

S E R V I C E N O T E

SUPERSEDES: NONE

**6683A GPIB Power Supply**

Serial Number: See below

**A9 Down Programmer Failures**

**Duplicate Service Notes:**

- 6680A-04      0000A00000 / US36480157 except US36480140
- 6681A-04      0000A00000 / US36400444 except US36400434 and US36400441
- 6682A-03      0000A00000 / US36440295
- 6683A-03      0000A00000 / US36420359
- 6684A-03      0000A00000 / US36410425 except US36420317 and US36410320

**To Be Performed By:** Agilent-Qualified Personnel

**Parts Required:**

Parts to repair A9 Assembly if A9 is repairable:

For models 6680A and 6681A:

Qty 1 p/n 5064-0142  
(kit containing 2 FET's 5182-9080, 2 insulators 0340-1507 and 6 sockets 1251-4211)

For models 6682A, 6683A and 6684A:

Qty 1 p/n 5064-0141  
(kit containing 2 FET's 5182-9079, 2 insulators 0340-1507 and 6 sockets 1251-4211)

*Continued*

DATE: December 1999

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:			
<b>MODIFICATION RECOMMENDED</b>			
ACTION CATEGORY:	<input type="checkbox"/> IMMEDIATELY <input checked="" type="checkbox"/> ON SPECIFIED FAILURE <input type="checkbox"/> AGREEABLE TIME	STANDARDS:	LABOR 3.0 Hours
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input checked="" type="checkbox"/> SERVICE CENTER	SERVICE INVENTORY:	<input type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	USED PARTS:	<input type="checkbox"/> RETURN <input checked="" type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AUTHOR: PS	ENTITY: 2100	AGILENT RESPONSIBLE UNTIL: December 2001	
		ADDITIONAL INFORMATION:	

Parts required if A9 Assembly is to be replaced:  
For Model Number:

6680A:	Qty 1	06680-60022	Down Programmer/Slow sense Assy
	Qty 1	5064-0142	FET Kit
6681A:	Qty 1	06681-60022	Down Programmer/Slow sense Assy
	Qty 1	5064-0142	FET Kit
6682A:	Qty 1	06682-60022	Down Programmer/Slow sense Assy
	Qty 1	5064-0141	FET Kit
6683A:	Qty 1	06683-60022	Down Programmer/Slow sense Assy
	Qty 1	5064-0141	FET Kit
6684A:	Qty 1	06684-60022	Down Programmer/Slow sense Assy
	Qty 1	5064-0141	FET Kit

**Situation:**

The output voltage cannot be lowered rapidly when the output is disabled or programmed to a lower voltage. Cause: the sockets for field effect transistors (FET's), A9 Q981 and A9 Q982, have been found to overheat disabling the down programmer circuit. Often the A9 can be easily and quickly repaired.

**Solution / Action:**

- 1) Using the disassembly procedures in the service manual, remove the top cover, the protective RFI Shield (galvanized sheet metal) and the A10 control assembly.
- 2) Without removing the A9, visually inspect the area around the FET sockets on the A9 assembly. Look for signs of overheating. If the board is badly damaged as indicated by lifted traces and/or burned circuit board material, the A9 assembly will need to be replaced. If the A9 board material is only discolored continue with step 3. If the A9 has to be replaced, also replace the FET's. Use the normal procedure for replacing the A9 and FET's and, in addition, follow step 6 below to solder the FET leads into the sockets.
- 3) Remove the screws holding the A9 FET's down to the heatsink and unplug the FET's from the A9 assembly. Discard the old insulators and FET's.
- 4) Remove overheated FET sockets from the A9 assembly: Using a soldering iron and long nose pliers, heat up the sockets from the side facing the outside of the unit and carefully push them part way in. Next grasp them from the inside and remove them. Be careful not to drop solder or sockets into the unit. Clean the plated-thru holes with desoldering braid.
- 5) Insert the new sockets into the A9 (don't solder them in yet). Insert the new FET's into the sockets and mount them to the heatsink using new insulators. Make sure that the sockets are fully seated into the circuit board. Do not use heatsink compound or overtighten the screws.
- 6) Carefully flow solder around the sockets on the side facing away from the heatsink (outside) and then carefully flow solder around the FET leads and INTO the sockets on the side facing the heatsink. By applying heat only to the sockets, the solder will draw into the sockets and will not flow toward the body of the FET's.
- 7) Re-install the A10 control assembly, shields, and cover by reversing the disassembly procedure in the manual.

*Continued*

- 8) Test the down programming circuits: With no load attached to the power supply, monitor the output voltage with an external voltmeter. Program the output voltage for the model's highest rated voltage. Switch the output off. If the down programmer circuit is operational, the output voltage will drop to zero in a fraction of a second. If the down programmer circuit is not operational, the filter capacitors will take tens of seconds to discharge.