

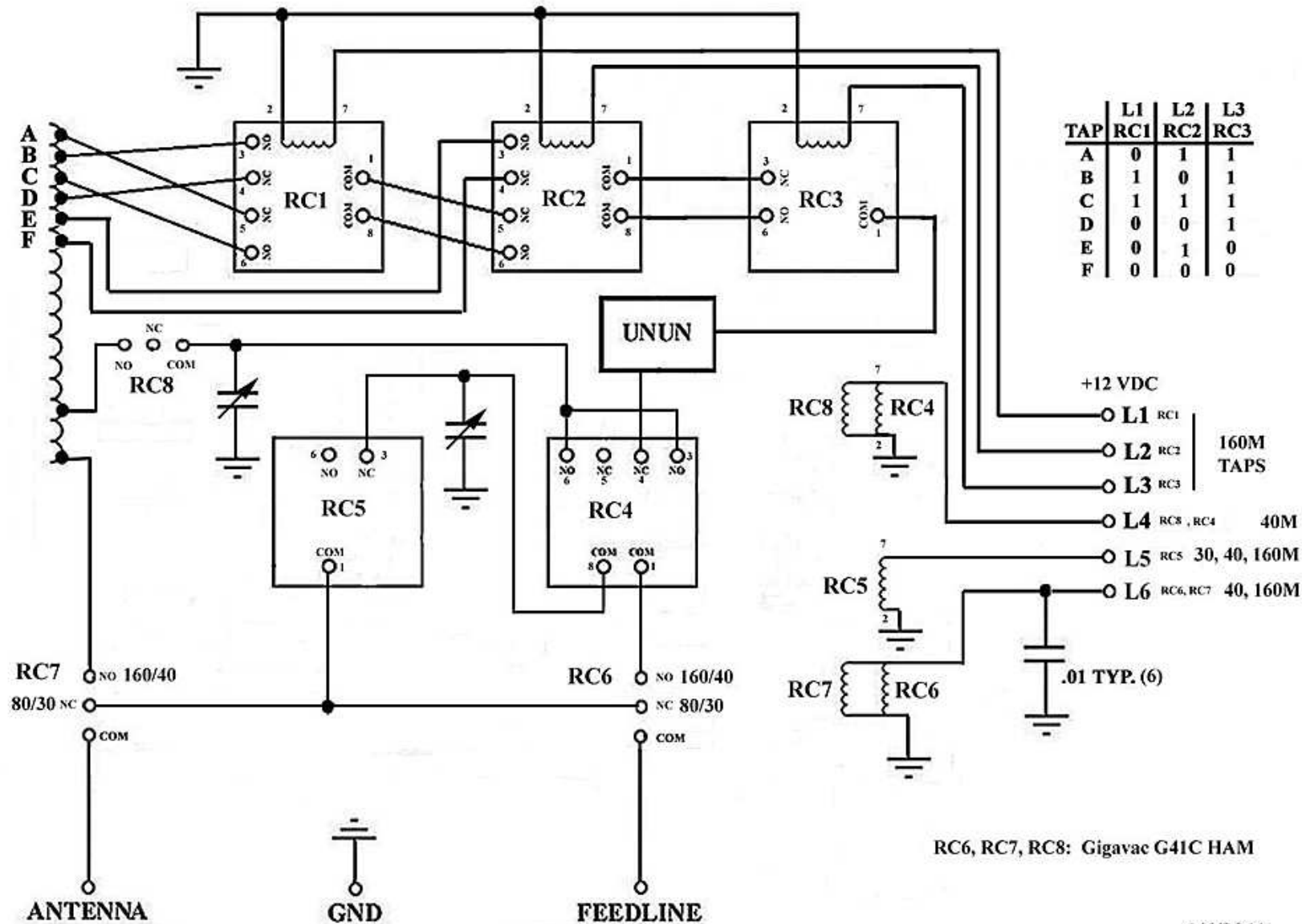
Hämtat från WA2ETU:s stationsbeskrivning

Shown below is my vertical antenna for 80 meters which I erected in 2004. It is a 1/4 wave, Model AS80-FS from Array Solutions. It is approximately 70 feet tall, 4" OD aluminum tubing at the bottom stepping down to 3/8" OD tubing at the top. I have 120 approximately 70 foot radials buried just under the surface of the grass. I built a mechanism to mount on the rear of my lawn tractor to dig the trenches and lay the wire in place. Still, it took a few days to install all the radials. I was not satisfied with the radial plate that came with the antenna so I made my own out of a 24" square copper plate. The radial wires are #18 bare copper attached to the radial plate with stainless steel hardware. It is possible to tilt the antenna down if needed. I decided to shield the lower section of the antenna in case an animal or person should come in contact with the antenna while I was transmitting. A piece of 4" PVC drain pipe is a perfect fit over the bottom section of the vertical. We (xyl and I) decided to paint the lower 20 feet green to better blend in with the surroundings. The antenna has been a good improvement for working DX on 80 meters. Previously I only had wire antennas on 80. I often use a reversible beverage receiving antenna. The beverage is either directed east or west. Although I have 6 1/2 acres of property, the property is not deep enough north and south to set up a beverage in that direction. In 2010 I replaced my original beverage with a DX Engineering unit. I control the direction by putting negative 12 VDC on the coax to switch from east to west. This beverage does seem to work much better than my original beverage.

