

**ATTENDANT INTERFACE FRAME, AUXILIARY MANUAL TEST CIRCUIT,  
PROCESSOR INTERFACE FRAME, AND PERIPHERAL DATA  
STORAGE PROCESSOR FRAMES  
OFFICE ALARM TESTS  
2-WIRE NO. 1 ELECTRONIC SWITCHING SYSTEM**

**1. GENERAL**

**1.01** This section describes a method of testing of-  
fice alarms for the attendant interface frame,  
auxiliary manual test circuit, processor interface  
frame, and peripheral data storage processor frames  
in a 2-Wire No. 1 Electronic Switching System (ESS)  
office.

**1.02** This section is reissued to delete tests on those  
frames now covered in Task Oriented Prac-  
tices (TOP). See paragraph 1.03 for a list of frames  
and their corresponding TOP.

This reissue affects the Equipment Test List (ETL).

**1.03** Tests are performed on the following frames:

- A. Miscellaneous Power (MP) Frame (TOP 231-055-015)**
- B. Junctor (J) Frame (TOP 231-051-001)**
- C. Line Switching (LS) Frame (Ferreed) (TOP 231-051-003)**
- D. Line Junctor Switching (LJS) Frame (Ferreed) (TOP 231-051-003)**
- E. Trunk Switching (TS) Frame (Ferreed) (TOP 231-051-003)**
- F. Trunk Junctor Switching (TJS) Frame (Ferreed) (TOP 231-051-003)**
- G. Universal Trunk (UT) Frame (TOP 231-051-001)**
- H. Master Scanner (MS) Frame (TOP 231-051-001)**

- I. 8K Call Store (CS) Frame (TOP 231-162-001)**
- J. 32K Call Store (CS) Frame (TOP 231-162-005)**
- K. Program Store (PS) Frame (TOP 231-162-000)**
- L. Central Control (CC) Frame (Standby Unit) (TOP 231-162-005)**
- M. Signal Processor (SP) Frame (Standby Unit) (TOP 231-165-001)**
- N. Central Pulse Distributor (CPD) Frame (TOP 231-051-001)**
- O. Memory Card Writer (MCW) Frame (TOP 231-163-000)**
- P. Master Control Center—Control, Display, and Test Frame (Control and Display Circuit) (TOP 231-168-000)**
- Q. Master Control Center—Control, Display, and Test Frame (Trunk and Line Test Circuit) (TOP 231-050-006)**
- R. Master Control Center—9-Track AMA-TTY Frame (AMA Circuit) (TOP 231-168-000)**
- S. Master Control Center—9-Track AMA-TTY Frame (TTY Circuit) (TOP 231-168-000)**
- T. Miscellaneous (M) Frame (TOP 231-055-015)**

**NOTICE**

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

- U. Miscellaneous Trunk (MT) Frame (TOP 231-051-001)**
- V. Building Alarm (TOP 231-052-001)**
- W. Power Distributing (PD) Frame (TOP 231-055-015)**
- X. Recorded Announcement (RA) Frame (TOP 231-055-010)**
- Y. Centrex Data Link (CDL) Frame (TOP 231-055-015)**
- Z. Peripheral Unit Controller (PUC) (TOP 231-050-030)**
- AA. Trunk Switching (TS) Frame (Remreed) (TOP 231-051-002)**
- BB. Trunk Junctor Switching (TJS) Frame (Remreed) (TOP 231-051-002)**
- CC. Remote Office Test Line (ROTL) Frame (TOP 231-055-008)**
- DD. Dynamic Overload Control (DOC) Transmitter Frame (TOP 231-055-004)**
- EE. Supplementary Trunk Test Panel (STTP) (TOP 231-050-006)**
- FF. Line Switched (LS) Frame (Remreed) (TOP 231-050-002)**
- GG. Line Junctor Switching (LJS) Frame (Remreed) (TOP 231-051-002)**
- HH. Miniaturized Universal Trunk (MUT) Frame (TOP 231-050-002)**
- II. Attendant Interface Frame (AIF)**
- JJ. Common Systems Recorded Announcement Frame and Control and Distribution Frame Used With CSRAF (TOP 231-055-010)**
- KK. HILO Universal Trunk (HILO UT) Frame (TOP 231-050-012)**
- LL. HILO Miscellaneous Trunk (HILO MT) Frame (TOP 231-050-012)**
- MM. Manual Trunk Test Position (MTTP) (TOP 231-055-006)**
- NN. Auxiliary Manual Test (AMT) Circuit**
- OO. Combined Miscellaneous Trunk (CMT) Frame (TOP 231-050-002)**
- PP. Data Terminal Basic and Supplementary Frames (DTF) Used with CCIS (TOP 231-050-020)**
- QQ. Processor Interface Frame (PIF)**
- RR. Peripheral Data Storage Processor (PDSP)—3A Auxiliary Processor Frames**
- 1.04** Tests are performed to determine that the office alarm circuit functions properly when a fuse operates, that the office alarm circuit gives the proper response to an operated fuse, and that the system has the ability to print out the proper messages on the local maintenance TTY. The test battery applied in these tests is obtained by use of the test cord (paragraph 2.02) connected to the proper test voltage pins on the frame being tested. The test cord is then connected to the designated fuse alarm ring stud in the fuse cap (ring in fuse cap).
- 1.05** The tests covered in this section should be made during periods of light traffic. It is important to minimize the period during which equipment is out of service. If any frame or system unit becomes marked in trouble during the testing procedure, stop testing and clear the trouble condition. If a test is interrupted before completion, the test should be restarted.
- 1.06** In all test procedures, the result of each step must be as indicated before the next step is performed. Whenever a specified output response is not received, a fault may exist and, if so, the condition causing the failure should be identified before continuing. Also, the attendant should be on the alert for extra output messages that may occur in addition to those given. An explanation for all extra messages should be obtained before proceeding. In some cases, only the message index is given for messages. The output and input message manuals and the troublelocating manuals should be referred to as necessary to interpret the messages.
- 1.07** During the progress of these tests, action is required at the various fuse mountings and

