FT1000MP – AUTOMATIC INRAD ROOFING FILTER SWITCH-OVER

Giancarlo MODA – I7SWX

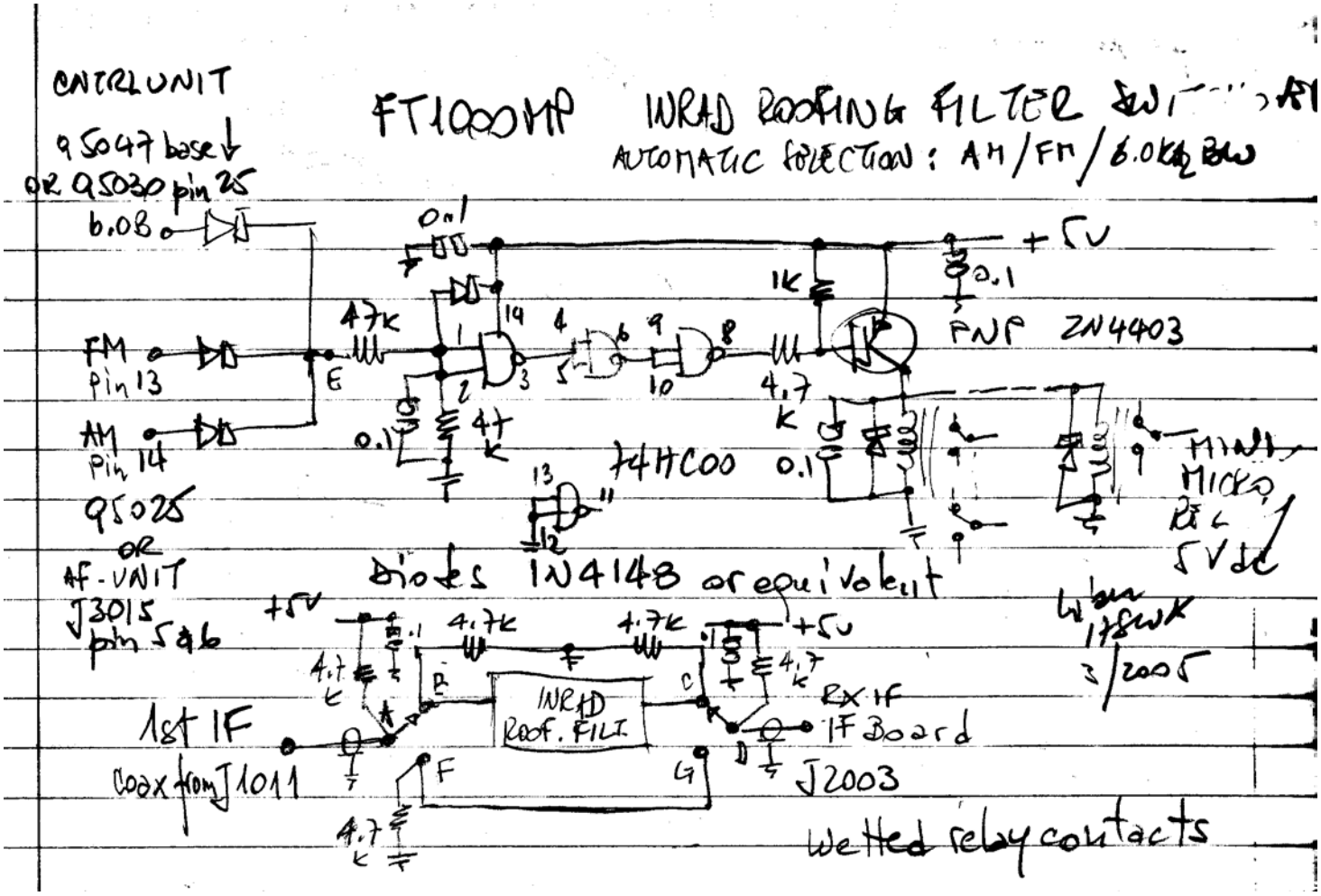

Figure 1 – INRAD Roofing Filter Switchover Circuit Diagram

An automatic INRAD Roofing Filter switchover has been designed to permit the use of the main receiver when selecting AM, FM and 6.0 IF Bandwidth.
The circuit is quite simple and does not require the addition of an external switch. It should be assembled and installed under the INRAD Roofing Filter PCB (see picture in Fig.3).

