

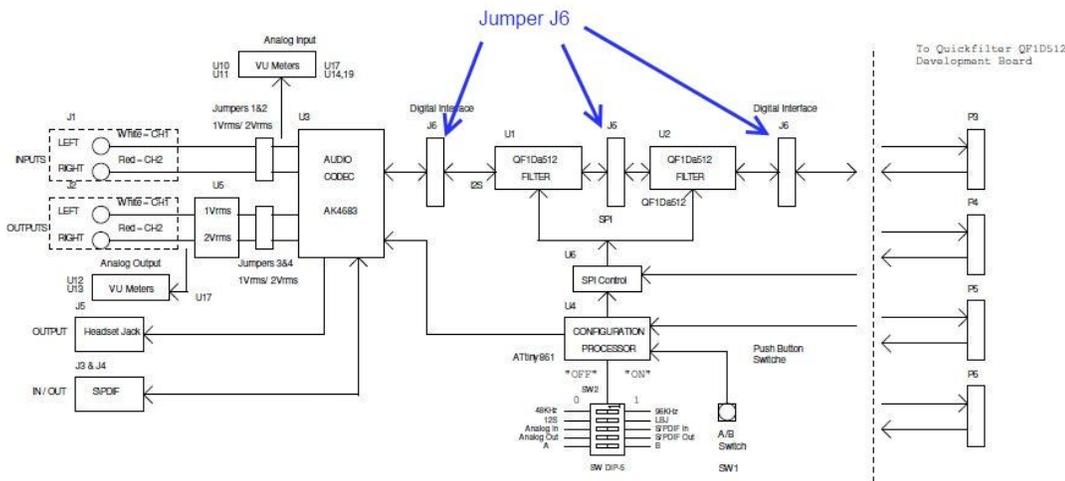
The QF1Da512-DK is used for development by placing it onto a QF1D512-DK, which provides the necessary USB interface for communication with our QFPro software running on a PC. Here is an illustration of that arrangement:

Connect both boards together via J3/P3, J4/P4, J5/P5, and J6/P6

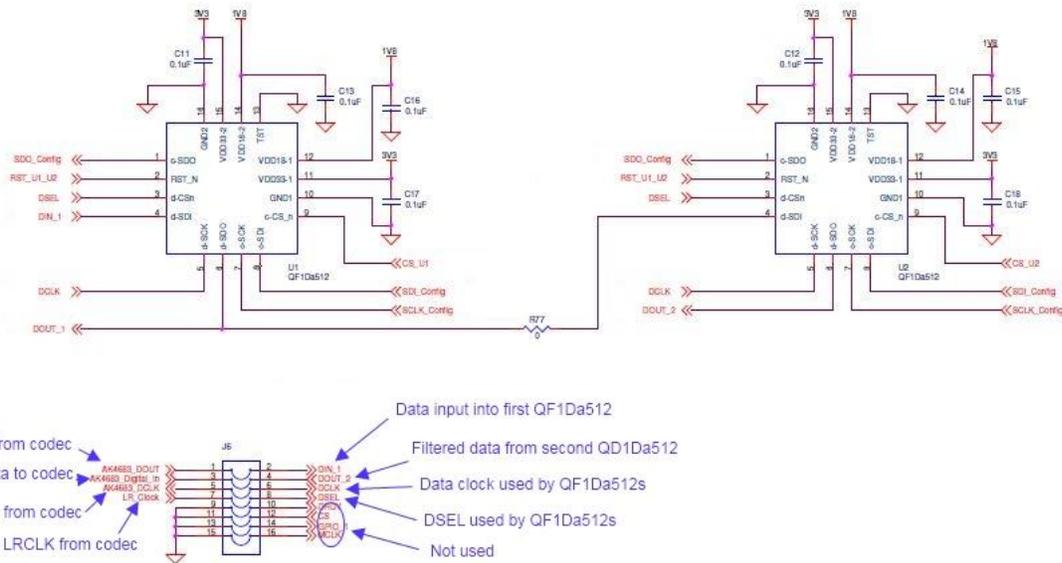


The QF1Da512 provides input for one stereo audio channel and output for one stereo audio channel. Also, implemented on this board are both a stereo headphone output and an SPDIF I/O interface. All of these are routed through the on-board codec, an AKM AK4683. In order to interface I2S audio input and output to the board, the two QF1Da512 digital filters must be isolated from the codec's I2S connections and the external I2S signals must be connected instead. Both of these requirements can be achieved via Jumper array J6. This is illustrated in the following block diagram.

