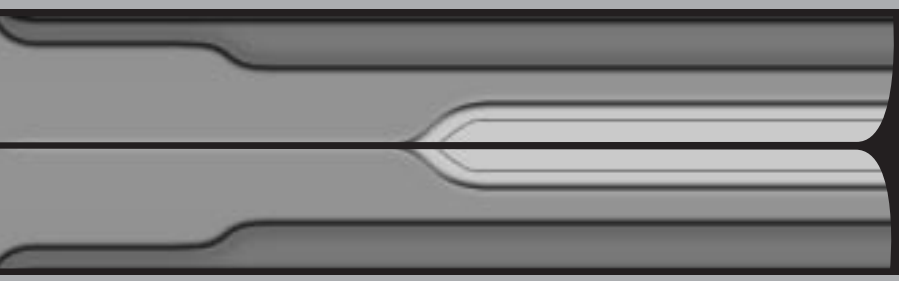


M·THEORY USERS GUIDE

Version 1.1

www.ugoaudio.com

M-theory Users Guide

Thank you for purchasing M-theory, your support is greatly appreciated. This PDF will guide you through general usage, as well as provide some extra programming tips to help you get the most out of M-theory. Check the Bookmarks tab in Acrobat for quick access to individual sections. If you upload any music that uses this synth (or any of my other VSTs), please send me an email to let me know where I can hear it. I am always interested to listen to what people are creating with my VSTs.

Thanks,
Ugo

Installation

Open the zip and extract the entire M-theory folder into your host's VST folder. Yup, that's it. No annoying copy protection, no tricky registration and no troublesome installers. **Note**: you must keep the file structure of the M-theory folder the same for the synth to find it's samples.

Overview

M-theory is capable of a rather wide range of sounds, and it excels at creating hybrid sounds that are very synthetic, and yet also have some characteristics of acoustic instruments.

M-theory's sound is generated a version of the Karplus-Strong synthesis method. In it, a signal triggers a very fast delay, causing the delay itself to make noise. Thus the delay becomes an oscillator. In M-theory's case, the delay is triggered by either samples or virtual analog oscillators. It's important to note though that although samples can be used, this is definitely not what one would generally consider a sample playback synth, "or rompler."

The best way to think about the two part oscillator section in M-theory, and how samples can work in it, is to consider a guitar string. The string is under tension, but it needs outside intervention to get it vibrating. You can pluck it with your fingers, use a plastic or metal pick, you can bow it, hit it with a drum stick, etc. In each case, the resulting sound is still very much one of a string but the tone and character will differ depending on how you choose to make the string vibrate, and with what material.

In M-theory, the delays can be thought of as the guitar string, and the exciters can be thought of as what you used to make that guitar string vibrate. So just as how different objects/materials will produce a different tones on a guitar string, using different sources as exciters in M-theory will lend some of their tone to the delays, but the overall sound still is the sound of the delays and not so much the exciters. In fact, when you use samples you'll find that remarkably little of the original sound will actually be retained, but they can still have a very large effect on the tone of the synth.

M-theory provides 3 options for exciters: 24 built-in samples, user loaded samples, or virtual analog oscillators (including noise) and you can have two of them feeding the delays at once, each imparting a bit of its tone to the overall sound.

Controls

Master Section

HQ/LQ
In the tab, right next to the word MASTER you'll see HQ. This is actually a switch that lets you set either high or low quality modes. Low quality uses considerably less CPU and it has a softer and warmer sound. The setting of this control is not saved with the preset, allowing you to set it to what you need and leave it there, even while you flip through presets. However, it is saved with your song.

Vol
Master volume

Vel
Velocity adjustment

Noise
When in plucked mode, this mixes in a short noise that can help emulate the sound of a pick against a string. When in bowed mode, this brings in a sustained noise that can help add a bit of texture to the sound.

Note: Holding down the CTRL key while adjusting a slider will allow you to fine tune your setting

Exciters

Exciters are what you use to get the delay oscillator moving. As mentioned above, these can be either samples or VA oscillators. The output of both exciters are merged, and that signal is what is sent along to the delays.

Mix
Adjusts the balance between the two exciters

VA
Selects between sampled waveforms or the VA oscillators. When this is off, it is set to use the built in samples. When it is lit, you can use the VA waveforms. In either case, you can select waveforms either by using the forward/backward (< >) buttons or by clicking right in the waveform name display area and selecting a waveform from the drop down list.

