DAT094
Introduction to Electronic System Design
Files in Lab4
total_system_MAC_ser_min_12_101

Lab 4

Total_system_MAC_ser_min_12_101

A total filter system with ADC and DAC using MAC_ser_min_12_17 FIR filter with 12 bits signal, 12 bits coefficients, 17 taps. A bandpass pass filter with a lower cutoff frequency of 8 kHz and a higher cutoff frequency of 14 kHz

Files

`MAC_ser_min_full_12_101.vhdl` – the total design including ADC and DAC

`MAC_ser_min_12_101.vhdl` – the filter design (from lab 4/MAC_ser_min_12_101)

`convert_data_format` – converts between signed and unsigned vectors

`sample_clock` – generats the sampling clock signal

`SPI_clock` – sets the clock frequency for the SPI communication

`SPI_AD` – reads data from the ADC using SPI interface

`SPI_DA` – sends output data to the DAC

`MAC_ser_min_12_101_package.vhdl` – gives coefficients for the filter and input signals and expected results for the simulation (from packages)

`vec2str_package.vhdl` – converts STD_LOGIC and STD_LOGIC_VECTOR to text for printing (from packages)

`system_frequencies_package.vhdl` – sets the system frequency, the sample frequency and the SPI clock frequency (from

packages)

DAT094
Introduction to Electronic System design
Files in Lab4 total_system MAC_ser_min_12_101
page 2