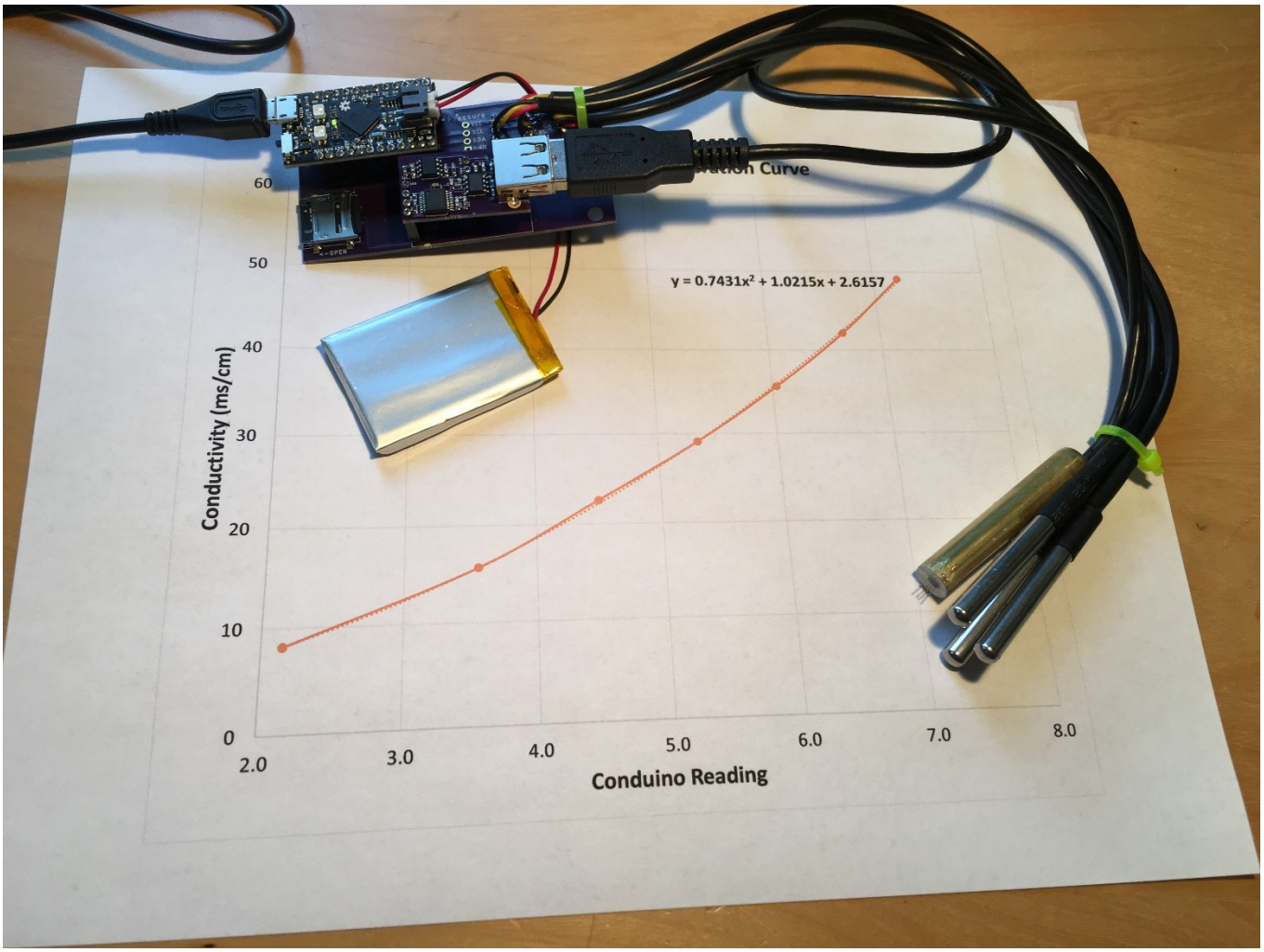
OpenCTD with Conduino

This version of the Open CTD instrument utilizes a Conduino conductivity probe made from a micro-USB cable.

