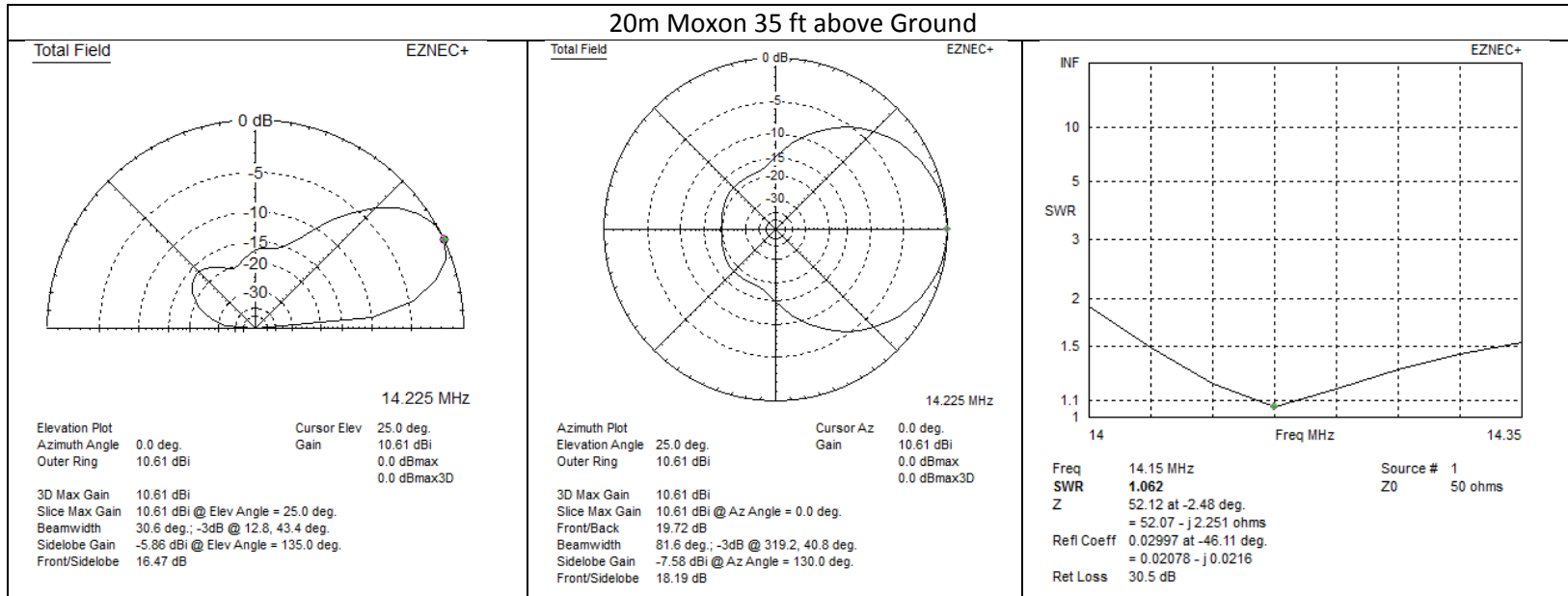


Moxon Antenna Modeling Part III

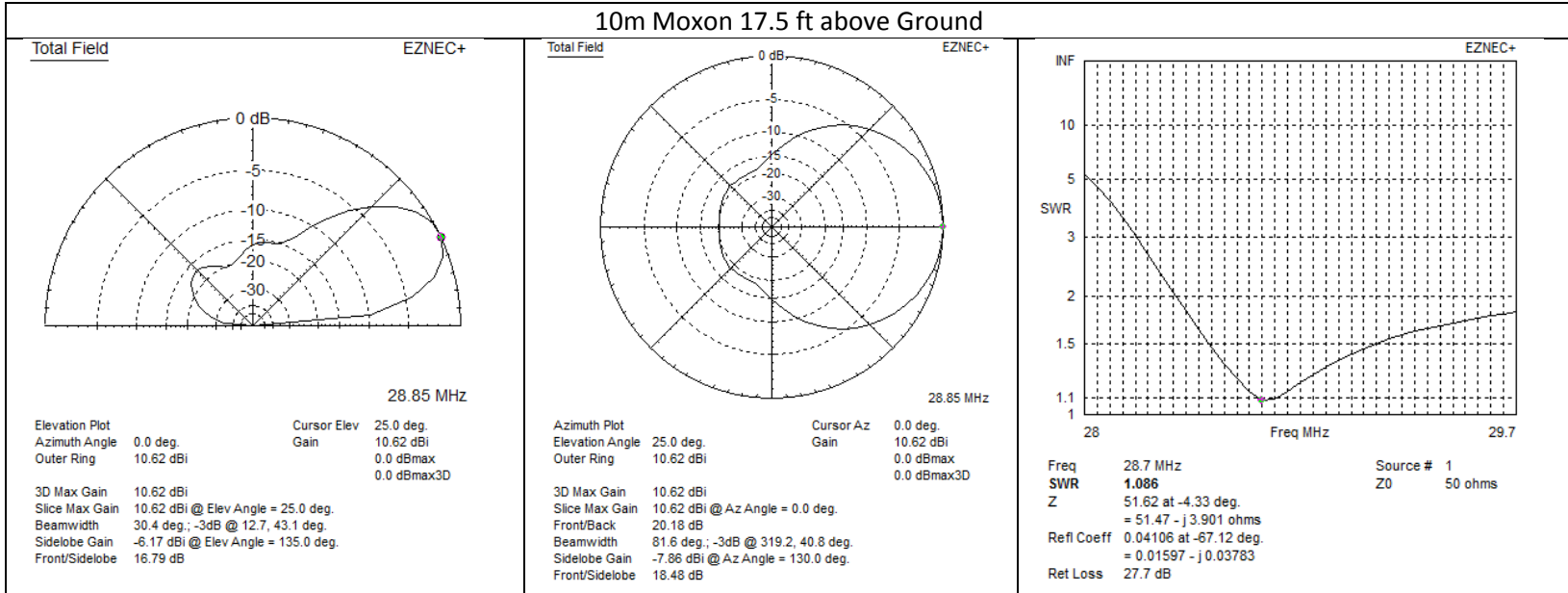
In the last discussion it seemed that a 20m single band antenna at 35 ft was about as good as it was going to get from a practical stand point. Below is a summary of the results of this antenna configuration.



Height Above Ground	Wavelength Above Ground	Gain	Front/Back Ratio	Take-Off Angle
35 ft	0.51 λ	10.61 dBi	19.72 dB	25°

