BABY AUDIO.

ATOMS MANUAL

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For help, please write us at:
support@babyaud.io

Synthesis from a different dimension

Atoms is a new type of synthesizer that is organic, yet otherworldly. Its unique sound is the result of cutting-edge techniques in physical modeling. Use Atoms to build eerie and unearthly textures that are buzzing with life.

Quick Start

Welcome to Atoms—a physical modeling synthesizer.

Atoms simulates a virtual structure of masses and springs that produces sound when bowed. Known as a mass-spring interaction network, this underlying physical model represents a new direction in synthesis.

The six main panel knobs control the characteristics of the physics simulation. Each one can be musically randomized, or automated within Atoms to create organic, evolving textures that sound and feel alive.

If you'd like a visual demonstration of how Atoms works, check out the tutorial video here: https://youtu.be/t9V_othnsPw

To go more in depth, watch our deep dive with lead developer Silvin Willemsen on the science that powers Atoms: https://youtu.be/AXaq4UhevU4

Use Cases

Physical modeling is an underexplored branch of synthesis in DAW-based music production.

Atoms is designed to harness the latest in this technology so you can discover new paradigms in sound design. At the same time, Atoms is simple enough to use that you can quickly create great sounds on the fly.

Here are a few ways to think about using Atoms in your workflow:

New pseudo-acoustic instrument:
At its heart, Atoms is like a bowed string instrument created in a science lab. It's capable of everything from sci-fi ambience to naturalistic string sounds. Since Atoms is based on a virtual acoustic structure, you can think of it like an evolution of a traditional acoustic instrument.

Evolving, organic textures:
Atoms' built-in automation functions make it easy to create patches that shift and change over time. This is the key to the lifelike sense of action in Atoms' most interesting patches.

Randomly generated patch explorer:
Atoms' musically calibrated randomization function accounts for the relationships between parameters as it generates new combinations. That means that unlike other randomizers, you'll never get settings that don't "work."

One of the best ways to explore Atoms is by randomizing your way to a cool sound and then using the Recycle function to fine-tune different variations.

The main parameters

Chaos:
The Chaos control introduces nonlinear behavior in the mass-spring interaction system. With this control turned up, the virtual springs begin pushing against each other to create pitch glides and detuning effects.

Order:
Atoms' mass-spring networks gradually lose high frequency energy as they decay—a physical process known as damping. Increase the Order control to introduce greater damping to the springs, acting like a low-pass filter.
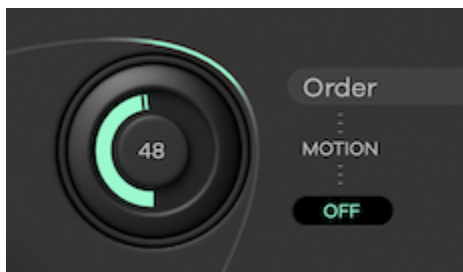
Force:
A mass-spring interaction model needs a source of energy to generate sound through vibration. In Atoms, it's a virtual bow. The Force parameter controls the pressure of the bow on the springs, adding noisiness and sharper harmonics as you increase it.

Overtones:
The Overtones parameter controls the position of Atoms' virtual bow along the mass-spring network. Turn it up to bow closer to the boundary, producing bright overtones like those of a violin bowed close to the bridge.

Drive:
Harmonic clipping with a waveshaping function that can bring out the complex harmonics Atoms creates.

Filter:
A traditional low-pass filter with resonance for even more tone shaping. Can be automated for LFO filter sweeps.

Randomization

Atoms' musical patch randomizer lets you quickly experiment with new sounds without worrying about incompatible settings.

Here are the main randomization controls in Atoms:

Magic Dice:
Click to musically randomize Atoms' parameters, except those excluded with the **Lock** button.

Recycle:
Creates variations on the current settings. Use it to fine-tune settings you discover with randomization or generate variations of your favorite presets.

Lock:
Excludes parameters from randomization. Use it to keep settings you like from being affected by the randomizer.

While in the lock menu, the ring control around each knob sets the range of randomization for the parameter.

Undo:
Returns Atoms to its previous settings.

The automation menu

Atoms' automation system is how you introduce motion to its six main parameters.

Enable automation by selecting one of the four automation modes:

- SINE— smooth sine wave modulation
- SAW—ramping sawtooth wave modulation
- DRIFT—semi-random modulation back and forth (also based on a mass-spring model!)

- MPE—modulate the parameter with polyphonic aftertouch pressure (when MPE is enabled)

Host sync:

Click the chain icon to enable synchronization to the host BPM.

Automation direction:

Invert the direction of the automation sweep.

LFO Mode:

Choose between three distinct LFO modes:

- Free—LFO runs independently
- Retrigger—LFO restarts with each note
- Hold—behaves like retrigger, but stops after one cycle

Automation rate:

Sets the speed of the automation in Hz or in Bars/Beats when Host sync is enabled.

Copy/paste automation setting:

Click the circle to copy automation settings from one parameter to another
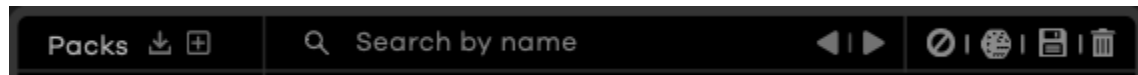
The preset panel

From left to right, the preset bar gives you the following options:

- Open preset menu

- Save preset

- Browse 250+ presets by top sound designers and friends of Baby Audio for instant inspiration.

