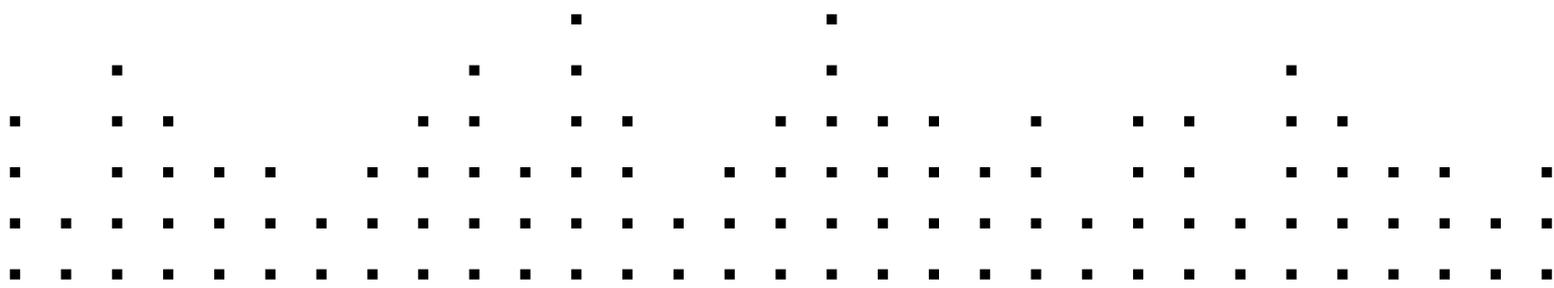




FMEB

GETTING STARTED



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Getting Started written by: Thomas Loop

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Germany

Native Instruments GmbH

Schlesische Str. 28

D-10997 Berlin

Germany

info@native-instruments.de

www.native-instruments.de

USA

Native Instruments North America, Inc.

5631 Hollywood Boulevard

Los Angeles, CA 90028

USA

sales@native-instruments.com

www.native-instruments.com



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1 Welcome to FM8!

Thank you for choosing FM8!

1.1 What is FM8?

FM8 is a powerful FM synthesizer featuring 32-bit resolution for superb sound quality and comprising an innovative algorithm programming matrix whose flexibility is light years ahead of older FM synthesizers. Extensive modulation, a rack of effects, a filter module/Operator, multiple waveforms and an Arpeggiator let you create and shape the most sophisticated sounds. FM8 integrates perfectly into the computer-based virtual studio, whether Mac OS X or Windows. It can serve as a stand-alone module, turning your computer into a synthesizer. It also works as a sequencer plug-in with various host-interfaces.

1.2 The FM8 Documentation

1.2.1 Special Notes in this Getting Started Guide

This manual uses special notes to provide additional tips and to warn you of things that can go wrong. The icons included in the marginal notes show the nature of the provided information:



Whenever this exclamation mark icon appears, you should read the corresponding paragraph carefully and follow the instructions and hints given there (if applicable).



This light bulb icon indicates that a paragraph contains useful extra information. This information may often help you to solve a task more efficiently, but does not necessarily apply to the setup or operating system you are using. However, it should be worth reading for most users.

1.2.2 Other Documentation

What you are holding in your hands right now is the Getting Started Manual that will give you a quick overview of FM8's main features and functions. For more in-depth information on all topics not covered here, please refer to the FM8 Reference Manual that is available as a PDF file in the subfolder "Documentation" of FM8'S installation folder. Alternatively, you can download the Reference Manual from the Update Manager on the Native Instruments Website: native-instruments.com

1.3 System Requirements

For current information about system requirements and compatibility with current and legacy operating systems, please see our website at:

native-instruments.com

2 Setup

This chapter leads you through the necessary steps for setting up your FM8 installation. The first part deals with the stand-alone version of FM8 and in the second section you will get an overview of the available FM8 plug-ins.

2.1 Setting up FM8 in Stand-Alone Mode

FM8 can run as a stand-alone software with its own interface to your sound- and MIDI-hardware. Use this mode if you only want to play FM8 via a MIDI keyboard attached to your computer or if you want FM8 to receive MIDI data from a piece of software that cannot host any of the available FM8 plug-ins.



If you start FM8 for the first time after installation, please make sure that the database building process has finished before you close the software/plug-in again. See the next section for more. Initial Database Build

The KORE SOUNDS® in FM8 are organized in a convenient database making sound retrieval and management a snap. For further information about working with the sound database please read chapter 4.1 “[Finding and Loading Sounds.](#)”

On the first time you start FM8 (stand-alone or one of the plug-ins) you get a message that FM8’s KORE sound database has to be created. Depending on the performance level of your computer hardware this can take a few minutes.

Please make sure that this procedure has come to an end before you close the application or plug-in. When the database creation has been finished, the ring stops to rotate. If you close it before it has finished FM8 has to start all over again the next time you start it.

2.2 Audio and MIDI Settings

Before you start your work with FM8 it is a good idea to configure its audio settings to fit your needs. This only applies to the stand-alone version of FM8 as with the FM8 plug-ins all things audio and MIDI are handled by the host software.

2.2.1 Audio Settings

1. To set up the audio hardware in the FM8 stand-alone application, select the entry *Audio and MIDI Settings...* from the File menu.



The Audio Tab of the Audio and MIDI Settings showing a RIG KONTROL 3 as the active audio hardware (Windows version shown).

2. On the Driver menu of the Audio Tab, you should select *ASIO* on Windows for best results. (On a Mac this will be set to *CoreAudio*, your only choice in Mac OS X.) Then use the Device menu to select the desired audio interface.
3. We recommend setting the sample rate to 44100 and setting the output latency to about 10 ms.

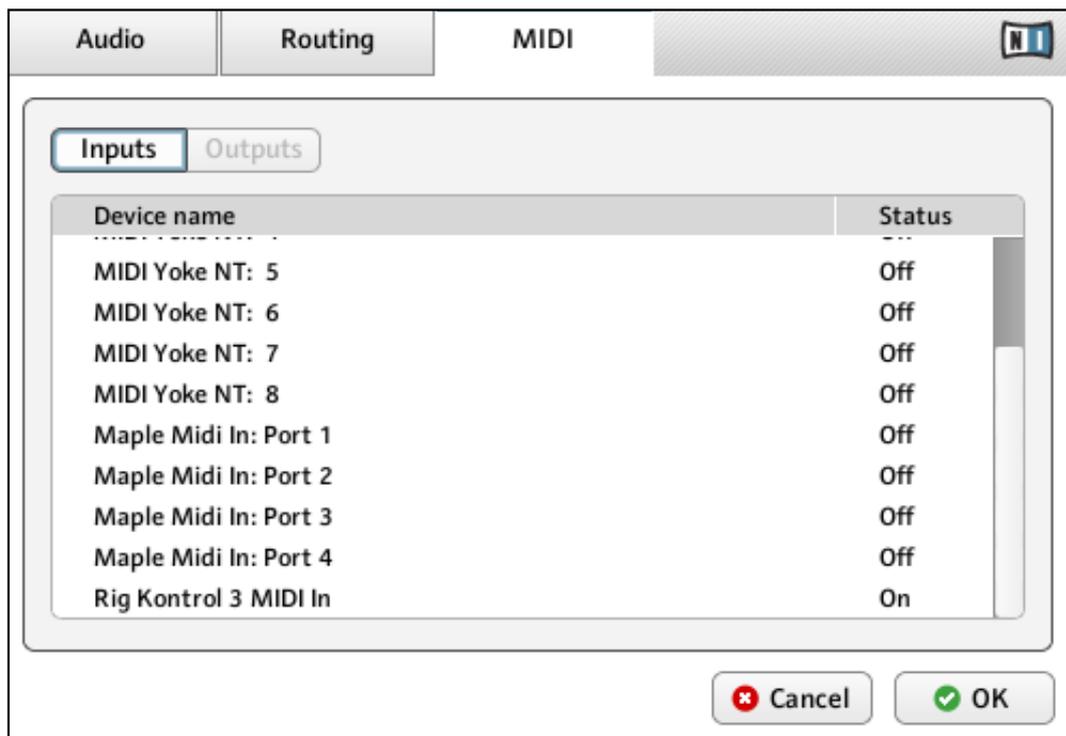
- Depending on your hardware this may be done via the Latency Slider on the bottom of the Audio Tab or via the Button ASIO Config that opens the control panel of your audio interface.
- These are recommended settings that should work well on most computer systems; for information on what these settings mean, please refer to chapter 2.2 “About Latencies”.