U
This toggles between the loading of user wav files or using the built in samples. When active, you will see an icon of a file folder appear in the waveform display. Clicking on that icon will bring up a standard windows file browser.

Note: Not all wav files are equally suitable for use in M-theory. Some guidelines for picking a good sample for use in M-theory are:

1.) Samples must immediately start with a sound. If a wav file has a long attack or dead air before the sound, then it will not be able to trigger the delays, and therefore you wont get any sound.

2.) Sounds that start with a strong signal, and especially those with heavy transients (drums, percussion, noise, slap bass, etc.) work the best.

3.) If you are using pitched sample material, you must be sure that it is properly tuned. If a sample is out of tune, it can throw off the tuning of the rest of the synth. However, it can be tuned to any standard western tuned semi tone. (It just can't be micro tuned, quarter tuned, or simply out of tune.)

K
This lets you select whether or not the sample will follow the pitch of your keyboard. However, the result this has on the overall sound is less a matter of pitch than it is one of tonal differences. While the samples will not track the pitch when this is turned off...the delays still do track your keyboard... so your sound will remain playable, but you get a different tone depending on if a sample follows the keyboard or not. You may also find that the response in different registers may change, depending on the pitch of the original sample. Trial and error is really the best way to get a feel for this.

< >
Use these to navigate forward or backward through the built in waveforms. These do not function with the loading of user samples, so they will not be on the GUI at that time.

Waveform name display area
For the built in waveforms, clicking on the file name will bring up a menu from which you can select waveforms. When loading user samples, click on the file icon to open a windows file browser.

V / A
These let you select whether or not velocity (V) or aftertouch (A) will modulate the pitch of the exciters. **Note:** Aftertouch is only available in bowed mode.

Pitch
These displays let you change the pitch of the exciters. (Does not effect noise.) To adjust them, click on the number and drag. The range is from 0 (no change) up to two octaves higher. You will notice though that this will not actually change the pitch of the sound, which makes this control title seem like a bit of a misnomer. Changing the pitch of the exciters will cause a change in the harmonic overtones of the sound, and alter the general character of the sound. This is a great way to fine tune your sound, without using up extra CPU. (The pitch of the synth is actually is controlled by the delay oscillator.)

Vol
These knobs allow for the individual volume adjustment of the exciters. They come in handy particularly when working with basic waveforms or very loud samples, where you really need to turn them down.

Delay Oscillator

Pluck/Bow
Selects between a plucked (short) sound or a bowed (sustained) sound.

Damping
This simulates the effect you get when damp a vibration. (Such as when palm muting a guitar.) In plucked mode, this results in a percussive sound. In bowed mode, it produced a softer, filtered sound.

Octave
Adjusts the overall pitch of the synth. The range is from 0 (no change) to two octaves higher. For lower pitches, see the tone mode description below.

Tone Mode
Use this to select different tonal variations. The name of each is descriptive of the effect it will have on the sound. This is also the way to get lower pitched sounds (by choosing the “Low” settings.) Note that the percussive settings are not an option in the bowed mode. The bowed mode has a longer attack so it would negate the effect of a percussive attack.

Mono
Switches from polyphonic usage to monophonic. Mono uses less CPU, but the sound reacts a little differently. This is especially the case with legato or fast notes, as this can result in higher volume for each successive note.

Bend Range
Sets the range that your controllers pitch bend can modulate the pitch.

Amp Envelope

Note: You’ll notice that there is no sustain control. This is because the Bowed mode handles that function.

PA
This is a pre-attack, which can provide a different kind of swelling sound. It’s more like a scrape or a “rushing” effect. What it is actually doing is adjusting the attack of the signal from the exciters into the delay oscillator.

A / D / R
Standard attack, decay and release stages.

Pitch Modulation

FM
Adjusts the amount that the exciters can modulate the pitch of the delays

DTN
Allows you to detune the two delays in the oscillator section from each other

PRT
Adjusts the portamento (or “glide”) between the notes

LFO On
Turns on the pitch LFO

E
When off, the LFO will modulate the delays, causing the overall pitch of the synth to change. When on, it will instead modulate the pitch of the exciters. The modulation is in semi tone increments, creating a stepped / “zingy” kind of sound as well as a tonal change. These two modes also change the functionality of the LFO waveform and range / destination settings. (See below.)

