



MOTION v.2.8

Phase Distortion / Virtual Analog / Modulation Synthesis.

Quick Start Guide

INSTALLATION

Just place the .dll file into your host's VST plug-ins directory.

PROGRAMMING

The key to Motion's animated sounds is its emphasis on modulation. Most other synths use modulation to simply accent the sound of the oscillators. In contrast, Motion's modulation sources are in serious control of the sound. This results in patches that have got tremendous life and movement.

To get the most out of Motion, its best to think of your patch programming as two phases.

1. Build the initial sound...like you would on any other synth.
2. Start programming all the modulation options with the same frame of mind that you would be in if you were recording knob, key, and slider movements into your host sequencer.

So if you keep in mind that many of the sonic alterations that you would normally only do during the song composition phase can actually be done during the initial synth programming phase...you'll be well on your way to working with Motion.

To further assist you in learning Motion, the next section of this text provides an overview of every parameter on the synth.

Parameters

Hint: If you hover your mouse over a control, you'll usually get a pop-up name/description.

Phase Distortion

To quote Jeff McClintock, the creator of SynthEdit: "Phase Distortion Synthesis was pioneered by Casio in the 80's. It is based on the idea of distorting the playback phase of a sine wave." This synthesis method is similar to Yamaha's FM synthesis...but to make life easy for the user, Casio (and Jeff) gave us prebuilt waveforms to pick from. So you can work with the PD oscillator pretty much like you would an analog oscillator.

For an in depth look into phase distortion, check out this site:
http://www.bluebear.org.uk/studio/cz101/cz_pd.html

I/O

Turns the phase distortion oscillator on or off.

WAVEFORM SWITCHES

Lets you select the waveforms. The results are more interesting when you use two at once.

OCTAVE & NOTE SWITCHES

these will set the oscillator's pitch.

PHASE

Use this to adjust the phase distortion.

The higher the setting, the brighter and more aggressive the sound. You can think of this as a form of filtering.

WARP

Turns the waveshaper on or off. Use this as a kind of distortion effect. WARNING: The Warp feature is prone to making some very loud and brutal sounds. ALWAYS LOWER THE VOLUME before using the Warp function to prevent damage your ears and your speakers.

-/+

Adjusts the waveshaper level. Positive and negative settings will yield different tones.

TYPE

lets you choose between multiple waveshaper types. Each one sounds different so try them all.

DT

Detunes the internal oscillators.

FILTER SELECTOR

This sets the filter type. Choose between Low Pass, High Pass, Band Pass and Band Reject.

CUT

Adjusts the filter's cutoff.

RES

Adjusts the filter's resonance. Be careful when working with high resonance levels. The filter can suddenly start screaming which, at higher volumes, can be very damaging to your ears and your speakers.

Hint: The resonance works in reverse with the Band Reject filter. As opposed to boosting a frequency, it pulls a frequency down. Sweeping the cutoff with the resonance down will give you a phaser type of effect.

VCA VEL

Switch this on to let the your keyboard's velocity control the volume. The harder you play, the louder the sound gets.

VCA

Standard ADSR envelope to control volume.

VOL

Sets the phase distortion oscillator's overall volume.

VCF VEL

Switch this on to let your keyboard's velocity control the filter cutoff. The harder you play, the higher the cutoff will go.

VCF

Standard ADSR envelope to control the filter cutoff.

LVL

Use this to adjust how much the envelope will effect the cutoff.

Virtual Analog

This one is exactly as it seems...it emulates a standard analog oscillator.

I/O

turns the virtual analog oscillator on or off.

WAVEFORM SWITCH

Lets you select your waveform. Includes white and pink noise options.

OCTAVE AND NOTE SWITCHES

these will set the oscillator's pitch.

SYNC

Switching this on will force the VA oscillator to synchronize with the PD oscillator. This has a "tightening" effect on the sound that many find particularly useful on basses and leads. Some other interesting sounds can be discovered by experimenting with adjusting the pitch of either oscillator while they are synced.

WARP

Turns the waveshaper on or off. Use this as a kind of distortion effect. **WARNING:** The Warp feature is prone to making some very loud and brutal sounds. **ALWAYS LOWER THE VOLUME** before using the Warp function to prevent damage your ears and your speakers.