2.2.2 MIDI Settings

For using FM8 with a MIDI keyboard you have to choose the right MIDI interface so that the MIDI data reaches FM8.

To do this:

- Open the Audio and MIDI Settings from the File Menu.
- Switch to the MIDI Tab.



The MIDI Tab of the Audio and MIDI Settings showing an active RIG KONTROL 3 MIDI interface (Windows version shown).

- On the MIDI Tab, check that the MIDI interface or device you are using is turned on. If you see your interface listed but it is off, click on the “off” label to turn it on.
- Now you should be able to play FM8 via your MIDI keyboard.

If you don't have a MIDI controller available, you can still play MIDI notes by using the computer's keyboard. We have assigned the four rows of alphanumeric keys in a similar pattern to that of a piano keyboard. For example, the bottom row of keys on your computer keyboard (from Z on the left to / on the right) is assigned to the white keys of the piano keyboard, with the Z key being assigned to C. The row of keys above that (from S to ;) covers the corresponding black keys, with S assigned to C#. The two rows of keys above are assigned in a similar pattern, but one octave higher.

2.3 About Latencies

The data produced by audio software like FM8 has to be handed over to the driver of the currently used audio hardware which in turn passes it to the digital to analog converters that produce an analog signal to be heard via your speakers. This procedure takes time. The resulting delay is called latency.

The high performance level of current computer hardware combined with advances in driver technologies has reduced the required time to a few milliseconds. Still, there is a trade-off to be made, as an extremely low latency taxes the computer resources more than a lax setting with a longer delay between sound production in the software and sound reproduction via the speakers.

The nature of the driver used is also an important factor in this game.

Use low-latency drivers

Whenever possible you should use low-latency drivers while working with FM8. FM8 works with two types of low-latency drivers:

- ASIO drivers
- Core Audio (only on Macs)

These two technologies ensure an efficient data transfer between Software and audio hardware and should provide a latency that is bearable for live play, if not unnoticeable.

2.4 FM8 as a Plug-in

FM8 does not only come as a stand-alone application but also in a variety of plug-in formats for use in hosts like Native Instruments KORE, Steinberg Cubase/Nuendo, Ableton Live, MOTU Digital Performer, Apple Logic or Digidesign Pro Tools.

The synthesis functionality of the FM8 plug-ins is identical to the stand-alone version. However, the plug-ins lack the options for settings up audio and MIDI hardware as this is handled by the host the plug-in is working in.

Plug-in Formats and Hosts

Depending on the operating system running on your computer you have the choice between the following plug-in formats:

- VSTi (Mac OS X and Windows)
- Audio Unit (Mac OS X only)
- RTAS (Mac OS X and Windows for the use in Digidesign Pro Tools)

Please refer to the documentation of your host software for details about the required plug-in format and how to open and use the FM8 plug-in.

3 Overview

With installation and setup covered, let's dive into the fun part: Using FM8 to make some noise!

This chapter provides a brief overview of the interface of FM8 with a description of some special elements of the user interface.

The elements of FM8's user interface are organized on several pages.

This document is about setting you up for your first steps in FM8 so we will not be able to dive into all the functionality offered by this synthesizer. Please read the main manual for an in-depth discussion of all features to be found in FM8.

3.1 The Application Control Bar

The upper portion of the FM8 remains constant as you switch among the various Editors.



On this bar you find a File Menu with various commands to manage your KORE SOUNDS and a few Options for controlling the behavior of FM8. Further to the right you find the Sound Readout menu, and some additional controls, including the Morph Square (see chapter [4.2.1](#) below for more on this). On the far right you see a Spectrum Display depicting the frequency spectrum of the current sound.

3.2 The Navigator

The Navigator is your main tool in switching around the FM8 interface.



Use the Navigator buttons to switch to the respective Editors. They are displayed to the right of the Navigator on the Edit Area.

3.3 The Browser

FM8 offers a large sound library of KORE SOUNDS so that you can start to make music immediately. The sounds are organized in a powerful database and tagged with a number of categorized Attributes that facilitates the search and retrieval of sounds to a new degree.

As the name implies, the KORE SOUNDS integrate seamlessly into Native Instrument KORE as well as being the native sound format for FM8.

In FM8 you use the Browser to load sounds. The View is switched on via the Browser Button on the Navigator in the left part of the interface.



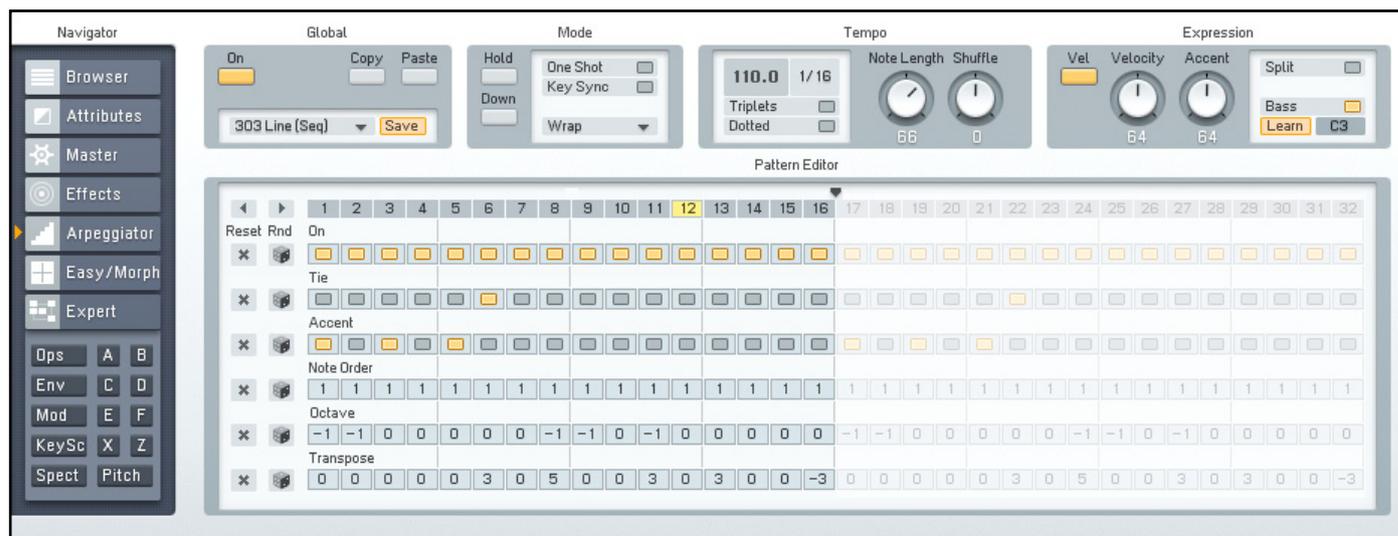
In the Browser you can use a variety of Attributes in different Categories to filter for the desired KORE SOUND. The results of your searches are displayed in the Search Results List to the right. Here you can also search for KORE SOUNDS and manage Program Change Lists.

