AX73

User Manual

English (US)

Version v1.0.0

MARTINIC

Table of Contents

Introduction

Thank you for purchasing or downloading the Martinic AX73. This synthesizer plugin is an emulation of a six-voice analog synthesizer released in 1986. Martinic has used its ACE (Advanced Circuitry Emulation) Technology to painstakingly model the analog sound of the AX73, and bring it into the 21st century.

More than just a faithful recreation of the original AX73, Martinic's interpretation introduces plenty of modern features to the synth, and also borrows some of the best bits from other members of the AX family.

The AX73 has two layers – each with two analog VCOs, filter, LFOs, envelope generators and arpeggiator and more. There's also a dedicated eight unit effects section, blending options for the two layers and 600 presets designed by a list of well-respected sound designers representing the best of classic synth patch design and modern presets too.

History

The original AX73 was a sophisticated synthesizer designed to challenge the biggest names of its era, including digital synths and other 'all analog signal path' competitors. Released in 1986 at a time when DCO based synthesizers were taking over, the AX73 was designed using analog VCOs. Though this decision cost it in terms of popularity at the time, it resulted in a brilliant-sounding synthesizer that is just waiting to be rediscovered by a brand new generation of musicians.

You can read more about the history of the AX73 on the Martinic AX73 History page.

Features

The Martinic AX73 is an analog subtractive synth which boasts two layers, each with two voltage controlled oscillators. These layers can be split across the keyboard, or stacked, effectively giving a four-oscillator synthesizer. The original AX73 had six-voice polyphony but Martinic has increased that to up to 24 voices.

Each layer has a filter, a chorus, and modulation from four envelopes and four LFOs. The Martinic AX73 also houses two arpeggiators – one per layer. The original AX73 did not have an arpeggiator; this arp is actually modelled on that of the AX80.

Martinic has also added a comprehensive, eight-unit effects section. The effects section includes: Compressor, Phaser, Flanger, Chorus, Delay, Reverb, Distortion and EQ. The effects can be arranged in any order using the FX Chain.

Installation

System Requirements

AX73 is available as a VST 2.4 or AU (Audio Units) instrument plugin, which means it needs to run inside VST or AU hosting software, e.g. Ableton Live, Cubase, GarageBand, Logic Pro, REAPER, Studio One, etc.

Although AX73 should be able to run at any sample rate the host provides, a rate of at least 44.1kHz is recommended.

The plugin is designed to run on Windows 7 or newer as a 32-bit or 64-bit plugin, or Mac OS X 10.9 (Mavericks) or newer as a 64-bit plugin.

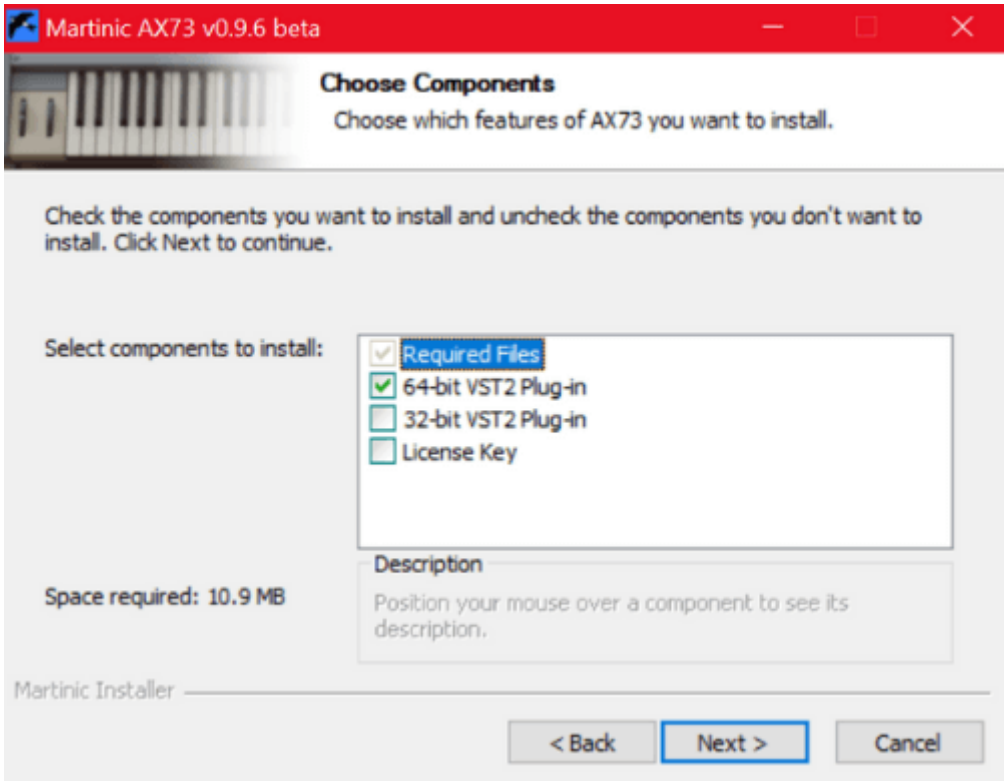
Windows Installation

To install AX73 on Windows, download the Windows 32/64-bit VST installer, and save it on your computer (e.g. in your Downloads folder).

Navigate to this folder, locate the installer and double-click on it, and then click on the **Next** button to start the installation process.

Carefully read the license, and then click on the **I Agree** button to continue. Next select which versions of the plugin you want to install, optionally select **License Key** if you have purchased a license, and click on the **Next** button.

Optionally change the install location, and again click on the **Next** button. Then select your VST2 32-bit and/or 64-bit plugin folder, and optionally select your license key file (if you have purchased a license), confirming each selection by clicking on the **Next** button.

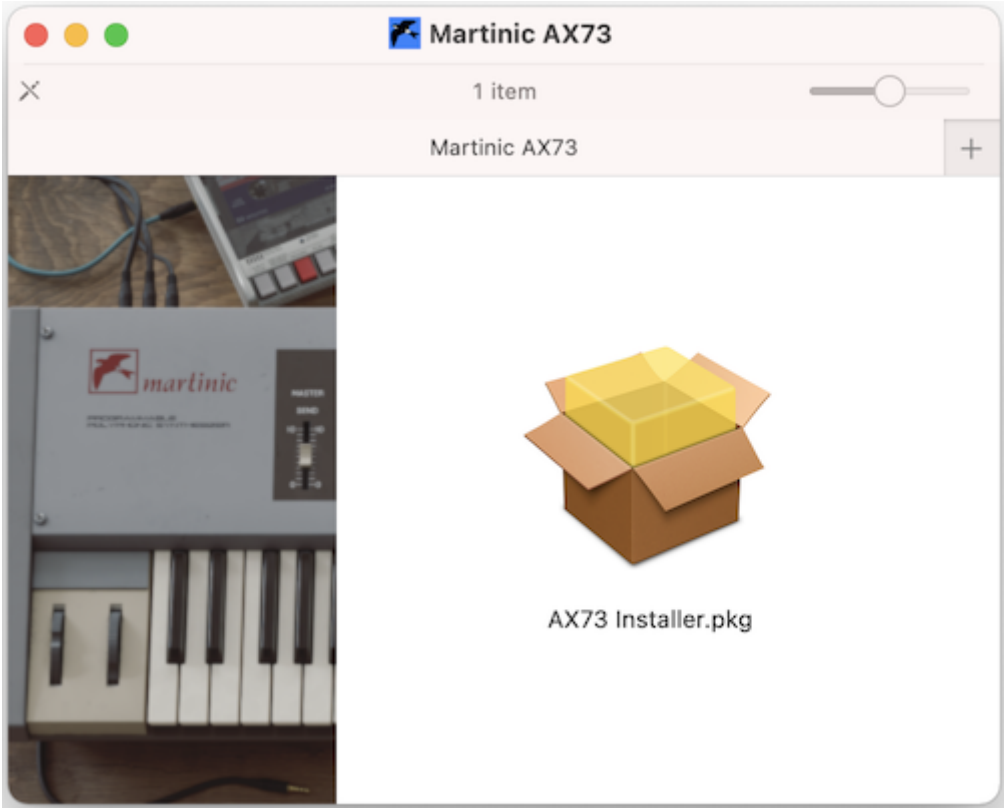


Now wait for the installation to complete (this should take only a few seconds), click on the **Close** button, and you are ready.

Mac Installation

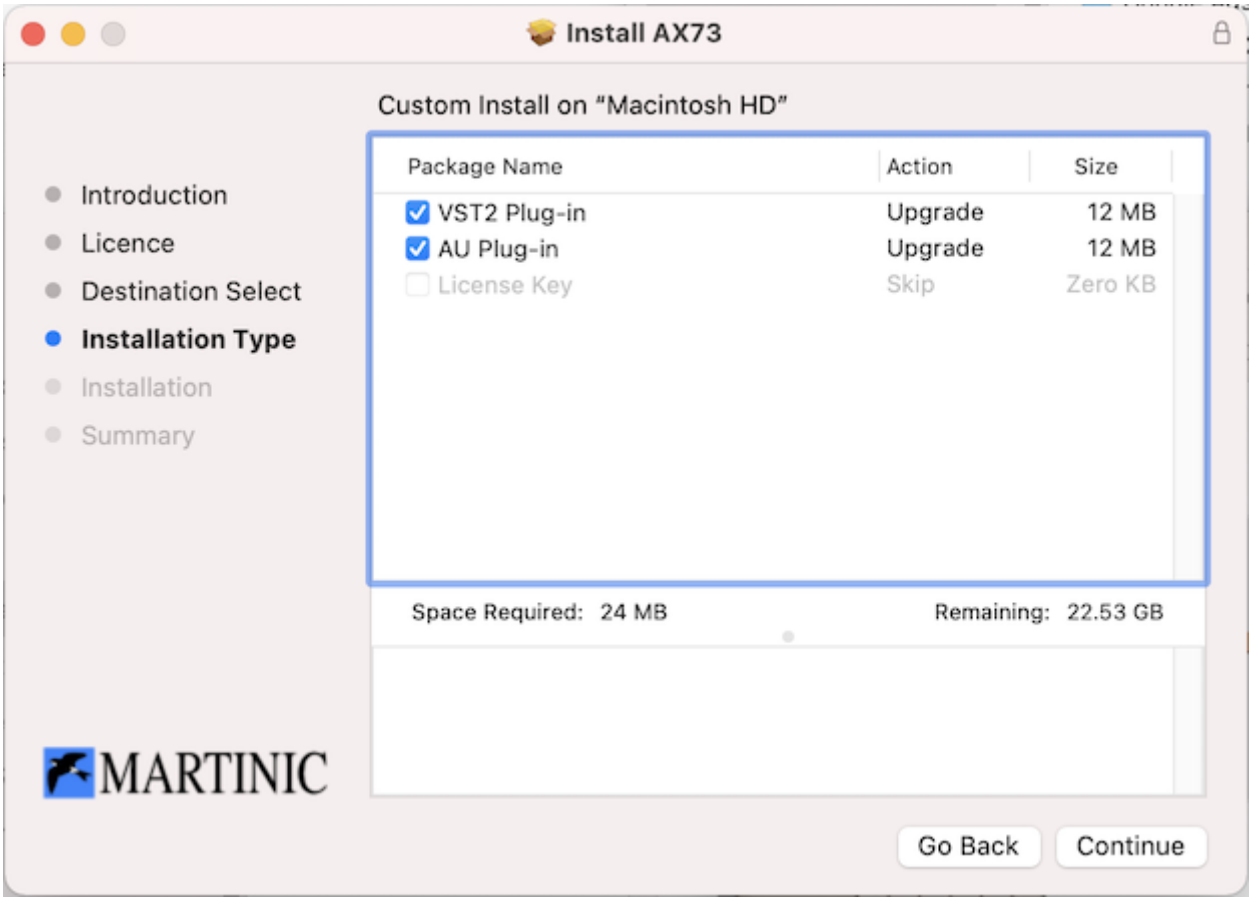
To install AX73 on Mac OS X or macOS, download the Mac VST/AU installer disk image (DMG), and save it on your computer (e.g. in your Downloads folder).

