

8642M-03A

S E R V I C E N O T E

SUPERSEDES 8642M-2, 8642M-3

HP 8642M Synthesized Signal Generator

A11 and A12 Module Serial Prefixes: 0000A00000/2737A00000

Procedure to Resolve A11 and A12 Module Failures

To Be Performed By: HP-Qualified Personnel

Parts Required:

A11 Reference Module exchange P/N: 08642-69896
 A12 Summation Module exchange P/N: 08642-69897

Situation:

HP 8642M instruments with serial prefixes 2737 and below may develop out of lock conditions in the A11 Reference Loop module, or the A12 Sum Loop/Divider module. These failures are generally leakage caused by silver migration on the trimmer capacitors used to adjust the Voltage Controlled Oscillators on these modules. Use the procedure at the end of this service note to determine if the failure is silver migration on a trimmer capacitor. If the failure is not caused by silver migration, follow Section III, "Diagnostics," and Section IV, "Replacing a Module," in the HP 8642M Synthesized Signal Generator Operation and Service manual to troubleshoot and replace the A11 or A12 Module.

Continued

DATE: 10 July 1992

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:			
MODIFICATION RECOMMENDED			
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 checked="" type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input checked="" type="checkbox"/> HP LOCATION	SERVICE INVENTORY:	<input checked="" type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	USED PARTS:	<input checked="" type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AUTHOR: D.B.	ENTITY: 1000	HP RESPONSIBLE UNTIL: December 1995	
		ADDITIONAL INFORMATION:	



If the A11 or A12 Module is determined to be faulty in an 8642M with a serial prefix of 2737A or below, replace the module with an exchange module.

Solution/Action:

Silver Migration Failure Identification Procedure

Use the following procedure to determine if silver migration has caused a VCO trim capacitor to develop leakage.

1. Set the POWER switch on the HP 8642M to ON.
2. After the instrument finishes its powerup checks, key in:

This sets the pretune DACs in the A11 and A12 modules to their maximum voltages.

Check A11 Pretune Line

3. On the HP 8642M key in:

This is the internal voltmeter reading of the A11 module pretune DAC output. The internal voltmeter is a one shot voltmeter.

4. To trigger another voltmeter reading press 1 HZ.
5. The HP 8642M display should read approximately: 12 VOLTAGE = +49.75.
6. This reading should not be less than +48.00.

Check A12 Pretune Line

7. On the HP 8642M key in:

This is the internal voltmeter reading of the A12 module pretune DAC output. The internal voltmeter is a one shot voltmeter.

8. To trigger another voltmeter reading press 1 HZ.
9. The HP 8642M display should read approximately: 21 VOLTAGE = +49.75.
10. This reading should not be less than +48.00.

11. If the HP 8642M displays Voltmeter Overrange, key in:

(Instead of 363363. This lowers the DAC setting by one bit - lowers voltage by 1.29V.)

12. Then key in:

13. The HP 8642M display should read approximately: 21 VOLTAGE = +48.46.

14. This reading should not be less than +46.71.

Continue to Monitor Both Pretune Lines

15. Leave the HP 8642M power on and continue to monitor the above two voltages by keying 12 HZ and 21 HZ. It may take several days for this problem to surface.

16. If one of the voltages begins to drift down, then the problem is in that module. If the voltage drifts below +45.00, it will cause the out of lock. Even if it does not drift below +45.00, the module is defective. The voltage should remain stable.

Note

When using the internal voltmeter the instrument can give false out of lock errors. Also, when exiting the voltmeter mode, false transient errors may be generated. These should not be interpreted as instrument failures. An instrument preset should be performed to clear out all errors.