S E R V I C E N O T E

SUPERSEDES: NONE

E4916A Crystal Impedance Meter

Serial Numbers: JP1KD00101 / JP1KD00222

Modification to fix no signal output on SOURCE terminal caused by internal power supply failure

To Be Performed By: HP-qualified personnel

Duplicate Service Notes: E4915A-01

Parts Required:

HP P/N	Qty.	Description
9140-1099	1	INDUCTOR 220nH

Situation:

There is no signal output on SOURCE terminal on the E4915A/E4916A. As a result, "E23:Search fail" message is displayed even if the device (crystal) has a resonant frequency in the search range of the E4915A/4916A.

Continued

DATE: March 1997

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

MODIFICATION RECOMMENDED

ACTION CATEGORY:	☐ IMMEDIATELY ■ ON SPECIFIED FAILURE ☐ AGREEABLE TIME	STANDARDS: LABOR 2.0 Hours		
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		HP RESPONSIBLE UNTIL: March 1999		
AUTHOR: KI	ENTITY: 3355	ADDITIONAL INFORMATION:		

HEWLETT® PACKARD

Cause of the Trouble

The inductor (A1L5) in the power supply circuit on the A1 Main Board does not have enough power capacity and may be broken and cut off through long use.

Note

"E23:Search fail" message does not always mean the E4915A/E4916A's power supply failure. Even if the E4915A/E4916A is working properly, "E23: Search fail" message is displayed when the E4915A/4916A just cannot find the resonant frequency of the device. If the E4915A/E4916A displays "E23:Search fail" message in the correct measurement setup and you confirm that there is no output signal on SOURCE terminal of the E4915A/E4916A, the unit may have the problem which can be fixed in this Service Note.

Solution/Action:

Replacing the inductor (A1L5) on the A1 Main Board (P/N: E4915-66501) with the new inductor which has enough power capacity (P/N: 9140-1099) solves the problem.

1. Remove the A1 Main Board (P/N: E4915-66501) from the E4915A/E4916A.

2. Measure the dc resistance of the inductor A1L5 on the backside (no HP logotype) of the A1 Main Board using a circuit tester. You do not need to remove the part for this measurement. (See Figure 1) If the dc resistance of the A1L5 inductor is roughly 1 ohm, the the inductor is not broken and the problem is not caused by the A1L5 inductor failure. If the dc resistance of the A1L5 inductor is extremely high, the inductor (A1L5) must be broken and cut off. Then follow the next procedure.

Note

When the A1L5 inductor is broken and cut off by this problem, the color of the board surface around the A1L5 inductor may change due to some scattered material from the inductor. You may be able to visually confirm the A1L5 failure by this phenomenon in such case.

3. Replace the inductor with the new inductor (P/N: 9140-1099).

Note

A1L5 inductor is a surface mount device. Be careful not to damage other components and printed circuit pattern on the board during the replacement.

4. Reinstall the A1 Main Board into the E4915A/E4916A.

5. Reinstall the other assemblies into the E4915A/E4916A.

6. Perform a typical device measurement to verify the basic measurement performance of the E4915A/E4916A.

Note

There is no need to perform any adjustments or performance tests for the E4915A/E4916A after the modification because the modification procedure does not include any repair which is related to the instrument analog performance.

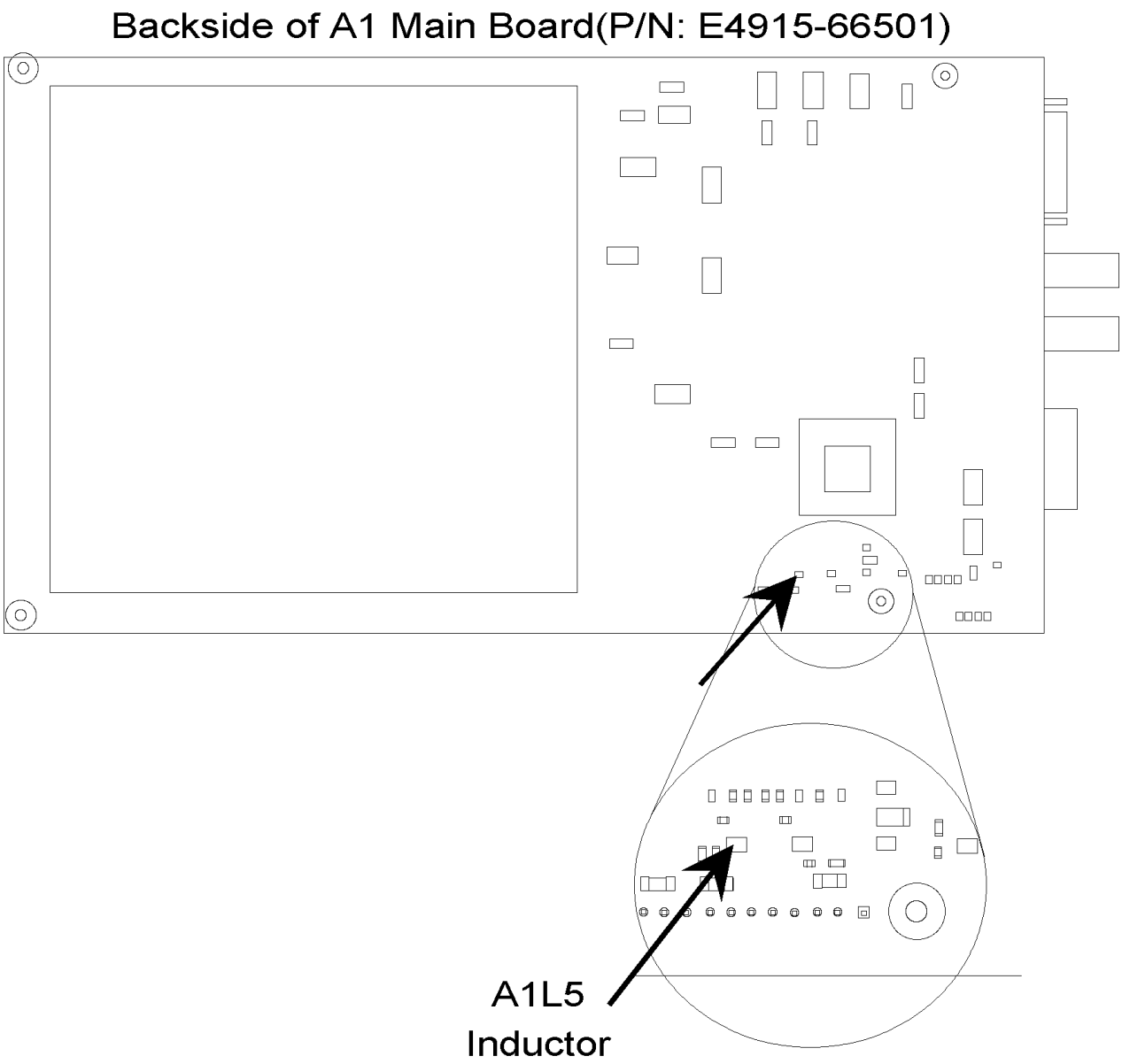

Figure 1 A1L5 Location