LFO
Adjusts the depth of the LFO (how much it will effect the sound)

DL
Adjusts the delay before the modulation swells in

WAV
Selects the waveform of the LFO. **Note:** When the LFO is set to modulate the exciters (“E”), the LFO gains a sample and hold option.

SPD
Selects the speed of the LFO

RNG/DST
The function of this control changes depending on whether or not the LFO is set to adjust the overall pitch (the delay oscillator) or the exciters. When set to modulate the delays (the E is off), this control functions as a pitch range limiter, fixing the maximum modulation range to a maximum of anywhere from 1/4th of a semi tone, to a full octave. When set to modulate the exciters (the E is on), this control functions as a destination selector. The options are either to modulate exciter 1, exciter 2, or both exciters.

Filters

While the filters in M-theory can be used for pretty much the same purposes as you would in any other synth, they are particularly useful as a means of EQ'ing your sound. So its often best to think of them as a means of fine tuning the tone and character of an existing sound (initially shaped in the oscillator section), rather than in the standard analog synth sense of using them to mold a raw sound.

A note about the filter envelopes: You'll notice that there is no release control for the filter envelopes. This is because that is handled/limited by the amp envelope.

All Pass

The all pass filter can have quite a big effect on the overall tone and character of the synth. It is recommended that you adjust this filter first, before any of the others.

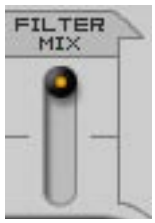
On
Turns the all pass filter on.

V
Sets whether or not key velocity can modulate the all pass filter.

All Pass slider
Adjusts the cutoff of the filter.

Thump Kill
If you find you're hearing too much of a "thump" in the mid and upper ranges, turn this on to reduce it.

LP1 Key
This is a simple low pass filter that can track your keyboard. When you turn this up, the lower notes will have fewer highs. This is helpful when you find that the low end has too much "zing."



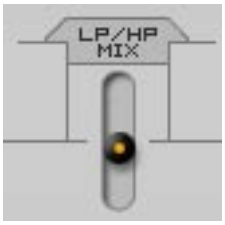
Filter Mix
This adjusts how much of the sound up to this point passes to the rest of the filters, or bypasses them and goes directly to the effects. **Note:** you can use the lines on the GUI as a reference for the signal path.

About the rest of the filters:

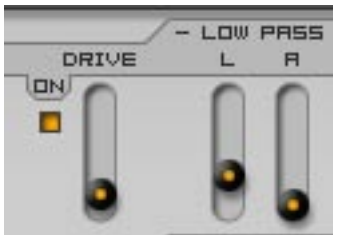
The band, low and high pass filters all come with most of the same features...cutoff, resonance, an envelope with adjustments for level (amount), attack, decay, and sustain, and an LFO. Additionally, on/off switches are provided for each. You will find that you do not always need all these filters running. Turning off the ones you do not require will help conserve CPU.

Below are features that are specific to a few of the individual filters.

Band Pass Mix
This adjusts how much of the incoming signal gets processed by the band pass filter, versus going straight out to the low and high.



LP/HP Mix
This adjusts how much of the incoming signal gets processed by either the low pass or high pass filters.



Low Pass Drive
Turning this on will add distortion into the low pass' sound. Increasing the drive will increase the amount of distortion.

Effects

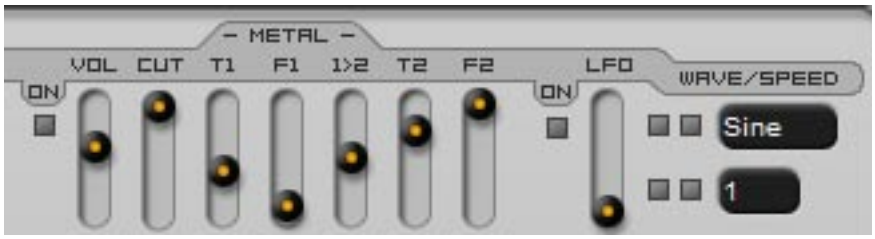
The signal path of the effects section flows from left to right, top to bottom. So it starts with the tremolo and ends with the reverb.

Tremolo

This is an LFO for your volume and, for the most part, it works the same as the other LFOs in M-theory. However, it does have an extra feature of its own. The "**AT**" button lets you use aftertouch to modulate both the rate and depth of the tremolo. The tremolo also has a delay slider, like the pitch LFO has, which lets you adjust how long it takes for the effect to come in.