-/+

Adjusts the waveshaper level. Positive and negative settings will yield different tones.

TYPE

lets you choose between multiple waveshaper types. Each one sounds different so try them all.

DT

Detunes the internal oscillators.

FM

This adjusts the amount that the PD oscillator will modulate the frequency of the VA oscillator. The more you increase this, the more harsh and metallic the VA oscillator will get. Although FM produces distortion too, it's sound is quite different from the waveshaper. This is another one that you've got to experiment with to get a good grip on exactly what it will sound like.

PW

This adjusts the width of the pulse waveform.

Hint: Hold down a note, slowly move the slider, and watch the oscilloscope at the bottom of the synth. You'll be able to see exactly what modulating the pulse width does to the waveform.

FILTER SELECTOR

This sets the filter type. Choose between Low Pass, High Pass, Band Pass and Band Reject.

CUT

Adjusts the filter's cutoff.

RES

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Switch this on to let the your keyboard's velocity control the volume. The harder you play, the louder the sound gets.

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Standard ADSR envelope to control volume.

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Sets the phase distortion oscillator's overall volume.

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Switch this on to let your keyboard's velocity control the filter cutoff. The harder you play, the higher the cutoff will go.

VCF

Standard ADSR envelope to control the filter cutoff.

LVL

Use this to adjust how much the envelope will effect the cutoff.

THE 16 STEP CV SEQUENCERS

Here is where things start to get really fun.

Hint: The sequencers will reset when you start your hosts sequencer.

MAIN SEQUENCER CONTROL

These controls are located in the upper right corner of the pitch sequencers control area.

SET

Clicking this button will reset all the sequencers to the first step.

Note: This only works on a sequencer if it is turned on.

I/X

This allows you to set the sequencers to either the internal clock or make them sync to an external midi clock.

IRATE

Sets the speed of the internal sequencer clock.

P SEQ (Pitch Sequencer)

You can use the pitch sequencer to create bass lines, melody lines, ambient accents, and wild pitch glitch kinds sounds. All the sequencers pitch changes are based off of the notes you play on the keyboard...so the sequencer will essentially be shifting key as you do. This can be a rather handy aid in coming up with chord progressions while composing.

RUN

Starts and stops the pitch sequencer.

PD

Allows the sequencer to control the phase distortion oscillator's pitch.

VA

Allows the sequencer to control the virtual analog oscillator's pitch.

GLIDE (portamento)

Creates a pitch bend between the sequencer's notes. The higher the setting, the longer it will take for the pitch to reach the next note.

Hint 1: this setting is independent of the sequencer's speed. So the slower the sequencer speed, the more the glide can do its thing.

Hint 2: the pitch glide control is disabled when its set as an LFO destination.

DIVIDE

This parameter will let you adjust the sequencer's speed when it is synced to an external midi clock.

DIRECTION

This lets you choose what direction the sequencer will play in. Forward and Backward are pretty self explanatory. The other two options are Bounce 1 and Bounce 2. Bounce 1 will make the sequencer go back and forth between playing forward and backward. Bounce 2 does the same as 1 except that it will play the first and last steps twice in a row.

OCTAVE SLIDERS

These adjust the octave of each step. Each has a range of 5 octaves...from 2 below the current octave, to 2 above.

NOTE SLIDERS

These adjust the note within the octave of each step. Each has a range of 11 semi tones. The lowest setting is the current note, the highest is one semitone before the next octave.

F SEQ (Filter Sequencer)

You can use the filter sequencer to create rhythmic filtering effects, custom sweeps, etc.

RUN

Starts and stops the filter sequencer.

PD

Adjusts how much the sequencer will control the phase distortion oscillator's filter cutoff.

VA

Adjusts how much the sequencer will control the phase virtual analog's filter cutoff.

GLIDE (portamento)

Creates a sweep between the sequencer's filter steps. The higher the setting, the longer it will take for the cutoff to reach the next setting.

Hint 1: This setting is independent of the sequencer's speed. So the slower the sequencer speed, the more the glide can do its thing.

Hint 2: Experiment with using fast-to-moderate glide speeds on slow sequences to create some funk filter lines.

