

GTD-5[®] EAX

**Solid State Line Cards
Handling, Testing, Grounding,
and Maintenance Procedures**



AG Communication Systems

A Joint Venture of AT&T and GTE

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Repair and Modification of PCBA's

4.04 For information on the repair and modification of PCBA's, refer to the following documents:

- (a) IP 2000 in Section 2 of CH-224-001, GTD-5 EAX Installation Handbook.
- (b) Section 10, Modification and Wire Wrapping Procedures, of CH-224-001.
- (c) GTE Practice 200-9 1 O-200, Printed Circuit Cards - Maintenance and Modifications, which also includes information on handling, storing, transporting, repairing, and troubleshooting electrostatic sensitive cards.

5. POWERING-UP LINE EQUIPMENT FRAMES

5.01 To power-up the line equipment frames, perform the following Installation Test Procedures (ITP's) found in Section 1 of CH-224-002, GTD-5 EAX Installation Test Handbook:

- (a) ITP 0591, Analog Line Unit Frame (ALUF).
- (b) ITP 0608, Expanded Line Slave Frame (ESEF).
- (c) ITP 0609, Expanded Line Unit Master Frame (ELMF).
- (d) ITP 0610, Expanded Line Slave Frame (ESSF).
- (e) ITP 0613, Standard Width Line Unit Master Frame 4: 1 (SLMF), EC-191 24.
- (f) ITP 0614, Standard Width Line Unit Frame 6: 1 (SSSF), EC-191 25.
- (g) ITP 0615, Standard Width Line Unit Frame 8: 1 (SSEF), EC-19126.

(h) ITP 0617, Standard Width Line Unit Master Frame 4: 1 (SLMF), EC-26324.

(i) ITP 0618, Standard Width Line Unit Frame 6: 1 (SSSF), EC-26325.

(j) ITP 0619, Standard Width Line Unit Frame 8: 1 (SSEF), EC-26326.

5.02 Figures 1 through 3 show ITP's 0617, 0618, and 0619, respectively.

6. DIAGNOSING LINE CIRCUITS

6.01 To diagnose GTD-5 EAX line circuits, perform ITP 7128 found in Section 3 of CH-224-002, GTD-5 EAX Installation Test Handbook. For additional information on diagnosing line circuits, refer to Part 6, FZ-7XXXXX-UTL, Line and Trunk Testing, of the GTD-5 EAX User's Guide. To schedule and define maintenance routines, refer to Part 14, FZ-7XXXXX-USA, Miscellaneous, and Part 15, FZ-7XXXXX-URP, Repair Manual, of the GTD-5 EAX User's Guide.

6.02 If several line card failures occur, check test apparatus to ensure that it is working properly.

6.03 If Outside Plant (OSP) is not attached, Compensation Network Verify Test (CNVT) failures may occur. These should be ignored.

6.04 The FB-16248-A SLCC line card is a replacement for the FB-1622 1 Standard Service Line Card (STLC). The Standard Width Line Frame (SWLF) is identified as a Standard Sized Line - Facility Interface Unit (SL-FIU). It is equivalent to the Analog Line - Facility Interface Unit (AL-FIU) and Expanded Line - Facility Line Unit (EL-FIU) concepts used on previous line frame designs. Prior to System Version Release (SVR) 1.6.3.2, system software does not support FIU type SLF. Therefore, the FIU type must be set to ELF for new SWLF's. Also, when an SLCC card is used in a switch that is below SVR 1.6.2.1, EB-2, DTF-3A, the make card command must use STLC as the

card type. This will allow all circuits to be correctly assigned.

System Verification Test Plan

7. OTHER TESTS

Call Processing Tests

7.01 To verify the proper functioning of the various types of calls, perform the ITP's found in Section 9 of CH-224-002, Installation Test Handbook.

Multiple Call Turnover Criteria Tests

7.02 To verify the application of any Traffic Load Simulator (TLS), perform the ITP's found in Section 10 of CH-224-002, GTD-5 EAX Installation Test Handbook.

