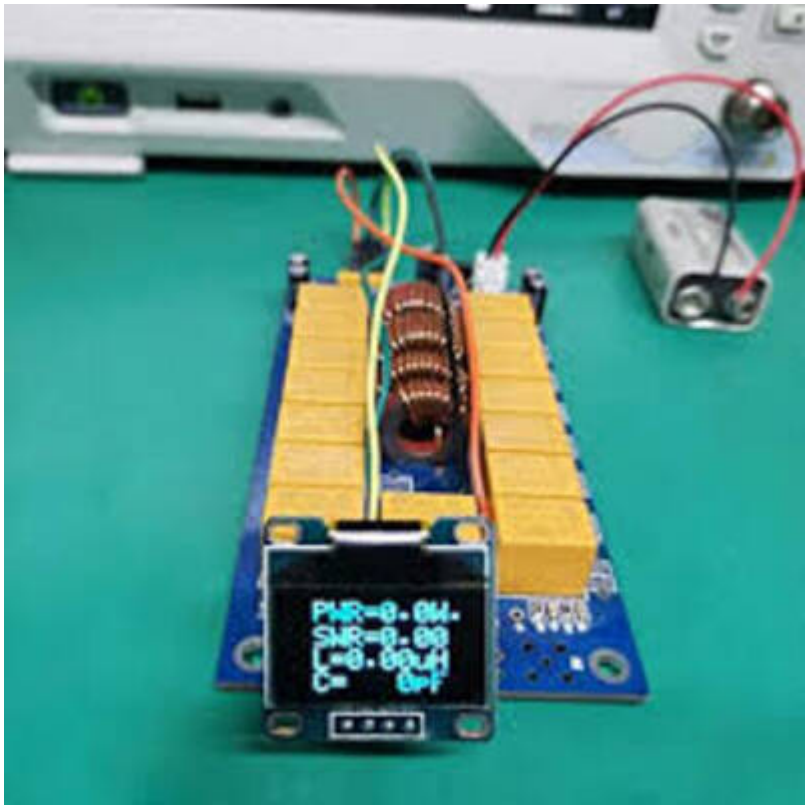
ATU-100 Project



Here is a link to a really interesting open source automatic antenna tuner kit that can be built inexpensively, I ordered a kit the other day about $60 CDN so am anxiously awaiting for it to arrive. It also has an OLED display which shows by default the power, SWR and selected inductance and capacitance, the kits range from fully assembled to partially assembled, the one I ordered (the most common kit) has the surface mount components installed and the PIC processor already programmed, so just need to solder in the relays a couple of capacitors and the various inductors. These kits are widely available on sellers like Amazon and e-bay by searching the keyword ATU-100.

Here is the link to the resource page.

https://github.com/Dfinitski/N7DDC-ATU-100-mini-and-extended-boards

Here is the link to the instruction manual and description.

https://github.com/Dfinitski/N7DDC-ATU-100-mini-and-extended-boards/blob/master/ATU_100_EXT_board/ATU-100_Extended_Board_User_Manual_eng.pdf

This is the first one I ordered:

https://www.amazon.ca/gp/product/B08TWTYTNR/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1

By default it doesn't work below 5 watts, however by winding the binocular toroid with 5 turns each side instead of 10 and changing 3 values in the processor with a PIC programmer (these are about $20.00) it can be used from 1 to 40 watts instead of the 5 to 100 watt default. I ordered a programmer so if anybody in the club ever needs to borrow it, just give me a call.

Here is a Youtube video showing the modification.

https://www.youtube.com/watch?v=dPys_-_wPcQ

Here is an update on where I am with this, I ended up ordering another kit off Aliexpress Canada which was much cheaper and shipping was also faster too so much better deal there (I wanted another one for up to 100 watt too as well as one for QRP):

