

4way Advanced is a 4 channel crossover plug-in for multi-way active loudspeaker configurations. Based on the architecture of a 4way PEQ version, this plug-in also provide the ability to input Biquad coefficients for up to 62 biquad filters allowing un-paralleled flexibility for engineers looking for unique custom filtering.

Software features

- . Extensive set of audio algorithms
- . Live tuning, hear the changes real time
- . Save/Load configurations
- . Advanced mode allows custom Biquad filter programming
- . Extensive plotting capabilities
- . Plug & Play setup requires no driver
- . Free Un-limited upgrades, your plug-in evolves as we evolve!

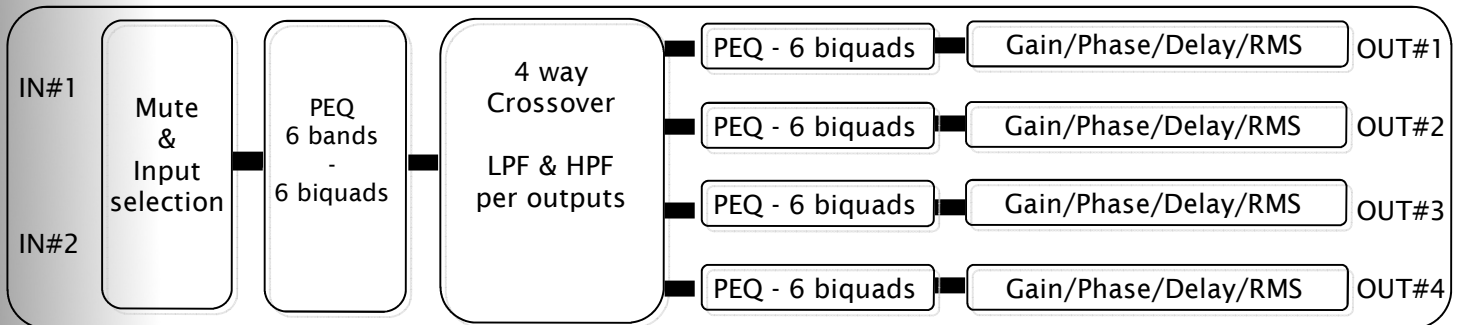
Applications

- . Active loudspeakers
- . Custom Engineering applications
- . All digital active crossover module
- . Custom amplifiers
- . Small PA processor
- . Custom Pro Audio boards

