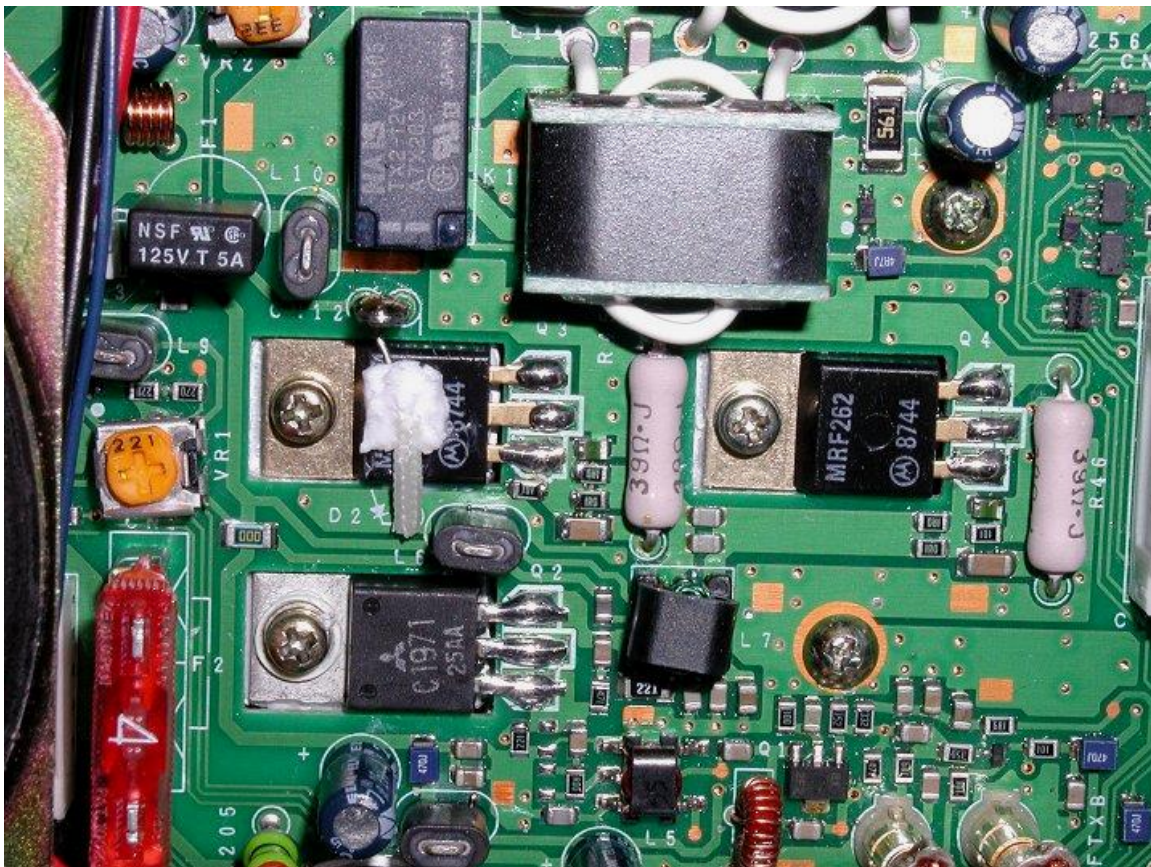


Subject: No power output on HF and 2 meters.

During the summer of 2008 I turned on my TS-2000 and noticed it was not putting out any rf power! I have heard of this happening to others but never expected it to happen to me! There was no output on HF and 2M. I traced it to a blown thru-hole fuse and one of the pair of driver transistors (2SC1972) - which was shorted. Luckily the fuse blew and saved the lands on the pcb. At first I thought it was the large plug in fuse but upon further investigation it turned out to be a round soldered in part (the fuse). I wasn't happy to see that!.

I ended up ordering the fuse replacement from Kenwood parts (new part was square), pulled out the entire board, and using the new fuse as a template along with 2 loose machined pins from an IC socket - soldered them in. This allows for an easy replacement if this should happen in the future. Now there will be no need to remove the pcb or de-solder the fuse as it is now a plug in.

I ordered "equivalent" replacement Motorola MRF transistors to originally substitute the pre and driver transistors (MRF261 and 2x MRF262's). After running the Adjustment Firmware I noticed a decrease in RF output power on the 2 meter band. The transmitter seemed to run out of gain when setting the 100W level – **so I ended up putting the good 2SC1971 pre-driver back in** and everything was fine again. The spec sheet does show that the MRF261 has a lower typical gain (7.5 vs 10 dB).



Note: The replacement square fuse is shown installed towards the top left corner mounted into IC socket pins for easy replacement if necessary in the future. The next step was to load in the adjustment firmware and make slight adjustments to the RF output power on the different bands. This wasn't all that necessary but I like to get it as close as possible. You need to be very careful when doing this. After the adjustment firmware is loaded and the adjustments are completed you need to re-load the user firmware (hopefully you are loading the latest that is available). This is not an easy process and if you make a mistake it is possible to come out with a non-working TS-2000 that may need to be shipped back to Kenwood!

There are a lot of counterfeit 2SC1972 transistors on the market these days coming from China (especially on EBAY). Even though they say "original Mitsubishi" I don't think I would trust them! NTE makes replacements that are an exact match and work well (2SC1971 = NTE342 / 2SC1972= NTE343). This is what I currently would use, but they are very expensive and hard to find!

I just obtained a new batch of 2SC1972's from a vendor on EBAY and would like to try them out to see how they work. They don't look like the older transistors I had but you never know.....

If anyone does not think they are capable of doing these repairs shoot me an email and I will quote you a labor charge: **mtrager1@windstream.net**

Good luck and 73's,

Michael
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