Texas Instruments TI-Nspire CX Power Connector Replacement

How to replace the Mini-USB charging port to fix power or data transfer issues.

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INTRODUCTION

This tutorial is to replace the charging female connector to the calculator. Replacing the power connector should be a last resort method! If you have issues with the calculator not charging, try replacing the battery first or getting a new cable and power supply. If you cannot transfer data, be sure your cable isn't power-only.

Warning: The disassembly steps are different for the Nspire CX II (CAS)!

TOOLS:

- Mako Driver Kit - 64 Precision Bits (1)

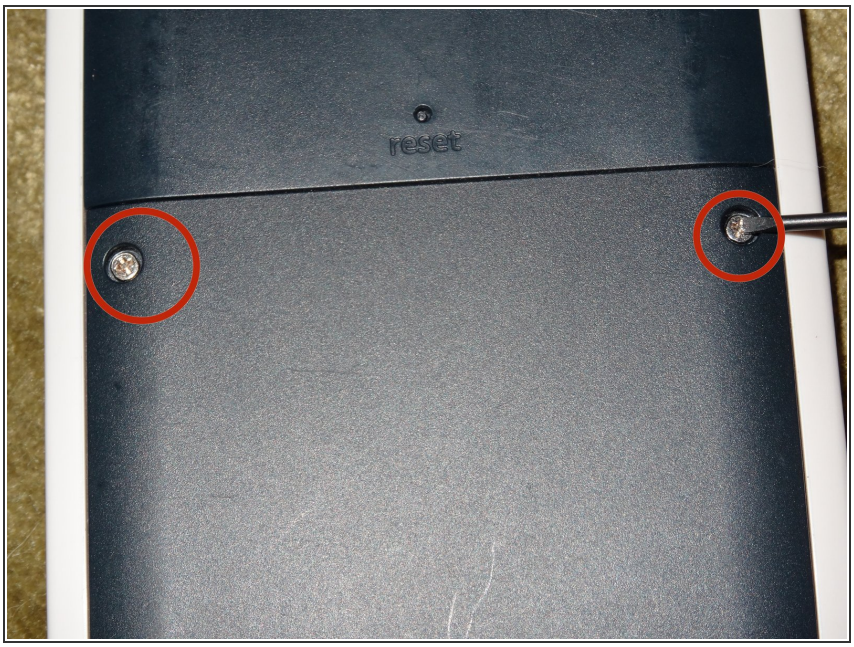
Step 1 — Remove top feet

- Take top feet off.

Step 2

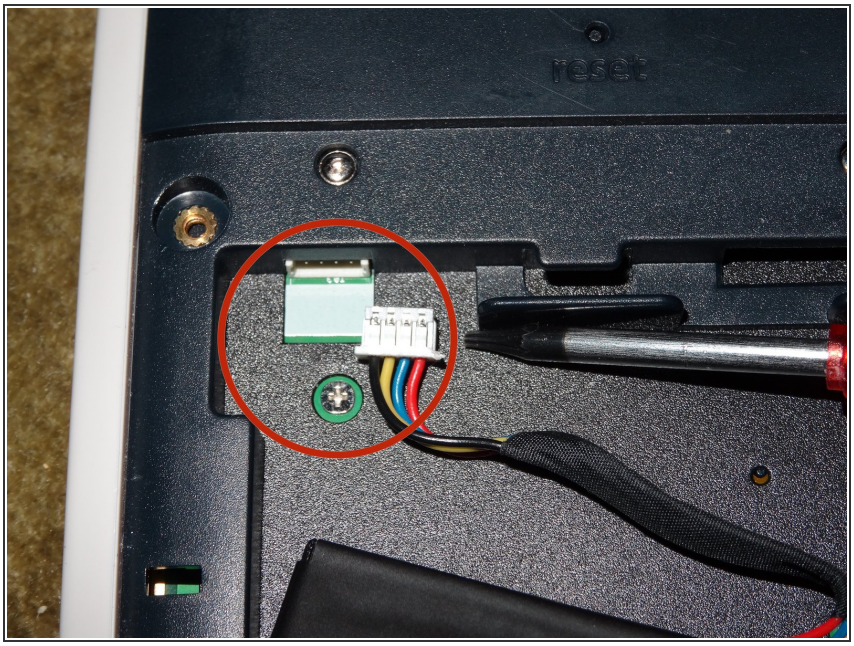
- Unscrew top "clutch" shaped screws using 1mm jewelers screwdriver.