frame controls. Verification is required at various office alarm indicator locations and at the maintenance TTY. Considerable time can be saved in these tests by mounting the remote maintenance TTY on a dolly. This permits the TTY to be moved alongside the frames being tested and plugged into the SP jack.

**1.08** The ringing and tone plant (Ringing and Tone Frame) alarms are covered in the 167 Division of Bell System Practices. This section covers the alarms for all other frames in a 2-wire No. 1 ESS office.

**1.09 Lettered Steps:** A letter a, b, c, etc, added to a step number in Part 4 of this section indicates an action which may or may not be required, depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the action column and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

**2. APPARATUS**

**2.01** The following apparatus is required for the performance of the fuse alarm tests. The details of each item are covered in the indicated paragraphs.

- Testing cord, paragraph 2.02
- Blocking tools, paragraph 2.03
- Relay contact connector and holder, paragraph 2.04.

**2.02** Use resistance testing cord (W1AF cord, 8 feet 6 inches long, equipped with two 360A tools and two 411C (test pick) tools.

**Caution:** *Do not substitute plain nonresistance cords. Such cords do not limit high current flow and can be dangerous.*

**2.03** Use blocking tools (508A) as required.

**2.04** Use a Relay Contact Connector 639A and Relay Contact Connector Holder 651D (used in Test P for AK-type relay).

**3. PREPARATION**

**Caution 1:** *The tests described in this section could result in severe service reaction and possible total failure of the ESS if improperly conducted.*

**Caution 2:** *Do not test alarms on a frame that has a mate frame or a duplicated circuit out of service as this can cause the system to fail.*

**Note 1:** If the office has several floors with grouped alarms, the alarm grouping controls should not be operated for these tests. This prevents the alarms caused by these tests from sounding on other floors.

**Note 2:** In the following tests when an AR03...TTY alarm is indicated, an AR06 SW RM ALM MJ will follow on the TTY printout.

**3.01** Each frame should be in service and operating normally before it is tested.

**3.02** Under certain conditions, the verification message will also contain certain diagnostic or maintenance type messages. The appearance of these messages is due to variations in the timing of the transmission and execution of orders within the ESS. Since these messages are not consistently present in the various verification messages, these messages have not been included in this section. In most cases, the output messages contain only the identifying heading without variable information.

**3.03** The following preparation should be performed before each testing interval. When tests are run sequentially, it is not necessary to repeat Steps 1 and 2 below.

STEP	ACTION	VERIFICATION
1	Make sure that all keys and switches on all frames on the MCC alarm, display, and control panel (ADCP) are NORMAL.	

STEP	ACTION	VERIFICATION
2	Ensure that the system is running in the full duplex mode by typing in the following messages at the MCC-TTY.	
	(a) MAC-STATUS-	PF
	This message verifies that the system is running in the duplex mode with both units of each duplicated pair in service. Clear the trouble in any unit that is marked in trouble.	MA03 message lists all CCs, SPs, PSs, CSs, CPDs, AMAs, CS buses, PS buses, CPD buses, peripheral unit buses, and scanner answer buses that are marked in trouble.
	(b) NETSD-TBL-a.	PF
	a = 0 through 7. Use this message eight times for a = 0 through a = 7.	MA06 messages list all signal distributor (SD) and network frames that are marked in trouble.
	Clear the trouble in any unit that is marked in trouble.	
	(c) SC-TBL-a.	PF
	a = 0, 1, 2, or 3. Use this message four times for a = 0 through a = 3.	MA06 messages list all scanners that are marked in trouble.
	Clear the trouble in any unit that is marked in trouble.	

