds.
10	Read the call data from the O and CU display after the TEST IN PROGRESS lamp is extinguished.	Zone registered is 8, call duration is from 60 to 63 seconds.
11	Press the DAC button to provide the teletype (TTY) printout.	Traffic count from TTY printout shows minimum of 1000 calls made.
12	Remove SA12 from the TEST slot.	
13	Clear any alarms that occurred by pressing the OAC and DAC buttons.	
14	Repeat Steps 2 through 13 for each scanner bank adapter.	

Test B: Scanner Bank Test-Line Interface Unit and Fixed Address Alarm Test

1	Remove LIU 000 from the scanner bank to be tested.	
2	Remove SB2 from the same scanner bank.	SB/SBA failure alarms are generated.
3	Reinstall SB2.	
4	Press the DAC and OAC buttons to clear SB/SBA alarms.	LIU alarm will occur.
5	Reinstall LIU 000.	
6	Clear the LIU alarm.	
7	Repeat Steps 1 through 6 for each scanner bank.	

Test C: Power Fail Test On Scanner Bank

Note: This test should be performed on one data path only. It might require action at more than one location.

STEP	ACTION	VERIFICATION
1	Remove SB7 from one scanner bank.	SBA number is displayed. SB POWER system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
2	Replace SB7 in the scanner bank under test.	
3	Press the OAC and DAC buttons to clear alarms.	
4	Repeat Steps 1 through 3 for each scanner bank.	

Test D: Power Fail Test On Scanner Bank Adapter

1	Make Data Path A (DPA) ACTIVE.	
2	Remove SA10/11 from any SBA, then press the DAC and OAC buttons.	SBA number is displayed. SBA POWER system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
3	Replace SA10/11 in the SBA under test.	
4	Press the DAC and OAC buttons to clear alarms.	
5	Make Data Path B (DPB) ACTIVE.	
6	Remove SA10/11 from the SBA under test, then press the DAC and OAC buttons.	SBA number is displayed. SBA POWER system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
7	Replace SA10/11 in the SBA under test.	
8	Press the DAC and OAC buttons to clear alarms.	

Test E: Oscillator Failure Test-Scanner Bank Adapters

1	Remove SA7 from SBA 00.	System alarms.

STEP	ACTION	VERIFICATION
2	Separate the crystal contacts from the socket on SA7. *Note:* Carefully instert the flat end of an orange-stick (or equivalent tool) between the crystal case base and the bracket on which the sockets are mounted. Rotate **(do not pry)** the orange-stick to separate the crystal's connector pins from their mating sockets by sliding the crystal case in its holding clips.	
3	Reinsert SA7 in SBA 00.	
4	Make DPA ACTIVE.	
5	Press the DAC and OAC buttons to clear alarms.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
6	Make DPB ACTIVE.	
7	Press the DAC and OAC buttons to clear alarms.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
8	Remove SA7 from SBA 00.	System alarms.
9	Replace the crystal in the socket.	
10	Reinsert SA7 in SBA 00.	
11	Press the DAC and OAC buttons to clear alarm.	

Test F: Parity and Memory Test on SA4 Circuit Pack

1	Remove SA4 from SBA 00.	
2	Reinsert SA4 on an extender switchboard (SA15 card).	
3	Install the SA12 test card in the TEST slot and mate it with the connector.	

STEP	ACTION	VERIFICATION
4	Ensure that all card switches are closed.	
5	Make DPA ACTIVE.	System alarms.
6	Press the DAC and OAC buttons.	Alarms clear.
7	OPEN switch B21 on the extender switchboard.	SBA number is displayed. SBA PARITY system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC lamp may light. *Note:* Display will clear on completion of TTY printout.
8	CLOSE switch B21 on the extender switchboard.	
9	Press the DAC and OAC buttons to clear alarms.	
10	OPEN switch A22 on the extender switchboard.	
11	Press the 7-1/2 SEC toggle switch to generate 1000 test calls from the installed SA12 card.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report (display may clear after printout). OAC lamp may light.
12	CLOSE switch A22 on the extender switchboard.	
13	Make DPB ACTIVE.	System alarms.
14	Press the DAC and OAC buttons to clear alarms.	
15	OPEN switch B21 on the extender switchboard.	SBA number is displayed. SBA PARITY system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC lamp may light. *Note:* Display will clear on completion of TTY printout.