One mini/micro DPDT relay or two mini/micro SPDT relays, connected in parallel, should be used.
The IF signals are switched as in diagram. The resistors connected at the switches are there to keep the contacts "wetted". This will lower the possibility of contacts oxidation.

The diodes used to implement an "OR" function, have to be connected to the referred components pin. The AM & FM signals could also be taken from socket J5016 (AM pin 6, FM pin 5) in the CNTRL Unit, or at J3015 (AM pin 6, FM pin 5). The IC 74HC00 is the small 14 pin SOIC type for SMD use.

The PNP transistor can be anyone with an Ic equal or over 500mA. Suggested types are 2N4403, BC328, 2N2905 or equivalent. The circuit is powered from the +5V DC rail; a connecting point could be at J3 pin 1 on the Inrad filter board.
The INRAD Roofing Filter is always inserted. When AM, FM or 6.0kHz IF BW is selected, the relay(s) will "remove" the INRAD filter and a direct connection between 1st IF output, coax from J1011, and 2nd RX Mixer input, J 2003, will be made. Figure 2 shows how the switchover cables can be implemented on the INRAD Roofing Filter PCB.

The mod is also applicable to the FT1000MP MK V. The CNTRL Unit is the same one and the connection references are also the same.

This mod should be implemented only by owners having soldering and circuit assembly experience.

