

## QRO ATU

Written by Hans Summers

Saturday, 11 July 2009 23:00 - Last Updated Saturday, 11 July 2009 23:26

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These preliminary pictures show my QRO ATU / Dummy Load / Power meter intended to be capable of handling the full 400W UK Legal maximum power at HF (QRP ATU manufactured in 1994. This project incorporates a

[QRO dummy load](#)

and my

[TinyScope](#)

for use as a modulation monitor if I should go on AM (but mainly just because it's cool).

As yet untested, and the power measuring side is not yet wired up. I'm awaiting having some moderate amount of power to apply to the unit, then will test and set up the power measurement (forward and reflected power).

**CLICK ANY PHOTO FOR A LARGER VERSION!**

{gallery}qroatu/1{/gallery}

1. Overall view. Cabinet dimensions are approximately 300mm x 210mm front panel, and 285mm deep.
2. Front panel view with no flash to spoil the tiny 1-inch CRT display. The front panel is double-sided fibreglass PCB.
3. [Click here](#) to read more about the [TinyScope](#) project.
4. [Click here](#) to read more about the QRO Dummy Load project.

{gallery}qroatu/2{/gallery}

5. Beautiful British-made Jackson Brothers transmitting 1000pF variable capacitor, from eBay.
6. Heavy duty 6-way ceramic switch from a radio rally. I have three for this ATU.
7. Back view of the switch. It isn't really as grubby as it looks!
8. 1954 moving coil meter, one of a pair from an old valve PSU cabinet from a radio rally.

{gallery}qroatu/3{/gallery}

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9. Transformer is wound using 1.5mm enamelled copper wire on a ceramic former, homebrewed by Charles Darley G4VSZ (thanks Charles!).

10. Aluminium angle frame, to secure the dummy load in position. Heavy use of Aluminium angle in this project!

11. Basic frame construction uses Aluminium angle and self-tapping screws. The rear of the variable capacitor is bolted to the framework.

12. The coil is mounted to a vertical support using improvised plastic spacers. One is a sawn off section of potentiometer shaft!

{gallery}qroatu/4{/gallery}

13. The cabinet is made of 0.5mm embossed Aluminium sheet, bolted to Aluminium angle. Note steel mesh section near [TinyScope](#), for ventilation.

14. Inside-view closeup showing the sheet bolted to the framework. The top, back and sides are kept as one piece.

15. Rear view of the assembled unit showing dummy load also bolted in place. Note SO239 antenna connector on PCB section bolted to the back.

16. Bottom view of the ATU. Note screw-cover cabinet feet (see also [this page about these feet!](#)).

{gallery}qroatu/5{/gallery}

17. Side view. I tried to keep the wires from the transformer away from each other.

18. View from the other side showing how the [TinyScope](#) is supported at the rear by an extra piece of PCB (the [TinyScope](#) panel cut-out!).

19. RF input SO-239 connectors, and cable exit for the mains power to the [TinyScope](#). The two inputs are selectable from the front panel.