STEP	ACTION	VERIFICATION
16	CLOSE switch B21 on the extender switchboard.	
17	Press the DAC and OAC buttons to clear alarms.	
18	OPEN switch A22 on the extender switchboard.	
19	Generate 1000 test calls from the installed SA12 card by pressing down on the 7-1/2 SEC toggle switch.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light may light.
20	CLOSE switch A22 on the extender switchboard.	
21	Replace SA4 in its original position.	System alarms.
22	Remove SA12.	
23	Press the DAC and OAC buttons to clear alarms.	

Test G: Parity and Memory Test On SA6 Circuit Pack

1	Remove SA6 from SBA 00.	System alarms.
2	Reinsert SA6 on an extender switchboard (SA15 card).	
3	Ensure that all card switches are closed.	
4	Make DPA ACTIVE.	
5	Press the DAC and OAC buttons.	Alarms clear.
6	OPEN switch B5 on the extender switchboard.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
7	CLOSE switch B5 on the extender switchboard.	
8	Press the DAC and OAC buttons to clear alarm.	

STEP	ACTION	VERIFICATION
9	OPEN switch B11 on the extender switchboard.	SBA number is displayed. SBA PARITY system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
10	CLOSE switch B11 on the extender switchboard.	
11	Make DPB ACTIVE.	System alarms.
12	Press the DAC and OAC buttons to clear alarms.	
13	OPEN switch B5 on the extender switchboard.	SBA number is displayed. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
14	CLOSE switch B5 on the extender switchboard.	
15	Press the DAC and OAC buttons to clear alarms.	
16	OPEN switch B11 on the extender switchboard.	SBA number is displayed. SBA PARITY system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
17	CLOSE switch B11 on the extender switchboard.	
18	Replace SA6 in its original position.	
19	Press the DAC and OAC buttons to clear alarms.	

Test H: Subscan Error Test

1	Remove SA9 from SBA 00.	System alarms.

STEP	ACTION	VERIFICATION
2	Reinsert SA9 on the extender switchboard (SA15 card).	
3	Ensure that all card switches are closed.	
4	Make DPA ACTIVE.	
5	Press the DAC and OAC buttons.	Alarms clear.
6	OPEN switch B11 on the extender switchboard.	SB FAILURE system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
7	CLOSE switch B11 on the extender switchboard.	
8	Make DPB ACTIVE.	System alarms.
9	Press the DAC and OAC buttons to clear alarms.	Alarms clear.
10	OPEN switch B11 on the extender switchboard.	SB FAILURE system alarm LED is ON. SBA FAILURE system alarm LED is ON. TTY prints alarm report. OAC light comes ON.
11	CLOSE switch B11 on the extender switchboard.	
12	Replace SA9 in its original position.	
13	Press the DAC and OAC buttons to clear alarms.	

Test I: SBA Selector Failure Test On OC1 Circuit Pack in Each Data Path

1	Remove the left-hand OC1 from DPA.	System alarms.
2	Reinstall OC1 on an extender switchboard (SA15 card).	
3	Ensure that all the card switches are closed.	
4	Make DPA ACTIVE.	
5	Press the DAC and OAC buttons.	Alarms clear.

