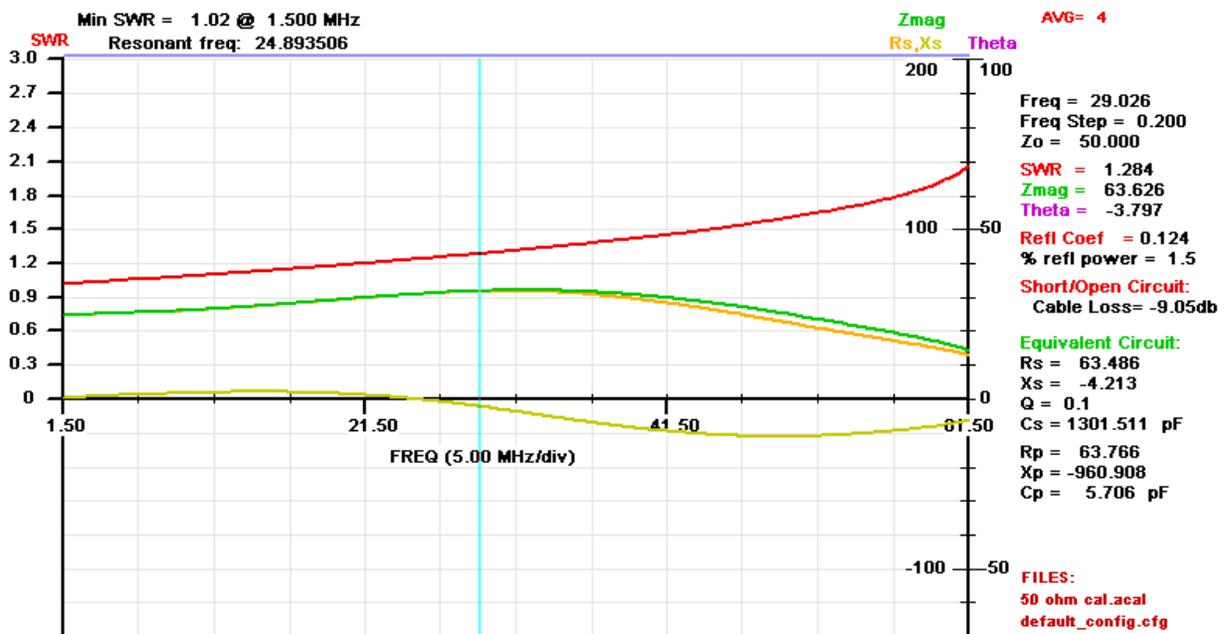


Flatten the Ameritron ADL-2500 Dummy Load
 Phil Salas – AD5X

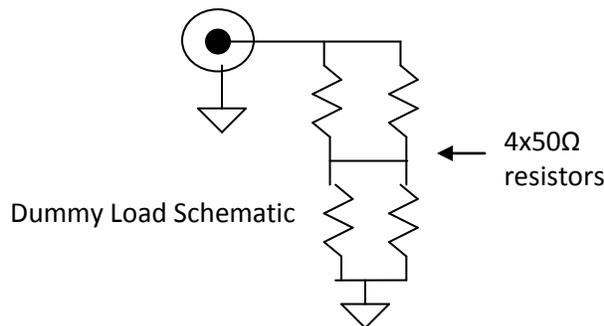
The Ameritron ADL-2500 (also the same as the same as the MFJ-265 and Vecronics DL-2500) is a full legal limit dry, fan cooled, dummy load that is spec'd from 1.8-54MHz with an SWR of less than 1.25:1 at 30 MHz and less than 1.4:1 at 54MHz. This is a very nice dummy load, however it doesn't quite meet its SWR spec at 30 MHz. Since I like to have a near-perfect load for making accurate power measurements and amplifier checks, I decided to see if I could improve the HF SWR. Additionally, in many cases I didn't need the internal dummy load fan to be operating (the fan is pretty noisy). Fan operation is unnecessary when operating at 100 watts, or even 600 watts with my ALS-600 for short periods of time. So I also wanted to add a fan on/off switch to the unit.

Below is the SWR curve of the unmodified ADL-2500 taken with an Array Solutions AIM4170C. Note the SWR at 30 MHz is close to 1.3:1.



SWR curve of the unmodified ADL-2500

The ADL-2500 consists of four high power 50 ohm resistors connected in series/parallel as shown below.



I found that 25pf of capacitance connected as shown below and in Photo A flattened the SWR nicely up to 30 MHz. I used two series 50pf 500V silver mica capacitors for the necessary 25pf.

