

## P R O D U C T I O N M E M O

To: All Service Departments

FROM: HP Microwave Division

INSTRUMENTS: HP Model 8690A  
Sweep Oscillators  
Serials Above 803-02061

SUBJECT: Major Electronic Redesign

The HP Model 8690A Sweep Oscillator; serials above 803-02061, have had a major electronic redesign. The changes improve performance and reliability. Here is a list of the changes:

1. New +275 and -300 V power supply assemblies.  
The new supplies are short circuit proof and have better ripple and regulation.
2. New reciprocal amplifier. Has better stability.
3. New helix amplifier. Has 3-kHz bandwidth which reduces noise and improves 8410A compatability.
4. New ALC amplifier. Removes power meter leveling.
5. New rectifier board. Improved serviceability and fuse added to +20 volt power supply.

Service Notes

1. The new power supply assemblies (A5, 08690-6033 and A6, 08690-6032) are interdependent and must be used together, i. e., in serials below 803-02061 both A5 and A6 must be replaced together.

2. The new ALC amplifier (A12, 08690-6024) is not interchangeable with the old ALC assembly. The new ALC amplifier has no power meter leveling circuitry.
3. The new reciprocal amplifier (A3, 08690-6034) is directly interchangeable.
4. The new helix amplifier (A4, 08690-6031) is interchangeable. However, it does limit the ext. FM frequency response to 3-kHz.

## P R O D U C T I O N M E M O

TO:

FROM: Microwave Division

INSTRUMENTS: HP Model 8690A Sweep Oscillators  
Serials Below 742-01461

SUBJECT: Replacement Grounding Spring

This Production Memo obsoletes Production Memo 8690A-3-67.

The coil type grounding spring used to ground the RF unit to the 8690A has been replaced by a leaf spring on the plug-in guide rail in the 8690A.

The following parts are used; spring, HP Part 08690-0020, and guide, plug-in rail, HP Part Number 08690-2030.

If the original spring breaks the new leaf spring and guide rail are the recommended replacement.

When the RF unit is viewed from the rear, the upper left hand guide rail is the one to be replaced.

DLW/ch

4/68-4

## P R O D U C T I O N M E M O

TO:

FROM: HP Microwave Division

INSTUMENTS: In Warranty - HP Model 8690A Sweep Oscillator  
Serials Below 803-02061

SUBJECT: +275 and -300 Volt Power Supply Repair

Any in warranty HP Model 8690A Sweep Oscillator, serial below 803-02061, that comes in for repair with defective low voltage power supplies i. e., the +275 or -300 volt supplies, should be repaired by replacing the supplies.

A new improved power supply is available as a complete assembly, HP Part Number 08690-6043. The new supply replaces the old A5 and A6 assemblies which may be thrown away.

A service note P08690-6043 should be included when the 8690A is returned to the customer. The parts note includes a schematic, parts list, and calibration instructions for the new supply.

DW/ch

4/68-4

## P R O D U C T I O N M E M O

TO:

FROM: HP Microwave Division

INSTRUMENTS: HP Model 8690A Serials Above 803-02061

SUBJECT: Service Feedback

The 8690A has been redesigned. You can help make the new 8690A better faster. Until further notice call either Mark Sanders or Dave Widman anytime an 8690A, serial 803-02061 and above, comes in for repair and let us know what happened.

If there are any built in problems in the new 8690A, we don't want to build 3 or 4 production runs before we find out about them.

The new 8690A has been tested as intensively as we know how, to make sure that it is going to be a solid, reliable instrument. The real test, however, will be given the instrument by our customers. If there is any lack in the new 8690A your fast feedback will help us take corrective action.

DW/ch

4/68-4

## P R O D U C T I O N   M E M O

TO:

FROM: HP Microwave Division

INSTRUMENTS: HP Model 8691-97A/B  
RF Units, All Serials

SUBJECT: Replacement Power Level Potentiometer

The recommended replacement for R1 and R2, the POWER LEVEL control, is resistor variable, cermet, 2 section 1K ohm, HP Part Number 2100-2675.

R1 and R2 should be replaced only if the old control has failed.

D. Widman

7/68-4

## P R O D U C T I O N   M E M O

TO:

FROM: HP Microwave Division

INSTRUMENTS: 8691A Op 01 Serials Below 720-00211  
8692A Op 01 Serials Below 720-00421  
8693A/B Op 01 Serials Below 720-00396  
8694A/B Op 01 Serials Below 720-00456

SUBJECT: Removal of R4 in internally levelled RF Units.

Because of gain variations in the ALC amplifiers, R4 is to be removed and S1B rewired to keep R3 in the circuit when the RF units are internally levelled. This change should be made under warranty.

Procedure:

1. Remove RF Unit. Locate R3, Ext ALC Gain, and S1, Ext-Int switch, on rear panel of RF Unit.
2. Remove R4 which is connected between S1B and R3.
3. Connect a jumper wire between the terminal on S1B to which R4 was connected and the other outside terminal on the same side of S1B.

This completes the modification.

