

Design Project

Design an N element broadside Dolph-Chebyshev linear array of $\lambda/10$ short dipoles. The side lobe level is 30 dB. The element separation is $\lambda/2$.

Find and plot the array factor and the array field pattern. Calculate the half power beam-width and the directivity of the array.

Find out the element separation that will result in the narrowest possible HPBW while keeping the side lobe level at the 30 dB level. Plot the array factor and the array field pattern in this case and compare the results to the $\lambda/2$ separation case.

Use the following values for the number of elements N:

1. N = 9 **AL-OFI, SALAH**
2. N = 8 **HALWANI, AMR**
3. N = 6 **AL-GHAMDI, MAJID**