Metal

This is a basic comb filter (more fast delays.) Use this to add additional resonances into the sound, or to help mimic a resonant body. The metal effect runs in parallel to the incoming signal, and the two delays that make up the metal effect also run parallel to each other.



Vol
Adjusts how loud the metal sound will be.

Cut
the cutoff for a basic low pass filter. Use this when you want to take a bit of the edge off of the metal sound.

T1
Sets the time of the first delay in the chain.

F1
Sets the feedback of the first delay

1 > 2
Adjusts how much of the signal from delay 1 will be fed into delay 2

T2
Sets the time of the second delay

F2
Sets the feedback of the second delay

LFO
This adjusts the time of both delays in the metal. You can use this to create sounds similar to that of a flanger.

Chorus

Mix
Sets the mix between the incoming signal and the output of the chorus

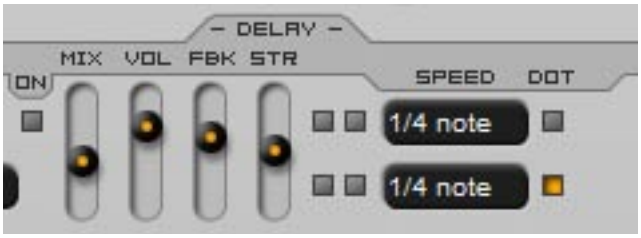
DPT
Adjusts the depth of the chorus effect

STR
Adjusts the stereo width of the effect

Speed
Adjusts how fast the chorus modulates

Delay

This is a dual delay. Each can be set to different times to create stereo ping-pong delays.



Mix
Sets the mix between the incoming signal and the output of the delay

Vol
Sets the volume of the delay

FBK
Adjusts the feedback level

STR
Adjusts the stereo width of the two delays.

Speed
Adjusts how fast the delays will repeat

Dot
Provides dotted note times

Reverb

Mix
Sets the mix between the incoming signal and the output of the reverb

SZ
Adjusts the size of the reverb

STR
Adjusts the stereo width

DMP
Adjusts the dampening (low pass filtering) of the delay. Use this when you feel the reverb is too bright and metallic.

MIDI Effects

2X

This feature causes another midi note to be played after each one you play on your keyboard.

Speed
Adjusts how quickly the note will be triggered. Slower speeds provided a sort of delay effect. Faster speeds can be useful for creating harmonies. (Including a 12 string guitar / mandolin type of doubling.)

Pitch
Lets you set the pitch of the newly triggered note. Settings are in semi tones above the note you play. The range is from 0, which plays the same note you do, to 12, which plays an octave higher than the note you play.

Velocity
This slider allows you to adjust how much key velocity effects the volume of the 2X generated note. Note that the master velocity must also be in use for this to work.

Arpeggiators

These are two programmable phrase arpeggiators which can be used at the same time. Giving both different settings allows you to create more complex patterns than you could with just a single arp. When used in conjunction with the 2X, you can get even more complex patterns.

A few words about phrase arps:

With your typical basic arp, the pattern is based exclusively on the pitch of the notes you play, and the order in which the keys were pressed in gets ignored. So if you press 3 keys, those three notes will always play in the order defined by the arp...typically either ascending, descending or alternating pitch...and not in the order you pressed the keys in. In contrast, with the phrase arps in M-theory, the order of the playback depends on the order you press the notes down in.

Arp Selection

Lets you choose whether only Arp 1 plays, only Arp 2, or both at once.

Gate
Sets how long the arpeggiated notes are

DIR
Sets the order in which the pitch of the notes will play back (based off of the order in which you pressed the keys in)

Octave
Sets whether the arpeggiator will trigger notes in higher octaves than what you are holding down.

Speed

Sets how fast each arpeggiator will play. In addition to the more standard speeds, there are also the options of Odd 1 and Odd 2, which provide an offset/odd timed feel.

Pattern

These divide each arpeggiator's playback into 16 parts, allowing you to create your own arpeggiator patterns by letting you chose when an arp will trigger. This can also be useful for fine tuning the speed that the arps play back at. (Note: this is actually a step sequencer that gates the transmission of the host clock signal to the arpeggiators.)

STP

This control lets you set the maximum number of steps in the arpeggiator pattern. To adjust, click on the number and drag up or down. Steps are activated left to right, with 1 being the first switch on the left, and 16 being the last step on the right.

