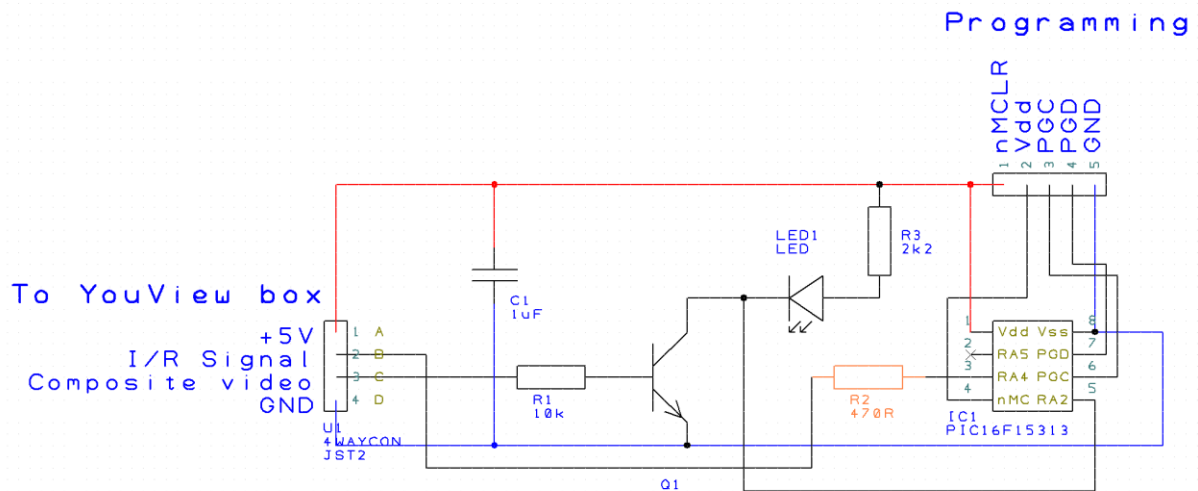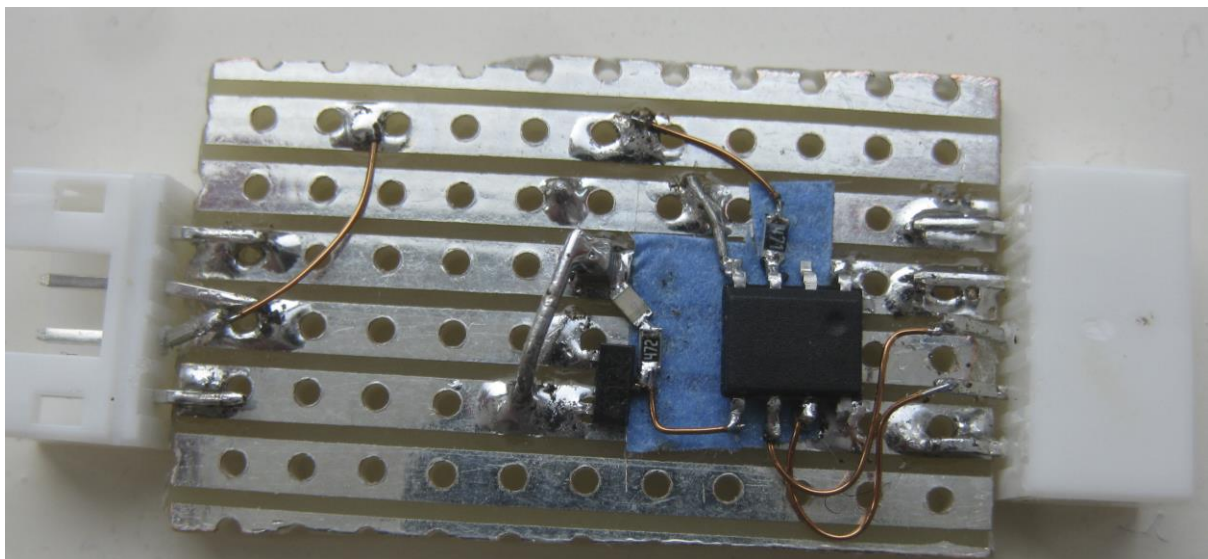# Implant Implementation

Schematic

Physical Implementation

In my case, I had surface mount parts to hand, so I built it 'ugly style' on a piece of Veroboard:

And I know it won't win any prizes.

Note that in the picture above, the wire links are self-fluxing enamelled wire – not bare copper!

The 1uF decoupler is mounted vertically ("tombstoned") with the thick link back to the ground.

The blue stuff is masking tape isolating the IC legs from the copper – the chip is held in place by the fact pins 1 and 8 are soldered to +5V and ground respectively.

It would take just a few minutes for me to lay out a PCB, and contact me via github if you have any interest in contributing to a small production run. I'm happy to do the layout without charge, but getting a small batch of bare boards made would cost about £30 (GB pounds), even via Seeed.

The board generates no heat to speak of, so it can be wrapped in bubble wrap and left to float about inside the YouView box which in my case never moves. If you don't like that, make the board a little bigger and screw it to the enclosure somehow.

Connector to YouView box

Pins 1 and 4 are power and ground respectively. If your I/R 'eye' is a 3.3V model, that should work equally well – the PIC16F15313 will work down to 2.7V. Note that if the rail is 5V, you must NOT use the PIC16<u>L</u>F15313 (note the L in the middle). You will fry it.

Pin 2 is the I/R signal connection, so RA4 is used as an input during 'monitoring' phase, and as an open-drain output during 'transmission' phase. The purpose of R2 is to avoid any risk of damage in case microcontroller tries to pull the I/R line high while the I/R receiver is trying to pull low (that would never happen with the 'stock' firmware, but its best to play safe.

Pin 3 is 'power sense' and for me, using the Composite Video signal from th SCART connector worked fine. You may find something better.

Programming Connector

Those of you familiar with PIC programming will recognize the three main programming connections nMCLR, PGC and PGD, and the two power pins.

Please note that the pin order is not exactly the same as that of a PicKit3 or PicKit4 – this is an accident of history – I happened to use the order here on some early products for reasons of PCB layout simplicity, and therefore I have a standard (for me) programming lead I use with all projects.

Feel free to adjust to suit your likes.