3.6 Effects Window



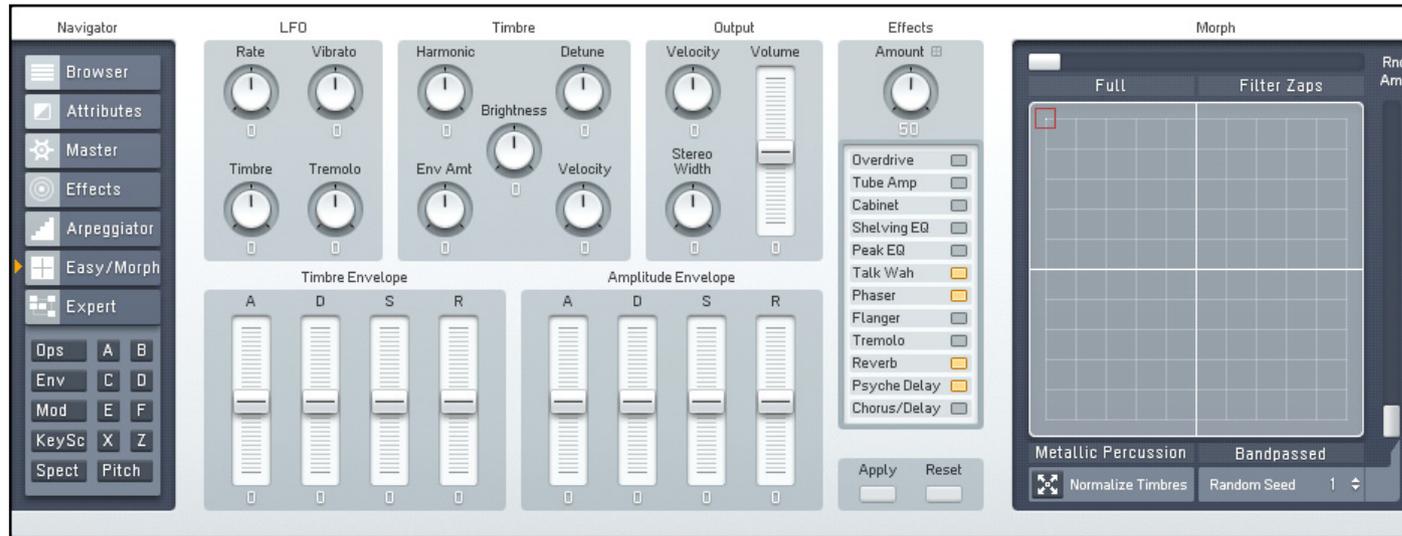
The FM8 sports a great selection of Effects processors that can be combined to produce a variety of sounds. The effects range from classics like Chorus and Flanger over bread-and-butter tools like equalizers and reverb to a cabinet modeling unit and the crazy Psychedelay.

3.7 Arpeggiator Window



The FM8 Arpeggiator combines an old-school arpeggiator-approach with a flexible step-sequencer concept including ties between notes, transposition of steps and rearrangements of note orders. The results range from classic arpeggios to complex sequences.

3.8 Easy/Morph Page



The Easy controls provide a convenient set of macro controls that allow for sound manipulations without having to bother about the gory details of FM synthesis.

The Morph Square is a new FM8 feature for seamless morphing between the timbral characteristics of four FM8 Sounds.

3.9 Expert Windows



The Expert Windows offer detailed control of the FM synthesis engine. Here you can edit and program every tiny detail of the Sound and its movements over time.

As the scope of this text only encompasses a quick introduction into FM8, a thorough description of the Expert Windows is left out. Please refer to the reference manual of FM8 for all details.

4 Basic Operation

4.1 Loading Sounds

Here you will get a kick-start into quickly finding and loading KORE SOUNDS via FM8's browser.

4.1.1 The Browser

FM8 offers a large sound library of KORE SOUNDS so that you can start to make music immediately. The sounds are organized in a powerful database and tagged with a number of categorized Attributes that facilitates the search and retrieval of sounds to a new degree.

As the name implies, the KORE SOUNDS integrate seamlessly into Native Instrument KORE as well as being the native sound format for FM8. In FM8 you use the Browser to load sounds. The View is switched on via the Browser Button on the Navigator in the left part of the interface.



The Navigator of FM8 with the Browser Button on top.

Click on the Browser Button and you see the Browser filling up the right part of the interface:



FM8's Browser ready for sound retrieval.

On the top of the Browser you see the Search Field. Below it you find the Attributes divided into five categories and to the right you have the Search Results List presenting the contents of FM8's KORE sound database.

If you just want to scan through the complete contents of the database, use the scroll bar of the Search Results List to browse the KORE SOUNDS. Load a sound with a double-click on its name.

4.1.2 Combining Attributes

But there is a more elegant way of getting the sounds you want: the Attributes.

Let us say you are looking for a mean, digital bass for a track you are working on:

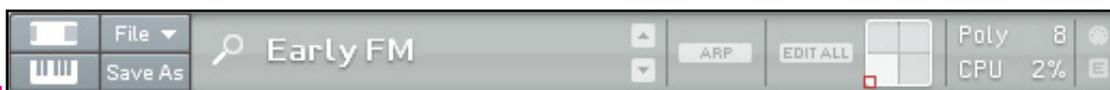
1. In the *Instruments* category, click on *Bass*.
2. In the *Source* category, select *Digital*.
3. In the *Timbre* category, select *Hard*.

- As you want the sound to bite, select *Percussive* in the *Articulation* category. The *Genre* column can be left untouched in our example. Now you see the following picture.



Your Search Results in the Browser. With each selected Attribute the list of KORE SOUNDS displayed in the Search Results List gets smaller, as fewer sounds match the combination of selected Attributes.

- Now simply double-click one of the entries on the Search Results List and the corresponding KORE SOUND is ready to be played.
- The loaded KORE SOUND appears in the Sound Redaout of the Application Control Bar



The KORE SOUND *Early FM* has been loaded.

7. The Search Results List is always mirrored in the Sound Readout menu. Click on it and you get a drop-down list.



The Search Results appear in the Sound Readout menu. The two small up and down arrows at the menu's right allow you to step through the list without opening the popup menu.

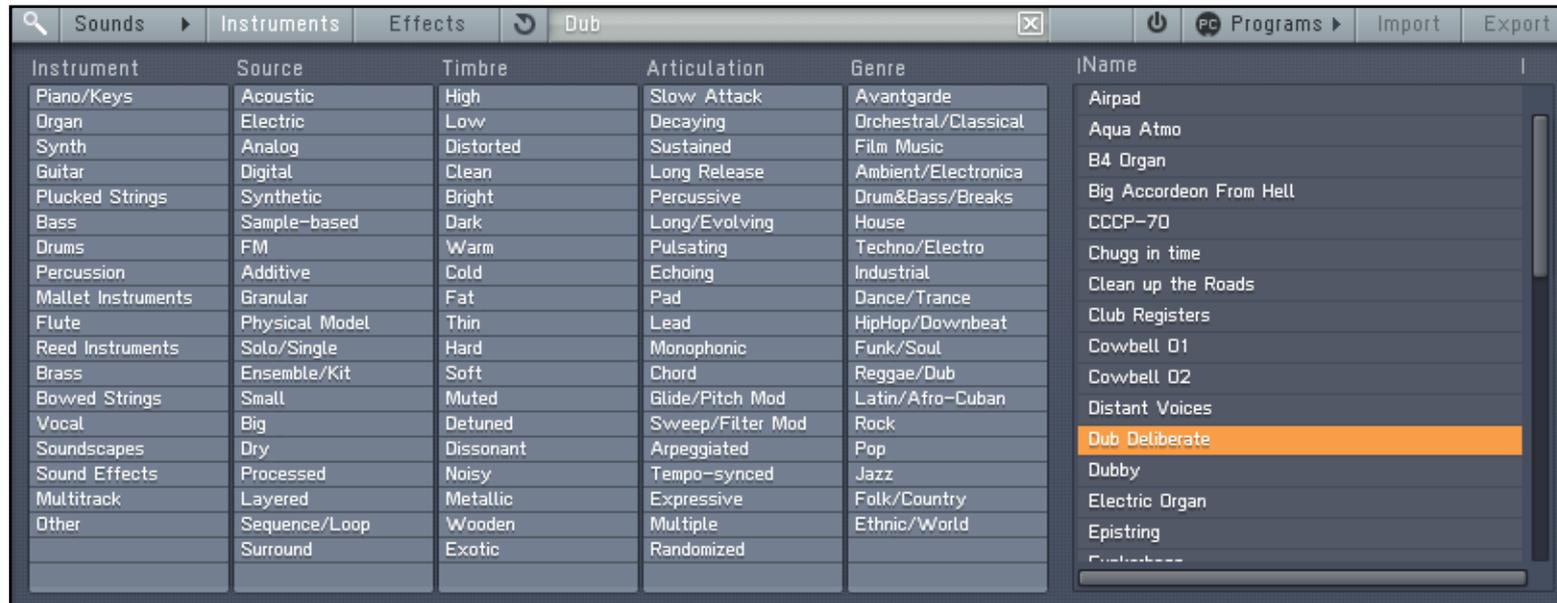
Now you know how to find and load KORE SOUNDS in FM8. Have fun with the great selection of sounds that comes with FM8.

