

Changing the TS-2000's Display Bulbs to LEDs..... Info

Rev. 2.1 8/19/07

I replaced the still good bulbs with LEDs from www.superbrightleds.com. They are stock number RL3-W3030 and cost about \$0.70 a piece! They should last forever and only draw 20 mA or less. If you go to their website you can see what other color LEDs are available. Just make sure they are at least 3000 mcd and the 3 mm size. You will need a total of 6 LEDs.

You also need to replace the surface mount resistors (quantity of 3) to a value of 150 - 154 ohms 1/2W. The 1/2W rating is more important for the size that is needed. The smd resistor is 2.5mm x 5.0mm with a size "footprint" of "2010". You can get 10 from Digi-Key for \$6.88 plus shipping. The part number is P154ACCT-ND.

Update: I will provide an update kit for anyone interested for a fee of \$25.00 which will include 1st Class Shipping. Included in the kit is 6 LEDs (white (recommended), green, red, blue, or yellow), 3 smd resistors, fine solder, and solder wick. Email me at: N2ZDB@aol.com PayPal accepted.





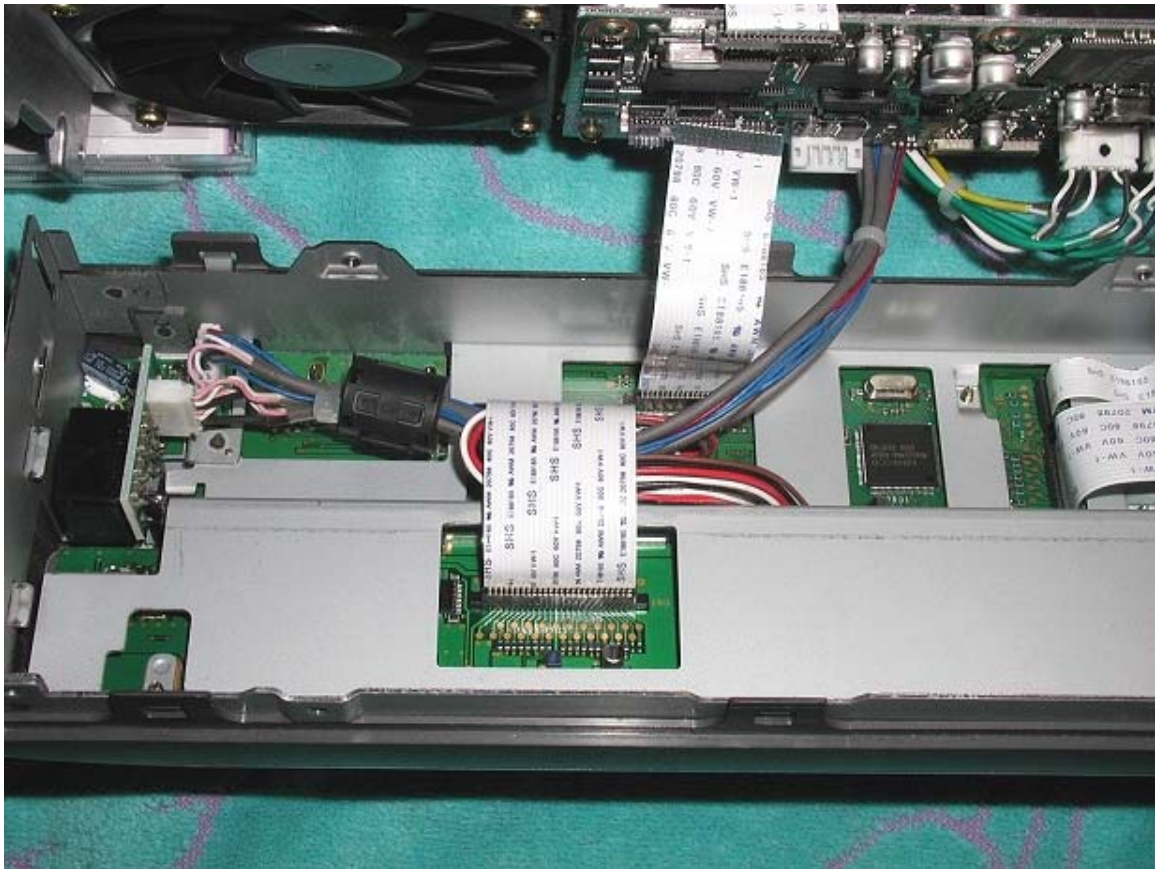
Above: One bank of LEDs shown with the series resistor (“151”). The anode of the diode (long lead) is on the same side as the resistor (left) for both LEDs. Make sure all 6 diodes are orientated this way! Also the LED leads must be bent back as shown. Make sure the LED sits all the way down into the hole.



If you follow instructions which is available on the net:

<http://mywebpages.comcast.net/russk2t/changing.htm>

You **do not** have to remove the encoder hardware from the plastic front panel. Just remove the rubber and knob so that you can get to the screw that secures it to the frame. The plastic front panel with encoder can be carefully removed by allowing the wire harness to unfold from the back of the display panel where it is placed. Remember to fold and place it back as shown when assembling the panel back together again!



The job isn't easy unless you have experience working with these kind of parts. Also the LED leads need to be preformed and inserted with the proper polarity or they will not work.

73's Michael, N2ZDB.
<http://hometown.aol.com/n2zdb>