STEP	ACTION	VERIFICATION
6	OPEN switch B30 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report. *Note:* If the last SBA is an even number, an SBA POWER FAILURE for that number will occur in addition to the above conditions.
7	CLOSE switch B30 on the extender switchboard.	
8	Return the left-hand OC1 back into DPA.	
9	Remove the right-hand OC1 from DPA.	
10	Reinstall OC1 on an extender switchboard.	
11	Ensure that all the card switches are closed.	
12	Make DPA ACTIVE.	
13	Press the DAC and OAC buttons.	Alarms clear.
14	OPEN switch B30 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report. *Note:* If the last SBA is an even number, an SBA POWER FAILURE for that number will occur in addition to the above conditions.
15	CLOSE switch B30 on the extender switchboard.	
16	Return the right-hand OC1 back into DPA.	
17	Remove the left-hand OC1 from DPB.	
18	Reinstall OC1 on an extender switchboard.	

STEP	ACTION	VERIFICATION
19	Ensure that all the card switches are closed.	
20	Make DPB ACTIVE.	
21	Press the DAC and OAC buttons.	Alarms clear.
22	OPEN switch B30 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report. *Note:* If the last SBA is an even number, an SBA POWER FAILURE for that number will occur in addition to the above conditions.
23	CLOSE switch B30 on the extender switchboard.	
24	Return the left-hand OC1 back into DPB.	
25	Remove the right-hand OC1 from DPB.	
26	Reinstall OC1 on an extender switchboard.	
27	Ensure that all the card switches are closed.	
28	Make DPB ACTIVE.	
29	Press the DAC and OAC buttons.	Alarms clear.
30	OPEN switch B30 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report. *Note:* If the last SBA is an even number, an SBA POWER FAILURE for that number will occur in addition to the above conditions.

STEP	ACTION	VERIFICATION
31	CLOSE switch B30 on the extender switchboard.	
32	Return the right-hand OC1 back into DPB.	
33	Press the DAC and OAC buttons to clear alarms.	

Test J: Bus Parity Error Test On OC2 Circuit Pack in Each Data Path

1	Remove OC2 from DPA.	
2	Reinstall OC2 on an extender switchboard (SA15 card).	
3	Ensure that all the card switches are closed.	
4	Install an SA12 card in any SBA.	
5	Make DPA ACTIVE.	
6	Press the DAC and OAC buttons.	Alarms clear.
7	OPEN switch A23 on the extender switchboard.	
8	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	SBA number is displayed. SBA PARITY system alarm LED is ON (extinguishes after first printout). O and CU PARITY system alarm LED is ON. O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
9	CLOSE switch A23 on the extender switchboard.	
10	Return OC2 to its original position in DPA.	
11	Remove OC2 from DPB.	
12	Reinstall OC2 on an extender switchboard.	

STEP	ACTION	VERIFICATION
13	Ensure that all the card switches are closed.	
14	Make DPB ACTIVE.	
15	Press the DAC and OAC buttons to clear alarms.	
16	OPEN switch A23 on the extender switchboard.	
17	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	SBA Number is displayed. SBA PARITY system alarm LED is on (extinguishes after first printout). O and CU PARITY system alarm LED is ON. O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
18	CLOSE switch A23 on the extender switchboard.	
19	Return OC2 to its original position in DPB.	
20	Press the DAC and OAC buttons to clear alarms.	

Test K: Binary to BCD Conversion Error Test On OC3 Circuit Pack in Each Data Path

1	Remove OC3 from DPA.	System alarms.
2	Reinstall OC3 on an extender switchboard (SA15 card).	
3	Ensure that all the card switches are closed.	
4	Install an SA12 card in any SBA.	
5	Make DPA ACTIVE.	
6	Press the DAC and OAC buttons to clear alarms.	
7	OPEN switch A27 on the extender switchboard.	

STEP	ACTION	VERIFICATION
8	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
9	CLOSE switch A27 on the extender switchboard.	
10	Return OC3 to its original position.	
11	Remove OC3 from DPB.	
12	Reinstall OC3 on an extender switchboard.	
13	Ensure that all the card switches are closed.	
14	Make DPB ACTIVE.	
15	Press the DAC and OAC buttons to clear alarms.	
16	OPEN switch A27 on the extender switchboard.	
17	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
18	CLOSE switch A27 on the extender switchboard.	
19	Return OC3 to its original position in DPB.	
20	Press the DAC and OAC buttons to clear alarms.	