For a more in-depth discussion of the Browser's functionality, please read the reference manual that came with your installation of FM8.

4.1.3 Searching Sounds

Sometimes you want to quickly find a KORE SOUND you have used before. You only know a part of its name and do not want to go through the Attributes to find it. This is easily done via the Search functionality of the Browser.

Just type a part of its name into the Search Field and you get a list of KORE SOUNDS matching your search. As an example we will search for a KORE SOUND that has the term “Dub” in its name:



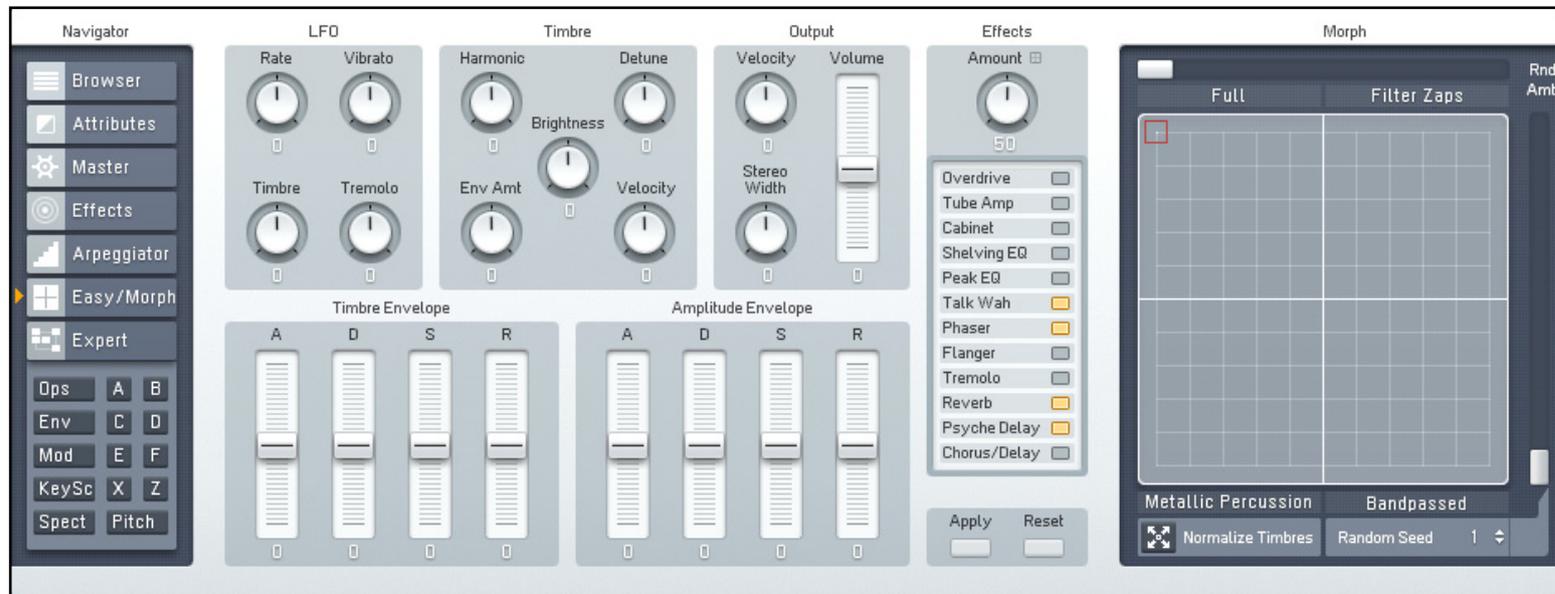
Searching for Dub.

Browse the Search Results List and you will quickly find the sound you were looking for.

4.2 Tweak the Sounds

FM8’s KORE SOUNDS are no static presets. The Easy/Morph Page provides a convenient set of macro controls that allow for sound manipulations without having to bother about the gory details of FM synthesis. Just grab a knob and change the timbre of your Sound with a single tweak. You can easily route an LFO to the main pitch or to the harmonic content or manipulate the amplitude envelope of all Operators at once and much more.

The Morph Square is a new FM8 feature for seamless morphing between the timbral characteristics of four FM8 Sounds. You can freely choose those four Sounds to produce new ones that you would possibly never have gotten when programming the FM8 the normal way. A randomization function throws in the possibility for additional variations.



The Easy/Morph Page lets you create new sounds in now time.

4.2.1 Morphing Sounds

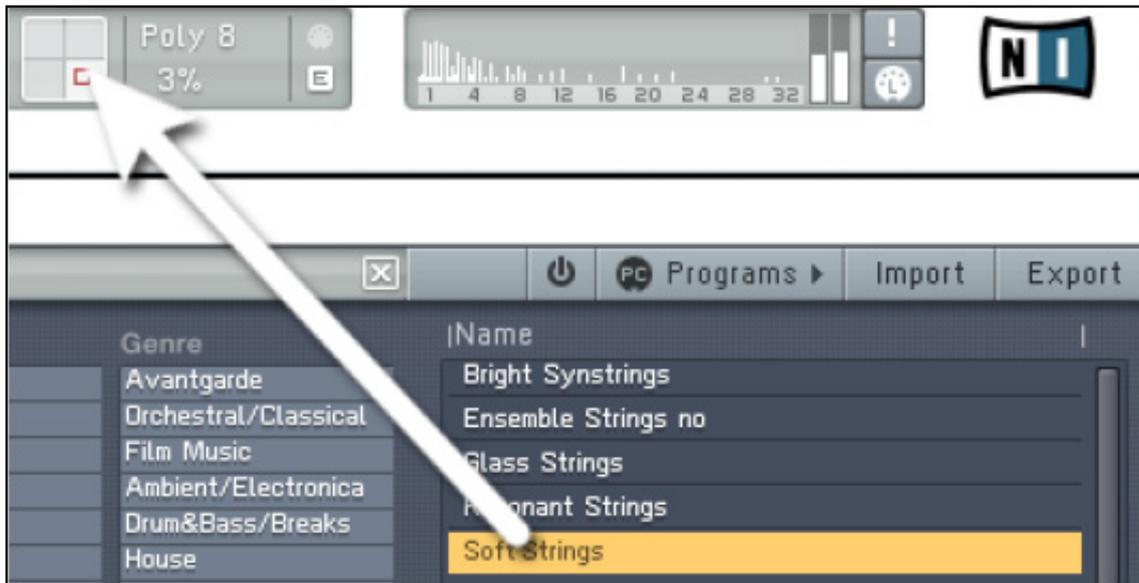
Setting up the Morphing feature is an easy task:

1. Switch to the Browser via the Browser Button of the Navigator.
2. Filter for a selection of KORE SOUNDS you would like to morph into each other by choosing some Attributes. Just make the steps described in section 4.1.1 above gain to get some Bass sound in your Search Results List.

