# Two Stage Preamp For 10 GHz using "Franco Rota" Satellite Boards

I made this preamp several years ago. When chatting at the Scottish Microwave Forum I was advised that the two stage version in the literature could have stability problems. So I made the back to back vesrion

Stage 1 Cut out two front ends from the left hand side and right hand side of the board as per the illustrations. You can use very sharp scissors or a sharp knife
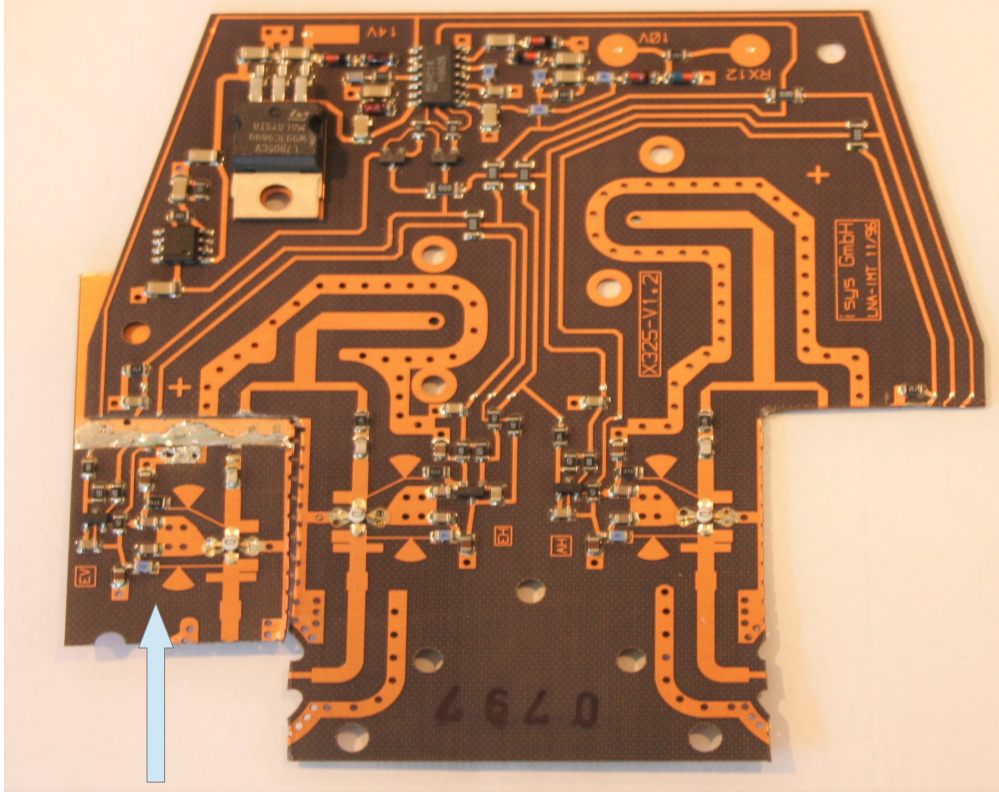

Left hand board (first stage)
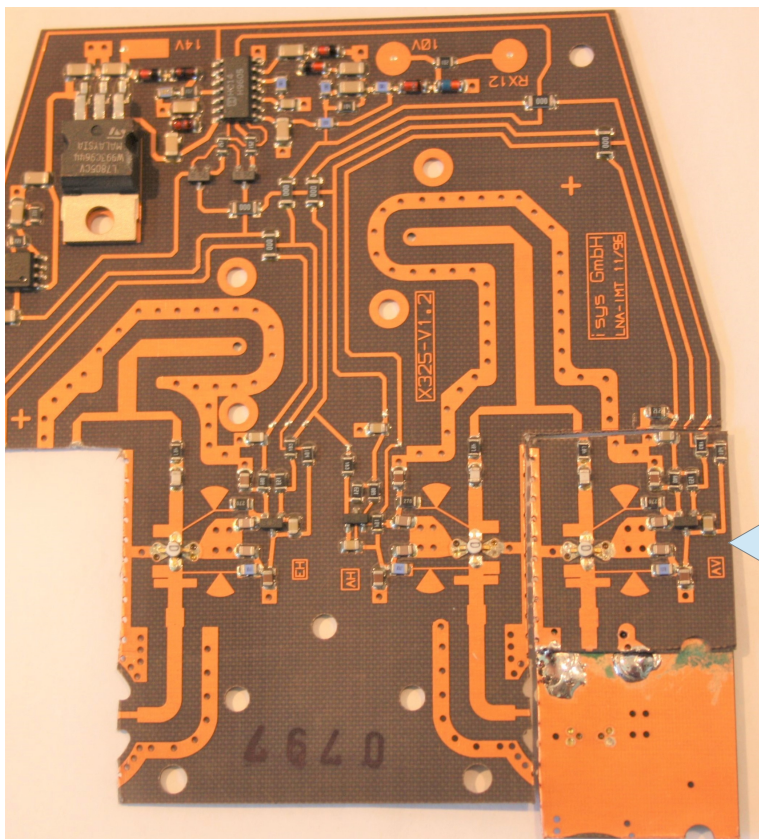
Right hand board (2)

