

S E R V I C E N O T E

SUPERSEDES: None

**HP 8591A Spectrum Analyzer
A4 First Converter, HP part number 08590-60214 only.**

Serial Numbers: 0000A00000 / 9999A99999

Resonance at 60 MHz and Flatness Correction Values

Duplicate Service Notes: 8590B-02

To be performed by: HP-Qualified Personnel or Customer-Qualified Personnel

Situation 1:

The response has a small but abrupt resonance at about 60 MHz which cannot be completely removed by the flatness correction values at 41 MHz and 68 MHz. A 0.5 dB offset minimizes the positive and negative errors relative to the 300 MHz reference point.

If the analyzer uses the 08590-60116 A4 First Converter, then this service note procedure is not necessary. The 8591A analyzer almost always uses this First Converter unless the First Converter has been replaced with the HP 08590-60214 First Converter.

Situation 2:

The firmware used in the 8591A does not properly compensate for flatness correction values which are more negative than -1.3 dB in linear mode. Some clipping of the top of the signal will occur in linear mode at frequencies below 41 MHz.

Continued

DATE: July 1997

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

AUTHOR:

PS

ENTITY:

5300

ADDITIONAL INFORMATION:

Solution 1:

The Frequency Response (Flatness) correction value at 78 MHz should be increased by 0.5 dB. During the Frequency Response Adjustment Procedure found in the Service Manual, add 0.5 dB to the "Error Relative to 300 MHz" at 78 MHz only. (Column 2 of the Correction Table without Option 001. Column 5 of the Correction Table with Option 001.)

Example:

Error at 78 MHz relative to 300 MHz =	-1.2 dB
Add 0.5 dB offset	+0.5 dB
Optimum correction value at 78 MHz	= -0.7 dB

Note

If you request and reinstall the original factory calibration values, it is not necessary to add this additional 0.5 dB offset. The original factory calibration numbers always include this offset.

Solution 2:

The HP 8591A analyzer should not be given a flatness correction value which is more negative than -1.3 dB. If the Frequency Response Adjustment Procedure requires a correction value more negative than -1.3 dB, use the value -1.3 dB. These values are only likely to occur at 4 and 41 MHz.

After all the flatness values have been installed, the Frequency Response Verification Test in the Installation and Verification Manual should be performed. In this verification test, one extra frequency at 20 MHz should be measured. It is unlikely that the Frequency Response Verification Test will fail since it has a ± 1.5 dB limit. However, should this test fail, the A4, First Converter must be replaced.

Replacement of the First Converter will be covered under Extended Warranty for this failure only. Order HP part number 08590-60194. This is the board assembly for the First Converter. You will have to order the 5 SMA connectors to install onto the 08590-60194 board. The part number for the connectors is 1250-2226.