

NO. 3 ESS OPERATIONAL TESTING
 E&M LEAD CIRCUIT (CPS-FS 361)

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1. GENERAL INFORMATION

1.1 The purpose of this section is to provide an operational test of the CPS-FB 361, 2-way E&M trunk. The method of testing each trunk group depends on whether the outgoing or incoming capabilities of the group are being tested.

1.2 Outgoing capabilities will be tested by using a test telephone to originate a call to a directory number which is routed to seize the trunk under test. The call will then be terminated at a miscellaneous trunk test set, ITE-5267.

1.3 Incoming capabilities will be tested by using an incoming trunk test set, ITE-5158, to originate a call through the trunk under test to a test telephone.

2. TEST SET CONNECTIONS AND SETUP

2.1 Locate either the ITE-5158 (when testing incoming capabilities) or the ITE-5267 (when testing outgoing capabilities) at the CDF.

2.2 Using the ITE-XXXX cord supplied in the test accessory set connect the trunk to be tested to the test set as shown in the table below. The CDF location of the trunk under test can be found in the cross-connect sheets.

CPS-FB381 LEAD	FROM CDF BLOCK	TO ITE-5158	TO ITE-5267
T1	T1	T	T
R1	R1	R	R
EA	EA	E	E
EB	EB	G	GRD
MA	MA	M	M
MB	MB	N	S

2.3 Select two test lines with major originating and terminating classes of 8 (usually line class code 1FR or 1FB qualifies) from ESS form 3100. Also select one test line with a coin line class code which has a major originating and terminating class of 24 or 25 (usually line class code of 1PO or DTF qualifies).

3. TEST SETUP INFORMATION

3.1 Information about the trunk to be tested is needed. The equipment location of the trunk is found on ESS Form 3201. The cross-connect sheets for the office will list the CDF location for the trunk to be tested. The circuit code for CPS-FB361 is "01".

3.2 The trunk group's direction (outgoing, incoming, 2-way), trunk type (regular, CAMA, TSP, TSPS), type of pulsing (MF, DP), start dial signal (delay-dial, no-start, 350MS wink start, 100MS wink start) and signaling (inband, multi-wink) are found on ESS Form 3204. Multi-wink signaling is presently for future use only. If the trunk group is marked for inband signaling, then the group is equipped for coin features and/or controlled ring. In general most regular trunks will either be OP, no-start or MP, 350MS wink-start. A few regular trunks may be OP, 356 wink-start. CAMA and TSPS groups are usually MF, 350 wink-start. TSPS and coin operator groups should be marked for inband signaling.

3.3 Determine the outgoing trunk group's access number as follows:

- a) Using the trunk group number determine the route index (RI) from the route index expansion table (ESS Form 3303).

- b) Using the RI, determine the code index (CI) from the code index table (ESS Form 3304).
- c) Using the CI, determine the 3-digit NPA and/or office code to access the trunk group. Also use the code index table to determine if a "0" or "1" prefix is needed.
- d) Normally the above method will work, however, the RI found in the code index table can be changed in the rate and route table (ESS Form 3301) depending on the line class code of the test phone being used. For example:

Test phone A has a LOC of 1PC with a screening class (SCRCLS) of 02. Test phone B has a LOC of 1FR with a SCROLS of 00. Code index 3 shows a screening table (SCRTBL) of 4 and a RI of 25.

The rate and route table as a RI entry of 27 for SCRTBL 4 and SCROLS 2. Therefore if a 3 or 6 digit code which points to code index 3 is dialed from test phone A, the rate and route table will change the route index from 25 to 27.

The rate and route table has no RI entry for SCRTBL 4 and SCROLS 0. Therefore, if test phone B is used to dial the same 3 or 6 digit code as was dialed by test phone A, the the call will be routed to RI 25 as shown in the code index table.

3.4 Many outgoing trunk groups can be accessed through more than one method. For example, a CAMA trunk group may be accessed by dialing 1+7 digits and 1+10 digits. A TSPS group is usually accessed by dialing "0", 0+7 digits or 0+10 digits from a flat rate or coin phone, or by dialing 1+7 digits or 1+10 digits from a coin phone.

3.5 Incoming trunks can be accessed directly by connecting the test set to the trunk being tested. The number of digits expected by the incoming trunk can be found on ESS Form 3202.

3.6 When testing a trunk group with special features only one member of the trunk group needs to be checked for all the special features and access codes. For example, member 0 of a TSPS trunk group should be checked to see if it can be accessed by both coin and flat rate phones dialing "0", 0+7 digits and 0+10 digits. Coin collect, coin return, and controller ring functions should also be checked. All other members of the group can be accessed using any one of the above access codes.

4. TEST PROCEDURE

- 4.1 Use Table A for outgoing trunks
and Table B for incoming trunks.

