



Product:	Commodity Intelligence Quarterly (CIQ)	
Description:	<ul style="list-style-type: none"> • 12 month pricing forecast • 12 month lead-time forecast • Design and Sourcing Activity Index • Data from 500 companies, 30 analysts and billions of marketplace signals 	 <u>Subscribe to CIQ</u>

EEVblog Electronics Community Forum

A Free & Open Forum For Electronics Enthusiasts & Professionals

Hello volvo_nut_v70

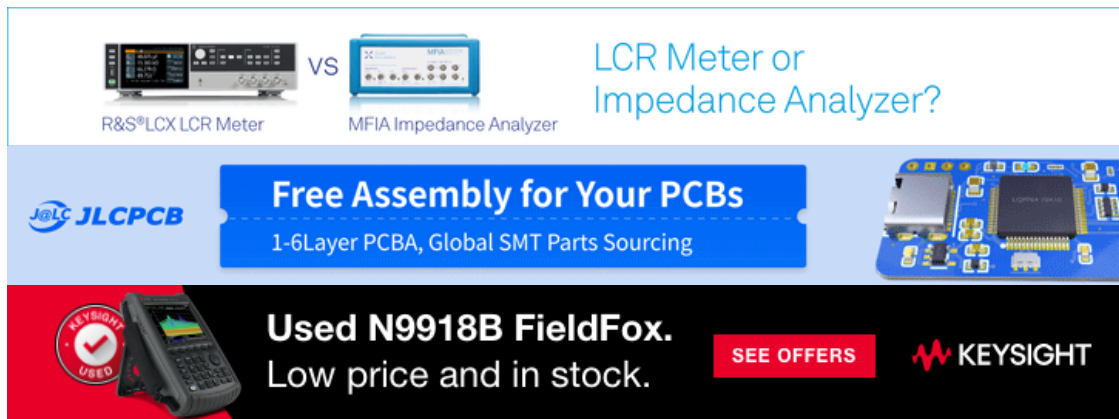
Show unread posts since last visit.
Show new replies to your posts.
July 27, 2022, 06:54:44 pm

This topic

News:
No news is good news. Be excellent to each other.

- Home
- Help
- Search
- Profile
- About us
- My Messages
- Calendar
- Links
- Members
- Logout

EEVblog Electronics Community Forum » Electronics » Repair » HP/Symmetricom 58503A/Z3805A GPS Time and Frequency Reference Receiver Repair x2



Advertisement for JLCPCB (Free Assembly for Your PCBs) and Keysight (Used N9918B FieldFox).

« previous next »

Pages: [1] **Go Down**

- REPLY
- NOTIFY
- MARK UNREAD
- SEND THIS TOPIC
- PRINT
- SEARCH

Author

Topic: HP/Symmetricom 58503A/Z3805A GPS Time and Frequency Reference Receiver

volvo_nut_v70 and 0 Guests are viewing this topic.

Ordinaryman1971

Frequent Contributor



Posts: 309

Country:



HP/Symmetricom 58503A/Z3805A GPS Time and Frequency Reference Receiver Repair x2

Say Thanks Reply Quote

« on: August 27, 2020, 07:00:22 pm »

Hi all,
 Wanted to share my journey fixing two of HP/Symmetricom 58503A.
 I have two of those units that are broken. Both of them have bad oscillators which are in my case hp 10811-60212 but another member had 10811-60159 so I guess they are interchangeable.
 When I power the units up they voltage regulators powering the heaters are getting really hot and the units draws... 1.5A.
 When the heaters are disconnected the current goes down to about .5A
First of the units fails the self test, fails also a oxco and efc.. That's what I see in SatStat before it fills with errors so it disables updates.
 When I look at the log I see "invalid header" messages.

reply: -113,"Undefined header"
 reply: -102,"Syntax error"
 Sent: *IDN?
 reply: -113,"Undefined header"

----- Receiver Status -----
 SYNCHRONIZATION [Outputs Invalid]
 SmartClock Mode _____ Reference Outputs _____

```

Locked                TFOM  9      FFOM  3
Recovery              1PPS TI --
Holdover              HOLD THR 1.000 us
>> Power-up: OCXO warm-up      Holdover Uncertainty _____
Predict --

```

```

ACQUISITION ..... [ GPS 1PPS Invalid ]
Tracking: 0 _____ Not Tracking: 8 _____ Time _____
PRN  EI  Az      LOCL GPS 06:02:23 [?] 01 Jan 1998
* 1  --  ---    GPS 1PPS Invalid: not tracking
* 6  --  ---    ANT DLY 0 ns
* 9  --  ---    Position _____
*20  --  ---    MODE Survey: 0% complete
*22  --  ---    Suspended: track <4 sats
*24  --  ---    INIT LAT N xx:03:04.414
*25  --  ---    INIT LON W xx:53:37.933
*28  --  ---    INIT HGT +194.28 m (MSL)
ELEV MASK 10 deg *attempting to track
HEALTH MONITOR ..... [ ERROR ]
Self Test: Err Int Pwr: OK Oven Pwr: OK OCXO: Err EFC: Err GPS Rcv: OK

```

The second unit fails self test, oxco and gps receiver. The serial link is also going up and down, and often I'm getting.. no response from the unit.

