

XMOS AN00209 app_design, mods by Teig 3May2022

Q_FORMAT 16

Max 3.000000 as FNN +3.00000000 (0x00030000 as QNN 0x00030000)

1 1.000000 as FNN +1.00000000 (0x00010000 as QNN 0x00010000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)	
dsp_design_biquad_lowpass	(0.25, 0.707, ..)	
dsp_design_biquad_highpass	(0.25, 0.707, ..)	
dsp_design_biquad_allpass	(0.25, 0.707, ..)	
dsp_design_biquad_bandpass	(0.25, 0.707, ..)	
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)	

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58573914,	+0.00000000,	+0.58573914,	+0.00000000,	-0.17149353
Coeffs of lowpass	+0.29287720,	+0.58573914,	+0.29287720,	+0.00000000,	-0.17149353
Coeffs of highpass	+0.29287720,	-0.58575439,	+0.29287720,	+0.00000000,	-0.17149353
Coeffs of allpass	+0.17149353,	+0.00000000,	+0.99998474,	+0.00000000,	-0.17149353
Coeffs of bandpass	+0.39955139,	+0.00000000,	-0.39956665,	+0.00000000,	-0.59825134
Coeffs of peaking	+1.15388489,	+0.00000000,	+0.09997559,	+0.00000000,	-0.25387573
Coeffs of lowshelf	+1.18847656,	+0.11128235,	+0.10357666,	+0.09364319,	-0.08715820
Coeffs of highshelf	+1.18847656,	-0.11129761,	+0.10357666,	-0.09364319,	-0.08715820

Impulse response of notch	+0.58573914,	+0.00000000,	+0.48529053,	+0.00000000,	-0.08322144,	+0.00000000,	+0.01426697,	+0.00000000
Impulse response of lowpass	+0.29287720,	+0.58573914,	+0.24264526,	-0.10044861,	-0.04161072,	+0.01722717,	+0.00714111,	-0.00296021
Impulse response of highpass	+0.29287720,	-0.58575439,	+0.24264526,	+0.10044861,	-0.04161072,	-0.01722717,	+0.00714111,	+0.00296021
Impulse response of allpass	+0.17149353,	+0.00000000,	+0.97058105,	+0.00000000,	-0.16644287,	+0.00000000,	+0.02854919,	+0.00000000
Impulse response of bandpass	+0.39955139,	+0.00000000,	-0.63859558,	+0.00000000,	+0.38203430,	+0.00000000,	-0.22854614,	+0.00000000
Impulse response of peaking	+1.15388489,	+0.00000000,	-0.19296265,	+0.00000000,	+0.04899597,	+0.00000000,	-0.01243591,	+0.00000000
Impulse response of lowshelf	+1.18847656,	+0.22257996,	+0.02082825,	-0.01745605,	-0.00344849,	+0.00120544,	+0.00041199,	-0.00006104
Impulse response of highshelf	+1.18847656,	-0.22259521,	+0.02082825,	+0.01745605,	-0.00344849,	-0.00120544,	+0.00041199,	+0.00006104

Q_FORMAT 24

Max 3.000000 as FNN +3.00000000 (0x03000000 as QNN 0x03000000)

1 1.000000 as FNN +1.00000000 (0x01000000 as QNN 0x01000000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)	
dsp_design_biquad_lowpass	(0.25, 0.707, ..)	
dsp_design_biquad_highpass	(0.25, 0.707, ..)	
dsp_design_biquad_allpass	(0.25, 0.707, ..)	
dsp_design_biquad_bandpass	(0.25, 0.707, ..)	
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)	

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58574975,	+0.00000000,	+0.58574975,	+0.00000000,	-0.17149961
Coeffs of lowpass	+0.29287487,	+0.58574975,	+0.29287487,	+0.00000000,	-0.17149961
Coeffs of highpass	+0.29287487,	-0.58574980,	+0.29287487,	+0.00000000,	-0.17149961
Coeffs of allpass	+0.17149955,	+0.00000000,	+0.99999994,	+0.00000000,	-0.17149961
Coeffs of bandpass	+0.39956409,	+0.00000000,	-0.39956409,	+0.00000000,	-0.59825641
Coeffs of peaking	+1.15390068,	+0.00000000,	+0.09998149,	+0.00000000,	-0.25388229
Coeffs of lowshelf	+1.18850213,	+0.11129105,	+0.10358155,	+0.09363973,	-0.08715302
Coeffs of highshelf	+1.18850213,	-0.11129105,	+0.10358155,	-0.09363973,	-0.08715302

