

LOCAL 08:17:16 [?] 18 Sep 1997

PRN El Az SS PRN El Az

```
GPS 1PPS Synchronized to UTC
10 26 158 30
             1 12 273
14 56 39 99
            3 17 319
                           ANT DLY 0 ns
16 26 191 20 *25 20 41
                            Position
22 42 304 114
                          MODE
                                Hold
26 55 176 38
31 59 358 129
                         LAT
                               N bla-bla-bla
32 46 76 135
                         LON
                               W bla-bla-bla
                      HGT
                                +20.50 m (MSL)
ELEV MASK 10 deg *attempting to track
HEALTH MONITOR ...... [ ERROR ]
E-113> DIAG:LOG:READ:ALL?
Log status: 3 entries
Log 001:20001016.16:16:27: Log cleared
```

Log 002:20001016.16:22:00: GPS reference valid at 19970918.03:27:55

Have you monitored the adjust voltage to the OCXO as it warms up and tries to lock?

Log 003:20001016.20:37:02: Position hold mode started

« Last Edit: May 06, 2017, 01:46:17 pm by Samogon »

Re: HP 58503A EFC error wont lock

« Reply #1 on: May 05, 2017, 03:47:49 am »

Logged Report to moderator

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□ TheSteve

Supporter





Posts: 3490 Country:

Living the Dream <u>...</u> Q



VE7FM

Re: HP 58503A EFC error wont lock

Say Thanks

Sav Thanks

Quote

Reply

Quote

edpalmer42 Super Contributor





Posts: 2060 Country: 🛂 <u>...</u> Q

« Reply #2 on: May 05, 2017, 04:22:06 am »

What's the response to the :DIAG:ROSC:EFC:REL? command? If its near 100 or zero then either your OCXO has drifted with age to the point where its frequency can't be corrected or maybe it has a fault with the oven. Replacement or major surgery is required.

Which oscillator is in yours?

Ed

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Reply

■ Samogon

Frequent Contributor



Posts: 457



« Reply #3 on: May 05, 2017, 05:28:43 am »

Thank you guys, will check it tomorrow.

Re: HP 58503A EFC error wont lock

When i was measuring 10MHz output without antenna it was 9999840Hz compared with well known rubidium source used as reference frequency for agilent 53150A.

Report to moderator Logged

Country:

edpalmer42

Super Contributor



Posts: 2060 Country: [1]



Re: HP 58503A EFC error wont lock

« Reply #4 on: May 05, 2017, 05:43:27 am »

Say Thanks

Say Thanks

Reply

Quote

Quote

Quote from: Samogon on May 05, 2017, 05:28:43 am

Thank you guys, will check it tomorrow.

When i was measuring 10MHz output without antenna it was 9999840Hz compared with well known rubidium source used as reference frequency for agilent 53150A.

160 Hz doesn't sound like drift. It's about the right error for a dead oven on an SC-cut oscillator.



Report to moderator

Samogon

Frequent Contributor





Posts: 457 Country:



Samogon

Frequent Contributor





Posts: 457







Super Contributor



Posts: 2060 Country: [19]



□ Samogon

Frequent Contributor



Posts: 457 Country:



Re: HP 58503A EFC error wont lock « Reply #5 on: May 05, 2017, 06:38:11 am »

Say Thanks

Reply Quote

Is it repairable or needs to be changed?

Logged Report to moderator



Say Thanks

Reply Quote

Quote from: edpalmer42 on May 05, 2017, 04:22:06 am

What's the response to the :DIAG:ROSC:EFC:REL? command? If its near 100 or zero then either your OCXO has drifted with age to the point where its frequency can't be corrected or maybe it has a fault with the oven. Replacement or major surgery is required.

Which oscillator is in yours?

Ed

Here is what it reports +9.99969E+001 Oscillator is: hp 10811-60159

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The following users thanked this post: sgi199



Re: HP 58503A EFC error wont lock « Reply #7 on: May 05, 2017, 03:20:13 pm »

Say Thanks

Reply

Quote

Almost anything can be repaired if you work hard enough at it.

There's lots of info online on the 10811 oscillator, including full schematics, so repair is possible. The 60159 version is a bit rare, though. I see that one is for sale on ebay. It looks like the unit is soldered shut. That will make repair a pain. Unsoldering oscillators is a bit of an art. Do it wrong and you overheat the interior.

The first step is to pull the oscillator and power it up on the bench so you can do some testing. Check obvious things like current draw, frequency while warming up, response to EFC voltage, etc. Confirm that the fault is in the oscillator rather than the 58503A. You mentioned power supply problems with the 58503A. Maybe the oven isn't getting any power.

Ed

Report to moderator

Re: HP 58503A EFC error wont lock [FIXED]

« Reply #8 on: May 06, 2017, 06:55:58 am »

Sav Thanks

Reply

Quote

There was +12V regulator dead on main board which was supplying power to oven with conjunction of -12V they were supplying 24V of OCXO.

Thank you guys



hp-58503A.JPG (84.43 kB, 640x480 - viewed 192 times.)

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edpalmer42

Super Contributor





Say Thanks

Reply

Quote



Posts: 2060 Country: [19] <u>...</u> Q

□ Samogon

Frequent Contributor



Posts: 457 Country: <u>₽</u> 🖂 🗘



Super Contributor



Posts: 2060 Country: <u>...</u> 💭

That looks more like it! What's the :DIAG:ROSC:EFC:REL? command give now? You can expect it to move rather quickly for a few weeks and then gradually slow down over the coming months.

Ed

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Say Thanks

Say Thanks

Re: HP 58503A EFC error wont lock [FIXED]

« Reply #10 on: May 06, 2017, 05:50:21 pm »

It is +8.68492E+001



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Quote

Re: HP 58503A EFC error wont lock [FIXED]

« Reply #11 on: May 06, 2017, 06:28:07 pm »

So that's 86.8%. Watch it to see which way it goes.

My Z3801A (a cousin to your 58503A) started in Oct. 2012 at about 51.2%. It's now about 55.5%. The numbers aren't directly comparable to yours because mine has a different OCXO, but you should be good for a long time. If your oscillator happens to age down instead of up, you'll never have to worry about it.

Another piece of data you might want to record is the response to the :DIAG:LIF:COUNT? command. This tells you how long your receiver has been running since it came out of the factory. Each count = 3 hours of runtime.

Ed



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The following users thanked this post: Samogon



Re: HP 58503A EFC error wont lock

« Reply #13 on: May 06, 2017, 07:05:05 pm »

Only 3.5 years of runtime? Barely broken in!

« Reply #12 on: May 06, 2017, 06:46:32 pm »

30864 hours.

+8.67462E+001 going down @

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Say Thanks

Say Thanks

SEND THIS TOPIC

■ Samogon

Frequent Contributor



Posts: 457 Country: <u>₽</u> 🖂 🗘

edpalmer42

Super Contributor



Posts: 2060 Country: [1]



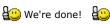
<u>...</u> Q

Pages: [1] Go Up

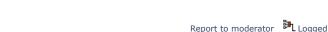




Ed



[FIXED]



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