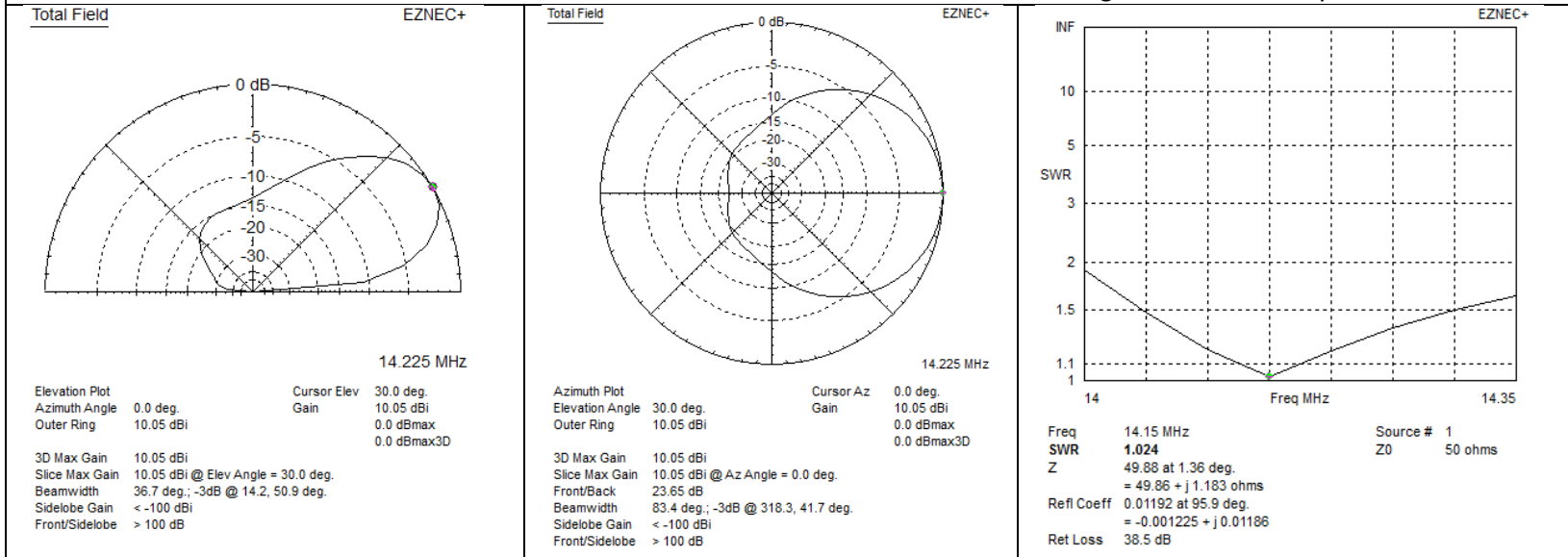
The next thing to look at is can I put two antenna on the same mast and not have them interact in an adverse fashion. I think I will start with adding a 10m Moxon at various heights and see what happens. Initially I will assume they are feed with separate feed lines. I will start where I think the best solution will be. I start by using just a 10m at about 0.5 λ above ground that provided the best results before. As it works out, this is about 210" or 17.5'.