If you have purchased a license, then you should copy your license key file to the same folder in which you have saved the installer disk image (DMG), so it can be installed along with the plugin.



Navigate to the folder in which you have saved the installer, locate the installer disk image (DMG) and double-click on it, and then double-click on the **AX73 Installer.pkg** icon. Click on the **Continue** or **Allow** button to confirm that the installation package will run a program, and then click on **Continue** (in the bottom right corner of the installation window) to start the installation process.

Carefully read the license, click on the **Continue** button, and then click on **Agree**. Next select which versions of the plugin you want to install (it is recommended that you install both the VST2 and AU versions, just to be sure), optionally select **License Key** if you have purchased a license, and click on the **Continue** button. Optionally change the install location, and then click on the **Install** button.



Now wait for the installation to complete (this should take only a few seconds), click on the **Close** button, and you are ready.

Loading the AX73 in your DAW

Once the plugin has been installed, start or restart your DAW. The plugin should be available in both VST and Audio Units versions (if both have been installed).

The plugin may be named **AX73** or **Martinic AX73**. This may be different between VST and AU versions of the plugin.

Getting Around

Using the controls (plus fine-tuning and value entry)

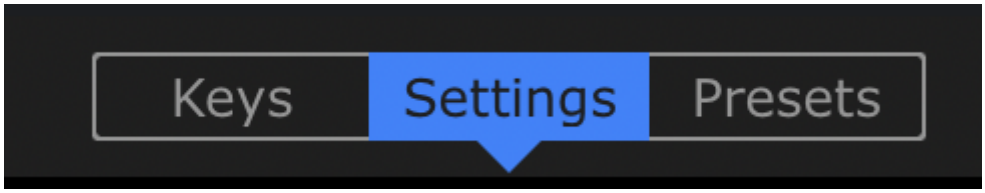
You can adjust controls by clicking and dragging them up or down using the mouse. To

fine-tune a parameter to a more exact value, hover your cursor over it, hold the **Ctrl** key (Mac and Windows), and scroll the mouse wheel. You can also right-click on a knob to enter a value using the computer keyboard.

Double-clicking a knob or fader will reset it to its default value.

Keys view and Settings view

The AX73 can be used in either Keys view or Settings view.



Keys view allows you to control some of the AX73's parameters, as you would on a physical version of the synth. Keys view only allows you to control the upper synth layer. The original AX73 only had a single fader, so Martinic has added extra sliders for crucial controls such as filter cutoff and resonance, VCA envelope settings and LFO settings, making the AX73 much more versatile in Keys view.

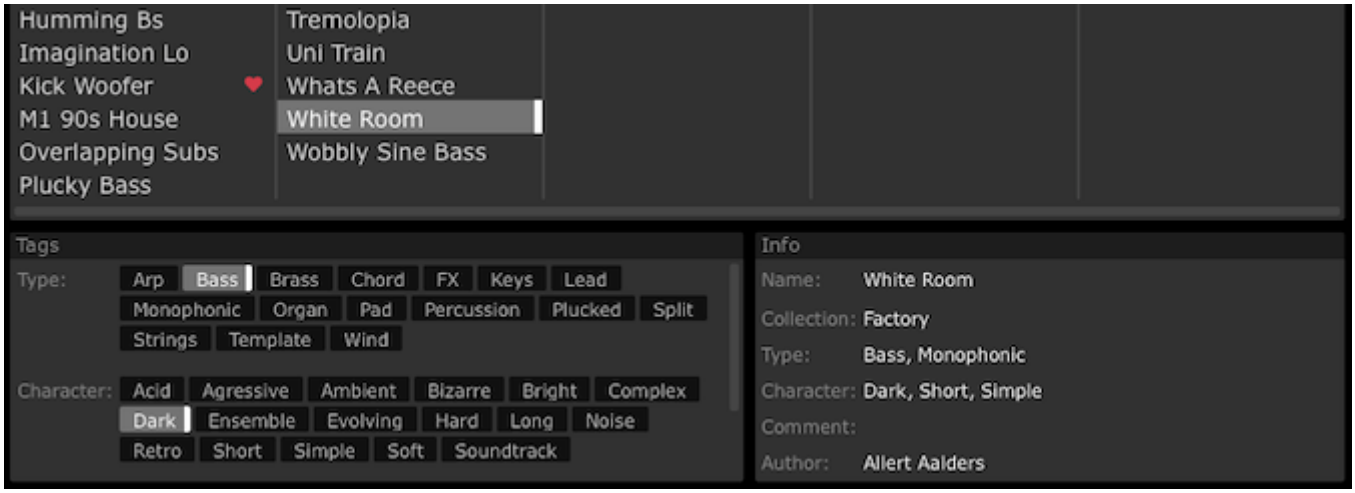
Settings view provides an abstracted set of controls for the synth, giving you control over every parameter on the AX73. Here you can access all the synth's controls, including master volume, pulse width modulation and portamento, VCF envelope, VCA envelope, LFO settings and basic Arp controls.

Preset Browser

The AX73's preset browser allows you to select, find and organise presets with ease. This is accessed using the Presets button alongside the Keys and Settings view buttons. Here you can find the 600 presets that come with the AX73 as well as save your own presets and create exportable collections which you can share or sell online.

We cover how to use the preset browser more in detail in the **Presets and Collections** section towards the end of this manual.

To load a preset, simply click on its name once. You can also filter presets by Type, Category and Author using the **Tags** panel.



You can search through presets using the **Search** bar, and select from a Collection (Factory presets, Favorites and My Presets) on the left-hand side of the browser. Collections are discussed in more detail in the **Presets and Collections** section of this manual.

Default Presets

In the VST version of the plugin, the top bar allows you to select between the 32 Default Presets that will be shown in your DAW. You can navigate between these 32 spaces using the left and right arrow keys either side of the name.

Selecting a preset from the preset browser will replace the selection currently in your default presets with the new one. Through this, it is possible to have the same preset selected multiple times within the 32 Default Presets.

The Default Presets can be useful for quickly accessing the “Default” patch: a starting-point for programming the synth that will set all settings to neutral, default positions.

Layers and FX

The AX73 has two separate synth Layers (Upper and Lower) that can be split or stacked for more sonic flexibility. In Settings view, you can switch the interface between programming the Upper and Lower layers, and the FX tab, by clicking the respective images in the top left-hand corner of the Settings view interface.

For more info on working with layers, see the **Split (Working with Layers)** section of this manual.

The FX section is explained in more detail in the **FX** section of this manual, towards the end of the document.

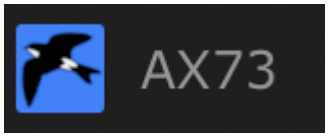
Copying Layer Settings

Below the FX image are three arrow buttons. The two **single arrow** buttons automatically

copy and paste the parameter settings from one layer to another. A warning dialogue will appear before this action is committed. The **dual arrow** button swaps the settings of the two layers. There is no warning as this action is reversible.

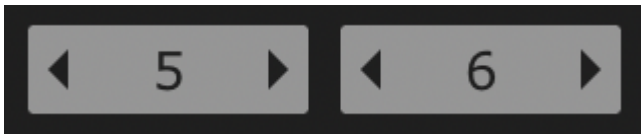
Bypass

You can bypass the synth's output by clicking the Martinic logo in the top left-hand corner of the interface. The logo's blue color will turn to gray when the synth is bypassed.



MIDI Channel Selection

The AX73's two layers can be played by different MIDI channels, this could mean two separate MIDI controllers, a MIDI controller and a sequencer, a MIDI controller with its own split functionality, or any other MIDI setup with multiple MIDI channels.



Set the MIDI channels with the two selectors in the top right-hand corner of the UI – the left channel controls the upper channel and the right the lower.

MIDI Learn

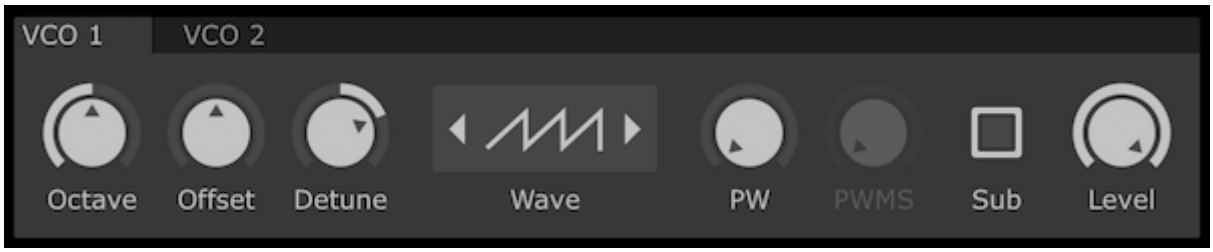
You can bring certain parameters on the virtual AX73 interface under the control of knobs and sliders on a MIDI keyboard or controller. To start the process, click the MIDI icon (the DIN plug with five dots in a circle) on either Keys or Settings view.

