

Installing Stratum II NTP server on RaspberryPi using SiRF STAR III gps

t=0x006c108 [0,0]

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Links

- <http://www.satsignal.eu/ntp/Raspberry-Pi-NTP.html>
- <https://www.raspberrypi.org/forums/viewtopic.php?t=191050>

Raspbian installation

```
root@ntpi:/home/pi# systemctl start ssh
```

```
root@ntpi:/home/pi# systemctl enable ssh
```

```
pi@ntpi:~ $ grep pps /boot/config.txt
dtoverlay=pps-gpio,gpiopin=18
```

```
pi@ntpi:~ $ sudo apt-get install pps-tools
```

```
# reboot, after it:
```

```
pi@ntpi:~ $ dmesg | grep pps
```

```
[ 30.331047] pps_core: LinuxPPS API ver. 1 registered
[ 30.331066] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giometti@lin
[ 30.352868] pps pps0: new PPS source pps.-1
[ 30.352966] pps pps0: Registered IRQ 178 as PPS source
```

```
root@ntpi:~# systemctl disable systemd-timesyncd
```

```
root@ntpi:~# systemctl stop systemd-timesyncd
```

```
pi@ntpi:~ $ hcitool scan
```

```
Scanning ...
```

```
00:02:78:10:A2:32 SJ GPS
```

```
root@ntpi:/home/pi# ppstest /dev/pps0
```

```
trying PPS source "/dev/pps0"
```

```
found PPS source "/dev/pps0"
```

```
ok, found 1 source(s), now start fetching data...
```

```
time_pps_fetch() error -1 (Connection timed out)
```

```
time_pps_fetch() error -1 (Connection timed out)
```

```
time_pps_fetch() error -1 (Connection timed out)
```

fail, gps module is powered off without bluetooth connection

```
root@ntpi:/home/pi# grep rfcomm /etc/rc.local
rfcomm bind rfcomm0 00:02:78:10:A2:32
```

fix pps signal from this GPS and test again

```
root@ntpi:/home/pi# grep pps /boot/config.txt
dtoverlay=pps-gpio,gpiopin=18,assert_falling_edge
root@ntpi:/home/pi# ppstest /dev/pps0 | head
trying PPS source "/dev/pps0"
found PPS source "/dev/pps0"
ok, found 1 source(s), now start fetching data...
source 0 - assert 1516805100.156350675, sequence: 70193 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.176368675, sequence: 70195 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.196339675, sequence: 70196 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.216363675, sequence: 70198 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.236378675, sequence: 70200 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.256385675, sequence: 70202 - clear 0.000000000, sequence: 0
source 0 - assert 1516805100.276392675, sequence: 70204 - clear 0.000000000, sequence: 0
```

This doesn't work, we need one event per second

```
# make pin 18 pull-down
root@ntpi:/home/pi# raspigpio set 18 ip pd

root@ntpi:/home/pi# grep pps /boot/config.txt
dtoverlay=pps-gpio,gpiopin=18,assert_falling_edge

root@ntpi:/home/pi# ppstest /dev/pps0
trying PPS source "/dev/pps0"
found PPS source "/dev/pps0"
ok, found 1 source(s), now start fetching data...
source 0 - assert 1517323262.001232132, sequence: 697469 - clear 0.000000000, sequence: 0
source 0 - assert 1517323263.001229640, sequence: 697470 - clear 0.000000000, sequence: 0
source 0 - assert 1517323264.001227157, sequence: 697471 - clear 0.000000000, sequence: 0
source 0 - assert 1517323265.001224685, sequence: 697472 - clear 0.000000000, sequence: 0
source 0 - assert 1517323265.788526615, sequence: 697474 - clear 0.000000000, sequence: 0
source 0 - assert 1517323266.001222221, sequence: 697475 - clear 0.000000000, sequence: 0

# works!
```

gpsd

```
pi@ntpi:~ $ sudo apt-get install gpsd
```

ntp server

```
root@ntpi:/home/pi# apt-get install ntp
```