D. Widman

7/68-4

## P R O D U C T I O N M E M O

TO:

FROM: HP Microwave Division

INSTRUMENTS: HP Model 8690A Sweep Oscillators  
Serials Between 803-02061 and 818-02730

SUBJECT: Failure to sweep when used with 8706A Control Unit  
or 8698A RF Unit

A wiring error causes the above serial numbered 8690A Sweep Oscillator not to sweep when used with an 8706A or 8698A. Operation is normal with any BWO RF Unit.

The trouble can easily be fixed by reversing the black and white wires which go to push on connectors between A3 and A4 on the mother board.

Normally the black wire is near A3 and the white wire is near A4.

D. Widman

8/68-4



## P R O D U C T I O N   M E M O

TO:

FROM: HP Microwave Division

SUBJECT: Temperature stability

INSTRUMENTS: Extended range R. F. units for the HP Model  
8690A/B Sweep Oscillators.

The 1 megohm potentiometers used on special shaping board assembly A2, HP part number 08691-6104, can cause excessive frequency change with temperature.

Replacing A2R12, A2R13, A2R14, A2R15, A2R20, A2R21, A2R22 with a 500K ohm pot, HP part number 2100-0917, improves the temperature stability.

Before changing the potentiometers measure the resistance of the pot plus the series resistor.

Then select a resistor that will let the pot resistance be about 250K ohms. For example, when replacing A2R12 the value of A2R1 should be selected so that the new resistance total of A2R12 plus A2R1 is the same as the old total and A2R12 is about 250K ohms. Be sure to use metal film resistors for the series values.

D. Widman

11/68-4

## P R O D U C T I O N M E M O

TO:

FROM: HP Microwave Division

INSTRUMENTS: HP Model K01-8690A Calibrator, All Serials

SUBJECT: To Eliminate Oscillations that may Occur in 8690A/B  
Power Supplies

Oscillations may occur in the 8690A/B Sweep Oscillator ALC Modulator circuit (A11Q12) when calibrating with a K01-8690A Calibrator, all serials. These oscillations can feed back into the 8690A/B power supplies.

To prevent this from occurring a jumper wire should be installed between PINS 15 and 16 on the P12 Connector in your K01-8690A. Check to make certain this junction is tied through a  $511\Omega$  resistor (R47) to chassis ground.

Jim Detrick

6/69-4

HEWLETT  PACKARD

## P R O D U C T I O N M E M O

TO:

FROM: HP Microwave Division

INSTRUMENT: HP Model 8690A/B Sweep Oscillator

SUBJECT: Service Note Index

<u>Service Note</u>	<u>Description</u>	<u>Serials Below</u>
8690A-1	Superseded by 8690A-2A	
8690A-2A	Reciprocal Amplifier Improvements. Change value of A3R17 and change recommended replacement for A3V5.	732-01261
8690A-3	Recommended replacement transistor for A1Q2 in 8690 RF units.	
8690A-4	Recommended replacement for pushbutton switches: S4, S5, S6, S7 and S8.	
8690A-5	Fan Noise Reduction. Install Fan Hole Cover. Recommended replacement for fan motor.	732-01311
8690A-6	Modification of 8690A for use with 8706A and 8707A. Add four diodes plus small wiring change.	747-01711
8690A-7	Modification of 8690A for use with RF units with serial prefix 724- and above. Wiring modification for RF units to ensure low resistance interconnections.	641-00261
8690A-8	Improve pen lift relay kit. P/N: 08690-6045.	803-(only)
8690A-9	<ol style="list-style-type: none"> <li>1. Improve power supply reliability, add R24, R25 and R26.</li> <li>2. Improve square wave symmetry. Change value of A11R40.</li> <li>3. Change value of A2R32.</li> <li>4. To ensure over lapping sweep times, change value of R3.</li> </ol>	717-00911

J. Detrick

11/69-4

<u>Service Note</u>	<u>Description</u>	<u>Serials Below</u>
8690A-10 8690B-1	Connection missing on A3. Reciprocal Amplifier Board causes Helix Overcurrent Relay to actuate when switching from RF to STANDBY.	803-02061 818-02430
8690A-11 8690B-2	Recommended replacement for: 8690A: A3V4, A4V1, A4V2, A4V4 8690B: A4V1, A4V2, A4V4	
P 1932-0049	Replacement for CK647 tube.	
P 08690-6043	Improved +275V and -300V Power Supplies are recommended replacement for A5 and A6.	803-02061
P 08690-6029	Helix Amplifier Modification Kit adds filter to improve sweep tracking ability when used with 8410A Network Analyzer.	803-02061

DAYTON

8690A/B-1-72

MARTMAN, ARTHUR RAYMOND

# PRODUCTION MEMO

TO:

Date: 27 October 1972

FROM: HP Microwave Division

INSTRUMENT: All 8690A/B's

SUBJECT: Replacement Fan

The recommended replacement fan in all 8690A's and 8690B's is 3160-0056. This fan is more reliable than the old fan, part number 3160-0097, and is directly interchangeable.

Al Schuettpelz

10/72-4

HEWLETT  PACKARD