Controls that can be learned will turn **purple**. Click a control in order to start assigning it, and the control will turn **red**. Next, move the knob, fader or other control that you want to assign to this parameter on your real-life MIDI keyboard. The keyboard should now assume control over the parameter, and the control will turn **green** to indicate that it has been assigned.

To unlearn a parameter **right click** on it and all MIDI control over that parameter will be unassigned.

Oscillators (VCO 1 & VCO 2)

Each layer has two identical oscillators: **VCO 1** and **VCO 2**. Oscillator views can be switched using the VCO 1 and VCO 2 tabs.



Oscillator Tuning (Octave, Offset, Detune)

Each oscillator has an **Octave** dial, which tunes the oscillator in octaves, with the default setting being 8', and ranging between 32' and 2'. An **Offset** dial tunes the oscillator by whole semitones from -12 to +12, and a **Detune** dial tunes the oscillator by cents. The dial's midpoint (50) stands for no detuning, while a detune value of up to 50 cents can be applied by moving the knob clockwise (too 100) or anticlockwise (to 0) (higher or lower pitch)

Wave

Select the waveshape of each VCO with the **Wave** selector. Choose from: Saw, Triangle, Square, Saw + Triangle and Sine. You can also turn each oscillator Off with this selector.

Pulse Width controls (PW & PWMS)

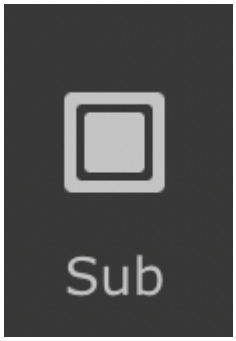
Each oscillator has controls for pulse width modulation. This modulation is applied to any selected waveshape – not just the square wave. The **PW** knob controls amount and **PWMS** modulates the cycle length of the pulse.

The PWMS modulation source comes from one of the LFOs, and is actually an alias for that LFO's Rate control. In the default patch, LFO 4 has PWM set as its destination, but any LFO can be set to modulate PW. If multiple LFOs target PWM, then it will use the LFO with the highest number (ie, if both LFO 1 and 4 target PWM, then it will use LFO 4).

If no LFO is set to target PWM then the **PWMS** control will be greyed out.

Sub oscillator and output Level

Activating the **Sub** switch turns on that VCO's sub oscillator, which is a square wave an octave below the VCO's main oscillator. the sound of this square wave is slightly different to the main oscillator's square wave, providing a potential alternative VCO source.



The sub oscillator can be activated even when the main oscillator is off.

The **Output** knob controls the volume of the sub oscillator and the main VCO simultaneously. The sub oscillator can be activated even when the main oscillator is off.

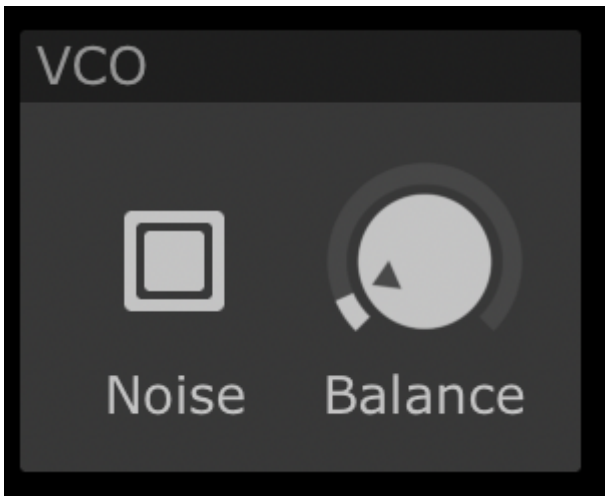
Stacking four oscillators in one patch

Using the Layer control (discussed later), you can stack two pairs of oscillators for a four-oscillator patch. Each layer of two can have its own modulation and filter setup, as well as individual settings for features such as Chorus and the Arpeggiator.

See the **Split** section later in this manual for more information about creating four-oscillator patches.

Noise Oscillator (VCO)

In the section labelled VCO, you can introduce some noise into your signal for added texture. Turn on the noise oscillator with the switch labelled **Noise**; the **Balance** knob controls the level of this noise.



Bend

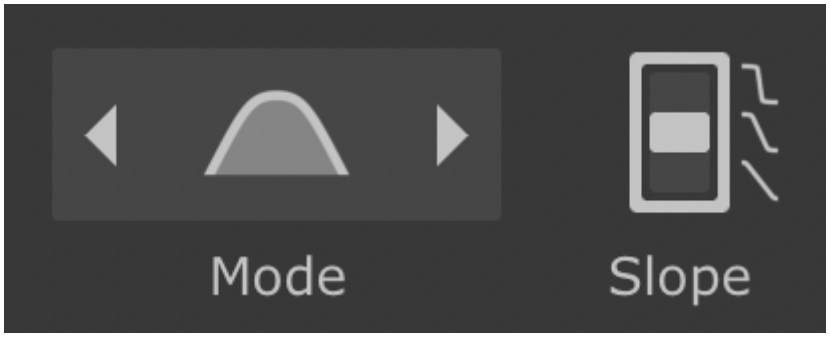
The Bend section controls what the pitch wheel modulates and by how much. While the pitch wheel of a synth is usually hardwired to change the oscillator pitches, this is only one option in the Bend section – modulate the pitch of the oscillators like this with the **VCO** dial, which can be set to a maximum of 24 semitones.

Your pitch wheel can also control the cutoff of the filter with the **VCF** dial. You can set both pitch and cutoff to be modulated by the wheel, by differing amounts, or just choose one of these.

VCF Filter section

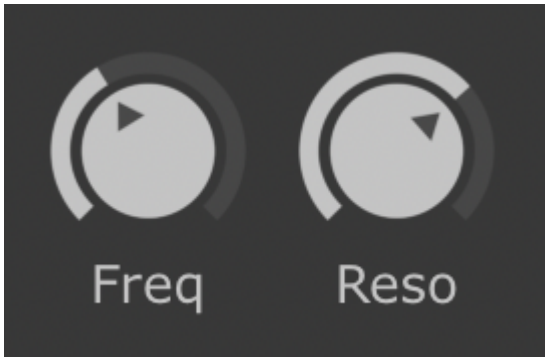
Mode and Slope

Each layer of the AX73 has its own filter section. Select from a band-pass, low-pass or high-pass filter with the **Mode** selector. The original AX73 synthesizer had a simple 24dB/oct filter, but Martinic's AX73 offers the choice of 6-, 12- and 24dB/oct filter slopes – choose between them with the **Slope** dial.



Freq and Reso

Freq controls the cutoff frequency and **Reso** the resonance.



The filter is capable of self-oscillation when the Resonance is set high enough.

OWFM

The **OWFM** dial controls the amount the triangle VCO output modulates the VCF frequency. These days, this effect is more commonly known as Filter FM. Note that you can't change the waveform that is used for this, the source is always the VCO1 triangle wave.

Because this is an audio-rate modulation routing, the behaviour of this function is dependent on the filter’s cutoff and the notes played – the effect will often be different for lower notes than it is for higher ones.

Key (Keytracking)

Key determines the amount of keytracking the cutoff frequency performs. When this knob is set to its lowest point, the filter remains in the same position regardless of the note played on the keyboard. When **Key** is above 0, the filter will increase in frequency when higher notes are played, giving notes across the span of the keyboard more similar

harmonic timbre. This effect is stronger the higher the Key knob is set.

LPF and HPF, Low and High Pass Filters

On the very right of the filter section you will find a standalone high pass filter (**HPF**) and low pass filter (**LPF**). These are applied to the signal after the main filter, and each have a slope of 6dB per octave.

VCA

The VCA section acts as an output section for the two oscillators.

Pan

Use **Pan** to pan the signal left or right.

Width

Width behaves differently depending on whether the Keyboard assign is set to Poly, Dual or Unison. If Keyboard Assign is set to Poly, then **Width** distributes the keys across the stereo image. For a width greater than 50 this means the lowest C will sound to the left, and the highest G will sound to the right, and all other keys somewhere in between, with the middle C more or less centered. As the value is increased towards 100 the lower notes move further to the left, and higher notes further to the right. For a width smaller than 50, this is reversed, so now lower keys will tend to the right, and higher keys to the left.

If Keyboard Assign is set to Dual or Unison, then **Width** controls the stereo spread of the voices within a single note. In this mode there's no difference between lower or higher keys, they're all the same.

Level

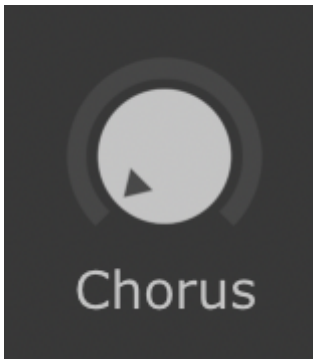
Level adjusts the gain of the VCOs.

The VCA Level control can be particularly helpful to compensate for the saturation introduced by the Filter stage of the synth. The filter can increase the level of sound (when using added resonance) or reduce it (when filtering heavily), so the Level control in this section can help to bring the signal back to a steady level.

Chorus

Chorus adds one of four chorus effects taken from the AX73 and AX60. The four chorus modes are:

Chorus 1: AX73 chorus 1.
Chorus 2: AX73 chorus 2 (same as AX73 chorus 1 but faster and deeper).
Chorus 3: AX60 chorus 1.
Chorus 4: AX60 chorus 2 (same as AX60 chorus 1, but faster and deeper).



Only one of the layers' Chorus controls can be used at one time. The layer whose Chorus works is determined by the Split **Mode** control: whichever layer has more voices will have its Chorus active.

Note, there is a separate, more flexible chorus unit in the FX section, which is covered later in the manual, in the **FX** section towards the end of this document.

Envelope Section

The Martinic AX73 has four envelope generators which broadly have the same controls. The only exception is EG A, which always controls the amplitude of the oscillators and so can't be assigned anywhere else. It also can't be set to different trigger modes or have its depth changed.

By default, envelopes EG F and EG O are set to control the filter cutoff (VCF) and oscillator pitch (VCO) respectively, but these can be changed.

Below we'll run through the controls that can be found on each envelope. Note that the Select, VCO, Retrig, Invert and Depth controls are greyed out on EG A.

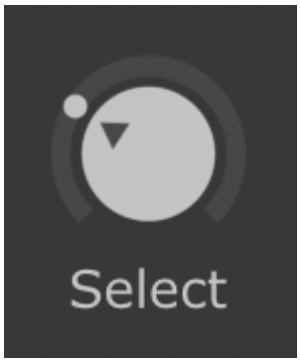
Envelope Generators (EG A/F/O/4)

NOTE: Envelopes will not take effect if both the Depth and Velocity controls are set to zero.

