



Ken Eckert <eckertkp@gmail.com>

Re: [HP-Agilent-Keysight-equipment] 21.4 Mhz I.F. Assembly Failure of H.P./Agilent ESA E44xx series Spectrum Analyzer

johncharlesgord via Groups.io <johngord@verizon.net@groups.io>

Fri, Jan 17, 2020 at 1:51 PM

Reply-To: HP-Agilent-Keysight-equipment@groups.io

To: HP-Agilent-Keysight-equipment@groups.io

John,

I had a similar problem on an E4411B. In the end, it was a bad relay in one of the RBW stages. No smoke or obvious damage, the relay just did not work. I don't remember how I found it; probably by attaching temporary probe connections to the various RBW stages until one didn't behave like the others. I replaced the relay with a similar (but not identical) unit from Digikey.

--John Gord

On Fri, Jan 17, 2020 at 01:01 PM, John Annison wrote:

Hi everyone.....

I have a perplexing problem I am trying solve, so this may be long and I hope someone has run into this problem or perhaps one of the H.P./Agilent people may lead me in the right direction.

This would apply to one of the ESA-E4402B thru E4407B series spectrum analyzers.

I do have all the Service, Cal, and CLIPS documentations so that is not the issue. I have a correctly working E4405B and E4407B with ONLY one correctly working 21.4 Mhz I.F. (A3) assembly.

The other 21.4 Mhz. I.F. assembly initially had a relay coil shorted to Return in the 3rd. Filter Pole, which caused the series resistor to burn open. This was repaired and all involved circuits were found to be not damaged. This circuit now functions correctly.

The problem is the E4405B or 07B will not complete the "align now" function with the still defective I.F. assembly. The good I.F. assembly always completes the test with both E4405B and 07B units.

What I have noticed is that:

The good I.F. unit goes through three iterations of calibrating (Align Now) of I.F./R.F. sequences and completes correctly.

The bad I.F. unit goes through one iteration of calibration and stops. The display goes back to "System, Alignments, Align Now, All required now"

The overall 21.4 Mhz. I.F. gain for both (A3) units are within one DB of each other, so gain is not the issue.

If there is anyone that knows the answer to this issue, I sure would appreciate the help. A procedure to test the A3 unit would be of help.

Thanks.

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