MARIO TALBOT

5343A-30A

S E R V I C E N O T E

SUPERSEDES 5343A-30

HP 5343A Microwave Frequency Counter 350 MHz Miscount Problems

SERIAL NUMBERS: 0000A00000/9999A99999

DUPLICATE NOTES: 5342A-59

TO BE PERFORMED BY: HP/Qualified Personnel

Situation:

A common failure mode of the HP 5342A and HP 5343A is to miscount by ±350 MHz when measuring high frequencies (typically 18 GHz and above). Troubleshooting this failure can be difficult because it is usually intermittent and related to an open ground loop somewhere in the instrument. This problem typically occurs in older units.

This service note concentrates on possible remedies as opposed to identification of this failure mode.

Solution:

Here are some possible fixes to this failure mode that have proved successful. Suggestions 1 through 4 mention service notes that have been written in the past about the 350 MHz miscount problem. Even though they apply to specific serial numbers, all units should be checked for compliance. *Tables 1* and *2* at the end of this service note provide a consolidated listing with affected serial numbers of these service notes.

1. Duplicate service notes 5342A-41B and 5343A-19A address a 350 MHz miscount problem due to plastic extractors on the A4, A5 and A8 assemblies. The plastic extractors should be replaced with ground screws in order to complete the ground loop. (Refer to *Table 1* and *Table 2* for the applicable serial numbers.)

DATE **17 APRIL 1991**

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

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2. Duplicate service notes 5342A-42A and 5343A-20A address a 350 MHz miscount problem due to insufficient RF sheilding on the A26 and A28 assemblies. (Refer to *Table 1* and *Table 2* for the applicable serial numbers.)

3. Service note 5343A-7 addresses a 350 MHz miscount problem that really applies to HP 5343As prior to series prefix 2026A, even though the service note indicates all serials. A terminal ground lug is required between the HP 5343A main casting and the A26 Sampler Driver to complete an open ground loop.

4. Service note 5343A-8 addresses a 350 MHz miscount problem between 18 GHz and 26.5 GHz for serial prefixes prior to 2026A. In this case, the miscounts are caused by unequal levels between the Main and Offset VCOs.

If the 350 MHz miscount still persists, then try each suggestion below. They are listed by ease of performance. Each suggestion is known to correct 350 MHz miscounts, so it is worth taking the time to check each one.

5. Verify that the input signal is making a good and proper connection at Input 1.

6. Verify that cable A5W1 is not crimped or scratched by the RF Cavity cover. This cable connects from the A5 assembly, which is covered, to the A26 Sampler Driver, which is not.

7. With the RF Cavity cover removed, verify that the grounding screws on the A3, A4, A5, A8 and A25 assemblies make good contact with the main casting and are not loose. These grounding screws are located at the top of each assembly.

8. Verify that the ground fingers on the A4, A5 and A8 assemblies have not broken off. These fingers are located on the sides of the assemblies. Service note 5342A-11B describes procedures on how to replace them as well as an illustration of their location. This service note also applies to the HP 5343A.

9. For the HP 5343A, verify that the terminal ground lug is securely attached between the main casting and the A26 Sampler Driver assembly. Service note 5343A-7 provides a clear picture of this location. (It is critical that this ground lug be securely attached.)

10. Check for a loose cover or any missing screws on the A26 Sampler Driver, the A28 1st IF Preamp Assembly and the U1 Sampler.

11. Check for loose connections, bent pins and metal flakes at the following connections:

    a. between Input 1 and U1 Sampler.

    b. between Input 1 and U2 Sampler, if option 002 is installed.

    c. between U2 Sampler and U1 Sampler, if option 002 is installed.

    d. between U1 Sampler and A28 and A26 assemblies.

12. As a last resort, try replacing the A26 Sampler Driver and/or the A8 Main VCO.