

Dear Dragoslav,

I thought that you might be interested in this too.

Hi Wes,

Here are the data photos I said I would send of the YU1AW amplifier I built. Susan laid out the 6 meter and two meter amps side by side on an Express PCB card. I also finally found some of the Infineon transistors from Allied Electronics.

This is an interesting preamp with almost 500mw of standing power, it could also double as the final on a small qrp rig...hi. It performs largely as suggested on the YU1AW website. Gain is adequately close to the article.

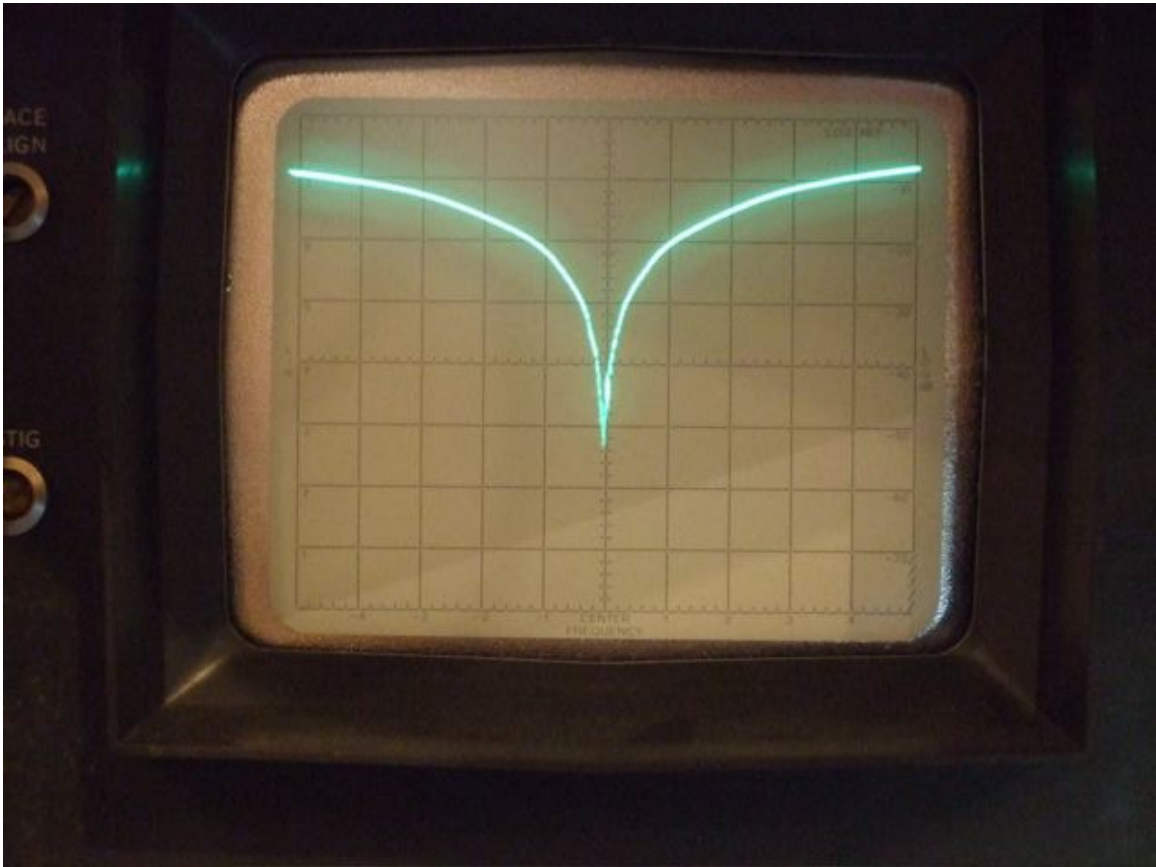


Fig. 473



Fig. 474

Input match and noise figure are interesting. Keep in mind that these are actual measurements, not simulations, done on an HP 8553 analyzer with tracking generator and an AIL 75 noise figure meter. The reflectometer has slightly over 25 dB directivity. All return loss photos are 10dB/div vertical and the 0 dB reference is at the top of the screen.

This preamp demonstrates the typical bi-modal input properties where Z_{match} differs from Z_{nf-opt} . In figure 473, the amp is tuned for best input match. The span is .1MHz/ div with the center at 50.125 MHz. Notice that this is super tuned, the displayed return loss of 50dB is far better than the bridge with a good 50 ohm load. Figure 474 shows the noise figure of about 3dB with the input match shown in figure 473.



