

INSTALLING 2M YAGI WITHIN A 70CM ARRAY BERT VE2ZAZ

I would like to report back on the replies I got from half-a-dozen hams regarding my question on placing a 2m beam in the middle of my 70cm yagi array (see original question below). I thank those who have responded to my question. A general trend can be found in the answers, though there was a bit of contradiction in some aspect.

Placing a 70cm yagi in the center of a 2m array can be done without much disturbance. The contrary may not be true. Assuming the 2m beam is placed “exactly” in the center of the H structure where the 70cm antenna pattern Circles do not reach, it may have minimal or no impact on my 70cm EME array performance. The problem for me is I cannot achieve this; the elevation rotor sits right in the sweet spot. In retrospect, the more I look at it, the more I realize that a 2m beam is big compared to the 1.45m antenna spacing used on 70cm.

Of more concern is the risk of blowing up my 2m front end or my 70cm preamp. There would be sufficient coupling between the 2 antennas (a suggestion made was -30dB). So 300W at 432MHz would turn into 300mW at the 2m radio front end. Recipe for failure...Of course by carefully managing the coax connections on the radio's i.e. disconnecting unused band antenna, one could operate safely. But I am not willing to try this, especially not during a terrestrial VHF contest. What could go wrong will go wrong.

So I guess I will install the 2m beam lower on the tower, on a fiberglass cross-boom, with an additional rotor, and with the drawback of the tower blocking some of the horizon and interfering with the antenna pattern. Oh well.

Thanks to all,

Bert, VE2ZAZ

Hello everyone.

I would like to install a 4 element 2m horizontal. yagi somewhere at the top of my tower. Problem is the top is occupied by my 4 x 4.3 lambda horizontal. 432MHz EME array, with the classic H structure. See current array at http://ve2zaz.net/EME_Log/Array.jpg .

Of course, with such a small 432 EME array, I want to disturb the radiation pattern the least possible. I understand that the interaction will not be nil, so I am asking those who have had the experience to help me on this one. I intend to mount the 4 element 2m yagi (horizontal polarization with mast mount behind the reflector) either on the mast just below the elevation rotor, or on the horizontal cross-boom just next to the elevation rotor. In both case, the 2m beam will not be quite at the center of the 432 EME array.

1 - How much disturbance will the 2m beam cause to the 432 EME array?
Significant or not?

2 How much 432MHz Tx RF will couple into the 2m antenna, and vice-versa? I normally transmit on 432 at 300W and 150W on 2m. Any risk of blowing up radio front end on 2m or preamp on 432?

I guess I could try simulating all of this... but I am sure some of you know the answer already...
Thanks in advance and 73.

Bert, VE2ZAZ