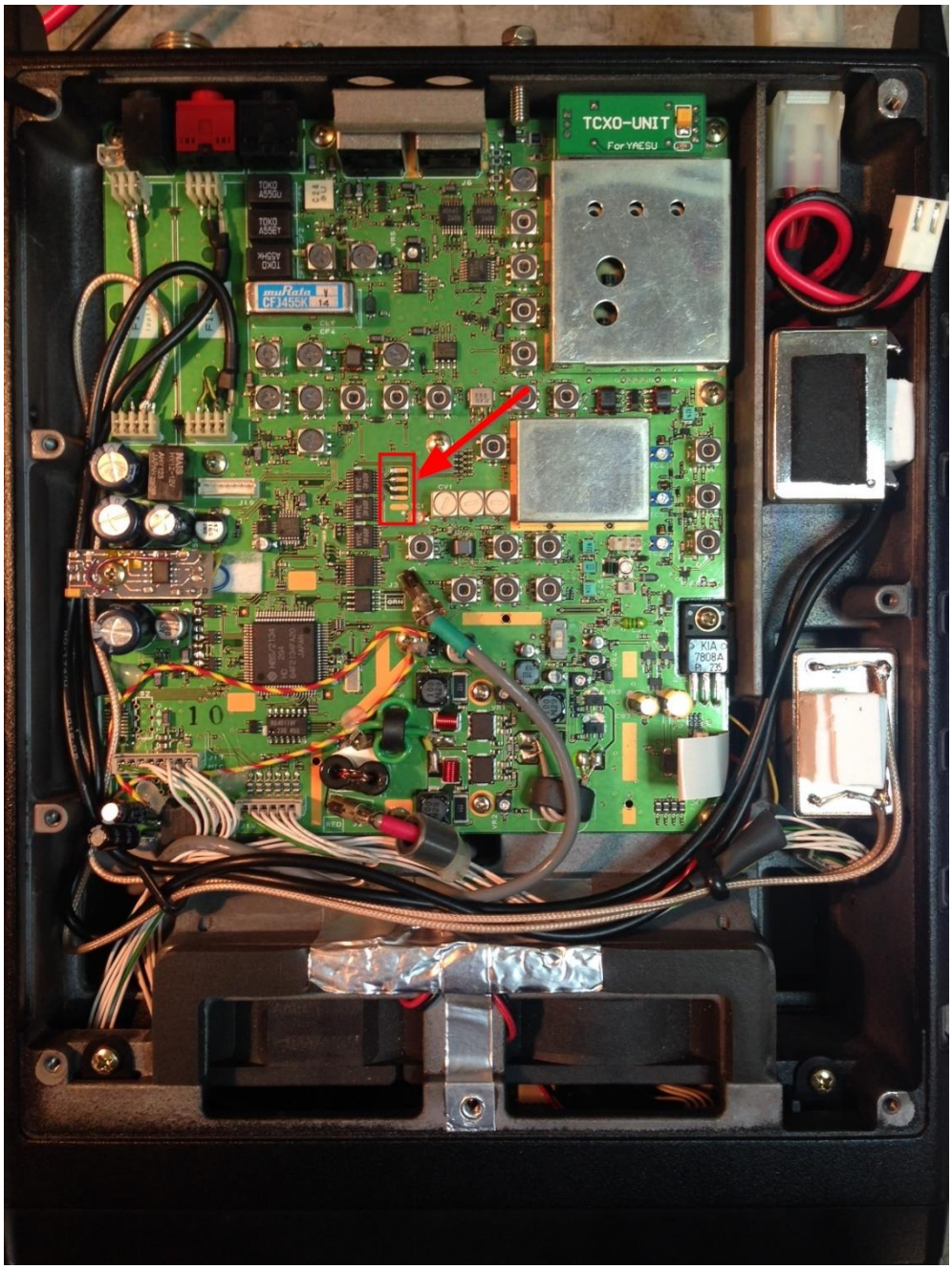
FT857/FT897 undocumented feature

By Alan Fanton 9A6RT

I bought the FT897 around 2002, and even before I first turned it on, I decided to open it (just the way I am), and noticed four pads on the main board. I thought those were service points, and didn't think of it much more - after all, I had to power it up for the first time.

