8568B-28

S E R V I C E N O T E

SUPERSEDES:

HP 8568B Spectrum Analyzer
HP 85680B RF Section

Serial Numbers:
2841A04550/3001A04974
Exceptions:
3001A04971/3001A04973

Surface-Acoustic-Wave Resonator Failures

Situation

Recent manufacturing lots of the Surface-Acoustic-Wave (SAW) Resonators, A20Z1 (HP part number 1GA1-8000), used in the 280 MHz oscillator of the A20 Third Converter have a higher than normal Q. This causes excessive acoustic-wave amplitude, resulting in metal migration of the aluminum coupling transducers in the SAW device. Metal migration drastically reduces the Q of the device, and the output of the 280 MHz oscillator decreases.

Symptoms of defective SAW devices are as follows:

- 275 UNLOCK
- Low or no 280 MHz output measured at A20J3

DATE: 12 April 1990

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION RECOMMENDED**			
ACTION CATEGORY:	☐ IMMEDIATELY ☐ ON SPECIFIED FAILURE ■ AGREEABLE TIME	LABOR STANDARDS: 1.0 Hour	
LOCATION CATEGORY:	■ CUSTOMER INSTALLABLE ☐ ON-SITE ■ HP LOCATION	SERVICE INVENTORY: ☐ RETURN ■ SCRAP ☐ SEE TEXT	USED PARTS: ☐ RETURN ■ SCRAP ☐ SEE TEXT
AVAILABILITY: PRODUCT'S SUPPORT LIFE		RESPONSIBLE ENTITY: 5300	UNTIL: 12 May 1991
AUTHOR: BS	ENTITY: 5300	ADDITIONAL INFORMATION:	

HEWLETT PACKARD

Solution:
Any HP 8568B within the serial number range listed above and all 1GA1-8000 SAW devices in service stock which have a lot number less than 81618A should be replaced with SAW devices having lot number 81618A and above.

The replacement SAW devices have copper-aluminum coupling transducers to eliminate the problem.

CAUTION

Electrostatic discharge (ESD) can damage or destroy electronic components. This procedure should be performed at a static-safe work station.

A20Z1 Replacement Procedure:

1. Turn the HP 8568B over to access the bottom of the HP 8568B RF Section. Remove the power cord, two bottom feet and bottom cover from the RF section.
2. Locate the A20 Third Converter Assembly and remove the snap-on coax cables from A20J2 and A20J3. Disconnect the 96 cable at A19J2.
3. Remove the A20 Third Converter Assembly from the instrument. Unsolder and remove the SAW device A20Z1.
4. Insert the replacement SAW, reinsert the A20 assembly, reconnect the coax cables, and power up the HP 8568B Spectrum Analyzer.
5. Allow the analyzer to warm up for at least 5 minutes.
6. Perform the "Third Converter Adjustment" in the *HP 8568B Performance Tests and Adjustments* manual.
7. Assure the front panel Amp Cal potentiometer has sufficient range to adjust the Cal signal to -10 dBm using "Recall 8."

NOTE

If the Amp Cal has insufficient range, A20R19 can be padded. Excessive padding of A20R19 can cause TOI problems, if padding seems excessive, look for a gain problem elsewhere.

8. Perform the "Spurious Response Test" in the "Performance Tests" chapter, to check TOI and SOI.