Instrument	Source	Timbre	Articulation	Genre	Name
Piano/Keys	Acoustic	High	Slow Attack	Avantgarde	Early FM
Organ	Electric	Low	Decaying	Orchestral/Classical	Hi
Synth	Analog	Distorted	Sustained	Film Music	Ministril
Guitar	Digital	Clean	Long Release	Ambient/Electronica	Pulsepecker
Plucked Strings	Synthetic	Bright	Percussive	Drum&Bass/Breaks	Razor's Delight
Bass	Sample-based	Dark	Long/Evolving	House	Scanbass
Drums	FM	Warm	Pulsating	Techno/Electro	Stereo Staccato
Percussion	Additive	Cold	Echoing	Industrial	Tremolo Bass
Mallet Instruments	Granular	Fat	Pad	Dance/Trance	
Flute	Physical Model	Thin	Lead	HipHop/Downbeat	
Reed Instruments	Solo/Single	Hard	Monophonic	Funk/Soul	
Brass	Ensemble/Kit	Soft	Chord	Reggae/Dub	
Bowed Strings	Small	Muted	Glide/Pitch Mod	Latin/Afro-Cuban	
Vocal	Big	Detuned	Sweep/Filter Mod	Rock	
Soundscapes	Dry	Dissonant	Arpeggiated	Pop	
Sound Effects	Processed	Noisy	Tempo-synced	Jazz	
Multitrack	Layered	Metallic	Expressive	Folk/Country	
Other	Sequence/Loop	Wooden	Multiple	Ethnic/World	
	Surround	Exotic	Randomized		

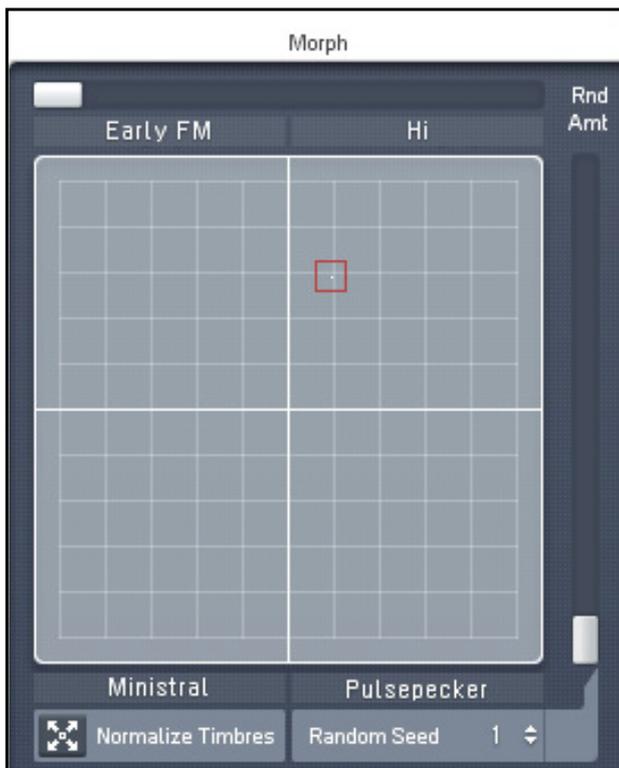
A small collection o bass sounds in the Browser.

3. Choose four of the sounds and drag them into the four quadrants of the small Morph Square in the Application Control Bar.



Easy setup via drag and drop.

4. Now your Morph Square on the Easy/Morph Page should look similar to this:



Four bass sounds ready to be morphed.

5. While playing on your keyboard, move the Morph Square with your mouse to get a multitude of new sounds. Now you probably already found some nice new sounds. But maybe they are not perfect, yet. Read on.

4.2.2 Tweak the Sound

Morphing four KORE SOUNDS into each other is fun. Sometimes the results can get a bit too dirty or have too much presence. This can be alleviated via the Easy controls.

If the sound gets too bright and edgy, dial in a lower setting for Brightness. This affects all corners of the sound.



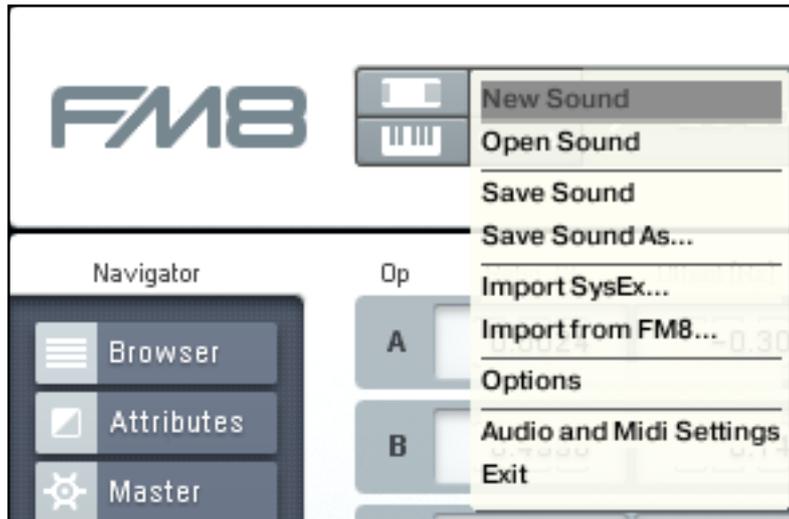
Tweaking the Brightness setting.

FM synthesis can be a bit daunting at the beginning. With the Easy Controls and the Morph Square you can get your own sounds without having to delve into the synthesis details.

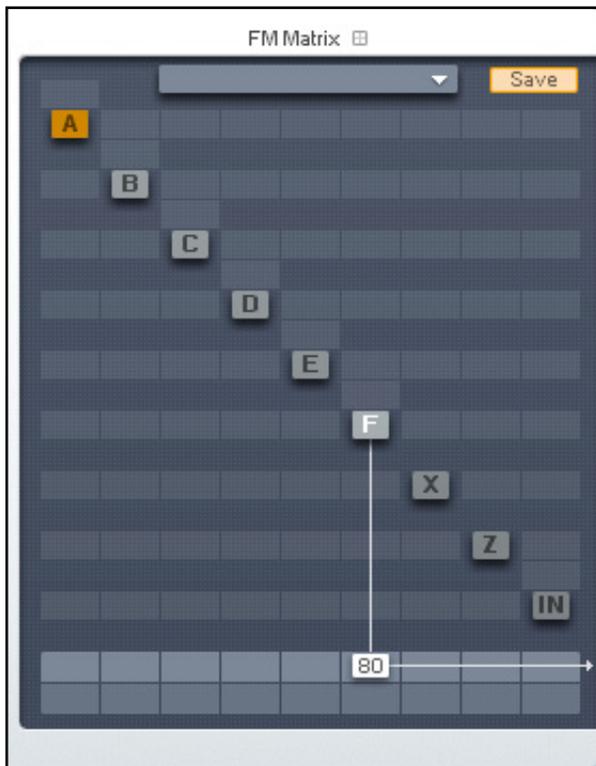
4.3 Create Your Own Sound

Now it's time to design your first FM8 KORE SOUND from scratch. Of course we are going to keep it simple and clear.

1. Initialize the edit buffer by choosing *New Sound* from the File menu of the Application Control Bar.

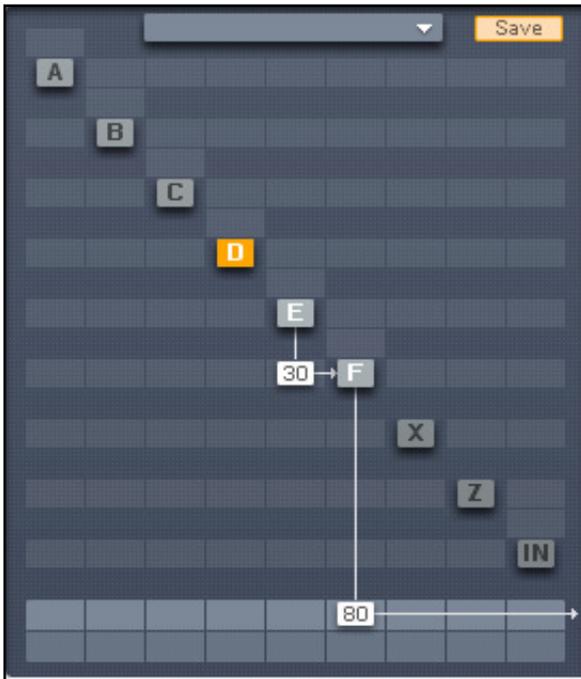


If you play a key you will hear a simple and clean sine wave, stemming from Operator F. The FM Matrix reflects this.