Test L: Input Buffer Failure Test On OC4 Circuit Pack in Each Data Path

1	Remove OC4 from DPA.	System alarms.

STEP	ACTION	VERIFICATION
2	Reinstall OC4 on an extender switchboard.	
3	Ensure that all the card switches are closed.	
4	Make DPA ACTIVE.	
5	Press the DAC and OAC buttons to clear alarms.	
6	OPEN switch A14 on the extender switchboard.	
7	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
8	CLOSE switch A14 on the extender switchboard.	
9	Restore DPA to ACTIVE status.	
10	Press the DAC and OAC buttons to clear alarms.	
11	OPEN switch A3 on the extender switchboard.	
12	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU PARITY system alarm LED is ON. O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
13	CLOSE switch A3 on the extender switchboard.	
14	Restore DPA to ACTIVE status.	
15	Press the DAC and OAC buttons to clear alarms.	

STEP	ACTION	VERIFICATION
16	OPEN switch A23 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. BUSY light comes ON. OAC light comes ON. TTY prints alarm report.
17	CLOSE switch A23 on the extender switchboard.	
18	Return OC4 to its original position in DPA.	
19	Remove OC4 from DPB.	
20	Reinstall OC4 on an extender switchboard.	
21	Ensure that all the card switches are closed.	
22	Make DPB ACTIVE.	
23	Press the DAC and OAC buttons to clear alarms.	
24	OPEN switch A14 on the extender switchboard.	
25	Generate 1000 test calls from the SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
26	CLOSE switch A14 on the extender switchboard.	
27	Restore DPB to ACTIVE status.	
28	Press the DAC and OAC buttons to clear alarms.	
29	OPEN switch A3 on the extender switchboard.	

STEP	ACTION	VERIFICATION
30	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	O and CU PARITY system alarm LED is ON. O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
31	CLOSE switch A3 on the extender switchboard.	
32	Restore DPB to ACTIVE status.	
33	Press the DAC and OAC buttons to clear alarms.	
34	OPEN switch A23 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. BUSY light comes ON. OAC light comes ON. TTY prints alarm report.
35	CLOSE switch A23 on the extender switchboard.	
36	Return OC4 to its original position in DPB.	
37	Press the DAC and OAC buttons to clear alarms.	

Test M: Memory Failure Test On OC5 Circuit Pack in Each Data Path

1	Remove OC5 from DPA.	System alarms.
2	Reinstall OC5 on an extender switchboard (SA15 card).	
3	Ensure that all the card switches are closed.	
4	Make DPA ACTIVE.	

STEP	ACTION	VERIFICATION
5	Press the DAC and OAC buttons to clear alarms.	
6	OPEN switch B15 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
7	CLOSE switch B15 on the extender switchboard.	
8	RESTORE DPA to ACTIVE status.	
9	Press the DAC and OAC buttons to clear alarms.	
10	OPEN switch A9 on the extender switchboard.	
11	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	The tape will try to write approximately 10 times, then goes off-line. O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. DPA TAPE DRIVE alarm LED is ON. DPA RECORD ERROR alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
12	CLOSE switch A9 on the extender switchboard.	
13	Return OC5 to its original position in DPA.	
14	Remove OC5 from DPB.	
15	Reinstall OC5 on an extender switchboard.	
16	Ensure that all the card switches are closed.	

STEP	ACTION	VERIFICATION
17	Make DPB ACTIVE.	
18	Press the DAC and OAC buttons to clear alarms.	
19	OPEN switch B15 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
20	CLOSE switch B15 on the extender switchboard.	DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
21	Restore DPB to ACTIVE status.	
22	Press the DAC and OAC buttons to clear alarms.	
23	OPEN switch A9 on the extender switchboard.	
24	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch.	The tape will try to write approximately 10 times, then goes off-line. O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. DPB TAPE DRIVE alarm LED is ON. DPB RECORD ERROR alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.