Impulse response of notch	+0.58574975,	+0.00000000,	+0.48529387,	+0.00000000,	-0.08322769,	+0.00000000,	+0.01427352,	+0.00000000
Impulse response of lowpass	+0.29287487,	+0.58574975,	+0.24264693,	-0.10045588,	-0.04161388,	+0.01722813,	+0.00713676,	-0.00295460
Impulse response of highpass	+0.29287487,	-0.58574980,	+0.24264693,	+0.10045588,	-0.04161388,	-0.01722813,	+0.00713676,	+0.00295460
Impulse response of allpass	+0.17149955,	+0.00000000,	+0.97058785,	+0.00000000,	-0.16645545,	+0.00000000,	+0.02854705,	+0.00000000
Impulse response of bandpass	+0.39956409,	+0.00000000,	-0.63860589,	+0.00000000,	+0.38205010,	+0.00000000,	-0.22856390,	+0.00000000
Impulse response of peaking	+1.15390068,	+0.00000000,	-0.19297343,	+0.00000000,	+0.04899251,	+0.00000000,	-0.01243836,	+0.00000000
Impulse response of lowshelf	+1.18850213,	+0.22258204,	+0.02084255,	-0.01744699,	-0.00345021,	+0.00119746,	+0.00041282,	-0.00006568
Impulse response of highshelf	+1.18850213,	-0.22258204,	+0.02084255,	+0.01744699,	-0.00345021,	-0.00119746,	+0.00041282,	+0.00006568

Q_FORMAT 28

Max 3.000000 as FNN +3.00000000 (0x30000000 as QNN 0x30000000)

1 1.000000 as FNN +1.00000000 (0x10000000 as QNN 0x10000000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)		
dsp_design_biquad_lowpass	(0.25, 0.707, ..)		
dsp_design_biquad_highpass	(0.25, 0.707, ..)		
dsp_design_biquad_allpass	(0.25, 0.707, ..)		
dsp_design_biquad_bandpass	(0.25, 0.707, ..)		
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)		
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)		
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)		

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58574980,	+0.00000000,	+0.58574980,	+0.00000000,	-0.17149958
Coeffs of lowpass	+0.29287490,	+0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of highpass	+0.29287490,	-0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of allpass	+0.17149958,	+0.00000000,	+1.00000000,	+0.00000000,	-0.17149958
Coeffs of bandpass	+0.39956409,	+0.00000000,	-0.39956409,	+0.00000000,	-0.59825641
Coeffs of peaking	+1.15390074,	+0.00000000,	+0.09998149,	+0.00000000,	-0.25388229
Coeffs of lowshelf	+1.18850219,	+0.11129103,	+0.10358154,	+0.09363973,	-0.08715301
Coeffs of highshelf	+1.18850219,	-0.11129103,	+0.10358154,	-0.09363973,	-0.08715301

Impulse response of notch	+0.58574980,	+0.00000000,	+0.48529395,	+0.00000000,	-0.08322771,	+0.00000000,	+0.01427352,	+0.00000000
Impulse response of lowpass	+0.29287490,	+0.58574980,	+0.24264698,	-0.10045585,	-0.04161385,	+0.01722813,	+0.00713676,	-0.00295462
Impulse response of highpass	+0.29287490,	-0.58574980,	+0.24264698,	+0.10045585,	-0.04161385,	-0.01722813,	+0.00713676,	+0.00295462
Impulse response of allpass	+0.17149958,	+0.00000000,	+0.97058789,	+0.00000000,	-0.16645541,	+0.00000000,	+0.02854703,	+0.00000000
Impulse response of bandpass	+0.39956409,	+0.00000000,	-0.63860586,	+0.00000000,	+0.38205005,	+0.00000000,	-0.22856389,	+0.00000000
Impulse response of peaking	+1.15390074,	+0.00000000,	-0.19297346,	+0.00000000,	+0.04899254,	+0.00000000,	-0.01243834,	+0.00000000
Impulse response of lowshelf	+1.18850219,	+0.22258205,	+0.02084252,	-0.01744701,	-0.00345022,	+0.00119748,	+0.00041283,	-0.00006571
Impulse response of highshelf	+1.18850219,	-0.22258205,	+0.02084252,	+0.01744701,	-0.00345022,	-0.00119748,	+0.00041283,	+0.00006571

Q_FORMAT 29

Max 3.000000 as FNN +3.00000000 (0x60000000 as QNN 0x60000000)