Step 3



- Remove battery cover

Step 4

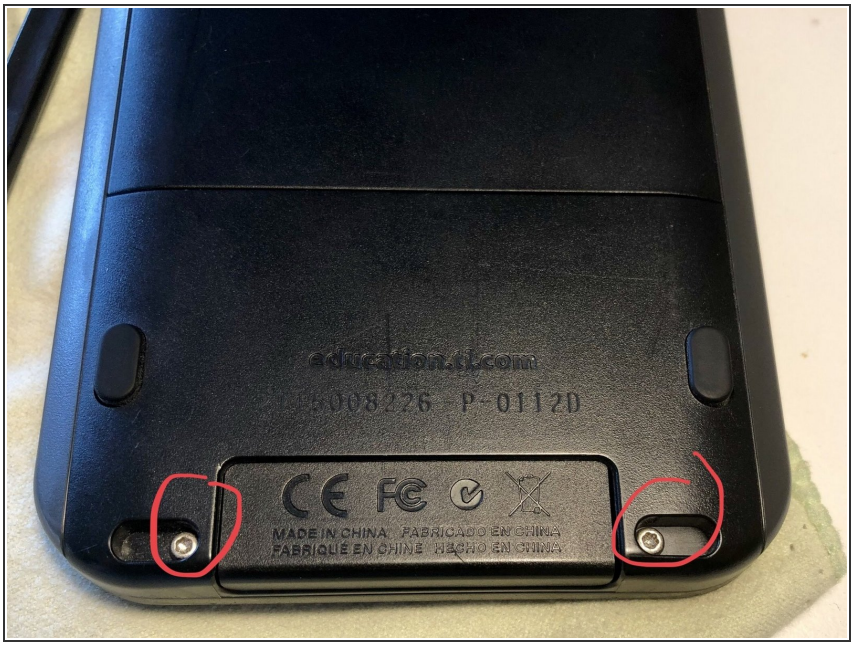


- Remove battery connector by grabbing lead and pulling out with fingers.
- An alternative is to use pliers to pull the tab out, or a screwdriver to wedge the side tabs off, but the plastic is delicate.

Step 5

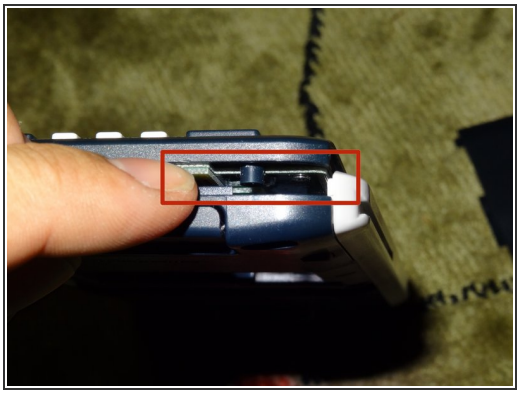
- Remove center cover "clutch" screws with 1mm screwdriver.

Step 6



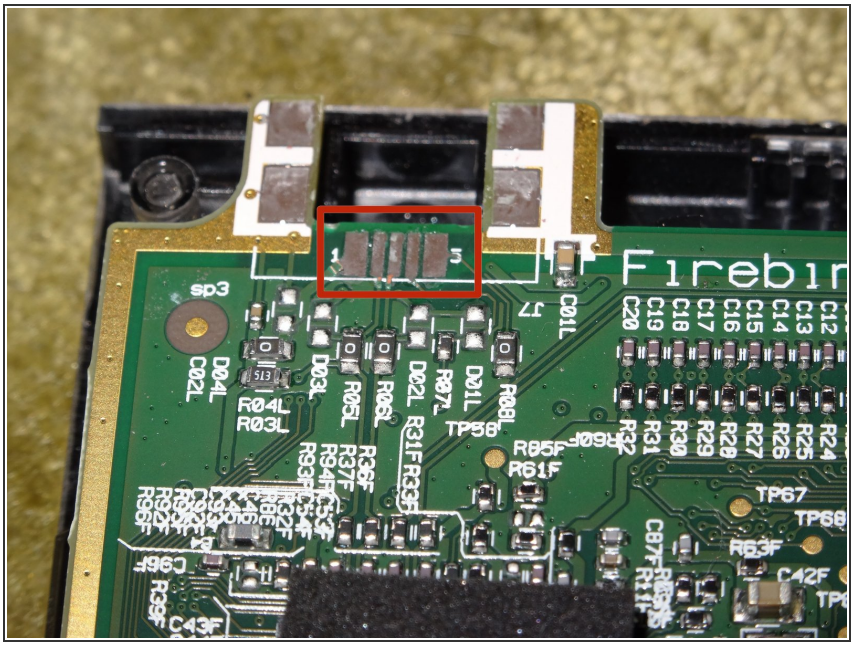
- Remove the two T6 screws here. Don't worry about the connector cover, it won't come loose.

