

Version 1.0
www.ugoaudio.com

Welcome

Thank you for purchasing Ironhead:Spawn. Your support is greatly appreciated. This bundle, based on the original Ironhead, provides you with an easy to use set morphing percussion synths that, when combined, offer a wide range of unique synthetic sounds. This manual will guide you through general usage, as well as provide some extra hints and tips to help you get the most out of them.

I hope you enjoy these plug-ins. If you post any music online that makes use of this synth (or any of my other VSTs), please send me an email at info@ironhead.com to let me know where I can hear it. I am always interested to listen to what people are creating with my VSTs.

Ugo

Installation

Open the zip and simply place the Ironhead-Spawn folder in your host's VST folder. Yup, that's it. No annoying copy protection, no tricky registration and no troublesome installers.

Overview of Ironhead:Spawn

The Ironhead series may be different from any other drum synths you've worked with...both in terms of sound and interface...and the best way to get to know them is to just jump right in and start tweaking. Explore the range of each of the vector controls (especially the Tone controls) and you'll quickly get a feel for what sounds these plugs are capable of and, how to find those sounds again when you need them later.

Most of us are used to working with a multitude of knobs and sliders that require us to tweak lots of individual parameters in order to achieve a cool sound. While that method of sound design can be fun, it can also be very time consuming. Additionally, it can get in the way when you are trying to focus on writing a song, but need to change your sound. It is easy to end up getting distracted in detailed parameters and find yourself being pulled out of "song writer mode" and getting stuck into "sound designer mode," thus running the risk of derailing your musical train of thought.

The Ironhead series was designed so you can put your technical side on hold. The shared condensed interface design lets you make just a few quick tweaks and get right back into song writing. With Ironhead, the goal is to get you to a cool and interesting percussion (or melodic) sound quickly, without having to get so caught up in all the details of how to get there. These plug-ins have also been built to provide sounds that will likely be different from the other percussion sources you're working with, increasing the chances of you finding something that will spice up your tracks, while minimizing the chances of overlap with your existing synths and samples. This lets Ironhead work well not just as a primary percussion source but also as a secondary source for layering with loops and other synths.

Unique to the Spawn versions is that they have been modified to track pitch across the keyboard

and their abilities expanded to take the most advantage of this, providing greatly increased sound design over the standard Ironhead and allows you to use the instruments melodically as well as percussively. Independently, each plug-in is focused and relatively basic, but as a bundle Ironhead: Spawn covers quite a variety of sounds. The result? Whereas Ironhead is a drum kit...Ironhead: Spawn is a band.

Interface

The shared Ironhead:Spawn GUI has been designed to be fast, easy and fun. All the main sound design is handled by just a few vector controls, each fine tuned for each instrument, and built to provide a wide but always useful range of sounds. This lets you spend less time trying to figure out how to make cool sounds and more time actually making them...think less, do more. For example, want to change your snare sound? Just move the tone control to shape the sound, and use the envelope control to adjust the attack and decay. That's it...only two controls moved and you've got a new snare...it's really that easy. This truly is a synth that does not require you to be a master sound designer to create your own cool synthetic percussion sounds.

Sound

Ironhead's sound is best thought of as synthetic junk percussion and the 13 instruments in the Spawn bundle are named after the types of sounds they produce. They can go from familiar drum/percussion sounds to wild thumps, knocks, smacks, clangs, bangs, and even melodic sounds...and always with their own unique character. Use it as a substitute for traditional synth drums to spice up your grooves, layer it with your favorite drum sources to give your rhythm section more depth and texture, or even create entire songs (percussion, bass, and melody) using only the Spawn bundle.

Why the odd names?

The instruments are named after the types of sounds they make instead of being named after real world instruments. The reason for this is simply because Ironhead's 15 instruments don't sound like common real world instruments, nor do they sound quite like the typical synthetic drums. Also, each of Ironhead's instruments are capable of a range of sounds, many of which can extend well beyond what would normally be expected from, say, a tom or a kick.

Additionally, some instruments can even overlap into other instrument categories, especially when you play them in different pitch ranges. So to get the most out of Ironhead, it is recommended that you think in terms of the kinds of sounds you are looking for (noisy, thumpy, hard, etc.) rather than just the type of instrument you might be looking to emulate or take the place of.

See the instrument specific sections of this manual for an idea of what to expect out of each one.