#### 4. METHOD

STEP	ACTION	VERIFICATION
<b>II. Attendant Interface Frame (AIF)</b>		
3	<b>Note:</b> The AIF is covered in SD-1A353-01.  At attendant interface frame— Momentarily apply -48V to ring in fuse cap of fuse 020 (-48V fuse block).	While voltage is applied— PWR OFF lamp lighted. Major audible alarm sounds. Aisle pilot lamp lighted. AR03 PWR ALM AIF
4	At control panel— Operate AUD ALM-OFF key.	OFF NOR lamp lighted. PWR OFF lamp extinguished. Major audible alarm silenced. Aisle pilot lamp extinguished. MA12 PWR RST AIF

STEP	ACTION	VERIFICATION
5	<p><b>Note:</b> Repeat this test for each additional attendant interface frame.</p> <p>Operate AUD ALM—NOR key.</p>	
<b>NN. Auxiliary Manual Test (AMT) Frame</b>		
3	<p><b>Note:</b> The AMT frame alarm circuit is covered in SD-1A435-01.</p> <p>At auxiliary manual test circuit— Momentarily apply -48V to ring in fuse cap of fuse -48A.</p>	<p>While voltage is applied— BCPA lamp lighted on fuse block. Major audible alarm sounds aisle pilot lamp lighted.</p> <p>AR03 PWR ALM SSDO</p> <p>MA12 PWR RST SSDO</p>
4a	<p><b>Note:</b> Repeat this test for each additional AMT frame.</p> <p>If location of AMT is in a remote office, ESS, or other areas— Momentarily apply -48V to ring in fuse cap of fuse -48A.</p>	<p>While voltage is applied— BCPA lamp lighted on fuse block. Audible and visual alarms activated per convention in switching office where AMT remote resides.</p> <p>At MCC TTY of the ESS office associated with AMT under test.</p> <p>AR03 PWR ALM SSDO</p> <p>MA12 PWR RST SSDO</p>
<b>QQ. Processor Interface Frame (PIF)</b>		
3	<p><b>Note:</b> The processor interface frame alarm circuit is covered in SD-1A457-01.</p> <p>At processor interface frame on PI CONTROL CKT 0— Operate REQ INH key.</p>	<p>OFF NOR lamp lighted. After a short delay, OS lamp lighted.</p> <p>MA10 OK TO RMV PWR PI 0 CKT 0</p>
4	<p>At fuse panel— Apply -48V to ring in fuse cap of fuse OCO (-48V fuse blocks).</p>	<p>At PI CONTROL CKT 0— After approximately 2 seconds, PWR OFF lamp lighted.</p>

STEP	ACTION	VERIFICATION
		On PWR UNITs 132L OC0 and OC2— ALM lamps lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
		AR03 PWR ALM PI 0 CKT 0
5	Operate PWR OFF key.	Major audible alarm silenced. Aisle pilot lamp extinguished.
		MA11 MAN PWR RMV PI 0 CKT 0
6	Remove -48V applied in Step 4.	
7	At PI CONTROL CKT 0— Operate REQ INH key.	PWR OFF lamp extinguished. On PWR UNITs 132L OC0 and OC2— After approximately 2 seconds, ALM lamps extinguished. After a short delay, OS lamp extinguished.
		MA12 PWR RST PI 0 CKT 0
8	Operate NOR key.	OFF NOR lamp extinguished.
9	At PI CONTROL CKT 0— Operate REQ INH key.	OFF NOR lamp lighted. After a short delay, OS lamp lighted.
		MA10 OK TO RMV PWR PI 0 CKT 0
10	At PWR UNIT 132L OC0— Raise switch cover and move the switch to the down (off) position.	On PWR UNIT 132L OC0— ALM lamp lighted. On PWR UNIT 132L OC2— After approximately 2 seconds, ALM lamp lighted. At PI CONTROL CKT 0— PWR OFF lamp lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
		AR03 PWR ALM PI 0 CKT 0
11	At PI CONTROL CKT 0— Operate PWR OFF key.	Major audible alarm silenced. Aisle pilot lamp extinguished.
		MA11 MAN PWR RMV PI 0 CKT 0
12	At PWR UNIT 132L OC0— Move the switch to the up (on) position.	