TABLE A

<u>STEP</u>	<u>PROCEDURE</u>	<u>ACTION</u>	<u>COMMENT OR RESULT</u>
1	Busy all members of the group to be tested except the member to be tested.	RMV:TRK (A,B);UCL!	M TT RMV TRK A B LKC
2	Make the connection from the trk under test to the ITE-5267.		Refer to Para. 2.2
3	Set up the ITE-5267 for the test.	At the ITE-5267: A. Operate the "SL" SW B. Operate the "TALKO" key. C. Depress & lock the "ST" key.	
4	Place the test call to seize the trunk.	Using the test phone dial the trunk group's access code (see para. 3.3). Use coin phone if coin features are being checked for this trunk group.	The "S" lamp will light to indicate
5	If trunk is "no-start" skip to step 7.		If the trunk is DP, no-start, the "S" lamp will flash during any outpulsing. The "S" lamp will not flash if the trunk is not supposed to outpulse any digits.
6	Provide a wink signal at the ITE-5267 to allow outpulsing.	At the ITE-5267: A. Quickly toggle the "B" switch first on (up) then off (down).	If the trunk is OP, wink-start, the "S" lamp will flash during outpulsing. If the trk is MF, MF digits will be heard in the headset on the ITE-5267. <u>NOTE:</u> If the trunk has timed out or the wink was too long, you must hand up the test phone and redial the call.

TABLE A (Cont'd)

<u>STEP</u>	<u>PROCEDURE</u>	<u>ACTION</u>	<u>COMMENT OR RESULT</u>
7	Provide a steady off-hook to answer call.	At the ITE-5267: A. Operate the "E" SW	If the trunk is a TSPS or CAMA type, then MF digits representing the calling number will be heard in the headset on the ITE-5267.
8	Verify a talking path between the test phone and the headset at the ITE-5267.		
9	If the trunk group has coin features, continue with step 10; if not, skip to step 13.		<u>NOTE</u> : Only one member of a trunk group needs to be tested for coin features.
10	Deposit coin in test phone.		<u>NOTE</u> : Stable call should still be up between test phone and headset at the ITE-5267.
11	Return the coin.	At the ITE-5267: A. Operate "COIN" SW to OIB position. B. Operate "TIMER" SW to "150" position. C. Depress "OR" key momentarily (1-2 seconds).	After step C, the "E" lamp should extinguish momentarily.
12	Verify that the coin was returned at the test phone.		
13	Disconnect the call.	Hang up the test phone and return "E" switch to the "OFF" or down position.	
14	Remove the tested trunk from service.	RMV:TRK (A,B);UCL!	M TT RMV TRK A B LKO
15	Restore an untested member of the group being tested.	RST:TRK (A,B);UCL!	M TT RST TRK A B

TABLE B

<u>STEP</u>	<u>PROCEDURE</u>	<u>ACTION</u>	<u>COMMENT OR RESULT</u>
1	At the ITE-5158 verify that all keys are released and switches are in the "OFF" or down position.		
2	Make the connection from the trk under test to the ITE-5158.		Refer to Para. 2.2
3	Set up the ITE-5158 for the test.	At the ITE-5158 A. Place large black toggle switch in "OFF" position. B. Operate the "TALK" switch. C. Depress & lock "PWR" key.	At the conclusion of this step, the lamp should be lit in the "PWR" key.
4	Seize the trunk.	At the ITE-5158: A. Operate the "EM" SW.	The "E" lamp should light steady. <u>NOTE:</u> If the trunk group is a wink start group the "W" lamp should also light steady. If trunk group is MF, "RB" lamp will lite.
5	If trunk is DP, do step 6, then skip to step 8. If trunk is MF, skip step 6 and continue with step 7.		
6.	Pulse digits to the trunk. (DP trunk type)	Using the rotary dial on the ITE-5158, dial the number of the test phone, using only the number of digits the trunk expects.	<u>EXAMPLE:</u> If the test phone number is 123-4567 and the IOT expects 5 digits, dial 3-4567. During dialing the "E" lamp will pulse the digits.
7	Pulse the digits to the trunk. (MF trunk type)	Using the MF pad on the ITE-5158, punch in KP + the number of the test phone, using only the number of digits the ICT expects.	<u>EXAMPLE:</u> If the test phone number is 123-4567 and the ICT expects 5 digits, punch in KP+3-4567. At the conclusion of this step, the "W" & "E" lamps remain steady while the "RB" lamp should flash. If the trunk has controlled ring, the "RB" lamp will extinguish.

TABLE B (Cont'd)

<u>STEP</u>	<u>PROCEDURE</u>	<u>ACTION</u>	<u>COMMENT OR RESULT</u>
8	Initiate and/or verify ringing at the test phone and audible at the headset.	No action required unless trunk has controlled ring. If so: A. Operate "RING" SW to "RIB" position. B. Quickly toggle the "EM" first off (down) then on (up). C. Immediately depress "R" key on the MF pad for 1-2 seconds.	"RB" lamp will lite during ringing and extinguish upon answer or when ringing ceases.
9	Answer test phone and verify a talking path to the headset.	At the ITE-5158: A. Place large black toggle switch in the "REPLY" pos.	The "E" lamp should remain lit. The "MB" lamp should light.
10	Disconnect the call.	Hang up the test phone and at the ITE-5158: A. Return the "EM" SW to the "OFF" pos. B. Release "PWR" key.	
11	If trunk group is a no test, continue with step 12. If not, skip to step 16.		<u>NOTE</u> : No test steps (12-15) need only be performed on one member per group.
12	Using the test phone A, call test phone B, verify a talking path and leave both phones off-hook.		
13	Repeat steps 3, 4, 5, 6, 7, & 9.		
14	Verify a 3-way talking path between the 2 test phones and the headset at the ITE-5158.		
15	Repeat step 10.		
16	Repeat step 1-15 for all FB361 trunks used as incoming trunks.		