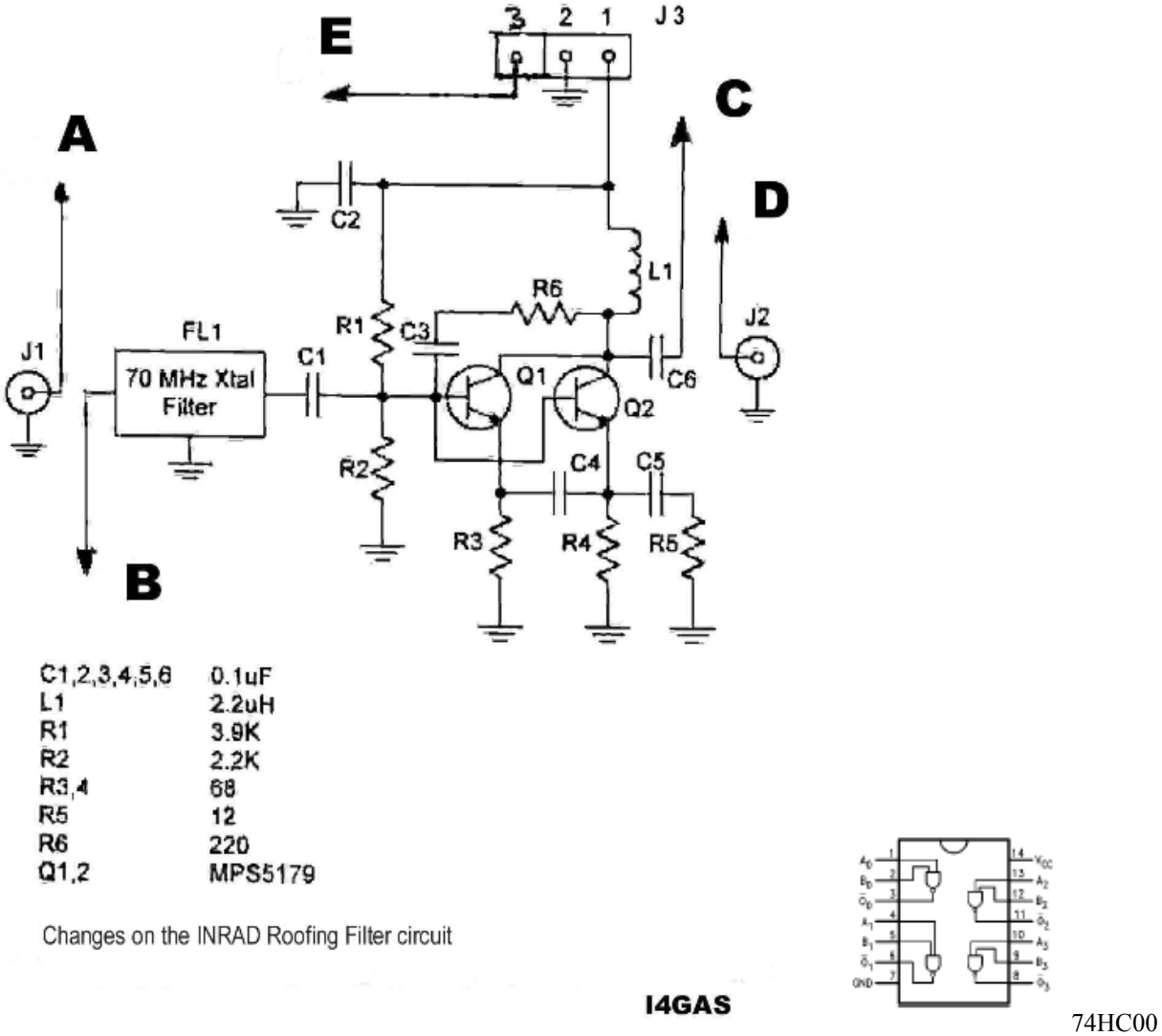

Figure 2 – Changes on the INRAD Roofing Filter PCB circuit.