Running from left to right in each envelope section the controls are as follows…

Select

This control determines a modulation destination for the envelope. Choose from **VCO** (oscillator pitch), **VCF** (filter frequency), **VCA** (oscillator output level), **PWM** (pulse width amount), filter Reso(nance), **OWFM** amount and **Pan**. You can also turn this destination selector **Off**.



VCO – (destination oscillator)

This switchable parameter allows you to choose which oscillator of the layer is being modulated by the envelope – oscillator 1, oscillator 2, or both simultaneously.

Retrig – retriggering mode

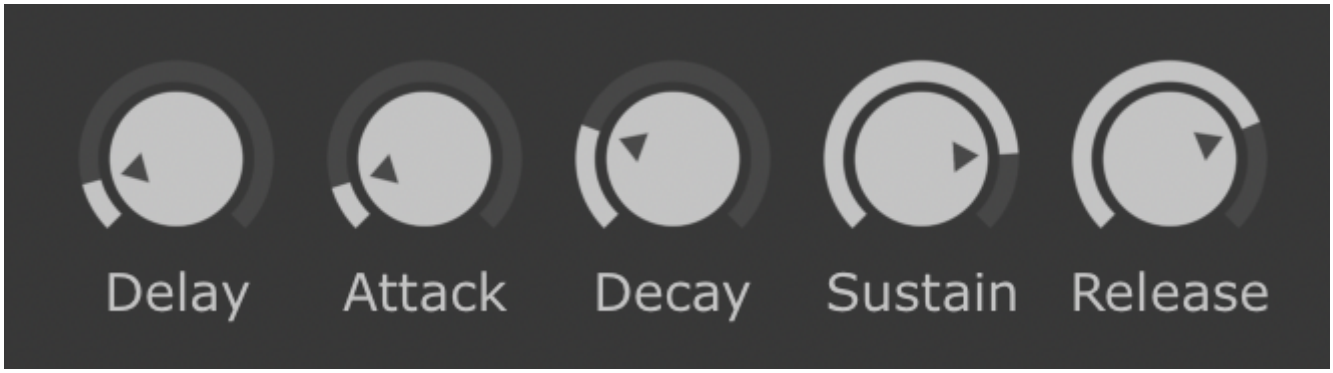
Turns on retriggering of the envelope and allows you to select the retriggering mode, determining what happens when a note is held down and another is played. To discover how this parameter influences notes, try playing setting the Envelope to modulate the VCO (pitch), and raising the Attack time quite high.

When Retrig is set to **Off**, holding one note and playing a second will activate the envelope modulation over the second note, keeping the first note's modulation as it was. When Retrig is set to **On**, holding one note and playing a second will reactivate (ie, 'retrigger') the modulation for both notes at the same time. When Retrig is set to **Legato**, the envelope modulation won't start again until all notes have been released and a new one is pressed.

Gate

This mode bypasses all DADSR settings except Delay, instead using the shortest attack and release times possible, and fixing Sustain to 100. This feature is from the AX60 and is very useful for creating organ-like patches.

Delay, Attack, Decay, Sustain and Release (DADSR)



These parameters dictate the shape of the envelope signal after a note is played. **Attack** sets the time taken for the modulation signal to rise to its maximum. **Decay** sets the time taken after this for the modulation signal to fall back to the level set by its **Sustain** parameter. When the note is released, its sound will fall from the Sustain level to silence for a duration set by the **Release** control. At the start of the chain, **Delay** creates a short pause after a note is played before the Attack phase of the envelope starts.

TIP: You can turn the AX73's ADSR envelopes into de facto AD envelopes by reducing the Sustain to 0, and you can turn them into de facto ASR envelopes by increasing the Sustain to 100.

Depth

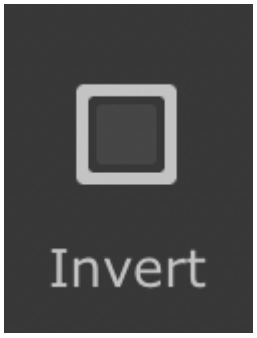
This controls how strongly an envelope is applied. When set at zero, the envelope will have no effect; when set to maximum, the envelope will have full effect.

Velocity

This parameter determines how the velocity with which a note is played determines the amount of modulation the envelope performs – ie, the Depth of a note's envelope signal is changed based on how strongly that note is hit. Turn **Velocity** clockwise to create stronger modulation depth with higher velocities; turn it anti-clockwise to create less modulation with higher velocities.

Invert

Effectively turns the envelope upside down, causing modulated parameters to fall rather than rise (during the Attack phase). Examples include filter cutoffs falling (when set to VCF) and pitches falling (when set to VCO).



EG

The section houses a single knob labelled **Mode**. Use this dial to switch between two preset configurations for envelopes EG A and EG F. These configurations are labelled **≠** (A does not equal F) and **=** (A equals F).

≠ assigns EG A to the VCA envelope and EG F parameters to the VCF and VCO

envelopes.

= assigns EG A to the VCA and VCF envelopes and EG F parameters to the VCO envelope.

When this switch is set to **Off**, EG A controls VCA, EG F controls the VCF, and EG O controls the VCO, as default.

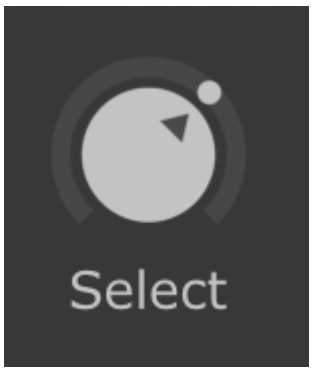
Perhaps an easier way to think of this switch is to set EG F to control VCO as well as the VCF (**≠**) or to set EG A to control the VCF as well as the VCA (**=**).

Split (Working with Layers)

The **Split** section allows you to control how the AX73's two layers are assigned across the keyboard. You can either layer the layers so that every key on the keyboard plays both layers (every note plays both layers at once), split the keyboard in two with each section (lower notes and higher notes) playing its own layer, or set each layer to be played by a different MIDI channel.

Select (Split, Layer, MIDI)

The **Select** knob sets how the AX73's two layers are assigned across the keyboard. When set to **Off**, only the Upper layer is audible.



Split divides the keyboard in two with the Lower layer played by the left-hand side of the keyboard and the Upper layer by the right (the split point can be set, see 'Point' below).

Layer assigns each key to both layers so both layers are played at once.

With Split Select set to **MIDI** the upper layer will respond only to note messages on the upper MIDI channel, and the lower layer will respond only to the lower MIDI channel. MIDI

channels are set in the toolbar (top-right).

Mode (voicing)

Mode sets how the AX73's voice will be split between the two layers. If 6 voices are active 0-6 would mean 0 voices assigned to the lower layer and 6 voices to the upper. 6-0 means 6 voices to the lower and 0 to the upper.

When more than six voices of polyphony are in use, the split values scale up in the same way – with 12 voices active, 2-4 would effectively mean 4-8, with four voices assigned to the lower layer and eight to the upper.

Point (Split point)

This control sets the split point on the keyboard between the two layers when the **Select** knob is set to **Split**. You can choose which MIDI note marks the first note playing the upper layer, with every one below that playing the lower layer.

Mod (mod wheel layer assignment)

This control determines which of the two layers your keyboard's Mod wheel will modulate. Choose from **Upper**, **Lower** and **U+L** (Upper and Lower). You can also set this dial to Off and the mod wheel will have no effect on either layer.

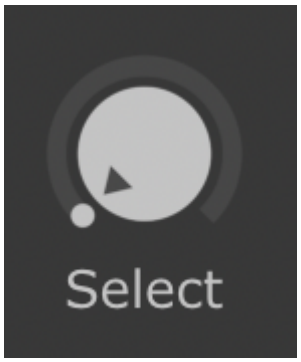
LFOs

Each layer has four assignable LFOs. Each LFO has the same set of controls, so the below information is applicable to all of the AX73's LFOs.

NOTE: LFOs will not take effect if the Depth control is set to zero, unless the Mod control is above zero and the mod wheel is raised.

Select

This determines which parameter each LFO is modulating. Choose from **Off** (no modulation), **VCO** (oscillator pitch), **VCF** (filter frequency), **VCA** (oscillator level), **PWM** (pulse width amount), **OWFM** amount, filter **Reso**nance and **Pan**.



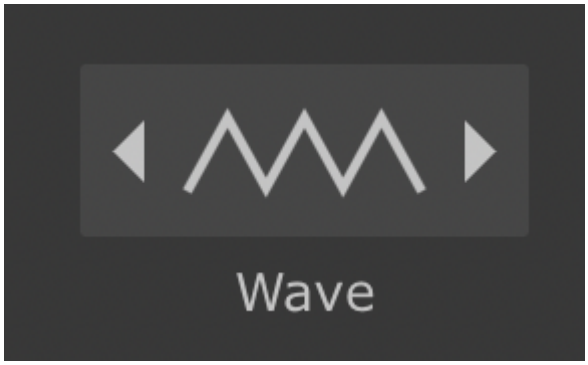
VCO – (destination oscillator)

This is used to specify whether VCO1, VCO2 – or both VCOs at the same time – are modulated by the LFO. This control only applies to VCO, VCA and PWM destinations, as

other destinations modulate parts of the signal chain after the VCOs.

Wave

This selects the shape of the LFO signal. Options are **Saw Down**, **Saw Up**, **Triangle**, **Square**, **Random**, **Parabola Down**, **Parabola Up** and **Sine**.



Step

This acts a little like a sample-and-hold waveform, sampling the set waveform at a certain number of times during its cycle. The result is a stepped motion, with the number of steps per cycle determined by the **Step** dial, and the level of each step determined by the **Step** dial and the selected waveform.

Retrig

This parameter helps you define how the LFO waveform behaves with different played notes. This is best understood in terms of one note being released and then another being pressed. When set to **Off**, the LFO wave will continue its cycle in the background after one note is released and before another note is pressed. Depending on the timing, the second note could start when the LFO is at any point in its cycle.

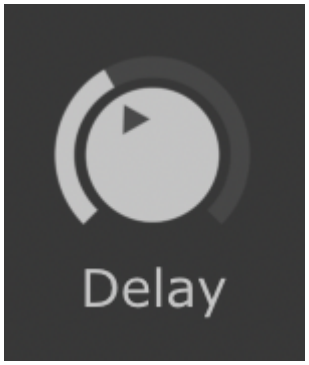
By setting **Retrig** to **On**, the LFO's cycle will restart with every note that is played – even if the previous one is still held down. The LFO will still affect all notes but will restart with each new note pressed.