Stage 2 Join the boards.
Clean the back earth plane of each board and overlap so that the output of board 1 lines up with the input of board 2. and solder them together by tinning the edge of each and applying suffient heat to bond the boards together. Also join the topside earth points on each board to the adjacent back plane of the other board using copper wire or tape to assist
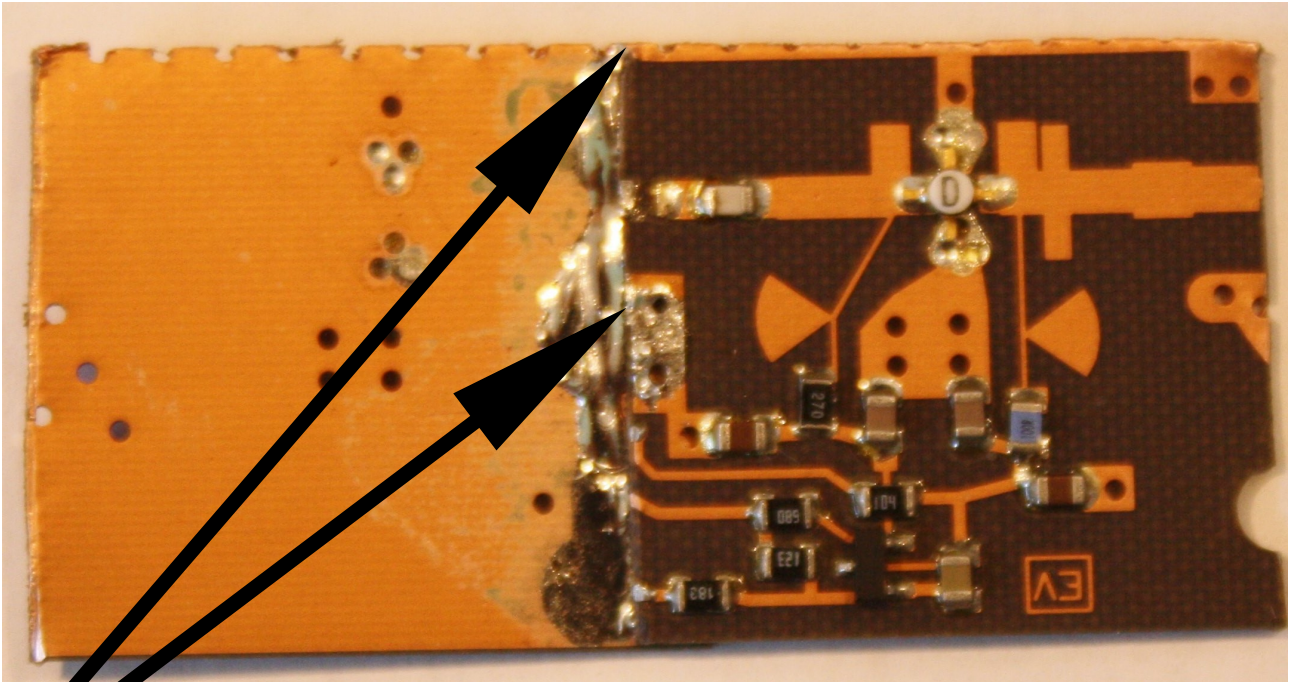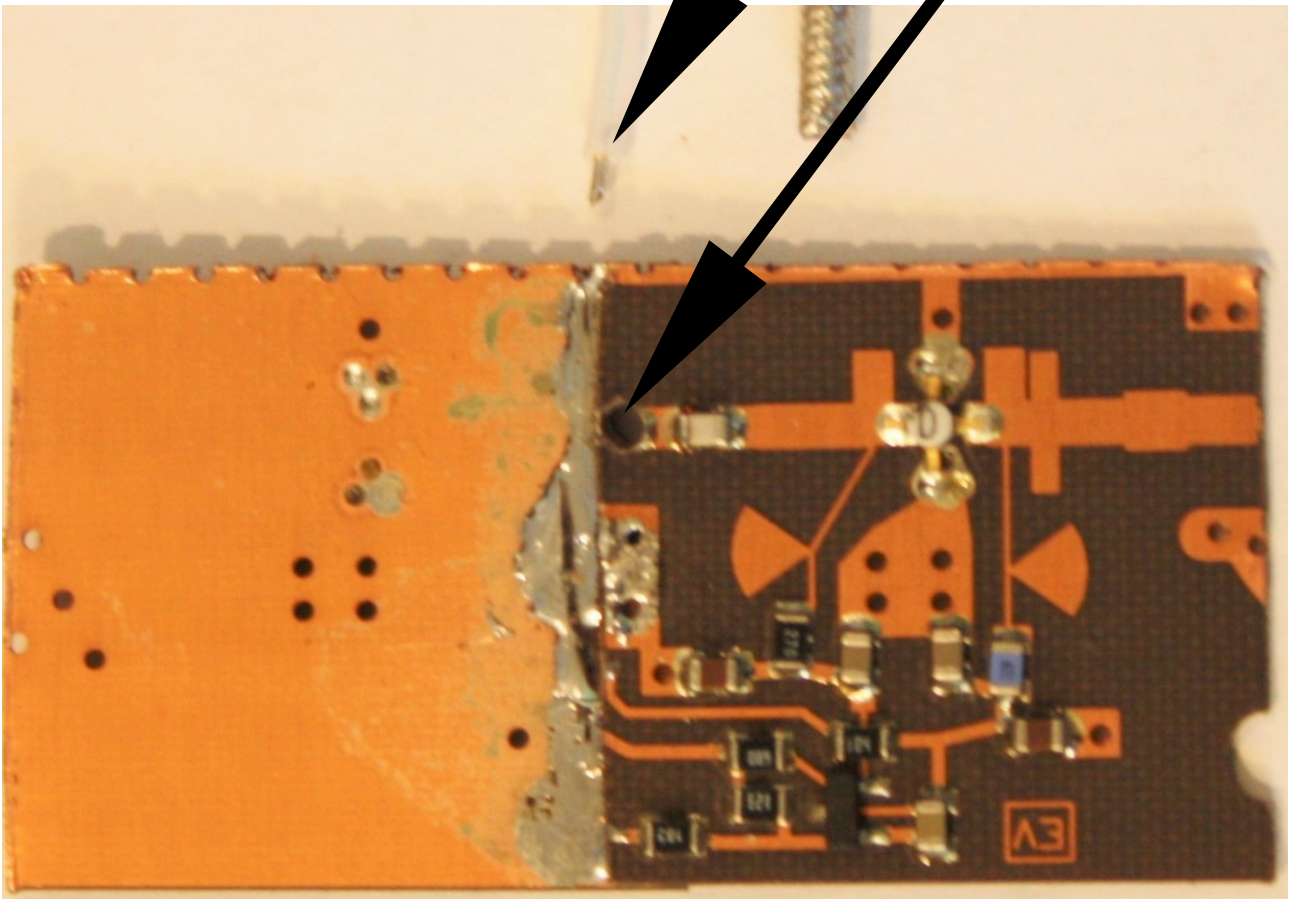

