

S E R V I C E N O T E

SUPERSEDES: E4411A-03A

**E4411A Spectrum Analyzer  
(Model Number ESA-L1500A)**

**Serial Numbers:** US36450101 / US36450399

(Exceptions: US36450149, US36450174, US36450189, US36450225, US36450235, US36450268, US36450273, US36450274, US36450275, US36450279, US36450282, US36450285, US36450298, US36450300, US36450304, US36450308, US36450311, US36450315, US36450316, US36450317, US36450321, US36450328, US36450329, US36450330, US36450331, US36450333, US36450337, US36450339, US36450340, US36450341, US36450342, US36450343, US36450344, US36450345, US36450346, US36450349, US36450352, US36450356, US36450357, US36450358, US36450387, US36450395, US36450396, US36450397, US36450398)

**Recommended Firmware Upgrade**

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

*Continued*

DATE: September 1997

ADMINISTRATIVE INFORMATION

|                                 |   |  |   |
|---------------------------------|---|--|---|
| SERVICE NOTE CLASSIFICATION:    |   |  |   |
| <b>MODIFICATION RECOMMENDED</b> |   |  |   |
| ACTION CATEGORY:                | <input type="checkbox"/> IMMEDIATELY<br><input type="checkbox"/> ON SPECIFIED FAILURE<br><input checked="" type="checkbox"/> AGREEABLE TIME                   | STANDARDS:   | LABOR 0.5 Hours   |
| LOCATION CATEGORY:              | <input checked="" type="checkbox"/> CUSTOMER INSTALLABLE<br><input checked="" type="checkbox"/> ON-SITE<br><input checked="" type="checkbox"/> SERVICE CENTER | SERVICE INVENTORY:                                     | <input type="checkbox"/> RETURN<br><input type="checkbox"/> SCRAP<br><input checked="" type="checkbox"/> SEE TEXT |
| AVAILABILITY:                   | PRODUCT'S SUPPORT LIFE  | USED PARTS:  | <input type="checkbox"/> RETURN<br><input type="checkbox"/> SCRAP<br><input checked="" type="checkbox"/> SEE TEXT |
| AUTHOR: RA                      | ENTITY: 5320  | AGILENT RESPONSIBLE UNTIL: End of Product Support Life |   |
|                                 |   | ADDITIONAL INFORMATION:                                |   |

**Parts Required:**

| <b>P/N</b>  | <b>Description</b> | <b>Quantity</b> |
|-------------|--------------------|-----------------|
| E4411-60005 | F/W Upgrade Kit    | 1               |

**Situation:**

A firmware bug was identified which impacts amplitude accuracy when using the step keys in large frequency steps. When stepping up through frequencies, one amplitude reading is measured, however, when stepping back down through the same frequencies, a different amplitude reading is measured which may be several dB higher. An example of this is seen when stepping through the harmonics of a 408MHz fundamental sinusoid. The 2nd harmonic will have a different reading depending on whether you are stepping up to it from the fundamental, or stepping down to it from the 3rd harmonic. No problem exists when changing the frequency using direct keypad entry or the knob.

Two additional firmware bugs have also been corrected in this firmware upgrade. The first bug causes Local Oscillator misalignment during the Auto Alignment process when signals between 0 and 300kHz are applied resulting in a very large value of LO feedthrough. The second bug causes a marker readout error when the Normalize function is run at a reference level other than 0dBm.

**Solution / Action:**

A firmware upgrade has been implemented which corrects the bugs. Prior to upgrading a unit, verify whether the unit needs the firmware upgrade by performing a "System / Show System" from the front panel. If the firmware revision is 19961224 or older, then it requires upgrading. Units which require new firmware should have the upgrade performed by the Service Centers whenever they are returned for repair, calibration, or upgrade. To perform the upgrade, refer to the Parts Required list above for the appropriate Firmware Upgrade Kit number. A firmware upgrade installation note is included in the kit. The firmware upgrade kit is reusable.

The firmware upgrade kit includes only PC compatible (DOS) floppy disks. If a workstation is to be used, the UNIX firmware and readme instructions are available on the Internet at URL: <http://www.tmo.agilent.com/tmo/datasheets/English/E4411A.html>. The same serial interface cable is used for both systems.

Code the CSO as Warranty Type Subtype 02G / Repair Class SN. Also, in the Details section of the CSO, write "per Service Note E4411A-03A".