Fig. 475

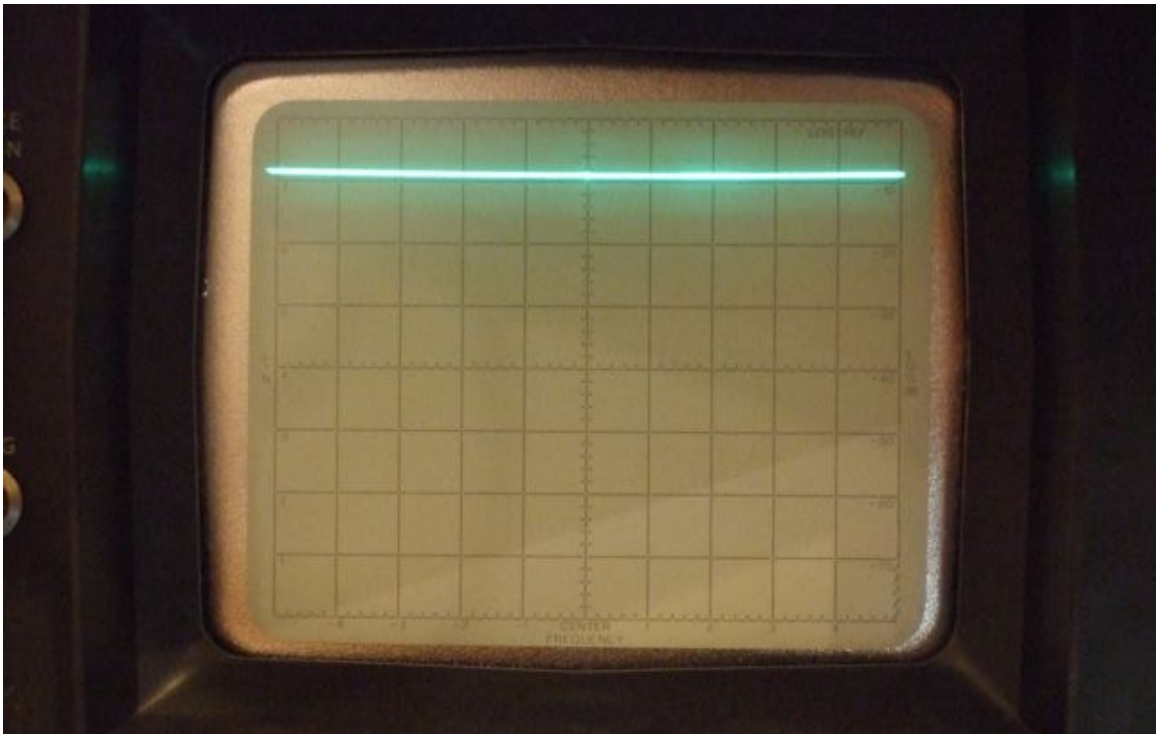


Fig. 476

In the next photo (475) we tuned the amp for best noise figure which is about 2 dB. Figure 476 shows a much flatter input return loss of about 9 dB. The span is .1 MHz per division here. In the next photo (477), the span was increased to 1 MHz per division to show the gentle shape of the return loss.