QF1Da512-DK Block Diagram

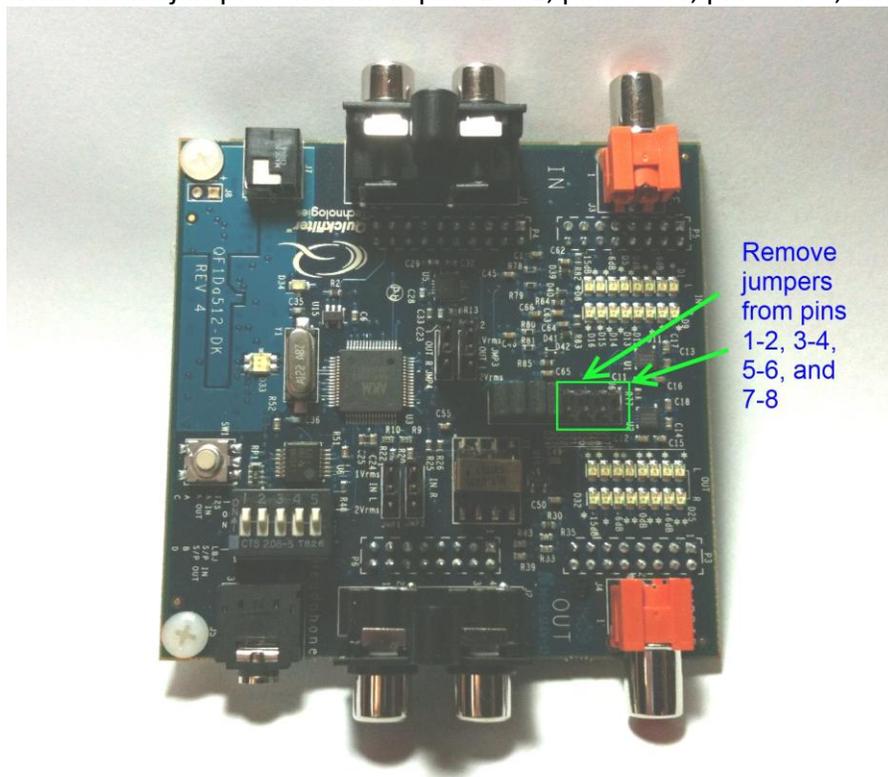


The default configuration for the board has all 8 jumpers in place on J6. Here is an illustration of the default setup:

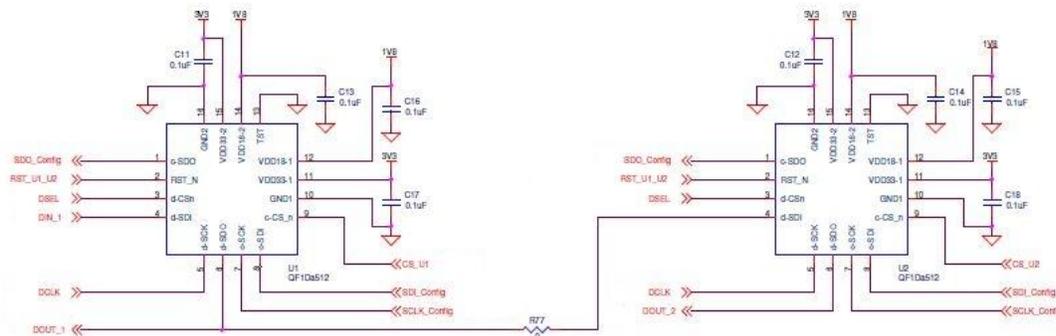


In order to implement an external I2S connection, the first four jumpers on J6 must be removed. The last four jumpers on J6 are not used in the default setup and are not needed for an external I2S interface and can be ignored.

Remove the jumpers that short pins 1 & 2, pins 3 & 4, pins 5 & 6, and pins 7 & 8 as illustrated here:



With these four removed, pins 2, 4, 6, and 8 are available for connection to the external I2S signals. The connections are illustrated here:



Disconnect jumpers for pins 1-2,3-4,5-6 & 7-8



Using wires that are as short as is feasible, make the following connections to J6:

- Connect the I2S data source signal to pin 2. This is the data that is to be filtered.
- Connect the I2S output data signal to pin 4. This is the filtered data returning.
- Connect the I2S Data Clock signal to pin 6.
- Connect the I2S Left/Right Clock signal to pin 8.

Note: For noise reduction in the signal lines, it is advisable to place a resistor in series with each signal line. A resistance of 27 Ohms to 56 Ohms should be sufficient.

With this arrangement, the I2S data into and the filtered I2S data out of the QF1Da512s and the related I2S control signals are now correctly configured for an external I2S interface.



Application Brief

Contact Information:

Quickfilter Technologies, Inc.
1024 S. Greenville Avenue, Suite 130
Allen, TX 75002-3324

www.quickfiltertech.com

Phone:214-547-0460
Fax:214-547-0481

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