Morphing & Variance

To add further life and movement to your grooves, these plugs offer two types of modulation: Morphing and Variance. Morphing allows you to move between two different control states for each instrument. The results can be anything from just a quick jump to a different sound, to subtle shifts and sweeps, to wild experimental sounds. Morphing can be controlled via BPM synced LFO, the mod wheel on your keyboard, midi CC, VST automation, or just with your mouse.

The Variance feature provides you to set an adjustable degree of random variation in the sound, allowing each hit to be different. Lower settings provide subtle variations that are useful for making grooves feel less repetitious, while higher settings can provide dramatically different sounds that are fun for fills and experimental purposes.

More information on these features can be found in the General Controls and Morphing sections.

Fine Tuning

Holding down the CTRL key while adjusting a slider to XY knob will allow you to fine tune your setting.

General Controls

The following are common controls shared by the instruments in Ironhead:Spawn.

Vol

Sets the volume of the instrument.

Ctrls

Clicking this lets you switch the display between the A and B control states. The “A” state is the default for normal usage. When morphing, the A state can be thought of as the starting point of the morph. Conversely, the “B” state can be thought of as the destination.



Var

The Variance feature allows you to set an adjustable degree of random variation over the tone. Lower settings will produce more minor/subtle changes, where as higher settings can make each new hit sound dramatically different from the last. The range that the Variance randomizes within is determined by where you have your Tone control set to. For example, if you have the Tone set in its upper right hand corner, the Variance will randomize within that general area. The higher the Variance setting, the further out of that area the randomizations can go.

Envelope

Adjusts the volume envelope for the instrument. Setting the X axis all the way over to the right will give you an immediate attack. As you bring it further to the left, the attack time gets longer. This



can be useful for taking a bit of the edge off of the noise. Bringing it all the way to the left can mimic backwards sounds. The Y axis controls the decay and release, so higher settings will make the sound ring out longer and lower settings will give you shorter, tighter sounds.

X axis - sets the attack time.

Y axis - sets the length of the decay and release.

Semi

Many, but not all, of the Ironhead:Spawn instruments include this control. It lets you adjust the maximum semitone range that the tone control will adjust the pitch of the secondary (rather than primary) pitched elements within the sound. Since not all Spawns include significant pitched elements, they do not all have this control.



Randomizer

The arrow buttons let you choose whether all the A and/or B states get randomized. An off option is provided as a safety measure. Clicking on the larger "Randomize" button will start the randomization process.



Instrument Specific Controls

Thud 1 & 2

These two instruments most closely resemble kick drums, but can also be used for hard knocks, short noise bursts, basses, and even some plucked string-like sounds. Both Thuds have different characters. Thud 1 can be softer where as Thud 2 can get brighter and harder sounding.



Thud 1 Tone

This vector control adjusts the general tone and pitch of the instrument.

X axis – adjusts between a softer tone, and a brighter, more distorted tone.

Y axis – controls the secondary pitch as well as extra tone adjustment.

Thud 2 Tone

X axis – adjusts between a softer tone and more aggressive one.

Y axis – controls the secondary pitch as well as extra tone adjustment.

Noise

This controls works the same for both Thuds. Adjusts between two different attack noises. Both of the noises are relative to the Tone setting, so if the Tone is set higher to be higher, brighter, and sharper, then the noises will be that way too. This relationship between the Tone and Noise controls can produce a wide range of sounds, from dull thumps to hard knocks.



X axis – blends in a short, bright noise.

Y axis – blends in a sort of knocking type noise.

Whack 1 & 2

The main purpose of these two is to take the place of a normal snare sound. However, both go well into synthetic territory though and are definitely not your normal snares, and both have a very strong junk percussion vibe. The controls work the same way on both of these instruments.

Tone

X axis – adjusts between a thinner tone and a more full sound.

Y axis – adjusts pitch and brightness.

Bonk

This is primarily for sounds that are somewhat reminiscent of toms and hand drums, but the Bonk can also go into bass drum territory too, as well as provide cool, rubbery, basses and bell-like sounds. In addition to sounding quite good on its own, low pitched Bonks also can be quite effective when layered with Thuds.

Tone

X axis – adjusts between a tighter sound and a looser one.

Y axis – controls the pitch as well as the adjusts between a wamers versus a more metallic sound.

Noise

X axis – adds a knock.

Y axis – adds sizzle and adjusts filtering.