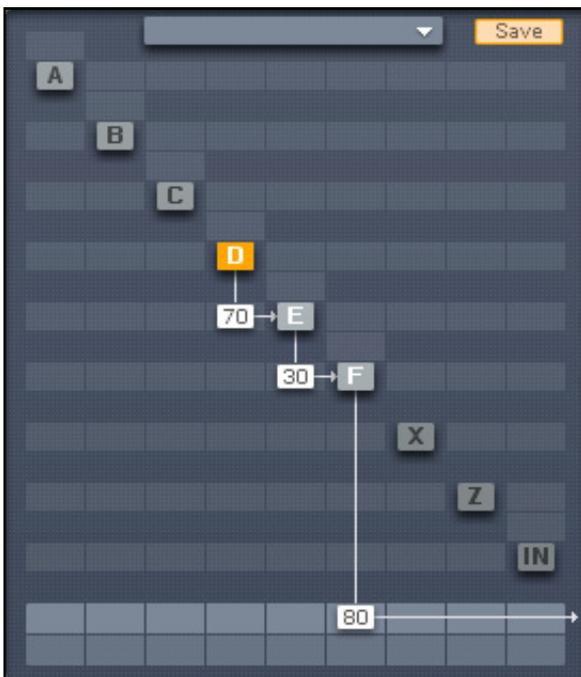


This sounds rather dull, so let's add some harmonics.

2. Click on the Operator page of Operator F in the Expert Controls.
3. Right-click Operators D and E on the FM Matrix to switch them on (the letters become white). Then click directly to the left of Operator F and drag your mouse up until you get a value of about 30. Now Operator E modulates Operator F.

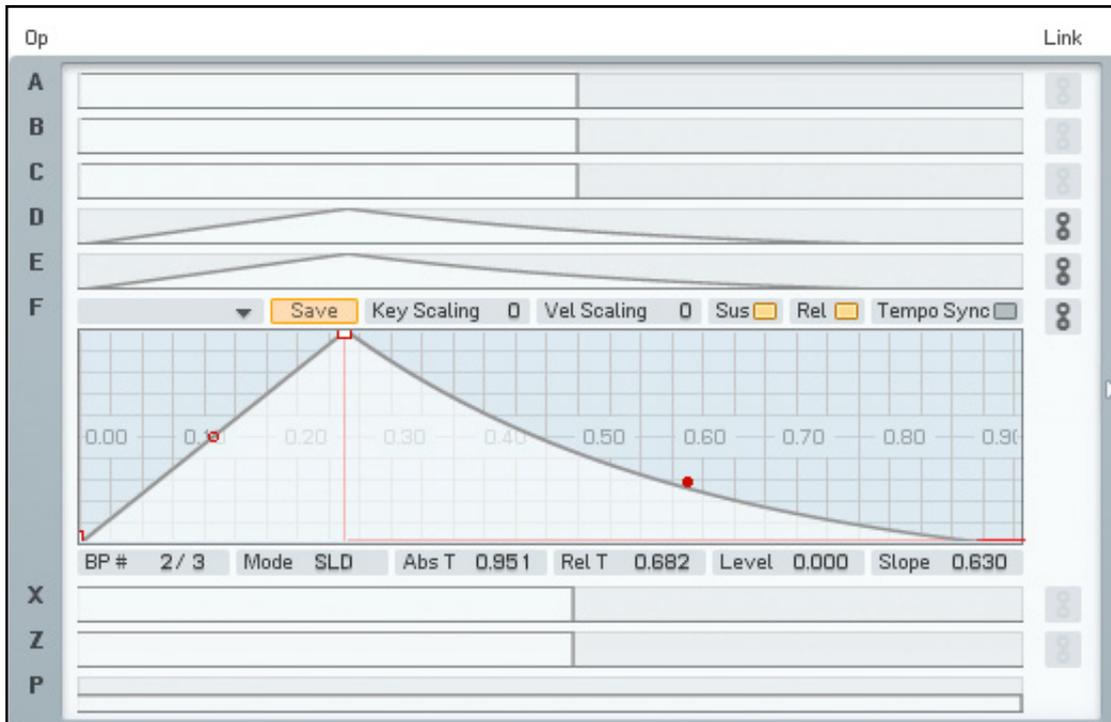


- The next step is to have Operator D modulate Operator E with an amount of 70.



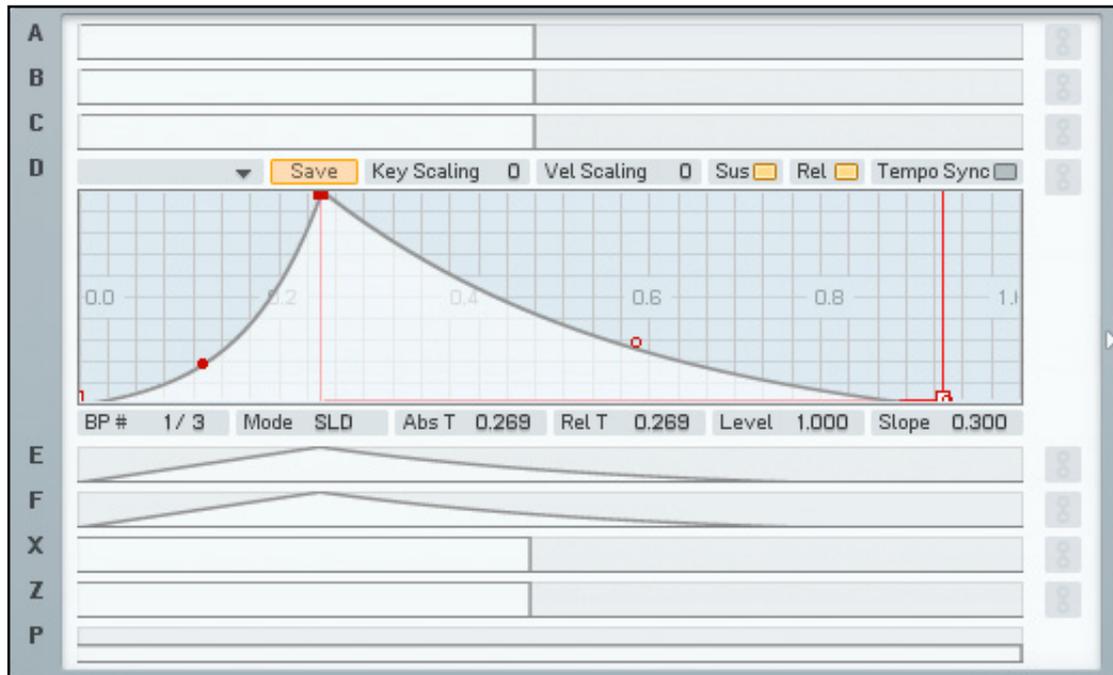
Now we have a nice little chain of modulators and carriers. You see that a modulator (like Op. E) modulating a carrier (Op. F) can be a carrier by himself (like Op. E being modulated by Op. D). When playing your keyboard you will hear the additional harmonics produced by the frequency modulation.

- Let's add some movement to the sound by tweaking the envelopes. Switch to the Envelopes page (Env). Now make sure you have Operator F selected for edits and link Operators D and E to Operator F by clicking on their Link buttons. Now every change you make to Operator F will be mirrored in the other two Operators and vice versa.