10m Moxon 17.5 ft above Ground

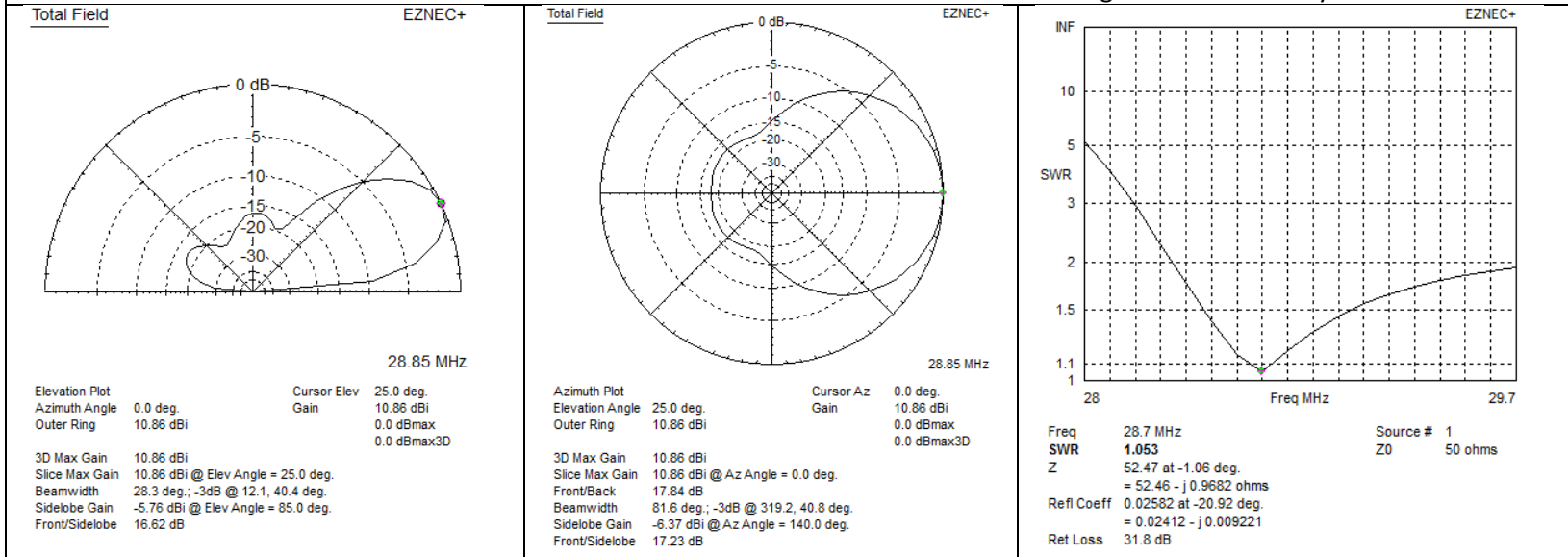


I am sure you see that the patterns are also identical. Since both antenna are the same height above ground in relationship to the wavelength, this is not a surprise. The next step will be put both antennas on the same mast, but feed separately and see what happens. I am a bit concerned since these two will be harmonically related, or at least close.

20m Moxon 35 ft above Ground and 10m at 17.5 ft above Ground. Feeding 20m Antenna only

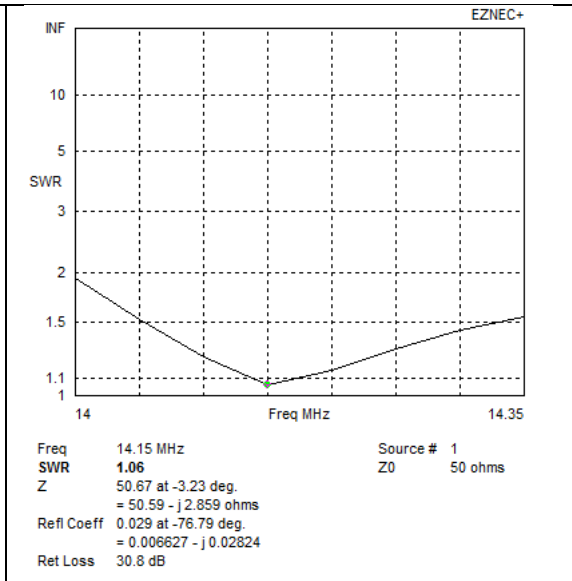
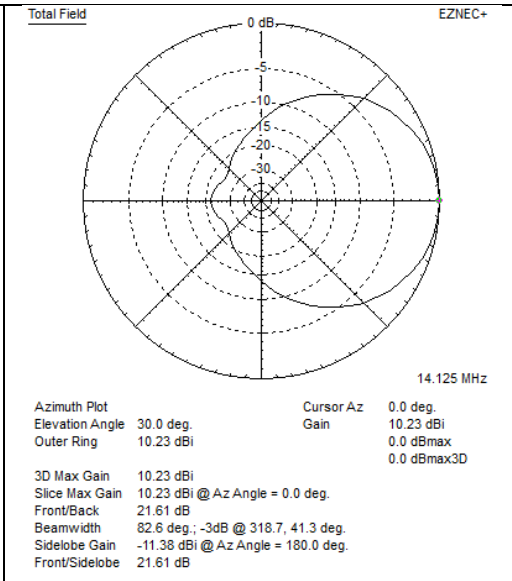
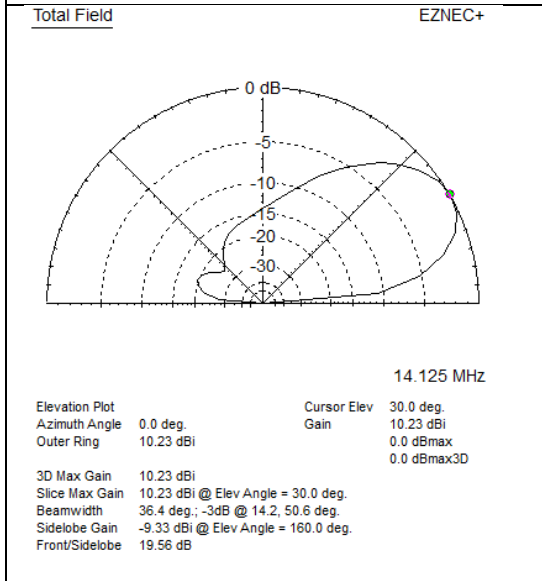


