

Bluetooth logging with GPS positioning.

This guide will show you how to log passing Bluetooth devices while you are out and about on foot, bike or in a car. You'll have the unique OUI of each Bluetooth device spotted, along with time, date & GPS co-ordinates.

Because each device we log has the GPS position that it was spotted at. You can then use a Windows PC to create a Google Earth/Maps KML file from the scripts output. So you can see exactly where each Bluetooth device was spotted along with a time & date stamp.

We assume that you have a PC running Ubuntu Linux. That you know the Root user password, and that you know how to enter commands in a terminal window. You'll need to install GPSD & GPSPipe commands from the command line or via the Package Manager in Ubuntu's System → Administration → Synaptic Package Manager.

The GPS module we've used plugs into the USB port and is a Qstarz BT-Q1000P model, which costs around £35 from eBay.

Let's begin. Plug the USB GPS module into the USB port & slide the switch on the side to the 'Log' position.

Now go to Applications → Accessories → Terminal → type `sudo su` at the \$ prompt and press return. Enter the password, which if you bought a package from us will be `password`.

At the # prompt now enter the command `dmesg` and press return. You should see something like 'cp2101 convertor now attached to ttyUSB0' – this is telling you that the GPS is routed through /dev/ttyUSB0, yours may be on a different port, maybe /dev/ttyUSB1 or USB2.

To bring up the GPS daemon type `gpsd /dev/ttyUSB0` at the # prompt and press return. Then type `gpspipe -r` and you should see the raw NMEA data going up the screen. Press Ctrl-C to stop it.

Next, we need to check that the bluetooth adapter is working correctly. Type `hciconfig hci0 up` to start the bluetooth device and then `hcitool scan` to run a scan for bluetooth devices.

Our scanner software consists of two scripts. The first is `btlocate` which takes the output from a `gpspipe` command and strips out only the bits we need. The main script is `btgps.sh` which loops around dumping out data to a file called `btGPSlogdate.csv`. To stop the script type `ctrl-c`.

Before you can run either `btlocate` or `btgps.sh` you will have to type `chmod +x btlocate` and also `chmod +x btgps.sh` at the # prompt – this will make both files executable.

Then to start the scan running type `./btgps.sh` at the # prompt.

Below you'll see various ways to sort & extract information from the a file. Remember Linux systems are case-sensitive.

Sort file and remove all duplicates on field one (OUI address) and show how many records.

```
sort -t, -u -k 1,1 all09.txt | wc -l
```

Sort file and remove all duplicates, putting result in newfile.txt

```
sort -t, -u -k 1,1 all09.txt >> newfile.txt
```

Go through newfile.txt and show how many TomToms were found

```
cat newfile.txt | grep '00:13:6C' | wc -l
```

Go through newfile.txt and isolate TomToms into file tomtom.txt

```
cat newfile.txt | grep '00:13:6C' >> tomtom.txt
```

Display the tomtom.txt file on the display

```
cat tomtom.txt
```

Search in a file for a particular TomTom OUI and send output to display

```
cat tomtom.txt | grep '00:13:6C:AB:CD:EF'
```

Search in a file for a particular TomTom OUI & output to newtomtom.txt

```
cat tomtom.txt | grep '00:13:6C:AB:CD:EF' >> newtomtom.txt
```

Display the contents of newtomtom.txt - shows sightings of that individual TomTom

```
cat newtomtom.txt
```

Remove an unwanted file

```
rm newtomtom.txt
```