

## A very quick look at the WA7X Cycloid antenna

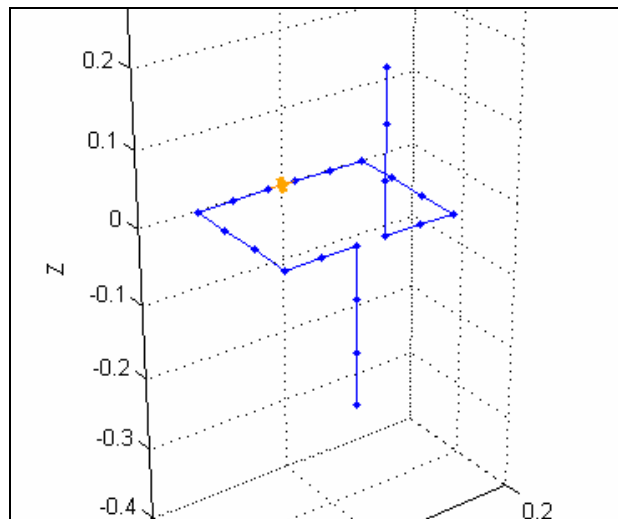
[http://www.wa7x.com/cycloid\\_info.html](http://www.wa7x.com/cycloid_info.html)

Thomas Abbott ZS6TXA 8 April 2007

I came across your antenna looking for information on Duplexers and how to tune them. I liked the sound of circular polarisation for a repeater site, many advantages. I was a bit sceptical about the antenna giving good circular polarisation all around, but analysed it in SuperNEC and found it definitely works.

### Simulation

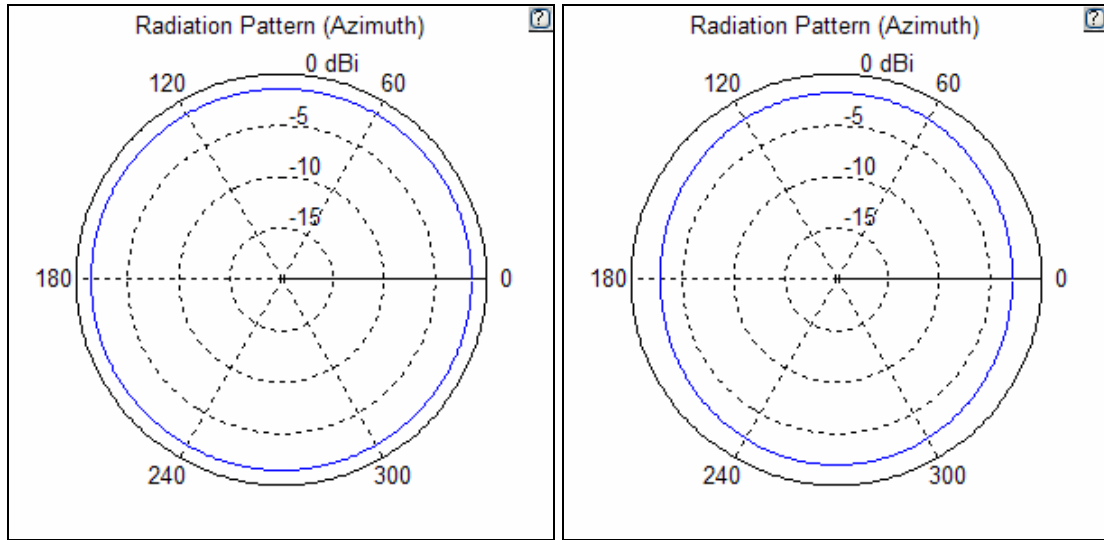
Here's the structure in SuperNEC. Easy model to input, and will simulate pretty accurately. The wire diameter shown here is not true, I used 12.5mm.



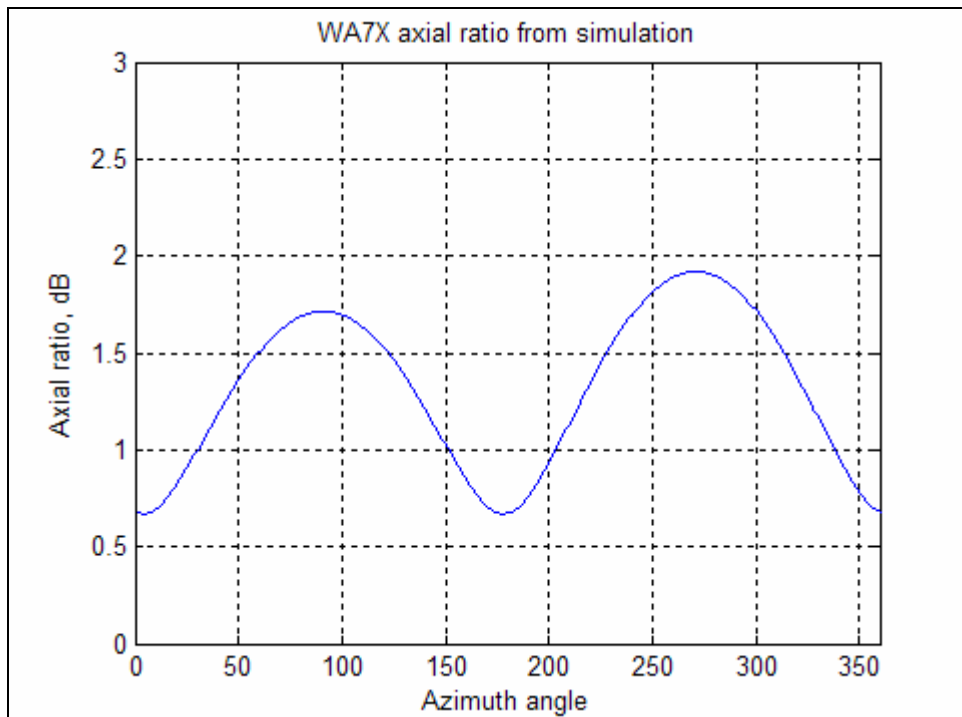
The impedance at 145MHz is  $8.4+j90\Omega$ , which is match-able. The network should be balanced and not get in the way of the antenna, I'd use another quarter-wave stub of copper, and some PCboard mischief inside, but that probably wouldn't handle much the power.

## Results

Radiation pattern is very omni, for V and H polarisations :



And the axial ratio is excellent :



Congratulations on a very neat antenna. Excellent diagram with clear dimensions.

I hope to try it soon, at home if not on the repeater.

73, and happy Easter.

Thomas ZS6TXA