STEP	ACTION	VERIFICATION
13	At PI CONTROL CKT 0— Operate REQ INH key.	PWR OFF lamp extinguished. On PWR UNITS 132L OC0 and OC2— After approximately 2 seconds, ALM lamps extinguished. At PI CONTROL CKT 0— After a short delay, OS lamp extinguished.
		MA12 PWR RST PI 0 CKT 0
14	Operate NOR key.	OFF NOR lamp extinguished.
15	At PI CONTROL CKT 1— Operate REQ INH key.	OFF NOR lamp lighted. After a short delay, OS lamp lighted.
		MA10 OK TO RMV PWR PI 0 CKT 1
16	At fuse panel— Apply -48V to ring in fuse cap of fuse 1C2 (-48V fuse block).	At PI CONTROL CKT 1— After approximately 2 seconds, PWR OFF lamp lighted. On PWR UNITS 132L 1C0 and 1C2— ALM lamps lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
17	Operate PWR OFF key.	Major audible alarm silenced. Aisle pilot lamp extinguished.
		MA11 MAN PWR RMV PI 0 CKT 1
18	Remove -48V applied in Step 16.	
19	At PI CONTROL CKT 0— Operate REQ INH key.	PWR OFF lamp extinguished. After a short delay, OS lamp extinguished.
		MA12 PWR RST PI 0 CKT 1
20	Operate NOR key.	OFF NOR lamp extinguished.
21	At PI CONTROL CKT 1— Operate REQ INH key.	OFF NOR lamp lighted. After a short delay, OS lamp lighted.
		MA10 OK TO RMV PWR PI 0 CKT 1
22	At PWR UNIT 132L 1C0— Raise switch cover and move the switch to the down (off) position.	On PWR UNIT 132L 1C0— ALM lamp lighted. On PWR UNIT 132L 1C2— After approximately 2 seconds, ALM lamp lighted. At PI CONTROL CKT 1—

STEP	ACTION	VERIFICATION
		PWR OFF lamp lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
		AR03 PWR ALM PI 0 CKT 1
23	At PI CONTROL CKT 1— Operate PWR OFF key.	Major audible alarm silenced. Aisle pilot lamp extinguished.
		MA11 MAN PWR RMV PI 0 CKT 1
24	At PWR UNIT 132L 1C0— Move the switch to the up (on) position.	
25	At PI CONTROL CKT 1— Operate REQ INH key.	PWR OFF lamp extinguished. On PWR UNITs 132L 1C0 and 1C2— After approximately 2 seconds, ALM lamps extinguished. After a short delay, OS lamp extinguished.
		MA12 PWR RST PI 0 CKT 1
26	Operate NOR key.	OFF NOR lamp extinguished.
27	At fuse panel— Apply -48V to ring in fuse cap of fuse OC3 (-48V fuse block).	At AUDIBLE ALARM CONTROL, DLI FUSE lamp lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
		AR03 PWR ALM PI 0 DLI
28	Operate AUD OFF key.	AUD OFF lamp lighted. Major audible alarm silenced. Aisle pilot lamp extinguished.
29	Remove -48V applied in Step 27.	DLI FUSE lamp extinguished.
		AR06 SW RM ALM MN PI 0 DLI
30	Operate AUD NOR key.	AUD OFF lamp extinguished.
31	At fuse panel— Apply +24V to ring in fuse cap of fuse OD16 (+24V fuse block).	At AUDIBLE ALARM CONTROL, DLI FUSE lamp lighted. Major audible alarm sounds. Aisle pilot lamp lighted.
		AR03 PWR ALM PI 0 DLI
32	Operate AUD OFF key.	AUD OFF lamp lighted.



