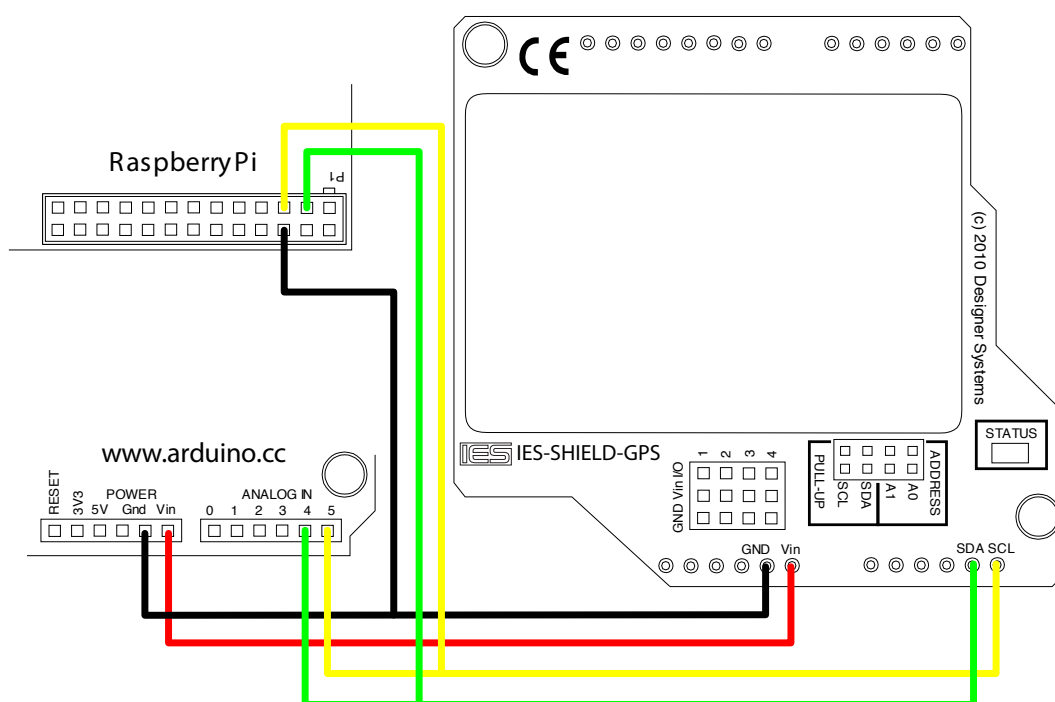# IES-SHIELD-GPS Quick Start Guide

Connection:

The IES-SHIELD-GPS should be connected to the Arduino or Raspberry-Pi boards using the supplied wires or plugged into the Arduino board after soldering pin headers into the IES-SHIELD-GPS board [not supplied]. The wiring diagram below shows the connections that need to be made:

QUICK START

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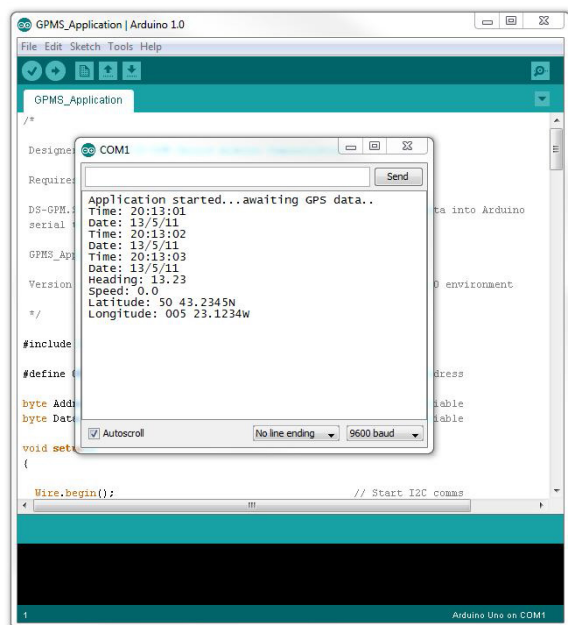## Arduino Demo Software Application:

After downloading and installing the open-source Arduino environment from http://arduino.cc/hu/Main/Software also download the IES-SHIELD-GPS application sketch from http://www.i-groupuk.com/downloads/GPM.S_Disk.zip and unzip and load this sketch file into the Arduino environment.
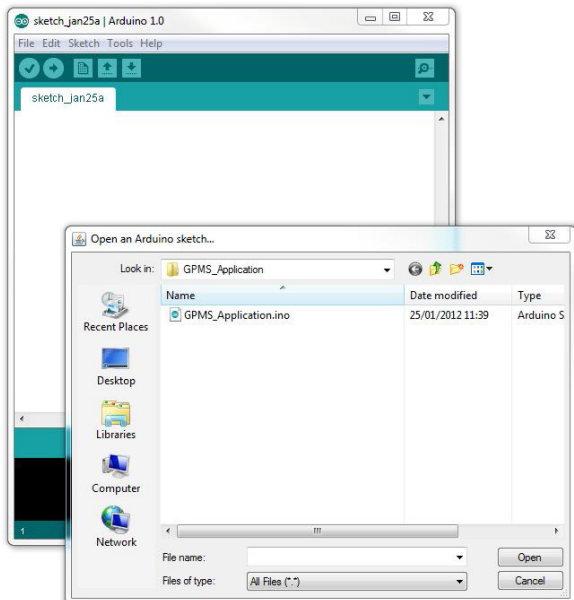
Connect the Arduino board to the computer using a USB cable and power up the board with an external power adaptor [external power is required to power the GPM]. Within the Arduino environment click on 'File' then 'Upload to I/O board'.

When the application has been uploaded click on 'Tools' then 'Serial monitor' to bring up the serial monitor window. If the program is running you should see in this window 'Application started...awaiting GPS data...' and then the 'Time' and 'Date' a couple of times, then 'Heading' and 'Speed' followed by 'Latitude' and 'Longitude'.

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If the GPM.S has not been left to collect GPS data, with a good view of the sky, the GPS location may not be current and it is therefore advisable to leave the unit connected and running for a period of time with a good view of the sky.

The status indicator on the GPM.S will flash when a good positional fix is found.

## Raspberry-Pi Demo Software Application:

After preparing an SD card with the latest release of the NOOBS (New Out Of Box Software) downloaded from http://www.raspberrypi.org/downloads start the Raspberry-Pi, log in (default username 'pi', password 'raspberry') and start the desktop using the command 'startx'.

Click on the start menu icon in the bottom left-hand corner of the desktop and select 'Internet' and 'NetSurf Web Browser'.

Navigate to http://www.i-groupuk.com/downloads/GPM.S_Disk.zip and confirm that you want to save this file. Close the NetSurf browser and click on the start menu icon, 'Accessories' and 'File Manager', you should then see the GPM.S_Disk.zip file listed under the pi directory as below:

Double click on this file to start the zip extractor and then go the 'Action', 'Extract' and click on the 'Extract' button as below:
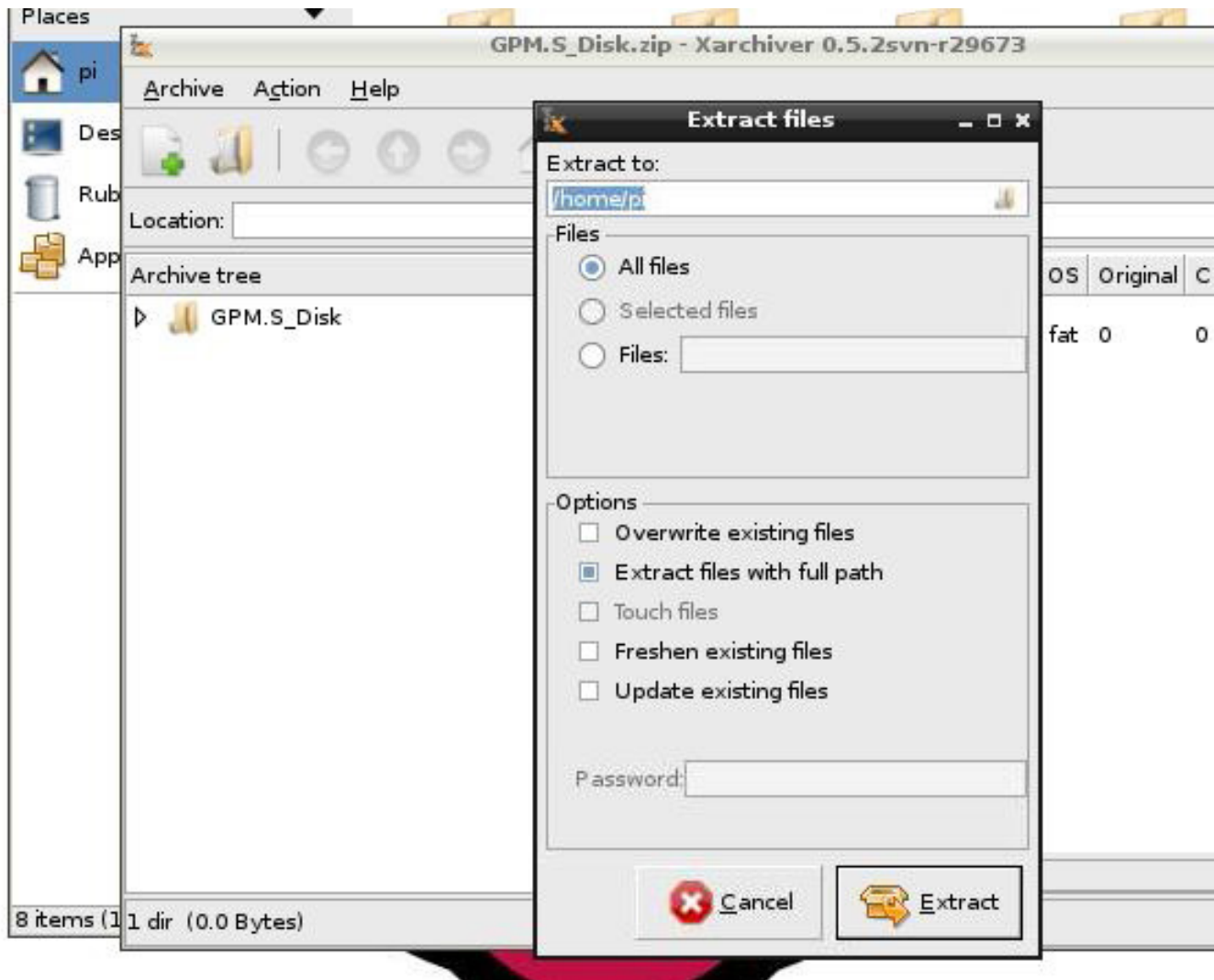
Close the XArchiver window and file manager window should now contain a directory called 'GPM.S_Disk'. Double click on this directory, then 'R-PI' and locate the 'GPM.S R-PI setup.txt' file and double click to open this file so that it can be read.