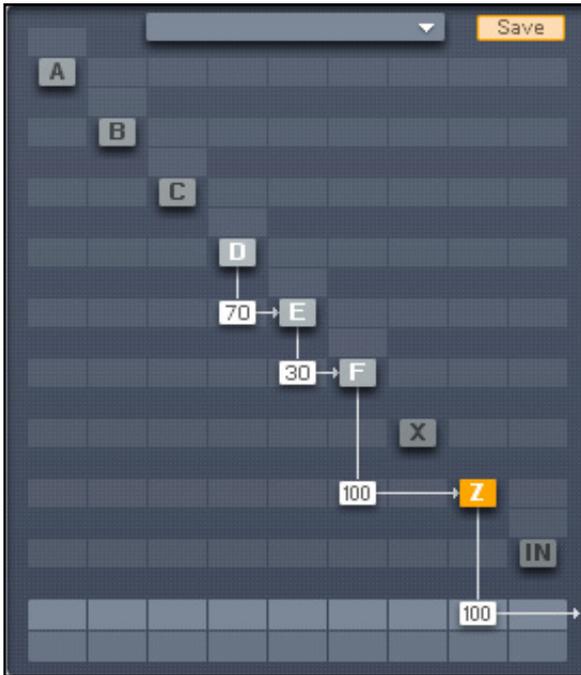
- Dial in a bit of Attack and a nice Release by using the red handles on the curve, as shown in the picture above. You can centre in on the complete Envelope with a double-click on the graph. You see that all three envelopes have the same shape.

- Now deactivate the Link buttons and switch to the Envelope of Operator D. Grab the Slope handle of the Attack phase (the red dot) and dial in an exponential slope.



Play some keys and you will hear that the harmonics are being faded into the Sound along the Envelope of Operator D, which is a modulator. This makes the Envelope of Operator D similar to a filter envelope. Let's push the Sound a bit more into the woodwind-direction. First of all we want it to be a bit softer. What could be better than a low-pass filter to soften things up?

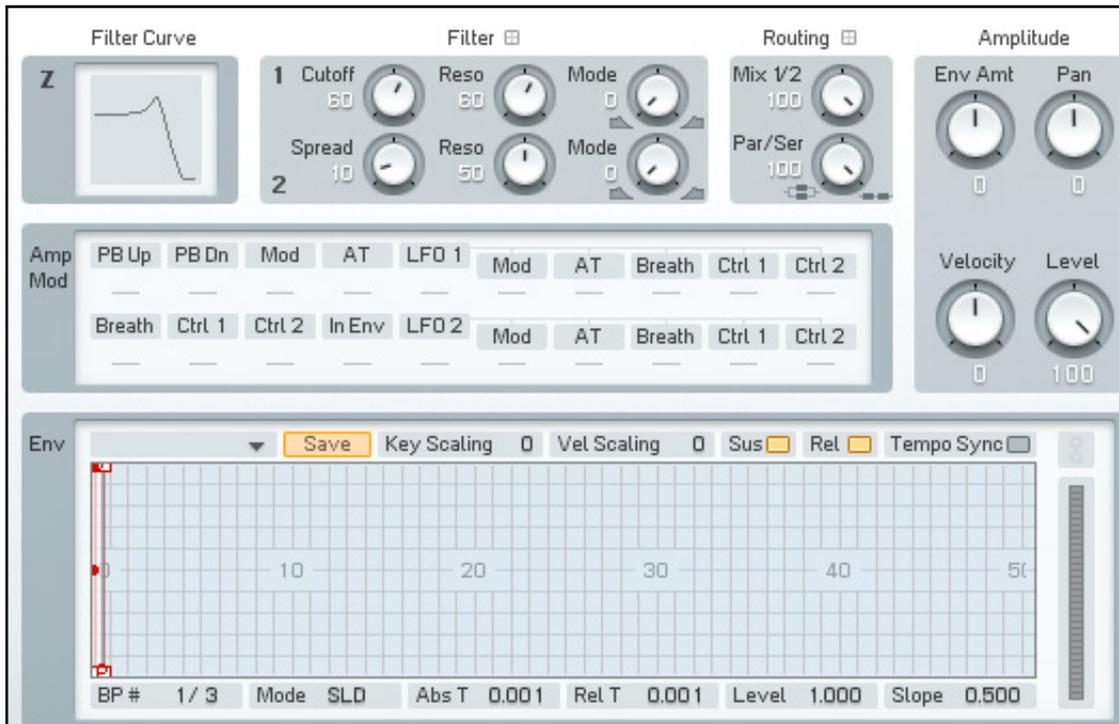
8. The Operator Z contains a great multimode filter, so we just route our signal through it.



Have a look at the picture above for pointers how to do it. Don't forget to turn the direct signal from Operator F completely down (a double-click on the value is a shortcut for doing this) and switch Operator Z on.

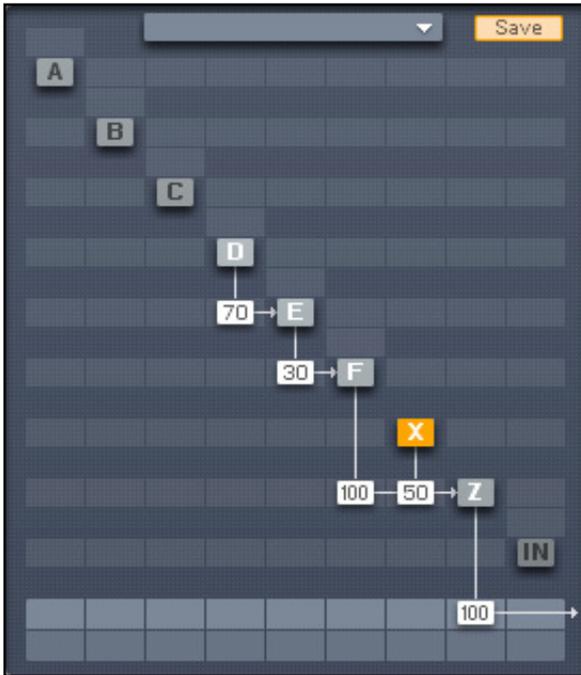
9. Switch to the window of Operator Z.

10. Set the Cutoff to about 60 and the Resonance of the first filter to about 60.

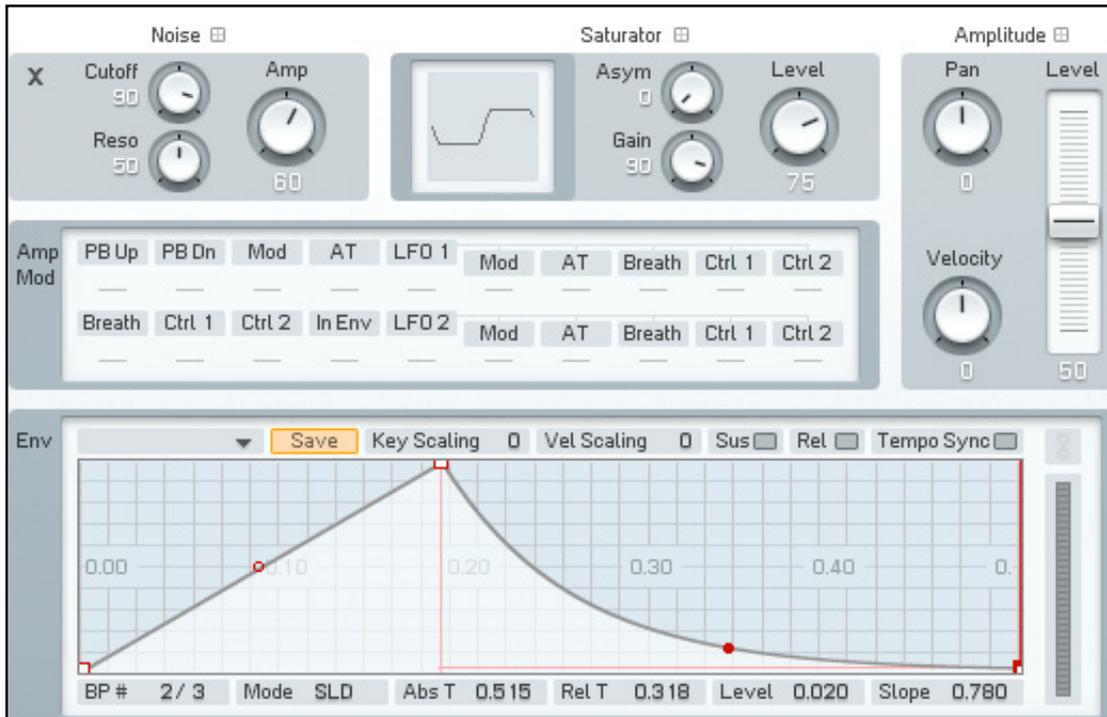


This setting caps the high mids and highs while adding some character via the resonant peak. Just have a look at the filter curve to see the response. We still miss something – the breath. Breathy sounds are usually synthesized with noise and guess what – the FM8 can produce that too. The noise generator is located in Operator X.

