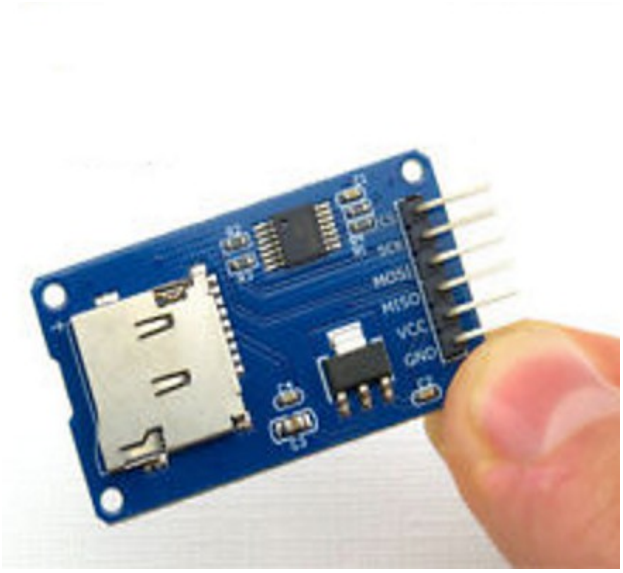
Instructions for Assembling a HAK5 USB Rubber Ducky Clone

Parts / Software Needed
1 x CJMCU Beetle Arduino board (ebay, amazon etc)
1 x Arduino Compatible microSD Reader module (ebay)
Soldering Iron and solder
50cm thin insulated copper wire (bell wire)
2-part epoxy
Arduino IDE software [free] (https://www.arduino.cc/en/Main/Software)

Introduction

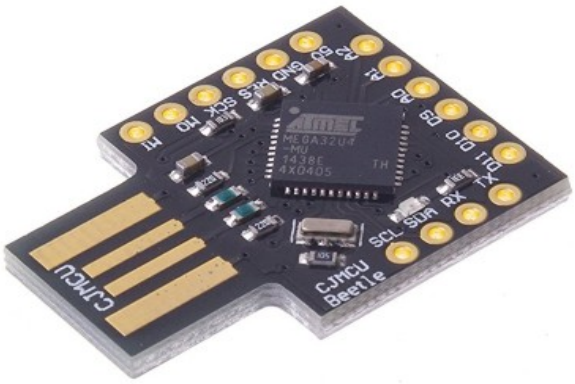
We are making a simple clone of the HAK5 USB Rubber ducky tool from a small Arduino beetle module glued to a cheap microSD card reader PCB. We will make 6 solder connections from one board to the other, to allow the Beetle to communicate with the SD Reader module.

The type of the microSD reader module is important – we need one of the larger ones of the type shown in the image below. These are 5V input and has enough flat space on its underside to epoxy the beetle board to.



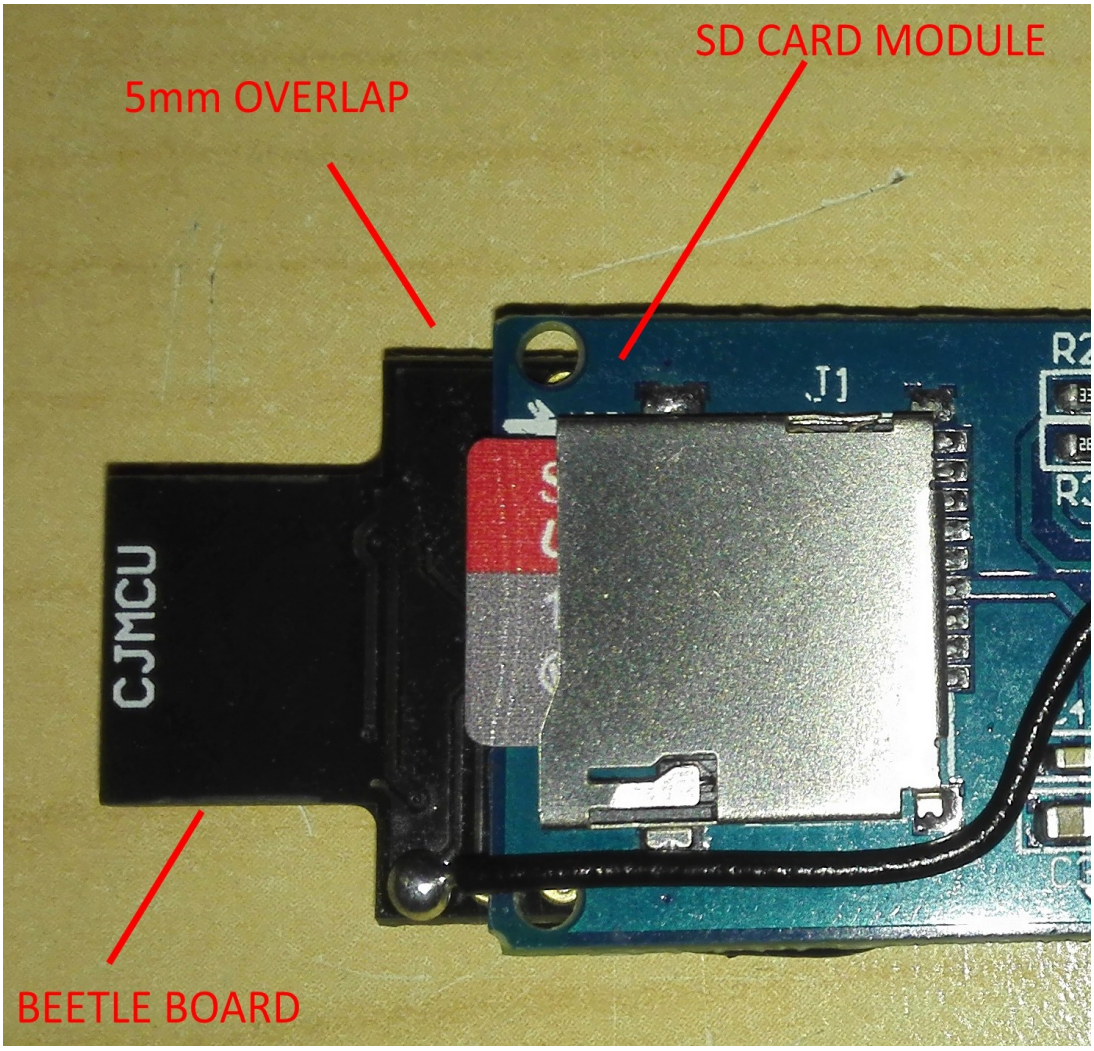
The Arduino microSD Reader Module – Easily found on Ebay etc