- Load the next or previous preset in the list

Preset browser

Atoms preset browser gives you easy access to the best patches from notable producers and sound designers:


Here are the top panel functions of the preset browser from left to right:

- Import a preset pack or create a new custom one.
- Search all presets by name
- Go to next or previous preset
- Sort presets by color tag—Presets can be assigned one of three identifying colors by clicking the circle on the right side of the row.
- Load a random preset
- Save the current preset
- Delete selected preset

Preset packs will appear in the left column of the browser window.

The bottom panel
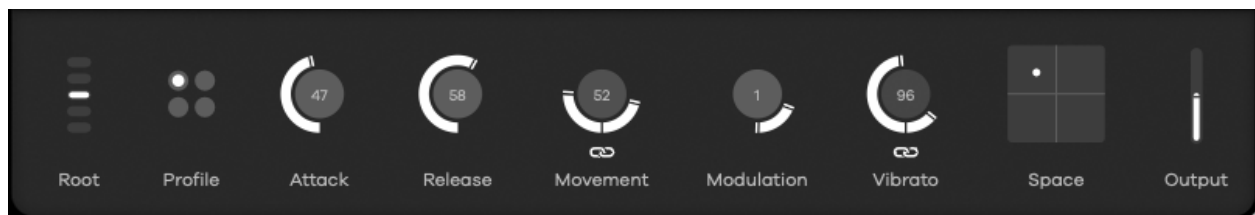
The bottom section of Atoms contains essential functions for tone shaping and the behavior of the mass-spring system.

Root:
Atoms can handle everything from powerful basslines to growling leads and airy pads. The root control lets you quickly set the octave range to transpose up and down +/- 24 semitones.

Profile:
Atoms' four unique profiles give you different arrangements of its mass-spring network for even more sonic range. Each profile has its own character to discover, from pristine detail to lo-fi goodness.

Attack:
Atoms' envelope shape comes from the physics of its mass-spring model.
The attack control varies the onset of the virtual bow from abrupt to gradual, letling you dial in everything from gentle pads to aggressive plucks.

Release:
The release control affects damping in the mass-spring network. This allows you to create everything from short decays to infinite sustain as if damping from air and friction did not exist.

Movement:
The movement control alters the depth and speed of the virtual bowing action to produce a subtle undulating motion.

Modulation:
Atoms' mass-spring interaction model can create interesting variations on classic modulation effects.

The movement control varies the "listening position" on the springs to create a unique chorus effect.

Vibrato:
The vibrato control varies the springs' stiffness to create unique pitch modulation.

Reverb:
A little context can go a long way when it comes to synth sounds. Atoms' built-in reverb lets you add ambience with simple size and mix controls on an X/Y pad.

Assigning Hardware Controllers to Atoms

Exploring Atoms with hands-on control can unlock new creative ideas. MIDI mapping is expected to be handled via a DAW like Ableton Live or Bitwig Studio to ensure utmost stability. Most modern DAWs have a built-in MIDI learn/MIDI link functionality that will allow you to assign hardware controllers to Atoms' parameters. For specific setup instructions, please refer to your DAW's manual.

Shortcuts

Atoms comes loaded with several shortcuts to speed up your workflow.

- Double click a parameter to reset it to its default value.

- Control (PC)/Command (Mac) + click and drag on a parameter to fine tune adjustments.

- Use the scroll wheel to adjust values while hovering over a parameter or cycle through automation types while hovering over a motion menu.

Compatibility

- Plugin formats: VST, VST3, AU, AAX (64-bit).

- Platforms supported: Mac OS 10.11 and up (including Native Apple Silicon M1/M2 Compatibility). PC Windows 10 and newer.

- DAWs supported: All major DAWs, including Ableton Live, Pro Tools, Logic Pro, FL Studio, Cubase, Studio One, Bitwig, Reaper, Reason etc.

Installation

A software download is emailed to you right after your purchase, however you can always go to www.babyaud.io/downloads for the latest software updates. After downloading, unzip the file and select either Mac or PC depending on your system.

- MAC: Double click on the PKG installer and follow the instructions
- PC/WINDOWS: Double click on the setup file and follow the instructions

Activation and Trial Version

Activate your software by entering the license key that was emailed to you when you bought Atoms. Serial keys are entered in the 'trial mode' open screen. If you have any problems activating, please email support@babyaud.io

If you're running Atoms in trial mode, please note that the trial will output 5 seconds of silence every 60 seconds. To buy the full version, go to www.babyaud.io/atoms

Uninstall Locations

Mac OS
- AU: /Library/Audio/Plug-ins/Components/
- VST: /Library/Audio/Plug-ins/VST/
- VST3: /Library/Audio/Plug-ins/VST3/
- AAX: /Library/Application Support/Avid/Audio/Plug-Ins/

Windows
- VST: The file will be in the custom path selected during installation
- VST3: \Program Files\Common Files\VST3\ AAX: \Program Files\Common Files\Avid\Audio\Plug-Ins\

End User License Agreement

Please read our End User License Agreement here: www.babyaud.io/eula

We hope you'll enjoy Atoms and use it in your own way to achieve things we had never even intended for it to do. If you run into any issues or have questions along the way, you can always contact us at support@babyaud.io – enjoy the journey!