7.03 To verify that the GTD-5 EAX system is ready to be turned over to the customer, perform the ITP's found in Section 11 of CH-224-002, GTD-5 EAX Installation Test Handbook.

7.04 The overall performance of the solid state line card protection is based upon an office that meets the grounding objectives set forth in GTE Practice 795-805-071. A grounding audit using that practice as well as local company procedures should be conducted prior to the powering-up of new line frames.

8. REFERENCES

8.01 The following documents supplement or complement the information provided in this practice:

DOCUMENT	NUMBER	DESCRIPTION
AGCS Practices:	224-100-100	GTD-5 EAX Power and Alarm Equipment
	237-224-214	GTD-5 EAX Engineering and Installation Ground Isolation
	256-224-216	GTD-5 EAX Cabling Methods
GTE Practices:	795-805-071	Central Office Grounding Systems - Engineering Applications
AGCS Handbooks:	CH-224-001	GTD.5 EAX Installation Handbook
	CH-224-002	GTD-5 EAX Installation Test Handbook
GTE Handbooks:	CH-110	Central Office Equipment Installation Handbook
User's Guide:	FZ-7XXXXX-UTL	Part 6, Line and Trunk Testing
	FZ-7XXXXX-USA	Part 14, Miscellaneous
	FZ-7XXXXX-URP	Part 15, Repair Manual

PRELIMINARY TEST/POWER-UP EQUIPMENT

ITP 0617 - ISSUE 1, JANUARY 1991

FRAME: SLMF Power-Up Test Procedure
REFERENCE: EL-16086-KB, EL-16189-KA, EL-16061-KA

APPLICABILITY: EC-26324-A/B/C/D

STEP	ACTION	EXPECTED RESULT
1	Connect anti-static grounding device to ground and to body.	<p>OOS & FAILURE LED's light on power supply in slot 023 of files T/B/E/C.</p> <p>POWER ON LED lights on all power supplies. All others extinguish.</p> <p>POWER ON LED lights on all power supplies. All others extinguish.</p>
2	Unseat all PCBA's in all files of the frame to be powered up.	
3	Connect digital multimeter common lead to ground.	
4	Verify all battery inputs at fuses FF1 through FF10 are at Office Battery Voltage.	
5	Verify there is no continuity between ground and output side of fuses FF1 through FF10.	
6	Trip circuit breakers and seat power supplies in slot 23 of files T/B/E/G (and files AK/F/H if equipped).	
7	Insert a 5-amp fuse in fuse position FF1 through FF8.	
8	Reset circuit breakers on all power supplies in SLMF.	
9	Depress rocker switch to ON for all power supplies in SLMF.	
10	Trip circuit breakers on all power supplies in SLMF.	
11	Seat all cards in SLMF into their respective backplane connectors.	
12	Reset circuit breakers on all power supplies in SLMF.	
13	Depress rocker switch to ON for all power supplies in SLMF.	
14	Insert a 1 -amp fuse in fuse position FA9.	
15	Insert a 20-amp barrel fuse in fuse position FF9. Wait 5 seconds to charge filter capacitor.	
16	Insert a 1-amp fuse in fuse position FA10.	
18	Insert a 1 S-amp barrel fuse in fuse position FF10.	
19	Insert remaining grasshopper fuses in SLMF fuse panel.	
20	Verify voltage level appearances as shown below - right.	
END		

Office Battery Voltage			Cross Reference				Voltage Level** Appearances							
# CELLS	BATTERY	FLOAT RANGE	FF	MB	FILE	SLOT	COPY	+ 5V	-5V	+ 12V	- 12v	+ 15V	- 15v	LPG
24	Antimony	51.08 to 52.08 VDC	1-4	1	T/A/B/C			Files T thru H slot 038, pin 1	Files T thru H slot 038, pin 2	Files T thru H slot 038, pin 3				TX22 TX26 Line card slots pins 88/89
24	Calcium	51.80 to 52.80 VDC	5-8	2	E/F/G/H									
24	Absolyte/VR	53.00 to 54.96 VDC	9	MBF1	FILT BATT									
23	Absolyte/VR	50.75 to 51.75 VDC	10	-	FILT BATT									

If fans are equipped: ITP 0611
 For power distribution fusing: ITP 0576
 For common power supply info: SDA 0576
 For misc. equipment power up: ITP0616

F51-F54	MBFP1	Fan packs*
F56-F59	MBFP2	Fan packs*

** +/-4%

* Fan packs may not be equipped.