STEP	ACTION	VERIFICATION
25	CLOSE switch A9 on the extender switchboard.	
26	Return OC5 to its original position in DPB.	
27	Press the DAC and OAC buttons to clear alarms.	

Test N: Interrogator Failure Test ON OC6 Circuit Pack in Each Data Path

	Note: The following procedure is identical for each data path. All references to "DP" indicate that the associated action should be performed on the data path under test.	
1	Remove OC6 from the DP shelf to be tested and install it on an extender switchboard (SA15 card).	System alarms.
2	Ensure that all the card switches are closed and install the OC6/extender board combination in the OC6 slot.	
3	Make the DP ACTIVE. Press the DAC and OAC buttons to clear alarms.	
4	OPEN switch B5.	O and CU FAILURE alarm LED illuminates. DP FAILURE alarm LED illuminates. Data paths switch to ACTIVE status. TTY prints alarm report. OAC lamp illuminates.
5	CLOSE switch B5.	
6	Restore the DP to ACTIVE status. Press the DAC and OAC buttons to clear alarms.	
7	OPEN switch B17.	Within 3 to 5 seconds, the following alarm conditions occur: O and CU FAILURE alarm LED illuminates. DP FAILURE alarm LED illuminates. Data paths switch to ACTIVE status. TTY prints alarm report. OAC lamp illuminates.

STEP	ACTION	VERIFICATION
8	CLOSE switch B17.	
9	Restore the DP to ACTIVE status. Press the DAC and OAC buttons to clear alarms.	
10	Insert SA12 in any SBA and generate 1000 test calls by pressing the SA12 toggle switch to the 7-1/2 SEC position.	
11	OPEN switch B4 while the MTR is writing.	SBA FAILURE alarm LED illuminates. O and CU FAILURE alarm LED illuminates. An SBA number (unspecified) is displayed on the O and CU numeric display. DP FAILURE alarm LED illuminates. Data paths switch to ACTIVE status. OAC lamp illuminates. TTY prints alarm report.
12	CLOSE switch B4.	
13	Make the DP ACTIVE. Press the OAC and DAC buttons to clear the alarms.	
14	OPEN switch A22.	
15	Within 30 seconds after the O and CU clock display changes to an ODD minute, initiate 1000 test calls by pressing the SA12 toggle switch to the 7-1/2 SEC position. *Note:* If the system is processing normal traffic during testing, the alarm may occur before test call termination. In this event, proceed to Step 16. If the test call terminates (as indicated when the SA12 TEST IN PROGRESS lamp is extinguished) coincident with an EVEN minute, no alarm occurs. Repeat Step 15.	O and CU FAILURE alarm LED illuminates. DP FAILURE alarm LED illuminates. Data paths switch to ACTIVE status. OAC lamp illuminates. TTY prints alarm report.
16	CLOSE switch A22. Press the DAC and OAC buttons to clear the alarms.	
17	OPEN switch B14.	

STEP	ACTION	VERIFICATION
18	Using the MSMS and SELECT switches, attempt to make the DP ACTIVE.	O and CU FAILURE alarm LED illuminates. Both DATA PATH FAILURE alarm LEDs illuminate. Data paths do not switch to ACTIVE status. OAC lamp illuminates. TTY prints alarm report.
19	CLOSE switch B14.	
20	Make the DP ACTIVE and press the OAC and DAC buttons to clear the alarms.	
21	OPEN switch A5.	
22	Within 30 seconds after the O and CU clock display changes to an EVEN minute, initiate 1000 test calls by pressing the SA12 toggle switch to the 7-1/2 SEC position. *Note:* If the system is processing normal traffic during testing, the alarm may occur before test call termination. In this event, proceed to Step 23. If the test call terminates (as indicated when the SA12 TEST IN PROGRESS lamp is extinguished) coincident with an ODD minute, no alarm occurs. Repeat Step 22.	O and CU FAILURE alarm LED illuminates. DP FAILURE alarm LED illuminates. Data paths switch to ACTIVE status. OAC lamp illuminates. TTY prints alarm report.
23	CLOSE switch A5.	
24	Remove the OC6/extender board combination; separate them, reinstall the OC6 in the DP shelf, and remove SA12. Press the DAC and OAC buttons to clear alarms.	