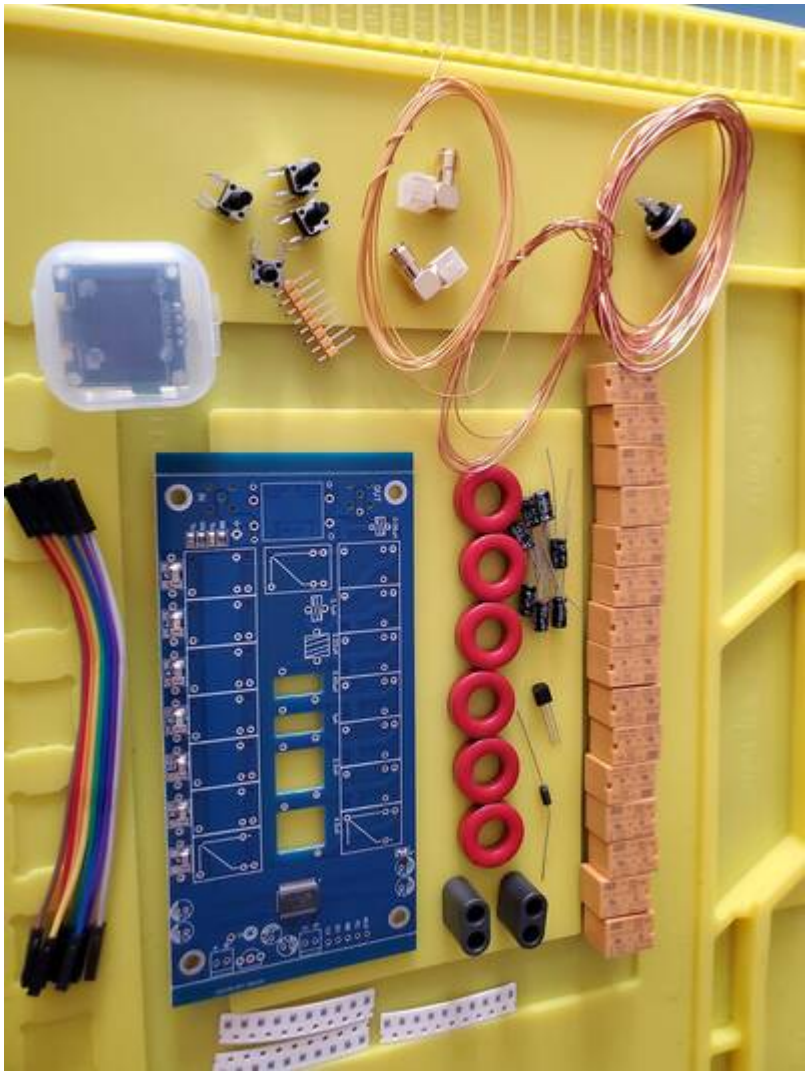
https://www.aliexpress.com/item/4001120351921.html?spm=a2g0s.9042311.0.0.10b44c4dCwsvp5

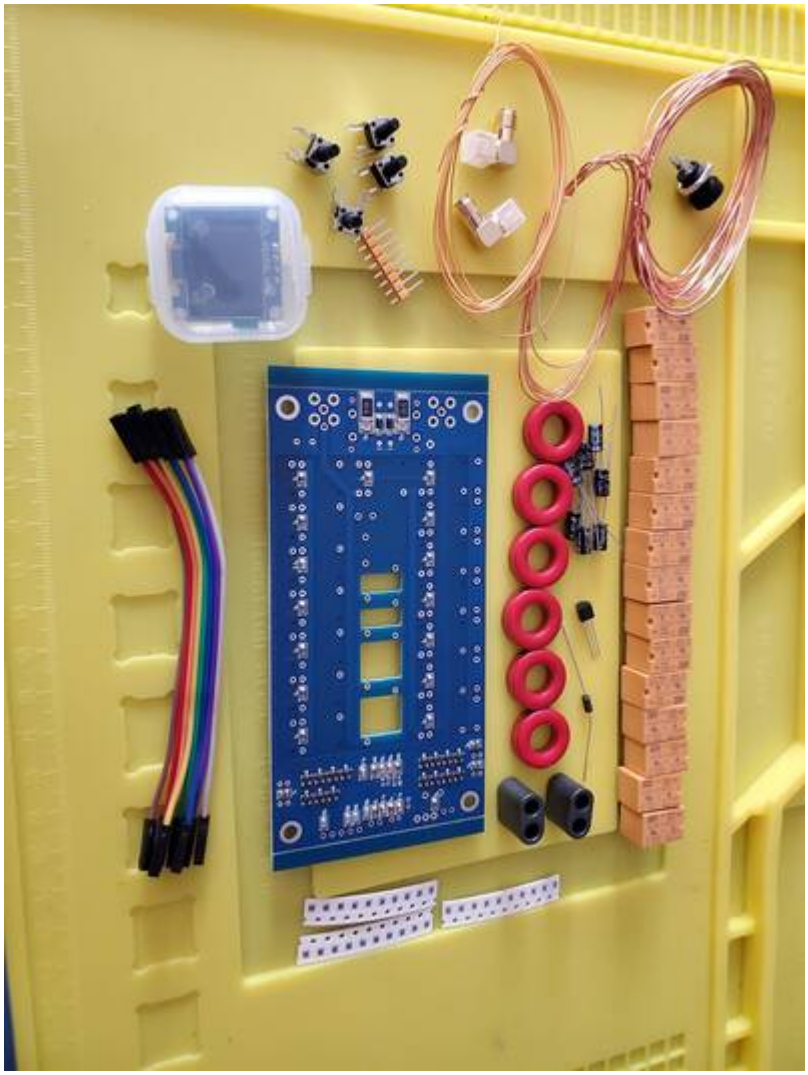
This one was just over $36 CDN including shipping.