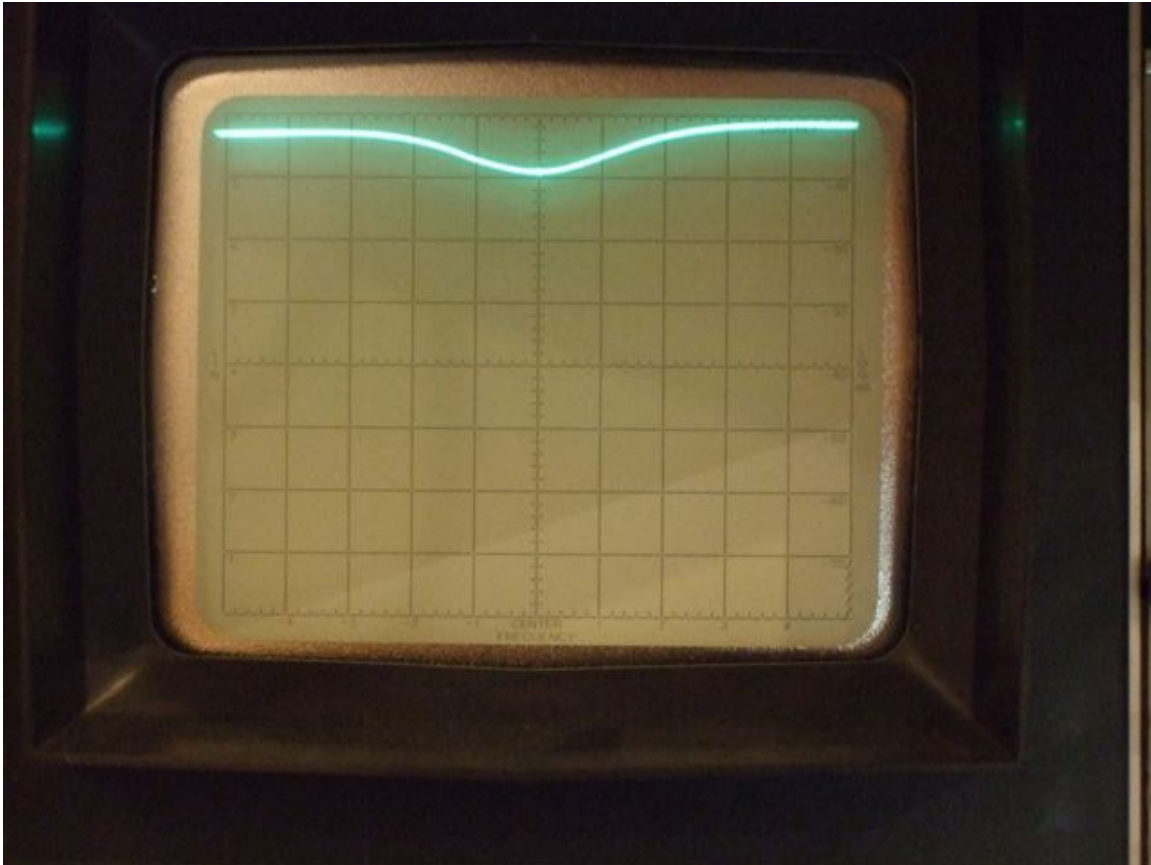


Fig. 477

I think there is some slight inductive feedback effect internal to the 135 due to the emitter ballasting resistors and bond wires, but not much. The delta NF between best NF and best match is about 1 dB NF. Considering the approximately 5,000 Kelvin sky on six meters, I think either setting would work well. The decision could be made on the basis of the existence of interfering services.