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You now need to start the LX Terminal window to run the demo program, so close the file manager window and double click the 'LXTerminal' icon on the desktop. Type in 'cd /home/pi/GPM.S_Disk/R-PI' and then 'ls' to list the files. You should now have a desktop that looks similar to the below:
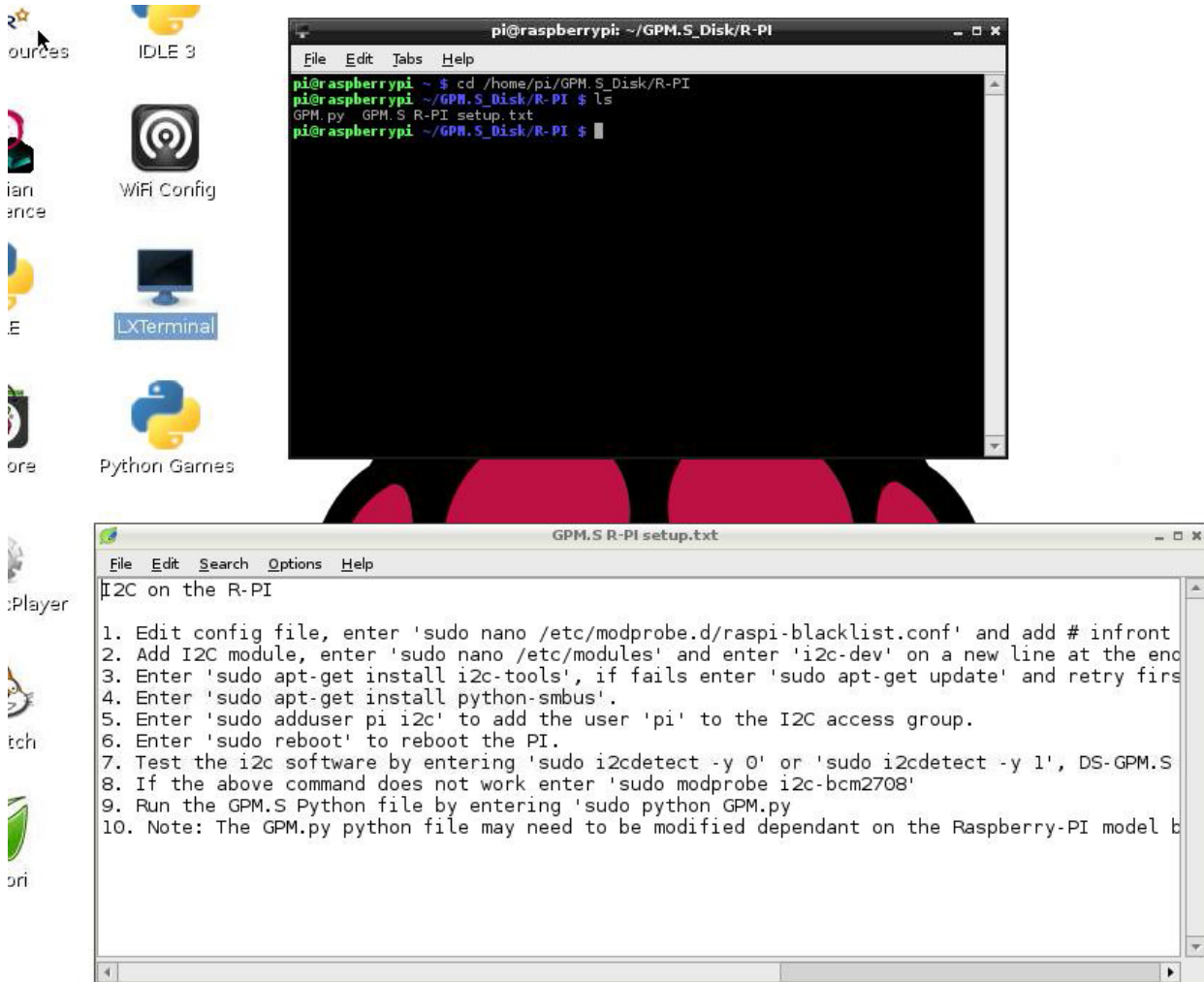
If you have not run any I^{2}C connected devices on your Raspberry-Pi before then follow the procedure listed in the GPM.S R-PI setup.txt file. A reboot will be required to bring you back to desktop.

Restart the LXTerminal, if required, and enter 'sudo python GPM.py' to start the DS-GPM.S application, you should then see the 'Time' and 'Date', then 'Heading' and 'Speed' followed by 'Latitude' and 'Longitude' displayed and repeated thereafter.

If the GPM.S has not been left to collect GPS data, with a good view of the sky, the GPS location may not be current and it is therefore advisable to leave the unit connected and running for a period of time with a good view of the sky.

The status indicator on the GPM.S will flash when a good positional fix is found.

The GPM.py program can be customised to display other registers within the DS-GPM.S by editing the GPM.py file using the command line 'sudo nano GPM.py'.

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For further information please contact IES

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.