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Author

Topic: **HP 58503B GPS standard upgrade** (Read 1570 times)

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jfphp
Regular Contributor

Posts: 225

HP 58503B GPS standard upgrade
« on: August 02, 2020, 10:43:41 am »

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Hello,
The performance of the GPS chip in the 58503B GPS standard is nowadays very poor : limited number of satellites, very bad sensitivity. Did anybody try to upgrade the GPS chip by using a more modern one ? Thank you.

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testpoint1
Frequent Contributor

Posts: 292
Country:

Re: HP 58503B GPS standard upgrade
« Reply #1 on: August 04, 2020, 01:56:31 am »

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what is GPS board type ?

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amc184
Regular Contributor

Posts: 110
Country:

Re: HP 58503B GPS standard upgrade
« Reply #2 on: August 04, 2020, 06:11:11 am »

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It uses some king of Motorola Oncore, maybe a UT or GT. There's not really anything you'll be able to drop right in that's much more modern, as they use their own format. Someone did some work towards this end on this blog:



<http://syncchannel.blogspot.com/>

What are you looking to get out of an upgrade? A better GPS receiver will certainly allow it to lock faster, but these devices are meant to be left powered up, so that doesn't seem too important. It might track more satellites, but I'm not sure if that will make the frequency output more accurate. For sensitivity, what kind of antenna are you using? On my similar unit I'm using a CGDSGPSTMG20N which works well, it's able to consistently track 7 or 8 satellites.

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jpb

Super Contributor



Posts: 1769

Country:



Re: HP 58503B GPS standard upgrade
« Reply #3 on: August 04, 2020, 09:40:05 am »

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The Furuno GT-8736 board is designed as a Motorola replacement I think:
<https://www.buerklin.com/en/MULTI-GNSS-RECEIVER-GT-8736C/p/64S3196>
but I have no idea if this would work or not - you'd probably need to do a lot of customization.

I'd also think that the firmware would not take advantage of it anyway if it was written for a board tracking just 8 satellites or what ever it is. Better to concentrate on getting a good timing antenna when the older GPS board will perform well anyway if it has a good signal from a few a satellites.

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jfphp

Regular Contributor



Posts: 225



Re: HP 58503B GPS standard upgrade
« Reply #4 on: August 04, 2020, 10:13:52 am »

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Thank you for answers. The GPS receiver is on the second floor of the house and the antenna --Lucent 26db gain conical -- is just above in the attic, the cable passing through the ceiling : I guess that this system introduces a little delay-frequency shift following the way through the tiles. The roof was recently thermaly insulated with a thick layer of ? covered with a tiny aluminium foil. GPS out, no satellite seen... The GPS of my labtop receives, in less than 1 minute on the first floor, a dozen of satellites. I have observed on the field that receiving a dozen of satellites gives a more precise position than receiving 4 ...8.

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testpoint1

Frequent Contributor



Posts: 292

Country:



Re: HP 58503B GPS standard upgrade
« Reply #5 on: August 04, 2020, 02:57:34 pm »

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maybe is VP oncore chip (6 channel), just follow my SSR-6T GPS Receiver testing, since the CCP Virus, may delay 2-3 weeks.

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notfaded1

Frequent Contributor



Posts: 556

Country:



Re: HP 58503B GPS standard upgrade
« Reply #6 on: August 04, 2020, 04:44:30 pm »

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Is this the adaptor board that enables using newer GNSS hardware on old gear like this?

Bill

SSR-Series-Adaptor-Boards-for-UT-TN486.pdf (387.5 kB - downloaded 89 times.)

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.llll..llll.
notfaded1

testpoint1

Frequent Contributor



Posts: 292

Country:



Re: HP 58503B GPS standard upgrade
« Reply #7 on: August 05, 2020, 02:46:51 am »

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yes, but need to test it.

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TheSteve

Supporter



Re: HP 58503B GPS standard upgrade
« Reply #8 on: August 05, 2020, 04:02:55 am »

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A replacement GPS receiver would be nice. I would think many different ones could be used with some protocol conversion. Really though the best solution with a 58503B is an external antenna.



Posts: 3490
Country:
Living the Dream

VE7FM

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texaspyro

Super Contributor

Posts: 1407

Re: HP 58503B GPS standard upgrade
« Reply #9 on: August 06, 2020, 07:13:43 am »

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There is a company in France that makes a replacement receiver for the Z801. Sorry... I don't remember who... it was talked about on time-nuts.

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FriedLogic

Regular Contributor

Posts: 115
Country:

Re: HP 58503B GPS standard upgrade
« Reply #10 on: August 06, 2020, 06:52:20 pm »

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Heol Design did a replacement for some old Trimble receivers.

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texaspyro

Super Contributor

Posts: 1407

Re: HP 58503B GPS standard upgrade
« Reply #11 on: August 07, 2020, 06:06:52 am »

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Quote from: FriedLogic on August 06, 2020, 06:52:20 pm

Heol Design did a replacement for some old Trimble receivers.

Yes. that's the one I am thinking about. They are not cheap, but not overly expensive. \$250 range sticks in my mind.

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