Test O: MTR Controller Failure Test on OC8R Circuit Pack

Notes:

1. Both data paths will be tested. The first DP tested will be the one that is in the ACTIVE status. All references to "DP" indicate that the associated action shall be performed on the data path under test.

2. These tests are made independent of the daily tape change, therefore, only the END OF TAPE procedure is used. *Do not use the END OF RECORDING period for these tests.*

STEP	ACTION	VERIFICATION
	3. The tape changes are made because circuit reaction, on reinstallation of the OC8R, is variable.	
1	Insert the key in the O and CU keyswitch, then rotate the key 90 degrees clockwise to activate the panel switches.	
2	Rotate the ROUTINE SYSTEM FUNCTIONS switch to the END OF TAPE position and press the INITIATE/BUSY switch.	MTR and data paths switch to ACTIVE status so that the second MTR (previously on STBY) is ACTIVE . MTR rewinds the tape completely onto the supply reel, and all related A/S/L lamps go out. END OF TAPE, OUTPUT & CONTROL, DATA PATH, and TAPE DRIVE FAILURE LEDs illuminate.
3	Press the OFFICE ALARM CUTOFF button to silence the audible alarm.	
4	Press the A/S/L switch of the DP under test.	LOCAL lamp illuminates. MTR STOP lamp may light.
5	Remove the tape and label it for transmittal to Accounting. Enter the MTR activity in the log.	
6	Remove the OC8R from the DP.	
7	Reinstall OC8R on an extender switchboard (SA15 card).	
8	Ensure that all the card switches are closed.	
9	Operate the OAC button.	Alarm clears.
10	Load a degaussed tape on the MTR, following normal tape loading procedures. *Note:* If the MTR STOP light is not lit, turn the MANUAL SYSTEM MODE SELECT switch to the appropriate DP RESET position, and operate the SELECT button to light the MTR STOP lamp.	
11	Press the LOAD switch.	Tape advances to the BOT mark and stops. LOAD lamp lights.

STEP	ACTION	VERIFICATION
12	Press the related data path A/S/L switch.	LOCAL lamp goes out, tape advances 12 inches, then returns to the BOT mark. LOAD lamp illuminates and the related data path goes to STBY.
13	Press the DAC and OAC buttons to clear alarms.	
14	Make the DP ACTIVE.	
15	Press the DAC and OAC buttons to clear alarms.	
16	OPEN switch A4 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
17	CLOSE switch A4 on the extender switchboard.	
18	Restore the DP to ACTIVE status.	
19	Press the DAC and OAC buttons.	Alarms clear.
20	OPEN switch B4 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
21	CLOSE switch B4 on the extender switchboard.	
22	Restore the DP to ACTIVE status.	
23	Press the DAC and OAC buttons.	Alarms clear.

STEP	ACTION	VERIFICATION
24	OPEN switch A29 on the extender switchboard.	
25	Insert the SA12 card into any SBA and generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch. *Note:* If verification occurs before the toggle switch is pressed, omit its operation.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
26	CLOSE switch A29 on the extender switchboard.	
27	Restore the DP to ACTIVE status.	
28	Press the DAC and OAC buttons to clear alarms.	
29	OPEN switch A16 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
30	CLOSE switch A16 on the extender switchboard.	
31	Restore the DP to ACTIVE status.	
32	Press the DAC and OAC buttons to clear alarms.	
33	OPEN switch A26 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.

