

Antennas and Amps

Written by Jim Kinter, K5KTF -

We have had a number of people write regarding amps and antennas.

I sat and did some calculations (<http://www.csgnetwork.com/antennaecalc.html>).

With 79mW (stock) power from the node into a:	3.5dBi (stock rubber duck)	176W EIRP
9dBi (yagi/omni/dish)		.62W EIRP
14dBi		1.9W EIRP
24dBi		19.8W EIRP

If you go with a 1/2W BDA (bi-directional amp--about \$60-\$80) into a:

3.5dBi (stock rubber duck)	.1W EIRP
9dBi (yagi/omni/dish)	3.9W EIRP
14dBi	12.6W EIRP
24dBi	126W EIRP

And then, even a 2 watt BDA (\$60-?00's):

3.5dBi (stock rubber duck)	4.47W EIRP
9dBi (yagi/omni/dish)	15.8W EIRP
14dBi	50.24W EIRP
24dBi	502.4W EIRP

As you can see, no matter how many watts your pushing, having a better antenna ALWAYS helps out more than the amp, especially when you factor in cost.

Antennas and Amps

Written by Jim Kinter, K5KTF -

I have seen a 25W BDA, for a couple thousand dollars, and drive that into a 3.5dBi Omni, your still only getting about 55W EIRP. (But that into a 24dBi dish will give you 6.2KW EIRP, enough to get fried pheasant/robin/bat/etc every night for dinner!-- If you cant hit your target with that, you must have too much dirt and concrete between sites.)

So your best bet will always be trying to connect with a good antenna first. If you connect, but its weak, THEN try an add a 100mW or a 1/2W BDA. Unless you like having dead birds on your property (already cooked!).

Dumping wattage into a weak antenna only propagates noise and makes things tougher for all.