Mentor®
A Siemens Business

Algorithmic C (AC) DSP Release Notes

Software Version v3.1.0

October 2018

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Release 3.1.0

This release is the first open-source release of the *ac_dsp* library. This release has the following DSP blocks implemented. This release provides new functionality and bug fixes.

Filter Blocks

Filter Implementation	Class Name	Header File
CIC Decimator (Full Precision)	ac_cic_dec_full	ac_cic_dec_full.h
CIC Interpolator (Full Precision)	ac_cic_intr_full	ac_cic_intr_full.h
FIR Filter – Constant Coefficients	ac_fir_const_coeffs	ac_fir_const_coeffs.h
FIR Filter – Loadable Coefficients	ac_fir_load_coeffs	ac_fir_load_coeffs.h
FIR Filter – Programmable Coefficients	ac_fir_prog_coeffs	ac_fir_prog_coeffs.h
FIR Filter – Register Sharing	ac_fir_reg_share	ac_fir_reg_share.h
Integrate and Dump	ac_intg_dump	ac_intg_dump.h
1-D Moving Average Filter	ac_mv_avg	ac_mv_avg.h
Polyphase Decimation Filter	ac_poly_dec	ac_poly_dec.h
Polyphase Interpolation Filter	ac_poly_intr	ac_poly_intr.h

FFT Blocks

FFT Implementation	Class Name	Header File
DIF Radix-2 In-place	ac_fft_dif_r2_inpl	ac_fft_dif_r2_inpl.h
DIF Mix-Radix Single-Delay Feedback	ac_fft_dif_r2m2p2_sdf	ac_fft_dif_r2m2p2_sdf.h
DIF Radix-2^2 Single-Delay-Feedback	ac_fft_dif_r2p2_sdf	ac_fft_dif_r2p2_sdf.h
DIF Radix-2^X Block Floating Point In-place	ac_fft_dif_r2pX_bfp_inpl	ac_fft_dif_r2pX_bfp_inpl.h
DIF Radix-2^X Dynamic In-place	ac_fft_dif_r2pX_dyn_inpl	ac_fft_dif_r2pX_dyn_inpl.h
DIF Radix-2^X In-place	ac_fft_dif_r2pX_inpl	ac_fft_dif_r2pX_inpl.h
DIF Radix-2 Single-Delay-Feedback	ac_fft_dif_r2_sdf	ac_fft_dif_r2_sdf.h
DIT Radix-2 In-place	ac_fft_dit_r2_inpl	ac_fft_dit_r2_inpl.h
DIT Radix-2 Single-Delay-Feedback	ac_fft_dit_r2_sdf	ac_fft_dit_r2_sdf.h

Supported Compilers

The ac_dsp library uses functions supplied in the ac_math library. Since the ac_math library requires C++11 support for default template arguments, the same compile requirement applies to the ac_dsp library.