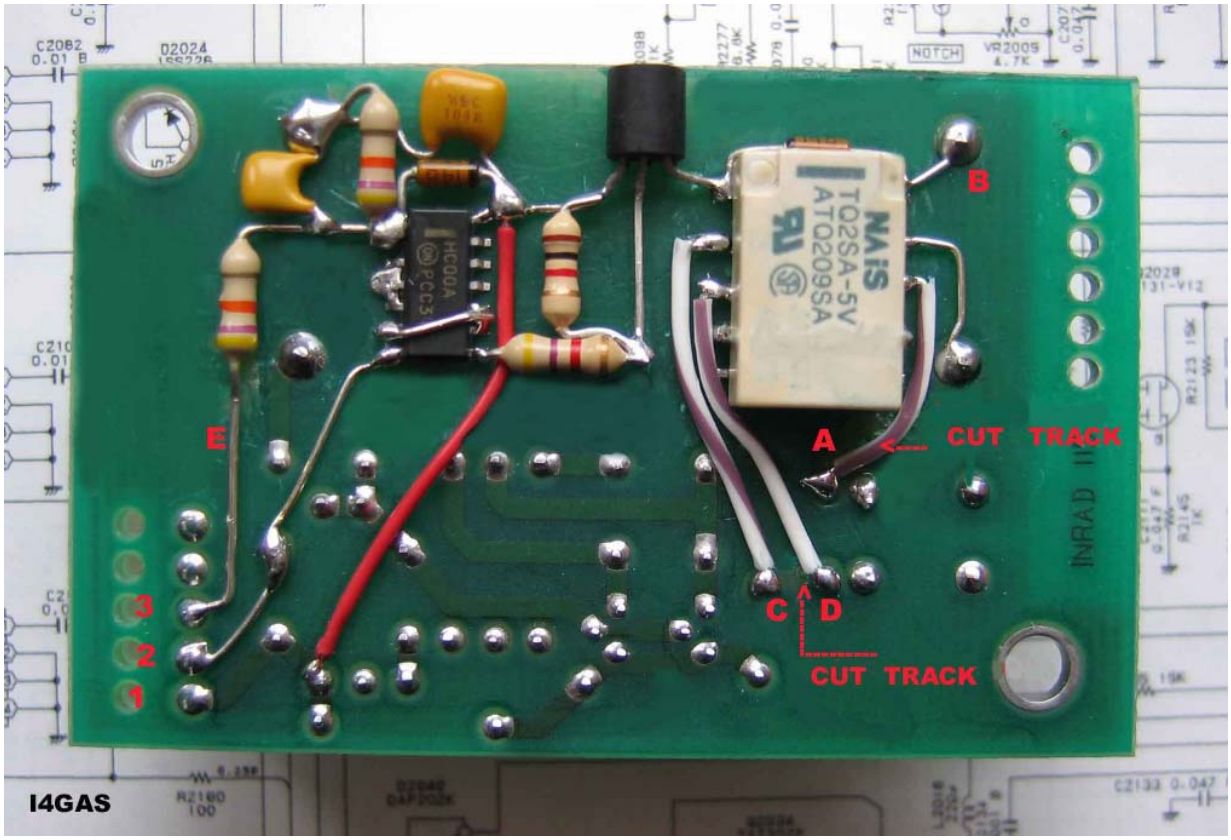

Figure 3 – The picture show how the circuit can be implemented under the INRAD Roofing Filter, as done by Gastone, I4GAS, in his FT1000MP MK V. PCB tracks have to be cut at point A and C-D. The resistors for the relay contacts "wetting" have not been added.

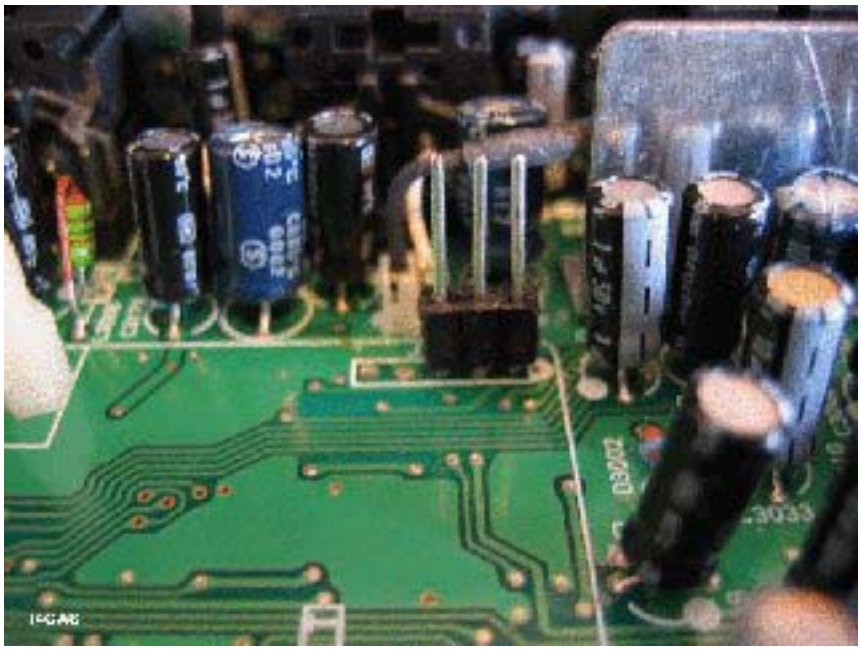

Figure 4 – Picture is showing the plug where the INRAD PCB is installed, on the FT1000MP MK V.