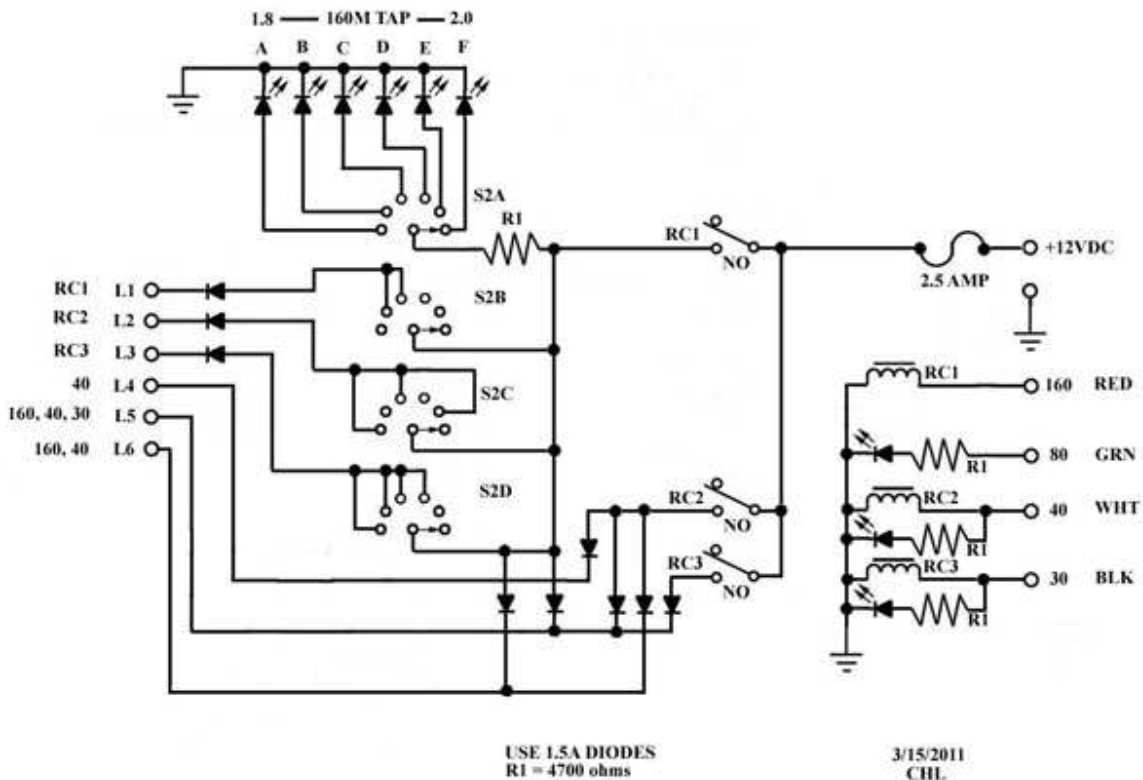
After all these years, in the winter of 2007 I became interested in working 160 meters. Due to the weather at the time and the construction of the vertical it seemed the easiest way to work 160 was to add a loading coil to the vertical. Although this is not the ideal 160 meter antenna it has worked well for me. After several iterations the current control for the vertical is shown below. The loading coil is made of 1/4" copper tubing and is approximately 7" in diameter. It has a Q well in excess of 1200. Six taps cover the 160 band with an SWR under 2:1. It is near 1.05:1 at the resonate points. A Unun matches the low impedance of the vertical to the coax feedline on 160. On 80, 40 and 30 meters the antenna is a good match to the coax without the Unun. I needed a relay at the output of the coil and had difficulty finding one that would work. I discovered Gigavac relays and they solved the problem. If you need high power RF relays I suggest you investigate Gigavac's product line. They have some special deals for hams. The polycarbonate enclosure is painted silver to reflect the heat and prevent UV damage to the components. The system handles legal limit power. The two air variable capacitors used in the matching system are home brew. I made them about 40 years ago to use in an antenna tuner. They sat unused for years.



VERTICAL ANTENNA TUNING CIRCUIT FOR 160/80/40/30



CONTROLLER CIRCUIT FOR VERTICAL ANTENNA



Källa: <http://home.windstream.net/adye/webpages/CURRENT.htm>