https://github.com/OceanographyforEveryone/OpenCTD

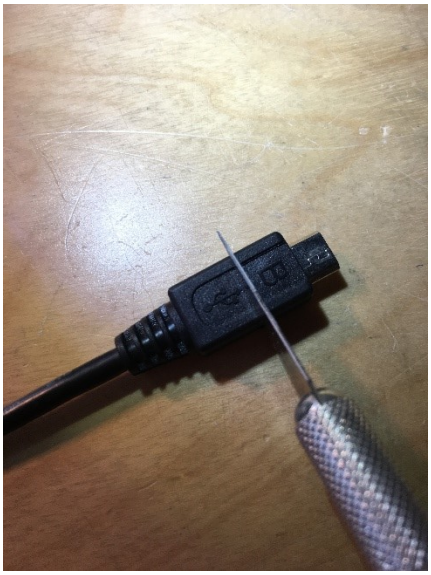
Here's a photo of the Conduino with three temperature sensors and calibration curve:



Conduino USB Probe Assembly Guide

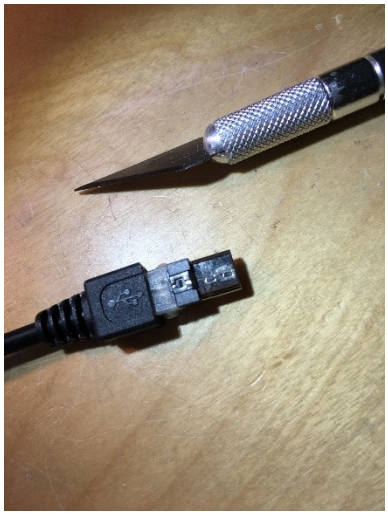
Here's one way to convert a micro-USB connector to a Conduino probe. Be patient and go slowly with the X-ACTO knife so the cable connections are preserved. A microscope is helpful.

First strip off the end of the cable housing by making a cut on all four sides.



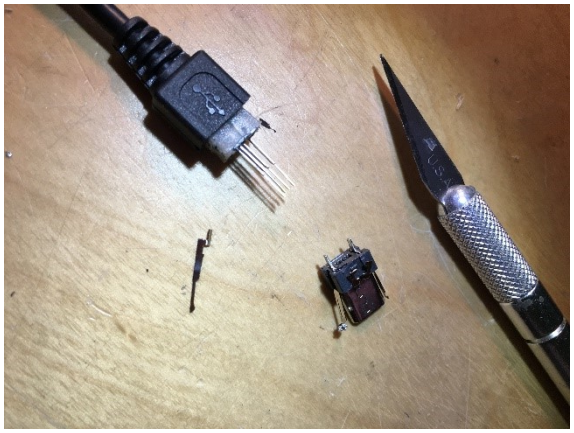
Cut again into fourths for ease of removal.

Remove the end of the housing and expose the connector.



Peel back the clips on the four sides.

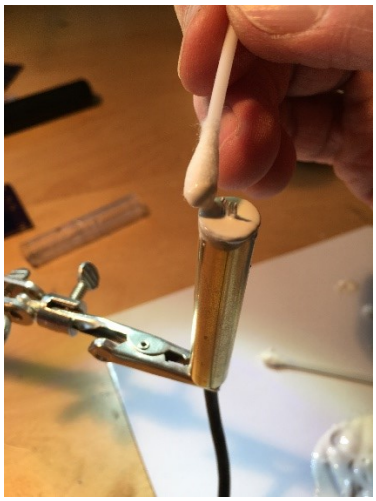
Carefully pull off the connector to reveal the electrodes. Darn, one of the electrodes came undone. Fortunately it's the ID pin which is unused. The Conduino board uses D+ and D-.



Now get rid of the rest of the housing so it can fit into a tube. Again, divide the housing into fourths by cutting down and slicing with the X-ACTO knife. Here's all of the discarded stuff along with what remains of the cable we'll use.

Use Marine Epoxy, readily available at Home Depot to cement the probe into a 3/8" tube. This tube is a brass tube because that's what the local hardware store had.

Use a holder to support the assembly while filling the void with epoxy. Here a Q-tip is used to mix and transport the epoxy.



Use the X-ACTO knife to carefully clear away the excess stuck to the electrodes now. In about an hour after the epoxy has set, use a microscope and knife to clear away all of the excess epoxy. Then allow 24 hours or so to fully cure.