

MODIFICATION RECOMMENDED –  
CORRECTS MANUFACTURING OR DESIGN DEFECTS

**E5070A-05B**

# **S E R V I C E                      N O T E**

Supersedes:  
E5070A-05A

## E5070A ENA Series Network Analyzer, 300 kHz to 3 GHz

Serial Numbers:    [0000A00000 / 9999Z99999]

**When a measurement trace or output power shows troubles between 1.3 GHz and 2.1 GHz, or in full frequency range, replace A1 module with the latest one (E5071-6x571), and update E5070A Operating System at the same time.**

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

**Parts Required: See Solution/Action**

## ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:			
<b>MODIFICATION RECOMMENDED</b>			
ACTION CATEGORY:	<input type="checkbox"/> IMMEDIATELY X ON SPECIFIED FAILURE <input type="checkbox"/> AGREEABLE TIME	STANDARDS: LABOR: 2.0 Hours	
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE X SERVICE CENTER	SERVICE INVENTORY: <input type="checkbox"/> RETURN X SCRAP <input type="checkbox"/> SEE TEXT	USED PARTS: <input type="checkbox"/> RETURN X SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE		AGILENT RESPONSIBLE UNTIL: May 2007
AUTHOR: KH                      PRODUCT LINE: WN			
ADDITIONAL INFORMATION:			

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**Situation:**

The E5070A and E5071A's A1 source board E5071-6x501, E5071-6x551, and E5071-6x561 module had high-failure rate component parts problem, thus it was re-designed to improve its reliability as E5071-6x571.

When the high-failure rate part has defective, the unit cannot output correct power level source or local signal, between 1.3 GHz and 2.1 GHz frequency range.

Typical symptoms are as the followings:

- The trace shows spike at 1.3 GHz or 2.1 GHz at the preset situation.
  - The trace between 1.3 GHz to 2.1 GHz is more noisy than other frequency ranges.
  - The power level of 1.3 GHz to 2.1 GHz is lower than other frequency ranges.
  - Internal test of A1 ALC shows fail at SOP (f=1.3G) or LOP (f=1.3G) as Figure 2.
- Above symptoms tend to appear after 30-minute heat run.

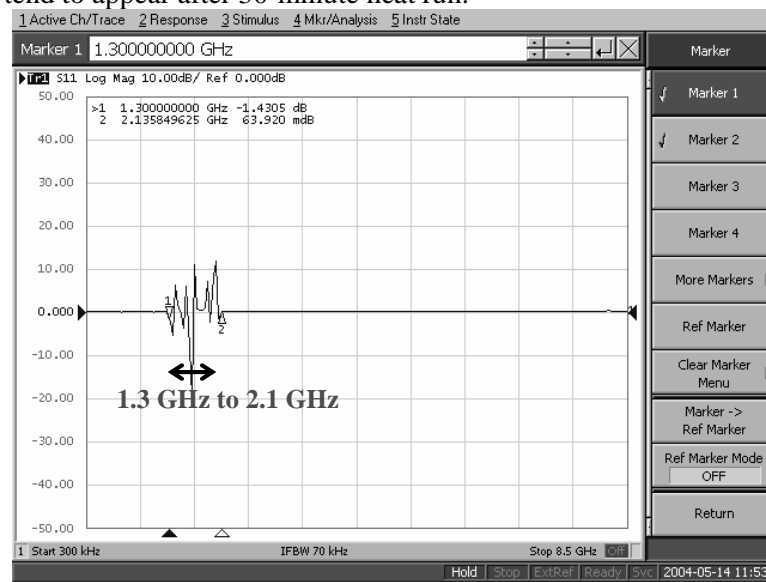


Figure 1. Trace shows noise around 1.3 GHz to 2.1 GHz at preset setting.