1) Take a pair of wire cutters and snip off the pins at the end of the SD Reader board. (Alternatively, you could de-solder them from board. This is the preferred solution.)



The Arduino CJCMU Beetle Board with its USB connector

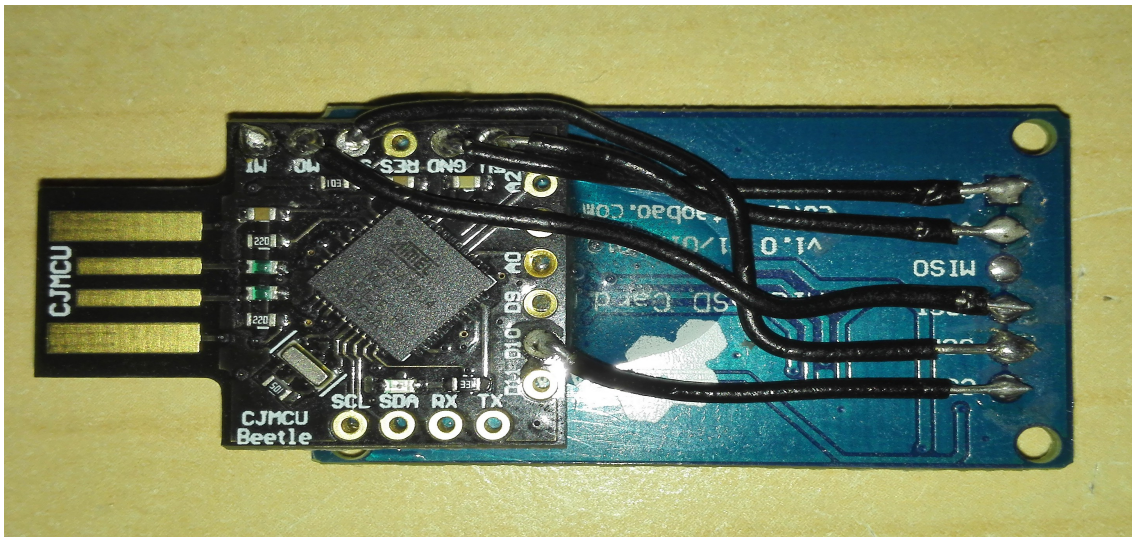
2) Now taking both boards, you'll notice that both have a flat underside where they could sit together. You need to epoxy them together (flatside to flatside) with the USB connector of the Beetle protruding well past the SD card slot on the reader module,as shown in the photo below. Only use a little epoxy – enough to secure the boards within touching the USB pins etc. Ideally, we want 4-5mm of the beetles wider section to push past the end of the SD reader board.



3) After the epoxy has set, we're ready to make out six solder connections between to boards. Cut the wire into 5cm lengths, and remove 3mm of the insulation from each end. The table below shows how each of the wires connects between the boards.