STEP	ACTION	VERIFICATION
34	CLOSE switch A26 on the extender switchboard.	
35	Restore the DP to ACTIVE status.	
36	Press the DAC and OAC buttons.	Alarms clear.
37	OPEN switch B27 on the extender switchboard.	
38	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch. *Note:* If verification occurs before the toggle switch is pressed, omit its operation.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
39	CLOSE switch B27 on the extender switchboard.	
40	Restore the DP to ACTIVE status.	
41	Press the DAC and OAC buttons to clear alarms.	
42	OPEN switch B9 on the extender switchboard.	
43	Generate 1000 test calls from the installed SA12 card by pressing down the 7-1/2 SEC toggle switch. *Note:* If verification occurs before the toggle switch is pressed, omit its operation.	O and CU FAILURE system alarm LED is ON. Data path FAILURE alarm LED is ON. Data path TAPE DRIVE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
44	CLOSE switch B9 on the extender switchboard.	
45	RESTORE the DP to ACTIVE status.	

STEP	ACTION	VERIFICATION
46	Press the DAC and OAC buttons.	All alarms extinguish.
47	Rotate the ROUTINE SYSTEM FUNCTIONS switch to the END OF TAPE position and press the INTIATE/BUSY switch.	MTR and data paths switch to ACTIVE status. MTR rewinds the tape completely onto the supply reel, and all related A/S/L lamps go out. END OF TAPE, OUTPUT & CONTROL, DATA PATH, and TAPE DRIVE FAILURE LEDs illuminate.
48	Return OC8R to its original position in the DP.	
49	Press the OAC button.	Alarm clears.
50	Press the A/S/L switch of the DP under test.	LOCAL lamp illuminates. MTR STOP lamp may light.
51	Remove the tape and label it for transmittal to Accounting. Enter MTR activity in the log.	
52	Load degaussed tape on the MTR, using normal operating procedures. *Note:* If the MTR STOP lamp is not lit, turn the MANUAL SYSTEM MODE SELECT switch to the appropriate DP RESET position, and operate the SELECT button to light the MTR STOP lamp.	
53	Press the LOAD switch.	Tape advances to the BOT mark and stops. LOAD lamp lights.
54	Press the DP A/S/L switch.	LOCAL lamp goes out, tape advances 12 inches, then returns to the BOT mark. LOAD lamp lights and the DP goes to STBY.
55	Press the DAC and OAC buttons.	All alarms clear.
56	Perform Steps 2 through 55 on the second data path.	
57	Remove the SA12 card from the SBA.	

Test P: Clock Oscillator Failure Test On OC10 Circuit Pack in Each Data Path

1	Remove OC10 from DPA.	System alarms.

STEP	ACTION	VERIFICATION
2	Reinstall OC10 on an extender switchboard.	
3	Transfer clock B into clock A as follows: • Slide the CC DISPLAY switch to position B. • Press the CC TRANSFER button (calendar clock B is now set to the same time [day-of-year and time-of-day] as calendar clock A). • Slide the CC DISPLAY switch to the NORMAL position.	
4	Ensure that all the card switches are closed.	
5	Make DPA ACTIVE.	
6	Press the DAC and OAC buttons to clear alarms.	
7	OPEN switch A4 on the extender switchboard.	Within 3 to 5 seconds, the following alarm conditions occur: O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
8	CLOSE switch A4 on the extender switchboard.	
9	Restore DPA to ACTIVE status.	System alarms.
10	Press the DAC and OAC buttons to clear alarms.	
11	OPEN switch B30 on the extender switchboard.	Within 80 seconds, the following alarm conditions occur: O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.