L

Turning this on will latch the arp, so when you take your finger off a key, the arp will continue to play

X

When a latch is activated, you have the option of bypassing the arp, allowing you to play freely overtop while the arp continues to play in the background.

Preset Classifications

M-theory's presets are organized into the following categories:

Arp	Arpeggiated
Atm	Atmospheric / Pad
Nat	Emulations of, or inspired by, natural instruments
Syn	More standard synth sounds
Hyb	Hybrid - too synthetic to be natural, but not pure synth

MIDI CC Assignments

Control Name	CC
Master Volume	7
Master Noise	3
Exciter Mix	4
Exciter 1 Pitch	5
Exciter 2 Pitch	6
Delay Osc - Pluck/Bow	2
Delay Osc - Damping	8
Amp Env - Pre Attack	9
Amp Env - Attack	10
Amp Env - Decay	11
Amp Env - Release	12
Pitch Mod - FM	13
Pitch Mod - Detune	14
Pitch Mod - Portamento	15
Pitch Mod - LFO	16
Pitch Mod - LFO to Exciter	17
Pitch Mod - LFO Level	18
All Pass - Adjust	19
Filter Mix	20
Band Pass - Mix	21
Band Pass - Cutoff	22
Band Pass - Resonance	23
Band Pass - Env Level	24
Band Pass - LFO On	25
Low Pass / High Pass Mix	26
Low Pass - Cutoff	27
Low Pass - Resonance	28
Low Pass - Drive On	29
Low Pass - Drive Gain	30
Low Pass - Env Level	31
Low Pass - LFO On	64
Low Pass - LFO Level	65
High Pass - Cutoff	66
High Pass - Resonance	67
High Pass - Env Level	68
High Pass - LFO On	69
High Pass - LFO Level	70
2X - On	71
2X - Speed	72
2X - Pitch	73

Control Name	CC
Arp - On	74
Arp 1 - Gate	75
Arp 1 - Direction	76
Arp 1 - Octave	77
Arp 1 - Speed	78
Arp 1 - Hold	79
Arp 1 - Bypass	114
Arp 2 - Gate	80
Arp 2 - Direction	81
Arp 2 - Octave	82
Arp 2 - Speed	83
Arp 2 - Hold	84
Arp 2 - Bypass	115
Tremolo - On	85
Tremolo - Level	86
Metal - On	87
Metal - Volume	88
Metal - LFO On	89
Metal - LFO Level	90
Chorus - On	91
Chorus - Mix	92
Chorus - Depth	93
Chorus - Stereo Width	94
Chorus - Speed	95
Delay - On	96
Delay - Wet/Dry	97
Delay - Volume	102
Delay - Feedback	103
Delay - Stereo Width	104
Delay - Time 1	105
Delay - Dot 1	106
Delay - Time 2	107
Delay - Dot 2	108
Reverb - On	109
Reverb - Mix	110
Reverb - Size	111
Reverb - Width	112
Reverb - Dampening	113

CPU Usage Tips

There is a lot going on under M-theory's hood, and using all of it can make the synth get pretty CPU hungry. Because of this, it helps to be conservative in your feature usage...if something isn't making a big difference in the sound, you may want to consider turning it off in order to save some CPU.

Additionally, the more voices that are active at once, the higher the CPU load will be. Common things that increase the CPU load due to extra voices (excluding playing chords, of course) are:

Arpeggiators
The arps trigger many voices quickly, they can easily add up to a full load of 6 voices.

2X
The 2X feature triggers two midi voices, so this will of course double the number of voices that are active at once.

Long envelope release times
This will allow voices to overlap while they are finishing. This overlap equates to multiple voices being active at once, thus doubling the CPU load.

Quality Modes
If you are still having problemes with M-theory using up more CPU than your song can afford, another thing you can do is to switch the master quality mode from HQ to LQ. This switch is found within the MASTER tab. Low quality mode uses considerably less CPU and it has a softer and warmer sound. If you do not wish to have this mode's tone on your final mixdown, you can always leave it in LQ mode when composing, then turn it up to HQ during your final mixing and rendering.

Note that the setting of this control is not saved with the preset, allowing you to set the quality to what you need and leave it there, even while you flip through presets. It is however saved with your song, so you don't have to reset this every time you go back to work on a song.