Hint 3: the pitch glide control is disabled when its set as an LFO destination.

DIVIDE

This parameter will let you adjust the sequencer's speed when it is synced to an external midi clock.

DIRECTION

This lets you choose what direction the sequencer will play in. Forward and Backward are pretty self explanatory. The other two options are Bounce 1 and Bounce 2. Bounce 1 will make the sequencer go back and forth between playing forward and backward. Bounce 2 does the same as 1 except that it will play the first and last steps twice in a row.

CUTOFF SLIDERS

These adjust the how high the filter cutoff will be for each step. The lowest setting leaves the cutoff unchanged from how it is set in the main filter controls. Raising the sliders will increase the cutoff.

G SEQ (Gate Sequencer)

The gate sequencer is here to further help you to create patterns within your patch. Use the buttons below the LEDs to turn on or off each step.

RUN

Starts and stops the gate sequencer.

PD

Allows the sequencer to control when you hear phase distortion oscillator.

VA

Allows the sequencer to control when you hear the virtual analog oscillator.

GATE

This controls the length of each step. Lower settings will give you a choppy sound, higher settings will give you a smoother transition from step to step.

DIVIDE

This parameter will let you adjust the sequencer's speed when it is synced to an external midi clock.

DIRECTION

This lets you choose what direction the sequencer will play in. Forward and Backward are pretty self explanatory. The other two options are Bounce 1 and Bounce 2. Bounce 1 will make the sequencer go back and forth between playing forward and backward. Bounce 2 does the same as 1 except that it will play the first and last steps twice in a row.

LFO

Time to create some serious automated animation. Here's the list of all the things you can control with the LFOs:

PD Phase
PD Cutoff
PD Resonance
PD Pan
PD Warp

VA Cutoff
VA Resonance
VA Pan
VA FM
VA Pulse Width
VA Warp

Delay Cutoff
Delay Resonance
Delay Pan

Pitch Sequencer Glide (P Seq Glide)
Filter Sequencer Glide (F Seq Glide)
Gate

You can have 8 running all at once!...and this is in addition to the sequencers and envelopes! Now you know why I called the synth "Motion."

Hint: a sequencer's glide knob will be disabled if an LFO is set to control the glide.

THE FIRST 6 LFOs

LEVEL KNOB

These adjust how much the LFO will effect (modulate) whatever parameter it has been assigned to.

LFO SPEED

These switches adjust the speed / beat division of the LFO.

WAVEFORM

Use these switches to choose a waveform for the LFO.

HINT: The Noise waveform does not create a random LFO effect as it would on most other synths. Instead it actually modulates using noise. This allows you to use it as a sort of extra noise generator.

DESTINATION

Use these switches to choose what parameter the LFO will modulate.

THE LAST TWO: WARP LFOs

These two are dedicated to modulating the Warp waveshapers.

WARP 1 & WARP 2

These switches turn on an LFO for each waveshaper level.

-/+

Use these to adjust how much the LFOs will modulate the waveshaper levels. Just as on the main Warp controls, these will make both negative and positive adjustments.

LFO SPEED

These switches adjust the speed / beat division of the LFOs.

WAVEFORM

Use these switches to choose waveforms for each Warp LFO.

DELAY

On the most part, this is a pretty straight forward delay, except that it has it's low pass filter.

I/O

Turns on and off the delay.

VOL

Controls how much you'll hear the delay. The highest setting is the same volume as the signal that fed it.

FDBK

Sets the feedback for the delay. The higher the setting, the more times you'll hear a repeat.

CUT

Adjusts the cutoff for the delay's filter.

RES

Adjusts the resonance for the delay's filter.

IN/EX

Selects whether the delay will use it's internal clock or sync to an external clock.
OFF = internal, ON = external.

TIME

Adjusts the speed of the internal clock.

DOT

Switch this on for dotted notes. (Only works when the delay is synced to an external clock.)

Hint: This is great for making counter rhythms with the delay.

DIVIDE

Selects the beat division (speed) when the delay is synced to an external clock.

MAIN

GLIDE

Adjust the main portamento speed. This adjusts the pitch sweep between the notes you play on your keyboard. This is independent of the pitch sequencer's glide control so feel free to use them both at once.