I also bought cases for them for about $35 CDN.

https://www.aliexpress.com/item/1005001873358599.html?spm=a2g0s.9042311.0.0.10b44c4dCwsvp5

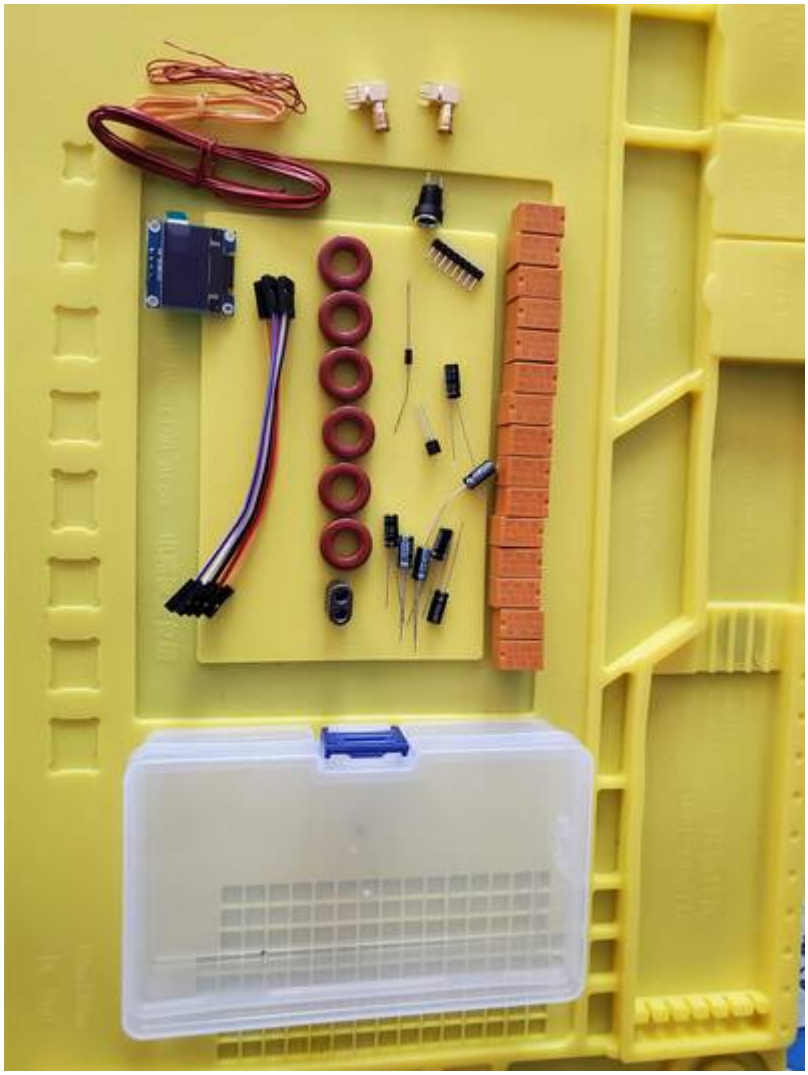
Here are some pictures of what I received from the Amazon kit:



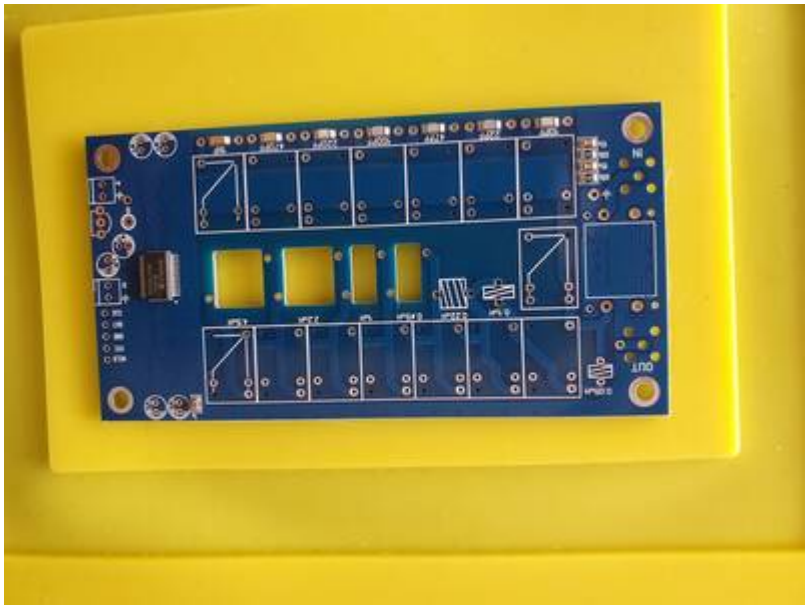


For some reason it came with 3 strips of SMD resistors and 4 PCB mount switches, both of which have nothing to do with the project so that is a bit of a mystery, it also came with an additional binocular ferrite which was an added bonus.

Below are pictures of what I received from Aliexpress Canada, even came in a nice little plastic box:



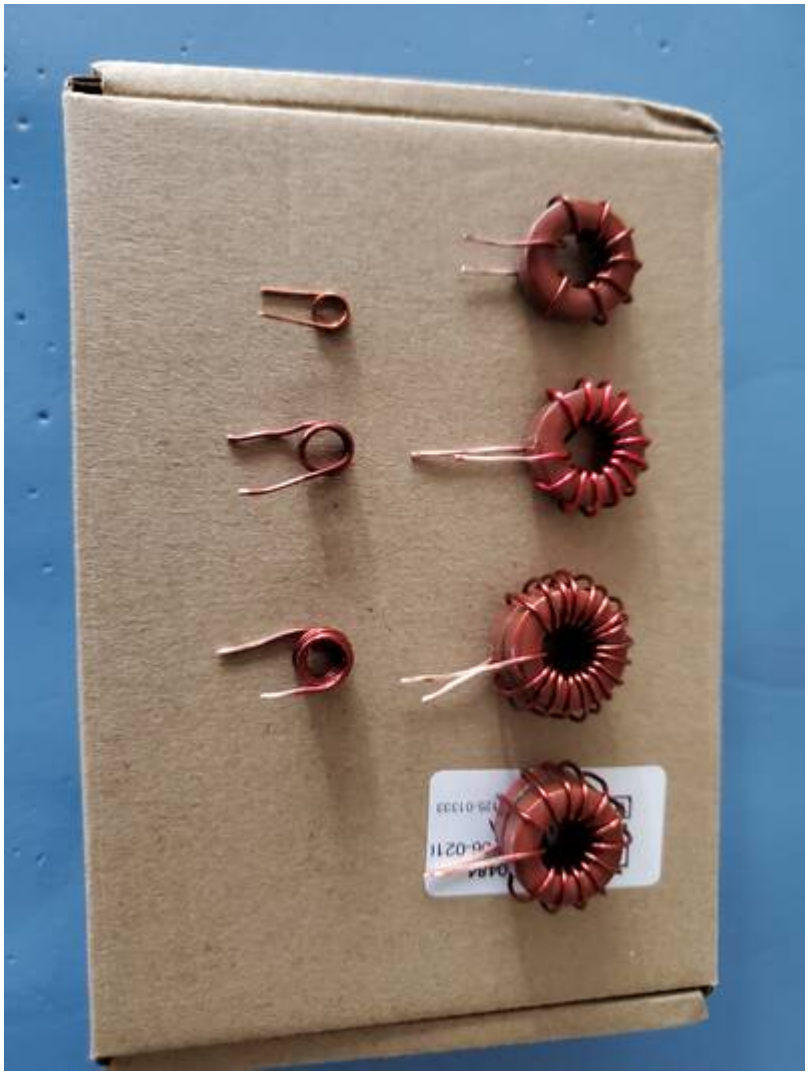




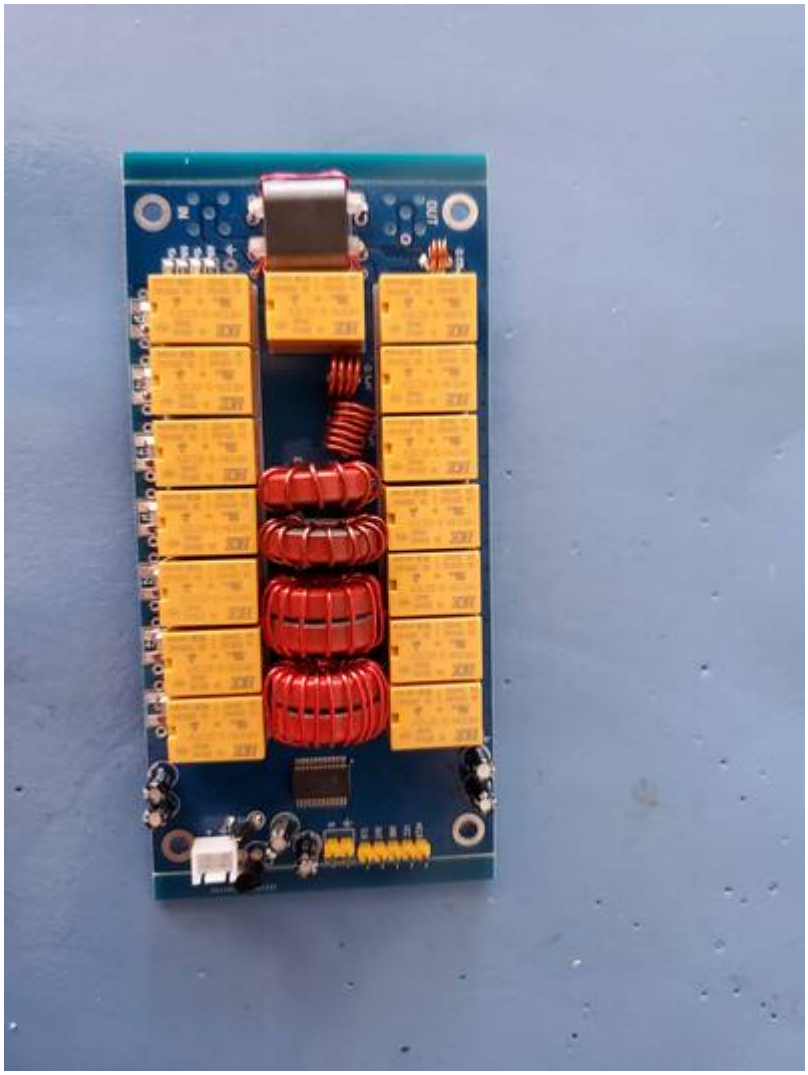
You can also buy these kits fully assembled too, I chose to build mine because I needed to modify it so I could use it for QRP levels and also for the fun factor in putting it together, I noticed the other day though they now are selling QRP versions fully assembled for about $115 CDN including express shipping.....

https://www.aliexpress.com/item/4001158847548.html?spm=a2g0o.productlist.0.0.30426c9flG7j9U&algo_pvid=f58cc53d-e9f2-426b-a164-a9ad4b6b99e1&algo_expid=f58cc53d-e9f2-426b-a164-a9ad4b6b99e1-6&btsid=0b0a555616149738641628587e38d5&ws_ab_test=searchweb0_0,searchweb201602_,searchweb201603_

Here is a picture of the ferrites I wound, the double ones I have since redone as they were a little loose, I ended up gluing them together before winding and had a much better result, so tip number 1 is to glue them together before winding them.



Another note on these ferrites is to make sure you strip or sand off the insulation far enough up so that it is bare on the top side of the board, these are double sided PCBs so the solder needs to flow to the other side to solder to the top pads too.



Here is one of the ATUs so far (the transmatch still needs soldering in this picture).

I will put some more pictures up as I progress with this.

Just thought I would put this up for anyone who is interested in building an inexpensive ATU, looks like a fun project, someone in the Phaser user group posted about these so it peaked my interest.

73 Nick VA7ILO