By setting **Retrig** to **Legato**, you can play a sequence of notes with no gaps in between. The first note will start the LFO, which will continue on this cycle regardless of when other legato notes are played.

By setting **Retrig** to **Poly**, the LFO's cycle will be applied to individual notes polyphonically. For example, you can play four notes with different start times, and each will 'trigger' its own LFO modulation at its start.

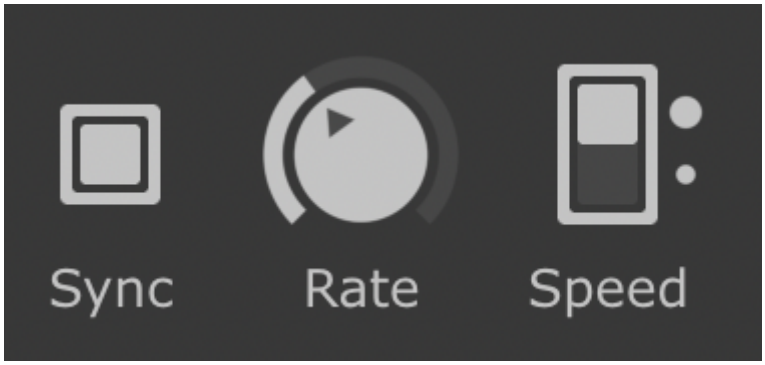
Delay

By raising this parameter, the LFO's signal doesn't start for a certain amount of time. This allows you to, for example, hold a single note down and have it start at a steady pitch before introducing VCO pitch modulation after a few milliseconds or beats of a bar.



Rate, Sync and Speed

Rate sets the frequency of the LFO. Activating the **Sync** switch causes the rate to sync to the tempo of your DAW, leading the **Rate** to offer choices in fractions of a musical measure (bar). When **Sync** is deactivated, **Rate** is adjusted without reference to your current tempo.



The **Speed** knob can be set to Slow or Fast. When the **Sync** button is active, this knob does not do anything. However, when **Sync** is not active, the **Speed** knob changes the available range frequencies that the LFO can be set to oscillate to with the **Rate** dial.

Loop

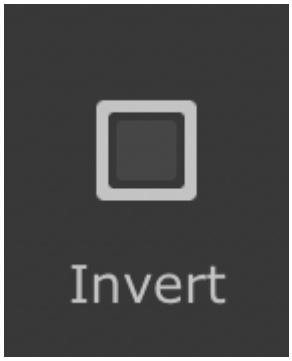
When an LFO is in any Retrigger mode, deactivating **Loop** turns the LFO waveform into a single-cycle, leaving the ending value constant after the cycle is over.

Effectively, you can use this to make the LFO behave like a very simple envelope, creating a modulation pattern that isn't attainable any other way. For example, selecting Saw Down and setting the destination to VCO pitch can give you a pitch drop at the start of each note, without needing to take account of an envelope generator's Release behavior.

Another interesting usage is when setting the unlooped LFO to its Random waveform. This gives you a constant random value from the start of each note, and multiple random values if the Retriggering mode is set to Polyphonic.

Invert

The **Invert** switch inverts the LFO wave. By default, the LFO will move upwards in its cycle from the start, but the **Invert** switch acts like a polarity flip, causing the LFO to move downwards in its cycle from the start.

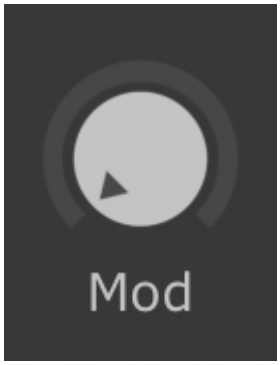


Depth

Determines the strength that the LFO modulates its target. The modulation will not be in effect if the Depth is set to zero. That is, unless Mod (see below) is active.

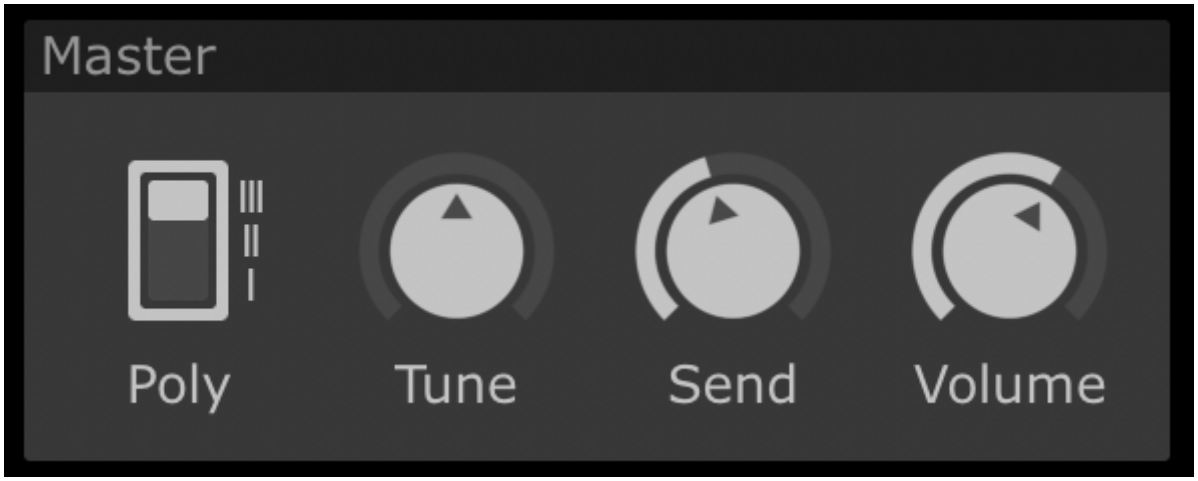
Mod

This knob controls how much the AX73's mod wheel position affects the depth of the LFO's modulation. If your **Depth** is set to zero but **Mod** is above zero, raising your mod wheel will increase the depth of modulation.



Master

The master section offers a global set of parameters – ie, settings that are applied independently of the AX73's two layers.



Poly (6, 12 or 24 voices)

The original AX73 had six voices of polyphony – ie, the ability to sound up to six notes at any one time. However, Martinic's emulation allows you to choose between **6**, **12** or **24** voices. You can change the number of voices using the **Poly** switch.

Tune

Tweak the global tuning of the synth with the **Tune** knob (between -1 and +1 semitones).

Send

Determines the output level of the synthesizer section before the signal enters the FX section. You can use **Send** to increase or decrease the level of the AX73 before it hits the

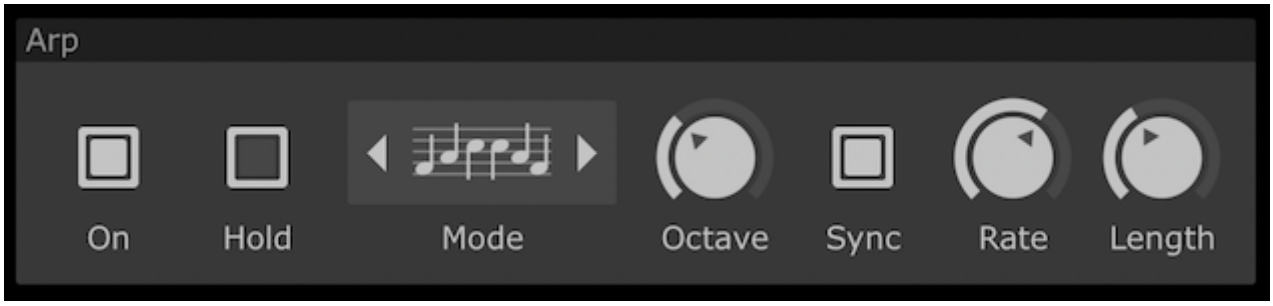
effects section.

Volume

Determines the global output **Volume** of the plugin, including the output of the FX section.

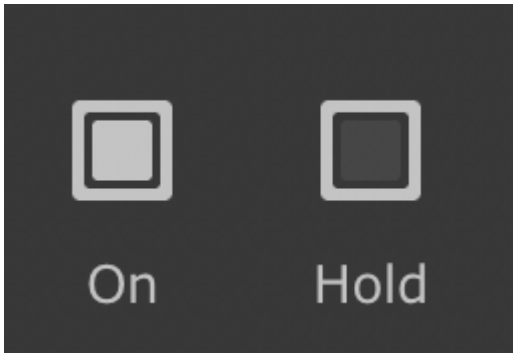
Arpeggiator

Martinic's AX73 borrows the arpeggiator from the AX60 synthesizer. This allows you to play and hold multiple notes and have them 'played' in sequence by the synth.



On

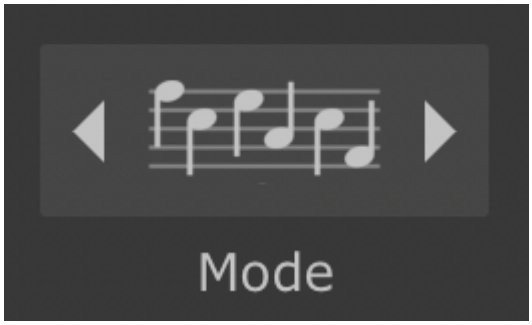
Turns the arpeggiator on.



Hold

With Hold mode activated, you can release a note or chord and the arpeggiator will act as if it is still being held down.

Mode



Determines in which order the arpeggiator will trigger depressed notes. The available modes are:

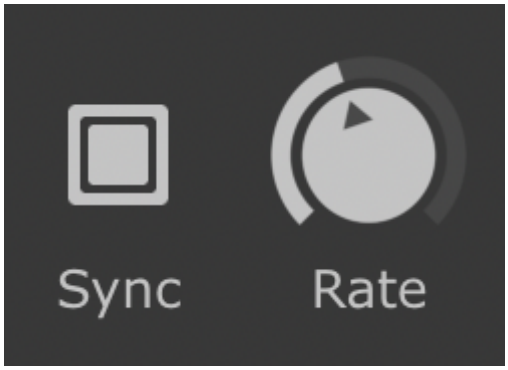
Order: notes arpeggiate in the order they are played on the keyboard.
Up: notes arpeggiate in ascending order.
Down: notes arpeggiate in descending order.
Up/Down Incl: notes arpeggiate up then down. The top and bottom notes are played twice.
Up/Down Excl: notes arpeggiate up then down. The top and bottom notes are played once.
Alt Rise: notes arpeggiate in ascending order but not in a linear order. A six-note pattern will rise like so: 1, 3, 2, 4, 3, 5, 4, 6
Alt Fall: notes arpeggiate in descending order but not in a linear order. A six-note pattern will rise like so: 6, 4, 5, 3, 4, 2, 3, 1
Random: notes are played randomly, and notes can repeat themselves
Shuffle: notes are played randomly, but notes cannot repeat themselves. This mode is only different to Random when there are three or more notes to choose from.
Improv: arpeggiator randomly chooses a direction (up or down) for the next note played after the current one.
Chord: when a chord is played as an input, this whole chord will play in a repeated rhythmic pattern.