Tic

This is the high hat of Ironhead. Alternating open/closed sounds can be emulated by setting the A and B morph states with different envelope release, then using the LFO to switch between them.

Tone

X axis – adjusts between a tighter and a looser sound.

Y axis – controls the pitch, as well as adds in more of a metallic ring in it's lowest positions.

Bash

Bash has an identity crisis. On one hand it is a metallic synthetic noise that is primarily intended to be used as a junk yard replacement for a crash cymbal. It can also be used to create splash-like sounds or even provide an alternate high hat sound. But on the other hand it provides a synthetic string/bell-like sound. Seemingly at odds, but it works well - and you can blend between the two.

Tone

X axis – adjusts between a more or less filtered sound.

Y axis – controls the pitch.

Noise

X axis – adds a short click type of noise.

Y axis – adds in a long noise.

Clang

This one is somewhere between a ride bell, a normal bell, and some other kind of metallic junk yard treasure. The Clang can be particularly fun to morph. Also, the higher your velocity, the more 'stick noise' you will hear in the attack.

Tone

X axis – adjusts between a softer, more hollow metal sound and a brighter more noisy sound.

Y axis – controls the pitch.

Noise

X axis – adds in the stick noise.

Y axis – adds in a long noise.

Ding 1, 2 & 3

The Dings provide various pitched metal or glass hits, such as bells and pipe and bottle hits and each Ding has its own character. To get the most out of the Dings, use of the Semi control is highly recommended because they rely heavily on interplay between the pitch of the oscillators.

Ding 1

The first of the Dings has a very full sound when the tone is in it's most outside settings, and can be very inharmonic towards the center. With lower envelope release settings, you can also get a sound that reminds me a bit classic cheesy 8-bit kind cowbell sounds that were nothing like real cowbells.

Tone

X axis – frequency modulation and tonal adjustments.

Y axis – pitch control and tonal adjustments.

Ding 2

This Ding has a more hollow and synthetic sound than Ding 1 and offers good bell, bottle and pipe hit sounds. Unlike the others, this one has some degree of secondary (semitone) pitch control on both the X and Y axis, which helps with creating inharmonic type sounds.

Tone

X axis – pitch control, tonal adjustment.

Y axis – pitch control, minor tonal adjustment.

Ding 3

Synthetic cow bells, normal bells, metallic hits, snare-like noises, basses, and more...this is a mighty versatile Ding. Additionally, the X and Y axis share the pitch and tone adjustments a bit more evenly than on Dings 1 and 2.

Tone

X axis – primary tonal adjustment / frequency modulation.

Y axis – pitch control, minor tonal adjustment.

Noise

X axis – chorused/detuned distorted noise.

Y axis – shrill distortion.

Smack

In it's noisier state, Smack is good for clap sounds and can also be useful as a substitute for a snare, or to be layered with a snare for a bigger hit. But turn the noise back and it provides a pitched oscillator with a slightly vocal quality.

Tone

X axis – tone / filter adjustment

Y axis – tone / filter adjustment as well as FM pitch modulation when the semi control is in use.

Noise

X axis – when Y is up, this acts as a bit crusher - when Y is down, it adds FM/PM noise.

Y axis – moves between a synth oscillator and straight up noise.

Shake

The Shake is useful as a replacement for tambourine sounds, shakers, and can also be used has an alternative to a high hat. Curiously enough, it also works well for bright synthetic plucked

strings.

Tone

X axis – adjusts between a more muffled sound and a brighter one.

Y axis – adjusts between a more full sound and a thinner one.

Noise

X axis – decreases the sample rate.

Y axis – moves between a synthetic plucked string and straight up noise.

Morph Section

Overview

Morphing is a term that is most commonly associated with computer graphics and is used to describe the process of transforming one object or image into another. Ironhead offers an audio version of this process. Each instrument in Ironhead has two separate sets of vector controls, these are called the A and B states and they can be adjusted however you wish. You can toggle between the A and B control views by clicking an instrument's A/B button.

The A state controls are the default set and they adjust the sound when the morphing is off. When the morphing is on, you can think of the A state as the starting point of your morph. Conversely, the B state can be thought of as your morph destination. So when you are anywhere in the process of morphing, you are either going to, or returning from, the B state.