Sent: *IDN?
 reply: HEWLETT-PACKARD,Z3805A,3542A0xxxx,3543B-A

----- Receiver Status -----

```

SYNCHRONIZATION ..... [ Outputs Invalid ]
SmartClock Mode _____ Reference Outputs _____
Locked to                TFOM  9      FFOM  3
Recovery              1PPS TI --
Holdover              HOLD THR 1.000 us
>> Power-up: OCXO warm-up      Holdover Uncertainty _____
Predict --

```

```

ACQUISITION ..... [ GPS 1PPS CLK Invalid ]
Satellite Status _____ Time _____
Tracking: 0      Not Tracking: 0      LOCL GPS 19:00:00 [?] -- -- -- --
1PPS CLK Invalid: not tracking
ANT DLY 0 ns
Position _____
MODE Survey: 0% complete
Suspended: no track data
INIT LAT 0:00:00.000
INIT LON 0:00:00.000
ELEV MASK 0 deg      INIT HGT +0.00 m (MSL)
HEALTH MONITOR ..... [ ERROR ]
Self Test: Err | Int Pwr: OK Oven Pwr: OK OCXO: Err EFC: OK GPS Rcv: Err


```

Wanted to ask if anybody has any experience fixing the oscillators and I guess heaters on them. When I connect the oscillators themselves... without the heaters they seem to be working. Maybe somebody has those hp10811-60159 OXCOs so I can just get one of them for testing. Second, wanted to know what kind of gps receiver I should get to replace the faulty one or is there a way to fix it? Third, what would be a problem with communication over serial... should I see and how to see what are the serial settings on those devices. What would be a problem with sending commands. It does look like a firmware may be corrupted. Anybody having copy of the firmware I may use? There is command in SatStat to upgrade firmware but I have programmer and adapter, can burn them if needed.

« Last Edit: August 28, 2020, 04:10:15 pm by Ordinaryman1971 »

Report to moderator  Logged

 **Ordinaryman1971**
 Frequent Contributor


 **Re: HP/Symmetricom 58503A/Z3805A
 GPS Time and Frequency Reference
 Receiver Repair x2**
 « Reply #1 on: August 27, 2020, 07:24:27 pm »

Say Thanks Reply Quote



Posts: 309
Country:

After several tries I've got the response from the first unit:
Sent: *IDN?
reply: -113,"Undefined header"
Sent: *IDN?
reply: HEWLETT-PACKARD,58503A,0,3704-A
so... it's missing serial.....
Corrupted FW?

« Last Edit: August 28, 2020, 03:18:58 am by Ordinaryman1971 »

[Report to moderator](#)

jfphp
Regular Contributor

Posts: 225

**Re: HP/Symmetrcom 58503A/Z3805A
GPS Time and Frequency Reference
Receiver Repair x2**
« Reply #2 on: August 28, 2020, 02:08:57 pm »

[Say Thanks](#) [Reply](#) [Quote](#)

Are you sure that this old HPIB box knows the query IDN ? Most of my HP instruments don't respond to this question.

[Report to moderator](#)

Ordinaryman1971
Frequent Contributor



Posts: 309
Country:

**Re: HP/Symmetrcom 58503A/Z3805A
GPS Time and Frequency Reference
Receiver Repair x2**
« Reply #3 on: August 28, 2020, 04:02:37 pm »

[Say Thanks](#) [Reply](#) [Quote](#)

reply: HEWLETT-PACKARD,58503A,0,3704-A
reply: HEWLETT-PACKARD,Z3805A,3542A0xxxx,3543B-A

Communication is done over RS232 not GPIB, it also uses null modem cable.
You can see the response I hope... after several tries I've got the response from either machine.
So, yes it does work and it's a valid query.
I've started disassembly of one of the oscillators. Not sure how to remove the insulation from the inside...
It's very hard from aging... working on it.
So, the oscillators are marked as :10811-60212 one of them is LM9611, the other one LM9829. I guess those are the manufacturing dates.

« Last Edit: August 29, 2020, 03:31:51 pm by Ordinaryman1971 »

[Report to moderator](#)

Pages: [1] [Go Up](#)

[REPLY](#) [NOTIFY](#) [MARK UNREAD](#) [SEND THIS TOPIC](#) [PRINT](#) [SEARCH](#)
« previous next »

Share me



EEVblog Electronics Community Forum » Electronics » Repair » HP/Symmetrcom 58503A/Z3805A GPS Time and Frequency Reference Receiver Repair x2

[LINK TO CALENDAR](#)

Jump to:

Quick Reply

PCB PARTNER **IPCB-DFM - Intelligent PCB DFM**
Gerber Software Free To Use
[Learn More](#)

BUDGET MULTIMETERS !!
ANENG, UNI-T and more...

[EEVblog Main Site](#) [EEVblog on Youtube](#) [EEVblog on Twitter](#) [EEVblog on Facebook](#) [EEVblog on Library](#)

SMF 2.0.18 | SMF © 2021, Simple Machines
Simple Audio Video Embedder
SMFAds for Free Forums
XHTML RSS Mobile WAP2