RT

Switch this on if you want the envelopes to retrigger with each new note played.

MONO

When switched on, Motion will only play monophonically. (Single notes only.)
Hint: Switching to mono can help conserve your computers processing power.

VOL

This is the master volume control for the synth.

OSCILLISCOPE

This not only looks cool, it can also help you when you are programming because it allows you to see exactly what you are doing to each oscillator's sound. It can be especially handy while you are making Warp and Pulse Width settings.

Yellow Line = Phase Distortion

Green Line = Virtual Analog

Hint: You'll be able to see what's going on much easier if you play mid and high notes. Low pitches have such long waveforms that they frequently exceed the useful visual range of the scope.

Randomizer

There's a little button inside the biggest gear in the logo. Click on it and most of the synths parameters will be given random settings. Sometimes the results are great, othertimes they suck, but usually they are just plain weird.

The randomizer can be a lot of fun to use...but be warned...resonance will be randomized, and the lfo's can also end up being set to control resonance. Because of this, the results can sometimes be very loud and harsh. I strongly recommend that you turn down your volume before experimenting with the randomizer.

Here is a list of all the controls that the randomizer **will** alter:

Phase
Oscillator waveform selection
Pitch
Warp type and level
Detune
Filter type
Cutoff
Resonance
FM
Sync
LFO division
LFO waveform
LFO destination
Sequencer direction
Sequencer Glide
Pitch sequencer octave and note sliders
Filter sequencer sliders
Gate sequencer steps
Gate sequencer gate time
Delay feedback, cutoff, resonance, time, dot, and division

All other controls **will not** be changed by the randomizer.

Note: there are a few bugs in the randomizer

1. Occasionally, the second PD waveform selector will go blank. Just click its buttons to make it show up again.
2. Sometimes the randomizer will hardly randomize anything at all. Click it again and it will probably work fine.
3. The randomizer will cause **huge** cpu spikes.

CREDITS

Synth Created by: Ugo
(Chris Sciurba)

Contact info:
email: ugo@ix.netcom.com

Ugo website:
<http://www.cortidesign.com/ugo>
(Flash required)

Tools Used:
Synth construction - SynthEdit (www.synthedit.com)
GUI and masks - Adobe Photoshop

This synth incorporates SynthEdit creations by:
Chris Kerry (ck delay / ck host bpm / ck warp)
<http://www.chriskerry.f9.co.uk/>

e-phonic (ep bpm 2 delay)
<http://www.e-phonic.com>

Bones (midi sync lfo control)
<http://www.chriskerry.f9.co.uk/>

Aaron of Tweakbench (randomizer)
<http://www.tweakbench.com>

Dan Worrall (sequencer control and sequencer)

Patches by:
Tim Conrardy (TC)
Likwid (LKW)
Stephan Muesch (SM)...aka rsmus7
Kered (DS)
ToTc
all other patches by Ugo

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Additional thanks and credits to Steinberg for their VST format.

Updated in v.2.8:

Added randomizer
Added filter sequencer glide as LFO destination
Added pitch sequencer glide as LFO destination
Added bypass-when-off to pitch and filter sequencers
Added gate control
Added gate as LFO destination
Fixed sequencer reset bugs
Added lots of new patches
Minor GUI changes

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1. There is no charge for the download or use of this synth. If you paid someone on eBay for this, they just ripped you off...please report them.
2. You may use this for free in personal and/or commercial music composition (Film, TV, audio CD, theater, video game soundtrack.)
3. You are not allowed to sell this synth or any part of it (including the provided presets, the manual, etc.), nor are you allowed to sell access to these things.
4. You are not allowed to distribute this synth in any way (online, magazine CD, hardware or software packages, etc.) without my written or emailed consent.
5. You are not allowed to sell samples of the provided presets. You may, however, sell samples of presets you create. Just use the Motion-Blank.fxp preset as your starting point. This preset is included in the zip file. If for some reason you can't find that file, please either contact me or use the randomizer to generate a brand new patch for you to start from. (Please make sure that you get a total randomization though, this may require pressing the randomizer button a few times.)

If you have any questions about this licence agreement, please feel free to contact me at:
ugo@ix.netcom.com / csciurba@adelphia.net