

University of California, Berkeley
Department of Electrical Engineering and Computer Sciences
EE123: DIGITAL SIGNAL PROCESSING

Fall 2006

Discussion #10

1. FFT Review

2. IDFT using DFT

Suppose you have a routine that computes the DFT of a N -point sequence, i.e. given $x[n]$, it computes $X[k]$. Show how the input and/or output may be rearranged such that the routine can also be used to compute the inverse DFT.

3. Chirp Transform Algorithm

4. Suppose that you are told that an $N=32$ FFT algorithm has a “twiddle” factor of W_{32}^2 for one of the butterflies in its fifth (last) stage. Is the FFT a decimation-in-time or decimation-in-frequency algorithm?