Step 7



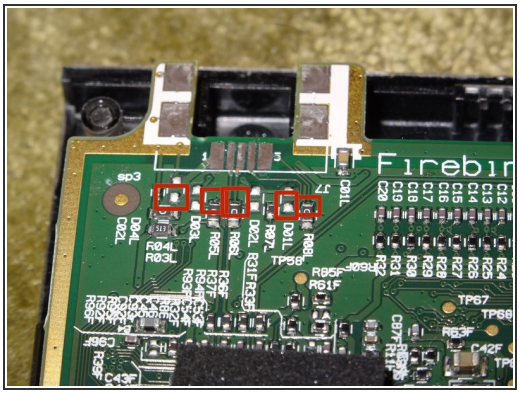
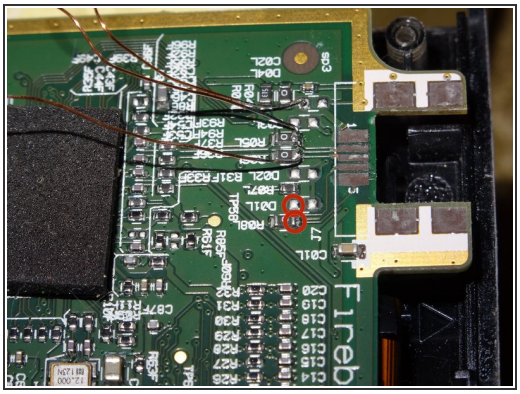
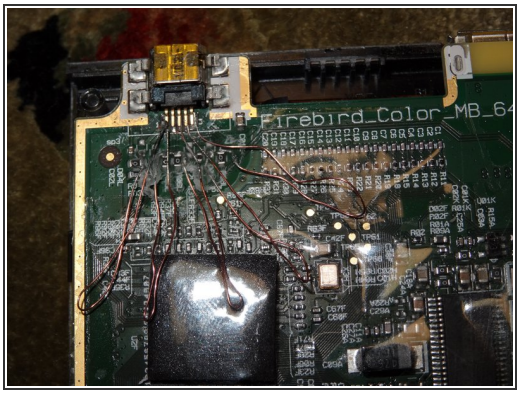
- Pry off front face with fingers and nails, otherwise spudger. Removal does not take too much force. work around one edge to the top.
- The reset button and rubber dome might come loose, make sure you don't lose it.

Step 8



- Inspect power connector damage. This calculator has all of the power contacts torn off.
- Follow the traces to see where to solder on replacement leads.
- I guessed the locations of where new leads were needed and got lucky.

Step 9

- Use enameled wire or other types of coated wire.

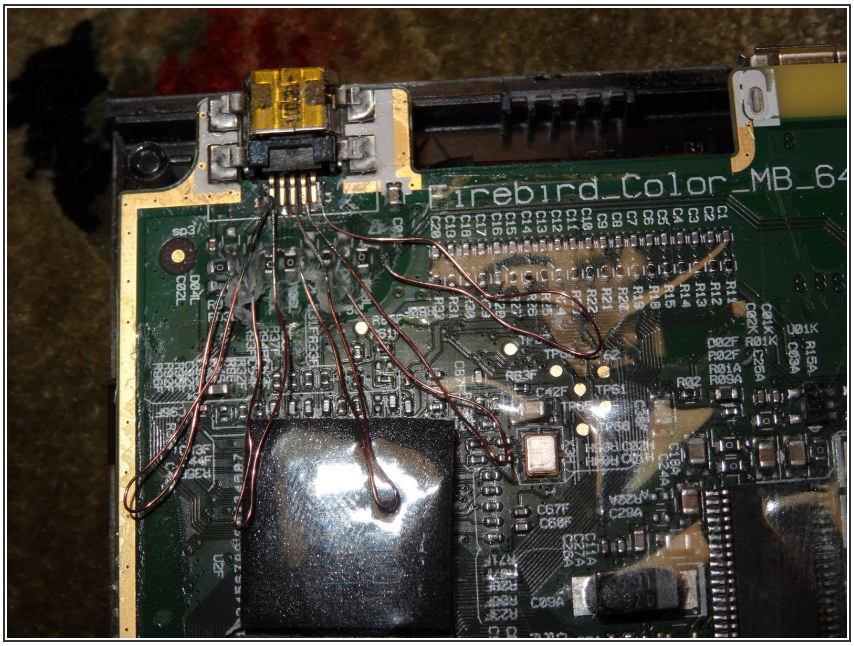
  ⚠ Do NOT use bare copper wire. Although it is used in this tutorial, bare wire can short and permanently brick the calculator.