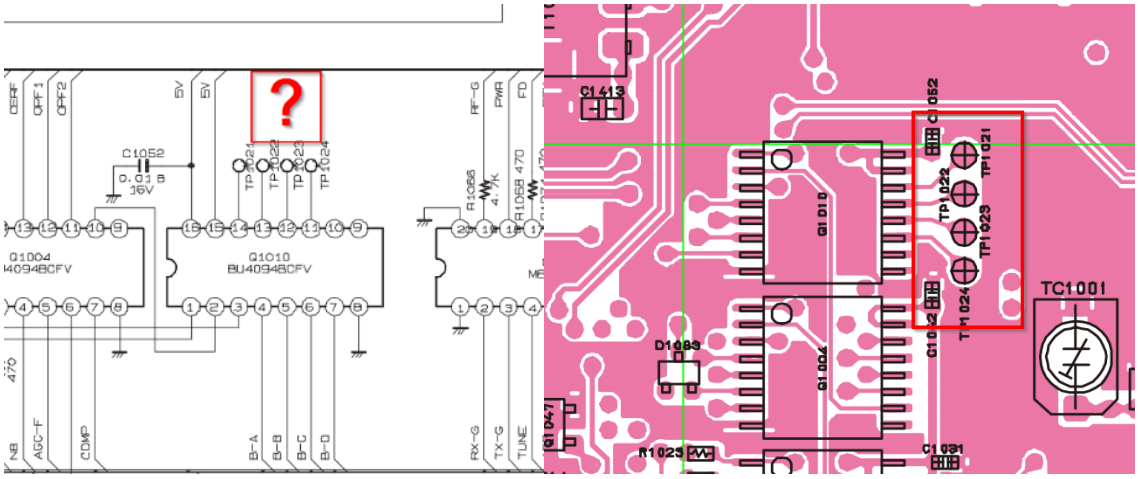
When it became available, I downloaded service manual, and noticed that those pads couldn't be used for service purposes, as they are connected to the output of a 4094 chip (8-bit shift and store register). The pads had been forgotten for a few years.



A few months ago, I started to build a OZ2M 70MHz transverter (it had to fit inside the radio, under the FT897 bottom cover, and with a 10W amplifier), and then I found out that it wouldn't be a good idea to power up the transverter when the radio was powered up, and manually change the antenna inputs.

Then I have remembered the pads...What were those for??? I tried to google it, but had no luck.

On the schematic diagram those pads do not lead to anything.



The investigation begins...

Tested with a multimetre, only 0V (low digital level) appeared on all pads.

When XVERT A (menu 91) was activated, +5V appeared on one pad, when XVERT B was activated, +5V appeared on another. That was what I'd been looking for.

So these are the pad functions:

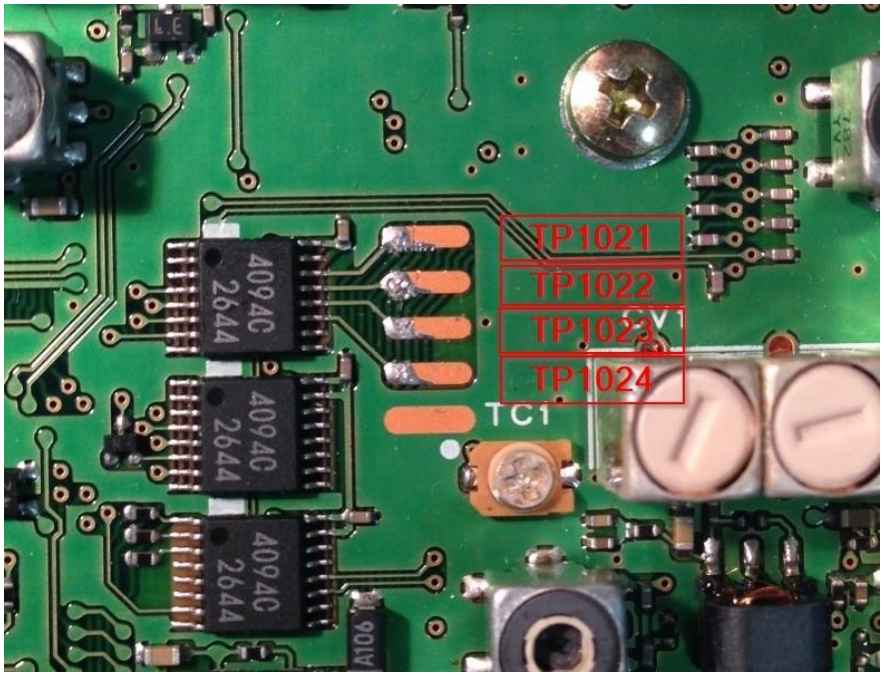
TP1021...becomes HI state (+5V) when in menu 64 or 65 or 66 (PG1, PG2,PG3) USER is selected and activated from the main screen (this can be used for antenna relay, FT897 with 2 SW antenna inputs).

TP1022... still unknown (if someone finds the purpose, please let us know)

TP1023...becomes HI state (+5V) when XVERT A (in menu91) is activated

TP1024...becomes HI state (+5V) when XVERT B (in menu 91) is activated

I've tested it with FT897 and FT857 (different batch numbers), and it's working as described above. As both of them are non „D" versions, I'm not sure if it will be the same with „D" versions, though I expect it will.



PEASE NOTE!!!

The voltage present at output of the 4094 chip **can not** directly drive a relay, or any device that consumes more than a few milliamps. The 4094 is an 8-bit shift and store register, and was not designed for driving anything than another CMOS device. If you intend to use it for that, use some type of a buffer designed to drive a relay or whatever you intend to use. Driving small relays can be done with a transistor array (ULN2803) or something similar, but not directly from the pins. As this is a CMOS device, keep in mind that any static discharge could destroy your radio.

So these features will be used to power up my transverter, the logic around it, and add one more antenna connector for an additional short wave antenna, when time permits it.

If it has been published somewhere before, please forgive my ignorance, if not, you're welcome to use this information, copy it, e-mail it, and do whatever you want, except for holding me responsible if you damage your radio.

73 9A6RT