1 1.000000 as FNN +1.00000000 (0x20000000 as QNN 0x20000000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)	
dsp_design_biquad_lowpass	(0.25, 0.707, ..)	
dsp_design_biquad_highpass	(0.25, 0.707, ..)	
dsp_design_biquad_allpass	(0.25, 0.707, ..)	
dsp_design_biquad_bandpass	(0.25, 0.707, ..)	
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)	

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58574980,	+0.00000000,	+0.58574980,	+0.00000000,	-0.17149958
Coeffs of lowpass	+0.29287490,	+0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of highpass	+0.29287490,	-0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of allpass	+0.17149958,	+0.00000000,	+1.00000000,	+0.00000000,	-0.17149958
Coeffs of bandpass	+0.39956409,	+0.00000000,	-0.39956409,	+0.00000000,	-0.59825641
Coeffs of peaking	+1.15390074,	+0.00000000,	+0.09998149,	+0.00000000,	-0.25388229
Coeffs of lowshelf	+1.18850219,	+0.11129103,	+0.10358154,	+0.09363973,	-0.08715301
Coeffs of highshelf	+1.18850219,	-0.11129103,	+0.10358154,	-0.09363973,	-0.08715301

Impulse response of notch	+0.58574980,	+0.00000000,	+0.48529396,	+0.00000000,	-0.08322771,	+0.00000000,	+0.01427352,	+0.00000000
Impulse response of lowpass	+0.29287490,	+0.58574980,	+0.24264698,	-0.10045584,	-0.04161385,	+0.01722814,	+0.00713676,	-0.00295462
Impulse response of highpass	+0.29287490,	-0.58574980,	+0.24264698,	+0.10045584,	-0.04161385,	-0.01722814,	+0.00713676,	+0.00295462
Impulse response of allpass	+0.17149958,	+0.00000000,	+0.97058789,	+0.00000000,	-0.16645542,	+0.00000000,	+0.02854703,	+0.00000000
Impulse response of bandpass	+0.39956409,	+0.00000000,	-0.63860586,	+0.00000000,	+0.38205005,	+0.00000000,	-0.22856389,	+0.00000000
Impulse response of peaking	+1.15390074,	+0.00000000,	-0.19297347,	+0.00000000,	+0.04899255,	+0.00000000,	-0.01243834,	+0.00000000
Impulse response of lowshelf	+1.18850219,	+0.22258206,	+0.02084252,	-0.01744701,	-0.00345022,	+0.00119748,	+0.00041283,	-0.00006571
Impulse response of highshelf	+1.18850219,	-0.22258206,	+0.02084252,	+0.01744701,	-0.00345022,	-0.00119748,	+0.00041283,	+0.00006571

Q_FORMAT 30

Max 3.000000 as FNN -1.00000000 (0xc0000000 as QNN 0xc0000000)

1 1.000000 as FNN +1.00000000 (0x40000000 as QNN 0x40000000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)	
dsp_design_biquad_lowpass	(0.25, 0.707, ..)	
dsp_design_biquad_highpass	(0.25, 0.707, ..)	
dsp_design_biquad_allpass	(0.25, 0.707, ..)	
dsp_design_biquad_bandpass	(0.25, 0.707, ..)	
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)	

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58574980,	+0.00000000,	+0.58574980,	+0.00000000,	-0.17149958
Coeffs of lowpass	+0.29287490,	+0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of highpass	+0.29287490,	-0.58574980,	+0.29287490,	+0.00000000,	-0.17149958
Coeffs of allpass	+0.17149958,	+0.00000000,	+1.00000000,	+0.00000000,	-0.17149958
Coeffs of bandpass	+0.39956409,	+0.00000000,	-0.39956409,	+0.00000000,	-0.59825641
Coeffs of peaking	+1.15390074,	+0.00000000,	+0.09998149,	+0.00000000,	-0.25388229
Coeffs of lowshelf	+1.18850219,	+0.11129103,	+0.10358154,	+0.09363973,	-0.08715301
Coeffs of highshelf	+1.18850219,	-0.11129103,	+0.10358154,	-0.09363973,	-0.08715301