Earthing points

Stage 3
Connect output of board 1 to input of board 2

inner of semirigid   drill small hole

To connect the outer of board 1 to the input of board 2, the inner of a very short piece of thin semirigid is required complete with the dielectric. A hole is drilled after the isolating capacitor on board 1 output line with a diameter of the dielectric. The dielectric is trimmed to the length of the drilled hole so that the inner which is soldered between the output line of board 1 to the input of board 2 is insulated from the earth planes as it passes through.

Dielectric   inner soldered to output
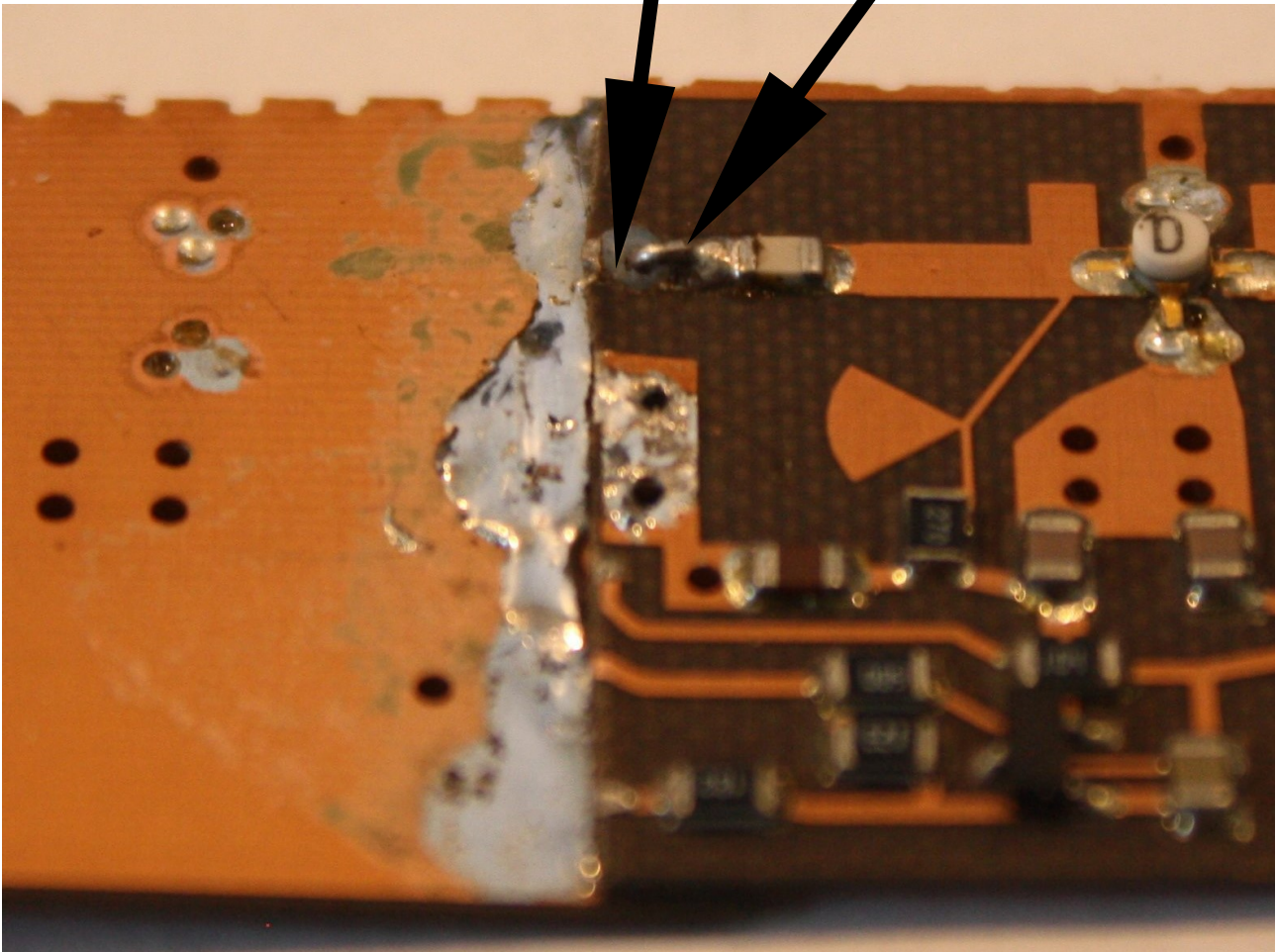
other side of joined boards
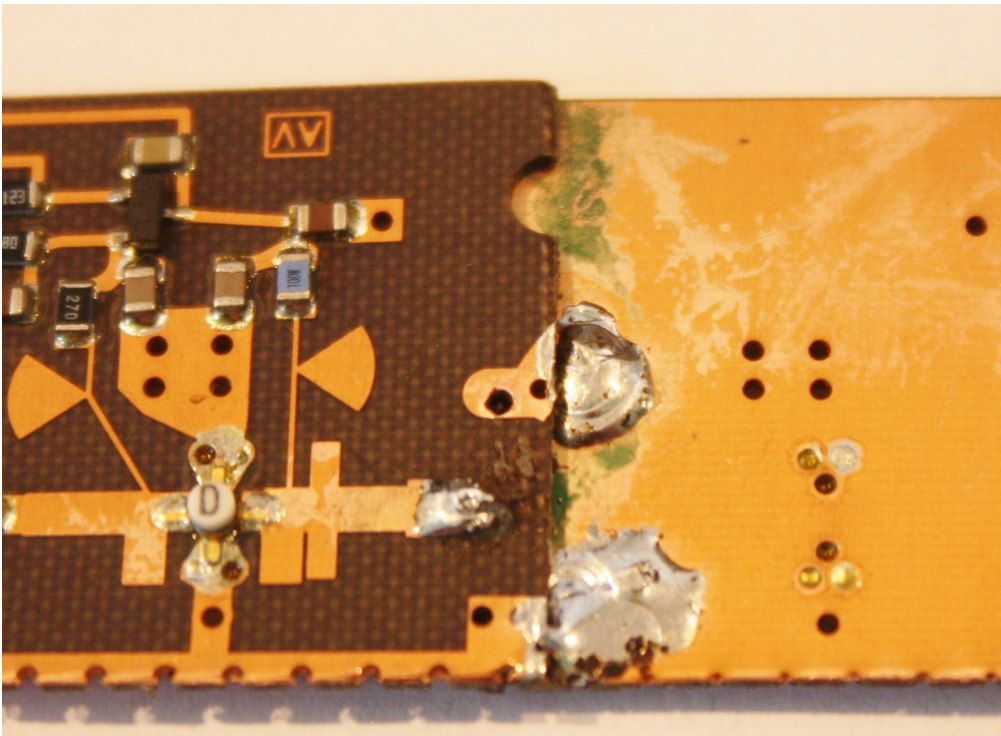
The final product.
Note that it is in a plastic box because I never got round to encasing it. It works well as it is – much to my surprise. The SMA connector is soldered to the board with a small coupling capacitor retrieved from another part of the Franco Rota board to ensure d.c. Isolation. I will at some point encase it using p.c. board.
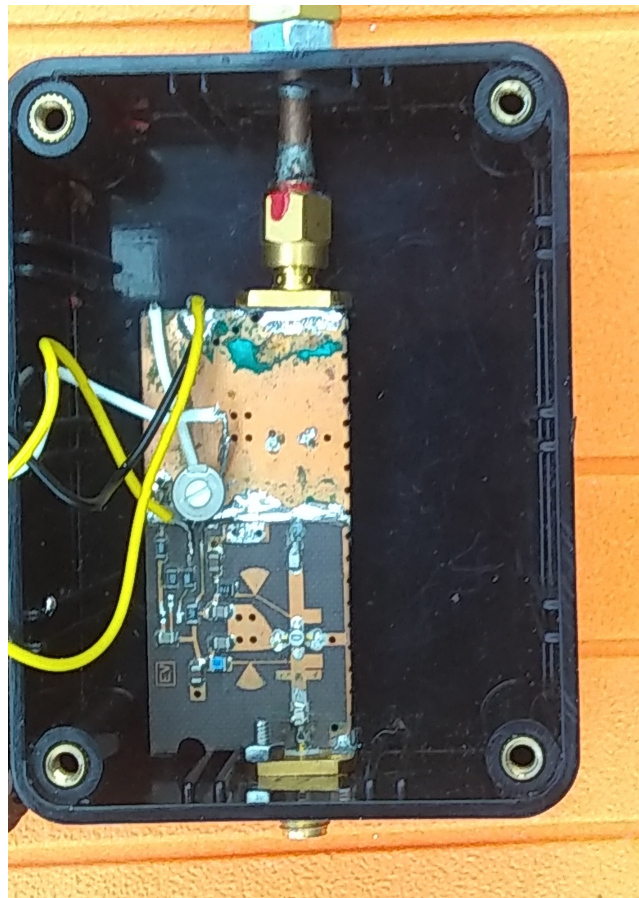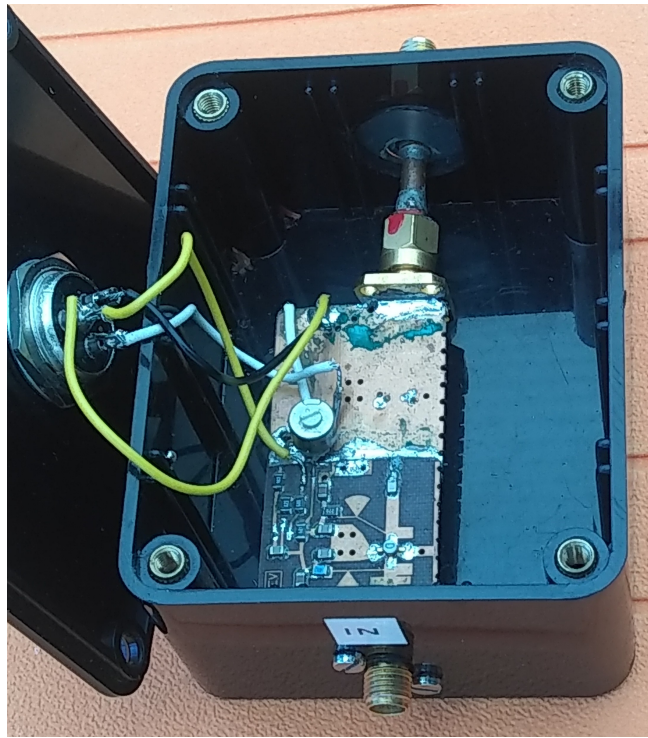
The small potentiometer is used to adjust the bias for best signal to noise.