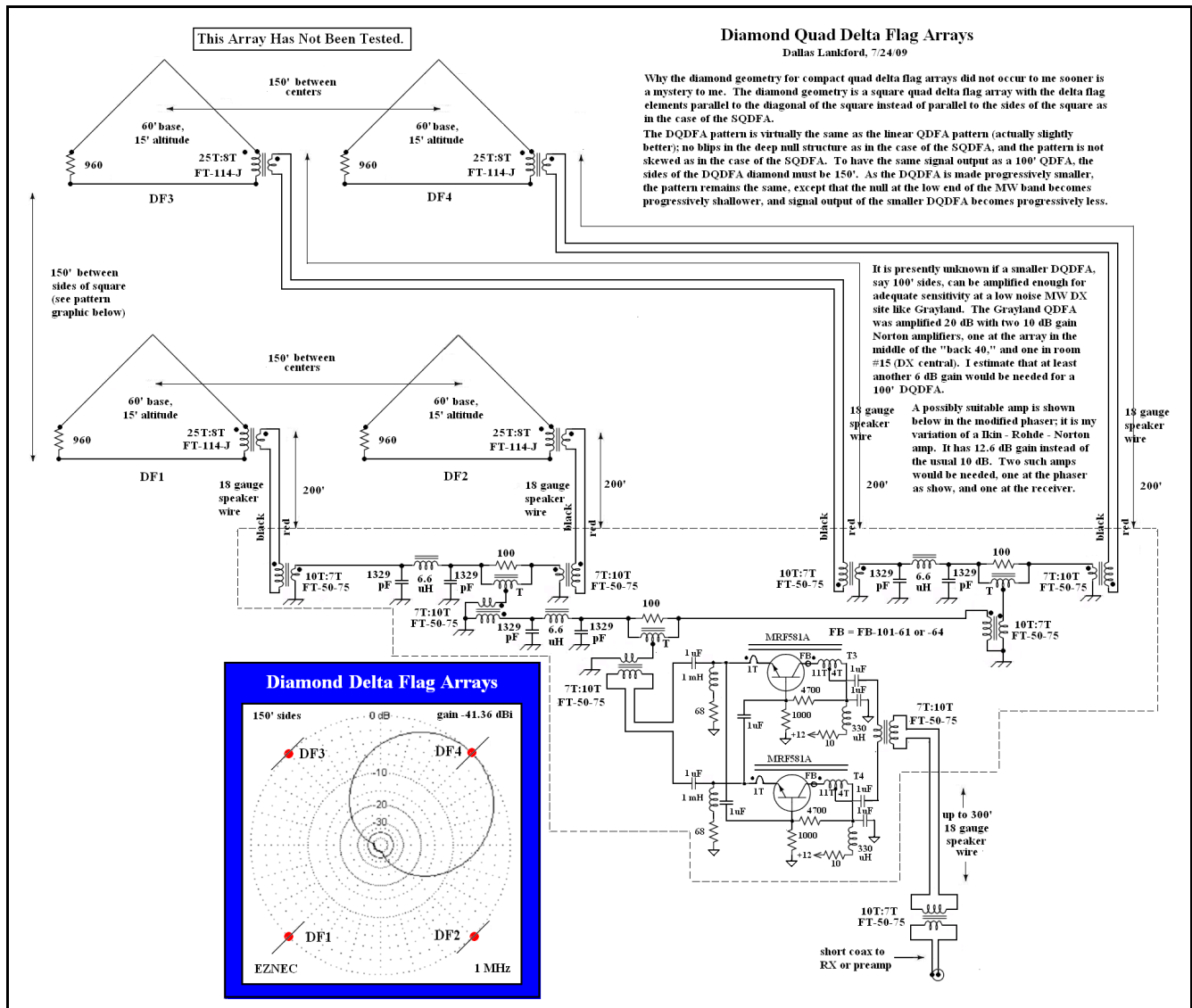


Diamond Quad Delta Flag Arrays

Dallas Lankford, 7/25/09

The graphic below contains a brief introduction to a remarkable MW antenna. For better resolution magnify the PDF document. The DQDFA's evolved from square QDFA's which in turn were developed as compact QDFA's. It is assumed that you are familiar with QDFA's; see the several articles about flag and delta flag arrays in The Dallas Files at www.kongsfjord.no. The planes of the SQDFA's delta flag elements are parallel to the sides of the square, while the planes of the DQDFA's delta flag elements are parallel to one of the diagonals of the square. This change eliminated the skewing and deep null structure irregularities of the SQDFA's. Consequently, the SQDFA's have been retired. The phaser in the graphic below is for a DQDFA with 150' sides, which gives a DQDFA with gain identical to a linear QDFA with 100' spacing. The gain of a DQDFA with 100' spacing is 6 dB less, the price you pay for an even more compact DQDFA. It remains to be seen if the 100' DQDFA produces adequate signal levels at the low end of the MW band at low noise MW DX sites like Grayland. The phaser for a 100' DQDFA is not the phaser below, but rather the phaser for the 100' spaced QDFA; see the appropriate articles in The Dallas Files.



At right is a stand alone version of the LINR amp. Two of these, one included in the phaser as shown above, and one at the receiver, provide 25.2 dB gain as compared to 20.6 dB gain from two standard 11:4:1. The two LINR's may be sufficient to bring the low MW band signals back to an acceptable level for use with an insensitive receive like Perseus. Eventually this will be determined. The input and output impedances of the LINR at right are for 50 ohms. Appropriate changes of the turns ratios should be made for other impedances.

I hope to have a 100' DQDFA operational in my yard in the near future.

