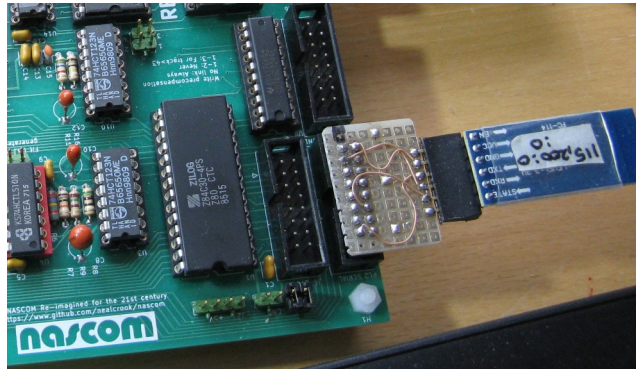# Bluetooth for Nascom

Go 'cordless' when transferring data from your Nascom 4 and P.C. This bluetooth link is easily built on a small piece of experimenters board. It protects your Nascom 4 from overvoltage and misconnection, whilst providing reliable serial data communications at 115kbaud (or whatever speed you prefer).


The connections to the HC-05 blutooth module, available from Ebay, are:-

- •VCC connects to +5V on the Nascom 4

- •GND connects to GND on the Nascom 4

- •RXD connects to TX_5V on the Nascom 4

- •TX connects to RX_5V on the Nascom 4

The signals RX_5V and TX_5V are 3.3V signals despite the names, so the HC-05 isn't damaged by them.

N.B. That's not the case on a Nascom 1 - 3, Signal RXD would need a potential divider or level shifter adding (see left) to prevent being over-volted. A 2N7001 or 2N7002 will do the job and is bidirectional, if need be. It might be as well to fit a level shifter to signal TX as well. Just make sure the 5V signals all face the Nascom 1-3 and the 3v3 signals face the HC-05. The HC-05 needs to be powered from a 3v3 supply, of course.
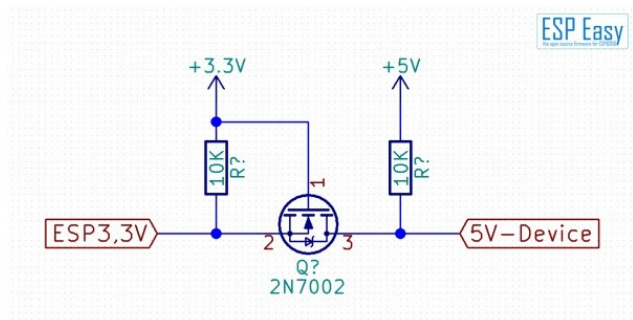
The HC-05 baud rate settings were changed to 115,200 baud, 8 bits no parity, 1 stop bit to match the Nascom 4 default. There are numerous ways to do that, enter 'HC-05 baud rate' in Youtube for some ideas.

Once installed, switch on the Nascom and the HC-05 should blink continuously to show that it's waiting to connect to your P.C.

The P.C. must be told to 'pair' with the bluetooth transceiver of the HC-05. The HC-05 will appear as a new serial port to the P.C. The port number needs to be checked – use Device Manager' in Windows to do that.

I use Tera Term in Windows as a terminal, setting the connection to 115200 baud, 8 bit data, 1 stop bit, no parity. Don't forget to set the port number from above. Once Tera Term connects, the HC-05 will blink twice periodically.

Here are a couple of uses for the P.C. ↔ Nascom serial link.

You can treat the P.C. just like a cassette tape recorder for loading and storing programs and data:-

Sending data to the P.C.

To receive from the Nascom, start a Log file to record incoming data to the disk. You can name it something like myfile.cas to remind you of the format.

N.B. Don't forget to check 'Binary' and uncheck 'Append' in the Log popup.

Click 'Save' and the P.C. will be waiting for the Nascom data.

You can use the 'W' command under Nassys or whatever is needed in your application, data is sent to the P.C.

When done, don't forget to set 'Stop Logging' in Tera term to close the file.

Receiving data from the P.C.

With Nassys, use the R command so that the Nascom is waiting for the data.

Select 'Send file' in Tera Term and choose the file to send.

If the Nascom mis-reads some of the data, it maybe that the P.C. is sending it too fast. (Nassys was not really designed to cope with 115kbaud) If that's the case, you can slow down transmission in Tera term with 'Setup' → 'Serial Poert' → Transmit delay. Set the msec/char to 1 usually fixes it.

Remote control of Nassys or Nas-Forth

Nassys, by default, is always ready to input characters from the keyboard or serial input port. To enable data both ways, in Nassys modify memory location 0C73. The default value is 79 – change it to 74. This changes the list of devices Nassys outputs to and includes the serial output port.

After the change, as well as typing commands to Nassys via the Tera Term, Tera Term will also display what appears on the Nascom screen – very handy sometimes, because it shows more lines and you can scroll back in time on the display for many more lines.

My copy of Nas-Forth employs the same trick, allowing a remote terminal on the P.C.