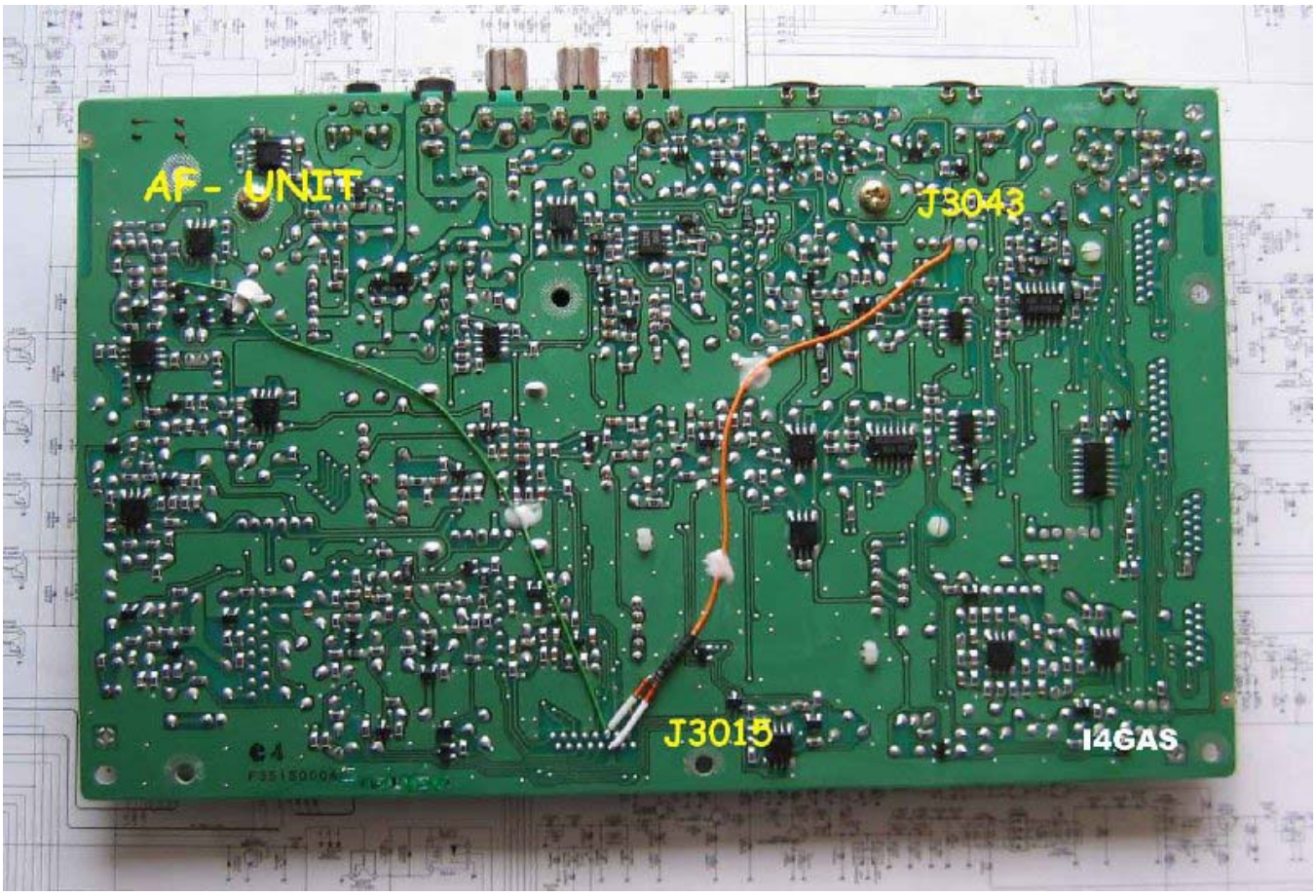

Figure 5– The picture shows how the AM & FM signals are taken, through the diodes, from the AF Unit, at Socket J3015, instead as drawn in circuit diagram at CNTRL Unit, Q5025, by I4GAS. The 6.0 BW control signal is coming from CNTRL UNIT and connected to J3043-3.

DISCLAMER NOTE: The application of this circuit is at risk of FT1000 owners.

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