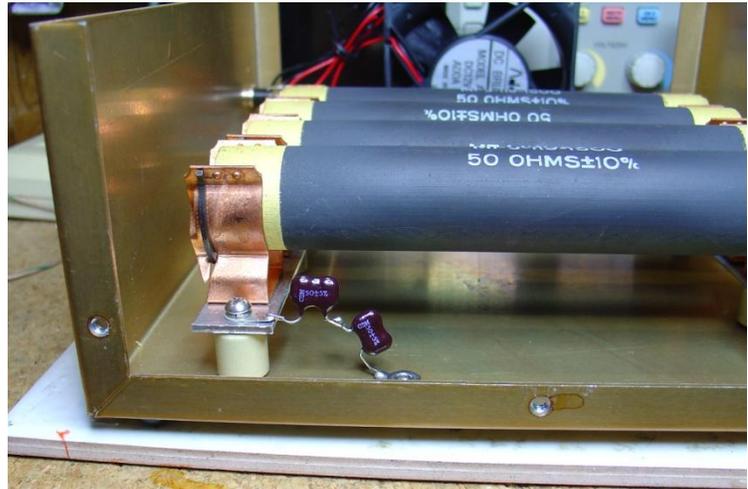
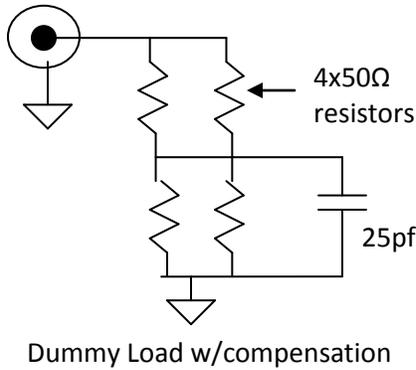
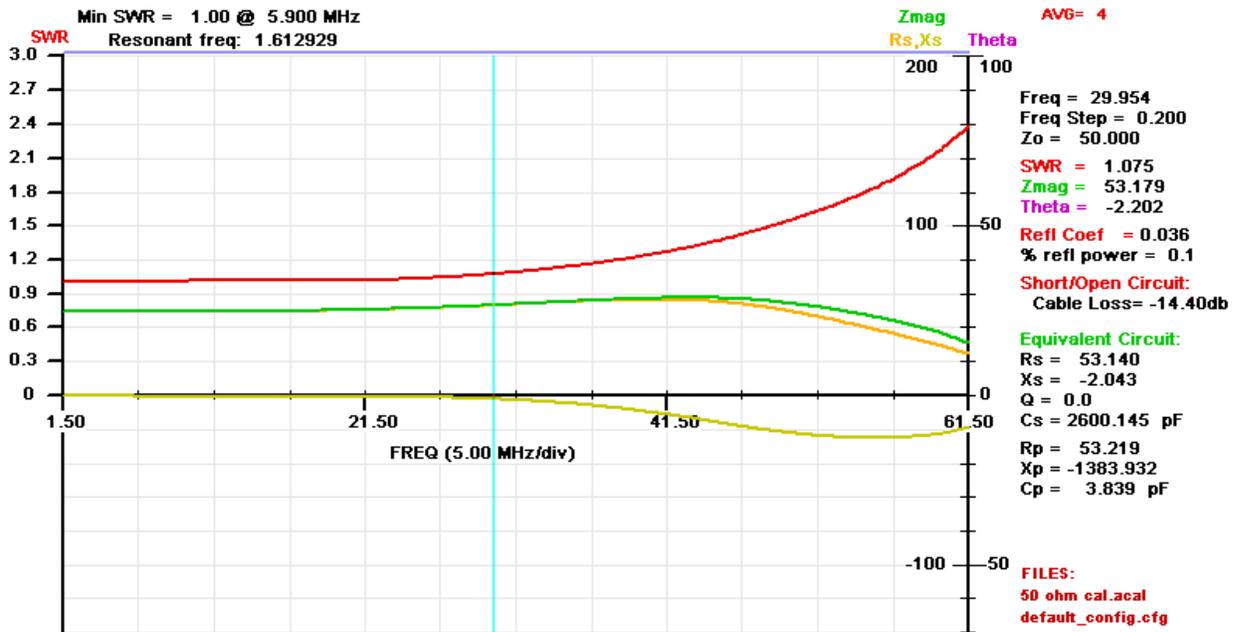


Photo A – Added 25pf capacitors (2x50pf caps in series)

Below is the SWR curve of the flattened ADL-2500. Note that at 30 MHz, the SWR is just 1.075:1.



SWR curve of the ADL-2500 with the added 25pf compensation

Finally, it was easy to add a SPST switch in series with the 12VDC input that powers the fan. I added the switch just above the existing DC input connector as shown in Photos B and C below.



Photo B: Fan On/Off switch Internal View



Photo C: External view of switch

These simple changes will take little time, yet improve the performance and convenience of the DL-2500 dummy load.