11. Activate Operator X and route its signal through the filter (Operator Z), as shown in the picture below.



12. Now switch over to the window of Operator X to tweak the settings. Dial in a value of 60 for the parameter Amp.



13. We have to change the Envelope to a shape with a small Attack and an exponential Decay phase. We just want a short, soft noise burst at the beginning of the sound, so you can deactivate the Sustain and Release buttons. Play some notes to hear the noise being faded in and out at the beginning of the Sound.
14. That was it. Your first FM-sound is ready to be tagged with some Attributes and saved into the database. Please read on for the details on how to do this.

4.4 Tagging and Saving Sounds

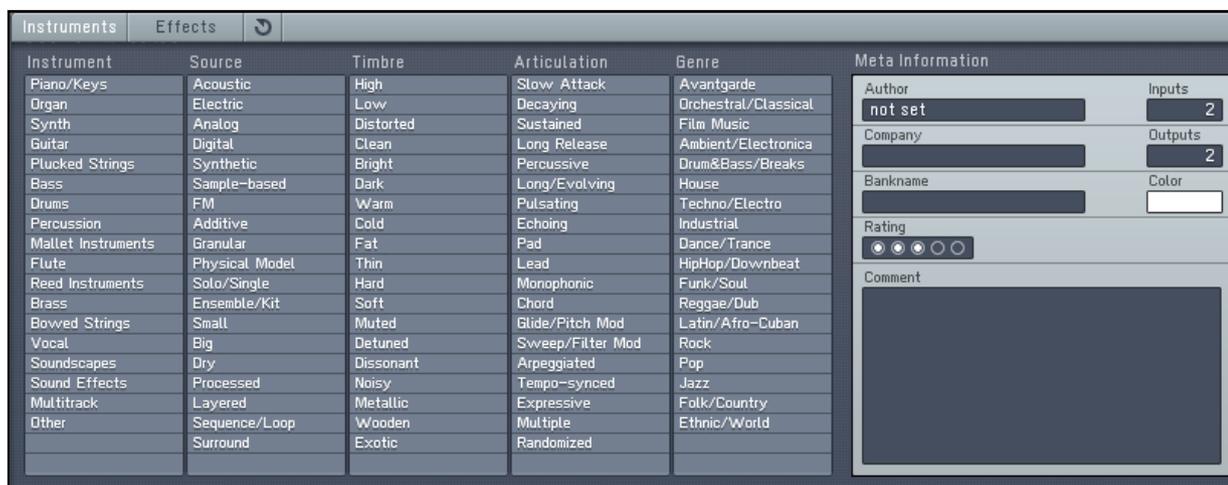
Once you have created your first FM8 KORE SOUND it is of course important to save it so that you can use it again at a later time.

4.4.1 Assigning Attributes

If you are content with your sound design work and are ready to save your new creation just take a few seconds of time to tag it with a few Attributes. This will make the future retrieval of the Sound a lot easier as the sound will integrate well with the search workflow described in section 4.1 “Finding and Loading Sounds”.

The Assignment of Attributes has its own View in FM8. Tagging your sound involves the following steps:

1. Click on the Attributes button in the Navigator. You see the following interface in the central part of FM8’s window, representing an empty palette of Attributes:



- Now choose some Attributes that fit your new KORE SOUND by clicking them. They will change their color to yellow, as shown in the following picture:



- Type in your Name into the Author field of the Meta Information. You can also add a Comment. The Comment field will be evaluated when you search for a KORE SOUND. Please refer to the main manual (chapter 4.10.3 “Defining Attributes and Saving KORE SOUNDS”) for further details.

Now your KORE SOUND has all the necessary information to be saved into FM8’s sound database. Read the next section and you will learn how to do that.

Please refer to chapter 4.10 “The Browser and Attribute Views” in the reference manual of FM8 for an in-depth discussion of Categories and Attributes and Meta Information.

4.4.2 Saving the Sound

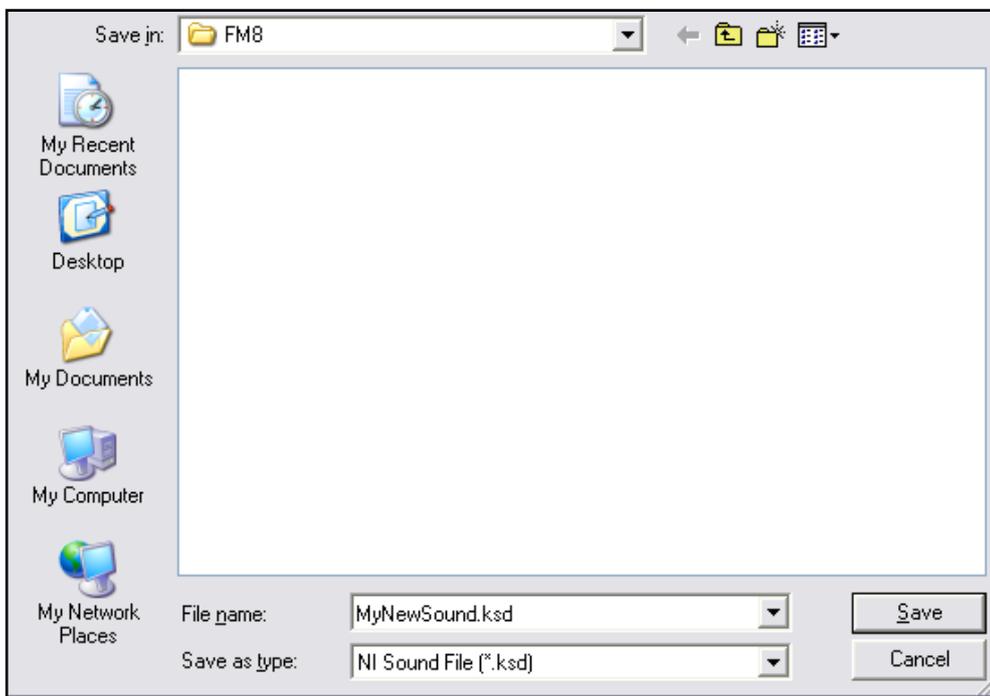
Saving sounds in FM8 is straightforward:

1. Click on the File Menu in the Application Control Bar (not the File menu of the standalone application) and choose the command Save Sound.



The Save Sound Command in FM8.

2. A file dialog pops up.
3. Type in the desired name for your new KORE SOUND.



The Save File dialog (Windows XP version shown).

4. Click on *Save* and you are done.

Now your new KORE SOUND is integrated into FM8's database of sounds. You can retrieve it by searching for its name in the Browser.



If a user KORE SOUND was already saved into the database before and you use the command Save Sound, the KORE SOUND will be overwritten with the changes made to it since it was opened. You can use Save As to avoid this.

For more information about KORE SOUNDS including the location of the underlying files on your file system, please refer to the main manual of FM8. It has been installed as a PDF file on your computer.

5 What's next?

With all the basics of FM8 now covered you should go on and further explore. If you just want to use FM8's collection of factory KORE SOUNDS have a look at the website of Native Instruments for additional content.

For creating you own sounds you will certainly refer to the reference manual that came as a PDF document with your FM8 installation. There you will find everything you need to know to develop fresh sound creations.

Have fun and make lots of music!

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