Ajay N. Patwardhan, The discrete Hartley transform and its algorithms, M. Tech. Thesis, Department of Electrical Engineering, Indian Institute of Technology Bombay, 1991.

Supervisor(s): Prof. T. S. rathore

Abstract **–** The fast Hartley transform (FHT) is being used as an alternative to the traditional fast Fourier transform(FT) for real data to avoid complex multiplication and to gain speed. Fast radix-2, radix-4 and split radix algorithms for discrete Hartley transform (DHT) are known. However they are restricted in data length. A general radix algorithm for arbitrary data length is proposed in this dissertation for DHT in decimation-in-time (DIT). The algorithm is optimized (not fully) with respect to a number of summations and multiplications. It, however, requires the same operational counts as the definition itself for prime data length. A mixed radix algorithm that works for any composite data length with less computational counts as compared to the general radix algorithm is also developed.