S E R V I C E N O T E

SUPERSEDES: None

8711B Network Analyzer

Serial Numbers:
8711B Serial Numbers: US34400357 / US34400650 and GB3500100 / GB3500137
8712B Serial Numbers: US34400163 / US34400229 and GB3500100 / GB3500160

Failure to reach low end frequency on the 8711B and 8712B

To Be Performed By: Agilent-Qualified Personnel or Customer

Duplicate Service Notes: 8711B-01, 8712B-01

Parts Required:
P/N: 0699-1420, Resistor 162 ohm, surface mount.

Continued

DATE: June 1996

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

MODIFICATION RECOMMENDED

ACTION CATEGORY:	☐ IMMEDIATELY ■ ON SPECIFIED FAILURE ☐ AGREEABLE TIME	STANDARDS: Labor Hour	
LOCATION CATEGORY:	■ CUSTOMER INSTALLABLE ☐ ON-SITE ■ SERVICE CENTER	SERVICE INVENTORY: ☐ RETURN ☐ SCRAP ■ SEE TEXT	USED PARTS: ☐ RETURN ■ SCRAP ☐ SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	AGILENT RESPONSIBLE UNTIL: June 1998	
AUTHOR: JV	ENTITY: 5320	ADDITIONAL INFORMATION:	

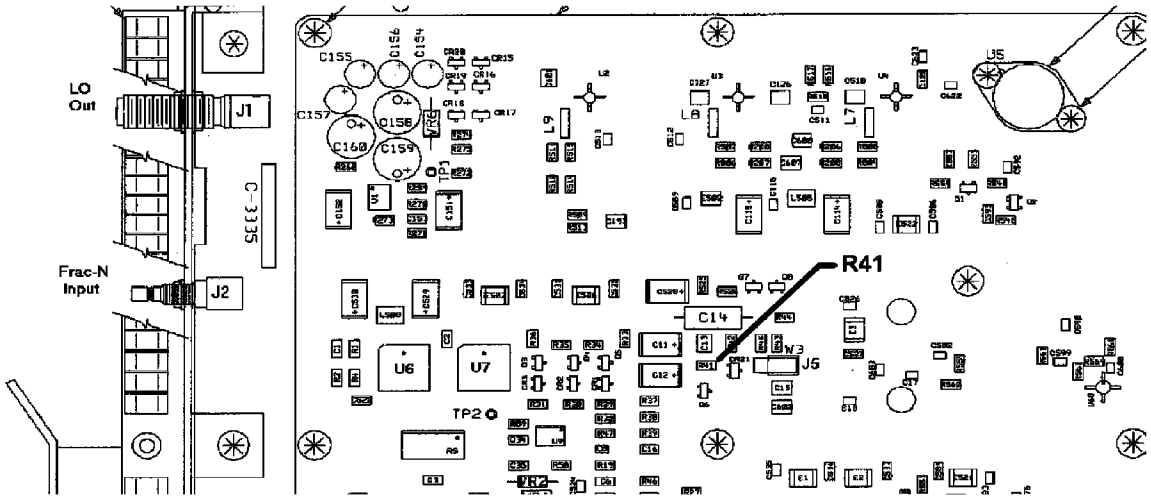
Agilent Technologies

Situation:
Several 8711B and 8712B customers have reported that they have improper transmission or reflection response somewhere below 50 MHz. The failure almost always arises when in the “dither” sweep mode. It may also appear in the “spur-avoid” mode. In rare cases has it been seen in normal sweep mode. Analysis of this failure has determined that a recent change to a circuit design has prevented the VCO from obtaining the required low end frequency of 300 kHz. Depending upon the individual VCO, the minimum frequency obtainable could be as high as 50 MHz.

To verify if any analyzer has this problem, set up a .3 to 100 MHz, 10 second sweep, on the instrument in question. Turn on the dither mode by pressing [MENU], (Spur Avoid Options), (Dither). On a spectrum analyzer that has been set to the same frequency span, verify the RF output is really sweeping over the full range of .3 to 100 MHz. If it cannot obtain the full range, or if it seems to have spurious oscillations, then this service note procedure must be performed. Turn off dither to see if the problem also exists in normal operation; if it does, then the analyzer must also be re-calibrated after the modification below is performed. All instruments in the above range should have this modification performed regardless of the outcome of this test. Some units with a “GB” prefix within the above range may already have the proper modification installed, but all units within this range should be checked.

Solution/Action:
To solve this problem, a simple resistor change must be made to the A4 Source board (p/n 08712-60004). Please note that this resistor is a surface mount component, located under a metal shield, so extra caution will need to be exercised. Because these resistors are both fragile and inexpensive, it is recommended that several extra resistors be ordered. To implement this modification, change resistor A4R41 from its current value of 287 ohms (see note below) to 162 ohms (P/N 0699-1420). See figure for the exact location.

Note:
Many of these instruments may have an existing resistor value of 121 ohms instead of 287 ohms. This may cause a similar problem. In either case, replace the existing value with the 162 ohm resistor.



Unsolder A4R41 and replace it with the 162 ohm resistor. Use extreme caution since this is a surface mount component. Although probably not necessary, it is generally a good idea to redo adjustments #104 through #109. If the problem existed even when the analyzer was not in dither mode, then performing these adjustments is definitely required.

After the resistor has been replaced, permanently mark the front of the A4 board shield with “Modified per 8711B-01.” It may also be helpful to mark the rear panel similarly.

This change should be made to all 8711Bs and 8712Bs, within the above serial number range, upon failure or as they are encountered.