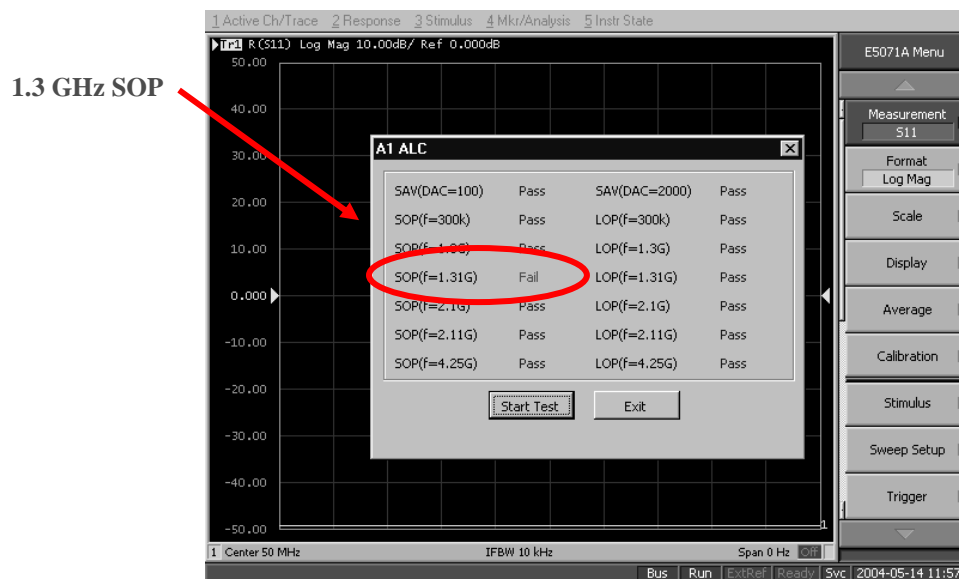


Figure 2. A1 ALC in Internal test has failure at SOP (f=1.3G) or LOP (f=1.3G)

And the latest A1 board (E5071-66571, E5071-69571) requires firmware version Rev.A.03.62 or later and the power-on test limit file. If customer unit's firmware version is less than Rev.A.03.60, it should be updated by changing the operating system.

With Rev A.03.60 or below version firmware, an error message "Power on test fail (A1 not found)" is shown at lower left part on a display at power on. If the power-on test limit file is not installed, any of messages "Power on test failed (A1 DC-bus, 0x00000010)", "Power on test failed (A1 DC-bus, 0x00000020)", or "Power on test failed (A1 DC-bus, 0x00000030)" is shown at power on.

#### **Solution/Action:**

**When customer's E5070A/71A shows any of the typical symptoms in "Situation" part, and the unit's original configurations are as the followings:**

- A1 source board part number is E5071-6x501, E5071-6x551, or E5071-6x561
- Firmware version is A.03.60 or below

#### **Parts Required**

<b>P/N</b>	<b>Description</b>	<b>Qty.</b>
E5071-69571 (or E5071-66571)	A1 Source board module	1

Update the E5070A operating system image referring to the service note E5070A-06B. Then, replace A1 module and perform the appropriate post repair procedures referring to the E5070A/E5071A service manual chapters 6 and 7.

At last, attach the last page of this note to the unit to inform the customer that the HDD is changed and a firmware version is updated.

**When customer's E5070A/71A shows the any of typical symptoms in "Situation" part, and the unit's original configurations are as the followings:**

- A1 source board part number is E5071-6x501, E5071-6x551, or E5071-6x561
- Firmware version is A.03.62 or higher

#### **Parts Required**

<b>P/N</b>	<b>Description</b>	<b>Qty.</b>
E5071-69571 (or E5071-66571)	A1 Source board module	1

Confirm that the E5070A is equipped with the power-on test limit file and the internal test rev A.05.00 or later. "Perform initial setting for the E5070A" section of the service note E5070A-06B includes the procedures to install these two files.

Then, replace A1 module and perform the appropriate post repair procedures referring to the E5070A/E5071A service manual chapters 6 and 7.

**When customer's E5070A/71A has a failure in A1 module, and the A1's part number is as the followings:**

**E5071-6x571 or a higher part number version.**

The unit is not the eligible one for this service note, because it has already the latest A1 module and firmware.

**Retrofit Time**

Assembly Time:	0.5 hour
Adjustment Time:	0.5 hour
Performance Tests Time:	1.0 hour
Total Time:	2.0 hour

## Note to Customer: Firmware Upgrade Notice

Your unit is recognized as being eligible for failure correction under the Agilent Technologies service note E5070A-05A. Therefore, we changed the source board module to the latest model to improve reliability, and this required firmware update to Rev.A.03.62 in order to assure correct operation of the new source board.

This firmware update adds some new features as listed below, and it might require some changes in operational procedures at your location; however, this firmware update is necessary for using the latest source board module. Please refer to the latest user's guide for detailed information on the new features. Thanks for your understanding.

Agilent Technologies

You can download the latest user's guide by going to [www.agilent.com/find/ena](http://www.agilent.com/find/ena) and then selecting "Manuals & Guides" from the "Key library information" menu.

### **Additional features from Rev.A.03.60**

No new features

### **Additional features from Rev.A.03.54 \***

- Add Auto Power Range set function

### **Additional features from Rev.A.03.53**

Change of A.03.54, and

- Add Initial Source Port Control feature

### **Additional features from Rev.A.03.50**

Changes of A.03.53, and

- Maximum output power limitation (-10 dBm) \*
- Add "SDEV" to CALC:SEL:FUNC:TYPE command parameter

### **Additional features from Rev.A.03.01**

Changes of A.03.50, and

- VBA Usability Enhancement
- ECal Functionality Enhancement
- Embedding/De-embedding Enhancement

### **Additional features from Rev.A.03.00**

Changes of A.03.01, and

- Add system characteristic impedance (Z0) set feature

\* Apply to only E507xA with A01 or A02 add power feature option.