To hear the changes you are making to the B state of in instrument, you must move the Morph Source slider up into the B position. The Source slider can be moved by any of the following methods:

- The built in LFO
- Your keyboard's mod wheel / MIDI CC #1
- VST automation
- Your mouse (of course)

Morph Controls

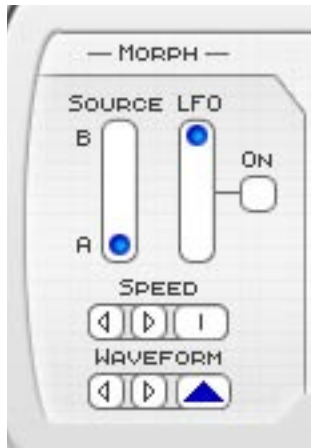
Source

This is the master control for morphing. With the slider all the way down, you will hear the A state settings. With the slider all the way up, you'll hear the B state settings. Anything in between the two will be some degree of morph.

LFO

This LFO will modulate the morphing in sync with your host's BPM. LFO Modulation is not a common feature on drum synths (let alone having it control morphing) but it can be a fun, creative,

and musically useful feature to experiment with. When the LFO is on, other forms of morph control (mod wheel, etc.) will not work properly. The LFO can be setup to morph slowly or very quickly, and a variety of wave shapes are available.



On

This switch turns the LFO on or off.

LFO Amount Slider

This controls how close to the B state the modulation will go. So the higher the setting, the closer to the B state the maximum point of the morph will be. With the slider all the way up to the top, the morph can go all the way from full A to full B.

Speed

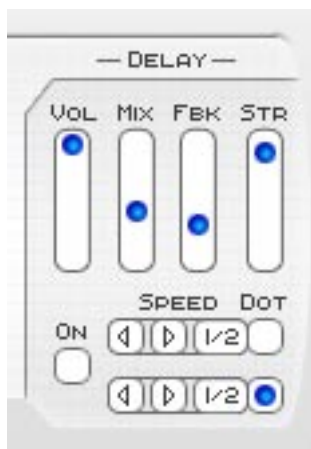
This controls the speed of the LFO, based on divisions of your hosts BPM.

Waveform

This lets you set the waveform shape for the LFO. The options are Sine, Saw, Ramp, Triangle, Square, and S&H (sample and hold / random.)

Delay Section

This section consists of two delays running at once. They are both controlled by the same On/Off switch, Feedback slider, and Stereo Slider, but they have independent speed controls. When the delays are set to the same speed, it will sound like you've got a single delay running. But if you set them to different speeds, you can create ping-pong delay effects.



On

Turns the Delay on or off.

Vol

Adjusts the volume of the delay.

Mix

Adjusts the mix between the wet and dry signals.

Fbk

Adjusts the amount of feedback for the delays. The higher the setting, the longer the delay will continue to repeat.

Str

This adjusts the stereo spread of the two delays when they are set to different speeds. Note that when they are set to the same speed, you will not hear any stereo spread.

Speed

These two controls adjust the speed of the delay. The speeds are set to divisions of your host's BPM.

Dot

Turning these on will create dotted note times for the delays. Setting the delays to different speeds, then making one dotted, can produce some cool delay rhythms.

CPU Saving Tips

The Spawns are not always the easiest synths on the CPU, but here are a few tips for minimizing the load.

1. Don't hold down notes, just let the envelopes do the job. Voices stay active for as long as you hold down a key...but there is no sustain stage in Ironhead's envelopes and the decay and release are locked together. So a quick tap of a key will produce a sound of the same length as holding a key down. This will help minimize the number of voices that are active at any given time.
2. Use shorter envelope times. For the same reasons as above, shorter envelope times will make a voice deactivate faster, thus minimizing the number of voices active at the same time. So if you don't need a long release, pulling the release time down could save you some CPU.
3. Ease up on the morphing. Morphing is a whole lot of fun, but it modulates a ton of parameters within Ironhead and that can eat up quite a lot of CPU...and the more instruments you are morphing at once, the more CPU is required to do the job. So morphing selectively, rather than (for example) having the LFO constantly morphing every Tic, Whack, and Bonk hit, will save you a good deal of CPU.
4. When you just need an extra sound, and don't need to hear much (if any) of a sound actually getting morphed...then use the A/B jump switch instead of the mod wheel or the LFO. The jump button gets to you the B state very quickly, thus reducing the amount of modulation time. This will greatly shorten the amount of time the CPU load for a morph is required.
5. Morphing uses up far more CPU when a voice is active. So if you don't need to hear a morph occur and really just need access to that other sound (like in the example above), jump to the B state while in between hits instead of during them. This will let the modulation occur while voices are not active, so virtually no extra CPU is required to get you to the B state.
6. When possible, reduce the number of simultaneous hits. The more instruments that are triggered (or are otherwise active) at once, the more CPU is required.
7. Turn off the Delay and LFO when they are not needed. While neither of these use up all that much CPU just to be on, they do require some. So if you are not using them, turn them off and you'll save a little bit more power.