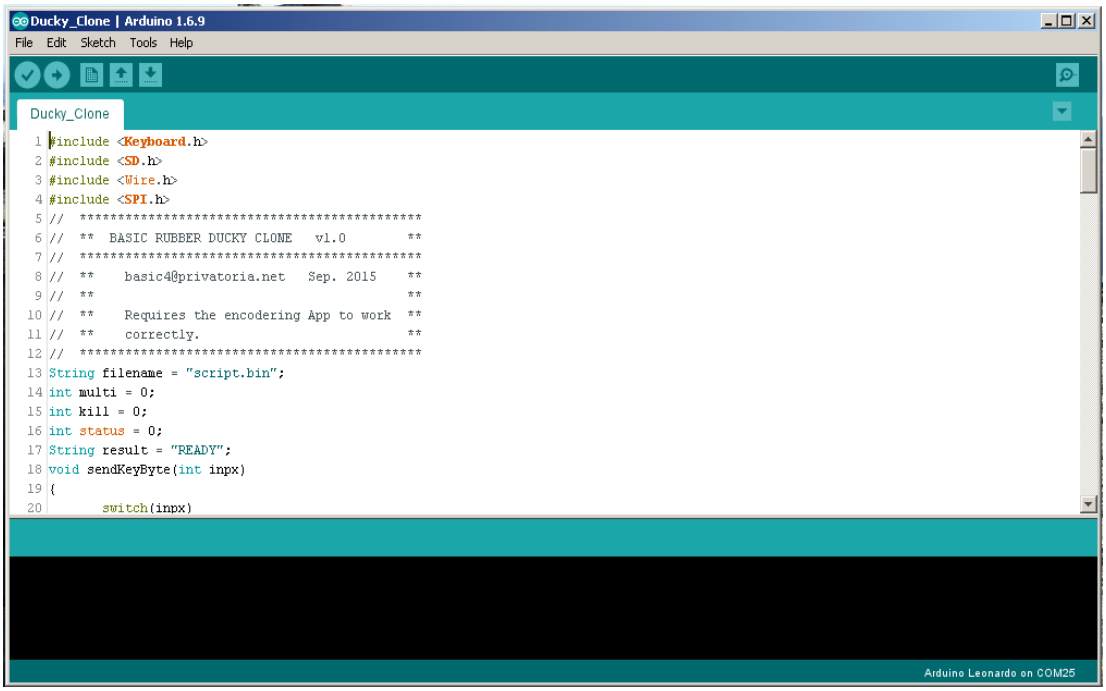
Beetle Pin Marking	SD Reader Pin Marking
5V	VCC
GND	GND
SCK	SCL
MO	MOSI
MI	MISO
D10	CS

4) Solder the wires flat to the board, ensuring they don't touch any other metal parts except the two points of the connection as stated in the table above. You may have to solder one or more wires on the component side of the board. When you have completed the soldering, your board should look something like this below.

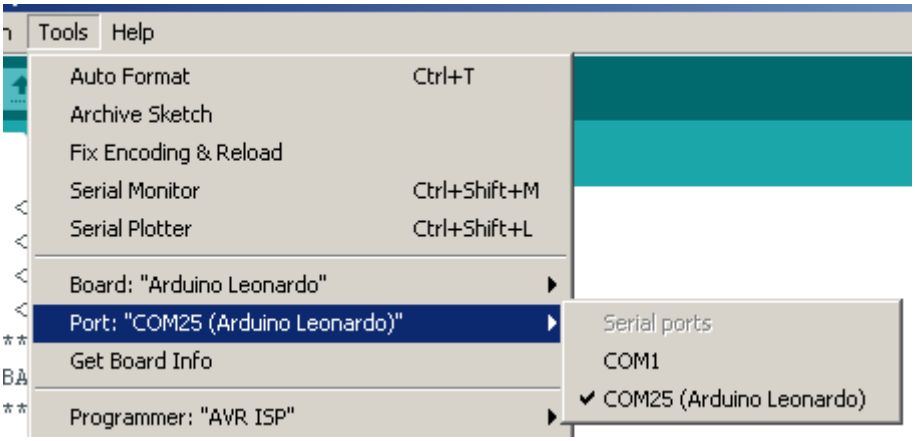


You may notice that I had to solder one of the wires on the component side. So Its not visible here. (ie. MI →MISO). If you have soldered the wire correctly, we can now move on to the software programming of the beetle.

5) Install the Arduino IDE application on your computer (https://www.arduino.cc/en/Main/Software) After installation, start-up the IDE. It should look something like this below. To Open the **'Ducky_Clone.ino**' file from this github, select 'File' and 'Open' from the main menu, and select the DuckClone file.



6) Plugin your board to a USB socket. The Arduino IDE software should recognise it and then under the 'Tools' menu item, then 'ports', you should see your beetle appear as a 'Arduino Leonardo' device on a specific COM port.



7) You now need to compile and program the firmware into your beetle board. On the main menu under 'Sketch', select 'Verify/Compile'. Once this completed, the IDE should say 'Done Compiling.'

8) Now from the main menu, select the 'Sketch' and 'Upload'. The firmware will then be programmed into the beetle. When completed, the IDE will say 'Done Uploading'.

9) **Congratulations!** - You've built a working USB Rubber Ducky. Now unplug your duck and read the 'Example_Script.txt' file in the github to write some Payloads.