STEP	ACTION	VERIFICATION
12	CLOSE switch B30 on the extender switchboard.	
13	Restore DPA to ACTIVE status.	
14	Press the DAC and OAC buttons to clear alarms.	
15	OPEN switch B20 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. Data path CLOCK SOURCE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
16	CLOSE switch B20 on the extender switchboard.	
17	Return OC10 to its original position in DPA.	
18	Remove OC10 from DPB.	
19	Reinstall OC10 on an extender switchboard.	
20	Transfer clock A into clock B as follows: • Slide the CC DISPLAY switch to position B. • Press the CC TRANSFER button (calendar clock B is now set to the same time [day-of-year and time-of-day] as calendar clock A). • Slide the CC DISPLAY switch to the NORMAL position.	
21	Ensure that all card switches are closed.	
22	Make DPB ACTIVE.	
23	Press the DAC and OAC buttons to clear alarms.	

STEP	ACTION	VERIFICATION
24	OPEN switch A4 on the extender switchboard.	Within 3 to 5 seconds, the following conditions occur: O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
25	CLOSE switch A4 on the extender switchboard.	
26	Restore DPB to ACTIVE status.	
27	Press the DAC and OAC buttons to clear alarm.	
28	OPEN switch B30 on the extender switchboard.	Within 80 seconds, the following alarm conditions occur: O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.
29	CLOSE switch B30 on the extender switchboard.	
30	Restore DPB to ACTIVE status.	
31	Press the DAC and OAC buttons to clear alarms.	
32	OPEN switch B20 on the extender switchboard.	O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. DPB CLOCK SOURCE alarm LED is ON. Data paths switch to ACTIVE status. OAC light comes ON. TTY prints alarm report.

STEP	ACTION	VERIFICATION
33	CLOSE switch B20 on the extender switchboard.	
34	Return OC10 to its original position in DPB.	
35	Press the DAC and OAC buttons to clear alarms.	
36	Reset the clocks to the correct time (use 767-8900 for a time check).	

Test Q: Clock Divider Failure Test On OC10 Circuit Pack in Each Data Path

1	Make DPA ACTIVE.	System alarms.
2	Press the DAC and OAC buttons.	Alarms clear.
3	Reset clock A. • Move the CLOCK DISPLAY slide switch to position A (data path A). • Press the CLOCK RESET button; clock A is reset to zeros (except day-of-year, which is reset to 001). • Move the CLOCK DISPLAY slide switch to the NORMAL position (center).	Within one minute, the following alarm conditions occur: O and CU FAILURE system alarm LED is ON. DPA FAILURE alarm LED is ON. DPA CLOCK DIVIDER alarm LED is ON. DPB goes to ACTIVE status. OAC light comes ON. TTY prints alarm report.
4	TRANSFER from clock B: • Move the CLOCK DISPLAY slide switch to position A (data path A). • Press the TRANSFER button; clock A is set to match clock B time. • Move the CLOCK DISPLAY slide switch to the NORMAL position (center).	

STEP	ACTION	VERIFICATION
5	Press the DAC and OAC buttons to clear alarms.	DPB is ACTIVE.
6	RESET clock B:	
	• Move the CLOCK DISPLAY slide switch to position B (data path B).	
	• Press the RESET button; clock B is reset to zeros (except day-of-year, which is reset to 001).	
	• Move the CLOCK DISPLAY slide switch to the NORMAL position (center).	Within one minute, the following alarm conditions occur: O and CU FAILURE system alarm LED is ON. DPB FAILURE alarm LED is ON. DPB CLOCK DIVIDER alarm LED is on. DPA goes to ACTIVE status. • OAC light comes ON. • TTY prints alarm report.
7	TRANSFER from clock A:	
	• Move the CLOCK DISPLAY slide switch to position B (data path B).	
	• Press the TRANSFER button; clock B is set to match clock A time.	
	• Move the CLOCK DISPLAY slide switch to the NORMAL position (center).	
8	Restore DPA to ACTIVE: • Rotate the MANUAL SYSTEM MODE SELECT switch to the DPA ACTIVE position.	
	• Press the SELECT button.	
	• Rotate the MANUAL SYSTEM MODE SELECT switch to the NORMAL position.	
9	Clear alarms by pressing the OAC and DAC buttons.	
10	Check the clocks for the correct time.	