20m Moxon 35 ft above Ground and 10m at 17.5 ft above Ground. Feeding 10m Antenna only

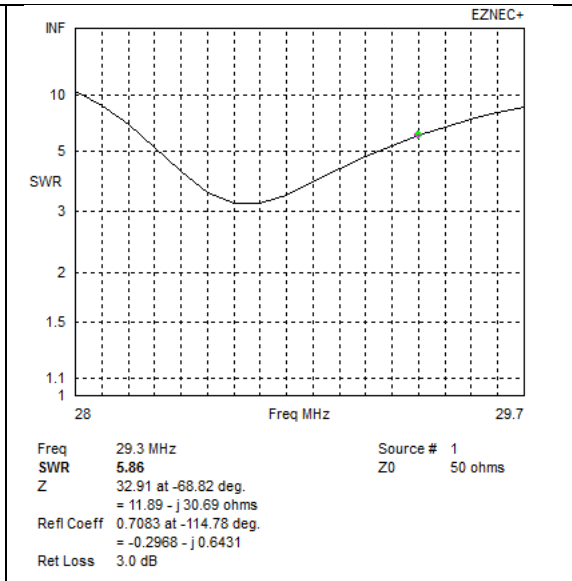
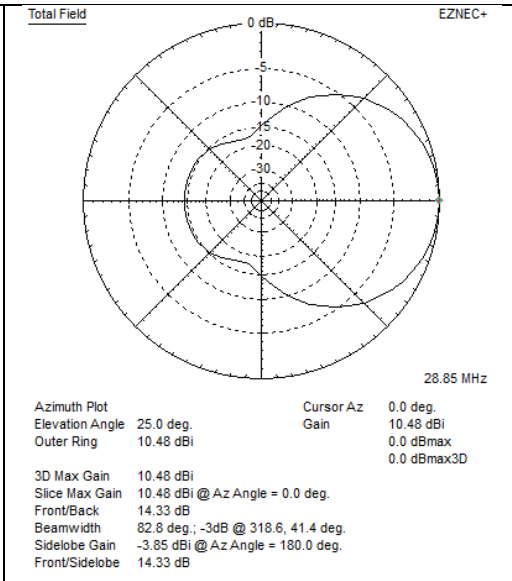
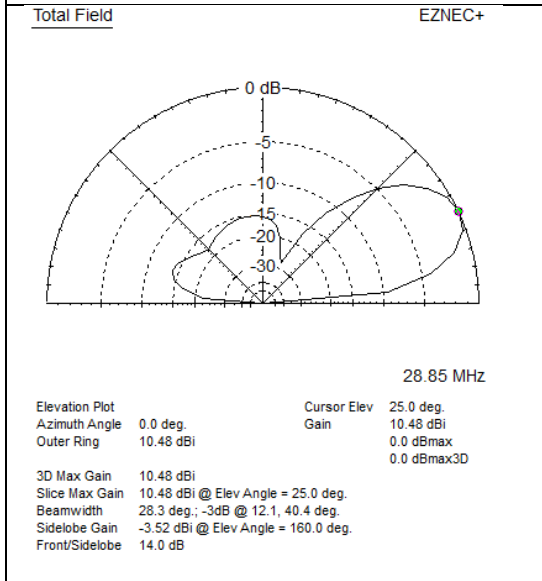


Ok, so there is a little difference, but not enough to be any concern. Now is the big test, lets feed them with the same feed line and see what happens.

20m Moxon 35 ft above Ground and 10m at 17.5 ft above Ground. Common Feed Line



20m Moxon 35 ft above Ground and 10m at 17.5 ft above Ground. Common Feed Line



It is pretty clear that this combination will not work. I think the harmonic relationship pretty well eliminates the possibility of feeding them with the same feed line. Next time I should try this with a 15m antenna.