MiniGNSS Logger Guidance

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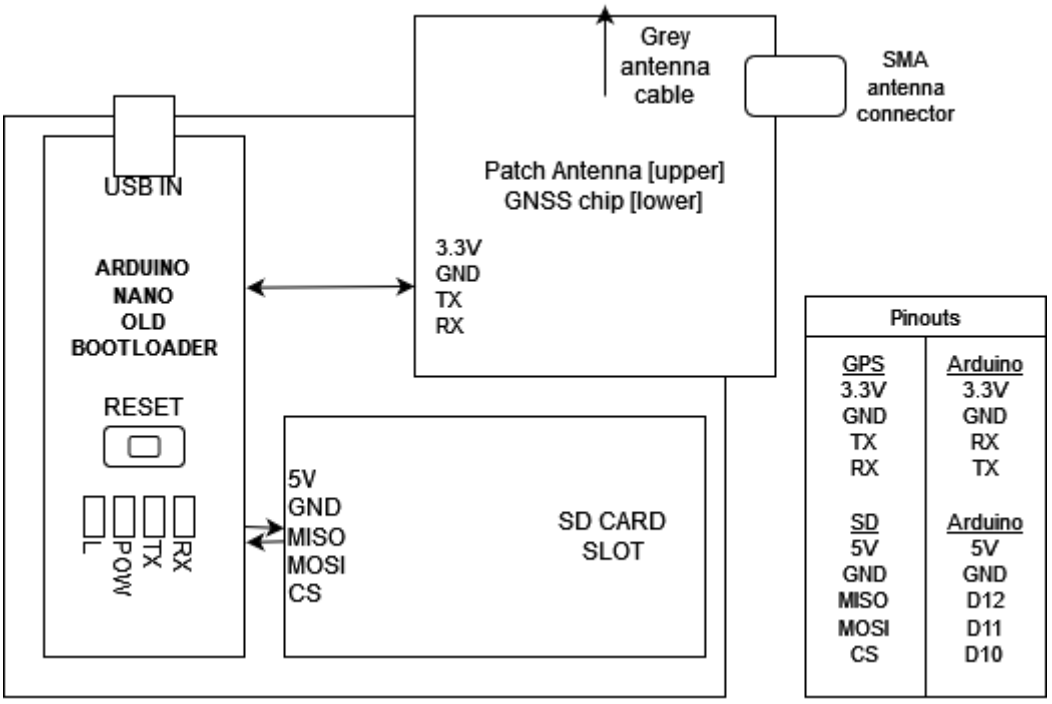
V1.0

1. Quick start

1. Check the SD card is formatted to FAT32 and inserted securely to the slot on the underside of the SD card adapter (this is on the underside of the SD card adapter between the adapter (blue) and the protoboard (green PCB). It's a standard push-click release
2. Check a GPS antenna is connected this is one of two options (only one should be connected at a time):
    a. UFL (I think) connector: Small antenna which is soldered onto the top side of the GPS, this is a pop connector, so it just pushes on or pulls off from the underside of the GNSS chip (grey wire, gold connector)
    b. SMA connector: Larger threaded connector sticking out the side of the GNSS chip, under the red protective cap when not in use. Fits the small antenna provided (for mounting higher up for example) but can be easily adapted to the BNC/TNC connections used on higher end antennas.
3. Provide 5 V power to the Arduino, preferably through the miniUSB connector on the board. (A direct supply may also be made through the VIN pin but this is less ideal)
4. Check
    a. "POW" LED is on and solid [Arduino has power]
    b. "RX" LED is blinking at 1 Hz [GNSS sensor is communicating with Arduino]
    c. "L" LED blinks rapidly [Arduino is writing the received data to the SD card]
    d. Solid red LED is visible on the underside of the GNSS chip
5. Move the logger (or antenna if using an external antenna) to an area with a clear view of the sky
6. Check for a second 1 Hz blinking LED on the GNSS chip [GNSS chip has enough satellites in view to give a position fix]



2. **Troubleshooting**
    a. Check the SD card was inserted before power on, the Arduino needs to lock file access and so currently hot swapping the SD card is now possible
    b. Check the SD card is correctly formatted. L blinking at 1Hz indicates an error communicating with the SD card.
    c. Check the antenna connector is secure, and the antenna has a clear view of the sky, no blinking led on the GNSS chip itself indicates poor GNSS reception, you can further troubleshoot this by looking at the NSAT and HDOP values in the data file
3. **Code**
   https://github.com/ejrobinson/MiniGNSSLogger
4. **Data format**
   TIME (YYYY/MM/DD HH:MM:SS.HHH),LATITUDE,LONGITUDE,NSAT,HDOP