

Sigma Delta DAC

Description

A Sigma Delta DAC which converts a 16 bit word input stream at a low frequency e.g. 44 kHz to a single bit output stream at a higher frequency (maximum 2 MHz).

An application could be to take the 16 bit output stream from a fft/iffit engine and create a single bit representation of this signal to feed H-bridge driving a speaker (after a proper discrete low pass filter). The 16 bit input can be a stored sound sample.

The representation (or at least a mode) of the 16 bit words is compatible with the output of one of the existing discrete components which transform a SPDIF output (digital output from a CD player) to a 16 bit stream.

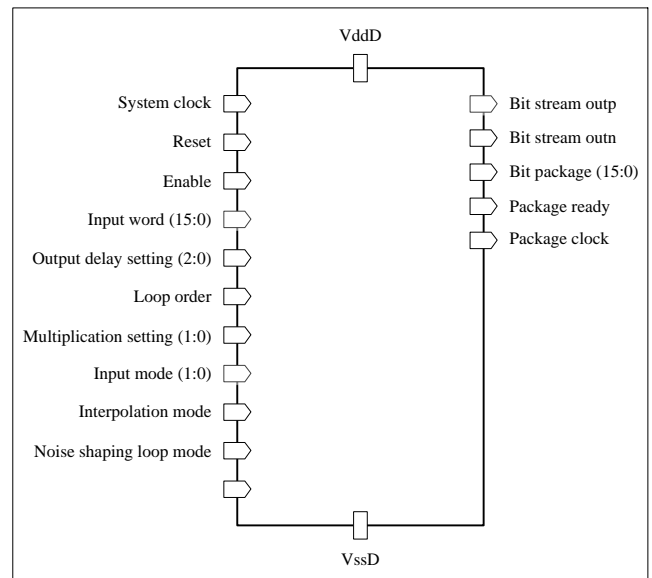
Crystal Semiconductor has developed a chip which converts the digital output of a CD to 16 bit data words (which can be reached using an SPI interface). Evaluation of this block has been done in FPGA.

Features

- Single bit Sigma Delta modulated DAC output and the inverted output
- 16 bit output gathered in one package for easy data logging during test
- 2nd order and 3rd order modulator loop
- Programmable OSR, setting the last data rate multiplication factor in the interpolation filter L_2
- Programmable delay on the single bit outputs to compensate for skew between the two complementary outputs

Verified in FPGA

Interface



For further information please contact us

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