Figure 1. ITP 0617, SLMF (EC-26324) Power-Up Test Procedure.

SECTION 224-000-802

ISSUE 1

PRELIMINARY TEST/POWER-UP EQUIPMENT

ITP 0618 - ISSUE 1, JANUARY 1991

FRAME: SSSF Power-Up Test Procedure
 REFERENCE: EL-16087-KB, **EL-16189-KA**, EL-16061-KA

APPLICABILITY: EC-26325-A/B/C/D/E
 For add-on modules or partially equipped frames, use only appropriate sections

STEP	ACTION	EXPECTED RESULT
1	Connect anti-static grounding device to ground and to body.	<p>OOS & FAILURE LED's light on power supply in slot 023 of files T/B/E/G.</p> <p>POWER ON LED lights on all power supplies. All others extinguish.</p> <p>POWER ON LED lights on all power supplies. All others extinguish.</p>
2	Unseat all PCBA's in all files of the frame to be powered up.	
3	Connect digital multimeter common lead to ground.	
4	Verify all battery inputs at fuses FF1 through FF10 are at Office Battery Voltage.	
5	Verify there is no continuity between ground and output side of fuses FF1 through FF10.	
6	Trip circuit breakers and seat power supplies in slot 23 of files T/B/E/G (and files A/C/F/H if equipped).	
7	Insert a 5-amp fuse in fuse position FF1 through FF8.	
8	Reset circuit breakers on all power supplies in SSSF.	
9	Depress rocker switch to ON for all power supplies in SSSF.	
10	Trip circuit breakers on all power supplies in SSSF.	
11	Seat all cards in SSSF into their respective backplane connectors.	
12	Reset circuit breakers on all power supplies in SSSF.	
13	Depress rocker switch to ON for all power supplies in SSSF.	
14	Insert a 1-amp fuse in fuse position FA9.	
15	Insert a 20-amp barrel fuse in fuse position FF9.	
16	Wait 5 seconds to charge filter capacitor.	
17	Insert a 1-amp fuse in fuse position FA10.	
18	Insert a 1-amp barrel fuse in fuse position FF10.	
19	Insert remaining grasshopper fuses in SSSF fuse panel.	
20	Verify voltage level appearances as shown below -right.	
END		

Office Battery Voltage			Cross Reference					Voltage Level** Appearances						
# CELLS	BATTERY	FLOAT RANGE	FF	MB	FILE	SLOT	COPY	+ 5V	-5v	+ 12V	-12V	+ 15V	-15v	LPG
24	Antimony	51.08 to 52.08 VDC	1-4	1	T/A/E/F			Files T thru H	Files T thru H	Files T thru H				TX22
24	Calcium	51.80 to 52.80 VDC	5-8	2	B/C/G/H			slot 038, pin 1	slot 038, pin 2	slot 038, pin 3				TX26
24	Absolyte/VR	53.00 to 54.96 VDC	9	MBF1	FILT BATT									
23	Absolyte/VR	50.75 to 51.75 VDC	10	-	FILT BATT									pins 88/89
If fans are equipped:			ITP 0611	F51- MBFP1	Fan packs*			** +/- 4%						
For power distribution fusing:			ITP0576	F54- MBFP1	Fan packs*									
For common power supply info:			SDA 0576	F56- MBFP2	Fan packs*									
For misc. equipment power up:			ITP0616	F59- MBFP2	Fan packs*									

* Fan packs may not be equipped.

Figure 2. ITP 0618, SSSF (EC-26325) Power-Up Test Procedure.

