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Project Name: Icom IC2730A Base Station Remote Control Head Adapter

Problem: Mounting the IC2730A Remote Control Head Effectively

Abstract:

I have an Icom IC2730A 2m/70cm mobile rig that I bought to run as a mobile but when the pandemic hit my office sent me home to work and I have been working remote since. So, I rarely drive anymore and I've wanted to use the rig as a base station. Traditionally my ham radio station and my remote workstation have not been integrated. However, my workstation is upstairs, and my radio station is downstairs (in the basement). I don't have television and working remote is so quiet and lonely I wanted to be able to hear folks talking and need to bring it all together. So, I built myself a desk and a second tier shelf for my desk to bring my monitors up to eye level and allow the radios to mount on the main desktop surface under the tier shelf to integrate the whole thing.

This whole integration thing created a problematic installation for the IC2730A remote control head in that I had no way to really mount it like I wanted to. Various contraptions involving Velcro, tape and left-over picture/blind mounting hardware just did not provide a secure and solid mount. Even the official (and expensive) Icom mounting plates and such did not provide what I really wanted.

I decided last year that I was going to get myself a nice Christmas present, so I ordered a Creality Ender 3 V2 3d printer and a Genmitsu CNC router. I set out to use the 3d printer to build a custom mount for the IC2730A remote control head but the learning curve for CAD drawing is steep for me (though I am learning) and I wasn't getting anywhere. The CNC router is for machining aluminum pieces that are part of my 4x 572B amplifier project. I then stumbled across Thingiverse (<https://www.thingiverse.com/>) and found a couple of Icom related projects but nothing specific to the 2730A.

One fellow on there had a backing plate for the IC880H and after contacting him, we worked on creating a back plate for the 2730A. A couple of prints later we had a sufficiently strong mount as the basis for an articulating base of simple ball and socket construction. After some further digging I found a ball and socket set on there that I printed up and attached to my top tier shelf and the backing plate of the 2730 remote head.

It is amazing that my first pass came out so nice and it works just the way I envisioned that I would want it to work. I now have my 2730A remote head mounted directly in front of me. It is at the right angle for clear visibility and the ball and socket is sufficiently strong and sticky to keep the control head stable as I use the mic.

The following pictures document the completed pieces being put together. Unfortunately, I forgot to take pictures of the printing process at various points. The plate plus ball and socket took around 2 hours to print but the results are well worth the wait.

**Exhibit 1: Test fitting backing plate with Ball and Socket mount on control head**



In this photo you can see the mounting plate mounted to the 2730A remote control head. Since this is a prototype, I mounted the ball part of the ball and socket to the backing plate with screws. I would like to make the ball part be an actual printed part of the backing plate or a snap in piece and ditch the screws. The ball and socket allow a large degree of flexibility in positioning of the control head.

Exhibit 2: Socket mounted to my tiered shelf awaiting the control head with ball piece



In this photo you can see the socket mounted to the shelf with wood screws. This mount is very secure and provides way to articulate positioning of the control head. I was thinking of mounting it underneath but then the control head would be constantly hit whenever I messed with the antenna tuner. I think I will try to extend the socket base to make mounting a bit more flexible but for now it works as I wanted.

**Exhibit 3: Oblique view of assembly attached together**



In this photo you can see the assembly mounted. It turns out that this configuration is just about perfect for my needs. The ball and socket are really strong and the printing process produces enough friction in the ball and socket interface to keep control head in the set position.

Exhibit 4: Control head in place and operating



A long bunch of months trying all manner of Rube Goldberg mounting experiments has now come to an end with the control head perfectly mounted directly in front of me.

**Conclusion: Highly satisfied with the results**

Overall, this was a very satisfying project to finish. While I did not want to pay Icom for a mount that really was not what I wanted printing my own mount has turned out to be exciting and fun. Also working with a person I have never met in a place I've never been (Oregon) to modify something they designed to fit the needs of my project has been education and fun.

The 3d printing technology, while it can be daunting, has taught me that there is a lot of things that one can do on their own to augment their lives and solve problems.

I want to say many thanks to the designer of the backing plate and his willingness to work with me in designing it. Also, thanks to the designer of the ball and socket project which has been out there since 2013! But a great thanks to Thingiverse for hosting a site with what appears to be millions of projects that can be recreated/replicated/remixed to make millions of other things.

Thanks for reading and hope to hear you on the air.

**Resources Used:**

- IC2730A Backing Plate link: <https://www.thingiverse.com/thing:4727541>
- Ball and Socket link: <https://www.thingiverse.com/thing:67911>
- 3D Printer: Creality Ender 3 V2