Octave

Causes the arpeggiator to arpeggiate through notes in the octaves above the ones you have actually played on the keyboard after cycling through the played notes. You can go up to three octaves above the notes played on the keyboard.

Rate and Sync

The speed at which the arpeggiator cycles through notes is set with the **Rate** dial. Activate the **Sync** button to synchronize the rate of the arp to your DAW's tempo.



Length

Lengthens or shortens 'notes' played by the arpeggiator.

Keyboard

This section allows you to voice notes with multiple oscillators and detune them.

Assign (Poly, Dual & Unison)

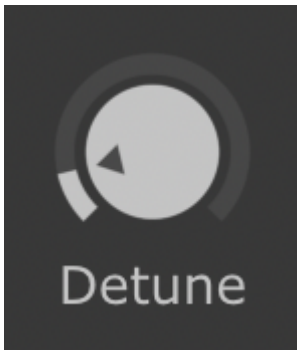
Poly mode, by default, plays each note with one voice per oscillator. **Dual** mode uses two oscillators per note. **Unison** assigns six voices to a single note. These voices can be detuned using the Detune dial (see below), and spread using the Width dial (see above).

The original AX73 housed only six oscillators, so Unison mode was only capable of playing monophonically. With Martinic's AX73 and its ability to use up to 24 voices, Dual and Poly can employ unison with multiple notes sounding together.

Remember: The VCA Width dial will spread voices across the stereo field when the AX73 is in Poly mode

Detune

Detune the voices to add texture. This is only audible in Dual and Unison mode.



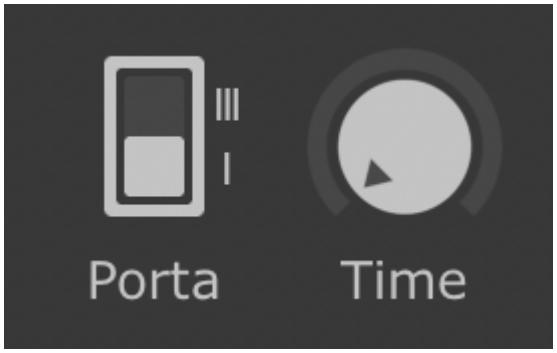
Mono (Low, High & Last)

Make the AX73 monophonic with the **Mono** dial. The different options on this dial determines how the monophony behaves. When **Low** is selected, the lowest note currently being played on the keyboard will sound. When **High** is selected, the highest note currently being played on the keyboard will sound. When **Last** is selected, the most recent note

played on the keyboard will sound.

Portamento (Porta & Time)

Portamento controls are located in the very bottom right-hand corner of the interface in Settings view, and the Time control can also be accessed in Keys view. When Time is set to zero (**Off**), Portamento is deactivated. Increasing the Time above zero will switch portamento on and increase the time taken to glide from one note to another.



If a note is playing (ie, the MIDI note has not ended and the envelope has not reached its Release phase) and another note plays, the AX73 Portamento effect causes the pitch to bend from the first note to the second. The length of this glide is determined by the **Time** dial.

When **Porta** is set to **Solo** mode, the AX73's voices behave monophonically, meaning that note releases from the first to the second note will not occur. When Porta is set to **Poly**, notes will release, and multiple notes will be played at once, but only one pitch glide can occur at one time.

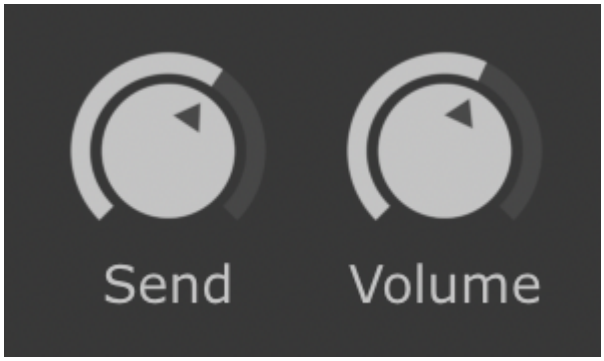
FX

The Martinic AX73 comes with eight in-built effects that can be run in serial in any order. Access the effects by clicking the FX image on the left-hand side of the interface.

Available processors are Compressor, Phaser, Flanger, Chorus, Delay, Reverb, Distortion and EQ. Below we explain how each effect works.

How effects work (Send & Volume)

The synths effects are placed in the virtual signal path *after* the output of the main synthesizer. Altering the **Send** control in the synth's Master panel will alter the level going *into* the effects section, not out of it. The **Volume** control on the main Settings screen changes the final output level *after* effects have been applied.



Compressor

Turn the compressor on with the **On** switch. Set the onset time of the compressor with the **Attack** dial. The release of the compressor is controlled by the **Release** dial..

The **Threshold** knob determines the minimum volume at which the compressor begins to take effect.

The **Ratio** knob controls the degree to which sound crossing the threshold level is reduced back towards that threshold level. Increase the gain of the compressor's outgoing signal with the **Makeup** dial. Finally, control the dry/wet mix of the outgoing signal with the **Mix** knob.

Phaser

Activate the phaser with the **On** switch. The rate of the phaser can be synchronized to the DAW with the **Sync** button. When synchronized, the range is 16/1 to 1/64.

The depth of the phaser is controlled by the **Depth** dial, **FB** controls the level of feedback, **Width** the stereo image of the sound and **Mix** the dry/wet balance.

Flanger

Turn the flanger on with the **On** button. Synchronize the rate of the flanger to your DAW with the **Sync** button. Set the rate with the **Rate** dial. When synchronized, the range is 16/1 to 1/64.

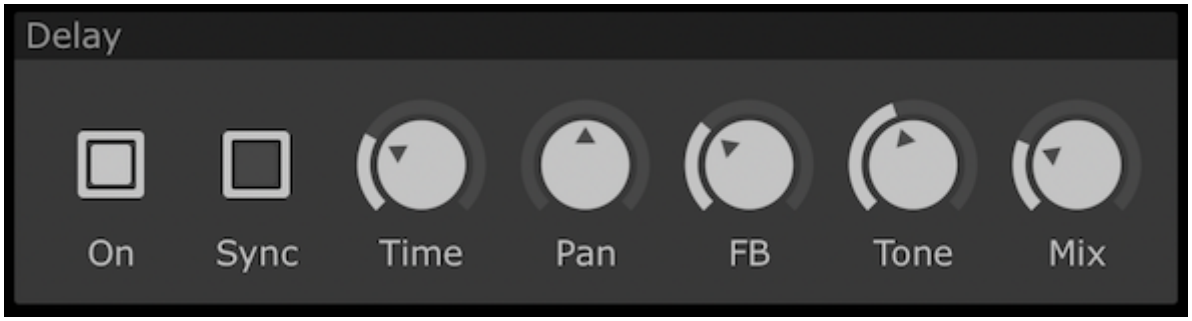
Control the depth of the flanger with the **Depth** dial, the Feedback with the **FB** dial, the stereo image of the flanger with the **Width** dial and the dry/wet mix with the **Mix** knob.

Chorus

Use the **On** button to activate the chorus unit. The chorus unit has very similar controls to the phaser and flanger units. Synchronize the rate of the chorus to your DAW with the **Sync** and adjust the rate with the **Rate** dial. When synchronized, the range is 16/1 to 1/64.

Delay

The delay unit acts like a standard delay. Turn it on with the **On** switch. The delay time is altered with the **Time** knob and can be synchronized to your DAW with the **Sync** button.



The **Pan** button introduces ping pong delay. Turning the dial right will pan the first tap right, turning the dial left will pan the first tap left. The more you turn this dial left or right, the more both left/right delays will be spread out to their side of the stereo image.

Reduce the **Tone** dial to apply a low-pass filter to the delayed (wet) signal. Alter the tonal properties of the delay signal and the **Mix** knob to control the dry/wet balance.

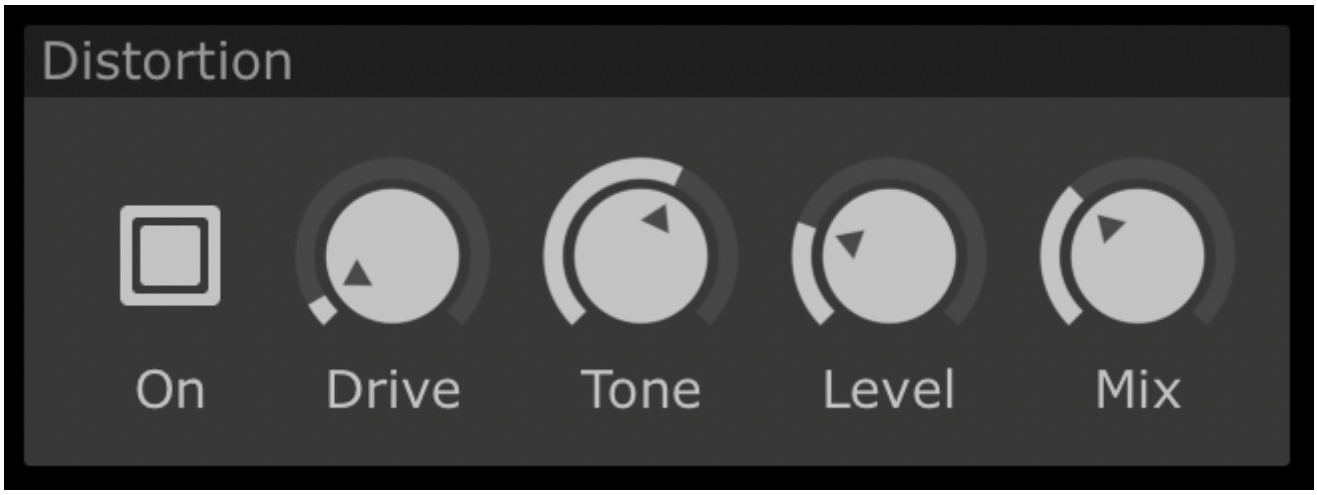
Reverb

Activate the reverb with the **On** button. You can delay the start of the reverb tail with **Delay** knob and adjust the length of the reverb tail with the **Time** knob. Use the **Tone** dial to adjust the sound of the reverb, effectively applying a low-pass filter to the wet reverb signal.