Known Bugs

Pop during/after preset change
When switching from a bowed/sustained preset to a plucked one, you might hear a nasty metallic pop/bonk sound during the preset change, or with each new note. If this occurs, the only way to clear it up is to just wait a few seconds for all the voices to finish.

Dual core processors + multiple instances
Unfortunately VSTs built with SynthEdit are not completely 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 stated that the fix for it will be in the next update (1.1) of SynthEdit. As soon as Jeff releases this fix, I will release an update to M-theory to solve this problem. In the meantime, there are a few workarounds for this issue.

1. Make additional copies of the M-theory dll for each extra instance you expect to need, and give each a new name. (eg: M-theory2.dll, M-theory3.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.

FL Studio
When M-theory is 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 M-theory 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"

Project5
The same problem occurs in Project5. Unfortunately though, this host does not offer the option of turning off the reset so there is no solution for it right now. However, the faster your computer, the less lag you will notice. So if you've got a newer computer, you may not run into this problem at all.

Quick start guide for sound design in M-theory

Just as with any synth, there is no absolute way you must work in M-theory. But I thought it might be helpful if I wrote a bit about how I tend to approach making new presets with this synth.

Short or long?
The first thing to decide is if you would like to make a short sound (plucked, bass, etc.) or a sustained sound (bowed string, pad, etc.) When that decision is made, use the Pluck/Bow control in the oscillator section to choose the appropriate sound type.

If you chose to go for something short, do you want it to sound kind of plucky, or percussive? If plucky then just keep going. If you want percussive, then consider choosing a pluck mute setting in order to get a more percussive sound. Alternatively, you could also choose one of the percussive options of the tone mode selector.

Tone
The tone mode settings can help get you on a path to start from. The options range from bright, higher pitched sounds, to low and hollow sounds, to sounds with a percussive edge.

Shaping your sound - Pt. 1 - Exciters/Oscillators
Head on over to the exciter section and start choosing some new source material. You may find it helpful to use the mix control to isolate one exciter at a time, at least in the beginning, so you can clearly hear what each option does for you.

If you would like to use noise or a VA oscillator as your exciter, then click on the VA button to choose one of these waveforms. If you'd like to use a sampled waveform, then leave the VA button off and start testing out the built in samples. You can choose them either by using the <> buttons or by clicking on the sample name in the waveform display area and choosing a new one from the pop-up menu.

You can even experiment with loading your own samples into M-theory. To do so, first click on the U button. You will now see a file folder icon show up in the waveform name display area. Clicking on that folder will open a windows file browser where you can load your own samples. M-theory only supports samples in WAV format.

A note of caution about the VA waveforms: These raw oscillator sounds can be very useful...but their purity also causes the delays that make up the other half of the oscillator section to feedback heavily. This can lead to a very loud sound, to its best to be a bit careful with these. I recommend turning down the volume a bit when working with them.

Pitch as tone
Once you think you have settled on the samples, now try changing their pitch. Instead of the normal pitch changing effect you would expect, in M-theory this will instead change the harmonic overtones of the sound, and generally have an effect on the overall character.
By now you may be seeing that there is a whole lot of tonal variety available to you before you even turn on a filter. This is important because not only will this give you more power and control to achieve the sounds you want, but it can also help you conserve CPU by not having to rely on filters as heavily as you often have to in other synths.

The amp envelope
The next thing you should tweak (if you haven't already) are the amp envelope settings, so you can adjust your attack, decay and release times. You'll notice that there is no sustain. This is because the bowed mode handles that task.

Tip 1: If you want to add a bit of a zing/scrape into your sound, or if you want to help tweak the draw of a bow, try adjusting the A1 slider.

Tip 2: Longer release times cause voices to overlap. This sounds fine, but it uses up more CPU because voices are active at the same time. So if you want to conserve some CPU, try keeping the release and decay settings as low as you can, while still preserving the sound and playability you are aiming for.

Pitch modulation
There are several ways to modulate the pitch of the sound in here.

FM
allows the exciters to modulate the frequency of the delays. This adds an interesting type of distortion into the sound, as well as slows the attack. The FM is useful for a variety of purposes, including adding a bit of noise into a flute sound, or helping emulate brass.

DTN
increasing this slider will detune one of the delays in the oscillator section from the other, creating a chorus type of effect.

PRT
want the sound of analog style portamento/glide? Then turn this up.