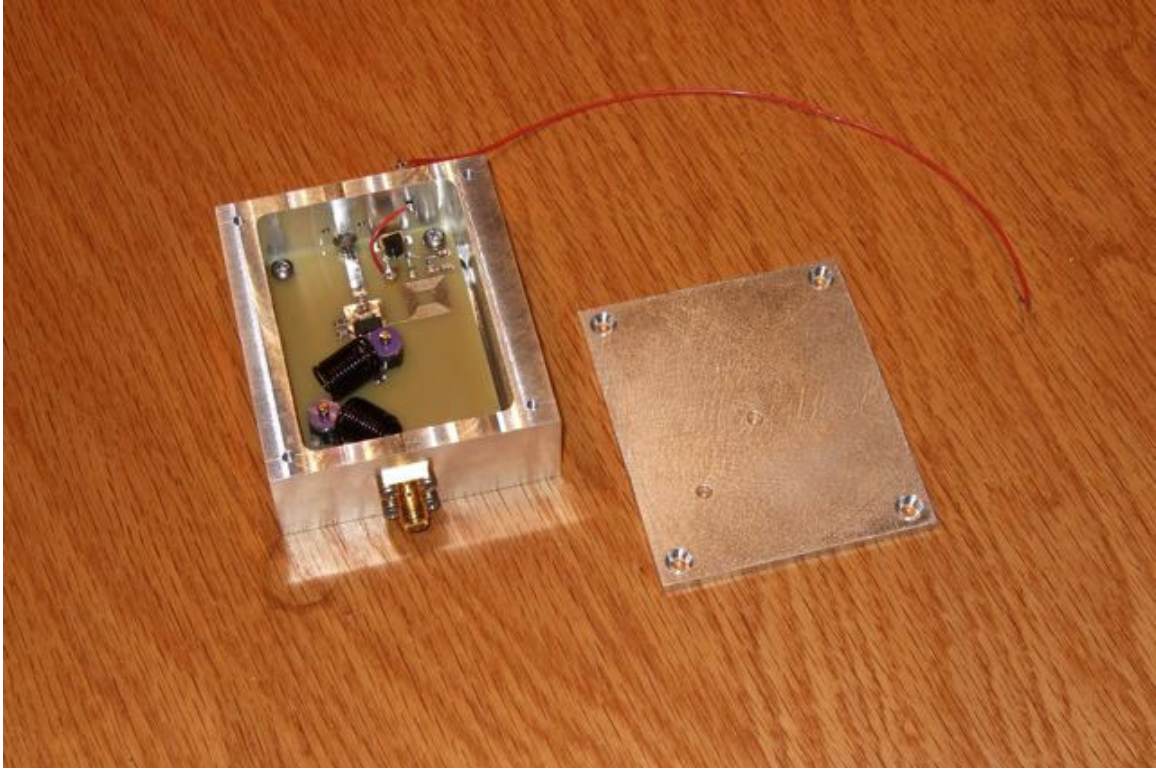


Fig. 479

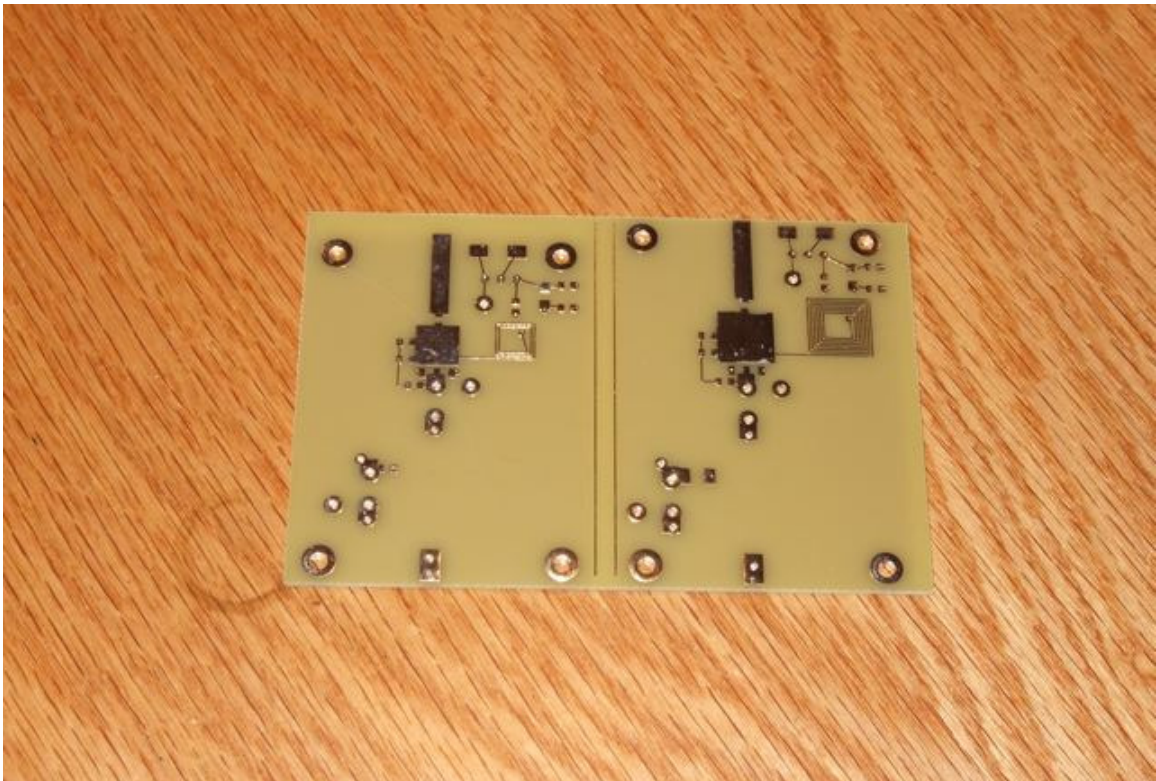


Fig. 480

Photos 479 and 480 show the actual amp and the board layout.

That is about it.

I would also like to mention the design on our site at:

<http://web.mac.com/sdt49/>

You might find this site interesting, especially the amplifier section.

73,

Fred WA7TZY