The **Damp** dial fades out high frequencies more quickly than low frequencies, to greater or smaller extents. The **Width** knob alters the stereo image of the reverb (with values below 50 reversing the channels) and the **Mix** dial dictates the dry/wet balance.

Distortion

Turn the distortion unit on with the **On** button. The distortion unit acts like standard distortion: **Drive** controls the drive amount, **Tone** controls the tone of the distortion and **Level** the output level pre **Mix**.



Set the dry/wet amount with the **Mix** dial.

EQ

The final effect is the EQ. The EQ has three bands: a high and low shelf and and a bell filter for the mid range frequencies.

Turn the EQ on with the **On** switch.

The **Low** dial sets the frequency of the low shelf and the **Level** dial sets its gain.

The **Mid** dial controls the frequency of the bell filter, the **BW** knob sets its Q and **Level** controls its gain.

High sets the frequency of the high shelf and **Level** controls its gain.

FX Chain

The AX73's onboard effects run in sequence and can be placed in any order. Drag the

units around in the FX Chain section to place them in the desired order. The signal runs from left to right.

Presets and Collections

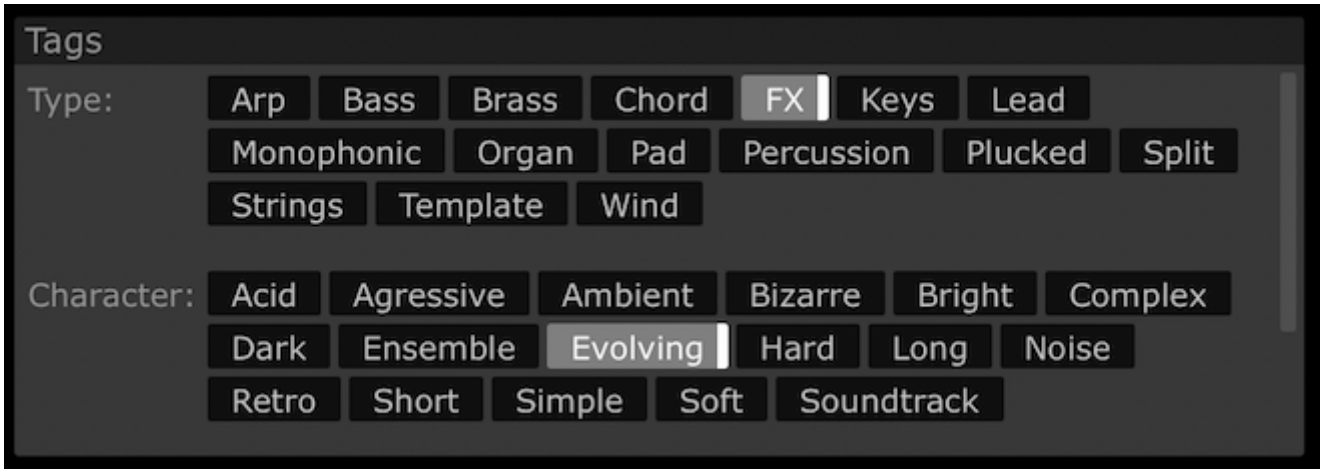
Presets

The AX73 comes loaded with more than 600 presets designed by sound designers who have worked on projects ranging from the Blade Runner soundtrack, to patches for the Yamaha DX7.

To find the presets, click the presets tab at the top of the AX73 interface. You will be presented with a list of all the presets. Choose one by clicking it a single time.

You can search for specific presets with the search bar in the top left hand-corner of the UI.

The **Tags** box lets you filter by type of Sound, Character and Author. Click on a tag to filter the available presets in the **Presets** window.



Saving Presets (Save buttons)

The **Save button** (disk icon) will save the current settings, overwriting the preset that is selected in the Presets view.

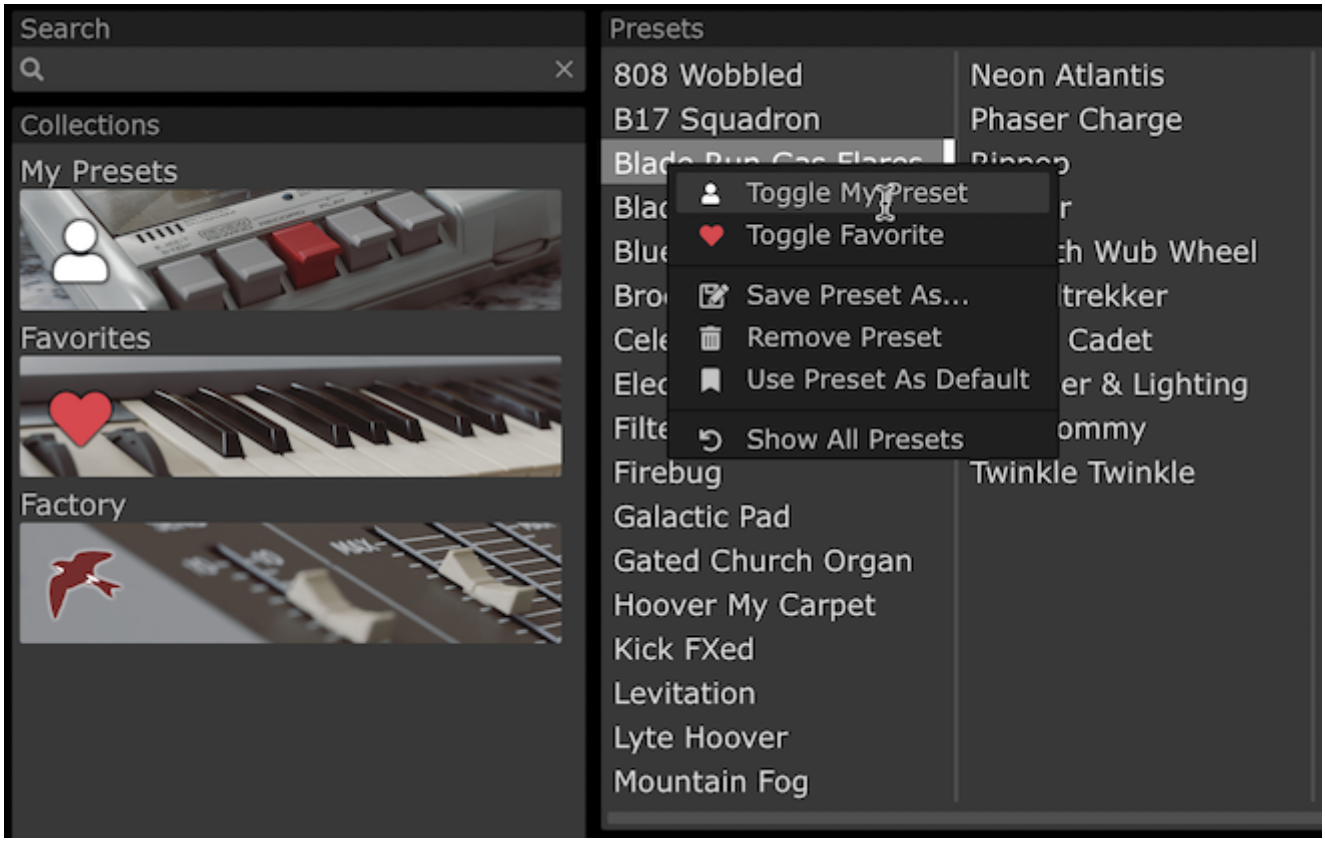
Note that the selected preset has to be in My Presets for this to work, as this keeps Factory presets and other Collection presets from being overwritten. If overwriting a Factory or Collection preset is attempted, a dialogue will appear offering to Save As instead.

The **Save As** button (disk and pen icon) allows you to save the current settings automatically in My Presets, rather than overwriting anything.

My Presets, Factory and Favorites Collections

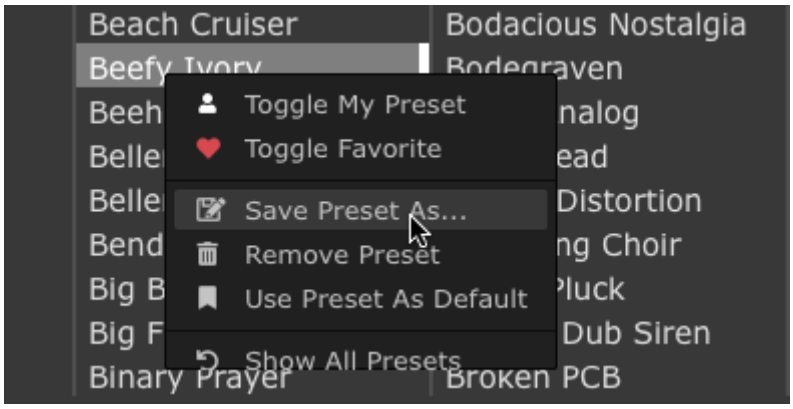
To the left of the preset browser you'll find at least three default Collections: **My Presets**, **Factory** and **Favorites**.

My Presets is where presets that you create and save are stored. To save a preset to My Presets click **Save Preset As** in the top toolbar of the AX73, or right-click on the preset you've adjusted in the browser and select **Save Preset As**.

