

## FGen for Windows

Analog inputs often contain unwanted frequency components. All unwanted frequencies below the Nyquist frequency can be removed by digital filters. The DAPL operating system has built-in commands to perform filtering on acquired data. The DAPL filtering commands implement Finite Impulse Response (FIR) filters by applying vectors of coefficients, called filter vectors, to acquired data.

FGen for Windows is a filter design program that can be used to generate DAPL filter vectors for use with DAPL filtering commands.

FGen for Windows can produce several filter types: lowpass, highpass, bandpass, and bandstop. The types of Window vectors that are available are Blackman, Hamming, Hanning, and Kaiser. FGen for Windows also provides plots of the filter response in linear, linear zoom, log, log zoom, and unit step units.

## Installation

FGen for Windows is delivered as part of the DAPtools Standard and DAPtools Professional package on CD-ROM. To install, place the CD-ROM into your CD-ROM reader and the Microstar Laboratories Setup Launcher will pop up. Select the FGen for Windows link. You can also use Explorer or Run to browse for the FGen folder. Find the SETUP.EXE program in this folder and run it.

By default, all files will be installed in the C:\Program Files\Microstar Laboratories\FGen directory unless otherwise specified.

## Copying Filter Vectors into DAPL

The following two methods may be used to copy filter vectors from FGen for Windows to the Windows clipboard:

1. Right click over FGen for Windows and select Copy Coefficients.
2. Use Ctrl-F.

From the clipboard, the filter vectors may be pasted into DAPL programs. The following example uses VECTOR V0 to display where vector information should appear in a DAPL command list.

RESET

```
; Taps: 51 (49), Scale: 4, Type: Lowpass, Window: Blackman
; Low Cutoff/Slope: 0.2/0.05
; Sum: 1.000014, Absolute Sum: 1.447380
VECTOR V0 = (-2, -4, 3, 28, 65, 80, 25, -126, -329, -448, -301, 208, 956,
1540, 1413, 201, -1926, -4069, -4784, -2670, 2876, 11122, 20027,
26904, 29491, 26904, 20027, 11122, 2876, -2670, -4784, -4069, -1926,
201, 1413, 1540, 956, 208, -301, -448, -329, -126, 25, 80, 65,
28, 3, -4, -2)
```

```
IDEF A 1
  SET IP0 S0
  TIME 1000
END

PDEF B
  FIRFILTER(IP0, V0, 0, 4, 0, 0, $BINOUT)
END

START A, B
```