LFO
please see the user guide for details on this section. It's also fine not to worry so much about it at this stage of the sound design process anyway because it's usually something you add on as an accent/effect towards the end.

Shaping your sound - Pt. 2 - The Filters
The next stage in this process takes us to filtering. The signal path here becomes a bit odd in M-theory. The signal path can be blended at various stages, giving you a very nice degree of control over how much effect each filter can have on the sound. This takes a little getting used to, but it's worth experimenting with it as it can do a lot to perfect your sound. It is often best to think of the filters almost like an EQ, allowing you to bring in a bit more mids, accentuate the highs, etc.

There are lines on the GUI indicating the signal path through the filter section. Use these as reference to help guide you in your decisions.

The first filter in the chain is the All Pass filter, and this is definitely the one you should start tweaking first. Even though it's just one slider, It can have quite an impact on the tone and character of your sound. (Though it is particularly CPU intensive.)

Next up, is the Thump Kill. You only need to consider using this if you feel your sound has too much of a low end "thump" in the mid and upper ranges. This is usually only an issue on plucked sounds. If

the thump is a problem, turn this on to help filter it out. If you are not bothered by a thump, then just leave the Thump Kill off.

Third in line is the LP KEY filter. This is a basic low pass that is hooked up to keyboard tracking. Turning it up will soften the tone of the lower keys. This is handy when you feel that your low end has too much “zing” in it.

This brings us to the first mix control, and it adjusts how much of the signal up to this point will be fed to the other filters, or be bypassed directly to the effects section. For the rest of the filtering, it really is up to you. You can treat the Band, Low, and High pass filters as you would on any analog synth, making them resonant and modulating them...or you can treat them like an EQ, to accentuate or cut frequency ranges. Additionally, in the low pass section you will notice a drive section. Turning this on will add distortion into the sound, and the slide will control the amount of it.

Effects
For the most part, this is your standard multi effect section. You’ve got Tremolo (amplitude modulation), Chorus, Delays, and Reverb, and if you have some experience working with these types of effects before, then they all work pretty much as you would expect. ...but then you’ve got the Metal effect.

The metal effect is a basic comb filter (fast delays) and is mainly used to add additional resonances into the sound. Often this is used to create an extra metallic character to the sound, but it can also be used to help make a variety of acoustic emulations sound a little more realistic by making it kind of seem like your sound has a body on it. (Like a guitar, or banjo body, or the tube of a wind instrument.) It’s a bit of an odd effect and I can only recommend experimentation and practice as a means of learning how to best use it. Also, if you find presets you like that use it, try turning it on and off to hear the effect it has on the sound. This can help give you an idea of what it is capable of providing.

Additionally, the metal effect can be modulated...so those odd resonances can start moving around. At the right settings (particularly with delays set to high feedback), this can provide an almost flanger-like sound.

MIDI Stuff
The last things waiting for you to experiment with are the 2X and the arpeggiators.

2X
This function plays an extra midi note after whatever you play. You can adjust the speed and the pitch of this triggered note. At slower speeds it can almost be like a delay, and at higher speeds it can providing a sort of doubling/harmony type of effect.

The arpeggiators
If you’ve used an arp on an analog type of synth before, then you know what you are getting into here. There are a few differences though...for starters, there are two of them and they can play at the same time. This allows you to create some pretty complex patterns. And speaking of patterns, the row of 16 buttons for each arp let you choose when the arps will play a note. This lets gives you a whole lot more control over your pattern than you get with most arpeggiators. And to top it off, these are phrase arps...so the order of the notes is controlled by the order in which you press the keys on your keyboard. Add to that the ability to set different lengths tofor each arp and, all together, this makes for a very fun and powerful arpeggiator section.

Credits

M-theory created by Ugo (Chris Sciurba)
www.ugoaudio.com
ugo@ugoaudio.com

This plugin was created with SynthEdit.
VST plugin technology by Steinberg.

This VSTi incorporates SynthEdit modules and prefabs by:

Dave Haupt - www.dehaupt.com
Chris Kerry - www.chriskerry.f9.co.uk
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/

Presets by:

- Antoine Bertier (AB)
- Canned Heat / Hootan Farzad (CH)
- Jeff Rhodes at Perimeter Sound Arts (PS) - http://www.perimetersound.com
- Jim Cloud (kloW)
- Elvar Aron (EA)
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