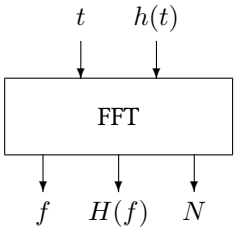
Block FFT

The FFT block calculates the discrete Fourier transform of its input signal.





Alogrithm

Name	FFT
Function	fb0053
Inputs	2
Outputs	3
Parameters	0 . . . [1]
Strings	0
Group	T

Inputs

1 Any signal t
2 Any signal $h(t)$

Outputs

1 Inverse of t
2 Fourier transform $H(f)$
3 Total number of data points

Parameters

1 FFT algorithm
  0 Cooley-Tuckey algorithm

Strings

None

Fourier transform

A physical process can be described either in the time domain $h(t)$ or else in the fregquency domain $H(t)$. The equations for the transformations are given by

$$H(f) = \int_{-\infty}^{\infty} h(t) \exp(2\pi i f t) \mathrm{d}t$$

and

$$h(t) = \int_{-\infty}^{\infty} H(f) \exp(-2\pi i f t) \mathrm{d}f$$

respectively. If t is measured in seconds, the unit of f is in s^{-1} or Hertz. The unit of t is not restricted to time. If t is given in meters, for example, the unit of f is m^{-1}.

Remark

The use of the FFT block is restricted to a maximum of $2^{20} = 1\,048\,576$ data points in the current version.

The block is still under construction.