- Pre-tin the leads so solder sticks more easily onto the copper. Do this by adding solder to tip of soldering iron, then rubbing across one of the ends of the replacement wire.

- Do this to both sides of all the wires, tin both the front and back each single end. The tin does not automatically flow to both sides, therefore tediously tin the front, then back of one side of wire.

ⓘ A steady hand helps with soldering to the PCB.

Step 10

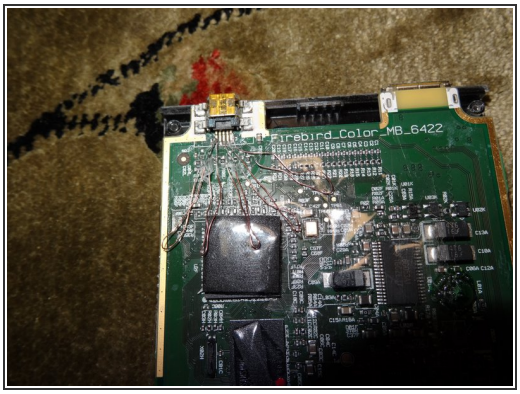


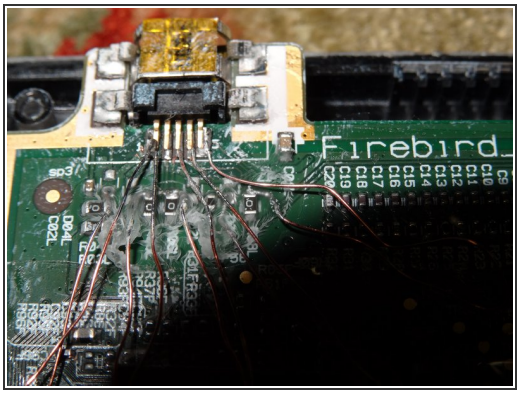
- Tape off the board with electrical tape or Kapton tape to prevent shorting.

⚠ Soldering the replacement leads in the wrong locations could cause unintended behavior, or a permanently bricked calculator.

⚠ This solder layout lead to failure of data transfer operation. Charging was ok.

Step 11





- Test before sealing the leads with superglue or tape.

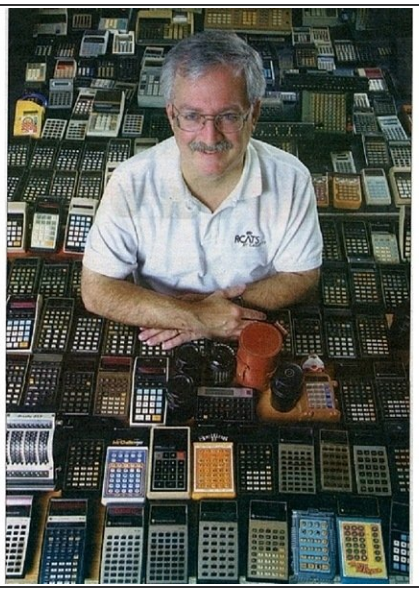
⚠ Be sure not to touch any leads together.

⚠ The new solder joints can break easily. Take care not to excessively or repeatedly bend leads.

- Superglue the support contacts back to the board, excessive pressure when charging may break the power plug off a second time.

⚠ Avoid using superglue that flows easily. This could clog up the new port or create a mess as shown in the photos.

Step 12



- Celebrate!

To reassemble your device, follow these instructions in reverse order.