Impulse response of notch	+0.58574980,	+0.00000000,	+0.48529396,	+0.00000000,	-0.08322771,	+0.00000000,	+0.01427352,	+0.00000000
Impulse response of lowpass	+0.29287490,	+0.58574980,	+0.24264698,	-0.10045585,	-0.04161386,	+0.01722813,	+0.00713676,	-0.00295462
Impulse response of highpass	+0.29287490,	-0.58574980,	+0.24264698,	+0.10045585,	-0.04161386,	-0.01722813,	+0.00713676,	+0.00295462
Impulse response of allpass	+0.17149958,	+0.00000000,	+0.97058789,	+0.00000000,	-0.16645542,	+0.00000000,	+0.02854703,	+0.00000000
Impulse response of bandpass	+0.39956409,	+0.00000000,	-0.63860586,	+0.00000000,	+0.38205005,	+0.00000000,	-0.22856389,	+0.00000000
Impulse response of peaking	+1.15390074,	+0.00000000,	-0.19297347,	+0.00000000,	+0.04899255,	+0.00000000,	-0.01243834,	+0.00000000
Impulse response of lowshelf	+1.18850219,	+0.22258205,	+0.02084252,	-0.01744701,	-0.00345022,	+0.00119748,	+0.00041283,	-0.00006571
Impulse response of highshelf	+1.18850219,	-0.22258205,	+0.02084252,	+0.01744701,	-0.00345022,	-0.00119748,	+0.00041283,	+0.00006571

XMOS AN00209 app_design, mods by Teig 3May2022

Q_FORMAT 31

Max 3.000000 as FNN -1.00000000 (0x80000000 as QNN 0x80000000)

1 1.000000 as FNN -1.00000000 (0x80000000 as QNN 0x80000000)

	f_n	Q	gain-dB
dsp_design_biquad_notch	(0.25, 0.707, ..)	
dsp_design_biquad_lowpass	(0.25, 0.707, ..)	
dsp_design_biquad_highpass	(0.25, 0.707, ..)	
dsp_design_biquad_allpass	(0.25, 0.707, ..)	
dsp_design_biquad_bandpass	(0.25, 0.707, ..)	
dsp_design_biquad_peaking	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_lowshelf	(0.25, 0.707, 3.0, ..)	
dsp_design_biquad_highshelf	(0.25, 0.707, 3.0, ..)	

	b0	b1	b2	-a1	-a2
Coeffs of notch	+0.58574980,	+0.00000000,	+0.58574980,	+0.00000000,	+0.17149958
Coeffs of lowpass	+0.29287490,	+0.58574980,	+0.29287490,	+0.00000000,	+0.17149958
Coeffs of highpass	+0.29287490,	+0.58574980,	+0.29287490,	+0.00000000,	+0.17149958
Coeffs of allpass	+0.17149958,	+0.00000000,	+1.00000000,	+0.00000000,	+0.17149958
Coeffs of bandpass	+0.39956409,	+0.00000000,	+0.39956409,	+0.00000000,	+0.59825641
Coeffs of peaking	-0.84609926,	+0.00000000,	+0.09998149,	+0.00000000,	+0.25388229
Coeffs of lowshelf	-0.81149781,	+0.11129103,	+0.10358154,	+0.09363973,	+0.08715301
Coeffs of highshelf	-0.81149781,	+0.11129103,	+0.10358154,	+0.09363973,	+0.08715301

Impulse response of notch	-0.58574980,	+0.00000000,	-0.68620565,	+0.00000000,	-0.11768398,	+0.00000000,	-0.02018275,	+0.00000000
Impulse response of lowpass	-0.29287490,	-0.58574980,	-0.34310283,	-0.10045585,	-0.05884199,	-0.01722814,	-0.01009138,	-0.00295462
Impulse response of highpass	-0.29287490,	-0.58574980,	-0.34310283,	-0.10045585,	-0.05884199,	-0.01722814,	-0.01009138,	-0.00295462
Impulse response of allpass	-0.17149958,	+0.00000000,	-1.00000000,	+0.00000000,	-0.17149958,	+0.00000000,	-0.02941211,	+0.00000000
Impulse response of bandpass	-0.39956409,	+0.00000000,	-0.63860586,	+0.00000000,	-0.38205005,	+0.00000000,	-0.22856389,	+0.00000000
Impulse response of peaking	+0.84609926,	+0.00000000,	+0.11482812,	+0.00000000,	+0.02915283,	+0.00000000,	+0.00740139,	+0.00000000
Impulse response of lowshelf	+0.81149781,	-0.03530259,	-0.03616279,	-0.00646300,	-0.00375689,	-0.00091506,	-0.00041311,	-0.00011843
Impulse response of highshelf	+0.81149781,	-0.03530259,	-0.03616279,	-0.00646300,	-0.00375689,	-0.00091506,	-0.00041311,	-0.00011843