

# Interfacing External ADCs to the QF1D512-DK Development Kit

## 1) Introduction

The QF1D512-DK development kit has expansion headers to allow the connection of a variety of external ADCs, allowing the user to evaluate the performance of the on-board QF1D512 filter chips with his ADC of choice, rather than just the default on-board ADS1271.

Whenever an external ADC is employed the user should ensure that an appropriate “Data Input Source” file is employed and that the configuration(s) files for the QF1D512 contain appropriate Data Format and Pin Settings information (see below and also the QF1D512-DK Users Guide for more information). To assist the user in this regard Quickfilter is pleased to provide example “Data Input Source” files and corresponding configuration files whenever possible. An application brief describing each available ADC along with the relevant files can be downloaded from the web site at [http://www.quickfiltertech.com/html/app\\_notes.php](http://www.quickfiltertech.com/html/app_notes.php)

## 2) Data Input Source Files

The “Data Input Source” files are used to configure the on-board FPGA and Quickfilter Pro to correctly control the ADC and capture and display the filtered data. Identified by an .adc suffix they can be conveniently located in the “ADC” folder where Quickfilter Pro is located. To load a new source file click on the dropdown, then click on “Browse” (figure 1), and then simply select the filename you wish to load.

*Note: You must be in Advanced User Mode for this option to be available.*

If an Input Source file is not available for the ADC of interest you can create your own by clicking on “New” and then entering the desired characteristics in the Data Input Source Editor (see QF1D512-DK Users Guide).

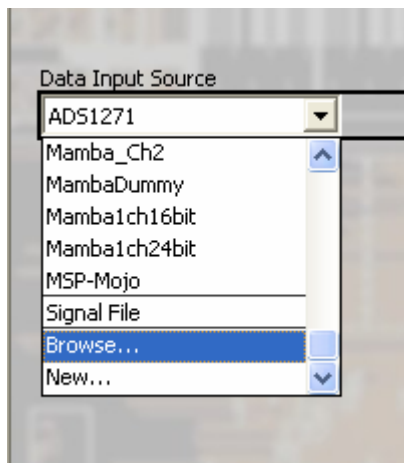


Figure 1. Loading a Data Source file

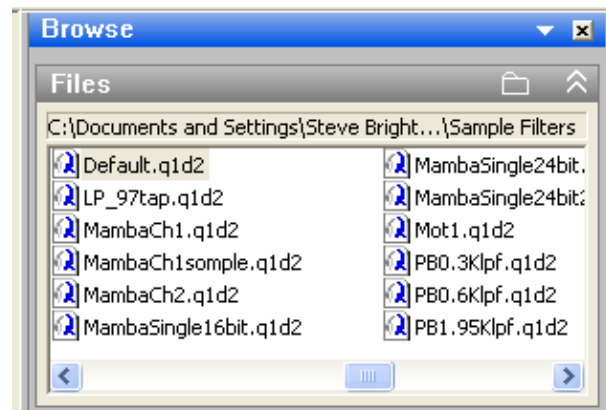


Figure 2. Loading a Configuration File

## 3) Configuration Files

Configuration files are used to set up the individual QF1D512s on the development board to correctly filter the data of interest. This configuration data would subsequently be used in the actual application to set up the device(s) to operate correctly. Configuration files consist of the filter coefficients plus the configuration register settings. Of particular interest in the configuration settings are the Data Format Editor, which defines which bits in the input data stream are actually filtered, and the Pin Settings Editor, which determines the polarity and active edges of the control signals applied to the chip (see QF1D512-DK Users Guide for more information).

To ensure you have correctly configured data format and pin settings you can load the example configuration files provided. These are loaded in the usual way from the browse panel in the information bar (figure 2). If necessary, browse to the folder where you stored the configuration files. Once loaded you may then click on “Edit” to modify the filter characteristics to suit your application.

*Note: You must be in Advanced User Mode for this option to be available.*

#### 4) QF1D512-DK Users Guide

More detailed information can be found in the QF1D512-DK Users Guide. This is automatically stored on your computer when Quickfilter Pro is installed. You can find the document within the program by clicking on “Help / Open Documents Folder”. Alternatively it can be downloaded from the web at <http://www.quickfiltertech.com/files/QF1D512-DK%20Users%20Guide.pdf> .

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