Known Bugs

Multi core processors + multiple instances

Unfortunately VSTs built with SynthEdit are not yet properly compatible with dual core processors. Single instances work fine, but multiple instances can cause crashes in hosts that have multi processor support activated. Jeff McClintock, SynthEdit's creator, is aware of the problem and has fixed it in the beta of the next update for SynthEdit (v1.1). The beta is not entirely stable yet, but as soon as it is I will update all my plug-ins to eliminate this multi core bug. In the meantime, there are a few workarounds for this issue.

1. Make additional copies of the Spawn dlls for each extra instance you expect to need, and give each a new name. (eg: clang-1.dll, clang-2.dll, etc.) Hosts consider each an individual instance, and therefore do not run into the multiple instance conflict.
2. Freeze each instance before loading another one, especially if your host has an "unload while frozen" option.
3. Turn off multi processing in your host. Of course this is the least desirable of the three options since it negates the benefit of having a dual core, but it does work.

Morph slider / refresh rate

When the morph slider moves fast enough it exceeds the GUI's refresh rate, which can cause visual glitches such as making it look like there are two knobs, that the is not moving its full distance, or that it appears twitchy and a bit random. This is just a visual issue though. Fast movements from the LFO, automation or CC/mod wheel, all control the morph properly and the sounds change just as fast and smoothly as they are supposed to.

FL Studio

When these VSTs are loaded you may experience a lag between when you press play and when the sequencer starts. A lag also occurs when pressing the rewind button. This problem is caused by an incompatibility between Ironhead and the reset procedure FL runs every time you play/rewind.

To fix this problem:

1. Press the options button in FL studio (at the top of the screen)
2. Choose the Audio Settings from the drop down menu
3. Turn off "Reset plugins on transport"

MIDI Assignments

To make hardware controller setup easier for people who own both the original Ironhead and the Spawn plugs, both share most of the same MIDI assignments.

Parameter	MIDI	Parameter	MIDI
Morph Slider	CC1 / Mod Wheel		
Thud 1A Tone X	CC 2	Thud 1B Tone X	NRPN 1
Thud 1A Tone Y	CC 3	Thud 1B Tone Y	NRPN 2
Thud 1A Noise X	CC 4	Thud 1B Noise X	NRPN 3
Thud 1A Noise Y	CC 5	Thud 1B Noise Y	NRPN 4
Thud 1A Env X	CC 7	Thud 1B Env X	NRPN 5
Thud 1A Env Y	CC 8	Thud 1B Env Y	NRPN 6
Thud 2A Tone X	CC 9	Thud 2B Tone X	NRPN 7
Thud 2A Tone Y	CC 10	Thud 2B Tone Y	NRPN 8
Thud 2A Noise X	CC 11	Thud 2B Noise X	NRPN 9
Thud 2A Noise Y	CC 12	Thud 2B Noise Y	NRPN 10
Thud 2A Env X	CC 13	Thud 2B Env X	NRPN 11
Thud 2A Env Y	CC 14	Thud 2B Env Y	NRPN 12
Whack 1A Tone X	CC 15	Whack 1B Tone X	NRPN 13
Whack 1A Tone Y	CC 16	Whack 1B Tone Y	NRPN 14
Whack 1A Env X	CC 17	Whack 1B Env X	NRPN 15
Whack 1A Env Y	CC 18	Whack 1B Env Y	NRPN 16
Whack 2A Tone X	CC 19	Whack 2B Tone X	NRPN 17
Whack 2A Tone Y	CC 20	Whack 2B Tone Y	NRPN 18
Whack 2A Env X	CC 21	Whack 2B Env X	NRPN 19
Whack 2A Env Y	CC 22	Whack 2B Env Y	NRPN 20
Bonk 1A Tone X	CC 23	Bonk 1B Tone X	NRPN 21
Bonk 1A Tone Y	CC 24	Bonk 1B Tone Y	NRPN 22
Bonk 1A Env X	CC 25	Bonk 1B Env X	NRPN 23
Bonk 1A Env Y	CC 26	Bonk 1B Env Y	NRPN 24
Bash A Tone X	CC 69	Bash B Tone X	NRPN 35
Bash A Tone Y	CC 70	Bash B Tone Y	NRPN 36
Bash A Noise X	CC 4	Bash B Noise X	NRPN 3
Bash A Noise Y	CC 5	Bash B Noise Y	NRPN 4
Bash A Env X	CC 71	Bash B Env X	NRPN 37
Bash A Env Y	CC 72	Bash B Env Y	NRPN 38