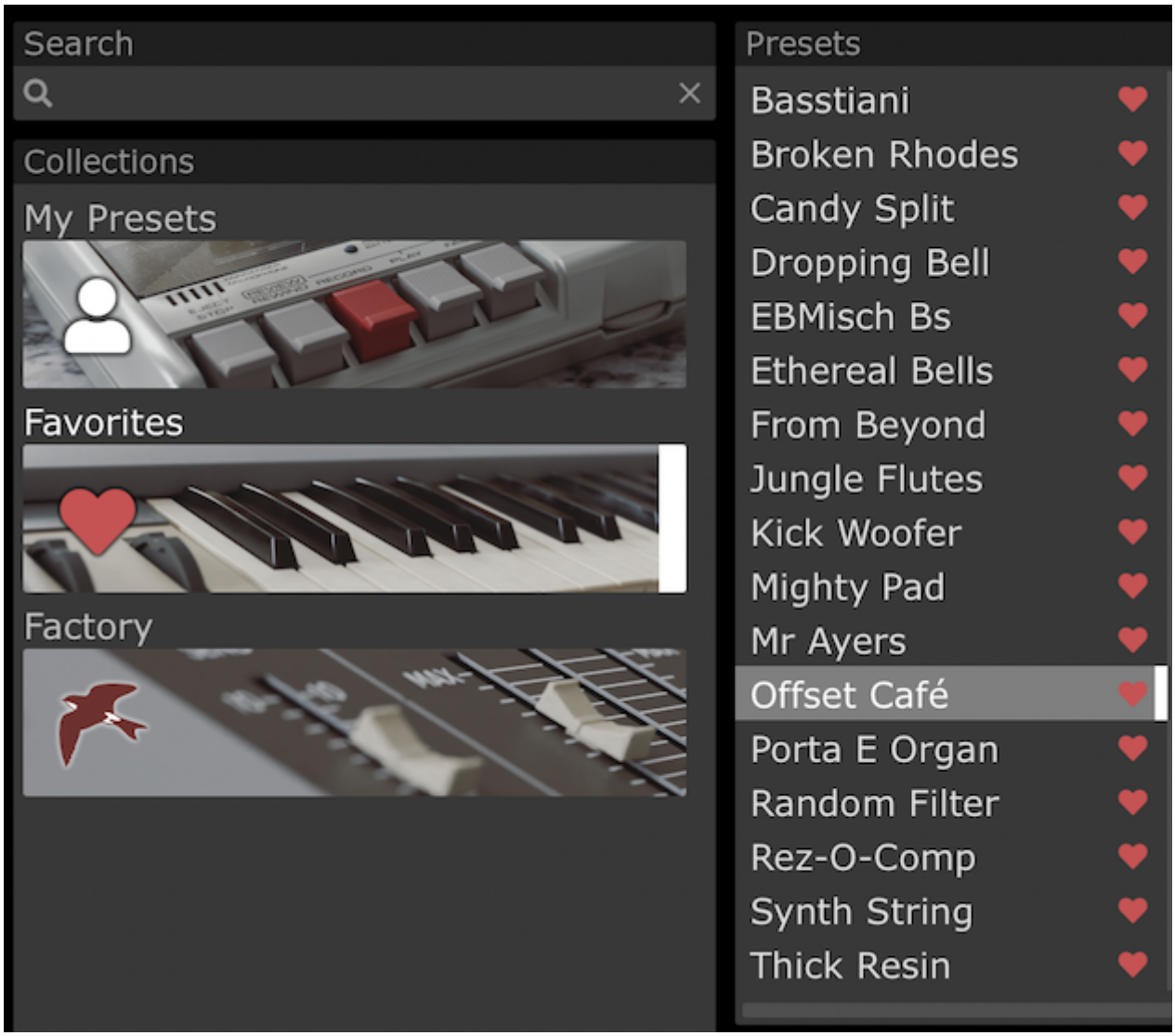


When in My Presets, add tags, rename presets and change the author by right clicking on either Name, Collection, Type, Character, Comment or Author in the Info panel in the

bottom right of the interface.



Factory is where you will find all 600 presets that come with the AX73.

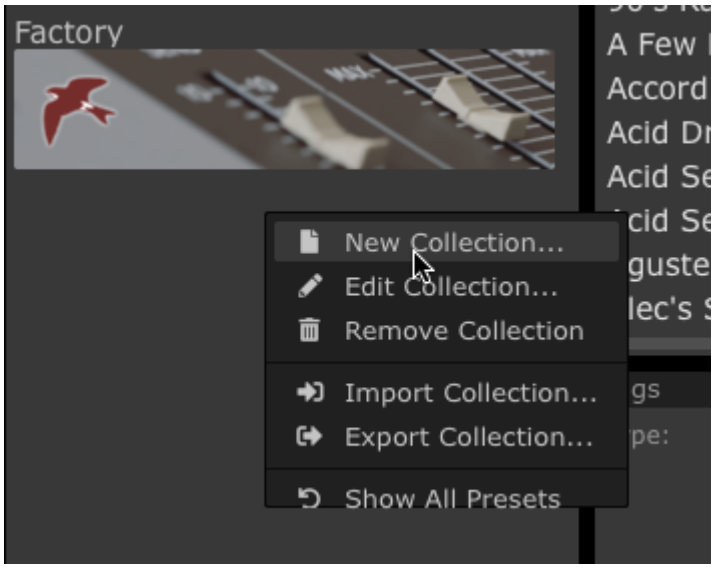


You can add presets that you use a lot to the **Favorites** collection. To add a preset to the Favorites collection, right-click on it and select **Toggle Favorite**.

Creating and saving collections

To create a new collection, right-click in the collection window on the left hand side of the interface and select **New Collection**.

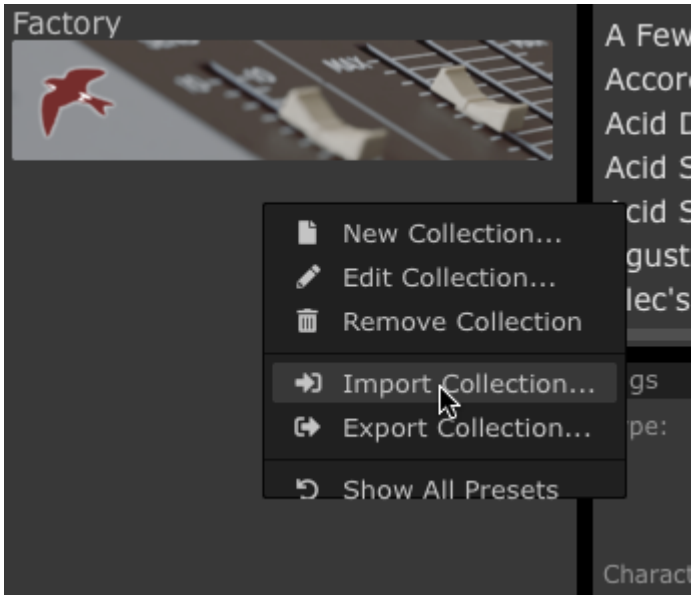
You can name your collection anything you like, add **Overlay Text** and upload an image to go with your collection. This is a useful feature if you plan to sell presets and want to add a personal touch to your collections.



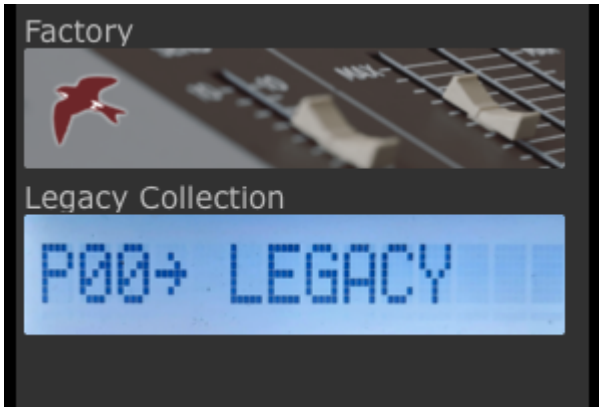
Once a collection is created, it's easy to add premade presets to it. Find a preset you want to add to your new collection and select it. Right click on your new collection and select **Add Selected Preset**.

It is advisable to remove any presets from My Presets after adding them to a Collection that you are creating. Presets in the My Presets category can be saved over, so to keep the Collection consistent and protected, remove any presets you wish to lock from My Presets.

Importing and exporting collections



To import a collection, right-click on the space behind the current collections and select *_Import Collection_. Select the **.mcoll** file that you have downloaded, and the collection will be added to the plugin.



To export a collection, right-click on the collection and select **Export Collection**. Choose where you would like your Collection to be saved. The collection will be saved as a .mcoll file which you can share as you like.

Backing up your preset data

To back up your presets (for example, when migrating to a new system), there are two ways to work. Firstly, you can add all the presets you wish to keep to a Collection and export it as a .mcoll file, re-importing that into the new system (see above).

The other way to back up or restore your entire preset library is to back up the **presets.data** file that can be found in your system's file browser. On Windows, this file is found in **C:\Users[Your Username]\AppData\Roaming\Martinic\AX73**, and on Mac, in **~/Library/Application Support/Martinic/AX73**.

AX73 Full Features List

OSCILLATORS

- Two VCOs per layer
- Waveshapes: Saw, Triangle, Square, Saw + Triangle, Sine
- Pulse width assignable when using any waveshape
- Sub oscillator per VCO
- Pink noise generator per layer

FILTER

- Filter per layer (LP/HP/BP) with self-oscillating capability
- OWFM feature modulates the VCF frequency using the oscillator frequency

VOICES AND LAYERING

- Stack or split Upper and Lower layers to create unique and complex patches
- Up to 24 voices of polyphony, quadrupling the original six
- MIDI Split mode allows two MIDI channels to play the Upper and Lower layers
- Assign mod wheel control to Upper, Lower or both synth layers

MODULATION OPTIONS

- Four DADSR Envelope Generators per layer (one hardwired to VCA level)
- Four LFOs per layer
- Modulation destinations: VCO, VCF, VCA level, PWM, Resonance, OWFM, Pan
- LFO shapes: Saw Up/Down, Triangle, Square, Random, Parabola Up/Down, Sine
- Envelopes can be inverted for falling pitch and filter effects
- Step function on LFOs acts like sample-and-hold operation over traditional waveshapes
- Retrigger modes on LFOs and Envelopes including Legato, Poly and other options
- Poly/Dual/Unison keyboard assign modes, with variable Detune
- Mono mode with Low/High/Last note priority
- Solo/Poly Portamento with adjustable Time

ARPEGGIATOR (from AX60)

- Arpeggiator per layer with variable Rate and Hold function
- Modes: Order, Up, Down, Up/Down Incl/Excl, Alt Rise/Fall, Random, Shuffle, Improv,

Chord

- Cycle arp playback through Octaves, sync to DAW tempo and choose gate Length

EFFECTS

- Built-in Chorus with four modes of operation
- Eight ‘external’ (post synth) effect units with flexible ordering and Mix dials
- Compressor with Attack, Release, Threshold, Ratio and Makeup
- Chorus with Rate, Depth, Sync and Width
- Flanger with Rate, Depth, Sync, Feedback and Width
- Phaser with Rate, Depth, Sync, Feedback and Width
- Delay with Time, Pan (ping-pong), Tone (filter)
- Reverb with Delay, Time, Tone (filter), Damping and Width
- Distortion with Drive, Tone and Level controls
- EQ with Low, Mid and High bands; Mid band features Bandwidth control

AX73

v1.0.0

www.martinic.com/products/ax73-plus

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