STEP	ACTION	VERIFICATION
		Major audible alarm silenced. Aisle pilot lamp extinguished.
33	Remove +24V applied in Step 31.	DLI FUSE lamp extinguished.
		AR06 SW RM ALM MN PI 0 DLI
34	Operate AUD NOR key.	AUD OFF lamp extinguished.
<b>RR.</b>	<b>Peripheral Data Storage Processor (PDSP)— 3A Auxiliary Processor Frames</b>	
3	<b>Note 1:</b> The 3A auxiliary processor alarm circuit is covered in SD-1A481-01.	
	<b>Note 2:</b> This test will require procedures to be performed at the 3A auxiliary processor and observations to be made in the No. 1 ESS switchroom.	
	<b>Note 3:</b> The INH BLDG ALARM key on the PDSP system status panel can be used to retire the audible alarm and aisle pilot lamp for fuse alarms. The alarms may also be retired at the No. 1 ESS MCC ALM RLS key.	
	At 3A CC System Status Panel— Operate the LAMP & PWR TEST key.	At System Status Panel— CRITICAL, MAJOR, and MINOR alarm lamps lighted (momentarily).
4a	For PDSP generics 3AP1 issue 2 and later or 3AP2 issue 2 and later— At 3A CC DATASPEED® 40 TTY type in EX:SSP!	At System Status Panel— CRITICAL, MAJOR, and MINOR alarm lamps lighted for 5 seconds.
5	At 3A auxiliary processor maintenance frame power unit— Operate relay CRIT ALM.	In No. 1 ESS switchroom— Critical audible alarm sounds.  AR01 MISC ALM CR SPL 50
6	Release relay CRIT ALM.	Critical audible alarm silenced.
7	At 3A maintenance frame— Operate relay MAJ ALM.	Major audible alarm sounds.  AR01 MISC ALM MJ SPL 49
8	Release relay MAJ ALM.	Major audible alarm silenced.

STEP	ACTION	VERIFICATION
9	At 3A maintenance frame— Operate relay MIN ALM.	Minor audible alarm sounds.  AR01 MISC ALM MN SPL 48
10	Release relay MIN ALM.	
11	At PDSP system status panel (SSP)— If ALARM TRFR lamp is lighted, operate ALARM TRFR key.	ALARM TRFR lamp extinguished.
12	At fuse panel on 3A maintenance frame— Momentarily apply -48V to ring in fuse cap of fuse AOA.	At 3A maintenance frame— Relay MJ1 releases, PWR, RESET pushbutton lighted. In No. 1 ESS switchroom— Major audible alarm sounds.  AR01 MISC ALM MJ SPL 45
13	On 3A maintenance frame— Depress PWR RESET pushbutton.	PWR RESET pushbutton extinguished. In No. 1 ESS switchroom— Major audible alarm silenced.
14	At fuse panel on 3A maintenance frame— Momentarily apply -48V to ring in fuse cap of fuse BOA.	At 3A maintenance frame— Relay MJ2 releases, PWR RESET pushbutton lighted. In No. 1 ESS switchroom— Major audible alarm sounds.  AR01 MISC ALM MJ SPL 45
15	On 3A maintenance frame— Depress PWR RESET pushbutton.	PWR RESET pushbutton extinguished. In No. 1 ESS switchroom— Major audible alarm silenced.
16	At fuse panel on 3A maintenance frame— Momentarily apply -48V to ring in fuse cap of fuse COA.	At 3A maintenance frame— Relay MJ3 releases, PWR RESET pushbutton lighted. In No. 1 ESS switchroom— Major audible alarm sounds.  AR01 MISC ALM MJ SPL 45
17	On 3A maintenance frame— Depress PWR RESET pushbutton.	PWR RESET pushbutton extinguished. In No. 1 ESS switchroom— Major audible alarm silenced.
18	<b>Caution: In the following steps, assure that the test is not performed on the in- service controller.</b>	

STEP	ACTION	VERIFICATION
19	Determine which 3A controller is on standby and at the DATASPEED 40 type in:  RMV:CU!	At DATASPEED 40 TTY—OK  On system status panel for associated controller— OUT-OF-SERVICE lamp lighted, STANDBY lamp extinguished.
20	At fuse panel on the out-of-service controller, momentarily apply -48V to ring in fuse cap of fuse AOP.	On out-of-service controller— ON lamp extinguished. At maintenance frame— PWR RESET lamp lighted. At DATASPEED 40 TTY— REPT ERR MCH  In No. 1 ESS switchroom— Major audible alarm sounds.  AR01 MISC ALM MJ SPL XXX  XXX = MEMN CONTR 0 through 47 XXX = MEMN CONTR 1 through 46.
21	ON 3A maintenance frame— Depress PWR RESET pushbutton.	PWR RESET lamp extinguished. On out-of-service controller— ON lamp lighted. In No. 1 ESS switchroom— Major audible alarm silenced.
22	At DATASPEED 40 TTY, type in:  RST:CU;UCL!	At DATASPEED 40 TTY—OK  At system status panel for associated controller— STANDBY lamp lighted. OUT-OF-SERVICE lamp extinguished.
23	At DATASPEED 40 TTY, type in:  SW:CU!	At DATASPEED 40 TTY—OK  At system status panel— In-service controller ACTIVE lamp extinguished and STANDBY lamp lighted; standby controller ACTIVE lamp lighted and STANDBY lamp extinguished.

STEP	ACTION	VERIFICATION
24	Repeat Steps 16 through 19 on the other 3A controller.	Results as in Steps 16 through 19.