Raspberry Pi Digital Display Monitor

GPS Receiver

ELM327 USB OBD interface



USB to Rasberry Pi

OBDII to Car

Power supply

Transformer/Convertor

12v car power socket



SD Card

Raspberry Pi

Via Card Reader

The Display screen will occupy a separate case from the Raspberry Pi, and will connect to the Pi board directly via a Driver Board. Although the Pi and Display will be in separate cases, both cases will be in close proximity of each other in order to connect both components.

The GPS receiver will be inside the Raspberry Pi case, interfacing with the Pi via a Breadboard. This will mean the GPS receiver will not be visible to the user.

The Pi will draw power from the 12v lighter socket from the car. Since the Pi runs on 5v power, a transformer or convertor is required in order to safeguard the Pi from power surges, overloads and spikes. The display will then draw its power from the Pi.

To communicate with the on board systems on a vehicle, the ELM327 USB interface is introduced. This will allow the Pi to communicate with the OBD-II interface on the car via USB using the ELM327. The ELM327 will draw its power from the OBD-II port on the car.

The data gathered during driving sessions will be stored on data files on the SD card. The SD card will then need to be read by a computer (via card reader) in order to upload the data files to the web server.