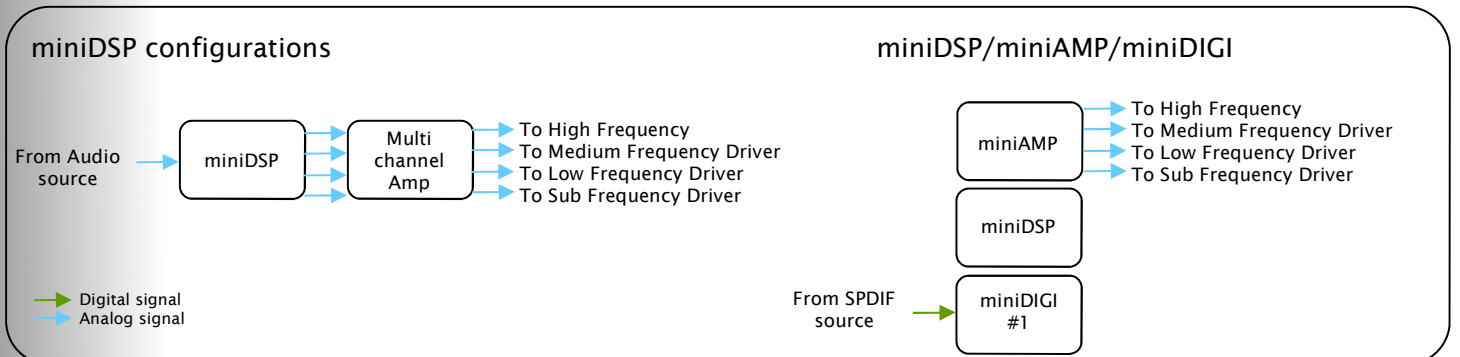
Algorithm and plug-in configuration

Item	Description
Sampling frequency	48kHz
Algorithm resolution	Double precision for best audio quality (56bits resolution)
Digital Inputs Digital Outputs	Plug-in IN#1&2 selectable on I2S_Data_In7&8 Plug-in OUT#1/2/3/4 available on I2S_Data_Out1/2/3/4 Un-processed signal from ADC on I2S_Data_Out5/6 Un-processed signal from Digital IN on I2S_Data_Out 7/8
Input mute/select	Click-less input mute per channel and input selection
Digital gain	Fader gain control from -80 to 0dB
Input/ Output meters	Monitoring signal from -80dBFS to 0dBFS - High refresh rate
Low & High Pass Filters on each output	Butterworth up to 8th order (6 to 48dB/oct) Linkwitz-Riley up to 8th order (12 to 48dB/oct) Bessel - 2nd order - Bypass per filter
Parametric Equalizers (Peak/Shelf)	6 EQ bands per input, 6 EQ bands per output Frequency, Gain, Q configurable, Peak of Shelf (low/high) Per-band bypass feature
Advanced Mode	Allows programming of each filter (PEQ/Crossover) as a custom biquad filter for unique applications.
Delay	Up to 7.5ms per channel (258cm) with 0.02ms increments
Polarity	Invert polarity 180degree per channel
Output mute	Individual output mute
Master output gain	Analog potentiometer control master output digital gain fader from -80 to 0dB. Disabled if no pot connected.

Audio flow chart diagram



Example application diagram



4 way Crossover

BandPass filter OUT1

Basic Advanced Process Bypass

```

biquad1,
b0=0.000042324375459811486,
b1=0.00008464875091962297,
b2=0.000042324375459811486,
a1=1.975933280159253,
a2=-0.9761025776610925,
biquad2,
b0=0.000042324375459811486,
b1=0.00008464875091962297,
b2=0.000042324375459811486,
a1=1.975933280159253,
a2=-0.9761025776610925,
biquad3,
b0=0.000042324375459811486,
b1=0.00008464875091962297,
    
```

Advanced mode for custom Biquad programming in a table format.

Basic mode for text book filtering (Butterworth/Linkwitz Riley/Bessel)

BandPass filter OUT1

Basic Advanced

LOW PASS FILTER SETTINGS

Cut off frequency: 100

Filter Type: LR 48dB/oct

Bypass filter: BYPASS

HIGH PASS FILTER SETTINGS

Cut off frequency: 100

Filter Type: LR 48dB/oct

Bypass filter: BYPASS

BandPass filter OUT2

Bandpass filter OUT3

Bandpass filter OUT4

Double precision algorithms (56bits) for greater resolution in low frequency range.

Wide range of filter choices Up to 8th order (48dB/oct)

Complex plotting displays the combined effect of low pass, equalizer and high pass filter.

Bypass feature to listen to the effect of filter settings.



Parametric Equalizer (Peak/Shelf)

PARAMETRIC EQUALIZER - INPUT CHANNEL 1

EQ BAND SELECTION

- EQ1 Freq:1992
- EQ2 Freq:20
- EQ3 Freq:20
- EQ4 Freq:20
- EQ5 Freq:20
- EQ6 Freq:20

Basic Advanced

PARAMETRIC EQ BAND 1

Frequency: 1992 Gain: [slider]

PARAMETRIC EQ BAND 1

Basic Advanced

a0: 1 a1: 0 a2: 0

b0: 1 b1: 0 b2: 0

Buttons: Bypass, Save & Process, Bypass

Basic mode

Advanced mode

Double precision algorithms (56bits) for greater resolution in low frequency range.

Up to 6 Bands of Parametric Equalization/Shelf filtering with complete freedom on Frequency, Gain and Q settings

Hybrid Basic and Advanced mode allows per band programming of custom Biquad filters along with PEQ/Shelf filters

Per Band Bypass allows to quickly listen to the effect of your equalizer settings.

Delay, Polarity, Input/output metering and Input toggle

Output delay in ms (0-7.5ms)

0.26 [slider]

Distance: 0.089 meters

Delay

Control delay per output channel to better time align each channel. To simplify your calculations, the equivalent distance in cm is calculated for you.

MUTE

RMS meter displays for input and output channels. Resolution from -80 to 0dBfs (Full scale)

ANALOG / DIGITAL INPUT

Toggle between the on-chip ADC or I2S input signal.

Analog Input

Digital Input (I2S)

Toggle your input source between Analog (A/D) or Digital (I2S) from a single mouse click.

Custom firmware

Looking for a custom firmware for a specific application? Want an OEM version for your own product line?

Our sales and engineering can help. Just email us with a description of your requirements and we'll get back to you with a quote.

Software & Hardware requirements

PC Hardware requirements

- 1GHz CPU
- 512MB RAM
- USB V2.0

Software requirements

- Windows XP/Vista/7
- Adobe Air environment
- Net 3.5 environment



Mac Hardware requirements

- Intel Core Duo or faster
- 512MB RAM
- USB V2.0

Software requirements

- Mac OS X v10.4, 10.5, 10.6
- Adobe Air environment