Parameter	MIDI	Parameter	MIDI
Tic A Tone X	CC 67	Tic B Tone X	NRPN 33
Tic A Tone Y	CC 68	Tic B Tone Y	NRPN 34
Clang A Tone X	CC 73	Clang B Tone X	NRPN 39
Clang A Tone Y	CC 74	Clang B Tone Y	NRPN 40
Clang A Noise X	CC 4	Clang B Noise X	NRPN 3
Clang A Noise Y	CC 5	Clang B Noise Y	NRPN 4
Clang A Env X	CC 75	Clang B Env X	NRPN 41
Clang A Env Y	CC 76	Clang B Env Y	NRPN 42
Ding 1A Tone X	CC 77	Ding 1B Tone X	NRPN 43
Ding 1A Tone Y	CC 78	Ding 1B Tone Y	NRPN 44
Ding 1A Env X	CC 79	Ding 1B Env X	NRPN 45
Ding 1A Env Y	CC 80	Ding 1B Env Y	NRPN 46
Ding 2A Tone X	CC 81	Ding 2B Tone X	NRPN 47
Ding 2A Tone Y	CC 82	Ding 2B Tone Y	NRPN 48
Ding 2A Env X	CC 83	Ding 2B Env X	NRPN 49
Ding 2A Env Y	CC 84	Ding 2B Env Y	NRPN 50
Ding 3A Tone X	CC 85	Ding 3B Tone X	NRPN 51
Ding 3A Tone Y	CC 86	Ding 3B Tone Y	NRPN 52
Ding 1A Noise X	CC 4	Ding 1B Noise X	NRPN 3
Ding 1A Noise Y	CC 5	Ding 1B Noise Y	NRPN 4
Ding 3A Env X	CC 87	Ding 3B Env X	NRPN 53
Ding 3A Env Y	CC 88	Ding 3B Env Y	NRPN 54
Smack A Tone X	CC 98	Smack B Tone X	NRPN 55
Smack A Tone Y	CC 90	Smack B Tone Y	NRPN 56
Smack A Noise X	CC 4	Smack B Noise X	NRPN 3
Smack A Noise Y	CC 5	Smack B Noise Y	NRPN 4
Smack A Env X	CC 91	Smack B Env X	NRPN 57
Smack A Env Y	CC 92	Smack B Env Y	NRPN 58
Shake A Tone X	CC 93	Shake B Tone X	NRPN 59
Shake A Tone Y	CC 94	Shake B Tone Y	NRPN 60
Shake A Noise X	CC 4	Shake B Noise X	NRPN 3
Shake A Noise Y	CC 5	Shake B Noise Y	NRPN 4
Shake A Env X	CC 95	Shake B Env X	NRPN 61
Shake A Env Y	CC 96	Shake B Env Y	NRPN 62

Credits

Ironhead:Spawn 1.0

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e-phonic - www.e-phonic.com

Kelly Lynch - www.rubidiumhexafluorosilicate.com/synthedit/

Lance Putnum - www.uweb.ucsb.edu/~ljputnam/synthedit.html

Rick Jelliffe - <http://extra.schematron.com>

Scoofster Modules - <http://scp.web.elte.hu/synthedit/>

Tweakbench - www.tweakbench.com

Etric Van Mayer - www.evmsynths.com

Presets by:

- antoine.bertier [AB]

- Musical Gym [MG]

- robenestobenz [RB]

- rsmus7 [SM]

- Ugo

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– Jeff McClintock, for creating SynthEdit

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– The Yahoo SynthEdit users group

– KVR - www.kvraudio.com

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