

Connecting 'legacy' (15y +) NMEA devices to your Rpi

Shopping list

Such NMEA equipment (up to NMEA version 2.1) made use of RS232, a single ended transmission standard. This allows a single talker to be connected to a single listener (bothway - . each end can be talker or listener).

More modern equipment will use RS485 a differential transmission system, allowing single talker and multiple receivers).

So we will need this :



and NOT that :



Search for : "DB9 male RS232 to USB" on your favorite web shop. **Reject** any item mentioning "TTL" !

The RS232 plug of the adapter shall be a male one, to keep consistency with legacy PC. Such 9 pins plugs are called DB9.

Therefore, in addition we will also need a female DB9 9 pins plug :



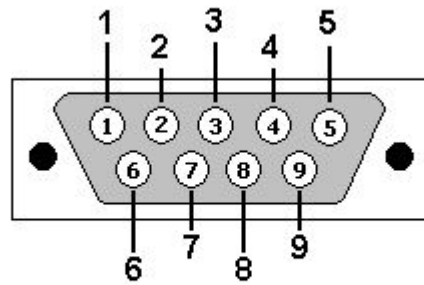
"DB9 FEMALE SOCKET CONNECTOR WITH HOOD SHELL" This is the solder type. A solderless type is also available

Overall budget on eBay : 12 € if you are in a rush, 3€ if you can wait for 6 weeks and buy from PRC

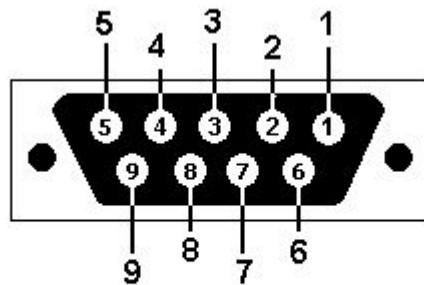
The RS232 **driver** is included in the Debian OS. Just forget it !

Numbering of the DB9 pins

No mystery here, just report to this drawings :



DB9: View looking into male connector



DB9: View looking into female connector

Simple as that !

Wiring the Female DB9 plug (with soldering) :

You will need a screwdriver and some soldering stuff: iron, solder, third hand, pliers, or a friend equipped with all that !

The dis-assembled plug :



The connections required :

- NMEA output signal to Adapter : pin n° 2
- NMEA input from adapter (if needed) : pin n°3
- NMEA Ground:pin n°5

Is it finished? **NO !**

The Rpi will want to control the RS232 link, then we need to confuse him by "looping" the control pins :

- Connect pins n° **1, 4 & 6** together ;
- Connect pins n° **7 & 8** together ;

Without those looped connections, the Rpi wouldn't see nothing ! (Those control signals are needed to establish the connection between both ends).

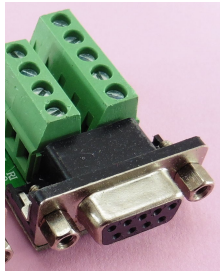
The final result should look like that :



Then you only need to re-assemble the DB9 plug shell. If the cable (or the wires) are loose in the collar just make a few turn around it (them) with adhesive tape. Painter's masking tape is perfect for that. Make enough turns to give the collar a firm grip on the cable (wires). Your plug will last longer !

Wiring the Female DB9 plug (without soldering) :

If soldering is out of reach for you, the good news is that you can find solderless DB9 plugs on eBay, by searching "db9 solderless female connector" :



Don't forget to loopback the control pins !

Last point : in OP tabs

At this point, start the NMEA sending equipment, connect both DB9, plug the USB cord into your powered USB hub,

- go to OP USB tab, click the "Add" button, select the new item (in my case 'QuiHeng electronics HL 340'), give it a new little name e.g. : devTTY_OP **mymea**,
- then go to OP NMEA tab, click "Add", select in the port list : 'TTY_OP mymea', give it a new little name e.g. : **"mymea"**, check the other fields : Serial, 4800 Bauds, in, no filters, and click the "OK" button.
- Don't forget to hit the "Apply" button in the right lower end corner.
- Then select the new line '**myneamea**', open the Diagnostic window and contemplate the NMEA sentences ...Done !